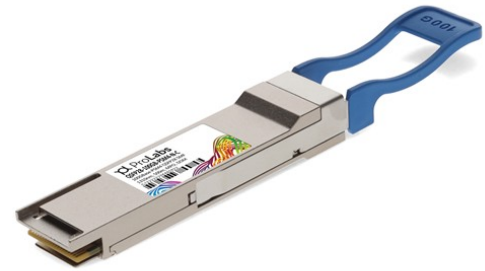


QSFP28-100GB-PSM4-N-C

Alcatel-Lucent Nokia® Compatible TAA 100GBase-PSM4 QSFP28 Transceiver (SMF, 1310nm, 500m, MPO, DOM)

Features:

- SFF-8665 Compliance
- MPO Connector
- Single-mode Fiber
- Commercial Temperature 0 to 70 Celsius
- Hot Pluggable
- Metal with Lower EMI
- Excellent ESD Protection
- RoHS Compliant and Lead Free



Applications:

- 100GBase Ethernet

Product Description

This Alcatel-Lucent Nokia® compatible QSFP28 transceiver provides 100GBase-PSM4 throughput up to 500m over single-mode fiber (SMF) using a wavelength of 1310nm via an MPO connector. Our transceiver is built to meet or exceed OEM specifications and is guaranteed to be 100% compatible with Alcatel-Lucent Nokia®. It has been programmed, uniquely serialized, and tested for data-traffic and application to ensure that it will initialize and perform identically. All of our transceivers comply with Multi-Source Agreement (MSA) standards to provide seamless network integration. Additional product features include Digital Optical Monitoring (DOM) support which allows access to real-time operating parameters. This transceiver is Trade Agreements Act (TAA) compliant. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

ProLabs' transceivers are RoHS compliant and lead-free.

TAA refers to the Trade Agreements Act (19 U.S.C. & 2501-2581), which is intended to foster fair and open international trade. TAA requires that the U.S. Government may acquire only "U.S.-made or designated country end products.")



Absolute Maximum Ratings

| Parameter | Symbol | Min. | Typ | Max. | Unit |
|----------------------------|--------|------|----------|------|------|
| Maximum Supply Voltage | Vcc | -0.5 | | 4.0 | V |
| Storage Temperature | TS | -40 | | +85 | °C |
| Operating Case Temperature | Tc | -5 | 25 | 70 | °C |
| Relative Humidity | RH | 5 | | 95 | % |
| Data Rate PER Channel | | | 25.78125 | | Gb/s |

Electrical Characteristics

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Notes |
|--|-----------------------|-------|------|-------|-------------------|-------|
| Power Supply Voltage | Vcc | 3.135 | 3.3 | 3.465 | V | |
| Power Dissipation | PD | | | 3500 | mW | |
| Module Supply Current | Icc | | | 1100 | mA | |
| Transmitter | | | | | | |
| Differential Data Input Swing | V _{IN, P-P} | 190 | | 700 | mV _{p-p} | |
| Input Differential Impedance | Z _{in} | 90 | 100 | 110 | Ω | |
| AC Common Mode Input Voltage Tolerance | | 15 | | | mV | |
| Receiver | | | | | | |
| Output Differential Impedance | Z _o | 90 | 100 | 110 | Ω | |
| Differential Data Output Swing | V _{OUT, P-P} | 300 | | 850 | mV _{p-p} | |
| AC Common Mode Output Voltage | | | | 7.5 | mV | |
| Single-ended Output Voltage | | -0.3 | | 4 | V | |

Notes:

