Tower Semiconductor and Tianyi Micro Announce Strategic Cooperation in Development of Next Generation OLED Micro Displays for AR/VR

Addressing the growing Chinese and global market needs for advanced AR/VR solutions

Based on Tower's high yield, dedicated process for micro display backplane, supporting current-driven OLED pixel designs

MIGDAL HAEMEK, Israel, and HANGZHOU, China, February 26, 2024 – Tower Semiconductor (NASDAQ/TASE: TSEM), the leader in high-value analog semiconductor foundry solutions, and Tianyi Micro, a leading provider of micro display driver chips specializing in developing silicon-based micro-OLEDs and micro-LEDs, today announced their strategic cooperation in the development of next generation OLED micro displays for AR/VR, addressing the growing Chinese and global market needs for advanced AR/VR solutions. The development is based on Tower's unique 180nm and 65nm dedicated micro display backplane process flows, supporting current-driven (as opposed to voltage-driven) OLED pixel designs. According to market analysis by Omdia, the micro display market will grow from 24 million units in 2023 to almost 90 million units in 2028, a CAGR of 67%. The overall AR/VR market, dominated by VR and XR headsets already reached $1.15 billion in 2023.

Tianyi Micro is currently the sole provider in China of current-driven pixel designs and selected Tower as its key foundry partner for micro display backplane developments. As performance requirements call for specific device characteristics such as high yield, ultra-low leakage combined with high voltage for high brightness, Tower has developed dedicated process flows addressing these requirements. Having such dedicated flows enables Tianyi to pursue its leading market position with next generation micro displays.

"We chose Tower for its well-known continuous innovation in silicon-based OLED technology, including but not limited to ultra-low leakage MOS devices, and customized anode for compact pixel circuit design. These advanced offerings, along with our close collaboration, allow Tianyi Micro to achieve high display performance based on current-driven pixel circuits/products," said

Lina Sun, Tianyi CEO. “Tower’s professional support and expertise allow us to achieve first pass silicon success that meet the high requirements of micro display products”.

Tower’s platform offers several strategic advantages such as high resolution, high brightness, excellent yield, and display uniformity. It’s dedicated flows for display backplanes include custom low leakage devices, high voltage (up to 10V) pixels for high brightness displays, and in-pixel MIM capacitors, as well as tailor-made back end for customer specific requirements (customized anodes, protective layers, custom CMP). These flows include complete process/device offerings, silicon results and PDK support with very accurate modeling. They are available in full flow or lean flow for high yield 2-chip solutions.

“We value long term cooperations that yield progress and technological advancements. Our collaboration with Tianyi Micro in micro display technology development is a perfect example for such a process, which extended our offering to include dedicated flows for micro display application”, said Dr. Avi Strum, Senior Vice President and CTO, Tower Semiconductor. “Like CMOS Image Sensors before, OLED Micro-displays have reached a point where standard CMOS flows are not meeting the image quality requirements. Future Displays call for a dedicated flow with customized devices for yield and performance. With projects that began on our 180nm and continued to 65nm high voltage platform for next generation micro displays, we are proud to continue our collaboration and drive solutions that deliver mutual success”.

Tower will be presenting this exciting technology and recent relevant developments in upcoming SEMICON China on March 20, 2024, at 11:30 am: **Advanced CMOS Process Technology for Micro Display Manufacturing** by Dr. Benoit Dupont, Sensors and Display Marketing Director, Tower Semiconductor.

For additional information about Tower Semiconductor’s micro displays technology offerings, please visit here.

For additional information about Tower Semiconductor’s CMOS image sensors technology offerings, please visit here.

About Tower Semiconductor

Tower Semiconductor Ltd. (NASDAQ/TASE: TSEM), the leading foundry of high value analog semiconductor solutions, provides technology, development, and process platforms for integrated circuits (ICs) in growing markets such as consumer, industrial, automotive, mobile, infrastructure, medical and aerospace and defense. Tower Semiconductor focuses on creating positive and sustainable impact on the world through

long term partnerships and its advanced and innovative analog technology offering, comprised of a broad range of customizable process platforms such as SiGe, BiCMOS, mixed-signal/CMOS, RF CMOS, CMOS image sensor, non-imaging sensors, displays, integrated power management (BCD and 700V), photonics, and MEMS. Tower Semiconductor also provides world-class design enablement for a quick and accurate design cycle as well as process transfer services including development, transfer, and optimization, to IDMs and fabless companies. To provide multi-fab sourcing and extended capacity for its customers, Tower Semiconductor owns two facilities in Israel (150mm and 200mm), two in the U.S. (200mm), two in Japan (200mm and 300mm) which it owns through its 51% holdings in TPSCo, a 300mm facility in Agrate, Italy, shared with ST as well as a 300mm capacity corridor in Intel's New Mexico factory. For more information, please visit: www.towersemi.com.

About Tianyi Micro

Tianyi Micro is incorporated in Beijing, China in 2020, and has set up teams in Beijing, Hangzhou, and Shenzhen to better serve their customers. Tianyi Micro is dedicated to the design of MicroOLED/MicroLED driver IC, whose products are primarily utilized in AR, VR, and MR spatial computing devices. Since 2020, Tianyi Micro has successfully mass-produced several sizes of MicroOLED display driver ICs which feature long lifespans, ultra-low power consumption and amazing display performance. Currently, Tianyi Micro has been developing TY130 in full swing - a 1.3-inch MicroOLED backplane for spatial computing equipment. The TY130 is expected to be launched in April 2024.

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 Tower'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. Tower does not intend to update, and expressly disclaim any obligation to update, the information contained in this release.

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