

FORM 6-K

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

For the month of November 2009 No. 5

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 November 19, 2009, the registrant announces Process Design Kit (PDK) Collaboration with Tanner EDA for Power Management Device Design.

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: November 19, 2009

By: /s/ Nati Somekh Gilboa

Nati Somekh Gilboa
Corporate Secretary

TowerJazz and Tanner EDA Announce Process Design Kit (PDK) Collaboration for Power Management Device Design

New PDKs catalyst for analog/mixed-signal design innovation

NEWPORT BEACH and MONROVIA, Calif., November 19, 2009 – TowerJazz, the global specialty foundry leader and Tanner EDA, a leading provider of electronic design automation (EDA) tools today announced a joint initiative to develop Process Design Kits (PDKs) for analog/mixed-signal (A/MS) designers using Tanner EDA's HiPer Silicon™ software. This collaboration gives Tanner EDA customers access to TowerJazz's innovative 0.18- and 0.35-micron power management process platform and TowerJazz customers access to Tanner EDA's A/MS tools for a complete IC design solution.

"Tanner EDA offers a perfect blend of price-performance, flexibility and interoperability that addresses the needs of our analog/mixed-signal IC design customers," stated Ori Galzur, VP, VLSI Design Center for TowerJazz. "By working with EDA vendors such as Tanner EDA, we can provide our mutual customers with an advanced power management platform and customized design capabilities to achieve more predictable designs. This will enable them to decrease design cycle time and achieve a time-to-market advantage for their high performance and differentiated power management solutions. "

"From my power management design experience, the key to first pass success and quicker design cycles is a consistent design environment. Combining TowerJazz's advanced power management platform with Tanner EDA's specialized IC design tools will provide this to the industry," said Marijana Vukicevic, Senior Analyst, Power Management at iSuppli.

About TowerJazz Power Management Platform

TowerJazz offers a differentiated and industry leading Bipolar-CMOS-DMOS (BCD) power management platform with 0.5- to 0.18-micron CMOS density and a combination of bipolar NPN and PNP devices, as well as high voltage CMOS and DMOS FETs for use in complex power management chips including driver ICs, battery and portable power management, power control for PC products, Class-D audio amplifiers, and many other consumer, communications and computing applications. The Company's continuously customizable LDMOS from 20V to 80V process provides design optimization and the lowest die size at any given breakdown voltage. The integration of a one to zero layer addition Non-Volatile Memory (NVM) provides significant differentiation and cost effectiveness for enhanced power management solutions.

About Tanner EDA Power Management Design Software

Tanner EDA's HiPer Silicon allows designers to plan and administer power management schemes in the context of their complete design. HiPer Silicon includes features and functionality that address an A/MS designer's power management requirements, such as

- Consistent, cohesive user interface across the entire design flow
- Robust design environment provides flexibility without sacrificing performance
- Low learning curve and licensing options help speed concept to silicon

"Our collaboration with TowerJazz is another example of enabling innovation by bringing leading-edge foundry capability to our customers," commented Tanner EDA President, Greg Lebsack. "We are excited to continue to expand our relationship with TowerJazz to benefit our mutual customers. Our specialized IC design software combined with TowerJazz's power platform will quickly and effectively meet our analog/mixed signal customers' needs for high quality power management ICs."

Availability of Power Management PDKs

Tanner EDA and TowerJazz PDKs for power management devices will be available in Q1 2010. For more information on PDK availability and access, please contact Ofer Tamir, Director of CAD, Design Environment & Support at TowerJazz (ofer.tamir@towerjazz.com) or Robin White, International Sales Manager at Tanner EDA (robin.white@tannereda.com).

About Tanner EDA

Tanner EDA is a global provider of electronic design automation (EDA) software solutions for the design, layout and verification of analog and mixed-signal ICs and MEMS. The low learning curve, high interoperability and powerful user interface of Tanner EDA's tool suite promotes innovation and speeds designs from concept to silicon. Tanner EDA software is used by thousands of designers in commercial and academic institutions for applications including Power Management, Displays and Imaging, Automotive, Consumer Electronics, Life Sciences, and RF. Founded in 1988, Tanner EDA has shipped over 33,000 licenses of its software to more than 5,000 customers in 67 countries. For more information on Tanner EDA products, visit www.tannereda.com.

About TowerJazz

Tower Semiconductor Ltd. (NASDAQ: TSEM, TASE: TSEM), the global specialty foundry leader and its fully owned U.S. subsidiary Jazz Semiconductor, operate collectively under the brand name TowerJazz, manufacturing integrated circuits with geometries ranging from 1.0 to 0.13-micron. TowerJazz provides industry leading design enablement tools to allow complex designs to be achieved quickly and more accurately and offers a broad range of customizable process technologies including SiGe, BiCMOS, Mixed-Signal and RFCMOS, CMOS Image Sensor, Power Management (BCD), and Non-Volatile Memory (NVM) as well as MEMS capabilities. To provide world-class customer service, TowerJazz maintains two manufacturing facilities in Israel and one in the U.S. with additional capacity available in China through manufacturing partnerships. For more information, please visit www.towerjazz.com.

Safe Harbor Regarding Forward-Looking Statements

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 Tower and/or Jazz's business is included under the heading "Risk Factors" in Tower's most recent filings on Forms 20-F, F-3, F-4 and 6-K, as were filed with the Securities and Exchange Commission (the "SEC") and the Israel Securities Authority and Jazz's most recent filings on Forms 10-K and 10-Q, as were filed with the SEC, respectively. Tower and Jazz do not intend to update, and expressly disclaim any obligation to update, the information contained in this release.

For TowerJazz

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