

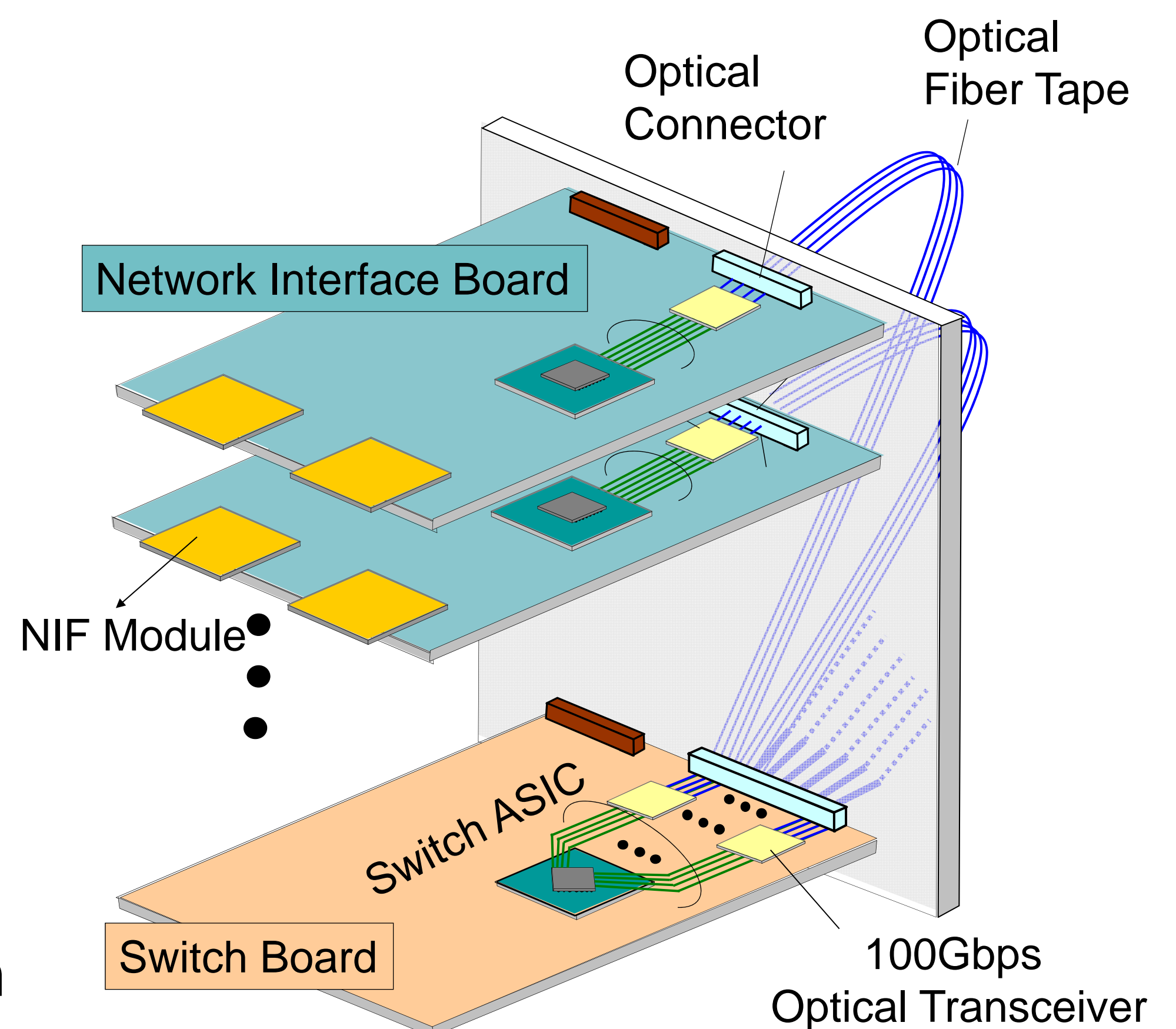
# 100Gb/s Micro-Optical-Module for High-Density Optical Backplane

