
**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**
Washington, DC 20549

FORM 6-K

**REPORT OF FOREIGN PRIVATE ISSUER
PURSUANT TO RULE 13a-16 OR 15d-16 OF
THE SECURITIES EXCHANGE ACT OF 1934**

May 21, 2012

Commission File No.: 000-30688

NOVA MEASURING INSTRUMENTS LTD.

(Translation of registrant's name into English)

**Building 22 Weizmann Science Park, Rehovot
P.O.B 266
Israel**

(Address of principal executive offices)

Indicate by check mark whether the registrant files or will file annual reports under cover Form 20-F or Form 40-F.

Form 20-F ☒ Form 40-F ☐

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(1): ____

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(7): ____

Indicate by check mark whether by furnishing the information contained in this Form, the registrant is also thereby furnishing the information to the Commission pursuant to Rule 12g3-2 (b) under the Securities Exchange Act of 1934.

Yes ☐ No ☒

Attached hereto and incorporated by reference herein are the following documents:

1. The Registrant's Notice of Annual General Meeting of Shareholders and Proxy Statement for its 2012 Annual General Meeting of Shareholders.
2. Proxy card for use in connection with the Registrant's 2012 Annual General Meeting of Shareholders.

This report on Form 6-K is hereby incorporated by reference into the Registrant's registration statements on Form S-8, filed with the Securities and Exchange Commission on the following dates: September 13, 2000 (File No. 333-12546); March 5, 2002 (File No. 333-83734); December 24, 2002 (File No. 333-102193, as amended by Amendment No. 1, filed on January 5, 2006); March 24, 2003 (File No. 333-103981); May 17, 2004 (File Nos. 333-115554, 333-115555, and 333-115556, as amended by Amendment No. 1, filed on January 5, 2006); March 7, 2005 (File No. 333-123158); December 29, 2005 (File No. 333-130745); September 21, 2006 (File No. 333-137491) and November 5, 2007 (File No. 333-147140).

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

NOVA MEASURING INSTRUMENTS LTD.
(Registrant)

By: */s/ Dror David*

Dror David
Chief Financial Officer

Date: May 21, 2012

Exhibit Index

99.1 Notice of Annual General Meeting of Shareholders and Proxy Statement

99.2 Proxy Card

NOVA MEASURING INSTRUMENTS LTD.

NOTICE OF ANNUAL GENERAL MEETING OF SHAREHOLDERS

Notice is hereby given that the annual general meeting of shareholders (the "Meeting") of Nova Measuring Instruments Ltd. (the "Company") will be held on Thursday, June 21, 2012 at 5:00 p.m. Israel time (10:00 a.m. Eastern time), at the Company's offices, located at Weizmann Science Park, Building 22, Einstein St., Ness Ziona, Israel.

The agenda of the Meeting shall be as follows:

1. Approval and ratification of the re-appointment of Brightman Almagor Zohar & Co., a member of Deloitte Touche Tohmatsu, as the independent auditors of the Company for the period ending at the close of the next annual general meeting;
2. Approval of the amendments to the Company's Amended and Restated Articles of Association in accordance with the proposal attached hereto as Appendix A, effective upon shareholder approval;
3. Re-election of each of Messrs. Michael Brunstein and Alon Dumanis as a director of the Company to hold office until the close of the next annual general meeting;
4. Re-election of Mr. Avi Cohen as a director of the Company to hold office until the close of the next annual general meeting, and classification of Mr. Cohen as an independent director;
5. Re-election of Ms. Naama Zeldis as an external director of the Company;
6. Subject to the approval of Item 2 above, approval of the amended indemnification letter agreement between the Company and its officers and directors; and
7. Approval of a remuneration package to the Company's directors (including external directors and excluding the chairman of the Board of Directors and, unless approved otherwise, excluding any other director who is also an employee of the Company).

In addition, the shareholders will be requested to consider at the Meeting the Company's audited consolidated financial statements for the year ended December 31, 2011.

The approval of each of Items 1, 2, 3, 4, 6 and 7, requires the affirmative vote of the Company's shareholders holding at least a majority of the Company's ordinary shares ("Shares") present, in person or by proxy, and voting on the matter.

The approval of Item 5 requires the affirmative vote of at least a majority of the Shares present, in person or by proxy, and voting on the matter, provided that such a majority includes (i) at least the majority of the total votes of shareholders, who (a) are not controlling shareholders of the Company, or (b) do not have personal interest in the election of Ms. Zeldis (other than a personal interest unrelated to relationships with a controlling shareholder of the Company), present at the Meeting in person or by proxy (votes abstaining shall not be taken into account in counting the above-referenced shareholder votes); or (ii) the total number of Shares of the shareholders mentioned in clause (i) above that are voted against such proposal does not exceed two percent (2%) of the total voting rights in the Company.

Only shareholders of record at the close of business on May 15, 2012 (the "Record Date") will be entitled to receive notice of, and to vote at the Meeting. All shareholders are cordially invited to attend the Meeting in person.

Shareholders who will not attend the Meeting in person may vote with respect to Items 1 through 7 by means of a proxy card and are obliged to complete, sign, date and return the proxy card no later than 48 hours before the time of the Meeting (i.e., 5:00 p.m. (Israel time) on June 19, 2012). Voting will be done by completing the second part of the proxy card. The form of proxy card is available on the websites: www.magna.isa.gov.il or www.maya.tase.co.il. The form of proxy card was also furnished to the Securities and Exchange Commission (the "Commission") on Form 6-K, and is available to the public on the Commission's website at <http://www.sec.gov>.

Shareholders wishing to express their position on an agenda item for this Meeting may do so by submitting a written statement ("Position Statement") to the Company's offices, c/o Ms. Orly Dean, at Weizmann Science Park, Building 22, Einstein St., Ness Ziona, Israel. Any Position Statement received will be furnished to the Commission on Form 6-K, and will be made available to the public on the Commission's website at <http://www.sec.gov> and in addition at <http://www.magna.isa.gov.il> or <http://maya.tase.co.il>. Position Statements should be submitted to the Company no later than May 25, 2012.

A shareholder is entitled to contact the Company directly and receive the text of the proxy card and any Position Statement.

A shareholder, whose Shares are registered with a Tel-Aviv Stock Exchange Ltd. (the "TASE") member and are not registered on the Company's shareholder's register, is entitled to receive from the TASE member who holds the Shares on the shareholder's behalf, by e-mail, for no charge, a link to the text of proxy card and to the Position Statements posted on the Israel Securities Authority website, unless the shareholder notified that he or she is not so interested; provided, that the notice was provided with respect to a particular securities account, prior to the Record Date.

