INDEPENDENT DATA SOLUTIONS

smartoptics | BROCADE

DATASHEET 5.0

8G-ZR-DXXX-BR1

SFP+, 8/4/2 Gbps FC/FICON, DWDM 100GHz, DDM, 23dB, 80km, D200 - D600 (41ch)

OVERVIEW

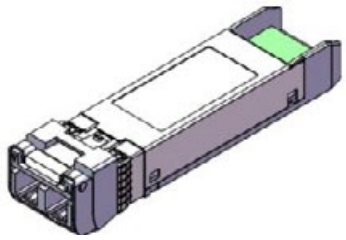
The 8G-ZR-Dxxx-BR1 is a versatile DWDM transceiver in SFP+ form-factor supporting a wide range of Fiber Channel (FC) services (2G to 8G). The transceiver has been layer-1 tested and approved by Brocade.

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 80km (without dispersion compensation) for 8G 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

PARAMETER	VALUE
Technology	DWDM 100GHz SFP+
Transmission media	SM (2x LC)
Typical reach	80km
Nominal wavelengths	192.00 - 196.00 THz (41ch)
Bit rate range	2.125 – 8.5 Gbps
Protocol support	8G FC
	4G FC
	2G FC
Power budget	10 – 23 dB [1) 2)]
Dispersion tolerance	-500 to 1600 ps/nm
Dispersion penalty	Max: 3 dB
Temperature range	0°C to +70°C
Power consumption	< 1.7 W
Transmitter data:	
Output power	Min: -1.0 dBm
	Max: +3.0 dBm
Transmit wavelengths	192.00 - 196.00 THz
	100GHz steps (G.694.1)
Regulatory compliance:	
RoHS	RoHS 6
Safety	EN 60825-1 Class 1 laser product
Storage temp.	-40°C to 85°C

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

For a 1550nm CWDM channel the DWDM channels D250 – D410 can be used.
For a 1530nm CWDM channel the DWDM channels D500 – D600 can be used. (The ITU G.694.2 channel grid states 1551/1531nm ± 7nm)

For 1550nm single-channel applications, the ITU-T G.959 states 1500nm – 1565nm, which means any channel between D200 – D600.

ORDERING INFORMATION

Ordering Number	Frequency THz	Wavelength nm
8G-ZR-D200-BR1	192.00	1561.42
8G-ZR-D210-BR1	192.10	1560.61
8G-ZR-D220-BR1	192.20	1559.79
8G-ZR-D230-BR1	192.30	1558.98
8G-ZR-D240-BR1	192.40	1558.17
8G-ZR-D250-BR1	192.50	1557.36
8G-ZR-D260-BR1	192.60	1556.55
8G-ZR-D270-BR1	192.70	1555.75
8G-ZR-D280-BR1	192.80	1554.94
8G-ZR-D290-BR1	192.90	1554.13
8G-ZR-D300-BR1	193.00	1553.33
8G-ZR-D310-BR1	193.10	1552.52
8G-ZR-D320-BR1	193.20	1551.72
8G-ZR-D330-BR1	193.30	1550.92
8G-ZR-D340-BR1	193.40	1550.12
8G-ZR-D350-BR1	193.50	1549.32
8G-ZR-D360-BR1	193.60	1548.51
8G-ZR-D370-BR1	193.70	1547.72
8G-ZR-D380-BR1	193.80	1546.92
8G-ZR-D390-BR1	193.90	1546.12

Ordering Number	Frequency THz	Wavelength nm
8G-ZR-D400-BR1	194.00	1545.32
8G-ZR-D410-BR1	194.10	1544.53
8G-ZR-D420-BR1	194.20	1543.73
8G-ZR-D430-BR1	194.30	1542.94
8G-ZR-D440-BR1	194.40	1542.14
8G-ZR-D450-BR1	194.50	1541.35
8G-ZR-D460-BR1	194.60	1540.56
8G-ZR-D470-BR1	194.70	1539.77
8G-ZR-D480-BR1	194.80	1538.98
8G-ZR-D490-BR1	194.90	1538.18
8G-ZR-D500-BR1	195.00	1537.40
8G-ZR-D510-BR1	195.10	1536.61
8G-ZR-D520-BR1	195.20	1535.82
8G-ZR-D530-BR1	195.30	1535.04
8G-ZR-D540-BR1	195.40	1534.25
8G-ZR-D550-BR1	195.50	1533.47
8G-ZR-D560-BR1	195.60	1532.68
8G-ZR-D570-BR1	195.70	1531.90
8G-ZR-D580-BR1	195.80	1531.12
8G-ZR-D590-BR1	195.90	1530.33
8G-ZR-D600-BR1	196.00	1529.55

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.
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.