



OneChip Readies EPON Parts

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Startup [OneChip Photonics Inc.](#) says it's ready to launch its EPON transceivers, the first step in finding out if chip integration is going to be enough to build a viable business in a crowded market.

The parts, OneChip's first, are getting shown off this week at the [China International Optoelectronics Exposition \(CIOE\)](#), billed as *the* biggest optical tradeshow. (But they cheat by including stuff like LED lighting.)

OneChip is designing PON transceivers that integrate multiple components into, you know, one chip. Those chips are built out of indium phosphide (InP) and manufactured by [Sanmina-SCI Corp.](#) (Nasdaq: [SANM](#)). (See [OneChip Tries Infinera's Trick.](#))

OneChip expects the EPON transceivers to be commercially available in the fourth quarter. Customers haven't had samples long enough to commit to making real orders, says Andy Weirich, OneChip's vice president of product line management.

One advantage of monolithic integration is not having to align the components; manual alignment, to make sure the light hits the right spots, has traditionally made optical components manufacturing a slow and expensive process.

Infinera uses monolithic InP integration in its DTN system for DWDM transport – but Infinera is going after a high-end market. OneChip, by contrast, is chasing a commodity market that's going to demand a low-priced product.

Speaking of which – PON transceivers are a notoriously overcrowded market, and considering the parts have to be inexpensive in the first place, it's tough to make money, let alone get noticed as a startup.

But OneChip claims it can lower the price by 20 to 25 percent, enough to tip equipment vendors to profitability on ONTs. And it's not going to do that by selling its transceivers at a loss.

"We fully intend to make money at this," Weirich says. "If we thought we would make money at the same rate as our competitors, I don't think we would have gotten into this."

"Ultimately, they're not going to slash the price of the ONT in half or anything, but it's a reduction in cost that's needed," says Sterling Perrin, an analyst with *Heavy Reading*. "The ONT ultimately needs to be comparable in price to copper at some point, and now, they're separated by hundreds of dollars."

EPON happens to be the dominant PON variant in Asia, but the real reason why OneChip is announcing EPON first is because GPON isn't yet possible for the company.

The GPON standard has settled upon what are called Class B+ optics, which meet a more demanding set of specifications than average parts. The result has been that most transceiver vendors use an avalanche photodiode (APD) as the optical receiver – and APDs aren't aren't a good candidate for OneChip's type of monolithic integration.

To get the proper optical-receiver sensitivity, OneChip intends to integrate a semiconductor optical amplifier (SOA) into its GPON devices. "That's something that's taken us a little bit longer to develop," Weirich says.

— Craig Matsumoto, West Coast Editor, *Light Reading*

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