



## 02311QDH-OPC

Huawei® 02311QDH Compatible TAA 100GBase-CWDM4 QSFP28 Transceiver (SMF, 1270nm to 1330nm, 2km, LC, DOM)

### Features

- SFF-8665 Compliance
- Duplex LC 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
- Access and Enterprise

### Product Description

This Huawei® 02311QDH compatible QSFP28 transceiver provides 100GBase-CWDM4 throughput up to 10km over single-mode fiber (SMF) using a wavelength of 1270nm to 1330nm via an LC connector. It is guaranteed to be 100% compatible with the equivalent Huawei® 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. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

OptioConnect's transceivers are RoHS compliant and lead-free.

## Regulatory Compliance

- ESD to the Electrical PINs: compatible with MIL-STD-883E Method 3015.4
- ESD to the LC Receptacle: compatible with IEC 61000-4-3
- EMI/EMC compatible with FCC Part 15 Subpart B Rules, EN55022:2010
- Laser Eye Safety compatible with FDA 21CFR, EN60950-1& EN (IEC) 60825-1,2
- RoHS compliant with EU RoHS 2.0 directive 2015/863/EU

## Absolute Maximum Ratings

| Parameter                  | Symbol          | Min. | Typ.     | Max. | Unit |
|----------------------------|-----------------|------|----------|------|------|
| Maximum Supply Voltage     | V <sub>CC</sub> | -0.5 |          | 4.0  | V    |
| Storage Temperature        | T <sub>S</sub>  | -40  |          | 85   | °C   |
| Operating Case Temperature | T <sub>C</sub>  | 0    |          | 70   | °C   |
| Operating Humidity         | RH              | 5    |          | 95   | %    |
| Data Rate Per Lane         |                 |      | 25.78125 |      | Gbps |

## Electrical Characteristics

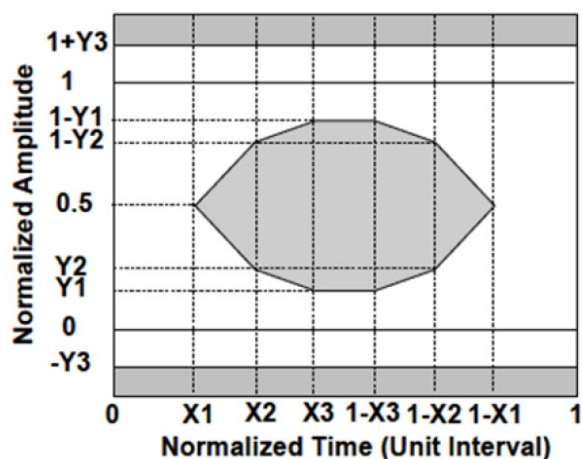
| Parameter                                  | Symbol              | Min. | Typ. | Max. | Unit             | Notes |
|--|---------------------|------|------|------|------------------|-------|
| Module Supply Current                      | I <sub>CC</sub>     |      |      | 1100 | mA               |       |
| Power Dissipation                          | P <sub>D</sub>      |      |      | 3500 | mW               |       |
| Transmitter                                |                     |      |      |      |                  |       |
| Single-ended Input Voltage Tolerance       |                     | -0.3 |      | 4.0  | V                |       |
| AC Common Mode Input Voltage Tolerance     |                     | 15   |      |      | mV               |       |
| Differential Input Voltage Swing Threshold |                     | 50   |      |      | mV <sub>pp</sub> |       |
| Differential Input Voltage Swing           | V <sub>in,pp</sub>  | 190  |      | 700  | mV <sub>pp</sub> |       |
| Differential Input Impedance               | Z <sub>in</sub>     |      | 100  |      | Ω                |       |
| Receiver                                   |                     |      |      |      |                  |       |
| Single-ended Output Voltage                |                     | -0.3 |      | 4.0  | V                |       |
| AC Common Mode Output Voltage              |                     |      |      | 7.5  | mV               |       |
| Differential Output Voltage Swing          | V <sub>out,pp</sub> | 300  |      | 850  | mV <sub>pp</sub> |       |
| Differential Output Impedance              | Z <sub>o</sub>      | 90   | 100  | 110  | Ω                |       |