1. Internally AC Coupled, but requires an external 100Ω differential load termination.

Optical Characteristics

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Notes |
|---|-------------|------------------------------------|------|-------|------|-------|
| Transmitter | | | | | | |
| Launch Optical Power per lane | Po | -9 | | +2 | dBm | 1 |
| Side Mode Suppression Ratio | SMSR | 30 | | | dB | |
| Center Wavelength Range | Λ | 1295 | 1310 | 1325 | nm | |
| Extinction Ratio | EX | 3.5 | | | dB | 2 |
| Optical Return Loss Tolerance | ORLT | | | 12 | dB | |
| Pout @TX-Disable Asserted | Poff | | | -30 | dBm | 1 |
| Transmitter Eye Mask Definition {X1, X2, X3, Y1, Y2, Y3} | | {0.31, 0.4, 0.45, 0.34, 0.38, 0.4} | | | | |
| Receiver | | | | | | |
| Center Wavelength | λ_c | 1295 | | 1325 | Nm | |
| Receiver Sensitivity | S | | | -12.0 | dBm | 3 |
| Damage Threshold | POL | 3.0 | | | dBm | |
| LOS Assert | LOSA | -24 | | | dBm | |
| LOS De-Assert | LOSD | | | -12.5 | dBm | |
| LOS Hysteresis | | 0.5 | | | dB | |

Notes:

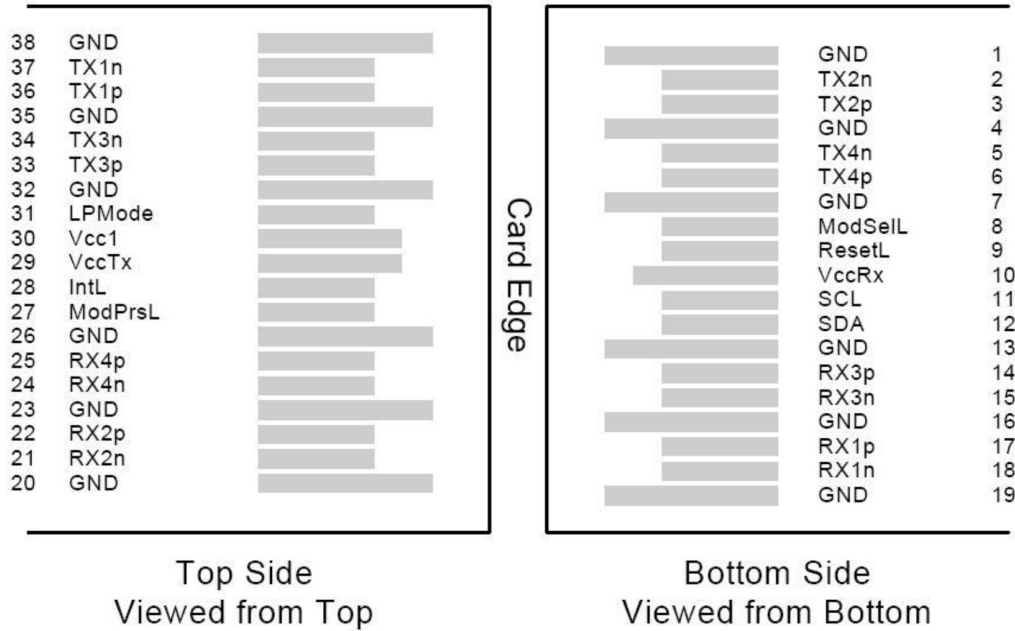
1. The optical power is launched into SMF.
2. Measured with a PRBS $2^{31}-1$ test pattern @25.78125Gbps
3. Measured with a PRBS $2^{31}-1$ test pattern, 25.78125Gb/s, BER of 5×10^{-5} (informative)

