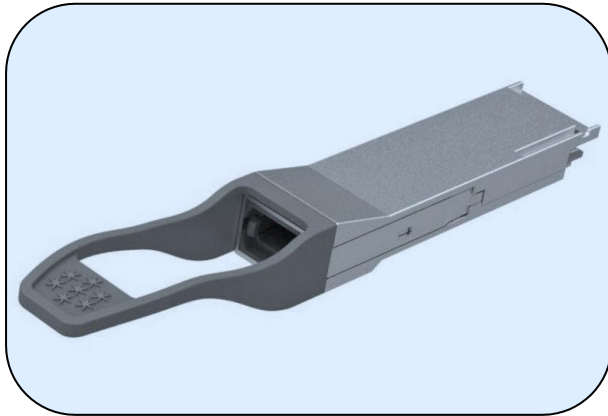


XQOxx9-40PY

100 Gbps QSFP28 PSM4 O-band
DWDM 40 km Transceiver



Applications

- 100G Ethernet Metro-Access over DWDM
- P to P Access Network

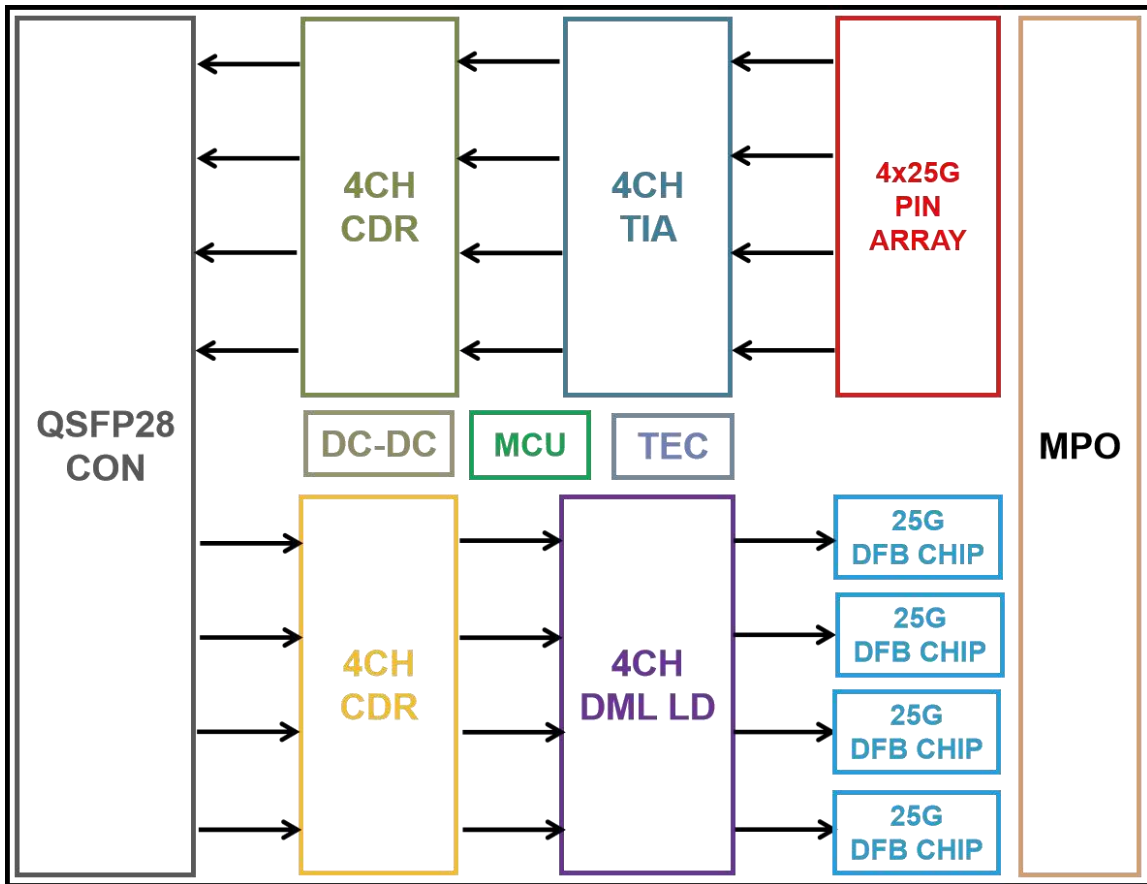
Features

- 4 channels full-duplex transceiver modules
- Transmission data rate up to 26 Gbps per channel
- 4 channels O-band DML DWDM
- Compliant to ITU-T 694.1
- 4 channels PIN photo detector array
- Internal CDR circuits on both receiver and transmitter channels
- Support CDR bypass
- Low power consumption < 5 W
- Hot Pluggable QSFP form factor
- Up to 40 km reach for G.652 SMF with external Mux/Demux, SOA
- Up to 10 km reach for G.652 SMF without external SOA
- Single male MPO (APC 8-degree) connector receptacle
- Single 3.3 V power supply
- RoHS compatible (lead free)
- Operating case temperature 0 °C to +70 °C (Standard)

Description

XQDxx9-40Px is a Four-Channel Pluggable Parallel Fiber-Optic QSFP28 PSM4 for 100G or 40 Ethernet Metro-Access over DWDM applications. The transceiver is a high performance module for data communication and interconnect applications. It integrates four data lanes in each direction with 104 Gbps bandwidth. Each lane can operate at 26 Gbps up to 40 km over G.652 SMF with external Mux/Demux, SOA. The electrical interface uses a 38 contact edge type connector. The optical interface uses a 12 fiber MTP (MPO) connector. This module provides reliable long life, high performance, and consistent service.

Functional Diagram



100Gb/s QSFP28 PSM4 O-band DWDM is one kind of parallel transceiver. DFB and PIN array package is key technique, through I2C system can contact with module.

Absolute Maximum Ratings

