

FORM 6-K

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

For the month of June 2006 No. 4

TOWER SEMICONDUCTOR LTD.  
(Translation of registrant's name into English)

RAMAT GAVRIEL INDUSTRIAL PARK  
P.O. BOX 619, MIGDAL HAEMEK, ISRAEL 23105  
(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 whether the registrant by furnishing the information contained in this Form is also thereby furnishing the information to the Commission pursuant to Rule 12g3-2(b) under the Securities Exchange Act of 1934.

Yes  No

On June 14, 2006, the Registrant announced that it manufactures Gen 2 RFID tags for Alien technology. Attached hereto is a copy of the press release.

This Form 6-K is being incorporated by reference into all effective registration statements filed by us under the Securities Act of 1933.

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.

TOWER SEMICONDUCTOR LTD.

Date: June 14, 2006

By: /s/ Nati Somekh Gilboa  
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Nati Somekh Gilboa  
Corporate Secretary

TOWER SEMICONDUCTOR MANUFACTURES GEN 2 RFID TAGS FOR  
ALIEN TECHNOLOGY

MIGDAL HAEMEK, Israel - June 14, 2006 - Tower Semiconductor Ltd. (NASDAQ: TSEM; TASE: TSEM), a pure-play independent specialty foundry, today announced that it is the manufacturing supplier for Alien Technology's internally-designed Gen 2 RFID (Radio Frequency Identification) integrated circuits. These ICs recently achieved the EPCglobal certification mark. The RFID ICs are produced at Tower's Fab2 in an advanced 0.18-micron manufacturing process.

Market analysts forecast the RFID IC's market to grow significantly to between \$500 millions and \$1 Billion by 2010, mainly due to the Gen 2 impact.

RFID tags help enable supply chain efficiency, visibility and security and are being deployed in retail, defense, transportation and health markets. Some of the implementation initiatives are being led by major US retailers. According to the U.S. Government Accountability Office, 13 federal agencies are already using or plan to deploy RFID technology. The U.S. Department of Defense (DoD), has mandated RFID's use across its suppliers for increased supply chain visibility and improved forecasting.

The newly certified Alien Gen 2 RFID chips include some new CMOS devices which were jointly developed with Tower. IC development efforts focused on the low-power requirements for such an RFID tag which draws its power solely from transmitted Radio Frequency energy.

"Gen 2 protocol is the emerging standard in RFID tag technology," said Yossi Netzer, general manager of mixed-signal & RF product line at Tower Semiconductor. "We are happy that Tower's R&D and manufacturing capabilities were chosen by Alien."

ABOUT TOWER SEMICONDUCTOR LTD.

Tower Semiconductor Ltd. is a pure-play independent specialty wafer foundry established in 1993. The company manufactures integrated circuits with geometries ranging from 1.0 to 0.13 micron; it also provides complementary technical services and design support. In addition to digital CMOS process technology, Tower offers advanced non-volatile memory solutions, mixed-signal and CMOS image-sensor technologies. To provide world-class customer service, the company maintains two manufacturing facilities: Fab 1 has process technologies from 1.0 to 0.35 micron and can produce up to 16,000 150mm wafers per month. Fab 2 features 0.18-micron and below standard and specialized process technologies, and has the current capacity of up to 15,000 200mm wafers per month. Tower's Web site is located at <http://www.towersemi.com/>.

SAFE HARBOR

This press release includes forward-looking statements, which are subject to risks and uncertainties. Actual results may vary from those projected or implied by such forward-looking statements. A complete discussion of risks and uncertainties that may affect the accuracy of forward-looking statements included in this press release or which may otherwise affect our business is included under the heading "Risk Factors" in our most recent Annual Report on Forms 20-F, F-1, F-3 and 6-K, as were filed with the Securities and Exchange Commission and the Israel Securities Authority. We do not intend to update, and expressly disclaim any obligation to update, the information contained in this release.

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