## TECHNICAL CHALLENGES

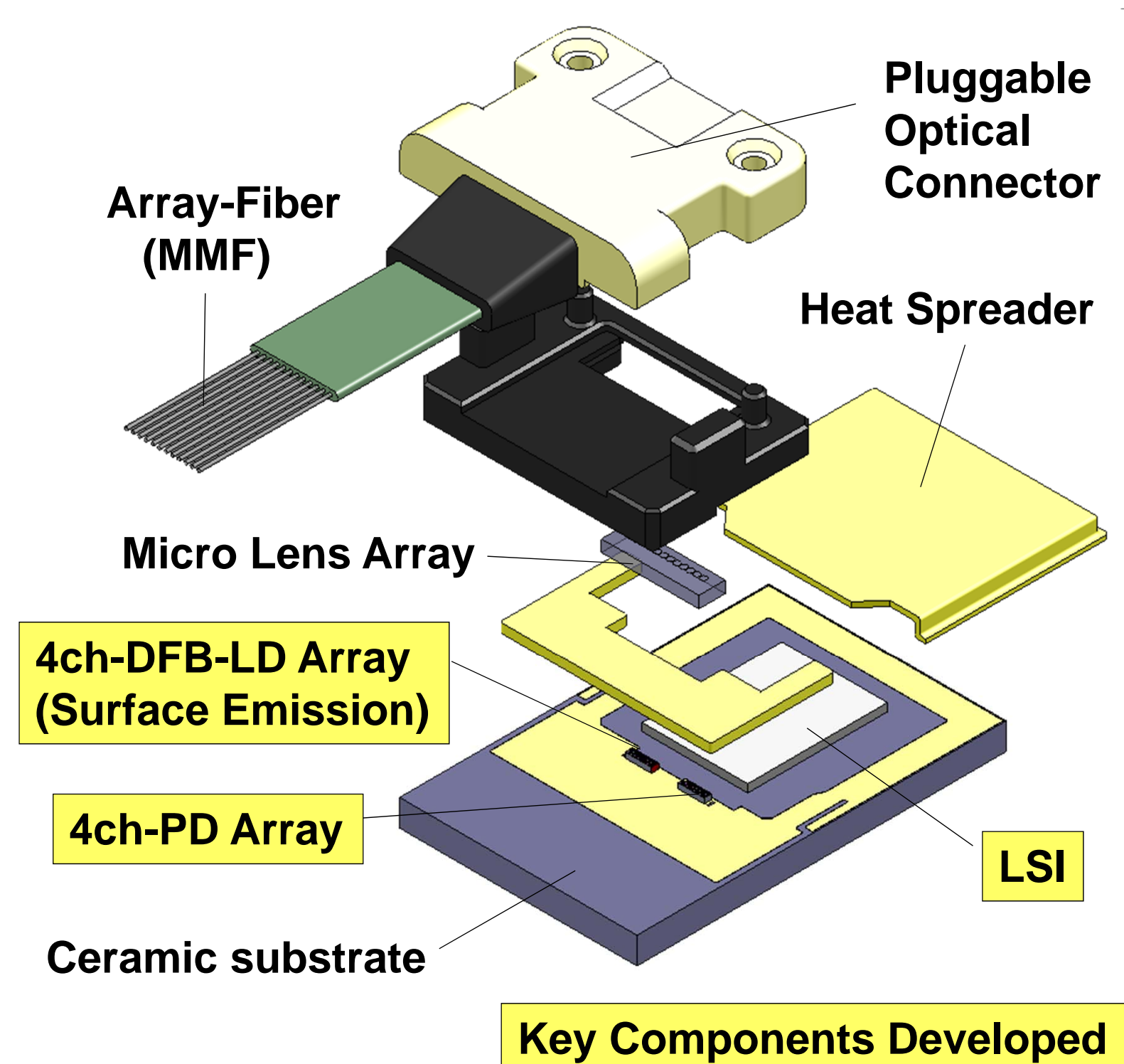
- Realize 100Gb/s transceiver with very small form factor, and low power consumption

