

## Key Highlights:

- **Type:** 2x100G CWDM4 QSFP-DD
- **Compatibility:** Multi-Vendor MSA Compatible
- **Tx/Rx Wavelength:** 2x(1271, 1291, 1311, 1331)nm
- **Laser:** DFB
- **Modulation:** NRZ
- **Fiber Type:** Single-Mode Fiber (SMF)
- **Connectors:** Double CS
- **Optical Budget:** 5dB
- **Max. Distance:** 2km
- **Data Rate:** 2x103.125 Gbps
- **Forward Error Correction:** Supported
- **DDM/DOM:** Supported
- **Power Consumption:** ≤ 7W
- **Temperature:** Standard 0° - 70°C



## Optical Transceiver : 2x100G-QDD-2.1

### Product Description:

2x100G-QDD-2.1 is Multi-Vendor MSA Compatible 2x100G CWDM4 QSFP28-DD (Quad Small Form-Factor Plug-gable Double Density) Transceiver designed for operation over single-mode optical fiber. 2x100G CWDM4 has a QSFP-DD form factor which supports eight electrical interface lanes which can operate in 25G NRZ encoding mode resulting in 200G (8x25G) data rate. Technically 2x100GBASE-CWDM4 QSFP28-DD modules consists of two 100G transceivers in one housing which can provide great flexibility for operators in their migration path towards QSFP-DD gear and 400G PAM4 infrastructure and help to make necessary interconnections with high density legacy 100GBASE-SR4 QSFP28 interfaces which use NRZ encoding. Module has a minimum guaranteed optical budget of 5 dB, which in most cases is enough to reach 2 km over OS2 single mode optical fiber. However, distance is just an indicative parameter calculated for comfort of identification. Eventually we calculate distance taking in account minimal optical budget and average attenuation of optical cabling in industry. 2x100G CWDM4 uses 8x25Gb/s Uncooled DFB (1271/1291/1311/1331nm) laser transmitters and 8x25Gb/s PIN Photo Detectors. 2x100GBASE-CWDM4 QSFP28-DD module supports DDM/DOM optical diagnostics, which provide diagnostic



information about the present operating conditions. 2x100G-QDD-2.1 operates in standard 0°-70°C temperature range and has a double duplex CS connector. CS connectors have been standardized by CS Consortium and require special CS patch cables. 2x100GBASE-CWDM4 QSFP-DD supports 2x103.125 Gbps data rate and such applications as 2x100G Ethernet (206.25 Gbps). 2x100G-QDD-2.1 optical transceiver is a multi-purpose module which can be used in various scenarios in today's networking environment. Most popular applications are Telecom Metro, Telecom Core, Wireless Backhaul and Data Center Interconnect (DCI).

The 2x100G-QDD-2.1 transceivers are widely used in Cisco, Juniper, Dell and other industry well known manufacturers equipment. Transceivers are CE/RoHS certified and are compliant with product safety standards. 2x100G CWDM4 transceiver is fully compliant to QSFP-DD Multi Source Agreement (MSA) and CWDM4 MSA standard. Consequently, compliance to above standards guarantees that module is compatible and works with majority of networking equipment, where is not implemented special algorithm for protection against third party modules. However – we have accumulated expertise in custom-encoded firmware for 2x100G-QDD-2.1 in order to make these modules work in almost any brand of equipment. We will be glad to know your requirements – Contact Us.

## Product Specification:

General parameter	Value
Media Type:	Single-Mode Fiber (SMF)
Connectors:	Double CS
TX Wavelength:	2 x 1271, 1291, 1311, 1331 nm
RX Wavelength:	2 x 1271, 1291, 1311, 1331 nm
Minimum Optical Budget:	5 dB
Maximum Distance:	2 km
Supported Data Rate:	2x103.125 Gbps
Data Rate, each Lane up to:	25.78125 Gbps
Modulation:	NRZ (Non-return-to-zero)
Supported Applications:	2x100G Ethernet (206.25 Gbps)
Digital Diagnostic Monitoring (DDM):	Supported
Optical Clock And Data Recovery (CDR):	Supported
Forward Error Correction (FEC)	Host FEC Supported
Operating Temperature Range:	Standard 0° - 70°C
Storage Temperature Range:	- 40° to 85°C
Relative Humidity (Non-Condensation):	0 to 85%



