S10G-MR80-TUN

SFP+ | 9.9-11.3G | 80 km | Tunable DWDM

1. Product overview

The GLOBALfiber S10G-MR80-TUN is a tunable SFP+ optical transceiver for DWDM 10G Ethernet links up to 80 km over single-mode fiber. It combines an MZM tunable transmitter, duplex LC interface and digital diagnostics accessible through a two-wire serial interface.

2. Key features

SFP+ MSA package • C-band tuning • 50 GHz ITU channel spacing as stated in the product description • Up to 11.3 Gb/s • Single +3.3 V supply • Maximum power dissipation 2.2 W • Built-in digital diagnostics

3. Applications

80 km 10 Gb/s CPRI/eCPRI, DWDM SONET/SDH and DWDM Ethernet links.



4. Technical data

Parameter	Specification
Form factor / connector / fiber	SFP+ / duplex LC / single-mode
Data rate / reach / stated budget	9.9-11.3 Gb/s / up to 80 km / 23 dB
Module supply current / power dissipation	666 mA maximum / 2.2 W maximum
TX input differential impedance	90 / 100 / 110 ohm (min / typ / max)
TX differential input swing	180-900 mV p-p
TX disable / enable voltage	2.0 to Vcc+0.3 V / 0 to 0.8 V
RX output differential impedance	90 / 100 / 110 ohm (min / typ / max)
RX differential output swing	450 / 600 / 900 mV p-p (min / typ / max)
LOS assert / de-assert voltage	2.0 to Vcc V / 0 to 0.8 V

5. Recommended operating conditions

Parameter	Min / Typical / Max
Operating case temperature	0 / - / +70 °C
Supply voltage	3.135 / 3.3 / 3.465 V
Data rate	- / 10.3125 / 11.3 Gb/s
Absolute maximum: storage temperature	-40 to +85 °C
Absolute maximum: supply voltage	0 to +3.6 V
Absolute maximum: relative humidity	0-85%

Absolute maximum ratings are stress limits, separate from the recommended operating conditions.

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6. Optical characteristics

Parameter	Min	Typ	Max	Unit
TX launch power [1]	-1.0	-	+4.0	dBm
TX wavelength (ITU grid)	1528.77	-	1566.72	nm
TX frequency	191.35	-	196.10	THz
Center wavelength spacing	-	50	-	GHz
Center wavelength deviation (EOL)	-5	-	+5	GHz
Wavelength tuning time	-	-	2	s
Transmitter and dispersion penalty	-	-	3	dB
Extinction ratio [2]	8.2	-	-	dB
Side-mode suppression ratio	30	-	-	dB
Relative intensity noise	-	-	-130	dB/Hz
Optical return loss tolerance	-	-	12	dB
TX-disabled output power [1]	-	-	-40	dBm
TX power monitor accuracy	-	-	±2	dB
RX center wavelength	1270	-	1620	nm
RX sensitivity (Pavg) [3]	-	-	-24	dBm
RX overload (Pavg)	-7.0	-	-	dBm
RX optical return loss	-	-	-26	dB
RX power monitor accuracy	-	-	±3	dB
LOS de-assert	-	-	-25	dBm
LOS assert	-35	-	-	dBm
LOS hysteresis	0.5	-	-	dB

[1] Into 9/125 um SMF. [2] PRBS 2^{31}-1 at 10.3125 Gb/s. [3] PRBS 2^{31}-1 at 10.3125 Gb/s, BER = 1E-12. Min/typ/max placement is retained from the original.

7. Digital diagnostics and management

Two-wire serial diagnostics per SFF-8472. Management references: SFF-8431, SFF-8472 and SFF-8690. Rate selection per SFF-8472 v12.1: RX at A2h, byte 110, bit 3; TX at A2h, byte 118, bit 3.

Pin map: 1/17/20 VeeT; 2 TX_Fault; 3 TX_Disable; 4 SDA; 5 SCL; 6 MOD_ABS; 7 RS0 (NA); 8 RX_LOS; 9 RS1 (NA); 10/11/14 VeeR; 12 RD-; 13 RD+; 15 VccR; 16 VccT; 18 TD+; 19 TD-. VccR/VccT: +3.3 V.

Signal grounds are isolated from the case. TX_Fault/RX_LOS require 4.7-10 kohm host pull-ups; TX_Disable has a 4.7-10 kohm internal pull-up to VccT. SDA/SCL require external pull-ups. MOD_ABS is grounded in the module and requires a 4.7-10 kohm host pull-up.

8. Safety and regulatory

SFP+ MSA compliant. Class 1 laser safety certified. RoHS compliant.

9. Ordering information

S10G-MR80-TUN	SFP+, 9.9-11.3G, 80 km, tunable DWDM 50 GHz ITU, 23 dB, SM