

NOVA MEASURING INSTRUMENTS LTD  
Form 20-F  
March 03, 2017

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

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Form 20-F

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

OR

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

For the fiscal year  
ended December  
31, 2016

OR

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

OR

SHELL  
COMPANY  
REPORT  
PURSUANT TO  
SECTION 13 or  
15(d) OF THE  
SECURITIES  
EXCHANGE  
ACT OF 1934

Commission File Number  
000-30668

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NOVA MEASURING INSTRUMENTS LTD.  
(Exact name of Registrant as specified in its charter)

Nova Measuring Instruments Ltd.                      Israel  
(Translation of Registrant's name into English) (Jurisdiction of incorporation or organization)

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Weizmann Science Park, Einstein St., Building 22, 2nd Floor, Ness-Ziona, Israel  
(Address of principal executive offices)

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Dror David, +972-73-2295833, +972-8-9407776, P.O.B 266, Rehovot 7610201, Israel  
(Name, Telephone, E-mail and/or Facsimile number and Address of the Registrant's Contact Person)

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

Title of each class	Name of each exchange on which registered
Ordinary Shares, nominal value NIS 0.01 per share	The NASDAQ Global Select Market

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

None

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

None

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: 27,351,431 ordinary shares, NIS 0.01 nominal (par) value per share, as of December 31, 2016.

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.

Yes  No

If this report is an annual or transition report, indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934.

Yes  No

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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 whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files).

Yes  No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, or a non-accelerated filer. See definition of "accelerated filer and large accelerated filer" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer

Accelerated filer

Non-accelerated filer

Indicate by check mark which basis of accounting the registrant has used to prepare the financial statements included in this filing:

U.S. GAAP

International Financing Reporting Standards as issued by the International Accounting Standards Board

Other

If "Other" has been checked in response to the previous question, indicate by check mark which financial statement item the registrant has elected to follow:

Item 17  Item 18

If this is an annual report, indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

Yes  No

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## Introduction

In this Annual Report, the “Company”, “Nova”, “we” or “our” refers to Nova Measuring Instruments Ltd. and its consolidated subsidiaries, when the context requires.

## Our Functional Currency

Unless otherwise indicated, all amounts herein are expressed in United States dollars (“U.S. dollars”, “dollars”, “USD”, “US\$” or “\$”).

The currency of the primary economic environment in which we operate is the U.S. dollar, since substantially all our revenues to date have been denominated in U.S. dollars and over 50% of our expenses are in U.S. dollars or in New Israeli Shekels linked to the dollar. Transactions and balances denominated in dollars are presented at their original amounts. Non-dollar transactions and balances have been re-measured into dollars as required by the principles in ASC 830 Foreign Currency Matters. All exchange gains and losses from such re-measurement are included in the net financial income when they arise.

## Cautionary Statement Regarding Forward-Looking Statements

Certain information contained herein, which does not relate to historical financial information, may be deemed to constitute forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. The words or phrases “will likely result”, “are expected to”, “will continue”, “is anticipated”, “estimate”, “project”, “believe”, “plan”, or similar expressions identify “forward looking statements”. Such statements, including without limitation, statements relating to our anticipated sales, revenues and expenses in 2017, our expectations with respect to our business and operations and our ability to gain market share are subject to certain risks and uncertainties that could cause actual results to differ materially from historical results and those presently anticipated or projected. We wish to caution readers not to place undue reliance on any such forward-looking statements, which speak only as of the date made. We cannot guarantee future results, levels of activity, performance or achievements. We also undertake no obligation to release publicly any revisions to these forward-looking statements to reflect events or circumstances after the date hereof or to reflect the occurrence of unanticipated events. Among the factors that could cause our actual results in the future to differ materially from any opinions or statements expressed with respect to future periods are competitive industry conditions and the ability to forecast the needs of the semiconductor industry with respect to the very cyclical nature of the industry and the very fast pace of technology evolutions and factors related to the conditions of the global markets and the global economy. Various other factors that could cause our actual results to differ materially are set forth in “Item 3D. Risk Factors” in this annual report on Form 20-F and elsewhere herein.

## PART I

Item 1. Identity of Directors, Senior Management and Advisors

Not applicable.

Item 2. Offer Statistics and Expected Timetable

Not applicable.

Item 3. Key Information

## 3A. Selected Financial Data

The following selected consolidated financial data as of December 31, 2016 and 2015 and for the years ended December 31, 2016, 2015 and 2014 have been derived from our audited consolidated financial statements included elsewhere in this annual report. These financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America (“U.S. GAAP”), and audited by our independent registered public accounting firm. The consolidated selected financial data as of December 31, 2014, 2013 and 2012 and for the years ended December 31, 2013 and December 31, 2012 have been derived from other consolidated financial statements not included in this Form 20-F that were also prepared in accordance with U.S. GAAP and audited by our independent registered public accounting firm. The selected consolidated financial data set forth below should be read in conjunction with and are qualified by reference to “Item 5. Operating and Financial Review and Prospects” and the consolidated financial statements and notes thereto and other financial information included elsewhere in this annual report on Form 20-F.

## Summary of Consolidated Financial Data

	Year ended December 31,				
	2012	2013	2014	2015	2016
	(in thousands, except per share data)				
Consolidated Statement of Operations Data:					
Revenues	\$96,168	\$111,509	\$120,618	\$148,514	\$163,903
Cost of revenues	45,014	52,438	57,005	71,434	88,623
Gross profit	51,154	59,071	63,613	77,080	75,280
Operating expenses:					
Research and development expenses, net	24,594	29,578	29,498	39,703	34,998
Sales and marketing expenses	11,998	11,963	12,747	15,967	21,523
General and administrative expenses	3,978	5,197	4,457	8,511	6,835
Amortization of intangible assets				1,318	1,758
Total operating expenses	40,570	46,738	46,702	65,499	65,114
Operating profit	10,584	12,333	16,911	11,581	10,166
Financing income, net	1,368	693	563	643	1,216
Income before income taxes	11,952	13,026	17,474	12,224	11,382
Income taxes expenses (benefit)	124	2,511	(1,178 )	(3,501 )	1,738
Net income for the year	\$11,828	\$10,515	\$18,652	\$15,725	9,644
Earnings per share:					
Basic	\$0.44	\$0.39	\$0.68	\$0.58	\$0.35
Diluted	\$0.43	\$0.38	\$0.67	\$0.57	\$0.35
Shares used in calculation of net earnings per share:					



Basic	26,619	27,091	27,447	27,185	27,175
Diluted	27,277	27,373	27,807	27,510	27,503

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	December 31,				
	2012	2013	2014	2015	2016
	(in thousands)				
Consolidated Balance Sheet Data:					
Working capital	106,298	118,596	130,480	112,819	128,872
Total assets	142,044	162,277	173,279	207,269	218,593
Capital stock (including additional paid-in capital)	111,062	114,348	119,058	113,022	117,102
Shareholders' equity	114,771	128,664	143,582	161,060	174,717

### 3B. Capitalization and Indebtedness

Not applicable.

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

Not applicable.

### 3D. Risk Factors

#### Risks Related to Our Business and Our Industry

Because substantially most of our current sales are dependent on three specific product lines, factors that adversely affect the pricing and demand for these product lines could substantially reduce our sales.

We are currently dependent on three process control product lines. We expect revenues from these product lines to continue to account for a substantial portion of our revenues in the coming years. As a result, factors adversely affecting the pricing of, or demand for, these product lines, such as competition and technological change, could significantly reduce our sales.

We depend on a small number of large customers, and the loss of one or more of them could significantly lower our revenues.

Like our peers serving the semiconductor market, our customer base is highly concentrated among a limited number of large customers. We anticipate that our revenues will continue to depend on a limited number of major customers, although the companies considered to be our major customers and the percentage of our revenue represented by each major customer may vary from period to period. As a result of our customer concentration, our financial performance may fluctuate significantly from period to period based, among others, on exogenous circumstances related to our clients. For example, it is possible that any of our major customers could terminate its purchasing relationship with us or significantly reduce or delay the amount of our products that it orders, purchase products from our competitors, or develop its own products internally. The loss of any one of our major customers would adversely affect our revenues. Furthermore, if any of our customers become insolvent or have difficulties meeting their financial obligations to us for any reason, we may suffer losses. For more information regarding our sales by major customers as percentage of our total sales, see Note 11 to our consolidated financial statements contained elsewhere in this report.

The markets we target are cyclical and it is difficult to predict the length and strength of any downturn or expansion period.

The semiconductor capital equipment market and industries, which are cyclical, experienced a steep downturns and upturns between the years 2008 and 2011. However, in recent years, we have seen a more stable overall capital investment patterns, yet we cannot predict the length and strength of potential future downturns or expansions.

Our inability to significantly reduce spending during a protracted slowdown in the semiconductor industry could reduce our prospects of achieving continued profitability.

Historically, we have derived all of our revenues, and we expect to continue to derive practically all of our revenues, from sales of our products and related services to the semiconductor industry. Our business depends in large part upon capital expenditures by semiconductor manufacturers, which in turn depend upon the current and anticipated demand for semiconductors. The semiconductor industry has experienced severe and protracted cyclical downturns and upturns. Specifically, during 2010, the semiconductor industry experienced a steep upturn of over 100%, which followed a severe downturn in 2008 and 2009. During cyclical downturns, as those we have experienced in the past and are likely to experience in the future, material reductions in the demand for the type of capital equipment and process technology that we offer may result in a decline in our sales. In addition, our ability to significantly reduce expenses in response to any downturn or slowdown in the rate of capital investment by manufacturers in these industries may be limited because of:

our continuing need to invest in research and development;

our continuing need to market our new products to new and existing customers; and

our extensive ongoing customer service and support requirements worldwide.

As a result, we may have difficulty achieving continued profitability during a protracted slowdown.

If we do not respond effectively and on a timely basis to rapid technological change, our ability to attract and retain customers could be diminished, which would have an adverse effect on our sales and ability to remain competitive.

The semiconductor manufacturing industry is characterized by rapid technological change, new product introductions and enhancements and evolving industry standards. Our ability to remain competitive and generate sales revenue will depend in part upon our ability to develop new and enhanced systems at competitive prices in a timely and cost-effective manner and to accurately predict technology transitions. Because new product development commitments must be made well in advance of sales, new product decisions must anticipate the future demand for products. If we fail to correctly anticipate future demand for products, our sales and competitive position will suffer. In addition, the development of new measurement technologies, new product introductions or enhancements by our competitors could cause a decline in our sales or loss of market acceptance of our existing products.

We depend on Process Equipment Manufacturers (“PEMs”) for sales of our integrated metrology systems, and the loss of PEMs as business partners could harm our business.

We believe that sales of integrated metrology systems will continue to be an important source of our revenues. Sales of our integrated metrology systems depend upon the ability of PEMs to sell semiconductor equipment products that are able to integrate with our metrology systems. If our PEMs are unable to sell such products, if they choose to focus their attention on products that do not integrate our systems, or if they choose to develop their own metrology solutions, our business could suffer. If we were to lose our PEMs as business partners for any reason, our inability to realize sales from integrated metrology systems could significantly harm our business. In addition, we may not be able to develop or market new integrated metrology products, which could slow or prevent our growth.

Some of our commercial agreements with PEMs and customers may include exclusivity provisions. Such exclusivity obligations may prevent us from engaging in certain business relationships with third parties, and thus may affect our ability to introduce new products into relevant markets.

Some of our commercial agreements with PEMs and customers may include exclusivity provisions, which prevent us from engaging in certain business relationships with third parties. These exclusivity obligations are normally used as a tool to promote the development and the penetration of innovative new products, and are usually limited in terms of scope and length. When considering whether to enter into any such exclusivity arrangements, we usually take into the consideration the terms of the exclusivity (e.g., length and scope), the expected benefit to the Company, and the risks and limitations associated with such exclusivity undertakings. Exclusivity obligations relating to our technology and products may affect our ability to commercialize our products, engage in potentially beneficial business relationships with third parties, or introduce new products into relevant markets, which could slow or prevent our growth.

If any of our systems fail to meet or exceed our internal quality specifications, we cannot ship them until such time as they have met such specifications. If we experience significant delays or are unable to ship our products to our customers as a result of our internal processes or for any other reason, our business and reputation may be adversely affected.

Our products are complex and require technical expertise to design and manufacture. Various problems occasionally arise during the manufacturing process that may cause delays and/or impair product quality. We actively monitor our manufacturing processes to ensure that our products meet our internal quality specifications. Any significant delays stemming from the failure of our products to meet or exceed our internal quality specifications, or for any other reasons, would delay our shipments. Shipment delays could be harmful to our business, revenues and reputation in the industry.

We are exposed to cyber security risks that, if materialized, may affect our business and operations.

Our global operations are linked by information systems, including telecommunications, the internet, our corporate intranet, network communications, email and various computer hardware and software applications. Despite our implementation of network security measures, our tools and servers are vulnerable to computer viruses, break-ins and similar disruptions from unauthorized tampering with our computer systems and tools located at customer sites, or could be subject to system failures or malfunctions for other reasons. System failures or malfunctioning could disrupt our operations and our ability to timely and accurately process and report key components of our financial results.

We may incorporate open source technology in some of our software and products, which may expose us to liability and have a material impact on our product development and sales.

Some of our software and products may utilize open source technologies. These technologies may be subject to certain open source licenses, including but not limited to the General Public License, which, when used or integrated in particular manners, impose certain requirements on the subsequent use of such technologies, and pose a potential risk to proprietary nature of products. In the event that we have or will in the future, use or integrate software that is subject to such open source licenses into or in connection with our products in such ways that will trigger certain requirements of these open source licenses, we may (i) be required to include certain notices and abide by other requirements in the absence of which we may be found in breach of the copyrights owned by the creators of such open source technologies; and/or (ii) be required to disclose our own source code or parts thereof to the public, which could enable our competitors to eliminate some or any technological advantage that our products may have over theirs. Any such requirement to disclose our source code or other confidential information related to our products, and the failure to abide by license requirement resulting in copyright infringement, could materially adversely affect our competitive position and impact our business results of operations and financial condition.

New product lines that we may introduce in the future may contain defects, which will require us to allocate time and financial resources to correct.

Our new product lines may contain defects when first introduced. If there are defects, we will need to divert the attention of our personnel from our ongoing product development efforts to address the detection and correction of the defects. In the past, no liability claims have been filed against us for damages related to product defects, and we have not experienced any material delays as a result of product defects. However, we cannot provide assurances that we will not incur these costs or liabilities or experience these lags or delays in the future. Moreover, the occurrence of such defects, whether caused by our products or the products of another vendor, may result in significant customer relations problems and adversely affect our reputation and may impair the market acceptance of our products.

We have historically generated losses and may incur future losses.

Since the year 2009, we have been able to demonstrate continued profitability, yet since our inception in 1993, we have had several years of losses and we may incur net losses in future years as well. We plan to increase our aggregate operating expenses in 2017 relative to 2016. However, our ability to generate profits is dependent mainly on our ability to generate sufficient sales. In the future, our sales may not be sufficient to cover the increase in our expenses and we may not be able to maintain profitability, mainly during a protracted slowdown.

Our dependence on a single manufacturing facility per product line magnifies the risk of an interruption in our production capabilities.

We have one manufacturing facility for our Optical CD product lines, which is located in Weizman Science Park, Ness-Ziona-Rehovot, Israel, and one manufacturing facility for our XPS product line, which is located in Santa Clara, CA, US (the "Manufacturing Facilities"). Although we adopted a disaster recovery plan, any event affecting any of our Manufacturing Facilities, including natural disaster, labor stoppages or armed conflict, may disrupt or indefinitely discontinue our manufacturing capabilities and could significantly impair our ability to fulfill orders and generate revenues, thus negatively impacting our business.

Our lease agreements for our Manufacturing Facilities include provisions that exempt the landlord and others from liability for damages to our Manufacturing Facilities.

Pursuant to our lease agreements for our Manufacturing Facilities (one of which is also our headquarters), the landlord and anyone on its behalf, and additional tenants are exempt from any liability for direct or consequential damages to our Manufacturing Facilities, except in the event of willful misconduct. While we have obtained insurance policies against certain damages, the aforementioned exemption of liability could compromise our ability to recover the full amount of such damages, and consequently we may incur substantial costs upon the occurrence of such damages.

Because shipment dates may be changed and some of our customers may cancel or delay orders with little or no penalty, and since we encounter difficulties in collecting cancellation fees from our customers, our backlog may not be a reliable indicator of actual sales and financial results.

We schedule production of our systems based upon order backlog and customer forecasts. We include in backlog only those orders to which the customer has assigned a purchase order number and for which delivery has been specified. In general, our ability to rely on our backlog for future forecasting and planning is limited because shipment dates may be changed, some customers may cancel or delay orders with little or no penalty, and our ability to collect cancellation fees from customers is not assured. Thus, our backlog may not be a reliable indicator of actual sales and financial results.

We experience quarterly fluctuations in our operating results, which may adversely impact our share price.

Our quarterly operating results within a specific year have fluctuated significantly in the past. We expect this trend to continue. A principal reason is that we derive a substantial portion of our revenue from the sale of a relatively small number of systems to a relatively small number of customers. As a result, our revenues and results of operations for any given quarter may decrease due to factors relating to the timing of orders, the timing of shipments of systems, and the timing of recognizing these revenues. Furthermore, our quarterly results are affected by the cyclical nature of the semiconductor capital equipment market and industries.

We also have a limited ability to predict revenues for future quarterly periods and, as a result, face risks of revenue shortfalls. If the number of systems we actually ship, and thus the amount of revenues we are able to record in any particular quarter, is below our expectations, the adverse effect may be magnified by our inability to adjust spending quickly enough to compensate for the revenue shortfall.

We operate in an extremely competitive market, and if we fail to compete effectively, our revenues and market share will decline.

Although the market for process control systems used in semiconductor manufacturing is currently concentrated and characterized by relatively few participants, the semiconductor capital equipment industry is intensely competitive. We compete mainly with Nanometrics Inc., KLA-Tencor Corp. and Rudolph Technologies, Inc., which manufacture and sell integrated and/or stand-alone process control systems. In addition, we compete with PEMs, such as ASML Holdings N.V., Applied Materials Inc. and Lam Research Inc., which develop (or might as well acquire companies which develop) in-situ sensors and metrology products. Established companies, both domestic and foreign, compete with our product lines, and new competitors enter our market from time to time. Some of our competitors have greater financial, engineering, manufacturing and marketing resources than we do. If a particular customer selects a competitor's capital equipment, we expect to experience difficulty in selling our solution to that customer for a significant period of time. A substantial investment is required by the customers to evaluate, test, select and integrate capital equipment into a production line. As a result, once a manufacturer has selected a particular vendor's capital equipment, we believe that the manufacturer generally relies upon that equipment for the specific production line application and frequently will attempt to consolidate its other capital equipment requirements with the same vendor. Accordingly, unless our systems offer performance or cost advantages that outweigh a customer's expense of switching to our systems, it will be difficult for us to achieve significant sales from that customer once it has selected another vendor's system for an application. We believe that our ability to compete successfully depends on a number of factors both within and outside of our control, including:

the contribution of our equipment to the customers' productivity;

our product quality and performance;

our global technical service and support;

the return on investment (ROI) of our equipment and its cost of ownership;

the breadth of our product line;

our success in developing and marketing new products; and

the extendibility of our products.

If we fail to compete in a timely and cost-effective manner against current or future competitors, our revenues and market share will decline.

The ongoing consolidation in our industry may harm us if our competitors are able to offer a broader range of products and greater customer support than we can offer.

We believe that the semiconductor capital equipment market is undergoing consolidation. A number of process control suppliers have been acquired by larger equipment manufacturers. For example, in 2005 Rudolph Technologies, Inc. acquired August Technologies, Inc., in 2006 Nanometrics acquired Soluris, Inc. and Accent Technologies, Inc., in 2007 KLA-Tencor Corp. acquired Therma-Wave, Inc. and Nanometrics acquired Tevet Ltd., and in 2011 Nanometrics acquired Nanda Technologies. In addition, in the recent two years a major consolidation has occurred in the process equipment manufacturers segment, such as Applied Materials Inc. acquiring Varian Semiconductor Equipment Associates, Lam Research Corporation acquiring Novellus Systems Inc., and recently ASML Holdings N.V. acquired Hermes Microvision, Inc. We believe that similar acquisitions and business combinations involving our competitors, our customers and the PMEs may occur in the future. These acquisitions

could adversely impact our competitive position by enabling our competitors and potential competitors to expand their product offerings and customer services, which could provide them an advantage in meeting customers' needs, particularly with those customers that seek to consolidate their capital equipment requirements with a smaller number of vendors. The greater resources, including financial, marketing, intellectual property and support resources, of competitors involved in these acquisitions could allow them to accelerate the development and commercialization of new competitive products and the marketing of existing competitive products to their larger installed bases. Accordingly, such business combinations and acquisitions by competitors and/or customers could jeopardize our competitive position.

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We may not be successful in our efforts to complete and integrate current and/or future acquisitions, which could disrupt our current business activities and adversely affect our results of operations or future growth.

Any acquisition may involve many risks, including the risks of:

diverting management's attention and other resources from our ongoing business concerns;

entering markets in which we have no direct prior experience;

improperly evaluating new services, products and markets;

being unable to maintain uniform standards, controls, procedures and policies;

failing to comply with governmental requirements pertaining to acquisitions of local companies or assets by foreign entities;

being unable to integrate new technologies or personnel;

incurring the expenses of any undisclosed or potential liabilities; and

the departure of key management and employees.

If we are unable to successfully complete future acquisitions or to effectively integrate our recent acquisition of ReVera or future acquisitions, our ability to grow our business or to operate our business effectively could be reduced, and our business, financial condition and operating results could suffer. Even if we are successful in completing acquisitions, we cannot assure you that we will be able to integrate the operations of the acquired business without encountering difficulty regarding different business strategies with respect to marketing and integration of personnel with disparate business backgrounds and corporate cultures. The integration of ReVera operations is still an ongoing process and, as of the date of this annual report on Form 20-F, we cannot assure you that such process will be completed without encountering difficulties. Further, in certain cases, mergers and acquisitions require special approvals, or are subject to scrutiny by the local authorities, and failing to comply with such requirements or to receive such approvals, may prevent or limit our ability to complete the acquisitions as well as expose us to legal proceedings prior or following the consummation of such acquisitions. In some cases, such proceedings, if initiated, may conclude in a requirement to divest portions of the acquired business. As of the date of this annual report on Form 20-F, we are not aware of any pending proceedings as such in connection with the acquisition of ReVera.

Some of our contracts and arrangements potentially subject us to the risk of significant or non-limited liability.

We produce highly complex optical and electronic components and, accordingly, there is a risk that defects may occur in any of our products. Such defects can give rise to significant costs, including expenses relating to recalling products, replacing defective items, writing down defective inventory and loss of potential sales. In addition, the occurrence of such defects may give rise to product liability and warranty claims, including liability for damages caused by such defects.

In our commercial relationship with customers, we attempt to negotiate waivers of consequential and indirect damages arising from damages for loss of use, loss of product, loss of revenue and loss of profit caused by our products. Similarly, with respect to our commercial relationship with subcontractors and suppliers, we attempt to negotiate arrangements which do not include a limitation of liabilities and limitation of consequential and in direct damages. However, some contracts and arrangements we are bound by expose us to product liability claims resulting in personal injury or death, up to an unlimited amount, and the incurrence of the risk of material penalties for consequential or liquidated damages. Additionally, under such contracts and arrangements, we may be named in product liability claims even if there is no evidence that our products caused the damage in question, and such claims could result in significant costs and expenses relating to attorneys' fees and damages.

In addition, such contracts and arrangements may include non-limited liability provisions for infringement of a third party's intellectual property rights in connection with our products.

Although we have not incurred material penalties for consequential or liquidated damages during the past, we may incur such penalties in the future. Such penalties for consequential or liquidated damages may be significant (and so is the legal process conducted in connection with such penalties) and could negatively affect our financial condition or results of operations.

Because of our small size, we depend on a small number of employees who possess both executive and technical expertise, and the loss of any of these key employees would hurt our ability to implement our strategy and to compete effectively.

Because of our small size and our reliance on employees with both executive and advanced technical skills, our success depends significantly upon the continued contributions of our officers and key personnel. All of our key management and technical personnel have expertise, which is in high demand among our competitors, and the loss of any of these individuals could cause our business to suffer. We do not maintain life insurance policies for our officers and directors.

Our lengthy sales cycle increases our exposure to customer delays in orders, which may result in obsolete inventory and volatile quarterly revenues.

Sales of our systems depend, in significant part, upon our customers adding new manufacturing capacity or expanding existing manufacturing capacity, both of which involve a significant capital commitment. We may experience delays in finalizing sales following initial system qualification while a customer evaluates and approves an initial purchase of our systems. In general, for new customers or applications, our normal sales cycle takes between six (6) to twelve (12) months to complete. During this time, we may expend substantial funds and management effort, but fail to make any sales. Lengthy sales cycles subject us to a number of significant risks, including inventory obsolescence and fluctuations in operating results, over which we have limited control.

Because of the technical nature of our business, our intellectual property is extremely important to our business, and our inability to protect our intellectual property could harm our competitive position.

As of December 31, 2016, we have been granted more than 130 U.S. patents and have about 35 U.S. patent applications pending including US provisional patent applications. In addition, we have been granted about 70 non-U.S. patents and more than 85 non-U.S. patent applications pending.

We cannot assure that:

pending patent applications will be approved;

any patents will be broad enough to protect our technology, will provide us with competitive advantages or will not be challenged or invalidated by third parties; or

the patents of others will not have an adverse effect on our ability to do business.

We also cannot assure that others will not independently develop similar products, duplicate our products or, if patents are issued to us, design around these patents. Furthermore, because patents may afford less protection under foreign law than is available under U.S. law, we cannot assure that any foreign patents issued to us will adequately protect our proprietary rights.

In addition to patent protection, we also rely upon trade secret protection, employee and third-party nondisclosure agreements and other intellectual property protection methods to protect our confidential and proprietary information. Despite these efforts, we cannot be certain that others will not otherwise gain access to our trade secrets or disclose our technology.

Additionally, as part of our long term technological collaboration, we are engaged with joint development activities with some of our strategic customers as well as with research institutes. These activities impose some limitations on the joint intellectual property developed as part of these programs.

Furthermore, we may be required to institute legal proceedings to protect our intellectual property. If such legal proceedings are resolved adversely to us, our competitive position and/or results of operations could be harmed. For additional information on our intellectual property, see “Item 4B – Intellectual Property” in this annual report on Form 20-F.

There has been significant litigation involving intellectual property rights in the semiconductor and related industries, and similar litigation involving Nova could force us to divert resources to defend against such litigation or deter our customers from purchasing our systems.

We have been, and may in the future be, notified of allegations that we may be infringing intellectual property rights possessed by others. In addition, we may be required to commence legal proceedings against third parties, which may be infringing our intellectual property, in order to defend our intellectual property. In the future, protracted litigation and expense may be incurred to defend ourselves against alleged infringement of third party rights or to defend our intellectual property against infringement by third parties. Adverse determinations in that type of litigation could:

result in our loss of proprietary rights;

subject us to significant liabilities, including triple damages in some instances;

require us to seek licenses from third parties, which licenses may not be available on reasonable terms or at all; or

prevent us from selling our products.

Any litigation of this type, even if we are ultimately successful, could result in substantial cost and diversion of time and effort by our management, which by itself could have a negative impact on our profit margin, available funds, competitive position and ability to develop and market new and existing products. For additional information on our intellectual property, see “Item 4B – Intellectual Property” in this annual report on Form 20-F.

We depend on a limited number of suppliers, and in some cases a sole supplier. Any disruption or termination of these supply channels may adversely affect our ability to manufacture our products and to deliver them to our customers.

We purchase components, subassemblies and services from a limited number of suppliers and occasionally from a single source. Disruption or termination of these sources could occur (due to several factors, including, but not limited to, work stoppages, acts of war, terrorism, fire, earthquake, energy shortages, flooding or other natural disasters), and these disruptions could have at least a temporary adverse effect on our operations. Although we generally maintain an inventory of critical components used in the manufacture and assembly of our systems, such supplies may not be sufficient to avoid potential delays that could have an adverse effect on our business.

To date, we have not experienced any material disruption or termination of our supply sources.

A prolonged inability on our part to obtain components included in our systems on a cost-effective basis could adversely impact our ability to deliver products on a timely basis, which could harm our sales and customer relationships.

The application of tax laws is subject to interpretation and if tax authorities challenge our methodologies or our analysis of our tax rates it could result in an increase to our worldwide effective tax rate and cause us to change the way we operate our business.

The application of the tax laws of various jurisdictions to our international business activities is subject to interpretation and also depends on our ability to operate our business in a manner consistent with our corporate structure and intercompany arrangements. The tax authorities of the jurisdictions in which we operate may challenge our methodologies for valuing developed technology or intercompany arrangements, including our transfer pricing, or determine that the manner in which we operate our business does not achieve the expected tax consequences, which could increase our worldwide effective tax rate and adversely affect our financial position and results of operations.



A certain degree of judgment is required in evaluating our tax positions and determining our provision for income taxes. In the ordinary course of business, there are many transactions and calculations for which the ultimate tax determination is uncertain. For example, our effective tax rates could be adversely affected by earnings being lower than anticipated in countries where we have lower statutory rates and higher than anticipated in countries where we have higher statutory rates, by changes in foreign currency exchange rates or by changes in the relevant tax, accounting and other laws, regulations, principles and interpretations. As we operate in numerous taxing jurisdictions, the application of tax laws can be subject to diverging and sometimes conflicting interpretations by tax authorities of these jurisdictions. It is not uncommon for taxing authorities in different countries to have conflicting views. In addition, tax laws are dynamic and subject to change as new laws are passed and new interpretations of the law are issued or applied. For example, the work being carried out by the OECD on base erosion and profit shifting as a response to increasing globalization of trade could result in changes in tax treaties or the introduction of new legislation that could impose an additional tax on businesses. As a result of changes to laws or interpretations, our tax positions could be challenged and our income tax expenses could increase in the future.

For instance, if tax authorities in any of the countries in which we operate were to successfully challenge our transfer prices, they could require us to reallocate our income to reflect transfer pricing adjustments, which could result in an increased tax liability to us. In addition, if the country from which the income was reallocated did not agree with the reallocation asserted by the first country, we could become subject to tax on the same income in both countries, resulting in double taxation. If tax authorities were to allocate income to a higher tax jurisdiction, subject our income to double taxation or assess interest and penalties, it could increase our tax liability, which could adversely affect our financial position and results of operations.

The disclosure rules regarding the use of conflict minerals may affect our relationships with suppliers and customers.

The Securities and Exchange Commission requires certain disclosure by companies that use conflict minerals in their products, with substantial supply chain verification requirements in the event that the materials come from, or could have come from, the Democratic Republic of the Congo or adjoining countries. These rules and verification requirements may impose additional costs on us and on our suppliers, and limit the sources or increase the prices of materials used in our products. Among other things, this rule could affect sourcing at competitive prices and availability in sufficient quantities of certain minerals used in the manufacture of components that are incorporated into our products. In addition, the number of suppliers who provide conflict-free minerals may be limited, and there may be material costs associated with complying with the disclosure requirements, such as costs related to the process of determining the source of certain minerals used in our products, as well as costs of possible changes to products, processes, or sources of supply as a consequence of such verification activities. We may not be able to sufficiently verify the origins of the relevant minerals used in components manufactured by third parties through the procedures that we implement, and we may encounter challenges to satisfy those customers who require that all of the components of our products be certified as conflict-free, which could place us at a competitive disadvantage if we are unable to do so. While we have created processes and procedures designed to enable compliance to these rules, if in the future we are unable to certify that our products are conflict free, we may face challenges with our customers, which could place us at a competitive disadvantage and harm our reputation. In addition, because Securities and Exchange Commission rules allow an issuer to delay reporting on an acquired company's products until the first calendar year that begins no sooner than eight months after the effective date of the acquisition, products of ReVera, which was acquired on April 2, 2015, would be included for the first time in the Form SD to be filed for calendar year 2016 (to be filed in 2017).

We are dependent on international sales, which expose us to foreign political and economic risks that could impede our plans for expansion and growth.

Our principal customers are located in Taiwan, South Korea, China, the United States and Germany, and we produce our products in Israel and the US. International operations expose us to a variety of risks that could seriously impact our financial condition and impede our growth. For instance, trade restrictions, changes in tariffs and import and export license requirements could adversely affect our ability to sell our products in the countries adopting or changing those restrictions, tariffs or requirements. This could reduce our sales by a material amount.

We may be affected by instability in the global economy and by financial turmoil.

Instability in the global markets and in the geopolitical environment in many parts of the world as well as other disruptions may continue to put pressure on global economic conditions. In the event global economic and market conditions, or economic conditions in key markets, remain uncertain or deteriorate further, we may experience material impacts on our business, operating results, and financial condition.

Because we derive a significant portion of our revenues from sales in Asia, our sales could be hurt by instability of Asian economies.

A number of Asian countries have experienced political and economic instability. For instance, Taiwan and China have had a number of disputes, as have North and South Korea, and Japan has for a number of years experienced significant economic instability. Additionally, the Asia-Pacific region is susceptible to the occurrence of natural disasters, such as earthquakes, cyclones, tsunamis and flooding. We have subsidiaries in Taiwan, Japan and South Korea and we have significant customers in Taiwan and South Korea as well as in China. An outbreak of hostilities or other political upheaval, economic downturns or the occurrence of a natural disaster in these or other Asian countries would likely harm the operations of our customers in these countries, causing our sales to suffer.

Significant developments stemming from the recent changes in the U.S. administration or the U.K.'s "Brexit" referendum could have a material adverse effect on us.

Significant developments stemming from the recent changes in the U.S. administration or the U.K.'s "Brexit" referendum could have a material adverse effect on us. In the United States, the new Presidential administration expressed support for and may implement greater restrictions on free trade and increases tariffs on goods imported into the United States, as well as comprehensive tax reform, including in corporate and income taxation. Given our sales and manufacturing facilities in the U.S., changes in U.S. political, regulatory and economic conditions or in its policies governing international trade and foreign manufacturing and investment in the U.S. could adversely affect our business. In the United Kingdom, a recent referendum was held in which voters approved an exit from the European Union ("E.U."), commonly referred to "Brexit" and is expected to be passed into law, after which negotiations will commence to determine the future terms of the U.K.'s relationship with the E.U. The impact on us from Brexit will depend, in part, on the outcome of tariff, trade, regulatory and other negotiations. As a result of the referendum, the global markets and currencies have been adversely impacted, including a sharp decline in the value of the British pound as compared to the U.S. dollar, which may impair the purchasing power of our U.K. and other international buyers. Brexit could also lead to legal uncertainty and potentially divergent national laws and regulations as the U.K. determines which E.U. laws to replace or replicate, and those laws and regulations may be cumbersome, difficult or costly in terms of compliance. Given our sales and operations in the E.U., any of these effects of Brexit, among others, could adversely affect our business, financial condition, operating results and cash flows.

A large number of our ordinary shares continue to be owned by a relatively small number of shareholders, whose future sales of our shares, if substantial, may depress our share price.

If our principal shareholders sell substantial amounts of our ordinary shares, including shares issued upon the exercise of outstanding options or warrants, the market price of our ordinary shares may fall. For additional information on our major shareholders, see “Item 7A – Major Shareholders” in this annual report on Form 20-F.

Certain shareholders may control the outcome of matters submitted to a vote of our shareholders, including the election of directors.

To the best of our knowledge, approximately 47% of our outstanding ordinary shares are cumulatively held by seven of our shareholders. As a result, and although we are currently not aware of any voting agreement between such shareholders, if these shareholders voted together or in the same manner, they would have the ability to control the outcome of corporate actions requiring an ordinary majority vote of shareholders as set in the Company’s Amended and Restated Articles of Association. Even if these shareholders do not vote together, each one of them may have the ability to influence the outcome of corporate actions requiring the vote of shareholders as set in the Company’s Amended and Restated Articles of Association. For additional information on our major shareholders, see “Item 7A – Major Shareholders” in this annual report on Form 20-F.

The market price of our ordinary shares may be affected by a limited trading volume and may fluctuate significantly.

In the past there has been a limited public market for our ordinary shares and there can be no assurance that an active trading market for our ordinary shares will continue. An absence of an active trading market could adversely affect our shareholders’ ability to sell our ordinary shares in short time periods. Our ordinary shares have experienced, and are likely to experience in the future, significant price and volume fluctuations, which could adversely affect the market price of our ordinary shares without regard to our operating performance.

We manage our available cash through various bank institutions and invest large portions of our cash reserves in bank deposits. A bankruptcy of one of the banks in which or through which we hold or invest our cash reserves, might prevent us to access that cash for an uncertain period of time.

We manage our available cash through various bank institutions and invest large portions of our cash reserves in bank deposits. As of December 31, 2016, substantially all of our cash reserves were invested in bank institutions, of which more than 40% was invested in one institution. A bankruptcy of one of the banks in which we hold our cash reserves or through which we invest our cash reserves, might prevent us to access that cash for an uncertain period of time.



We may fail to maintain effective internal control over financial reporting in accordance with Section 404 of the Sarbanes-Oxley Act of 2002.

The Sarbanes-Oxley Act of 2002 imposes certain duties on us and our executives and directors. Our efforts to comply with the requirements of Section 404 (Assessment of Internal Control), which started in connection with our Annual Report on Form 20-F for the fiscal year ended December 31, 2007, have resulted in increased general and administrative expense and a diversion of management time and attention, and we expect these efforts to require the continued commitment of resources. Section 404 of the Sarbanes-Oxley Act of 2002 requires (i) management's annual review and evaluation of our internal control over financial reporting and (ii) an attestation report issued by an independent registered public accounting firm on our internal control over financial reporting, in connection with the filing of our Annual Report on Form 20-F for each fiscal year. We have documented and tested our internal control systems and procedures in order for us to comply with the requirements of Section 404. While our assessment of our internal control over financial reporting resulted in our conclusion that as of December 31, 2016, our internal control over financial reporting was effective, we cannot predict the outcome of our testing in future periods. If we fail to maintain the adequacy of our internal controls, we may not be able to ensure that we can conclude on an ongoing basis that we have effective internal controls over financial reporting. Failure to maintain effective internal control over financial reporting could result in investigation or sanctions by regulatory authorities, and could have a material adverse effect on our operating results, investor confidence in our reported financial information, and the market price of our ordinary shares.

#### Risks Related to Operations in Israel

Potential political, economic and military instability in Israel may adversely affect our growth and revenues.

Our principal offices and manufacturing facilities and many of our suppliers are located in Israel. Although most of our sales are currently being made outside Israel, potential 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 occurred between Israel and its Arab neighbors, including extensive hostilities along Israel's northern border with Lebanon in 2006 and continuous hostilities along Israel's border with the Gaza Strip. Some of these hostilities and armed conflicts resulted in artillery attacks on Israeli territories and civil facilities. In 2012 as well as during the summer of 2014, rocket attacks from Gaza Strip resulted in damages in areas which are close to our manufacturing facility in Israel. In addition, it was widely believed that Iran, which has previously threatened to attack Israel, has been trying to achieve nuclear capability (although recently Iran has signed a framework agreement with the United States and several other countries, in which Iran committed to a supervision on its nuclear program). The tension between Israel and Iran may escalate in the future and turn violent, which could affect the Israeli economy generally and us in particular. Moreover, since December 2010, there has been a wave of protests and civil resistance demonstrations in several countries in the Middle East and North Africa, including Egypt and Syria, both of which share a border with Israel. This situation creates instability in the Middle East and the surrounding countries. The resumption of hostilities and on-going tension and instability in the region, may have a negative effect on our business and harm our growth and revenues.

Our operations may be disrupted by the obligation of key personnel to perform military service.

Some of our executive officers and employees in Israel are obligated to perform significant periods of military reserve service until the age of 40 for soldiers and until the age of 45 for officers. This time-period may also be extended by the Military Chief of the General Staff and the approval of the Minister of Defense or by a directive of the Minister of Defense in the event of a declared national emergency. Our operations could be disrupted by the absence for a significant period of one or more of our executive officers or key employees due to military service. To date, our operations have not been materially disrupted as a result of these military service obligations. Any disruption in our operations due to such obligations would adversely affect our ability to produce and market our existing products and to develop and market future products.

Provisions of our Amended and Restated Articles of Association and Israeli law may delay, prevent or make difficult an acquisition of Nova, which could prevent a change of control and negatively affect the price of our ordinary shares.

Israeli corporate law regulates mergers, requires tender offers for acquisitions of shares above specified thresholds, for special approvals for transactions involving directors, officers or significant shareholders and regulates other matters that may be relevant to these types of transactions. Furthermore, Israeli tax considerations may make potential transactions unappealing to us or to some of our shareholders. See Item 10.B, “Additional Information – Memorandum and Articles of Association”. For a more detailed discussion regarding some anti-takeover effects of Israeli law.

These provisions of Israeli law may delay, prevent or make difficult an acquisition of Nova, which could prevent a change of control and therefore depress the price of our shares.

The rights and responsibilities of our shareholders are governed by Israeli law and differ in some respects from the rights and responsibilities of shareholders under U.S. law.

We are incorporated under Israeli law. The rights and responsibilities of holders of our ordinary shares are governed by our Amended and Restated Articles of Association and by the Israeli Companies Law, 1999 (the “Companies Law”). These rights and responsibilities differ in some respects from the rights and responsibilities of shareholders in typical U.S. corporations. In particular, pursuant to the Companies Law each shareholder of an Israeli company has to act in good faith in exercising his or her rights and fulfilling his or her obligations toward the company and other shareholders and to refrain from abusing his power in the company, including, among other things, in voting at the general meeting of shareholders and class meetings, on amendments to a company’s articles of association, increases in a company’s authorized share capital, mergers, and transactions requiring shareholders’ approval under the Companies Law. In addition, a controlling shareholder of an Israeli company or a shareholder who knows that it possesses the power to determine the outcome of a shareholder vote or who has the power to appoint or prevent the appointment of a director or officer in the company, or has other powers toward the company has a duty of fairness toward the company. However, Israeli law does not define the substance of this duty of fairness. Because Israeli corporate law has undergone extensive revision in recent years, there is little case law available to assist in understanding the implications of these provisions that govern shareholder behavior.

