



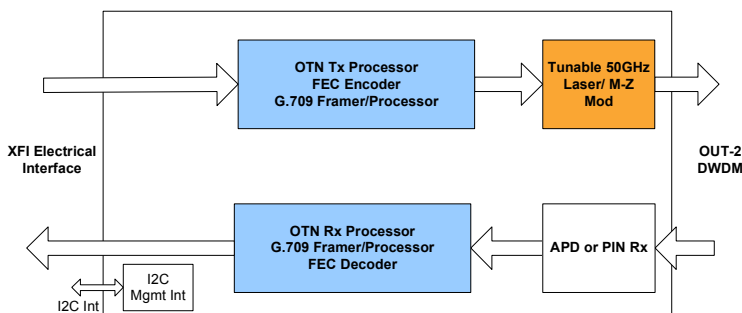
Tunable OTN XFP MSA Compliant DWDM 11.1Gb/s Transceiver with Integrated G.709 and E-FEC



Description

Menara Networks Tunable OTN XFP DWDM transceiver combines carrier grade OTN G.709 framing, FEC performance and 50GHz full C-band tunability into a XFP MSA compliant package. Menara's Tunable OTN XFP is the only industry XFP MSA that can transparently carry a native 10G LAN PHY and SONET/SDH payload with a carrier grade DWDM Optical Transport Network (OTN) interface without the need for bandwidth limitation. OTN XFP combines a G.709 compliant Digital Wrapper and Forward Error Correction (FEC) with a M-Z modulated 50GHz tunable laser for superior optical performance and management functions equal to those found in external DWDM Transponder systems. Tunable OTN XFP is designed to interoperate with any Open DWDM line system that support 50GHz or 100GHz spaced wavelengths per the ITU-T C-band grid thus offering complete and cost effective DWDM transport for IP, MPLS, and Ethernet applications.

Tunable OTN XFP G.709 digital wrapper overhead and FEC functions are handled by the OTN Processor, which is integrated into the XFP module. The OTN Processor provides Operations Administration and Management (OAM) functions with G.709 alarms and Performance Management statistics.



Management

Management of the Tunable OTN XFP is provided via the XFP MSA I²C interface, which supports digital diagnostic monitoring, alarms and loop backs to include G.709 and FEC management registers and wavelength tuning. Routers and Switches can reap the performance gains of FEC without changes to the existing I²C interface in a management Transparent Mode of operation, in which the Tunable OTN XFP activates the G.709 Digital Wrapper and FEC coding without the need for specific I²C provisioning.

Applications

- IP/MPLS and Ethernet Switches
- Access, Metro and Regional Carrier Ethernet DWDM Networks
- MSPP
- Customer Premise Ethernet Demarcation

Features

- Compliant with XFP MSA
- Integrated OTN G.709 Digital Wrapper
- 6.2dB to 8.6dB Net Coding Gain G-FEC and E-FEC for superior optical performance
- Tunability over full C-band 50GHz ITU-T wavelengths (SFF-8477 Control)
- Multi-protocol and bit rate support for 10GE, OC-192/STM-64, 10G FC and OTN
- Fully transparent 10G LAN PHY OTU2e at 11.09 Gbps
- Optional GFP mapper for 10GE LAN PHY OTU-2 at 10.709 Gbps
- Adaptive Receiver Decision Threshold Control for improved OSNR range
- True link BER reporting and Integrated PRBS 10 Gbps BERT for test set free link turn-up
- OTN Digital diagnostics and alarm reporting

Tunable OTN XFP MSA Compliant DWDM 10Gb/s Transceiver with Integrated G.709 and FEC

Transceiver Optical Specifications (G.709 and E-FEC Enabled)

Parameter	Symbol	Min	Typical	Max	Units
Host Native Nominal Bit Rate		9.9533 (SONET/SDH) 10.3125 (LAN PHY)			Gbps
DWDM Line Interface Bit Rate		10.7092 (OTU2) 11.0957 (OTU2e LAN PHY)			Gbps
OTN Interface Bit Rate Deviation		+/- 20 (SONET) +/- 100 (LAN PHY)			ppm
DWDM Wavelength Range	λ_{WDM}	1528.77	-	1564.68	nm
Channel Spacing	f_{SPACING}	50			GHz
Laser Tuning Range	f_{TUNE}	Full C-band			
Wavelength Accuracy (Beginning and End of Life)	$\Delta\lambda_{\text{EOL}}$	-20	-	+20	pm
Extinction Ratio	ER	9	-	-	dB
Side Mode Suppression Ratio	SMSR	30	-	-	dB
Average Output Power	P_{OUT}	-1	-	+3	dBm
Eye Mask Compliance		GR-253i3/G.959.1			
Receiver Operating Range @ 11.1Gbps					
0ps/nm Dispersion	P_{IN}	-29	-	-7	dBm
+1500ps/nm Dispersion	(APD)	-26	-	-7	dBm
OSNR Requirement @ 11.1Gbps					
0 ps/nm	OSNR_{MIN}	14	-	-	dB/
+1450ps/nm Dispersion	(APD)	18	-	-	0.1nm
-18dBm to -8dBm Input					
Jitter Compliance	-	802.3ae/GR-253i3			
Operating Case Temperature	T_{C}	-5	-	70	°C
Storage Temperature	T_{stg}	-40	-	85	°C

For further information: info@menaranet.com

www.menaranet.com

Preliminary: Subject to change