SMR-L80-Cxx

SFP CWDM | Up to 2.5 Gb/s | Duplex LC | Single-mode

1. Product overview

The GLOBALfiber SMR-L80-Cxx is a hot-pluggable CWDM SFP transceiver with a DFB transmitter and Super-TIA receiver. The family provides 18 wavelength options from 1270 to 1610 nm at 20 nm intervals, with digital diagnostics and a single 3.3 V supply.

2. Key features

Up to 2.5 Gb/s • 28 dB optical link budget • Duplex LC • Power dissipation <1.0 W • TTL logic interface • Internal or external diagnostic calibration • Standard temperature: 0°C to +70°C

3. Applications

Fibre Channel switch infrastructure; ATM switches and routers; SONET/SDH switches; CPRI at 2.4576 Gb/s; other optical links.



4. Technical data

Parameter	Specification
Form factor / fiber / optical connector	SFP / SMF / duplex LC
Supply current / power dissipation	300 mA maximum / <1.0 W
TX differential input (electrical table)	400-1600 mV p-p; AC coupled LVPECL
RX differential output (electrical table)	400-1200 mV p-p; AC coupled LVPECL
TX / RX differential impedance	85 / 100 / 115 ohm (min / typ / max)
TX input DC impedance	>100 kohm
TX disable; TX fault; RX LOS high	2.0 to Vcc+0.3 V
TX enable; TX fault normal; RX LOS normal	0 to 0.8 V
MOD_DEF high / low	2.5 V minimum / 0-0.5 V
Pin-note TX and RX differential swings	400-2000 mV (200-1000 mV single-ended)
Supply pin note / hot-plug inrush	3.3 V ±5%; <=30 mA above steady state

5. Recommended operating conditions

Operating case temperature	0 to +70 °C
Supply voltage (min / typ / max)	3.15 / 3.3 / 3.45 V
Maximum rates: OC-48/STM-16; CPRI; 2FC	2.5; 2.4576; 2.125 Gb/s
Absolute maximum storage temperature	-40 to +85 °C
Absolute maximum supply voltage	-0.5 to +3.6 V
Relative humidity (absolute-rating table)	5-85%

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6. Optical characteristics

Parameter	Min	Typ	Max	Unit
Link budget / data rate	28 / -	- / -	- / 2.5	dB / Gb/s
TX center wavelength	lambdac-6	lambdac	lambdac+7.5	nm
TX RMS spectral width	-	-	1	nm
TX average output power	0	-	5	dBm
Side-mode suppression ratio	30	-	-	dB
Extinction ratio [1]	8.2	-	-	dB
Rise/fall time (20-80%)	-	-	150	ps
TX-disabled output power	-	-	-45	dBm
RX center wavelength	1260	-	1630	nm
RX sensitivity: OC-48/STM-16; 2FC [2]	-	-	-29	dBm
RX sensitivity: CPRI [2]	-	-	-20	dBm
RX overload / return loss	-9 / -12	-	-	dBm / dB
LOS de-assert / assert	- / -42	-	-30 / -	dBm
LOS hysteresis	0.5	-	-	dB

Optical eye: ANSI Fibre Channel and Gigabit Ethernet compliant. [1] Filtered PRBS 2^{23}-1 at 2.5 Gb/s. [2] BER <=1E-12, 2^{23}-1 NRZ PRBS, ER = 8.2 dB.

Code	Min nm	Typ nm	Max nm	Code	Min nm	Typ nm	Max nm
27	1264	1270	1277.5	45	1444	1450	1457.5
29	1284	1290	1297.5	47	1464	1470	1477.5
31	1304	1310	1317.5	49	1484	1490	1497.5
33	1324	1330	1337.5	51	1504	1510	1517.5
35	1344	1350	1357.5	53	1524	1530	1537.5
37	1364	1370	1377.5	55	1544	1550	1557.5
39	1384	1390	1397.5	57	1564	1570	1577.5
41	1404	1410	1417.5	59	1584	1590	1597.5
43	1424	1430	1437.5	61	1604	1610	1617.5

7. Digital diagnostics and management

Monitor	Range	Accuracy
Temperature / voltage	0-70 °C / 3.1-3.5 V	±3 °C / ±3%
Bias current	15-85 mA	±10%
TX / RX power	0 to 5 / -29 to -9 dBm	±3 dB / ±3 dB

SFF-8472 two-wire SCL/SDA interface; serial ID and diagnostic EEPROM. Internal/external calibration; external constants at A2h bytes 56-95. Rate select is not connected. TX_DISABLE high or open disables TX. Host pull-ups: 4.7-10 kohm for TX_FAULT, LOS and MOD_DEF pins.

8. Safety and regulatory

SFP MSA; SFF-8472; Class 1 FDA/CDRH and IEC 60825 laser safety. RoHS 2011/65/EU + (EU) 2015/863. ESD pins: MIL-STD-883G method 3015.7, Class 1C (>1000 V). Enclosure: EN 55035:2017/A11:2020, IEC 61000-4-2. EMI: FCC Part 15 B, ANSI C63.4:2014, EN 55032:2015+A11:2020, CISPR 16-2-1; host/chassis design determines Class B margins. Immunity: EN 55024:2010+A1:2015, IEC 61000-4-3. Component standards: EN 62368-1:2014+A11, EN 60825-1:2014, EN 60825-2:2004+A1+A2.

9. Ordering information

SMR-L80-Cxx - SFP CWDM, up to 2.5 Gb/s, SMF, duplex LC, DDM, 28 dB, 0 to +70 °C. xx denotes the wavelength code in the table above (27-61).