



### **QSFP-100G-2DW47-AR-OPC**

Arista Networks® QSFP-100G-2DW47-AR Compatible TAA 100GBase-DWDM PAM4 QSFP28 Transceiver C-Band (SMF, 1539.77nm, 80km w/EDFA/DCM, LC, DOM)

#### **Features**

- SFF-8665 Compliance
- Duplex LC Connector
- 100GHz DWDM ITU Grid
- Single-mode Fiber
- Commercial Temperature 20 to 70 Celsius
- Hot Pluggable
- Metal with Lower EMI
- Excellent ESD Protection
- RoHS Compliant and Lead Free



#### **Applications:**

- 100GBase Ethernet
- Access, Metro and Enterprise

#### **Product Description**

This Arista Networks® QSFP-100G-2DW47-AR compatible QSFP28 transceiver provides 100GBase-DWDM throughput up to 80km over single-mode fiber (SMF) PAM4 using a wavelength of 1539.77nm via an LC connector. It can operate at temperatures between 0 and 70C. Our transceiver is built to meet or exceed OEM specifications and is guaranteed to be 100% compatible with Arista Networks®. 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.

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

## Wavelength Guide (100GHz ITU-T Channel)

| Channel # | Frequency (GHz) | Wavelength (nm) | Frequency (GHz) | Wavelength (nm) |
|-----------|-----------------|-----------------|-----------------|-----------------|
|           | L0              |                 | L1              |                 |
| 16        | 191600          | 1564.68         | 191650          | 1564.27         |
| 17        | 191700          | 1563.86         | 191750          | 1563.45         |
| 18        | 191800          | 1563.05         | 191850          | 1562.64         |
| 19        | 191900          | 1562.23         | 191950          | 1561.83         |
| 20        | 192000          | 1561.42         | 192050          | 1561.01         |
| 21        | 192100          | 1560.61         | 192150          | 1560.2          |
| 22        | 192200          | 1559.79         | 192250          | 1559.39         |
| 23        | 192300          | 1558.98         | 192350          | 1558.58         |
| 24        | 192400          | 1558.17         | 192450          | 1557.77         |
| 25        | 192500          | 1557.36         | 192550          | 1556.96         |
| 26        | 192600          | 1556.56         | 192650          | 1556.15         |
| 27        | 192700          | 1555.75         | 192750          | 1555.34         |
| 28        | 192800          | 1554.94         | 192850          | 1554.54         |
| 29        | 192900          | 1554.13         | 192950          | 1553.73         |
| 30        | 193000          | 1553.33         | 193050          | 1552.93         |
| 31        | 193100          | 1552.52         | 193150          | 1552.12         |
| 32        | 193200          | 1551.72         | 193250          | 1551.32         |
| 33        | 193300          | 1550.92         | 193350          | 1550.52         |
| 34        | 193400          | 1550.12         | 193450          | 1549.72         |
| 35        | 193500          | 1549.32         | 193550          | 1548.91         |
| 36        | 193600          | 1548.52         | 193650          | 1548.11         |
| 37        | 193700          | 1547.72         | 193750          | 1547.32         |
| 38        | 193800          | 1546.92         | 193850          | 1546.52         |
| 39        | 193900          | 1546.12         | 193950          | 1545.72         |
| 40        | 194000          | 1545.32         | 194050          | 1544.92         |
| 41        | 194100          | 1544.53         | 194150          | 1544.13         |
| 42        | 194200          | 1543.73         | 194250          | 1543.33         |
| 43        | 194300          | 1542.94         | 194350          | 1542.54         |
| 44        | 194400          | 1542.14         | 194450          | 1541.75         |
| 45        | 194500          | 1541.35         | 194550          | 1540.95         |
| 46        | 194600          | 1540.56         | 194650          | 1540.16         |
| 47        | 194700          | 1539.77         | 194750          | 1539.37         |
| 48        | 194800          | 1538.98         | 194850          | 1538.58         |

|    |        |         |        |         |
|----|--------|---------|--------|---------|
| 49 | 194900 | 1538.19 | 194950 | 1537.79 |
| 50 | 195000 | 1537.4  | 195050 | 1537    |
| 51 | 195100 | 1536.61 | 195150 | 1536.22 |
| 52 | 195200 | 1535.82 | 195250 | 1535.43 |
| 53 | 195300 | 1535.04 | 195350 | 1534.64 |
| 54 | 195400 | 1534.25 | 195450 | 1533.86 |
| 55 | 195500 | 1533.47 | 195550 | 1533.07 |
| 56 | 195600 | 1532.68 | 195650 | 1532.29 |
| 57 | 195700 | 1531.9  | 195750 | 1531.51 |
| 58 | 195800 | 1531.12 | 195850 | 1530.72 |
| 59 | 195900 | 1530.33 | 195950 | 1529.94 |
| 60 | 196000 | 1529.55 | 196050 | 1529.16 |
| 61 | 196100 | 1528.77 | 196150 | 1528.38 |