Because most of our revenues are generated in U.S. dollars, but a significant portion of our expenses is incurred in currencies other than U.S. dollars, and mainly New Israeli Shekels, our profit margin may be seriously harmed by currency fluctuations.

We generate most of our revenues in U.S. dollars, but incur a significant portion of our expenses in currencies other than U.S. dollar, and mainly New Israeli Shekel, commonly referred to as NIS. As a result, we are exposed to risk of devaluation of the U.S. dollar in relation to the NIS and other currencies. In that event, the dollar cost of our operations in countries other than the U.S. will increase and our dollar measured results of operations will be adversely affected. During 2016, the U.S. dollar devaluated against the NIS by 1.46%, after revaluated by approximately 10.8% in the previous three years. We cannot predict the future trends in the rate of devaluation or revaluation of the U.S. dollar against the NIS, and our operations also could be adversely affected if we are unable to hedge against currency fluctuations in the future.

We participate in government programs under which we receive grants and tax benefits. These programs impose restrictions on our ability to use the technologies developed under these programs. In addition, the reduction or termination of these programs would increase our costs and/or our effective tax rate. We are also subject to certain limitations related to the repatriation of funds that benefited from the tax holiday under the Approved and Benefited Enterprises regimes. The distribution or deemed distribution of such funds may be subject to recapture provisions under which we will be subject to the corporate tax that we were initially exempt from.

#### Government Programs.

We received royalty-bearing grants from the National Authority for Technological Innovation, or NATI (formerly known as the Office of the Chief Scientist of the Ministry of Economy and Industry, or the OCS), for the financing of certain of our research and development programs that meet specified criteria. In addition, we are currently participating in development consortiums in Europe, mainly in order to be able to support our customers in the transition to advance technology nodes in the coming years. These consortiums are joint programs with the OCS and the European Research Area. To maintain our eligibility for these programs, we must continue to meet certain conditions. In addition, we may be required to pay royalties related to grants received in the framework of such programs. These programs also restrict our ability to manufacture particular products and transfer particular technology, which were developed as part of the OCS's programs outside of Israel. The restrictions associated with receiving such OCS's grants may require us to obtain approval of the research and development committee nominated by the OCS for certain actions and transactions and pay additional payments to the OCS. Approval to manufacture products outside of Israel or consent to the transfer of technology, if requested, might not be granted. In addition, if we fail to comply with certain restrictions associated with receiving such OCS's grants, we may be subject to criminal charges.

Preferred Enterprise Regime. In addition to the above mentioned grants, until the end of 2015 we were eligible to receive certain tax benefits under Israeli law for capital investments as an Approved and Benefitted Enterprise. Starting 2016, we made an election to receive tax benefits under Israeli law for capital investments as a "Preferred Enterprise". While we believe that we meet the statutory conditions to entitle us to such benefits there can be no assurance that the tax authorities in Israel will concur to our position in general and for each specific year separately. Should it be determined that we have not, or do not meet such conditions, the benefits received could be cancelled. We could also be required to pay increased taxes or refund any benefits previously received, adjusted for inflation and interest. For additional information regarding Approved and Benefitted Enterprise and Preferred Enterprise see, "Item 10E. Taxation – Israeli Taxation" in this annual report on Form 20-F.

It should be noted that the Israeli government may reduce or eliminate the above mentioned benefits in the future. The termination or reduction of these grants or tax benefits could harm our business, financial condition and results of operations, and result in significantly higher fluent tax payment. In addition, if we increase our activities outside Israel due to, for example, future acquisitions or outsourcing of manufacturing or development activities, these activities generally will not be eligible for inclusion in Israeli grants or tax benefit programs. Accordingly, our effective corporate tax rate could increase significantly in the future and our grants might be reduced.

Any shareholder with a cause of action against us as a result of buying, selling or holding our ordinary shares may have difficulty asserting a claim under U.S. securities laws or enforcing a U.S. judgment against us or our officers, directors or Israeli auditors.

We are organized under the laws of the State of Israel, and we maintain most of our operations in Israel. Most of our officers and directors as well as our Israeli auditors reside outside of the United States and a substantial portion of our assets and the assets of these persons are located outside the United States. Therefore, if you wish to enforce a judgment obtained in the United States against us, or our officers, directors and auditors, you will probably have to file a claim in an Israeli court. Additionally, you might not be able to bring civil actions under U.S. securities laws if you file a lawsuit in Israel. We have been advised by our Israeli counsel that Israeli courts generally enforce a final executory judgment of a U.S. court for liquidated amounts in civil matters after a hearing in Israel. If a foreign judgment is enforced by an Israeli court, it will be payable in Israeli currency. However, payment in the local currency of the country where the foreign judgment was given will be acceptable, subject to applicable foreign currency restrictions.

Our shares are listed for trade on more than one stock exchange, and this may result in price variations.

Our ordinary shares are listed for trading on The NASDAQ Global Select Market and on the Tel Aviv Stock Exchange Ltd., or TASE. This may result in price variations. Our ordinary shares are traded on these markets in different currencies, U.S. dollars on The NASDAQ Global Select Market and New Israeli Shekels on the TASE. These markets have different opening times and close on different days. Different trading times and differences in exchange rates, among other factors, may result in our shares being traded at a price differential on these two markets. In addition, market influences in one market may influence the price at which our shares are traded on the other.

We may be classified as a “passive foreign investment company” for U.S. income tax purposes, which could have significant and adverse tax consequences to U.S. shareholders.

Generally, if for any taxable year 75% or more of our gross income consists of specified types of passive income, or, on average, at least 50% of our assets are held for the production of, or produce, passive income, we may be characterized as a passive foreign investment company (a “PFIC”) for U.S. federal income tax purposes. Classification of Nova as a PFIC could result in adverse U.S. tax consequences to our U.S. shareholders, such as ineligibility for any preferred tax rates on capital gains or on dividends, interest charges on certain taxes treated as deferred, and additional reporting requirements under U.S. federal income tax laws and regulations. It may be possible for U.S. holders of common shares to mitigate certain of these consequences by making an election to treat us as a “qualified electing fund” under Section 1295 of the Internal Revenue Code of 1986, as amended (the “Code”) or a “mark-to-market election” under Section 1296 of the Code. U.S. shareholders should consult with their own U.S. tax advisors with respect to the U.S. tax consequences of investing in our ordinary shares.

We believe that for our 2016 taxable year we were not a PFIC. Nonetheless, because the determination of whether we are, or will be, a PFIC for a taxable year depends on our assets, income and activities in each year and the application of complex U.S. federal income tax rules, which are subject to various interpretations, there is a risk that we were a PFIC in 2016. Absent one of the elections referenced above and described in greater detail below, if we are a PFIC for any taxable year during which a U.S. holder holds our ordinary shares, we generally will continue to be treated as a PFIC with respect to such U.S. holder in all succeeding years regardless of whether we cease to meet the PFIC tests in one or more subsequent years. Currently we expect that we will not be a PFIC in 2017. However, PFIC status is determined based on our assets and income over the course of each taxable year, and is dependent on a number of factors, including the value of our assets, the trading price of our ordinary shares and the amount and type of our gross income. Therefore, there can be no assurances that we will not become a PFIC for the 2017 taxable year, or any future year, or that the Internal Revenue Service will not challenge any determination made by us concerning our PFIC status. For a discussion on how we might be characterized as a PFIC and related tax consequences, please see the section of this annual report entitled “U.S. Taxation – Passive Foreign Investment Companies.” Investors should consult their own tax advisors regarding all aspects of the application of the PFIC rules to our ordinary shares.

#### Item 4. Information on the Company

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

Nova Measuring Instruments Ltd. was incorporated in May 1993 under the laws of the State of Israel. We commenced operations in October 1993 to design, develop and produce integrated process control systems for use in the manufacture of semiconductors, also known as integrated circuits or chips.

In April 2000, we conducted an initial public offering and our shares were listed for trading on NASDAQ.

In June 2002, we listed our shares on the TASE, pursuant to legislation which enables Israeli companies whose shares are traded on certain stock exchanges outside of Israel to be registered on the TASE, while reporting, in substance, in accordance with the provision of the relevant foreign securities law applicable to the Company.

During 2003, we began expanding our product offerings to include stand-alone systems. In recent years stand-alone metrology has started to account for a significant portion of our overall revenues.

Until 2008, most of our products were sold to process equipment manufacturers such as Applied Materials, Inc. and Ebara Corp., which later sold these products to semiconductor manufacturers. Since then, we have completely changed our business model, selling most of our products directly to semiconductor manufacturers. Through this process, which has also enabled us to introduce to these customers additional products and features, we have improved our products gross margins and net profitability. In parallel, we continue to work with the process equipment manufacturers as business partners for future products and process control solutions.

In February 2010, we successfully completed an underwritten public follow-on offering in which we received approximately \$17.0 million in net proceeds.

In March 2014, we announced a \$12 million share repurchase program, which we completed in May 2016.

In April 2015, we acquired ReVera Inc. or ReVera, a privately held company headquartered in Santa Clara, California, which develops, manufactures and sells stand-alone metrology tools for measurements of thin-films and composition applications in the semiconductor industry.

We currently have six direct and indirect fully owned subsidiaries in the U.S., Japan, Taiwan, Korea and Germany.

Our headquarter office is located in Israel at the Weizmann Science Park, Building 22, 2<sup>nd</sup> Floor, Ness-Ziona. Our telephone number at our main office is +1-972-73-229-5600.

#### 4.B Business Overview

We deliver continuous innovation by providing advanced metrology solutions for the semiconductor manufacturing industry. Deployed with the world's largest integrated-circuit manufacturers, our products deliver state of the art, high performance metrology solutions for effective process control throughout the semiconductor fabrication lifecycle. Our holistic approach and complete suite of products, which combines high-precision hardware and cutting-edge software, support the development and production of the most advanced devices in today's high-end semiconductor market.

We offer in-line Optical and x-ray stand-alone metrology systems, as well as integrated optical metrology systems, which are attached directly to wafer fabrication process equipment. Our metrology product portfolio combined with Nova's modeling software, aim to deliver unique measurement solutions to measure the most advanced semiconductor technology nodes. Our suit of products are designed to deliver a holistic solution while demonstrating high performance and fast time to solution. Our metrology systems measure various film thickness and composition properties as well as critical-dimension (CD) variables during various front-end and back-end of line steps in the semiconductor wafer fabrication process, allowing semiconductor manufacturers to improve quality, productivity and yields, lower manufacturing costs and increase profitability. We supply our metrology solutions to major semiconductor manufacturers worldwide, and are recognized for excellence since our first system was installed in 1995.

The semiconductor manufacturing process starts with a flat silicon disc known as a silicon wafer upon which circuits are constructed. To construct the circuits, a series of layers of thin films that act as conductors, semiconductors or insulators are applied to the polished side of the wafer. During the manufacturing process, these film layers are subjected to processes which remove portions of the film, create circuit patterns and perform other functions. The semiconductor manufacturing process requires precise steps and strict control of equipment performance and process sequences. Tight control can be achieved through monitoring silicon wafers and measuring relevant parameters before or after each process step with metrology tools such as those we produce.

Prior to the introduction of our integrated metrology systems, process control was solely achieved through stand-alone measurement equipment. Stand-alone measurement equipment requires semiconductor manufacturers to interrupt the manufacturing process sequence, remove sample silicon wafers from the process equipment and place the silicon wafers on the stand-alone measuring or inspection tool. In contrast, our integrated metrology approach is based on patented measuring methods that enable us to produce optical measuring systems that are small enough to be integrated directly inside many types of semiconductor process equipment. We believe that in several instances during the manufacturing process, our integrated approach offers considerable advantages over the conventional stand-alone approach to metrology control, enabling manufacturers using our integrated equipment to reduce costs and to improve production efficiency, yield and quality.



We have always invested in our integrated metrology solutions as this continues to be an area where we have a leading position. In addition, in the past few years, we developed and started manufacturing stand-alone metrology systems, leveraging our technology, methods, metrology expertise and market position in the integrated metrology field to expand our offerings into the larger market for stand-alone metrology systems. Over the past several years we developed several generations of Stand-Alone metrology tools. Through a customer driven roadmap which aligns our development efforts with both R&D as well as high volume manufacturing needs of our customers, we have been able to build a differentiated product offering. The success of this endeavor has allowed us to grow this aspect of our business such that it now represents a significant part of our overall business. Today, both stand-alone and integrated metrology solutions have reached a level of maturity allowing semiconductor manufactures to choose how to use either technology and make decisions based on merit specific to the process step in question, always balancing between the amount of data attained and the use made of the data for capabilities such as automated process control. Our long-term strategy is focused on advanced metrology and process control solutions where our integrated process control products and stand-alone products are compatible or complementary and used in a customized way to meet specific customer needs.

In April 2015, through the acquisition of ReVera, we expanded our technology base. The foregoing technology added a unique capability to our product portfolio, allowing us to measure ultra-thin film thickness and composition for critical wafer fabrication steps. We believe that the combination of ReVera's XPS/XRF technology and Nova's dimensional Holistic FAB-Wide Solution, creates a compelling and unique portfolio for the measurement of film, composition, material properties and critical-dimension (CD) variables, which address today's growing challenges associated with the transition to advanced nodes in the semiconductor segments.

Demand for metrology systems is driven by capital equipment spending by semiconductor manufacturers, which in turn are driven by worldwide demand for semiconductor devices and technological transition processes, which are required from these devices for the most advanced high end applications. Industry data indicates that through the years worldwide demand for semiconductors has been growing. We believe that this growth in demand will continue to generate demand for process control equipment, including metrology systems, as semiconductor manufacturers invest in technology and capacity expansion. We also believe that demand for metrology systems will be driven by the increasing cost of semiconductor manufacturing and by the requirements of semiconductor manufacturers for better control of process equipment. Finally, demand for metrology is strongly driven by technology challenges. The growing investment in advanced technology nodes and device structures introduces growing complexity and new challenges. Scaling limits and technology progress are continuously pushed in order to improve cost and gain competitive advantage. These fundamental elements create favorable market conditions for metrology growth where more process steps are needed, new novel materials are introduced and innovative structures and packaging solutions are incorporated. We believe that all the above market conditions set favorable business environment for growth.



## Our Market

### Semiconductor Industry and the Metrology Market

The increased use of semiconductors has been accompanied by an increase in their complexity. Due to the creation of new applications and markets for semiconductors, suppliers and manufacturers are faced with an increasing demand for new products that provide greater functionality and higher performance at lower prices. As a result, many new complex materials, structures and processes are being introduced into semiconductor manufacturing ecosystem. Such materials include, among others, copper, low-k and high-k dielectrics, silicon-on-insulator, silicon-germanium, III-V, strained silicon and raised source/drain. Manufacturers have transitioned in the past years toward 300 mm silicon wafers (from 200 mm silicon wafers). While 300 mm wafers can yield up to twice as many integrated circuits than 200 mm wafers, they also create new manufacturing challenges. For example, because 300 mm wafers can bend or bow more than twice than the 200 mm wafers, they are more susceptible to damage. The larger area of 300 mm wafers also makes it more difficult to maintain film uniformity across the entire wafer. Semiconductors also continue to move toward smaller feature sizes and more complex structures such as 3D FinFET transistors, GAA (Get All Around), 3D-NAND and emerging memory structures. The growing complexity of semiconductor devices increase the complexity and the costs of the semiconductor manufacturing process, which has also been a driver for the growing demand for metrology systems.

The ever-increasing level of complexity and the decrease in feature sizes has also significantly increased the cost and performance requirements of semiconductor fabrication equipment. The cost of wafer fabrication equipment has also increased due to the higher levels of automation being utilized by manufacturers. Thus, semiconductor manufacturers must increase their investment in capital equipment in order to sustain technological leadership, to expand manufacturing capacity and maintain profitability. According to published reports by an industry market research firm, the cost of building a state-of-the-art semiconductor manufacturing facility has grown from approximately \$200 million in 1983, and may reach up to \$5-10 billion in 2017 for building mega fab facilities capable of manufacturing 300 mm wafers. We believe that the process control equipment market, which includes the metrology segment, will grow in the future at a pace greater than the overall process equipment market since the challenges of meeting process design goals will become increasingly difficult such that process control equipment will consume a larger portion of the overall costs of semiconductor manufacturing equipment.

### The Semiconductor Manufacturing Process

Semiconductors typically consist of transistors or other components connected by an intricate system of circuitry on silicon wafers. Integrated circuit manufacturing involves well over a dozen individual steps, some of which are repeated several times, through which numerous copies of an integrated circuit are formed on a single silicon wafer. Typically, up to 30 very thin patterned layers are created on each wafer during the manufacturing process. At the end of the manufacturing process, the wafer is cut into individual chips or dies. Because semiconductor specifications are extremely tight, and integrated circuits are becoming more complex, requiring ever more sophisticated manufacturing processes, the process steps are constantly monitored, and critical parameters are measured at each step using metrology equipment.

Many of the manufacturing steps involve the controlled application or removal of layers of materials to or from the wafer. The application of materials to the wafer, known as deposition, involves the layering of extremely thin films of electrically insulating, conducting or semi-conducting materials. These layers can range down to less than tens of angstroms in thickness and create electrically active regions on the wafer and its surface. A wide range of materials and deposition processes are used to build up thin film layers on wafers to achieve specific performance characteristics. One of the principal methods of thin film layer deposition is chemical vapor deposition (CVD). In CVD, a chemical is introduced into the chamber where the wafer is being processed and is deposited using heat and a chemical reaction to form a layer of solid material on the surface of the silicon wafer. Although CVD equipment represents the largest equipment type, there are more segments in the thin-layer deposition equipment market as epitaxy, physical vapor deposition (PVD) and atomic layer deposition (ALD). Currently the ALD represents the fastest growing equipment category. Metrology systems monitor the thickness and uniformity of thin film layers during the deposition process.

Once the thin film has been deposited on the wafer to form a solid material, circuit patterns are created using a process known as photolithography. During this process, a light sensitive coating called photoresist is applied to the wafer, which is then exposed to intense light through a patterned, opaque piece of glass. For the photolithography process to work properly, the thickness of the photoresist must be precise and uniform. In addition, to control the photolithography process, the film thickness, reflectivity, overlay registration and critical dimensions are all measured and verified. The exposed photoresist is developed when it is subjected to a chemical solution. The developed wafer is then exposed to another chemical solution, or plasma, that etches away any areas not covered by the photoresist to create the structure of the integrated circuit. Semiconductor manufacturers use metrology systems to verify the removal of material through the etch process and the critical dimensions of the structures created.

To meet the flatness challenges posed by ever smaller feature sizes and the critical need for ultra-flat foundation for high precision photolithography, manufacturers use process technology known as Chemical Mechanical Planarization, or CMP. CMP removes uneven film material deposited on the surface of the wafer from processes such as CVD and photolithography by carefully “polishing” the wafer with abrasives and chemicals, creating an extremely flat and even surface for the patterning of subsequent film layers. Metrology systems are used to control and verify the results of the CMP process by measuring the thin film layer to determine when the correct thickness has been achieved.

The processes described above are repeated in sequence until the last layer of structures on the wafer has been completed. Each integrated circuit on the wafer is then inspected and its functionality tested before shipment. Measurements taken by metrology systems during the manufacturing process help insure process uniformity and help semiconductor manufacturers avoid costly rework and misprocessing, thereby increasing efficiency and profitability.

#### Process Control Requirement

The steps used to create semiconductors are accurate processes that require strict control of equipment performance and process sequences for the resulting semiconductor devices to function properly. Tight control is achieved through monitoring of the in process wafers and by measuring relevant parameters after each process step. These procedures are usually carried out on a small sample of the wafers though in some steps where process stability is difficult to achieve, the number of sampled wafers will increase. The monitoring may include measurement of several parameters, such as the thickness of the layers of thin film deposited, the sizes of the features that are patterned through the photolithography process, as well as the registration or alignment between two consecutive layers, known as overlay. Monitoring also includes inspection of the wafer for irregularities, defects or scratches. If parameters are out of specification or if defects or contamination are present, the manufacturer adjusts the process and measures another sample of wafers thereby allowing manufacturers to reduce costs and improve device performance.

## The Need for Effective Process Control Tools

A number of technical and operational trends within the semiconductor manufacturing industry are strengthening the need for more effective process control solutions. These trends include:

**Development of Smaller Semiconductor Features.** The development of smaller features, now as small as 10nm in production and 5nm in R&D, enables semiconductor manufacturers to produce larger numbers of circuits per wafer and to achieve higher circuit performance. As feature geometries decrease, manufacturing yields become increasingly sensitive to processing deviations and defects, as more integrated circuits are lost with every discarded wafer. In addition, the increased complexity and number of layers of the integrated circuits increase the chance of error during the manufacturing of the wafer.

**Transition to 3D Device Structures.** Foundries are adopting 3D FinFET transistors starting at 14/16 nm technology nodes to get improved performance and use less power in 1x technology nodes. Memory makers moved to 3D NAND and vertical structures for next generation NAND technology. These trends require process control with metrology solutions capable of measuring critical dimensions in these 3D structures that are currently supported only by optical metrology technology.

**Transition to 3D Integration Technology.** Three-dimensional (3D) integration of active devices, directly connecting multiple IC chips, offers many benefits, including power efficiency, performance enhancements, significant product miniaturization, and cost reduction. It provides an additional way to extend Moore's law beyond spending ever-increasing efforts to shrink feature sizes. A critical element in enabling 3D integration is the Through-Silicon Via (TSV); TSV provides the high-bandwidth interconnection between stacked chips. The TSV process is beginning to enter production. In the case of TSV, since multiple chips are connected, the process has to achieve and maintain very high yield levels in order to be economically viable. TSV metrology solutions are required to closely monitor and measure depth, side-wall slope, top and bottom diameter (CD), and bottom curvature.

**Shortening of Technology Life Cycles.** The technology life cycle of integrated circuits continues to shorten as semiconductor manufacturers strive to adopt new processes that allow a faster transition to smaller, faster and more complex devices. In the past, the technology life cycle was approximately three years; it is now only two years. The accelerating rate of obsolescence of technology makes early achievement of enhanced productivity and high manufacturing yields an even more critical component of a semiconductor manufacturer's profitability and metrology continues to play an even more critical role in achieving these demanding results.

**New Materials.** Copper metal layers continue to be the key material for the back end of line for advanced integrated circuits in order to increase performance and reduce the cost of integrated circuits. In addition new material such as Cobalt and Ruthenium metals are being introduced at the first metal steps to enable reduction in resistivity. The Industry is continuously searching directions to reduce the effective K of the low K materials and to reduce the barrier thickness and material types. These changes require new processing and metrology equipment and thus represents challenging developments for the semiconductor manufacturing industry. In addition, in order to overcome limitations in the continued shrink of transistor dimensions, leading edge integrated circuit manufacturers are introducing new materials in the transistor gate stack. The adoption of high-k dielectrics is a key element for gate control in the most advanced technology nodes of 16/14nm and 10nm currently in production, while R&D work to implement the next gate control material being done with Silicon Germanium and III-IV materials. These new materials, combined with metal layers, require new processing and metrology equipment in the atom level and thus represent a challenging development for the semiconductor manufacturing industry.

**Increasing Use of Multi Patterning Lithography.** The continuous need for scaling to meet reduced transistor costs combined with delays in EUV lithography is pushing the industry to develop alternative lithography techniques such as multi patterning, DSA and E-Beam. These alternative technologies are increasing the Etch and CMP process steps and thus increasing the process control and metrology steps in these areas accordingly.

**Growing of Foundry Manufacturing.** As a result of the rising investment needed for semiconductor process development and production as well as the proliferation of different types of semiconductors, semiconductor manufacturing is increasingly being outsourced to large semiconductor contract manufacturers, or foundries. A foundry typically runs several different processes and makes hundreds to thousands of different semiconductor product types in one facility, making the maintenance of a constant high production yield and overall equipment efficiency more difficult to achieve. This trend of shifting to foundries for manufacturing needs has progressed even further during recent years. The challenges associated with foundry in the following years relate to aspects such as: shortening the time to market, reducing costs and monitoring process complexity.

**Advanced Memory Manufacturing.** As a result of recent years progress, the NAND market has entered a critical transition phase as NAND technology shifts from traditional 2D planar structures to 3D structures where 2D NAND flash has reached its practical limit for cost-per-bit reductions and thus major cost reductions in the future will come from the shifting to 3D NAND structures.

In order to address the increasing costs associated with these trends, we believe semiconductor manufacturers must enhance manufacturing productivity. One way to enhance productivity is through improvements in process control, with a greater emphasis on metrology as part of process control. As part of this emphasis on metrology, manufacturers are taking more measurements to characterize each step of the semiconductor manufacturing process, new and enhanced measurement techniques are being used to provide meaningful data and the data provided is being used in new ways to enhance the manufacturing process. We believe that the demand for advanced process control systems that address the evolving needs of semiconductor manufacturers will continue to drive the growth in the market for process control systems and that the demand for metrology will be even higher as a result of the short time cycle of each technology and the need to fast ramp from R&D to production.

We believe that in certain process steps, integrated metrology systems provide semiconductor manufacturers with the greatest opportunity to increase the productivity and yields of their equipment, thereby increasing their profitability. Therefore, we plan to continue to maintain a major focus on the integrated metrology market. However, recognizing that a significant number of process steps will continue to rely on stand-alone equipment, we intend to continue leveraging our market leading position in the integrated metrology market and our metrology expertise to deepen our penetration of the stand-alone metrology market. Furthermore, the technological and operational trends within the semiconductor manufacturing industry that are strengthening the need for more effective process control solutions can sometimes be addressed through the use of stand-alone metrology equipment or a combination of both stand-alone and integrated metrology.

#### The World Economy – Update

Gartner Inc. forecasts the world GDP to grow by 2.6% in 2017 compared to an estimated increase of 2.2% in 2016, and forecasts the U.S. GDP to grow by 2.2% in 2017.

Gartner Inc. forecasts semiconductor revenues to increase by 7.2% in 2017, compared to an increase of 1.5% in 2016. In addition, Gartner Inc. forecasts WFE sales in 2017 to increase by 5.7% following an estimated increase of 8.1% in 2016.

According to research reports, future demand drivers for semiconductors include mobile devices, data centers infrastructure of high end servers and storage, internet-of-things and other electronic equipment.

#### Expected Equipment Spending in 2017

We believe that overall capital spending and Wafer-Fab-Equipment in 2017 is expected to increase compared to 2016. By the main customer segments we expect that the key investment trends will be as follow:

1. Foundry spending is expected to grow over 2016 and focus on investment in 10nm production ramp, 7nm pilot lines, and potential moderate expansions in 28/16/14nm production lines.

2. NAND/Flash is expected to continue its growth driven by ramp of 3D-NAND.

3. DRAM investment is expected to increase as the market shifts to undersupply.

In the metrology segment we note some positive signs for investment growth, driven by an increase in complexity and overall process steps. We believe the growth is a result of the use of multi-patterning techniques in leading edge technologies, which increases the number of measurement steps, and requires advanced metrology solutions. We also believe this can generate growth opportunities for our optical CD integrated and stand-alone product lines as well as for our X-Ray products.

## The Nova Approach

### Optical CD Integrated Metrology

As development cycles are becoming shorter, fabrication processes are becoming less stable and call for tight process control schemes that is closer to the actual process step and produce wafer to wafer variation control. Nova's approach is to lead the industry with solutions that can enable effective and accurate measurements in non-ideal process conditions. Our integrated metrology systems provide semiconductor manufacturers with effective and efficient process control by measuring wafers and their properties immediately after the process, without removing the wafer from the process equipment. All our products use our patented measuring methods that enable us to produce optical measuring systems that are small enough to be incorporated directly inside many types of equipment used in semiconductor processing. Integrated systems measure the wafer within the actual process environment, reducing labor and wafer handling as well as the risk of contamination of or damage to the wafer. In addition, we believe that our systems deliver significant increases in overall equipment efficiency through advanced process control, along with improving wafer-to wafer uniformity, all with minimal operator intervention.

We provide our customers with flexible integrated process control solutions by offering systems that meet thin film as well as Optical CD measurement needs in critical applications in the wafer fabrication process. Our integrated process control platform can be deployed in multiple processes and applications of semiconductor manufacturing cycle.

We believe that our integrated metrology systems can provide several important advantages to semiconductor manufacturers, enabling them to:

- utilize the process equipment wafer handling mechanism to allow measurement of the sample wafers while processing other wafers and avoid the need for the costly additional wafer handling required by stand-alone metrology systems;
- perform the measurements without removing the wafer from the process equipment, increasing the efficiency of the process and decreasing the risk of contamination;
- reduce manufacturing equipment processing variability through the use of wafer to wafer measurements and closed loop control based on automated feedback of process variability;
- reduce capital costs of the fabrication facility by increasing overall equipment efficiency and reducing labor costs and necessary clean room area;
- reduce the amount of time required to qualify process equipment that is usually idle during qualification steps, thus, minimizing costly equipment down time;
- reduce the number of test wafers; and
- detect processing errors as early as possible.

We believe that as semiconductor manufacturers demand greater efficiency from their manufacturing equipment, process equipment manufacturers will increasingly seek to offer their customers integrated metrology in their tools to lower costs and increase overall efficiency. We believe the drive toward more efficient manufacturing operations in the face of increasing complexity and cost will continue the trend of adopting integrated metrology solutions such as those we offer to multiple processes.

In prior years, most of our integrated metrology products were sold through process equipment manufacturers (such as Applied Materials, Inc. and Ebara Corporation). These products were later sold by the process equipment manufacturers (PEMs) to the semiconductor manufacturers. In recent years, we completely changed this model and now we sell our integrated metrology products directly to semiconductor manufacturers. This resulted in more favorable commercial terms to end users, to PEMs and to our Company. It also enabled deeper technological cooperation with end users and expansion of our product offering through new, and previously unavailable, features and functionality.

### Optical CD Stand-Alone Metrology

As stated above, we pioneered the area of integrated metrology and to-date revenues from that product continue to represent the larger portion of our overall revenues. With the adoption of our technology and the formation of long standing relationships with leading customers, we have come to realize that our technology can be extended beyond integrated metrology into areas such as stand-alone metrology. Accordingly, in the past few years we developed stand-alone metrology tools to perform measurements similar to those performed by our integrated metrology tools. The expression “stand-alone metrology” generically describes free standing metrology equipment which is located in line, i.e., next to the processing equipment and receives cassettes or FOUP of wafers to allow sampling of a few or several wafers from each cassette it receives. There are several types of stand-alone metrology tools each of which performs a distinct type of measurement, e.g., defect inspection, electrical performance, microscopic analysis, cross sections, etc. Our specific focus is in the area of optical CD measurement which is generally utilized in order to characterize critical dimensions on a wafer, their width, shape and profile. This technology is utilized today in several areas of the fab such as photolithography, etch, CMP, deposition, etc. The key advantage offered by this technique is that it provides visualization of the full cross-section-like profile of the structure, while remaining non-destructive and extremely fast with very high accuracy and repeatability. Adding stand-alone metrology to our product portfolio has allowed us to expand our reach into more areas of the fab.

We introduced this concept in 2006 and were successful in penetrating several major accounts since then, allowing us to see a significant increase in our overall customer base and revenues with the stand-alone products. With the introduction of stand-alone metrology, we have expanded our addressable markets and are now able to provide metrology solutions for four of the five critical manufacturing steps, as opposed to the one or two we were previously able to provide, when our product offering was limited to integrated tools only.

### Modeling and Software Solutions

The integrated and stand-alone products are combined with the NovaMARS modeling engine to create Nova’s metrology holistic solution. NovaMARS is our modeling and application development software that enables complex 2D, 3D and in-die measurements with high accuracy and fast time-to-solution. Over the past several years we have leveraged our advanced modeling know-how to create unique solutions that address industry growing process challenges. Furthermore, we are continuously exploring new methods to deliver superior process control solutions that leverage our advanced modeling engines. In addition to our modeling software solutions, we have introduced the fleet management software which is Nova solution for managing large fleets of metrology tools to deliver high productivity and operational efficiency in high volume production environment of foundry and memory customers. The fleet management solution offers an easy and intuitive platform for managing and improving the overall productivity of Nova’s fleet of systems and is designed to address the needs and working methodologies of metrology and process engineers in the fab.



## InSitu Measurement

Taking advantage of our extensive and unique experience in advanced modeling and real-time optical integrated measurements, we have introduced the NovaRPM solution – a real time profile monitoring system enabling in-situ process control. The NovaRPM system receives spectral information from an in-situ process tool sensor, interprets the spectra in real-time and extracts information such as depth, CD, and profile information that provides real-time data and trends on critical parameters. The profile changes are used by automated process control (APC) software to control the process. This unique capability to track target parameters in real-time enables reducing the process tool instability, incoming wafer variability and tool-to-tool variability.

## Materials and TF Measurements

The growing usage of complex materials in advanced FinFET logic, DRAM and flash memory technology nodes has increased the demand for metrology solutions that can measure composition and film thickness with high precision and accuracy in recent years. ReVera, a Nova company, has pioneered the materials metrology segment with products that utilize x-ray photoelectron spectroscopy (XPS), a powerful technology that has been optimized to provide the automation, speed and reliability required in today's advanced semiconductor production environment. XPS is uniquely suited for the move to thinner films and smaller features, while improving the performance at each new technology node. ReVera's products are used by logic and memory device manufacturers worldwide to measure, monitor and control critical device layers in high-volume production and to enable rapid development and control of complex, new processes. ReVera products set the standard for High K – Metal Gate, tunnel oxide and capacitor film metrology.

## Hybrid and Technology Synergies

As part of our holistic metrology approach that uses additional sources and channels of information to optimize the metrology performance, we have introduced hybrid metrology. Hybrid metrology combines measurements from multiple metrology toolset types in order to enable or improve the measurement of one or more critical parameters required for process control of advanced devices, materials and architectures. In the hybrid ecosystem, two or more toolsets measure the same or similar targets. The data from one toolset helps reducing the model degrees of freedom of the other toolset (typically Optical metrology) resulting in improved performance of the combined measurement in compare of that of any of the individual toolsets. Nova's hybrid metrology solution is implemented in production in advanced technology nodes and is available with multiple metrology toolsets including CD SEM and x-ray Photoelectron Spectroscopy (XPS) technologies.

## Our Technology

We believe that our technological and engineering expertise and research and development capabilities allow us to develop and offer new products and technologies to meet the ever-changing demands of the semiconductor industry. We have applied our technological and engineering expertise to develop a wide range of integrated and stand-alone products for the dielectric CMP, copper CMP, Tungsten CMP, Etch and lithography processes as well as high end CVD deposited layers, Cu electroplating and sputtering of Cu barrier and seed materials. Because of our open architecture policy, our integrated metrology solutions can work with most models of CMP and Etch tools made by the major process equipment manufacturers, for both 200 mm and 300 mm applications.

Our scatterometry capabilities have enabled us to penetrate new customers with Stand-Alone Optical CD metrology systems. Our combined offering of advanced measurement hardware and advanced modeling software place us in a position to offer an advantageous solution to our customers.

Following the acquisition of ReVera in April 2015, we have expanded our capabilities beyond dimensional metrology in the measurement of material composition and areal density of films down to sub-atomic thickness. These stand-alone products address issues in transistor gate dielectrics, work function adjustment materials, DRAM capacitor dielectrics, and VNAND cell fabrication.

Our suite of technological capabilities includes:

**Broadband Spectrophotometry.** Our broadband Spectrophotometry capabilities range from deep ultraviolet to infrared. This technology enables fast, accurate and small spot size film thickness measurement in a large range of applications on a very cost effective basis, both as an integrated system and as a stand-alone system.

**Scatterometry.** Our Scatterometry systems are based on our broadband Spectrophotometry technology. These systems use a fully polarized deep ultraviolet to near-infrared spectral light source. This technology enables fast and cost effective system development. Scatterometry provides two and three dimensional characterization of very fine geometries on patterned product wafers. These profiling and critical dimension capabilities are key enablers of advanced process control, allowing almost real time metrology of the most advanced design rules, down to 5 nm and below. A key component in scatterometry technology is the modeling software which converts raw spectra coming from the measurement tool into useful information in terms of customer parameters. This segment of the technology is where we currently focus our attention and where we have also acquired specific advantages due to our unique solutions. Some of Nova's metrology solutions use multi-channel reflectometry to reduce the ambiguity, increase the sensitivity to critical parameters, and improve measurement accuracy. The measurements are gathered using different wave lengths, polarizations and directions in order to deliver highly-accurate results.

**Dark Field Spectral Reflectometry** - In order to further increase the variety of independent channels, we implemented measurement schemes based on the notion of dark-field (DF) detection. In DF measurements, the optical system is designed so that light going through 'simple' reflection from the sample is blocked before detection. Dark field spectral reflectometry is currently implemented in Nova's V2600 for measurements of Through-Silicon-Via (TSV). In order to isolate and highlight the signal related to reflection from TSV side walls, we implemented a dark-field method by which all light specularly reflected from the wafer top surface is blocked, and only light that has entered the via is collected for analysis. This method is beneficial for the characterization of the TSV profile, allowing sensitivity to the via side walls and bottom characteristics.

**Imaging and Image Processing.** One of Nova's key core technologies is high-end optical imaging. As part of this specialty, Nova has implemented advanced image processing algorithms, sophisticated navigational channels, and robust pattern recognition capabilities, in its tools.

**Computational Modeling for Electromagnetic and Optical Systems.** Our MARS multi-channel metrology modeling suite is capable of providing modeling solutions for the most advanced 3D structures in semiconductor manufacturing. It is a complete modeling and application development solution designed to provide high accuracy in short time to solution and is coupled with Nova advanced computation hardware.

**X-ray Photoelectron Spectroscopy.** Our XPS systems measure the material composition, bonding states, and thicknesses of thin (<10nm) film stacks. Primary application is monitoring the transistor gates and VNAND layer deposition in integrated circuits. Through XPS we have also gained expertise in charged particle optics technologies.

**X-ray Fluorescence.** We have added XRF capability to our Veraflex III XPS tool. The combination of XPS and XRF allows measurement of composition and thickness at greater depths than provided by XPS alone. Compared to conventional XRF systems, our vacuum-based XRF system offers superior detection of elements of low atomic number, and smaller measurement areas.

**Lab to Fab -** Nova now has the experience, capability and know-how to transform traditional analytical laboratory instrumentation into high volume, high productivity production tools.

The measurement techniques used in our metrology products are unique and protected by a number of patents.

Throughout our history, we have been a technological leader in the integrated metrology field. We were the first to offer integrated metrology solutions for semiconductor manufacturers and are the only provider of integrated metrology solutions that can measure wafers in water, which allows for more efficient and close-to-the-process metrology.

Through the acquisition of ReVera, Nova has gained market leadership in x-ray technologies, and is the sole provider of XPS technology to semiconductor high volume manufacturing customers.

## Products

Our product portfolio includes a complete set of in-situ, integrated and stand-alone metrology platforms suited for dimensional, films and material metrology measurements for process control across multiple semiconductor manufacturing process steps including lithography, Etch, CMP and deposition. Our solutions utilize optical spectral reflectometry and x-ray technologies combined with advanced software modeling and unique algorithmic capabilities and address a broad range of metrology requirements of our end-user and process equipment manufacturer customers. Nova's fleet management platform addresses the need for high efficiency and productivity in the most advanced production lines of our customers, manages large fleets of metrology tools, and is designed to address the needs and working methodologies of metrology and process engineers in the fab. As part of our holistic view of metrology that extends to use more channels and sources of information available for optimizing the metrology solution performance, we also provide the hybrid metrology solution that combines data from different toolsets in the fab such as CD-SEM and x-ray together with Nova's optical metrology to provide improved performance above that of any individual toolset. Following is a summary of our main products:

### Thin Film and Optical CD Process Control

The NovaScan 2040 is the second generation of integrated thickness monitoring systems with enhanced spectral range, responding to the needs of the industry for emerging chemical mechanical polishing high-end applications of thin films and complex layer stacks. The 2040 model was introduced to the market at the end of 2000, and since then has replaced the NovaScan 840 and accounted for the majority of our sales for 200 mm production lines.

The NovaScan 3090Next is a legacy system still sold into 300mm fabs as the latest and best of the NovaScan line. Targeted for 45nm and 32nm technology nodes with extendibility down to 20nm, this tool was released in 2006 and provided significant improvements in throughput, accuracy, tool to tool matching and spectral range over the older NovaScan 3090. It also improved overall tool reliability. The NovaScan 3090Next is available as integrated metrology and as stand-alone metrology systems for both thin film and Optical CD (scatterometry) applications.

The Nova i500 integrated metrology product family delivers advanced metrology with high throughput and tool matching performance. The platform is qualified with several process tools and is deployed in both R&D and high volume production of the most advanced logic and memory technology nodes.

The Nova T500 stand-alone product family is targeted at technology nodes ranging from 32nm and smaller than 20nm. The Nova T500 features improved metrology performance, improving both accuracy and tool to tool matching, providing industry leading throughput of 250WPH using dual metrology units.

The Nova T600 features multi-channel reflectometry configuration that is optimized for best sensitivity on small features and critical device parameters, such as measurement of high-aspect-ratio structures. Nova T600 is designed to meet the metrology and process control challenges for advanced FinFET and 3D-NAND in R&D and production.

The Nova V2600 TSV metrology system, announced in July 2012, enables chipmakers to accelerate the development and improve production yield of multi-chip integrations that rely on TSVs (Through Silicon Vias). The Nova V2600, developed in collaboration with device makers, allows accurate measurement of critical TSV features such as side-wall angle, bottom diameter, and bottom curvature. This process control solution delivers complete TSV dimensional metrology in a high-throughput production-ready system for the industry's transition to 3D integration in production. Nova V2600 collects a dark-field reflectometry spectrum that is highly sensitive to variations in TSV internal structure. This high-throughput platform is recognized for providing superior cost of ownership and operational flexibility.