## KEY ACCOMPLISHMENTS

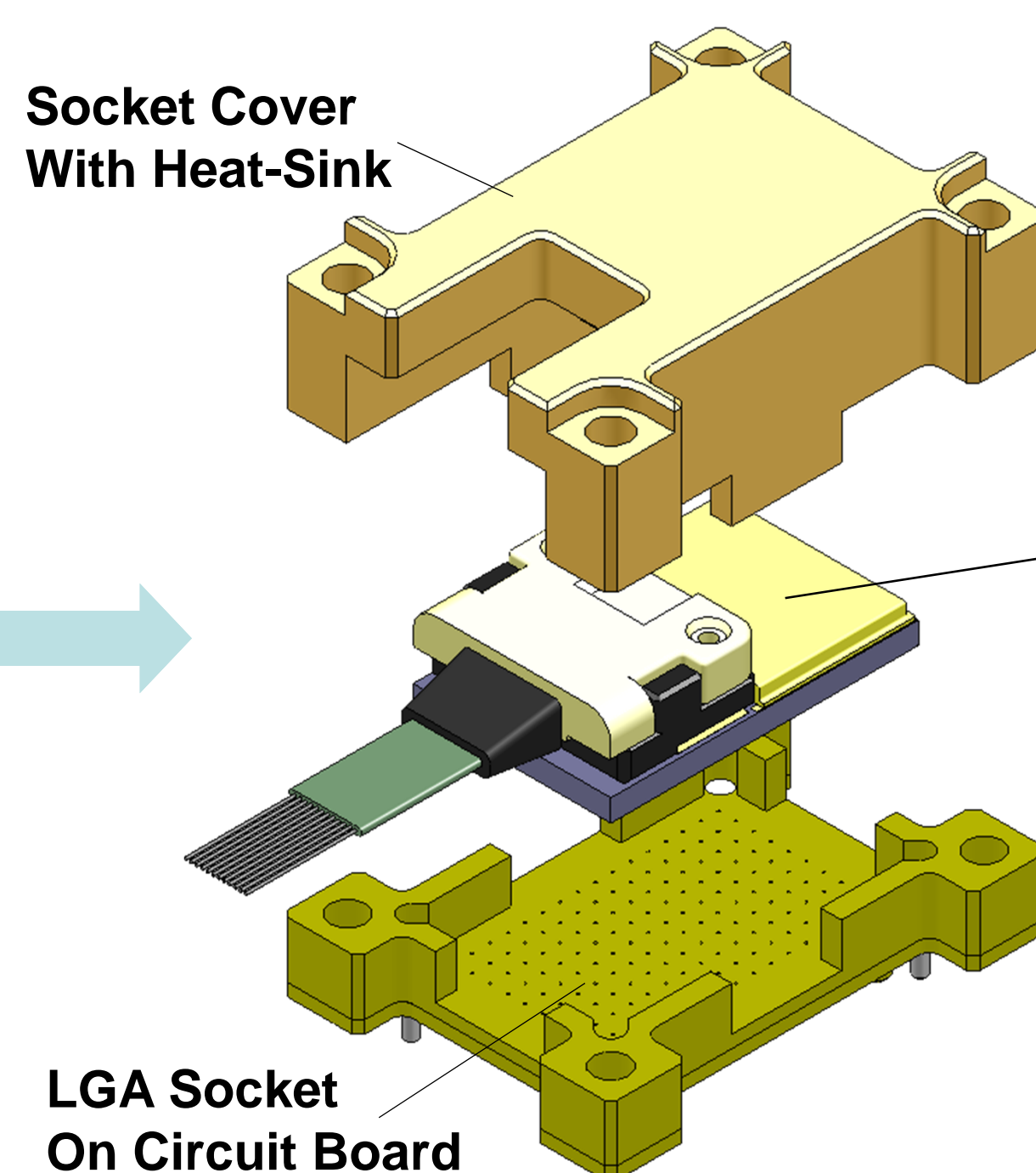
- Micro-package : W9 x L14 x H5.3 mm Pluggable (Electrical and optical)
- Low power consumption of 2 W with highly integrated LSI (20mW /Gbps)
- 1/100 area and 1/15 power consumption of CFP transceiver