A shareholder, whose Shares are registered with a member of the TASE, is required to prove his share ownership to vote at the Meeting. Such shareholder shall provide the Company with an ownership certificate (as of the Record Date) from that TASE member and is entitled to receive the ownership certificate in the branch of the TASE member or by mail to his address (in consideration of mailing fees only), if the shareholder so requested. Such a request will be made in advance for a particular securities account.

Discussion at the Meeting will be commenced if a quorum is present. A quorum is constituted by two or more shareholders who are present in person or by proxy, or who have delivered to the Company a proxy card indicating their manner of voting, and who hold or represent Shares conferring in the aggregate at least one-third (33.33%) of the voting power in the Company. If a quorum is not present within half an hour of the time designated for the Meeting, the Meeting will be adjourned to Thursday, June 28, 2012, at the same time and place. If a quorum is not present within half an hour of the time designated for the adjourned meeting, any number of shareholders who are present in person or proxy, or who have delivered a proxy card, will constitute a quorum.

The wording of the resolutions to be voted at the Meeting and relevant documents thereto may be inspected at the Company's offices, which are located at the Company's offices in the Weizmann Science Park, Building 22, Einstein St., Ness Ziona, Israel during normal business hours and by prior coordination with Ms. Orly Dean (tel: +972-73-2295621).

By Order of the Board of Directors,

A handwritten signature in dark ink, appearing to read "M. Brunstein", is written over a light gray rectangular background.

Dr. Michael Brunstein,
Chairman of the Board of Directors of the Company

Dated: May 21, 2012

NOVA MEASURING INSTRUMENTS LTD.

Weizmann Science Park
Building 22, Einstein St., Ness Ziona
Israel

PROXY STATEMENT

ANNUAL GENERAL MEETING OF SHAREHOLDERS

TO BE HELD ON JUNE 21, 2012

This Proxy Statement is furnished to the holders of ordinary shares, par value NIS 0.01 per share (the “Shares”), of Nova Measuring Instrument Ltd. in connection with the annual general meeting of shareholders of the Company to be held at the Company’s offices in the Weizmann Science Park, Building 22, Einstein St., Ness Ziona, Israel on Thursday, June 21, 2012 at 5:00 p.m. Israel time (10:00 a.m. Eastern time), and thereafter as it may be adjourned from time to time (the “Meeting”). Unless the context otherwise requires, references in this Proxy Statement to “Nova,” the “Company,” “we” or “our” refer to Nova Measuring Instruments Ltd.

At the Meeting, the following resolutions will be proposed for adoption by the shareholders:

1. Approval and ratification of the re-appointment of Brightman Almagor Zohar & Co., a member of Deloitte Touche Tohmatsu, as the independent auditors of the Company for the period ending at the close of the next annual general meeting;
2. Approval of the amendments to the Company’s Amended and Restated Articles of Association in accordance with the proposal attached hereto as Appendix A, effective upon shareholder approval;
3. Re-election of each of Messrs. Michael Brunstein and Alon Dumanis as a director of the Company to hold office until the close of the next annual general meeting;
4. Re-election of Mr. Avi Cohen as a director of the Company to hold office until the close of the next annual general meeting, and classification of Mr. Cohen as an independent director;
5. Re-election of Ms. Naama Zeldis as an external director of the Company;
6. Subject to the approval of Item 2 above, approval of the amended indemnification letter agreement between the Company and its officers and directors;
7. Approval of a remuneration package to the Company’s directors (including external directors and excluding the chairman of the Board of Directors and, unless approved otherwise, excluding any other director who is also an employee of the Company).

Shareholders Entitled to Vote

Only holders of record of Shares at the close of business on May 15, 2012 (the “Record Date”) are entitled to receive notice of, and to vote at, the Meeting.

As of May 9, 2012, the Company had 26,601,866 issued and outstanding Shares. Each Share is entitled to one vote on each matter to be voted on at the Meeting. The votes of all shareholders voting on a matter are counted and abstentions are not taken into account (other than for quorum purposes).

Proxies

All shareholders who are unable to attend the Meeting in person are requested to complete, date and sign the enclosed form of proxy and return it promptly in the pre-addressed envelope provided. If your shares are held in “street name” (meaning in the name of a bank, broker or other record holder), you must either direct the record holder of your shares on how to vote your shares or obtain a legal proxy from the record holder to vote the shares at the Meeting on behalf of the record holder as well as a statement from such record holder that it did not vote such shares. In order for these shares to be counted, a duly executed proxy must be received by the Company’s Transfer Agent or by the Company, at its registered offices, c/o Ms. Orly Dean, at Weizmann Science Park, Building 22, Einstein St., Ness Ziona, Israel, no later than 48 hours prior to the Meeting, that is on or before June 19, 2012 at 5:00 p.m., Israel time. Shares represented by proxy received after such time will not be counted. Any such proxy may be revoked by such holders at any time before it is exercised by: (i) delivering written revocation or a later dated proxy to Ms. Orly Dean; or (ii) attending the Meeting and voting in person.

Upon the receipt of a properly executed proxy in the form enclosed herewith, the persons named as proxies therein will vote the Shares covered thereby in accordance with the directions of the shareholder executing such proxy. Subject to applicable law and the rules of The NASDAQ Stock Market, in the absence of such instructions, the Shares represented by properly executed and received proxies will be voted "FOR" all of the proposed resolutions to be presented at the Meeting for which the Company's board of directors (the "Board") recommends a "FOR", other than Item 5.

Expenses and Solicitation

Shareholders wishing to express their position on an agenda item for this Meeting may do so by submitting a written statement ("Position Statement") to the Company's offices, c/o Ms. Orly Dean, at Weizmann Science Park, Building 22, Einstein St., Ness Ziona, Israel. Any Position Statement received will be furnished to the Securities and Exchange Commission (the "Commission") on Form 6-K, and will be made available to the public on the Commission's website at <http://www.sec.gov> and in addition at <http://www.magna.isa.gov.il> or <http://maya.tase.co.il>.

Position Statements should be submitted to the Company no later than May 25, 2012.

We know of no other matters to be submitted at the Meeting other than as specified herein. If any other business is properly brought before the Meeting, the persons named as proxies may vote in respect thereof in accordance with their best judgment.

These proxy and proxy card shall also serve as a voting deed (ktav hatzba'a) as such term is defined under the Israeli Companies Law, 5759-1999 (the "Companies Law").