Pin Descriptions

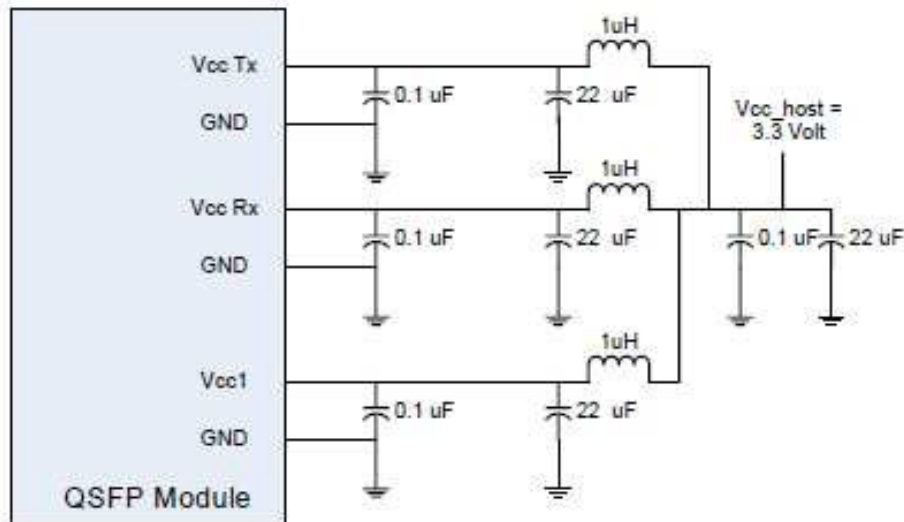
| Pin | Symbol | Name/Descriptions | Ref. |
|-----|---------|--|------|
| 1 | GND | Transmitter Ground (Common with Receiver Ground) | 1 |
| 2 | Tx2- | Transmitter Inverted Data Input | |
| 3 | Tx2+ | Transmitter Non-Inverted Data output | |
| 4 | GND | Transmitter Ground (Common with Receiver Ground) | 1 |
| 5 | Tx4- | Transmitter Inverted Data Input | |
| 6 | Tx4+ | Transmitter Non-Inverted Data output | |
| 7 | GND | Transmitter Ground (Common with Receiver Ground) | 1 |
| 8 | ModSelL | Module Select | 2 |
| 9 | ResetL | Module Reset | 2 |
| 10 | VccRx | 3.3V Power Supply Receiver | |
| 11 | SCL | 2-Wire serial Interface Clock | 2 |
| 12 | SDA | 2-Wire serial Interface Data | 2 |
| 13 | GND | Transmitter Ground (Common with Receiver Ground) | 1 |
| 14 | Rx3+ | Receiver Non-Inverted Data Output | |
| 15 | Rx3- | Receiver Inverted Data Output | |
| 16 | GND | Transmitter Ground (Common with Receiver Ground) | 1 |
| 17 | Rx1+ | Receiver Non-Inverted Data Output | |
| 18 | Rx1- | Receiver Inverted Data Output | |
| 19 | GND | Transmitter Ground (Common with Receiver Ground) | 1 |
| 20 | GND | Transmitter Ground (Common with Receiver Ground) | 1 |
| 21 | Rx2- | Receiver Inverted Data Output | |
| 22 | Rx2+ | Receiver Non-Inverted Data Output | |
| 23 | GND | Transmitter Ground (Common with Receiver Ground) | 1 |
| 24 | Rx4- | Receiver Inverted Data Output | 1 |
| 25 | Rx4+ | Receiver Non-Inverted Data Output | |
| 26 | GND | Transmitter Ground (Common with Receiver Ground) | 1 |
| 27 | ModPrsl | Module Present | |
| 28 | IntL | Interrupt | 2 |
| 29 | VccTx | 3.3V power supply transmitter | |
| 30 | Vcc1 | 3.3V power supply | |
| 31 | LPMode | Low Power Mode | 2 |
| 32 | GND | Transmitter Ground (Common with Receiver Ground) | 1 |
| 33 | Tx3+ | Transmitter Non-Inverted Data Input | |
| 34 | Tx3- | Transmitter Inverted Data Output | |
| 35 | GND | Transmitter Ground (Common with Receiver Ground) | 1 |
| 36 | Tx1+ | Transmitter Non-Inverted Data Input | |
| 37 | Tx1- | Transmitter Inverted Data Output | |
| 38 | GND | Transmitter Ground (Common with Receiver Ground) | 1 |

Notes:

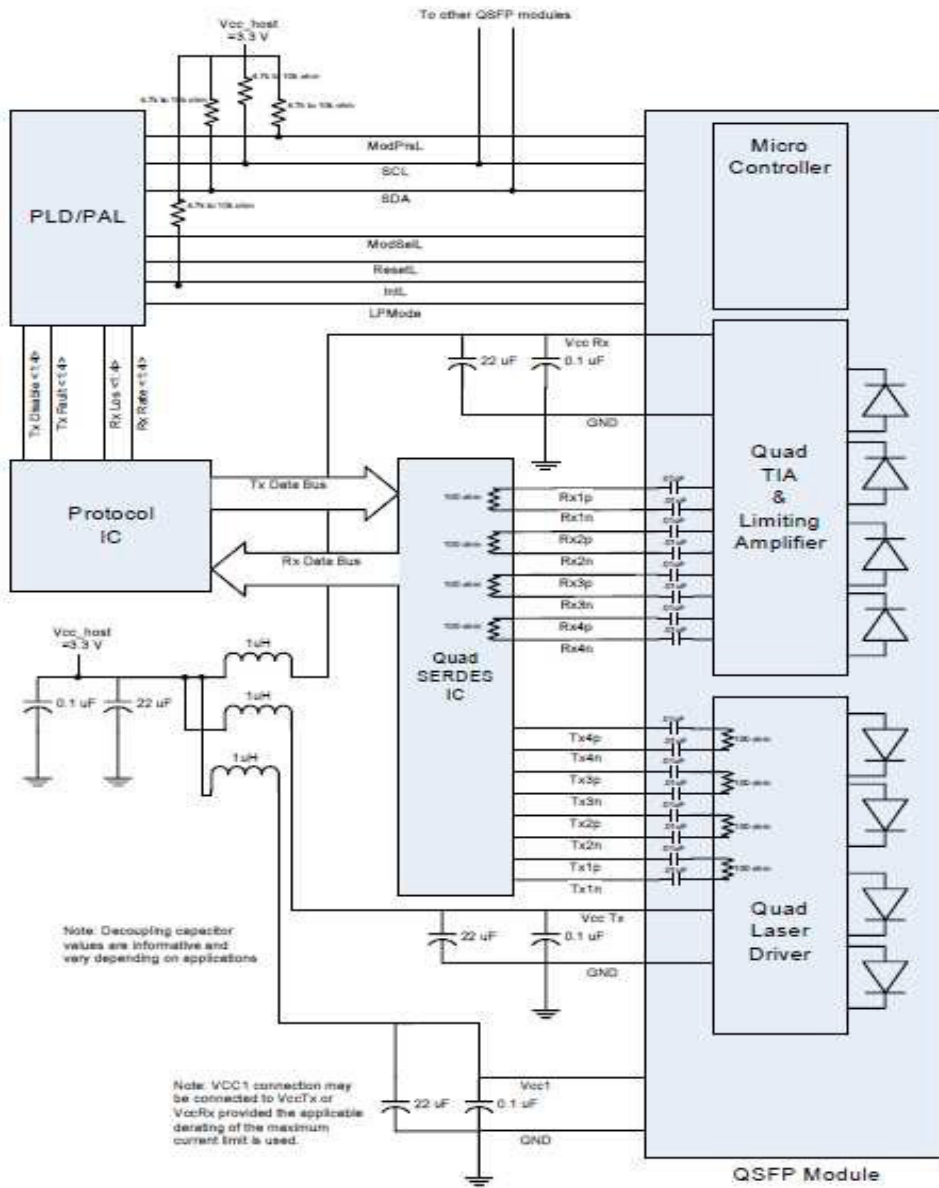
1. The module signal grounds are isolated from the module case.
2. This is an open collector/drain output that on the host board requires a 4.7KΩ to 10KΩ pull-up resistor to VccHost.