## Optical Characteristics

| Parameter                                       | Symbol   | Min.    | Typ.    | Max.    | Unit | Notes |
|---|--|---------|---------|---------|------|-------|
| Lane Wavelength                                 | L0   | 1294.53 | 1295.56 | 1296.59 | nm   |       |
|   | L1   | 1299.02 | 1300.05 | 1301.09 |      |       |
|   | L2   | 1303.54 | 1304.58 | 1305.63 |      |       |
|   | L3   | 1308.09 | 1309.14 | 1310.19 |      |       |
| Transmitter                                     |  |         |         |         |      |       |
| Launch Optical Power per lane                   | Po   | -4.3    |         | +4.5    | dBm  | 1     |
| Total Launch Optical Power                      | Po   |         |         | +10.5   | dBm  | 1     |
| Extinction Ratio                                | EX   | 4.0     |         |         | dB   | 2     |
| Spectral width(-20dB)                           | $\Delta\lambda$  |         |         | 1       | nm   |       |
| Side Mode Suppression Ratio                     | SMSR   | 30      |         |         | dB   |       |
| Optical Return Loss Tolerance                   | ORLT   |         |         | 20      | dB   |       |
| Pout @TX-Disable Asserted                       | Poff   |         |         | -30     | dBm  | 1     |
| Eye Mask Coordinates:<br>X1, X2, X3, Y1, Y2, Y3 | Specification Values<br>0.25, 0.4, 0.45, 0.25, 0.28, 0.4 |         |         |         |      |       |
| Receiver  |  |         |         |         |      |       |
| Sensitivity per Channel                         | S  |         |         | -8.6    | dBm  | 3     |
| Damage Threshold (each channel)                 | POL  | 4.5     |         |         | dBm  |       |
| Optical Return Loss                             | ORL  | 26      |         |         | dB   |       |
| LOS De-Assert                                   | LOSD   |         |         | -11.6   | dBm  |       |
| LOS Assert                                      | LOSA   | -24     |         |         | 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 PRBS  $2^{31}-1$  test pattern, 25.78125Gb/s



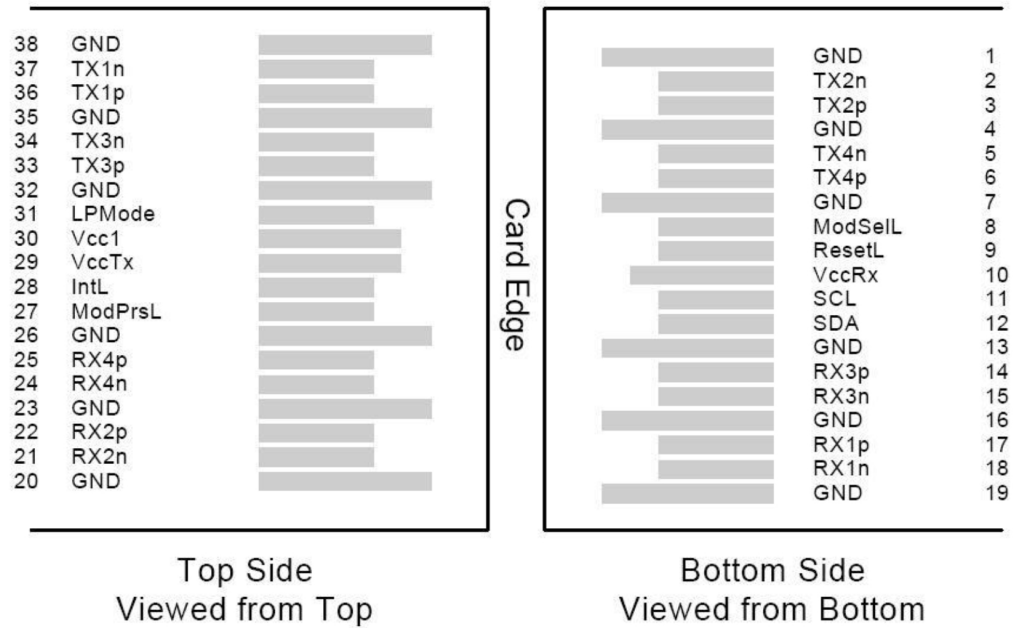
## Pin Descriptions

| Pin | Logic       | Symbol  | Name/Descriptions                                   | Ref. |
|-----|-------------|---------|---|------|
| 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    | MODSEIL | 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, internal pulled down to GND         |      |
| 28  | LVTTTL-O    | IntL    | Interrupt output, should be pulled up on 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:**

