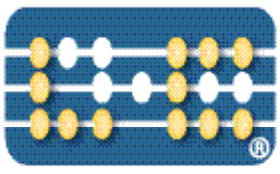
2017



LIGHTCOUNTING
Market Research

- Semi-Annual Market Forecast
- Semi-Annual High Speed Ethernet Optics

Mega Datacenter Optics

Impact of Cloud Services on the Telecom Industry

Datacom

-State of the Industry
-Integrated Optical Devices

Telecom

Active Optical Cables / Embedded Optical Modules

Next Generation Access Optics

Quarterly Market Update

Report Overviews and Descriptions

Integrated Optical Devices (Published annually in January)

In contrast to electronic chips that combine millions of functions in a single device, optics developed for transmitting data over fiber networks remains relatively simple. Generation and detection of light is accomplished by discrete optical elements: lasers and detectors coupled with fiber and co-packaged with electronics. Increasing the speed of optics as required in mega-datacenters and DWDM networks has lead to development of more complex optical devices that combine multiple functions on the same chip. New technologies such as Silicon Photonics (SiP) also hold promise for integration of optics and electronics. This report will include analysis of the market data from 2010-2016 and provide a forecast for shipments of integrated optical devices based on InP, GaAs and SiP technologies.

Information on the report is available at http://www.LightCounting.com/Silicon.cfm

NEW!! Impact of Cloud Servics on the Telecom Industry (Published annually in February):

Emergence of Internet based delivery of video and many other services presents a challenge and opportunity for telecom service providers. Burdened with extensive legacy networking infrastructure, Service Providers face challenges in adapting their networks to deliver these new Cloud services. This report reviews approaches taken by leading service providers to transform their businesses and networks to compete with rapidly growing Internet Cloud companies.

Information on the report is available at: http://www.LightCounting.com/Cloud.cfm

High Speed Ethernet Optics (Published semi-annually in March and September):

This reported is focused on markets and technologies for Ethernet Optical transceivers, used in Data center, Enterprise and Telecom applications. It will include the latest shipment data and a forecast for more than 50 types of Ethernet transceivers segmented by speed, reach and form factors. Confidential sales data from more than 20 leading suppliers will provide a basis for this report. As an active participant in the IEEE 802.3 standards process, LightCounting is also uniquely placed to provide an insider perspective on vendor's latest products and technologies under consideration by the IEEE.

Information on the report is available at: http://www.LightCounting.com/DataCenter2.cfm and http://www.LightCounting.com/Datacenter.cfm

Quarterly Market Updates (Published quarterly in March, June, September and December):

These reports feature the latest quarterly financial reports of service providers, Web 2.0 companies, optical networking equipment vendors, module and component vendors. Each report comes with a database featuring quarterly shipments, pricing and sales for more than 100 categories of optical components and modules based on confidential sales data collected by us from more than 25 leading vendors. The database also includes historical data for the last 4 quarters and provides estimates for the current and at least one next quarter.

Information on the latest report is available at http://www.LightCounting.com/marketupdate.cfm

Report Overviews and Descriptions

Market Forecasts
(Published semi-annually in April and October):

Based upon confidential sales data provided by more than 25 leading optical component and module vendors together with data points obtained from semiconductor vendors, network equipment vendors, service providers and the Web 2.0 companies, these reports provide detailed forecasts for more than 125 optoelectronic modules including transceivers, transponders, line cards and WSS used in WDM, SONET/SDH, Ethernet, Fiber Channel, FTTx, Wireless Backhaul and Optical Interconnect applications.

Information on the latest report is available at http://www.LightCounting.com/Forecast.cfm

State of the Industry
(Published annually in May):

Rapidly increasing demand for optical connectivity led to the emergence of a vibrant new industry segment focused on the manufacture of the electronic and optical components and modules used in routers, switches and optical transport equipment. This report will analyze business strategies, latest M&A activity and profitability across the optical networking supply chain, including both equipment manufacturers and optoelectronic component suppliers. It will also provide market shares of the top 3, top 6 and top 10 optical component and module vendors in WDM, SONET/SDH, Ethernet, Fibre Channel, FTTx, Wireless fronthaul/backhaul and Active Optical Cables and Embedded (on-board) optical module market segments.