NovaMars is an advanced scatterometry modeling and application development software tool enabling complex 2D, 3D and in-die measurements as well as Real Time Regression (RTR) capabilities. Process engineers can harness the power and flexibility of the tool to develop their own scatterometry applications by themselves thus keeping the details of their process within the fab. Its user interface and high level of automation provide easier and faster application development and eliminate discrepancies between different developers, enabling the best solution, independent of user proficiency. Combined with the NovaMARS innovative modeling software capabilities, Nova's Optical CD tools provide the metrology precision and accuracy as well as application development flexibility needed for the development of most advanced technology nodes. The NovaMars is an integral part in all Nova integrated and stand-alone solutions.

Nova Hybrid Metrology solution is part of our holistic metrology approach that utilizes different sources of information that can enhance the overall metrology performance. The Hybrid metrology solution combines data from different metrology toolsets in the fab together with Nova's optical metrology to provide improved performance above that of any individual toolset. Nova has been pioneering the hybrid concept in the past several years and has proven the value of the solution in multiple publications and technical papers. As of 2013, the Hybrid solution has been implemented in production at leading customers' fabs.

Nova Fleet Management is Nova's newest solution for managing large fleets of metrology tools and is designed to address the needs and working methodologies of Metrology and Process Engineers in the fab. The solution offers an easy and intuitive platform for managing and improving the overall productivity of Nova systems. Comprised of a centralized server dedicated for databases and data storage, network-connected tools and servers, Nova Fleet Management serves as the back-end platform that enables Wafer-less Recipe Creation (WRC) for simple and intuitive recipe creation without interfering with tool operation. It also supports distribution of recipes from a central location to multiple tools over the fab network in efficient and secure mechanism. The centralized server contains an advanced report generator for the analysis of the metrology spectral data collected from the tools as well as tool performance and health monitoring to ensure that the tools are operating within specifications and enable tight monitoring of the fleet's performance trends.

NovaHPC (High Power Computer) supports the NovaMars Application Development Tool and enables effective and timely calculations of attained spectra. Scalable and user configurable infrastructure with Nova's proprietary task management software addresses the growing needs of IC manufacturing metrology.

The VeraFlex II, introduced in 2010, is a unique production-proven platform to use x-ray photoelectron spectroscopy (XPS), a materials analysis technology that is proven essential to increase device yield. The VeraFlex II has characterized over 30 HKMG material systems for thickness and composition, and is addressing a growing number of thin film process control applications where traditional metrology approaches struggle to deliver viable solutions. The VeraFlex II is also used extensively by advanced node DRAM and Flash manufacturers to control tunnel oxides, capacitor films, silicides, and low doses of carbon. Manufacturers of alternative memory devices such as PRAM, ReRAM, and MRAM need VeraFlex II to characterize and control phase change materials and new electrode-oxide material systems.

The VeraFlex III XF is the third generation of the globally adopted VeraFlex series of XPS production systems that delivers a major increase in performance and provides a broader applications coverage. It combines enhanced XPS capability with a unique low energy XRF (LE-XRF) channel to address the metrology challenges of 20nm nodes and beyond. With technology enhancements that improve performance on current inline logic and memory film applications, the VeraFlex III XF provides solutions for emerging applications in FinFET HKMG, interconnect processes, and advanced memories.

QED is the Offline Advanced Data Analysis and Recipe Creation and Maintenance System that supports VeraFlex II and VeraFlex III XF. It brings the VeraFlex series engineering interface from the fab to the office. Built on PHI MultiPak's package of extensive XPS analysis function, QED brings all the tools necessary to manage the most effective film thickness and composition control recipes. QED functions include all aspects of film acquisition and analysis, a full suite of recipe creation and editing tools, and powerful signal analysis functions used to find and process the most critical elemental peaks.

Metrology is becoming a technology enabler that allows process equipment suppliers to tighten their specifications in order to meet customer's demand. Our strategy to offer holistic and diverse portfolio to enable the industry transitions, establishes the advantage and the value that innovative company like us brings to our customers and the market. With such a diversified portfolio, we now cover a variety of applications in both front end and back end of line that increases our served and available markets and footprint in all customer segments.

#### Research and Development

We have assembled a core team of experienced scientists and engineers who are highly skilled in their particular field or discipline. Our research and development core competencies, technologies and disciplines are in scatterometry, thin film metrology, XPS and material metrology and include measurement instruments, optical modeling, image acquisition, pattern recognition, X-Ray energy sources, electron optics and detection, vacuum systems and equipment integration. Our research and development staff consists of about 178 highly skilled members, approximately 37 of which hold Ph.D's. In addition, we rely on independent subcontractors and consultants in various fields. Since June 2003, our research and development operations in Israel are certified as ISO9001/2000 quality standard.

The metrology and process control market is characterized by continuous technological development and product innovations. We believe that the rapid and ongoing development of new products and enhancements to our existing product lines is critical to our success. Accordingly, we devote a significant portion of our technical, management and financial resources to developing new applications and emerging technologies. In 2014, 2015 and 2016, our research and development expenses, net of participation by the OCS and the European Community, were \$29.5 million, \$39.7 million and \$35.0 million respectively, representing, 24.5%, 26.7% and 21.4% of our respective total revenues for those years.

Our vision is to continue to be a market leader in the semiconductor process control market, increase our leadership in integrated metrology solutions, increase our leadership in in-line composition and thickness of ultra-thin layers and become the leader in the stand-alone Optical CD metrology market, and our research and development efforts and activities are designed to support this vision. Our research and development policy is based on a structured process of initiating new projects and on-going review of existing development projects. Project initiation is based on a detailed project plan, risk and market analysis. Each project is monitored throughout its life cycle in a structured process, including design reviews and project management reviews. In the frame of our research and development activities we consider from time to time entering into consortium arrangements. In 2016 we entered into development consortiums in Europe, and also continued with development consortiums, which we entered during 2012 – 2015, mainly in order to be able to support our customers in the transition to advance technology nodes in the coming years. These consortiums are joint collaboration programs with other semiconductors companies supported by the OCS and European Joint Research. It should be noted, that in order to maintain our eligibility for these programs, we must continue to meet

certain conditions. These programs might also restrict our ability to manufacture particular products and transfer particular technology, which were funded by the OCS. For additional information, see “Item 5C - Grants from the Office of the Chief Scientist” in this annual report on Form 20-F.



As part of our long term technological collaboration, we are also engaged with joint development activities with some of our strategic customers, as well as with research institutes. These activities impose some limitations on the joint intellectual property developed as part of these programs.

### Intellectual Property

Our success depends in part upon our ability to protect our intellectual property. We therefore have an extensive program devoted to seeking patent protection for our inventions and discoveries that we believe will provide us with competitive advantages. As of December 31, 2016, our portfolio includes more than 130 U.S. patents and about 70 non-U.S. patents. The U.S. patents we hold have expiration dates ranging from 2016 to 2034. We also have about 35 U.S. patent applications pending and more than 85 applications pending in other countries including 18 PCT applications. Our patents and applications principally cover various aspects of optical measurement systems and methods, integrated process control implementation concepts, and optical, opto-mechanical and mechanical design. In addition, our patents and applications principally cover various aspects of X-Ray based measurement systems and methods, including process control implementation concepts, X-Ray energy sources, electron optics and detection, vacuum systems and equipment integration. We have also registered 6 trademarks in the U.S. and have more than 20 registered trademarks and 3 applications for trademarks' registration in countries other than the U.S.

To protect our proprietary rights, we also rely on a combination of copyrights, trademarks, trade secret laws, contractual provisions (e.g. confidentiality agreements) and licenses. Our copyrights include software copyrights. We constantly seek to control access to, and distribution of our proprietary information, such as our proprietary algorithms.

While we attempt to protect our intellectual property through patents, copyrights and non-disclosure and confidentiality agreements, we may not be able to adequately protect our technology. Competitors may be able to develop similar technology independently or design around our patents and, despite our efforts, our trade secrets may be disclosed to others. Furthermore, the laws of countries other than the U.S. may not protect our intellectual property to the same extent as the laws in the U.S. We also cannot assure that: (i) our pending patent applications will be approved; (ii) any patents granted will be broad enough to protect our technology or provide us with competitive advantages or will not be successfully challenged or invalidated by third parties; or (iii) that the patents of others will not have an adverse effect on our ability to do business. We may also have to commence legal proceedings against third parties to protect our intellectual property.

From time to time, we receive communications from others asserting that our products infringe or may infringe their intellectual property rights. Typically, our in-house patent counsel investigates these matters and, where appropriate, retains outside counsel to provide assistance. We are not presently involved in any material legal proceedings in which a third party has asserted that we have violated their intellectual property rights. If, however, we become involved in any such litigation and its outcome is adverse to us, it may result in a loss of proprietary rights, subject us to significant liabilities, including treble damages in some instances, require us to seek licenses from third parties which may not be available on reasonable terms or at all, or prevent us from selling our products. Furthermore, any litigation relating to intellectual property, even if we are ultimately successful, could result in substantial costs and diversion of time and effort by our management. This in and of itself could have a negative impact on us.

While we believe that we would be successful in any litigation seeking to enforce our patent rights, the ultimate outcome of any litigation or other legal proceedings cannot be predicted.

#### Our Customers, Sales and Marketing

Our sales and marketing strategy is based mostly on a direct approach where we engage with our customers from the early stages of process development, work in collaboration to address their challenges in the development phase and support the transition to high volume production. We seek to establish and maintain close and mutually beneficial relationships with our customers by consistently providing them with a high level of service, support and new capabilities. We have a global network of sales and marketing, customer service and applications support offices worldwide.

In additions, we have established sales and support activities with key process equipment manufacturers to ensure our products are combined into our partners' next generation equipment sets as those become available. As part of our integrated tools sales effort, we continuously add new process equipment manufacturers as partners as we introduce new integrated process control systems that can be integrated with different types of equipment.

We serve all sectors of the integrated circuit manufacturing industry including logic, ASIC, foundries and memory manufactures. Our end user and process equipment manufacturer customers are located in different countries.

The table below describes the distribution of our total revenues, from systems and services, according to the geographic location of the actual installation of our systems in end-user sites:

	2014	2015	2016
Taiwan, R.O.C.	\$53,870	\$65,466	\$74,567
USA	31,078	21,533	15,269
Korea	12,865	27,526	26,871
China	4,405	9,652	31,269
Other	18,400	24,337	15,927
Total	120,618	148,514	163,903

The semiconductor industry is dominated by a small number of large companies. As a result, while our overall customer base is diverse, our sales are highly concentrated among a relatively small number of customers. The following table indicates the percentage of our total revenues derived from sales to our five largest customers and the range of these revenues from these customers for the periods indicated.

	2014	2015	2016
Total revenues from five largest customers	74 %	76 %	76 %
Range of revenues from five largest customers	4%-36%	9%-31%	10%-34%

We anticipate that our revenues will continue to depend on a limited number of major customers, although the companies considered to be our major customers and the percentage of our revenue represented by each major customer may vary from year to year. As our customer base is highly concentrated, if any of our customers becomes insolvent or has difficulties meeting its financial obligations to us, we may suffer losses that may be material in amount. A loss of any of our major customers may likewise cause us to suffer a material decrease in sales and revenue.

The highly competitive nature of the market for semiconductor capital equipment affects our ability to successfully implement our marketing and sales efforts. Competitive factors in the market for integrated process control systems include technological leadership, system performance, ease of use, reliability, cost of ownership, technical support and customer relationships. For integrated process control, an adequate business model, internal organization and unique process equipment manufacturer agreements and partnerships are also significant factors. We believe we compete favorably on the basis of these factors in the markets we serve.

Our current stand-alone metrology products compete with both Nanometrics and KLA-Tencor. In this area, we have gained market share both in CMP and Etch segments using our T600 platform combined with our advanced modeling and software capabilities. These solutions are being used for in line metrology at leading foundries and memory customers. The T600 platform was selected for several process steps due to superior metrology performance and significant cost of ownership advantage with the dual measurement unit configuration. In the integrated metrology field, we primarily compete with products manufactured by Nanometrics. We have gained market share with the successful proliferation of i500 platform in key accounts, but we expect our integrated products to face intense competition in the coming years. We see an increasing demand to implement high end metrology solution – both software and hardware – for integrated metrology tools as customers start using these tools for advanced nodes. We also compete against companies manufacturing other types of equipment as a result of the disruptive nature of the technology we offer. These companies include Hitachi hi-tech and Applied Materials in the area of CD-SEM and Rudolph Technologies in the area of acoustic measurement of top metal copper lines.

#### Manufacturing

We have one manufacturing facility for our Optical CD product lines, which is located in Ness-Ziona, Israel, divided into two buildings, and one manufacturing facility for our x-ray product line, which is located in Santa Clara, CA, US.

Our principal manufacturing activities include assembly, integration, final testing and calibration. Our production activities are conducted in our manufacturing and repair center facility in Israel and in Santa Clara. We rely and expect to continue to rely on subcontractors and turnkey suppliers to fabricate components, build subassemblies and perform other non-core activities in a cost-effective manner. While we use standard components and subassemblies wherever possible, most mechanical parts, metal fabrications, optical components and other critical components used in our products are engineered and manufactured to our specifications. A small portion of these components and subassemblies are obtained from a limited group of suppliers, and occasionally from a single source supplier.



In order to leverage the relatively high volume of the systems we manufacture, and in order to decrease production costs, we continue to focus our internal manufacturing activities on processes that add significant value or require unique technology or specialized knowledge and outsource others. Our manufacturing operations in Israel received the ISO 9001 quality mark by an international certification institute in October 1999. Since then, we have upgraded our quality systems to conform to ISO 9001:2008 requirements. In 2010, we received the formal certification of ISO 14001:2004 and in 2014 we received the formal certification of ISO 18001:2007 for our manufacturing operations in Israel.

#### Capital Expenditures

Our capital expenditures are primarily for network infrastructure, computer hardware and software, leasehold improvements of our facilities, expansion of clean room facilities and system demonstration and development tools. None of these assets are held as collateral or guarantee other obligations. For additional information on our capital expenditures, see “Item 5B. Liquidity and Capital Resources” in this annual report on Form 20-F.

#### Political and Economic Conditions in Israel

We are incorporated under the laws of the State of Israel, and our principal offices and manufacturing facilities are located in Israel. We are, therefore, directly influenced by the political, economic and military conditions affecting Israel. Any major hostilities involving Israel, the interruption or curtailment of trade between Israel and its trading partners or a significant downturn in the economic or financial condition of Israel could have a material adverse effect on our business, financial condition and results of operations. Additionally, many of our male employees in Israel are currently obligated to perform annual reserve duty in the Israel Defense Force and virtually all such employees are subject to being called to active duty at any time under emergency circumstances. While we have operated effectively under these requirements since we began our operations, no assessment can be made as to the full impact of such requirements on our workforce or business if conditions should change, and no prediction can be made as to the effect of the expansion or reduction of such obligations.

#### Government Regulation

For information relating to the impact of certain government regulations on our business, see “Item 5C – Grants from the Office of the Chief Scientist” on this annual report on Form 20-F.

#### 4.C Organizational Structure

##### Our Subsidiaries

Our subsidiaries and the countries of their incorporation are as follows. All of our subsidiaries are wholly owned by the Company:

<u>Name of Subsidiary</u>	<u>Country of Incorporation</u>
Nova Measuring Instruments Inc.	Delaware, U.S.
ReVera Incorporated*	Delaware, U.S.
Nova Measuring Instruments K.K.	Japan
Nova Measuring Instruments Taiwan Ltd.	Taiwan
Nova Measuring Instruments Korea Ltd.	Korea
Nova Measuring Instruments GmbH	Germany

\* A wholly-owned subsidiary of Nova Measuring Instruments Inc.

Nova measuring Instruments Netherlands B.V., a wholly owned subsidiary of the Company, was liquidated on 21.07.2016.

#### 4.D Property, Plant and Equipment

Our main facilities, located in Ness-Ziona, Israel, occupy approximately 8,600 square meters, including: approximately 2,000 square meters of production facilities, approximately 4,500 square meters of research and development offices (including approximately 700 square meters of laboratories) and approximately 2,100 square meters of headquarters, sales and marketing, service and support and administration facilities. Our current lease agreement (which was amended in May 2016 to include additional space required for our operations) extends the lease period of the premises until January 31, 2026 (with a right, at Nova's sole discretion, to terminate the agreement on January 31, 2021, upon a 180 day prior notice).

Our subsidiaries lease offices in various locations, for use as a service and pre-sale facility. Our U.S. subsidiary (Nova Measuring Instruments Inc.) leases approximately 380 square meters and ReVera leases approximately 1,885 square meters including approximately 450 square meters of production facilities. The current lease agreement of ReVera premises extends the lease period of the premises until January 31, 2020 (with, at ReVera's sole discretion, a right to extend the lease period for an additional two years and a right of first refusal to lease additional space of 617 square meters when such space becomes available). Our Japanese subsidiary leases approximately 50 square meters, our Taiwanese subsidiary leases approximately 930 square meters and our Korean subsidiary leases approximately 780 square meters. Our European subsidiary leases approximately 160 square meters in Germany and France.

We believe that our facilities and equipment are in good operating condition and adequate for their present usage.

##### Item 4A. Unresolved Staff Comments

None.

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

Information in this Operating Review and Financial Prospects Section should be read in conjunction with our consolidated financial statements and notes thereto which are included elsewhere in this report.

Executive Overview

We are a worldwide leading designer, developer and producer of metrology systems for the semiconductor manufacturing industry. Our metrology systems are used to take precise measurements of semiconductors during the manufacturing process to control the manufacturing process and increase the productivity of manufacturing equipment. We market and sell our metrology systems mainly to semiconductor manufacturers, and in some cases to semiconductor process equipment manufacturers.

Our business is greatly affected by the level of spending on capital equipment by semiconductor manufacturers. Capital expenditures by semiconductor manufacturers tend to be cyclical in nature and depend on numerous factors, many of which are beyond our control. Such factors include, inter alia, general economic conditions throughout the world and the demand and perceived demand for semiconductors. In addition, demand for our products and services is affected by the timing of new product announcements and releases by us and our competitors, market acceptance of our new or enhanced products and changes or advances in semiconductor design or manufacturing processes.

In the recent five years (2011-2016), we were able to present positive Compound Annual Growth Rate (CAGR) of products revenues of approximately 7.4%, while Gartner Inc. estimates that the Wafer Fab Equipment ("WFE") segment have experienced a CAGR of approximately -1.2%. We believe that our improved performance is attributed mainly to our continued penetration into the standalone metrology segment, including revenues of ReVera. Industry forecasts indicate increase in WFE spending in the next year, and we believe we are well positioned to continue to grow as we continue our focus on high growth segments within the industry.

We derive our revenues principally from sales of our metrology systems and services relating to our systems. In 2016, product sales accounted for approximately 75% of our total revenues, and services accounted for approximately 25%. Presently, we have no significant long-term debt, and during 2016 our overall cash reserves decreased by approximately \$6 million mainly due to the \$12.9 million non-recurring payment related to the royalty buyout payment with the OCS. As of the end of 2016, we had overall cash reserves of \$91.7 million and working capital of \$128.9 million.

Our service organization is operated on a profit and loss basis and is measured as a cost center in each territory and on a global basis. The objectives of our service organization are defined and measured by: customer satisfaction; quality parameters, such as time to repair and mean time between failures; and by profit and loss criteria. The service organization provides support to all products we sell, during both the warranty period and the post warranty period.

#### Significant Events in 2016 and Outlook for 2017

During 2016 Nova demonstrated few significant achievements:

- Continuous revenues growth, hitting record high of \$163.9 million.
- 4th consecutive year of revenue growth yielding a 4th consecutive record revenue year.
- Service revenues hit record high of \$41.5 million.
- Continued ReVera's integration as part of Nova, while creating cross selling opportunities in the combined company.



- Reached the target model of Nova for operating margins supporting Nova's profitable growth.
- Improved geography diversification with significant growth in China (19% of total revenues in 2016).
- Diversified customer mix, with 4 major customers accounting for 10% or more of the products revenues.
- Significant adoption of Nova's latest and advanced product portfolio for 3D devices evolution:

- o Nova T6XX/ T5XX Standalone OCD metrology tools

- o Nova i5XX Integrated OCD metrology tools

- o MARS modeling SW

- o VF II/III platforms for Composition and Thin Film measurements

Deep collaboration with several research institutes and customers' technology development centers, utilizing a variety of Nova's products, leading to Nova's positioning as a partner of choice for long term technology development and high volume manufacturing.

In 2017, Nova plans to focus on the following:

- Continue our sustainable growth through a stronger market position and technical leadership.

- Continue Nova's aggressive innovation and development plans for meeting future industry challenges in both the memory and foundry segments.

- Concentrating in further strengthening our position through delivery to the challenging buildup of 10/7/5nm technology nodes, memory advanced VNAND nodes and DRAM scaling at leading customers.

- Support our customers' transition to 3D device structures (both in memory and foundry) to enable them to move to high volume manufacturing of advanced technology nodes.

- Continue delivering advanced metrology systems to the trailing edge technology nodes to support the IOT ramp up.

- Continue our progress to meet Nova200 strategic plan, which define the Company's growth path in revenue, customers, technology and financial performance, to support sustained profitable growth.

- Continue leading the emerging metrology markets with innovative and disruptive solutions.

- Continue the collaborations and joint research programs with leading semiconductor manufacturers and relevant leading research institutes.

- Continue our products innovation and diversification through several new product introductions to extend the Company's market leadership.

- Continue the aggressive plans to generate revenues and unique competitive edge through SW products.



Strengthening the partnership with our customers and build a “Customer Centric” approach to accommodate and deliver customers’ requirements along the semiconductor lifecycle.

Build extensive roadmap for ReVera’s x-ray products, in order to enhance Nova’s existing product’s offering in materials and dimensions metrology.

The challenges and risks we face in meeting our plans include:

On time delivery of the required process control solutions to meet the current and future needs of our existing and new customers.

Correctly understanding the market trends and competitive landscape to ensure our products retain proper differentiation to win customer confidence.

Creating aggressive, innovative and competitive roadmap deliverables at reasonable costs in order to properly control expenses.

Identifying the metrology evolution for future industry needs in order to meet process control requirements and lead the market.

In order to address these risks and challenges, we are working closely with leading customers’ process development groups and with the leading process equipment manufacturers as well as with leading technology research institutes. The purpose of working closely with these entities is to receive from them as early as possible information and feedback on their current and future metrology and process control needs and tune the roadmap to support such needs.

In 2016 we performed well with yearly growth in revenues. We were able to present record revenues for fourth consecutive years, demonstrating our growing position in the market.

It is our belief that we have been able to consistently win and grow as a result of a combination of factors:

Optical metrology has become an enabler for the entire industry over the last few years, sometimes on the account of other metrology capabilities, which are not optical based.

XRay XPS has been widely adopted by leading memory and foundry customers for complex materials composition and film thickness applications.

Nova’s unique metrology solutions, combining Optical and X-Ray metrology for both dimensions and materials, provide the most advanced solution, combining the best innovative and technical metrology capabilities with the best cost of ownership and productivity.

The ability to provide a unique and differentiated technology portfolio sets us apart from the competition and adding a competitive edge to our offering.

Our technical innovative solutions are well accepted by leading customers that allow us to gain more market share with additional process steps and new applications

Our ability to closely team with our customers allows us to predict the industry evolution and process control challenges and by that introduce innovative and advanced metrology solutions to solve industry needs.

Our diversified portfolio, which is a result of continuous research and development, is becoming more attractive to our customers.

· Widening our solutions' base to include hardware and software elements in a coupled offering.

· Well controlled P&L and operating model to support a sustainable and profitable growth.

Understanding the industry's challenges for the next several years, it is our belief that we should continue growing going forward as the adoption of our solutions increases as a function of process complexity and industry development. We believe that our served addressable market is continuously expanding as we penetrate to more steps of the semiconductor manufacturing process and, as we continue innovating our portfolio for leading new emerging metrology opportunities. We also believe that going forward, as the semiconductor process is becoming much more complicated with variety of challenges, the necessity for our unique portfolio, combining multiple technologies for both materials, film and dimensional metrology, will grow in the next few years.

#### Critical Accounting Policies

Our discussion and analysis of our financial condition and results of operations are based upon our consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States of America. We believe the following critical accounting policies, among others, affect our more significant judgments and estimates used in the preparation of our consolidated financial statements.

#### Use of Estimates – General

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

#### Revenue Recognition

We recognize revenues from the sale of products when all the following criteria have been met: a persuasive evidence of an arrangement exists, delivery has occurred, the price is fixed or determinable, collection of resulting receivables is probable and there are no remaining significant obligations.

For transactions containing multiple elements, revenue is recognized upon delivery of the separate elements, based on their relative fair value. The Company determines the selling price using vendor specific objective evidence ("VSOE"), if it exists, and otherwise uses estimated selling price ("ESP"). Third Party Evidence ("TPE") is not typically used to determine selling prices as to limited availability of reliable competitor products' selling prices. The ESP is established considering multiple factors including, but not limited to, gross margin objectives, pricing strategies, internal costs and other economic conditions. These factors are subjective in nature and any changes in these factors will affect the ESP and as a consequence revenues recognized.

Service contracts generally specify fixed payment amounts for periods longer than one month, and are recognized on a straight line basis over the term of the contract.

#### Inventories Write-Off

We carry our inventory at the lower of either the actual cost or the current estimated market value of the inventory. We regularly review inventory quantities on hand and record a provision for excess and obsolete inventory based primarily on our estimated forecast of product demand and production requirements for the next twenty four months. As demonstrated during 2008, demand for our products can fluctuate significantly. A significant increase in the demand for our products could result in a short-term increase in inventory purchases while a significant decrease in demand could result in an increase in the amount of excess inventory quantities on hand, which could lead to losses. In addition, our industry is characterized by rapid technological change, frequent new product developments, and rapid product obsolescence that could result in an increase in the amount of obsolete inventory quantities on hand. Additionally, our estimates of future product demand may prove to be inaccurate, in which case we may have understated or overstated the provision required for excess and obsolete inventory. In the future, if our inventory is determined to be overvalued, we would be required to recognize such costs in our cost of goods sold at the time of such determination. Likewise, if our inventory is determined to be undervalued, we may have over-reported our costs of goods sold in previous periods and would be required to recognize such additional operating income at the time of sale. Therefore, although we make every effort to ensure the accuracy of our forecasts of future product demand, any significant unanticipated changes in demand or technological developments could have a significant impact on the value of our inventory and our reported operating results.

#### Goodwill:

Goodwill and certain other purchased intangible assets have been recorded as a result of the acquisition of ReVera. Goodwill represents the excess of the purchase price in a business combination over the fair value of net tangible and intangible assets acquired. Goodwill is not amortized, but rather is subject to an impairment test. Goodwill amount on December 31, 2016 was \$20.1 million.

The Company performs an annual impairment test during the fourth quarter of each fiscal year, or more frequently if impairment indicators are present. The Company operates in one operating segment, and this segment comprises its only reporting unit.

ASC 350, "Intangibles – Goodwill and Other", prescribes a two-phase process for impairment testing of goodwill. The first phase screens for impairment, while the second phase (if necessary) measures impairment. Goodwill impairment is deemed to exist if the net book value of a reporting unit exceeds its estimated fair value. In such case, the second phase is then performed, and the Company measures impairment by comparing the carrying amount of the reporting unit's goodwill to the implied fair value of that goodwill. An impairment loss is recognized in an amount equal to the excess. The Company has an option to perform a qualitative assessment to determine whether it is more-likely-than-not that the fair value of a reporting unit is less than its carrying amount prior to performing the two-step goodwill impairment test. If this is the case, the two-step goodwill impairment test is required. If it is more-likely-than-not that the fair value of a reporting unit is greater than its carrying amount, the two-step goodwill impairment test is not required.

For the year ended December 31, 2016, the Company performed an annual impairment analysis, using market capitalization, and no impairment losses have been identified.

## Intangible assets

As a result of the acquisition in April 2015, our balance sheet included acquired intangible assets, in the aggregate amount of approximately \$17.9 million and \$15.4 million as of December 31, 2015 and 2016, respectively.

In 2015, we allocated the purchase price of the company we have acquired to the tangible and intangible assets acquired and liabilities assumed, based on their estimated fair values. These valuations require management to make significant estimations and assumptions, especially with respect to intangible assets. Critical estimates in valuing intangible assets include future expected cash flows from technology acquired, backlog and customer relationships. Management's estimates of fair value are based on assumptions believed to be reasonable, but which are inherently uncertain and unpredictable.

Intangible assets are comprised of acquired technology, customer relations, backlog and IP R&D.

During 2015 and 2016 no impairment charges were identified.

For a discussion of other significant accounting policies used in the preparation of our financial statements and recent accounting pronouncements, see Note 2 to our consolidated financial statements contained elsewhere in this report.

## New Accounting Pronouncements

For information regarding new accounting pronouncements, see Note 2W to our consolidated financial statements contained elsewhere in this report.

## 5.A Operating Results

### Overview

The table below describes the distribution of our total revenues, from systems and services, by geographic areas of our product installations at semiconductor manufacturing facilities. As our customers include semiconductor manufacturers as well as process equipment manufacturers, this distribution is different from the distribution of our revenues by customer location discussed in the immediately preceding paragraph.

	2014	2015	2016
Taiwan, R.O.C.	45 %	44 %	45 %
USA	26 %	14 %	9 %
Korea	11 %	19 %	16 %
China	4 %	6 %	19 %
Other	14 %	17 %	11 %
Total	100 %	100 %	100 %

Historically, a substantial portion of our revenues has come from a small number of customers, and we anticipate that our revenues will continue to depend on a limited number of major customers.

The sales cycle for our systems typically ranges from six (6) to twelve (12) months and depends upon the status of our system's integration with a particular manufacture and model of process equipment, the evaluation criteria of our customers, and the technology or application of the process. Additionally, the rate and timing of customer orders may vary significantly from month to month as a function of the specific timing of fab expansions. Accordingly, if sales of our products do not occur when we expect or we are unable to adjust our estimates on a timely basis, our expenses and inventory levels may fluctuate relative to revenues and total assets. In 2016, our inventory levels at the end of each

quarter ranged from \$28.0 million to \$30.7 million. We schedule production of our systems based upon order backlog and customer forecasts. We include in backlog only those orders to which the customer has assigned a purchase order number and for which delivery has been specified.

Our revenues increased by 10% in 2016 following an increase of 23% in 2015, and an increase of 8% in 2014. The revenue increase in 2016 is attributed to increased demand for our products and to higher service revenues as a result of larger installed base.

The following table shows the relationship, expressed as a percentage, of the listed items from our consolidated statements of operations to our total revenues for the periods indicated:

	Percentage of Total Revenues		
	Year ended December 31,		
	2014	2015	2016
Revenues from product sales	76.4 %	74.9 %	74.7 %
Revenues from services	23.6 %	25.1 %	25.3 %
Total revenues	100 %	100 %	100 %
Cost of products sale	33.0 %	34.1 %	30.7 %
Cost of services	14.3 %	14.0 %	15.5 %
Expense related to settlement of OCS grants	-	-	7.9 %
Total cost of revenues	47.3 %	48.1 %	54.1 %
Gross profit	52.7 %	51.9 %	45.9 %
Operating expenses:			
Research and development expenses, net	24.5 %	26.7 %	21.3 %
Sales and marketing expenses	10.5 %	10.8 %	13.1 %
General and administrative expenses	3.7 %	5.7 %	4.2 %
Amortization of intangible assets		0.9 %	1.1 %
Total operating expenses	38.7 %	44.1 %	39.7 %
Operating profit	14.0 %	7.8 %	6.2 %
Financing income, net	0.5 %	0.4 %	0.7 %
Income before income taxes	14.5 %	8.2 %	6.9 %
Income tax expenses (benefit)	(1.0 )%	(2.4 )%	1.0 %
Net income	15.5 %	10.6 %	5.9 %

#### Comparison of Years Ended December 31, 2016 and 2015

Revenues. Our revenues in 2016 increased by \$15.4 million, or 10%, compared to 2015. Revenues attributable to product sales were \$122.4 million, an increase of \$11.3 million, or 10%, compared to 2015. Revenues attributable to services were \$41.5 million, an increase of \$4.1 million, or 11%, compared to 2015. The increase in product revenues in 2016 was mainly attributed to an increase in sales of OCD, while XPS products revenues increased in 2016 financial reports due to the inclusion of ReVera results for a full year (relative to nine months in 2015). The increase in services revenues is attributed mainly to the higher number of systems included in our installed base, including the transition of XPS installed base in some regions to Nova responsibility, as part of ReVera integration into Nova operations. This higher installed base generated higher service contracts as well as higher time and materials revenues.





**Cost of Revenues and Gross Profit.** Cost of revenues consists of labor, material and overhead costs of manufacturing our systems, royalties, and the costs associated with our worldwide service and support infrastructure. It also consists of inventory write-offs and provisions for estimated future warranty costs for systems we have sold. In 2016, cost of revenues also included \$12.9 million of expenses related to royalty buyout agreement with the OCS in Israel. Our cost of revenues attributable to product sales in 2016 was \$50.4 million. Our gross margin attributable to product revenues in 2016 was 48%, compared to 54% in 2015. This decrease in products gross margins in 2016 is mainly related to the above mentioned \$12.9 million of expenses related to the royalty buyout agreement and \$1.9 million of inventory write-off. Our cost of services in 2016 was \$25.4 million. Our gross margin attributable to service revenues in 2016 was 39%, compared to 44% in 2015. The decrease in service gross margins in 2016 is mainly related to the costs associated with transitioning ReVera global service organization into Nova overall service operations, as well as expansion of the service global infrastructure and headcount teams to ensure the quality of services provided to our customers.

**Research and Development Expenses, net.** Consist primarily of salaries and related expenses and also include consulting fees, subcontracting costs, related materials and overhead expenses, after offsetting grants received or receivable from the OCS and the European Community. Our net research and development expenses in 2016 were \$35 million, a decrease of \$4.7 million, or 12%, compared to 2015, after offsetting grants received or receivable of \$4.3 million in 2016 and \$1.2 million in 2015. Research and development expenses excluding grants received or receivable in 2016 were \$39.3 million, compared to \$40.9 million in 2015. The decrease in net research and development expenses in 2016 was mainly attributed to the \$3.0 million increase in grants and to lower expenses related to prototypes purchasing in 2016. In 2016, net research and development expenses represented 21% of our revenues, compared to 27% of our revenues in 2015.

**Sales and Marketing Expenses.** Sales and marketing expenses are mainly comprised of salaries and related costs for sales and marketing personnel, travel related expenses, overhead and commissions to our representatives and sales personnel. Starting 2015, sales and marketing expenses also include amortization of intangibles related to customer relations. Our sales and marketing expenses in 2016 were \$21.5 million, an increase of \$5.6 million, or 35%, compared to 2015. The increase in sales and marketing expenses in 2016 was mainly attributed to higher commission expenses related to the increase in sales, as well as an increase in headcount of sales and marketing personnel. Sales and marketing expenses represented 13% our revenues in 2016 compared to 11% of our revenues in 2015.

**Amortization of Intangible Assets.** As part of the acquisition of ReVera on April 2, 2015, the company acquired \$12.3 million of intangible asset related to technology. In 2016, the company recorded \$1.8 million of amortization of intangible assets compared to \$1.3 million in 2015. This increase results from the different amortization periods in 2016 and 2015.

**General and Administrative Expenses.** General and administrative expenses are comprised of salaries and related expenses and other non-personnel related expenses such as legal expenses. Our general and administrative expenses in 2016 were \$6.8 million, a decrease of \$1.7 million, or 20%, compared to 2015. The decrease in general and administrative expenses in 2016 was mainly attributed to \$2.7 million of expenses related to the acquisition and integration of ReVera included in the general and administrative expenses in 2015. In 2016, general and administration expenses represented 4% of our revenues, compared to 6% of our revenues in 2015.

**Income Tax Expenses.** Income tax expenses are comprised of current tax expenses and deferred tax expenses/income. In 2016 we recorded \$1.7 million of income tax expenses, compared with \$3.5 million of income tax benefit in 2015. The increase in income tax expenses in 2016 is attributed to the decrease in accumulation of future research and development credits in 2016 relative to 2015, and to an increase in applicable tax rates, following the conclusion of utilization of certain tax exemptions in Israel in 2015.

#### Comparison of Years Ended December 31, 2015 and 2014

**Revenues.** Our revenues in 2015 increased by \$27.9 million, or 23%, compared to 2014. Revenues attributable to product sales were \$111.2 million, an increase of \$19.0 million, or 21%, compared to 2014. Revenues attributable to services were \$37.3 million, an increase of \$8.9 million, or 31%, compared to 2014. The increase in product revenues in 2015 was mainly attributed to the consolidation of the revenues of ReVera starting April 2, 2015. The increase in services revenues is attributed mainly to the higher number of systems included in our installed base, including the installed base of systems of ReVera. This higher installed base generated higher service contracts as well as higher time and materials revenues.

**Cost of Revenues and Gross Profit.** Cost of revenues consists of labor, material and overhead costs of manufacturing our systems, royalties, and the costs associated with our worldwide service and support infrastructure. It is also consists of inventory write-offs and provisions for estimated future warranty costs for systems we have sold. In 2015, cost of revenues also included \$3.5 million of amortization of acquired intangibles related to the acquisition of ReVera. Our cost of revenues attributable to product sales in 2015 was \$50.7 million. Our gross margin attributable to product revenues in 2015 was 54%, compared to 57% in 2014. This decrease in products gross margins in 2015 is mainly related to the above mentioned \$3.5 million of amortization of acquired intangibles. Our cost of services in 2015 was \$20.7 million. Our gross margin attributable to service revenues in 2015 was 44%, compared to 39% in 2014. The increase in service gross margins in 2015 is mainly related to the significant increase of 31% in services revenues in this year, utilizing more efficiently existing infrastructure.

**Research and Development Expenses, net.** Consist primarily of salaries and related expenses and also include consulting fees, subcontracting costs, related materials and overhead expenses, after offsetting grants received or receivable from the Office of the Chief Scientist in Israel and the European Community. Our net research and development expenses in 2015 were \$39.7 million, an increase of \$10.2 million, or 35%, compared to 2014, after offsetting grants received or receivable of \$1.2 million in 2015 and \$3.5 million in 2014. The increase in research and development expenses in 2015 was mainly attributed to the consolidation of research and development expenses of ReVera, starting April 2, 2015. In 2015, net research and development expenses represented 27% of our revenues, compared to 25% of our revenues in 2014.

**Sales and Marketing Expenses.** Sales and marketing expenses are mainly comprised of salaries and related costs for sales and marketing personnel, travel related expenses, overhead and commissions to our representatives and sales personnel. Starting 2015, sales and marketing expenses also include amortization of intangibles related to customer relations. Our sales and marketing expenses in 2015 were \$16.0 million, an increase of \$3.2 million, or 25%, compared to 2014. The increase in sales and marketing expenses in 2015 was mainly attributed to the acquisition of ReVera. Sales and marketing expenses represented 11% our revenues in 2015 and 2014.

**Amortization of Intangible Assets.** As part of the acquisition of ReVera in 2015, the company acquired \$12.3 million of intangible asset related to technology. The company recorded \$1.3 million of amortization of intangible assets in 2015.

**General and Administrative Expenses.** General and administrative expenses are comprised of salaries and related expenses and other non-personnel related expenses such as legal expenses. In 2015, general and administration expenses also included \$2.7 million of expenses related to the acquisition and integration of ReVera. Our general and administrative expenses in 2015 were \$8.5 million, an increase of \$4.1 million, or 91%, compared to 2014. The increase in general and administrative expenses in 2015 was mainly attributed to the above mentioned \$2.7 million of expenses related to the acquisition and integration of ReVera, as well as to the consolidation of general and administration expenses of ReVera, starting April 2<sup>nd</sup>, 2015. In 2015, general and administration expenses represented 6% of our revenues, compared to 4% of our revenues in 2014. The increase in general and administrative expenses as percent of revenues in 2015 is attributed mainly to the above mentioned expenses related to the acquisition and integration of ReVera.

**Income Tax Expenses.** Income tax expenses are comprised of current tax expenses and deferred tax expenses/income. In 2015 we recorded \$3.5 million of income tax benefit, compared with \$1.2 million of income tax benefit in 2014. The increase in income tax benefit in 2015 is attributed to \$1.5 million increase in income tax benefits related to accumulating research and development credits in Israel and to \$1.9 million of income tax benefit related to amortization of intangibles as a result of the acquisition of ReVera. These amounts were offset by \$1.1 million increase in current tax expenses in 2015 relative to 2014.

## 5.B Liquidity and Capital Resources

As of December 31, 2016, we had working capital of approximately \$128.6 million compared to working capital of approximately \$112.8 million as of December 31, 2015.

Cash and cash equivalents, short-term and long-term deposits as of December 31, 2016 were \$91.7 million compared to \$97.8 million as of December 31, 2015.

Trade accounts receivable increased from \$19.0 million as of December 31, 2015 to \$42.6 million as of December 31, 2016. The increase in accounts receivables is mainly related to the increase in the quarterly sales levels in the fourth quarter of 2016 relative to the fourth quarter of 2015, as well as to the timing of shipments during the fourth quarter of 2016

Inventories increased from \$27.7 million as of December 31, 2015 to \$29.3 million as of December 31, 2016.

Operating activities in 2016 generated negative cash flow of \$4.2 million compared to a positive cash flow of \$25.8 million in 2015. The decrease in operating cash flow in 2016 is mainly related to the non-recurring \$12.9 million royalty buyout payment to the OCS, as well as to the increase in accounts receivables at the end of 2016.

The following table describes our investments in capital expenditures during the last three years:

	2014		2015		2016	
	Domestic	Abroad	Domestic	Abroad	Domestic	Abroad
	(in dollar thousands)					
Electronic equipment	3,884	84	2,925	32	1,618	136
Office furniture and equipment	29	5	37	90	83	-
Leasehold improvements	1,352	0	1,135	154	1,183	113
Total	5,265	89	4,097	276	2,884	249

In 2016, the investment in capital expenditures was financed from our cash reserves. Although we currently have no significant capital commitments, we expect to spend approximately \$8 million on capital expenditures in 2017, mainly for expansion of manufacturing facilities, renovation of existing office facilities, information systems improvements (software and hardware) and electronic equipment used in our research and development labs.

