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**SECURITIES AND EXCHANGE COMMISSION**

WASHINGTON, D.C. 20549

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**FORM 20-F/A**

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

For the fiscal year ended December 31, 2002

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**M-SYSTEMS FLASH DISK PIONEERS LTD.**

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

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**Israel**

(Jurisdiction of incorporation or organization)

7 Atir Yeda St., Kfar Saba, Israel 44425

(Address of principal executive offices)

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

**Title of each class**

N/A

**Name of each exchange on which registered**

N/A

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

**Ordinary Shares, nominal value 0.001 New Israeli Shekel per share**

(Title of Class)

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

**None**

(Title of Class)

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Indicate the number of outstanding shares of each of the issuer's classes of capital or common stock as of the close of the period covered by the annual report:

27,485,361

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for 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 statements the registrant has elected to follow:

Item 17 ☐ Item 18 ☒

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### **EXPLANATORY NOTE**

This Amendment No. 1 on Form 20-F/A (the "Amended 20-F") speaks as of the filing date of our Form 20-F for the fiscal year ended December 31, 2002, filed on June 30, 2003 (the "Original 20-F"), except for the certifications which speak as of their respective dates and the filing date of the Amended 20-F. Except as specifically indicated, the Amended 20-F has not been updated to reflect events occurring subsequent to the filing of the Original 20-F.

### **PRELIMINARY NOTE**

THIS ANNUAL REPORT CONTAINS HISTORICAL INFORMATION AND FORWARD-LOOKING STATEMENTS. STATEMENTS LOOKING FORWARD IN TIME ARE INCLUDED IN THIS ANNUAL REPORT PURSUANT TO THE "SAFE HARBOR" PROVISION OF THE PRIVATE SECURITIES LITIGATION REFORM ACT OF 1995. THEY INVOLVE KNOWN AND UNKNOWN RISKS AND UNCERTAINTIES THAT MAY CAUSE OUR ACTUAL RESULTS IN FUTURE PERIODS TO BE MATERIALLY DIFFERENT FROM ANY FUTURE PERFORMANCE SUGGESTED HEREIN, INCLUDING ALL OF THE RISKS AND UNCERTAINTIES DISCUSSED BELOW IN ITEM 3.D "RISK FACTORS" AND ELSEWHERE IN THIS REPORT. FURTHERMORE, WE OPERATE IN AN INDUSTRY SECTOR WHERE SECURITIES VALUES MAY BE VOLATILE AND MAY BE INFLUENCED BY ECONOMIC AND OTHER FACTORS BEYOND THE COMPANY'S CONTROL. FUTURE EVENTS AND ACTUAL RESULTS COULD DIFFER MATERIALLY FROM THOSE SET FORTH IN, CONTEMPLATED BY OR UNDERLYING THE FORWARD-LOOKING STATEMENTS AND THUS RELIANCE SHOULD NOT BE PLACED ON THESE FORWARD-LOOKING STATEMENTS, WHICH ARE APPLICABLE ONLY AS OF THE DATE HEREOF. IN THE CONTEXT OF THE FORWARD-LOOKING INFORMATION PROVIDED IN THIS ANNUAL REPORT AND IN OTHER REPORTS, PLEASE REFER TO THE DISCUSSIONS OF RISK FACTORS DETAILED IN, AS WELL AS THE OTHER INFORMATION CONTAINED IN, THIS ANNUAL REPORT AND OUR OTHER FILINGS WITH THE SECURITIES AND EXCHANGE COMMISSION.

WE URGE YOU TO CONSIDER THAT STATEMENTS THAT USE THE TERMS "BELIEVE," "DO NOT BELIEVE," "EXPECT," "PLAN," "INTEND," "ESTIMATE," "ANTICIPATE," "PROJECT" AND SIMILAR EXPRESSIONS ARE INTENDED TO IDENTIFY FORWARD-LOOKING STATEMENTS. THESE STATEMENTS REFLECT OUR CURRENT VIEWS WITH RESPECT TO FUTURE EVENTS AND ARE BASED ON ASSUMPTIONS AND ARE SUBJECT TO RISKS AND UNCERTAINTIES.

EXCEPT AS REQUIRED BY APPLICABLE LAW, INCLUDING THE SECURITIES LAWS OF THE UNITED STATES, WE DO NOT INTEND TO UPDATE OR REVISE ANY FORWARD-LOOKING STATEMENTS, WHETHER AS A RESULT OF NEW INFORMATION, FUTURE EVENTS OR OTHERWISE AND WE DISCLAIM ANY OBLIGATION TO PUBLICLY REVISE ANY SUCH STATEMENTS TO REFLECT ANY CHANGE IN EXPECTATIONS OR IN EVENTS, CONDITIONS, OR CIRCUMSTANCES ON WHICH ANY SUCH STATEMENTS MAY BE BASED.

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## **PART I**

Unless the context otherwise requires, all references in this annual report to “M-Systems”, “we”, “our”, “us” and the “Company” refer to M-Systems Flash Disk Pioneers Ltd. and its consolidated subsidiaries. References to “dollars” or \$ are to United States dollars.

All references herein to “ordinary shares” shall refer to our ordinary shares, nominal value 0.001 New Israeli Shekel per share.

### **ITEM 1. IDENTITY OF DIRECTORS, SENIOR MANAGEMENT AND ADVISORS**

– Not applicable

### **ITEM 2. OFFER STATISTICS AND EXPECTED TIMETABLE**

– Not applicable

### item 3. KEY INFORMATION

#### A. SELECTED FINANCIAL DATA

The following selected summary of financial information was derived from our Consolidated Financial Statements, which have been prepared in accordance with accounting principles generally accepted in the United States. The selected summary data should be read in conjunction with, and are qualified in their entirety by, our Consolidated Financial Statements and notes thereto, which are presented elsewhere herein and by reference to “Item 5: Operations and Financial Review and Prospects.”

##### Summary Consolidated Financial Information

|   | Year ended December 31,               |            |           |             |            |
|---|---------------------------------------|------------|-----------|-------------|------------|
|   | 1998                                  | 1999       | 2000      | 2001        | 2002       |
|   | (in thousands, except per share data) |            |           |             |            |
| Statement of Operations Data:   |                                       |            |           |             |            |
| Revenues .....  | \$ 16,351                             | \$ 30,430  | \$ 92,589 | \$ 44,678   | \$ 64,817  |
| Cost of revenues .....  | 9,834                                 | 20,735     | 64,281    | 60,573      | 44,415     |
| Gross profit (loss) .....   | 6,517                                 | 9,695      | 28,308    | (15,895)    | 20,402     |
| Operating expenses:   |                                       |            |           |             |            |
| Research and development, net .....   | 2,237                                 | 3,137      | 7,364     | 13,290      | 11,974     |
| Selling and marketing, net .....  | 4,310                                 | 6,779      | 11,535    | 12,122      | 12,547     |
| General and administrative .....  | 1,264                                 | 1,772      | 2,809     | 3,913       | 4,000      |
| In-process research and development write-off .....   | ---                                   | ---        | 6,215     | ---         | ---        |
| Total operating expenses .....  | 7,811                                 | 11,688     | 27,923    | 29,325      | 28,521     |
| Operating income (loss) .....   | (1,294)                               | (1,993)    | 385       | (45,220)    | (8,119)    |
| Other income (expenses), net .....  | 785                                   | ---        | ---       | (1,193)     | ---        |
| Financial income, net .....   | 202                                   | 217        | 5,875     | 4,628       | 2,619      |
| Income (loss) before minority interest in losses of a Subsidiary .....                        | \$ (307)                              | \$ (1,776) | \$ 6,260  | \$ (41,785) | \$ (5,500) |
| Minority interest in losses of a Subsidiary .....   | 37                                    | 122        | 19        | ---         | ---        |
| Net income (loss) .....   | \$ (270)                              | \$ (1,654) | \$ 6,279  | \$ (41,785) | \$ (5,500) |
| Basic net earnings (loss) per share .....   | \$ (0.01)                             | \$ (0.08)  | \$ 0.25   | \$ (1.56)   | \$ (0.20)  |
| Diluted net earnings (loss) per share .....   | \$ (0.01)                             | \$ (0.08)  | \$ 0.22   | \$ (1.56)   | \$ (0.20)  |
| Number of shares used in computing basic net earnings (loss) per share (in thousands) .....   | 19,245                                | 19,881     | 25,368    | 26,716      | 26,953     |
| Number of shares used in computing diluted net earnings (loss) per share (in thousands) ..... | 19,245                                | 19,881     | 28,040    | 26,716      | 26,953     |

## Summary Consolidated Financial Information (cont.)

|                                    | Year ended December 31, |          |            |          |          |
|------------------------------------|-------------------------|----------|------------|----------|----------|
|                                    | 1998                    | 1999     | 2000       | 2001     | 2002     |
|                                    | (in thousands)          |          |            |          |          |
| Balance Sheet Data:                |                         |          |            |          |          |
| Cash, cash equivalents, short-term |                         |          |            |          |          |
| Bank deposits, short term and long |                         |          |            |          |          |
| term marketable securities.....    | \$ 7,990                | \$ 6,230 | \$ 120,476 | \$97,236 | \$94,094 |
| Working capital.....               | 12,242                  | 15,710   | 155,694    | 87,264   | 70,297   |
| Total assets.....                  | 17,882                  | 26,791   | 185,251    | 145,451  | 148,202  |
| Shareholders' equity.....          | 13,832                  | 17,474   | 172,799    | 133,051  | 128,290  |

## B. CAPITALIZATION AND INDEBTEDNESS

– Not applicable

## C. REASONS FOR THE OFFER AND USE OF PROCEEDS

– Not applicable

## D. RISK FACTORS

*Our business, operating results and financial condition could be seriously harmed due to any of the following risks. In addition, the trading price of our ordinary shares could decline due to any of these risks, and you could lose all or part of your investment.*

### **We have incurred losses in the past, are currently incurring losses, and may incur losses in the future.**

We have a history of losses. Other than the year 2000, in which we were profitable, we have incurred losses in our past ten years of operation. In recent years, we incurred net losses of \$1.7 million in 1999, \$41.8 million in 2001 (\$30.2 million of them were due to an inventory write-down, and \$1.0 million of them were due to an investment write-off) and \$5.5 million in 2002. We will need to generate increased revenues to return to and maintain profitability. We cannot be sure that we will be successful in increasing our revenues or that we will be able to achieve profitability or maintain profitability, if achieved, on a consistent basis.

**Our quarterly operating results have fluctuated significantly in the past and may fluctuate significantly in the future, which may harm the price of our shares.**

Our quarterly operating results have fluctuated significantly in the past and we expect that they will continue to fluctuate in the future. This fluctuation could cause the market price of our ordinary shares to decline. This fluctuation may result from a variety of factors, including, without limitation, the following:

- Changes in global economic conditions in general, and conditions in our industry and target markets in particular;
- Changes in business and economic conditions or growth rates in any of the geographic regions in which we do business, particularly in the United States, the European Union and the Far East;
- Availability of components, including flash components, in sufficient quantities, at competitive prices and delivered in a timely manner to allow us to meet customer demand;
- Accessibility of third party manufacturing and assembly services for certain of our products;
- Changes in the price of components, including flash components, used in our products;
- Decline in the average selling prices of our products due to competitive pricing pressures;
- Expenses related to obsolescence or devaluation of unsold inventory, or reserves necessary to protect us against future write-downs of unsold inventory;
- Lengthening in manufacturing cycle times or increases in manufacturing costs due to disruptions in the manufacturing process or reductions in yield;
- Manufacturing flaws affecting the reliability, functionality or performance of our products which could increase our product costs, reduce demand for our products or require product recalls;
- Quality problems or any other significant technical difficulties or interruptions in the manufacture or supply of our products, which could cause shipment delays and require product recalls;
- Difficulty of forecasting sales and managing inventory levels;
- Competition in general and the timing of new product introductions by us and our competitors;
- Lower than anticipated market acceptance of our new or enhanced products;
- Slower than anticipated market acceptance of the products that incorporate our solutions, resulting in delays or cancellation of such product introductions;
- Changes in our distribution channels;
- Competitive pricing pressures, which affect both the selling prices of our products and the value of our inventory;
- Increases in our research and development and marketing expenses;
- Decreases in our financial income based on interest rate reductions;
- The business impact of unrest or political instability in locales in which we conduct our business, such as the current unrest in Israel;
- Difficulties in conducting business with subcontractors, customers, partners and others in Asia and other areas of the world that have been or may be affected by contagious diseases such as the SARS virus;
- Exchange rate fluctuations; and
- Adverse economic conditions and currency fluctuations, and especially the new conditions associated with the September 11, 2001 terrorist attacks in the U.S.

Sales and profitability, if any, in any particular quarter may be lower (or losses may be greater) than those of preceding quarters, including comparable quarters. Moreover, our product and customer mix varies quarterly, which affects our overall average selling prices and gross margins. Our DiskOnChip and DiskOnKey products, which currently represent the majority of our product revenues, have lower average selling prices and gross margins than our Fast Flash Disk (“FFD”) products. Depending on the relative mix between sales of these products (and any other products we may offer), our gross margins could fluctuate significantly. In addition, a significant portion of our research and development, marketing, and general and administrative expenses are relatively fixed. Accordingly, our operating results have been and may in the future be, adversely affected when our revenues do not meet our expectations in any given quarter. Our operating results in future periods may be below the expectations of securities analysts and investors. If that occurs, the market price of our ordinary shares could be materially and adversely affected.

**Our revenues and gross margins may be, and have been, adversely affected by volatility in, and various factors affecting, the market price of flash memory components.**

For most of its products, the Company relies to a significant extent on the purchase of flash memory components or custom made products incorporating flash components from third party manufacturers and distributors. As a result, the Company is exposed to the risks associated with any increase or decrease in the price of flash components and to the volatility of such price range.

In the event of a sharp decline in the price of flash components, the value of our inventory will fall and the Company may be compelled to write-down its inventory's value, which may result in a significant decrease in our gross margins. In addition, we may need to significantly reduce our selling prices, which may result in a decline in our revenues and gross profits. An example of this vulnerability occurred during the first half of 2001, when the flash prices decreased significantly both due to the worldwide economic slowdown and the excess of supply of flash components. This caused our revenues to decline significantly and caused us to write-down \$30.2 million against the valuation of our inventory in the first half of 2001.

Alternatively, in the event that the market price for flash components goes up (e.g. as a result of inflationary pressures on flash component suppliers or increased demand for any reason), we may be unable to pass these price increases on to our customers and, consequently, our gross margins could suffer, or, in the extreme, we may not be able to sell the Company's products at a profit at all, resulting in loss of revenues and market share and/or in net losses.

To the extent that the market price for flash components either increases or declines dramatically and this situation continues or worsens, our revenues may decline or may fail to grow. If we cannot reduce our product manufacturing costs to offset either a reduction or an increase in prices, as the case may be, our gross margins and net results will be adversely affected.

**Our revenues and gross margins may be adversely affected by reduced activity in our customers' markets.**

As a result of the continued worldwide economic slowdown, many of our customers may continue refraining from increased spending at previously estimated rates or decide to decrease spending and may hold back or cease the development of new products. In addition, public demand for new products incorporating our technology – such as high end cell phones and Personal Digital Assistants (“High-End Mobile Devices”) for our DiskOnChip product line or for new lap-top computers and PCs and their accessories for our DiskOnKey product line (see in Item 4.D below the paragraph titled “Our Target Markets”) – might languish resulting in reduced demand for our products. As a result, our revenues may decline, and our inventory levels may increase. To the extent our inventory levels increase in an environment of decreasing flash product prices or as a result of continuing lowered demand for our products, our gross margins may be negatively impacted.



**Our stock price has been, and may continue to be, volatile for various reasons, including the volatility and downturn in share prices for technology companies generally as well as for companies in our industry.**

The market price of our stock has fluctuated significantly in the past and is likely to continue to fluctuate in the future. For example, between January 1, 2002 and May 1, 2003, our closing stock price has fluctuated from a low of \$4.95 to a high of \$12.59. We believe that fluctuations will continue as a result of, among other things, the factors discussed above (see in this Item 3.D above the paragraph titled “Our quarterly operating results may have fluctuated significantly in the past and may fluctuate significantly in the future, which may harm the price of our shares”) and as a result of announcements by us, our competitors or third parties (such as industry and research analysts) regarding our business, the business of our competitors, our markets, technological innovations, or changes in earnings estimates. In addition, in recent years the stock market has experienced significant price and volume fluctuations and the market prices of the securities of high technology companies have been especially volatile, often for reasons outside the control of these companies. These fluctuations, as well as general economic, political and market conditions, including certain conditions related to the State of Israel (also see in this Item 3.D below the paragraph titled “Conditions in Israel affect our operations and may limit our ability to produce and sell our products”), may have an adverse effect on our stock price. In the past, securities class action litigation has often been brought against companies following periods of volatility in the market price of their securities. We may be the target of similar litigation in the future. Securities litigation could result in substantial costs and divert our management’s attention and resources, which could cause serious harm to our business.

**The success of our business depends on emerging markets and new products and on our ability to maintain a competitive edge as these markets grow.**

Sales of our DiskOnChip products are directly related to the demand for High-End Mobile Devices and for such products as set-top boxes and thin clients (“Embedded Devices”). High-End Mobile Devices and Embedded Devices are still relatively new types of products, and we cannot be sure that they will achieve market acceptance, that demand for these products will grow or that our products will be included in the High-End Mobile Devices and Embedded Devices that achieve market acceptance. If sales of High-End Mobile Devices and Embedded Devices do not grow, or if successful High-End Mobile Devices or Embedded Devices do not incorporate our products, then sales of our DiskOnChip products will decrease or will not grow as anticipated. Most High-End Mobile Devices currently do not use or need flash for data storage and we cannot be sure that the requirement for data storage in that market will grow or that High-End Mobile Device designers and Original Equipment Manufacturers (“OEMs”) will choose to use the DiskOnChip. If the demand for Flash data storage does not grow in the High-End Mobile Devices market, or the DiskOnChip is not chosen by the relevant manufacturers as their preferred solution, then sales of our products to this market will not develop or grow as anticipated. This would reduce our revenues and our profitability, if any, or increase our losses.

The market for our DiskOnKey products is relatively new market that comes to answer a new need – secured and easy transfer of data between different computers and other applications. We cannot be sure that the need for such new products will develop, that demand for these products will grow or that our products will be accepted as the preferred solution by manufacturers, OEMs and consumer end-users. If the demand for Universal Serial Bus (“USB”) compatible personal flash data storage devices does not grow, or the DiskOnKey is not chosen by the relevant OEMs, consumer electronic companies and consumer end-users as their preferred solution, then sales of our DiskOnKey products to this market will not develop or grow as anticipated. This would reduce our revenues and our profitability, if any, or increase our losses.

As certain of our markets are in their initial stages of development, our competition in these markets may be comparatively limited. However, should the potential of these markets increase, we expect major corporations to enter into competition for these markets, which may result in our losing current design wins and/or customers. This would reduce our revenues and our profitability, if any, or increase our losses.

**We may be unable to achieve broad market acceptance for our products.**

Our business strategy depends on our achieving broad market acceptance for our products. We may, however, be unsuccessful in developing products that meet the needs of our target markets, in effectively marketing our products and in convincing potential customers to adopt our products and solutions. In addition, in order to attain a high market share, we may have to increase our production volumes at a rapid rate. If our products are not accepted in the market or if we are unable to increase our production volumes in a timely manner, we may lose market share to our competitors.

**We depend on operating system vendors to support our software and include our software with their operating systems.**

Our marketing strategy for DiskOnChip relies on our software being included in major operating systems. These operating systems are constantly being updated. As a result, we should continue to promote our software to ensure that it remains supported by these operating systems. If we are unable to maintain the support of major operating systems for our products, if the developers and distributors of major operating systems choose to support a competing product instead of our own or support other competing solutions together with our solution, or if other operating systems that do not include our software achieve market acceptance, this could adversely impact sales and accordingly have a material adverse effect on our business, financial condition and results of operations.

**We depend on Toshiba as a single source for our Mobile DiskOnChip and our DiskOnChip Millennium Plus products, and we expect to be dependant on them as a single source for future DiskOnChip products.**

We developed our Mobile DiskOnChip, DiskOnChip Millennium and DiskOnChip Millennium Plus products as part of a strategic relationship with Toshiba Corporation (“Toshiba”). At present, Toshiba is our sole manufacturer of the Mobile DiskOnChip and DiskOnChip Millennium Plus products. In addition, we are working with Toshiba on the joint development of future DiskOnChip products, for which they will be the sole source of supply as well. Toshiba not only provides the flash components but also manufactures and assembles the finished product. We are seeking to develop, with other manufacturers, products that will be comparable to the DiskOnChip although possessing different features and capacity. This will require additional hardware and software development, and we cannot assure you that we will be successful in developing such comparable products or that such other manufacturers will succeed in delivering products which are of similar cost, quality and functionality. If Toshiba were to close down or downsize its flash business, experience manufacturing problems or delays for any reason, including difficulty in obtaining sufficient raw materials, work stoppages, excessive demand for its manufacturing capacity or other causes, we may be unable to fill our customers’ orders for this product or unable to fulfill it in a timely fashion, which would result in lost sales and significantly lower revenues.

Pursuant to our agreement with them, Toshiba has begun to market and expects to begin selling the Mobile DiskOnChip, the DiskOnChip Millennium Plus and presumably future jointly-developed products as well, to customers under Toshiba’s trademark without obtaining our prior consent, subject to Toshiba paying us specified royalties. If Toshiba markets and sells the Mobile DiskOnChip, DiskOnChip Millennium Plus or future jointly-developed products to customers, they may compete in the same markets as we do, which could result in lost sales and lower revenues.

**We depend on third party subcontractors and certain strategic partners to manufacture, assemble and supply almost all of our products, and to jointly develop certain of our products.**

We rely on third party subcontractors and certain strategic partners to manufacture, assemble and supply most of our products, and to jointly develop certain of our products. For some products, we rely on a single source of supply (e.g., see in this Item 3.D above the paragraph titled “We depend on Toshiba as a single source for our Mobile DiskOnChip, DiskOnChip Millennium and DiskOnChip Millennium Plus products etc.”). The prices charged for the products we need manufactured, and the availability of qualified subcontractors for a particular product or products, may vary from time to time. Our product suppliers are often operating at peak capacity. At times, we have been unable to obtain adequate supplies of certain products within the time frame we need, which has resulted in delayed or lost sales of our products. In other cases, we have been required to keep unusually large product inventories in order to avoid shortages. We cannot assure you that shortages will not occur in the future. Moreover, an increase in prices by any of our suppliers could reduce our gross margins. In addition, should any of our suppliers or strategic partners become unable or unwilling to continue supplying us with their components or services, this would have a material adverse effect on the Company. As a majority of our third party subcontractors and strategic partners are located in the Far East, in the event that the SARS virus causes any of their manufacturing facilities to experience a shut-down or slow-down of manufacturing capacity and/or shipping ability, this may have a material adverse effect on the Company.

Some of our manufacturers and suppliers require that we give them lead times of three months or more when we place orders. If we underestimate our needs when we place orders, we may be unable to meet our customers' demands, and we could lose revenues and market share to our competitors. Alternatively, if we overestimate our need for products, we could increase our inventory levels, which could, in turn, increase our working capital needs and increase our exposure to a later devaluation of the inventory in stock if prices in the market go down. Either of these situations could have a material adverse effect on our business, financial condition and results of operations.

Should any of our strategic partners refrain from developing future products with us, our future results may be adversely affected.

If we experience quality problems or any significant technical or other difficulties or interruptions in the manufacture of our products, or supply delays from any of our product manufacturers or suppliers, it could take us a significant amount of time to correct the problem or to find a replacement source of supply.

**Any disruptions or other difficulties experienced at our manufacturing facility in Israel could adversely affect our business.**

We operate one manufacturing facility at our headquarters in Kfar-Saba, Israel. We currently manufacture our FFD and DiskOnChip 2000 products at that facility. If we experience quality problems or any significant technical or other difficulties or interruptions in the manufacture of our products at our facility, this could have an adverse effect on our business, financial condition and results of operations (also see in this Item 3.D below the paragraph titled "Conditions in Israel affect our operations and may limit our ability to produce and sell our products.").

**We depend on third parties for the supply and quality of components required for the manufacture of our products, including flash components.**

We rely on third parties to manufacture and supply components for our products, including the basic flash components used in all our products and the application specific integrated circuit ("ASIC") components used in our DiskOnKey and in some of our DiskOnChip products. For some components, we rely on a single source of supply. The availability and prices in the market of the components we need may vary from time to time. Our component suppliers are often operating at peak capacity. At times, the demand for components used in our products has exceeded available supply, and suppliers have raised prices and/or been forced to allocate limited resources among competing purchasers. On certain occasions we have been unable to obtain adequate supplies of certain components, which has resulted in delayed or lost sales of our products. In other cases, we have been required to keep unusually large component inventories in order to avoid shortages. We cannot assure you that shortages will not occur in the future. Moreover, an increase in prices by our suppliers could reduce our gross margins. In addition, should any of our suppliers become unable or unwilling to continue supplying us with their components, this would have a material adverse effect on the Company.

Some of our suppliers require that we give them lead times of three months or more when we place orders. If we underestimate our needs when we place orders, we may be unable to meet our customers' demands, and we could lose revenues and market share to our competitors. Alternatively, if we overestimate our need for products, we could increase our inventory levels, which could, in turn, increase our working capital needs. Either of these situations could have a material adverse effect on our business, financial condition and results of operations.

If we experience supply delays from any of our component suppliers, it could take us a significant amount of time to find a replacement source of supply. Any such delay in supply could cause us to lose sales.

Furthermore, if we experience quality problems from any of our component suppliers, it could take us a significant amount of time to identify the problem as associated with a particular component, ascertain whether this is as a result of a design or a manufacturing flaw and either correct the problem, if possible, replace the components or find an alternate source of supply. Any such quality problem or delay could, in addition to causing us lost sales, detrimentally affect our reputation in the market and cause us to incur additional costs as a result of the recall and replacement of affected products.

**We depend on third party foundries for silicon wafers and any shortage or disruption in our supply from these sources will reduce our revenues, earnings and gross margins.**

Our flash memory based products require silicon wafers, which are currently supplied by Toshiba and Samsung Electronics Co., Ltd. (“Samsung”). If Toshiba or Samsung are uncompetitive, or are unable or unwilling to satisfy our requirements, our business, financial condition and operating results may suffer. In addition, in the event that we are supplied with silicon wafers with low yield, our operating results and our ability to supply products to our customers may suffer. Any disruption in supply from these sources due to natural disaster, power failure, labor unrest or other causes, could significantly harm our business, financial condition and results of operations. Our obligation to provide a rolling forecast of anticipated purchase orders, limits our ability to react to fluctuations in demand for our products which may lead to excess wafer inventories and could result in higher operating expenses and reduced gross margins. In addition, if our flash suppliers do not continue to invest in the required advancements to their flash technology and flash products, our business, financial condition and operating results may suffer.

**High levels of inventory could adversely affect our gross margins.**

Due to various reasons (e.g. an anticipation of a shortage in components, a high sales forecasts which is not realized, cancellation of orders from customers, anticipation of an increase in prices), the Company may find itself with a higher level of inventory than its then current needs. As a result of this high level of inventory, the Company may be exposed to the risk of a decrease in the value of the inventory should the price of such components drop, and our gross margins will be adversely affected. Furthermore, in the event that the Company maintains large amounts of inventory, certain components or products, if warehoused for too long, might be rendered obsolete due to the modification and improvement of the Company’s products which might cause the Company to incur an inventory write-off. In addition, the Company may lose out on any financial income which it might have earned from cash assets converted into inventory.

**Undetected hardware and software errors or defects may increase our costs and impair the market acceptance of our products.**

Our products may contain undetected errors or defects. These could result either from errors or defects in components or products designed or manufactured by us that we fail to detect, or errors or defects in components supplied by third parties. In the past we have at times found these errors or defects in new or enhanced products after the commencement of commercial shipments. Our customers integrate our products into their applications together with products they acquire from other vendors. As a result, when problems occur in an application, it may be difficult to identify the product that has caused the problem. Regardless of the source of these errors or defects, we will need to divert the attention of engineering personnel from our product development efforts to address the detection of the errors or defects. These errors or defects could cause us to incur warranty or repair costs, liability claims or lags or delays. We could be forced to recall products that were already sold into the market and installed by our customers. Our insurance policies may not provide sufficient protection should a claim be asserted. Moreover, the occurrence of errors or defects, whether caused by our products or the products of another vendor, may significantly harm our relations with, or result in the loss of, customers, injure our reputation and impair market acceptance of our products.

**We sell our products in a highly competitive industry. As a result, we may lose market share and be unable to achieve or maintain profitability.**

The markets in which we compete are characterized by intense competition. Our DiskOnChip, DiskOnKey and FFD products compete with other flash disks, standard flash components, hard drives and alternative data storage technologies. Our competitors include many large U.S. and international companies that have substantially greater financial, technical, marketing, logistical infrastructure and support and other resources, greater access to component fabrication capacity, broader product lines and longer-standing relationships with customers than us, which may limit our ability to effectively compete with them. We believe that our ability to compete successfully depends on a number of factors, including the price, quality, features, performance, ease of integration and availability of our products.

Our DiskOnKey product competes with other USB-compatible flash disks, removable magnetic media, removable optical media, flash cards, floppy drives and other removable storage media. Our competitors in this market currently consist of numerous third tier computer peripheral manufacturers or hardware manufacturers, the majority of whom are located in Asia where manufacturing costs tend to be lower. Many of these competitors are vying for and attaining market share on the basis of aggressive pricing. In addition, we also currently experience (and expect this trend to continue) competition from large U.S. and/or international companies (including flash manufacturers) that have substantially greater financial, sales, technical, marketing, logistical infrastructure and support and other resources, greater access to component fabrication capacity, sometimes at substantially lower costs, broader product lines and longer-standing relationships with customers than we do.

The competition for our DiskOnChip products comes mainly from flash manufacturers offering competing solutions to our own. These flash manufacturers may have an advantage over us in that they have substantially greater financial, sales, technical, marketing, logistical infrastructure and support and other resources, greater access to component fabrication capacity, sometimes at substantially lower costs, broader product lines and longer-standing relationships with customers than we do. In addition, customers who desire to purchase our DiskOnChip products, may need to make engineering changes in the architecture of their current NOR based solution (for which most cell phones today are designed) to our NAND based solution, changes which are not required of certain of our competitors.

We expect competition to increase in the future from existing competitors and from other companies, including flash manufacturers, that may enter our existing or future markets with similar or alternative data storage solutions that may be less costly or provide additional and better features. In addition, given the developing nature of our markets and the related intellectual property, we cannot assure you that some of our competitors will not infringe our intellectual property rights, and thereby might force us to incur substantial or even prohibitive costs if we choose to defend our rights. In fact, we believe that some of our competitors to the DiskOnKey infringe our patent covering USB flash drives and we have initiated legal action in two separate instances (see Item 4.B below the paragraph titled "Intellectual Property Rights and Current Litigation"). Furthermore, increased competition may force us to reduce the prices for our products, thereby reducing our revenues and margins, and could otherwise have a material adverse effect on our business, financial condition and results of operations. There can be no assurance that we will be able to compete successfully against current and future competitors or that competitive pressures faced by us will not materially adversely affect our business, financial condition or results of operations.

**We have limited product offerings. As a result, our business may suffer if demand for any of these products declines or if we cannot develop new products to meet the needs of our customers.**

We offer three major product lines, with our DiskOnChip products accounting for approximately 45% of our sales in 2002, and our DiskOnKey products accounting for approximately 41% of our sales in 2002. If other companies were to develop products with similar or more features, similar or better performance or wider acceptance than our products, sales of our products could decline. Any significant decrease in the sales of our products could have a material adverse effect on our business, financial condition and results of operations.

Adversely, focusing on three different major product lines requires that the Company allocate sufficient resources to each, and the Company might not have the infrastructure to be able to fully support the needs of each product line and of additional product lines. As a result of not being able to adequately focus our efforts and resources on all of the Company's product lines, we may lose our positioning in already existing markets.

**Our success depends on our ability to anticipate new technological changes and to introduce new products in a timely manner.**

The market for our products is characterized by rapidly changing technology and evolving industry standards. The introduction of products embodying new technology and the emergence of new industry standards could render our existing products obsolete and unmarketable. Although we design our products to fit and match certain market standard interfaces, some of these interfaces may change over a relatively short period which may cause our then existing products to become obsolete while possibly enabling competing products. Our ability to anticipate changes in technology and industry standards and interfaces and to successfully develop and introduce new and enhanced products on a timely basis will be a critical factor in our ability to grow and to remain competitive. In addition, the anticipated development schedules for high technology companies are inherently difficult to predict and are subject to change as a result of shifting priorities in response to customers' requirements and product introductions from competitors. Our inability, for technological or other reasons, to develop products and product enhancements that are technologically competitive, responsive to customer needs or competitively priced would have a material adverse effect on our business, financial condition and results of operations.

**Our non-retail products generally have a long sales cycle, which increases our costs in obtaining orders and reduces the predictability of our earnings.**

Our DiskOnChip and FFD products are technologically complex and are typically intended for use in applications that may be critical to the business of our customers. Non-retail prospective customers generally must make a significant commitment of resources to test and evaluate our products and to integrate them into their applications. As a result, our non-retail sales process is often subject to delays associated with lengthy approval processes that typically accompany the design and testing of new computer and telecommunications equipment. The sales cycles of our non-retail products to new customers currently average approximately 18 months from the time we make a proposal to a customer until the time the customer begins to commercially manufacture its product. This requires us to invest significant resources to make sales, and reduces the predictability of our sales.

