TOWER SEMICONDUCTOR LTD
Form 6-K
February 23, 2017

FORM 6-K

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

For the month February 2017 No. 2

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

Ramat Gavriel Industrial Park
P.O. Box 619, Migdal Haemek, Israel 2310502
(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 February 23 2017, the Registrant and UCSD Announce Best in
Class 5G Mobile Transmit-Receive Chips with Greater than 12 Gbps Data Rates

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: February 23, 2017 By:/s/ Nati Somekh
Name: Nati Somekh
Title: Corporate Secretary

NEWS ANNOUNCEMENT FOR IMMEDIATE RELEASE

UCSD and TowerJazz Demonstrate Best in Class 5G Mobile Transmit-Receive Chips with Greater than 12 Gbps Data Rates

Design targets FCC plans for licensing 28GHz communications band
Phased array technology available now to meet emerging billion dollar 5G markets

NEWPORT BEACH and SAN DIEGO, Calif., Feb 23, 2017 – TowerJazz, the global specialty foundry leader, and The University of California, San Diego (UCSD), a recognized leader for microwave, millimeter-wave, mixed-signal RFICs, and phased arrays, demonstrate for the first time, a greater than 12 Gbps, 5G phased-array chipset. This chipset demonstrates that products can be fabricated today to meet the emerging 5G telecom standards for the next wave of worldwide mobile communications. The chipset operates at 28 to 31 GHz, a new communications band planned for release by the FCC. The chipset uses TowerJazz's high volume SiGe BiCMOS technology, with record performance at the 28GHz band, representing a more than 10-times improvement in data rate vs. 4G LTE, and today meets many other technical specification requirements of the emerging 5G standard.

5G Status and Recent Announcements

- The FCC in July 2016 released plans to provide new frequency spectra to market ahead of agreed upon 5G (fifth generation) wireless standards. This included licensed spectra around 28, 37-40 GHz bands and an unlicensed 64-71 GHz band.

- Recent reports (Jan 2017) have stated that 5G communications could foster a $12 trillion economy in 2035 (IHS Markit), and in the next seven years $275 billion in spending on infrastructure could result from 5G implementation in the USA (CTIA/Accenture report).

- Though 5G standards have not yet been fixed, several reports from the world's leading network service providers suggest 5G data rates will be 1 to 10 Gbps, compared to the 4G standards which are 100 Mbps up to 1 Gbps.

- 5G demos are beginning worldwide. Verizon has stated that it will begin pre-trials of 5G in the USA using the 28 GHz band, and will "achieve some level of commercialization" in 2017.

About the 5G Chip Sets and H3 Process

The 5G transmit and receive chipsets reported today achieved more than 12 Gbps data rates at 30 meters separation, and greater than 3 Gbps when separated by 300 meters, using two polarizations. The UCSD chip utilizes 16-64-256 QAM (quadrature amplitude modulation) schemes to achieve these data rates. The measured EVM (error vector magnitude), a figure of merit used to determine the quality of the data received, suggests both chipsets are already performing at 4G LTE levels. The 64-QAM link reported today at 12 Gbps, has an EVM < 5% at 30 meters. The 16 QAM link at 3 Gbps has an EVM <12% at 300m and over all scan angles, and all with no FEC or equalization. The system operates in a dual-polarization mode. In addition, the 4 x 8 (32-element) phased-arrays use SiGe core chips and are assembled on a multi-layer printed-circuit board together with the antennas. Record figures of merit such as NF (Noise Figure), EIRP (Equivalent Isotropically Radiated Power), and EVM have been demonstrated.

"The TowerJazz H3 platform is truly great, and allows for 13-20 dBm transmit power per element with high PAE (power-added efficiency) of 20% at 28 GHz. Also, it offers very low-noise transistors resulting in an LNA NF of 2.4 dB at 28 GHz, high-Q inductors and low-loss transmission-lines for on-chip power distribution," said Prof. Gabriel Rebeiz, member of the U.S. National Academy of Engineering, distinguished professor and wireless communications industry chair at the UC San Diego Jacobs School of Engineering.