The Company expects to solicit proxies by mail and to mail this proxy statement and the accompanying proxy card to shareholders on or about May 21, 2012. This proxy statement and the accompanying proxy card are also available to the public through one the following websites <http://www.magna.isa.gov.il>, <http://maya.tase.co.il> or <http://www.sec.gov>.

All costs of solicitation of proxies will be borne by the Company. In addition to solicitations by mail, certain of the Company's directors, officers and regular employees, without additional remuneration, may solicit proxies by telephone, telegraph and personal interviews. Brokers, custodians and fiduciaries will be requested to forward proxy soliciting material to the beneficial owners of Shares held in their names, and the Company will reimburse them for their reasonable out-of-pocket costs.

Quorum and Voting Requirements

The quorum required consists of two or more shareholders who are present in person or proxy (or who have delivered a proxy card indicating their manner of voting) and who together hold or represent Shares conferring in the aggregate at least one third (33.33%) of the voting power in the Company. If a quorum is not present within one half hour of the time designated for the Meeting, the Meeting shall be adjourned to Thursday, June 28, 2012, at the same time and place. If a quorum is not present within one half hour of the time designated for the adjourned Meeting, any number of shareholders who are present in person or by proxy, or who have delivered a proxy card, shall constitute a quorum.

The approval of each of Items 1, 2, 3, 4, 6 and 7, requires the affirmative vote of the Company's shareholders holding at least a majority of the Shares present, in person or by proxy, and voting on the matter. The approval of Item 5 requires the affirmative vote of at least a majority of the Shares present, in person or by proxy, and voting on the matter, provided that such a majority includes (i) at least the majority of the total votes of shareholders, who (a) are not controlling shareholders of the Company, or (b) do not have personal interest in the election of Ms. Zeldis (other than a personal interest unrelated to relationships with a controlling shareholder of the Company), present at the Meeting in person or by proxy (votes abstaining shall not be taken into account in counting the above-referenced shareholder votes); or (ii) the total number of Shares of the shareholders mentioned in clause (i) above that are voted against such proposal does not exceed two percent (2%) of the total voting rights in the Company.

Under the Companies Law, a personal interest means a personal interest of a person in an act or transaction of a company, including: (i) a personal interest of that person's relative (i.e. spouse, brother or sister, parent, grandparent, child as well as child, brother, sister or parent of such person's spouse or the spouse of any of the above); or (ii) a personal interest of another entity in which that person or his or her relative (as defined above) holds 5% or more of such entity's issued shares or voting rights, has the right to appoint a director or the chief executive officer of such entity, or serves as director or chief executive officer of such entity, including the personal interest of a person voting pursuant to a proxy whether or not the proxy grantor has a personal interest. A personal interest resulting merely from holding the Company's shares of stock will not be deemed a personal interest.

Reporting Requirements

We are subject to the information reporting requirements of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), applicable to foreign private issuers. We fulfill these requirements by filing reports with the Commission. Our filings with the Commission may be inspected without charge at the Commission's Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. Information on the operation of the Public Reference Room can be obtained by calling the Commission at 1-800-SEC-0330. Our filings are also available to the public on the Commission's website at <http://www.sec.gov>.

As a foreign private issuer, we are exempt from the rules under the Exchange Act related to the furnishing and content of proxy statements. The circulation of this notice and proxy statement should not be taken as an admission that we are subject to the proxy rules under the Exchange Act.

AFTER CAREFUL CONSIDERATION, OUR BOARD RECOMMENDS THAT SHAREHOLDERS VOTE "FOR" THE PROPOSALS DESCRIBED IN THIS PROXY STATEMENT.

ITEM 1: APPROVAL AND RATIFICATION OF THE RE-APPOINTMENT OF BRIGHTMAN ALMAGOR ZOHAR & CO., A MEMBER OF DELOITTE TOUCHE TOHMATSU, AS THE INDEPENDENT AUDITORS OF THE COMPANY FOR THE PERIOD ENDING AT THE CLOSE OF THE NEXT ANNUAL GENERAL MEETING

Under the Companies Law and the Company's Amended and Restated Articles of Association, the shareholders of the Company are authorized to appoint the Company's independent auditors. Under the Amended and Restated Articles of Association of the Company, the Board (or a committee, if it is so authorized by the Board) is authorized to determine the independent auditor's remuneration. In addition, the approval by the Company's Audit Committee of the independent auditor's re-appointment and remuneration is required under the corporate governance rules of The NASDAQ Stock Market.

Following the recommendation by the Company's Audit Committee and the Board, it is proposed that Brightman Almagor Zohar & Co., a member of Deloitte Touche Tohamtsu, be re-appointed as the independent auditors of the Company for the period ending at the close of the next annual general meeting. Such auditors served as the Company's auditors for fiscal year 2011 and have no relationship with the Company or with any affiliate of the Company, except as described in the Company's Annual Report on Form 20-F for the fiscal year ended December 31, 2011 as filed with the Commission (the "Annual Report").

Information on fees paid to the Company's independent public accountants may be found in the Annual Report.

At the Meeting, it is proposed that the following resolution be adopted:

"RESOLVED, to approve and ratify the reappointment of Brightman Almagor Zohar & Co., a member of Deloitte Touche Tohamtsu, as the independent auditors of the Company for the period ending at the close of the next annual general meeting."

ITEM 2: APPROVAL OF THE AMENDMENTS TO THE COMPANY'S AMENDED AND RESTATED ARTICLES OF ASSOCIATION IN ACCORDANCE WITH THE PROPOSAL ATTACHED HERETO AS APPENDIX A, EFFECTIVE UPON SHAREHOLDER APPROVAL.

At the Meeting, shareholders will be asked to approve the amendments to the Company's Amended and Restated Articles of Association in accordance with the proposal attached hereto as Appendix A, effective upon shareholder approval.

The proposed revisions include amendments resulting from the latest amendments to the Companies Law, authorizing the grant by the Company of indemnification against monetary liability imposed in favor of injured parties in an administrative procedures under the Israeli Securities Law of 1968 (the "Securities Law") and expenses related to such procedures, including reasonable litigation expenses and attorneys' fees.

"RESOLVED, to approve the amendments to the Company's Amended and Restated Articles of Association in accordance with the proposal attached hereto as Appendix A, effective upon shareholder approval."

ITEM 3: RE-ELECTION OF EACH OF MESSRS. MICHAEL BRUNSTEIN AND ALON DUMANIS AS A DIRECTOR OF THE COMPANY TO HOLD OFFICE UNTIL THE CLOSE OF THE NEXT ANNUAL GENERAL MEETING.

At the Meeting, shareholders will be asked to approve the re-election of each of Messrs. Michael Brunstein, Alon Dumanis as a director of the Company to hold office until the close of the next annual general meeting.