| Parameter | Symbol | Min | Max | Unit |
|----------------------------|--------|------|---------|------|
| Supply Voltage | Vcc | -0.3 | 3.6 | V |
| Input Voltage | Vin | -0.3 | Vcc+0.3 | V |
| Storage Temperature | Tst | -20 | 85 | °C |
| Case Operating Temperature | Top | 0 | 70 | °C |
| Humidity (non-condensing) | Rh | 5 | 85 | % |

Recommended Operating Conditions

| Parameter | Symbol | Min | Typical | Max | Unit |
|---------------------------------------|--------|------|----------|------|------|
| Power Supply Voltage | Vcc | 3.13 | 3.3 | 3.47 | V |
| Case Operating Temperature | Tca | 0 | | 70 | °C |
| Data Rate Per Lane | fd | | 25.78125 | | Gbps |
| Humidity | Rh | 5 | | 85 | % |
| Power Dissipation | Pm | | | 5 | W |
| Link Distance with G.652 ¹ | D | | | 40 | km |

Note

1. Requires a DWDM line system with amplification and dispersion management.

Electrical Specifications

| Parameter | Symbol | Min | Typical | Max | Unit |
|---------------------------------------|------------------|---------|---------|-----|-------|
| Differential input impedance | Zin | 90 | 100 | 110 | ohm |
| Differential Output impedance | Zout | 90 | 100 | 110 | ohm |
| Differential input voltage amplitude | ΔV_{in} | 190 | | 700 | mVp-p |
| Differential output voltage amplitude | ΔV_{out} | 300 | | 850 | mVp-p |
| Input Logic Level High | V _{IH} | 2.0 | | VCC | V |
| Input Logic Level Low | V _{IL} | 0 | | 0.8 | V |
| Output Logic Level High | V _{OH} | VCC-0.5 | | VCC | V |
| Output Logic Level Low | V _{OL} | 0 | | 0.4 | V |

Notes

1. Differential input voltage amplitude is measured between TxnP and TxnN.
2. Differential output voltage amplitude is measured between RxnP and RxnN