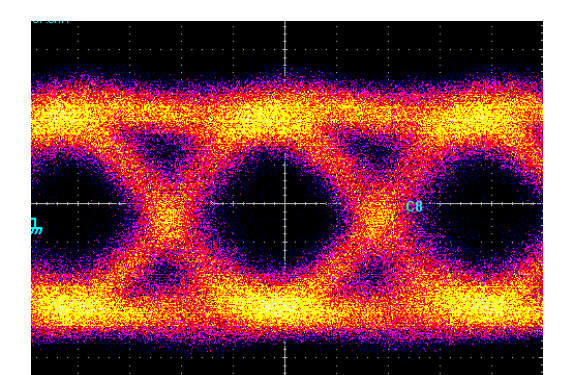
High Capacity Edge Router with Optical Backplane



Optical Module schematic structure

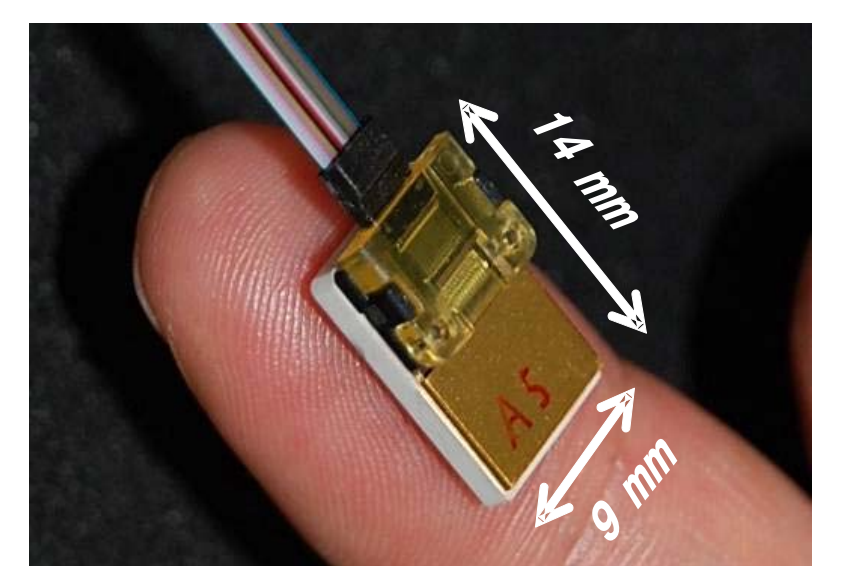


Socket Mounting on Circuit Board



25 Gb/s optical output

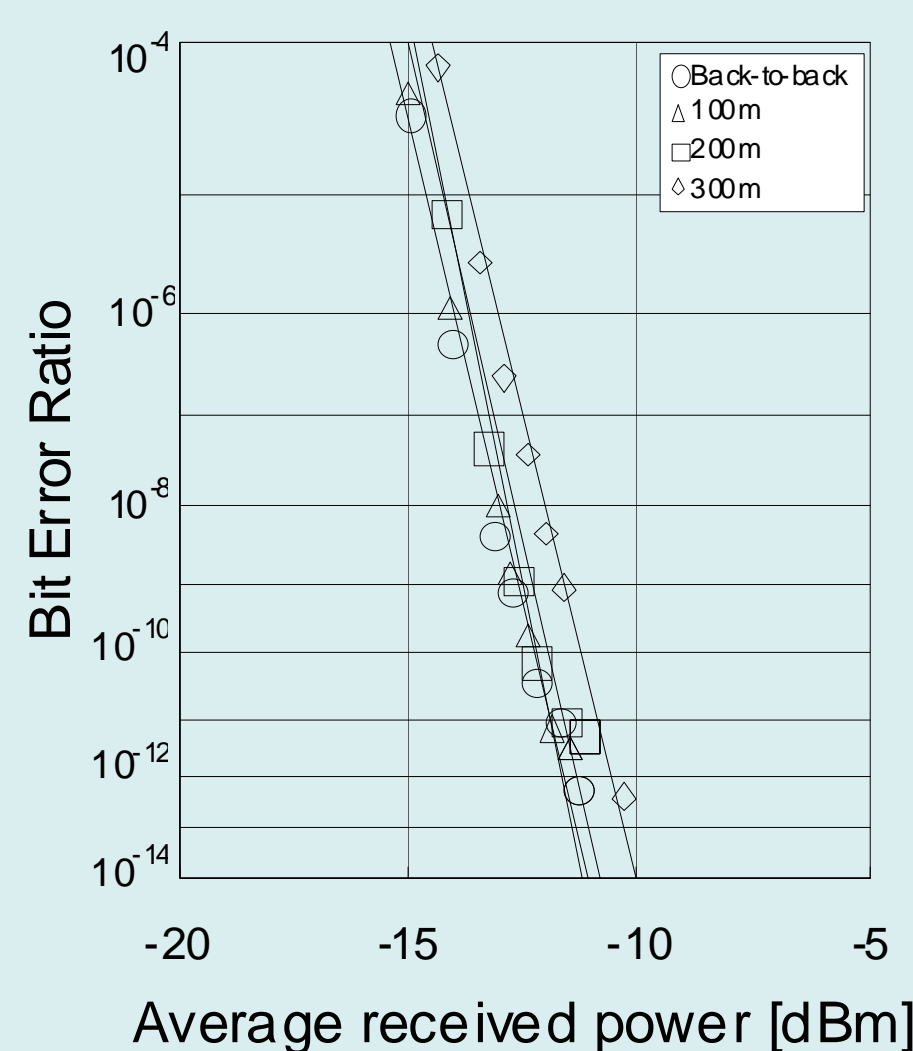
Optical Module (TRx)  
W9 x L14 x H5.3mm



