



LIGHTCOUNTING

Market Research on High-Speed Interconnects

Datacom, Telecom, CATV, FTTX, Consumer markets

FOR IMMEDIATE RELEASE

Growth in sales of 40G and 100G products continues despite the market slowdown. 100G optical transmission technology based on digital signal processing will enable future intelligent and flexible optical networks.

EUGENE, Ore. – June 7, 2011 – LightCounting has released a report on 100 Gbps optical transmission technology, which will prove to be a transformational technology in carrier networks. While 10G will continue as the largest market in both revenue and units, LightCounting expects sales of 100G DWDM line cards to grow to \$2.3 billion by 2015. At the same time, a new market for 40GigE and 100GigE client-side optical transceiver modules is developing, and LightCounting forecasts the market for those devices will grow to \$380 million by 2015.

This report examines the development of 100G DWDM line-side technology and standards for 100G on both the line side (DWDM) and client side (Ethernet). It looks at trials and initial deployments of 100G technology as well as offerings from system, module and communications IC suppliers. It addresses the market opportunity for 40 and 100GE in the datacenter and takes a look at some of the activity to develop 100G direct detection alternatives to DP-QPSK with coherent detection. The report also presents LightCounting forecasts for both client-side and line-side 40G and 100G technology as well as an evaluation of current market pricing. Finally, it presents some of the ongoing research in developing optical transmission technology beyond 100G.

The technology used for 100G DWDM line-side connections provides higher spectral efficiency than 10G or 40G transmission techniques. That ultimately will make 100G desirable for carrier networks, but the impact of 100G on carrier networks will go far beyond spectral efficiency.

As noted in the report, the performance of the transmission technology selected for 100G, DP-QPSK with coherent detection, is the first optical transmission technology based on digital signal processing. This means the line card can provide remote real-time monitoring of optical layer performance in terms of span loss, latency, chromatic dispersion, PMD, and pre and post FEC BER. In addition, software and hardware in the 100G line card implements a tunable receiver. Under software control, the receiver can select the particular wavelength channel to use. Some vendors are even talking about taking things a step further by adding digital control of transponder characteristics that

are similar to what software-defined radios bring to RF networks. A 100G transponder may ultimately be able, under software control, to change performance characteristics (like optical channel bandwidth, modulation format, wavelength channel, and transmission rate) to adapt to changing conditions and traffic loads. Together with tunable laser transmitters, 100G line cards will provide the first fully tunable transponders in the network. It's not a big leap to imagine these fully tunable transponders paired with grid-flexible, directionless, colorless ROADMs and management software to create truly intelligent, configurable optical networks. This flexibility would allow dynamic reallocation of resources and provide greater network efficiency—it would enable the capacity, intelligence, and flexibility that have been dreamed about for optical networks for over a decade.

More information on the report is available at: www.lightcounting.com/100gbps

About

LightCounting

LightCounting is a market research company focused on in-depth study of the optical communications market. Our research covers the whole supply chain including components, modules, systems, and their applications. Most of our analysis is based on confidential sales data provided exclusively to LightCounting by leading component and module suppliers.

For more information: www.LightCounting.com or 408.962.4851.