INDEPENDENT DATA SOLUTIONS

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DATASHEET 5.4

16G-ER-BR2

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

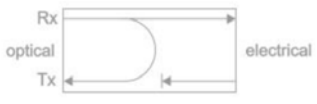
OVERVIEW

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.



OWRAP with forwarding

EWRAP with forwarding

TECHNICAL DATA

PARAMETER	VALUE
Technology	Grey SFP+
Transmission media	SM (2x LC)
Typical reach	40km
Nominal wavelengths	1550 nm
Bit rate range	4.25 - 14.025 Gbps
Protocols FC:	16G FC
	8G FC
	4G FC
Power budget	6 – 13dB [1]
	6 – 14 dB [2] [3]
Temperature Range	0°C to +70°C
Power consumption	< 2.2W
Transmitter data:	
Output power (avg):	Min: 0 dBm [1]
	Max: +4 dBm [1]
Transmit wavelengths	1540 – 1560 nm
Receiver data:	
Minimum input power	-13.0dBm [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

Regulator Compliance	
RoHS	RoHS 6
Saftey	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 231-1

ORDERING INFORMATION

Ordering Number	DESCRIPTION
16G-ER-BR2	SFP+, 16/8/4 Gbps FC/FICON, 1550nm, SM, DDM, 13dB, 40km

GENERAL 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. Will vary over temperature.
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.