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Product Data Sheet

Key Highlights:

- **Type**: 100GBASE-LR4 CFP
- **Compatibility:** Multi-Vendor MSA Compatible
- **Tx/Rx Wavelength:** 1295.56, 1300.05, 1304.58, 1309.14 nm
- **Laser:** DFB
- **Fiber Type:** Single-Mode Fiber (SMF)
- **Connectors:** Double LC
- **Optical Budget:** 6.3dB
- **Max. Distance:** 10km
- **Data Rate:** 103.125-111.81 Gbps
- **DDM/DOM:** Supported
- **Power Consumption:** ≤ 12W
- **Temperature:** Standard 0° - 70°C

Optical Transceiver : 100G-CFP-10

Product Description:

100G-CFP-10 is Multi-Vendor MSA Compatible 100GBASE-LR4 CFP (Centum Form Factor Pluggable) Transceiver, operating over pair of single-mode optical fiber with four independent optical communication lanes, separated from each other using LAN WDM technology. Module has minimum guaranteed optical budget of 6.3 dB, which in most cases is enough to reach 10 km distance using single-mode cable. However, distance is just 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. 100G-CFP-10 uses cooled 4x27.95Gb/s LAN WDM TOSA (1295.56, 1300.05, 1304.58, 1309.14nm) laser transmitters and 4x27.95Gb/s PIN ROSA receivers. Module support DDM/DOM optical diagnostics, which provide diagnostic information about the present operating conditions. 100G-CFP-10 operates in Standard 0°-70°C temperature range and has double LC connectors.

100GBASE-LR4 CFP support up to 103.125-111.81 Gbps data rate and such applications as 100G Ethernet (103.125Gbps), Optical Transport Network OTU4 4I1-9D1F (111.81Gbps). 100G-CFP-10 optical trans-

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ceiver is multi-purpose module used in number of different places in today's networking environment. Most popular applications are Internet Service Provider (ISP) Fiber to the Home Aggregation and Backbone, Mobile Operator Core Networks and Mobile Backhaul and Data Center networking site interconnections.

100G-CFP-10 is CE/RoHS certified and it is Compliant with product safety standards. 100GBASE-LR4 CFP Transceiver is fully compliant to CFP Multi Source Agreement (MSA), IEEE 802.3ba 100GBASE-LR4. 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 – our technical team has accumulated deep expertise in custom-encoded firmware's for 100GBASE-LR4 CFP transceiver in order to make it work in almost any brand equipment. We will be glad to know your requirements.

Product Specification:

General parameter	Value
Media Type:	Single-Mode Fiber (SMF)
Connectors:	Double LC
TX Wavelength:	1295.56, 1300.05, 1304.58, 1309.14 nm
RX Wavelength:	1295.56, 1300.05, 1304.58, 1309.14 nm
Minimum Optical Budget:	6.3dB
Maximum Distance:	10 km
Supported Data Rate:	103.125-111.81Gbps
Data Rate, each Lane up to:	25.78Gbps (Ethernet), 27.95Gbps (OTU4)
Modulation:	NRZ
Supported Applications:	100G Ethernet (103.125Gbps), OTU4 4I1-9D1F (111.81Gbps)
Digital Diagnostic Monitoring (DDM):	Supported
Optical Clock And Data Recovery (CDR):	Supported
Operating Temperature Range:	Standard 0°- 70°C
Storage Temperature Range:	- 40° to 85°C
Relative Humidity (Non-Condensation):	0 to 85%
Power Consumption:	≤ 12W
Power Supply Voltage Typical:	+ 3.3V
Power Supply Voltage Range:	-3.135 to 3.465V

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General parameter	Value
Chipset:	MAXIM, MINDSPEED, SEMTECH, TI, SUMITOMO
Compliance:	CFP MSA, IEEE 802.3ba 100GBASE-LR4, OTN OTU4, CE, RoHS-6, Class 1 FDA, IEC60825-1 Laser Safety Compliant

Transmitter Parameters:	Value
Transmitter Type:	DFB Laser
Tx Wavelength Bandwidth:	4 LAN WDM Seperated 1310 nm Lanes (15.66 nm 1294.53 – 1310.19nm) (L0 Tx center 1295.56nm, L1 Tx center 1300.05nm, L2 Tx center 1304.58nm, L3 Tx center 1309.14nm)
Total Average Launch Power (Min):	- 4.3 dBm
Total Average Launch Power (Max):	4.5 dBm
Side-mode Suppression Ratio (Min):	30 dB
Optical Modulation Amplitude OMA (Min) Each Lane:	- 1.3 dBm
Optical Modulation Amplitude OMA (Max) Each Lane:	4.5 dBm
Difference in Launch Power between any Two Lanes OMA (Max):	5 dBm
TDP Each Lane:	2.2 dB
Launch Power in OMA minus TDEC (Min) Each Lane:	- 2.3 dBm
Extinction Ratio (Min):	4 dB
Relative Intensity Noise (Max):	- 130 dB/Hz
Transmitter reflectance (Max):	- 12 dB
Average Launch Power OFF Transmitter (Max) Each Lane:	- 30 dB

Receiver Parameters:	Value
Receiver Type:	PIN Photodiode
Rx Wavelength Bandwidth:	4 LAN WDM Seperated 1310 nm Lanes (15.66 nm 1294.53 – 1310.19nm) (L0 Tx center 1295.56nm, L1 Tx center 1300.05nm, L2 Tx center 1304.58nm, L3 Tx center 1309.14nm)

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Receiver Parameters:	Value
Average Receive Power (Min):	-10.6 dBm
Average Receive Power (Max):	4.5 dBm
Receiver Overload Each Lane:	4.5 dBm
Difference in receiver power between any two lanes (OMA):	5.5 dB
Receiver Sensitivity (OMA) Each Lane:	-8.6 dB
Receiver Reflectance (Max):	-26 dB
LOS Assert (Min):	- 21 dBm
LOS De-assert (Max):	- 11 dBm
LOS Hysteresis (Min):	0.5 dB

Compatibility:

EDGE Optical transceivers can be provided with custom-encoded firmware, in order to provide compatibility with more then 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

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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.

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