

FORM 6-K

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

For the month of March 2008

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

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 March 27, 2008, the Registrant Announces that it Ramps-Up Production of N-trig's Digitizer Chips. 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: March 27, 2008

By: /s/ Nati Somekh Gilboa

Nati Somekh Gilboa
Corporate Secretary

TOWER SEMICONDUCTOR RAMPS-UP PRODUCTION
OF N-TRIG'S DIGITIZER CHIPS

THE PRODUCT IS MANUFACTURED ON TOWER'S ADVANCED 0.18 MICRON PROCESS

Migdal Haemek and Kfar Saba, Israel - March 27, 2008 - Tower Semiconductor, Ltd. (NASDAQ: TSEM; TASE: TSEM), an independent specialty wafer foundry, and N-trig, the provider of DuoSense(TM) technology, combining pen and zero-pressure touch for mobile computers into a single device, today announced ramp-up of production of N-trig's A-trig and D-trig - the newest digitizer chipset to be integrated in OEMs computer systems.

N-trig's DuoSense digitizers are thinner and more integrated solution, providing the ultimate human interface experience. Its zero-pressure touch enables the best touch and pen experience on the market and is based on capacitive touch instead of traditional resistive touch. It is the only digitizer currently available that fully enables all the capabilities of the latest mobile platforms. DuoSense digitizers are implemented using Tower's Fab2 0.18-micron advanced process. Tower is the leading provider of the A-trig and D-trig products' silicon wafers.

N-trig's technology supports any type of LCD and can be implemented in a broad range of products from small tablet PCs to large format LCDs. N-trig's DuoSense dual mode digitizer drives a new level of mobile productivity, enables new market opportunities, and encourages the creation of new products and mass market applications that don't currently exist. By offering the most advanced digitizer on the market, N-trig enables OEMs and ODMs to introduce computer products that offer their customers a more personalized, intuitive, Hands-onTM, interactive experience with their computers.

In-Stat expects the worldwide convertible notebook market to rise from US\$1.2 billion in 2004 to \$5.4 billion in 2009. It is predicted that the number of convertible notebooks will rise from 1M to 4M units. In addition the market demand for DuoSense technology is expected to arise from the emerging desktop replacement, AIO (all in one) and large format LCD entertainment segments. These consumer segments are all large volume markets.

"With Tower's state-of-the-art manufacturing process and effective technical support, we were able to implement this challenging and complex product," said Amihai Ben David, CEO of N-trig. "We are very happy with the mode of cooperation from Tower and look forward to a long-term business relationship."

"Tower has every confidence in N-trig's ability through its innovative product to rapidly gain market share in a fast growing sector of LCD displays. We worked closely with N-trig providing preferred prototype manufacturing, test platform and intensive engineering support" said Dr. Itzhak Edrei senior vice president of product lines and world wide sales at Tower. " Tower takes pride in supporting technology-forward customers such as N-trig, with effective technology know-how, cost effective manufacturing and full service support ."

About Tower Semiconductor Ltd.

Tower Semiconductor Ltd. (Nasdaq: TSEM, TASE: TSEM) is an independent specialty foundry that delivers customized solutions in a variety of advanced CMOS technologies, including digital CMOS, mixed-signal and RF (radio frequency) CMOS, CMOS image sensors, power management devices, and embedded non-volatile memory solutions. Tower's customer orientation is complemented by its uncompromising attention to quality and service. Its specialized processes and engineering expertise provides highly flexible, customized manufacturing solutions to fulfill the increasing variety of customer needs worldwide. Boasting two world-class manufacturing facilities with standard and specialized process technologies ranging from 1.0- to 0.13-micron, Tower Semiconductor provides exceptional design support and technical services to help customers sustain long-term, reliable product performance, while delivering on-time and on-budget results. More information can be found at <http://www.towersemi.com>.

About N-trig

N-trig is the provider of DuoSense(TM) digitizer technology combining pen and zero-pressure touch for mobile computers into a single device. N-trig enables OEMs and ODMs to provide innovative new technology for the next generation of mobility by making notebook PCs more mobile, productive, user-friendly, natural, and intuitive to use. DuoSense is easily integratable and supports any type of LCD, giving OEMs and ODMs more flexibility. Founded in 1999, N-trig's manufacturing capabilities are in place for volume production with certified supplier and quality control standards to meet the needs of its customers. In addition, DuoSense drives a new level of mobile productivity and is enabling new market opportunities in gaming and multimedia. As a technology leader in the exploding market for touch enabled devices, N-trig is backed by prominent international investors and has a highly experienced management team with a proven track record. N-trig maintains its global headquarters in Kfar Saba, Israel and has a regional presence with offices in Austin, TX and Taipei, Taiwan. For more information, please visit www.n-trig.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 Form 20-F, Forms 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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