Long sales cycles also subject us to risks not usually encountered by companies whose products have short sales cycles. These risks include the potential cancellation of orders based on customers' changing budgetary constraints, and the unpredictability of internal acceptance reviews. In addition, orders expected in one quarter could shift to another because of the timing of customers' procurement decisions. This complicates our planning processes and reduces the predictability of our earnings.

**Sales to a small number of customers represent a significant portion of our revenues.**

More than half of our revenues come from a small number of customers. Specifically, sales to our top 3 customers accounted for approximately 34.5% of our revenues in 2000, 18.8% in 2001 and 33.8% in 2002 and sales to our top 10 customers accounted for approximately 55% of our revenues in 2000, 47% in 2001 and 56% in 2002. If we were to lose any of our significant customers or experience any material reduction in orders from these customers, our revenues and operating results would suffer. In particular, due to the business nature of the market for our DiskOnKey products (the fact that a customer can, with little effort and investment, move from our solution to a solution of a competitor), and the relative ease with which our customers may terminate their business relationship with us, we may encounter a severe reduction in sales of our DiskOnKey products over a very short period of time. Furthermore, due to the high level of fluctuation in the amount of units ordered by significant customers, our overall revenues may fluctuate from quarter to quarter. In addition, the composition of our major customer base changes from year to year as the market demand for our customers' products change, and as we introduce new or improved products targeted at different or additional markets.

**We expect our expenses to increase, which could adversely affect our financial condition and results of operation.**

We expect our quarterly operating expenses to increase in 2003 beyond the figures for the fourth quarter of 2002 due primarily to planned sales & marketing and research & development activities. In addition, subject to market conditions at the time, our operating expenses might increase as a result of a need to hire additional personnel to support possible future growth in sales unit volumes, and sales and marketing efforts. Furthermore, we have significant fixed costs, and we cannot readily reduce these expenses over the short term. If revenues do not increase as our operating expenses increase, or if revenues decrease or do not meet expectations for a particular period, we will experience growing losses.

**Our business could suffer if third parties infringe upon our proprietary technology, and our patents and proprietary technology may not afford us sufficient protection from infringement.**

Our success is dependent upon our proprietary technology. We currently rely on a combination of patent, trade secret, copyright and trademark law, together with non-disclosure agreements, to establish and protect the proprietary rights and technology used in our products.

As of May 1<sup>st</sup>, 2003, we hold twenty two (22) U.S. patents and several foreign patents relating to our technology and products. We also have forty three (43) applications for patents pending in the U.S. with respect to new products and technologies. However, we cannot assure you that the pending patent applications will be granted or that our existing patents or any other patents that may be granted will be enforceable or provide us with meaningful protection from competitors. Patents that may be granted to us in some foreign countries may not afford the same protection to us as is provided under the patent laws of the U.S. If a competitor were to infringe our patents, the costs of enforcing patent rights might be substantial or even prohibitive. In seeking to protect our trademarks, copyrights and other proprietary rights, or defending ourselves against claims of infringement brought by others, with or without merit, we could face costly litigation and the diversion of our management's attention and resources. This could have a material adverse effect on our business, financial condition and results of operations (see Item 4.B below the paragraph titled "Intellectual Property Rights and Current Litigation").

We also may desire or be required to obtain licenses from others in order to further develop, produce and market commercially viable products. We cannot assure you that we will be able to obtain any required licenses on commercially reasonable terms, if at all, that the patents underlying those licenses will be valid and enforceable or that the technology underlying those licenses will remain proprietary in nature.

We also rely on unpatented proprietary know-how, copyrights and trade secrets, and employ various methods, including confidentiality agreements with employees, consultants and marketing partners, to protect our trade secrets and know-how. However, these methods may not afford complete protection and we cannot assure you that others will not independently develop our trade secrets and know-how or obtain access thereto.

**Our products may infringe on the intellectual property rights of others and this could cause us to have to stop manufacturing or selling certain of our products.**

Third parties may assert against us infringement claims or claims that we have violated a patent or infringed a copyright, trademark or other proprietary right belonging to them. An infringement claim, even if not meritorious, could result in the expenditure of significant financial and managerial resources by us. An adverse determination of any infringement claim could subject us to significant liabilities to third parties, could require us to seek licenses from third parties and could prevent us from manufacturing, selling or using certain of our products, any of which could have a material adverse effect on our business, financial condition or results of operations.

**Our success depends on key personnel, including our executive officers, the loss of whom could disrupt our business.**

Our success greatly depends on the continued contributions of our senior management and other key research and development, sales, finance, marketing and operations personnel, including, without limitation, Mr. Dov Moran, our Chairman, President and Chief Executive Officer. We cannot assure you that we will be successful in retaining our key personnel.

**Our success depends on attracting and retaining additional qualified personnel.**

The success of our business depends on our ability to attract and retain highly qualified management, technical, sales, finance and marketing personnel. In particular, we require highly qualified technical personnel who are capable of developing technologies and products and providing the technical support required by our customers. Individuals who possess these qualifications are in high demand, and we may not be successful in attracting, integrating and retaining them when and as needed.

**Investments in or acquisitions of companies or technologies may distract our management and disrupt or otherwise harm our business.**

One of our strategies is to acquire or make investments in complementary businesses, technologies, services or products if appropriate opportunities arise. We have made several investments in or acquisitions of companies or assets of companies in the past. We may in the future engage in discussions and negotiations with companies about our acquiring or investing in those companies' businesses, products, services or technologies. We cannot make assurances that we will be able to identify future suitable acquisition or investment candidates, or if we do identify suitable candidates that we will be able to make the acquisitions or investments on commercially acceptable terms or at all. If we acquire or invest in another company, we could have difficulty assimilating that company's personnel, operations, technology or products and service offerings into our own. The key personnel of the acquired company may decide not to work for us. These difficulties could disrupt our ongoing business, distract our management and employees, increase our expenses and adversely affect our results of operations. We may incur indebtedness or issue equity securities to pay for any future acquisitions. The issuance of equity securities could be dilutive to our existing shareholders. In addition, any investment in another company will be subject to the risks faced by that company. To the extent that any company in which we invested in the past or any company in which we invest in the future, thereafter loses value or does not succeed, we may lose part or all of our investment. We do not now have any agreement to enter into any material investment or acquisition transaction.

**Our United States investors could suffer significant adverse tax consequences if we are characterized as a passive foreign investment company.**

Although we do not believe that we were a passive foreign investment company for U.S. federal income tax purposes during 2002, we cannot assure you that we will not be treated as a passive foreign investment company in any of 2002, 2003 or in future years. We would be deemed to be a passive foreign investment company if (i) 75% or more of our gross income in a taxable year including the pro rata share of the gross income of any company, U.S. or foreign, in which we are considered to own 25% of the shares by value, is passive income, or (ii) at least 50% of our assets in a taxable year, averaged over the year and ordinarily determined based on fair market value and including our pro rata share of the assets of any company, U.S. or foreign, in which we are considered to own 25% or more of the shares by value, produce, or are held for the production of passive income. Passive income includes interest, dividends, royalties, rents and annuities. If we are or become a passive foreign investment company, or if the U.S. Internal Revenue Service subsequently successfully asserts that we are, were or became a passive foreign investment company at some point, many of our shareholders will be subject to potentially substantial adverse tax consequences, including:

- Taxation at the highest ordinary income tax rates in effect during the holding period on some distributions on our ordinary shares, and gain from the sale or other disposition of our ordinary shares;
- Paying interest on taxes allocable to prior periods; and
- No increase in the tax basis of our ordinary shares to fair market value at the date of the holder's death.

**Our costs may be impacted by fluctuations in currency exchange rates.**

Certain of our expenses are in, or are linked to, currencies other than the U.S. Dollar, principally the New Israeli Shekel (NIS), the New Taiwanese Dollar and the Japanese Yen. This exposes us to potentially increased operational costs as well as increased costs for certain of our products as a result of currency fluctuations. In the event that any of our customers demand that certain of the Company's products be quoted and sold in currencies other than the U.S. Dollar, we may receive income in the future in such other currencies. As a result, our revenues may be adversely affected.



**Conditions in Israel affect our operations and may limit our ability to produce and sell our products.**

We are incorporated under Israeli law and our principal offices and research and development facilities are located in Israel. Political, economic and military conditions in Israel directly affect our operations. Since the establishment of the State of Israel in 1948, a number of armed conflicts have taken place between Israel and its Arab neighbors and a state of hostility, varying in degree and intensity, has led to security and economic problems for Israel. We could be adversely affected by any major hostilities involving Israel, the interruption or curtailment of trade between Israel and its trading partners, a significant increase in inflation, or a significant downturn in the economic or financial condition of Israel. Since October 2000, there has been a significant and escalating increase in violence between Israel and the Palestinians, primarily but not exclusively in the West Bank and Gaza Strip. Further deterioration of hostilities into a full scale conflict might require more widespread military reserve service by some of our employees, which could have a material adverse effect on our business. In addition, several Arab countries still restrict business with Israeli companies. We could be adversely affected by restrictive laws or policies directed towards Israel or Israeli businesses. In addition, the current conflict in Iraq may have adverse implications on business in Israel.

Generally, all male adult citizens and permanent residents of Israel under the age of 54 are, unless exempt, obligated to perform up to 43 days of military reserve duty annually. Additionally, all Israeli residents of this age are subject to being called to active duty at any time under emergency circumstances. Many of our officers and employees are currently obligated to perform annual reserve duty. Although we have operated effectively under these requirements since we began operations, we cannot assess the full impact of these requirements on our workforce or business if political and military conditions should change, and we cannot predict the effect on us of any expansion or reduction of these obligations.

**The government programs and tax benefits that we currently receive require us to meet several conditions and may be terminated or reduced in the future, which would increase our costs and taxes.**

We benefit from certain government programs and tax benefits, particularly as a result of tax exemptions and reductions resulting from the 'approved enterprise' status of our manufacturing facilities in Israel (see Item 10.E below the paragraph titled "Law for the Encouragement of Capital Investments, 1959"). To be eligible for these programs and tax benefits, we must continue to meet conditions, including making specified investments in property and equipment and financing a percentage of investments with share capital. If we fail to meet such conditions in the future, the tax benefits would be canceled and we could be required to refund the tax benefits already received. These programs and tax benefits may not be continued in the future at their current levels or at any level. The Israeli government has reduced the benefits available under some of these programs in recent years, and Israeli governmental authorities have indicated that the government may further reduce or eliminate some of these benefits in the future. The termination or reduction of these programs and tax benefits could increase our expenses, thereby reducing our profits and increasing our losses.

**The rate of inflation in Israel may negatively impact our costs if it exceeds the rate of devaluation of the New Israeli Shekel against the U.S. Dollar.**

The majority of our revenues is denominated in U.S. dollars or is dollar-linked, but we incur a portion of our expenses, principally salaries and related personnel expenses in Israel and the costs of maintaining our facilities in Israel, in NIS. As a result, we are exposed to the risk that the rate of inflation in Israel will exceed the rate of devaluation of the NIS in relation to the dollar or that the timing of this devaluation lags behind inflation in Israel. In that event, the dollar cost of our operations in Israel will increase and our dollar-measured results of operations will be adversely affected. In 1997, 1998, 2001 and 2002, the rate of devaluation of the NIS against the dollar exceeded the rate of inflation in Israel, a reversal from prior years, which benefited us. In 1999 and 2000 however, the rate of inflation in Israel exceeded the rate of devaluation of the NIS against the dollar. We cannot predict whether in the future the rate of devaluation of the NIS against the dollar will exceed the rate of inflation in Israel or vice versa. We cannot assure you that we will not be materially adversely affected if the rate of inflation in Israel exceeds the devaluation of the NIS against the dollar, or if the timing of this devaluation lags behind increases in inflation in Israel.

**It may be difficult to enforce a U.S. judgment against us, our officers and directors and some of the experts named in this report or to assert U.S. securities law claims in Israel.**

We are incorporated in Israel. Substantially all of our executive officers and directors and certain experts named in this report are nonresidents of the U.S., and a substantial portion of our assets and the assets of these persons are located outside the U.S. Therefore, it may be difficult to enforce a judgment obtained in the U.S. against us or any such persons. Additionally, it may be difficult for you to enforce civil liabilities under U.S. federal securities laws in original actions instituted in Israel.

**Under current Israeli law, we may not be able to enforce covenants not to compete and therefore may be unable to prevent our competitors from benefiting from the expertise of some of our former employees.**

We currently have non-competition clauses in the employment agreements of nearly all of our employees. The provisions of such clauses prohibit our employees, if they cease working for us, from directly competing with the Company or working for our competitors. Recently, Israeli courts have required employers, seeking to enforce non-compete undertakings against former employees, to demonstrate that the competitive activities of the former employee will cause harm to one of a limited number of material interests of the employer recognized by the courts (e.g. the confidentiality of certain commercial information or a company's intellectual property). In the event that any of the Company's employees chooses to go and work for one of our competitors, we may be unable to prevent our competitors from benefiting from the expertise of our former employees obtained from us, if we cannot demonstrate to the court that harm would be caused to the Company.

**Certain provisions of our Articles of Association and of Israeli law could delay, hinder or prevent a change in our control.**

Our Articles of Association contain provisions that could make it more difficult for a third party to acquire control of us, even if that change would be beneficial to our shareholders. Specifically, our Articles of Association provide that any merger or significant acquisition involving us requires the approval of 75% of the voting power of our shareholders present at a meeting, in person or by proxy, and voting on the transaction. This provision of our Articles of Association can only be amended by the same supermajority shareholder vote required for approval of a merger or acquisition transaction. In addition, certain provisions of the Israeli Companies Law 1999 (the "Companies Law"), which came into effect in February 2000, could also delay or otherwise make more difficult a change in our control. The provision of the Companies Law relating to mergers and acquisitions are discussed in greater detail in "Item 10: Additional Information."

## **ITEM 4. INFORMATION ON THE COMPANY**

### **A. HISTORY AND DEVELOPMENT OF THE COMPANY**

Our commercial and legal name is M-Systems Flash Disk Pioneers Ltd. We are a company organized under the laws of the State of Israel and are subject to the Companies Law. Our principal offices are located at 7 Atir Yeda St., Kfar Saba 44425, Israel and our telephone number is +972-9-764-5000. Our U.S. agent is our subsidiary, M-Systems, Inc., located at 8371 Central Avenue, Suite A, Newark, CA 94560, and its telephone number is (510) 494-2090.

In March 2000, we completed a secondary offering of our ordinary shares, which provided net proceeds for the company of approximately \$149.6 million. In September 2000, we effected a 2-for-1 stock split in the form of a 100 percent stock dividend.

In September 2000, we acquired the assets of Fortress U&T Ltd. (“Fortress”) for approximately \$8 million. These assets included significant technology, patents and know-how relating to implementation of secured encryption, data protection, secure smart card technology and secure payment schemes. These technologies can provide security and access control to prevent accidental or intentional modification of a customer’s application code residing on a flash disk, copy protection to prevent piracy and unauthorized cloning, and reliable authentication of authorized users. As part of this transaction, most of Fortress’ employees formed our new research and development center in Omer, Israel to develop new flash disk security features and to integrate advanced security features into our existing and future flash disk products.

In October 2000, we purchased 586,080 preferred shares of Saifun Semiconductors Ltd. (“Saifun”) for approximately \$10 million. Saifun is a private, venture-backed Israeli company engaged in research, development, production and marketing of flash memory products and technology. Boaz Eitan, who was, up until the last Annual General Meeting of the shareholders of the Company, a member of our Board of Directors, is the founder, chief executive officer and a director of Saifun (see Item 7.B below the paragraph titled “Related Party Transactions”).

In April 2001, we signed an agreement for the purchase of the building in which our headquarters’ executive offices, research, development and manufacturing facilities are located. As part of the agreement, we also purchased a vacant lot adjacent to our offices. The aggregate consideration for these purchases was approximately \$10.5 million, which we financed ourselves. Some of the consideration has been placed in an escrow fund pending the receipt by the sellers of these properties of various permits and third party approvals. In addition to the consideration paid for the building and the adjacent lot, we invested an additional \$3.29 million in developing and renovating the facility.

In April, 2003 we established a subsidiary in Israel named Smart Caps Ltd. (“Smart Caps”) for the purpose of developing and marketing smart applications for our line of DiskOnKey products. The State of Israel, through the Office of the Chief Scientist (“OCS”), has committed to investing up to approximately \$550,000 in Smart Caps. This investment by the OCS is to at least match our investment in Smart Caps. In consideration for such investments, M-Systems and the OCS are to be issued shares in Smart Caps pro rata to each of their relative investments.

On May 1<sup>st</sup>, 2003, we entered into a Share Purchase Agreement with Dr. Hans Wagner, a member of our Board of Directors, for the purchase of 500,000 ordinary shares, which transaction was subsequently consummated (see Item 7.B below the paragraph titled “Related Party Transactions”).

## B. BUSINESS OVERVIEW

### **Our Company**

We are a leading developer, manufacturer and marketer of innovative data storage products based on flash memory, known as flash disks. Our flash disks provide the functionality of a mechanical hard drive on a solid-state silicon chip. We achieve this through the combination of our patented flash management technology, known as TrueFFS (True Flash File System), with standard flash memory components and miniaturization technologies that we have developed. Flash components are silicon chips on which data can be recorded and from which data can be retrieved and which require no power to retain data. Our TrueFFS software enables us to transform standard flash components into highly reliable, easy to integrate and efficient flash disks which meet the unique data storage needs of our target markets.

Our products are based on our TrueFFS technology and include both removable and non-removable data storage media in a wide range of capacities, interfaces, and form factors. We have three primary product lines: the DiskOnChip, DiskOnKey and FFD product families.

Our DiskOnChip and FFD product lines provide non-removable (sometimes referred to as 'local') data storage. In this way, they are analogous to a hard disk, which is embedded within a computer system, in contrast to removable storage such as a floppy disk.

Our DiskOnKey product line provides removable and pocketable thumb-sized data storage which plugs directly into the USB port of PC's, laptops, and other computer-based consumer products, allowing the user to store and carry his data with him and to quickly, easily and reliably transfer data between any computer or any computerized system which has a USB port.

Typically, our flash disks are used to store operating systems, applications software, and data such as voice, video, documents, e-mail and pictures, in the many applications where the use of traditional data storage devices, such as mechanical hard drives or floppy drives, is unsuitable or is less suitable. As we discuss in further detail below (see in this Item 4.B below the paragraphs titled "Industry Background" and "The M-Systems Solution"), the benefits of flash disks over traditional data storage devices include lower power consumption; much higher reliability, durability and ruggedness; greater cost-effectiveness in many applications, much greater capacity when comparing the DiskOnKey to a floppy drive, and (except for the FFD products, which are designed to serve as drop-in replacements for hard drives) much smaller and more lightweight.

In very broad terms, the difference between the DiskOnChip and FFD product lines can be summarized as follows: Our DiskOnChip family is comprised of various compact and light-weight flash disk products (at a form factor of either a chip or module) which are optimized for applications which are relatively small and/or need relatively small data storage capacities. Our FFD product line is available in much higher data storage capacities, comes in standard hard-drive sizes and interfaces, and is designed to provide extremely high reliability, ruggedness and durability under the harshest environmental and other conditions.

Our DiskOnChip product family is well-suited for and primarily targeted at the High-End Mobile Devices and Embedded Devices markets.

Our DiskOnKey product family is targeted at the PC and laptop markets. It currently provides 8, 16, 32, 64, 128, 256, 512 megabytes and 1 gigabyte of portable, reliable data storage in a thumb-sized and pocketable device that plugs directly into the USB port of PCs, laptops and various consumer appliances. This product is designed to replace other portable data storage devices, such as conventional floppy disks, which lack the convenience, reliability and/or the storage capacity of the DiskOnKey.

Our FFD product line is well-suited for and primarily targeted at military systems and network infrastructure equipment.

See in this Item 4.B below the paragraph titled "Products" for more details on our product lines and our specific products.

## Industry Background

The memory and data storage markets have traditionally included data storage devices such as hard drives and floppy drives, and traditional memory components such as ROM (Read Only Memory), RAM (Random Access Memory) devices, or standard flash memory components.

These traditional solutions are not suitable, or are not efficient, in meeting the data storage needs of many existing and emerging products. Our target markets for our DiskOnChip, DiskOnKey and FFD product lines are comprised of such products (see in this Item 4.B below the paragraph titled “Our Target Markets.”)

Following is a brief review of the aforementioned traditional solutions:

- A hard drive is a high capacity, low cost-per-megabyte data storage device that consists of one or more flat, mechanically spinning circular disks coated with magnetizable material, over which an arm with a read/write head is positioned to magnetically record and retrieve data to and from the disk. Traditional hard drives are not a suitable solution for the data storage requirements of High-End Mobile Devices and Embedded Devices (products which are based on a computer platform but are not generally thought of as computers). Hard drives are unsuitable for these products because, among other things, they are too big and heavy, too noisy, consume too much power, and are not cost-effective in relatively low capacities. In addition, hard drives are susceptible to mechanical failures, and wear, strong shocks, vibrations or extremes in temperature and humidity adversely affect their performance. As a result, they are not sufficiently reliable either for High-End Mobile Devices or the many portable Embedded Devices that are subject to shocks, falls and other stresses. Furthermore, they are certainly a problematic solution for the data storage requirements of military systems and network infrastructure equipment applications and other applications where data reliability and extended life expectancy is critical.
- A floppy drive is a very low capacity (1.44 megabyte) mechanical data storage device that, similar to a hard drive, includes a flat, mechanically spinning circular disk coated with magnetizable material, over which an arm with one or two read/write heads are positioned to magnetically record and retrieve data to and from the disk. Unlike a hard drive, it has no accurate feedback mechanism from the disk, which makes the floppy disk a much less reliable solution than a hard disk. Furthermore, writing to and reading from a floppy disk are much slower than on a hard drive. In addition to reliability and speed concerns, a floppy disk lacks the storage capacity required by many of today’s files and applications, is less convenient to carry around than a DiskOnKey that can clip in one’s pocket, and requires one to carry an external floppy drive around for use with the many laptops which do not integrate a floppy drive. The current 3.5 inch format of the floppy disk and drive was introduced in 1980, using the same basic technology used in the 8 inch floppy drives introduced in 1973. In light of all of the above, the floppy drive and floppy disk are clearly much less suitable for storing, transporting and transferring data than the much more reliable, convenient, high-speed and high capacity DiskOnKey.
- Traditional memory components, such as ROM or RAM devices and standard flash memory components, are not suitable solutions for the data storage requirements of High-End Mobile Devices, Embedded Devices, military systems and network infrastructure equipment applications, and key-chain storage devices. ROM devices are unable to record new data or update previously recorded data. RAM devices are able to record new data but are volatile, meaning that they are unable to retain stored data when the power supply is cut off. Standard flash memory components are able to record new data and are non-volatile. However, standard flash memory components alone are not an optimal data storage solution because they are unable to rewrite to locations that have already been written to without first erasing large blocks of data and they have a limited number of write cycles. Among other things, they are less reliable than our flash disks because they lack our error detection and correction feature. Moreover, they do not organize stored data in a way that is efficiently recognized by the operating systems commonly used in computers and computer-based systems.

## **The M-Systems Solution**

We have capitalized on our patented TrueFFS flash management technology to provide a broad range of both non-removable and removable flash disks that resolve many of the drawbacks and limitations of the traditional data storage solutions discussed above.

Our DiskOnChip products provide the combination of ease of integration, compact size, cost-effectiveness, reliability, durability, speed and low power consumption required by High-End Mobile Devices and Embedded Devices. The Mobile DiskOnChip family was designed for and optimized to the specific needs of advanced High-End Mobile Devices.

Our DiskOnKey products, introduced at the end of 2000, are removable, reliable, lightweight, high-speed and high capacity thumb-sized and pocketable data storage devices that are based both on our TrueFFS technology and on our new and patented DiskOnKey technology. The DiskOnKey plugs directly into the USB port of PC's, laptops, and other computer-based consumer products, allowing the user to conveniently store and carry his data with him and to quickly and reliably transfer data between any computer-based system which has a USB port. Since the DiskOnKey has its own central processing unit ("CPU"), it can also support and run multiple software applications directly from the product itself. For example, in November 2001, we introduced our KeySafe™ security application that ensures the confidentiality of private data by means of a user-defined password and internally secured access verification and is supported by the latest Windows operating systems.

Our FFD products offer much higher maximum data storage capacities than our DiskOnChip and DiskOnKey products families, and provide the combination of speed and extremely high reliability, durability, and ruggedness under the harshest environmental conditions that are required by military systems and network infrastructure equipment.

In general, although not all of the following advantages are relevant to all of our products or to some of our products when competing in specific markets, the benefits that our products provide include the following:

*Ease of Integration.* Our TrueFFS software supports nearly all major operating systems used in High-End Mobile Devices and Embedded Devices. As a result, our customers can easily integrate our DiskOnChip products into their products with minimal integration efforts. This enables our DiskOnChip products to provide a convenient solution for the data storage requirements of our customers' products and reduces the time and cost required for our customers to bring a product to market. In addition, several hundred different types of commercially available embedded motherboards currently include a socket specifically designed for our DiskOnChip 2000 products. As a result, our customers can easily integrate the DiskOnChip into their designs. Our FFD products have a standard hard drive interface and can therefore easily replace a hard drive. Our products are available in modular form, which enables our customers to easily upgrade from one of our flash disks to another with greater capacity, if and when required.

*Compact Size.* Our technology enables our DiskOnChip products to emulate a hard drive without the need for a microprocessor, unlike competing products. As a result, our DiskOnChip products are small. We believe that our Mobile DiskOnChip is the smallest flash disk in the world, with the DiskOnChip Millennium and DiskOnChip Millennium Plus being smaller than any flash disk other than the Mobile DiskOnChip. Compact size is particularly important to manufacturers of High-End Mobile Devices and Embedded Devices that increasingly are seeking to provide more product functionality with components occupying less space.

*Low Power Consumption; Non-Volatility.* All of our products require relatively little power to operate. This feature is particularly important to manufacturers of battery-powered and other portable or small appliances. All our products are also non-volatile, meaning they retain stored data even while the power supply is cut off, and our TrueFFS software ensures data integrity if for any reason the power supply is cut off while data is being read or written.

*Cost-Effectiveness.* The DiskOnChip Millennium and the Mobile DiskOnChip families provide particularly cost-effective solutions for the data storage needs of our customers' products because all of the logic circuitry and related hardware of the flash disk have been integrated with the flash memory component onto a single chip. In addition, our FFD products are highly reliable and durable. As a result, they represent a cost-effective solution for products such as military systems and network infrastructure equipment, where the cost of repairing or replacing the data storage device is high or where the potential costs of losing data or the failure of the related system are great.

*High Reliability, Durability and Ruggedness.* Unlike many traditional data storage devices that use rotating media such as hard drives, or floppy disks, our products are solid-state, meaning that they have no moving parts and therefore are not susceptible to mechanical failure. In addition, because our products are solid-state, they can withstand shocks, vibrations and temperature and humidity extremes better than data storage devices that use rotating media. Our products also contain effective error detection and correction algorithms that further enhance reliability. Moreover, our TrueFFS software performs wear leveling, which spreads the writing of data over the entire flash storage device, thereby increasing the durability of the product.

*High Performance.* Our products have a higher write speed than standard flash components alone. In addition, our FFD products provide faster access times than hard drives and read and write speeds comparable to high-performance hard drives.

*Compatibility; Capacity.* Our DiskOnKey is a lightweight, thumb-sized and pocketable device that plugs directly into the USB port of PCs, laptops and other consumer appliances. The DiskOnKey does not require drivers with the latest operating systems and is operating-system-independent, thus allowing users with both a Mac and Windows machine to easily transfer data between the two systems. In addition, in contrast to floppy disks whose maximum capacity is 1.44 megabytes, the DiskOnKey is currently available in capacities of 8, 16, 32, 64, 128, 256 and 512 megabytes and 1 gigabyte.

## **Our Target Markets**

As discussed above, our primary target markets for our three principal product lines, the DiskOnChip, the DiskOnKey, and the FFD families, are as follows:

### **— Target Markets for the DiskOnChip Product Line**

The primary target markets for our DiskOnChip products are: (i) the High-End Mobile Devices market; and (ii) the Embedded Devices market.

#### **The High-End Mobile Devices Market:**

High-End Mobile Devices are portable handsets of all kinds. The High-End Mobile Devices market is comprised primarily of cellular phones and PDAs.

Cellular phones were originally just that; telephones that you could carry around with you to make and receive phone calls, with no additional features (i.e. voice-centric cellular hand-sets). The first handheld computers were dubbed Personal Digital Assistants, or PDAs, because they were primarily used to store phone numbers, addresses and appointments. Many were basically just expensive electronic organizers.

The market for 2.5G-3G feature-rich handsets is growing rapidly. More and more handsets with features such as digital cameras, color screens, MMS (Multimedia Messaging Services) & Email capabilities, PIM (Personal Information Management) and gaming, as well as graphical applications & operating systems (i.e. data-centric cellular devices) are introduced and sold world wide. These data-centric devices require (among others), much more memory than their predecessors. For example, a simple voice-centric 2G cellular phone usually featured 2 megabytes of flash memory, while 2.5G and 3G data-centric devices feature 16-64 megabytes. This increase in memory must also take into account the unique characteristics of data-centric mobile handsets that must be physically small yet feature improved performance and lower power consumption for a longer battery life.

Most of today's data-centric mobile handsets suffer from slow write performance, low reliability, limited capacity and high power consumption. This limits the ability of designers of mobile applications to provide advanced applications and to allow the customer to store more than a minimal amount of data. The Mobile DiskOnChip offers both the storage capacity and the features needed to overcome these limitations.

We believe that our Mobile DiskOnChip delivers an ideal combination of high capacity & small size, with the high performance and reliability needed for multimedia enabled handsets and PDAs. Based on the latest NAND technology, integrated with a feature rich ultra thin controller, Mobile DiskOnChip also features an ideal cost structure.

### **The Embedded Devices Market:**

Our DiskOnChip product line was designed and developed over the years with the needs of embedded systems in mind. Embedded systems are products that are based on a computer platform but that are nevertheless not generally thought of as computers. Among the numerous examples of these products are point-of-sale terminals, bar-code readers, video conferencing equipment and manufacturing robots and control systems.

With the advent and increasing popularity of the Internet, the ever-growing demand for access to the Internet anytime and anywhere fueled dramatic growth in the year 2000 in the Connected Devices market and we shifted our focus to this then-emerging market for internet connected devices (“Connected Devices”). Connected Devices (many of which are Embedded Devices themselves) are digital devices of all kinds that are used to access the Internet and process, store and respond to information. These appliances enable low-cost and convenient access to Internet content, services and applications and are revolutionizing the way people access and use information. Examples of Connected Devices are digital set-top boxes and thin clients which are relatively inexpensive devices (also known as “network computers”) designed primarily for business use which are configured with only essential equipment (usually without hard disk drives) and connected to a local area network or other server via the Internet or other communications lines. Our DiskOnChip products provide the combination of ease of integration, compact size, cost-effectiveness, reliability, durability, speed and low power consumption required by Connected Devices and other embedded systems. However, in light of the sharp decrease in the worldwide demand for Connected Devices which negatively affected our revenues in 2001, together with the growing and anticipated demand for the next-generation of data-centric mobile handsets, we decided to widen our target markets and focus on more than just the Connected Devices Market. Embedded systems which we are targeting include, for example, residential gateways (i.e. devices which allow to easily and securely share a high-speed broadband Internet connection with all of the computers throughout the home or small office), point of sales devices and wireless terminals (i.e. small hand held computers, ruggedized to withstand the rigors of everyday use and abuse).

#### **— Target Markets for the DiskOnKey Product Line**

The DiskOnKey product family is targeted at the PC and laptop markets. It is designed to replace other portable data storage devices, such as conventional megabyte floppy disks, which lack the convenience, reliability and/or the storage capacity of the DiskOnKey. The DiskOnKey, currently available in capacities of 8, 16, 32, 64, 128, 256 or 512 megabyte and 1 gigabyte, provides the user with the ability to save and transfer data such as Word documents, songs (MP3s), pictures (JPEGs), PowerPoint presentations, digital video and anything else that can be saved within the boundaries of the storage capacity of the model purchased. It provides portable, secure and reliable data storage in a thumb-sized and pocketable device that plugs directly into the USB port of PCs and laptops, and so enables the easy storage, back-up and transfer of data between any PC, laptop or other computer appliance with a USB port.

We sell our DiskOnKey products through PC and laptop vendors, distributors, Consumer Electronic Companies, and our other marketing channels. DiskOnKey is re-sold by our customers mainly under their own private name and label.

#### **— Target Markets for the FFD Product Line**

Our FFD product line is primarily targeted to provide solutions for the military and aerospace, telecommunication network infrastructure, public safety and automation markets. These mission-critical systems, where the risk and/or cost of data loss based on technical failure or down-time is unacceptably high, require products which may be subject to rough handling, extreme shocks, vibrations and/or to a variety of temperature, humidity or altitude extremes; or which otherwise need to store data reliably under harsh environmental conditions.