## APPLICATION OF THE MICRO-PACKAGING TECHNOLOGY (NEC)

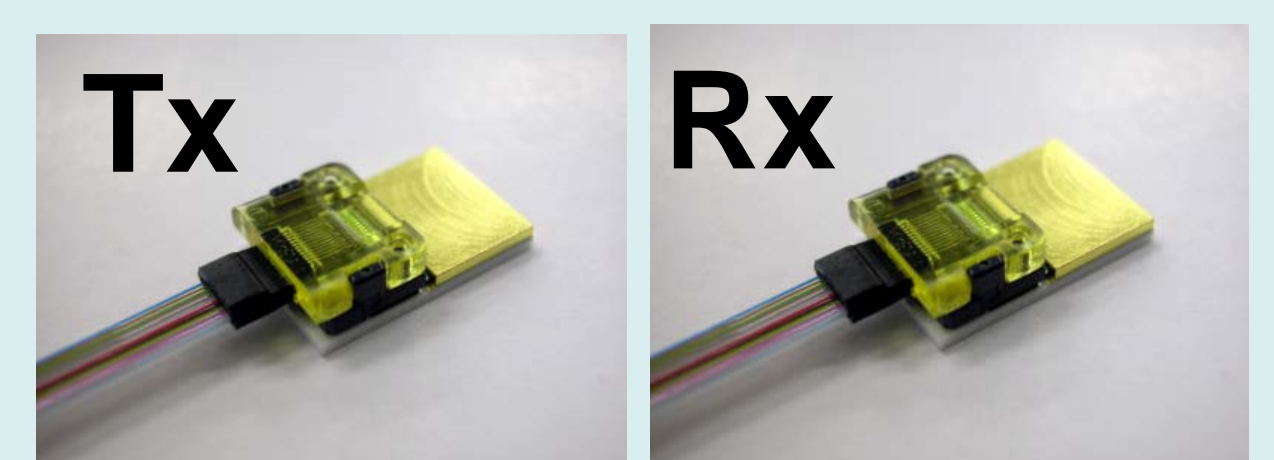
- 10Gb/s x 12ch transmitter (Tx) and receiver (Rx) with the same form factor

- 10G x 12ch electrical signal  $\leftrightarrow$  10G x 12ch optical signal (850 or 1050nm)
- Optical devices and LSI are 12ch VCSEL or PD array, LDD or TIA/Lin, for Tx or Rx
- Faster release planning



Example of 10Gb/s Optical Transmission Characteristics

- 1050nm-Tx to Rx, up to 300m



W9 x L14 x H4 mm