



## Cavendish Kinetics' RF MEMS Tuner, Fabricated at TowerJazz, Sets New Industry Benchmark by Passing 50 Billion Cycle Testing

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### ***Proven Reliability Opens Door to Substantial \$6 Billion Cellular MEMS and Sensor Market\****

NEWPORT BEACH, Calif. & SAN JOSE, Calif.--(BUSINESS WIRE)--Jun. 3, 2014-- [TowerJazz](#), the global specialty foundry leader, and [Cavendish Kinetics](#), today announced that Cavendish's CK301 RF MEMS tuner has passed the 50 billion cycles test with zero part failures. Additionally, the parts have passed standard JEDEC and SEMI qualification and select Mil-Std 883D and IEC tests. The CK301 RF MEMS tuner combines Cavendish's patented NanoMech™ MEMS technology with TowerJazz's high voltage CMOS and custom radio frequency interconnect processing, and has now been released for volume production at TowerJazz.

"The cycling data is impressive, especially as the reliability has exceeded the specifications from mobile phone makers by up to 100x" said Dr. David Howard, TowerJazz Executive Director and Fellow. "The monolithically integrated chip is designed for reliability and manufacturability, and is taking full advantage of our standard semiconductor process tooling and MEMS process experience."

Cavendish's first generation MEMS products, which include the CK301, are innovative RF tuners specifically designed to overcome the antenna performance challenges experienced in today's LTE smartphones, which have to support an ever growing number of operating modes and frequency bands. In addition, larger displays and batteries, and ever thinner form-factors further constrain the antenna volume available in smartphones. Antenna Tuning is one of the most promising solutions to enable multiband antenna performance, but existing tuning solutions do not provide the characteristics required to make it work efficiently. Cavendish's RF tuners provide an industry leading 'Q-Factor' (>200), are very low loss (dB), and enable the required tuning ranges so that RF designers can meet LTE radio performance requirements. In addition, Cavendish's antenna tuner is only 2mm<sup>2</sup> in size and does not require other components, which makes it easy to implement in even the most challenging form-factors.

Cavendish's upcoming MEMS products will address the performance needs of LTE-advanced RF front-end components such as power amplifiers, filters and switches, to enable demanding next generation LTE carrier-aggregation and WiFi co-existence solutions.

"We have dedicated ourselves to build RF MEMS products that are optimizing smartphone radio platforms, and can be mass produced using basic CMOS processes," said Dennis Yost, President and CEO of Cavendish Kinetics. "During this development, TowerJazz has been an invaluable technology and process partner with its advanced MEMS foundry know-how. With TowerJazz's process expertise, we have been able to achieve our goals of manufacturability, quality and reliability, and are now in the enviable position to be able to supply many tens of millions of devices per month to support the large and rapidly growing LTE mobile device market," Yost added.

"We are proud that Cavendish Kinetics was able to take full advantage of our MEMS Foundry enablement solutions," said Russell Ellwanger, CEO of TowerJazz. "The RF MEMS market is an important growth area for TowerJazz, and the successful collaboration with Cavendish expands our leadership position in this nascent market. Now, Cavendish is in a position to mass produce a highly reliable CMOS-MEMS solution, utilizing the proven TowerJazz high volume manufacturing capability."

### **About Cavendish Kinetics**

Cavendish Kinetics ([www.cavendish-kinetics.com](http://www.cavendish-kinetics.com)) provides high-performance RF tuning solutions for mobile device manufacturers in the global wireless industry. As the world's leading expert on RF microelectromechanical systems (MEMS) design and manufacturing, Cavendish has achieved a breakthrough—applying its patented MEMS technology and manufacturing processes to solving tough radio-frequency (RF) connectivity problems, particularly for 4G and LTE. Privately held, Cavendish is based in San Jose, CA, USA, and has offices in Korea, Taiwan, China and The Netherlands.

### **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 also owns 51% of TowerJazz Panasonic Semiconductor Company, Ltd. (TPSCo) through a joint venture with Panasonic Corporation. 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 & 700V), and MEMS capabilities. Through TPSCo, TowerJazz offers additional capacity as well as leading edge 45nm CMOS, 65nm RF CMOS and 65nm 1.12um pixel technologies. TowerJazz provides a world-class design enablement platform that enables a quick and accurate design cycle. TowerJazz also offers Transfer Optimization and development Process Services (TOPS) to IDMs and fabless companies that need to expand capacity. To provide multi-fab sourcing for its customers, TowerJazz operates two manufacturing facilities in Israel, one in the U.S., and four in Japan. For more information, please visit [www.towerjazz.com](http://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.

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