Our FFD product line was designed specifically to meet the needs of the markets for mission critical systems. The FFD products provide extremely high reliability, measured by impressive MTBF (Mean Time Between Failures), durability, ruggedness, enabling compliance with various US military and telecom standards, and extended life expectancy under the harshest environmental conditions. The FFD line offer high performance and high capacity in standard hard-drive sizes and interfaces, serving as drop-in replacements for standard rotating hard drives. In contrast to rotating/mechanical hard drives, which are susceptible to mechanical failure and whose performance is adversely affected by shocks, vibrations or extremes in temperature, high altitude and humidity, the FFD product line is a solid-state flash disk with no moving parts. As with all of our products, this feature, combined with the error detection and correction capabilities of our TrueFFS technology, makes our FFD products significantly more rugged, reliable and long-lived than hard drives. The markets for our FFD products include the military and aerospace markets (e.g. data recorders, moving maps, sonar, radar, fire control systems, black boxes, airborne reconnaissance systems, rugged laptops, tactical computers and servers), the telecommunication network infrastructure market (e.g. data storage in optical switches, ATM (Asynchronous Transfer Mode) switches, IP gateways and wireless base stations), the public safety-computing systems market (in police vehicles, public buses and in trains) and the market for mission critical automated applications (e.g. production line manufacturing machines, point of sales systems and automatic teller machines).

## **Products**

### ***DiskOnChip***

Our DiskOnChip product line includes, in historical order of their introduction to the market, the DiskOnChip 2000, the DiskOnChip Millennium, the DiskOnChip Millennium Plus, Mobile DiskOnChip, DiskOnChip based MCP (Multi-Chip Packaging) and the Mobile DiskOnChip G3. DiskOnChip is based on cost effective, high capacity NAND flash technology, optimized to meet the unique requirements of Mobile devices and embedded systems

DiskOnChip provides an easy and reliable high capacity non volatile memory ("NVM") solution. It utilizes standard NAND flash components, while overcoming the technological limitations of NAND flash. DiskOnChip supports virtually all major operating systems in its target markets (such as Symbian OS, all Microsoft OSs, Linux, Palm, VxWorks, QNX, Nucleus). As a result, our customers can integrate the DiskOnChip into their products with relatively minimal integration efforts, reducing their integration risk and time to market. Thanks to built-in error detection and correction features, enabled by our TrueFFS technology, DiskOnChip provides extremely reliable data storage to the market.

- ***DiskOnChip 2000.***

DiskOnChip 2000 is a module that contains NAND flash components and a thin controller, forming a flash disk. Its capacities range from 16 megabytes to 1 gigabyte, all using the exact same pinout, making it ideal as an easy drop-in storage solution for embedded application. It features a standard memory interface (similar to that of NOR flash or EEPROM), and built in error detection / correction capabilities, based on TrueFFS technology. DiskOnChip 2000 is available in a standard DIP (Dual In-line Package) form factor, which enables it to be easily incorporated into our customers' products.

- ***DiskOnChip Millennium.***

DiskOnChip Millennium is the industry's first monolithic flash disk (both the flash and the controller are placed on the same silicon die). It is also the first NAND device with XIP (eXecution In Place) boot capabilities. DiskOnChip Millennium was jointly developed by M-Systems and Toshiba as part of a strategic relationship. We believe that, when introduced, the DiskOnChip Millennium was the smallest flash disk in the world;

The main advantages of DiskOnChip Millennium's monolithic structure are its reduced cost and size and its boot capabilities. DiskOnChip Millennium is available with 8 megabytes of storage capacity, in form factors of TSOP (Thin Small Outline Package) and DIP (compatible with DiskOnChip 2000).

- ***DiskOnChip Millennium Plus.***

DiskOnChip Millennium Plus is the world's first 32 megabyte monolithic (single die) flash disk. This product is the second joint development with Toshiba. In addition to the larger storage capacity that it provides, the DiskOnChip Millennium Plus offers data protection features to prevent customers' software, proprietary data and products from being duplicated or modified. It also features an improved XIP boot capability designed to efficiently replace boot ROM in any hardware environment.

- ***Mobile DiskOnChip.***

The Mobile DiskOnChip product line is the most recent addition to the DiskOnChip family of products. It is the first NAND-based device optimized for the unique requirements of mobile handsets, including a low 1.8V I/O interface, a deep power-down mode, and a small BGA (Ball Grid Array) form factor (as small as 7x10mm, the smallest in the world). Mobile DiskOnChip offers capacities of 16 megabytes to 64 megabytes. The 16 megabytes and 32 megabytes are monolithic (single die) products, and the 64 megabytes is a single chip product comprised of two dies of Mobile DiskOnChip 32 megabytes (using MCP technology). Mobile DiskOnChip also provides mobile applications with increased write performance.

We have recently announced (along with Toshiba) the new Mobile DiskOnChip G3 which is the first device to implement Multi Level Cell (MLC) NAND technology. We believe that the Mobile DiskOnChip G3 is the smallest flash disk in the world. It features a complete NVM solution in approximately 60 percent of the die size of a standard NAND flash of the same capacity. Mobile DiskOnChip G3 is based on M-Systems' x2 technology, designed to overcome the limitations of MLC NAND technology and enables it as a reliable, high-performance, low-cost local storage device – mainly intended for 2.5G and 3G mobile handsets.

- ***DiskOnChip-based MCP.***

DiskOnChip-based MCP packs Mobile DiskOnChip along with a selected combination from NOR flash, PSRAM (Pseudo Static Random Access Memory), SDRAM (Synchronous Dynamic Random Access Memory) or SRAM (Static Random Access Memory), delivering all system memory needs in a single, compact FBGA package. This is extremely useful for Mobile applications, facing shrinking printed circuit boards ("PCBs") and increasing memory requirement. M-Systems offers DiskOnChip-based MCP combinations as well as combinations tailored to specific customer needs. To provide the service, M-Systems partnered with both Toshiba and Advanced Micro Devices Inc. ("AMD"), thus has access to best of breed flash technologies (NAND and MLC NAND from Toshiba and MirrorBit from AMD) to provide ideal MCP solutions.

### ***DiskOnKey***

In November 2000, we announced the introduction of our DiskOnKey product. The DiskOnKey is a lightweight, thumb-sized and pocketable device that plugs directly into the USB port of PCs, laptops and other consumer appliances. The DiskOnKey provides removable, secured data storage based on flash memory and our patented technology. It can be used as an alternative to bulky storage devices and floppy disks for reliable and personal data storage, and enables users to quickly, easily and reliably transfer data between their computers at home or work, in their pocket, or briefcase or on their keychain. The DiskOnKey does not require drivers with the latest operating systems and allows users with both a Mac and Windows machine to easily transfer data between the two systems. The DiskOnKey is currently available in capacities of 8, 16, 32, 64, 128, 256 and 512 megabytes, and 1 gigabyte. In addition to providing data storage, since the DiskOnKey has its own CPU, it can also support and run multiple software applications directly from the product itself. For example, in November 2001, we introduced our KeySafe security application (available in six languages), which ensures the confidentiality of private data by means of a user-defined password and internally-secured access verification and is supported by the latest Windows operating systems. In June of 2002, we introduced our MyKey™ application, which allows users easy access, synchronization, and personalization of their DiskOnKey, and is supported on all the latest Windows operating systems.

Throughout 2002, the DiskOnKey product family grew to meet the various market demands. The DiskOnKey Pro was introduced in August of 2002 to meet the market's demand for a smaller form factor. DiskOnKey USB 2.0, allowing faster performance (speeds) was introduced in October of 2002. In addition, during the second half of 2002, certain partners of M-Systems began developing their own unique form factors (different shape of exterior plastic casing) to differentiate themselves in the marketplace, while continuing to incorporate our technology and components inside.

The DiskOnKey has been tested under extreme conditions for reliability and durability, securing both USB-compliance and certification by Microsoft's Windows Hardware Quality Testing Lab (WHQL). The DiskOnKey has been granted industry awards and write-ups, such as CNET's Top 100 Products of 2002, numerous gift and tech buying guides mentions, such as Business Week, CNN Headline News, Newsweek, and mentioned as the industry leader in Wall Street Journal, just to name a few.

### **FFD**

Our FFD, or Fast Flash Disk, product line is designed to meet the data storage requirements of the military and aerospace, telecommunication network infrastructure, public safety and automation markets. Our FFD products consist of a printed circuit board that contains a number of flash components, a microprocessor that runs our TrueFFS software and other proprietary algorithms, and the logic circuitry and related hardware of a flash disk, all encased in a rugged metal package. Our FFD products provide an attractive alternative to traditional hard drive technologies for applications that require extremely reliable, rugged, high-performance and high capacity flash data storage. Unlike rotating hard drives, our flash disk products are solid-state devices that have no moving parts and can withstand rough handling, extreme shocks, vibrations, or a variety of temperature, humidity and altitude extremes. This characteristic, together with the error detection and correction capabilities of our TrueFFS technology, makes our flash disks significantly more rugged and reliable than hard drives. The FFD product line is available in capacities ranging from 32 megabytes to 35 gigabytes. Our newest FFD product provides a data rate of 30 megabytes per second for sustained read, 20 megabytes per second for sustained write. Our FFD products are available with standard hard drive form factors and interfaces, including IDE/ATA (Integrated Drive Electronics/AT Attachment), Narrow SCSI (Small Computer Systems Interface) and Ultra Wide SCSI interfaces in standard 2.5" and 3.5" casing can, and can therefore be used as a "drop in replacement" for hard drives.

### **Technology**

Our proprietary TrueFFS (True Flash File System) software, which consists of patented data organization algorithms, procedures and methodologies, is the core of our flash disk technology. We designed TrueFFS to enable our flash disks to emulate a hard drive and overcome the inherent limitations of flash memory technology. We work with major operating system vendors to make TrueFFS universally available, free of charge, in the form of software modules incorporated in their operating systems, or supporting their operating systems.

TrueFFS enables our flash disks to overcome critical flash memory limitations, including:

- Standard flash memory components are unable to rewrite to locations that have already been written to without erasing large blocks of data. TrueFFS overcomes this limitation by virtual mapping and allocation of "sector size" flash areas. Sector size is the standard size of an information block written to a data storage device such as a hard drive.
- Standard flash memory components have a limited number of write cycles. TrueFFS overcomes this limitation by wear leveling, a process which spreads the writing of data over the available media even if the application is continuously rewriting the same file or to the same sector.
- Standard flash memory components often include imperfections in the silicon, which make certain areas unusable for read/write functions. TrueFFS addresses this limitation by incorporating sophisticated error detection and correction algorithms, which are supported by the internal logic of our DiskOnChip products, to ensure reliable operation while maintaining high performance. In addition, TrueFFS performs on-line block mapping out mechanism to isolate imperfect areas of the flash media.
- Standard flash memory components may lose large portions of data if power is lost while "writing" data. TrueFFS addresses this limitation by incorporating algorithms that ensure data integrity in the event that power is cut off in the middle of a write operation.

We achieve hard disk emulation for our DiskOnChip products through our TrueFFS software, rather than through a hardware-based solution, such as the addition of a microprocessor. By doing so, we are able to produce our DiskOnChip products with the addition of only minimal logic circuitry. In our DiskOnChip Millennium and DiskOnChip Millennium Plus and Mobile DiskOnChip this architecture enables us to integrate all the required logic circuitry onto the flash component itself. As a result, our products are able to provide compact and cost-effective solutions for our customers' data storage requirements.

## **Marketing and Sales**

We market our products through a variety of methods, including participation in industry trade shows, conferences, publications, media promotion, through our website and increasingly, through strategic partners.

We target our DiskOnChip sales efforts primarily to large original equipment manufacturers that include our products in their applications. Our DiskOnKey is a retail product. Accordingly, we market and sell the DiskOnKey to the retail consumer market through major computer vendors and international retail chains, as well as through various distributors.

We market our products through a combination of our own sales managers; independent local sales representatives that sell our products on our behalf; and independent distributors that purchase our products for resale to their customers. Our sales managers are compensated based on a salary and a bonus dependent in part on sales levels. The independent local sales representatives receive commissions for their product sales. We continually seek to strengthen each of our sales channels, including by engaging new representatives and distributors and providing them with extensive training and support with respect to our products and technologies. Our technical engineers are an integral part of the sales process and provide customers with technical information and support regarding our products and their integration with the customers' applications.

In addition, we have entered into a strategic partnership with Toshiba in order to position the DiskOnChip as the market standard. As part of this arrangement, Toshiba provides us with raw flash components and fabrication services for some of our DiskOnChip products. In addition, we have, from time to time, entered into agreements with Toshiba for the joint development of some of our DiskOnChip products using Toshiba's flash component technology and our flash data storage technology. These development agreements also grant Toshiba an 8-year license to manufacture and distribute specific DiskOnChip products as a second source for which we receive royalty payments.

We maintain local sales offices in Silicon Valley, California; Boston, Massachusetts; Taipei, Taiwan; Tokyo, Japan; Shenzhen, China and Kfar Saba, Israel. As of May 1<sup>st</sup>, 2003, we had 112 employees dedicated to marketing, sales and technical support functions.

See Note 14 to our Consolidated Financial Statements included elsewhere in this report for a breakdown by geographical market of our revenues for 2000, 2001 and 2002.

## **Manufacturing and Sources of Supply**

### ***Manufacturing***

We manufacture most of our products through qualified subcontractors. Toshiba manufactures our DiskOnChip Millennium, DiskOnChip Millennium Plus and Mobile DiskOnChip products. We have entered into a manufacturing agreement with Toshiba, pursuant to which Toshiba has agreed to provide us with specified manufacturing capacity through 2005, and we negotiate and place purchase orders with Toshiba from time to time for the manufacture of products. Subcontractors located in China and Taiwan manufacture our DiskOnKey products for us. We manufacture our DiskOnChip 2000 and FFD products at our facility in Kfar Saba.

Our products are European Union CE (Communaute Europeenne) approved and our manufacturing process meets the ISO-9001 quality standards. The Company's Quality System is ISO-9001, certified for the design and development, manufacturing and service processes. The Company's contract manufacturers are all ISO-9002 certified as well as ISO-14001 certified.

The Company's DiskOnKey products comply with worldwide regulatory standards such as UL, TUV, CB and FCC.

### ***Sources of Supply***

We purchase our supplies from various sources, including flash components that we purchase principally from Toshiba and Samsung. Samsung currently supplies the majority of our flash components. Although our agreement with Samsung expired in March 2003, we continue to purchase flash components from them. Our policy is to have more than one supplier for all of our parts wherever feasible. However, Toshiba is currently the sole manufacturer of our DiskOnChip Millennium, DiskOnChip Millennium Plus and Mobile DiskOnChip products, and might be the sole manufacturer of future DiskOnChip products. Samsung is currently the sole supplier of the flash components for a portion of our DiskOnKey products. In addition, we currently rely on Atmel Sarl as a single source for supply of ASIC components for our DiskOnKey products. In April 2001 we entered into a development and supply agreement with Atmel Sarl. Under this agreement, Atmel is to layout, develop, manufacture, test and supply the ASIC components for our DiskOnKey products. The agreement is terminable by Atmel at will, subject to six-months' prior notice, or by either party for breach, subject to thirty days' prior notice. If Toshiba, Samsung, Atmel or any of our other suppliers fails to provide parts or services in a timely manner and we are unable to secure an alternate supply of comparable price and quality in a timely manner, our results of operations could be adversely affected.

At times, we have experienced difficulties in securing adequate supplies of certain components for our products, which has resulted in delayed or lost sales. In an effort to mitigate supply shortages, we at times have maintained a larger inventory of certain components than we would otherwise maintain if the availability of adequate supplies were more certain.

### **Seasonality**

We do not believe that seasonality has a material affect on our business at this time. However, we anticipate that we may experience seasonality in sales of our DiskOnKey product in the future. This is due to DiskOnKey being a retail product that may experience higher sales during holiday shopping seasons.

### **Research and Development**

We have devoted significant resources to research and development activities with respect to our core flash data storage technology. We have emphasized the development of our technology, the enhancement of existing products and the development of new products, generally in response to the rapidly evolving markets for PCs and laptops, High-End Mobile Devices and Embedded Devices and the demanding markets for military systems and network infrastructure equipment applications. In addition, we emphasize the development and addition of new features to our products, such as data protection, security and access control, and the development of new applications for our DiskOnKey products. Our expertise and in depth know how in the usage of advanced flash technologies is utilized to good effect in our research and development activities. We believe that our success will continue to depend upon our ability to enhance our existing products and to introduce new products in response to changes in market demands in a timely manner. Accordingly, we intend to continue to make substantial investments in product and technology development. As of March 15, 2003, we had 91 employees dedicated to research and development activities.

Our gross research and development expenses during 2000, 2001 and 2002 were \$7.4 million, \$13.3 million and 12.2 million, respectively. A small portion of our operating expenses during 2001 was funded by the Singapore – Israel industrial research and development (“SIIRD”). In 2002 a small portion of our operating expenses was funded by the SIIRD and the Information Society Technology (“IST”) funds, in the amounts of \$63,000 and \$212,000, respectively. Net research and development expenses represented, 8%, 29.7% and 18.5%, of our revenues during, 2000, 2001 and 2002 respectively. In connection with the grants received from the OCS and SIIRD, we are required to pay the OCS and SIIRD royalties at the rate of 1.5%-5.0% on all revenues derived from the sale of products developed as a result of the research projects funded by these grants, up to a maximum of 150% of the dollar-linked amount of the grant. The IST fund does not require any royalties. The manufacture of products developed using OCS funding must remain in Israel, and any technology developed using OCS funding may not be transferred to any other entity without the prior consent of the OCS. These restrictions do not affect sales of our products outside Israel.

## **Intellectual Property Rights and Current Litigation**

Our success is dependent upon our proprietary technology. We currently rely on a combination of patent, trade secret, copyright and trademark law, together with non-disclosure agreements, to establish and protect the proprietary rights and technology used in our products.

As of May 1<sup>st</sup>, 2003, we hold twenty two (22) U.S. patents and several foreign patents relating to our technology and products. We also have forty three (43) applications for patents pending in the U.S. with respect to new products and technologies. However, we cannot be sure that the pending patent applications will be granted or that our existing patents or any other patents that may be granted will be enforceable or provide us with meaningful protection from competitors. Patents that may be granted to us in some foreign countries may not afford the same protection to us as is provided under the patent laws of the U.S. If a competitor were to infringe our patents, the costs of enforcing patent rights might be substantial and, in some cases, even prohibitive.

We also may desire or be required to obtain licenses from others in order to further develop, produce and market commercially viable products effectively. We cannot be sure that these licenses will be obtainable on commercially reasonable terms, if at all, that the patents underlying these licenses will be valid and enforceable or that the technology underlying these licenses will remain proprietary in nature.

We also rely on unpatented proprietary know-how, copyrights and trade secrets, and employ various methods, including confidentiality agreements with employees, consultants and marketing partners, to protect our trade secrets and know-how. However, these methods may not afford complete protection and we cannot be sure that others will not independently develop our trade secrets and know-how or obtain access thereto.

We have registered U.S. trademarks with respect to “M-Systems,” “TrueFFS,” “DiskOnChip,” “DiskOnChip Millennium,” “DiskOnKey” and our stylized kangaroo symbol for our DiskOnKey products and have filed U.S. trademark applications in connection with certain of our other products, including “DiskOnKey MyKey,” “Mobile DiskOnChip” and “FFD”.

The Company is currently involved in two separate lawsuits relating to its intellectual property. Following is a short summary of the status of these lawsuits:

(1) JMTek LLC (“JMTek”) - On October 1<sup>st</sup>, 2002, we filed suit in U.S. Federal Court against JMTek, a corporation based in Washington State, for infringement of one of our patents. As of May 1<sup>st</sup>, 2003, the suit is still in pre-trial stages. Although we are confident in our assertions, it is not possible, at this stage, to predict the outcome or estimate the financial consequences of this action.

(2) Trek Technology (Singapore) PTE Ltd. (“Trek”) – During 2002, Trek, a Singaporean company, issued what we believed to be threatening letters to some of our distributors in Singapore, alleging that our DiskOnKey products infringe their Singaporean patent. Our request from Trek to retract its allegations went unanswered and in May, 2002, we filed suit against Trek in the High Court of Singapore for making groundless threats alleging that our products infringe Trek’s patent. Concurrently, Trek sued certain of our distributors in Singapore, for infringement of Trek’s patent. Trek subsequently added us and another distributor as co-defendants. In accordance with indemnification agreements entered into between M-Systems and its co-defendants, we have been managing the litigation for all of the co-defendants. A trial date was set for June 28<sup>th</sup>, 2003. Under our indemnification obligations, we have undertaken to indemnify its co-defendants in the event that Trek prevails in its action and our co-defendants suffer losses as a result. Although we are confident in our assertions, it is not possible, at this stage, to predict the outcome or estimate the financial consequences of this action.

## Competition

Our products compete with flash data storage products, including flash components and other flash disks, and alternative data storage technologies, including hard drives. The markets in which we compete are characterized by intense competition, rapid technological change, evolving industry standards, unstable average selling prices and rapid product obsolescence. Our competitors include many large U.S. and international companies that have substantially greater financial, technical, marketing, logistical infrastructure and support and other resources, greater access to component fabrication capacity, broader product lines and longer-standing relationships with customers than we have, which may limit our ability to effectively compete with them. In addition, we have also experienced competition from a number of relatively small companies (mainly from the far east) who have taken advantage of low assembly costs and have accepted lower than average gross margins resulting in such competitors setting very low prices for their products.

We believe that our various products possess many, if not all, of the following competitive strengths: reliability, ease of integration, ease of use, high-performance, cost-effectiveness, features and capabilities.

We believe that our non-retail products, such as the DiskOnChip and FFD product lines also benefit from the extensive and pre-sale technical support we provide to our customers. In addition, we believe that our DiskOnChip product line benefits from long-term strategic relationships that we have with Toshiba, and we expect it to benefit from our strategic relationship with AMD.

The advantages of our DiskOnKey product over older technologies, such as floppy disks that require floppy drives, include much higher capacity, reliability, and greater convenience and portability. In competing against rival USB-compatible 'keychain storage' products, we believe that our DiskOnKey products benefit from the fact that we are considered by many to be the leader and innovator of the USB-compatible 'keychain storage' market, having first introduced the concept and product. We believe that we also benefit, among other things, from the combination of the following factors: our long-standing reputation and expertise in the flash disk storage field relative to newer and smaller third-tier competitors; the fact that DiskOnKey products do not need drivers with the latest operating systems and their ability to transfer data between Windows and Mac machines; our advanced technology and the incorporated CPU which enables the DiskOnKey to directly support and run multiple, advanced software applications directly from the product itself; and the DiskOnKey's reliability and performance and its existing and planned features.

Specifically, our DiskOnChip products compete primarily against standard flash components, with or without added software, and other flash disks. The DiskOnChip competes against these products based on a number of factors, including functionality, cost-effectiveness, ease of integration, size, reliability, performance, capacity, modularity and the effectiveness of the related disk emulation software. Flash components are manufactured by various companies, including Intel Corporation, Samsung, Toshiba and AMD. However, customers relying on standard flash components currently have to develop or purchase, test and integrate additional hardware and/or software into their products in order for the flash components to be able to emulate a hard drive in the way a flash disk does. Our DiskOnChip products also face competition from other flash disk products, principally those manufactured by SanDisk. The DiskOnChip product in the DIP package faces competition in the embedded systems market from a product called DiskOnModule manufactured by a Taiwanese company, Power Quotient International Co., Ltd. (PQI) and from others.

Our DiskOnChip products are specifically designed for applications where removability of the flash disk is not required. For these applications, the DiskOnChip is generally more cost-effective, faster and consumes less power than removable flash disks and it requires a simpler interface.

Our DiskOnKey product competes with other flash USB drives, removable magnetic media, removable optical media, flash cards, floppy drives and other removable storage media. Our primary competitors in this market currently consist of numerous third tier computer peripheral manufacturers or new hardware manufacturers, the majority of whom are located in Asia where manufacturing costs tend to be lower. These companies include, among others, Trek 2000, J.M. Tech, Netac and LGN. Many of these competitors are vying for and attaining market share on the basis of aggressive pricing. We have also begun to experience competition from large U.S. and international companies (e.g. SanDisk and Lexar) that have more experience in the retail market, substantially greater financial, sales, technical, marketing and other resources, greater access to component fabrication capacity, broader product lines and longer-standing relationships with customers than we do.

We believe the DiskOnKey will compete in this market on the basis of its patented and advanced technology and features (including the ability to directly run security and other software applications that we have developed and are developing), its user-friendly size, reliability and performance.

Our FFD products face competition primarily from traditional hard drives, which are available from many sources, including Seagate Technology, Inc., Maxtor Corporation and International Business Machines Corp. (“IBM”), and drives based on flash or other solid-state memory offered by a number of competitors, including SanDisk, Silicon Storage Technology, Inc., Memtech, and BiTMICRO Networks. The FFD competes against these products based on a number of factors, including performance, reliability, durability, ruggedness, available capacities, price (in some instances) and other features, including the ability to customize the product to a customer’s needs.

In general, we expect competition to increase in the future from existing competitors and from other companies that may have a more efficient cost structure and/or direct access to distribution channels and/or stronger relations with the OEMs we currently sell to or intend to sell to. Such companies may enter our existing or future markets with similar or alternative data storage solutions that may be less costly and/or provide additional features and/or sell directly to computer manufacturers that will provide such device with their computers. In addition, computer manufacturers themselves may choose to manufacture competing devices. Increased competition may force us to reduce the prices for our products, thereby reducing our revenues and margins, and could otherwise have a material adverse effect on our business, financial condition and results of operations. We cannot be sure that we will be able to compete successfully against current and future competitors or that competitive pressures faced by us will not materially adversely affect our business, financial condition or results of operations.



## C. STRUCTURE

The following table lists our subsidiaries, their country of organization and our ownership percentage in each.

| <b>Name</b>                                    | <b>Country of Organization</b> | <b>Ownership</b> |
|--|--------------------------------|------------------|
| M-Systems, Inc.                                | U.S.                           | 100%             |
| M-Systems Asia Ltd.                            | Taiwan                         | 100%             |
| M-Systems Flash Disk<br>Pioneers (Japan), Inc. | Japan                          | 100%             |
| M-Systems UK Ltd.                              | United Kingdom                 | 100%             |
| M-Systems B.V.                                 | The Netherlands                | 100%             |
| Smart Caps Ltd.                                | Israel                         | 100%*            |

\* As of May 1<sup>st</sup>, 2003, Smart Caps Ltd. is a wholly owned subsidiary of M-Systems. As and when the OCS invests in Smart Caps, our ownership percentage will decrease (see Item 4.A above the paragraph titled "HISTORY AND DEVELOPMENT OF THE COMPANY").

## D. PROPERTY, PLANTS AND EQUIPMENT

Our headquarters' executive offices, research, development and manufacturing facilities are currently located in a building of approximately 75,000 square feet at 7 Atir Yeda St., Kfar Saba 44425, Israel, which we own. We also own an adjacent vacant plot of 117,000 square feet. We own the building and the property free and clear of all encumbrances except for a mortgage taken out by the sellers from Bank Leumi. The outstanding balance of that mortgage on our building and property is covered in full by escrowed funds to be delivered to the sellers only upon the receipt of various necessary permits and third party approvals, at which point the escrowed funds are to be released for the purpose of paying off the mortgage and removing the lien. In addition, we lease office space of approximately 5,000 square feet for a research and development facility in Omer, Israel.

We also lease office space for our sales offices in Silicon Valley, California; Massachusetts; Taipei, Taiwan; Tokyo, Japan; Shenzhen, China; and Vienna, Austria. These leases for sales offices are not material to our operations.

## ITEM 5. OPERATING AND FINANCIAL REVIEW AND PROSPECTS

*This “Operating and Financial Review and Prospects” section contains forward-looking statements that involve risks and uncertainties. Our actual results could differ materially from those anticipated in these forward-looking statements as a result of certain factors including, but not limited to, those set forth elsewhere in this report.*

### A. OPERATING RESULTS

#### Overview

We are a leading developer, manufacturer and marketer of innovative data storage products, known as flash disks. Our products are based on our patented TrueFFS technology and include the DiskOnChip, DiskOnKey and Fast Flash Disk (FFD) product families. DiskOnChip is primarily targeted at the Mobile Devices and Embedded Devices markets, while the FFD product line is used in military systems and network infrastructure equipment. The DiskOnKey product family targets the PC and laptop markets.

During 2000, our efforts were primarily targeted at the Connected Devices market and as a result, our revenues increased significantly in 2000 as compared to 1999. During 2000, we began investing both time and resources in the development of a new product line, the DiskOnKey. In early 2001, due primarily to the worldwide economic slowdown, we experienced a significant decrease in our revenues, mainly from the Connected Devices market. As a result of this slowdown, we decided to shift our focus to the Mobile Devices market and the PC and Laptop market. Due to this shift in focus, we succeeded in showing a significant growth in our revenues in 2002, in comparison to 2001. On a quarterly basis, our revenues decreased significantly in the first and second quarters of 2001. Since then, from the third quarter of 2001, throughout the end of 2002 and continuing on through the first quarter of 2003, our revenues have steadily increased on a quarter by quarter basis.

The worldwide economic slowdown was the primary cause of both the decrease in our revenues during the first half of 2001 and the concurrent industry-wide decrease in the price of flash components. This decrease in our revenues and the significant decrease in the price of flash components necessitated a re-evaluation of our inventory, which resulted in our accepting a significant inventory write-down and, in turn, resulted in negative gross profits for 2001.

During 2000 and the first quarter of 2001, our operating expenses increased on a quarterly basis, as the Company invested additional resources in the development and marketing of both its DiskOnChip and DiskOnKey product lines. Following the sharp decrease in the Company’s revenues and as the existence of a continuing global economic slowdown became evident, we decreased our quarterly expenses, from the second quarter of 2001 until the first quarter of 2002 (inclusive), by sharpening our focus only on those products and activities deemed to be crucial to our future growth and cutting or eliminating expenses in other areas. As we identified the great potential of both the Mobile Devices market and the market for Laptops and PCs for the sale of our products, we began investing in the development of new products and new sales & marketing channels, which resulted in an increase of our quarterly expenses from the second quarter of 2002, throughout the end of 2002 and continuing on through the first quarter of 2003. On a yearly basis, our operating expenses increased from 2000 to 2001, and slightly decreased from 2001 to 2002.

The preparation of financial statements requires management to make estimates, assumptions, and judgments that affect both (1) the reported amounts of assets and liabilities and the disclosure of contingent liabilities as of the date of the financial statements, and (2) the reported amounts of revenues and expenses during the reporting period. On an ongoing basis, management evaluates its estimates, assumptions, and judgments. Management bases its estimates, assumptions, and judgments on historical experience and on various other factors that it believes to be reasonable under the circumstances, some of which may not be readily apparent from other sources. Under different estimates, assumptions, judgments, factors or circumstances, actual results might differ from the results that were reported.

Management believes the following critical accounting policies, among others, affect its significant judgments and estimates used in the preparation of the Company's Consolidated Financial Statements:

**Revenue Recognition** - The Company and its subsidiaries generate most of their revenues from selling their data storage products to end customers, resellers and to OEMs. Revenues from product sales are recognized in accordance with Staff Accounting Bulletin No. 101 "Revenue Recognition in Financial Statements" ("SAB 101") when delivery has occurred, persuasive evidence of an arrangement exists, the vendor's fee is fixed or determinable, no further obligation exists and collectibility is reasonably assured. Because of frequent sales price reductions and rapid technology obsolescences in the industry, sales made to distributors or retailers under agreements allowing price protection and/or right of return are deferred until the retailers or distributors sell the merchandise to the end customer, or the right of return expires.

**Inventory Valuation** - Our policy for valuation of inventory and commitments to purchase inventory, including the determination of obsolete or excess inventory, requires us to perform a detailed assessment of inventory at each balance sheet date which includes a review of, among other factors, an estimate of future demand for products within specific time horizons, valuation of existing inventory, as well as product life-cycle and product development plans. The estimates of future demand that we use in the valuation of inventory are the basis for the revenue forecast, which is also consistent with our short-term manufacturing plan. Inventory reserves are also provided to cover risks arising from slow moving items. We write-down our inventory for estimated obsolescence or unmarketable inventory equal to the difference between the cost of inventory and the estimated market value based upon assumptions about future demand, market conditions, and specifically – prices of flash components.

**Warranties** - We provide for the estimated cost of product warranties at the time revenue is recognized. Our products sold are covered by a warranty for periods ranging from one (1) year to five (5) years. We accrue a warranty reserve for estimated costs to provide warranty services. Our estimate of costs to service the warranty obligations is based on historical experience and expectation of future conditions. To the extent we experience increased warranty claim activity or increased costs associated with servicing those claims, our warranty accrual will increase, resulting in decreased gross profits.

**Investment in private companies** - Investment in a privately-held company is recorded at the lower of cost or estimated fair value. Any decrease in the value of investments, other than a temporary decrease, is recorded when it becomes known to us.

*The following is a brief description of certain of the line items included in our financial statements as well as trend information regarding those line items:*

**Revenues.** Substantially all of our revenues are generated from the sale of our products. A significant portion of our product sales consists of sales of our DiskOnChip, DiskOnKey and FFD product lines. In 2002, we derived approximately 45% of our revenues from sales of our DiskOnChip product line and 41% from sales of our DiskOnKey product line.

Due to the global economic slowdown which began during the first half of 2001, our 2001 revenues went down as compared to our revenues for 2000. Our resulting shift in focus to the PC and Laptop market and to the Mobile Devices market has since brought us consistent growth and our quarterly results have shown consecutive growth, quarter by quarter, from the third quarter of 2001 through the first quarter of 2003. On an annual basis, in 2002 we have shown a growth in revenues of 45% in comparison to 2001.

**Cost of Revenues.** Our cost of revenues consists primarily of the cost of components and manufacturing costs (including costs of subcontractors that manufacture our products), salaries and related personnel expenses for those engaged in the manufacture of our products, maintenance costs and other overhead costs.