Our principal liquidity requirement is expected to be for working capital and capital expenditures as well as additional acquisitions. We believe that our current cash reserves will be adequate to fund our planned activities for at least the next 12 months. Our long-term capital requirements will be affected by many factors, including the success of our current products, our ability to enhance our current products and our ability to develop and introduce new products that will be accepted by the semiconductor industry. We plan to finance our long-term capital needs with our cash reserves together with positive cash flow from operations, if any. If these funds are insufficient to finance our future business activities, which may include acquisitions, we will have to raise additional funds through the issuance of additional equity or debt securities, through borrowing or through other means. We cannot assure that additional financing will be available on acceptable terms.

Presently, we have no long-term debt, nor any readily available source of long-term debt financing such as a line of credit.

With regard to usage of hedging financial instruments and the impact of inflation and currency fluctuations, see “Item 11. Quantitative and Qualitative Disclosures about Market Risk” in this annual report on Form 20-F.

#### 5.C Research and Development, Patents and Licenses, etc.

For information regarding our research and development activities, see “Item 4B – Research and Development” in this annual report on Form 20-F.

#### Grants from the Office of the Chief Scientist

Under the Encouragement of Research, Development and Technological Innovation in the Industry Law 1984, or the Innovation Law, formerly known as the Law for the Encouragement of Industrial Research and Development, 1984, a qualifying research and development program is eligible for grants of up to 50% of the program’s research and development expenses. The program must be approved by a committee of the OCS. The recipient of the grants is required to return the grants by the payment of royalties on the revenues generated from the sale of products (and related services) developed (in all or in part) according to, or as a result of, a research and development program funded by the OCS (at rates which are determined under the Innovation Law up to the aggregate amount of the total grants received by the OCS, plus annual interest (as determined in the Innovation Law). Royalties are paid in NIS linked to the dollar at the exchange rate in effect at the time of payment. Following the full payment of such royalties and interest, there is generally no further liability for royalty payment. Nonetheless, the restrictions under the Innovation Law (as generally specified below) will continue to apply even after our company has repaid the full

amount of royalty payable pursuant to the grants.

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The pertinent obligations under the Innovation Law are as follows:

**Local Manufacturing Obligation.** The terms of the grants under the Innovation Law require that we manufacture the products developed with these grants in Israel. Under the regulations promulgated under the Innovation Law, the products may be manufactured outside Israel by us or by another entity only if prior approval is received from the OCS (such approval is not required for the transfer of less than 10% of the manufacturing capacity in the aggregate, in which case a notice should be provided to the OCS). This approval may be given only if we abide by all the provisions of the Innovation Law and related regulations. Ordinarily, as a condition to obtaining approval to manufacture outside Israel, we would be required to pay royalties at an increased rate (usually 1% in addition to the standard rate and increased royalties cap between 120% and 300% of the grants, depending on the manufacturing volume that is performed outside Israel). We note that a company also has the option of declaring in its OCS grant application an intention to exercise a portion of the manufacturing capacity abroad, thus avoiding the need to obtain additional approvals and pay the increased royalties cap.

**Know-How transfer limitation.** The Innovation Law restricts the ability to transfer know-how funded by the OCS outside of Israel. Transfer of OCS funded know-how outside of Israel requires prior OCS approval and in certain circumstances is subject to certain payment to the OCS calculated according to formulae provided under the Innovation Law. If we wish to transfer OCS funded know-how, the terms for approval will be determined according to the character of the transaction and the consideration paid to us for such transfer. The OCS approval to transfer know-how created, in whole or in part, in connection with an OCS-funded project to third party outside Israel where the transferring company remains an operating Israeli entity is subject to payment of a redemption fee to the OCS calculated according to a formula provided under the Innovation Law that is based, in general, on the ratio between the aggregate OCS grants to the company's aggregate investments in the project that was funded by these OCS grants, multiplied by the transaction consideration, taking into account depreciation mechanism, and less royalties already paid to the OCS. The transfer of such know-how to a party outside Israel where the transferring company ceases to exist as an Israeli entity is subject to a redemption fee formula that is based, in general, on the ratio between aggregate OCS grants received by the company and the company's aggregate R&D expenses, multiplied by the transaction consideration, taking into account depreciation mechanism, and less royalties already paid to the OCS. The regulations promulgated under the Innovation Law establish a maximum payment of the redemption fee paid to the OCS under the above mentioned formulas and differentiates between two situations: (i) in the event that the company sells its OCS funded know-how, in whole or in part, or is sold as part of an M&A transaction, and subsequently ceases to conduct business in Israel, the maximum redemption fee under the above mentioned formulas will be no more than six times the amount received (plus annual interest) for the applicable know-how being transferred, or the entire amount received from the OCS, as applicable; (ii) in the event that following the transactions described above (i.e., asset sale of OCS funded know-how or transfer as part of an M&A transaction) the company continues to conduct its R&D activity in Israel (for at least three years following such transfer and maintain at least 75% of its R&D staff employees it had for the six months before the know-how was transferred, while keeping the same scope of employment for such R&D staff), then the company is eligible for a reduced cap of the redemption fee of no more than three times the amounts received (plus annual interest) for the applicable know-how being transferred, or the entire amount received from the OCS, as applicable.

Approval of the transfer of OCS funded technology to another Israeli company may be granted only if the recipient abides by all the provisions of the law and related regulations, including the restrictions on the transfer of know-how and manufacturing rights outside of Israel. In light of the Arrangement (as further discussed below), in certain circumstances, under such sale transactions (i.e., the transfer of OCS funded technology or portion thereof to another Israeli company), we might be obligated to pay royalties to the OCS from any income derived from such a sale transaction.

Approval to manufacture products outside of Israel or consent to the transfer of technology, if requested, might not be granted.

These restrictions may impair our ability to enter into agreements for those products or technologies without the approval of the OCS. We cannot be certain that any approval of the OCS will be obtained on terms that are acceptable to us, or at all. Furthermore, in the event that we undertake a transaction involving the transfer to a non-Israeli entity of know-how developed with OCS funding pursuant to a merger or similar transaction, the consideration available to our shareholders may be reduced by the amounts we are required to pay to the OCS. Any approval, if given, will generally be subject to additional financial obligations. Failure to comply with the requirements under the Innovation Law may subject us to mandatory repayment of grants received by us (together with interest and penalties), as well as may expose us to criminal proceedings. In addition, the Government of Israel may from time to time audit sales of products which it claims incorporate technology funded via OCS programs and this may lead to additional royalties being payable on additional products.

We were obligated to pay royalties of 5% in 2016 and 2015 and 3%-3.5% in 2014, of revenues derived from sales of products funded with these grants. In August 2016, we entered into a royalty buyout arrangement, or the Arrangement, with the OCS. As part of the Arrangement we paid approximately \$12.9 million to the OCS in September 2016. The contingent net royalty liability to the OCS at the time we executed the Arrangement was approximately \$24 million. This obligation included different annual interest rates ranging up to 5%. As a result of the foregoing payment, we are released from any future royalty payments on these previous funds received from the OCS. However, to the extent that we will be able to commercialize products that were developed as part of OCS programs and were declared as "failed" at the time of the Arrangement, we will be required to pay royalties to the OCS from income generated from such commercialization. Currently, we do not anticipate that such failed projects will generate revenues in the future. As of December 31, 2016, we had no royalty liability to the OCS for grants received (subject to the aforementioned). We may participate in research and development programs, which may or may not bear royalty obligations (depending on the specific terms of the applicable program) towards the OCS. We note that the Arrangement does not release the Company from other obligations towards the OCS as further detailed herein. See also Note 8A to our consolidated financial statements contained elsewhere in this report.



It should be noted that the OCS is in the process of promulgating regulations which deals with granting of licenses to use, especially for R&D purposes, know-how developed as a result of research financed by the OCS. Such regulations may have an effect on our company, in respect of the amount of payments to the OCS for the grant of licenses to third parties. As of the date of filing of this report, we are unable to assess the effect, if any, of the promulgation of such regulations on our company.

On July 29, 2015, Innovation Law was amended (“Amendment No. 7”) ushering in the formation of NATI. NATI was established on January 1, 2016 and fully constituted in June 2016. NATI is authorized to change the current restrictions imposed on recipients of grants under the Innovation Law with a new set of arrangements in connection with ownership obligations of know-how (including with respect to restrictions on transfer of know-how and manufacturing activities outside of Israel), as well as royalties obligations associated with approved programs. The Innovation Law as existed prior to the amendment will continue to be in effect with respect to R&D programs which were active prior to January 1, 2016 until the earlier of: (i) one year following the date of appointment of all members of the NATI council (no later than June 2017); or (ii) as otherwise resolved by the NATI council. The amended Innovation Law includes new provisions with respect to sanctions imposed for violations of its provisions. As of the date of this annual report on Form 20-F, we are unable to determine whether NATI will promulgate new set of arrangements or adopt the arrangements which were stipulated under the Innovation Law as existed prior to the amendment. Therefore, as of the date of this annual report on Form 20-F, we are unable as assess the effect, if any, of the promulgation of such arrangements on the Company.

In addition to royalty-bearing grants from the OCS, in 2010, we participated in a 'Magnet' program, IMG4, sponsored by the OCS. Under the terms of this program, we were cooperating with additional companies and research institutes in Israel, organized in a consortium, for the development of advanced techniques for improved tool control. No royalties from this funding are payable to the Israeli government, however, the provisions of the Innovation Law and related regulations regarding, inter alia, the restrictions on the transfer of know-how outside of Israel do apply, mutatis mutandis. In general, any consortium member that develops technology as a result of its activities within and during the framework of the consortium project ("Foreground IP") remains the owner of such technology and any intellectual property rights related thereto. Specific mechanism applies with respect to joint Foreground developed by several members. In addition, the Foreground is subject to certain access rights as detailed in the consortium agreement. Further, there are certain limitations with respect to the transfer of the Foreground. Technology which was held by a consortium member prior to its entering into the consortium agreement or which was developed as a result of activities outside the framework of the consortium member ("Background IP") remains owned by the member who developed it. In certain circumstances, such Background is subject to certain access rights as detailed in the consortium agreement. The IMG4 program ended in 2010.

In addition, in 2016, 2015 and 2014, we participated in an additional 'Magnet' program, METRO 450, sponsored by the OCS. Under the terms of this program, we are cooperating with additional companies and research institutes in Israel, organized in a consortium for the development of pre-competitive elements of 450mm solutions that can also bring value even if the transition to 450mm is delayed. No royalties from this funding are payable to the Israeli government. Some of the abovementioned obligations (such as the restrictions under the Innovation Law and obligation to grant certain access rights to the Company's technology and intellectual property rights) apply regarding this project as well.

In addition, we are also participating in European consortiums, which are joint programs with the OCS and the European Research Area. Some of the abovementioned obligations and undertakings (such as the restrictions under the Innovation Law and obligation to grant certain access rights to the Company's technology and intellectual property rights) apply with respect to these joint projects as well.

## 5.D Trend Information

For Information regarding most significant recent trends in our market, see “Item 4B – Our Market – The World Economy – Update” in this annual report on Form 20-F.

## 5.E Off-Balance Sheet Arrangements

We do not have and are not party to any off-balance sheet arrangements.

## 5.F Tabular Disclosure of Contractual Obligations

As of December 31, 2016 we had contractual obligations as described in the following table:

	Payment due by Period (in \$ thousands)				
	Total	Less than 1 year	1-3 years	3-5 years	More than 5 years
Operating Lease Obligations	8,277	2,458	3,905	1,913	-
Purchase Obligations	22,620	12,946	9,651	23	-
Other Long Term Liabilities	1,330	-	1,330	-	-
Total	32,227	15,404	14,886	1,936	-

Item 6. Directors, Senior Management and Employees

## 6.A Directors and Senior Management

The following is the list of senior management and directors as of February 3, 2016:

<u>Name</u>	<u>Age</u>	<u>Position</u>
Michael Brunstein	73	Chairman of the Board of Directors
Alon Dumanis	66	Director
Avi Cohen	63	Director
Raanan Cohen	61	Director
Zehava Simon	58	External Director
Dafna Gruber	51	External Director
Eli Fruchter	61	Director
Eitan Oppenheim	51	President and Chief Executive Officer
Dror David	47	Chief Financial Officer
Shay Wolfling	45	Chief Technology Officer
Gabriel Waisman	46	Chief Business Officer
Glyn Davies	54	Corporate Executive Vice President and ReVera Inc. President
Gabi Sharon	54	Corporate Vice President Operations
Dov Farkash	57	Senior Corporate Vice President Modeling Software Division
Shiri Neder	41	Corporate Vice President Human Resources
Zohar Gil	50	Corporate Vice President Marketing and Business Development

Our directors (other than the external directors) serve as such until the next annual general meeting of our shareholders. Our external directors, in accordance with Israeli law, serve for a three-year term, which may be renewed for two additional three-year terms, subject to certain conditions, and thereafter for additional three-year terms, if both the audit committee and the board of directors confirm that in light of the expertise and contribution of the external director, the extension of such external director's term would be in the interest of the Company. Our external directors are Ms. Zehava Simon who was elected in 2014, and Ms. Dafna Gruber who was elected in 2015.

Our board of directors determined that Zehava Simon, Dafna Gruber, Avi Cohen, Raanan Cohen and Eli Fruchter are independent directors under the Companies Law. In addition, our board of directors determined that all of our directors qualify as "independent directors" as defined by The NASDAQ Stock Market.

Dr. Michael Brunstein was named chairman of our board of directors in June 2006, after serving as member of our board of directors from November 2003. During the years 1990 and 1999, Dr. Brunstein served as Managing Director of Applied Materials Israel Ltd. Prior to that, Dr. Brunstein served as President of Opal Inc., and as a Director of New Business Development in Optrotech Ltd. Dr. Brunstein is a member of the board of directors of IAI (Israel Aerospace Industries Ltd.). Dr. Brunstein holds a B.Sc. in Mathematics and Physics from The Hebrew University, Jerusalem, and a M.Sc. and a Ph.D. in Physics from Tel Aviv University, Israel.

Dr. Alon Dumanis has served as a director of Nova since 2002. Until December 31, 2015, Dr. Dumanis acted as the Chief Executive Officer of Crecor B.V, Docor International B.V, Docor Levi Lassen I BV, Docor Levi Lassen II BV and Docor International Management Ltd., all Dutch investment companies, subsidiaries of The Van-Leer Group Foundation, and currently Dr. Dumanis is a member of the management teams of the foregoing companies. Dr. Dumanis is currently a chairman of Aposense and a member of the board of directors of Rada, both public companies traded on TASE. Dr. Dumanis is the chairman of Dumanis Investments Ltd., Dumanis Holdings Ltd., Dumanis Ventures Ltd. and the chief executive officer of ACS Cyber Solutions, all private companies. Dr. Dumanis is a former member of the board of directors of Tadiran Communications (a public company traded on TASE), of El Al Israel Airlines (a public company traded on TASE), of Protalix Biotherapeutics (a public company traded on the New York Stock Exchange), and a former member of the board of directors of Inventech Investments Co. Ltd. (a public company traded on TASE), Spectronix (a public company traded on TASE) and Ice Cure (a public company traded on TASE). Previously, Dr. Dumanis was the Head of the Material Command in the Israel Air Force at the rank of Brigadier General. Dr. Dumanis currently serves as chairman and member of several national steering committees and is the author of many papers published in a number of subject areas, including technology and management. Dr. Dumanis holds a Ph.D. in Aerospace Engineering from Purdue University, West Lafayette, Indiana, USA.

Mr. Avi Cohen has served as a director of Nova since 2008. Mr. Cohen serves as the Chief Executive Officer of MX1, a global media service provider founded in July 2016 as a result of a merger between RR Media Ltd., and SES Platform Services GmbH. From July 2012 and until its merger with SES Platform Services GmbH, Mr. Cohen served as the chief executive officer of RR Media Ltd. (previously known as RRsat Global Communications Network Ltd.), which was a public company traded on NASDAQ. Prior to that, until March 2012, Mr. Cohen served as President and Chief Executive Officer of Orbit Technologies, a public company traded on the TASE. Prior to joining Orbit in December 2008, Mr. Cohen served as Chief Operating Officer and Deputy to the chief executive officer of ECI Telecom Ltd. a leading supplier of best-in-class networking infrastructure equipment for carrier and service provider networks worldwide. Prior to joining ECI in September 2006, Mr. Cohen served in a variety of management positions at KLA-Tencor. From 2003 Mr. Avi Cohen was a Group Vice President, Corporate Officer and Member of the Executive Management Committee based at the corporate headquarters in the U.S. During his tenure, he successfully led the creation of KLA-Tencor's global Metrology Group. From 1995 he was the President of KLA-Tencor Israel responsible for the Optical Metrology Division. Before joining KLA-Tencor, Mr. Cohen also spent three years as Managing Director of Octel Communications, Israel, after serving as Chief Executive Officer of Allegro Intelligent Systems, which he founded and which was acquired by Octel. Mr. Cohen holds B.Sc. and M.Sc. degrees in electrical engineering and applied physics from Case Western Reserve University, USA.

Mr. Raanan Cohen was appointed as a director of the Company by our board of directors in February 2014. Prior to that and until December 2012, Mr. Cohen has served as the President and Chief Executive Officer of Orbotech Ltd., a public company traded on NASDAQ. Mr. Cohen has also served in a range of other executive positions at Orbotech Ltd, including Co-President for Business and Strategy, EVP and President of the Printed Circuit Board (PCB) Division, Vice President for the PCB-AOI product line and President and chief executive officer of Orbotech, Inc. Prior to its merger with Orbotech in 1991, Mr. Cohen held various positions at Orbot, another manufacturer of AOI systems. Prior to joining Orbot in 1984, he worked at Telrad Networks Ltd. Mr. Cohen currently serves as the Chief Executive Officer of EyeWay Vision Ltd., as a member of the board of directors of Utilight Ltd., all private companies. Mr. Cohen holds a B.Sc. in Computer Science from the Hebrew University in Jerusalem, Israel.

Ms. Zehava Simon was elected as the Company's external director in accordance with the provisions of the Companies Law in June 2014. Ms. Simon served as a Vice President of BMC Software from 2000 until 2013 and in her last position (as of 2011) acted as Vice President of Corporate Development. From 2002 to 2011, Ms. Simon served as Vice President and General Manager of BMC Software in Israel. In this role, she was responsible for directing operations in Israel and India as well as offshore sites. Prior to that, Ms. Simon held various positions at Intel Israel., which she joined in 1982, including leading of Finance & Operations and Business Development for Intel in Israel. Ms. Simon is currently a board member of Audiocodes, a public company traded on NASDAQ and TASE, Nice Systems, a public company traded on NASDAQ and TASE, and Amiad water systems, a public company traded on London Stock Exchange. Ms. Simon is a former member of the board of directors of Insightec Ltd. (2005-2012), M-Systems Ltd., a NASDAQ listed company which was acquired in 2006 by SanDisk Corp., a public company traded on NASDAQ as well (2005-2006) and Tower Semiconductor Ltd., a public company traded on TASE and NASDAQ (1999-2004). Ms. Simon holds a B.A. in Social Sciences from the Hebrew University, Jerusalem, Israel, a law degree (LL.B.) from the Interdisciplinary Center in Herzlia and an M.A. in Business and Management from Boston University, USA.

Ms. Dafna Gruber was elected as the Company's external director in accordance with the provisions of the Companies Law in April 2015. Ms. Gruber has more than 20 years of broad experience, serving as chief financial officer and a senior executive management member in leading hi-tech companies traded on both NASDAQ and TASE. Since October 2015, Ms. Gruber has been serving as the chief financial officer of Clal Industries Ltd., a private company. From April 2007 until April 2015, Ms. Gruber served as the chief financial officer of Nice Systems Ltd., a public company traded on NASDAQ and TASE. As a member of the senior management team, Ms. Gruber was a senior member of the strategy and M&A forum of the company. During her employment with Nice, Ms. Gruber was responsible, inter alia, for finance, operation, MIS and IT, legal and investor relations. From 1996 until May 2007, Ms. Gruber was part of Alvarion Ltd., a public company traded on NASDAQ and TASE, mostly as chief financial officer. Prior to that, from 1993 to 1996, Ms. Gruber was a controller at Lannet Data Communications Ltd., subsequently acquired by Lucent Technologies Inc. Ms. Gruber serves as an external director at TAT Technologies Ltd., a public company traded on NASDAQ and TASE, since November 2013, and as a member of the board of directors of Clal Biotechnologies Ltd., a public company traded on TASE. In addition, Ms. Gruber serves on the boards of directors of several private companies held by Clal Industries Ltd. Ms. Gruber is a certified public accountant and holds a Bachelor's degree in Accounting and Economics from Tel Aviv University, Israel.

Mr. Eli Fruchter was appointed to serve as a director of the Company by our board of directors in August 2016. Mr. Fruchter founded EZchip Semiconductor Ltd., a supplier of highly integrated Network Processors, where he served as the chief executive officer until February 2016 when the company was acquired by Mellanox (Nasdaq: MLNX) for approximately \$811 million. Prior to EZChip, Mr. Fruchter co-founded LanOptics Ltd., a supplier of networking products, where he served as co-general manger. During his tenure at LanOptics, Mr. Fruchter led LanOptics' successful initial public offering on the Nasdaq. Mr. Fruchter was also among the founders of Adacom Technologies Ltd., a manufacturer of data communications products. Mr. Fruchter holds a B.Sc. degree in Electrical Engineering from the Technion – Israel Institute of Technology, Haifa, Israel.

Mr. Eitan Oppenheim has been serving as the President and Chief Executive Officer of the Company since July 31, 2013. He has previously served as the Executive Vice President Global Business Group, since November 2010. From 2009 until 2010, Mr. Oppenheim served as Vice President and Europe General Manager of Alvarion Ltd., a public company traded on NASDAQ. During the years 2007 through 2009, Mr. Oppenheim served as Vice President of sales and marketing of OptimalTest Ltd., a public company traded the New York Stock Exchange. Prior to that, from 2002 till 2006, Mr. Oppenheim served as Vice President – Business Manager of the Flat Panel Displays division of Orbotech Ltd., a public company traded on NASDAQ. From 2001 till 2002, Mr. Oppenheim served as Managing Director of Asia Pacific at TTI Telecom International, a leading provider of assurance, analytics and optimization solutions to communications service providers (CSP) worldwide. Prior to that, from 1994 till 2001, Mr. Oppenheim held several key executive positions at Comverse Network Systems Ltd., a public company traded on NASDAQ. Mr. Oppenheim holds a BA in Economics and Accounting from the Haifa University, Israel and an MBA from Ben-Gurion University, Beer-Sheva, Israel.

Mr. Dror David has served as the Chief Financial Officer since November 2005. Mr. David joined Nova in April 1998, as the Company's Controller, and since then served in various financial and operational positions, including the position of Vice President of Resources, in which he was responsible for the finance, operations, information systems and human resources functions of the Company. Mr. David was also a leading member in the Company's initial public offering on NASDAQ in 2000, the Company's private placement in 2007 and the Company's secondary offering in 2010. Prior to joining Nova, Mr. David spent five years in public accounting with Delloitte Touch in Tel Aviv, specializing in industrial high-tech companies. Mr. David is a shareholder and a board member of P2P Ltd., a privately held company. Mr. David is a Certified Public Accountant in Israel, holds a B.A. in Accounting and Economics from Bar Ilan University, and an M.B.A. from Derby University of Britain.

Dr. Shay Wolfling joined Nova in 2011, as Chief Technology Officer. Prior to joining Nova, Dr. Wolfling was an R&D manager at KLA-Tencor-Belgium (formerly ICOS Vision Systems, a public traded company acquired by KLA in 2008), where he led multidisciplinary metrology & inspection development projects. From 2000 until its technology acquisition by ICOS in 2005, Dr. Wolfling was a founder and Vice President of Research and Development of Nano-Or-Technologies, a start-up company with a proprietary technology for 3D optical measurements. Dr. Wolfling took Nano-Or from the idea stage to initial product sales. Prior to founding Nano-Or, Dr. Wolfling was a project manager in Y-Beam-Technologies, a start-up offering laser-based skin treatments. Dr. Wolfling has several patents under his name in the field of optical measurements. Dr. Wolfling holds a B.Sc. in physics and mathematics from the Hebrew University of Jerusalem, Israel, a second degree in physics from Tel-Aviv University, Israel and a Ph.D. in physics from the Hebrew University of Jerusalem, Israel.

Mr. Gabriel Waisman joined Nova in 2016 as our Chief Business Officer, responsible for the Company's customer facing groups, including global sales, marketing, customer support and applications. Mr. Waisman brings over 17 years of managerial expertise in a global geographically dispersed environment, and extensive experience in working with pioneering multidisciplinary technologies, particularly within the electronics and telecom sectors. Prior to joining Nova, Mr. Waisman served as President at Orbotech Pacific (Orbotech LTD, Hong Kong) from August 2013 until April 2016 and Orbotech West (Orbotech Inc., USA) from May 2011 until July 2013, where he was responsible for sales and marketing, finance and operations, and customer support. Previous to this, from June 2003 until May 2011, Mr. Waisman served in various managerial positions at Alvarion Technologies Ltd., starting as Strategic Marketing Director, EMEA, and moving on to Vice President of Strategic Accounts, General Manager of West Europe, followed by Managing Director, Asia-Pacific. Mr. Waisman has also served as EMEA Regional Sales and Marketing Director (Broadband division) at Comverse Ltd. Mr. Waisman holds a B.Sc. in electronic engineering from the Technion – Israel Institute of Technology, Haifa, Israel and an MBA in Business Administration from the Tel-Aviv University, Israel.

Mr. Glyn Davies joined ReVera in 2010 as President, Chief Executive Officer and a member of ReVera's board of directors and has served as the Corporate Executive Vice President and ReVera's President since the acquisition of ReVera by Nova in April 2015. Prior to joining ReVera, Mr. Davies has held a variety of positions in executive management, business development, marketing and sales. From 2004 until 2009 Mr. Davies served as the President of Negevtech, Inc., a venture-backed semiconductor capital equipment start-up. Prior to Negevtech, from 2000 until 2004, Mr. Davies served as the Vice President of Corporate Marketing at Credence Systems, with a focus on strategic marketing and M&A. During his time at Credence, Mr. Davies led a series of strategic acquisitions, developed the company's product portfolio and increased served markets. Prior to Credence, Mr. Davies spent 11 years at KLA-Tencor, a multi-billion dollar wafer inspection and metrology equipment provider. Mr. Davies held senior management positions in business development and marketing, and was responsible for the formation and leadership of the yield management software group at Tencor before the merger with KLA. Prior to KLA-Tencor, from 1984 until 1989 Mr. Davies served in marketing and engineering positions at Cambridge Instruments and Nanometrics. Mr. Davies holds a BS in Electronic Computer and Systems Engineering from Loughborough University, England.

Mr. Gabi Sharon has served as Corporate Vice President of Operations since September 2006. Having joined Nova in 1995, Mr. Sharon served in several key positions in the Company including as Global Customer Support Manager from September 1995 to September 2004. From September 2004 until September 2006 Mr. Sharon managed the Product Development Division, and spearheaded the NovaScan 3090 product line and its successful market launch. For a period of two years, from 2004 to 2006, he also served as the Product Marketing Manager and led the initial penetration of the Copper CMP market. Prior to joining Nova Mr. Sharon served as Project Manager in ECI Israel. Mr. Sharon holds a B.Sc. in Computer Science from Northeastern University, Boston, Massachusetts, and a M.Sc. in Technology Management from Polytechnic University, New York.

Mr. Dov Farkash has served as our Senior Corporate Vice President Modeling Software Division since April 2016. Prior that, since April 2014, Mr. Farkash served as our Senior Vice President Strategic Software. Mr. Farkash joined Nova in 2000, and till 2005 he served in various key sales positions in Nova. From 2005 until 2009, Mr. Farkash has served as VP Sales of Nova. From 2009 until April 2014, Mr. Farkash served as our Vice President Business Development. Prior to joining Nova, Mr. Farkash served as worldwide Sales and Marketing Manager of AFCON Ltd., and AFCON Inc., USA. Prior to that, Mr. Farkash served in various managerial positions in software development in various Hi-tech companies. Mr. Farkash holds a B.Sc. in Computer Engineering and an MBA from the Technion – Israel Institute of Technology, Haifa, Israel.

Ms. Shiri Neder joined Nova in July 2015, as Corporate Vice President Human Resources. Ms. Neder has a vast experience in the field of Human Resource management, including in connection with leading advanced human resource processes, post-merger integrations and organizational and individual development. Prior to joining Nova, Ms. Neder held several senior positions in global companies in field, regional, and corporate roles. From 2010 until July 2015, Ms. Neder served as the Vice President of Human Resources at Amdocs Ltd., a public company traded on NASDAQ. Prior to that from 2008 until 2010, Ms. Neder served as Regional Senior Human Resources Manager at Microsoft Corporation in England. From 2006 until 2008 Ms. Neder served as senior human resources manager at Microsoft Israel R&D Center. Prior to that, Ms. Neder held several Human Resources positions at cellular companies in Israel – Pelephone Communications Ltd., and Partner Communications Ltd. Ms. Neder holds a BA in Social Sciences from Bar Ilan University, Israel, an MA in Organizational Sociology from Tel Aviv University, Israel, an MBA from the Academic College of Tel Aviv-Yaffo, Israel, and an MA in Law from Bar Ilan University, Israel.

Mr. Zohar Gil has served as our Corporate Vice President Marketing and Business Development since March 2016. Mr. Gil joined Nova in June 2011, and until March 2016 served in several key business and marketing positions including Head of Customer Management for Nova's foundry accounts in the Asia Pacific region and Head of Marketing and Product Management. Currently, as our Vice President Marketing and Business Development, Mr. Gil is focusing on the Company's corporate marketing, strategy and M&A activities. Prior to joining Nova, From 2001 until 2010, Mr. Gil held leading business and marketing positions at Alvarion Ltd., including General Manager for the Carrier Line of Business and Vice President of Product Management. Prior to that, from 1997 until 2001, Mr. Gil served in variety of marketing and product management positions in 3Com Corporation. Mr. Gil holds a B.Sc. in Industrial Engineering from Tel-Aviv University, Israel, and an Executive MBA from Northwestern and Tel-Aviv Universities from the Kellogg-Recanati Business School of Management.

## Voting Agreement

We are not aware of any voting agreement currently in effect.

## 6.B Compensation

The aggregate direct remuneration paid or payable to all persons who served in the capacity of executive officer for 2016 (consisting of 10 persons, including one former executive officer) in terms of employer costs was approximately \$4.4 million (including \$0.6 million set aside for pension and retirement benefits and amounts expensed by the Company for automobiles made available to its executive officers).

Disclosure regarding the compensation of our senior executives on an individual basis will be disclosed in our proxy statement in connection with the 2017 annual general meeting of shareholders in accordance with Israeli regulations.

At the 2013 annual general meeting, our shareholders approved the employment terms of Mr. Eitan Oppenheim, the President and Chief Executive Officer of the Company, including: (i) a monthly base salary of NIS 87,000; (ii) an annual bonus of up to ten (10) monthly base salaries (with up to two additional monthly base salaries in the case of over achievement), subject to objectives to be annually determined by the board of directors and its committees in accordance with our compensation policy. In the event of employment termination during a fiscal year (unless for termination for cause), Mr. Oppenheim will be entitled to a prorated bonus (subject to adjusted objectives to the relevant period of employment); (iii) a one-time grant of an option to purchase up to 80,000 ordinary shares of the Company with an exercise price per share equal to the closing price on NASDAQ Stock Market on September 12, 2013) and the option will vest in equal annual installments over four years commencing one year from the grant date (i.e., 25 % of the option vests on each anniversary of the grant date); (iv) a bonus of up to ten (10) monthly base salaries for the completion of an acquisition of a non-affiliated company, subject to the limitation on a special bonus set forth in our compensation policy (the payment of such bonus is subject to the approval of the board of directors and its committees); (v) in connection with termination of employment, a three month advance notice and a six month adjustment period, during which Mr. Oppenheim will be entitled to all of his compensation elements, and to the continuation of vesting of his options; (vi) based on our policies and procedures and the applicable law, Mr. Oppenheim is entitled to customary social benefits such as pension fund or management insurance, education fund, vacation pay, sick leave and convalescence pay; (vii) based on our policies and procedures and the applicable law and subject to required approvals under applicable law, Mr. Oppenheim is entitled to be covered by a directors and officers insurance, including a "run-off" insurance policy; (viii) non-disclosure, non-compete and ownership of intellectual property undertakings; (ix) upon certain events of change of control, Mr. Oppenheim will be entitled to (A) advance notice and adjustment period as defined in Section (v) above, and (B) term and vesting extension of options of two years following termination of employment; (x) monthly travel expenses or a Company car, a Company's cellular phone, a land line phone, toll road expenses, a laptop computer and other expense reimbursements pursuant to our policies and procedures.

At the 2014 annual general meeting, our shareholders approved the following amendments to the employment terms of Mr. Oppenheim, the President and Chief Executive Officer of the Company: (i) an update of Mr. Oppenheim's monthly salary to NIS 96,000; (ii) that the maximum bonus for over achievement will be 150% of the target bonus which is ten (10) monthly base salaries (rather than two monthly base salaries); and (iii) that Mr. Oppenheim will be entitled to an annual grant of options to purchase up to 100,000 ordinary shares of the Company per each year of 2014, 2015 and 2016. The first grant of 100,000 options was made on August 1, 2014; the second and third grants of 100,000 options each will be made on the second and third anniversary of the initial grant, respectively, provided that Mr. Oppenheim is fully employed by the Company and continues with his duties as the president and chief executive officer of the Company at the respective grant date. The vesting schedule of the options is over a four (4) year period with a one fourth of such options vesting on each anniversary of the grant. The term of the options is of seven (7) years after each grant date, unless they have been exercised or cancelled in accordance with the terms of and



conditions of the applicable incentive plan of the Company or the employment terms of Mr. Oppenheim. The exercise price is determined per the Company's equity-based compensation policy.

At the 2015 annual general meeting, our shareholders approved the following amendments to the employment terms of Mr. Oppenheim, the President and Chief Executive Officer of the Company: (i) an update of Mr. Oppenheim's monthly salary to NIS 101,000; and (ii) that Mr. Oppenheim will be entitled to an additional grant of options to purchase up to 50,000 ordinary shares of the Company per each of the years 2015 and 2016. The first grant was made on August 1, 2015 and the second grant is scheduled to be made on August 1, 2016, provided that Mr. Oppenheim is fully employed by the Company and continues to act as the president and chief executive officer of the Company at the grant date. The vesting schedule of each grant is over a four (4) year period with a one fourth of such options vesting on each anniversary of the respective grant date. The term of the options is of seven (7) years after the grant date, unless they have been exercised or cancelled in accordance with the terms of and conditions of the applicable incentive plan of the Company or the employment terms of Mr. Oppenheim. The exercise price is determined per the Company's equity-based compensation policy. The grants are made in accordance with and subject to Section 102 of the Income Tax Ordinance of 1961 (New Version) (the "Ordinance"). In accordance with the Company's policy, Mr. Oppenheim is entitled to request that up to 2/3 of each grant will be made in RSUs (based on a 3:1 ratio, i.e., any option to purchase up to three (3) ordinary shares will be converted to one (1) RSU).

At the 2016 annual general meeting, our shareholders approved the following amendments to the employment terms of Mr. Oppenheim, the President and Chief Executive Officer of the Company, according to which Mr. Oppenheim is entitled to the following terms: (a) upon a Significant Event, unvested options granted to Mr. Oppenheim will vest upon the consummation of the Significant Event; and unexercised options granted to Mr. Oppenheim may be exercised until the earlier of two years from the consummation of the Significant Event, and termination of the options. Such arrangements will not apply if Mr. Oppenheim remains the chief executive officer of our company or the surviving entity, and unvested options are replaced for new options of the surviving entity as part of the Significant Event with a vesting schedule and terms identical to the replaced options. Further, upon a Significant Event, Mr. Oppenheim will be entitled to a special bonus of up to 12 monthly salaries, subject to the approval of the compensation committee and our board of directors and subject to the limitation on a special bonus imposed by our compensation policy. In the event of termination of employment (up to 12 months from the Significant Event), Mr. Oppenheim will be entitled to the retirement terms under his employment agreement, the special bonus described above and the payment of the annual bonus in full for the year in which the Significant Event has occurred, subject to the annual bonus plan, on an annual basis calculation, and subject to the approval of the compensation committee and our board of directors prior to the consummation of the transaction, or the respective body in the new surviving entity following the transaction, as applicable. A "Significant Event" is defined for this purpose as: (1) the sale of all or substantially all of our company's assets; (2) a merger of our company with or into another company or entity after which our shareholders will hold 50% or less of the surviving entity; (3) our company becoming a division or a subsidiary of another company; or (4) the purchase of our company's shares, after which the purchaser will hold 50% or more of our company's shares, provided, however, that the purchaser is not one of our institutional investors upon execution of the purchase agreement; (b) upon Acquisition of a company (which is not an affiliate of the company), Mr. Oppenheim will be entitled to receive a bonus of up to 12 monthly salaries subject to the approval of the compensation committee and our board of directors and subject to the limitation on a special bonus imposed by our compensation policy. An "Acquisition" includes, among others, a merger of our company or a subsidiary of our company with or into another entity, such that upon consummation of such transaction our shareholders will hold more than 50% of the surviving entity; and (c) Mr. Oppenheim will be entitled to an annual target cash bonus of up to twelve (12) monthly salaries and a maximum bonus for over achievement of 50% of the target bonus.

As of February 15, 2017, 1,027,268 options to purchase our ordinary shares and 117,108 RSU's were outstanding and held by certain current executive officers and directors (consisting of sixteen persons), of which 421,236 options are currently exercisable or exercisable within 60 days of February 15, 2017, and 14,610 RSU's will vest within 60 days of February 15, 2017. See "Item 6E. Share Ownership" in this annual report on Form 20-F.

In accordance with our equity-based compensation policy, effective February 2016, the exercise price of granted options is equal to the average closing price of the Company's ordinary shares on NASDAQ during the 30-trading day period preceding the day of allocation.

The total amount paid or payable to the directors, including external directors, (consisting of seven persons in 2016, for 2016 was \$0.27 million.

The compensation arrangement of the Company's directors (excluding the chairman of the board of directors and, unless approved otherwise, any other director who is also an employee of the Company), as approved by our shareholders at the 2012 annual general meeting, includes:

1. An annual payment of US\$18,000 (or an equivalent amount in NIS calculated into NIS according to a NIS 4.00 = US\$1.00 exchange rate) but not less than the annual payment required under the Companies Regulations (Rules Regarding Compensation and Expenses to an External Director), 2000, and the Companies Regulations (Relief for Public Companies with Shares Listed for Trading on a Stock Market Outside of Israel), 2000 (collectively, the "Regulations").

2. Additionally, the following payments (subject to the minimal and maximal payment restrictions applicable to the Company under the Regulations): (i) for each meeting that the director or external director attends in person, an amount of US\$600 (in an equivalent amount in NIS according to a NIS 4.00 = US\$1.00 exchange rate, provided that such payment will not be lower than the applicable payment required under the Regulations to be paid to external directors); (ii) for each execution of a written consent in lieu of a meeting, an amount of US\$300 (in an equivalent amount in NIS according to a NIS 4.00 = US\$1.00 exchange rate, provided that such payment will not be lower than the applicable payment required under the Regulations to be paid to external directors); and (iii) for each meeting that the director or external director attends by teleconference, an amount of US\$360 (in an equivalent amount in NIS according to a NIS 4.00 = US\$1.00 exchange rate, provided that such payment will not be lower than the applicable payment required under the Regulations to be paid to external directors).

3. An annual award of an option to purchase up to 10,000 ordinary shares or options with fair market value of US\$80,000, the lower of the two, to be granted to each director or external director on the date of each annual general meeting at which such director or external director is elected or reelected (or if an external director is not standing for reelection, on the date of the annual general meeting, provided that such external director is serving on the board of directors at the time of the annual general meeting). The exercise price of each option will be determined pursuant to our equity based compensation policy.

All the above mentioned sums are paid in an equivalent amount in NIS according to a NIS 4.00 = US\$1.00 exchange rate, provided that such payment will not be lower than the applicable payment required under the Regulations to be paid to external directors, and the proposed changes are in line with the Company's Compensation Policy (as further detailed below).

In February 2017, our board of directors has resolved, based on the recommendation of our compensation committee, that effective as of April 2017, the compensation arrangement of the Company's directors (including external directors and excluding the chairman of the board of directors and, unless approved otherwise, any other director who is also an employee of the Company) will be changed such that the annual payment will be increased to NIS 92,000 (approximately US\$24,200) and the payment per meeting to NIS3,000 (approximately US\$790) (for each execution of a written consent in lieu of a meeting, an amount of NIS 1,500 and for each meeting that the director or external director attends by teleconference, an amount of NIS 1,800), subject to the applicable minimum and maximum limitations include in the Companies Regulations (Rules Regarding the Compensation and Expenses of an External Director), 5760- 2000, as amended by the Companies Regulations (Relief for Public Companies Traded in Stock Exchange Outside of Israel), 5760-2000, as such regulations may be amended from time to time. No change was made with respect to the equity grants to the directors and external directors. The revisions in the annual and per meeting fees are exempted from approval of the Company's shareholders pursuant to Rule 7 of Companies Regulations (Rules Regarding the Compensation and Expenses of an External Director), 5760-2000 and Rule 1A(2) of the Companies Regulations (Relief from Related Party Transactions), 5760-2000.

The compensation arrangement of Dr. Michael Brunstein, the chairman of our board of directors, as approved by our shareholders at the 2006, 2008 and 2010 annual general meetings, includes: (i) a gross annual fee of US\$110,000 payable monthly in NIS; (ii) an annual award of options to purchase up to 10,000 ordinary shares, to be granted to Dr. Brunstein on the date of each annual general meeting at which the chairman of the board of directors is elected or reelected, starting the 2008 annual general meeting, the exercise price of which will be determined pursuant to our equity based compensation policy and the other terms (i.e., the amount, exercise price and vesting schedule) will be identical to the terms of options granted to other directors on an annual; and (iii) a biennial award of an option to purchase up to 75,000 ordinary shares to Dr. Brunstein on the date of every other annual general meeting at which the chairman of the board of directors is elected or reelected, starting with the 2010 annual general meeting (and thereafter in 2012). The exercise price of such options is determined pursuant to our equity based compensation policy, and consistent with our compensation policy, the options will vest quarterly over a period of four years.

