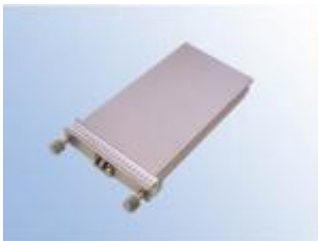


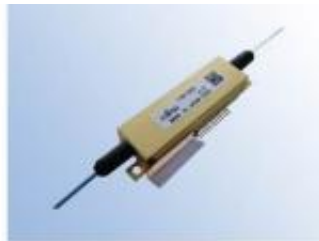
# Fujitsu demonstrates optical components for 100G metro network

March 11 2014

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100G CFP Coherent Transceiver



100G DP-QPSK InP Modulator



100G DP-QPSK Integrated Coherent Receiver

New services such as mobile broadband using smart devices, social networking, cloud computing, and on-line streaming have led to a rapid increase in the volume of communications traffic. This has created a great demand for 100G optical networks. The requirement for Core Networks to handle larger capacity and longer distance on their links has led to a spread of 100G optical networks using digital coherent transmission systems. The requirements on IP networks between data centers and metro networks to achieve larger capacity, higher port density, and lower cost has similarly led to the spread of 100 GbE optical networks. For core network applications the 100G Coherent Transceiver defined in the OIF 100GLH-EM specification for long distance and high capacity transmission systems has been deployed. For metro network though a smaller size, lower power consumption and lower cost coherent transceiver is required.

For this application a 100G CFP Coherent Transceiver with the same interface as the CFP Transceiver which is popular in LAN will be used. To develop a CFP Coherent Transceiver smaller size, [lower power consumption](#), and lower cost [optical devices](#) are also necessary.

In this demonstration, we will show a solution to achieve a 100G CFP Coherent Transceiver. The optical transmitting and the optical receiving sections are separated in our demo. In the optical transmitting section a 100G DP-QPSK optical signal is generated with our in-house compact InP Modulator. This [optical signal](#) is then demodulated using the in-house compact Integrated Coherent Receiver in the optical receiving section. The signal's waveform distortion from the transmission path will then be compensated by the coherent DSP and a resultant bit error rate which meets all requirements displayed. This demo will show the realization of a 100G CFP Coherent Transceiver using compact optical devices.

## **100G DP-QPSK InP Modulator**

This is a Mach-Zehnder modulator made from Indium Phosphide (InP) designed to meet the OIF specifications for 128 Gbs (32 Gbaud) DP-QPSK applications. The modulator incorporates a DP-QPSK optical modulation circuit, polarization beam combiner, and a monitor photodiode all inside of a compact package. The FOC design allows for compact size, wide bandwidth, and low drive voltage operation. (Note) The InP DP-QPSK optical modulation circuit used in this product is co-developed with NTT Electronics Corporation.

## **100G DP-QPSK Integrated Coherent Receiver**

This is a 100G integrated receiver compliant with the OIF specifications for 100Gbps digital coherent receiving systems. The integration of 90°

Hybrids, Balanced Receivers, Polarizing Beam Splitters, VOA function and monitor function all into a single package by PLC and micro-assembly technologies allows FOC to realize a compact, low-cost and high-performance 100G integrated receiver for use in a CFP Coherent Transceiver.

Provided by Fujitsu

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