The market price for flash memory components decreased significantly during 2001, mainly in the first half of 2001, due to the excess supply of flash memory components caused by the significant increases in 2000 in worldwide flash memory supply and the significant decrease in customer demand sparked by the worldwide economic slowdown in 2001. In response to this decline in the market price for flash memory components, we reduced the value of our inventory during the first half of 2001 by approximately \$30.2 million. Our inventory decreased from \$37.5 millions at December 31, 2000 to \$13.4 millions at June 30, 2001, mainly due to the inventory write-down. Any further decline in the market price of such components could have a further negative effect on the value of inventory of flash memory components and, therefore, increase our costs of revenues.

*Gross Profit.* Our gross profit increased significantly in 2002 compared to 2001, moving from a gross loss to a gross profit. Our gross loss in 2001 is attributable mainly to the inventory write-down and the sharp decrease of our revenues. Furthermore, compared to 2001, gross margins shifted significantly from negative gross margins (due to the inventory write-down done in 2001) to positive gross margins.

*Research and Development Expenses, Net.* Research and development expenses consist primarily of salaries and related personnel expenses and subcontractor costs related to the design, development and testing of new products and technologies and product enhancements. Research and development expenses are presented net of participations received or accrued from the OCS, the Binational Industrial Research and Development (“BIRD”) Foundation, SIIRD and IST. All research and development costs are expensed as incurred. We believe that continued investment in research and development is critical to attaining our strategic objectives. As a result of the decrease in the revenues in 2001 compared to 2000, and the company’s decision to sharpen its focus only on those products and activities deemed to be crucial to our future growth and cutting or eliminating expenses in other areas, the research and development expenses went down from the first quarter of 2001 till the first quarter of 2002. During 2002, as a result of the continued growth in our revenues compared to those of 2001 and the high potential for revenues growth both in the DiskOnKey and the Mobile DiskOnChip products, we decided to expand our investments in the development of new products. In addition, during 2002 we decided to change the company’s focus to be more markets oriented, and as a result some of our employees and their related activities moved from R&D to sales and marketing. We consequently shifted \$2.2 million from R&D expenses to sales and marketing expenses during 2002. We expect the R&D expenses to increase in the future as we continue to develop new products and product lines and enhance existing products

*Selling and Marketing Expenses, Net.* Selling and marketing expenses consist primarily of salaries, commissions and related personnel expenses for those engaged in the sale, marketing and support of our products (including commissions payable to our independent sales representatives), as well as related trade shows, promotional and public relations expenses. As a result of the decrease in the Company’s revenues in 2001 compared to 2000, and the Company’s decision to sharpen our focus only on those activities deemed to be crucial to our future growth and cutting or eliminating expenses in other areas, the selling and marketing expenses went down from the first to the fourth quarter of 2001. During 2002, as a result of the continued growth in our revenues compared to those of 2001 and the high potential for the growth of our revenues from both in the DiskOnKey and the Mobile DiskOnChip products, we have decided to expand our sales and marketing activities. In addition, during 2002 we have decided to change the company’s focus to be more markets oriented, and as a result some of our employees and their related activities moved from R&D to sales and marketing. As a result, during 2002 we shifted \$2.2 million from R&D expenses to selling and marketing expenses. We intend to pursue sales and marketing campaigns aggressively and expect selling and marketing expenses to increase in the future

*General and Administrative Expenses.* General and administrative expenses consist primarily of salaries and related personnel expenses for executive, accounting, finance, legal and litigation, human resources, administrative and network and information systems personnel, facilities maintenance, professional fees and other general corporate expenses. As we add personnel and incur additional costs related to the growth of our business, we expect that general and administrative expenses will also increase.

*Financial Income, Net.* Financial income, net consists primarily of interest earned on bank deposits, bonds and gains or losses from selling marketable securities and from the translation of monetary balance sheet items denominated in non-dollar currencies. Our financial income, net, decreased during both 2001 and 2002 as a result of the both of the decrease of interest rates in the market and of our reduced cash balance.

*Taxes.* Israeli companies are generally subject to income tax at the corporate rate of 36%. However, as an ‘approved enterprise’ we are eligible for certain tax benefits. These benefits should result in our income being tax exempt or taxed at a lower rate after we begin to report taxable income for a number of years (see in Item 5.B below the paragraph titled “Taxation”).

*Net Income (Loss).* In 2001 our net loss was \$41.8 million, \$30.2 million of which was due to the inventory write-down, and \$1 million was an investment write-off. In 2002 our net loss was \$5.5 million dollars.

## Results of Operations

The following table sets forth, for the periods indicated, the percentage of revenues represented by certain items reflected in our consolidated statements of operations.

|  | Year ended December 31, |         |        |
|--|-------------------------|---------|--------|
|  | 2000                    | 2001    | 2002   |
| Revenues   | 100.0%                  | 100.0%  | 100.0% |
| Cost of revenues   | 69.4                    | 68.0    | 68.5   |
| Inventory write-down   | ---                     | 67.6    | ---    |
| Gross profit (loss)  | 30.6                    | (35.6)  | 31.5   |
| Operating expenses:  |                         |         |        |
| Research and development, net                                    | (8.0)                   | (29.7)  | (18.5) |
| Selling and marketing, net                                       | (12.5)                  | (27.1)  | (19.4) |
| General and administrative                                       | (3.0)                   | (8.8)   | (6.2)  |
| In-process research and development write-off                    | 6.7                     | ---     | ---    |
| Total operating expenses   | 30.2                    | 65.6    | 44.0   |
| Operating income (loss)  | 0.4                     | (101.2) | (12.5) |
| Capital loss   | ---                     | (2.7)   | ---    |
| Financial income, net  | 6.3                     | 10.4    | 4.0    |
| Income (loss) before minority interest in losses of a subsidiary | 6.8                     | (93.5)  | (8.5)  |
| Minority interest in losses of a subsidiary                      | 0.0                     | ---     | ---    |
| Net income (loss)  | 6.8%                    | (93.5)% | (8.5)% |

### Year Ended December 31<sup>st</sup>, 2002 Compared to Year Ended December 31<sup>st</sup>, 2001

**Revenues.** Revenues in 2002 increased by \$20.1 million or 45% to \$64.8 million from \$44.7 million in 2001. Our DiskOnKey sales increased by \$20.2 million or 306%. Our DiskOnChip sales increased by \$1.9 million, or 7%, and our FFD sales increased by \$0.5 million, or 10%. The increase in revenues was attributable primarily to the continued penetration of our DiskOnKey product line to the PC and Laptop market, which resulted in a significant increase in unit sales in 2002 as compared to 2001. Average selling prices for our DiskOnKey products remained relatively constant during 2001 and 2002.

**Gross Profit.** Our gross profit in 2002 was \$20.4 million compared to a gross loss of \$15.9 million in 2001, which resulted from the inventory write-down of \$30.2 million. Furthermore, compared to 2001, gross margins changed from negative 35.6%, reflecting the 2001 inventory write-down, to positive 31.5%.

**Research and Development Expenses, Net.** Our gross research and development expenses in 2002 decreased by \$1.1 million to \$12.2 million, a decrease of 8.2% from the Company's gross research and development expenses of \$13.3 million in 2001. Our net research and development expenses decreased by \$1.3 million to \$12.0 million, a decrease of 9.9% from the net research and development expenses of the Company's of \$13.3 million in 2001. The decrease in our gross research and development expenses is attributable to the Company's decision to shift focus to a more market oriented approach. This, in turn, caused us during 2002 to reallocate employees and the related expenses in the amount of \$0.7 million from research and development to selling and marketing. As a percentage of revenues, our net research and development expenses decreased to 18.5% in 2002 from 29.7% in 2001. In 2002, we received \$63,000 and \$212,000 research and development grants from SIIRD and IST, respectively, in comparison to the \$60,000 research and development grant we received from SIIRD in 2001.

**Selling and Marketing Expenses, Net.** Gross selling and marketing expenses in 2002 slightly increased by \$0.4 million, or 3.5%, to \$12.5 million from \$12.1 million in 2001. As a result of the Company's decision to shift focus to a more market oriented approach, during 2002 we reallocated employees and the related expenses in the amount of \$0.7 million from research and development to selling and marketing. As a percentage of revenues, our net selling and marketing expenses decreased to 19.4% in 2002 from 27.1% in 2001.

*General and Administrative Expenses.* General and administrative expenses in 2002 slightly increased by \$0.1 million, or 2%, to \$4.0 million from \$3.9 million in 2001, as we increased our administrative staff to support our expanding operations. As a percentage of revenues, our general and administrative expenses decreased to 6.2% in 2002 from 8.8% in 2001.

*Capital loss.* In 2001, we realized a one-time charge of \$1.0 million due to an investment write-off, as well as a one-time write-off of \$181,000 relating to assets used in our previous facilities that could not be utilized in our new facilities in Kfar-Saba. In 2002 we had no capital loss.

*Financial Income, Net.* Financial income, net, in 2002 decreased by \$2 million or 43.4% to \$2.6 million from \$4.6 million in 2001, due mainly to the lower interest rates prevailing in the market.

*Net Income (Loss).* For the reasons discussed above, in 2002 our net loss was \$5.5 million compared to a net loss of \$41.8 million in 2001.

### **Year Ended December 31<sup>st</sup>, 2001 Compared to Year Ended December 31<sup>st</sup>, 2000**

*Revenues.* Revenues in 2001 decreased by \$47.9 million or 52% to \$44.7 million from \$92.6 million in 2000. Our DiskOnChip sales decreased by \$45.5 million, or 62%, and our FFD sales decreased by \$2.6 million, or 33%. The decrease in revenues was attributable primarily to the economic slowdown that negatively affected the Connected Devices and the telecom infrastructure markets, and by extension sales of our DiskOnChip products which are incorporated into these devices. In 2001, we commenced sales of our DiskOnKey products, and derived revenues of \$6.6 million from such sales by the end of that year.

*Gross Loss.* Our gross loss in 2001 was \$15.9 million and was attributable mainly to the inventory write-down accepted by the Company in 2001 and to the sharp decrease in our revenues compared to 2000. Our gross loss in 2001 was \$15.9 million compared to a gross profit of \$28.3 million in 2000. Furthermore, compared to 2000, gross margins went down significantly due to the inventory write-down.

*Research and Development Expenses, Net.* Gross research and development expenses in 2001 increased by \$6.0 million, or 81.3%, to \$13.3 million from \$7.4 million in 2000. The increase in our research and development expenses was attributable primarily to a high level of activity in connection with the development of new products in the DiskOnChip family, mainly the Mobile DiskOnChip, the development of the DiskOnKey and the addition of the activity of the new development center based on the personnel and technology of Fortress, acquired by us in September 2000, the expenses of which were only consolidated to our results in 2000 in the fourth quarter. As a percentage of revenues, our net research and development expenses increased to 29.7% in 2001 from 8.0% in 2000. In 2001, we received \$60,000 in research and development grants from SIIRD while we did not receive research and development grants in 2000 from any of SIIRD, OCS or BIRD.

*Selling and Marketing Expenses, Net.* Gross selling and marketing expenses in 2001 increased by \$0.6 million, or 5.1%, to \$12.1 million from \$11.5 million in 2000. We increased the selling and marketing expenses in connection with our introduction and promotion of the Mobile DiskOnChip and the DiskOnKey. At the same time, we minimized other sales and marketing activities to the level we believed was crucial for the company to allow for future growth. As a percentage of revenues, our net selling and marketing expenses increased to 27.1% in 2001 from 12.5% in 2000.

*General and Administrative Expenses.* General and administrative expenses in 2001 increased by \$1.1 million, or 39.3%, to \$3.9 million from \$2.8 million in 2000. In 2000 and the beginning of 2001, we built an administrative and finance infrastructure which would be able to cope with the sales growth that we had experienced in 2000, and that we then expected would continue. As a percentage of revenues, our general and administrative expenses increased to 8.8% in 2001 from 3.0% in 2000.

*In Process R&D Write-Off.* In 2000, we realized a one-time charge of \$6.2 million due to a write-off of in-process research and development in connection with our acquisition of the business and assets of Fortress.

*Capital loss.* In 2000 we had no capital loss. In 2001, we realized a one-time charge of \$1.0 million due to an investment write-off, as well as a one-time write-off of \$181,000 relating to assets used in our previous facilities that could not be utilized in our new facilities in Kfar-Saba.

*Financial Income, Net.* Financial income, net, in 2001 decreased by \$1.2 million or 21.2% to \$4.6 million from \$5.9 million in 2000, due both to the lower interest rates prevailing in the market and to a decrease in our cash balance.

*Minority Interest in Losses of Subsidiary.* In June 1998, we established a subsidiary in Japan, M-Systems Flash Disk Pioneers (Japan), Inc., to further the sales and marketing of our products in Japan. The subsidiary was established together with a Japanese partner, Dempa Shinbun Inc. ("Dempa"), which owned 33% of the company through June 2001, at which time we purchased Dempa's share in the subsidiary. In 2001, no minority interest in losses of this subsidiary was recorded, compared to \$19,000 in 2000.

*Net Income (Loss).* For the reasons discussed above, in 2001 our net loss was \$41.8 million as opposed to our income of \$6.3 million in 2000.

### **In-Process Research and Development**

In September 2000, we acquired the business and assets of Fortress U&T Ltd. ("Fortress"), in exchange for \$8,456,000 in cash, out of which \$6,215,000 was allocated to in-process research and development and written-off. The value of the in-process research and development was determined based on an independent expert's assessment of the relative market potential of the research and development project.

The project under development at the time of the acquisition was for the development of a Smart Card. As of the date of the acquisition, the Smart Card technology had not demonstrated its technological or commercial feasibility. Significant risks of technical completion, costs and timing were associated with the development of this project, as there were significant new features being developed at the time of the acquisition. In addition, there were also high levels of market risks as there was very strong competition in the market for Smart Card technology. In the event that the project failed to become viable, it was unlikely that Fortress would be able to realize any value from the sale of the technology to another party.

As the in-process research and development had no alternative use in the event that the proposed project did not prove to be feasible, these development efforts are within the definition of In-Process Research and Development (IPR&D) contained in Statement of Financial Accounting Standards (SFAS) No. 2 "Accounting for Research and Development Costs".

Sales of Smart Card based on this project were expected to continue through 2005. We have assessed a percentage of completion for the Smart Card in order to allocate only the value of research and development performed as of the acquisition date. The percentage of completion was primarily based on our estimates as to the costs incurred on the project prior to the date of the acquisition out of the total estimated budget. As of the date of the acquisition, approximately \$2,900,000 had been spent while an additional approximately \$1,000,000 was thereafter estimated to be incurred to complete the project. Thus, the technical development was estimated to be approximately 74% complete. Actual total expenses incurred under this project were in compliance with the original estimates.

We used an income approach in valuing the acquired IPR&D. Under this approach, the fair value reflects the present value of the projected free cash flows that will be generated by the IPR&D projects and that would be attributable to the acquired technology, if successfully completed. The projected revenues used in the income approach were based upon our estimate of the revenues to be generated upon completion of the projects and the beginning of commercial sales. The projections assumed that the products will be successful and that the product's development and commercialization would meet our management's time schedule.

In determining applicable discount rates to be used in the valuation of the in-process technology, the independent expert analyzed the risks of an investment in Fortress. In arriving at appropriate discount rates, the independent expert considered the weighted average cost of capital. The weighted average cost of capital was calculated to be 15%. The discount rate applicable to in-process project reflects the risks inherent in such project, as described above. An overall after-tax discount rate of 45% was applied to the in-process projects' cash flows.

## **B. LIQUIDITY AND CAPITAL RESOURCES**

To date, we have funded our operations primarily through cash from operations and the sale of securities and, to a much lesser extent, through government grants to support our marketing and research and development efforts. We completed our initial public offering in March, 1993, which provided net proceeds of \$4.6 million. In July, 1993, we called for redemption of certain of the warrants we had issued in connection with the IPO, which resulted in the exercise of most of these warrants and provided net proceeds of \$4.7 million. In January, 1995, we completed a private placement of ordinary shares and warrants, which provided net proceeds of \$3.7 million (and thereafter, an additional \$480,000 upon exercise by certain investors of some of the warrants issued). In August, 1996, we completed a secondary offering of our ordinary shares, which provided net proceeds of \$12.6 million. In March, 1998, we received net proceeds of \$72,000 from the exercise of warrants that had been granted to the underwriters' representative in connection with our IPO. In March, 2000, we completed a secondary offering of our ordinary shares, which provided net proceeds to us of approximately \$149.6 million.

In July, 1999, we raised approximately \$5.0 million in a private placement of 1,818,182 ordinary shares, reflecting a price per share of \$2.75, and 1,038,962 warrants. Each warrant entitled the holder to purchase one ordinary share at a price of \$2.875 until December 31<sup>st</sup>, 2002, subject to certain anti-dilution and other adjustment protections. The holders of the ordinary shares issued in the private placement and upon the exercise of the warrants have registration rights, including the right to demand registration of their shares in an underwritten public offering at any time after January, 2002. As of December 31<sup>st</sup>, 2002 all of said warrants have been exercised and none remain outstanding.

On May 1<sup>st</sup>, 2003, we entered into a Share Purchase Agreement with Dr. Hans Wagner, a member of our Board of Directors, for the purchase of 500,000 ordinary shares (see Item 7.B below the paragraph titled "Related Party Transactions").

We had no indebtedness as of May 1<sup>st</sup>, 2003, December 31, 2001 and as of December 31, 2000.

Our cash, cash equivalents, short-term deposits and short term marketable securities were \$64.0 million at December 31<sup>st</sup>, 2002, compared to \$80.1 million at December 31<sup>st</sup>, 2001. Our long term marketable securities were \$30.1 million at December 31<sup>st</sup>, 2002, compared to \$17.2 million at December 31<sup>st</sup>, 2001.

Net cash used in operating activities in 2002, 2001 and 2000 was \$2.75 million, \$9.8 million and \$15.4 million, respectively. This was attributable primarily to changes in our working capital. We expect that our principal uses of cash in the near future will be to fund increases in sales and marketing expenditures and research and development expenditures. We cannot assure you that the uses will not be different. In addition, we may also use cash to finance strategic acquisitions of, or investments in, related businesses, product lines and technologies.

During the years ended December 31<sup>st</sup>, 2002, 2001 and 2000, the aggregate amount of our capital expenditures was \$19.2 million. These expenditures were principally for the purchase of our building and the adjacent vacant lot, improvement of our building, investment in our manufacturing facilities, purchases of computer equipment and leasehold improvement. As of December 31, 2002, we had no commitment for material capital expenditures.



**Lease commitments:**

The Company's facilities in Omer, its subsidiaries' facilities and its vehicles are leased under several operating lease agreements, which expire on various dates, the latest of which is in 2005.

Future minimum lease commitments under non-cancelable operating leases, are as follows:

|            | <b>Year ended December 31,</b> |             |             |                  |
|------------|--------------------------------|-------------|-------------|------------------|
|            | <b>2003</b>                    | <b>2004</b> | <b>2005</b> | <b>Total</b>     |
| Facilities | \$ 363,000                     | 369,000     | 305,000     | \$ 1,037,000     |
| Vehicles   | \$ 666,000                     | 375,000     | 122,000     | \$ 1,163,000     |
| <br>Total  | <br>\$ 1,029,000               | <br>744,000 | <br>427,000 | <br>\$ 2,200,000 |

Facilities lease expenses for the years ended December 31, 2000, 2001 and 2002, were approximately \$798,000, \$384,000 and \$456,000, respectively. Vehicles lease expenses for the years ended December 31, 2000, 2001 and 2002 were approximately \$234,000, \$606,000 and \$763,000, respectively.

As of December 31, 2002, the Company has authorized and available credit lines of \$4.0 million from banks. None of the credit lines were drawn as of December 31, 2002. In connection with the credit lines, the Company agreed not to place any liens on its assets without the respective bank's consent.

**Royalty Commitments**

Under the Company's research and development agreements with the OCS, BIRD and SIIRD, the Company is required to pay royalties at the rate of 1.5%-5% of sales of products developed with funds provided by the OCS, BIRD and SIIRD, up to an amount equal to 150% of the OCS and BIRD and 100% of the SIIRD research and development grants (dollar-linked) related to such projects. In addition, the Israeli Government, through the Fund for Encouragement of Marketing Activities ("FEMA"), and BIRD awarded the Company and its U.S. subsidiary grants for participation in expenses for overseas marketing. The Company is committed to pay royalties to FEMA at the rate of 3% on the increase in export sales, up to the amount of the grants received by the Company. As of December 31, 2002, the Company had outstanding obligations to pay royalties of \$447,000 in respect of these various grants.

**Taxation**

Israeli companies are subject to corporate tax at the rate of 36%. However, the effective rate of tax of a company that derives income from an 'approved enterprise' (as referred to below) may be considerably lower (see Item 10.E below the paragraph titled "Law for the Encouragement of Capital Investments, 1959").

Most of our production facilities have been granted 'approved enterprise' status under six separate programs pursuant to Israel's Law for the Encouragement of Capital Investments, 1959 (the "Investment Law"). The primary tax benefits resulting from such status are described below.

During 2001, we purchased the assets of Fortress, which had a facility that had been granted 'approved enterprise' status. In 2001, we initiated a research and development facility in Omer, Israel, at the site of Fortress' facilities. Income derived from our Omer facility is tax-exempt for a 10-year period, commencing in the year in which we first recognize Israeli taxable income from that facility, and will end no later than the earlier of 12 years from the commencement of production, or 14 years from receipt of the approval for the Omer 'approved enterprise'. The Company came to an agreement with the Israeli tax authorities on the percentage of revenues which are deemed attributable to the facility in Omer.

In addition, income which is not attributable to our Omer facility and which is derived from our 'approved enterprises' that commenced operations prior to or during 1996 is tax exempt for the first four years of the 10-year tax benefit period, and is subject to a reduced tax rate during the rest of the period. Income which is not attributable to the Omer facility and which is derived from our 'approved enterprises' that commenced operations after 1996 is tax exempt for the first two years of the 10-year tax benefit period, and is subject to a reduced tax rate during the rest of the period. The reduced tax rate is imposed at a rate of between 10% and 25%, depending on the percentage of M-Systems' shares held by non-Israelis in that remaining period (the more shares held by non-Israelis, the lower the tax rate). The tax benefit periods for each respective 'approved enterprise' will commence in the year in which we first recognize Israeli taxable income from such 'approved enterprise', and will end no later than the earlier of 12 years from the commencement of production, or 14 years from receipt of the approval for such 'approved enterprise'. Accordingly, the period relating to these 'approved enterprises' will expire between 2005 and 2012. The tax benefit periods for these 'approved enterprises' have not yet commenced except for the first plan.

We cannot be sure that 'approved enterprise' programs will continue to be available, or that we will continue to qualify for benefits under such programs. In addition, the benefits available to an 'approved enterprise' are conditional upon the fulfillment of certain conditions stipulated in the relevant laws and regulations and the criteria set forth in the certificate of approval issued to us. In the event that we do not comply with these conditions, in whole or in part, we may be required to refund the amount of the benefits, indexed to the Israeli CPI, with interest.

In the years ended December 31<sup>st</sup>, 2002, 2001 and 2000, we incurred losses for tax purposes. Accordingly, we did not provide for taxes on income in any of the reported periods.

## **C. RESEARCH AND DEVELOPMENT, PATENTS AND LICENSES, ETC.**

### **Government of Israel Support Programs**

#### ***Research and Development Overview and Internal Program***

We have devoted significant resources to research and development activities with respect to our core flash data storage technology. We have emphasized the development of our technology, the enhancement of existing products and the development of new products, generally in response to the rapidly evolving markets for Mobile Devices, Embedded Devices, military systems and network infrastructure equipment and other embedded systems. In addition, we emphasize the development and addition of new features to our products, such as security and access control.

Our gross research and development expenses during 2002, 2001 and 2000 were \$12.2 million, \$13.3 million and \$7.4 million, respectively. A small portion of our revenues during those years was funded through grants from - SIIRD and IST, as discussed below.

#### ***Research and Development Grants***

We participate in programs offered by the OCS, SIIRD and IST that support research and development activities. We received or accrued participation from OCS, SIIRD and IST of \$0, \$63,000 and \$212,000 respectively in 2002, \$0, \$60,000, \$0 in 2001, and \$0, \$0 and \$0, respectively, in 2000. Our OCS grants related to the development of a compact IDE interface flash disk, our SIIRD grants related to the development of LPC flash disk and our IST grants related to the development of secure mobile payment on chip (SM-PAYSOC). For a discussion of such programs, including royalty obligations and limitations on manufacturing and the transfer of technology relating to such participations, see "Item 4B: Business Overview — Research and Development."

### **Inflation**

Most of our sales traditionally have been made in dollars, and most of our expenses have been incurred in dollars or denominated in NIS. We have not been materially affected by changes in the rate of inflation in Israel. Inflation in the U.S. and our other markets has not had a material effect on our results of operations.

### **Functional Currency**

The U.S. dollar is the primary currency in the economic environment in which we operate. Most of our sales are made outside of Israel and are denominated in dollars. Most of our purchases of materials and components are made outside of Israel and are denominated in dollars. In addition, most marketing and service costs are incurred in dollars. As a result, our functional and reporting currency is the U.S. dollar.

## **D. TREND INFORMATION**

Please see the discussion of significant recent trends in our business, including trends in our revenues, costs of revenues, research and development expenses, sales and marketing expenses and net income (loss), in "Item 5A: Operating Results – Overview."

## ITEM 6. DIRECTORS, SENIOR MANAGEMENT AND EMPLOYEES

### A. DIRECTORS AND SENIOR MANAGEMENT

The following table sets forth certain information regarding our directors and executive officers as of May 1<sup>st</sup>, 2003:

| <u>Name</u>      | <u>Age</u> | <u>Position</u>  |
|------------------|------------|--|
| Dov Moran        | 47         | President, CEO and Chairman of the Board of Directors      |
| Aryeh Mergi      | 41         | Executive Vice President of Business Development; Director |
| Ronit Maor       | 32         | CFO and Vice President of Finance and Administration       |
| Dana Gross       | 36         | Chief Marketing Officer; Director                          |
| Amir Friedman    | 41         | Director   |
| Yair Shoham      | 49         | Director   |
| Dr. Hans Wagner  | 73         | Director   |
| Yossi Ben Shalom | 47         | Director   |

The background of each of our directors, executive officers and key employees is as follows:

*Dov Moran.* Mr. Moran is a founder of M-Systems and has been a director and President, Chief Executive Officer and Chairman of the Board of Directors of M-Systems since 1989. Mr. Moran has also been a director and chairman of the board of directors of our U.S. subsidiary, M-Systems Inc. (“MSU”), since 1992. From 1984 to 1989, Mr. Moran was an independent consultant in the computer industry. Prior thereto, Mr. Moran served in the Israeli Navy for seven years and was director of its microprocessors department. Mr. Moran received a B.Sc. in Computers and Electronic Engineering (with honors) from the Technion, Israel Institute of Technology, in Haifa, Israel in 1977.

*Aryeh Mergi.* Mr. Mergi is a founder of M-Systems and has been a director of M-Systems since 1989 and a director of MSU since 1992. Mr. Mergi has been our Executive Vice President of Business Development of the Company since 2000. From 1995 to 2000, he served as Executive Vice President of Sales and Marketing. From 1989 to 1995, he served as Vice President of Research and Development. Mr. Mergi received a B.Sc. in Electronic Engineering (with honors) from the Technion, Israel Institute of Technology, in Haifa, Israel in 1988.

*Ronit Maor.* Ms. Maor has been Chief Financial Officer and Vice President of Finance and Administration since May 1997. Ms. Maor joined us as Planning and Control Manager in March 1996 and was promoted to Vice President of Planning and Control in February 1997. Prior thereto, Ms. Maor was a project manager at Tefen, an industrial engineering consulting company. She received her B.Sc. in Industrial Management Engineering (with honors) from Tel-Aviv University in 1995.

*Dana Gross.* Ms. Gross has served as the Company’s Chief Marketing Officer since July, 2002, and as a director of the Company since September 2000. Ms. Gross joined the Company in July 1992 as Vice President of Operations. She was promoted to Chief Financial Officer in 1994, to President of MSU in 1995, to Executive Vice President of Business Development in 1997, to Vice President of Worldwide Sales in 1998 and to Executive Vice President of the DiskOnChip business unit in 2000. Ms. Gross received a B.Sc. in Industrial Management Engineering (with honors) from Tel-Aviv University in 1992 and an M.B.A. degree from San Jose State University in 1997.

*Amir Friedman.* Mr. Friedman is a founder of M-Systems and has served us as a director since 1991. Mr. Friedman served as our Vice President for U.S. operations from 1991 to 1994 and as the President of MSU from 1989 to 1994. Mr. Friedman is also a founder and director of Connect-ONE Ltd., and has served as its President since 1995. Mr. Friedman received a B.Sc. in Electronic Engineering from the University of Wisconsin in 1981 and an M.B.A. from Tel-Aviv University in 1989. Mr. Friedman qualifies as an independent director under applicable Nasdaq rules and was elected to the Board of Directors as an External Director under the applicable provisions of the Companies Law.

*Yair Shoham.* Mr. Shoham has served as a director of M-Systems since 1996. Since June 1999, Mr. Shoham has been general partner with Genesis Partners II L.L.C., an Israel-based venture capital fund that is affiliated with CIBC World Markets Corp. From 1997 to 1999, Mr. Shoham was the Vice President for Business Development of Butterfly VLSI Ltd., and from January 1996 to December 1996 he was the Vice President for Business Development of VDOnet Corporation Ltd. From January 1994 to December 1995, Mr. Shoham was a partner at the law firm of Goldfarb, Levy, Eran & Co., Tel-Aviv, Israel. Mr. Shoham received his B.A. degree from Haifa University in Israel in 1982 and a J.D. degree from Loyola University of Chicago School of Law in 1985. Mr. Shoham qualifies as an independent director under applicable Nasdaq rules and was elected to the Board of Directors as an External Director under the applicable provisions of the Companies Law.

*Dr. Hans Wagner.* Dr. Wagner has served as a director of M-Systems since November, 2002. Dr. Wagner is currently a Senior Partner of Omega Partners Ltd., a telecommunications consultancy firm, of which he was a founder in 1977. Dr. Wagner also founded and serves as a director of Ozone Ltd., a manufacturer of recycling devices founded in 1996, and of Pelikon Ltd., a developer and manufacturer of electro-luminescent displays founded in 2000. From 1995 to 2000, Dr. Wagner served as a strategic advisor to the management of Ericsson Mobile LM. From 1984 to 1992, Dr. Wagner was a founder and served as chairman of Technophone, a mobile telephone manufacturer which was then the worldwide number three in sales prior to its acquisition by Nokia. From 1973 to 1977, Dr. Wagner served as the Assistant Secretary General of the UNDP. From 1969 to 1973, Dr. Wagner served as the CEO of SONAB AB, Sweden's second largest communication equipment manufacturer. From 1963 to 1969, Dr. Wagner served as the COO of Incentive AB, Sweden's largest technical conglomerate. Dr. Wagner holds a Masters degree in Chemical Engineering, an MBA degree from the Stockholm School of Economics and a Ph.D. from the Massachusetts Institute of Technology. Dr. Wagner qualifies as an independent director under applicable Nasdaq rules.

*Yossi Ben Shalom* Mr. Ben Shalom has served as a director of the Company since January, 2003. Mr. Ben Shalom is a co-founder of DBSI Investments Ltd. Before establishing DBSI Investments, Mr. Ben-Shalom had been Executive Vice President and Chief Financial Officer of Koor Industries Ltd. (KOR - Nasdaq) from 1998 through 2000. Before that, Mr. Ben-Shalom served as Chief Financial Officer of Tadiran Ltd. Mr. Ben-Shalom serves as an active director on numerous boards, including, among others, on the boards of NICE Systems (NICE - Nasdaq) - computer telephony; Machteshim Agan - chemicals; and Bank Klali. Mr. Ben-Shalom served as an active chairman in successful turnaround programs, such as at Eurocar Israel, American Express Israel and Scopus Technologies. Mr. Ben Shalom holds a BA in Economics and an MA in Business Management from Tel Aviv University. Mr. Ben Shalom qualifies as an independent director under applicable Nasdaq rules.

## **B. COMPENSATION**

The aggregate compensation paid by us and our subsidiaries to all persons who served in the capacity of director and executive officer for the year ended December 31, 2002 (11 persons of which 4 no longer serve in such capacity) was approximately \$636,800, which includes approximately \$37,300 set aside or accrued to provide pension, retirement or similar benefits, but does not include amounts expended by us for automobiles made available to our officers, expenses (including business travel, professional and business association dues and expenses) reimbursed to officers and other fringe benefits commonly reimbursed or paid by companies in Israel. The Company does not pay directors' fees to its directors.

During fiscal 2002, all persons who served in the capacity of director and executive officer for the year ended December 31, 2002, were granted options to purchase a total of 289,600 ordinary shares at an average price of \$7.18 per share, with vesting terms of 2-4 years. All options were granted pursuant to our then current share option and incentive plans (see in Item 6.E below the paragraph titled "Share Option Plans and recent changes in Israeli law").

## **C. BOARD PRACTICES**

### **Terms of Office**

Directors are elected by an ordinary resolution at the Annual General Meeting of our shareholders. All directors of the Company, other than “External directors under the Companies Law (see in this Item 6.C below the paragraph titled “External Directors”) who serve for a period of three years after their election, serve until the next Annual General Meeting, unless their offices are vacated earlier under any relevant provision of our Articles of Association.

