

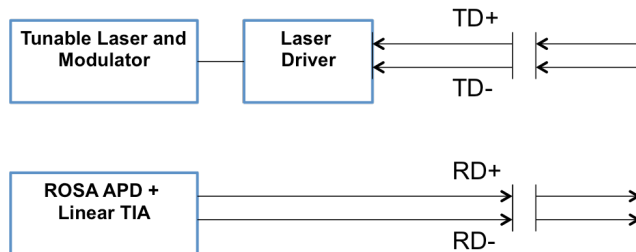


50GHz Full C-band Tunable 10GBASE-ZR/OC-192 LR-2 SFP+ Transceiver 10Gb/s 80km P/N 5ZR0A0x-TNBL



Description

Menara Networks' 50GHz Full C-band Tunable 5ZR0A0x-TNBL SFP+ transceivers are designed for use in 10Gb/s to 11.1Gb/s 50GHz DWDM links up to 80km of G.652 fiber. The SFP+ module supports 10GBASE-ZR and -ZW applications along with SONET OC-192 LR-2 and SDH STM-64 ITU-T G.959.1 P1L1-2D2 applications for Ethernet Switches, IP Routers or SONET/SDH optical interfaces. Digital Optical Monitoring interfaces are provided via the SFP+ standards compliant I²C interface.

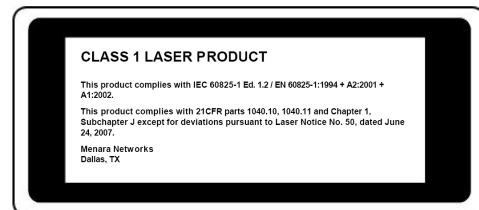


Applications

- Full C-band Tunable 10GBASE-ZR 10GEthernet
- 8GB/10GB Fibre Channel
- SONET OC-192 LR-2
- SDH STM-64 ITU-T G.959.1 P1L1-2D2
- Access DWDM Ethernet Switch or IP Router Interconnect

Features

- Hot-pluggable SFP+ footprint
- 50GHz DWDM ITU-T Full C-band Tunability
- Support 9.95Gb/s to 11.3Gb/s bit rates
- 80km 50GHz DWDM laser
- 80km APD photodiode receiver
- Single 3.3V power supply
- Power dissipation < 2.0W
- -5°C to +70°C
- Duplex LC fiber connectors
- 10GBASE-ZR/ZW
- SDH STM-64 ITU-T G.959.1 P1L1-2D2
- Full Digital Optical Monitoring
- Metal enclosure for lower EMI
- Complies with RoHS directive (2002/95/EC)
- Compliant with SFP+ Electrical MSA SFF-8431
- Compliant with SFP+ Mechanical MSA SFF-8432
- Laser Class 1 IEC/CDRH compliant



Transmitter E-O Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Support data rate	-	9.95	10.3125	11.1	Gb/s	-
Center Wavelength (DWDM)	λ	1528.38	-	1565.50	nm	ITU-T
Wavelength Stability after Startup	$\Delta\lambda_{EOL}$	$\lambda_i - 25$	-	$\lambda_i + 25$	pm	
DWDM Channel Spacing	$f_{SPACING}$		50		GHz	
Tuning Time	ΔT_{TUNE}			1	sec	
Average Optical Output Power	P_o	-1.0	-	+3.0	dBm	
Optical Power of Off Transmitter	P_{off}	-	-	-30	dBm	
Extinction Ratio	E_r	9.0	-	-	dB	1
Side Mode Suppression Ratio	SMSR	35			dB	1
Tx Eye Crossing		45		60	%	
Output Eye Diagram	Compliant with IEEE and GR-253-CORE					

1. Measured with 10.709Gbps, PRBS $2^{31}-1$

Receiver O-E Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Support data rate	-	9.95	10.3125	11.1	Gb/s	-
Operating Wavelength	-	1525	-	1570	nm	2
Sensitivity @ 9.95 to 10.3Gbps	Sen_1			-24	dBm	3
Sensitivity @ 11.1Gbps	Sen_2			-23	dBm	3
Saturation	Ps	-7			dBm	3
Optical Path Penalty @ 9.95Gbps 1600ps/nm	OPP_1			2	dB	3
Optical Path Penalty @ 10.7Gbps 1600ps/nm	OPP_2			2.5	dB	3
Optical Path Penalty @ 11.1Gbps 1450ps/nm	OPP_3			3	dB	3
Rx Damage Threshold	RX_{DAMAGE}			1	dBm	
LOS Asserted (EOL)	T_{loss_on}	-40.0		-27.5	dBm	High level: Alarm
LOS De-Asserted	T_{loss_off}			-27	dBm	
LOS Hysteresis (EOL)	T_{loss_Hs}	0.5			dB	

Notes:

- Rx wavelength range is 1270nm to 1610nm with 2dB penalty outside of specified operating range
- Measured with PRBS $2^{31}-1$ at 10^{-12} BER

Ordering Information

Part Number	ROHS Compliant	Operating Case Temperature
5ZR0A0x-TNBL	ROHS-6	-5 ~ +70°C

x = J for Juniper
x = C for Cisco
x = A for Alcatel
x = O for Cisco ONS



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