There are currently three directors serving on the Board who are not external directors, two of which are standing for re-election under this Item 3 (the additional director who is not an external director, Mr. Avi Cohen, is standing for re-election under Item 4). All of our directors attended 85% or more of the meetings of the Board and Board committees on which they served since last year annual general meeting.

Herein below are details on those directors currently serving on the Board, and standing for reelection:

Dr. Michael Brunstein (68) 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. At present, Dr. Brunstein serves as a board member of Ham-let Ltd., a company listed on the TASE. He is a chairman and serves on boards of directors of several privately owned companies. 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.

Dr. Alon Dumanis (62) has served as a director of Nova since 2002. He is 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. Dr. Dumanis is currently a chairman of Aposense (TASE-APOS), XSight System, Softlib, Bondex, Clariton, DNR Imaging, and a member of the board of directors of Spectronix (TASE-SPCT), Collplant (TASE-CLPT), Ice Cure (TASE-ICCM), and other Hi Tech companies in Docor's investment portfolio. Dr. Dumanis is a former member of the board of directors of Tadiran Communications (TASE-TDCM), of El Al Israel Airlines (TASE-LY), of Protalix Biotherapeutics (NYSE-PLX), and a former member of the board of directors of Inventech Investments Co. Ltd. (TASE-IVTC). 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

Each of the director nominees has certified to the Company that he complies with all requirements under the Israeli Companies Law for serving as a director.

At the Meeting, it is proposed that the following resolution be adopted:

“**RESOLVED**, to approve the re-election of each of Messrs. Michael Brunstein and Alon Dumanis as a director of the Company to hold office until the close of the next annual general meeting.”

ITEM 4: RE-ELECTION OF MR. AVI COHEN AS A DIRECTOR OF THE COMPANY TO HOLD OFFICE UNTIL THE CLOSE OF THE NEXT ANNUAL GENERAL MEETING, AND CLASSIFICATION OF MR. COHEN AS AN INDEPENDENT DIRECTOR

At the Meeting, shareholders will be asked to approve the re-election of Mr. Avi Cohen as a director of the Company to hold office until the close of the next annual general meeting, and to classify him as an independent director under the provisions of the Companies Law.

Mr. Cohen has certified to the Company that he complies with all requirements under the Companies Law for serving as an independent director. Such certification will be available for inspection at the Meeting.

Herein below is information regarding Mr. Cohen:

Mr. Avi Cohen (59) has served as a director of Nova since 2008. Mr. Cohen serves as President at Orbit Technologies, a public company traded on the TASE. Until April 1, 2012, Mr. Cohen served as the Chief Executive Officer at of Orbit Technologies. Orbit is a leading designer, developer, and manufacturer of a wide range of advanced communication systems for the commercial and defense markets. Prior to joining Orbit in December 2008, Mr. Cohen served as Chief Operating Officer and Deputy to the CEO at 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 he 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.

At the Meeting, it is proposed that the following resolution be adopted:

“**RESOLVED**, to approve the re-election of Mr. Avi Cohen as a director of the Company to hold office until the close of the next annual general meeting, and the classification of Mr. Cohen as an independent director.”

ITEM 5: RE-ELECTION OF MS. NAAMA ZELDIS AS AN EXTERNAL DIRECTOR OF THE COMPANY

At the Meeting, shareholders will be asked to re-elect Ms. Naama Zeldis as an External Director of the Company for an additional three year term. Ms. Naama Zeldis has served as an external director of the Company since 2006 and was re-elected in 2009 for an additional three-year term.

Herein below are details regarding Ms. Naama Zeldis:

Ms. Naama Zeldis was elected as the Company's external director in accordance with the provisions of the Companies Law in 2006, and was re-elected for an additional term in 2009. Ms. Zeldis has been serving as Chief Financial Officer of Netafim Ltd. since December 2005. Prior to that, she served as Chief Financial Officer of EDS Israel, Radguard, and Director of Finance of RAD Data Communications. Ms. Zeldis is a former member of the board of directors and of the audit committee of Metalink. Ms. Zeldis holds a B.A. in Economics and an M.A. in Business Administration, majoring in Financing, from the Hebrew University of Jerusalem and a B.A. in Accounting from Tel-Aviv University.

Ms. Naama Zeldis has certified to the Company that she complies with all requirements under the Israeli Companies Law for serving as an external director. The Board has determined that Ms. Naama Zeldis qualifies as an audit committee financial expert.

At the Meeting, it is proposed that the following resolution be adopted:

“**RESOLVED**, to re-elect Ms. Naama Zeldis as an External Director of the Company for an additional three-year term.”

ITEM 6: SUBJECT TO APPROVAL OF ITEM 2, APPROVAL OF AMENDED INDEMNIFICATION LETTER AGREEMENT BETWEEN THE COMPANY AND ITS OFFICERS AND DIRECTORS

At the Meeting, shareholders will be asked to approve the form of indemnification letter agreement which will be entered between the Company and its present and future directors and officers, in the form attached hereto as Appendix B. This form of indemnification agreement replaces a current form of indemnification agreement that was adopted by the Company's shareholders in August 2006. In light of recent amendments to the Companies Law and the Securities Law, it is proposed to adopt a new form of indemnification agreement that, among others, addresses these amendments and provides indemnification as well against monetary liability imposed in favor of injured parties in an administrative procedures under the Securities Law and expenses related to such procedures, including reasonable litigation expenses and attorneys' fees.

Pursuant to the terms of the indemnification letter agreement, the aggregate indemnification amount that the Company is obligating to pay, whether in advance or post factum, under all the indemnification letters that shall be issued by the Company pursuant shall not exceed 25% (twenty-five percent) of the Company's shareholders equity, according to the most recent Company consolidated financial statements prior to the date of the indemnification payment.

The Company's Audit Committee and the Board approved the proposed form of indemnification letter agreement, and, pending approval by the shareholders, the Company intends to enter into indemnification agreements with its directors and officers.

The Board believes that entering into indemnification agreements serves the best interests of the Company and its shareholders by strengthening its ability to attract and retain the services of knowledgeable and experienced persons as directors and officers who, through their efforts and expertise, can make a significant contribution to the Company's success. The indemnification agreements are intended to complement the indemnity protection available under applicable law and any policies of insurance the Company may maintain.

The Company may, by action of its Board, provide indemnification to employees and agents of the Company with the same scope and effect as the foregoing indemnification of directors and officers.

Until the entry into the new indemnification agreements in the form attached, following the approval by the Company's shareholders, directors' and officers' indemnification rights shall continue to be governed by the current executed indemnification letter agreements, previously approved by the shareholders in August 2006.