We have entered into employment agreements with all of our executive officers similar in form to the agreements entered into with all of our other employees. These agreements are subject to termination by either party, with or without cause, in most cases on either 30 or 60 days’ notice, depending on the agreement. Under these agreements with our Israeli executive officers, we and the employee each contribute a percentage of the salary of the employee to a fund known as “Managers’ Insurance.” This fund provides a combination of savings plan, insurance and severance pay benefits to the employee, giving the employee a lump sum of payment upon retirement and securing severance pay, if legally entitled, upon termination of employment. Each employee who agrees to participate contributes an amount equal to 5% of his or her salary and we contribute between 13.3% and 15.8% of his or her salary. Israeli law generally requires severance pay, which may be funded by Managers’ Insurance, upon the retirement or death of an employee or termination of employment without due cause. These agreements all contain provisions standard for a company in our industry regarding non competition, confidentiality of information and assignment of inventions. The enforceability of covenants not to compete is limited in Israel.

### **Alternate Directors**

Our Articles of Association provide that a director may appoint, by written notice to us, any individual to serve as an alternate director so long as such individual does not already serve as a director or an alternate director. Any alternate director will have all of the rights and obligations of the director appointing him or her, except the power to appoint an alternate (unless the instrument appointing him or her provides otherwise) and the right to remuneration. The alternate director may not act at any meeting at which the director appointing him or her is present. Unless the appointing director limits the time period or scope of any such appointment, the appointment will be effective for all purposes and for an indefinite time, but will expire upon the expiration of the appointing director’s term. Currently, no alternate directors have been appointed.

### **External Directors**

Under the Companies Law, companies incorporated under the laws of Israel whose shares have been offered to the public in or outside of Israel are required to appoint at least two external directors. This law provides that a person may not be appointed as an external director if the person or the person’s relative, partner, employer or any entity under the person’s control, has, as of the date of the person’s appointment to serve as external director, or had, during the two years preceding that date, any affiliation with the company or any entity controlling, controlled by or under common control with the 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.

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 may otherwise interfere with the person’s ability to serve as an out external side director.

External directors are to be elected by a majority vote at a shareholders’ meeting, provided that either:

1. at least one-third of the shares of non-controlling shareholders voted at the meeting, vote in favor of election of the director; or
2. the total number of shares of non-controlling shareholders voted against the election of the director does not exceed one percent of the aggregate voting rights in the company.

The initial term of an external director will be three years and may be extended for an additional three years. Each committee of a company's board of directors will be required to include at least one external director and the audit committee of a company's board of directors is required to include both the external directors. We have appointed Yair Shoham and Amir Friedman as external directors pursuant to the Companies Law.

An external director is entitled to compensation as provided in regulations to be adopted under the Companies Law and is otherwise prohibited from receiving any other compensation, directly or indirectly, in connection with service provided as an external director.

### **Independent Directors**

Our ordinary shares are listed for quotation on the Nasdaq National Market and thus we are subject to the rules of the Nasdaq National Market applicable to quoted companies as well as to the applicable provisions of the Sarbanes-Oxley Act of 2002 ("Sarbanes-Oxley") and the rules and regulations thereunder. Under the rules, we are required to appoint a minimum of three (3) Independent Directors. The independence standard under the rules excludes any person who is a current employee of the Company or who has been an employee of the Company for a certain period of time as well as the immediate family members of an executive officer of the Company. Messrs. Friedman, Shoham and Ben-Shalom and Dr. Wagner serve as Independent Directors and meet the independence standard of the above rules.

### **Audit Committee**

Under the Companies Law, the board of directors of any publicly traded company must appoint an audit committee, comprised of at least three directors including all of the external directors but excluding: (a) the chairman of the board of directors; (b) any controlling shareholder or relative of a controlling shareholder; or (c) any director employed by the company or who provides services to the company on a regular basis. Under the Nasdaq rules, we are required to have at least three independent directors on the audit committee. In addition, Nasdaq requires that the members of the audit committee (a) not have any relationship to the company that may interfere with the exercise of their independence, and (b) must be financially literate.

The roles of our audit committee under the Companies Law include identifying irregularities in the management of the company's business and approving related party transactions as required by law. The responsibilities of the audit committee under the Nasdaq rules include, among other things, evaluating the independence of a company's outside auditors.

In addition to such functions as the audit committee may have under the Companies Law or under the Nasdaq rules, the primary purpose of our audit committee is to assist the board of directors in fulfilling its responsibility to oversee management's conduct of the financial reporting process, the systems of internal accounting and financial controls and the annual independent audit of the company's financial statements. The audit committee reviews with management and our outside auditors the audited financial statements included in our Annual Report on Form 20-F and our interim quarterly financial results included on Form 6-K.

The audit committee must observe the independence of our outside auditors and has the authority and responsibility to nominate for shareholder approval, evaluate and, where appropriate, replace our outside auditors.

In discharging its oversight role, our audit committee is empowered to investigate any matter brought to its attention with full access to all books, records, facilities and personnel of our company and the power to retain outside counsel, auditors or other experts for this purpose.

Our audit committee currently consists of Amir Friedman, Yair Shoham and Yossi Ben Shalom.

### **Financial Expert**

Under Sarbanes-Oxley, one of the Audit Committee members must have accounting or related financial management expertise. Our Board of Directors has recognized Mr. Ben Shalom, based on all of the requirements set forth in the applicable rules and regulations, as our "financial expert" and we believe that we are in compliance with this requirement.

### Internal Auditor

Under the Companies Law, the board of directors of a public company must appoint an internal auditor, nominated by its audit committee. The role of the internal auditor is to examine, among other matters, whether the company's actions comply with the law and orderly business procedure. Under the Companies Law, the internal auditor may be an employee of the company but not an office holder, an affiliate, or a relative of an office holder or affiliate, and he may not be the company's independent accountant or its representative. We have appointed an internal auditor in accordance with the requirements of the Companies Law.

## D. EMPLOYEES

As of May 1<sup>st</sup>, 2003, we had 311 employees, including 42 employees in administration and accounting, 112 in sales and marketing, 95 in research and development and 62 in operations. Of these 311 employees, 243 were based in Israel, 27 in the United States and 41 in other countries.

We are subject to Israeli labor laws and regulations with respect to our Israeli employees. These laws principally concern matters such as paid annual vacation, paid sick days, length of the workday and work week, minimum wages, pay for overtime, insurance for work-related accidents, severance pay and other conditions of employment.

Furthermore, by order of the Israeli Ministry of Labor and Welfare, we and our Israeli employees are subject to provision of the collective bargaining agreements between the Histadrut, the General Federation of Labor in Israel and the Coordination Bureau of Economic Organizations, including the Industrialists Associations. These provisions principally concern cost of living increases, recreation pay and other conditions of employment. We believe that the benefits and working conditions that we provide to our employees are above the required minimum. Our employees are not represented by a labor union. We have written employment contracts with virtually all of our employees and we believe that our relations with our employees are satisfactory.

## E. SHARE OWNERSHIP

As of May 1<sup>st</sup>, 2003, the aggregate number of our ordinary shares beneficially owned by each of our directors and executive officers as of such date is set forth in the following table. For the purposes hereof, beneficial ownership by a person, as of a particular date, assumes the exercise of all options and warrants held by such person that are currently exercisable or are exercisable within 60 days of such date.

| Name of director/executive officer | Ordinary Shares<br>beneficially owned |         |
|------------------------------------|---------------------------------------|---------|
|                                    | Number                                | Percent |
| Dov Moran                          | 2,362,771                             | 8.58%   |
| Aryeh Mergi                        | 822,256                               | 2.99%   |
| Amir Friedman                      | *                                     | *       |
| Yair Shoham                        | *                                     | *       |
| Hans Wagner                        | *                                     | *       |
| Dana Gross                         | *                                     | *       |
| Ronit Maor                         | *                                     | *       |
| Yossi Ben-Shalom                   | *                                     | *       |

\* beneficially owned less than 1% of the Company's issued and outstanding ordinary shares as of May 1<sup>st</sup>, 2003.



### **Share Option Plans and Recent Changes in Israeli Law**

The Company previously had two incentive share option plans in place, the Incentive and Restricted Share Option Plan (the “IRSO Plan”) and the Section 102 Share Option Plan (the “102 Plan” and, together with the IRSO Plan, the “Old Plans”). The respective term of each of the Old Plans expired on February 15<sup>th</sup>, 2003.

In replacement of the Old Plans and in lieu of recent revisions (the “Tax Reform”) to the Israeli Income Tax Ordinance (New Version) 1961 (the “Tax Ordinance”) requiring the adoption of certain adjustments concerning the issuance of share options to Israeli employees, the Company adopted, by way of a resolution of the Board of Directors on November 5<sup>th</sup>, 2002 and a resolution of the shareholders of the Company on December 17<sup>th</sup>, 2002, its new omnibus 2003 Stock Option and Restricted Stock Incentive Plan (the “New 2003 Plan”). Following is a brief review of each of the Old Plans, of the New 2003 Plan and of the Tax Reform:

#### ***Incentive and Restricted Share Option Plan***

Under the IRSO Plan, we were authorized to grant options for up to 3,000,000 ordinary shares to our employees, directors and consultants. The exercise price per share for an incentive share option could not be less than the market value of the ordinary shares on the date the option was granted. Incentive options granted under the IRSO Plan in accordance with the terms thereof were intended to qualify as incentive stock options under Section 422 of the U.S. Internal Revenue Code of 1986, as amended (the “Code”). Any options that were cancelled or forfeited before expiration became available for future grant under the IRSO Plan. The IRSO Plan expired on February 15<sup>th</sup>, 2003.

As of December 31, 2002, we had outstanding options for 1,108,116 ordinary shares under the IRSO Plan, at an average exercise price of \$6.46 per ordinary share, and with expiration dates ranging from February, 2005 to December, 2012.

#### ***Section 102 Share Option Plan***

Under the 102 Plan, we were authorized to grant options to purchase an aggregate of 4,000,000 ordinary shares to our Israeli employees. The exercise prices of options granted under the 102 Plan were determined by our Board of Directors at the time of the grant, and such granted options usually expire no later than ten years from the date of grant. Any options that were cancelled or forfeited before expiration became available for future grant under the 102 Plan. The 102 Plan expired on February 15<sup>th</sup>, 2003.

Prior to the revision of the Tax Ordinance, pursuant to Section 102 thereof and the rules promulgated thereunder (including the requirement that the options and/or the resulting shares be deposited with a trustee for at least two years), the tax on the benefit arising to the employee from the grant and exercise of options as well as from the allotment of ordinary shares under these options is deferred until the transfer of the options and/or ordinary shares to the employee’s name or upon the sale of those options and/or ordinary shares. We will be allowed to claim as an expense for tax purposes the amounts credited to the employees as a benefit upon sale of the shares allotted under the 102 Plan at a price exceeding the exercise price, when the related capital gains tax is payable by the employee.

As of December 31, 2002, we had outstanding options for 2,705,538 ordinary shares under the 102 Plan, at an average exercise price of \$6.24 per ordinary share, and with expiration dates ranging from August, 2003 to December, 2012.

### ***The New 2003 Plan***

Under the New 2003 Plan, the Company has reserved five million (5,000,000) ordinary shares for the granting of awards to the employees, officers, directors, service providers and consultants of the Company and of any subsidiary of the Company. The New 2003 Plan is intended to enable the Company to issue awards under varying tax regimes, including without limitation (i) pursuant and subject to the provisions of the Tax Ordinance; (ii) incentive stock options within the meaning of Section 422 of the Code; (iii) nonqualified stock options; (iv) shares of restricted stock; and (v) other share-based awards. Apart from issuance under the relevant tax regimes in the State of Israel and the United States of America, the New 2003 Plan contemplates issuances of awards in other jurisdictions, with respect to which the Board of Directors is empowered to make the requisite adjustments in the New 2003 Plan and set forth the relevant conditions in the Company's agreement with the grantee in order to comply with the requirements of the tax regimes in any such jurisdictions.

Awards may be granted pursuant to the New 2003 Plan from time to time within a period of ten (10) years from the date the New 2003 Plan was adopted by the Board of Directors. The exercise prices of options granted under the New 2003 Plan is to be determined, subject to applicable law, by the Board of Directors at the time of the grant, and such granted options usually expire no later than ten years from the date of grant. Any of the ordinary shares reserved under the New 2003 Plan, which may remain unsold and which are not subject to outstanding options at the termination of the New 2003 Plan, shall cease to be reserved for the purpose of the New 2003 Plan. If any outstanding award under the New 2003 Plan should, for any reason, expire, be canceled or be forfeited without having been exercised in full, the ordinary shares allocable to the unexercised, canceled or terminated portion of such award shall (unless the New 2003 Plan shall have been terminated) become available for subsequent grants of awards under the New 2003 Plan.

### ***Revisions to the Tax Ordinance***

The Tax Reform created a new tax structure for taxing stock or stock options that the Company grants to its Israeli employees, while the existing tax structure will continue to apply to the issuance of options to external service providers and to the controlling owners of the Company, who are not considered to be 'employees' of the Company for the purposes of Section 102 of the Tax Ordinance. As a general rule, a company can choose to issue options or shares through a trustee or without a trustee. If such company chooses the trustee track, it must further opt for either the 'ordinary income track' or the 'capital gains track' and this decision is then binding on the company and on all similarly situated office-holders for the subsequent two years.

We have chosen to issue shares and options through a trustee, who has been authorized by the tax authorities in accordance with and for the period set by law and, as a result, neither the issuance of shares or options to those of our eligible employees, nor the exercise by such employees of their options, will be taxable. The tax will be imposed only when the shares are sold by the trustee or transferred to the employee, whichever is earlier. We have notified the tax authorities of our opting for the 'capital gains track' in accordance with the requirements of the Tax Ordinance.

As a result of our choosing the 'capital gains track,' in the event that the trustee holds the shares until the end of the required holding period, which is at least 2 years from the end of the tax year in which the shares or options were issued to the trustee, the value of the benefit to the employee will be considered to be capital gain and he or she will be taxed at a rate of 25%. In addition, we will not be able to deduct expenses for tax purposes. As our ordinary shares are registered on a stock exchange, a part of the profit that reflects the value of the benefit to the date of issuance will be considered as ordinary income by the employee and we will be able to deduct this as a salary expense, with the balance being deemed as capital gains and taxable at 25% which we will not be able to deduct as an expense. Had we chosen the 'ordinary income (employment income) track', the employee would have been considered as having received employment income in an amount equal to the benefit (consideration at date of sale, less share option exercise price and expenses from the purchase and sale). We would then have been entitled to deduct as a salary expense, the same amount as the employee would have received in income. The required holding period by the trustee under the 'ordinary income (employment income) track' is one year from the end of the tax year in which the options or shares were issued to the employee.

**The Employee Stock Purchase Plan — Global Non-U.S. (the “Global ESPP plan”); and the Employee Stock Purchase Plan — U.S. (the “U.S. ESPP plan”)**

The purpose of the ESPP plans is to enable our employees to purchase M-Systems’ shares through accumulated payroll deductions. The Global ESPP plan is available to all of our non-U.S. employees. The U.S. ESPP plan is available to our U.S. employees and contains certain provisions intended to qualify the U.S. ESPP plan as an “employee stock purchase plan” under Section 423 of the Code.

The terms of our ESPP plans (both Global and U.S.) provide that any of our employees (with certain restrictions in the U.S. ESPP Plan), if he or she so chooses, can elect before any “Offering Period” to have any whole percentage between 1% and 10% deducted from his salary and allocated to buy M-Systems shares. An “Offering Period” is a six-month period, with a new Offering Period beginning on May 15 and November 15 each year (unless changed by the Board of Directors). The price of the shares purchased by the employee — i.e., the number of shares that he will receive in return for the amounts deducted from his salary over the six-month Offering Period — will be determined at the end of the Offering Period and will be equal to the lower of 85% of the closing bid for of M-Systems’ shares on (1) the first day of the Offering Period; or (2) the last day of the Offering Period.

Under the Global ESPP plan, we may sell up to 550,000 shares to our employees. Under the U.S. ESPP plan, we may sell up to 200,000 shares to our employees.

The ESPP plans expire in 2011 unless earlier terminated by our Board of Directors.

## ITEM 7. MAJOR SHAREHOLDERS AND INTERESTED PARTY TRANSACTIONS

### A. MAJOR SHAREHOLDERS

The following table sets forth the number of ordinary shares owned beneficially by all shareholders known to us to own beneficially more than 5% of the outstanding ordinary shares on May 1<sup>st</sup>, 2003 .

| Name   | Ordinary Shares<br>beneficially owned |         |
|--|---------------------------------------|---------|
|  | Number                                | Percent |
| RS Investment Management Co. LLC <sup>(1)</sup>                            | 2,874,000                             | 10.44%  |
| Dov Moran  | 2,362,771                             | 8.58%   |
| All directors and executive officers as a group (8 persons) <sup>(2)</sup> | 3,578,740                             | 13.00%  |

<sup>(1)</sup> Based on information contained in the Report of Form 13-G filed by RS Investment Management Co. LLC, it is the general partner of RS Investment Management, L.P. and the majority shareholder of RS Investment Management, Inc. G. Randall Hecht is the chief executive officer and a control person of RS Investment Management Co. LLC, RS Investment Management, L.P., and RS Investment Management, Inc.

<sup>(2)</sup> Also includes options granted to such directors and executive officers of the Company, which are exercisable within 60 days of May 1<sup>st</sup>, 2003.

As of May 1<sup>st</sup>, 2003, our ordinary shares were held by approximately 74 holders of record. Based on a review of the information provided to us by our transfer agent, 54 holders of record, holding approximately 85.56% of our outstanding ordinary shares, were residents of the United States.

### B. RELATED PARTY TRANSACTIONS

In October, 2000, we purchased 586,080 preferred shares of Saifun for approximately \$10 million. This investment was part of a transaction in which Saifun sold 2,327,323 of its preferred shares to various venture capital and strategic investors for aggregate consideration of approximately \$39.7 million. Saifun is a private, venture-backed Israeli company engaged in research, development, production and marketing of flash memory products and technology. Boaz Eitan, who was at the time of this transaction a member of our Board of Directors, is the founder, chief executive officer and a director of Saifun. This transaction was approved by our Audit Committee and Board of Directors, in the absence of Dr. Eitan in both cases, in accordance with the provisions of the Companies Law governing approval of related party transactions. As of the date hereof, Mr. Eitan is no longer a member of the Company's Board of Directors.

On May 1<sup>st</sup>, 2003, we entered into a Share Purchase Agreement (the "PPM") with Dr. Hans Wagner, a member of our Board of Directors, according to which Dr. Wagner is to purchase 500,000 of our ordinary shares, at a purchase price per share of \$8.21, for an aggregate investment amount of \$4,105,000 (a copy of the PPM is attached to this Annual Report as Exhibit 4(b)(i)). The closing of this transaction occurred prior to the filing of this Annual Report. This transaction was approved by our Audit Committee and Board of Directors, in the absence of Dr. Wagner, in accordance with the provisions of the Companies Law governing approval of related party transactions.

**Insurance.** We have obtained directors and officers liability insurance for the benefit of our office holders and intend to continue and obtain such insurance and pay all premiums thereunder to the fullest extent permitted by the Companies Law. Under the Companies Law, an Israeli company may not exempt an office holder from liability for a breach of his duty of loyalty, but may exempt in advance an office holder from his liability to the company, in whole or in part, for a breach of his duty of care.

Our Articles of Association provide that, subject to the provisions of the Companies Law, we may enter into a contract for the insurance of the liability of any of our office holders for acts which he or she performed in his or her capacity as an office holder in relation to:

- A breach of his/her duty of care to us or to another person;
- a breach of his/her duty of loyalty to us, provided that the office holder acted in good faith and had reasonable cause to assume that his/her act would not prejudice our interests; or
- A financial liability imposed upon him/her in favor of another person.

## **C. INTEREST OF EXPERT AND COUNSEL**

– Not applicable

## **ITEM 8. FINANCIAL INFORMATION**

### **A. CONSOLIDATED STATEMENTS AND OTHER FINANCIAL INFORMATION**

Our consolidated audited financial statements are included in this annual report in “Item 18: Financial Statements.”

#### **Legal Proceedings**

Other than the litigation set forth in Item 4.B above in the paragraph titled “Intellectual Property Rights and Current Litigation,” we are not involved in any legal proceedings that we believe, individually or in the aggregate, will have a material adverse effect on the Company.

#### **Dividend Distribution Policy**

We have never declared or paid any cash dividends on our ordinary shares and we do not intend to pay cash dividends on our shares in the foreseeable future. We currently intend to retain any future earnings to finance operations and to expand our business. If we declare cash dividends, they could be taxable to the recipient. Because we have received benefits under the Investment Law (see item 10.E below the paragraph titled “Law for the Encouragement of Capital Investments, 1959”), payment of cash dividends during the exemption period granted under the Investment Law will subject that portion of our income derived from the ‘approved enterprise’ status granted to us under the Investment Law, to Israeli taxes to which the income would not otherwise be subject. We intend to reinvest the amount of the tax-exempt income derived from our “approved enterprises” status permanently and not to distribute such income as dividends.

Under the provisions of our Articles of Association, the declaration of any final cash dividends in respect of any fiscal period requires shareholder approval, which may reduce but not increase such dividend from the amount proposed by our Board of Directors; provided that any failure by our shareholders to approve a final dividend will not affect any interim dividend which has been paid.

## **B. SIGNIFICANT CHANGES**

– Not applicable

## ITEM 9. THE OFFER AND LISTING

A. 4. The following table lists the high and low last reported sales prices on Nasdaq for the periods indicated:

| <u>Yearly Figures</u> | <u>High</u> | <u>Low</u> |
|-----------------------|-------------|------------|
| 1998:                 | \$8.09      | \$2.75     |
| 1999:                 | \$34.00     | \$3.63     |
| 2000:*                | \$44.25     | \$11.94    |
| 2001:                 | \$16.56     | \$3.92     |
| 2002:                 | \$12.59     | \$4.95     |

| <u>Quarterly Figures</u> | <u>High</u> | <u>Low</u> |
|--------------------------|-------------|------------|
| 2001:                    |             |            |
| First Quarter            | \$16.56     | \$5.78     |
| Second Quarter           | \$11.96     | \$6.02     |
| Third Quarter            | \$8.13      | \$3.92     |
| Fourth Quarter           | \$11.69     | \$4.13     |

|                |             |            |
|----------------|-------------|------------|
| 2002:          | <u>High</u> | <u>Low</u> |
| First Quarter  | \$12.59     | \$7.15     |
| Second Quarter | \$9.86      | \$7.27     |
| Third Quarter  | \$8.68      | \$6.21     |
| Fourth Quarter | \$8.68      | \$4.95     |

| <u>Monthly Figures</u> | <u>High</u> | <u>Low</u> |
|------------------------|-------------|------------|
| 2002-2003:             |             |            |
| Most Recent 6 months:  |             |            |
| November 2002          | \$8.68      | \$6.15     |
| December 2002          | \$8.68      | \$6.89     |
| January 2003           | \$8.25      | \$5.82     |
| February 2003          | \$6.50      | \$5.63     |
| March 2003             | \$6.40      | \$5.20     |
| April 2003             | \$8.84      | \$6.00     |

\* We effected a two-for-one stock split in September 2000. Accordingly, the share price information for 2000 is adjusted to reflect such stock split. The share price information for the years 1999 and 1998 remain unadjusted and reflect the pre-split highs and lows for said years.

On May 1<sup>st</sup>, 2003, the last reported sale price of our ordinary shares was \$8.34 per share. There is currently no trading market for our ordinary shares outside the United States.

**B. – Not applicable**

**C.** Our ordinary shares were quoted on the Nasdaq Small-Cap Market under the symbol “FLSHF” from our initial public offering in March 1993 through our secondary public offering in August 1996. Since August 8, 1996, our ordinary shares have been quoted on the Nasdaq National Market. On March 24, 1999, our ticker symbol was changed to “FLSH.”

**D. – Not applicable**

**E. – Not applicable**

**F. – Not applicable**

## **ITEM 10. ADDITIONAL INFORMATION**

### **A. SHARE CAPITAL**

**– Not applicable**

### **B. MEMORANDUM AND ARTICLES OF ASSOCIATION**

#### **Objects and Purposes**

The objects and purposes of our company appear in our Memorandum of Association and include taking all actions permissible under applicable laws.

#### **Approval of Specified Related Party Transactions**

The Companies Law imposes a duty of care and a duty of loyalty on all of a company’s office holders as defined below, including directors and executive officers. The duty of care requires an office holder to act with the level of care that a reasonable office holder in the same position would have acted under the same circumstances. The duty of loyalty generally requires an office holder to act in good faith and for the good of the company. An “office holder” as defined in the Companies Law is a director, a general manager, a chief executive officer, a deputy general manager, a vice general manager, other managers directly subordinate to the general manager and any person who fills one of the above positions without regard to title.

The Companies Law requires that an office holder of a company promptly disclose any personal interest that he may have and all related material information known to him, in connection with any existing or proposed transaction by the company. Once an office holder complies with these disclosure requirements, the board of directors may approve a transaction between the company and the office holder, or a third party in which an office holder has a personal interest, unless the articles of association provide otherwise. A transaction that is adverse to the company’s interest cannot be approved. If the transaction is an extraordinary transaction under the Companies Law, then, in addition to any approval stipulated by the articles of association, it also requires audit committee approval before board approval and, in specified circumstances, subsequent shareholder approval. Any transaction between a company and one of its directors relating to the conditions of the director’s service, including in relation to exculpation, insurance or indemnification, or in relation to the terms of the director’s service in any other capacity requires audit committee approval before board approval and subsequent shareholder approval.

The Companies Law also provides that a director with an interest in an extraordinary transaction brought before the board of directors or the audit committee for its approval may not vote on the approval and may not be present for the discussion of the issue. However, this rule would not apply if a majority of the directors or a majority of the members of the audit committee also possessed an interest in the transaction.

Under our Articles of Association, our Board of Directors may exercise all powers and take all actions that are not required under law or under our Articles of Association to be exercised or taken by our shareholders, including the power to borrow money for the purposes of our company.

Our directors are not subject to any age limit requirement, nor are they disqualified from serving on the Board of Directors because of a failure to own certain amount of our shares.

### **Rights, Preferences and Restrictions on Shares**

Our Articles of Association authorize one class of shares, which are our ordinary shares. We may declare a dividend to be paid to the holders of our ordinary shares and allocated among them in proportion to the sums paid up or credited as paid up on account of the nominal value of their respective shareholdings, without taking into account any premium paid for the shares. Our Board of Directors may declare dividends only out of retained earnings, or earnings derived over the two most recent fiscal years, whichever is higher. Our Articles of Association provide that our Board of Directors may propose a final dividend in respect of any fiscal period but that such dividend shall be payable only after approved by our shareholders. All unclaimed dividends may be invested or otherwise used by the Board of Directors for our benefit until those dividends are claimed. In the event an unclaimed dividend is claimed, only the principal amount of the dividend will be paid to the person entitled to the dividend.

If we liquidate, after satisfying liabilities to creditors and subject to the rights of holders of shares, if any, with any special rights upon winding up, our assets will be distributed to the holders of ordinary shares in proportion to their holdings.

Holders of ordinary shares have one vote for each - paid-up ordinary share held of record on all matters submitted to a vote of our shareholders. These voting rights may be affected by the grant of any special voting rights to the holders of a class of shares with preferential rights that may be authorized in the future.

Our Articles of Association provide that directors are elected by an ordinary resolution of a general meeting of our shareholders. Our ordinary shares do not have cumulative voting rights in the election of directors. Accordingly, the holders of ordinary shares representing more than 50% of the voting power in our company have the power to elect all directors.

We may, subject to the applicable provisions of the Companies Law, issue redeemable shares and subsequently redeem them. In addition, our Board of Directors may make calls for upon shareholders in respect of any sum that has not been paid up in respect of any shares held by those shareholders.

Under the Companies Law, the disclosure requirements that apply to an office holder also apply to a controlling shareholder of a public company. A controlling shareholder includes a shareholder that holds 25% or more of the voting rights in a public company if no other shareholder owns more than 50% of the voting rights in the company. Extraordinary transactions with a controlling shareholder or in which a controlling shareholder has a personal interest, and the terms of compensation of a controlling shareholder who is an office holder, require the approval of the audit committee, the board of directors and the shareholders of the company. The shareholder approval requires that: (a) the majority of shares voted at the meeting, including at least one third of the shares of disinterested shareholders voted at the meeting, vote in favor of the transaction; or (b) the total number of shares of disinterested shareholders voted against the transaction does not exceed one percent of the aggregate voting rights in the company.

The Companies Law also requires a shareholder to act in good faith towards a company in which he holds shares and towards other shareholders and to refrain from abusing his power in the company, including in connection with voting at a shareholders' meeting on:

- Any amendment to the Articles of Association;
- An increase in the company's authorized capital;
- A merger; or
- Approval of some of the acts and transactions that require shareholder approval.

A shareholder has the general duty to refrain from depriving other shareholders of their rights. Any controlling shareholder, any shareholder that knows that it possesses the power to determine the outcome of a shareholder vote and any shareholder that, under the provisions of the articles of association, has the power to appoint an office holder in the company, is under a duty to act in fairness towards the company. The Companies Law does not describe the substance of this duty.



### **Modifications of Share Rights**

Under our Articles of Association, the rights attached to any class may be varied by adoption of the necessary amendment of the Company's Articles of Association, provided that the holders of shares of the affected class approve the change by a class meeting in which the holders of at least 75% of the shareholders present at the meeting, in person or by proxy, and voting on the issue approve the change. Our Articles of Association differ from the Companies Law in this respect, as under the law changes in the rights of shareholders require the consent of at least 50% of the voting power of the affected class represented at the meeting and voting on the change. Our Articles of Association require for quorum at a meeting of a particular class of shares the presence of two shareholders holding at least 25% of the voting power of that class. Our Articles of Association - may be amended by majority of the voting power of our company represented at a shareholders meeting and voting thereon, except that the provisions of our Articles of Association relating to mergers and acquisitions can only be amended by a vote of 75% of the voting power of our company represented at a meeting and voting thereon.

### **Shareholders Meetings and Resolutions**

We are required to hold an annual general meeting of our shareholders once every calendar year, but no later than 15 months after the date of the previous annual general meeting. All meetings other than the annual general meeting of shareholders are referred to as extraordinary general meetings. Our Board of Directors may call extraordinary general meetings whenever it sees fit, at such time and place, within or without the State of Israel, as it may be determined. In addition, the Companies Law provides that the board of directors of a public company is required to convene an extraordinary meeting upon the request of (a) any two directors of the company or one quarter of the company's board of directors or (b) one or more shareholders holding, in the aggregate, (i) five percent of the outstanding shares of the company and one percent of the voting power in the company or (ii) five percent of the voting power in the company.

The quorum required by our Articles of Association for a meeting of shareholders consists of at least two shareholders present in person or by proxy who hold or represent between them at least 25% of the voting power in our company. A meeting adjourned for lack of quorum is adjourned to the same day in the following week at the same time and place or any time and place as the chairman of the meeting decides. At such reconvened meeting, the required quorum consists of any two shareholders present in person or by proxy.

Our Articles of Association enable our Board of Directors to fix a record date to allow us to determine the shareholders entitled to notice of, or to vote at, any general meeting of our shareholders. The record date may not be more than 40 days, or any longer period permitted under the Companies Law, nor less than 4 days before the date of the meeting. Each shareholder of record as of the record date determined by the Board of Directors may vote the shares then held by that shareholder unless all calls and other sums then payable by the shareholder in respect of its shares have not been paid.

### **Limitation on Ownership of Securities**

The ownership and voting of our ordinary shares by non-residents of Israel are not restricted in any way by our Articles of Association or by the laws of the State of Israel, except for shareholders who are subjects of countries which are enemies of the State of Israel.

### **Mergers and Acquisitions; Anti-takeover Provisions**

The Companies Law includes provisions allowing corporate mergers. These provisions require that the board of directors of each company that is party to the merger approve the transaction. In addition, the shareholders of each company must approve the merger. Our Articles of Association require approval of a merger or acquisition by a vote of the 75% of our company's voting power, present and voting on the proposed merger at a shareholders' meeting. In determining whether the requisite majority has approved the merger, shares held by the other party to the merger or by any person holding at least 25% of such other party are excluded from the vote. The Companies Law does not require court approval of a merger other than in specified situations. However, upon the request of a creditor of either party to the proposed merger, a 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 to their creditors.

A merger may not be completed unless at least 70 days have passed from the time that a Merger Proposal (as defined in the Companies Law) has been filed with the Israeli registrar of companies.

The Companies Law also provides that the acquisition of shares in a public company on the open market (i.e., from other shareholders of the company) must be made by means of a tender offer if, as a result of the acquisition, the purchaser would become a 25% shareholder of the company. The rule does not apply if there already is another 25% shareholder of the company. Similarly, the 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 45% shareholder of the company, unless there already is a 50% shareholder of the company.

If, following any acquisition of shares, the purchaser would hold 90% or more of the shares of the company that acquisition must be made by means of a tender offer for all of the target company's shares. An acquirer who wishes to eliminate all minority shareholders must do so by means of a tender offer and acquire 95% of all shares not held by or for the benefit of the acquirer prior to the acquisition. However, in the event that the tender offer to acquire that 95% is not successful, the acquirer may not acquire tendered shares if by doing so the acquirer would own more than 90% of the shares of the target company.

### **Changes in Capital**

Our Articles of Association enable us to increase or reduce our share capital. Any such changes are subject to the provisions of the Companies Law and must be approved by a resolution passed by a majority of the voting power of our company present, in person or by proxy, at a general meeting and voting on such change in the capital. In addition, certain transactions which have the effect of reducing capital, such as the declaration and payment of dividends under certain conditions and the issuance of shares for less than their nominal value, require a resolution of the Board of Directors and court approval.

