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News Release

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OneChip Photonics Delivers New Family of High-Performance, Low-Cost Photonic Integrated Circuit-Based EPON Transceivers

First fully integrated optical access transceivers will pave way for broader deployment of FTTP networks and voice, data and video services

OTTAWA and SHENZHEN, China – Sept. 7, 2009 – At The 11th China International OPTO ELECTRONIC Expo (CIOE 2009), OneChip Photonics today announced its new family of high-performance, low-cost Photonic Integrated Circuit (PIC)-based Ethernet Passive Optical Network (EPON) transceivers. OneChip’s fully integrated transceivers are designed for Optical Line Terminals (OLTs) and Optical Network Units (ONUs), which are deployed at service provider central offices and at customer premises, respectively. These transceivers will help system providers and carriers deploy Fiber-to-the-Premises (FTTP) more cost-effectively than ever before – and meet consumer and business demand for high-bandwidth voice, data and video services.

OneChip Photonics develops and manufactures low-cost, high-performance optical transceivers – based on monolithic Photonic Integrated Circuits (PICs) in Indium Phosphide (InP) – for access networks and other mass-market broadband applications. OneChip’s breakthrough approach and technology will remove the cost and performance barriers that have been impeding the ubiquitous deployment of Fiber-to-the-Home and enable new business and consumer broadband applications.

“OneChip’s new EPON transceivers are the first fully integrated optical access transceivers on the market,” said Jim Hjartarson, CEO of OneChip Photonics. “They will give system providers and carriers the ability to significantly lower the cost and boost the performance of their FTTP networks, while meeting business and consumer demand for high-bandwidth voice, data and video services.”

OneChip’s new optical modules include OLT transceivers that provide a 1.25 Gb/s or 2.5 Gb/s downstream and a 1.25 Gb/s or 2.5 Gb/s upstream data link in a single fiber, using a 1490 nm optical wavelength continuous-mode transmitter and a 1310 nm optical wavelength burst-mode receiver. The offering also includes ONU transceivers that provide a 1.25 Gb/s or 2.5 Gb/s downstream and a 1.25 Gb/s or 2.5 Gb/s upstream data link in a single fiber, using a 1490 nm optical wavelength continuous-mode receiver and a 1310 nm optical wavelength burst-mode transmitter. OneChip’s new EPON ONU transceivers are compliant with IEEE Standard 802.3ah™-2004 1000BASE-PX20-U and its extensions, SFF MSA2000 and FCC 47 CFR Part 15, Class B standards.

“In recent years, PICs have transformed long-haul optical networks, but *Heavy Reading* has long felt that PICs also have a tremendous role to play in the future of fiber access networks, where per-subscriber costs are so crucial to operator success,” said Sterling Perrin, senior analyst at *Heavy Reading*, an independent market research organization. “With the announcement of these fully integrated EPON transceivers, OneChip is bringing the powerful value

proposition of Indium Phosphide-based PICs to the FTTH market.”

OneChip Delivers on Market Opportunity

Currently, transceivers comprise 30 to 40 percent of an ONU’s/OLT’s cost. They offer low levels of integration and require manual assembly from multiple parts, which limits their cost-effectiveness, performance and quality. OneChip uses a new PIC design/fabrication approach, which is based on a vertical integration of all the active and passive transceiver components into a common multi-guide structure manufactured in one epitaxial growth. This approach is inherently high yielding and low cost.

OneChip believes that its new approach and technology will enable the company to claim a significant share of the FTTx optical transceiver market – one that global analyst and consulting firm Ovum estimates will grow from \$419 million by the end of 2009 to \$456 million by the end of 2013.

OneChip Offers Critical Competitive Advantages

Most current FTTP transceiver providers base their transceivers on either Discrete Optics or Planar Lightwave Circuit (PLC) designs. These designs offer low levels of integration and require assembly from multiple parts, requiring active optical alignment. There is little technical differentiation among them. Rather, vendors must compete on the basis of who can assemble the parts in a slightly cheaper fashion. And there is little opportunity to further reduce such costs.

OneChip Photonics has taken a new approach with its breakthrough PIC technology. OneChip is monolithically integrating all the functions required for an optical transceiver onto a single, Indium Phosphide (InP)-based chip. All active and passive components of the chip – including the Distributed-Feedback (DFB) laser, Optically Pre-Amplified Detector (OPAD), Wavelength Splitter (WS), Spot-Size Converter (SSC), and various elements of passive waveguide circuitry – are, uniquely, integrated in one epitaxial growth step, without re-growth or post-growth modification of the epitaxial material.

With respect to transmit performance, OneChip’s single-frequency DFB lasers will offer a superior performance – much more suitable for longer-reach and higher bit-rate applications – than competing Fabry-Perot (FB) lasers. With respect to receive performance, OneChip’s Optically Pre-Amplified Detector (OPAD) design is a higher gain-bandwidth solution than competing Avalanche Photodiode (APD) solutions. It also is a lower-cost solution, as it does not require a high-voltage power source.

OneChip’s breakthrough monolithic Photonic Integrated Circuits have the smallest footprint on the market, the optical parts are aligned for life, and the parts are highly robust (resistant to vibration and other outside elements). Further, OneChip’s PICs are designed for automated mounting onto a silicon optical bench, without requiring active alignment, using industry-standard, automated assembly processes – resulting in consistently high yields of good devices.

EPON Portfolio Enabling FTTP Deployment

The EPON transceivers implement all active and passive optical components in a PIC, unique to OneChip Photonics. The optical signal path is entirely contained in a solid state, single monolithic Indium Phosphide (InP) semiconductor die, eliminating conventional free-space optical signal propagation and multiple discrete optical elements and resulting in a more robust and reliable optical path. The transmitter section uses a 1310 nm MQW-DFB (Multiple Quantum Well – Distributed Feedback) laser for superior performance at long distances or over older or more dispersive fiber plant, and is Class 1 laser compliant according to international safety standard IEC-60825. The receiver section uses an integrated 1490 nm PIN, as well as a preamplifier and limiting post-amplifier.

An optical filter rejects out-of-band optical signals to provide rejection of other downstream wavelengths in use on the PON, either for video overlay or fiber link monitoring purposes. Target markets/applications include Gigabit Ethernet Point-to-Point bi-directional (ONU and OLT sides) and 2.5 Gb/s Ethernet Passive Optical Networks, EPON, (ONU and OLT sides).

OneChip also is developing OLT and ONU transceivers for Gigabit PON (GPON) networks.

Availability and Pricing

OneChip currently is providing sample devices to its prospective customers and partners and plans to ship its first production EPON transceivers in the fourth quarter of 2009.

Please contact OneChip's Sales team at any of the following numbers or addresses, for more information on the prices of its EPON transceivers:

Global Headquarters (Ottawa, Canada): +1 (613) 226-6117; +1 (866) 652-4627 (toll-free)

U.S. Sales Office (Cupertino, Calif.): +1 (408) 725-7511

E-mail: sales@onechipphotonics.com

About OneChip Photonics

OneChip Photonics is a privately held company, headquartered in Ottawa, Canada, that develops and manufactures low-cost, high-performance optical transceivers – based on monolithic Photonic Integrated Circuits (PICs) in Indium Phosphide (InP) – for access networks and other mass-market broadband applications. OneChip's breakthrough approach and technology will remove the cost and performance barriers that have been impeding the ubiquitous deployment of Fiber-to-the-Home (FTTH) and enable new business and consumer broadband applications. For more information, please contact OneChip at (613) 226-6117 or info@onechipphotonics.com, or visit our Web site at www.onechipphotonics.com.

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