32G-IR-DXXX-BR

SFP28, 8/16/32G FC, DWDM 100GHz, DDM, 7dB, D915-D960

BROCADE

OVERVIEW

The 32G-IR-Dxxx-BR is a versatile DWDM transceiver in SFP28 form-factor supporting a wide range of Fiber Channel (FC) services (8G to 32G). The transceiver is provided in versions covering all C-band channels in the 100GHz DWDM grid as specified in the ITU-T G.694.1 standard. The transceiver has been layer-1 tested and approved by Brocade.

The transceiver has an inbuilt 3-mode CDR (Clock Data Recovery) function;
- High data rate mode for 32G FC
- Low data rate mode for 16G FC
- Bypass mode for 8 GFC

The optical performance provides a bridgeable distance of up to 10km (without dispersion compensation) for 32G FC.
This transceiver provides digital diagnostic functions via a 2-wire serial interface as defined by the SFF-8472 specification.

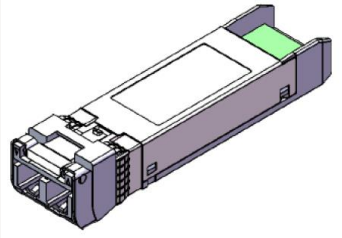
The transceiver module is compliant to RoHS-6/6.

TECHNICAL DATA

Technology		DWDM 100GHz SFP28
Transmission media		SM (2x LC)
Typical reach		10 km
Nominal wavelength		191.50 - 196.00 THz
Bit rate range		28.05 / 25.78125 Gbps 14.025 Gbps 8.500 Gbps
Protocols	FC:	32G 16G 8G
Power budget		0 - 7.0 dB
Dispersion tolerance		-170 to +170 ps/nm [1]
Temperature range		0°C to +70°C
Power consumption		< 2.0W

Transmitter data	Output power (avg):	Min: -3.0 dBm [1] Max: +2.0 dBm [1]
	Tx wavelength:	192.15 - 196.00 THz in 100GHz steps ITU-T G.694.1
Receiver data	Minimum input power:	-10.0 dBm [1] [2]
	Max input power:	+2.0 dBm
	Wavelength range:	1480 – 1580 nm
DDM		Yes
MSA compliance		SFP28 SFF-8402

[1] @ 28.05 Gbps (32G FC)
[2] @ BER < 1E-6 using PRBS 2^{31}-1



Regulatory compliance	
EMC CE	EN 55022:2010 EN 55024:2010
UL/Safety	UL 60950-1
FCC	47 CFR PART 15 OCT, 2013
RoHS	RoHS 6
TUV	EN 60950-1:2006+A11+A1+A12+A2 EN 60825-1:2014 EN 60825-2:2004+A1+A2

Storage temp.	-40°C to 85°C

Note: Optical BER performance is specified at a BER 1E-6 implying that Reed Solomon RS-FEC encoding/decoding shall be used to provide sufficient BER performance.

ORDERING INFORMATION

Part number	Freq. THz	λ nm
32G-IR-D150-BR	191.50	1565.50
32G-IR-D160-BR	191.60	1564.68
32G-IR-D170-BR	191.70	1563.86
32G-IR-D180-BR	191.80	1563.05
32G-IR-D190-BR	191.90	1562.23
32G-IR-D200-BR	192.00	1561.42
32G-IR-D210-BR	192.10	1560.61
32G-IR-D220-BR	192.20	1559.79
32G-IR-D230-BR	192.30	1558.98
32G-IR-D240-BR	192.40	1558.17
32G-IR-D250-BR	192.50	1557.36
32G-IR-D260-BR	192.60	1556.55
32G-IR-D270-BR	192.70	1555.75
32G-IR-D280-BR	192.80	1554.94
32G-IR-D290-BR	192.90	1554.13
32G-IR-D300-BR	193.00	1553.33
32G-IR-D310-BR	193.10	1552.52
32G-IR-D320-BR	193.20	1551.72
32G-IR-D330-BR	193.30	1550.92
32G-IR-D340-BR	193.40	1550.12
32G-IR-D350-BR	193.50	1549.32
32G-IR-D360-BR	193.60	1548.51
32G-IR-D370-BR	193.70	1547.72
32G-IR-D380-BR	193.80	1546.92

Part number	Freq. THz	λ nm
32G-IR-D390-BR	193.90	1546.12
32G-IR-D400-BR	194.00	1545.32
32G-IR-D410-BR	194.10	1544.53
32G-IR-D420-BR	194.20	1543.73
32G-IR-D430-BR	194.30	1542.94
32G-IR-D440-BR	194.40	1542.14
32G-IR-D450-BR	194.50	1541.35
32G-IR-D460-BR	194.60	1540.56
32G-IR-D470-BR	194.70	1539.77
32G-IR-D480-BR	194.80	1538.98
32G-IR-D490-BR	194.90	1538.19
32G-IR-D500-BR	195.00	1537.40
32G-IR-D510-BR	195.10	1536.61
32G-IR-D520-BR	195.20	1535.82
32G-IR-D530-BR	195.30	1535.04
32G-IR-D540-BR	195.40	1534.25
32G-IR-D550-BR	195.50	1533.47
32G-IR-D560-BR	195.60	1532.68
32G-IR-D570-BR	195.70	1531.90
32G-IR-D580-BR	195.80	1531.12
32G-IR-D590-BR	195.90	1530.33
32G-IR-D600-BR	196.00	1529.55

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.