

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.

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 | 2 – 13 dB ¹⁾ 2 – 14 dB ^{2) 3)} |
| Temperature range | 0°C to +70°C |
| Power consumption | < 2.2 W |

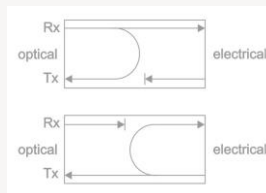
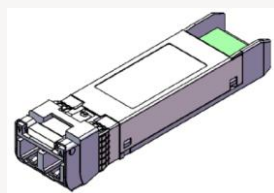
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|-------------------------|----------------------|--|
| Transmitter data | Output power (avg): | Min: 0 dBm ¹⁾ Max: +4 dBm ¹⁾ |
| | Tx wavelength: | 1540 – 1560 nm |
| Receiver data | Minimum input power: | -13.0 dBm ^{1) 4)} -14.0 dBm ^{2) 4)} -14.0 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 |

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|----------------------|---------------|
| 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



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

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|-------------------------------|---|
| 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) Worst case power consumption. |
| 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. |