#### Absolute Maximum Ratings

| Parameter             | Symbol            | Min. | Typical | Max.                 | Unit |
|-----------------------|-------------------|------|---------|----------------------|------|
| Signal Input Voltage  | V <sub>in</sub>   | -0.5 |         | V <sub>cc</sub> +0.5 | V    |
| Power Supply Voltage  | V <sub>cc</sub>   | -0.5 |         | 3.6                  | °C   |
| Storage Temperature   | T <sub>S</sub>    | 5    |         | 85                   | °C   |
| Operating Temperature | T <sub>case</sub> | 20   |         | 70                   | °C   |

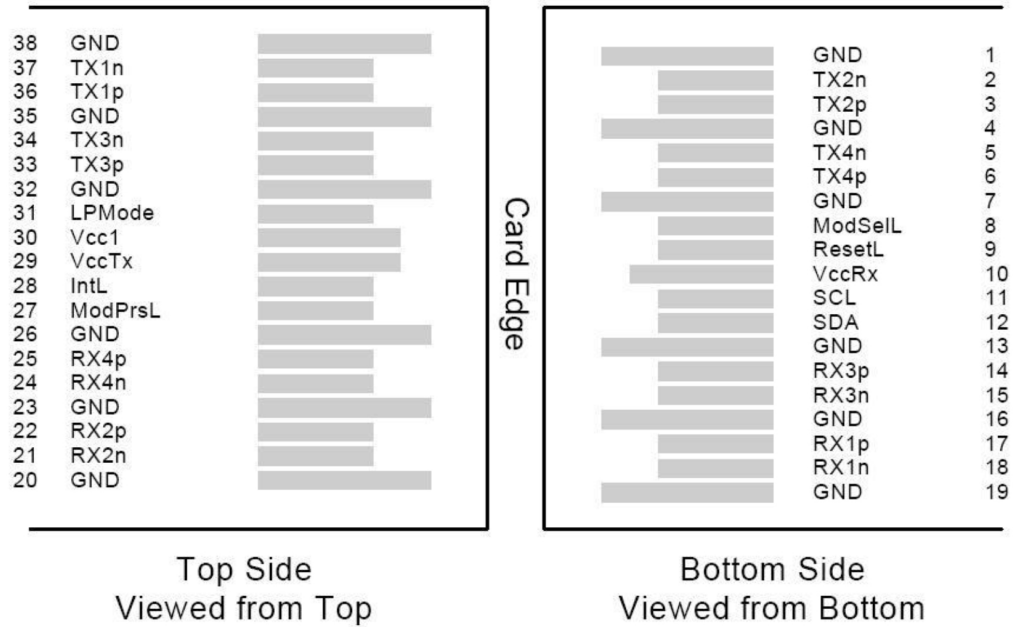
#### Electrical Characteristics

| Parameter            | Symbol          | Min.  | Typ. | Max.  | Unit | Notes |
|----------------------|-----------------|-------|------|-------|------|-------|
| Power Supply Voltage | V <sub>cc</sub> | 3.135 | 3.3  | 3.465 | V    |       |
| Power Dissipation    | P <sub>D</sub>  |       | 4    | 5     | W    |       |

Optical Characteristics

| Parameter                   | Symbol          | Min. | Typ.      | Max. | Unit | Notes |
|-----------------------------|-----------------|------|-----------|------|------|-------|
| Transmitter                 |                 |      |           |      |      |       |
| Optical Wavelength          | $\lambda_C$     | 1480 | $\lambda$ | 1580 | nm   |       |
| Channel Spacing             | $\Delta f$      |      | 100       |      | GHz  |       |
| Optical Extinction Ratio    | ER              |      | 6         |      | dB   |       |
| Side-Mode Suppression Ratio | SMSR            | 30   |           |      | dB   |       |
| Spectral Width              | $\Delta\lambda$ |      | +/-25     | 1    | GHz  |       |
| Optical Transmit Power      | Pout/lane       | -11  | -10       | -8   | dBm  |       |
| Receiver                    |                 |      |           |      |      |       |
| Optical Wavelength          | $\lambda_C$     | 1480 |           | 1580 | nm   |       |
| Receiver Max. Sensitivity   | Pmin            | -3   | -2.5      | -2   | dBm  |       |
| Damage Threshold            | Pmax            | 10   |           |      | dBm  |       |
| Optical Return Loss         | ORL             |      |           | 20   | dBm  |       |
| LOS Hysteresis              | LOSH            |      | 1.0       |      | dB   |       |
| LOS Assert                  | LOSA            | -10  |           |      | dBm  |       |
| LOS De-Assert               | LOSD            |      |           | -3   | dBm  |       |

