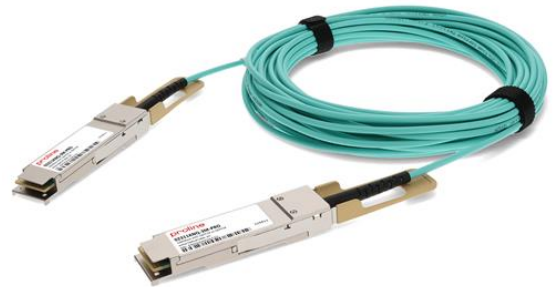


02311KNQ-3M-PRO

Huawei® 02311KNQ-3M Compatible TAA 100GBase-AOC QSFP28 to QSFP28 Active Optical Cable (850nm, MMF, 3m)

Features

- QSFP28 MSA compliant
- Supports 103.1Gbps aggregate bit rate
- Four independent full-duplex channels
- 4x25G electrical interface (OIF CEI-28G-VSR)
- Single 3.3V power supply
- Operating case temperature: 0 to 70 Celsius
- RoHS Compliant and Lead Free
- Maximum power consumption 2.5W each terminal



Applications:

- 100GBase Ethernet
- InfiniBand EDR

Product Description

This is a Huawei® 02311KNQ-3M Compatible 100GBase-AOC QSFP28 to QSFP28 active optical cable that operates over active fiber with a maximum reach of 3m. It has been programmed, uniquely serialized, and data-traffic and application tested to ensure it is 100% compliant and functional. We stand behind the quality of our products and proudly offer a limited lifetime warranty. This cable is TAA (Trade Agreements Act) compliant and is built to comply with MSA (Multi-Source Agreement) standards.

Proline'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.



General Specifications

| Parameter | Symbol | Min. | Typ. | Max. | Unit |
|------------------------------------|--------|------|------|------|------|
| Storage Temperature | Tstg | -40 | | 85 | °C |
| Operating Case Temperature | Tc | 0 | | 70 | |
| Power Supply Voltage | Vcc | -0.5 | | 3.6 | V |
| Relative Humidity (Non-Condensing) | RH | 0 | | 85 | % |

Electrical Characteristics

| Parameter | Test Point | Min. | Typ. | Max. | Unit | Notes |
|-----------------------------------------------------------------------------------|------------|-------------------------------------|----------|--------------------------------|------|---------|
| Power Consumption | | | | 2.5 | W | 1 |
| Supply Current | Icc | | | 757 | mA | 1 |
| Power Supply Voltage | Vcc | 3.135 | 3.3 | 3.465 | V | |
| Data Rate Per Lane | | | 25.78125 | | Gbps | |
| Data Rate Accuracy | | -100 | | 100 | ppm | |
| Control Input Voltage - High | | 2 | | Vcc | V | |
| Control Input Voltage - Low | | 0 | | 0.8 | V | |
| Transmitter (Per Lane) | | | | | | |
| Overload Differential Voltage | TP1a | 900 | | | mV | |
| Common-Mode Voltage (Vcm) | TP1 | -350 | | 2825 | mV | 2 |
| Differential Termination Resistance Mismatch | TP1 | | | 10 | % | At 1MHz |
| Differential Return Loss (SDD11) | TP1 | | | See CEI-28G0VSR Equation 13-19 | dB | |
| Common-Mode to Differential Conversion and Differential to Common-Mode Conversion | TP1 | | | See CEI-28G-VSR Equation 13-20 | dB | |
| Stressed Input Test | TP1a | See CEI-28G-VSR Section 13.3.11.2.1 | | | | |
| Receiver (Per Lane) | | | | | | |
| Differential Voltage (Pk-Pk) | TP4 | | | 900 | mV | |
| Common-Mode Voltage (Vcm) | TP4 | -350 | | 2850 | mV | 2 |
| Common-Mode Noise (RMS) | TP4 | | | 17.5 | mV | |
| Differential Termination Resistance Mismatch | TP4 | | | 10 | % | At 1MHz |

| | | | | | | |
|-------------------------------------------------------------------------------------------|-----|------|--|--------------------------------|----|---|
| Differential Return Loss (SDD22) | TP4 | | | See CEI-28G-VSR Equation 13-19 | dB | |
| Common-Mode to Differential Conversion and Differential to Common-Mode Conversion (SCC22) | TP4 | | | -2 | dB | 3 |
| Transition Time (20-80%) | TP4 | 9.5 | | | ps | |
| Vertical Eye Closure (VEC) | TP4 | | | 5.5 | dB | |
| Eye Width at 10 ⁻¹⁵ Probability (EW15) | TP4 | 0.57 | | | UI | |
| Eye Height at 10 ⁻¹⁵ Probability (EH15) | TP4 | 0.57 | | | UI | |

Notes:

1. Per terminal.
2. Vcm is generated by the host. Specification includes the effects of ground offset voltage.
3. From 250MHz to 30GHz.

