

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

Form 20-F/A

(Amendment No. 1)

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, 2007

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

NOVA MEASURING INSTRUMENTS LTD.

(Exact name of Registrant as specified in its charter)

Nova Measuring Instruments Ltd.
(Translation of Registrant's name into English)

Israel
(Jurisdiction of incorporation or organization)

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

Dror David, +972-8-9387572, +972-8-9407776, P.O.B 266, Rehovot 76100, 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
Ordinary Shares, nominal value NIS 0.01 per share

Name of each exchange on which registered
The Nasdaq Global 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: 19,369,418 Ordinary Shares, NIS 0.01 nominal (par) value per share, as of December 31, 2007, of which 2,229 Ordinary Shares held by the Registrant which have no voting or equity rights.

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

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 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

EXPLANATORY NOTE

This Amendment No. 1 on Form 20-F/A (the "Amendment") to our annual report on Form 20-F for the fiscal year ended December 31, 2007, as filed with the Securities and Exchange Commission (the "Commission") on March 28, 2008 (the "Form 20-F"), is being filed solely for the purpose of furnishing a revised consent of Brightman Almagor & Co. as Exhibit 15.1 that includes a reference to our registration statement on Form F-3 filed with the Commission on May 11, 2007, which was inadvertently omitted from the consent filed with the Form 20-F.

Therefore, this Amendment consists of a cover page, this explanatory note, a revised list of exhibits (Item 19 of Part III), a signature page and the revised Exhibit 15.

This Amendment speaks as of the date of the initial filing of the Form 20-F. Other than as described above, this Amendment does not, and does not purport to, amend, update or restate any other information or disclosure included in the Form 20-F and does not, and does not purport to, reflect any events that have occurred after the date of the initial filing of the Form 20-F. As a result, our Annual Report on Form 20-F for the fiscal year ended December 31, 2007, as amended by this Amendment, continues to speak as of the initial filing date of the Form 20-F.

PART III

Item 19. EXHIBITS.

See Exhibit Index.

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 Amendment No. 1 to the annual report on its behalf.

NOVA MEASURING INSTRUMENTS LTD.

By: */s/ Gabi Seligsohn*

Gabi Seligsohn
President and Chief Executive Officer

Date: April 9, 2008

EXHIBIT INDEX

<u>Exhibit Number</u>	<u>Description</u>
1.1	Articles of Association, as amended (incorporated by reference to Exhibit 1.1 to the Company's Annual Report on Form 20-F filed on May 11, 2007).
4.1	1997 Stock Option Plan (Plan 2) (incorporated by reference to Exhibit 10.1 to the Company's Registration Statement on Form F-1 (File No. 333-11640)).
4.2	Option Plan 3 (incorporated by reference to Exhibit 10.2 to the Company's Registration Statement on Form F-1 (File No. 333-11640)).
4.3	Option Plan 4A and 4B (incorporated by reference to Exhibit 10.3 to the Company's Registration Statement on Form F-1 (File No. 333-11640)).
4.4	Option Plan 5 (incorporated by reference to Exhibit 4.4 to the Company's Annual Report for 20-F for 2002 filed May 9, 2002).
4.5	Option Plan 6 (incorporated by reference to Exhibit 4.1 to the Company's Registration Statement on Form S-8 filed December 24, 2002 (File No. 333-102193)).
4.6	Employment Agreement between Nova and Giora Dishon (incorporated by reference to Appendix A to Exhibit 99.1 to the Company's Report on Form 6-K filed October 26, 2006).
4.7	Employment Agreement between Nova and Moshe Finarov (incorporated by reference to Appendix A to Exhibit 99.1 to the Company's Report on Form 6-K filed October 26, 2006).
4.8	Agreements between Nova and the Office of the Chief Scientist in Israel (incorporated by reference to Exhibit 10.10 to the Company's Registration Statement on Form F-1 (File No. 333-11640)).
4.9	Certificate of Approval from the Investment Center in Israel (incorporated by reference to exhibit 10.11 to the Company's Registration Statement on Form F-1 (File No. 333-11640)).
4.10*	Summary of Lease Agreements between Nova and Ef-Shar Ltd.
4.11	Employee Stock Purchase Plan 1 (incorporated by reference to Exhibit 4.1 to the Company's Registration Statement on Form S-8 filed on March 24, 2003 (File No. 33-103981)).
4.12	Letter of Indemnification and Exculpation for certain directors, officers and/or employees (incorporated by reference to Appendix C to the Company's Report on Form 6-K filed on July 7, 2006).
4.13	Option Plan 7A (incorporated by reference to Exhibit 4.1. to the Company's Registration Statement on Form S-8 filed on May 17, 2004 (File No. 333-115554)).
4.14	Option Plan 7B (incorporated by reference to Exhibit 4.1 to the Company's Registration Statement on Form S-8 filed on March 7, 2005 (File No. 333-123158)).
4.15	Amended and Restated Asset Purchase Agreement dated as of August 8, 2006 by and among the Company, HyperNex, Inc. and the Stockholders listed on Schedule 4(a) therein (incorporated by reference to Exhibit 4.16 to the Company's Annual Report on Form 20-F filed on May 11, 2007).
4.16	Option Plan 7C (incorporated by reference to Exhibit 4.20 of the Company's Annual Report on Form 20-F filed on June 29, 2006).
4.17	Option Plan 8 (incorporated by reference to Exhibit 4.1 to the Company's Registration Statement on Form S-8 filed on December 29, 2005 (File No. 333-130745)).
4.18	Share Purchase Agreement, dated as of February 28, 2007, by and between the Company and the investors identified on the signature pages thereto, including the form of warrant (incorporated by reference to Exhibit 4.19 to the Company's Annual Report on Form 20-F filed on May 11, 2007).
4.19	2007 Incentive Plan (incorporated by reference to Exhibit 99.1 to the Company's Registration Statement on Form S-8 filed on November 5, 2007 (File No. 333-147140)).
8.1	List of Subsidiaries (incorporated by reference to Exhibit 8 of the Company's Annual Report on Form 20-F filed on June 29, 2006).
12.1*	Certification required by Rule 13a-14(a) of the Securities Exchange Act of 1934, as amended.
12.2*	Certification required by Rule 13a-14(a) of the Securities Exchange Act of 1934, as amended.
13.1*	Certification Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
13.2*	Certification Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
15.1**	Consent of Brightman Almagor & Co.

* Previously filed with the original Form 20-F, filed with the Commission on March 28, 2008

** Filed herewith.

Brightman Almagor & Co.

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference of our report dated March 19, 2008 included in the Annual Report on Form 20-F of Nova Measuring Instruments Ltd. (the "Company") for the fiscal year ended December 31, 2007 into the Registration Statements on Form S-8 of the Company, 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); March 24, 2003 (File No. 333-103981); May 17, 2004 (three files; File Nos. 333-115554, 333-115555, and 333-115556); March 7, 2005 (File No. 333-123158); December 29, 2005 (File No. 333-130745); January 5, 2006 (two files, File Nos. 333-102193 and 333-115556); September 21, 2006 (File No. 333-137491) and November 5, 2007 (File No. 333-147140) and into the Registration Statement on Form F-3 of the Company, filed with the Securities and Exchange Commission on May 11, 2007 (File No. 333-142834).

/s/ Brightman Almagor & Co.
Brightman Almagor & Co.

Certified Public Accountants

A member of Deloitte Touche Tohmatsu

Tel Aviv, Israel

April 8, 2008
