

Rockley Photonics Silicon Photonics Platform for Next Generation Transceivers



The Integrated Optics Company

Overview

This reference design for a 400G DR4 transceiver uses Rockley's four-channel 400G silicon photonic integrated circuit chipsets (PICs).

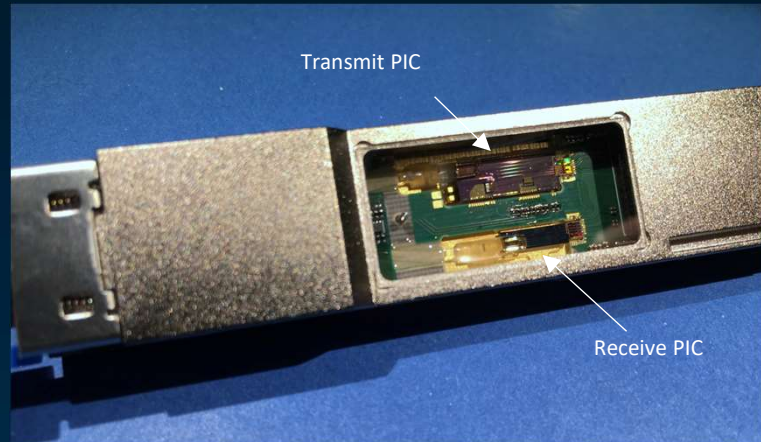
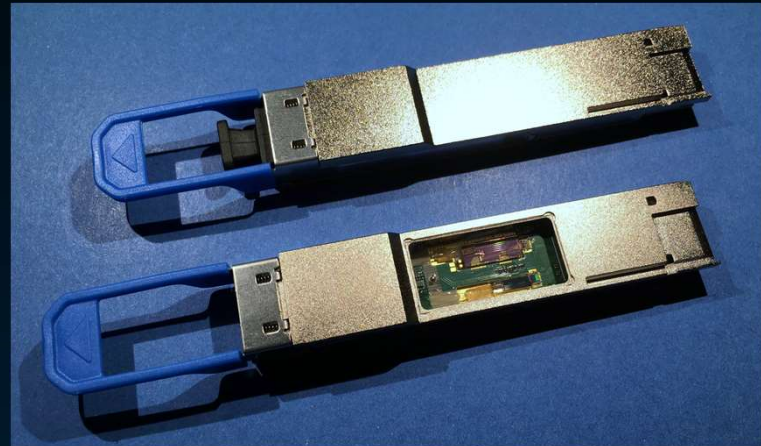
The transmit PIC features 1310nm distributed feedback (DFB) lasers, four electro-absorption modulators (EAMs), and V-grooves with spot-size converters to enable passive coupling to four single-mode output fibers.

The receive PIC features four monolithically integrated Ge waveguide PIN photodetectors and V-grooves with spot-size converters to enable passive coupling to four single-mode input fibers.

Applications

✓ DR4 optical links for datacenter networks

- Operation at 106.25Gb/s PAM4, 53.125Gb/s PAM4, 25.78Gb/s NRZ
- 0°C to 75°C die temperature operation



Key Features

Transmit

- Four-channel transmit PIC compliant with 400GBASE-DR4, 4x100GBASE-DR
- Flip-chip bonded 1310nm InP DFB lasers
- Flip-chip bonded array of four 1310nm InP EA modulators
- Array of four V-grooves with integrated spot-size converters for passive-aligned fiber attachment

Receive

- Four-channel receive PIC compliant with 400GBASE-DR4, 4x100GBASE-DR
- Array of four high-speed monolithically integrated Ge waveguide PIN photodiodes
- Array of four V-grooves with integrated spot-size converters for passive-aligned fiber attachment

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