On September 12, 2013, our shareholders approved the Company's compensation policy.

Pursuant to the Companies Law a compensation policy must be re-approved (and re-considered) at least once in every three years. Our shareholders voted on June 30, 2016 against the amended and restated compensation policy recommended by our board of directors. In August 2, 2016, our board of directors (per the recommendation of our compensation committee) has concluded that the approval of the proposed amended and restated compensation plan is for the benefit of the company, and based on detailed arguments and in accordance with the provisions of the Companies Law, has resolved to approve our amended and restated compensation policy despite the objection of our shareholders. Accordingly, our amended compensation policy is effective as of that date. The full text of the amended and restated compensation policy was included as Exhibit A to the proxy statement attached to our report on Form 6-K, furnished to the Securities and Exchange Commission on May 26, 2016.

## 6.C Board Practices

### Board of Directors' Committees

The Company's board of directors has appointed the following committees:

The Audit Committee is comprised of Dafna Gruber, Zehava Simon, Avi Cohen and Eli Fruchter. The audit committee is responsible to assist the board of directors in fulfilling its responsibility for oversight of the quality and integrity of accounting, auditing and financial reporting practices of the Company. According to the Companies Law, the audit committee must consist of at least three directors, must include all of the external directors and the majority of its members must be independent directors under the Companies Law. The following individuals may not be members of the audit committee: (i) the chairman of the board of directors; (ii) any director employed by the Company, its controlling shareholder or any entity under the control of the controlling shareholder; (iii) any director providing services on a regular basis to the Company, its controlling shareholder or any entity under the control of the controlling shareholder; (iv) any director whose main source of income comes from the Company's controlling shareholder; or (v) the Company's controlling shareholders or any of their relatives. The chairman of the audit committee must be an external director, who has not been serving as a chairman of the audit committee for more than nine years. Under the Companies Law, the audit committee is responsible, among others, for (i) identifying deficiencies in the administration of the Company, including by consulting with the internal auditor, and recommending remedial actions with respect to such deficiencies; (ii) reviewing and approving related party transactions, including, among others, determining whether or not such transactions are deemed material actions or extraordinary transactions; (iii) ensuring that a competitive process is conducted for related party transactions with a controlling shareholder (regardless of whether or not such transactions are deemed extraordinary transactions), optionally based on criteria which may be determined by the audit committee annually in advance; (iv) setting forth the approval process for transactions that are 'non-negligible' (i.e., transactions with a controlling shareholder that are classified by the audit committee as non-negligible, even though they are not deemed extraordinary transactions), as

well as determining which types of transactions would require the approval of the audit committee, optionally based on criteria which may be determined annually in advance by the audit committee; (v) evaluating the Company's internal audit program and the performance of the Company's internal auditor and the resources at his/her disposal; (vi) reviewing the scope of work of the Company's external auditor and making recommendations regarding his/her salary; and (vii) creating procedures relating to the employees' complaints regarding deficiencies in the administration of the Company as well as adopting against retaliation. The audit committee operates under a charter adopted by the board of directors.

The Compensation Committee is comprised of Zehava Simon, Dafna Gruber and Raanan Cohen. The function of the compensation committee is described in the approved charter of the committee, and includes assisting the board of directors in discharging its responsibilities relating to compensation of the Company's officers, directors and executives and the overall compensation programs and reviewing and approving, or if required by law, approving and recommending for approval by the board of directors, grants and awards under the Company's equity incentive plans. The primary objective of the committee is to oversee the development and implementation of the compensation policies and plans that are appropriate for the Company in light of all relevant circumstances and which provide incentives that further the Company's long-term strategic plans and are consistent with the culture of the Company and the overall goal of enhancing enduring shareholder value. Under the Companies Law the compensation committee must consist of at least three directors, must include all the external directors, the majority of its members must be external directors, and its chairman must be an external director. In addition, all members of the compensation committee must meet the requirements under the Companies Law for membership in the audit committee, as described above.

Under the Companies Law and our compensation committee charter, our compensation committee is responsible, among others, for (i) recommending to the board of directors regarding its approval of a compensation policy in accordance with the requirements of the Companies Law, and any other compensation policies, incentive-based compensation plans and equity-based plans; (ii) overseeing the development and implementation of such compensation plans and policies that are appropriate in light of all relevant circumstances and recommending to the board of directors regarding any amendments or modifications that the compensation committee deems appropriate; (iii) determining whether to approve transactions concerning the terms of engagement and employment of our officers and directors that require compensation committee approval under the Companies Law or our compensation plans and policies; and (iv) taking any further actions as the compensation committee is required or allowed to under the Companies Law or the compensation plans and policies.

The Nominating Committee is comprised of Alon Dumanis, Michael Brunstein, Eli Fruchter and Zehava Simon. The function of the nominating committee is described in the approved charter of the committee, and includes responsibility for identifying individuals qualified to become board members and recommending that the board of directors consider the director nominees for election at the general meeting of shareholders. The nominating and corporate governance committee is also responsible for developing and recommending to the board of directors a set of corporate governance guidelines applicable to the Company, periodically reviewing such guidelines and recommending any changes thereto.

On September 7, 2010, our board of directors resolved to authorize the audit committee to fulfill the scope and act as the Company's investment committee.

All committees are acting according to written charters that were approved by our board of directors. In February 2012, we adopted an internal enforcement plan which was approved by our board of directors. The internal enforcement plan, as part of which we adopted and implementing procedures and policies in order to comply with the provisions of the Israeli Securities Law, 5728-1968 (the "Israeli Securities Law"), the Companies Law and the applicable guidelines issued by Israeli Securities Authority. The internal enforcement plan includes, among others, the board committees' charters, procedures with respect to related party transactions, insider trading, reporting and complaints, and a code of conduct. We have recently started a review process of our enforcement plan and related procedures. We plan to conclude this review process by July 2017.

#### Internal Auditor

Under the Companies Law, the board of directors must also appoint an internal auditor nominated by the audit committee. Our internal auditor is Ms. Dana Gottesman-Erlich, CPA (Isr.) of BDO Ziv Haft, an independent registered accounting firm which is a part of the BDO international accounting firm. Ms. Gottesman-Erlich replaced Mr. Guy Sapir, C.P.A (Isr) of Kesselman & Kesselman PwC Israel as our internal auditor as of January 2016. The role of the internal auditor is to examine whether a company's actions comply with the law and proper business procedure. The internal auditor may not be an interested party or office holder, or a relative of any interested party or office holder, and may not be a member of the company's independent accounting firm or its representative. The Companies Law defines an interested party as a holder of 5% or more of the shares or voting rights of a company, any person or entity that has the right to nominate or appoint at least one director or the general manager of the company or any person who serves as a director or as the general manager of a company.

#### 6.D Employees

Set forth below is a chart showing the number of people we employed at the times indicated:

	As of December 31,		
	2014(*)	2015(*)	2016(*)
Total Personnel	404	496	510
Located in Israel	292	301	299
Located abroad	112	195	211
In operations	79	87	83
In research and development	146	180	178
In global business	154	195	214
In general and administration	25	34	35



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(\* ) The numbers of employees set forth in this table do not include contractors and an insignificant number of temporary employees retained by the Company from time to time.

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We were a member of the Industrialists Association in Israel, an employer's union until December 31, 2006. Under applicable Israeli law, we and our employees are subject to protective labor provisions such as restrictions on working hours, minimum wages, paid vacation, sick pay, severance pay and advance notice of termination of employment as well as equal opportunity and anti-discrimination laws. Orders issued by the Israeli Ministry of Economy and Industry make certain industry-wide collective bargaining agreements applicable to us. These agreements affect matters such as cost of living adjustments to salaries, length of working hours and week, recuperation and travel expenses. In Israel, Nova is subject to the instructions of the Extension Order in the Industrial Field for Extensive Pension Insurance 2006 according to the Israeli Collective Bargaining Agreements Law, 1957 (the "Extension Order"). The Extension Order ensures the pension insurance of most employees which fall under its criteria.

#### 6.E Share Ownership

Based on information provided to us, our sixteen directors and officers listed in Item 6A above, have had, as a group, sole voting and investment power for 468,287 shares beneficially owned by them as of February 15, 2017 (representing 1.70% of the 27,490,639 issued and outstanding ordinary shares of the Company as of such date). Such number includes 421,626 shares subject to options that are immediately exercisable or exercisable within 60 days of February 15, 2017 (with expiration dates ranging between 2018 and 2023; exercise prices (\$/share) ranging between 0.93 and 12.45) and 14,610 RSUs to be vested within 60 days as of February 15, 2017. Each of such directors and executive officers beneficially owned less than 1% of the Company's shares as of such date.

Beneficial ownership of shares is determined in accordance with the rules of the SEC and generally includes any shares over which a person exercises sole or shared voting or investment power. Ordinary shares that are subject to warrants or options that are presently exercisable or exercisable within 60 days of the date of February 15, 2017 are deemed to be outstanding and beneficially owned by the person holding the options for the purpose of computing the percentage ownership of that person, but are not treated as outstanding for the purpose of computing the percentage of any other person.

#### Employee Benefit Plans

The share option plans active throughout 2016, are described below:

2007 Incentive Plan - The maximum number of ordinary shares to be issued under the plan, which was adopted by our shareholders on October 25, 2007, was 2,500,000, subject to future increases or decreases by the Company. On May 1, 2012, the board of directors resolved to increase the aggregate number of shares issuable under the 2007 Incentive Plan by one million shares, and amend the 2007 Incentive Plan to address a change in the clearing procedures of the TASE. On December 17, 2014, the board of directors resolved to increase the aggregate number of shares issuable under the 2007 Incentive Plan by two million shares, and to amend the 2007 Incentive Plan. Such amendment includes, among others, a change of the exercise period in the event of termination, and in case of death, disability or retirement of the optionee. In connection with the aforementioned increases, we have not obtained a shareholder approval as required under NASDAQ Listing Rules and followed in lieu home practice rules that do not require such approval. As of December 31, 2016, options to purchase 4,094,777 ordinary shares at an exercise prices which range from \$0.43 to \$12.45, the fair market value of Nova's stock based on the dates of grant, were granted under this plan of which, as of December 31, 2016, 1,712,827 options were exercised, 734,384 options were outstanding and exercisable, 603,085 options had been cancelled and 1,044,481 were outstanding and unvested. As of December 31, 2016, 762,237 RSU's had been issued, of which 447,095 had vested, 36,822 had been cancelled and 278,320 RSU's were outstanding.

On September 12, 2013, our shareholders (following an approval by our compensation committee and board of directors), approved the Company's compensation policy, which includes, among others, provisions relating to equity based compensation for Nova's executive officers. On August 2, 2016, our board of directors (per the recommendation of our compensation committee) has concluded that the approval of the proposed amended and restated compensation plan is in the interest of the Company, and based on detailed arguments and in accordance with the provisions of the Companies Law, has resolved to approve our amended and restated compensation policy despite the objection of our shareholders. Accordingly, our amended compensation policy is effective as of that date.

The amended and restated compensation policy provides, among others, that: (i) such equity based compensation is intended to be in a form of share options and/or other equity based awards, such as RSUs, in accordance with the Company's equity incentive plan in place as may be updated from time to time; (ii) all equity-based incentives granted to executive officers will be subject to vesting periods in order to promote long-term retention of the awarded executive officers. Unless determined otherwise in a specific award agreement approved by the compensation committee and the board of directors, grants to executive officers (other than directors) will vest gradually over a period of between three to five years; and (iii) all other terms of the equity awards will be in accordance with Nova's incentive plans and other related practices and policies. The board of directors may, following approval by the compensation committee, extend the period of time for which an award is to remain exercisable and make provisions with respect to the acceleration of the vesting period of any executive officer's awards, including, without limitation, in connection with a corporate transaction involving a change of control, subject to any additional approval as may be required by the Companies Law. The compensation policy also provides that the equity based compensation will be granted from time to time and be individually determined and awarded according to the performance, educational background, prior business experience, qualifications, role and the personal responsibilities of the executive officer. The fair market value of the equity based compensation for the executive officers will be determined according to acceptable valuation practices at the time of grant.

Our equity based compensation policy, which was initially adopted in February 2007 and was most recently amended in February 2016, provides, among others, that the exercise price for each option will be equal to the average closing price of the Company's ordinary shares on NASDAQ during the 30-trading day period preceding the day of allocation.

For additional information regarding our employees' incentive plans, see Note 9 of our consolidated financial statements, contained elsewhere in this report.

Item 7. Major Shareholder and Related Party Transactions

## A. Major Shareholders

The following table sets forth certain information regarding the beneficial ownership of our outstanding ordinary shares as of the dates indicated below for each person who we know beneficially owns five percent or more of the outstanding ordinary shares.

Beneficial ownership of shares is determined under rules of the SEC and generally includes any shares over which a person exercises sole or shared voting or investment power. Applicable percentages are based on 27,490,639 ordinary shares outstanding as of February 15, 2017.

Name	Number of Ordinary Shares Beneficially Owned	Percentage of Ordinary Shares Beneficially Owned	
Itshak Sharon (Tshuva), Delek Group Ltd., The Phoenix Holdings Ltd. and Excellence Holdings Ltd. <sup>(1)</sup>	2,337,083	8.50	%
Renaissance Technologies LLC and Renaissance Technologies Holdings Corporation <sup>(2)</sup>	2,071,300	7.53	%
Clal Insurance Enterprises Holdings Ltd. <sup>(3)</sup>	1,978,960	7.20	%
Wellington Management Group LLP, Wellington Group Holdings LLP, Wellington Investment Advisors Holdings LLP and Wellington Management Company LLP <sup>(4)</sup>	1,835,260	6.68	%
Migdal Insurance & Financial Holdings Ltd. <sup>(5)</sup>	1,705,805	6.21	%
Yelin Lapidot Holdings Management Ltd. <sup>(6)</sup>	1,620,271	5.89	%
Harel Insurance Investments & Financial Services Ltd. <sup>(7)</sup>	1,455,884	5.30	%

(1) Based upon information provided to the Company by Itshak Sharon (Tshuva), Delek Group Ltd., The Phoenix Holdings Ltd. and Excellence Holdings Ltd. as of February 1, 2017 and consist of 187,664 shares held for their own account.

(2) The information is based upon Amendment No. 3 to Schedule 13G filed with the SEC by Renaissance Technologies LLC and Renaissance Technologies Holdings Corporation on February 14, 2017.

(3) The information is based upon Amendment No. 5 to Schedule 13G filed with the SEC by Clal Insurance Enterprises Holdings Ltd. and IDB Development Corporation Ltd. on February 14, 2017.

(4) The information is based upon Schedule 13G filed with the SEC by Wellington Management Group LLP, Wellington Group Holdings LLP, Wellington Investment Advisors Holdings LLP, Wellington Management Company LLP. on February 9, 2017.

(5) The information is based upon Schedule 13G filed with the SEC by Migdal Insurance & Financial Holdings Ltd. on January 26, 2017.

(6) The information is based upon Amendment No. 2 to Schedule 13G filed with the SEC by Dov Yelin, Yair Lapidot and Yelin Lapidot Holdings Management Ltd. on February 8, 2017.

(7) The information is based upon Amendment No. 3 to Schedule 13G filed with the SEC by Harel Insurance Investments & Financial Services Ltd. on January 31, 2017.

All the shareholders of the Company have the same voting rights.

To our knowledge, the significant changes in the percentage of ownership held by our major shareholders during the past three years have been: (i) the increase in the percentage of ownership held by Clal Insurance Enterprises Holdings Ltd. above 5% as of 2012 and the decrease in the percentage of ownership in 2015 and in 2016; (ii) the increase in the percentage of ownership held as a group by Delek Group Ltd., The Phoenix Holdings Ltd. & Excellence Holdings Ltd. above 5% as of 2012, the increase in the percentage of ownership in 2013 and 2014 and the decrease in the percentage of ownership in 2015 and 2016; (iii) the increase in 2013 and afterwards the decrease in 2014 in the percentage of ownership held by Invicta Capital Management, LLC. As reported on Amendment 8 to Schedule 13G filed with the SEC by Invicta Capital Management on February 14, 2014, Invicta Capital Management beneficially owned 1,157,376 of our ordinary shares (then representing 4.2% of our issued and outstanding share capital); (iv) the decrease in the percentage of ownership held by Federated Investors, Inc., Voting Shares Irrevocable Trust, John F. Donahue and Rhodora J. Donahue (collectively, "Federated Investors"). As reported on Amendment 3 to Schedule 13G filed with the SEC by Federated Investors on June 7, 2013, Federated Investors beneficially owned 1,286,534 of our ordinary shares (then representing 4.82% of our issued and outstanding share capital); (v) the increase in the percentage of ownership held by Migdal Insurance & Financial Holdings Ltd., above 5% as of 2012, the increase in the percentage of ownership in 2013, 2014 and 2015 and the decrease in the percentage of ownership in 2016; (vi) the increase in the percentage of ownership held by Renaissance Technologies LLC and Renaissance Technologies Holdings Corporation above 5% in 2013, 2014 and 2015; (vii) the increase in the percentage of ownership held by Harel Insurance Investments & Financial Services Ltd., above 5% in 2014, 2015 and 2016; (viii) the increase and then the decrease in the percentage of ownership held by Yelin Lapidot Holdings Management Ltd., above and then below 5% in 2014 and the increase in the percentage of ownership held by Yelin Lapidot Holdings Management Ltd., above 5% in 2015 and in 2016; and (ix) the increase in the percentage of ownership held by Wellington Management Group LLP, Wellington Group Holdings LLP, Wellington Investment Advisors Holdings LLP and Wellington Management Company LLP above 5% in 2016.

As of February 15, 2017, our ordinary shares were held by 15 registered holders (not including CEDE & Co.). Based on the information provided to us by our transfer agent, as of February 15, 2017, 13 registered holders were U.S. domicile holders and held approximately 0.15% of our outstanding ordinary shares.

#### Control of Registrant

To the Company's knowledge, it is not owned or controlled by a foreign government. Except for the shareholders identified above owning more than five percent of the Company's ordinary shares, the Company has no knowledge of any corporation or other natural or legal person owning a controlling interest in the Company.

#### B. Related Party Transactions

Pursuant to our amended and restated compensation policy, we may provide "directors' and officers' liability insurance" for our directors and officers as follows: (i) the annual premium to be paid by us will not exceed 1.5% of the aggregate coverage of the insurance policy; (ii) the limit of liability of the insurer will not exceed the greater of \$50 million or 30% of our shareholders equity based on our most recent financial statements at the time of approval by the compensation committee; (iii) the insurance policy, as well as the limit of liability and the premium for each extension or renewal will be approved by the compensation committee (and, if required by law, by the board of directors) which will determine that the sums are reasonable considering our exposures, the scope of coverage and the market conditions and that the insurance policy reflects the current market conditions, and it will not materially affect our profitability, assets or liabilities. The amended and restated compensation policy also provides that upon circumstances to be approved by the compensation committee (and, if required by law, by the board of directors), we will be entitled to enter into a "run off" insurance policy of up to seven years, with the same insurer or any other insurance, as follows: (i) the limit of liability of the insurer will not exceed the greater of \$50 million or 30% of our shareholders equity based on our most recent financial statements at the time of approval by the compensation committee; (ii) the annual premium will not exceed 300% of the last paid annual premium; (iii) the insurance policy, as well as the limit of liability and the premium for each extension or renewal will be approved by the compensation committee (and, if required by law, by the board of directors) which shall determine that the sums are reasonable considering our exposures covered under such policy, the scope of cover and the market conditions, and that the insurance policy reflects the current market conditions and that it will not materially affect our profitability, assets or liabilities. According to the amended and restated compensation policy, we may extend the insurance policy in place to include cover for liability pursuant to a future public offering of securities as follows: (i) the additional premium for such extension of liability coverage will not exceed 50% of the last paid annual premium; and (ii) the insurance policy as well as the additional premium will be approved by the compensation committee (and if required by law, by the board of directors) which will determine that the sums are reasonable considering the exposures pursuant to such public offering of securities, the scope of cover and the market conditions and that the insurance policy reflects the current market conditions, and it does not materially affect our profitability, assets or liabilities. Since our amended and restated compensation policy was approved by our compensation committee and our board of directors in accordance with the authority granted by the Companies Law (and not by our shareholders), we currently intend to submit the above directors' and officers' liability insurance framework to the approval of our shareholders during 2017.

In November 2016, we obtained directors' and officers' liability insurance for our officers and directors with coverage in an aggregate amount of \$40,000,000 (including \$5,000,000 Side A DIC). This directors' and officers' liability insurance was presented and approved by our compensation committee and board of directors and will be submitted to the approval of our shareholders during 2017.

In addition, we undertook to indemnify our officers and directors. On June 21, 2012, the shareholders at the annual general meeting approved an amended letter of indemnification to be given to our directors and officers. The aggregate indemnification amount that the Company can pay to all its officers and directors pursuant to these letters of indemnification will not exceed 25% of the Company's shareholders equity, according to the most recent consolidated financial statement prior to the date of indemnification payment. Prior to that, we undertook to indemnify our officers and directors up to an aggregate amount of \$10,000,000 or 25% of the Company's shareholders equity, the higher of the two. Pursuant to our amended and restated compensation policy, we may indemnify our directors and officers to the fullest extent permitted by applicable law, for any liability and expense that may be imposed on the director or the officer, as provided in the indemnity agreement between us and such individuals, all subject to applicable law and our articles of association. Our amended and restated compensation policy also provides that we may exempt our directors and officers in advance for all or any of their liability for damage in consequence of a breach of the duty of care vis-a-vis our company, to the fullest extent permitted by applicable law.

For information relating to options granted to officers and directors, see "Item 6E. Share Ownership" in this annual report on Form 20-F. For information regarding our compensation policy and compensation arrangements with our directors and executive officers (including our chairman and chief executive officer), please refer to "Item 6B. Compensation" in this annual report on Form 20-F.

7.C Interest of Experts and Counsel

Not applicable.

## Item 8. Financial Information

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

See “Item 17. Financial Statements” in this annual report on Form 20-F and pages F-1 through F-30.

#### Legal Proceedings

From time to time, we or our subsidiaries may be a party to legal proceedings and claims in the ordinary course of business. We are currently not involved in any significant legal proceedings, except as noted below:

Based on publicly available information, we have been informed that on February 20, 2017, an employee of our U.S. subsidiary filed a collective action complaint with the U.S. District Court of Northern District of California asserting failure to pay overtime compensation in violation of the Fair Labor Standards Act. As of the date of this report, we haven’t been served with the complaint. Once we have the opportunity to review the allegations, we’ll respond appropriately with the court.

#### Dividend Policies

We anticipate that, for the foreseeable future, we will retain any earnings to support operations and to finance the growth and development of our business. Therefore, we do not expect to pay cash dividends for at least the next several years.

The distribution of dividends may be limited by the Companies Law, which permits the distribution of dividends only out of retained earnings or earnings derived over the two most recent fiscal years, whichever is higher, provided that there is no reasonable concern that payment of a dividend will prevent a company from satisfying its existing and foreseeable obligations as they become due. Our Amended and Restated Articles of Association provide that dividends will be paid at the discretion of, and upon resolution by, our board of directors.

In addition, distribution of dividends may be subject to certain tax implication. For additional information regarding tax implication of dividends' distribution, see “Item 10E. Taxation – Israeli Taxation” in this annual report on Form 20-F.

#### Export Sales

Substantially all of our products are sold to customers located outside Israel.

### 8.B Significant Changes

Not applicable.

## Item 9. The Offer and Listing

### 9.A Offer and Listing Details

The information presented in the table below presents, for the periods indicated, the reported high and low market prices on NASDAQ. The shares began trading on NASDAQ on April 11, 2000 at a price of \$18 per share. Our ordinary shares were registered for trading on the Tel Aviv Stock Exchange in 2002, and the table below presents, for the periods indicated, the reported high and low market prices on the Tel Aviv Stock Exchange.





NASDAQ

Price per  
share  
(US\$)  
High Low

Yearly highs and lows

2011	11.795.11
2012	9.28 6.82
2013	10.317.68
2014	12.259.5
2015	13.349.43
2016	13.968.57

Quarterly highs and lows

2014		
	First quarter	12.259.82
	Second quarter	12.139.63
	Third quarter	12.199.77
	Fourth quarter	10.839.5
2015		
	First quarter	12.1010.04
	Second quarter	13.3410.57
	Third quarter	13.069.43
	Fourth quarter	11.209.55
2016		
	First quarter	11.478.57
	Second quarter	11.9610.38
	Third quarter	12.2610.77
	Fourth quarter	13.9611.64
2017		
	First quarter (until February 15, 2017)	16.7813.04

Monthly highs and lows

August 2016	12.1510.94
September 2016	12.2611.20
October 2016	12.4911.64
November 2016	12.7611.83
December 2016	13.9612.47
January 2017	15.0513.04
February 2017 (until February 15, 2017)	16.7815.08

Tel Aviv Stock Exchange

Price per  
share (NIS)  
High Low

Yearly highs and lows

2011	40.99	20.00
2012	36.58	26.04
2013	36.99	29.02
2014	42.55	33.99
2015	50.67	37.53
2016	53.86	34.10

Quarterly highs and lows

2014		
First quarter	42.55	34.35
Second quarter	41.50	33.99
Third quarter	41.98	34.50
Fourth quarter	41.78	36.51
2015		
First quarter	48.50	39.77
Second quarter	50.67	40.93
Third quarter	48.96	37.66
Fourth quarter	43.89	37.53
2016		
First quarter	43.41	34.10
Second quarter	45.80	38.61
Third quarter	46.95	41.35
Fourth quarter	53.86	43.60
2017		
First quarter (until February 15, 2017)	60.95	50.23

Monthly highs and lows

August 2016	45.99	42.40
September 2016	45.95	42.60
October 2016	47.21	43.60
November 2016	49.91	45.72
December 2016	53.86	48.00
January 2017	56.98	50.23
February 2017 (until February 15, 2017)	60.95	56.25

## 9.B Plan of Distribution

Not applicable.

## 9.C Markets

Our ordinary shares are quoted on The NASDAQ Global Select Market under the symbol “NVMI” and on the Tel Aviv Stock Exchange.

9.D Selling Shareholders

Not applicable.

9.E Dilution

Not applicable.

9.F Expenses on the Issue

Not applicable.

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Item 10. Additional Information

10.A Share Capital

Not applicable.

10.B Memorandum and Articles of Association

Set forth below is a summary of certain provisions of the Company's Amended and Restated Articles of Association, as adopted by the Company's shareholders on September 25, 2008, and Israeli law affecting shareholders of the Company. This summary does not purport to be complete and is qualified in its entirety by reference to our memorandum and Amended and Restated Articles of Association and such law. On September 25, 2008, our shareholders adopted the Amended and Restated Articles of Association of the Company, which were later amended on June 21, 2012 (for the purposes of this Item, the "Amended Articles").

Registration. The Company was incepted and registered with the Israeli Registrar of Companies on May 17, 1993, under registration number 51-181-246-3.

Purpose of the Company. The purposes of the Company, as provided by Article 4 of our Amended Articles, are (a) to invent, design, plan, develop, manufacture, market and trade in the field of measuring instruments in electronics, micro-electronics, medicine, chemistry, metallurgy, ceramics and any other field, (b) to initiate, participate, manage, execute, import and export any kind of project within the borders of the State of Israel and/or outside Israel, (c) to register patents, trademarks, trade names, intellectual property rights, marketing rights and any other right of any kind whatsoever, both in Israel and abroad and (d) to engage in any legal activity, both in Israel and abroad.

Approval of Related Party Transaction; Corporate Borrowings. The Companies Law requires that office holders of a company, including directors and executive officers, promptly disclose to the board of directors any personal interest they may have and all related material information known to them about any existing or proposed transaction with such company. The approval of the board of directors is required for 'non-extraordinary' transactions between a company and its office holders, or between a company and other persons in which an office holder has a personal interest, unless such company's articles of association provide otherwise. Under the Companies Law, a 'non-extraordinary' transaction between a company or between the company and a third party in which an office holder of a company has a personal interest, will require the approval of the board of directors or a committee authorized by the board of directors, unless such company's articles of association provide otherwise. Our Amended Articles do not provide otherwise, and therefore such transaction requires the approval of our board of directors. If a transaction is an "extraordinary transaction", it is subject to the approval of the audit committee prior to its approval by the board of directors. For information regarding the necessary approvals under the Companies Law for transactions with office holders and directors regarding their terms of engagement with the company, see "— Compensation of Officers and Directors" in this Item below.

In addition, an extraordinary transaction between a public company and a controlling shareholder (i.e. a shareholder who has the ability to direct the activities of a company, including a shareholder that owns 25% or more of the voting rights if no other shareholder owns more than 50% of the voting rights, but excluding a shareholder whose power derives solely from its position on the board of directors or any other position with the company), or in which a controlling shareholder has a personal interest, including a private placement in which the controlling shareholder has a personal interest, a transaction between a public company and a controlling shareholder, the controlling shareholders' relative, or entities under its control, directly or indirectly, with respect to services to be provided to the public company, and a transaction concerning the terms of compensation of the controlling shareholder or the controlling shareholder's relative, who is an office holder or an employee, requires the approval of the audit committee or, in some cases, the compensation committee (see "— Compensation of Officers and Directors" in this Item below), the board of directors and a majority of the shares voted by the shareholders of the company participating and voting on the matter in a shareholders' meeting. In addition, the shareholder approval must fulfill one of the following requirements: (i) the majority must include at least a majority of the shares of the voting shareholders who have no personal interest in the transaction (in counting the total votes of such shareholders, abstentions are not taken into account); or (ii) the total of opposition votes among the shareholders who have no personal interest in the transaction may not exceed 2% of the aggregate voting rights in the company. Any such transaction the term of which is more than three years, must be approved in the same manner every three years, unless the audit committee has determined that longer term is reasonable under the circumstances.

According to the Companies Law, if an extraordinary transaction is discussed by the board of directors or the audit committee, directors and office holders that have personal interest in the proposed transaction, may not participate in the discussion or vote. However, if the majority of the members of the audit committee or the board of directors (as applicable) have personal interest in the proposed transaction, then all directors (including those with personal interest) may participate in the discussion and vote, provided that in the event the majority of the members of the board of directors have personal interest in the transaction, said transaction will also be subject to the approval of the Company's shareholders meeting.

Under regulations promulgated under the Companies Law regarding payment of compensation to external directors, compensation of external directors is comprised of annual compensation and a per meeting payment ranging as stated in the regulations. These amounts are adjusted once every year in accordance with the Israeli consumer price index. With regard to a company, which shares are traded in an exchange outside of Israel, and is subject to laws which impose upon the external directors duties which exceed the duties imposed upon them under Israeli law, the maximum amount payable to the external directors is approximately NIS 134,180 per annum and approximately NIS 4,035 per meeting, as adjusted for changes in the Israeli CPI once every year. The approval of the shareholders of the company is required for such compensation, unless it is between the maximum and fixed amounts set forth in these regulations. If the shareholder's approval is required, it has to be done in the same manner as the approval of transactions with office holders and directors regarding their terms of engagement with the company (see "— Compensation of Officers and Directors" in this Item below). The compensation of external directors may also be linked to the compensation of other directors, subject to certain restrictions. Additionally, external directors may be entitled to compensation in stock (including by way of granting options to purchase the Company's stock), provided that such compensation is granted within the framework of a stock incentive plan applicable to all other directors and further provided the amount of stock granted or purchasable does not fall below the lowest amount granted to any other director and does not exceed the average amount of stock granted to all other directors. The regulations also allow an increased compensation to external directors that are considered "expert external directors" under the terms set forth in said regulations.

Share Capital. The Company currently has one class of ordinary shares, 0.01 NIS par value per share. The Amended Articles provide that the board of directors may decide on a distribution, subject to the provisions set forth under the Companies Law and the Amended Articles. Under the Companies Law, dividends may be paid out of net earnings, as calculated under that law, for the two years preceding the distribution of the dividend and retained earnings, provided that there is no reasonable concern that the dividend will prevent the company from satisfying its existing and foreseeable obligations as they become due. For more information, see the Company's balance sheet and the statement of shareholders' equity in the financial statements. Each ordinary share is entitled to one vote at all shareholders meetings.

Changes of Rights of Holders of the Shares. According to the Amended Articles, any change in the rights and privileges of the holders of any class of shares requires the approval of a class meeting of such class of shares by a simple majority (unless otherwise provided by the Companies Law or the regulations thereto or by the terms of issue of the shares of that class).

Shareholders Meetings. An annual meeting should be convened at least once every calendar year, and no later than 15 months after the preceding annual meeting, to review the Company's financial statements and to transact any other business required pursuant to the Amended Articles or to the Companies Law, and any other matter which the board of directors places on the agenda of the annual meeting, at a time and place that the board of directors will determine. A special meeting may be called by the board of directors and at the demand of any of the following: two directors or one-quarter of the directors then serving; one or more shareholders who hold at least five per cent of the issued and outstanding capital stock and at least one percent of the voting rights in the Company; or one or more shareholders who hold at least five percent of the voting rights in the Company.

According to the Amended Articles, the quorum required for an ordinary meeting of shareholders is at least two shareholders present in person or by proxy who together hold or represent in the aggregate more than one third (33.33%) of the voting power. A meeting adjourned for lack of a quorum is reconvened one day thereafter at the same time and place or to such other day, time and place as our board of directors may indicate in a notice to the shareholders. At the reconvened meeting, the required quorum consists of any number of members present in person or by proxy, regardless of the number of shares represented. The Companies Law and regulations determine that prior notice of no less than 21 days should be given to the company's shareholders, prior to convening a meeting. In the event that the issue to be resolved is an issue subject to the Israeli proxy rules, a notice of no less than 35 days should be given to the company's shareholders. In some cases a prior notice of not less than 14 days may be given to the company's shareholders.

Subject to anti-terror legislations, there are no limitations on the rights of non-resident or foreign owners to hold or vote ordinary shares imposed under Israeli law or under the Amended Articles.

Board of Directors. The Amended Articles provide that directors may be elected either at our annual general meeting or a special meeting of shareholders by a vote of the holders of more than 50% of the total number of votes represented at such meeting. In addition, our board of directors is authorized to appoint directors, at its discretion, provided that the total number of directors does not exceed the maximum number of directors permitted by the Amended Articles. Each of our directors (except our external directors) holds office until the next annual general meeting of shareholders. The Companies Law provides that a person, who is, directly or indirectly subordinated to the chief executive officer of a public company, may not serve as the chairman of its board of directors. In addition, neither the chief executive officer nor his relative is eligible to serve as chairman of the board of directors (and vice versa), unless such nomination was approved by a majority of the company's shareholders for a term not exceeding three years, and either: (i) such majority included the majority of the voting shareholders (shares held by abstaining shareholders are not considered) which are not controlling shareholders and have not personal interest regarding the decision; or (ii) the aggregate number of shares voting against the proposal did not exceed 2% of company voting shareholders. The term can be extended for additional three year terms, in the same manner.

The Companies Law provides that Israeli public companies must have at least two external directors, and following Amendment 27 any and all of such external directors are no longer required to be Israeli residents in case of a company listed on a foreign stock exchange (such as our Company). External directors may be elected at our annual general meeting or a special meeting of our shareholders in a number and manner stipulated by the Companies Law, i.e., for an initial term of three years, which may be extended for two additional three-year terms (provided that the re-election for additional term was presented by the external director whose tenure is about to end or by the board of directors or by one or more shareholders that own, in the aggregate, 1% or more of the Company's outstanding share capital), and thereafter for additional three-year terms, if both the audit committee and the board of directors confirm that in light of the expertise and contribution of the external director, the extension of such external director's term would be in the interest of the Company. The election and re-election of external directors, requires the affirmative vote of a majority of the shares and in addition either that (i) a majority of the shares held by shareholders who are not controlling shareholders or a have personal interest in the election (other than a personal interest unrelated to the controlling shareholders) attending in person or represented by proxy have voted in favor of the proposal (shares held by abstaining shareholders are not be considered) or (ii) the aggregate number of shares voting against the proposal held by such shareholders has not exceeded 2% of the company's voting shareholders. External directors may be removed from office only under the following circumstances: (i) an external director ceases to meet the legal requirements for appointment as an external director or breaches his or her fiduciary duty to the company and a resolution to remove such external director is made by the shareholders at a meeting at which such external director is granted a reasonable opportunity to express his position (such a resolution requires the same majority of votes that elected the external director); (ii) an external director ceases to meet the legal requirements for appointment as an external director or breaches his or her fiduciary duty to the Company and a court orders that such director be removed; or (iii) an external director is unable to perform his or her duties or is convicted of certain felonies and a court orders that such director be removed. An external director is qualified for nomination as an external director, only if he/she has either professional qualifications or accounting and financial expertise. At least one of the external directors must have accounting and financial expertise. However, a company whose shares are traded in certain exchanges outside of Israel, including The NASDAQ Global Select Market, such as our company, is not required to nominate at least one external director who has accounting and financial expertise, as long as another independent director for audit committee purposes who has such expertise serves on the board of directors pursuant to the applicable foreign securities laws. In such case all external directors will have professional qualification.



Regulations adopted under the Companies Law provide that a director with accounting and financial expertise is a director that due to his education, experience and skills has high expertise and understanding in business-accounting matters and financial statements in a way that enables him to deeply understand the financial statements of the company and to facilitate discussion with respect to the way the financial data should be presented. The assessment of the accounting and financial expertise of a director should be made by the board of directors, who has to take into consideration, inter alia, the education, experience and knowledge of the director in the following subjects:

- (1) Accounting matters and audit accounting matters, which are typical to the sector in which the company works and of companies with the same size and complexity as of the company;
- (2) The duties and obligations of the auditing accountant; and
- (3) Preparing of financial statements and their approval according to applicable law, including securities law.

The regulations also provide that a director with professional qualifications is a director who meets one of the following conditions:

- (1) A holder of an academic degree in one of the following: economics, business administration, accounting, law, or public administration;
  - (2) A holder of another academic degree or is otherwise a graduate of higher education in a major field of business of the company or in other field which is relevant to the role; and
- (3) He has experience of at least five years in one of the following, or that he has cumulative experience of at least five years in two or more of the following:
  - (a) A senior position in the business management of a corporation which has a significant scope of business;
  - (b) A senior public position or in a senior role in the public service; or
  - (c) A senior position in the company's major fields of business.

According to the Companies Law, the board of directors of a public company must establish the minimum number of board members that are to have accounting and financial expertise while considering, inter alia, the nature of the company, its size, the scope and complexity of its operations and the number of directors stated in the Amended Articles.

In April 2006, our board of directors resolved that the minimum number of board members that need to have accounting and financial expertise, including the external director with accounting and financial expertise, is one (1).

Our board of directors determined that each of Ms. Dafna Gruber and Ms. Zehava Simon has accounting and financial expertise as described in the regulations promulgated pursuant to the Companies Law, and that, therefore, the requirements of the minimum number of board members that need to have accounting and financial expertise, as set by the board of directors, has been met.

Under the Companies Law, the majority of the members of the audit committee must be independent directors. A public company may classify a director as independent only if (i) the audit committee has determined that he or she is qualified to serve as an external director (with the exception that such director does not have to have professional qualifications or accounting and financial expertise in order to serve as an independent director), and (ii) he or she is not serving as a director in the company for more than consecutive nine years (only a period of two or more years, in

which such person did not serve as a director in the company, will be deemed to discontinue the nine year sequence), provided that a company listed on NASDAQ, such as our company, may extend such nine year period by additional three-year periods in certain circumstances. In February 2017, our audit committee and board of directors acted accordingly and resolved to extend the classification of Mr. Avi Cohen as an independent director under the Companies Law. All of our board members are independent, in accordance with NASDAQ Listing Rules and the Companies Law.

Compensation of Officers and Directors. Under the Companies Law, Israeli public companies are required to establish a compensation committee and adopt a policy regarding the compensation and terms of employment of their directors and officers. For information on the composition, roles and objectives of the compensation committee pursuant to the Companies Law and our compensation committee charter, see "Item 6C. Board Practices –Board of Directors' Committees – Compensation Committee" in this annual report on Form 20-F.

Pursuant to the Companies Law, the compensation policy must be approved by the company's board of directors after reviewing the recommendations of the compensation committee. The compensation policy also requires the approval of the general meeting of the shareholders, which approval must satisfy one of the following (the "Majority Requirement"): (i) the majority should include at least a majority of the shares of the voting shareholders who are non-controlling shareholders or do not have a personal interest in the approval of the compensation policy (in counting the total votes of such shareholders, abstentions are not be taken into account) or (ii) the total number of votes against the proposal among the shareholders mentioned in paragraph (i) does not exceed two percent of the aggregate voting power in the company. Under certain circumstances and subject to certain exceptions, the board of directors may approve the compensation policy despite the objection of the shareholders, provided that the compensation committee and the board of directors determines that it is for the benefit of the company, following an additional discussion and based on detailed arguments. In August 2016, our compensation committee and board of directors acted accordingly and adopted our amended and restated compensation plan despite our shareholders' objection.

The Companies Law provides that the compensation policy must be re-approved (and re-considered) every three years, in the manner described above. Moreover, the board of directors is responsible for reviewing from time to time the compensation policy and deciding whether or not there are any circumstances that require an adjustment to the company's compensation policy. When approving the compensation policy, the relevant organs must take into consideration the goals and objectives listed in the Companies Law, and include reference to specific issues listed in the Companies Law. Such issues include, among others (the "Compensation Policy Mandatory Criteria"): (i) the relevant person's education, qualifications, professional experience and achievements; (ii) such person's position within the company, the scope of his responsibilities and previous compensation arrangements with the company; (iii) the proportionality of the employer cost of such person in relation to the employer cost of other employees of the company, and in particular, the average and median pay of other employees in the company, including contract workers, and the impact of the differences between such person's compensation and the other employees' compensation on the labor relations in the company; (iv) the authority, at the board of director's sole discretion, to lower any variable compensation components or set a maximum limit (cap) on the actual value of the non-cash variable components, when paid; and (v) in the event that the terms of engagement include any termination payments - the term of employment of the departing person, the company's performance during that term, and the departing person's contribution to the performance of the company.