Optical Specifications

| Parameter | Symbol | Min | Typical | Max | Unit |
|--|-------------------------------|-----------------|---------|------|-------|
| Transmitter | | | | | |
| Centre Wavelength | λ_c | per ITU-T 694.1 | | | nm |
| Side Mode Suppression Ratio | SMSR | 30 | | | dB |
| Average launch power, each lane | PAVG | -1 | | 6 | dBm |
| TDP each lane | TDP | | | 2.9 | dB |
| Extinction Ratio | ER | 4 | | | dB |
| Relative Intensity Noise | RIN | | | -128 | dB/Hz |
| Optical Return Loss Tolerance | TOL | | | 20 | dB |
| Transmitter Reflectance | RT | | | -20 | dB |
| Average launch power of OFF transmitter, each lane | POFF | | | -30 | dBm |
| Eye Mask coordinates ¹ : X1, X2, X3, Y1, Y2, Y3 | {0.31,0.4,0.45,0.34,0.38,0.4} | | | | |
| Receiver | | | | | |
| Centre Wavelength | λ_c | 1260 | | 1360 | nm |
| Damage Threshold, each lane ² | THd | 5.5 | | | dBm |
| Average Receive Power, each lane | | -10.6 | | 4.5 | dBm |
| Receive power, each lane (OMA) | | | | 4.5 | dBm |
| Receiver Reflectance | RR | | | -26 | dBm |
| Receiver Sensitivity (OMA), each lane ³ | SEN | | | -8.6 | dBm |
| LOS Assert | LOSA | | -18 | | dBm |
| LOS De-Assert – OMA | LOSD | | -15 | | dBm |
| LOS Hysteresis | LOSH | 0.5 | | | dB |

Notes

1. Hit Ratio = 5×10^{-5}
2. The receiver shall be able to tolerate, without damage, continuous exposure to a modulated optical input signal having this power level on one lane. The receiver does not have to operate correctly at this input power.
3. Sensitivity is specified at 1×10^{-12} BER at 25.78125 Gb/s

O-band λ_c Wavelength Grid

| Product Code | TX1 | | TX2 | | TX3 | | TX4 | |
|--------------|---------|-----------------|---------|-----------------|---------|-----------------|---------|-----------------|
| | Ch. No. | Frequency (THz) | Ch. No. | Frequency (THz) | Ch. No. | Frequency (THz) | Ch. No. | Frequency (THz) |
| XQO019-40Px | 01 | 233.6 | 02 | 233.45 | 03 | 233.3 | 04 | 233.15 |
| XQO059-40Px | 05 | 233 | 06 | 232.85 | 07 | 232.7 | 08 | 232.55 |
| XQO109-40Px | 10 | 232.25 | 11 | 232.1 | 12 | 231.95 | 13 | 231.8 |
| XQO149-40Px | 14 | 231.65 | 15 | 231.5 | 16 | 231.35 | 17 | 231.2 |

Ordering information¹

| Part number | Product Description |
|-------------|---|
| XQDxx9-40PN | QSFP28 PSM4 DWDM O-band 100 Gbps Transceiver, 40 km, MPO, 0-70°C |
| XQDxx9-40PY | QSFP28 PSM4 DWDM O-band 100 Gbps Transceiver, 40 km, MPO, 0-70°C, DDM |
| | xx: 01 – Ch. 01-04, 05 – Ch. 05-08, 10 – Ch. 10-13, 14 – Ch. 14-17 |

Notes

¹ For accurate order specification please contact XenOpt reseller before placing an order. The content of this document is subject to change without notice. XenOpt does not guarantee errorless or outdated information.

Please specify any compatibility requirements at time of ordering. Standard MSA compatible pluggable components may not work or some function of these components may not be available in devices that require customized compatible devices. Pluggable components compatible with one type of communications equipment may not work in other type of communications equipment.

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The product image is only for reference purpose

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