

QSFP28-100GB-PSM4-NF-N-AO

Alcatel-Lucent Nokia® Compatible TAA 100GBase-PSM4 QSFP28 Transceiver (SMF, 1310nm, 2km, MPO, DOM, No FEC)

Features

- Compliant to IEEE 802.3bm
- Compliant with MSA 100G PSM4 Specifications
- 4 Parallel Lanes Design
- Single 3.3V Power Supply
- 4-Channel PIN Photo Detector
- Up to 25.78125Gbps Per Channel Data Links
- Class 1 Laser Safety Certified
- Up to 2km on SMF with No FEC
- RoHS Compliant and Lead-Free
- Commercial Temperature: 0 to 70 Celsius



Applications

- 100GBase Ethernet

Product Description

This Alcatel-Lucent Nokia® QSFP28 transceiver provides 100GBase-PSM4 throughput up to 2km over single-mode fiber (SMF) using a wavelength of 1310nm via an MPO connector. It is guaranteed to be 100% compatible with the equivalent Alcatel-Lucent Nokia® transceiver. This easy to install, hot swappable transceiver has been programmed, uniquely serialized and data-traffic and application tested to ensure that it will initialize and perform identically. Digital optical monitoring (DOM) support is also present to allow 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.

AddOn's 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 | Notes |
|----------------------------|------------------|------|----------|------|------|-------|
| Power Supply Voltage | V _{CC} | -0.5 | | 4 | V | |
| Storage Temperature | T _{stg} | -40 | | 85 | °C | |
| Case Operating Temperature | T _c | 0 | 25 | 70 | °C | |
| Relative Humidity | RH | 5 | | 95 | % | |
| Data Rate | BR | | 25.78125 | | Gbps | |

Electrical Characteristics

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Notes |
|--|---------------------|-------|------|-------|-------|-------|
| Power Supply Voltage | V _{CC} | 3.135 | 3.3 | 3.465 | V | |
| Power Supply Current | I _{CC} | | | 1060 | mA | |
| Power Dissipation | P _{DISS} | | | 3500 | W | |
| Transmitter | | | | | | |
| Input Differential Impedance | Z _{IN} | 90 | 100 | 110 | Ω | |
| Differential Data Input Swing | V _{IN,pp} | 190 | | 700 | mVp-p | |
| AC Common-Mode Input Voltage Tolerance | | 15 | | | mV | |
| Receiver | | | | | | |
| Output Differential Impedance | Z _{OUT} | 90 | 100 | 110 | Ω | |
| Differential Data Output Swing | V _{OUT,pp} | 300 | | 850 | mVp-p | 1 |
| AC Common-Mode Output Voltage | | 12 | | 7.5 | ps | |
| Single-Ended Output Voltage | | -0.3 | | 4 | | |

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 | -4.5 | | 4 | dBm | 1 |
| Side-Mode Suppression Ratio | SMSR | 30 | | | dB | |
| Center Wavelength | λ | 1295 | 1310 | 1325 | nm | |
| Extinction Ratio | ER | 3.5 | | | dB | 2 |
| Optical Return Loss Tolerance | ORLT | | | 20 | 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 | λC | 1295 | | 1325 | nm | |
| Average Receive Power Per Lane | P1 | -7.5 | | 2.0 | dBm | |
| Receiver Sensitivity Per Lane | S | | | -7.5 | dBm | 3 |
| Receiver Overload Per Channel | POL | 2.0 | | | dBm | 3 |
| Damage Threshold | Pdamage | 3.0 | | | dBm | |
| LOS De-Assert | LOSD | | | -12.5 | dBm | |
| LOS Assert | LOSA | -24 | | | dBm | |
| LOS Hysteresis | | 0.5 | | | dB | |

Notes:

1. The optical power is launched into the SMF.
2. Measured with a PRBS $2^{31}-1$ test pattern @25.78125Gbps.
3. Measured with PRBS $2^{31}-1$ test pattern, @25.78125Gbps per lane, and BER= 1×10^{-12} .