Electrical Pin-out Details



## Pin Descriptions

| Pin | Logic        | Symbol  | Name/Descriptions                    | Plug Sequence | Ref. |
|-----|--------------|---------|--------------------------------------|---------------|------|
| 1   |              | GND     | Ground                               | 1             | 1    |
| 2   | CML-I        | Tx2n    | Transmitter Inverted Data Input      | 3             |      |
| 3   | CML-I        | Tx2p    | Transmitter Non-Inverted Data output | 3             |      |
| 4   |              | GND     | Ground                               | 1             | 1    |
| 5   | CML-I        | Tx4n    | Transmitter Inverted Data Input      | 3             |      |
| 6   | CML-I        | Tx4p    | Transmitter Non-Inverted Data output | 3             |      |
| 7   |              | GND     | Ground                               | 1             | 1    |
| 8   | LVTTTL-I     | ModSelL | Module Select                        | 3             |      |
| 9   | LVTTTL-I     | ResetL  | Module Reset                         | 3             |      |
| 10  |              | VccRx   | +3.3V Power Supply Receiver          | 2             | 2    |
| 11  | LVC MOS- I/O | SCL     | 2-Wire Serial Interface Clock        | 3             |      |
| 12  | LVC MOS- I/O | SDA     | 2-Wire Serial Interface Data         | 3             |      |
| 13  |              | GND     | Ground                               | 1             | 1    |
| 14  | CML-O        | Rx3p    | Receiver Non-Inverted Data output    | 3             |      |
| 15  | CML-O        | Rx3n    | Receiver Inverted Data output        | 3             |      |
| 16  |              | GND     | Ground                               | 1             | 1    |
| 17  | CML-O        | Rx1p    | Receiver Non-Inverted Data output    | 3             |      |
| 18  | CML-O        | Rx1n    | Receiver Inverted Data output        | 3             |      |
| 19  |              | GND     | Ground                               | 1             | 1    |
| 20  |              | GND     | Ground                               | 1             | 1    |
| 21  | CML-O        | Rx2n    | Receiver Inverted Data output        | 3             |      |
| 22  | CML-O        | Rx2p    | Receiver Non-Inverted Data output    | 3             |      |
| 23  |              | GND     | Ground                               | 1             | 1    |
| 24  | CML-O        | Rx4n    | Receiver Inverted Data output        | 3             |      |
| 25  | CML-O        | Rx4p    | Receiver Non-Inverted Data output    | 3             |      |
| 26  |              | GND     | Ground                               | 1             | 1    |
| 27  | LVTTTL-O     | ModPrsL | Module Present                       | 3             |      |
| 28  | LVTTTL-O     | IntL    | Interrupt                            | 3             |      |
| 29  |              | VccTx   | +3.3V Power Supply Transmitter       | 2             | 2    |
| 30  |              | VccI    | +3.3V Power Supply                   | 2             | 2    |
| 31  | LVTTTL-I     | LPMODE  | Low Power Mode                       | 3             |      |
| 32  |              | GND     | Ground                               | 1             | 1    |
| 33  | CML-I        | Tx3p    | Transmitter Non-Inverted Data input  | 3             |      |
| 34  | CML-I        | Tx3n    | Transmitter Inverted Data Input      | 3             |      |
| 35  |              | GND     | Ground                               | 1             | 1    |
| 36  | CML-I        | Tx1p    | Transmitter Non-Inverted Data input  | 3             |      |
| 37  | CML-I        | Tx1n    | Transmitter Inverted Data Input      | 3             |      |
| 38  |              | GND     | Ground                               | 1             | 1    |