Information on the latest report is available at http://www.lightcounting.com/SOTIR.cfm

Mega Data Center Optics
(Published annually in June):

This report is structured to provide a detailed analysis of the growth in data traffic and the rapidly changing data center infrastructure architectures on the market for pluggable optical transceivers. Analysis on technology transitions in servers, switches and DWDM transport equipment will be correlated to projections for sales of next generation optical products. The report will include a forecast for optical connectivity of mega-datacenters, including DWDM optics, Ethernet transceivers and Active Optical Cables.

Information on the latest report is available at http://www.lightcounting.com/MegaDC.cfm

Next Generation Access Optics
(Published annually in November):

High-speed internet has become an essential part of life for billions of people around the globe. Current state-of-the-art mobile 4G LTE and fixed Passive Optical Networks deliver broadbad to the masses. FTTx networks will consume more than 90 million optical modules in 2016, and mobile fronthaul applications another 16 million transceivers, with a combined market value of $1.5 billion. While these networks are still being rolled out, the next generation is in development. This report examines how the new 5G and NG-PON2 networks will reshape demand for optical components, reducing the opportunity for some types and speeds of modules, and dramatically increasing it for others. The report includes a detailed five-year forecast of transceiver shipments, prices and revenues, broken down by speeds, reaches and colors for both PON and fronthaul applications. Profiles of leading vendors of fronthaul and PON equipment components, and visual guides to mobile fronthaul and PON networking equipment are also included.

Information on the latest report is available at http://www.lightcounting.com/Access.cfm

Report Overviews and Descriptions

Active Optical Cables and Embedded Optical Modules (Published annually in December):

This two-part focused report examines two segments of optical interconnects that go beyond pluggable modules. Active Optical Cables (AOCs) embed transceiver technologies into enclosed cables with electrical connections on the outside. This design enables significantly lower product costs compared to open-faced transceivers and are plug-and-play without the usual issues surrounding optical technologies. Having gained traction in the High-Performance Computing (HPC) area, they are spreading into the data center and into proprietary intra-system interconnects.

Part 2 on Embedded Optical Modules (EOMs) details the design and use of optical interconnect technologies inside computer and communication systems. As data rates continue to ramp, signal losses increase to the point that the effective reach of copper cabling and PCB traces on circuit boards shrinks considerably.

Information on the latest report is available at http://www.lightcounting.com/AOC.cfm

Publication Dates

- January 2017 - Integrated Optical Devices
- February 2017 Impact of Cloud Services on the Telecom Industry
- March, June, September and December 2017 - Quarterly Market Updates
- March 2017 -High Speed Ethernet Optics
- April 2017 - Market Forecast
- May 2017 - State of the Industry Report
- June 2017 - Mega Data Center Optics
- September 2017 - High Speed Ethernet Optics
- October 2017 - Market Forecast
- November 2017 - Next Generation Access Optics
- December 2017 - Active Optical Cables and Embedded Optical Modules

LightCounting's Subscription Packages

LightCounting offers **Platinum Plus, Platinum, Gold, Gold Plus, Silver and Bronze** subscription packages that, in addition to the reports, include:

- Previews of the quarterly and semi-annual forecasts (at least two weeks ahead of the publication date)
- At least 8 research notes for publication in the calendar year. Between January and October 2016, the following Research Notes were published:
  - Optical Module Development to Diversify Even Further (June 2016)
  - Demand for Optics in China Continue to Surprise (July 2016)
  - The Optical Backplane is Finally Here. Will This Change Everything (July 2016)
  - Notes on Nice (July 2016)
  - 100G Optical Modules for Datacenters? (August 2016)
  - ECOC (October 2016)
  - The Roses are Red but the White Boxes are Blue in California (October 2016)