General parameter	Value
Power Consumption:	≤ 7W
Power Supply Voltage Typical:	+ 3.3V
Power Supply Voltage Range:	-3.135 to 3.465V
Compliance:	IEC 60825-1 Laser Safety Compliant, 100G CLR4 Alliance, 100G CWDM4 MSA, RoHS-6, CE, QSFP-DD MSA, SFF-8665, CMIS V4.0

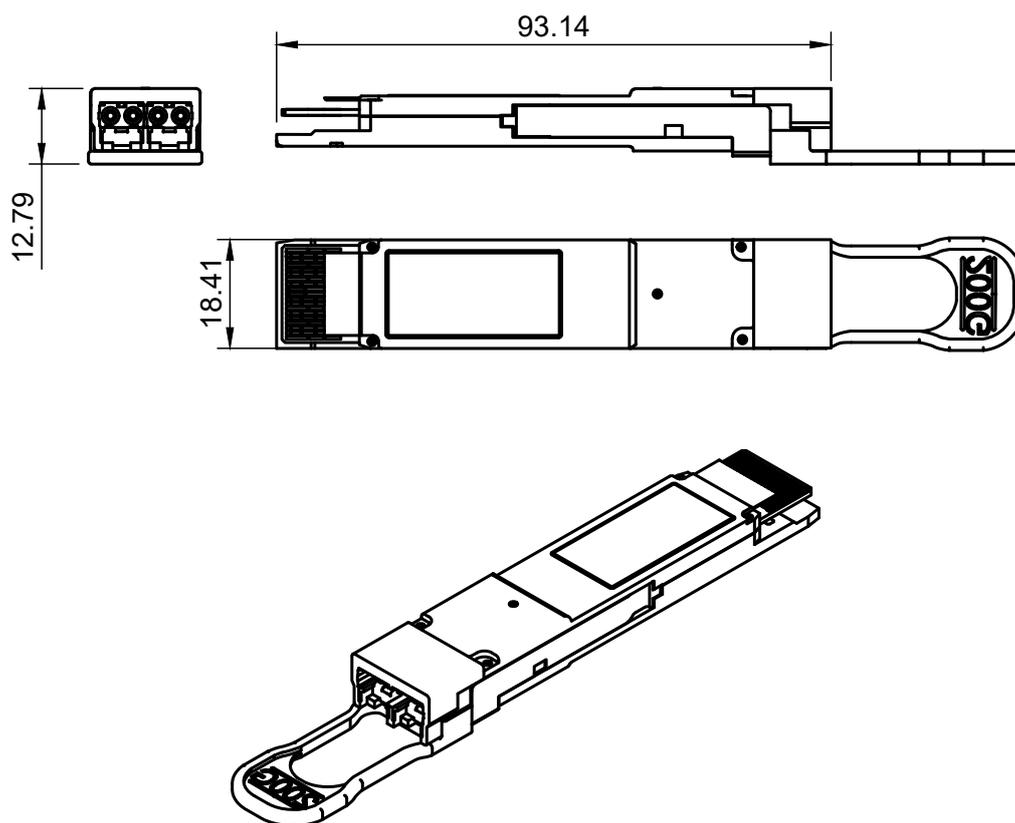
Transmitter Parameters:	Value
Transmitter Type:	Uncooled DFB Laser
Tx Wavelength Bandwidth:	2x4 CWDM Lanes (73 nm 1264.50 – 1337.50nm) (L0 Tx center 1271nm, L1 Tx center 1291nm, L2 Tx center 1311nm, L3 Tx center 1331nm)
Average Launch Power Each Lane (Max):	2.5 dBm
Average Launch Power Each Lane (Min):	-6.5 dBm
Side-mode Suppression Ratio (Min):	30 dB
Outer Optical Modulation Amplitude OMA (Min) Each Lane:	- 4 dBm
Outer Optical Modulation Amplitude OMA (Max) Each Lane:	2.5 dBm
Launch Power in OMA minus TDECQ (Min) Each Lane:	- 5 dBm
Extinction Ratio (Min):	3.5 dB
Transmitter reflectance (Max):	- 26 dB
Average Launch Power OFF Transmitter (Max) Each Lane:	- 30 dB