The Securities and Exchange Commission has expressed its opinion that indemnification of directors, officers and controlling persons of the Company against liabilities arising under the Securities Act of 1933, as amended (the “Securities Act”), is against public policy as expressed in the Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Company of expenses incurred or paid by a director or officer of the Company in the successful defense of the action, suit or proceeding) is asserted by the director or officer in connection with securities which may have been registered, the Company will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court or appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Act and will be governed by the final adjudication of such issues.

It is proposed that the following resolutions be adopted at the Meeting:

“**RESOLVED**, subject to the approval of Item 2 above, that the form of indemnification agreement with regard to all current directors and officers, and all future directors and officers, is hereby approved.”

ITEM 7: APPROVAL OF A REMUNERATION PACKAGE TO THE COMPANY'S DIRECTORS (INCLUDING EXTERNAL DIRECTORS AND EXCLUDING THE CHAIRMAN OF THE BOARD OF DIRECTORS AND, UNLESS APPROVED OTHERWISE, EXCLUDING ANY OTHER DIRECTOR WHO IS ALSO AN EMPLOYEE OF THE COMPANY).

The current compensation arrangement of the Company's directors (excluding the chairman of the Board and, unless approved otherwise, any other director who is also an employee of the Company), as approved by our shareholders at the 2007 and 2008 annual general meetings, includes:

1. An annual payment of US\$12,000 (in an equivalent amount in NIS), subject to the minimal and maximal payment restrictions applicable to the Company 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):
 - a. for each meeting that the director or external director attends in person, an amount of US\$600 (in an equivalent amount in NIS);
 - b. for each execution of a written consent in lieu of a meeting, an amount of US\$300 (in an equivalent amount in NIS); and
 - c. for each meeting that the director or external director attends by teleconference, an amount of US\$360 (in an equivalent amount in NIS).
3. An annual award of an option to purchase up to 10,000 ordinary shares 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. The exercise price of each option shall be determined pursuant to the Company's Equity Based Compensation Policy.

At the meeting, our shareholders will be asked to approve the following remuneration update to the Company's directors (including external directors and excluding the chairman of the Board and any other director who is also an employee of the Company):

- I. An update of the annual payment to 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 Regulations to be paid to external directors.
- II. The payments for directors' attendance in meetings and teleconferences, and for execution of written consents (as listed in Section 2a.-2c. above in this Item 7) shall not be revised, except that in each case, the equivalent amount in NIS shall be paid 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).
- III. All other compensation package components as approved by the Company's shareholders in 2007 and 2008 (i.e. an annual award of an option to purchase up to 10,000 ordinary shares with an exercise price of as determined pursuant to the Company's Equity Based Compensation Policy, as listed in Section 3 above in this Item 7) shall not be revised.

We are updating the annual payment in order to meet the applicable minimum pay to external directors under the Regulations. Our Board has resolved that all members of the Board (other than the chairman of the Board and, unless approved otherwise, any other director who is also an employee of the Company) shall receive the same compensation package.

It is proposed that the following resolutions be adopted at the Meeting:

"RESOLVED, to approve a remuneration package to the Company's directors (including external directors and excluding the chairman of the Board and any other director who is also an employee of the Company), as described in this Item 7".

OTHER BUSINESS

Management knows of no other business to be acted upon at the Meeting. However, if any other business properly comes before the Meeting, the persons named in the enclosed proxy will vote upon such matters in accordance with their best judgment.

By the Order of the Board of Directors,

A handwritten signature in dark ink, appearing to read "M. Brunstein", is written over a light gray rectangular background.

Michael Brunstein
Chairman of the Board of Directors of the Company

Dated: May 21, 2012

**AMENDMENT NO. 1
TO
AMENDED AND RESTATED ARTICLES OF ASSOCIATION
OF
NOVA MEASURING INSTRUMENTS LTD.**

- I. In Article 58, the last sentence "The directors may waive the necessity of such notice either beforehand or retrospectively" shall be deleted and replaced with the following sentence: "In urgent cases, a majority of the members of the Board may decide to hold a meeting without such notice."
- II. Article 66 shall be deleted.
- III. At the end of Article 72.2, the phrase " , or in connection with a financial sanction." shall be added.
- IV. At the end of Articles 72.4, the phrase " , including, without limitation, matters referenced in Section 56H(b)(1) of the Securities Law." shall be added.
- V. At the end of Articles 73.4, the phrase " , including, without limitation, matters referenced in Section 56H(b)(1) of the Securities Law." shall be added.

_____, 2011

Dear Mr./Ms. _____:

Letter of Indemnification

1. The Company hereby undertakes to indemnify you for any obligation imposed on you or expense spent by you as a result of your capacity as an Officer of the Company, as defined under the Israeli Companies Law 5759-1999 (the "Companies Law") (hereinafter: the "Officer"), subject to the applicable law, the Company's Amended and Restated Articles of Association and as follows:
 - 1.1. A monetary obligation imposed on you or incurred by you in favor of another person pursuant to a judgment, including a judgment given in settlement or a court approved settlement or arbitrator's award, subject to Section 1.6 below.
 - 1.2. Reasonable litigation expenses, including attorney's fees, incurred by you in consequence of an investigation or proceeding conducted or filed against you by an authority that is authorized to conduct such investigation or proceeding, provided that such investigation or proceeding: (i) concludes without the filing of an indictment against you and without imposition of a monetary liability in lieu of criminal proceedings; (ii) concludes with the imposition of a monetary payment on you in lieu of criminal proceedings, but the criminal offense in question does not require the proof of criminal intent; or (iii) in connection with a monetary sanction.
 - 1.3. Reasonable litigation expenses, including attorney's fees, incurred by you or which you were obligated to pay by a court, in proceedings filed against you by the Company or on its behalf or by another person, or in a criminal charge of which you were acquitted, or in a criminal charge of which you were convicted of an offense that does not require proof of criminal intent.
 - 1.4. Any monetary obligation imposed on you in favor of all the injured parties by a breach in an Administrative Procedure, as stated in Section 52(54)(a)(1)(a) to the Securities Law, 5728-1968 (the "Securities Law"). The term "Administrative Procedure" shall have the following meaning: a procedure according to Chapter 8C (Financial Sanctions), 8D (Administrative Enforcement Measures Imposition by the Administrative Enforcement Committee) or 9A (Arrangement for Avoidance from or Cessation of Procedures) to the Securities Law, as amended from time to time.
 - 1.5. Expenses expended by you with respect to an Administrative Procedure (as defined in Section 1.4 above) relating to you, including reasonable litigation expenses, which include attorneys' fees.
 - 1.6. With regards to Section 1.1, this obligation to indemnify is limited to the events detailed in Annex A which according to the Board of Directors' opinion, are foreseen in light of the Company's actual activities, and which shall not exceed 25% (twenty five percent) of the Company's shareholders equity, as detailed below in Section 1.7. The Board of Directors has determined that such amounts and criteria set by the Board of Directors are reasonable under the circumstances.
 - 1.7. The aggregate indemnification amount that the Company will pay to all of its Officers, whether in advance or post factum, under all the indemnification letters that shall be issued by the Company pursuant to this Letter of Indemnification, shall not exceed 25% (twenty five percent) of the Company's shareholders equity, according to the most recent Company consolidated financial statements prior to the date of the indemnification payment (hereinafter the "Maximum Indemnification Amount").
 - 1.8. In the event the indemnification amount the Company is required to pay its Officers, as set forth above, exceeds the Maximum Indemnification Amount or its remaining balance (as existing at that time), the Maximum Indemnification Amount or its remaining balance will be divided among the Officers entitled to indemnification, so that the amount of indemnification each of them will actually receive will be calculated in accordance with the ratio between the amount for which each individual may be indemnified and the aggregate amount for which all the relevant Officers may be indemnified.