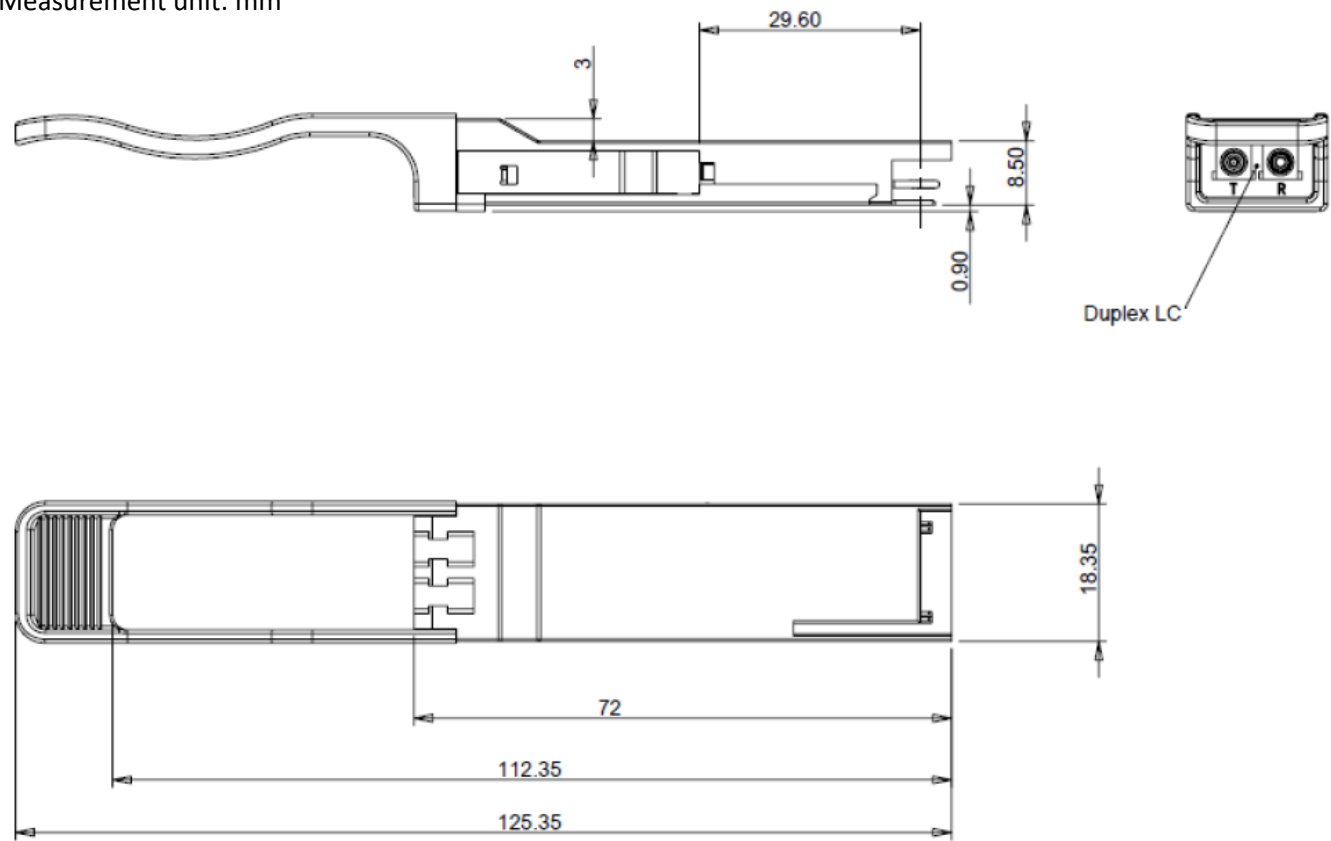
- 1. Module circuit ground is isolated from module chassis ground with in the module.
- 2. Open collector; should be pulled up with 4.7k-10k ohms on host board to a voltage between 3.15V and 3.6V.

**Electrical Pin-out Details**



**Mechanical Specifications**

Measurement unit: mm



## **OptioConnect**

### **Innovation for the Future of High-Speed Networking**

#### **Who We Are**

OptioConnect is reshaping the landscape of communication and high-speed networking through intelligent technology. With a core focus on cutting edge technology, we deliver smarter fiber optic solutions for enterprise networks, data centers, and next-gen telecom infrastructures.

#### **What We Do**

At OptioConnect, we fuse advanced engineering with intelligent automation to drive the future of networking. Our AI-integrated solutions are designed to optimize performance and streamline operations with:

- Superior Performance
- Network and traffic optimization
- Intelligent energy management
- Seamless OEM compatibility
- Scalable cost-efficiency

#### **Smarter Networks by Design**

Innovation isn't just a goal—it's our process. We embed AI and machine learning across our R&D and product lines, enabling adaptive performance, automated tuning, and faster deployment cycles. The result? Networks that don't just work—they learn, evolve, and outperform.

#### **Our Team**

Our engineers, data scientists, and network architects bring decades of experience and a future-focused mindset. We provide hands-on support with intelligent insights that turn complex challenges into simple solutions.

#### **Our Mission**

To deliver AI-enhanced connectivity that reduces cost, increases speed, and maximizes efficiency—empowering our partners to operate at the forefront of a rapidly evolving digital world.

#### **Let's Connect**

Discover how OptioConnect's intelligent infrastructure solutions can power your network's next leap forward.

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