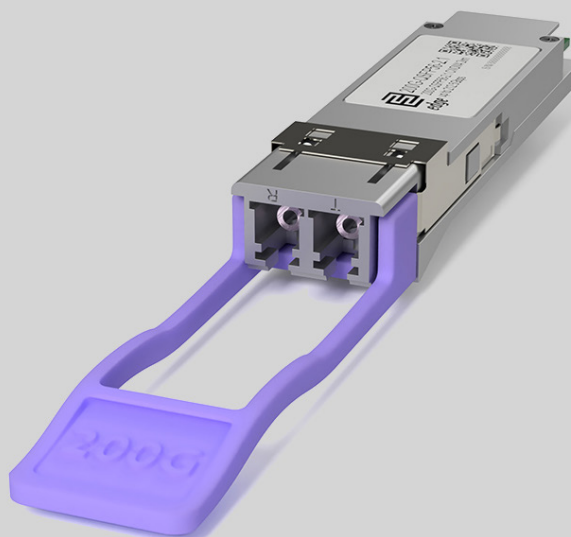


Key Highlights:

- **Type:** 200G-FR4 QSFP56
- **Compatibility:** Multi-Vendor MSA Compatible
- **Tx/Rx Wavelength:** 1271, 1291, 1311, 1331 nm
- **Laser:** DFB
- **Modulation:** PAM4
- **Fiber Type:** Single-Mode Fiber (SMF)
- **Connectors:** Double LC
- **Optical Budget:** 4dB
- **Max. Distance:** 2km
- **Data Rate:** 212.5 Gbps
- **FEC Forward Error Correction:** Supported
- **DDM/DOM:** Supported
- **Power Consumption:** ≤ 6.5 W
- **Temperature:** Standard 0° - 70°C



Optical Transceiver : 200G-QSFP56-2.1

Product Description:

200G-FR4 QSFP56 is a Multi-Vendor MSA Compatible 200G-FR4 QSFP56 (Quad Small Form-Factor Pluggable) Transceiver designed for operation over Single-Mode Fiber (SMF). 200GBASE-FR4 QSFP56 has a QSFP form factor, built in 200G PAM4 (Pulse Amplitude Modulation 4-level) DSP (Digital Signal Processor) and module supports four electrical interface lanes, which can operate in 50G PAM4 encoding mode resulting in 200G (4x50G) data rate. 200G-QSFP56-2.1 modules can become handy in Data Center environments where we would have several 200G signals coming from the server side (NICs) which need to be aggregated by the Data Center switch. Module has a minimum guaranteed optical budget of 4 dB, which in most cases is enough to reach 2 km over OS2 singlemode fiber with FEC support. 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. 200G-FR4 QSFP56 uses 4 channel (1271/1291/1311/1331nm) 53.125 Gbps DFB Lasers and 4 channel (1271/1291/1311/1331nm) 53.125 Gbps PIN photodiode receivers. Module supports DDM/DOM optical diagnostics, which provide diagnostic information about the present



operating conditions. 200GBASE-FR4 QSFP56 operates in the standard 0°-70°C temperature range and has a double LC optical connector and 38 pins edge connector for electrical interface. 200GBASE-FR4 QSFP56 supports 212.5 Gbps data rate and such applications as 200G Ethernet.

The 200G-FR4 QSFP56 transceivers are widely used in Mellanox, Intel, Arista, Huawei and other industry well known manufacturers equipment. Transceivers are CE/RoHS certified and are compliant with product safety standards. 200G-QSFP56-2.1 transceiver is fully compliant to 200GBASE-FR4 QSFP56 Multi Source Agreement (MSA), where IEEE 802.3bs defines physical layer specifications of 200GAUI-4 electrical interface and transmitting 2 km over single-mode fiber (200GBASE-FR4) using four parallel wavelengths (CWDM) each at 50 Gbit/s, SFF-8679 defines QSFP+ 4X Hardware and Electrical Specification and additionally module is Common Management Interface Specification CMIS V4.0 compliant. 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 200G-QSFP56-2.1 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 LC
TX Wavelength:	1270 nm, 1290 nm, 1310 nm, 1330 nm
RX Wavelength:	1270 nm, 1290 nm, 1310 nm, 1330 nm
Minimum Optical Budget:	4 dB
Maximum Distance:	2 km
Supported Data Rate:	212.5 Gbps
Supported Applications:	200G Ethernet (212.5 Gbps)
Modulation:	PAM4
DDM/DOM:	Supported
CDR (Clock and Data Recovery) chip	Supported
Forward Error Correction (FEC):	Supported
Operating Temperature Range:	Standard 0°- 70°C
Storage Temperature Range:	- 40° to 85°C
Relative Humidity (Non-Condensation):	0 to 85%
Power Consumption:	≤6.5 W



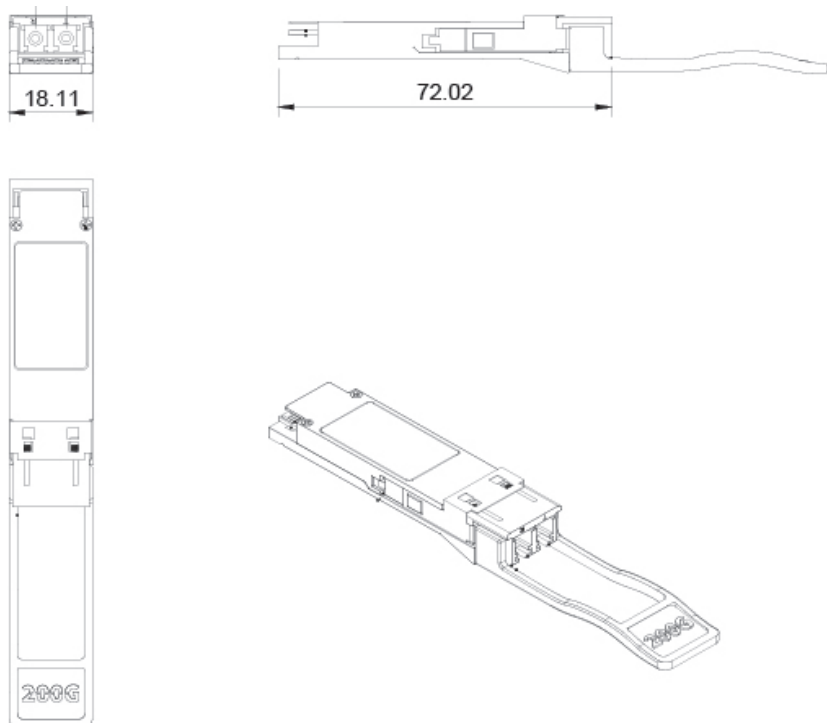
General parameter	Value
Power Supply Voltage Typical:	+ 3.3 V
Compliance:	IEEE802.3bs 200GBASE-FR4, SFF-8679, CMIS V4.0, QSFP56 MSA, RoHS-6, CE

Transmitter Parameters:	Value
Transmitter Type:	DFB Laser
Tx Wavelength Bandwidth:	4 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):	4.7 dBm
Average Launch Power Each Lane (Min):	-4.2 dBm
Side-mode Suppression Ratio (Min):	30 dB
Extinction Ratio (Min):	3.5 dB

Receiver Parameters:	Value
Receiver Type:	PIN Photodiode Array
Rx Wavelength Bandwidth:	4 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):	-8.2 dBm
Average Receive Power Each Lane (Max):	4.7 dBm
Receiver Overload:	4.7 dBm



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.

