Xscape Photonics and Tower Semiconductor Unveil the Industry's First Optically Pumped On-Chip Multi-Wavelength Laser Platform for AI Datacenter Fabrics

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Monolithically integrated, optically pumped, programmable multi-color laser built on Tower's PH18 platform enables scalable CWDM/DWDM optical fabrics for disaggregated AI clusters

MIGDAL HAEMEK, Israel and SANTA CLARA, Calif. – Aug. 25, 2025 - Tower Semiconductor (NASDAQ/TASE: TSEM), a leading foundry of high-value analog semiconductor solutions, and Xscape Photonics, a U.S.-based innovator in advanced photonic interconnects funded by industry leaders such as NVIDIA and Cisco, today announced the successful prototyping and validation kit availability of the industry's first on-chip, optically pumped, multi-wavelength laser source. Built on Tower's mature, high-volume PH18 Silicon Photonics platform, the solution supports CWDM and DWDM wavelength grids and is tailored for AI datacenter fabrics, where bandwidth density, power efficiency, and scalability are essential.

The optical interconnect market for AI datacenters is expected to grow, driven by the rising demand for high-speed, low-latency connectivity in hyperscale AI deployments. According to LightCounting, sales of optical transceivers and LPO/CPO for AI clusters are expected to reach more than $10 billion in 2026, double the size of sales in 2024. LightCounting projects these sales to reach $20 billion by 2030.

This breakthrough from Tower Semiconductor and Xscape Photonics enables a path toward high performance, high reliability, lower cost and a simplified supply chain by monolithically embedding programmable multi-color lasers on-chip, pumped optically by a single CW external laser. It also eliminates the need to source for multiple externally modulated lasers or require hybrid III-V integration. Xscape Photonics' solution simplifies design, reduces latency and component count, and is especially impactful for GPU-to-GPU and GPU-to-HBM optical links in AI clusters. Leveraging Tower's high-volume modular PH18 platform, the solution offers a seamless upgrade path for existing customers, fully compatible with established photonic components such as modulators and detectors.

"Our close collaboration with Tower has allowed us to bring to market a highly differentiated, manufacturable, and scalable solution," said **Vivek Raghunathan, CEO of Xscape Photonics.** "By building on Tower's proven and qualified high-volume PH18 platform, we've eliminated the need for costly hybrid laser integration and delivered the first monolithically integrated, multi-color laser source directly on-chip. This will transform how AI fabrics are architected going forward."

Xscape Photonics is developing a multi-color laser platform, ChromX, based on its proprietary CombX technology, a programmable laser source device that allows end users—especially those already designing with Tower's PH18 platform—to easily integrate high-performance laser sources, significantly reducing packaging complexity and component count. The laser source is compatible with existing silicon photonic modulators and detectors, opening a seamless path toward fully integrated optical interconnect for AI data center fabrics.

"We are excited to partner with Xscape Photonics in bringing this first-of-its-kind innovation to life," said **Ed Preisler, Vice President and GM of Tower Semiconductor's RF Business Unit** . "Tower's multi-sourced and high-volume silicon photonics platform has once again demonstrated its ability to support advanced custom solutions for AI and datacenter customers at scale. This new solution exemplifies how our flexible, modular technology ecosystem enables rapid prototyping and high-volume production adoption for emerging AI and data-driven markets."

For additional information about the company's RF platform offering, 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 its customers in growing markets such as consumer, industrial, automotive, mobile, infrastructure, medical and aerospace and defense. Tower Semiconductor focuses on creating a 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 one operating facility in Israel (200mm), two in the U.S. (200mm), two in Japan (200mm and 300mm) which it owns through its 51% holdings in TPSCo, shares a 300mm facility in Agrate, Italy with STMicroelectronics as well as has access to a 300mm capacity corridor in Intel's New Mexico factory. For more information, please visit: www.towersemi.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 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.

About Xscape Photonics
Xscape Photonics develops custom photonic platform solutions designed for ultra-high bandwidth connections inside data centers to power Agentic AI systems. The company's proprietary ChromX platform targets scaling of AI computing performance in an environmentally sustainable manner and is

optimized for power, cost, scale and reliability. The company recently announced the availability of EagleX, its technology evaluation kit. To learn more, follow us on LinkedIn or visit xscapephotonics.com.

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