SO-XFP-ER-DXXXX

XFP, 10G Multirate, DWDM, 100GHz, DDM, 14dB, 40km, D9180-D9610 (44ch)

OVERVIEW

The SO-XFP-ER-Dxxxx is a versatile DWDM transceiver supporting a wide range of traffic formats ranging from 9.95 to 11.1 Gbps. The transceiver is provided in 44 channel versions at the 100GHz DWDM grid as specified in the ITU-T 694.1 standard.

The distance performance is in accordance with the IEEE 802.3ae ER/EW-standard, providing a bridgeable distance of up to 40km for 10GbE-LAN (10GBASE-ER) and 10GbE-WAN (10GBASE-EW) services.

This transceiver provides digital diagnostic functions via a 2-wire serial interface as defined by the SFF-8472 specification.

The transceiver module is compliant to RoHS-6/6

TECHNICAL DATA

Technology		DWDM 100GHz XFP
Transmission media		SM (2x LC)
Typical reach		40 km
Nominal wavelength		191.80 - 196.10 THz (44ch)
Interface standards		10GBASE-ER 10GBASE-EW 1200-SM-LL-L 10G FC OC-192 IR-2, IR-3 STM S-64.2b, S-64.3b
Bit rate range		9.95 - 11.1 Gbps
Protocols	Eth:	10GbE-LAN 10GbE-WAN
	OTN:	OTU2e OTU2
	SDH/SONET:	STM-64/OC-192
	FC:	10G FC
	CPRI:	Opt 8 (10.1376 Gbps)
Power budget		0.0 - 14.0 dB
Dispersion tolerance		800 ps/nm [1]
Dispersion penalty		2.0 dB @ 800 ps/nm [1]
Temperature range		0°C to +70°C
Power consumption		< 2.0W

Transmitter data	Output power:	Min: -1.0 dBm Max: +4.0 dBm
	Tx wavelength:	191.80 - 196.10 THz in 100GHz steps (G.694.1)
Receiver data	Minimum input power:	-15.0 dBm [1]
	Max input power:	+0.5 dBm
	Wavelength range:	1270 – 1600 nm
DDM		Yes
MSA compliance		SFF-8431 SFF-8432 SFF-8472

[1] @ 10.3Gbps

Regulatory compliance	
EMC CE	EN 55022:2010 EN 55024:2010
UL/Safety	UL 60950-1
FCC	47 CFR PART 15 OCT, 2013
RoHS	RoHS 6
TUV	EN 60950-1:2006+A11+A1+A12+A2 EN 60825-1:2014 EN 60825-2:2004+A1+A2

Storage temp.	-40°C to +85°C

Note! See “Definitions” below.

Note: IEEE 802.3ae 10GBASE-ER/EW is defined only at 1550 nm. The standard is referred to from bridgeable distance perspective for the other wavelengths within the DWDM band.

ORDERING INFORMATION

Part number	Freq. THz	λ nm
SO-XFP-ER-D9180	191.80	1563.05
SO-XFP-ER-D9190	192.90	1562.23
SO-XFP-ER-D9200	192.00	1561.42
SO-XFP-ER-D9210	192.10	1560.61
SO-XFP-ER-D9220	192.20	1559.79
SO-XFP-ER-D9230	192.30	1558.98
SO-XFP-ER-D9240	192.40	1558.17
SO-XFP-ER-D9250	192.50	1557.36
SO-XFP-ER-D9260	192.60	1556.55
SO-XFP-ER-D9270	192.70	1555.75
SO-XFP-ER-D9280	192.80	1554.94
SO-XFP-ER-D9290	192.90	1554.13
SO-XFP-ER-D9300	193.00	1553.33
SO-XFP-ER-D9310	193.10	1552.52
SO-XFP-ER-D9320	193.20	1551.72
SO-XFP-ER-D9330	193.30	1550.92
SO-XFP-ER-D9340	193.40	1550.12
SO-XFP-ER-D9350	193.50	1549.32
SO-XFP-ER-D9360	193.60	1548.51
SO-XFP-ER-D9370	193.70	1547.72
SO-XFP-ER-D9380	193.80	1546.92
SO-XFP-ER-D9390	193.90	1546.12

Part number	Freq. THz	λ nm
SO-XFP-ER-D9400	194.00	1545.32
SO-XFP-ER-D9410	194.10	1544.53
SO-XFP-ER-D9420	194.20	1543.73
SO-XFP-ER-D9430	194.30	1542.94
SO-XFP-ER-D9440	194.40	1542.14
SO-XFP-ER-D9450	194.50	1541.35
SO-XFP-ER-D9460	194.60	1540.56
SO-XFP-ER-D9470	194.70	1539.77
SO-XFP-ER-D9480	194.80	1538.98
SO-XFP-ER-D9490	194.90	1538.18
SO-XFP-ER-D9500	195.00	1537.40
SO-XFP-ER-D9510	195.10	1536.61
SO-XFP-ER-D9520	195.20	1535.82
SO-XFP-ER-D9530	195.30	1535.04
SO-XFP-ER-D9540	195.40	1534.25
SO-XFP-ER-D9550	195.50	1533.47
SO-XFP-ER-D9560	195.60	1532.68
SO-XFP-ER-D9570	195.70	1531.90
SO-XFP-ER-D9580	195.80	1531.12
SO-XFP-ER-D9590	195.90	1530.33
SO-XFP-ER-D9600	196.00	1529.55
SO-XFP-ER-D9610	196.10	1528.77

DEFINITIONS

Technology:	Grey; Transceiver type for non-WDM applications. Electrical or optical. CWDM; Transceiver type for CWDM applications using G.694.2 channel grid. DWDM; Transceiver type for DWDM applications using G.694.1 channel grid. BiDi; Transceiver pair using two different wavelength channels operating on a single-fiber. DAC: Direct Attach Cable. Electrical or optical cable with attached connectors.
Transmission Media:	Type of fiber, e.g. Multimode (MM) or Singlemode (SM). Number of and connector type within brackets (e.g. 2x LC, 1x MPO).
Typical reach:	Nominal distance performance based on dispersion and power budget properties, i.e. w/o dispersion compensation and optical amplification.
Bit rate range:	Supported bit rate range in Gigabit or Megabit per second (Gbps or Mbps).
Protocols:	Protocols within supported bit rate range.
Nominal wavelength:	Typical wavelength from transmitter.
Interface standards:	Referenced interface standards e.g. IEEE 802.3 standard for 10GbE services.
Power budget:	Min and max power budget between Transmitter and Receiver. Excluding any dispersion penalty.
Dispersion tolerance/penalty:	Maximum amount of tolerated dispersion and required reduction of power budget to maintain BER better than $1E^{-12}$. Defined at a specific bit rate.
Temperature range:	Max operating case temperature range. Standard temperature range: Typically 0°C to +70°C (32°F to +158°F) Extended temperature range (E-temp): Typically -20°C to +75°C (-4°F to +167°F) Industrial temperature range (I-temp): -40°C to +85°C (-40°F to +185°F)
Power consumption:	Worst case power consumption.
Transmitter Output power:	Average output power. Provided in min and max values.
Receiver minimum input power:	Minimum average input power at specified BER, normally $1E^{-12}$.
Receiver max input power:	Maximum average input power at specified BER, normally $1E^{-12}$.
DDM:	Digital Diagnostic Monitoring functionality as defined in SFF-8472 MSA.