In addition, the Companies Law provides that the following matters must be included in the compensation policy (the "Compensation Policy Mandatory Provisions"): (i) the award of variable components must be based on long term and measurable performance criteria (other than non-material variable components, which may be based on non-measurable criteria taking into account the relevant person's contribution to the performance of the company); (ii) the company must set a ratio between fixed and variable pay, set a cap on the payment of any cash variable compensation components as of the payment of such components, and set a cap on the maximum cash value all non-cash variable components as of their grant date; (iii) the compensation policy must include a provision requiring the relevant person to return to the company any compensation that was awarded on the basis of financial figures that were subsequently restated; (iv) equity based variable compensation components should have an appropriate minimum vesting periods, which should be linked to long term performance objectives; and (v) the company must set a clear limit on termination payments.

Pursuant to the Companies Law, any transaction with an office holder (except directors and the chief executive officer of the company) with respect to such office holder's compensation arrangements and terms of engagement, requires the approval of the compensation committee and the board of directors. Such transaction must be consistent with the provisions of the company's compensation policy, provided that the compensation committee and the board of directors may, under special circumstances, approve such transaction that is not in accordance with the company's compensation policy, if both of the following conditions are met: (i) the compensation committee and the board of directors discussed the transaction in light of the roles and objectives of the compensation committee (also see "Item 6C. Board Practices –Board of Directors' Committees – Compensation Committee" in this annual report on Form 20-F) and after taking into consideration the Compensation Policy Mandatory Criteria and including in such transaction the Compensation Policy Mandatory Provisions; and (ii) the company's shareholders approved the transaction, provided that in public companies the approval must satisfy the Majority Requirement. Notwithstanding the above, the compensation committee and the board of directors may, under special circumstances, approve such transaction even if the shareholders' meeting objected to its approval, provided that (i) both the compensation committee and the board of directors re-discussed the transactions and decided to approve it despite the shareholder's objection, based on detailed arguments, and (ii) the company is not a 'Public Pyramid Held Company'. For the purpose hereof, a "Public Pyramid Held Company" is a public company that is controlled by another public company (including companies that issued only debentures to the public), which is also controlled by another public company (including companies that issued only debentures to the public) that has a controlling shareholder.

Transactions between public companies (including companies that have issued only debentures to the public) and their chief executive officer, with respect to his or her compensation arrangement and terms of engagement, require the approval of the compensation committee, the board of directors and the shareholder's meeting, provided that the approval of the shareholders' meeting must satisfy the Majority Requirement. Notwithstanding the above, the compensation committee and the board of directors may, under special circumstances, approve such transaction with the chief executive officer even if the shareholders' meeting objected to its approval, provided that (i) both the compensation committee and the board of directors re-discussed the transactions and decided to approve it despite the shareholder's objection, based on detailed arguments, and (ii) the company is not a Public Pyramid Held Company. Such transaction with the chief executive officer must be consistent with the provisions of the company's compensation policy, provided that the compensation committee and the board of directors may, under special circumstances, approve such transaction that is not in accordance with the company's compensation policy, if both of the following conditions are met: (i) the compensation committee and the board of directors discussed the transaction in light of the roles and objectives of the compensation committee (see "Item 6C. Board Practices –Board of Directors' Committees – Compensation Committee" in this annual report on Form 20-F) and after taking into consideration the Compensation Policy Mandatory Criteria and including in such transaction the Compensation Policy Mandatory Provisions; and (ii) the company's shareholders approved the transaction, provided that in public companies the approval must satisfy the Majority Requirement. In addition, the compensation committee may determine that such transaction with the CEO does not have to be approved by the shareholders of the company, provided that: (i) the chief executive officer is independent based on criteria set forth in the Companies Law; (ii) the compensation committee determined, based on detailed arguments, that bringing the transaction to the approval of the shareholders may compromise the chances of entering into the transaction; and (iii) the terms of the transaction are consistent with the provisions of the company's compensation policy. Under the Companies Law, non-material amendments of transactions relating to the compensation arrangement or terms of engagement of office holders (including the chief executive officer), require only the approval of the compensation committee.

With respect to transactions relating to the compensation arrangement and terms of engagements of directors in public companies (including companies that have issued only debentures to the public), the Companies Law provides that such transaction is subject to the approval of the compensation committee, the board of directors and the shareholders' meeting. Such transaction must be consistent with the provisions of the company's compensation policy, provided that the compensation committee and the board of directors may, under special circumstances, approve such transaction that is not in accordance with the company's compensation policy, if both of the following conditions are met: (i) the compensation committee and the board of directors discussed the transaction in light of the roles and objectives of the compensation committee (see "Item 6C. Board Practices –Board of Directors' Committees – Compensation Committee" in this annual report on Form 20-F) and after taking into consideration the Compensation Policy Mandatory Criteria and including in such transaction the Compensation Policy Mandatory Provisions; and (ii) the company's shareholders approved the transaction, provided that in public companies the approval must satisfy the Majority Requirement.

Pursuant to the Companies Law a compensation policy must be re-approved (and re-considered) at least once in every three years. Our shareholders voted on June 30, 2016 against the amended and restated compensation policy recommended by our board of directors. On August 2, 2016, our board of directors (per the recommendation of our compensation committee) has concluded that the approval of the proposed amended and restated compensation plan is in the interest of the Company, and based on detailed arguments and in accordance with the provisions of the Companies Law, has resolved to approve our amended and restated compensation policy despite the objection of our shareholders. Accordingly, our amended compensation policy is effective as of that date. For the full text of the amended and restated compensation policy see our report on Form 6-K furnished to the Securities and Exchange Commission on May 26, 2016.

Changes in Capital. Our share capital may be increased or decreased by a vote of our shareholders in accordance with the Companies Law.

Acquisition of a Controlling Stake. According to the Companies Law, an acquisition pursuant to which a purchaser will hold a “controlling stake”, that is defined as 25% or more of the voting rights if no other shareholder holds a controlling stake, or an acquisition pursuant to which such purchaser will hold more than 45% of the voting rights of the company if no other shareholder owns more than 45% of the voting rights, may not be performed by way of market accumulation, but only by way of a special tender offer (as defined in the Companies Law) made to all of the company’s shareholders on a pro rata basis. A special tender offer may not be consummated unless a majority of the shareholders who announced their stand on such offer have accepted it (in counting the total votes of such shareholders, shares held by the controlling shareholders, shareholders who have personal interest in the offer, shareholders who own 25% or more of the voting rights in the company, relatives or representatives of any of the above or the bidder and corporations under their control, shall not be taken into account). A shareholder may be free to object to such an offer without such objection being deemed as a waiver of his right to sell its respective shares if the transaction is approved by a majority of the company’s shareholders despite his objection. Shares purchased not in accordance with those provisions will become “dormant shares” and will not grant the purchaser any rights so long as they are held by the purchaser.

Acquisition. A person wishing to acquire shares or a class of shares of an Israeli public company and who would, as a result, own more than 90% of the target company’s issued and outstanding share capital or of certain class of its shares, is required by the Companies Law to make a full tender offer (as defined in the Companies Law) to all of the company’s shareholders for the purchase of all of the issued and outstanding shares of the company or class of shares. If either (i) the shareholders who do not accept the offer hold, in the aggregate, less than 5% of the issued and outstanding share capital of the company or of the applicable class, and more than half of the shareholders who do not have a personal interest in the offer accept the offer, or (ii) the shareholder who do not accept the offer hold less than 2% of the issued and outstanding share capital of the company or of the applicable class, then all of the shares that the acquirer offered to purchase will be transferred to the acquirer by operation of law. However, a shareholder that had its shares so transferred, whether or not it accepted the tender offer (unless otherwise provided in the offering memorandum), may, within six (6) months from the date of acceptance of the tender offer, petition the court to determine that the tender offer was for less than fair value and that the fair value should be paid as determined by the court. If the shareholders who did not accept the tender offer hold at least 5% of the issued and outstanding share capital of the company or of the applicable class of shares, the acquirer may not acquire shares of the company that will increase its holdings to more than 90% of the company’s issued and outstanding share capital or of the applicable class from shareholders who accepted the tender offer.

The Companies Law provides that corporate mergers require the approval of both companies’ boards of directors and shareholders. In the event, however, that shares of the target company are held by the acquiring company or by a person holding 25% or more of any type of controlling means of the acquiring company, the merger will not be approved if a majority of the shareholders of the target company attending and voting at the meeting at which the merger is considered (without taking into account, for that purpose, the shares held by the acquiring company or by a person holding 25% or more of any type of controlling means of the acquiring company) object to and do not vote in favor of the merger. If a person holds 25% or more of any type of controlling means of more than one merging company, the same provisions shall apply with regard to the shareholders’ vote with respect to each such company. Upon the request of a creditor of either party to the proposed merger, the court may delay or prevent the merger if the court concludes that there exists a reasonable concern that as a result of the merger the surviving company will be unable to satisfy the target company’s obligations. Furthermore, a merger may not close unless at least 30 days have passed from the time that the general meeting of each of the merging companies was held and at least 50 days have passed from the date on which the merger proposal was sent to the Israeli Registrar of Companies.



In addition, the Companies Law preserves provisions of its predecessor, the Companies Ordinance, dealing with arrangements between a company and its shareholders. These arrangements may be used to effect squeeze out transactions in which the target company becomes a wholly owned subsidiary of the acquirer. These provisions generally require that the merger be approved by at least 75% of the shares of participating shareholders and a majority of the shareholders voting at a shareholders meeting. In addition to shareholder approval, court approval of the transaction is required, which entails further delay.

A merger, the acquisition of a controlling stake or any transaction in which all or substantially all the assets of a company are de facto transferred to another company, may require the approval of the Israeli Commissioner of Restrictive Trade Practices, in the event that the aggregate annual sales volume in Israel of all the companies which are parties to such transaction in the year preceding the merger, exceeds NIS 150 million (approximately \$39.6 million), adjusted annually to the Israeli consumer price index, and the annual sales volume in Israel of at least two of the companies which are parties to such transaction exceeds NIS 10 million each (approximately \$2.64 million), and also if after the consummation of such transactions, the joint market, in Israel, or at any identified geographic part of Israel will be in excess of 50% with respect to such products and services.

#### 10.C Material Contracts

In April 2015, we consummated the acquisition of 100% of the equity of ReVera Incorporated, a privately held company headquartered in Santa Clara, California for \$46.5 million in cash from existing funds, on a cash free, debt free basis. The Agreement and Plan of Merger dated March 11, 2015 by and among Nova Measuring Instruments Ltd., ReVera Incorporated, Neptune Acquisition Inc., and the Representative (named therein) was previously filed as exhibit to our annual report on Form 20-F, filed with the SEC on February 29, 2016.

#### 10.D Exchange Controls

Israeli law and regulations do not impose any material foreign exchange restrictions on non-Israeli holders of our ordinary shares.

Dividends, if any, paid to holders of our ordinary shares, and any amounts payable upon our dissolution, liquidation or winding up, as well as the proceeds of any sale in Israel of our ordinary shares to an Israeli resident, may be paid in non-Israeli currency or, if paid in Israeli currency, may be converted into freely repatriable dollars at the rate of exchange prevailing at the time of conversion.

#### 10.E Taxation

##### Israeli Taxation

The following is a summary of the material Israeli tax laws applicable to us, and some Israeli Government programs benefiting us. This section also contains a discussion of some Israeli tax consequences to persons owning our ordinary shares. This summary does not discuss all the aspects of Israeli tax law that may be relevant to a particular investor in light of his or her personal investment circumstances or to some types of investors subject to special treatment under Israeli law. Examples of this kind of investor include traders in securities or persons that own, directly or indirectly, 10% or more of our outstanding voting capital, all of whom are subject to special tax regimes not covered in this discussion. Some parts of this discussion are based on a new tax legislation which has not been subject to judicial or administrative interpretation. The discussion should not be construed as legal or professional tax advice and does not cover all possible tax considerations.



SHAREHOLDERS ARE URGED TO CONSULT THEIR OWN TAX ADVISORS AS TO THE ISRAELI OR OTHER TAX CONSEQUENCES OF THE PURCHASE, OWNERSHIP AND DISPOSITION OF OUR ORDINARY SHARES, INCLUDING, IN PARTICULAR, THE EFFECT OF ANY FOREIGN, STATE OR LOCAL TAXES.

#### General Corporate Tax Structure in Israel

Israeli companies are generally subject to corporate tax on their taxable income at the rate of 25% for the 2016 tax year (to be reduced to 24% in 2017 and to 23% in 2018 and thereafter).

#### Income Tax Regulations (Rules on Bookkeeping by Foreign Invested Companies and Certain Partnerships and Determination of their Taxable Income), 1986

As a “foreign invested company” (as defined in the Israeli Law for the Encouragement of Capital Investments-1959), the Company's management has elected to apply Income Tax Regulations (Rules for Maintaining Accounting Records of Foreign Invested Companies and Certain Partnerships and Determining Their Taxable Income) - 1986. Accordingly, its taxable income or loss is calculated in US Dollars.

#### Tax Benefits under the Law for the Encouragement of Capital Investments, 1959

##### Tax benefits prior to the 2005 Amendment

The Law for the Encouragement of Capital Investments, 1959, generally referred to as the “Investments Law”, provides that a capital investment in eligible facilities may, upon application to the Investment Center of the Ministry of Economy and Industry of the State of Israel the (“Investment Center”), be granted the status of 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 sources, and by its physical characteristics, e.g., the equipment to be purchased and utilized pursuant to the program.

A company owning an Approved Enterprise is eligible for a combination of grants and tax benefits (the “Grant Track”). The tax benefits under the Grant Track include, among others, accelerated depreciation and amortization for tax purposes. The benefit period is ordinarily seven years commencing with the year in which the Approved Enterprise first generates taxable income. The benefit period is limited to 12 years from the earlier of the commencement of production by the Approved Enterprise or 14 years from the date of approval of the Approved Enterprise.

The tax benefits under the Investments Law also apply to income generated by a company from the grant of a usage right with respect to know-how developed pursuant to the Approved Enterprise, income generated from royalties, and income derived from a service which is auxiliary to such usage right or royalties, provided that such income is generated within the ordinary course of business of the company investing in the Approved Enterprise. If a company has more than one approval or only a portion of its capital investments are approved, its effective tax rate is the result of a weighted average of the applicable rates. The Tax Benefits under the Investments Law are not, generally, available with respect to income derived from products manufactured outside of Israel. In addition, the Tax Benefits available to a company investing in an Approved Enterprise are contingent upon the fulfillment of conditions stipulated in the Investments Law and related regulations and the criteria set forth in the specific certificate of approval, as described above. In the event that a company does not meet these conditions, it would be required to refund the amount of tax benefits, plus a consumer price index linked adjustment and interest.

A company which qualifies as a foreign investment company (a "FIC") will be eligible for a three-year extension of tax benefits following the expiration of the seven-year period referenced above. In addition, in the event that the level of foreign ownership in an Approved Enterprise reaches 49% or higher, the corporate tax rate applicable to income earned from the Approved Enterprise is reduced as follows:

% of Foreign Ownership	Tax Rate
49% or more but less than 74%	20%
74% or more but less than 90%	15%
90% or more	10%

A company qualifies as a FIC if (i) it has received at least NIS 5 million in loans (for a minimum period of three years) or as investment in share capital from a foreign resident who is consequently entitled to at least 25% of the "rights" in the company (consisting of profit sharing rights, voting rights and appointment of directors), or (ii) if a foreign resident has purchased the company's shares from an existing shareholder, consequently entitling the foreign shareholder to at least 25% of such rights in the company provided that the company's outstanding and paid-up share capital exceeds NIS 5 million.

Additionally, a company owning an Approved Enterprise on or after April 1, 1986, may elect to forgo its entitlements to grants and tax benefits under the Grant Track and apply for alternative package of tax benefits for a benefit period of between seven and ten years (the "Alternative Track"). Under the Alternative Track, a company's undistributed income derived from the Approved Enterprise will be exempt from corporate tax for a period of between two and ten years, starting from the first year the company derives taxable income under the Approved Enterprise program. The length of time of this exemption will depend on the geographic location of the Approved Enterprise within Israel and the type of the approved enterprise. After the exemption period lapses, the company subject to tax at a tax rate of 25% (or a lower rate in the case of a FIC) for the remainder of the benefit period.

The Company has elected to be taxed under the Alternative Track. A company that has elected the Alternative Track and subsequently pays a dividend out of income derived from the Approved Enterprise during the tax exemption period will be subject to corporate tax on the amount which is determined by the distributed amount grossed up with the effective corporate tax rate which would have been applied had the company not elected the Alternative Track, which is at referred above ranged between 10%-25%. Under the Investments Law, the transfer of funds from the Company to shareholders and other related parties may be deemed to be regarded as a dividend distribution for this purpose in certain circumstances. Dividends paid out of income derived from an Approved Enterprise are generally subject to withholding tax at source at the reduced rate of 15%, if the dividend is distributed during the tax exemption period or within 12 years thereafter. In the event, however, which the company qualifies as a FIC, there is no such time limitation.

Under the Alternative Track, dividends paid by a company are considered to be attributable to income received from the entire company and the company's effective tax rate is the result of a weighted average of the various applicable tax rates, excluding any tax-exempt income. Under the Investments Law, a company that has elected the Alternative Track is not obliged to distribute retained profits, and may generally decide from which year's profits to declare dividends.

We currently intend to reinvest any income derived from our Approved Enterprise program and not to distribute such income as a dividend.

#### Tax benefits under the 2005 Amendment

An amendment to the Investments Law, which effective as of April 1, 2005, has changed certain provisions of the Investments Law (the "2005 Amendment"). An eligible investment program under the 2005 Amendment qualifies for benefits as a "Benefited Enterprise" (rather than as an Approved Enterprise which status is still applicable for investment programs approved prior to December 31, 2004 and/or investment programs under the Grant Track). According to the 2005 Amendment, only Approved Enterprises receiving cash grants require the prior approval of the Investment Center.

The duration of the tax benefits described herein is limited to the earlier of seven or ten years (depending on the geographic location of the Approved Enterprise within Israel) from the Commencement Year (as described below) or 12 years from the first day of the Year of Election (as described below). Commencement Year is defined as the later of the first tax year in which a company had derived liable income for tax purposes from the Benefited Enterprise, or the Year of Election, which is defined as the year in which a company requested to have the tax benefits apply to the Benefited Enterprise. The tax benefits granted to a Benefited Enterprise are determined, depending on the geographic location of the Benefited Enterprise within Israel, according to one of the following, which may be applicable to us:

- (i) Similar to the currently available Alternative Track, exemption from corporate tax may be available on undistributed income for a period of two to ten years, depending on the geographic location of the Benefited Enterprise within Israel, and a reduced corporate tax rate of 10% to 25% for the remainder of the benefit period, depending on the level of foreign investment in each year. Benefits may be granted for a term of seven to ten years, depending on the level of foreign investment in the company. If the company pays a dividend out of income derived from the Benefited Enterprise during the tax exemption period, such income will be subject to deferred corporate tax with respect to the amount distributed (grossed up with the effective corporate tax rate which would have applied had the company not enjoyed the exemption) at the rate which would have applied had such company had the status of a Benefited Enterprise. The company is required to withhold tax on such distribution at a rate of 15%; or
- (ii) A special track which enables companies owning facilities in certain geographical locations in Israel to pay corporate tax at a flat rate of 11.5% on income the Benefited Enterprise (the "Ireland Track"). The benefit period is for ten years. Upon payment of dividends, the company is required to withhold tax on such dividend at a rate of 15% for Israeli residents and at a rate of 4% for foreign residents.

Generally, a company that is Abundant in Foreign Investment (owned by at least 74% foreign shareholders and has undertaken to invest a minimum sum of \$20 million in the Benefited Enterprise) is entitled to an extension of the benefit period by an additional five years, depending on the rate of its income that is derived in foreign currency.

As a result of the 2005 Amendment, tax-exempt income generated under the provisions of the Investments Law, as amended, will subject us to taxes upon distribution or liquidation and we may be required to record deferred tax liability with respect to such tax-exempt income.

We had three Approved Enterprise plans under the Investments Law, which entitled us to certain tax benefits. In addition, in 2011, based on Company investments in property and equipment in the years 2008 and 2009, the Company submitted the applicable form as a Benefitted Enterprise in accordance with the 2005 Amendment to the Investments Law. The year of election was 2010.

#### Tax benefits under the 2011 Amendment

On December 29, 2010, the Israeli Parliament approved the 2011 amendment to the Investments Law (the “2011 Amendment”). The 2011 Amendment significantly revised the tax incentive regime in Israel, commencing on January, 1 2011.

The 2011 Amendment introduced a new status of “Preferred Enterprise”, replacing the existed status of “Benefited Enterprise”. Similarly to “Beneficiary Company”, a Preferred Company is an industrial company meeting certain conditions (including a minimum threshold of 25% export). However, under the 2011 Amendment the requirement for a minimum investment in productive assets in order to be eligible for the benefits granted under the Investments Law as with respect to “Benefited Enterprise” was cancelled.

A Preferred Company is entitled to a reduced flat tax rate with respect to the income attributed to the Preferred Enterprise, at the following rates:

Tax Year	Development Region “A”	Other Areas within Israel
2011-2012	10%	15%
2013	7%	12.5%
2014-2016	9%	16%
2017 onwards <sup>1</sup>	7.5%	16%

In addition, the 2011 Amendment introduced a new status of “Special Preferred Company” which is an Industrial company meeting, in addition to the conditions prescribed for “Preferred Company” certain additional conditions (including that the total Preferred Enterprise income is at least NIS 1.5 billion in 2016 and NIS 1 billion in 2017 and thereafter). The tax rate applicable for a period of 10 years to income generated by such an enterprise will be reduced to 5%, if located in Development Region “A”, or to 8%, if located in other area within the State of Israel.

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<sup>1</sup> In December 2016, the Israeli Parliament (the Knesset) approved an amendment to the Investments Law pursuant to which the tax rate applicable to Preferred Enterprises in Development Region “A” will be reduced to 7.5% as of 2017. It should be noted that the amendment to the Investments Law also include new tax tracks for technology-based activities and enterprises: (i) Preferred Technology Enterprise, which under certain conditions is entitled to a reduced flat tax rate of 12% if located in other area within Israel (instead of 16% for a Preferred Enterprise), and a 4% tax rate on dividend distributions out of such income to a foreign resident parent company (or a lower rate under a tax treaty); (ii) Special Preferred Technology Enterprise – an enterprise that meets all the conditions of a Preferred Technology Enterprise and in addition, the total annual revenue of such enterprise together with other companies in the group is NIS 10 billion or more. Under such conditions, a reduced flat tax rate of 6% shall apply, and a 4% tax rate on dividend

distributions out of such income to a foreign resident parent company (or a lower rate under a tax treaty). These tax tracks will enter into force starting January 1, 2017.

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Dividends distributed from income which is attributed to a “Preferred Enterprise” or a “Special Preferred Enterprise” will be subject to withholding tax at source at the following rates: (i) Israeli resident corporations – 0%, (ii) Israeli resident individuals – 20% (iii) non-Israeli residents - 20%, subject to a reduced tax rate under the provisions of an applicable double tax treaty.

The 2011 Amendment also revised the Grant Track to apply only to the approved programs located in Development Region “A” and shall provide not only cash grants (as prior to the 2011 Amendment) but also the granting of loans. The rates for grants and loans shall not be fixed but up to 20% of the amount of the approved investment (may be increased with additional 4%). In addition, a company owning a Preferred Enterprise under the Grant Track may be entitled also to the tax benefits which are prescribed for a Preferred Company.

The provisions of the 2011 Amendment do not apply to existing “Benefited Enterprises” or “Approved Enterprises”, which will continue to be entitled to the tax benefits under the Investments Law, as has been in effect prior to the New Amendment, unless the company owning such enterprises had made an election to apply the provisions of the 2011 Amendment (such election cannot be later rescinded), which is to be filed with the Israeli Tax Authority, not later than the date prescribed for the filing of the company’s annual tax return for the respective year. A company owning a Benefited Enterprise or Approved Enterprise which made such election by July 30, 2015, will be entitled to distribute income generated by the Approved/Benefited Enterprise to its Israeli corporate shareholders tax free.

Until the end of 2015, we did not utilize tax benefits related to Preferred Enterprises. Starting 2016, we started utilizing such benefits, with a related tax rate of 16%.

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

We believe that we qualify as an “Industrial Company” within the meaning of the Law for the Encouragement of Industry (Taxes), 1969, or the Industry Encouragement Law. The Industry Encouragement Law defines “Industrial Company” as an Israeli resident company, of which 90% or more of its income in any tax year (exclusive of income from certain defense loans), capital gains, interest and dividends is generated from an “Industrial Enterprise” that it owns. An “Industrial Enterprise” is defined as an enterprise whose principal activity in a given tax year is industrial manufacturing.

An Industrial Company is entitled to certain tax benefits, including: (i) a deduction of the cost of purchases of patents, know-how and certain other intangible property rights (other than goodwill) used for the development or promotion of the Industrial Enterprise over a period of eight years, beginning from the year in which such rights were first used, (ii) the right to elect to file consolidated tax returns with additional Israeli Industrial Companies controlled by it, and (iii) the right to deduct expenses related to public offerings in equal amounts over a period of three years beginning from the year of the offering.

Eligibility for benefits under the Encouragement of Industry Law is not contingent upon the approval of any governmental authority.

There is no assurance that we qualify or will continue to qualify as an Industrial Company or that the benefits described above will be available in the future.

## Taxation of the Company Shareholders

### Capital Gains

Capital gain tax is imposed on the disposition of capital assets by an Israeli resident, and on the disposition of such assets by a non-Israel resident if those assets are either (i) located in Israel; (ii) are shares or a right to a share in an Israeli resident corporation, or (iii) represent, directly or indirectly, rights to assets located in Israel. The Ordinance distinguishes between “Real Gain” and the “Inflationary Surplus”. Real Gain is the excess of the total capital gain over Inflationary Surplus computed generally on the basis of the increase in the Israeli CPI between the date of purchase and the date of disposition.

The capital gain accrued by individuals on the sale of our ordinary shares will be taxed at the rate of 25%. However, if the individual shareholder is a “Controlling Shareholder” (i.e., a person who holds, directly or indirectly, alone or together with another, 10% or more of one of the Israeli resident company’s means of control) at the time of sale or at any time during the preceding twelve (12) months period, such gain will be taxed at the rate of 30%.

The Real Gain derived by corporations will be generally subject to the ordinary corporate tax (25% in 2016, to be reduced to 24% in 2017 and to 23% in 2018 and thereafter).

Individual and corporate shareholder dealing in securities in Israel are taxed at the tax rates applicable to business income – 25% for corporations in 2016 (to be reduced to 24% in 2017 and to 23% in 2018 and thereafter) and a marginal tax rate of up to 50% in 2016 for individuals, including an excess tax for high earning individuals whose taxable income from Israeli sources exceeds a certain threshold (NIS 810,720 in 2016 and NIS 640,000 in 2017 and thereafter, as discussed below). Notwithstanding the foregoing, capital gain derived from the sale of our ordinary shares by a non-Israeli shareholder may be exempt under the Ordinance from Israeli taxation provided that the following cumulative conditions are met: (i) the shares were purchased upon or after the registration of the securities on the stock exchange (this condition will not apply to shares purchased on or after January 1, 2009), and (ii) the seller does not have a permanent establishment in Israel to which the derived capital gain is attributed. Non-Israeli corporations will not be entitled to the foregoing exemptions if (i) an Israeli resident has a controlling interest, directly or indirectly, alone or together with another (i.e., together with a relative, or together with someone who is not a relative but with whom, according to an agreement, there is regular cooperation in material matters of the company, directly or indirectly), or together with another Israeli resident, exceed 25% in one or more of the means of control in such non-Israeli resident corporation or (ii) Israeli residents are the beneficiaries of, or are entitled to, 25% or more of the revenues or profits of such non-Israeli resident corporation, whether directly or indirectly.

In addition, the sale of shares may be exempt from Israeli capital gain tax under the provisions of an applicable tax treaty. For example, the U.S.-Israel Double Tax Treaty exempts U.S. resident from Israeli capital gain tax in connection with such sale, provided (i) the U.S. resident owned, directly or indirectly, less than 10% of an Israeli resident company’s voting power at any time within the 12 month period preceding such sale; (ii) the seller, being an individual, is present in Israel for a period or periods of less than 183 days at the taxable year; and (iii) the capital gain from the sale was not derived through a permanent establishment of the U.S. resident in Israel.

Either the purchaser, the Israeli stockbrokers or financial institution through which the shares are held is obliged, subject to the above mentioned exemptions, to withhold tax upon the sale of securities from the Real Gain at the rate of 25% in respect of a corporation and/or an individual.

At the sale of securities traded on a stock exchange a detailed return, including a computation of the tax due, must be filed and an advanced payment must be paid on January 31 and June 30 of every tax year in respect of sales of securities made within the previous six months. However, if all tax due was withheld at source according to applicable provisions of the Ordinance and regulations promulgated thereunder the aforementioned return need not be filed and no advance payment must be paid. Capital gain is also reportable on the annual income tax return.

#### Dividends

As of January 1, 2014, any distribution of dividends from income attributed to a Preferred Enterprise is generally subject to a tax at a rate of 20%. However, if such dividends are distributed to an Israeli company, no tax is imposed. As of January 1, 2014, dividends distributed from income attributed to an Approved Enterprise and/or a Benefited Enterprise are subject to a tax rate of 20%. Notwithstanding the above, a reduced 15% tax rate will be applicable if the dividend was distributed out of income of: (i) Approved Enterprise activated prior to 2014; or (ii) Benefited Enterprise with a Year of Election prior to 2014. Those rates may be further reduced under the provisions of any applicable double tax treaty.

A distribution of dividends from income, which is not attributed to an Approved Enterprise/Benefited Enterprise/Preferred Enterprise to an Israeli resident individual, will generally be subject to income tax at a rate of 25%. However, a 30% tax rate will apply if the dividend recipient is a "Controlling Shareholder" (as defined above) at the time of distribution or at any time during the preceding 12 months period. If the recipient of the dividend is an Israeli resident corporation, such dividend will be exempt from income tax provided the income from which such dividend is distributed was derived or accrued within Israel.

The Ordinance generally provides that a non-Israeli resident (either individual or corporation) is subject to an Israeli income tax on the receipt of dividends at the rate of 25% (30% if the dividends recipient is a "Controlling Shareholder" (as defined above), at the time of distribution or at any time during the preceding 12 months period); those rates are subject to a reduced tax rate under the provisions of an applicable double tax treaty. Thus, under the U.S.-Israel Double Tax Treaty the following rates will apply in respect of dividends distributed by an Israeli resident company to a U.S. resident: (i) if the U.S. resident is a corporation which holds during that portion of the taxable year which precedes the date of payment of the dividend and during the whole of its prior taxable year (if any), at least 10% of the outstanding shares of the voting stock of the Israeli resident paying corporation and not more than 25% of the gross income of the Israeli resident paying corporation for such prior taxable year (if any) consists of certain type of interest or dividends – the tax rate is 12.5%, (ii) if both the conditions mentioned in section (i) above are met and the dividend is paid from an Israeli resident company's income which was entitled to a reduced tax rate applicable to an Approved Enterprise – the tax rate is 15%, and (iii) in all other cases, the tax rate is 25%, or the domestic rate (if such is lower). The aforementioned rates under the Israel U.S. Double Tax Treaty will not apply if the dividend income was derived through a permanent establishment of the U.S. resident in Israel.



Payers of dividends on our shares, including the Israeli stockbroker effectuating the transaction, or the financial institution through which the securities are held, are generally required, subject to any of the foregoing exemption, reduced tax rates and the demonstration of a shareholder of his, her or its foreign residency, to withhold taxes upon the distribution of dividends at a rate of 25%, provided that the shares are registered with a Nominee Company (for corporations and individuals).

#### Excess Tax

Individuals who are subject to tax in Israel are also subject to an additional tax at a rate of 2% in 2016 (to be increased to 3% in 2017 and thereafter) on annual income exceeding a certain threshold (NIS 810,720 for 2016 and NIS 640,000 for 2017 and thereafter (linked to the Israeli Consumer Price Index)), including, but not limited to income derived from dividends, interest and capital gains.

#### Foreign Exchange Regulations

Non-residents of Israel who hold our ordinary shares are able to receive any dividends, and any amounts payable upon the dissolution, liquidation and winding up of our affairs, repayable in non-Israeli currency at the rate of exchange prevailing at the time of conversion. However, Israeli income tax is generally required to have been paid or withheld on these amounts. In addition, the statutory framework for the potential imposition of currency exchange control has not been eliminated, and may be restored at any time by administrative action.

#### U.S. Taxation

The following discussion describes certain material United States (“U.S.”) federal income tax consequences generally applicable to U.S. holders (as defined below) of the purchase, ownership and disposition of our ordinary shares. This summary addresses only holders who acquire and hold ordinary shares as “capital assets” for U.S. federal income tax purposes (generally, assets held for investment purposes).

For purposes of this discussion, a “U.S. holder” is a beneficial owner of ordinary shares who is:

- An individual citizen or resident of the U.S. (as determined under U.S. federal income tax rules);
- a corporation (or another entity taxable as a corporation for U.S. federal income tax purposes) created or organized in or under the laws of the U.S., any state thereof, or the District of Columbia;
- an estate, the income of which is subject to U.S. federal income taxation regardless of its source; or
- a trust, if (a) a U.S. court is able to exercise primary supervision over its administration and one or more U.S. persons have the authority to control all of its substantial decisions, or (b) the trust has in effect a valid election in effect under applicable Treasury Regulations (as defined below) to be treated as a United States person.

This summary is for general information purposes only and does not purport to be a comprehensive description of all of the U.S. federal income tax considerations that may be relevant to a decision to purchase, hold or dispose of the Company’s ordinary shares. In addition, the possible application of U.S. federal estate or gift taxes or any aspect of state, local or non-U.S. tax laws is not considered. This discussion is based on current provisions of the Internal Revenue Code of 1986, as amended (the “Code”), Treasury Regulations promulgated under the Code by the U.S. Treasury Department (including proposed and temporary regulations) (the “Treasury Regulations”), rulings, current administrative interpretations and official pronouncements by the Internal Revenue Service (the “IRS”), and judicial decisions, all as currently in effect and all of which are subject to differing interpretations or to change, with a retroactive effect. Such changes could materially and adversely affect the tax consequences described below. No

assurance can be given that the IRS would not assert, or that a court would not sustain, a position contrary to any of the tax consequences described below.

This discussion does not address all aspects of U.S. federal income taxation that may be relevant to any particular U.S. holder based on the holder's particular circumstances, including, but not limited to,

- persons who own, directly, indirectly or constructively, 10% or more (by voting power or value) of our outstanding voting shares;
- persons who hold the ordinary shares as part of a hedging, straddle or conversion transaction;
- persons whose functional currency is not the U.S. dollar;
- persons who acquire their ordinary shares in a compensatory transaction;
- broker-dealers;
- insurance companies;
- regulated investment companies;
- real estate investment companies;
- qualified retirement plans, individual retirement accounts and other tax-deferred accounts;
- traders who elect to mark-to-market their securities;
- tax-exempt organizations;
- banks or other financial institutions;
- U.S. expatriates and certain former citizens and long-term residents of the United States; and
- persons subject to the alternative minimum tax.

The tax treatment of a partner in a partnership (or other entity or arrangement classified as a partnership for U.S. federal income tax purposes) may depend on both the partnership's and the partner's status and the activities of the partnership. Partnerships (or other entities or arrangements classified as a partnership for U.S. federal income tax purposes) that are beneficial owners of ordinary shares, and their partners and other owners, should consult their own tax advisers regarding the tax consequences of the acquisition, ownership and disposition of ordinary shares.

**THIS SUMMARY OF MATERIAL UNITED STATES FEDERAL INCOME TAX CONSIDERATIONS IS FOR GENERAL INFORMATION ONLY AND IS NOT TAX ADVICE. EACH HOLDER SHOULD CONSULT ITS TAX ADVISOR WITH RESPECT TO THE PARTICULAR TAX CONSEQUENCES TO IT OF AN INVESTMENT IN THE ORDINARY SHARES, INCLUDING THE EFFECTS OF APPLICABLE UNITED STATES FEDERAL INCOME TAX LAWS AS WELL AS ANY TAX CONSEQUENCES ARISING UNDER THE UNITED STATES FEDERAL ESTATE OR GIFT TAX RULES OR UNDER THE LAWS OF ANY FOREIGN, STATE OR LOCAL JURISDICTION OR UNDER ANY APPLICABLE TAX TREATY.**

## Distributions on the Ordinary Shares

We currently do not intend to distribute dividends for at least the next several years. However, if we make any distributions of cash or other property to a U.S. holder of our ordinary shares, the amount of the distribution for U.S. federal income tax purposes will equal the amount of cash and the fair market value of any property distributed and will also include the amount of Israeli taxes withheld, if any, as described above under “— Dividends” above. In general (and subject to the PFIC rules discussed below), any distribution paid by us on the ordinary shares to a U.S. holder will be treated as dividend income to the extent the distribution does not exceed our current and/or accumulated earnings and profits, as determined under U.S. federal income tax principles. The amount of any distribution which exceeds these earnings and profits will be treated first as a non-taxable return of capital, reducing the U.S. holder’s tax basis in its ordinary shares to the extent thereof, and then as capital gain income (long-term capital gain if the U.S. holder’s holding period exceeds one year), from the deemed disposition of the ordinary shares (subject to the PFIC rules discussed below). Corporate holders generally will not be allowed a deduction for dividends received on the ordinary shares.

The amount of any dividend paid in NIS (including amounts withheld to pay Israeli withholding taxes) will equal the U.S. dollar value of the NIS calculated by reference to the exchange rate in effect on the date the dividend is received by the U.S. holder, regardless of whether the NIS are converted into U.S. dollars. A U.S. holder will have a tax basis in the NIS equal to their U.S. dollar value on the date of receipt. If the NIS received are converted into U.S. dollars on the date of receipt, the U.S. holder should generally not be required to recognize foreign currency gain or loss in respect of the distribution. If the NIS received are not converted into U.S. dollars on the date of receipt, a U.S. holder may recognize foreign currency gain or loss on a subsequent conversion or other disposition of the NIS. Such gain or loss will be treated as U.S. source ordinary income or loss.

Dividends paid by us generally will be foreign source, “passive income” for U.S. foreign tax credit purposes, U.S. holders may elect to claim as a foreign tax credit against their U.S. federal income tax liability the Israeli income tax withheld from dividends received on the ordinary shares. The Code provides limitations on the amount of foreign tax credits that a U.S. holder may claim. U.S. holders that do not elect to claim a foreign tax credit may instead claim a deduction for Israeli income tax withheld, but only for a year in which these U.S. holders elect to do so for all foreign income taxes. The rules relating to foreign tax credits are complex (and may also be impacted by the tax treaty between the United States and Israel), and you should consult your tax advisor to determine whether you would be entitled to this credit.

Under current law, certain distributions treated as dividends that are received by an individual U.S. holder from a “qualified foreign corporation” generally qualify for a 20% reduced maximum tax rate so long as certain holding period and other requirements are met. A non-U.S. corporation (other than a corporation that is treated as a PFIC for the taxable year in which the dividend is paid or the preceding taxable year) generally will be considered to be a qualified foreign corporation (i) if it is eligible for the benefits of a comprehensive tax treaty with the United States which the Secretary of Treasury of the United States determines is satisfactory for purposes of this provision and which includes an exchange of information program, or (ii) with respect to any dividend it pays on stock which is readily tradable on an established securities market in the United States. Dividends paid by us in a taxable year in which we are not a PFIC and with respect to which we were not a PFIC in the preceding taxable year are expected to be eligible for the 20% reduced maximum tax rate, although we can offer no assurances in this regard. However, any dividend paid by us in a taxable year in which we are a PFIC or were a PFIC in the preceding taxable year will be subject to tax at regular ordinary income rates (along with any applicable additional PFIC tax liability, as discussed below).

The additional 3.8% tax on “net investment income” (described below) may apply to dividends received by certain U.S. holders who meet certain modified adjusted gross income thresholds.

#### Sale, Exchange or Other Taxable Disposition of the Ordinary Shares

Upon the sale, exchange or other taxable disposition of the ordinary shares (subject to the PFIC rules discussed below), a U.S. holder generally will recognize capital gain or loss in an amount equal to the difference between the amount realized and the U.S. holder’s tax basis in the ordinary shares. The gain or loss recognized on the sale or exchange of the ordinary shares generally will be long-term capital gain (currently taxable at a reduced rate for non-corporate U.S. holders) or loss if the U.S. holder’s holding period of the ordinary shares is more than one year at the time of the disposition. The deductibility of capital losses is subject to limitations.

Gain or loss recognized by a U.S. holder on a sale or exchange of ordinary shares generally will be treated as U.S. source income or loss for U.S. foreign tax credit purposes. Under the tax treaty between the United States and Israel, gain derived from the sale, exchange or other taxable disposition of ordinary shares by a holder who is a resident of the U.S. for purposes of the treaty and who sells the ordinary shares within Israel may be treated as foreign source income for U.S. foreign tax credit purposes.

The additional 3.8% tax on “net investment income” (described below) may apply to certain U.S. holders who meet certain modified adjusted gross income thresholds, including capital gains.

