

DATASHEET 5.7

DS-16G-ER-Dxxx

SFP+, 16/8/4G FC, DWDM 100GHz grid, 192.00 - 196.00THz (41ch), 40km, 13dB, LC, D2955-D6142

OVERVIEW

The DS-16G-ER-Dxxx is a versatile DWDM transceiver in SFP+ form-factor supporting a wide range of Fiber Channel (FC) services (4G to 16G). The transceiver has been layer-1 tested and approved by Cisco.

For diagnostic purposes, the transceiver supports optical (OWRAP) and electrical (EWRAP) loop-back functionality, with or without forwarding. The transceiver is provided in 41 channel versions at the 100GHz DWDM grid as specified in the ITU-T 694.1 standard. The transceiver can also be used in 1550/1530nm CWDM applications by selecting wavelength versions that match these.

The optical performance provides a bridgeable distance of up to 40km (without dispersion compensation) for 16G FC.

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

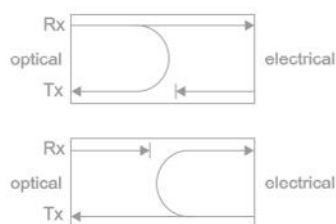
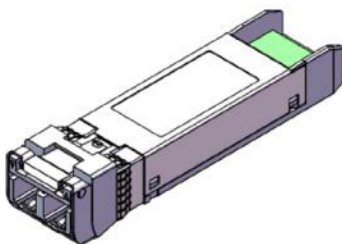
The transceiver module is compliant to RoHS-6/6.

¹⁾@ 14.025 Gbps (16G FC)

²⁾@ 8.5 Gbps (8G FC)

³⁾@ 4.25 Gbps (4G FC)

⁴⁾@ BER < 1E-12 using PRBS 231-1



TECHNICAL DATA

Technology	DWDM 100GHz SFP+
Transmission media	SM (2x LC)
Typical reach	40 km
Nominal wavelengths	192.00 - 196.00 THz (41ch)
Bit rate range	4.25 – 14.025 Gbps
Protocol support	FC: 16G FC 8G FC 4G FC
Power budget	3 – 13 dB ¹⁾ 3 – 14 dB ^{2) 3)}
Dispersion tolerance	800 ps/nm
Dispersion penalty	Max: 2 dB
Temperature range	0°C to +70°C
Power consumption	< 2.1 W
Transmitter data:	
Output power (avg):	Min: 0 dBm ¹⁾ Max: +4 dBm ¹⁾
Tx wavelengths	192.00 - 196.00 THz in 100GHz steps (G.694.1)
Receiver data:	
Minimum input power	-13.0 dBm ^{1) 4)} -14.0 dBm ^{2) 4)} -14.0 dBm ^{3) 4)}
Max input power	+1.0 dBm
Wavelength range	1480 – 1580 nm
DDM	Yes
MSA compliance	SFP+ MSA
Regulatory compliance	
RoHS	RoHS 6
Safety	EN 60825-1 Class 1 laser product
Storage temp.	-40°C to 85°C

ORDERING INFORMATION

Part Number	ITU channel	λ nm
DS-16G-ER-D6142	192.00	1561.42
DS-16G-ER-D6061	192.10	1560.61
DS-16G-ER-D5979	192.20	1559.79
DS-16G-ER-D5898	192.30	1558.98
DS-16G-ER-D5817	192.40	1558.17
DS-16G-ER-D5736	192.50	1557.36
DS-16G-ER-D5655	192.60	1556.55
DS-16G-ER-D5575	192.70	1555.75
DS-16G-ER-D5494	192.80	1554.94
DS-16G-ER-D5413	192.90	1554.13
DS-16G-ER-D5333	193.00	1553.33
DS-16G-ER-D5252	193.10	1552.52
DS-16G-ER-D5172	193.20	1551.72
DS-16G-ER-D5092	193.30	1550.92
DS-16G-ER-D5012	193.40	1550.12
DS-16G-ER-D4932	193.50	1549.32
DS-16G-ER-D4851	193.60	1548.51
DS-16G-ER-D4772	193.70	1547.72
DS-16G-ER-D4692	193.80	1546.92
DS-16G-ER-D4612	193.90	1546.12

Part Number	Freq. THz	λ nm
DS-16G-ER-D4532	194.00	1545.32
DS-16G-ER-D4453	194.10	1544.53
DS-16G-ER-D4373	194.20	1543.73
DS-16G-ER-D4294	194.30	1542.94
DS-16G-ER-D4214	194.40	1542.14
DS-16G-ER-D4135	194.50	1541.35
DS-16G-ER-D4056	194.60	1540.56
DS-16G-ER-D3977	194.70	1539.77
DS-16G-ER-D3898	194.80	1538.98
DS-16G-ER-D3819	194.90	1538.18
DS-16G-ER-D3740	195.00	1537.40
DS-16G-ER-D3661	195.10	1536.61
DS-16G-ER-D3582	195.20	1535.82
DS-16G-ER-D3504	195.30	1535.04
DS-16G-ER-D3425	195.40	1534.25
DS-16G-ER-D3347	195.50	1533.47
DS-16G-ER-D3268	195.60	1532.68
DS-16G-ER-D3190	195.70	1531.90
DS-16G-ER-D3112	195.80	1531.12
DS-16G-ER-D3033	195.90	1530.33
DS-16G-ER-D2955	196.00	1529.55

DEFINITIONS

Technology	CWDM; Transceiver type for CWDM applications using G.694.2 channel grid. DWDM; Transceiver type for DWDM applications using G.694.1 channel grid.
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 giving a BER, normally 1E ⁻¹² .
DDM	Digital Diagnostic Monitoring functionality as defined in SFF-8472 MSA.