TOWER SEMICONDUCTOR LTD
Form 6-K
June 25, 2012

FORM 6-K

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

For the month of June 2012
No. 05

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 S 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 S

On June 25, 2012, the registrant announces Radiation Hardened SRAM Designed by RedCat Devices and Fabricated in TowerJazz's 0.18um Process Flow Withstands 15 Mrad Total Ionization Dose.

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 25, 2012

By: /s/ Nati Somekh
Name: Nati Somekh
Title: Corporate Secretary

Radiation Hardened SRAM Designed by RedCat Devices and Fabricated in TowerJazz's 0.18um Process Flow Withstands 15
Mrad Total Ionization Dose

Developed technology in TowerJazz commercial foundry opens multi-billion markets requiring specific components able to withstand high
dose radiation

Applications include electronics for communication, observation and navigation systems as well as production of sterilized medical devices

MIGDAL HAEMEK, Israel and MILAN, Italy, June 25, 2012 – RedCat Devices, a fabless company specializing in the development of radiation hard (rad-hard) components for civilian and special applications, and TowerJazz, the global specialty foundry leader, announced today a breakthrough achievement in the design and fabrication of radiation hard integrated circuits (ICs). The developed technology opens multi-billion markets that require specific components able to withstand high dose radiation. Such doses lead to errors and irreversible failures in standard CMOS products. The markets include electronics for communication, observation and navigation systems as well as new applications, such as production of medical devices sterilized with high doses of gamma radiation and further tracking of these devices.

As a part of the Program focused on the development of the radiation hard components, the companies for the first time report the results of testing RedCat's 512 kbit SRAM (RC7C512RHH). The part has been designed by RedCat using its rad-hard standard cell library and IPs with the support of TowerJazz's Design Center in Netania, Israel, and fabricated in TowerJazz's Fab 2 in Migdal Haemek, Israel utilizing a flavor of its commercial 0.18-micron CMOS process flow. RC7C512RHH has been developed following several rad-hard by design techniques: from the architecture level down to the layout level. Edge-less transistors were used to avoid Total Ionization Dose (TID) damaging effects. Transient propagation and functional interrupts as well as single-event latch-ups were mitigated by patented design solutions. SRAM was supplied with rad-hard pad ring (ESD protection).

The experiments were performed at the X-ray facility in Legnaro (Padova), Italy in passive and active modes. No errors were observed for absorbed doses of above 15 Mrad (Si). All of the functional tests after irradiation passed without any failure. Radiation immunity of the demonstrated level was previously reported only for digital ICs fabricated in dedicated foundries specialized in rad-hard technologies. Therefore, this new design allows for radiation immunity on analog ICs fabricated using TowerJazz's CMOS process.

"We are impressed by the design demonstrated by RedCat, which in combination with TowerJazz's CMOS technology allowed us to achieve outstanding SRAM performance. By making rad-hard technology available in TowerJazz's commercial foundry, it allows us to not only target the traditional aerospace applications, but also the growing multi-billion dollar markets of food processing, medical device sterilization, and environmental cleanup technologies," said Dr. Avi Strum, TowerJazz VP and General Manager of Specialty Business Unit.

"We are excited about producing specialty rad-hard ICs in cooperation with TowerJazz," said Dr. Cristiano Calligaro, CEO of RedCat Devices. "Many customers have already expressed their interest in the developed technology. We plan to expand and diversify our rad-hard product portfolio to include non-volatile memories and CMOS image sensors, and we are pleased that TowerJazz offers these specialty process technologies as well. Some of the products are already in the final stages of development."

The companies wish to thank the Israeli Ministry of Industry and Trade and the Italian Ministry of Foreign Affairs for the financial support provided within the Israel-Italy Joint Innovation Program for Industrial, Scientific and Technological Cooperation in R&D.

About RedCat Devices
RedCat Devices (RCD) is a fabless semiconductor company developing volatile and non-volatile radiation immune memories for civilian and special applications, in particular for aerospace programs. RCD was established in 2006 using the funding provided by the Milan Chamber of Commerce and the Lombardia Region. RedCat's radiation hard (rad-hard) libraries and IPs have been developed and verified together with the leading semiconductor foundries. This approach combines the most advanced standard CMOS processes with rad-hard by design. For more information, please, visit http://www.redcatdevices.it/.

About TowerJazz
Tower Semiconductor Ltd. (NASDAQ: TSEM, TASE: TSEM), its fully owned U.S. subsidiary Jazz Semiconductor Ltd., and its fully owned Japanese subsidiary TowerJazz Japan, Ltd., operate collectively under the brand name TowerJazz, the global specialty foundry leader. TowerJazz manufactures integrated circuits with geometries ranging from 1.0 to 0.13-micron, offering 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 CMOS and MEMS capabilities. TowerJazz also offers a world-class design enablement platform that complements its sophisticated technology and enables a quick and accurate design cycle. In addition, TowerJazz provides (TOPS) Technology Optimization Process Services to IDMs as well as fabless companies that need to expand capacity, or progress from an R&D line to a production line. To provide multi-fab sourcing, TowerJazz maintains two manufacturing facilities in Israel, one in the U.S., and one in Japan 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 TowerJazz'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 toupdate, the information contained in this release.

###

TowerJazz/Media Contact:	RedCat Devices/Media Contact
Lauri Julian	Cristiano Calligaro
+1 949 4358181	+39 02 89506865
lauri.julian@towerjazz.com	c.calligaro@redcatdevices.it

TowerJazz Investor Relations Contact:
Noit Levi
+972 4 6047066
noit.levi@towerjazz.com