Pin Descriptions

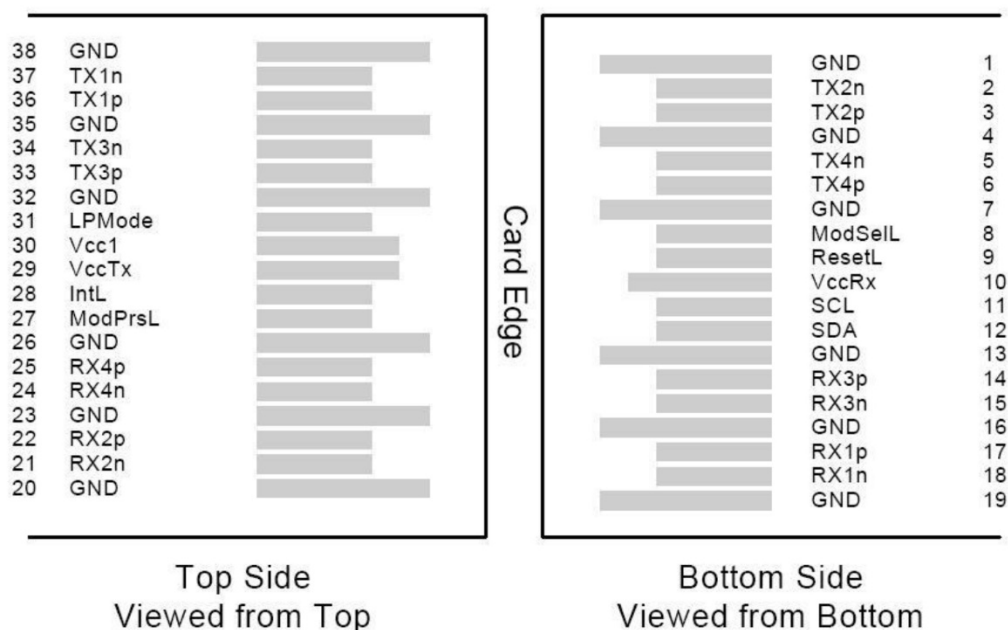
| Pin | Symbol | Name/Description | Notes |
|-----|---------|---|-------|
| 1 | GND | Transmitter Ground (Common with Receiver Ground). | 1 |
| 2 | Tx2- | Transmitter Inverted Data Input. | |
| 3 | Tx2+ | Transmitter Non-Inverted Data Input. | |
| 4 | GND | Transmitter Ground (Common with Receiver Ground). | 1 |
| 5 | Tx4- | Transmitter Inverted Data Input. | |
| 6 | Tx4+ | Transmitter Non-Inverted Data Input. | |
| 7 | GND | Transmitter Ground (Common with Receiver Ground). | 1 |
| 8 | ModSelL | Module Select. | 2 |
| 9 | ResetL | Module Reset. | 2 |
| 10 | VccRx | +3.3V Receiver Power Supply. | |
| 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 Transmitter Power Supply. | |
| 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 Input. | |
| 38 | GND | Transmitter Ground (Common with Receiver Ground). | 1 |

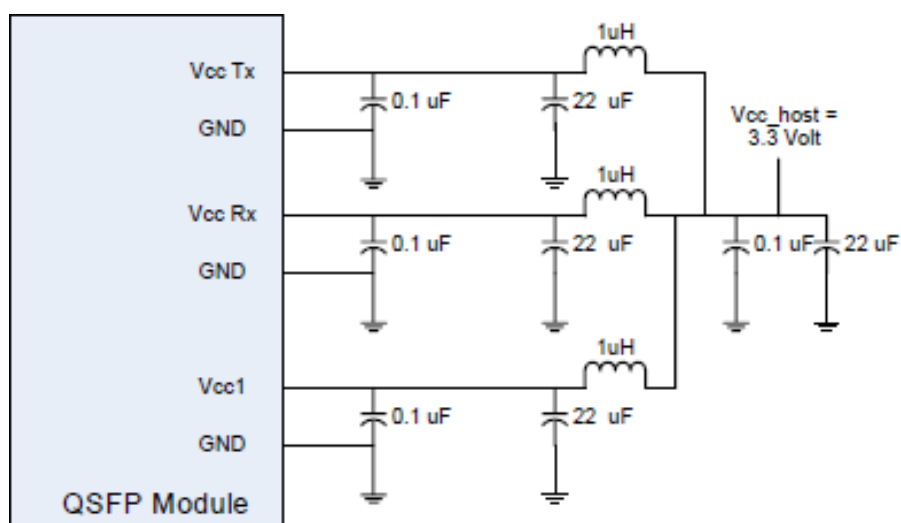
Notes:

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

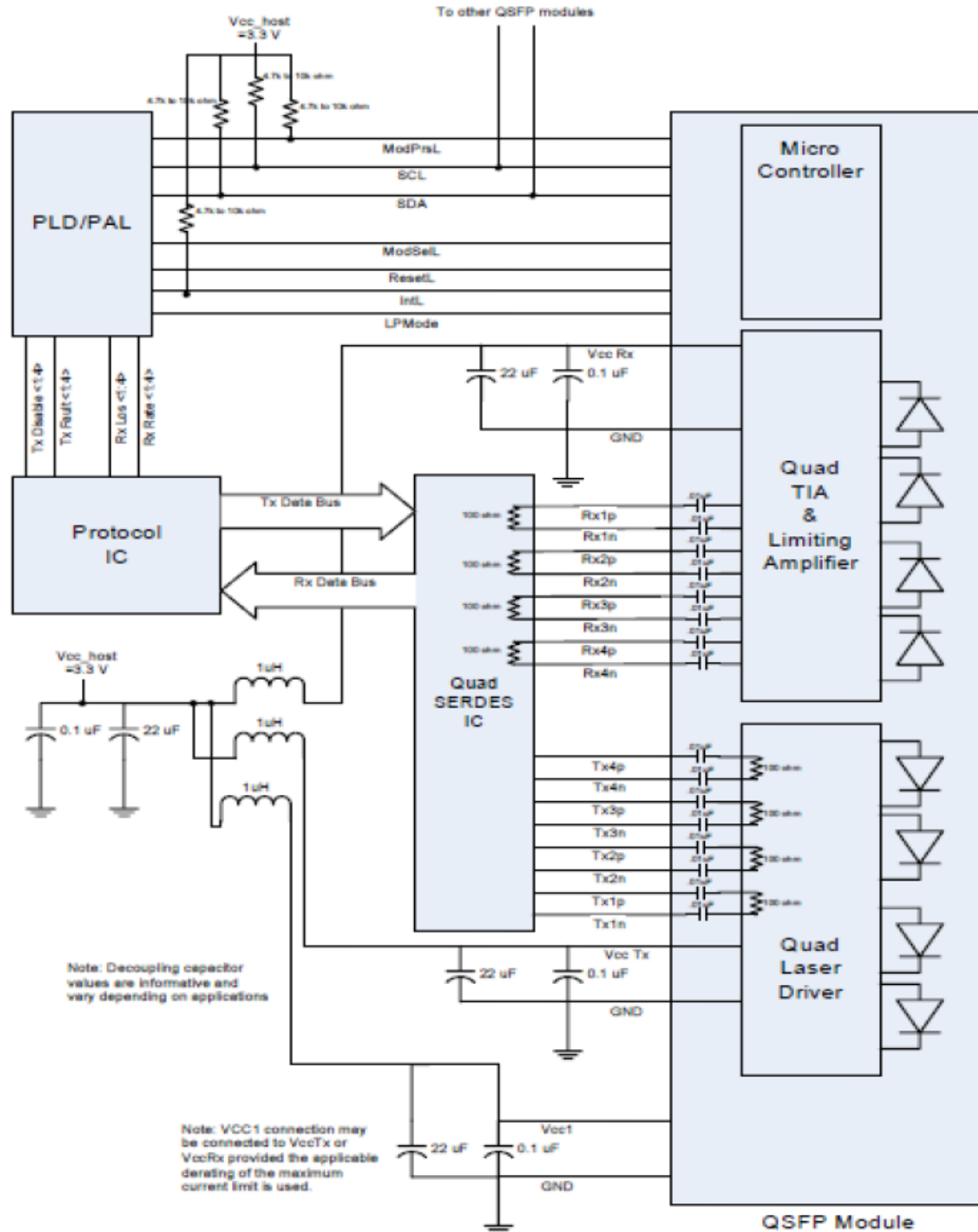
Electrical Pin-Out Details



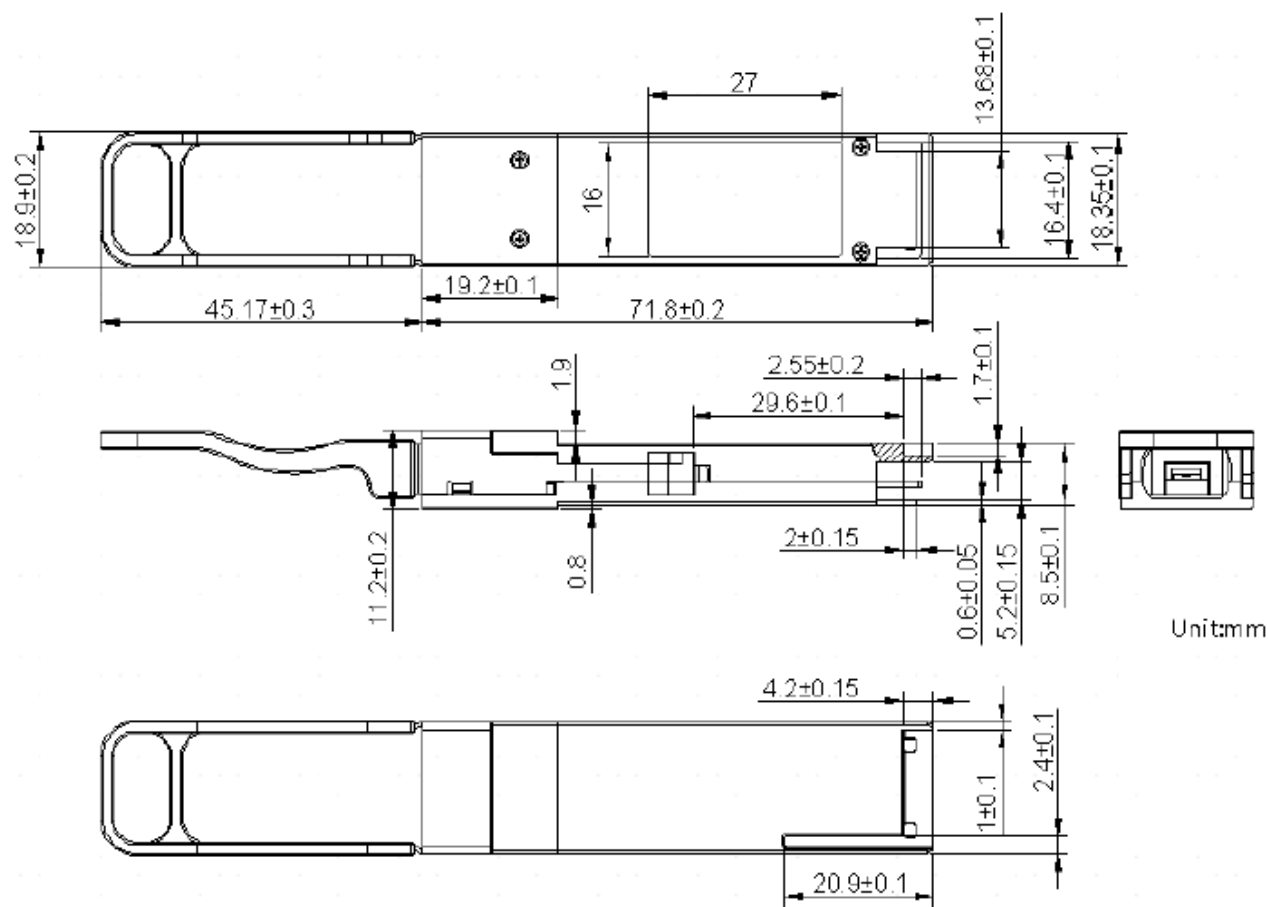
Recommended Host Board Power Supply Filter Network



Transceiver Interface Block Diagram



Mechanical Specifications



About AddOn Networks

In 1999, AddOn Networks entered the market with a single product. Our founders fulfilled a severe shortage for compatible, cost-effective optical transceivers that compete at the same performance levels as leading OEM manufacturers. Adhering to the idea of redefining service and product quality not previously had in the fiber optic networking industry, AddOn invested resources in solution design, production, fulfillment, and global support.

Combining one of the most extensive and stringent testing processes in the industry, an exceptional free tech support center, and a consistent roll-out of innovative technologies, AddOn has continually set industry standards of quality and reliability throughout its history.

Reliability is the cornerstone of any optical fiber network and is ingrained in AddOn's DNA. It has played a key role in nurturing the long-term relationships developed over the years with customers. AddOn remains committed to exceeding industry standards with certifications from ranging from NEBS Level 3 to ISO 9001:2005 with every new development while maintaining the signature reliability of its products.



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