#### Passive Foreign Investment Companies

In general, a foreign (i.e., non-U.S.) corporation will be a PFIC for any taxable year in which, after applying the relevant look-through rules with respect to the income and assets of its subsidiaries, either (1) 75% or more of its gross income in the taxable year is “passive income,” or (2) assets held for the production of, or that produce, passive income comprise 50% or more of the average of its total asset value in the taxable year. For purpose of the income test, passive income includes dividends, interest, royalties, rents, annuities and net gains from the disposition of assets, which produce passive income. For purposes of the asset test, assets held for the production of passive income includes assets held for the production of, or that produce dividends, interest, royalties, rents, annuities, and other income included in the income test. In determining whether we meet the asset test, cash is considered a passive asset and the total value of our assets generally will be treated as equal to the sum of the aggregate fair market value of our outstanding stock plus our liabilities. If we own at least 25% (by value) of the stock of another corporation, we will be treated, for purposes of the PFIC tests, as owning our proportionate share of the other corporation’s assets and receiving our proportionate share of the other corporation’s income. The income test is conducted at the taxable year-end. The asset test is conducted on a quarterly basis and the quarterly results are then averaged together.



If a corporation is treated as a PFIC for any year during a U.S. holder's holding period and the U.S. holder does not timely elect to treat the corporation as a "qualified electing fund" under Section 1295 of the Code or elect to mark its ordinary shares to market (both elections described below), any gain on the disposition of the shares will be treated as ordinary income, rather than capital gain, and the holder will be required to compute its tax liability on that gain, as well as on dividends and other distributions, as if the income had been earned ratably over each day in the U.S. holder's holding period for the shares. The portion of the gain and distributions allocated to prior taxable years in which a corporation was a PFIC will be ineligible for any preferential tax rate otherwise applicable to any "qualified dividend income" or capital gains, and will be taxed at the highest ordinary income tax rate in effect for each taxable year to which this portion is allocated. An interest charge will be imposed on the amount of the tax allocated to these taxable years. A U.S. holder may elect to treat a corporation as a qualified electing fund only if the corporation complies with requirements imposed by the IRS to enable the shareholder and the IRS to determine the corporation's ordinary income and net capital gain. Additionally, if a corporation is a PFIC, a U.S. holder who acquires shares in the corporation from a decedent will be denied the normally available step-up in tax basis to fair market value for the shares at the date of death of the decedent and instead will have a tax basis equal to the decedent's tax basis if lower than fair market value. These adverse tax consequences associated with PFIC status could result in a material increase in the amount of tax that a U.S. holder would owe and an imposition of tax earlier than would otherwise be imposed and additional tax form filing requirements. Unless otherwise provided by the IRS, if a corporation is classified as a PFIC, a U.S. person that is a direct or indirect holder generally will be required to file IRS Form 8621, Information Return by a Shareholder of a Passive Foreign Investment Company or Qualified Electing Fund, or any applicable successor form, to report its ownership interest in such entity.

Status of Nova as a PFIC. Under the income test, less than 75% of our gross income was passive income in 2016. For 2016, while we continued to have substantial amounts of cash and short-term deposits and the market value of our ordinary shares continued to be volatile, a determination of the value of our assets by reference to the average market value of our ordinary shares and our liabilities results in a conclusion that the average value of our passive assets did not exceed 50% of the average value of our gross assets in 2016. Nonetheless, there is a risk that we were a PFIC in 2016 or we will be a PFIC in 2017 or subsequent years because there are no definitive rules regarding the manner in which a company should value its assets for purposes of the PFIC asset test. For example, taking into account our existing cash balances, if the value of our stock were to decline materially, it is possible that we could become a PFIC in 2017 or a subsequent year. Additionally, due to the complexity of the PFIC provisions and the limited authority available to interpret such provisions, there can be no assurance that our determination regarding our PFIC status could not be successfully challenged by the IRS.

Available Elections. If we become a PFIC for any taxable year, U.S. holders should consider whether or not to elect to treat us as a "qualified electing fund" or to elect to "mark-to-market" their ordinary shares in order to mitigate the adverse tax consequences of PFIC status.

If a U.S. holder makes a qualified electing fund election (a “QEF election”) for its ordinary shares that is effective from the first taxable year that the U.S. holder holds our ordinary shares and during which we are a PFIC, the electing U.S. holder will avoid the adverse consequences of our being classified as a PFIC, but will instead be required to include in income a pro rata share of our net capital gain, if any, and other earnings and profits (“ordinary earnings”) as long-term capital gains and ordinary income, respectively, on a current basis, in each case whether or not distributed, in the taxable year of the U.S. holder in which or with which our taxable year ends. A subsequent distribution of amounts that were previously included in the gross income of U.S. holders should not be taxable as a dividend to those U.S. holders who made a QEF election. In the event we incur a net loss for a taxable year, such loss will not be available as a deduction to an electing U.S. holder, and may not be carried forward or back in computing our net capital gain or ordinary earnings in other taxable years. The tax basis of the shares of an electing U.S. holder generally will be increased by amounts that are included in income, and decreased by amounts distributed but not taxed as dividends, under the QEF rules described above. In order to make (or maintain) a QEF election, the U.S. holder must annually complete and file IRS Form 8621, Information Return by a Shareholder of a Passive Foreign Investment Company or Qualified Electing Fund, or any applicable successor form. However, we do not expect that we will prepare or provide to U.S. Holders a “PFIC annual information statement,” which would enable a U.S. Holder to make one type of a QEF election. In addition, each U.S. Holder of a PFIC is required to file an annual report containing such information as the U.S. Department of the Treasury may require. U.S. Holders are advised to consult with their own tax advisors regarding the details of the PFIC rules and any elections that may be available.

Alternatively, if a U.S. holder elects to “mark-to-market” its ordinary shares, the U.S. holder generally will include in its income any excess of the fair market value of our ordinary shares at the close of each taxable year over the holder’s adjusted basis in such ordinary shares. If a U.S. holder makes a valid mark-to-market election with respect to our ordinary shares for the first taxable year of the U.S. holder in which the U.S. holder holds (or is deemed to hold) our ordinary shares and for which we are determined to be a PFIC, such holder generally will not be subject to the PFIC rules described above in respect of its common shares. A U.S. holder generally will be allowed an ordinary deduction for the excess, if any, of the adjusted tax basis of the ordinary shares over the fair market value of the ordinary shares as of the close of the taxable year, or the amount of any net mark-to-market gains recognized for prior taxable years, whichever is less. A U.S. holder’s adjusted tax basis in the ordinary shares generally will be adjusted to reflect the amounts included or deducted under the mark-to-market election. Additionally, any gain on the actual sale or other disposition of the ordinary shares generally will be treated as ordinary income. Ordinary loss treatment also will apply to any loss recognized on the actual sale or other disposition of ordinary shares to the extent that the amount of such loss does not exceed the net mark-to-market gains previously included with respect to such ordinary shares. A mark-to-market election applies to the tax year for which the election is made and to each subsequent year, unless our ordinary shares cease to be marketable, as specifically defined, or the IRS consents to revocation of the election. No view is expressed regarding whether our ordinary shares are marketable for these purposes or whether the election will be available.

If a U.S. holder makes either the QEF election or the mark-to-market election, distributions and gain will not be recognized ratably over the U.S. holder’s holding period or be subject to an interest charge as described above. Further, the denial of basis step-up at death described above will not apply. If a U.S. holder makes the QEF election, gain on the sale of the ordinary shares will be characterized as capital gain. However, U.S. holders making one of these two elections may experience current income recognition, even if we do not distribute any cash. The elections must be made with the U.S. holder’s federal income tax return for the year of election, filed by the due date of the return (as it may be extended) or, under certain circumstances provided in applicable Treasury Regulations, subsequent to that date.



The foregoing discussion relating to the QEF election and mark-to-market elections assumes that a U.S. holder makes the applicable election with respect to the first year in which Nova qualifies as a PFIC. If the election is not made for the first year in which Nova qualifies as a PFIC, the procedures for making the election and the consequences of election will be different.

**SPECIFIC RULES AND REQUIREMENTS APPLY TO BOTH THE QEF ELECTION AND THE MARK-TO-MARKET ELECTION, AND YOU ARE URGED TO CONSULT YOUR TAX ADVISOR CONCERNING OUR PFIC STATUS AND THE VARIOUS ELECTIONS YOU CAN MAKE.**

#### Medicare Tax on Net Investment Income

A U.S. holder that is an individual or estate, or a trust that does not fall into a special class of trusts that is exempt from such tax, will be subject to a 3.8% tax on the lesser of (1) the U.S. holder's "net investment income" for the relevant taxable year and (2) the excess of the U.S. holder's modified adjusted gross income for the taxable year over a certain threshold (which, in the case of individuals, will be between \$125,000 and \$250,000 depending on the individual's circumstances). A U.S. holder's "net investment income" generally may include its dividend income and its net gains from the disposition of shares, unless such dividends or net gains are derived in the ordinary course of the conduct of a trade or business (other than a trade or business that consists of certain passive or trading activities). If you are a U.S. holder that is an individual, estate or trust, you are urged to consult your tax advisors regarding the applicability of the Medicare tax to your income and gains in respect of your investment in the shares and the interaction of these rules with the rules applicable to income included as a result of the QEF election.

#### Withholdable Payments to Foreign Financial Entities and Other Foreign Entities

The Hiring Incentives to Restore Employment Act of March 2010 (the "HIRE Act"), including the Foreign Account Tax Compliance Act ("FATCA") provisions promulgated thereunder, generally provides that (1) a 30% withholding tax may be imposed on certain payments of U.S. source income (such as dividends) to certain non-U.S. holders, and (2) beginning January 1, 2019, a 30% withholding tax may be imposed on the proceeds from the sale of property by certain non-U.S. holders that could give rise to certain types of U.S. source payments. Withholding generally is required unless such non-U.S. holders enter into an agreement with the IRS to disclose the name, address and taxpayer identification number of certain U.S. persons that own, directly or indirectly, interests in such non-U.S. holders, as well as certain other information relating to such interests. Non-U.S. holders should consult their own tax advisors regarding the possible implications and obligations of FATCA and the HIRE Act on the purchase, ownership and disposition of our common stock.

#### United States Information Reporting and Backup Withholding

In general, U.S. holders may be subject to certain information reporting requirements under the Code relating to their purchase and/or ownership of stock of a foreign corporation such as the Company. Failure to comply with these information reporting requirements may result in substantial penalties.

Specifically, certain U.S. Holders holding specified foreign financial assets, including our ordinary shares, with an aggregate value in excess of the applicable U.S. dollar threshold are subject to certain exceptions, required to report information relating to our Ordinary Shares by attaching a complete IRS Form 8938, Statement of Specified Foreign Financial Assets, to their tax returns, for each year in which they hold our ordinary shares. U.S. Holders are urged to consult their own tax advisors regarding information reporting requirements relating to the ownership of our Ordinary Shares.

In addition, and as discussed in the section of this annual report entitled “U.S. Taxation – Passive Foreign Investment Companies”, if a corporation is classified as a PFIC, a U.S. person that is a direct or indirect holder generally will be required to file an informational return annually on IRS Form 8621, Information Return by a Shareholder of a Passive Foreign Investment Company or Qualified Electing Fund, or any applicable successor form, to report its ownership interest in such entity, unless otherwise provided by the IRS.

Dividend payments and proceeds from the sale or disposal of ordinary shares may be subject to information reporting to the IRS and possible U.S. federal backup withholding, currently at the rate of 28%. Certain holders (including, among others, corporations) generally are not subject to information reporting and backup withholding. A U.S. holder generally will be subject to backup withholding if such holder is not otherwise exempt and such holder:

- fails to furnish its taxpayer identification number, or TIN, which, for an individual, is ordinarily his or her social security number,
- furnishes an incorrect TIN,
- is notified by the IRS that it is subject to backup withholding because it has previously failed to properly report payments of interest or dividends, or
- fails to certify, under penalties of perjury, that it has furnished a correct TIN and that the IRS has not notified the U.S. holder that it is subject to backup withholding.

Any U.S. holder who is required to establish exempt status generally must file IRS Form W-9 (“Request for Taxpayer Identification Number and Certification”).

Backup withholding is not an additional tax and may be claimed as a refund or a credit against the U.S. federal income tax liability of a U.S. Holder, provided that the required information is timely furnished to the IRS.

#### 10.F Dividends and Paying Agents

Not applicable.

#### 10.G Statements by Experts

Not applicable.

#### 10.H Documents on Display

The documents referred to herein, including the Amended Articles, can be obtained from the Company at its registered office at Weizmann Science Park, Building 22, 2nd Floor, Ness-Ziona, Israel. In addition, the Company is subject to certain informational requirements of the Securities Exchange Act of 1934 and the rules and regulations promulgated thereunder. In accordance therewith, the Company files reports with the Commission. Reports and other information provided to the Commission by the Company may be inspected and copied at the public reference

facilities maintained by the Commission at Room 1024, 100 Fifth Street, N.E., Washington, D.C. 20549. Information on the operation of the public reference facilities may be obtained by calling the Commission at 1-800-SEC-0330. In addition, certain of the Company's reports filed with the Commission are available on-line at [www.sec.gov](http://www.sec.gov).

10.I Subsidiary Information

Not applicable.

Item 11. Quantitative and Qualitative Disclosures About Market Risk

Market Risk

Market risk represents the risk of loss that may impact the consolidated financial position, results of operations or cash flows of the Company. The Company is exposed to market risk in the area of foreign exchange rates, as described below.

The Company does not utilize financial instruments for trading purposes and holds no derivative financial instruments that could expose it to significant market risk.

Impact of Currency Fluctuation

Because our results are reported in Dollars, changes in the rate of exchange between the Dollar and local currencies in those countries in which we operate (primarily the NIS, the Euro and the Japanese Yen) will affect the results of our operations. The dollar cost of our operations in countries other than the U.S., is negatively influenced by revaluation of the U.S. dollar against other currencies. During 2016, the value of the U.S. dollar devaluated against the NIS by 1.46%, devaluated against the Yen by approximately 2.8% and revaluated against the Euro by approximately 3.6%. During the first six months of 2016 the value of the U.S. dollar devaluated against the NIS by approximately 1.5%, devaluated against the Yen by approximately 14.6% and devaluated against the Euro by 1.9%. During the last six months of 2016 the value of the U.S. dollar revaluated against the NIS by approximately 0.03%, revaluated against the Yen by approximately 13.6% and revaluated against the Euro by approximately 5.5%.

As of December 31, 2016, the majority of our net monetary assets were denominated in dollars and the remainder was denominated mainly in NIS. Net monetary assets that are not denominated in dollars or dollar-linked NIS were affected by the currency fluctuations in 2016, and are expected to continue to be affected by such currency fluctuations in 2017.

In 2014, we entered into currency-forward transactions and currency-put options (NIS/dollar) of approximately \$67 million with settlement dates through 2014-2015, designed to reduce cash-flow exposure to the impact of exchange-rate fluctuations on firm commitments of approximately \$67 million. In accordance with ASC 815-10, we recorded in 2014 a decrease of approximately \$1.7 million in fair market value in "Other Comprehensive Income". Short-term exposures to changing foreign exchange rates are primarily due to operating cash flows denominated in foreign currencies and transactions denominated in non-functional currencies. Our most significant foreign currency exposures are related to our operations in Israel. We have used foreign exchange forward contracts to partially cover known and anticipated exposures. We estimate that an instantaneous 10% depreciation in NIS from its level against the dollar as of December 31, 2014, with all other variables held constant, would decrease the fair value of our net assets denominated in foreign currency, held at December 31, 2014, by approximately \$0.6 million.

In 2015, we entered into currency-forward transactions and currency-put options (NIS/dollar) of approximately \$59 million with settlement dates through 2015-2016, designed to reduce cash-flow exposure to the impact of exchange-rate fluctuations on firm commitments of approximately \$59 million. In accordance with ASC 815-10, we recorded in 2015 an increase of approximately \$1.1 million in fair market value in "Other Comprehensive Income". Short-term exposures to changing foreign exchange rates are primarily due to operating cash flows denominated in foreign currencies and transactions denominated in non-functional currencies. Our most significant foreign currency exposures are related to our operations in Israel. We have used foreign exchange forward contracts to partially cover known and anticipated exposures. We estimate that an instantaneous 10% depreciation in NIS from its level against the dollar as of December 31, 2015, with all other variables held constant, would decrease the fair value of our net assets denominated in foreign currency, held at December 31, 2015, by approximately \$0.75 million.

In 2016, we entered into currency-forward transactions and currency-put options (NIS/dollar) of approximately \$60 million with settlement dates through 2016-2017, designed to reduce cash-flow exposure to the impact of exchange-rate fluctuations on firm commitments of approximately \$60 million. In accordance with ASC 815-10, we recorded in 2016 an increase of approximately \$0.1 million in fair market value in "Other Comprehensive Income". Short-term exposures to changing foreign exchange rates are primarily due to operating cash flows denominated in foreign currencies and transactions denominated in non-functional currencies. Our most significant foreign currency exposures are related to our operations in Israel. We have used foreign exchange forward contracts to partially cover known and anticipated exposures. We estimate that an instantaneous 10% depreciation in NIS from its level against the dollar as of December 31, 2016, with all other variables held constant, would decrease the fair value of our net assets denominated in foreign currency, held at December 31, 2016, by approximately \$0.8 million.

Item 12. Description of Securities Other than Equity Securities

Not applicable.

PART II

Item 13. Defaults, Dividend Arrearages and Delinquencies

None.

Item 14. Material Modification to the Rights of Security Holders and Use of Proceeds

Not applicable.

Item 15. Controls and Procedures

(a) Our management, including our chief executive officer and chief financial officer, has evaluated the effectiveness of our disclosure controls and procedures as of December 31, 2016. Based on such review, our chief executive officer and chief financial officer have concluded that we have in place effective controls and procedures designed to ensure that information required to be disclosed by us in the reports that we file or submit under the Securities Exchange Act of 1934, as amended, is accumulated and communicated to our management, including our principal executive and principal financial officers, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure, and is recorded, processed, summarized and reported, within the time periods specified in the SEC's rules and forms.

(b) Our management, under the supervision of our chief executive officer and chief financial officer, is responsible for establishing and maintaining adequate internal control over our financial reporting, as defined in Rules 13a-15(f) and 15d-15(f) of the Securities Exchange Act of 1934, as amended. The Company's internal control over financial reporting is defined as a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. Internal control over financial reporting includes policies and procedures that:

pertain to the maintenance of records that in reasonable detail accurately and fairly reflect our transactions and asset dispositions;

provide reasonable assurance that transactions are recorded as necessary to permit the preparation of our financial statements in accordance with generally accepted accounting principles, and that our receipts and expenditures are being made only in accordance with authorizations of our management and directors; and

provide reasonable assurance regarding the prevention or timely detection of unauthorized acquisition, use or disposition of assets that could have a material effect on our financial statements.

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

Under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, we evaluated the effectiveness of our internal control over financial reporting as of December 31, 2016. In making this evaluation, we used the criteria established in Internal Control—Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Based on this evaluation, our management concluded that the Company's internal controls over financial reporting were effective as of December 31, 2016.

(c) Kost Forer Gabbay & Kasierer, an independent registered accounting firm and a member firm of Ernst & Young, has issued an attestation report on the effectiveness of our internal control over financial reporting, as stated in their report included herein. See "Report of Independent Registered Public Accounting Firm" on page F-3.

(d) There were no changes in our internal controls over financial reporting identified with the evaluation thereof that occurred during the period covered by this annual report that have materially affected, or are reasonable likely to materially affect our internal control over financial reporting.

Item 16A. Audit Committee Financial Expert

Our board of directors has determined that our audit committee includes one audit committee financial expert, as defined by Item 16A of Form 20-F. Ms. Dafna Gruber is an independent director as such term is defined by Rule 5605(a)(2) of The NASDAQ Stock Market.

Item 16B. Code of Ethics

The Company has adopted a written code of conduct that applies to all Company employees, including the Company's directors, principal executive officer, principal financial officer and principal accounting officer.

You may review our code of conduct on our website: <http://www.novameasuring.com>, under "Corporate/Corporate Governance".

Item 16C. Principal Accountant Fees and Services

During each of the last two fiscal years, Kost Forer Gabbay & Kasierer, an independent registered accounting firm and a member firm of Ernst & Young ("Kost Forer Gabbay & Kasierer") has acted as our registered public accounting firm and independent auditors.

Audit Fees

Kost Forer Gabbay & Kasierer audit fee for each of the fiscal year 2016 and 2015 were approximately \$250,000 and \$240,000, respectively, including fees associated with the annual audit and reviews of the Company's quarterly consolidated financial results submitted on Form 6-K, consultations on various accounting issues and performance of local statutory audits. The audit fee include fees associated with the audit of management assessment of internal control over financial reporting, annual tax returns and audit of reports to OCS.

Audit-Related Fees

We did not incur expenses for any audit-related services by Kost Forer Gabbay & Kasierer in 2016 or 2015, except as included under the caption "Audit Fees".

Tax Fees

We did not incur expenses for any tax advice services by Kost Forer Gabbay & Kasierer in 2016 or 2015.

All Other Fees

Other than the audit fees described above, we incurred in 2016 fees to Kost Forer Gabbay & Kasierer, in the amount of approximately \$9,000 for other services related to SEC regulation consulting and Europe funding reporting requirements. In fiscal year 2015 we incurred approximately \$28,000 for other fees of Kost Forer Gabbay & Kasierer for services related to SEC regulation consulting and OCS application support.

Pre-Approval Policies for Non-Audit Services

Our audit committee has adopted a pre-approval policy for the engagement of our independent accountant to perform certain services. Pursuant to this policy, which is designed to assure that such engagements do not impair the independence of our auditors, all audit, audit related and tax services must be specifically approved by the audit committee and certain other non-audit, non-audit related and non-tax services may be approved without consideration

of specific case-by-case provided certain terms and procedures are met. The Company's audit committee approved all of the services provided by Kost Forer Gabbay & Kasierer in fiscal years 2016 and 2015.



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

The Company has not obtained any exemption from applicable audit committee listing standards.

Item 16E. Purchases of Equity Securities by the Issuer and Affiliates Purchasers

In March 2014, we announced a \$12 million repurchase program of the Company's ordinary shares. Through February 28, 2017, we spent an aggregate of \$12 million to repurchase 1,084,778 ordinary shares under our share repurchase program. The repurchase program was ended in May 2016. The following table provides information regarding our repurchases of our ordinary shares for each month included in the period covered by this annual report on Form 20-F:

Period	(a) Total Number of Ordinary Shares Purchased	(b) Average Price Paid per Ordinary Share	(c) Total Number of Ordinary Shares Purchased as Part of Publicly Announced Plans or Programs	(d) Approximate Dollar Value of Shares that May Yet Be Purchased Under the Plans or Programs (in thousands)
January, 2016	--	--	--	--
February, 2016	--	--	--	--
March, 2016	--	--	--	--
April, 2016	--	--	--	--
May, 2016	81,000	11.54	1,084,778	35
June, 2016	--	--	--	--
July, 2016	--	--	--	--
August, 2016	--	--	--	--
September, 2016	--	--	--	--
October, 2016	--	--	--	--
November, 2016	--	--	--	--
December, 2016	--	--	--	--

Item 16F. Change In Registrant's Certifying Accountant

See ITEM 16F in our annual report on Form 20-F for the year ended December 31, 2015.

Item 16G. Corporate Governance

There are no significant ways in which the Company's corporate governance practices differ from those followed by domestic companies listed on The NASDAQ Global Select Market.

Item 16H. Mine Safety Disclosure

Not applicable.

PART III

Item 17. Financial Statements

Not applicable.

Item 18. Financial Statements

See pages F-1 through F-30.

Item 19. Exhibits

See Exhibit Index.

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NOVA MEASURING INSTRUMENTS LTD.

CONSOLIDATED FINANCIAL STATEMENTS  
AS OF DECEMBER 31, 2016

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NOVA MEASURING INSTRUMENTS LTD.

CONSOLIDATED FINANCIAL STATEMENTS  
AS OF DECEMBER 31, 2016

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Shareholders of

NOVA MEASURING INSTRUMENTS LTD.

We have audited the accompanying consolidated balance sheets of Nova Measuring Instruments Ltd. and its subsidiaries (collectively, the "Company") as of December 31, 2016 and 2015, and the related consolidated statements of operations, comprehensive income, changes in shareholders' equity and cash flows for each of the two years in the period ended December 31, 2016. 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 audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (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 audit provides a reasonable basis for our opinion.

In our opinion the financial statements referred to above present fairly, in all material respects, the consolidated financial position of Nova Measuring Instruments Ltd. and its subsidiaries at December 31, 2016 and 2015, and the consolidated results of their operations and their cash flows for each of the two years in the period ended December 31, 2016, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the Company's internal control over financial reporting as of December 31, 2016, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework), and our report dated March 3, 2017, expressed an unqualified opinion thereon.

Tel-Aviv, Israel /s/ KOST FORER GABBAY & KASIERER  
KOST FORER GABBAY & KASIERER  
March 3, 2017 A Member of Ernst & Young Global

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM  
ON INTERNAL CONTROL OVER FINANCIAL REPORTING

To the Board of Directors and Shareholders of

NOVA MEASURING INSTRUMENTS LTD.

We have audited Nova Measuring Instruments Ltd.'s (the "Company") internal control over financial reporting as of December 31, 2016, based on criteria established in Internal Control - Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

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

In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2016, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheets of the Company and subsidiaries as of December 31, 2016 and 2015, and the related consolidated statements of operations, comprehensive income, changes in shareholders' equity and cash flows, for each of the two years in the period ended December 31, 2016, and our report dated March 3, 2017, expressed an unqualified opinion thereon.

Tel-Aviv, Israel /s/ KOST FORER GABBAY & KASIERER  
KOST FORER GABBAY & KASIERER  
March 3, 2017 A Member of Ernst & Young Global

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Shareholders of

NOVA MEASURING INSTRUMENTS LTD.

We have audited the accompanying consolidated balance sheet of Nova Measuring Instruments LTD. and subsidiaries (the "Company") as of December 31, 2014 and the related consolidated statements of operations, comprehensive income, changes in shareholders' equity and cash flows for the year 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 the standards of the Public Company Accounting Oversight Board (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 provide a reasonable basis for our opinion.

In our opinion, such consolidated financial statements present fairly, in all material respects, the financial position of Nova Measuring Instruments LTD. and subsidiaries as of December 31, 2014 and the results of their operations and their cash flows for the year ended December 31, 2014, in conformity with accounting principles generally accepted in the United States of America.

/s/ Brightman Almagor Zohar & Co.

Brightman Almagor Zohar & Co.

Certified Public Accountants

A member firm of Deloitte Touche Tohmatsu

Tel Aviv, Israel

February 25, 2015

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NOVA MEASURING INSTRUMENTS LTD.

## CONSOLIDATED BALANCE SHEETS

(U.S. dollars in thousands, except share data)

	As of December 31,	
	2016	2015
<b>ASSETS</b>		
Current assets		
Cash and cash equivalents	\$20,406	\$27,733
Short-term interest-bearing bank deposits	70,546	69,298
Trade accounts receivable, net of allowance for doubtful accounts of \$90 and \$124 at December 31, 2016 and 2015, respectively	42,626	19,046
Inventories (Note 4)	29,260	27,683
Deferred tax assets (Note 10)	-	3,540
Other current assets	4,838	2,677
Total current assets	167,676	149,977
Non-Current assets		
Long-term interest-bearing bank deposits	750	750
Deferred tax assets (Note 10)	3,020	5,735
Other long-term assets	230	211
Severance pay funds (Note 7)	1,425	1,514
Property and equipment, net (Note 5)	10,017	11,062
Intangible assets, net (Note 3)	15,361	17,906
Goodwill (Note 3)	20,114	20,114
Total non-current assets	50,917	57,292
<b>TOTAL ASSETS</b>	<b>\$218,593</b>	<b>\$207,269</b>
<b>LIABILITIES AND SHAREHOLDERS' EQUITY</b>		
Current liabilities		
Trade accounts payable	\$16,501	\$14,378
Deferred revenues	4,072	5,828
Deferred tax liabilities (Note 10)	-	956
Other current liabilities (Note 6)	18,461	15,996
Total current liabilities	39,034	37,158
Non-Current liabilities		
Accrued severance pay (Note 7)	2,418	2,469
Deferred tax liabilities (Note 10)	1,094	5,760
Other long-term liability	1,330	822
Total non-current liabilities	4,842	9,051
Commitments and contingencies (Note 8)		
<b>TOTAL LIABILITIES</b>	<b>43,876</b>	<b>46,209</b>
<b>SHAREHOLDERS' EQUITY (Note 9)</b>		
Ordinary shares, NIS 0.01 par value - authorized 40,000,000 shares at December 31, 2016 and 2015, 27,351,431 shares issued		

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and outstanding at December 31, 2016 and 27,093,937 shares issued and outstanding at December 31, 2015	74	73
Additional paid-in capital	128,993	123,977
Accumulated other comprehensive loss	(50 )	(114 )
Treasury shares	(11,965 )	(11,028 )
Retained earnings	57,665	48,152
Total shareholders' equity	174,717	161,060
 Total liabilities and shareholders' equity	 \$218,593	 \$207,269

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

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NOVA MEASURING INSTRUMENTS LTD.  
CONSOLIDATED STATEMENTS OF OPERATIONS  
(U.S. dollars in thousands, except per share data)

	Year ended December 31,		
	2016	2015	2014
Revenues:			
Products	\$122,439	\$111,178	\$92,208
Services	41,464	37,336	28,410
Total revenues	163,903	148,514	120,618
Cost of revenues:			
Products	50,386	50,691	39,784
Services	25,362	20,743	17,221
Expense related to royalty buyout agreement with the Office of the Chief Scientist (Note 8)	12,875	-	-
Total cost of revenues	88,623	71,434	57,005
Gross profit	75,280	77,080	63,613
Operating expenses:			
Research and development expenses, net (Note 2N)	34,998	39,703	29,498
Sales and marketing expenses	21,523	15,967	12,747
General and administrative expenses	6,835	8,511	4,457
Amortization of intangible assets (Note 3)	1,758	1,318	-
Total operating expenses	65,114	65,499	46,702
Operating income	10,166	11,581	16,911
Financing income, net	1,216	643	563
Income before tax on income	11,382	12,224	17,474
Income tax expenses (benefit)	1,738	(3,501 )	(1,178 )
Net income for the year	\$9,644	\$15,725	\$18,652
Earnings per share:			
Basic	\$0.35	\$0.58	\$0.68
Diluted	\$0.35	\$0.57	\$0.67
Shares used in calculation of earnings per share:			
Basic	27,175	27,185	27,447
Diluted	27,503	27,510	27,807

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

NOVA MEASURING INSTRUMENTS LTD.

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

(U.S. dollars in thousands, except per share data)

	Year ended December 31,		
	2016	2015	2014
Net income for the year	\$9,644	\$15,725	\$18,652
Other comprehensive income (loss) ("OCI") related to:			
Gain (loss) recognized in OCI (Note 13)	114	(142 )	(1,844 )
Gain (loss) reclassified from OCI to income (Note 13)	(50 )	1,205	126
Other comprehensive income (loss)	64	1,063	(1,718 )
Total comprehensive income for the year	\$9,708	\$16,788	\$16,934

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

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## NOVA MEASURING INSTRUMENTS LTD.

CONSOLIDATED STATEMENTS OF CHANGES IN SHAREHOLDERS' EQUITY

(U.S. dollars in thousands, except share amounts which are reflected in thousands)

	Ordinary Shares		Additional Paid-in Capital	Accumulated Other Comprehensive Income (Loss)	Treasury Shares	Retained Earnings	Total Shareholders' Equity
	Number	Amount					
Balance as of January 1, 2014	27,281	72	114,276	541	-	13,775	128,664
Issuance of shares in connection with employee share-based plans	474	1	2,585				2,586
Issuance of shares upon exercise of options	22	(* )	(* )				(* )
Stock based compensation			2,124				2,124
Share repurchase	(640 )				(6,726 )		(6,726 )
Other comprehensive income				(1,718 )			(1,718 )
Net income for the year						18,652	18,652
Balance as of December 31, 2014	27,137	73	118,985	(1,177 )	(6,726 )	32,427	143,582
Issuance of shares in connection with employee share-based plans	288	1	2,318				2,319
Issuance of shares upon exercise of options	33	(* )	(* )				(* )
Stock based compensation			2,674				2,674
Share repurchase	(364 )	(1 )			(4,302 )		(4,303 )
Other comprehensive income				1,063			1,063
Net income for the year						15,725	15,725
Balance as of December 31, 2015	27,094	73	123,977	(114 )	(11,028 )	48,152	161,060
Issuance of shares in connection with employee share-based plans	268	1	2,150				2,151
Issuance of shares upon exercise of options	70	(* )	(* )				(* )
Stock based compensation			2,735				2,735
Share repurchase	(81 )	(* )			(937 )		(937 )
Cumulative effect to stock based compensation from adoption of a new accounting standard (Note 2P)			131			(131 )	-
Other comprehensive income				64			64
Net income for the year						9,644	9,644
Balance as of December 31, 2016	27,351	74	128,993	(50 )	(11,965 )	57,665	174,717

(\*) Less than \$1

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

NOVA MEASURING INSTRUMENTS LTD.  
CONSOLIDATED STATEMENTS OF CASH FLOWS

(U.S. dollars in thousands)

	Year ended December 31,		
	2016	2015	2014
Cash flows from operating activities:			
Net income for the year	\$9,644	\$15,725	\$18,652
Adjustments to reconcile net income to net cash provided by (used in) operating activities:			
Depreciation	4,049	4,597	3,951
Amortization of acquired intangible assets	2,545	5,023	-
Loss related to equipment	222	-	-
Stock-based compensation	2,735	2,674	2,124
Loss (gain) on securities	-	(10 )	175
Change in deferred tax assets, net	633	(5,046 )	(1,626 )
Increase (decrease) in accrued severance pay, net	38	70	(71 )
Decrease (increase) in trade accounts receivables, net	(23,580)	(1,959 )	12,381
Decrease (increase) in inventories	(1,670 )	(1,949 )	2,226
Decrease (increase) in other current and long-term assets	(2,180 )	370	408
Increase (decrease) in trade accounts payables	2,123	1,604	(4,038 )
Increase in other current and long-term liabilities	3,037	3,329	64
Increase (decrease) in short term deferred revenues	(1,756 )	1,361	(703 )
Net cash provided by (used in) operating activities	(4,160 )	25,789	33,543
Cash flows from investment activities:			
Decrease (increase) in short-term interest-bearing bank deposits	(1,248 )	37,991	(27,737)
Proceeds from short-term available for sale securities	-	-	1,617
Proceeds from (investments in) short-term held for trading securities	-	2,005	(1,942 )
Acquisition of subsidiary, net of acquired cash (Note 3)	-	(45,344)	-
Additions to property and equipment	(3,133 )	(4,373 )	(5,234 )
Net cash used in investing activities	(4,381 )	(9,721 )	(33,296)
Cash flows from financing activities:			
Purchases of treasury shares	(937 )	(4,303 )	(6,726 )
Shares issued under employee share-based plans	2,151	2,319	2,586
Net cash provided by (used in) financing activities	1,214	(1,984 )	(4,140 )
Increase (decrease) in cash and cash equivalents	(7,327 )	14,084	(3,893 )
Cash and cash equivalents - beginning of year	27,733	13,649	17,542
Cash and cash equivalents - end of year	\$20,406	\$27,733	\$13,649
Supplemental disclosure of cash flow information:			
Cash paid during the year for income taxes	\$1,902	\$83	\$136

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

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NOVA MEASURING INSTRUMENTS LTD.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(U.S. dollars in thousands, except share and per share data)

NOTE 1 - GENERAL

Business Description:

Nova Measuring Instruments Ltd. (the “Company”) was incorporated in May 1993 and commenced operations in October 1993 in the design, development and production of integrated process control systems, used in the manufacturing of semiconductors. In October 1995, the Company began manufacturing and marketing its systems. In recent years, the Company expanded its product offering to include stand-alone systems.

The Company continues research and development for the next generation of its products and additional applications for such products. The Company operates in one operating segment.

The Company has wholly owned subsidiaries in the United States of America (the “U.S.”), Japan, Taiwan, Korea and Germany. In 2016, the wholly owned subsidiary in the Netherlands was liquidated. The subsidiaries (the “subsidiaries”) are engaged in pre-sale activities and providing technical support to customers.

On April 2, 2015, the Company completed the acquisition of 100% shares of ReVera Inc. (hereinafter – ReVera) a privately-held U.S. company. For more details see Note 3.

The ordinary shares of the Company are traded on The NASDAQ Global Market since April, 2000 and on the Tel-Aviv Stock Exchange since June, 2002.

NOTE 2 - SIGNIFICANT ACCOUNTING POLICIES

The Company’s consolidated financial statements have been prepared in accordance with generally accepted accounting principles (“GAAP”) in the United States of America.

The following is a summary of the significant accounting policies, which were applied in the preparation of these financial statements, on a consistent basis:

A. Principles of Consolidation and Basis of Presentation

The Company’s consolidated financial statements include the financial statements of the Company and its wholly owned subsidiaries (“the Company”), after elimination of material intercompany transactions and balances.

B. Use of Estimates in the Preparation of Financial Statements

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

C. Financial Statements in U.S. Dollars

The currency of the primary economic environment in which the operations of the Company and its subsidiaries are conducted is the U.S. dollar (the “dollar”). Accordingly, the Company uses the dollar as its functional and reporting currency. Certain of the dollar amounts in the financial statements may represent the dollar equivalent of other currencies, including the New Israeli Shekel (“NIS”).



Transactions and balances denominated in dollars are presented at their dollar amounts. Non-dollar transactions and balances are re-measured into dollars in accordance with the principles set forth in Accounting Standards Codification Topic No. 830 (“ASC 830”), “Foreign Currency Translation”. All transaction gains and losses of the re-measured monetary balance sheet items are reflected in the statements of operations as financial income or expenses, as appropriate.

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NOVA MEASURING INSTRUMENTS LTD.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(U.S. dollars in thousands, except share and per share data)

NOTE 2 - SIGNIFICANT ACCOUNTING POLICIES (Cont.)

D. Cash and Cash Equivalents

Cash and cash equivalents represent short-term highly liquid investments (mainly interest-bearing deposits) with maturity dates not exceeding three months from the date of deposit.

E. Short Term Bank Deposit

Short term bank deposits consist of bank deposits with original maturities of more than three months and up to twelve months.

F. Allowance for Doubtful Accounts

The allowance for doubtful accounts is computed on the specific identification basis.

G. Business Combination

The company accounts for business combination in accordance with ASC No, 805, "Business Combination". ASC No. 805 requires recognition of assets acquired and liabilities assumed at the acquisition date, measured at their fair values as of that date. Any excess of the fair value of net assets acquired over purchased price and any subsequent changes in estimated contingencies are to be recorded in the consolidated statements of operations.

H. Inventories

Inventories are presented at the lower of cost or market. Cost is determined as follows:

Raw materials-on the average cost basis.

Finished goods and work in process - on actual production cost basis (materials, labor and indirect manufacturing costs).

The Company writes down product inventory, based on slow moving items, and assumptions about future demands and market conditions.

I. Property and Equipment

Property and equipment are presented at cost, net of accumulated depreciation. Annual depreciation is calculated based on the straight-line method over the shorter of the estimated useful lives of the related assets. Estimated useful life, in years, is as follows:

	Years
Electronic equipment	3-7
Office furniture and equipment	7-15
Leasehold improvements	Over the shorter of the term of the lease or the useful life of the asset

Depreciation methods, useful lives and residual values are reviewed at the end each reporting year and adjusted if appropriate.

#### J. Accrued Warranty Costs

Accrued warranty costs are calculated in respect of the warranty period on the Company's products and are based on the Company's prior experience and in accordance with management's estimate. The estimated future warranty obligations are affected by the warranty periods, install base, labor and other related costs incurred in correcting a product failure.

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NOVA MEASURING INSTRUMENTS LTD.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(U.S. dollars in thousands, except share and per share data)

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

## K. Intangible Assets

Intangible assets that are not considered to have an indefinite useful life are amortized using mainly the straight-line basis over their estimated useful lives, as noted below. Recoverability of these assets is measured by a comparison of the carrying amount of the asset to the undiscounted future cash flows expected to be generated by the assets. If the assets are considered to be impaired, the amount of any impairment is measured as the difference between the carrying value and the fair value of the impaired assets.

	Weighted Average Useful Life (Years)
Technology	7
Customer relationships	10
Backlog	Per occurrence
IPR&D	(*)

(\*) Will be determined upon successful launch of the related product.

As of December 31, 2016 and 2015 no impairment losses were identified.

## L. Goodwill

Goodwill and certain other purchased intangible assets have been recorded as a result of acquisitions of ReVera. Goodwill represents the excess of the purchase price in a business combination over the fair value of net tangible and intangible assets acquired. Goodwill is not amortized, but rather is subject to an impairment test. The Company performs an annual impairment test during the fourth quarter of each fiscal year, or more frequently if impairment indicators are present. The Company operates in one operating segment, and this segment comprises its only reporting unit.

ASC 350, "Intangibles – Goodwill and Other", prescribes a two-phase process for impairment testing of goodwill. The first phase screens for impairment, while the second phase (if necessary) measures impairment. Goodwill impairment is deemed to exist if the net book value of a reporting unit exceeds its estimated fair value. In such case, the second phase is then performed, and the Company measures impairment by comparing the carrying amount of the reporting unit's goodwill to the implied fair value of that goodwill. An impairment loss is recognized in an amount equal to the excess. The Company has an option to perform a qualitative assessment to determine whether it is more-likely-than-not that the fair value of a reporting unit is less than its carrying amount prior to performing the two-step goodwill impairment test. If this is the case, the two-step goodwill impairment test is required. If it is more-likely-than-not that the fair value of a reporting unit is greater than its carrying amount, the two-step goodwill impairment test is not required.

For the period ended December 31, 2016 and for the period ended December 31, 2015 the Company performed an annual impairment analysis and no impairment losses have been identified.

## M. Revenue Recognition

Revenues from the sale of products are recognized when all the following criteria have been met: a persuasive evidence of an arrangement exists, delivery has occurred, the price is fixed or determinable, collection of resulting

receivables is probable and there are no remaining significant obligations.

Allocation of arrangement consideration among the separate units of accounting is based on their relative selling prices. The selling price for each unit of accounting is determined based on a selling price hierarchy using either vendor specific objective evidence (“VSOE”) of selling price, third party evidence of selling price (“TPE”) or the vendor’s best estimate of estimated selling price (“ESP”) for that deliverable. Use of the residual method is prohibited.

