NewPhotonics® Expands Near-Package Optics PIC Series with Laser Integrated, Serviceable High-Density 6.4T Optical Engine

Introducing the NPC50506 6.4T DR32 chipset, an Open-CPX compliant PIC for NPO socket pluggables enabling low power in a compact form factor for AI interconnect



NPC50506 6.4T Laser Integrated NPO Optical Interconnect Chipset

PETACH TIQWA, TEL AVIV, ISRAEL, September 9, 2026 /EINPresswire.com/ -- NewPhotonics® Ltd., the award-winning fabless semiconductor designer delivering innovative all-optical domain connectivity solutions for data center interconnect, today introduced the NPC50506 6.4T DR32 NPO optical engine chipset with integrated laser. Designed for serviceable Open CPX-compliant near-packaged optics, the compact engine moves optical conversion closer to the switch or XPU while preserving independent testability and field replacement. NewPhotonics recently became a member of the Open CPX MSA.

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>
> *Doron Tal, SVP and GM at NewPhotonics*

"The introduction of NPO solutions with integrated lasers is likely to be a game changer in the race to deliver the network capacity required for agentic AI" said Simon Stanley, Analyst at Large, Omdia. "Open CPX-compliant NPO pluggable interconnects fit into a sweet spot between pluggable modules and co-packaged optics (CPO)."

Building on the NPC505 product line launched in January 2026, the NPC50506 introduces a compact form factor, high-density 6.4T optical engine with integrated laser to eliminate the complex system design of alternate solutions that use an external light source. The heterogeneously integrated laser enables lower optical insertion loss and reduced power consumption.

The laser-integrated NPC505 design eliminates complex assembly, laser attach, and optical coupling steps in a low-profile flip-chip PIC for simplified assembly of a known-good optical engine. The socketed design allows independent engine testing prior to installation and replacement without needing to replace the entire switch or XPU package.

“We’ve taken a system approach to the chipset design to deliver important advantages in NPO manufacturing yield and service at AI-cluster scale,” said Doron Tal, SVP and GM at NewPhotonics. “NPO is moving from a roadmap option to a practical deployment architecture as bandwidth density demand, power and serviceability become system-level constraints on infrastructure design. With the NPC50506 for NPO, we have combined high-density bandwidth and short electrical reach in the only integrated laser package that delivers pragmatic balance of proximity and performance in AI scale-up and scale-out interconnect.”

The monolithic silicon photonic chip design features:
- Heterogeneously low-loss laser integration eliminating the need for an external light source
- Low profile flip-chip BGA for simplified assembly and manufacturing
- Integrated 224 Gbps high-bandwidth PAM4 modulator and control circuitry
- Serviceable socketed architecture designed for the Open CPX-MSA form-factor ecosystem
- Per-channel output power monitoring and transmission disable access

The NPC50506 6.4T NPO optical engine will be shown at the ECOC 2026 event in Malaga, Spain September 21-23, where it is a finalist for the Most Innovative Optical Component award. NPC50506 will sample in Q3 2026, and the HDK reference design will be available in Q4 2026. Learn more about the NPC505 Series for NPO at www.newphotonics.com.

About NewPhotonics®
NewPhotonics is a fabless semiconductor delivering innovative optical-first silicon photonic product and technology innovation for AI-era hyperscaler, neo-cloud and data center interconnect that enables market disrupting energy efficiency and production simplicity and volume of FRO/LRO/LPO and NPO pluggables as well as advanced co-packaged optics solutions. In a highly integrated and system approach to design, the company offers laser integrated PICs for scale-out and scale-up photonic interconnect, the OSPic® all-optical signal processor engine, and the industry-first Syncra™ powered by Niox™ heaterless MRM CPO platform with zero-loss monitoring and real-time calibration. Visit www.newphotonics to learn more.

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