- 1.9. **For the avoidance of doubt, it is hereby clarified that nothing contained in this Letter of Indemnification or in the above resolutions derogate from the Company's right, subject to Board of Directors approval, to indemnify you post factum for any amounts which you may be obligated to pay as set forth in Section 1 above without the limitations set forth in Section 1.7 above. The aforesaid shall however not be construed as an obligation of the Company to indemnify you after the fact.**
2. The Company shall act according to this Letter of Indemnification as detailed above in regards to any other company controlled, directly or indirectly, by the Company (a "Subsidiary") with respect to the periods such other company is a Subsidiary or in your capacity as a director, or observer at board of director meetings, of a company not controlled by the Company but where your appointment as a director or observer results from the Company's holdings in such company ("Affiliate").
3. Notwithstanding the above, in no event will the Company indemnify you for the following events:
- 3.1. a breach of fiduciary duty, except for a breach of a fiduciary duty to the Company, a Subsidiary or an Affiliate while acting in good faith and having reasonable cause to assume that such act would not harm the Company's interests;
- 3.2. a reckless or intentional breach of duty of care that was not done negligently;
- 3.3. an action taken with the intent of making personal gain unlawfully;
- 3.4. a fine, civil fine, a monetary sanction or forfeit imposed upon you for an offense;
- 3.5. a counterclaim made by the Company or in its name in connection with a claim against the Company filed by you.
4. The Company will make available all amounts needed in accordance with section 1 above on the date on which such amounts are first payable by you.
5. The Company shall advance to you all expenses incurred by you in connection with a claim on the date on which such amounts are first payable, but has no duty to advance payments within less than fourteen (14) days following delivery of a written request therefor. The foregoing shall not apply in circumstances where the Company shall take upon itself to manage the proceedings as provided herein below.
6. As part of the aforementioned undertaking and subject to Sections 1.1 – 1.5 above, the Company will make available to you any security or guarantee that you may be required to post in accordance with an interim decision given by a court or an arbitrator, including for the purpose of substituting liens imposed on your assets.
7. The Company will indemnify you, in accordance with this Letter of Indemnification, even if at the relevant time of indebtedness you are no longer an Officer of the Company or of a Subsidiary or a director or board observer of an Affiliate, provided that the obligations are in respect of actions taken by you while you were an Officer and/or board observer, as aforesaid, and in such capacity, including if taken prior to the above resolutions.
8. No payment hereunder shall be made to you in connection with any event for which payment is actually paid to you under a valid and collectible insurance policy or under a valid and enforceable indemnity clause or agreement (excluding this Letter of Indemnification), except in respect of any excess beyond the payment under such insurance, clause or agreement.
9. Additionally, it is emphasized that this Letter of Indemnification is not to be construed as an agreement for the benefit of any third party, including any insured party, and it is not transferable, and no insurer will have the right to request that the Company participate in any payment for which the insurer is obligated under any insurance agreement to which it is a party, other than a deductible that is specified in such agreement.

10. Subject to this Letter of Indemnification, the indemnification will, in each case, cover all sums of money (100%) that you will be obligated to pay, in those circumstances for which indemnification is permitted under law and under this Letter of Indemnification.
11. The Company will be entitled to any amount collected from a third party in connection with liabilities indemnified hereunder.
12. Indemnification by the Company as detailed in this Letter of Indemnification will also be subject to fulfilling the following procedures:
- 12.1. You will inform the Company of every legal or administrative proceeding that may be brought against you in connection with any event that may entitle you to indemnification, and of every warning made to you in writing, regarding legal or administrative proceedings that may be commenced against you, and this will be done in a timely manner, immediately after you first become aware of such, and you will provide to the Company or to whom the Company will instruct you, all documents in connection with such proceedings.
- Similarly, you must advise the Company on an ongoing and current basis concerning all events which you suspect may give rise to the initiation of legal or administrative proceedings against you.
- 12.2. The Company will, within a reasonable period of time (or within a shorter period of time if the matter requires filing a statement of defense or a response to a proceeding), take upon itself the handling of your defense in the legal proceeding and/or entrust such handling to any prominent attorney the Company may select at its discretion for this purpose, subject to the fulfillment of all the following conditions: (a) you have informed the Company as provided in Section 12.1 above; and (b) the legal proceedings against you solely involves a claim for monetary damages. The Company and/or the above-mentioned attorney will be entitled to act within their exclusive discretion to bring the proceeding to a close; the appointed attorney will owe his/her duty of loyalty to the Company and to you. In the event that a conflict of interests arises between you and the Company, the attorney will so inform the Company of any such conflict and you, subject to the Company's approval, which approval not to be unreasonably withheld, will have the right to appoint an attorney on your behalf, and the provisions of this Letter of Indemnification will apply to expenses you may incur as a result of such appointment. If the Company decides to settle or arbitrate a monetary obligation, the Company will be entitled to do so, as long as the lawsuit or the threat of a lawsuit against you will be fully withdrawn. At the request of the Company you will sign any document that will empower the Company and/or attorney as mentioned above, to act on your behalf with regard to your defense in the above-mentioned proceedings and to represent you in all matters relating to these proceedings, as set forth above. Without derogating from the above provision with respect to a conflict of interests, in any event where, on reasonable grounds, the attorney chosen by the Company is unacceptable to you, you shall be entitled to appoint your own attorney and the provisions of this Letter of Indemnification will apply to expenses you may incur as a result, provided, however, that the proposed appointment of such attorney including the identity and terms of engagement of such attorney be brought immediately to the attention of the Company for its *prior* written approval, which approval not to be unreasonably withheld.
- 12.3. You will cooperate with the Company and/or with any attorneys as set forth above in every reasonable manner required of you by any of them in connection with the handling of such legal proceedings, all subject to this Letter of Indemnification.
- 12.4. Whether or not the Company acts as specified in Section 12.2 above, the Company will cover all other expenditures and payments that are mentioned in this Letter of Indemnification, so that you will not be required to pay or to finance them yourself.
- 12.5. Your indemnification in connection with any legal proceeding against you, as set forth in this Letter of Indemnification, will not be enforceable in connection with amounts you may be required to pay as a result of a settlement or arbitration unless the Company agrees in writing to the settlement or to the entering into the arbitration proceeding, as the case may be.

