
FORM 6-K

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

For the month December 2021 No. 1

TOWER SEMICONDUCTOR LTD.

(Translation of registrant's name into English)

Ramat Gavriel Industrial Park

P.O. Box 619, Migdal Haemek, Israel 2310502

(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 December 21, 2021, the Registrant Juniper Networks Announce World's
First Open Market Silicon Photonics Platform with Monolithically Integrated III-V Lasers**

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: December 21, 2021

By: /s/ Nati Somekh

Name: Nati Somekh

Title: Corporate Secretary

NEWS ANNOUNCEMENT

FOR IMMEDIATE RELEASE

Tower Semiconductor and Juniper Networks Announce World's First Open Market Silicon Photonics Platform with Monolithically Integrated III-V Lasers

Enables next-generation optical communications for telecoms and datacenters, as well as emerging applications in artificial intelligence and LiDAR for autonomous vehicles

MIGDAL HAEMEK, Israel and MOUNTAIN VIEW, Calif. – December 21, 2021 – Tower Semiconductor (NASDAQ/TASE: TSEM), the leading foundry of high-value analog semiconductor solutions, and Juniper Networks (NYSE: JNPR), a leader in secure, AI-driven networks, today announced the world's first silicon photonics (SiPho) foundry-ready process with integrated III-V lasers, amplifiers modulators and detectors. This integrated laser process addresses optical connectivity in datacenters and telecom networks, as well as new emerging applications in artificial intelligence (AI), LiDAR and other sensors. According to the market research firm Yole, the silicon photonics transceiver market for datacenters is expected to grow rapidly at a CAGR of 40% to reach over \$5B in 2025.

The new platform co-integrates III-V lasers, semiconductor optical amplifiers (SOA), electro-absorption modulators (EAM) and photodetectors with silicon photonics devices, all monolithically on a single chip. This enables smaller, higher-channel count and more power-efficient optical architectures and solutions. Foundry availability will enable a broad array of product developers to create highly integrated photonic integrated circuits (PICs) for diverse markets.

Process design kits (PDK) are expected to be available by year end and the first open multi-project wafer (MPW) run are expected to be offered early next year. First samples of full 400Gb/s and 800Gb/s PICs reference designs with integrated laser are expected to be available in the second quarter of 2022.

“Our mutual development work with Tower has been extraordinarily successful in qualifying this innovative silicon photonics technology in a high-volume manufacturing facility,” said Rami Rahim, CEO of Juniper Networks. “By offering this capability to the entire industry, Juniper offers the potential to radically reduce the cost of optics while lowering the barrier to entry for customers”.

“Our partnership with Juniper on silicon photonics is bringing a paradigm shift for product development across our industry,” said Russell Ellwanger, CEO of Tower Semiconductor. “It is now possible to mix the advantages of III-V semiconductors with high-volume silicon photonics manufacturing. Being the singular open market, integrated laser silicon photonics platform, and having a multi-year advantage over any potential foundry competitor, we are jointly creating breakthrough products with truly unique value for our industry and for society as a whole”.

For additional details on the PDK and MPW shuttle schedule, please visit [here](#).

About Tower Semiconductor

Tower Semiconductor Ltd. (NASDAQ: TSEM, TASE: TSEM), the leading foundry of high value analog semiconductor solutions, provides technology and manufacturing 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, integrated power management (BCD and 700V), 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 manufacturing facilities in Israel (150mm and 200mm), two in the U.S. (200mm), three facilities in Japan (two 200mm and one 300mm) which it owns through its 51% holdings in TPSCO and is sharing a 300mm manufacturing facility being established in Italy with ST. For more information, please visit: www.towersemi.com.

About Juniper Networks

Juniper Networks is dedicated to dramatically simplifying network operations and driving superior experiences for end users. Our solutions deliver industry-leading insight, automation, security and AI to drive real business results. We believe that powering connections will bring us closer together while empowering us all to solve the world's greatest challenges of well-being, sustainability and equality. Additional information can be found at Juniper Networks (www.juniper.net) or connect with Juniper on [Twitter](#), [LinkedIn](#) and [Facebook](#).

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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.

This press release includes forward-looking statements within the meaning of applicable securities laws, which are subject to risks and uncertainties. All statements, other than statements of historical fact, could be deemed forward-looking statements. All statements made in this press release are made only as of the date of this press release. Juniper Networks undertakes no obligation to update the information in this press release in the event facts or circumstances subsequently change after the date of this press release.

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