

FORM 6-K

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

For the month of January 2007

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 January 09, 2007, the registrant announces that More Than 10 Million ULC Mobile Devices are Ringing Using Modiotek Sound Generators Manufactured at Tower Semiconductor, 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: January 09, 2007

By: /s/ Nati Somekh Gilboa

Nati Somekh Gilboa
Corporate Secretary

MORE THAN 10 MILLION ULC MOBILE DEVICES ARE RINGING USING MODIOTEK
SOUND GENERATORS MANUFACTURED AT TOWER SEMICONDUCTOR

MIGDAL HAEMEK, ISRAEL - January 9, 2007 - Tower Semiconductor Ltd. (NASDAQ: TSEM; TASE: TSEM), a pure-play independent specialty foundry, today announced that it has collaborated with Modiotek Co., Ltd., the new spin-off company from Macronix International Co., Ltd. (NASDAQ: MXIC; TSE: 2337.TT), to successfully introduce 32-polyphony sound generator into ULC (Ultra Low Cost) handset models, following manufacturing 10 millions of MAP S32i series products for the past two years.

The MAP S32i is built for ULC phones with FM tuner and hands-free features. It is equipped with 32-polyphony MIDI engine based on wave-table synthesis technology, providing best performance-cost ratio handset ring-tone solution. Moreover, it has integrated 16/32ohm stereo headphone amplifier, 8ohm loud-speaker amplifier, two stereo auxiliary analog input ports for FM audio sound input and speech signal from analog base-band chip residing in the cell phone system implementation; its unique function integration provides total system cost improvement for ULC handset application.

The MAP (Mobile Audio Platform) family consists of half a dozen different products, customized for the specific cellular phone models and applications which were built, using Tower's FAB2 0.18-micron mixed signal process technology and shipped during 2006. The MAP (Mobile Audio Platform) products represent a business of thousands of wafers each quarter for Tower.

Among the handsets using these products are leading models by two of Top-5 handset brands and a dozen well-known handset makers. The market for ULC handsets is estimated at 48 million sets in 2007 and expected to grow to 150 million sets by 2010, according to market research company Strategy Analytics. The derived demand of sound generators is going to ramp up gradually.

"In our drive to optimize our manufacturing capabilities, we selected Tower Semiconductor to manufacture our highest volume products," said J T Chung the newly appointed president and CEO of the Modiotek that develops the audio products. "Tower's excellent engineering and manufacturing capabilities resulted in fast products ramp and smooth volume delivery, which is a must in the competitive consumer business."

"We are happy that Modiotek chose Tower for manufacturing the Sound Generators products family", said Yossi Netzer, general manager of the RF and Mixed Signal product line at Tower Semiconductor. "The sound generators cooperation is a good example for a close partnership that drives products success through matching technology and competitive time to market. Tower's customer support and manufacturing teams worked closely with Modiotek, to ensure smooth delivery and quality execution. We look forward to a continued working relationship with them for the coming generations of this family of products."

ABOUT TOWER SEMICONDUCTOR LTD.

Tower Semiconductor Ltd. is a pure-play independent specialty 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 & RF-CMOS, and CMOS image-sensor technologies. To provide world-class customer service, the company maintains two manufacturing facilities: Fab 1 has process standard and specialized technologies from 1.0 to 0.35 micron and Fab 2 features standard and specialized technologies of 0.18, 0.16 and 0.13-micron. Tower's Web site is located at <http://www.towersemi.com/>.

ABOUT MACRONIX INTERNATIONAL CO., LTD

Macronix International Co., Ltd. is a leading provider of innovative Non-Volatile Memory (NVM) solutions. Utilizing state of the art technology in the cutting edge fabrication facilities, the company offers a wide range of NOR Flash and Mask ROM products across various densities. Through strong relationships with its customers, Macronix continues to develop pioneering products for consumer and enterprise applications. The company is poised to increase market share and continues to expand its presence as the #1 Mask ROM supplier in the world. Macronix web site is located at <http://www.mxic.com.tw>.

ABOUT MODIOTEK CO., LTD

Modiotek Co., Ltd., a new IC design house spun off from Macronix Audio Product Line, is a leading DAM (digital answering machine) solution provider and concentrate on developing key integrated circuit and system solutions for mobile phone manufacturers. Modiotek's mobile audio products enable the delivery of multi-functions with high quality, low power consumption, and high integration to the music phone environment. Modiotek's web site is located at <http://www.modiotek.com.tw>.

SAFE HARBOR

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