16G-ER-BR2

SFP+, 16/8/4 Gbps FC/FICON, 1550nm, SM, DDM, 13dB, 40km

BROCADE

OVERVIEW

The 16G-ER-BR2 is a versatile 1550nm transceiver in SFP+ form-factor supporting a wide range of Fiber Channel (FC) services (4G to 16G). For diagnostic purposes, the transceiver supports optical (OWRAP) and electrical (EWRAP) loop-back functionality, with or without forwarding. The transceiver is layer-1 tested and approved by Brocade.

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

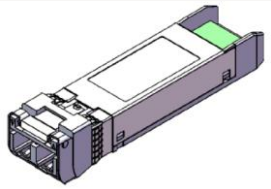
Technology		Grey SFP+
Transmission media		SM (2x LC)
Typical reach		40 km
Nominal wavelength		1550 nm
Bit rate range		4.25 – 14.025 Gbps
Protocols	FC:	16G FC 8G FC 4G FC
Power budget		6 – 13 dB [1] 6 – 14 dB [2] [3]
Temperature range		0°C to +70°C
Power consumption		< 2.2 W

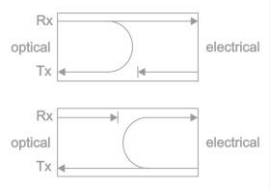
Transmitter data	Output power (avg):	Min: 0 dBm [1] Max: +4 dBm [1]
	Tx wavelength:	1540 – 1560 nm
Receiver data	Minimum input power:	-13.0 dBm [1] [4] -14.0 dBm [2] [4] -14.0 dBm [3] [4]
	Max input power:	-2.0 dBm
	Wavelength range:	1480 – 1580 nm
DDM		Yes
MSA compliance		SFF+ MSA

Regulatory compliance	
RoHS	RoHS 6
Safety	EN 60825-1 Class 1 laser product

Storage temp.	-40°C to 85°C

[1] @ 14.025 Gbps (16G FC)
[2] @ 8.5 Gbps (8G FC)
[3] @ 4.25 Gbps (4G FC)
[4] @ BER < 1E-12 using PRBS 2^{31}-1





OWRAP with forwarding

EWRAP with forwarding

ORDERING INFORMATION

Part number	Description
16G-ER-BR2	SFP+, 16/8/4 Gbps FC/FICON, 1550nm, SM, 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 at specified BER, normally $1E^{-12}$.
DDM:	Digital Diagnostic Monitoring functionality as defined in SFF-8472 MSA.