Receiver Parameters:	Value
Receiver Type:	PIN Photodiode Array
Rx Wavelength Bandwidth:	2x4 CWDM Lanes (73 nm 1264.50 – 1337.50nm) (L0 Tx center 1271nm, L1 Tx center 1291nm, L2 Tx center 1311nm, L3 Tx center 1331nm)
Average Receive Power Each Lane (Min):	-11.5 dBm
Average Receive Power Each Lane (Max):	2.5 dBm



Receiver Parameters:	Value
Damage Threshold Each Lane:	3.5 dBm
Receiver Overload	3.5 dBm
Difference in receiver power between any two lanes (OMA):	5.5 dB
Receiver Sensitivity (OMA) Each Lane:	-10.0 dB
Receiver Reflectance (Max):	-26 dB

## Mechanical Dimensions



## Compatibility:

EDGE Optical transceivers can be provided with custom-encoded firmware, in order to provide compatibility with more than 100 vendor brands in data and telecom communications industry:

**MS** - General MSA  
**AD** - ADVA  
**AE** - Advantech  
**AL** - Alcatel (Nokia)  
**AT** - Allied Telesis  
**AR** - Arista  
**AS** - Arris  
**AV** - Avaya  
**BC** - Barracuda  
**BR** - Broadcom  
**QL** - Cavium (Qlogic)  
**CR** - Ceragon  
**CP** - Checkpoint  
**CH** - Chelsio  
**CN** - Ciena  
**CI** - Cisco  
**LI** - Cisco (Linksys)  
**CE** - Comnet  
**CO** - Coriant  
**DH** - Dahua  
**DC** - DCN  
**DL** - Dell & Force10  
**DK** - D-Link

**DZ** - DZS(Dasan-Zhone)  
**EI** - ECI  
**EC** - EdgeCore  
**EW** - EdgeWare  
**EL** - Eltex  
**EM** - EMC2  
**EN** - Enterasys  
**ER** - Ericsson  
**EF** - EXFO  
**EX** - Extreme Networks  
**F5** - F5 Networks  
**FI** - Finisar  
**FO** - Fortinet  
**FU** - Fujitsu  
**H3** - H3C  
**HI** - Hirschmann  
**HU** - Huawei  
**IB** - IBM  
**IF** - Infinera  
**IN** - Intel  
**IX** - Ixia  
**JU** - Juniper Networks  
**KM** - KeyMile

**KY** - KyLand  
**LN** - Lenovo  
**ML** - Mellanox  
**ME** - Meraki (Cisco)  
**MT** - MikroTik  
**MO** - Moxa  
**MR** - MRV  
**NC** - NEC  
**NG** - Netgear  
**NK** - Nokia  
**NT** - Nortel  
**NS** - NSN  
**OR** - Oracle  
**PA** - Palo Alto Network  
**PL** - Planet  
**QC** - QCT(Quanta)  
**QN** - QNAP  
**RD** - RAD  
**RW** - RadWare  
**RC** - Raisecom  
**RK** - Ruckus  
**RU** - Ruijie Networks  
**SG** - Samsung

**SV** - Sandvine  
**SC** - Silicom  
**SF** - SolarFlare  
**SW** - SonicWall  
**SM** - Supermicro  
**SY** - Synology  
**TC** - Telco Systems  
**TP** - TP-LINK  
**TN** - Trendnet  
**UN** - Ubiquiti Networks  
**VX** - VeEx  
**WG** - WatchGuard  
**WS** - Waystream  
**WT** - Westermo  
**ZT** - ZTE  
**ZX** - Zyxel  
**HP** - HP  
**AG** - Avago  
**OC** - Oclaro  
**EU** - Emulex  
**TM** - Transmode  
**AU** - HP Aruba  
**XX** - Other

## Warranty:

EDGE Optic's provides a limited **warranty for sixty (60) months** from Purchaser's receipt of the Equipment represented in this data sheet against defective design or workmanship. Warranty does not cover damage caused by improper deployment, misuse and accidents.

