FORM 6-K

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

For the month of August 2009 No. 9

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 x Form 40-F o

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 o No x

On August 24, 2009, the registrant announces that SWID Selects Jazz Semiconductor's 0.35-micron SiGe BiCMOS Process and Models; Achieves First-Time Success for Digital Satellite Tuner.

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: August 24, 2009

By: /s/ Nati Somekh Gilboa

Nati Somekh Gilboa
Corporate Secretary

SWID Selects Jazz Semiconductor's 0.35-micron SiGe BiCMOS Process and Models; Achieves First-Time Success for Digital Satellite Tuner

SWID's fully integrated RF tuner used in set-top-boxes (STBs) and mobile TVs to receive signals from satellite

Combined Digital STB and mobile TV market expected to grow from $334M in 2009 to $630M in 2012, a CAGR of 23.5%

NEWPORT BEACH, Calif., and SHENZHEN, China, August 24, 2009 – Jazz Semiconductor , a Tower Group Company (NASDAQ: TSEM, TASE: TSEM), today announced that Southwest Integrated Circuit Design (SWID), a fabless IC design company, selected its 0.35-micron SiGe BiCMOS process (SBC35) and models to develop their satellite tuner LW10039, a fully integrated RF tuner for DVB-S digital satellite receiver systems. The end products utilizing SWID's tuner are set-top-boxes (STBs) and mobile TVs to receive signals from a satellite. According to Strategy Analytics, the combined digital STB and mobile TV market is expected to grow from $334 million in 2009 to $630 million in 2012, a CAGR of 23.5%. Through this partnership, SWID has set a goal to become the major TV tuner supplier in China.

SWID utilized Jazz's SBC35 process which includes high performance diodes. This enables lower leakage currents and higher breakdown voltage reducing power consumption and increasing tuning range for much better VCOs. SBC35 also includes high quality factor variable capacitors which are a key component in complex RF designs. The LW10039 incorporates a fully integrated wide band, low noise PLL frequency synthesizer which provides LO signals. The LW10039 also has LNA, RFVGA, I/Q mixer, LPF, VGC and an IF output amplifier – all integrated in the same 28 pin QFP chip.

"The SWID team was very impressed by the tools and accurate simulation models offered by Jazz which enabled us to achieve first-time success," said Lin Fan, President of SWID. "Simply put, Jazz's process, models and tool kits are by far the best in the industry for RF IC designs. By utilizing these design enablement capabilities, we were able to reduce our design cycle time by five months."

“We are pleased to be working with a fast-paced company like SWID, helping them bring to market new RF products,” said Dr. Marco Racanelli, Senior Vice President and General Manager, RF and HPA Business Group at Jazz. “SWID’s circuit design excellence coupled with our design enablement capabilities and superior SiGe process technology enabled their RF tuner to be designed quickly, accurately and cost-effectively providing performance, time-to-market and cost advantages.”

Jazz’s SBC35 process enables customers to have better noise performance over standard CMOS as well as to combine the LNA into a one-chip design thereby saving board space and reducing total manufacturing and design costs. In addition, Jazz’s industry leading models and tools provide key benefits to RF IC designers:

- Advanced de-embedding techniques are used to generate accurate high frequency device models.
- Physical design enablement tools such as the Jazz Inductor Toolbox (JIT) allow high-quality passives to be designed in a short time for quick time-to-market.
- Design for manufacturing tools such as Jazz’s process control model tool (PCMT) and its X-Sigma tool allow designs to be optimized for yield, critical for price sensitive consumer applications.

About SWID
Southwest Integrated Circuit Design Co., Ltd, (SWID), provides integrated circuits (ICs) and other electronic circuits for mobile communication, modules and systems, circuit design, circuit production, circuit test, and circuit marketing, as well as provides consultation service for circuit design and production technologies. Using the fabless model, SWID designs and develops high-end products with proprietary IP, and represents China’s analog ICs standard. SWID has many senior engineers for RF IC design and other analog-oriented ICs. SWID is located in China with a design center in Chongqing and an office in Shenzhen. For more information, please visit www.swid.com.cn.

About Tower Semiconductor, Ltd. and Jazz Semiconductor, Inc.
Tower Semiconductor Ltd. (NASDAQ: TSEM, TASE: TSEM) is a global specialty foundry leader and its fully owned subsidiary Jazz Semiconductor, a Tower Group Company is a leader in Analog-Intensive Mixed-Signal (AIMS) foundry solutions. Tower and Jazz manufacture integrated circuits with geometries ranging from 1.0 to 0.13-micron and provide industry leading design enablement tools to allow complex designs to be achieved quickly and more accurately. Tower and Jazz offer a broad range of process technologies including Digital, Mixed-Signal and RFCMOS, HV CMOS, BCD, Non-Volatile Memory (NVM), Embedded NVM, MEMS, and CMOS Image Sensors. To provide world-class customer service, Tower and Jazz maintain two manufacturing facilities in Israel and one in the U.S. with additional manufacturing capacity available in China through partnerships with ASMC and HHNEC. For more information, please visit www.towersemi.com and www.jazzsemi.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’s and 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. Tower and Jazz do not intend to update, and expressly disclaim any obligation to update, the information contained in this release.

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