

TOWER SEMICONDUCTOR LTD

Form 6-K

March 18, 2014

FORM 6-K

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

For the month of March 2014 No. 4

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 March 18, 2014, the registrant announced TowerJazz and Gpixel Announce World's Highest Resolution, 150 Megapixel Full-Frame CMOS Image Sensor. Attached please find the press release.

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: March 18, 2014

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

TowerJazz and Gpixel Announce World's Highest Resolution, 150 Megapixel
Full-Frame CMOS Image Sensor

Targets China's fast growing medical, industrial and scientific imaging markets

LONDON, England, March 18, 2014 – TowerJazz, the global specialty foundry leader, and Gpixel, Inc., a custom IC design house in China, announced today at Image Sensors 2014, the release of Gpixel's world's highest resolution CMOS image sensor using TowerJazz's TS18IS technology. Gpixel's 150 megapixel full-frame CMOS image sensor (GMAX3005) will target the demanding medical, industrial and scientific imaging markets. According to a 2014 image sensors report by Yole, sensors for automotive, machine vision, security and surveillance were ranked as fast emerging markets with a CAGR over 20% each. The new sensor from Gpixel and additional products expected to be released this year will answer the growing demand in China for high end image sensors.

"We believe that an intelligent imaging system is essential for all future smart ICs. The core of such an imaging system is a high performance, robust, reliable and integrated image sensor. We chose TowerJazz's CMOS image sensor manufacturing process due to its excellent pixel performance, stitching technology for wafer scale die size, and its outstanding pixel and process customization capabilities," said Dr. Xinyang Wang, Founder & CEO, Gpixel, Inc. "We believe China is on its way to become the biggest market in the world for high-end image sensor products and TowerJazz, as our strategic partner, is critical to our success."

"We are pleased Gpixel is starting the production ramp of their high resolution image sensor and we are confident they will grow rapidly to address China's rising demand in the high end CMOS image sensor market," said Dr. Avi Strum, Vice President and General Manager, CMOS Image Sensor Business Unit, TowerJazz. "Gpixel's GMAX3005 was a first time success due to Gpixel's design engineers' very high skills and knowledge of CIS design. We believe Gpixel is the most interesting and promising CIS company in China today."

Please visit TowerJazz at Image Sensors 2014 (booth #4) at Park Plaza Victoria, London to learn more about its CMOS image sensor technology.

About GMAX3005

Gpixel's GMAX3005 is a monochrome CMOS image sensor, offering a world record 150MP active pixel resolution, and is capable of running at ten frames per second at full frame with even higher frame rates achieved in row-windowing mode. This "wafer-scale" sensor has an astonishing 167.6mm x 30.1mm chip size including 165mm x 27.5mm photon-sensitive area. GMAX3005 has 16-bit on-chip ADC with 12-bit ENOB, and 120 LVDS output pairs running at 200Mbps. The sensor consumes less than 2.5W at full frame rate in full resolution.

GMAX3005 sits in an ultra-flat 395-pin PGA ceramic package with excellent heat dissipation and reliability. GMAX3005 is ideal for applications that require high sensitivity; it reaches a noise level of less than 4e-, a dynamic range of 75.4dB, and over 70% quantum efficiency at 550nm wavelength. GMAX3005 has a dark current as low as 10e-/s/pixel at 32°C, which makes long exposure possible even without active cooling. These performance results place it in the category of high end industrial grade sensors matching the capabilities of the best sensors available in the market today.

About Gpixel, Inc.

Gpixel Inc. is a Chinese company specialized in providing high-end customized and off-the-shelf CMOS image sensor solutions for industrial, medical, and scientific applications. The company was founded in 2013 by experienced CMOS image sensor designers and semiconductor physicists. In less than two years, Gpixel has filed more than 10 patent applications, covering from global shutter pixel, HDR pixel, low power and high speed AD converters. Gpixel products focus on extremely high resolution (over 100Mpix), very low noise ($<2e^{-}$), high dynamic range ($>100\text{dB}$) and ultra-high speed ($>2\text{Gpix/s}$) CMOS image sensor applications. Gpixel is committed to continuously innovate and work in close cooperation with its customers to deliver the most state-of-art image sensor technologies and products. For more information, please visit www.gpixelinc.com.

About TowerJazz

Tower Semiconductor Ltd. (NASDAQ: TSEM, TASE: TSEM), its fully owned U.S. subsidiary Jazz Semiconductor, Inc. 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, offering a broad range of customizable process technologies including: SiGe, BiCMOS, Mixed-Signal/CMOS, RFCMOS, CMOS Image Sensor, Power Management (BCD), and MEMS capabilities. TowerJazz also provides a world-class design enablement platform that enables a quick and accurate design cycle. In addition, TowerJazz provides (TOPS) Transfer Optimization and development Process Services to IDMs and fabless companies that need to expand capacity. TowerJazz offers multi-fab sourcing with two manufacturing facilities in Israel, one in the U.S., and one in Japan. 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 to update, the information contained in this release.

TowerJazz US Company/Media Contact: Lauri Julian | +1-949-715-3049 | lauri.julian@towerjazz.com

TowerJazz Investor Relations Contact: Noit Levi | +972-4-604-7066 | noit.levi@towerjazz.com

Gpixel Contact: Xinyang Wang | xinyang.wang@gpixelinc.com