## **C. MATERIAL CONTRACTS**

In April 2001, we signed an agreement with Aspen Nadlan Ltd. and Narkis Marom Mivnei Ta'asiya Ltd. to purchase the building in which our headquarters' executive offices, research, development and manufacturing facilities are located. As part of the agreement, we also purchased a vacant lot adjacent to our offices. The aggregate consideration for these purchases was approximately \$10.5 million that we financed ourselves. Some of the consideration has been placed in an escrow fund pending the receipt by the sellers of these properties of certain permits and third party approvals. In addition, in April 2001 we entered into a development and supply agreement with Atmel Sarl. Under this agreement, Atmel is to layout, develop, manufacture, test and supply the ASIC components for our DiskOnKey products.

Other than the agreement referred to above, in the past two years we have not entered into any material contracts other than contracts entered into in the ordinary course of our business.

## **D. EXCHANGE CONTROLS**

Under Israeli law, foreign currency transactions are generally permitted, except for transactions that are specifically restricted. Among these restricted transactions are foreign currency transactions by institutional investors, including investments outside of Israel by pension funds and insurers, as well as futures contracts by foreign residents for periods of more than one month.

Holders of ordinary shares are able to convert dividends and liquidation distributions into freely repatriable non-Israeli currencies at the rate of exchange prevailing at the time of repatriation, pursuant to a general permit issued by the Controller of Foreign Exchange at the Bank of Israel under the Currency Control Law, 1978, provided that Israeli income tax has been withheld by us with respect to such amounts.

Our ordinary shares may be freely held and traded pursuant to the General Permit and the Currency Control Law. The ownership or voting of ordinary shares by non-residents of Israel, except with respect to citizens of countries that are in a state of war with Israel, are not restricted in any way by our Memorandum of Association or Articles of Association or by the laws of the State of Israel.

## E. TAXATION

The following is a summary of the current tax structure applicable to companies in Israel, with special reference to its effect on us. The following also contains a discussion of certain Israeli Government programs benefiting us. To the extent that the discussion is based on new tax legislation that has not been subject to judicial or administrative interpretation, there can be no assurance that the views expressed in the discussion will be accepted by the tax authorities in question. The discussion is not intended, and should not be construed, as legal or professional tax advice and is not exhaustive of all possible tax considerations.

### **General Corporate Tax Structure**

Israeli companies are subject to corporate tax at the rate of 36%. However, the effective rate of tax of a company that derives income from an 'approved enterprise' (as referred to below) may be considerably lower (see in this Item 10.E below the paragraph titled "Law for the Encouragement of Capital Investments, 1959").

### **Law for the Encouragement of Industry (Taxes), 1969**

We currently qualify as an "industrial company" under the Law for the Encouragement of Industry (Taxes), 1969 (the "Industry Encouragement Law"). A company qualifies as an "industrial company" if it is resident in Israel and at least 90% of its income in a given tax year, determined in NIS (other than income from certain types of loans, capital gains, interest and dividends), is derived from industrial enterprises owned by that company. An "industrial enterprise" is defined as an enterprise whose major activity in a particular tax year is industrial manufacturing activity. See Note 12 to our Consolidated Financial Statements.

Under the Industry Encouragement Law, an industrial company is entitled to deduct the purchase price of patents and certain other intangible property rights (other than goodwill) over a period of eight years, beginning with the year in which such rights were first used.

An industrial company may be eligible for special depreciation rates for machinery, equipment and buildings. These rates differ based on various factors, including the date of commencement of operation and the number of work shifts. An industrial company owning an 'approved enterprise' may choose between such special depreciation rates and the depreciation rates available to 'approved enterprises'.

Qualification as an industrial company under the Industry Encouragement Law is not conditioned upon the receipt of prior approval from any Israel government authority. No assurance can be given that we will continue to qualify as an industrial company or that we will, in the future, be able to take advantage of any tax benefits available to industrial companies.

### **Law for the Encouragement of Capital Investments, 1959**

The Investment Law provides that a capital investment in eligible facilities may, upon application to the Investment Center, be designated as an 'approved enterprise'. Each certificate of approval for an 'approved enterprise' relates to a specific investment program delineated both by its financial scope, including its capital resources, and by its physical characteristics, *e.g.*, the equipment to be purchased and utilized pursuant to the program. The tax benefits derived from any such certificate of approval relate only to taxable income attributable to the specific 'approved enterprise'. If a company has more than one approval, its effective tax rate is the result of a weighted combination of the applicable rates. Income derived from activity that is not integral to the activity of the enterprise should not be divided between the different enterprises and should not enjoy tax benefits.

Most of our current production facilities have been granted the status of an 'approved enterprise' under the Investment Law, in six separate investment programs. Under the Investment Law, we have chosen the "alternative benefits" option and have waived Government grants in return for a tax exemption. These programs provide us with the tax benefits described below. Under the terms of our 'approved enterprise' programs, our income from 'approved enterprises' will be tax exempt for periods of 2-4 years (except with respect to income from our Omer facility, which will be tax-exempt for 10 years), commencing with the year in which we first earn taxable income from the relevant 'approved enterprise', and is subject to a reduced tax rate for an additional period of up to a total of ten years from when the tax exemption began. The reduced tax rate is imposed at a rate of between 10% and 25%, depending on the percentage of M-Systems' shares held by non-Israelis during that remaining period (the more shares held by non-Israelis, the lower the tax rate). The tax benefits periods described above will end upon the earlier of (a) 12 years from the year of commencement of production, or (b) 14 years from the year of approval of 'approved enterprise' status).

A company that has elected the alternative package of benefits, like we have, and that subsequently pays dividend out of income derived from the 'approved enterprise' during the tax exemption period, will be subject to tax in respect of the amount distributed (including the tax thereon) at the rate that would have been applicable had it not elected the alternative package of benefits (generally 10%-25%, depending on the extent of foreign shareholders holding our ordinary shares). The dividend recipient is taxed at the reduced rate applicable to dividends from 'approved enterprises' (15%), if the dividend is distributed during the tax exemption period or within 12 years thereafter.

The Investment Law also provides that an 'approved enterprise' is entitled to accelerated tax depreciation on property and equipment included in an approved investment program.

Any future applications we make to the Investment Center will be reviewed separately, and decisions as to whether or not to approve such applications will be based, among other things, on the then prevailing criteria set forth in the Investment Law, on the specific objectives we set forth in such applications and on certain financial criteria. Accordingly, there can be no assurance that any such applications will be approved. In addition, the benefits available to an 'approved enterprise' are conditional upon our fulfilling certain conditions stipulated in the Investment Law and its regulations and the criteria set forth in the specific certificate of approval, as described below. If we were to violate those conditions, in whole or in part, we would be required to refund the amount of tax benefits, with the addition of the CPI linkage adjustment and interest. We believe that our 'approved enterprises' operate in substantial compliance with all of these conditions and criteria.

As a result of the Investment Law benefits, as well as our accumulated net operating loss carry forwards, we do not anticipate being subject to income taxation in Israel until approximately 2005.

As of December 31, 2001, we generated a total of approximately \$35 million of net operating loss carryforwards in Israel. These Israeli net operating loss carryforwards have no expiration date. The tax benefits granted to an 'approved enterprise' are not available to us with respect to the income of our subsidiaries. The actual amount of the benefits associated with the 'approved enterprise' program will depend upon a number of factors, including whether these tax incentives are renewed or if the tax authorities successfully challenge the manner in which profits are recognized among our subsidiaries or within specified tax jurisdictions.

### **Taxation under Inflationary Conditions**

The Income Tax (Inflationary Adjustments) Law, 1985 (the "Inflationary Adjustments Law"), was designed to neutralize the erosion of capital investments in business and to prevent tax benefits resulting from deduction of inflationary expenses. This law applies a supplementary set of inflationary adjustments to the normal taxable profits computed under regular historical cost principles.

The Inflationary Adjustments Law introduced a special tax adjustment for the preservation of equity based on changes in the Israeli CPI, whereby certain corporate assets are classified broadly into fixed (inflation-resistant) assets and non-fixed assets. Where a corporation's equity exceeds the depreciated cost of fixed assets, a tax deduction that takes into account the effect of the annual rate of inflation on such excess is allowed (up to a ceiling of 70% of taxable income for companies in any single year, with the unused portion carried forward on a linked basis, without limit). If the depreciated cost of fixed assets exceeds shareholders' equity, then such excess, multiplied by the annual inflation rate, is added to taxable income.

Under the Inflationary Adjustments Law, results for tax purposes are measured in real terms, in accordance with changes in the Israeli CPI. We are taxed under this law. The discrepancy between the change in (1) the Israeli CPI and (2) the exchange rate of Israeli currency in relation to the dollar, may in future periods cause significant differences between taxable income and the income measured in dollars as reflected by our financial statements (which are measured in dollars). In addition, subject to certain limitations, depreciation of fixed assets and losses carried forward are adjusted for inflation on the basis of changes in the Israeli CPI.

### **Withholding and Capital Gains Taxes Applicable to Non-Israeli Shareholders**

The State of Israel imposes income tax on nonresidents of Israel on income accrued or derived from sources in Israel. These sources of income include passive income such as dividends, royalties and interest, as well as non-passive income from services rendered in Israel. We are required to withhold income tax at the rate of 25%, or 15% for dividends of income generated by an 'approved enterprise', on all distributions of dividends other than bonus shares (stock dividends), unless a different rate is provided in a treaty between Israel and the shareholder's country

of residence. Under the income tax treaty between the United States and Israel, the maximum tax on dividends paid to a holder of ordinary shares who is a U.S. resident (as defined in the treaty) is 25%.

### **Capital Gains Taxes on Sales of our Ordinary Shares**

Israeli law imposes a capital gains tax on the sale of securities and other capital assets. In general, the capital gains tax rate on the sale of publicly-traded securities of an Israeli company is 15%. Non-residents of Israel, however, are exempt from Israeli capital gains tax on the sale of our shares.

A nonresident of Israel who receives interest, dividend or royalty income derived from or accrued in Israel, from which tax was withheld at the source, is generally exempted from the duty to file tax returns in Israel with respect to such income, provided such income was not derived from a business conducted in Israel by the taxpayer and the taxpayer has no other taxable sources of income in Israel.

Israel presently has no estate or gift tax.

### **United States Federal Income Tax Considerations**

The following discussion describes the material United States federal income tax consequences to a holder of our ordinary shares, referred to for purposes of this discussion as a “U.S. Holder”, that is:

- A citizen or resident of the United States;
- A corporation created or organized in or under the laws of the United States or of any state thereof;
- An estate, the income of which is includible in gross income for United States federal income tax purposes regardless of its source; or
- A trust, if a court within the United States is able to exercise primary supervision over the administration of the trust and one or more U.S. persons have the authority to control all substantial decisions of the trust.

This summary does not purport to be a comprehensive description of all of the tax considerations that may be relevant to each person’s decision to purchase ordinary shares. This summary considers only U.S. Holders that will own ordinary shares as capital assets.

This discussion does not address all aspects of United States federal income taxation that may be relevant to any particular shareholder based on such shareholder’s individual circumstances. In particular, this discussion does not address the potential application of the alternative minimum tax or United States federal income tax consequences to U.S. Holders that are subject to special treatment, including:

- Taxpayers who are broker-dealers or insurance companies;
- Taxpayers who have elected mark-to-market accounting;
- Tax-exempt organizations;
- Financial institutions or “financial services entities”;
- Taxpayers who hold ordinary shares as part of a straddle, “hedge” or “conversion transaction” with other investments;
- Taxpayers who own directly, indirectly or by attribution at least 10% of our voting power; and
- Taxpayers whose functional currency is not the U.S. dollar.

In addition, this discussion does not address any aspect of state, local or non-United States tax laws.

Additionally, this discussion does not consider the tax treatment of partnerships or persons who hold ordinary shares through a partnership or other pass-through entity or the possible application of United States federal gift or estate tax.

**INDIVIDUAL HOLDERS ARE ADVISED TO CONSULT WITH THEIR OWN TAX ADVISOR WITH RESPECT TO THE SPECIFIC TAX CONSEQUENCES TO THEM OF PURCHASING, HOLDING OR DISPOSING OF OUR ORDINARY SHARES.**

## **Taxation of Ordinary Shares**

### ***Taxation of Dividends Paid On Ordinary Shares***

A U.S. Holder will be required to include in gross income as ordinary income the amount of any distribution paid on ordinary shares, including the amount of foreign taxes, if any, withheld from the amount paid, on the date the distribution is received to the extent the distribution is paid out of our current or accumulated earnings and profits as determined for United States federal income tax purposes. Distributions in excess of such earnings and profits will be applied against and will reduce the U.S. Holder's basis in the ordinary shares and, to the extent in excess of such basis, will be treated as gain from the sale or exchange of a capital asset.

Distributions of current or accumulated earnings and profits paid in foreign currency to a U.S. Holder will be includible in the income of a U.S. Holder in a U.S. dollar amount calculated by reference to the exchange rate on the day the distributions received. A U.S. Holder that receives a foreign currency distribution and converts the foreign currency into U.S. dollars subsequent to receipt will have foreign exchange gain or loss based on any appreciation or depreciation in the value of the foreign currency against the U.S. dollar, which will generally be U.S. source ordinary income or loss.

U.S. Holders will have the option of claiming the amount of any Israeli income taxes withheld at source either as a deduction from gross income or as a dollar-for-dollar credit against their United States federal income tax liability. Individuals who do not claim itemized deductions, but instead utilize the standard deduction, may not claim a deduction for the amount of the Israeli income taxes withheld, but such amount may be claimed as a credit against the individual's United States federal income tax liability. The amount of foreign income taxes that may be claimed as a credit in any year is subject to complex limitations and restrictions, which must be determined on an individual basis by each shareholder. These limitations include, among others, rules that limit foreign tax credits allowable with respect to specific classes of income to the United States federal income taxes otherwise payable with respect to each such class of income. The total amount of allowable foreign tax credits in any year cannot exceed regular U.S. tax liability for the year attributable to foreign source taxable income. A U.S. Holder will be denied a foreign tax credit with respect to Israeli income tax withheld from dividends received on the ordinary shares to the extent such U.S. Holder has not held the ordinary shares for at least 16 days of the 30-day period beginning on the date which is 15 days before the ex-dividend date or to the extent such U.S. Holder is under an obligation to make related payments with respect to substantially similar or related property. Any days during which a U.S. Holder has substantially diminished its risk of loss on the ordinary shares are not counted toward meeting the 16-day holding period required by the statute. In addition, distributions of current or accumulated earnings and profits will be foreign source passive income for United States foreign tax credit purposes and will not qualify for the dividends received deduction available to corporations.

### ***Taxation of the Disposition of Ordinary Shares***

Generally, upon the sale, exchange or other disposition of our ordinary shares, a U.S. Holder will recognize capital gain or loss in an amount equal to the difference between such U.S. Holder's basis in the ordinary shares, which is usually the cost of such shares, and the amount realized on the disposition. If, as anticipated, the ordinary shares are publicly traded, a disposition of shares will be considered to occur on the "trade date," regardless of the holder's method of accounting. Capital gain from the sale, exchange or other disposition of ordinary shares held more than one year is long-term capital gain and is eligible for a maximum 20% rate of taxation for non-corporate holders. Gain or loss recognized by a U.S. Holder on a sale, exchange or other disposition of ordinary shares generally will be treated as United States source income or loss for United States foreign tax credit purposes. The deductibility of a capital loss recognized on the sale, exchange or other disposition of ordinary shares is subject to limitations.

### ***Information Reporting and Backup Withholding***

Dividend payments with respect to the ordinary shares and proceeds from the sale, exchange or redemption of ordinary shares may be subject to information reporting to the Internal Revenue Service ("IRS") and possible U.S. backup withholding. Backup withholding will not apply, however, to a U.S. Holder who furnishes a correct taxpayer identification number and makes any other required certification or who is otherwise exempt from backup withholding. Generally, a U.S. Holder will provide such certification on IRS Form W-9 (Request for Taxpayer Identification Number and Certification).

Amounts withheld under the backup withholding rules may be credited against a U.S. Holder's tax liability, and a U.S. Holder may obtain a refund of any excess amount withheld under the backup withholding rules by filing the appropriate claim for refund with the IRS.

#### ***Tax Consequences of Passive Foreign Investment Company (PFIC) Status***

We will be deemed a passive foreign investment company, or PFIC, if 75% or more of our gross income in a taxable year, including our pro rata share of the gross income of any company, U.S. or foreign, in which we are considered to own 25% or more of the shares by value, is passive income. Alternatively, we will be deemed to be a PFIC if at least 50% of our assets in a taxable year, averaged over the year and ordinarily determined based on fair market value and including our pro rata share of the assets of any company in which we are considered to own 25% or more of the shares by value, are held for the production of, or produce, passive income. Passive income includes, among other things, amounts derived by reason of the temporary investment of funds raised in offerings of our ordinary shares. If we were a PFIC, and a U.S. Holder did not make an election to treat us as a "qualified electing fund" (as described below):

- Excess distributions by us to a U.S. Holder would be taxed in a special way. "Excess distributions" are amounts received by a U.S. Holder with respect to our stock in any taxable year that exceed 125% of the average distributions received by such U.S. Holder from us in the shorter of either the three previous years or such U.S. Holder's holding period for ordinary shares before the present taxable year. Excess distributions must be allocated ratably to each day that a U.S. Holder has held our stock. A U.S. Holder must include amounts allocated to the current taxable year in its gross income as ordinary income for that year. A U.S. Holder must pay tax on amounts allocated to each prior taxable year in which we were a PFIC at the highest rate in effect for that year on ordinary income and the tax is subject to an interest charge at the rate applicable to deficiencies for income tax.
- The entire amount of gain realized by a U.S. Holder upon the sale or other disposition of ordinary shares will also be treated as an excess distribution and will be subject to tax as described above.
- The tax basis in shares of our stock that were acquired from a decedent who was a U.S. Holder would not receive a step-up to fair market value as of the date of the decedent's death but would instead be equal to the decedent's basis, if lower than fair market value.

The special PFIC rules described above will not apply to a U.S. Holder if the U.S. Holder makes an election to treat us as a 'qualified electing fund' ("QEF") in the first taxable year in which the U.S. Holder owns ordinary shares and if we comply with certain reporting requirements. Instead, a shareholder of a qualified electing fund is required for each taxable year to include in income a pro rata share or the ordinary earnings of the qualified electing fund as ordinary income and a pro rata share or the net capital gain of the qualified electing fund as long-term capital gain, subject to a separate election to defer payment of taxes, which deferral is subject to an interest charge.

The QEF election is made on a shareholder-by-shareholder basis and can be revoked only with the consent of the Internal Revenue Service, or IRS. A shareholder makes a QEF election by attaching a completed IRS Form 8621, including the PFIC annual information statement, to a timely filed United States federal income tax return and by filing such form with the IRS Service Center in Philadelphia, Pennsylvania. Even if a QEF election is not made, a shareholder in a PFIC who is a U.S. person must file a completed IRS Form 8621 every year.

A U.S. Holder of PFIC stock which is publicly traded could, instead of making a QEF election, elect to mark the stock to market annually, recognizing as ordinary income or loss each year an amount equal to the difference as of the close of the taxable year between the fair market value of the PFIC stock and the U.S. Holder's adjusted tax basis in the PFIC stock. Losses would be allowed only to the extent of net mark-to-market gain previously included by the U.S. Holder under the election for prior taxable years. If the mark-to-market election were made, then the rules set forth above would not apply for periods covered by the election.

We reasonably believe that we were not a PFIC for 2002. We base our belief that we were not a PFIC in 2002 on a tax valuation made by an independent “big 4” U.S. accounting firm for the fiscal year 2001 and further calculations that we have made in comparison to such tax valuation and the facts set forth in such tax valuation. However, we did not obtain any new tax valuation with respect to 2002. There can be no assurance, however, that the IRS will not determine that we are a PFIC. Furthermore, the tests for determining PFIC status are applied annually and it is difficult to make accurate predictions of future income and assets, which are relevant to this determination. Accordingly, we cannot assure you that we will not be treated as a PFIC in any of 2001, 2002 or in future years.

U.S. Holders who hold ordinary shares during a period when we are a PFIC will be subject to the foregoing rules, even if we cease to be a PFIC, subject to certain exceptions for U.S. Holders who made a QEF election. U.S. Holders are urged to consult their tax advisors about the PFIC rules, including as to the advisability of choosing to make a QEF election, a “protective” QEF election, or an election to mark the shares to market annually.

## **F. DIVIDENDS AND PAYING AGENTS**

– Not applicable

## **G. STATEMENT BY EXPERTS**

– Not applicable

## **H. DOCUMENTS ON DISPLAY**

All documents referenced herein concerning us are archived at our principal offices located at 7 Atir Yeda St., Kfar Saba, Israel.

## **I. SUBSIDIARY INFORMATION**

– Not applicable

## **ITEM 11. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK**

We are exposed to a variety of risks, including changes in foreign currency exchange rates, changes in interest rates and weak economic conditions in foreign markets. However, we do not use derivative financial instruments in our investment portfolio to hedge foreign currency, interest rate or other types of market risks.

### **Interest Rate Risk**

Our exposure to interest rate risk relates primarily to our short term deposits and investments. The majority of our cash is held in U.S. dollars and bears interest at various rates based upon the London Inter Bank Offered Rate (LIBOR). These deposits are placed with high quality U.S. and European banks. Approximately half of our cash is currently invested in bonds featuring credit ratings of A or higher. The bonds possess terms of up to six (6) years.



**Foreign Currency Exchange and Inflation Risk**

Most of our revenues generated and costs incurred outside of the United States are generally denominated in dollar currencies. Costs not effectively denominated in United States dollars are translated to United States dollars, when recorded, at the prevailing exchange rates for the purposes of our financial statements. Consequently, fluctuations in the rates of exchange between the dollar and non-dollar currencies will affect our results of operations. An increase in the value of a particular currency relative to the dollar will increase the dollar reporting value for transactions in that particular currency, and a decrease in the value of that currency relative to the dollar will decrease the dollar reporting value for those transactions. This effect on the dollar reporting value for transactions is generally only partially offset by the impact that currency fluctuations may have on costs. We do not generally engage in currency hedging transactions to offset the risks associated with variations in currency exchange rates. Consequently, significant foreign currency fluctuations and other foreign exchange risks may have a material adverse effect on our business, financial condition and results of operations. Since our revenues are generated in United States dollars and currencies other than NIS, and a substantial portion of our expenses is incurred and will continue to be incurred in NIS, we are exposed to risk by the amount that the rate of inflation in Israel exceeds the rate of devaluation of the NIS in relation to the dollar and other currencies or if the timing of the devaluation lags behind inflation in Israel.

**ITEM 12. DESCRIPTION OF SECURITIES OTHER THAN EQUITY SECURITIES**

– Not applicable

## **PART II**

### **ITEM 13. DEFAULTS, DIVIDEND ARREARAGES AND DELINQUENCIES**

– Not applicable

### **ITEM 14. MATERIAL MODIFICATIONS TO THE RIGHTS OF SECURITY HOLDERS AND USE OF PROCEEDS**

– Not applicable

### **ITEM 15. CONTROLS AND PROCEDURES**

(a) Evaluation of disclosure controls and procedures. To their best knowledge and belief and based on their evaluation of the Company's disclosure controls and procedures (as defined in Rules 13a-14(c) and 15d-14(c) under the Securities Exchange Act of 1934) as of a date within 90 days of the filing date of this Annual Report on Form 20-FA, the Company's Chief Executive Officer and Chief Financial Officer have concluded that the Company's disclosure controls and procedures are designed to ensure that information required to be disclosed by the Company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms and are operating in an effective manner.

(b) Changes in internal controls. There were no significant changes in the Company's internal controls or in other factors that could significantly affect these controls subsequent to the date of their most recent evaluation.

**ITEM 16A. [RESERVED]**

**ITEM 16B. [RESERVED]**

**ITEM 16C. [RESERVED]**

### **PART III**

#### **ITEM 17. FINANCIAL STATEMENTS**

– Not applicable

#### **ITEM 18. FINANCIAL STATEMENTS**

See Consolidated Financial Statements, immediately following Item 19 below.

## ITEM 19. EXHIBITS

|         |       |   |
|---------|-------|---|
| 1.1     | *     | M-Systems' Memorandum of Association, as amended  |
| 1.2     | **    | M-Systems' Articles of Association, as amended  |
| 4(a).1  | ***   | Form of Warrant for Purchase of Ordinary Shares, dated July 23, 1999  |
| 4(a).2  | **    | Purchase Agreement made as of September 17, 2000 between Fortress U&T Ltd. and M-Systems Flash Disk Pioneers Ltd.   |
| 4(a).3  | **    | Agreement, dated April 24, 2001, by and between Aspen Real Estate Ltd., Narkis Marom Industrial Buildings Ltd., and M-Systems Flash Disk Pioneers Ltd., together with an English summary of the Agreement |
| 4(a).4  | ***** | Development and Supply Agreement dated April 18, 2001 by and between Atmel Rousset, Atmel Sarl, and M-Systems Flash Disk Pioneers Ltd.  |
| 4(b)(i) | ****  | Share Purchase Agreement dated May 1 <sup>st</sup> , 2003, by and between M-Systems Flash Disk Pioneers Ltd. and Dr. Hans Wagner  |
| 8       | ****  | List of M-Systems' Subsidiaries and where they are incorporated   |
| 12(a).1 | ***** | Consent of Kost Forer and Gabbay  |
| 12(a).2 | ***** | Consent of BDO Seidman, LLP   |
| 12(a).3 | ***** | Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350   |
| 12(a).4 | ***** | Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350   |

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\* Previously filed as an exhibit to our Registration Statement on Form F-1, File No. 33-55838, and incorporated by reference herein.

\*\* Previously filed as an exhibit to our Annual Report on Form 20-F for the fiscal year ended December 31, 2000, and incorporated by reference herein.

\*\*\* Previously filed as an exhibit to our Registration Statement on Form F-1, File No. 333-11450, and incorporated by reference herein.

\*\*\*\* Previously filed as an exhibit to our original Annual Report on Form 20-F for the fiscal year ended December 31, 2002, and incorporated by reference herein.

\*\*\*\*\* Filed herewith.

**M-SYSTEMS FLASH DISK PIONEERS LTD. AND ITS SUBSIDIARIES**

**CONSOLIDATED FINANCIAL STATEMENTS**

**AS OF DECEMBER 31, 2002**

**IN U.S. DOLLARS**

**INDEX**

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**REPORT OF INDEPENDENT AUDITORS**

**to the Shareholders of**

**M-SYSTEMS FLASH DISK PIONEERS LTD.**

We have audited the accompanying consolidated balance sheets of M-Systems Flash Disk Pioneers Ltd. ("the Company") and its subsidiaries as of December 31, 2001 and 2002, 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 management. Our responsibility is to express an opinion on these financial statements based on our audits. We did not audit the financial statements of certain, wholly-owned subsidiaries, which statements reflect total assets of 2.5% and 2.9% out of total consolidated assets as of December 31, 2001 and 2002, respectively and total revenues of 28% and 26% out of total consolidated revenues for the years ended December 31, 2001 and 2002, respectively. Those statements were audited by other auditors whose report has been furnished to us, and our opinion, insofar as it relates to data included for these subsidiaries is based solely on the report of the other auditors.

We conducted our audits in accordance with auditing standards generally accepted in the United States. 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 management, as well as evaluating the overall financial statement presentation. We believe that our audits and the report of other auditors provide a reasonable basis for our opinion.

In our opinion, based on our audits and the report of other auditors, the consolidated 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, 2001 and 2002, and the consolidated results of their operations and cash flows for each of the three years in the period ended December 31, 2002, in conformity with accounting principles generally accepted in the United States.

Tel-Aviv, Israel  
January 23, 2003  
(Except for Note 15 which date is May 1, 2003)

**KOST FORER & GABBAY**  
A Member of Ernst & Young Global

**CONSOLIDATED BALANCE SHEETS****U.S. dollars in thousands**

|  | <b>December 31,</b> |                   |
|--|---------------------|-------------------|
|  | <b>2001</b>         | <b>2002</b>       |
| <b>ASSETS</b>  |                     |                   |
| <b>CURRENT ASSETS:</b>   |                     |                   |
| Cash and cash equivalents  | \$ 75,914           | \$ 29,833         |
| Short-term bank deposits   | ---                 | 23,364            |
| Short-term marketable securities (Note 3)  | 4,137               | 10,836            |
| Trade receivables (net of allowance for doubtful accounts - \$ 102 in 2001 and 2002) | 5,125               | 4,920             |
| Other accounts receivable and prepaid expenses                                       | 1,008               | 1,962             |
| Inventories (Note 4)   | 11,631              | 17,100            |
| Total current assets   | 97,815              | 88,015            |
| <b>LONG-TERM INVESTMENTS:</b>  |                     |                   |
| Severance pay funds  | 1,338               | 1,763             |
| Long-term marketable securities (Note 3)   | 17,185              | 30,061            |
| Long-term investments (Note 5)   | 10,391              | 10,616            |
| Total long-term investments  | 28,914              | 42,440            |
| <b>PROPERTY AND EQUIPMENT, NET (Note 6)</b>  | 17,206              | 16,756            |
| <b>GOODWILL (Note 7a)</b>  | 477                 | 477               |
| <b>OTHER INTANGIBLE ASSETS, NET (Note 7b)</b>  | 1,039               | 514               |
| <b>Total assets</b>  | <b>\$ 145,451</b>   | <b>\$ 148,202</b> |

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

**CONSOLIDATED BALANCE SHEETS****U.S. dollars in thousands, except share data**

|  | <b>December 31,</b> |             |
|--|---------------------|-------------|
|  | <b>2001</b>         | <b>2002</b> |
| <b>LIABILITIES AND SHAREHOLDERS' EQUITY</b>  |                     |             |
| <b>CURRENT LIABILITIES:</b>  |                     |             |
| Trade payables   | \$ 2,796            | \$ 8,044    |
| Deferred revenues  | 2,919               | 4,759       |
| Other accounts payable and accrued expenses (Note 8)   | 4,836               | 4,915       |
| Total current liabilities  | 10,551              | 17,718      |
| <b>ACCRUED SEVERANCE PAY</b>   | 1,849               | 2,194       |
| <b>COMMITMENTS AND CONTINGENT LIABILITIES (Note 9)</b>   |                     |             |
| <b>SHAREHOLDERS' EQUITY (Note 10):</b>   |                     |             |
| Share capital:   |                     |             |
| Ordinary shares of NIS 0.001 par value: Authorized - 100,000,000 shares as of December 31, 2001 and 2002; Issued and outstanding - 26,860,379 shares as of December 31, 2001 and 27,485,361 shares as of December 31, 2002 | 8                   | 8           |
| Additional paid-in capital   | 184,648             | 185,387     |
| Accumulated deficit  | (51,605)            | (57,105)    |
| Total shareholders' equity   | 133,051             | 128,290     |
| Total liabilities and shareholders' equity   | \$ 145,451          | \$ 148,202  |

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



**CONSOLIDATED STATEMENTS OF OPERATIONS****U.S. dollars in thousands, except share and per share data**

|  | <b>Year ended December 31,</b> |             |             |
|--|--------------------------------|-------------|-------------|
|  | <b>2000</b>                    | <b>2001</b> | <b>2002</b> |
| Revenues (Note 14)   | \$ 92,589                      | \$ 44,678   | \$ 64,817   |
| Cost of revenues   | 64,281                         | 30,356      | 44,415      |
| Inventory write-down (Note 4)                                    | ---                            | 30,217      | ---         |
| Gross profit (loss)  | 28,308                         | (15,895)    | 20,402      |
| Operating expenses:  |                                |             |             |
| Research and development, net (Note 13a)                         | 7,364                          | 13,290      | 11,974      |
| Selling and marketing  | 11,535                         | 12,122      | 12,547      |
| General and administrative                                       | 2,809                          | 3,913       | 4,000       |
| In-process research and development write off                    | 6,215                          | ---         | ---         |
| Total operating expenses   | 27,923                         | 29,325      | 28,521      |
| Operating income (loss)  | 385                            | (45,220)    | (8,119)     |
| Other expenses   | ---                            | (1,193)     | ---         |
| Financial income, net (Note 13b)                                 | 5,875                          | 4,628       | 2,619       |
| Income (loss) before minority interest in losses of a subsidiary | 6,260                          | (41,785)    | (5,500)     |
| Minority interest in losses of a subsidiary                      | 19                             | ---         | ---         |
| Net income (loss)  | \$ 6,279                       | \$ (41,785) | \$ (5,500)  |
| Basic net earnings (loss) per share (Note 11)                    | \$ 0.25                        | \$ (1.56)   | \$ (0.20)   |
| Diluted net earnings (loss) per share (Note 11)                  | \$ 0.22                        | \$ (1.56)   | \$ (0.20)   |

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

# STATEMENTS OF CHANGES IN SHAREHOLDERS' EQUITY

U.S. dollars in thousands

|  | Share<br>capital | Additional<br>paid-in<br>capital | Treasury<br>Stock | Accumulated<br>other<br>comprehensive<br>income (loss) | Accumulated<br>deficit | Total<br>comprehensive<br>income (loss) | Total<br>shareholders'<br>equity |
|--|------------------|----------------------------------|-------------------|--|------------------------|---|----------------------------------|
| Balance as of January 1, 2000  | \$ 4             | \$ 38,307                        | \$ (4,738)        | \$ ---   | \$ (16,099)            |   | \$ 17,474                        |
| Issuance of shares, net  | 1                | 148,225                          | ---               | ---  | ---                    |   | 148,226                          |
| Exercise of warrants to investors  | *) ---           | *) ---                           | ---               | ---  | ---                    |   | ---                              |
| Exercise of options  | *) ---           | 827                              | ---               | ---  | ---                    |   | 827                              |
| Stock split effected as stock dividend (100%)                              | 3                | (3)                              | ---               | ---  | ---                    |   | ---                              |
| Comprehensive income (loss):   |                  |                                  |                   |  |                        |   |                                  |
| Unrealized losses on available for sale<br>marketable securities           | ---              | ---                              | ---               | (7)  | ---                    | \$ (7)                                  | (7)                              |
| Net income   | ---              | ---                              | ---               | ---  | 6,279                  | 6,279                                   | 6,279                            |
| Total comprehensive income   |                  |                                  |                   |  |                        | <u>\$ 6,272</u>                         |                                  |
| Balance as of December 31, 2000  | 8                | 187,356                          | (4,738)           | (7)  | (9,820)                |   | 172,799                          |
| Exercise of options  | *) ---           | 562                              | ---               | ---  | ---                    |   | 562                              |
| Reversal of accrued issuance expenses                                      | ---              | 1,315                            | ---               | ---  | ---                    |   | 1,315                            |
| Issuance of shares related to employees stock<br>purchase plan             | *) ---           | 153                              | ---               | ---  | ---                    |   | 153                              |
| Cancellation of treasury stock   | ---              | (4,738)                          | 4,738             | ---  | ---                    |   | ---                              |
| Comprehensive income (loss):   |                  |                                  |                   |  |                        |   |                                  |
| Reclassification adjustment to available for sale<br>marketable securities | ---              | ---                              | ---               | 7  | ---                    | \$ 7                                    | 7                                |
| Net loss   | ---              | ---                              | ---               | ---  | (41,785)               | (41,785)                                | (41,785)                         |
| Total comprehensive loss   |                  |                                  |                   |  |                        | <u>\$ (41,778)</u>                      |                                  |
| Balance as of December 31, 2001  | 8                | 184,648                          | ---               | ---  | (51,605)               |   | 133,051                          |
| Exercise of options  | *) ---           | 303                              | ---               | ---  | ---                    |   | 303                              |
| Exercise of warrants to investors  | *) ---           | *) ---                           | ---               | ---  | ---                    |   | *) ---                           |
| Issuance of shares related to employees stock<br>purchase plan             | *) ---           | 436                              | ---               | ---  | ---                    |   | 436                              |
| Net loss   | ---              | ---                              | ---               | ---  | (5,500)                | \$ (5,500)                              | (5,500)                          |
| Total comprehensive loss   |                  |                                  |                   |  |                        | <u>\$ (5,500)</u>                       |                                  |
| Balance as of December 31, 2002  | <u>\$ 8</u>      | <u>\$ 185,387</u>                | <u>\$ ---</u>     | <u>\$ ---</u>  | <u>\$ (57,105)</u>     |   | <u>\$ 128,290</u>                |

\*) Represents an amount lower than \$ 1.