If required by law, the Company's authorized organs will consider the request for indemnification and the amount thereof and will determine if you are entitled to indemnification and the amount thereof.

- 12.6. If, for any reason, the Company has decided not to appoint an attorney, as detailed in Section 12.2 above, you will have the right to appoint an attorney of your choice, provided that the proposed appointment of such attorney including the identity and terms of engagement of such attorney be brought immediately to the attention of the Company for its prior written approval, which approval not to be unreasonably withheld. If you do not inform the Company regarding your choice of attorney in compliance with the above, the Company will have the right in its discretion to appoint an attorney on your behalf.
13. This Letter of Indemnification is issued after receipt by the Company of all required approvals under law and the Amended and Restated Articles of Association of the Company. Should any additional approval be required, the Company will exert its best effort to obtain such approval.
14. If the Company pays to you, or on your behalf, any amount in connection with a legal proceeding as provided in this Letter of Indemnification, and thereafter it is determined that you are not entitled to such indemnification from the Company as detailed in this Letter of Indemnification, the sums paid by the Company will be considered a loan that was extended to you by the Company, which will be linked to the Consumer Price Index plus interest at the rate established in the Income Tax Regulations (Establishment of Interest Rates) – 1985, as may be in effect from time to time, and you will be required to repay these sums to the Company when requested to do so in writing by the Company and in accordance with a payment schedule that the Company determines.
15. In order to remove any doubt, in the event of death, this Letter of Indemnification will apply to your heirs.
16. No waiver, omission or grant of extension by the Company or by you will be interpreted in any manner as a waiver of rights pursuant to this Letter of Indemnification or under applicable law, and will not prevent either party from taking all legal and other measures in order to enforce such rights.
17. If any undertaking included in this Letter of Indemnification is held invalid or unenforceable, such invalidity or unenforceability will not affect any of the other undertakings which will remain in full force and effect. Furthermore, if such invalid or unenforceable undertaking may be modified or amended so as to be valid and enforceable as a matter of law, such undertakings will be deemed to have been modified or amended, and any competent court or arbitrator are hereby authorized to modify or amend such undertaking, so as to be valid and enforceable to the maximum extent permitted by law. Notwithstanding the above, if this Letter of Indemnification shall be declared or found void for any reason whatsoever then any previous undertaking of the Company for indemnification towards you, which this Letter of Indemnification is intended to replace, shall remain in full force and effect.
18. The terms contained in this Letter of Indemnification will be construed in accordance with the Companies Law, and in the absence of any definition in the Companies Law, pursuant to the Securities Law.
19. This Letter of Indemnification and the agreement herein shall be governed by and construed and enforced in accordance with the laws of the State of Israel. You should be aware, however, that, insofar as indemnification for liabilities arising under the United States Securities Act of 1933, as amended (the “Securities Act”) may be permitted to the Officers of the Company, the Company has been advised that in the opinion of the U.S. Securities and Exchange Commission (the “SEC”) such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event of a claim for such indemnification (other than the payment by the Company of expenses incurred or paid by an Officer in the successful defense of any action, suit or proceeding), the Company will (in accordance with an undertaking given to the SEC), unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

20. Notwithstanding anything herein to the contrary, the Company shall have no obligation to provide indemnity hereunder if a court of competent jurisdiction determines that such indemnification is not lawful.
21. This Letter of Indemnification will enter into affect upon your signature in the space provided below and return of the signed copy to the Company.
22. This Letter of Indemnification replaces and substitutes any previous undertaking of the Company for indemnification, to the extent granted.

Respectfully,

on behalf of
Nova Measuring Instruments Ltd.

I accept the terms and conditions of the above. I am aware that my agreement to accept this Letter of Indemnification constitutes my irrevocable agreement that this Letter of Indemnification replaces and substitutes any previous undertaking of the Company for indemnification, to the extent granted to me. Notwithstanding, the above, if this Letter of Indemnification shall be void for any reason whatsoever than any previous undertaking of the Company for indemnification towards me shall remain in force.

Name: _____
Date: _____

Annex A

Subject to any provision of law, the events are as follows:

1. The issuance of securities including, but not limited to the public according to a prospectus, a private offering, sales offering, the issuance of bonus shares, issuance of securities and/or any other manner of security offering and also tender offers for securities, the Company's purchase of its own and its subsidiaries' securities, as well as any action relating to any of the above.
2. A "Transaction" or "Activity" as defined in Article 1 of the Companies Law, including among others a negotiation regarding such Transaction and/or Activity, transfer, sale and/or purchase of assets and/or liabilities, including securities and/or the granting and/or receiving of any right in any of the above, including among others, the acquisition, sale or merger of entities and/or any action connected directly or indirectly with such a Transaction.
3. The filing of a report and/or announcement required by the Companies Law and/or Securities Law, or U.S. Securities Laws, including the regulations pertaining to these laws, and/or according to rules and/or regulations adopted by the Tel-Aviv Stock Exchange or The NASDAQ or any other stock exchange and/or any law of any other country pertaining to these issues and/or the failure to file such a report and/or announcement.
4. Any decision regarding a Distribution, as defined in the Companies Law including a Distribution pursuant to a court order.
5. Preparation of financial statements of the Company and its Subsidiaries and approval of such financials.
6. A change in the Company's structure and/or a reorganization of the Company, including any arrangement between the Company and its shareholders and/or creditors according to the Companies Law, and/or any decision relating to these issues including, but not limited to, a merger, a demerger, a change in the Company's capital, the establishment of subsidiaries and/or their liquidation or sale, and/or all allotments or distributions.
7. Expressions, announcements, statements, including a position taken, and/or an opinion made in good faith by an Officer in the course of and/or in connection with his/her duties, including during negotiations and contracting with suppliers, consultants and consumers and/or during a meeting of the Company's management, Board of Directors and/or one of its committees.
8. An action made in good faith in contradiction to the Memorandum of Incorporation and/or the Amended and Restated Articles of Association.
9. An Action and/or decision relating to employer-employee relations including employment agreements, negotiations regarding employment agreements, salary and/or other employee benefits, including employee stock option plans and/or option distributions to employees.
10. An action and/or decision relating to work safety and/or working conditions and/or employee activities and/or any event relating thereto.
11. An action or decision relating to insurance matters and/or risk management of the Company.
12. Actions relating to the Company's commercial relations, including with employees, outside contractors, customers, suppliers, and service providers.
13. Preparation of work plans, including pricing, marketing, distribution, and instructions to employees, to customers and to suppliers and to cooperative arrangements, including with competitors.
14. Actions relating to product development, to the conduct of product testing, approvals, sales, distribution of licensing in their regard.
15. Decisions and/or actions relating to environmental compliance, including pollution, contamination, and hazardous materials.
16. Granting of liens on Company assets and granting guarantees on behalf of the Company.

