

DATASHEET 5.1

DS-16G-ER-CXX

SFP+, 16/8/4 Gbps FC/FICON, CWDM, DDM, 13dB, 40km, 1470nm-1550nm (5ch)

OVERVIEW

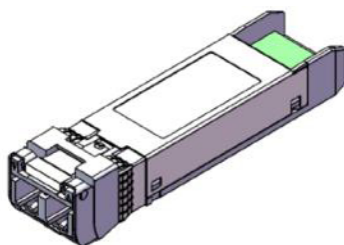
The DS-16G-ER-Cxx is a versatile CWDM transceiver in SFP+ form-factor supporting a wide range of Fiber Channel (FC) services (4G to 16G). The transceiver has been layer-1 tested and approved by Cisco.

The transceiver is provided in 5 channel versions at the CWDM grid as specified in the ITU-T 694.2 standard.

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.



TECHNICAL DATA

Technology	CWDM SFP+
Transmission media	SM (2x LC)
Typical reach	40 km
Nominal wavelengths	1470 - 1550 nm in 20nm steps (8ch)
Bit rate range	4.25 – 14.025 Gbps
Protocol support	FC: 16G FC 8G FC 4G FC
Power budget	2 – 13 dB ¹⁾²⁾
Dispersion tolerance	800 ps/nm
Dispersion penalty	Max: 2 dB
Temperature range	0°C to +70°C
Power consumption	< 1.9 W
Transmitter data:	
Output power (avg):	Min: -1.0 dBm Max: +3.0 dBm
Tx wavelengths	Max: +3.0 dBm in 20nm steps (8ch) (G.694.2)
Receiver data:	
Minimum input power	-14.0 dBm ¹⁾²⁾
Max input power	+1.0 dBm
Wavelength range	1260 – 1620 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

¹⁾@ 8.5 Gbps (16G FC)

²⁾@ BER < 1E-12 using PRBS 2³¹-1

ORDERING INFORMATION

Part Number	Description
DS-16G-ER-C47	SFP+, 16/8/4 Gbps FC/FICON, CWDM 1470nm, DDM, 13dB, 40km
DS-16G-ER-C49	SFP+, 16/8/4 Gbps FC/FICON, CWDM 1490nm, DDM, 13dB, 40km
DS-16G-ER-C51	SFP+, 16/8/4 Gbps FC/FICON, CWDM 1510nm, DDM, 13dB, 40km
DS-16G-ER-C53	SFP+, 16/8/4 Gbps FC/FICON, CWDM 1530nm, DDM, 13dB, 40km
DS-16G-ER-C55	SFP+, 16/8/4 Gbps FC/FICON, CWDM 1550nm, DDM, 13dB, 40km

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 giving a BER, normally 1E-12.
DDM	Digital Diagnostic Monitoring functionality as defined in SFF-8472 MSA.