Pin Descriptions

| Pin | Logic | Symbol | Name/Description | Notes |
|-----|-------------|---------|--------------------------------------|-------|
| 1 | | GND | Module Ground. | 1 |
| 2 | CML-I | Tx2- | Transmitter Inverted Data Input. | |
| 3 | CML-I | Tx2+ | Transmitter Non-Inverted Data Input. | |
| 4 | | GND | Module Ground. | 1 |
| 5 | CML-I | Tx4- | Transmitter Inverted Data Input. | |
| 6 | CML-I | Tx4+ | Transmitter Non-Inverted Data Input. | |
| 7 | | GND | Module Ground. | 1 |
| 8 | LVTTTL-I | ModSelL | Module Select. | 2 |
| 9 | LVTTTL-I | ResetL | Module Reset. | 2 |
| 10 | | VccRx | +3.3V Receiver Power Supply. | |
| 11 | LVC MOS-I | SCL | 2-Wire Serial Interface Clock. | 2 |
| 12 | LVC MOS-I/O | SDA | 2-Wire Serial Interface Data. | 2 |
| 13 | | GND | Module Ground. | 1 |
| 14 | CML-O | Rx3+ | Receiver Non-Inverted Data Output. | |
| 15 | CML-O | Rx3- | Receiver Inverted Data Output. | |
| 16 | | GND | Module Ground. | 1 |
| 17 | CML-O | Rx1+ | Receiver Non-Inverted Data Output. | |
| 18 | CML-O | Rx1- | Receiver Inverted Data Output. | |
| 19 | | GND | Module Ground. | 1 |
| 20 | | GND | Module Ground. | 1 |

| | | | | |
|----|----------|---------|---------------------------------------------------------|---|
| 21 | CML-O | Rx2- | Receiver Inverted Data Output. | |
| 22 | CML-O | Rx2+ | Receiver Non-Inverted Data Output. | |
| 23 | | GND | Module Ground. | 1 |
| 24 | CML-O | Rx4- | Receiver Inverted Data Output. | |
| 25 | CML-O | Rx4+ | Receiver Non-Inverted Data Output. | |
| 26 | | GND | Module Ground. | 1 |
| 27 | LVTTTL-O | ModPrsL | Module Present. Internally pulled down to the GND. | |
| 28 | LVTTTL-O | IntL | Interrupt output should be pulled up on the host board. | 2 |
| 29 | | VccTx | +3.3V Transmitter Power Supply. | |
| 30 | | Vcc1 | +3.3V Power Supply. | |
| 31 | LVTTTL-I | LPMODE | Low-Power Mode. | 2 |
| 32 | | GND | Module Ground. | 1 |
| 33 | CML-I | Tx3+ | Transmitter Non-Inverted Data Input. | |
| 34 | CML-I | Tx3- | Transmitter Inverted Data Input. | |
| 35 | | GND | Module Ground. | 1 |
| 36 | CML-I | Tx1+ | Transmitter Non-Inverted Data Input. | |
| 37 | CML-I | Tx1- | Transmitter Inverted Data Input. | |
| 38 | | GND | Module Ground. | 1 |

Notes:

1. The module circuit ground is isolated from the module chassis ground within the module.
2. Open collector. Should be pulled up with 4.7kΩ to 10kΩ on the host board to a voltage between 3.15V and 3.6V.

Electrical Pin-Out Details



Recommended Power Supply Filter



Block Diagram



Mechanical Specifications



About Us:

Proline Options is one of North America's leading providers of transceivers and high speed cabling. With a reputation for quality, tested products that cover the connectivity spectrum, Proline Options has a solution for you regardless of the specification.

At Proline Options, every product is tested in its intended application - never batch or spec tested only. We run bandwidth, distance and IOS network tests. We have documented an impressive 0.03% failure rate over the last 10 years. To continue this rate of success we invest millions annually in our own on-site testing lab.



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