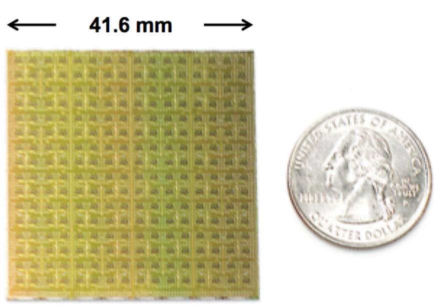
NEWS ANNOUNCEMENT **FOR IMMEDIATE RELEASE**

TowerJazz and UCSD Demonstrate First 5G 256-Element 60 GHz Silicon Wafer-Scale Phased Array Transmitter

Targets the >$500M emerging market of 5G 60 GHz base stations with beamforming capabilities

Enables lower cost phased arrays for commercial and aerospace & defense markets through integration of multiple circuit functions and high efficiency antennas on the same silicon chip

NEWPORT BEACH and SAN DIEGO, Calif., May 14, 2015 – TowerJazz, the global specialty foundry leader, and The University of California, San Diego (UCSD), a recognized leader for microwave, millimeter-wave and mixed-signal RFICs, today announced they have collaborated to demonstrate the first 256-element (16 x 16) wafer-scale phased array transmitter with integrated high-efficiency antennas operating at 56-65 GHz frequency range. First time success was achieved for the wafer-scale RFIC using TowerJazz's own proprietary models, kit and the mmWave capabilities of its 0.18-micron SiGe BiCMOS process, SBC18H3.



256-Element Array Chip

In addition, TowerJazz proprietary methods allowed for very large chip area with an extremely high level of integration. The phased-array system-on-a-chip (SoC) targets the emerging 5G high-performance wireless standard which will aim for greater than 10 Gbps (gigabits per second) peak data-rate communication. The array has beamforming capabilities that include independent amplitude and phase control for all 256 different antenna elements. By developing this wafer-scale chip, UCSD and TowerJazz have successfully demonstrated highly scalable RF-IC transmitters for 5G phased array applications. The collaboration of the wafer-scale phased array chip was partially funded through collaboration with DARPA.

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 radiation 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 have seen limited use in commercial systems due to their relatively high cost. UCSD’s design and utilization of TowerJazz wafer processes are targeted to greatly reduce the cost of phased arrays especially at millimeter-wave frequencies for 5G communication systems.

“This is yet another leap forward in the area of phased arrays that we are proud to announce. We have a track record of successful collaboration with TowerJazz and the ability to bring this innovative design from UCSD to market depends strongly on TowerJazz’s SiGe BiCMOS foundry process which enables lower-cost phased arrays through integration of multiple circuit functions and high efficiency antennas on the same silicon chip,” said Dr. Gabriel M. Rebeiz, Distinguished Professor of Electrical Engineering at UCSD, the lead professor on this chip.

"We believe the results achieved by UCSD’s 5G 60 GHz phased array transmitter again demonstrate the remarkable teamwork between TowerJazz, UCSD and DARPA, to provide novel capabilities and technologies to both the aerospace and defense community as well as commercial markets,” said Dr. David Howard, TowerJazz’s Executive Director and Fellow & Co-PI for the DAHI Program. “It is satisfying to have our long term collaboration and vision bear fruit, as shown in this demonstration, and to bring attention to our enabling role in emerging 5G markets and standards.”

About UCSD’s Phased Array SoC

The wafer-scale 256-element SiGe BiCMOS SoC phased-array is 42x42 mm^2 and combines the 60 GHz source, amplifiers, distribution network, phase shifters, voltage controlled amplifiers, and high-efficiency on-chip antennas (16 x 16 elements), allowing record performance for a new generation of high-performance phased arrays for the 60 GHz band (56-65 GHz). Such an advancement better serves the needs of the greater than $500M emerging market of 5G 60 GHz base-stations with beamforming capabilities and Gbps data rates. The antennas are integrated on-chip which removes the expensive and lossy transitions and distribution network between the phased array and the off-chip antennas.

This wafer-scale phased array with 256 radiating elements, together with all the necessary CMOS control circuits such as dual SPI control (serial parallel interface), is capable of electronic beam scanning to +/-50 degrees in all planes – the most of any mm-wave phased-array antenna to date. A measured EIRP (equivalent isotropically radiated power) of 45 dBm at 60

GHz was achieved from the wafer-scale array at an operating temperature of 95-100^{o}C, congruent with base-station temperatures, and within the FCC's EIRP power limits for 60 GHz band. The architecture could be scaled to 512 (16x32) or 1024 (32x32) elements due to on-chip antenna integration and the wafer-scale integration of multiple reticles on a single chip.

About TowerJazz's SBC18H3 BiCMOS Process

The phased array chip was developed using TowerJazz's SBC18H3 BiCMOS which offers both high-performance 0.18-micron SiGe bipolar and high quality passive elements combined with high density 0.18-micron CMOS, to enable high-speed networking and millimeter wave applications. The process offers SiGe transistors with peak Fmax of 280 GHz and peak Ft of 240 GHz, ideal for low-power, high performance millimeter wave circuits, which replace the need for more expensive GaAs chips. SBC18H3 comes standard with 1.8 and 3.3 volt CMOS (dual-gate), deep trench isolation, lateral and vertical PNP transistors, MIM capacitors, high-performance varactors, poly-silicon as well as metal and N-well resistors, p-i-n and Schottky diodes, high-Q inductors, triple well isolation, and six layers of metal. TowerJazz also manufactures a faster, lower noise process, named SBC18H4, with Fmax of 340 GHz.

The chip was designed and tested by Samet Zihir and Ozan Gurbuz from the Electrical and Computer Engineering Department at UCSD under the supervision of Prof. Gabriel M. Rebeiz, with help from Dr. Arjun Karroy, TowerJazz, and was sponsored by the DARPA DAHI program under the direction of Dr. Daniel Green.

Availability

The SBC18H3 process is available through the TowerJazz multi-project wafer (MPW) system www.towerjazz.com. The chip is available from UCSD and interested parties should contact Prof. Gabriel M. Rebeiz; Department of Electrical and Computing Engineering at UCSD, 858/534-8001 or rebeiz@ece.ucsd.edu.

TowerJazz will be exhibiting at IMS 2015 (booth #736) on May 19-21, and Dr. Rebeiz from UCSD will be presenting a paper on May 20, titled, "A 60 GHz 64-element Wafer-Scale Phased-Array with Full-Reticle Design" in Room 125AB from 1:50pm – 2:10pm.

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 tenure 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. subsidiary Jazz Semiconductor, 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), one 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 and 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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