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

**CONSOLIDATED STATEMENTS OF CASH FLOWS****U.S. dollars in thousands**

|   | Year ended December 31, |             |            |
|---|-------------------------|-------------|------------|
|   | 2000                    | 2001        | 2002       |
| Cash flows from operating activities:   |                         |             |            |
| Net income (loss)   | \$ 6,279                | \$ (41,785) | \$ (5,500) |
| Adjustments required to reconcile net income (loss) to net cash used in operating activities:       |                         |             |            |
| Depreciation and amortization of other intangible assets  | 895                     | 2,213       | 2,234      |
| Amortization of goodwill  | 19                      | 65          | ---        |
| Accrued interest on short-term bank deposits  | (1,926)                 | (783)       | (502)      |
| Interest accrued and amortization of premium and discount on held-to-maturity marketable securities | (6)                     | 27          | 167        |
| Write-off of long-term investment in KeyNetica Inc.   | ---                     | 1,012       | ---        |
| Write-off of in-process research and development  | 6,215                   | ---         | ---        |
| Capital loss from sale of property and equipment  | ---                     | 181         | ---        |
| Gain on sale of available for sale and held to maturity marketable securities                       | ---                     | (106)       | (70)       |
| Accrued severance pay, net  | 103                     | 15          | (80)       |
| Minority interest in losses of a subsidiary   | (19)                    | ---         | ---        |
| Decrease (increase) in trade receivables  | (1,533)                 | 2,031       | 205        |
| Decrease (increase) in other accounts receivable and prepaid expenses                               | (245)                   | 477         | (903)      |
| Decrease (increase) in inventories  | (24,235)                | 25,907      | (5,469)    |
| Increase (decrease) in trade payables   | (2,662)                 | (380)       | 5,248      |
| Increase (decrease) in deferred revenues  | (1,081)                 | 1,755       | 1,840      |
| Increase (decrease) in other accounts payable and accrued expenses                                  | 2,814                   | (455)       | 79         |
| Net cash used in operating activities   | (15,382)                | (9,826)     | (2,751)    |
| Cash flows from investing activities:   |                         |             |            |
| Investment in available-for-sale marketable securities  | (2,894)                 | ---         | ---        |
| Investment in held to maturity marketable securities  | ---                     | (29,435)    | (30,955)   |
| Purchase of property and equipment  | (3,192)                 | (14,735)    | (1,292)    |
| Investment in long-term lease deposits  | 41                      | (50)        | 7          |
| Loans to employees, net   | (133)                   | (64)        | (76)       |
| Proceeds from sale and maturity of available for sale and held to maturity marketable securities    | ---                     | 11,092      | 11,283     |
| Proceeds from sales of property and equipment   | 22                      | 86          | 33         |
| Short-term bank deposits, net   | (44,298)                | 47,709      | (22,862)   |
| Investment in private company   | (11,012)                | ---         | (207)      |
| Payment for the acquisition of Fortress' assets (a)   | (8,456)                 | ---         | ---        |
| Purchase of the minority interest in a subsidiary   | ---                     | (235)       | ---        |
| Net cash provided by (used in) investing activities   | (69,922)                | 14,368      | (44,069)   |

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

**CONSOLIDATED STATEMENTS OF CASH FLOWS**  
**U.S. dollars in thousands**

|   | <b>Year ended December 31,</b> |                   |                  |
|---|--------------------------------|-------------------|------------------|
|   | <b>2000</b>                    | <b>2001</b>       | <b>2002</b>      |
| Cash flows from financing activities:   |                                |                   |                  |
| Proceeds from issuance of shares, net   | 149,606                        | ---               | ---              |
| Proceeds from exercise of options   | 827                            | 562               | 303              |
| Proceeds from issuance of shares related to employees stock purchase plan           | ---                            | 153               | 436              |
| Net cash provided by financing activities   | 150,433                        | 715               | 739              |
| Increase (decrease) in cash and cash equivalents                                    | 65,129                         | 5,257             | (46,081)         |
| Cash and cash equivalents at the beginning of the year                              | 5,528                          | 70,657            | 75,914           |
| Cash and cash equivalents at the end of the year                                    | <u>\$ 70,657</u>               | <u>\$ 75,914</u>  | <u>\$ 29,833</u> |
| Non-cash activities:  |                                |                   |                  |
| Issuance expenses payable (reversal)  | <u>\$ 1,380</u>                | <u>\$ (1,315)</u> | <u>\$ ---</u>    |
| Realized (unrealized) losses on available for sale marketable securities            | <u>\$ (7)</u>                  | <u>\$ 7</u>       | <u>\$ ---</u>    |
| (a) Payment for the acquisition of Fortress U&T Ltd. assets:                        |                                |                   |                  |
| Estimated fair values of assets acquired at the date of acquisition are as follows: |                                |                   |                  |
| Property and equipment  | \$ 172                         | \$ ---            | \$ ---           |
| Core technology   | 1,243                          | -                 | -                |
| In-process research and development   | 6,215                          | -                 | -                |
| Assembled workforce   | 252                            | -                 | -                |
| Goodwill  | 326                            | -                 | -                |
| Other assets - patents  | 248                            | -                 | -                |
|   | <u>\$ 8,456</u>                | <u>\$ ---</u>     | <u>\$ ---</u>    |

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

## **NOTE 1:- GENERAL**

M-Systems Flash Disk Pioneers Ltd. ("the Company") is a developer, manufacturer and marketer of innovative data storage products, known as flash disks. The Company's flash disks provide the functionality of a mechanical hard drive on a solid state silicon chip. The Company's products are based on its patented TrueFFS technology and include the DiskOnChip, DiskOnKey, and Fast Flash Disk (FFD) product families. DiskOnChip is primarily targeted at the High-End Mobile Devices and Embedded Devices Markets, while the FFD product line is primarily targeted at military systems and network infrastructure equipment. The DiskOnKey product family is targeted at the PC and laptop markets (see also Note 14).

As of December 31, 2002, the Company has wholly-owned subsidiaries in the United States, Netherlands, Taiwan, U.K., Japan and Israel, and an office in China.

The Company depends on Toshiba as a single source for its mobile DiskOnChip, DiskOnChip Millennium and DiskOnChip Millennium Plus products, and expects to be dependant DiskOnChip on them as a single source for future DiskOnChip products. Toshiba not only provides the flash components but also manufactures and assembles the finished product. The Company is seeking to develop, with other manufacturers, products that will be comparable to the DiskOnChip although possessing different features and capacity. This will require additional hardware and software development, and therefore it is not assured that the Company will be successful in developing such comparable products or that such other manufacturers will succeed in delivering products, which are of similar cost, quality and functionality. If Toshiba were to close down or downsize its flash business, experience manufacturing problems or delays for any reason, including difficulty in obtaining sufficient raw materials, work stoppages, excessive demand for its manufacturing capacity or other causes, the Company may be unable to fill its customers' orders for this product or unable to fulfill them in a timely fashion, which would result in lost sales and significantly lower revenues.

The Company relies on third parties to manufacture and supply components for its products, including the capacitors, printed circuit boards and the application specific integrated circuit ("ASIC") components used in the DiskOnKey and in some of the DiskOnChip products. For some components, the Company relies on a single source of supply. In particular, it has an agreement with Atmel Sarl, its single source for supply of ASIC components for the DiskOnKey products. Because the Company depends on single suppliers for certain key components, and do not have a long-term supply contract with its suppliers, it faces the risk of inadequate component supply, price increases, late deliveries and poor component quality, as any supplier may terminate their relationships with the Company or pursue other relationships with its competitors. If the Company was to lose its relationship with these suppliers, the lead time required to qualify new suppliers could be as long as six months. Also, if the Company were to lose its single suppliers or these suppliers are otherwise unable to satisfy the volume and delivery schedule requirements, it may be difficult to locate any suppliers who have the ability to develop, manufacture and deliver the specialized components the Company needs for its products in the desired lead times and quality.

As to the principal markets and customers, see Note 14.

## **NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES**

The consolidated financial statements have been prepared in accordance with United States generally accepted accounting principles ("U.S. GAAP").

### **Use of estimates:**

The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. Actual results could differ from those estimates.

### **Financial statements in U.S. dollars:**

A majority of the revenues of the Company and its subsidiaries is generated in U.S. dollars ("dollars"). In addition, a substantial portion of the Company and its subsidiaries' costs is incurred in dollars. Since management believes that the dollar is the primary currency in the economic environment in which the Company and each of its subsidiaries operate, the dollar is their functional and reporting currency. Accordingly, monetary accounts maintained in currencies other than the dollar are remeasured into U.S. dollars in accordance with Statement of the Financial Accounting Standard No. 52 "Foreign Currency Translation" ("SFAS No. 52"). All transaction gains and losses from the remeasurement of monetary balance sheet items are reflected in the statement of operations as financial income or expense, as appropriate.

### **Principles of consolidation:**

The consolidated financial statements include the accounts of the Company and its subsidiaries ("the Group"). Intercompany balances and transactions including profits from inter-company sales not yet realized outside the group, have been eliminated upon consolidation.

### **Cash equivalents:**

Cash equivalents include short-term, highly liquid investments that are readily convertible to cash with maturities of three months or less, at the date acquired.

### **Short-term bank deposits:**

Short-term bank deposits are deposits with maturities of more than three months, but less than one year. The short-term bank deposits are presented at their cost, including accrued interest. The deposits are in U.S. dollars and bear annual interest at an average rate of 2.5%.

### **Marketable securities:**

The Company accounts for investments in marketable securities in accordance with Statement of Financial Accounting Standard No. 115, "Accounting for Certain Investments in Debt and Equity Securities" ("SFAS No. 115").

Management determines the appropriate classification of its investments in marketable debt securities at the time of purchase and reevaluates such determinations at each balance sheet date.

Debt securities for which the Company does not have the intent or ability to hold to maturity are classified as available-for-sale, along with any investments in equity securities that have not been classified as trading securities. Securities available for sale are carried at fair value, with the unrealized gains and losses, net of income taxes, reported as a separate component of shareholders' equity, accumulated other comprehensive income (loss). Realized gains and losses on sales of investments, as determined on a specific identification basis, are included in the consolidated statement of operations.

Debt securities are classified as held-to-maturity when the Company has the positive intent and ability to hold the securities to maturity and are stated at amortized cost. As of December 31, 2001 and 2002, the Company classified all its marketable securities as held to maturity whereas in December 31, 2000 all the marketable securities were classified as available-for-sale.

The amortized cost of debt securities held to maturity is adjusted for amortization of premiums and accretion of discounts to maturity. Such amortization, interest and decline in value judged to be other than temporary are included in financial income, net. The cost of securities sold is based on the specific identification method.

## NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

### Inventories:

Inventories are stated at the lower of cost or market value. Inventory write-downs are provided to cover risks arising from slow-moving items, excess inventories, technological obsolescence or market prices lower than cost. In 2001, the Company re-evaluated the fair value of its inventories and wrote-down \$ 30,217.

Cost is determined as follows:

Raw materials, parts and supplies - using the moving average cost method.

Work in progress and finished products:

Raw materials and components - using the moving average cost method.

Labor, overhead and subcontracted work - on the basis of actual costs.

### Investment in other companies:

The investment in other companies is stated at cost, since the Company does not have the ability to exercise significant influence over operating and financial policies of the investees.

The Company's investments in other companies are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an investment may not be recoverable, in accordance with Accounting Principle Board Opinion No. 18 "The Equity Method of Accounting for Investments in Common Stock", ("APB No. 18"). During 2001, the Company recorded a write off of its investments in KeyNetica in the amount of \$1,012. During 2002, based on managements' most recent analyses, no impairment losses have been identified.

### Property and equipment:

Property and equipment are stated at cost, net of accumulated depreciation. Depreciation is calculated by the straight-line method over the estimated useful lives of the assets, at the following annual rates:

|   | %                          |
|---|----------------------------|
| Building  | 4                          |
| Computers, manufacturing and peripheral equipment | 20 - 33                    |
| Office furniture and equipment                    | 6 - 20                     |
| Motor vehicles                                    | 15                         |
| Leasehold improvements                            | Over the term of the lease |

The Company's and its subsidiaries long-lived assets are reviewed for impairment in accordance with Statement of Financial Accounting Standard No. 144 "Accounting for the Impairment for Disposal of Long-Lived Assets" ("SFAS No. 144") whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset to the future undiscounted cash flows expected to be generated by the assets. If such assets are considered to be impaired, the impairment to be recognized is measured by the amount by which the carrying amount of the assets exceeds the fair value of the assets. Assets to be disposed of are reported at the lower of the carrying amount or fair value less costs to sell. As of December 31, 2002, no impairment losses have been identified.

## NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

### Other intangible assets:

Intangible assets subject to amortization arose from acquisitions prior July 1, 2001, are being amortized on a straight-line basis over their useful life in accordance with APB Opinion No. 17 "Intangible Assets" ("APB No. 17") at the following periods:

|                      | <b><u>Weighted average<br/>amortization period, in Years</u></b> |
|----------------------|--|
| Core Technology      | 3  |
| Patents and know-how | 3  |
| Other                | 5  |
| Total                | 3  |

Intangible assets acquired in a business combination for which date is on or after July 1, 2001, should be amortized over their useful life using a method of amortization that reflects the pattern in which the economic benefits of the intangible assets are consumed or otherwise used up, in accordance with Statement of Financial Accounting Standards No. 142 "Goodwill and Other Intangible Assets", ("SFAS No. 142").

The Company's and its subsidiaries long-lived assets are reviewed for impairment in accordance with Statement of Financial Accounting Standard No. 144 "Accounting for the Impairment for Disposal of Long-Lived Assets" ("SFAS No. 144") whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset to the future undiscounted cash flows expected to be generated by the assets. If such assets are considered to be impaired, the impairment to be recognized is measured by the amount by which the carrying amount of the assets exceeds the fair value of the assets. Assets to be disposed of are reported at the lower of the carrying amount or fair value less costs to sell.

As of December 31, 2002, no impairment losses have been identified.

Goodwill represents excess of the costs over the fair value of net assets of businesses acquired. Goodwill that arose from acquisitions prior to July 1, 2001, was amortized until December 31, 2001, on a straight-line basis over 5 years. Under Statement of Financial Accounting Standard No. 142, "Goodwill and Other Intangible Assets" ("SFAS No. 142") goodwill acquired in a business combination for which date is on or after July 1, 2001, shall not be amortized.

SFAS No. 142 requires goodwill to be tested for impairment on adoption and at least annually thereafter or between annual tests in certain circumstances, and written down when impaired, rather than being amortized as previous accounting standards required. Goodwill attributable to each of the reporting units is tested for impairment by comparing the fair value of each reporting unit with its carrying value. Fair value is determined using discounted cash flows, market multiples and market capitalization. Significant estimates used in the methodologies include estimates of future cash flows, future short-term and long-term growth rates, weighted average cost of capital and estimates of market multiples for the reportable unit. Based on its most recent analysis, management believes that no impairment of intangible assets exists as of December 31, 2002.

### Income taxes:

The Company and its subsidiaries account for income taxes in accordance with Statement of Financial Accounting Standard No. 109, "Accounting for Income Taxes" ("SFAS No.109"). This statement prescribes the use of the liability method whereby deferred tax asset and liability account balances are determined based on differences between financial reporting and tax bases of assets and liabilities and are measured using the enacted tax rates and laws that will be in effect when the differences are expected to reverse. The Company and its subsidiaries provide a valuation allowance, if necessary, to reduce deferred tax assets to their estimated realizable value.



## **NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)**

### **Revenue recognition:**

The Company and its subsidiaries generate most of their revenues from selling their data storage products to end customers, resellers and to Original Equipment Manufacturers ("OEM").

Revenues from product sales are recognized in accordance with Staff Accounting Bulletin No. 101 "Revenue Recognition in Financial Statements" ("SAB 101") when delivery has occurred, persuasive evidence of an arrangement exists, the vendor's fee is fixed or determinable, no further obligation exists, and collectibility is reasonably assured. Because of frequent sales price reductions and rapid technology obsolescence in the industry, sales are made to distributors and retailers under agreements allowing price protection and/or right of return and deferred until the retailers or distributors sell the merchandise to the end customer, or the right of return expire. Deferred revenues include amounts received from customers for which revenue has not been recognized.

Revenues from royalties are accounted for upon notification from licensees that royalties are due.

### **Research and development costs:**

Research and development costs, net of grants received, are charged to the statements of operations as incurred.

### **Royalty and non-royalty bearing grants:**

Royalty-bearing grants from the Government of Israel and others for funding approved research and development projects and for funding marketing activities are recognized at the time the Company and its subsidiaries are entitled to such grants, based on costs incurred, and are recorded as a deduction of research and development costs, and selling and marketing expenses, respectively (see also Note 13a).

In addition, during 2002, the Company received non-royalty-bearing grant in the amount of \$ 212 for its participation in the secure mobile payments and services on chip project ("SN-PAYSOC").

The grants are not required to be repaid and are recognized at the time the Company is entitled to such grants, on the basis of the costs incurred and are recorded as a deduction of research and development expenses.

### **Warranty costs:**

The Company provides a warranty in a range between 12 to 60 months at no extra charge. A provision is recorded for estimated warranty costs based on the Company's experience. Warranty expenses for the years ended December 31, 2000, 2001 and 2002 were approximately \$ 200, \$ 200 and \$ 272, respectively.

### **Advertising expenses:**

Advertising expenses are charged to the statements of operations as incurred. Advertising expenses for the years ended December 31, 2000, 2001 and 2002 were \$ 335, \$ 195 and \$ 132, respectively.

### **Concentrations of credit risk:**

Financial instruments that potentially subject the Company and its subsidiaries to concentrations of credit risk consist principally of cash and cash equivalents, short-term bank deposits, marketable securities and trade receivables.

Cash and cash equivalents and short-term bank deposits are invested mainly in U.S dollars in deposits with major banks worldwide (mainly in Israel, the United States, Cayman, England and France). Such deposits may be in excess of insured limits and are not insured in other jurisdictions. Management believes that the financial institutions that hold the investments of the Company and its subsidiaries are financially sound and, accordingly, minimal credit risk exists with respect to these investments.

## NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

The trade receivables of the Company and its subsidiaries are derived from sales to customers located primarily in the United States, the Far East and Europe. The Company and its subsidiaries generally do not require collateral; however, in certain circumstances, the Company and its subsidiaries may require letters of credit, other collateral, additional guarantees or advanced payments. The Company and its subsidiaries perform ongoing credit evaluations of its customers and to date have not experienced material losses. An allowance for doubtful accounts is determined with respect to specific debts that are doubtful of collection.

Investments in marketable securities are conducted through investment banks in France and in the United States, and include investments in government and corporate debts. Management believes that the financial institutions that hold the Company's investments are financially sound, the portfolio is well diversified and accordingly, minimal credit risk exists with respect to these investments.

The Company and its subsidiaries have no significant off-balance-sheet concentration of credit risk such as foreign exchange contracts, option contracts or other foreign hedging arrangements.

### Accounting for stock-based compensation:

The Company has elected to follow Accounting Principles Board Opinion No. 25 "Accounting for Stock Issued to Employees" ("APB No. 25") and FASB Interpretation No. 44 "Accounting for Certain Transactions Involving Stock Compensation" ("FIN No. 44") in accounting for its employee stock option plans. Under APB 25, when the exercise price of the Company's share options is less than the market price of the underlying shares on the date of grant, compensation expense is recognized.

Under SFAS 123, pro forma information regarding net income (loss) and net earnings (loss) per share is required, and has been determined as if the Company had accounted for its employee stock options under the fair value method of that Statement. The fair value for these options was estimated at the date of grant using a Black-Scholes Option pricing model, with the following weighted- average assumptions for each of the years ended December 31, 2000, 2001 and 2002: expected volatility of 108%, 104% and 62%, respectively; a risk-free interest rate of 6%, 2% and 1.5%, respectively; dividend yield of 0% for all years; and a weighted-average expected life of 3.25 years for all years presented.

For purposes of pro-forma disclosure, the estimated fair value of the options is amortized to expenses over the options' vesting period which is four years.

Pro forma information under SFAS 123:

|  | Year ended December 31, |             |            |
|--|-------------------------|-------------|------------|
|  | 2000                    | 2001        | 2002       |
| Net income (loss) as reported  | \$ 6,279                | \$ (41,785) | \$ (5,500) |
| Add: stock-based compensation expenses included in reported net income (loss)              | ---                     | ---         | ---        |
| Deduct: stock-based compensation expense determined under fair value method for all awards | 3,318                   | 4,580       | 4,475      |
| Pro forma net income (loss)  | \$ 2,961                | \$ (46,365) | \$ (9,975) |
| Pro forma basic net earnings (loss) per share  | \$ 0.12                 | \$ (1.74)   | \$ (0.37)  |
| Pro forma diluted net earnings (loss) per share  | \$ 0.11                 | \$ (1.74)   | \$ (0.37)  |

## **NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)**

### **Severance pay:**

The Company's liability for severance pay is calculated pursuant to Israeli and Taiwanese severance pay laws as applicable to the relevant employees, based on the most recent salary of the employees multiplied by the number of years of employment, as of the balance sheet date. Employees are entitled to one month's salary for each year of employment or a portion thereof. The Company's liability for all of its employees in Israel, is fully covered by monthly deposits with severance pay funds, insurance policies and by an accrual. The value of those policies is recorded as an asset in the Company's balance sheet.

The Company's liability for all of its employees in Taiwan is not covered by deposits with severance pay funds or insurance policies, but only by an accrual.

The deposited funds include profits accumulated up to the balance sheet date. The deposited funds may be withdrawn only upon the fulfillment of the obligation pursuant to Israeli severance pay law or labor agreements. The value of the deposited funds is based on the cash surrendered value of these policies, and includes immaterial profits.

Severance expenses for the years ended December 31, 2000, 2001 and 2002, amounted to approximately \$ 464, \$ 501 and \$ 531, respectively.

### **Fair value of financial instruments:**

The following methods and assumptions were used by the Company and its subsidiaries in estimating their fair value disclosures for financial instruments:

The carrying amounts of cash and cash equivalents, short-term bank deposits, trade receivables and trade payables approximate their fair value due to the short-term maturities of such instruments.

As of December 31, 2001 and 2002, the fair value of marketable securities was based on the quoted market prices.

### **Basic and diluted net earnings (loss) per share:**

Basic net earnings (loss) per share is computed based on the weighted average number of Ordinary shares outstanding during each year. Diluted net earnings per share is computed based on the weighted average number of Ordinary shares outstanding during each year, plus dilutive potential Ordinary shares considered outstanding during the year, in accordance with Statement Financial Accounting Standard No. 128, "Earnings Per Share" ("SFAS No. 128").

The total weighted average number of shares related to the outstanding options and warrants excluded from the calculations of diluted net earnings (loss) per share since they had an anti-dilutive effect was 1,237, 3,519,902 and 3,635,851 for 2000, 2001 and 2002, respectively.

### **Impact of recently issued accounting standard:**

In April 2002, the FASB issued SFAS No. 145, "Rescission of FASB Statements No. 4, 44, and 64, Amendment of FASB Statement No. 13, and Technical Corrections," which rescinds SFAS No. 4, "Reporting Gains and Losses from Extinguishment of Debt" and an amendment of that Statement, and SFAS No. 64, "Extinguishments of Debt Made to Satisfy Sinking-Fund Requirements." SFAS No. 145 also rescinds SFAS No. 44, "Accounting for Intangible Assets for Motor Carriers." SFAS No. 145 amends SFAS No. 13, "Accounting for Leases," to eliminate an inconsistency between the required accounting for sale-leaseback transactions and the required accounting for certain lease modifications that have economic effects that are similar to sale-leaseback transactions. SFAS No. 145 also amends other existing authoritative pronouncements to make various technical corrections, clarify meanings, or describe their applicability under changed conditions. SFAS No. 145 is effective for fiscal years beginning after May 15, 2002. The Company does not expect the adoption of SFAS No. 145 to have a material impact on its results of operations or financial position.

In June 2002, the FASB issues SFAS No. 146, "Accounting for Costs Associated with Exit or Disposal Activities," which addresses significant issue regarding the recognition, measurement, and reporting of costs associated with exit and disposal activities, including restructuring activities. SFAS No. 146 requires that costs associated with exit or disposal activities be recognized when they are incurred rather than at the date of a commitment to an exit or disposal plan. SFAS No. 146 is effective for all exit or disposal activities initiated after December 31, 2002. The Company does not expect the adoption of SFAS No. 146 to have a material impact on our results of operations or financial position.

## **NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)**

In November 2002, the FASB issued FASB Interpretation No. 45, "Guarantor's Accounting and Disclosure Requirements for Guarantees, Including Indirect Guarantees of Indebtedness of Others, an interpretation of FASB Statements No. 5, 57, and 107 and Rescission of FASB Interpretation No. 34" ("FIN No. 45"). FIN No. 45 elaborates on the disclosures to be made by a guarantor in its interim and annual financial statements about its obligations under certain guarantees that it has issued. It also clarifies that a guarantor is required to recognize, at the inception of a guarantee, a liability for the fair value of the obligation undertaken in issuing the guarantee. FIN No. 45 does not prescribe a specific approach for subsequently measuring the guarantor's recognized liability over the term of the related guarantee. It also incorporates, without change, the guidance in FASB Interpretation No. 34, "Disclosure of Indirect Guarantees of Indebtedness of Others," which is being superseded. The disclosure provisions of FIN No. 45 are effective for financial statements of interim or annual periods that end after December 15, 2002 and the provisions for initial recognition and measurement are effective on a prospective basis for guarantees that are issued or modified after December 31, 2002, irrespective of a guarantor's year-end. The Company does not expect the adoption of FIN No. 45 to have a material impact on its results of operations or financial position.

### NOTE 3:- MARKETABLE SECURITIES

The following is a summary of held-to-maturity marketable securities:

|                                 | December 31,      |                              |                               |                                      |                   |                              |                               |                                      |
|---------------------------------|-------------------|------------------------------|-------------------------------|--------------------------------------|-------------------|------------------------------|-------------------------------|--------------------------------------|
|                                 | 2001              |                              |                               |                                      | 2002              |                              |                               |                                      |
|                                 | Amortized<br>cost | Gross<br>Unrealized<br>Gains | Gross<br>unrealized<br>losses | Estimated<br>fair<br>market<br>value | Amortized<br>cost | Gross<br>unrealized<br>gains | Gross<br>unrealized<br>losses | Estimated<br>fair<br>market<br>value |
| <b><u>Held-to-maturity:</u></b> |                   |                              |                               |                                      |                   |                              |                               |                                      |
| Government debts                | \$ ---            | \$ ---                       | \$ ---                        | \$ ---                               | \$ 10,041         | \$ 434                       | \$ (9)                        | \$ 10,466                            |
| Corporate debts                 | 21,322            | 662                          | (365)                         | 21,619                               | 30,856            | 975                          | ---                           | 31,831                               |
|                                 | <u>\$ 21,322</u>  | <u>\$ 662</u>                | <u>\$ (365)</u>               | <u>\$ 21,619</u>                     | <u>\$ 40,897</u>  | <u>\$ 1,409</u>              | <u>\$ (9)</u>                 | <u>\$ 42,297</u>                     |

Aggregate maturities of held-to-maturity securities for years subsequent to December 31, 2002 are:

|   | December 31, 2002 |                             |
|---|-------------------|-----------------------------|
|   | Amortized cost    | Estimated fair market value |
| <b><u>Held-to-maturity:</u></b>         |                   |                             |
| 2003 (short-term marketable securities) | \$ 10,836         | \$ 10,991                   |
| 2004                                    | 1,016             | 1,071                       |
| 2005                                    | 10,342            | 10,810                      |
| 2006                                    | 8,325             | 8,822                       |
| 2007                                    | 7,279             | 7,484                       |
| 2008                                    | 3,099             | 3,119                       |
|   | <u>\$ 40,897</u>  | <u>\$ 42,297</u>            |

The net adjustment to unrealized holding gains (losses) on available-for-sale securities included as a separate component of shareholders' equity called "accumulated other comprehensive losses" amounted to \$ (7), \$ 7 and \$ 0 in 2000, 2001 and 2002, respectively.

During 2002, the Company sold several marketable securities in consideration of \$ 8,283 and several of the securities were redeemed in consideration of \$ 3,000. The marketable securities were sold before their maturity, due to deterioration of their credit rating. As a result of the sale, the Company recorded gain in the amount of \$ 70 in the financial income.

#### NOTE 4:- INVENTORIES

|                   | December 31,     |                  |
|-------------------|------------------|------------------|
|                   | 2001             | 2002             |
| Raw materials     | \$ 1,832         | \$ 3,021         |
| Work in progress  | 681              | 3,367            |
| Finished products | 9,118            | 10,712           |
|                   | <u>\$ 11,631</u> | <u>\$ 17,100</u> |

During 2001, as a result of a sharp reduction in the prices of flash components, and the economic slowdown that caused a decline in the Company's sales resulting in prolonged inventory cycles, the Company re-evaluated the fair value of its inventories and recorded an inventory write-down in the cost of revenues at an approximate amount of \$ 30,217.

#### NOTE 5:- LONG-TERM INVESTMENTS

|  | December 31,     |                  |
|--|------------------|------------------|
|  | 2001             | 2002             |
| Investment in Saifun Semiconductors Ltd. (1) | \$ 10,000        | \$ 10,000        |
| Investment in KeyNetica Inc. (2)             | ---              | ---              |
| Investment in Phison Electronics Corp. (3)   | ---              | 207              |
| Employee loans and lease deposits            | 391              | 409              |
|  | <u>\$ 10,391</u> | <u>\$ 10,616</u> |

(1) In October 2000, the Company purchased 2.5% of the outstanding Preferred B shares of NIS 0.01 par value of Saifun Semiconductors Ltd. ("Saifun") in consideration of \$ 10,000.

Saifun is a privately held Israeli company engaged in research, development, production and marketing of flash memory products and technology. Saifun's founder, Chief Executive Officer and director was, up until December 2002, a member of the Board of Directors of the Company.

(2) In August 2000, the Company purchased 400,000 Preferred A shares of \$ 0.001 par value, representing approximately 19% of the outstanding shares, of KeyNetica Inc. ("KeyNetica"), in consideration of \$ 412. In addition, the Company provided a convertible loan to KeyNetica in the amount of \$ 600.

On March 31, 2001, the Company decided to impair all of its investments in Preferred A shares in KeyNetica and to write-off the convertible loan, based on several indicators which supported KeyNetica's inability to continue as a going concern. The Company recorded in the other expenses, a capital loss in the amount of \$ 1,012, resulting from assessing the impairment loss based upon the difference between the carrying amount and the fair value of the investment, as evaluated by the Company.

(3) During the first quarter of 2002, the Company signed a share purchase agreement with Phison Electronics Corp. ("Phison") a Taiwanese company, to purchase 550,000 Preferred shares TWD 10 par value in consideration of \$ 600.

In April 2002, the Company purchased 184,000 Preferred shares of TWD 10 par value of Phison in consideration of \$ 207. The investment represents approximately 2% of the outstanding shares of Phison.