**Notes:**

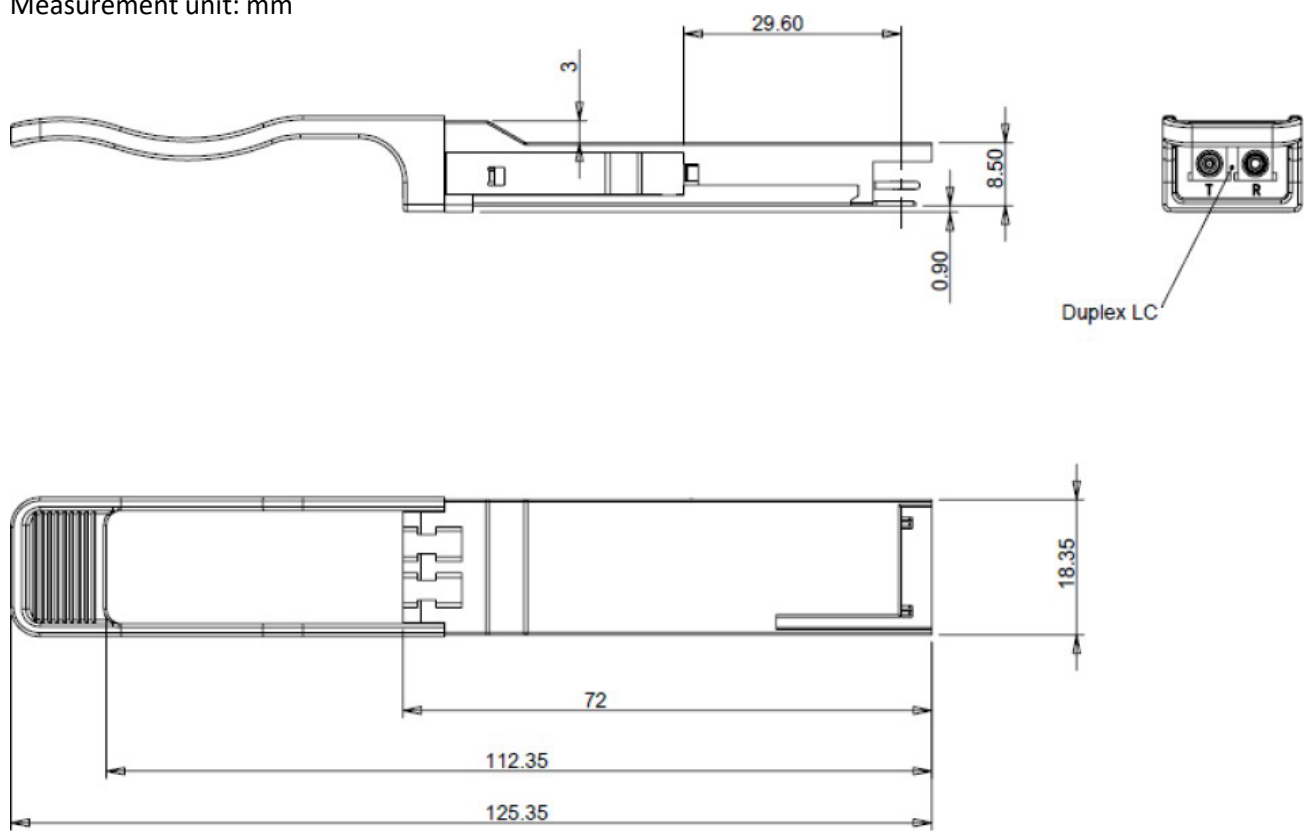
1. GND is the symbol for signal and supply (power) common for the QSFP28 module. All are common within the QSFP28 module and all module voltages are referenced to this potential unless otherwise noted. Connect these directly to the host board signal-common ground plane.
2. VccRx, Vcc1 and VccTx are the receiver and transmitter power supplies and shall be applied concurrently. Requirements defined for the host side of the Host Edge Card Connector are listed in Table 6. Recommended host board power supply filtering is shown in Figures 3 and 4. Vcc Rx Vcc1 and Vcc Tx may be internally connected within the QSFP28 Module in any combination. The connector pins are each rated for a maximum current of 500Ma.

**DOM Specifications**

| Parameter                                      | Min. | Typ. | Max. | Unit |
|------------------------------------------------|------|------|------|------|
| Receive Power Monitor Accuracy                 | -2   |      | 2    | dB   |
| Transmit Power Monitor                         | -2   |      | 2    | dB   |
| Laser Bias Current Monitor Accuracy            | -10  |      | 10   | %    |
| Transceiver Temperature Monitor Accuracy       | -5   |      | 5    | °C   |
| Internally Measured Transceiver Supply Voltage |      |      | 3    | %    |

**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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