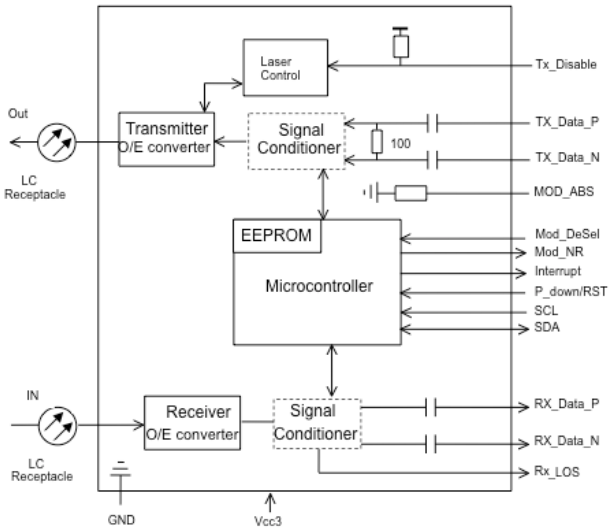
DWDM 10GBASE-ER/OC-192 IR-2 XFP Transceiver 10Gb/s 40km, 100GHz ITU-T

P/N 4ER0P0x-DWyy

Description

Menara Networks' 4ER0P0x-DWyy transceivers are designed for use in 10Gb/s to 11.1Gb/s 100GHz DWDM links up to 40km over single mode fiber. The XFP module supports IEEE 802.3ae 10GBASE-ER and –EW applications along with SONET OC-192 IR-2 and SDH STM-64 ITU-T G.959 S-64.2b applications for Ethernet Switches, IP Routers or SONET/SDH optical interfaces. Digital Optical Monitoring interfaces are provided via the XFP standards compliant I^2C interface.

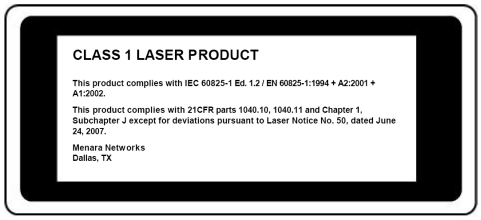


Applications

- 10GBASE-ER/EW 10GEthernet
- 8GB/10GB Fibre Channel
- SONET OC-192 IR-2
- SDH STM-64 ITU-T G.959 S-64.2b
- Ethernet Switch or IP Router Interconnect

Features

- Hot-pluggable XFP footprint
- 100GHz DWDM ITU-T fixed wavelength
- Support 9.95Gb/s to 11.3Gb/s bit rates
- 40km 100GHz DWDM EML laser
- PIN photodiode receiver
- Power dissipation < 3.5 W
- -5°C to +70°C and -40°C to +85°C
- Duplex LC fiber connectors
- IEEE 802.3ae 10GBASE-ER/EW
- SONET OC-192 IR-2
- SDH STM-64 ITU-T G.959 S-64.2b
- Full Digital Optical Monitoring
- Metal enclosure for lower EMI
- Complies with RoHS directive (2002/95/EC)
- Compliant with XFP Electrical and Mechanical MSA INF-8077
- Laser Class 1 IEC/CDRH compliant
- Links of 40km with 9/125 µm single mode fiber (SMF) of maximum interconnect distances



Transmitter E-O Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Operating Data Rate	-	9.95	10.3125	11.1	Gb/s	-
Center Wavelength	λ	1529.55	-	1561.42	nm	ITU-T
Side Mode Suppression Ratio	SMSR	30	-	-	dB	-
Wavelength Stability after Startup	$\Delta\lambda_{EOL}$	λ_i -100	-	λ_i +100	pm	
Average Optical Output Power	Po	-1	-	+3	dBm	1
Extinction Ratio	Er	8.2	-	-	dB	-
Differential data Inputs swing	Vinpp	120	-	820	mV	2
Output Power After Disabled	-	-	-	-30	dBm	-
Output Eye Diagram	Compliant with ITU-T and IEEE recommendation MASK					

Receiver O-E Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Operating Data Rate	-	9.95	10.3125	11.1	Gb/s	-
Operate Wavelength	-	1528	-	1561	nm	-
Sensitivity @ 9.95 to 10.3Gbps	Sen1			-16	dBm	1
Sensitivity @ 11.1Gbps	Sen1			-15	dBm	1
Saturation	Ps	-7	-	-	dBm	1
Optical Path Penalty @ 9.95Gbps 800ps/nm	OPP1			2	dB	1
Optical Path Penalty @ 10.7Gbps 800ps/nm	OPP2			3	dB	1
Optical Path Penalty @ 11.1Gbps 800ps/nm	OPP3			3	dB	1
LOS Asserted	-	-37	-	-	dBm	High level: Alarm
LOS De-Asserted	-	-	-	-30	dBm	
LOS Hysteresis	-	0.5	-	-	dB	

Notes

1 .Measured at PRBS 2^{31}-1, NRZ, BER≤10^{-12} 2. Internally AC coupled

Ordering Information

Part Number	ROHS Compliant	Operating Case Temperature
4ER0P0x-DWyy	ROHS-6	-5 ~ +70°C
4ER0P1x-DWyy		-10 ~ +85°C
4ER0P2x-DWyy		-40 ~ +85°C

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

yy = DWDM ITU-T Channel as defined below

Freq (THz)	Wave (nm)	Ch	Freq (THz)	Wave (nm)	Ch	Freq (THz)	Wave (nm)	Ch
196.00	1529.55	60	194.60	1540.56	46	193.20	1551.72	32
195.90	1530.33	59	194.50	1541.35	45	193.10	1552.52	31
195.80	1531.12	58	194.40	1542.14	44	193.00	1553.33	30
195.70	1531.90	57	194.30	1542.94	43	192.90	1554.13	29
195.60	1532.68	56	194.20	1543.73	42	192.80	1554.94	28
195.50	1533.47	55	194.10	1544.53	41	192.70	1555.75	27
195.40	1534.25	54	194.00	1545.32	40	192.60	1556.55	26
195.30	1535.04	53	193.90	1546.12	39	192.50	1557.36	25
195.20	1535.82	52	193.80	1546.92	38	192.40	1558.17	24
195.10	1536.61	51	193.70	1547.72	37	192.30	1558.98	23
195.00	1537.40	50	193.60	1548.51	36	192.20	1559.79	22
194.90	1538.19	49	193.50	1549.32	35	192.10	1560.61	21
194.80	1538.98	48	193.40	1550.12	34	192.00	1561.42	20
194.70	1539.77	47	193.30	1550.92	33			