Recommended Host Board Power Supply Filter Network

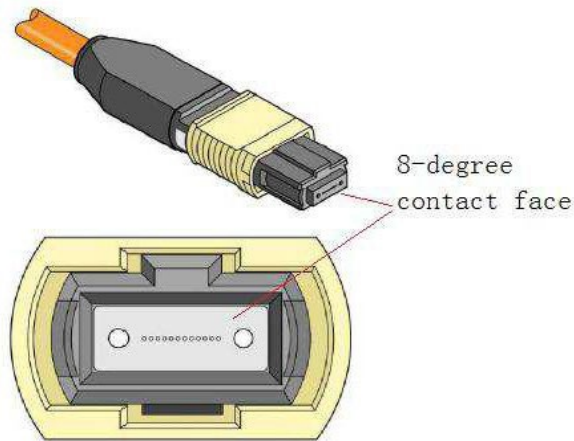
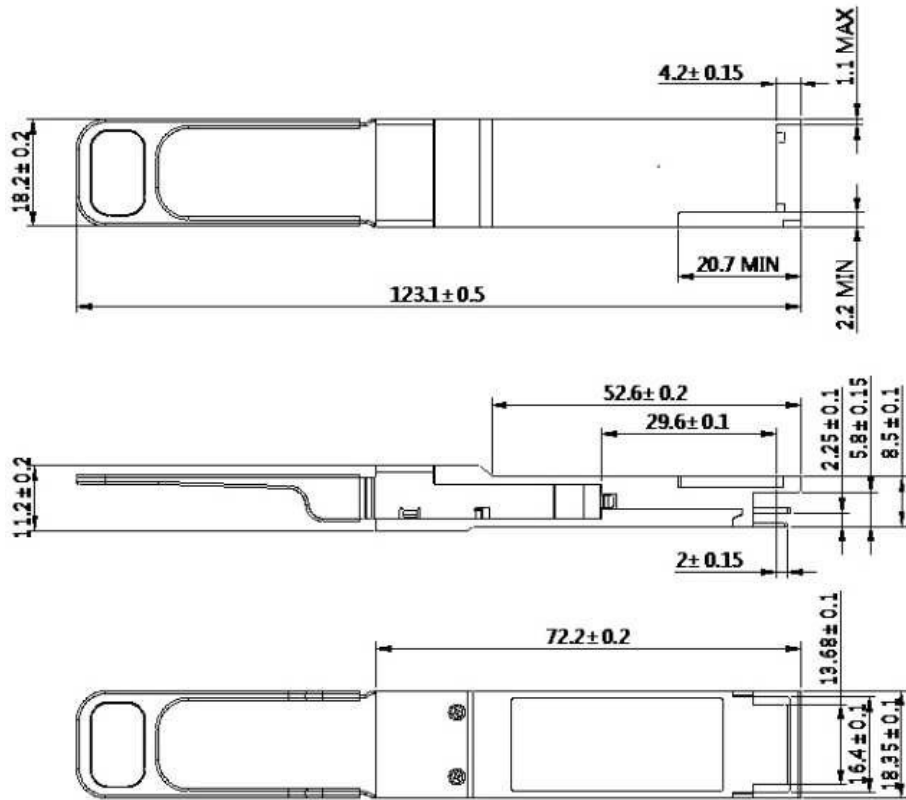


Recommended Application Interface Block Diagram



Mechanical Specifications

Measurement unit: mm



About ProLabs

Our extensive experience comes as standard. For over 20 years ProLabs has delivered optical connectivity solutions that give our customers freedom and choice through our ability to provide seamless interoperability. At the heart of our company is the ability to provide state-of-the-art optical transport and connectivity solutions that are compatible with more than 100 optical switching and transport platforms.

A Complete Portfolio of Network Solutions

ProLabs is focused on innovations in optical transport and connectivity. The combination of our knowledge of optics and networking equipment enables ProLabs to be your single source for optical transport and connectivity solutions from 100Mb to 1.6T while providing innovative solutions that increase network efficiency. We provide the optical connectivity expertise that is compatible with and enhances your switching and transport equipment.

The Trusted Partner

Customer service is our number one value. ProLabs has invested in people, labs and manufacturing capacity to ensure compatible products, and immediate answers to your questions. With Engineering and Manufacturing offices in the U.K. and U.S. augmented by field offices throughout the U.S., U.K. and Asia, ProLabs is able to be our customers best advocate 24 hours a day.



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