17. Compliance with various governmental requirements in Israel and outside Israel, including a Ministry of Defense, Antitrust Authority, Securities Authority, Environmental Compliance Agency and Tax Authorities.
18. Investigations conducted against you by any governmental or quasi-governmental authority.
19. Establishment and management of financial policy, including credit policies, hedging against changes in currency exchange rates and utilization of cash reserves.
20. Actions taken (or alleged omissions) pursuant to or in accordance with the policies and procedures of the Company, its subsidiaries and/or its affiliates, whether such policies and procedures are published or not.
21. Causing damages, including bodily injury and property damage, partial or comprehensive loss, loss of use or disability, during any action or omission relating to the Company, or relating to its employees, agents or others who act or are purported to act on behalf of the Company.
22. An event resulting from the Company being a publicly traded company or due to its shares being issued to the public.
23. Transfer of information required or permitted to be transferred under applicable law to an interested party of the Company.
24. An act that may be considered as an infringement of the intellectual property rights of a third party, or an act relating to the Company's intellectual property, *inter alia*, by taking action and filing lawsuits. Also, any action taken against Nanometrics, Inc., in regards to protection of intellectual property.
25. Any of the above specified events relating to an activity of an entity controlled by the Company or an entity affiliated with the Company or pursuant to the Officer's position in an affiliated entity and/or in an entity controlled by the Company.
26. The Company's follow-on public offering completed in 2010.
27. Any other actions which can be anticipated for companies of the type of the Company, and which the Board of Directors may deem appropriate.
28. Any indemnifiable event and/or action pursuant to the Efficiency of Enforcement Procedures in the Securities Authority Law (Legislation Amendments), 2011.
29. Any of the above specified events, whether occurring in Israel or occurring outside of Israel.

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FOLD AND DETACH HERE

NOVA MEASURING INSTRUMENTS LTD.

Weizmann Science Park, Building 22, 2nd Floor, Einstein Street, Ness Ziona, Israel
Tel: +972-73-2295600 – Fax: +972-8-9407776

THIS PROXY IS SOLICITED ON BEHALF OF THE BOARD OF DIRECTORS OF NOVA MEASURING INSTRUMENTS LTD.

The undersigned, a shareholder of Nova Measuring Instruments Ltd. (the “Company”), an Israeli corporation, hereby appoints Michael Brunstein and Dror David, and each of them acting individually, as the attorney and proxy of the undersigned, with full power of substitution, for and in the name of the undersigned, to vote and otherwise act on behalf of the undersigned at the annual general meeting of shareholders of the Company to be held at the offices of the Company, Building 22 (2nd floor) Weizmann Science Park, Einstein Street, Ness Ziona, on June 21, 2012 at 5:00 p.m. Israel time (10:00 a.m. Eastern time), or at any adjournment(s) or postponement(s) thereof, with respect to all of the ordinary shares, par value NIS 0.01, of the Company (the “Shares”) which the undersigned would be entitled to vote, with all powers the undersigned would possess if personally present, provided said proxies are authorized and directed to vote as indicated with respect to the matter set forth below this Proxy. Subject to applicable law and the rules of NASDAQ, in the absence of such instructions, the Shares represented by properly executed and received proxies will be voted “FOR” all of the proposed resolutions to be presented to the annual general meeting or any adjournment(s) or postponement(s) thereof for which the Board of Directors recommends a “FOR” vote, other than Item 5.

This proxy also delegates, to the extent permitted by applicable law, discretionary authority to vote with respect to any other business which may properly come before the annual general meeting or any adjournment(s) or postponement(s) thereof.

WHETHER OR NOT YOU EXPECT TO ATTEND THE MEETING, PLEASE COMPLETE, DATE AND SIGN THIS FORM OF PROXY AND MAIL THE ENTIRE PROXY PROMPTLY, ALONG WITH PROOF OF IDENTITY IN ACCORDANCE WITH THE COMPANY'S PROXY STATEMENT, IN THE ENCLOSED ENVELOPE IN ORDER TO ASSURE REPRESENTATION OF YOUR SHARES. NO POSTAGE NEED BE AFFIXED IF THE PROXY IS MAILED IN THE UNITED STATES.

Shareholders entitled to notice of and to vote at the meeting shall be determined as of the close of business on May 15, 2012, the record date fixed by the Board of Directors for such purpose.

The signer hereby revokes all previous proxies given by the signer to vote at the annual general meeting or any adjournments thereof.

Address Change/Comments
(Mark the corresponding box on the reverse side)

SHAREOWNER SERVICES
P.O. BOX 3550
SOUTH HACKENSACK, NJ 07606-9250

(Continued and to be marked, dated and signed, on the other side)

WO#
25204

WO#
25204

Please mark your votes
as indicated in this example

☒ ☐ ☐

FOR **AGAINST** **ABSTAIN**

FOR AGAINST ABSTAIN

☐ ☐ ☐

□ □ □

VOTE FOR EACH DIRECTOR SEPARATELY

FOR	AGAINST	ABSTAIN
☐	☐	☐
☐	☐	☐

FOR AGAINST ABSTAIN

☐ ☐ ☐

□ □ □

YES NO

☐ ☐

FOR AGAINST ABSTAIN

☐ ☐ ☐

□ □ □

Mark Here for
Address Change
or Comments
SEE REVERSE

Signature _____ Signature _____ Date _____