## NOTE 6:- PROPERTY AND EQUIPMENT, NET

|   | December 31,     |                  |
|---|------------------|------------------|
|   | 2001             | 2002             |
| Cost:   |                  |                  |
| Land and building (1)                             | \$ 14,475        | \$ 14,633        |
| Computers, manufacturing and peripheral equipment | 5,029            | 6,042            |
| Office furniture and equipment                    | 1,551            | 1,639            |
| Motor vehicles                                    | 257              | 182              |
| Leasehold improvements (1)                        | 433              | 433              |
|   | <u>21,745</u>    | <u>22,929</u>    |
| Accumulated depreciation                          | <u>4,539</u>     | <u>6,173</u>     |
| Depreciated cost                                  | <u>\$ 17,206</u> | <u>\$ 16,756</u> |

(1) In April 2001, the Company acquired its facility and nearby land in Kfar Saba, Israel, in consideration of approximately \$ 10,500. In addition, the Company reclassified during 2001 the leasehold improvements related to the facility in Kfar-Saba in the amount of \$ 3,290 to the cost of the building.

a. As for charges, see Note 9.

b. Depreciation expenses for the years ended December 31, 2000, 2001 and 2002, were \$ 820, \$ 1,584 and \$ 1,709, respectively.

## NOTE 7:- OTHER INTANGIBLE ASSETS, NET

### a. Goodwill:

|                          | December 31,  |               |
|--------------------------|---------------|---------------|
|                          | 2001          | 2002          |
| Original amount          | \$ 561        | \$ 561        |
| Accumulated amortization | 84            | 84            |
| Amortized cost           | <u>\$ 477</u> | <u>\$ 477</u> |

In June 1998, the Company established a subsidiary in Japan, M-Systems Flash Disk Pioneers (Japan), Inc. ("MSJ"). The Company owned 67% of this company. In June 2001, the Company exercised its option and purchased all shares of MSJ held by minority for a total cash consideration of \$ 235. The acquisition was accounted for on the basis of the purchase method of accounting and the purchase price has been allocated to goodwill.

### b. Other assets:

|                           | December 31,    |               |
|---------------------------|-----------------|---------------|
|                           | 2001            | 2002          |
| Original amount:          |                 |               |
| Core Technology           | \$ 1,243        | \$ 1,243      |
| Patents and know-how      | 248             | 248           |
| Other                     | 252             | 252           |
|                           | <u>1,743</u>    | <u>1,743</u>  |
| Accumulated Amortization: |                 |               |
| Core technology           | 535             | 931           |
| Patents and know-how      | 104             | 185           |
| Other                     | 65              | 113           |
|                           | <u>704</u>      | <u>1,229</u>  |
| Amortized cost            | <u>\$ 1,039</u> | <u>\$ 514</u> |

In September 2000, the Company acquired the business and assets of Fortress U&T Ltd. ("Fortress"), in exchange for \$ 8,456 in cash. Fortress was a privately held Israeli company that was engaged in data security technologies.

The acquisition was treated on the basis of the purchase method of accounting in accordance with Accounting Principle Board Opinion No. 16 "Business Combinations" ("APB No. 16") and accordingly the purchase price, in the total amount of \$ 8,456, has been allocated according to the estimated fair value of the assets acquired.

The Company recorded a one-time expense in September 2000, in the amount of \$ 6,215, to write off in-process research and development acquired from Fortress, for which technological feasibility had not yet been established and for which no alternative future use existed.



**NOTE 7:- OTHER INTANGIBLE ASSETS, NET (Cont.)**

c. Amortization expense amounted to \$ 94, \$ 694 and \$ 525 for the years ended December 31, 2000, 2001 and 2002, respectively.

d. Estimated amortization expenses for the year ended:

|      | <u>December 31,</u> |
|------|---------------------|
| 2003 | \$ 424              |
| 2004 | \$ 51               |
| 2005 | \$ 39               |

**NOTE 8:- OTHER ACCOUNTS PAYABLE AND ACCRUED EXPENSES**

|                                | <u>December 31,</u> |                 |
|--------------------------------|---------------------|-----------------|
|                                | <u>2001</u>         | <u>2002</u>     |
| Employees and payroll accruals | \$ 2,191            | \$ 2,187        |
| Accrued expenses               | 2,139               | 2,130           |
| Accrued royalty expenses       | 166                 | 166             |
| Provision for warranty         | 200                 | 272             |
| ESPP                           | 52                  | 59              |
| Other                          | 88                  | 101             |
|                                | <u>\$ 4,836</u>     | <u>\$ 4,915</u> |

## NOTE 9:- COMMITMENTS AND CONTINGENT LIABILITIES

### Royalty commitments:

a. Under the Company's research and development agreements with the Office of the Chief Scientist ("OCS"), the Bi-national Industrial Research and Development Foundation ("BIRD-F") and Singapore-Israel Industrial Research and Development ("SIIRD"), the Company is required to pay royalties at the rate of 1.5%-5% of sales of products developed with funds provided by the OCS, BIRD-F and SIIRD, up to an amount equal to 150% of the OCS and BIRD-F and 100% of the SIIRD research and development grants (dollar-linked) related to such projects. The obligation to pay these royalties is contingent on actual sales of the products and in the absence of such sales, no payment is required. Royalties payable with respect to grants received under programs approved by the OCS after January 1, 1999, are subject to interest on the U.S. dollar-linked value of the total grants received at the annual rate of LIBOR applicable to U.S. dollar deposits. Royalties payable with respect to grants received under programs approved by the BIRD-F, are linked to the Consumer Price Index in the United States.

The Company has expensed royalties relating to repayment of grants from the OCS, BIRD-F and SIIRD of \$ 312, \$ 0 and \$ 0 for the years ended December 31, 2000, 2001 and 2002, respectively. The royalties were recorded in the cost of revenues.

As of December 31, 2002, the Company had an outstanding contingent obligation to pay royalties of \$ 281, in respect of these grants.

b. The Israeli Government, through the Fund for Encouragement of Marketing Activities, and the BIRD-F awarded the Company and its U.S. subsidiary grants for participation in expenses for overseas marketing. The Company is committed to pay royalties to the Fund for Encouragement of Marketing Activities at the rate of 3% on the increase in export sales, up to the amount of the grants received by the Company linked to the dollar and to the BIRD-F as described in paragraph a. above.

The Company has expensed royalties relating to repayment of grants from the Fund for Encouragement of Marketing Activities and the BIRD-F of \$ 66, \$ 5 and \$ 0 for the years ended December 31, 2000, 2001 and 2002, respectively. The royalties were recorded in the cost of revenues.

As of December 31, 2002, the Company had outstanding obligations to pay royalties of \$ 166 in respect of these grants.

### Lease commitments:

The Company's facilities in Omer, its subsidiaries facilities and its vehicles are leased under several operating lease agreements, which expire on various dates, the latest of which is in 2005 .

Future minimum lease commitments under non-cancelable operating leases, are as follows:

| Year ended December 31, |                 |                 |                 |
|-------------------------|-----------------|-----------------|-----------------|
|                         | Facilities      | Vehicles        | Total           |
| 2003                    | \$ 363          | \$ 666          | \$ 1,029        |
| 2004                    | 369             | 375             | 744             |
| 2005                    | 305             | 122             | 427             |
|                         | <u>\$ 1,037</u> | <u>\$ 1,163</u> | <u>\$ 2,200</u> |

Facilities lease expenses for the years ended December 31, 2000, 2001 and 2002, were approximately \$ 798, \$ 384 and \$ 456, respectively.

Vehicles lease expenses for the years ended December 31, 2000, 2001 and 2002 were approximately \$ 234, \$ 606 and \$ 763, respectively.

## **NOTE 9:- COMMITMENTS AND CONTINGENT LIABILITIES (Cont.)**

### **Guarantees:**

The Company issued a guarantee in the amount of \$ 127 in connection with a lawsuit against one of its suppliers.

The Company has provided additional guarantees in the amount of approximately \$ 30 in connection with its subsidiary's bank account.

### **Lines of credit:**

As of December 31, 2002, the Company has authorized and available credit lines of \$ 4,000 from banks.

In connection with the credit lines, the Company agreed not to place any liens on its assets without the respective bank's consent.

### **Charges:**

The land and the building are free and clear of all encumbrances except for a mortgage taken out by the sellers of the building from Bank Leumi. The outstanding balance of that mortgage on the land and the building is covered in full by escrowed funds to be delivered to the sellers only upon the receipt of various necessary permits and third party approvals, at which point the escrowed funds are to be applied to pay off the mortgage and remove the lien.

## **NOTE 10:- SHAREHOLDERS' EQUITY**

The Ordinary shares of the Company are traded on NASDAQ National Market.

### **General:**

The Ordinary shares entitle their holders to receive notice to participate and vote in general meetings of the Company, the right to share in distribution upon liquidation of the Company, and to receive dividends, if declared.

In July 1999, the Company issued an aggregate of 1,818,182 Ordinary shares to investors for net proceeds of \$ 4,753. The Company also granted to the investors warrants, exercisable into 1,038,962 Ordinary shares, at a price of \$ 2.875 per share. The warrants were exercisable until December 31, 2002. On April 1, 2000, 415,584 warrants were exercised to 383,508 shares due to a cashless exercise mechanism and on December 31, 2002, the remaining 623,378 warrants were exercised to 406,140 shares also due to a cashless exercise mechanism.

In March 2000, the Company issued 4,735,000 Ordinary shares at \$ 34.125 per share in consideration of net proceeds of approximately \$ 148,226 in a public offering.

In September 2000, the Company's Board of Directors has approved a two-for-one stock split effected as a 100% stock dividend from the Company's additional paid-in capital. All Ordinary shares, options, warrants and per share data have been retroactively adjusted for all periods presented.

### **Stock option plans:**

The Company has two share incentive and stock option plans for directors, officers, employees, consultants and contractors of the Company and its subsidiaries (the plans were adopted on February 16, 1993):

#### **a. Incentive and restricted stock options ("the IRSO plan"):**

Options to purchase 3,000,000 Ordinary shares may, from time to time, be granted to employees, directors, consultants and contractors of the Company. Options granted under the IRSO plan in accordance with the terms thereof will be qualified as incentive stock options. As of December 31, 2002, 1,324,384 options are available for future grant. Any options which are canceled or forfeited before expiration become available for future grant.

The exercise price per share for a restricted stock option is to be determined by the Board of Directors, but may not be less than the lower of 75% of the market value of the Ordinary shares on the date the option is granted, or 75% of the book value per share of the Ordinary shares at the end of the year.

The options vest over a period of four years; 50% after two years, and an additional 25% per each year thereafter.

The options granted generally expire no later than ten years from the date of grant. This plan expires in 2003.

#### **b. Employee Stock Options Plan ("the ESOP plan") :**

Under the ESOP Plan, options to purchase an aggregate of 4,000,000 Ordinary shares may, from time to time, be granted to Israeli employees of the Company. The exercise prices of options granted under this plan are to be determined by the Board of Directors at the time of the grant and shall not be less than the market value of the Ordinary shares on the date of granting such options. The options granted expire no later than ten years from the date of grant. This plan expires in 2003. As of December 31, 2002, options to purchase 644,702 Ordinary shares were available for future grant. Any options that are canceled or forfeited before expiration become available for future grant.

The options vest over a period of four years; 50% after two years, and an additional 25% per each year thereafter.

c. In November 2002, the Company approved a new option plan "2003 Stock Option and Restricted Stock Incentive Plan". Under this plan, 5,000,000 options to purchase Ordinary shares are available for future grant to employees, officers, directors, service providers and consultants of the Company and its subsidiaries.

# NOTE 10:- SHARE CAPITAL (cont.)

d. A summary of the Company's employees share option activity under the IRSO and ESOP plans and related information is as follows:

|   | Year ended December 31, |  |                  |  |                  |  |
|---|-------------------------|--|------------------|--|------------------|--|
|   | 2000                    |  | 2001             |  | 2002             |  |
|   | Amount                  | Weighted<br>average<br>exercise<br>price | Amount           | Weighted<br>average<br>exercise<br>price | Amount           | Weighted<br>average<br>exercise<br>price |
|   |                         | \$                                       |                  | \$                                       |                  | \$                                       |
| Options outstanding at the beginning of the year                                    | 2,298,976               | 2.43                                     | 2,742,928        | 7.33                                     | 3,560,138        | 6.37                                     |
| Changes during the year:  |                         |  |                  |  |                  |  |
| Granted   | 1,098,310               | 15.24                                    | 1,628,480        | 5.37                                     | 855,166          | 6.68                                     |
| Exercised   | (407,908)               | 2.02                                     | (294,370)        | 1.92                                     | (154,250)        | 1.96                                     |
| Forfeited or cancelled  | (246,450)               | 5.55                                     | (516,900)        | 10.87                                    | (447,400)        | 9.04                                     |
| Options outstanding at the end of the year  | <u>2,742,928</u>        | <u>7.33</u>                              | <u>3,560,138</u> | <u>6.37</u>                              | <u>3,813,654</u> | <u>6.30</u>                              |
| Options exercisable at the end of the year  | <u>398,968</u>          | <u>2.12</u>                              | <u>760,048</u>   | <u>2.50</u>                              | <u>1,213,003</u> | <u>5.47</u>                              |
| Weighted average fair value of options granted during the year, at their grant date |                         | <u>10.52</u>                             |                  | <u>3.45</u>                              |                  | <u>2.92</u>                              |

**NOTE 10:- SHARE CAPITAL (cont.)**

The options outstanding as of December 31, 2002, under the IRSO and ESOP plans have been separated into ranges of exercise prices as follows:

| Range of<br>exercise<br>prices | Options<br>outstanding<br>at<br>December 31,<br>2002 | Weighted<br>average<br>exercise<br>price | Weighted<br>average<br>remaining<br>contractual<br>life | Options<br>exercisable<br>at<br>December 31,<br>2002 | Weighted<br>average<br>exercise<br>price of<br>exercisable<br>options |
|--------------------------------|--|--|---|--|---|
| \$                             |  | \$                                       | Years   |  | \$  |
| 1.38 - 1.88                    | 580,438  | 1.83                                     | 5.74  | 473,788  | 1.82  |
| 2.00 - 2.75                    | 305,560  | 2.25                                     | 4.35  | 293,560  | 2.26  |
| 3.25 - 3.75                    | 66,000   | 3.61                                     | 5.98  | 52,500   | 3.58  |
| 4.01 - 4.3                     | 607,080  | 4.28                                     | 8.80  | ---  | ---   |
| 5.00 - 5.75                    | 226,500  | 5.46                                     | 9.70  | 2,000  | 5.00  |
| 6.00 - 6.2                     | 795,000  | 6.03                                     | 8.01  | 88,650   | 6.13  |
| 7.02 - 10.1                    | 641,366  | 7.39                                     | 9.19  | 7,650  | 8.75  |
| 12.00 - 12.75                  | 439,410  | 12.36                                    | 7.54  | 219,705  | 12.36   |
| 16.25 - 19.50                  | 90,600   | 18.80                                    | 7.32  | 44,300   | 18.78   |
| 21.75 - 25.00                  | 61,700   | 24.58                                    | 7.55  | 30,850   | 24.58   |
|                                | <u>3,813,654</u>                                     | <u>6.29</u>                              | <u>7.68</u>   | <u>1,213,003</u>                                     | <u>5.47</u>   |

All of the options were granted at exercise prices that were equal or higher to market prices at the date of grant and, therefore, no compensation cost has been charged against income in respect of the aforementioned plans in the years ended December 31, 2000, 2001 and 2002.

**Employee Stock Purchase Plan ("ESPP"):**

During 2001, the Company adopted its Global and U.S. ESPP (the "plans"). The plans provide eligible employees with the opportunity to purchase 550,000 Ordinary shares under the Global ESPP and 200,000 Ordinary shares under the U.S. ESPP. Under the plans' terms the employees may purchase the shares through periodic deduction between 1% and 10% of their salary. The number of shares to be issued in return for the amounts deducted in a six-months period ("the offering period") will be determined at the end of the offering period and will be equal to the lower of 85% of the closing bid of the Company's shares in the Stock Exchange Market on the first day or the last day of the offering period.

In November 2001, at the end of the First Offering period, the Company issued 18,313 Ordinary shares to eligible employees in consideration of \$ 153.

In May 2002, at the end of the second offering period, the Company issued 28,711 Ordinary shares to eligible employees in consideration of \$ 214.

In November 2002, at the end of the third offering period, the Company issued 35,881 Ordinary shares to eligible employees in consideration of \$ 222. Subsequently, a new offering period commenced, which will elapse in May 2003.

As of December 31, 2002, 667,095 Ordinary shares were available for future purchase by employees. The average weighted price of the Ordinary shares purchased in 2002 was \$ 6.85.

## NOTE 10:- SHARE CAPITAL (cont.)

### Treasury stock:

During 1998, the Company sold a former subsidiary based in Taiwan, to certain shareholders of the subsidiary. As part of the agreement, the Company returned 6,045,500 shares of the subsidiary to those shareholders and in exchange, those shareholders transferred 1,330,000 shares of M-Systems to one of M-Systems wholly-owned subsidiary.

The Company accounted for the investment by its subsidiary in its shares as treasury stock at the cost of \$ 4,738. During 2001, the Company canceled the treasury stock and recorded the cancellation against additional paid in capital.

### Dividends:

In the event that cash dividends are declared in the future, such dividends will be paid in NIS or in foreign currency subject to any statutory limitations. The Company does not intend to pay cash dividends in the foreseeable future. The Company has decided not to declare dividends out of tax-exempt earnings.

## NOTE 11:- NET EARNINGS (LOSS) PER SHARE

The following table sets forth the computation of historical basic and diluted net earnings (loss) per share:

|  | Year ended December 31, |             |            |
|--|-------------------------|-------------|------------|
|  | 2000                    | 2001        | 2002       |
| Numerator:   |                         |             |            |
| Net income (loss)  | \$ 6,279                | \$ (41,785) | \$ (5,500) |
| Numerator for basic net earnings (loss) per share - income (loss) available to Ordinary shareholders                               | \$ 6,279                | \$ (41,785) | \$ (5,500) |
| Numerator for diluted net earnings (loss) per share - net income (loss) available to Ordinary shareholders after assumed exercises | \$ 6,279                | \$ (41,785) | \$ (5,500) |
| Denominator:   |                         |             |            |
| Weighted average shares  | 26,698,286              | 26,715,683  | 26,953,410 |
| Treasury stock   | (1,330,000)             | ---         | ---        |
| Denominator for basic net earnings (loss) per share-weighted-average shares  | 25,368,286              | 26,715,683  | 26,953,410 |
| Effect of dilutive securities:   |                         |             |            |
| Employee stock options   | 2,020,185               | *) ---      | *) ---     |
| Warrants   | 652,140                 | *) ---      | *) ---     |
| Dilutive potential Ordinary shares   | 2,672,325               | ---         | ---        |
| Denominator for diluted net earnings (loss) per share  | 28,040,611              | 26,715,683  | 26,953,410 |

\*) Anti-dilutive.

## **NOTE 12:- INCOME TAXES**

### **Tax benefits under the Law for the Encouragement of Capital Investments, 1959 (the "Capital Investment Law"):**

Most of the Company's and its Israeli subsidiary production facilities have been granted an "Approved Enterprise" status under the above Law under six separate investment programs. According to the Capital Investments Law, the Company has elected the "alternative benefits" - and has waived Government grants in return for a tax exemption.

The Company is also a "foreign investors' company", as defined by the abovementioned law, and, as such, is entitled to a 10-year period of benefits and to an additional reduction in tax rates, up to 10% or 25% (based on the percentage of foreign ownership in each taxable year).

Income derived from the first investment program which commenced in 1992 and expired in 1998 was tax-exempt for a period of two years (1992 and 1993), and was subject to tax at the reduced rate of 20%, for an additional period of five years ended in 1998. The period of benefits for this program ended in 1998.

For the Company's other five investment programs, the tax benefits are as follows: Income derived from investment programs, which commenced operations prior to or during 1996 is tax exempt for the first four years of the 10-year tax benefit period, and is entitled to a reduced tax rate of 20% during the remaining benefit period. Income derived from investment programs that commenced operations subsequent to 1996, is tax exempt for the first two years of the 10-year tax benefit period, and is entitled to a reduced tax rate of 20% during the remaining benefit period. The period of benefits for all these investment programs has not yet commenced, since the Company does not yet have taxable income.

The period of tax benefits detailed above is subject to limits of the earlier of 12 years from commencement of production, or 14 years from receiving the approval. Accordingly, the period of benefits relating to all investment programs will expire in the years 2005 through 2012.

In connection with the purchase of Fortress, the Company established a research and development facility in Omer, Israel, at the site of Fortress' facilities. Income derived from the Omer facility is tax exempt for a 10-year period. The Company came to agreement with the Israeli tax authorities on the percentage of revenues which are deemed attributable to the facility in Omer.

The entitlement to the above benefits is conditional upon the Company's fulfilling the conditions stipulated by the above law, regulations published thereunder and the instruments 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, including interest.

The tax exempt income attributable to the "Approved Enterprise" can be distributed to shareholders without imposing tax liability on the Company only upon the complete liquidation of the Company. In the event of a distribution of such tax-exempt income as a cash dividend in a manner other than in the complete liquidation of the Company, the Company will be required to pay tax at the rate of 20% on the amount distributed. In addition, these dividends will be subject to 15% withholding tax.

The Company's Board of Directors has determined that such tax-exempt income will not be distributed as dividends. Accordingly, no deferred taxes have been provided on income attributable to the Company's "Approved Enterprise".

The Capital Investments Law also grants entitlement to claim accelerated depreciation on equipment used by the "Approved Enterprise" during five tax years.

If the Company derives income from sources other than an "Approved Enterprise", such income will be taxable at the regular corporate tax rate of 36%.



## NOTE 12:- INCOME TAXES (cont.)

### Tax benefits under the Law for the Encouragement of Industry (Taxes), 1969:

The Company and its Israeli subsidiary currently qualify as an "industrial company" under the above law and, as such, are entitled to certain tax benefits, mainly accelerated depreciation of machinery, equipment, and building the rights to claim public issuance expenses and amortization of patents and other intangible property rights as a deduction for tax purposes.

### Taxable income under the Inflationary Income Tax (Inflationary Adjustments) Law 1985:

Results of the Company and its Israeli subsidiary for tax purposes are measured and reflected in real terms in accordance with the changes in the Israeli Consumer Price Index ("CPI"). As explained in Note 2, the financial statements are presented in U.S. dollars. The difference between the change in the Israeli CPI and in the NIS/U.S. dollar exchange rate causes a difference between taxable income or loss and the income or loss before taxes reflected in the financial statements. In accordance with paragraph 9(f) of SFAS No. 109, the Company has not provided deferred income taxes on this difference between the reporting currency and the tax bases of assets and liabilities.

### Deferred income taxes:

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. Significant components of the Company's deferred tax assets are as follows:

|   | December 31, |          |
|---|--------------|----------|
|   | 2001         | 2002     |
| Deferred tax assets:                                |              |          |
| Net operating loss carryforward of subsidiaries     | \$ 3,268     | \$ 4,459 |
| Reserve and allowances                              | 727          | 1,041    |
| Total deferred tax asset before valuation allowance | 3,995        | 5,500    |
| Valuation allowance                                 | (3,995)      | (5,500)  |
| Net deferred tax asset                              | \$ ---       | \$ ---   |

As of December 31, 2002, the Company's subsidiaries have provided valuation allowances of approximately \$ 5,500 in respect of deferred tax assets resulting from tax loss carryforwards and other temporary differences. The net change in the valuation allowance in the year 2002, amounted to \$ (1,505). Management currently believes that since the Company's subsidiaries have a history of losses it is more likely than not that the deferred tax regarding the loss carryforwards and other temporary differences will not be realized in the foreseeable future.

## NOTE 12:- INCOME TAXES (cont.)

Income (loss) before minority interest consists of the following:

|          | Year ended December 31, |                    |                   |
|----------|-------------------------|--------------------|-------------------|
|          | 2000                    | 2001               | 2002              |
| Domestic | \$ 6,177                | \$ (36,356)        | \$ (1,509)        |
| Foreign  | 83                      | (5,429)            | (3,991)           |
|          | <u>\$ 6,260</u>         | <u>\$ (41,785)</u> | <u>\$ (5,500)</u> |

### Net operating loss carryforwards:

The Company and its Israeli subsidiary have accumulated losses for Israel income tax purposes as of December 31, 2002, in the amount of approximately \$ 58,000. These losses may be carried forward (linked to the Israeli CPI) and offset against taxable income in the future for an indefinite period. The Company expects that during the period these tax losses are utilized, its income would be substantially tax exempt. Accordingly, there will be no tax benefit available from such losses and no deferred income taxes have been included in these consolidated financial statements.

As of December 31, 2002, M-Systems Inc. had U.S. federal net operating loss carryforwards of approximately \$ 3,710, that can be carried forward and offset against taxable income and expire during the years 2015 to 2022. Utilization of U.S. net operating losses may be subject to substantial annual limitations due to the "change in ownership" provisions of the Internal Revenue Code of 1986 and similar state law provisions. The annual limitations may result in the expiration of net operating losses before utilization.

As of December 31, 2002, M-Systems Taiwan and M-Systems Japan had a net operating loss carryforwards of approximately \$ 2,700 and \$ 2,070, respectively, which can be carried forward and offset against taxable income and expire during the years 2003 to 2005.

### Reconciliation of the theoretical tax expense (benefit) to the actual tax expense (benefit):

In 2000, 2001 and 2002 the main reconciling item of the statutory tax rate of the Company (36%) to the effective tax rate (0%) is carryforward tax losses and other deferred taxes for which a full valuation allowance was provided.

# **NOTE 13:- SELECTED STATEMENTS OF OPERATIONS DATA**

|    |  | Year ended December 31, |                  |                  |
|----|--|-------------------------|------------------|------------------|
|    |  | 2000                    | 2001             | 2002             |
| a. | Research and development expenses, net:                  |                         |                  |                  |
|    | Total expenses   | \$ 7,364                | \$ 13,350        | \$ 12,249        |
|    | Less - grants and participations                         | ---                     | 60               | 275              |
|    |  | <u>\$ 7,364</u>         | <u>\$ 13,290</u> | <u>\$ 11,974</u> |
| b. | Financial income, net:                                   |                         |                  |                  |
|    | Financial income:  |                         |                  |                  |
|    | Interest on marketable securities, net                   | \$ 10                   | \$ 729           | \$ 1,391         |
|    | Interest on bank deposits                                | 6,145                   | 4,018            | 1,164            |
|    | Gain on sale of held to maturity marketable securities   | ---                     | 48               | 70               |
|    | Gain on sale of available for sale marketable securities | ---                     | 58               | ---              |
|    | Foreign currency translation differences                 | 390                     | 225              | 157              |
|    | Other  | 8                       | 62               | 117              |
|    |  | <u>6,553</u>            | <u>5,140</u>     | <u>2,899</u>     |
|    | Financial expenses:                                      |                         |                  |                  |
|    | Foreign currency translation differences                 | 480                     | 389              | 174              |
|    | Bank commissions   | 153                     | 77               | 74               |
|    | Other  | 45                      | 46               | 32               |
|    |  | <u>678</u>              | <u>512</u>       | <u>280</u>       |
|    | Financial income, net                                    | <u>\$ 5,875</u>         | <u>\$ 4,628</u>  | <u>\$ 2,619</u>  |

## NOTE 14:- CUSTOMERS AND GEOGRAPHIC INFORMATION

The Company manages its business on a basis of one reportable segment. See Note 1 for a description of the Company's business. Total revenues are attributed to geographic areas based on the location of customers in accordance with Statement of Financial Accounting Standard of No. 131, "Disclosures about Segments of an Enterprise and Related Information ("SFAS 131").

The following presents total revenues and long-lived assets as of and for the years ended December 31, 2000, 2001 and 2002:

|  | <b>2000</b>               |                              | <b>2001</b>               |                              | <b>2002</b>               |                                   |
|--|---------------------------|------------------------------|---------------------------|------------------------------|---------------------------|-----------------------------------|
|  | <b>Total<br/>revenues</b> | <b>Long-lived<br/>assets</b> | <b>Total<br/>revenues</b> | <b>Long-lived<br/>assets</b> | <b>Total<br/>revenues</b> | <b>Long-<br/>Lived<br/>assets</b> |
| Israel                                   | \$ 4,584                  | \$ 4,226                     | \$ 2,435                  | \$ 17,346                    | \$ 1,678                  | \$ 16,923                         |
| United States                            | 42,172                    | 217                          | 17,130                    | 157                          | 17,248                    | 117                               |
| Europe (excluding France)                | 6,732                     | 20                           | 5,533                     | 15                           | 7,648                     | 4                                 |
| France                                   | 11,911                    | ---                          | 3,690                     | ---                          | 2,957                     | ---                               |
| Taiwan                                   | 12,742                    | 145                          | 7,835                     | 114                          | 8,282                     | 100                               |
| Japan                                    | 6,776                     | 23                           | 4,635                     | 31                           | 22,177                    | 76                                |
| Far East (excluding Taiwan<br>and Japan) | 7,626                     | ---                          | 3,420                     | 20                           | 4,827                     | 15                                |
| Other                                    | 46                        | ---                          | ---                       | ---                          | ---                       | ---                               |
|  | <u>\$ 92,589</u>          | <u>\$ 4,631</u>              | <u>\$ 44,678</u>          | <u>\$ 17,683</u>             | <u>\$ 64,817</u>          | <u>\$ 17,235</u>                  |

### Accumulated Amortization

Total revenues from external customers, divided on the basis of the Company's product lines, are as follows:

|                        | <b>Year ended December 31,</b> |                  |                  |
|------------------------|--------------------------------|------------------|------------------|
|                        | <b>2000</b>                    | <b>2001</b>      | <b>2002</b>      |
| DiskOnChip             | \$ 72,950                      | \$ 27,440        | \$ 29,366        |
| DiskOnKey              | ---                            | 6,606            | 26,810           |
| Fast Flash Disks (FFD) | 8,002                          | 5,389            | 5,926            |
| PC Cards               | 9,024                          | 3,402            | 1,154            |
| Other                  | 2,613                          | 1,841            | 1,561            |
|                        | <u>\$ 92,589</u>               | <u>\$ 44,678</u> | <u>\$ 64,817</u> |

## NOTE 14:- CUSTOMERS AND GEOGRAPHIC INFORMATION (Cont.)

Major customers data as a percentage of total revenues:

|            | Year ended December 31, |      |      |
|------------|-------------------------|------|------|
|            | 2000                    | 2001 | 2002 |
| Customer A | 15%                     | 4%   | 1%   |
| Customer B | 12%                     | 4%   | ---  |
| Customer C | ---                     | 3%   | 15%  |
| Customer D | 3%                      | 6%   | 10%  |

## NOTE 15:- SUBSEQUENT EVENTS

a. In May 2003, the Company entered into a share purchase agreement with one of its directors according to which, the director is to purchase within no later than 60 days, 500,000 ordinary shares of the Company for an aggregate amount of \$4,105.

b. In April 2003, the Company established a subsidiary in Israel named Smart Caps Ltd. ("Smart Caps") for the purpose of developing and marketing smart applications for M-Systems' line of DiskOnKey products.

The State of Israel, through the Office of the Chief Scientist, has committed to investing up to approximately \$ 550 in Smart Caps. This investment by the State of Israel is to at least match the Company's investment in Smart Caps. In consideration for such investments, the Company and the State of Israel are to be issued shares in Smart Caps pro rata to each of their relative investments.

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Accountants and Consultants

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## **Report of Independent Certified Public Accountants**

The Board of Directors of  
M-Systems, Inc.

We have audited the accompanying balance sheets of M-Systems, Inc. (a wholly owned subsidiary of M-Systems Flash Disk Pioneers Ltd.) as of December 31, 2002 and 2001 and the related statements of operations, shareholders deficiency, and cash flows for the years then ended. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with auditing standards generally accepted in the United States of America. 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 management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of M-Systems, Inc. as of December 31, 2002 and 2001, and the results of its operations and its cash flows for the years then ended in conformity with accounting principles generally accepted in the United States of America.

As discussed in Notes 1 and 5, the Company's revenues consist of commission income from its parent company that are generated under terms and conditions prescribed by its parent company. Further, as of December 31, 2002, the Company has a net liability of \$10,354,000 due to its parent company and is economically dependant upon its parent company for continuing financial support. The accompanying financial statements of M-Systems, Inc. may not necessarily be indicative of the financial position, results of operations and cash flows of the Company had it operated without its affiliation with and continuing financial support of its parent company.

/S/ BDO Seidman, LLP

San Jose, California  
January 8, 2003

## **SIGNATURES**

Pursuant to the requirements of Section 12 of the Securities Exchange Act of 1934, M-Systems hereby certifies that it meets all of the requirements for filing on Form 20-F/A, and that it has duly caused and authorized the undersigned to sign this Amendment No. 1 to its Annual Report on its behalf on the 10<sup>th</sup> day of November, 2003.

### **M-SYSTEMS FLASH DISK PIONEERS LTD.**

By: /s/ Dov Moran

Dov Moran,

President and Chief Executive Officer

## CERTIFICATIONS

I, Dov Moran, certify that:

1. I have reviewed this annual report on Form 20-F/A of M-Systems Flash Disk Pioneers Ltd.;
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.

Date: November 10<sup>th</sup>, 2003

By: /s/ Dov Moran

Dov Moran, President and Chief Executive Officer

M-Systems Flash Disk Pioneers Limited



I, Ronit Maor, certify that:

1. I have reviewed this annual report on Form 20-F/A of M-Systems Flash Disk Pioneers Ltd.;
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.

Date: November 10<sup>th</sup>, 2003

By: /s/ Ronit Maor

Ronit Maor, Chief Financial Officer

M-Systems Flash Disk Pioneers Limit