By using TowerJazz's SiGe BiCMOS technology, UCSD's design team, led by graduate student Kerim Kibaroglu and post-doctoral fellow Mustafa Sayginer, and with the use of state-of-the-art Keysight equipment such as the 8195A Arbitrary Wave Generator, the DSOS804A Digital Scope and the Signal Studio suite with the VSA software, was able to achieve record links at 30 to 300 meters over all scan angles. Prof. Rebeiz added, "We thank TowerJazz for this wonderful process and look forward to continued collaboration."

Today, peak wireless data rates for 4G LTE can be up to 1 Gbps, but are nominally lower around 100 to 300 Mbps. Here, TowerJazz has demonstrated more than 10x those speeds using the UCSD 5G next-generation mobile designs made with its high volume H3 technology.

"We continue to release additional technology nodes, e.g. our H5 and H6, which have even lower noise devices and higher speed capabilities. These technologies will enable 5G designers to further increase data rates through higher QAM modulation schemes, or shrink chip sizes and increase the distance over which these 5G chips can perform," said Dr. David Howard, Executive Director and TowerJazz Fellow. "Also, as we add new features to our SiGe Terabit Platform, we support easy evolution of customer technology for fast time to market. This allows our customers to grow their technology roadmap and products as the 5G standards evolve."

Availability
The SBC18H3 process, as well as H4, H5 processes, are available through TowerJazz at www.towerjazz.com. Chips used in the technology demonstrations are available from UCSD and interested parties should contact Prof. Gabriel M. Rebeiz; Department of Electrical and Computing Engineering at UCSD, 858/336-3186 or rebeiz@ece.ucsd.edu.

About Phased Arrays
Phased arrays allow the electronic steering of an antenna beam in any direction and with high antenna gain by controlling the phase at each antenna element. The radiated beam can be "moved in space" using entirely electronic means through control of the phase and amplitude at each antenna element used to generate the beam. This beam steering technique is much more compact and much faster than mechanically steered arrays. Furthermore, phased arrays allow the creation of deep nulls in the radiation pattern to mitigate strong interference signals from several different directions. They have been in use since the 1950s in defense applications and are receiving intense commercial interest for automotive (radars) and communication (5G) chip markets.

About UCSD
The University of California, San Diego, is one of the leading Universities in mixed-signal, microwave and mm-wave RFICs, digital communications, applied electromagnetics, RF MEMS (microelectromechanical systems) and nano-electronics research, and is home to the Center for Wireless Communications. UCSD has an annual research budget exceeding $850M, and its Jacobs School of Engineering is ranked as Number 17 in the US-News and World Report 2015 ranking. The Electrical and Computer Engineering Department, consisting of 46 teaching tenured faculty, trains approximately 400 graduate students per year. For more information, please visit www.ece.ucsd.edu and www.ucsd.edu.

About TowerJazz
Tower Semiconductor Ltd. (NASDAQ: TSEM, TASE: TSEM) and its fully owned U.S. subsidiaries Jazz Semiconductor, Inc. and TowerJazz Texas Inc., operate collectively under the brand name TowerJazz, the global specialty foundry leader. TowerJazz manufactures integrated circuits, offering a broad range of customizable process technologies including: SiGe, BiCMOS, mixed-signal/CMOS, RF CMOS, CMOS image sensor, integrated power management (BCD and 700V), and MEMS. TowerJazz also provides a world-class design enablement platform for a quick and accurate design cycle as well as Transfer Optimization and development Process Services (TOPS) to IDMs and fabless companies that need to expand capacity.

To provide multi-fab sourcing and extended capacity for its customers, TowerJazz operates two manufacturing facilities in Israel (150mm and 200mm), two in the U.S. (200mm) and three additional facilities in Japan (two 200mm and one 300mm) through TowerJazz Panasonic Semiconductor Co. (TPSCo), established with Panasonic Corporation of which TowerJazz has the majority holding. Through TPSCo, TowerJazz provides leading edge 45nm CMOS, 65nm RF CMOS and 65nm 1.12um pixel technologies, including the most advanced image sensor technologies. For more information, please visit www.towerjazz.com or www.tpsemico.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 to update, the information contained in this release.

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