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NOVA MEASURING INSTRUMENTS LTD.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(U.S. dollars in thousands, except share and per share data)

NOTE 2 - SIGNIFICANT ACCOUNTING POLICIES (Cont.)

M. Revenue Recognition. (Cont.)

The objective of ESP is to determine the price at which the Company would transact a sale if the product or service were sold on a stand-alone basis.

Revenues from Service contracts generally specify fixed payment amounts for periods longer than one month, and are recognized on a straight line basis over the term of the contract.

Revenues from sales which were not yet determined to be final sales due to acceptance provisions are deferred and included in deferred revenues. In cases where collectability is not probable, revenues are deferred and recognized upon collection.

Deferred revenues include amounts invoiced to customers for which revenue has not yet been recognized.

N. Research and Development

Research and development costs are charged to operations as incurred. Amounts received or receivable from the Government of Israel through the Office of the Chief Scientist (“OCS”) or from the European Community as participation in certain research and development programs are offset against research and development costs. The accrual for grants receivable is determined based on the terms of the programs, provided that the criteria for entitlement are expected to be met. Royalty expenses are determined based on actual revenues and presented in cost of revenues. During 2016 the Company entered into a royalty buyout agreement with the OCS refer to note 8A for further details. Research and development grants recognized during the years ended December 31, 2016, 2015 and 2014 were \$4,261, \$1,237 and \$3,490, respectively.

O. Income Taxes

The Company accounts for income taxes utilizing the asset and liability method in accordance with ASC 740, “Income Taxes”. Current tax liabilities are recognized for the estimated taxes payable on tax returns for the current year. Deferred tax liabilities or assets are recognized for the estimated future tax effects attributable to temporary differences between the income tax bases of assets and liabilities and their reported amounts in the financial statements, and for tax loss carryforwards. Measurement of current and deferred tax liabilities and assets is based on provisions of enacted tax laws, and deferred tax assets are reduced, if necessary, by the amount of tax benefits, the realization of which is not considered more likely than not based on available evidence.

ASC 740-10 requires a two-step approach to recognizing and measuring uncertain tax positions. The first step is to evaluate the tax position for recognition by determining if the weight of available evidence indicates that it is more likely than not that the position will be sustained on audit, including resolution of related appeals or litigation processes, if any. The second step is to measure the tax benefit as the largest amount which is more than 50% likely of being realized upon ultimate settlement.

P. Share-Based Compensation

The Company accounts for equity based compensation using ASC 718-10 “Share-Based Payment,” which requires companies to recognize the cost of employee services received in exchange for awards of equity instruments based

upon the grant-date fair value of those awards.

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NOVA MEASURING INSTRUMENTS LTD.  
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(U.S. dollars in thousands, except share and per share data)

NOTE 2 - SIGNIFICANT ACCOUNTING POLICIES (Cont.)

P. Share-Based Compensation (Cont.)

Stock Options

Under ASC 718, the fair market value of each option grant is estimated on the date of grant using the “Black-Scholes option pricing” method with the following weighted-average assumptions:

	2016	2015	2014
Risk-free interest rate	1.08%	1.41%	1.61%
Expected life of options	4.62 years	4.62 years	4.75 years
Expected volatility	28.41%	35.67%	45.29%
Expected dividend yield	0%	0%	0%

Expected volatility was calculated based on actual historical share price movements over a term that is equivalent to the expected term of granted options. The expected term of options granted is based on historical experience and represents the period of time that options granted are expected to be outstanding. The risk-free interest rate is based on the yield from U.S. treasury bonds with an equivalent term. The Company has historically not paid dividends and has no foreseeable plans to pay dividends.

The Company elected to early adopt ASU-2016-19 starting January 1, 2016 and to account for forfeitures as they occur. The net cumulative effect of this change, in a total amount of \$131 thousands, was recognized as a reduction to retained earnings as of January 1, 2016.

Q. Earnings per Share

Earnings per share are presented in accordance with ASC 260-10, “Earnings per Share”. Pursuant to which, basic earnings per share excludes the dilutive effects of convertible securities and is computed by dividing income (loss) available to common shareholders by the weighted-average number of ordinary shares outstanding for the period, net of treasury shares. Diluted earnings per share reflect the potential dilutive effect of all convertible securities. The number of potentially dilutive securities excluded from diluted earnings per share due to the anti-dilutive effect amounted to 1,134,971 in 2016, 946,829 in 2015 and 526,381 in 2014.

Basic earnings per share in 2016, 2015 and 2014 were \$0.35, \$0.58 and \$0.68 respectively. Diluted earnings per share in 2016, 2015 and 2014 were \$0.35, \$0.57 and \$0.67 respectively.

R. Treasury Shares

Treasury shares are recorded at cost and presented as a reduction of shareholders' equity.

S. Concentrations of Credit Risk

Financial instruments that potentially subject the Company to concentrations of credit risk consist principally of cash and cash equivalents, bank deposits, trade receivables and foreign currency derivative contracts.



The majority of the Company's cash and cash equivalents and bank deposits are invested in dollar instruments with major banks in Israel. Management believes that the financial institutions that hold the Company's investments are corporations with high credit standing. Accordingly, management believes that low credit risk exists with respect to these financial investments.

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NOVA MEASURING INSTRUMENTS LTD.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(U.S. dollars in thousands, except share and per share data)

NOTE 2 - SIGNIFICANT ACCOUNTING POLICIES (Cont.)

S. Concentrations of Credit Risk (Cont.)

The trade receivables of the Company are derived from sales to customers located primarily in Taiwan R.O.C., Korea, China and USA. The management of the Company performed risk assessment on an ongoing basis and believes it bears low risk.

The Company entered into options and forward contracts to hedge against the risk of overall changes in future cash flow from payments of payroll and related expenses as well as other expenses denominated in NIS. The derivative instruments hedge a portion of the Company's non-dollar currency exposure. Counterparty to the Company's derivative instruments is major financial institution.

T. Fair Value Measurements

The fair values of the Company cash and cash equivalents, accounts receivable, and accounts payable approximate their carrying amounts due to their short-term nature. The estimated fair values of the derivative instruments are calculated based on market rates to settle the instruments. These values represent the estimated amounts the Company would receive upon sale or pay upon transfer, taking into consideration current market rates. The Company calculate derivative asset and liability amounts using a variety of valuation techniques, depending on the specific characteristics of the hedging instrument, taking into account credit risk. The fair value of the Company derivative contracts (including forwards and options) is determined using standard valuation models. The significant inputs used in these models are readily available in public markets or can be derived from observable market transactions and, therefore, the Company derivative contracts have been classified as Level 2. Inputs used in these standard valuation models include the applicable spot, forward, and discount rates. The standard valuation model for the Company option contracts also includes implied volatility, which is specific to individual options and is based on rates quoted from a widely used third-party resource.

U. Derivative Financial Instruments

ASC 815 requires the presentation of all derivatives as either assets or liabilities on the balance sheet and the measurement of those instruments at fair value.

For derivative instruments that are designated and qualify as a cash flow hedge (i.e., hedging the exposure to variability in expected future cash flows that is attributable to a particular risk), the effective portion of the gain or loss on the derivative instrument is reported as a component of other comprehensive income and reclassified into earnings in the same period or periods during which the hedged transaction affects earnings. The remaining gain or loss on the derivative instrument in excess of the cumulative change in the present value of future cash flows of the hedged item, if any, is recognized in current earnings during the period of change. See Note 13 for disclosure of the derivative financial instruments in accordance with such pronouncements.

V. Impairment of Long-Lived Assets

Long-lived assets, held and used by the Company are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of the assets (or asset Company) may not be recoverable. In the event that the sum of the expected future cash flows (undiscounted and without interest charges) of the long-lived assets is less than the carrying amount of such assets, an impairment charge would be recognized, and the assets (or asset

Company) would be written down to their estimated fair values.

The Company performed an impairment review and did not identify any indicators.

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NOVA MEASURING INSTRUMENTS LTD.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(U.S. dollars in thousands, except share and per share data)

NOTE 2 - SIGNIFICANT ACCOUNTING POLICIES

W. New Accounting Pronouncements

In 2014, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2014-09, Revenue from Contracts with Customers. The standard provides companies with a single model for accounting for revenue arising from contracts with customers and supersedes current revenue recognition guidance, including industry-specific revenue guidance. In 2016, the FASB issued four amendments to the ASU. The standard is effective for public companies for annual periods beginning after December 15, 2017. The Company will adopt this ASU effective January 1, 2018. The guidance is required to be adopted on either a full or modified retrospective basis. The Company is currently evaluating the effect that the standard will have on its consolidated financial statements and related disclosures. In November 2016, the FASB issued Accounting Standards Update No. 2016-18, Statement of Cash Flows (Topic 230): Restricted Cash (ASU 2016-18), which requires companies to include amounts generally described as restricted cash and restricted cash equivalents in cash and cash equivalents when reconciling beginning-of-period and end-of-period total amounts shown on the statement of cash flows. The amendments in this Update are effective for public business entities for fiscal years beginning after December 15, 2017. Early adoption is permitted. The Company does not expect that this new guidance will have a material impact on the Company's consolidated Financial Statements.

In March 2016, the Financial Accounting Standards Board ("FASB") issued a new standard that changes the accounting for certain aspects of share-based payments to employees (ASU No. 2016-19). The new guidance requires excess tax benefits and tax deficiencies to be recorded in the income statement when stock awards vest or are settled. The standard also allows the Company to repurchase more of an employee's vesting shares for tax withholding purposes without triggering liability accounting, clarifies that all cash payments made to tax authorities on an employee's behalf for withheld shares should be presented as a financing activity on the Company's cash flows statement, and provides an accounting policy election to account for forfeitures as they occur. The amendments in this ASU are effective for fiscal years beginning after December 15, 2016. The Company elected to early adopt the new guidance in 2016, which requires the Company to reflect any adjustments as of January 1, 2016, the beginning of the annual period that includes the year of adoption. The Company elected to account for forfeitures as they occur, rather than estimate expected forfeitures. The net cumulative effect of this change was recognized as a \$131 thousands reduction to retained earnings as of January 1, 2016.

In 2015, the FASB issued ASU No. 2015-17, Income Taxes (Topic 740): Balance Sheet Classification of Deferred Taxes. Under this ASU, a reporting entity is required to classify all deferred tax assets and liabilities as noncurrent in a classified balance sheet. Current guidance requiring the offsetting of deferred tax assets and liabilities of a tax-paying component of an entity and presentation as a single noncurrent amount is not affected. The Company early adopted this ASU prospectively and the Company 2016 consolidated balance sheet reflects the new guidance for classification of deferred taxes. Prior periods were not reclassified.

In March 2016, the FASB issued ASU 2016-05, "Derivatives and Hedging (Topic 815): Effect of Derivative Contract Novations on Existing Hedge Accounting Relationships", which clarifies that a change in the counter party to a derivative instrument designated as a hedging instrument does not require de-designation of that hedging relationship, provided that all other hedge accounting criteria are met. The new guidance is effective for fiscal years beginning after December 15, 2016. The Company does not expect that this new guidance will have a material impact on the Company's Consolidated Financial Statements.

NOTE 3 - ACQUISITION OF REVERA INC.

On April 2, 2015 (“the Closing Date”), The Company completed the acquisition of ReVera Inc. (“ReVera”) a privately held company headquartered in Santa Clara, California, which develops, manufactures, and sells stand-alone metrology tools for measurements of thin-films and composition applications in the semiconductor industry. The company paid \$46,500 in cash, of which \$2,475 were paid to ReVera noteholders prior to the acquisition.

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## NOVA MEASURING INSTRUMENTS LTD.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(U.S. dollars in thousands, except share and per share data)

## NOTE 3 - ACQUISITION OF REVERA INC. (Cont.)

The financial results of ReVera are included in the consolidated financial statements from the closing date.

Upon acquisition, ReVera became the Company's wholly-owned subsidiary. The acquisition was accounted for as a business combination. This method requires, among other things, that assets acquired and liabilities assumed in a business combination be recognized at their fair values as of the acquisition date.

The Company allocated the total consideration to ReVera's tangible and intangible assets and liabilities based on their estimated fair values as of the acquisition date and allocated the remaining amount to goodwill. The allocation is as follows:

Cash and cash equivalents	\$1,158
Net assets excluding cash and cash equivalents	7,991
Deferred tax current assets	563
Deferred tax long-term assets	3,753
Intangible assets	22,929
Goodwill	20,114
Deferred revenues, net	(1,409 )
Deferred tax current liabilities	(2,122 )
Deferred tax long-term liabilities	(6,477 )
Total purchases price	\$46,500

The valuation of intangible assets were as follows:

	As of December 31,	
	2016	2015
Original amount:		
Technology	\$ 12,305	\$ 12,305
Customer relationships	5,191	5,191
Backlog	3,506	3,506
IPR&D	1,927	1,927
	22,929	22,929
Accumulated amortization:		
Technology	3,076	1,318
Customer relationships	986	199
Backlog	3,506	3,506
IPR&D	-	-
	7,568	5,023
Net book value	\$ 15,361	\$ 17,906

Annual amortization expenses are expected as follows:

Year ending December 31,	
2017	\$2,561
2018	2,614

2019	2,625
2020	2,503
2021 and thereafter	5,058
	\$15,361

NOVA MEASURING INSTRUMENTS LTD.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(U.S. dollars in thousands, except share and per share data)

## NOTE 3 - ACQUISITION OF REVERA INC. (Cont.)

## Measurement of Fair Values

The fair value of technology is based on the discounted estimated royalty payments that have been avoided as a result of the technology being owned.

The fair value of customer relationships has been determined using the multi-period excess earnings method, whereby the subject asset is valued after deducting a fair return on all other assets that are part of creating the related cash flows.

The fair value of Backlog has been calculated using the income approach. The backlog is considered a valuable intangible asset, which can be separately sold.

The fair value of in-process research and development ("IPR&D") intangible assets represent the value assigned to acquired research and development projects that, as of the acquisition date had not established technological feasibility and had no alternative future use. The IPR&D intangible assets are capitalized and accounted for as indefinite-lived intangible assets and are subject to impairment testing until completion or abandonment of the projects. Upon successful completion of each project and launch of the product, the Company will make a separate determination of useful life of the IPR&D intangible assets and the related amortization will be recorded as an expense over the estimated useful life of the specific projects.

Goodwill generated from the ReVera acquisition is primarily attributable to expected synergies. All goodwill generated during this period is not deductible for tax purposes.

In 2015, the Company incurred acquisition-related expenses of \$1,979. These expenses have been included in operating expenses in the statement of operation.

## NOTE 4 - INVENTORIES

## A. Composition:

	As of December 31,	
	2016	2015
Raw materials	\$ 9,596	\$ 6,649
Work in process	12,205	12,932
Finished goods	7,459	8,102
	\$ 29,260	\$ 27,683

B. In the years ended December 31, 2016, 2015 and 2014, the Company wrote-off inventories in a total amount of \$4,038, \$2,551 and \$1,554, respectively.



## NOVA MEASURING INSTRUMENTS LTD.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(U.S. dollars in thousands, except share and per share data)

## NOTE 5 - PROPERTY AND EQUIPMENT, NET

	As of December 31,	
	2016	2015
Cost:		
Electronic equipment	\$ 26,234	\$ 24,718
Office furniture and equipment	1,731	1,648
Leasehold improvements	7,274	6,303
	\$ 35,239	\$ 32,669
Accumulated depreciation:		
Electronic equipment	19,925	17,150
Office furniture and equipment	1,363	1,298
Leasehold improvements	3,934	3,159
	25,222	21,607
Net book value	\$ 10,017	\$ 11,062

Depreciation expenses amounted to \$4,049, \$4,597 and \$3,951 for the years ended December 31, 2016, 2015 and 2014, respectively.

## NOTE 6 - OTHER CURRENT LIABILITIES

## A. Consists of:

	As of December 31,	
	2016	2015
Accrued salaries and fringe benefits	\$ 10,612	\$ 8,056
Accrued warranty costs (See B below)	4,358	3,883
Governmental institutions	2,947	3,338
Other	544	719
	\$ 18,461	\$ 15,996

## B. Accrued Warranty Costs:

The Company provides standard warranty coverage on its systems. Parts and labor are covered under the terms of the warranty agreement. The Company accounts for the estimated warranty cost as a charge to costs of revenues when revenue is recognized.

The following table provides the changes in the product warranty accrual for the fiscal years ended December 31, 2016 and 2015:

	As of December 31,	
	2016	2015
Balance as of beginning of year	\$ 3,883	\$ 2,356
Acquisition of ReVera	-	973

Services provided under warranty	(4,168 )	(4,221 )
Changes in provision	4,643	4,775
Balance as of end of year	\$ 4,358	\$ 3,883

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NOVA MEASURING INSTRUMENTS LTD.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(U.S. dollars in thousands, except share and per share data)

NOTE 7 - LIABILITY FOR EMPLOYEE SEVERANCE PAY, NET

Israeli law and labor agreements determine the obligations of the Company to make severance payments to dismissed employees and to employees leaving employment under certain other circumstances. The obligation for severance pay benefits, as determined by Israeli law, is based upon length of service and the employee's most recent salary. The liability is partially covered through insurance policies purchased by the Company and deposits in a severance fund.

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 Israel's Severance Pay Law, 1963 or labor agreements.

Since July 2008, the Company's agreements with new Israeli employees are under Section 14 of the Israeli Severance Pay Law, 1963. The Company's contributions for severance pay have replaced its severance obligation. Upon contribution of the full amount of the employee's monthly salary for each year of service, no additional calculations are conducted between the parties regarding the matter of severance pay and no additional payments are made by the Company to the employee.

Severance pay expenses for the years ended December 31, 2016, 2015 and 2014, amounted to \$120, \$94 and \$6, respectively (not including the company's contributions to severance pay under section 14).

NOTE 8 - COMMITMENTS AND CONTINGENCIES

Under the research and development agreements of the Company with the OCS and pursuant to applicable laws, the Company has undertaken to pay royalties at the rate of 3.5%-5% (2015 onwards-5%) on sales of products developed with funds provided by the OCS, up to an amount equal to 100% of the OCS research and development A. grants received, linked to the dollar plus interest on the unpaid amount received based on the 12-month LIBOR rate (from the year the grant was approved) applicable to dollar deposits. Refund of the grants thereon is contingent on future sales and the Company has no obligation to refund grants if sufficient sales are not generated. The Company ceased its participation in royalty bearing programs in December 2014.

In August 2016, the Company entered into a royalty buyout agreement ("the Agreement") with the OCS. As part of the Agreement the Company paid \$12,875 to the OCS in September, 2016. The contingent net royalty liability to the OCS at the time of the settlement was \$24,340, this obligation included different annual interest rates ranging up to 5%. As a result of this payment, the Company does not expect to pay in the future royalty payments on the previous funds received from the OCS.

Royalty expense amounted to \$13,511 (\$12,875 related to the Agreement), \$1,255, and \$1,019 for the years 2016, 2015 and 2014, respectively. The balance of the contingent liability to the OCS as of December 31, 2015 was \$23,959.

NOVA MEASURING INSTRUMENTS LTD.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(U.S. dollars in thousands, except share and per share data)

NOTE 8 - COMMITMENTS AND CONTINGENCIES (Cont.)

B. The Company rents its facilities under various operating lease agreements, which expire on various dates, the latest of which is in 2021. The minimum rental payments are as follows:

Year	
2017	\$1,928
2018	1,779
2019	1,766
2020	1,766
2021	147
Total	\$7,386

Rental expense for the facilities amounted to \$2,139, \$1,781 and \$1,594 for the year 2016, 2015 and 2014, respectively. In connection with the Company's facilities lease agreement in Israel, the lessor has a lien of approximately \$750 on certain bank deposits as of December 31, 2016. These deposits are included in long-term interest-bearing bank deposits.

On February 1, 2017, the company signed an operating lease agreement which expires in 2020. The minimum rental payments are \$1,243.

The Company is obligated under certain agreements with its suppliers to purchase specified items of inventory C. which are expected to be utilized during the years 2017-2020. As of December 31, 2016, non-cancelable purchase obligations were approximately \$21,677.

NOTE 9 - SHAREHOLDERS' EQUITY

A. Rights of Shares:

Holders of ordinary shares are entitled to participate equally in the payment of cash dividends and bonus shares (stock dividends) and, in the event of the liquidation of the Company, in the distribution of assets after satisfaction of liabilities to creditors. Each ordinary share is entitled to one vote on all matters to be voted on by shareholders.

B. Share Repurchase:

On March 24, 2014, the Company announced a \$12 million share repurchase program, which was executed in 2014, 2015 and 2016.

Through December 31, 2016, the Company repurchased 1,084,778 ordinary shares for an aggregate amount of \$11,965.

NOVA MEASURING INSTRUMENTS LTD.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(U.S. dollars in thousands, except share and per share data)

## NOTE 9 - SHAREHOLDERS' EQUITY (Cont.)

## C. Equity Based Incentive Plans:

The Company's Board of directors approves, from time to time, equity based incentive plans, the last of which was approved in October 2007. Equity based incentive plans include stock options, restricted stock units and restricted stock awards to employees, officers and directors.

## Stock Options

The following table summarizes the effects of stock-based compensation resulting from the application of ASC 718 included in the Statements of Operations as follows:

	Year ended December 31,		
	2016	2015	2014
Cost of Revenues:			
Products	\$342	\$373	\$375
Services	218	203	178
Research and Development expenses	983	1,085	870
Sales and Marketing expenses	884	744	446
General and Administration expenses	308	269	255
Total	\$2,735	\$2,674	\$2,124

Stock options vest over four years and their term may not exceed 10 years. Commencing January 1, 2016, the exercise price of each option is the average market price of the underlying share during the period of 30 trade days preceding the date of each grant.

Through December 31, 2016, 11,795,497 share options have been issued under the plans, of which 5,377,629 options have been exercised, 4,639,003 options have been cancelled, and 746,732 options were exercisable as of December 31, 2016.

The weighted average fair value (in dollars) of the options granted during 2016, 2015 and 2014, according to Black-Scholes option-pricing model, amounted to \$2.89, \$3.76 and \$4.31 per option, respectively. Fair value was determined on the basis of the price of the Company's share.

Summary of the status of the Company's share option plans as of December 31, 2016, 2015 and 2014, as well as changes during each of the years then ended, is presented below:

	2016		2015		2014	
	Share	Weighted	Share	Weighted	Share	Weighted
	Options	Average	Options	Average	Options	Average
		Exercise		Exercise		Exercise
		Price		Price		Price
Outstanding - beginning of year	1,757,170	9.95	1,534,642	8.90	1,707,702	7.48
Granted	434,571	11.36	625,959	11.67	392,879	10.77
Exercised	268,022	8.15	287,928	8.06	473,616	5.48
Expired and forfeited	144,854	8.58	115,503	10.01	92,323	8.09

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Outstanding - year end	1,778,865	10.52	1,757,170	9.95	1,534,642	8.9
Options exercisable at year-end	746,732	9.51	689,369	8.66	644,685	8.11

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NOVA MEASURING INSTRUMENTS LTD.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(U.S. dollars in thousands, except share and per share data)

## NOTE 9 - SHAREHOLDERS' EQUITY (Cont.)

The aggregate intrinsic value represents the total intrinsic value (the difference between the Company's closing stock price on the last trading day of the fiscal year and the exercise price, multiplied by the number of in-the-money options) that would have been received by the option holders had all option holders exercised their options on the last trading day of the fiscal year. This amount changes based on the fair market value of the Company's shares.

The total intrinsic value of options outstanding as of December 31, 2016 and 2015 was \$4,703 and \$1,259, respectively. The total intrinsic value of options exercisable as of December 31, 2016 and 2015 was \$2,699 and \$979, respectively. The total intrinsic value of options exercised during the years 2016, 2015 and 2014 was \$1,342, \$505 and \$2,328, respectively.

The following table summarizes information about share options outstanding as of December 31, 2016:

Range of Exercise Prices (US dollars)	Number Outstanding	Weighted Average Remaining Contractual Life (in years)	Weighted Average Exercise Price (US dollars)	Number Exercisable	Weighted Average Exercise Price (US dollars)
0.43-2.54	16,840	2.33	1.23	16,840	1.23
4.20-6.70	41,000	2.28	6.03	41,000	6.03
7.40-7.91	88,843	2.58	7.82	88,843	7.82
8.38-8.89	272,173	3.28	8.73	212,935	8.71
9.04-9.58	42,414	3.41	9.11	28,367	9.09
10.08-10.93	317,606	4.98	10.25	127,359	10.21
11.28-12.45	999,989	5.59	11.72	231,388	11.77
	1,778,865			746,732	

## Unrecognized Compensation Expense

As of December 31, 2016, there was \$1,866 of total unrecognized compensation cost related to non-vested employee options and \$1,817 of total unrecognized compensation cost related to non-vested employee RSUs. These costs are generally expected to be recognized over a period of four years.

## Restricted Share Units

Restricted Share Units ("RSU") grants are rights to receive shares of the Company's common stock on a one-for-one basis and vest 25% on each of the first, second, third and fourth anniversaries of the grant date and are not entitled to dividends or voting rights, if any, until they are vested. The fair value of the RSU awards is being recognized on a straight-line basis over vesting period.

As of December 31, 2016, 762,237 RSU's had been issued, 447,095 RSU's had been vested, 36,822 had been cancelled. As of December 31, 2015, 644,094 RSU's had been issued, 376,623 RSU's had been vested, 14,682 had been cancelled. As of December 31, 2014, 451,647 RSU's had been issued, 343,718 RSU's had been vested, 9,609 had been cancelled.

The number of RSU's issued in 2016, 2015 and 2014 was 118,143, 192,447 and 44,707, respectively. The weighted average fair values at grant date of RSU's granted for the years ended December 31, 2016, 2015 and 2014 were \$11.53, \$11.51 and \$10.08, respectively. The total intrinsic value of RSU's vested during the years 2016, 2015 and 2014 was \$927, \$322 and \$236, respectively.

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NOVA MEASURING INSTRUMENTS LTD.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(U.S. dollars in thousands, except share and per share data)

NOTE 10 - INCOME TAXES

A. Income Tax Regulations (Rules on Bookkeeping by Foreign Invested Companies and Certain Partnerships and Determination of their Taxable Income), 1986:

As a "Controller Foreign Cooperation" (as defined in the Israeli Law for the Encouragement of Capital Investments-1959), the Company's management has elected to apply Income Tax Regulations (Rules for Maintaining Accounting Records of Foreign Invested Companies and Certain Partnerships and Determining Their Taxable Income) - 1986. Accordingly, its taxable income or loss is calculated in US Dollars.

B. Law for the Encouragement of Capital Investments - 1959:

Part of the Company's investment in equipment has received approvals in accordance with the Law for the Encouragement of Capital Investments, 1959 ("Approved Enterprise" status) in three separate investment plans. The Company has chosen to receive its benefits through the "Alternative Benefits" track, and, as such, is eligible for various benefits. These benefits include accelerated depreciation of fixed assets used in the investment program, as well as a full tax exemption on undistributed income in relation to income derived from the first plan for a period of 4 years and for the second and third plans for a period of 2 years. Thereafter a reduced tax rate of 25% will be applicable for an additional period of up to 3 years for the first plan and 5 years for the second and third plans, commencing with the date on which taxable income is first earned but not later than certain dates. The benefit period of the second and third plan have commenced.

On April 1, 2005, an amendment to the Investment Law came into effect ("the Amendment") and has significantly changed the provisions of the Investment Law. The Amendment limits the scope of enterprises which may be approved by the Investment Center by setting criteria for the approval of a facility as a Privileged Enterprise, such as provisions generally requiring that at least 25% of the Privileged Enterprise's Income will be derived from export. Additionally, the Amendment enacted major changes in the manner in which tax benefits are awarded under the Investment Law so that companies no longer require Investment Center approval in order to qualify for tax benefits. However, the Investment Law provides that terms and benefits included in any certificate of approval already granted will remain subject to the provisions of the law as they were on the date of such approval. Therefore, the Israeli companies with Approved Enterprise status will generally not be subject to the provisions of the Amendment.

The entitlement to the above benefits is conditional upon the Company 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.

In the event of distribution by the Company of a cash dividend out of retained earnings that were tax exempt due to its Approved Enterprise status, the Company would have to pay corporate tax of 10% - 25% on the income from which the dividend was distributed based on the extent to which non-Israeli shareholders hold Company's shares. A 15% withholding tax may be deducted from dividends distributed to the recipients.

The Company has not provided deferred taxes on future distributions of tax-exempt earnings, as the Company intends to reinvest any income derived from its Approved Enterprise program and not to distribute such income as a dividend. Accordingly, such earnings have been considered to be permanently reinvested.

In 2008, the Company submitted a request to approve a new plan (fourth plan) as a Privileged Enterprise in accordance with the Amendment to the Investment Law. The commencing year was 2010. The expected expiration year is 2021.

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NOVA MEASURING INSTRUMENTS LTD.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(U.S. dollars in thousands, except share and per share data)

## NOTE 10 - INCOME TAXES (Cont.)

## B. Law for the Encouragement of Capital Investments - 1959: (Cont.)

In 2011, new legislation amending to the Investment Law was adopted. Under this new legislation, a uniform corporate tax rate will apply to all qualifying income of certain Industrial Companies (Requirement of a minimum export of 25% of the company's total turnover), as opposed to the current law's incentives, which are limited to income from Approved Enterprises during their benefits period. Under the new law, the uniform tax rate will be 10% in areas in Israel designated as Development Zone A and 15% elsewhere in Israel during 2011-2012, 7% and 12.5%, respectively, in 2013-2014, and 6% and 12%, respectively thereafter. The profits of these Industrial Companies will be freely distributable as dividends, subject to a 15% withholding tax (or lower, under an applicable tax treaty).

Under the transition provisions of the new legislation, the Company may decide to irrevocably implement the new law while waiving benefits provided under the current law or to remain subject to the current law.

In August 2013 "The Arrangements Law" (hereinafter - "the Law") was officially published. The following significant changes affecting taxation were approved:

1. The tax rate on a company in Development area A, effective January 1, 2014 is 9% (instead of 7% in 2014 and 6% in 2015 and thereafter), and the tax rate for companies in all other areas will be 16% (instead of 12.5% in 2014 and 12% in 2015 and thereafter).

2. The tax rate on dividend distributed, generated from "preferred income" or by a company that has an approved enterprise related to tourism increased effective January 1, 2014 from 15% to 20%.

In 2016, most of the Company's taxable income in Israel is attributable to Preferred Enterprises, with a related tax rate of 16%. In 2015 and 2014, most of the Company's taxable income in Israel is attributable to Approved Enterprise programs with zero tax.

## C. Law for the Encouragement of Industry (Taxation), 1969:

The Company is an "Industrial Company" under the Law for the Encouragement of Industry (Taxation), 1969 and, therefore, is entitled to certain tax benefits, mainly accelerated rates of depreciation.

## D. Deferred 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 and its subsidiary deferred tax assets are as follows:

	As of December 31,	
	2016	2015
Net operating loss carry-forwards	\$ 3,929	\$ 4,363
AMT credit carryforward	418	418
Temporary differences relating to reserve and allowances	8,493	9,658
Intangible assets	(5,760 )	(6,715 )

	7,080	7,724
Valuation Allowance	(5,154 )	(5,165 )
Deferred tax asset, net	\$ 1,926	\$ 2,559

The Company's U.S. subsidiaries have carry-forward tax losses of approximately \$8,356 to offset against future U.S. federal taxable income. The carry-forward tax losses are expected to be fully utilized by 2024.

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## NOVA MEASURING INSTRUMENTS LTD.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(U.S. dollars in thousands, except share and per share data)

## NOTE 10 - INCOME TAXES (Cont.)

## D. Deferred Taxes: (Cont.)

## Israel:

	As of December 31,	
	2016	2015
Short-term deferred tax assets	\$ -	\$ 2,973
Long-term deferred tax assets	3,020	1,981
	\$ 3,020	\$ 4,954

## International:

	As of December 31,	
	2016	2015
Short-term deferred tax assets	\$ -	\$ 567
Long-term deferred tax assets	-	3,754
Short-term deferred tax liabilities	-	(956 )
Long-term deferred tax liabilities	(1,094 )	(5,760 )
	\$ (1,094 )	\$ (2,395 )

Under ASC 740-10, deferred tax assets are to be recognized for the anticipated tax benefits associated with net operating loss carry-forwards and deductible temporary differences; unless it is more-likely-than-not that some or all of the deferred tax assets will not be realized.

The adjustment is made by a valuation allowance.

In 2016, the Company early adopted ASU 2015-17, that requires the presentation of all deferred tax assets and liabilities as non-current, in addition, that requires the offsetting of deferred tax assets and liabilities (mainly related to intangible assets) of a tax-paying component of an entity (Refer also to note 2W).

## E. Israel and International Components of Income before Taxes:

	Year ended December 31,		
	2016	2015	2014
Israel	\$ 14,021	\$ 15,377	\$ 16,648
International	(2,639 )	(3,153 )	826
	\$ 11,382	\$ 12,224	\$ 17,474

## F. Israel and International Components of Income Taxes:

	Year ended December 31,		
	2016	2015	2014

Israel	\$2,615	\$(2,413)	\$(1,426)
International	(877)	(1,088)	248
	\$1,738	\$(3,501)	\$(1,178)
Current	\$1,105	\$1,545	\$448
Deferred	633	(5,046)	(1,626)
	\$1,738	\$(3,501)	\$(1,178)

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## NOVA MEASURING INSTRUMENTS LTD.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(U.S. dollars in thousands, except share and per share data)

## NOTE 10 - INCOME TAXES (Cont.)

## G. Tax Reconciliation:

The following is a reconciliation of the theoretical tax expense, assuming that all income is taxed at the ordinary statutory average corporate tax rate in Israel and the actual tax expense in the statement of operations, is as follows:

	Year ended December 31,		
	2016	2015	2014
Net income before taxes	\$11,382	\$12,224	\$17,474
Statutory tax expenses	1,821	3,239	4,631
Effect of Approved or Preferred Enterprises status in Israel	136	(7,807)	(8,639)
Permanent differences, including difference between the basis of measurement of income reported for tax purposes and the basis of measurement of income for financial reporting purposes – net	588	1,377	776
Different tax rates of deferred taxes	(104)	-	1,839
Deferred taxes on carryforward tax losses for which valuation allowance was provided	-	-	(39)
Effect of foreign operations taxed at various rates	(657)	(530)	(31)
Adjustments for previous years tax	(135)	-	-
Change in valuation allowance	11	-	42
Other	78	220	243
	(83)	(6,740)	(5,809)
Actual tax expense (benefit)	\$1,738	\$(3,501)	\$(1,178)

## H. Effective Tax Rates:

The Company's effective tax rates differ from the statutory rates applicable to the Company for tax year 2016 due primarily to effect of Preferred Enterprises status and in 2015 and 2014 due primarily to effect of Approved Enterprise status.

## I. Tax Assessments:

The Company has either received final tax assessments or the applicable statute of limitations rules have become effective through tax year 2011. Two subsidiaries received final tax assessments through tax year 2012. The other subsidiaries did not receive final tax assessments since their incorporation.

## J. Undistributed earnings of foreign subsidiaries:

We consider the earnings of certain subsidiaries to be indefinitely invested outside the Israel on the basis of estimates that future domestic cash generation will be sufficient to meet future domestic cash needs and the Company's specific plans for reinvestment of those subsidiary earnings. We have not recorded a deferred tax liability of approximately \$741 related to the Israel income taxes of undistributed earnings of foreign subsidiaries indefinitely invested outside the Israel. Should we decide to repatriate the foreign earnings, we would need to adjust the Company's income tax provision in the period we determined that the earnings will no longer be indefinitely invested outside the Israel.





## NOVA MEASURING INSTRUMENTS LTD.

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## NOTE 10 - INCOME TAXES (Cont.)

## K. Uncertain Tax Positions:

The taxation of the Company's business is subject to the application of multiple and sometimes conflicting tax laws and regulations as well as multinational tax conventions. The application of tax laws and regulations is subject to legal and factual interpretation, judgment and uncertainty.

In addition, the Company classifies interest and penalties recognized in the financial statements relating to uncertain tax position under the income taxes line item.

Tax laws themselves are subject to change as a result of changes in fiscal policy, changes in legislation and the evolution of regulations and court rulings. Consequently, taxing authorities may impose tax assessments or judgments against the Company that could materially impact its tax liability and/or its effective income tax rate.

The Company believes that it has adequately provided for any reasonably foreseeable outcomes related to tax audits and settlement. The final tax outcome of its tax audits could be different from that which is reflected in the Company's income tax provisions and accruals. Such differences could have a material effect on the Company's income tax provision and net income in the period in which such determination is made.

The following table summarizes the changes in uncertain tax positions:

	As of December 31,	
	2016	2015
Balance at the beginning of the year	\$ 1,165	\$ 651
Increase (decrease) related to prior year tax positions, net	37	(241 )
Increase related to current year tax positions	131	755
Balance at the end of the year	\$ 1,333	\$ 1,165

## L. Income from Other Sources in Israel:

Income not eligible for benefits under the Approved and Preferred Enterprise Laws mentioned in "B" above are taxed at the corporate tax rate of 25% in 2016 and 26.5% in 2015 and 2014, respectively. Effective January 1, 2017 the tax rate will be 24%.

## NOTE 11 - GEOGRAPHIC AREAS AND MAJOR CUSTOMERS

## A. Sales by Geographic Area (as Percentage of Total Sales):

	Year ended December 31,		
	2016	2015	2014
	%	%	%
Taiwan, R.O.C.	45	44	45
USA	9	14	26
Korea	16	19	11

China	19	6	4
Other	11	17	14
Total	100	100	100

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## NOTE 11 - GEOGRAPHIC AREAS AND MAJOR CUSTOMERS (Cont.)

## B. Sales by Major Customers (as Percentage of Total Sales):

	Year ended December 31,		
	2016	2015	2014
	%	%	%
Customer A	34	31	36
Customer B	11	14	9
Customer C	11	8	5
Customer D	11	9	7
Customer E	10	1	-
Others	23	37	43
Total	100	100	100

## C. Assets by Location:

Substantially all fixed assets are located in Israel.

## NOTE 12 - TRANSACTIONS AND BALANCES WITH RELATED PARTIES

The total directors' fees (including the chairman of the Board) for the year 2016 amounted to \$267 (2015 - \$266, 2014 - \$247). The number of stock options granted to directors in 2016 amounted to 135,000.

## NOTE 13 - FINANCIAL INSTRUMENTS

## A. Hedging Activities:

The Company enters into forward contracts, and currency options to hedge its balance sheet exposure as well as certain future cash flows in connection with certain operating expenses (mainly payroll expense) and forecast transactions which are expected to be denominated in New Israeli Shekel ("NIS"). The Company is exposed to losses in the event of non-performance by counterparties to financial instruments; however, as the counterparties are major Israeli banks, credit risk is considered immaterial. The Company does not hold or issue derivatives for trading purposes. The notional amounts of the hedging instruments as of December 31, 2016 and December 31, 2015 were \$54,789, and \$58,718 respectively. The terms of all of these currency derivatives are less than one year.

## B. Derivative Instruments

The fair value of derivative contracts as of December 31, 2016 and December 31, 2015 was as follows:

Derivative Assets Reported in Other Current Assets December 31,		Derivative Liabilities Reported in Other Current Liabilities December 31,	
2016	2015	2016	2015
\$ -	\$ -	\$ 58	\$ 114

Derivatives designated as hedging instruments in cash flow  
hedge

The impact of derivative instrument on total operating expenses in the year ended December 31, 2016, 2015 and 2014  
was:

	Year ended December 31,		
	2016	2015	2014
Gain (loss) on derivative instruments	\$ 50	\$ (1,205 )	\$ (126 )

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SIGNATURES

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

NOVA MEASURING INSTRUMENTS  
LTD.

By: /s/ Eitan Oppenheim  
Eitan Oppenheim  
President and Chief Executive Officer

Date: March 3, 2017

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EXHIBIT INDEX

Number Description

- 1.1 Amended and Restated Articles of Association (incorporated by reference to Exhibit 3.1 to the Company's Registration Statement on Form S-8 filed with the Securities and Exchange Commission on October 25, 2012 (File No. 333-184585)).
- 4.2 2007 Incentive Plan, as amended (incorporated by reference to Exhibit 4.2 to the Company's Annual Report on Form 20-F filed with the Securities and Exchange Commission on February 25, 2015).
- 4.3 A form of amended Indemnification Letter Agreement between the Company and its present and future directors and officers (incorporated by reference to Appendix B to Exhibit 99.1 of the Company's Report on Form 6-K filed with the Securities and Exchange Commission on May 21, 2012).
- 4.4 Summary of lease agreement dated May 28, 2000, as amended and supplemented on August 21, 2000, February 20, 2003, November 1, 2005, May 7, 2007, October 30, 2010, May 15, 2011, June 15, 2012, July 5, 2012, February 28, 2013, December 31, 2014, October 1, 2015 and May 25, 2016 (filed herewith).
- 4.5 Agreement and Plan of Merger dated March 11, 2015 by and among Nova Measuring Instruments Ltd., ReVera Incorporated, Neptune Acquisition Inc., and the Representative (named therein) (incorporated by reference to Exhibit 4.5 to the Company's Annual Report on Form 20-F filed with the Securities and Exchange Commission on February 29, 2016).
- 8.1 List of Subsidiaries (filed herewith).
- 12.1 Certification required by Rule 13a-14(a) of the Securities Exchange Act of 1934, as amended (filed herewith).
- 12.2 Certification required by Rule 13a-14(a) of the Securities Exchange Act of 1934, as amended (filed herewith).
- 13.1 Certification Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (filed herewith).
- 13.2 Certification Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (filed herewith).
- 15.1 Consent of Kost Forer Gabbay & Kasierer (filed herewith).
- 15.2 Consent of Brightman Almagor Zohar & Co. (filed herewith).
- 101 Financial information from Nova Measuring Instruments Ltd.'s Annual Report on Form 20-F for the year ended December 31, 2016 formatted in XBRL (eXtensible Business Reporting Language).