Ver. 1.0sb

1550nm External Modulation Optical Transmitter (DWDM ITU Wavelength) • MX-T8500T Series

Technical Specification

CONTENT

1.0 PRODUCT DESCRIPTION

The MX- T8500T-HP Series 1550nm (with customer specified ITU Wavelength) High Performance Externally Modulated Optical Transmitters are a dual optical output transmitter designed for analog and digital CATV QAM signals. Maxcom's 1550nm optical amplifiers adopt world class pump lasers and American OFS erbium-doped optical fiber components. Units provide excellent APC, ACC and ATC control, superb design in the ventilation and heat-dissipation which ensure long life and a highly reliable operation of the pump laser.

Our 1550nm externally modulated technology for the optical transmitter has no laser chirp, low dispersion distortion, and a large extinction ratio, with excellent characteristics within 40~862MHz (Available to 1000 MHz). The External Modulator does not generate CSO distortion after reasonable bias. It can be followed by an EDFA when used in a large coverage area and very-long trunk and local networks. Adopting WDM, multi-wavelength optical channels can be added and transmitted through one fiber, complimenting current developments and trends relative to triple-play and fiber to home.

The units optical source adopts narrow line width (Typ.=0.35MHz), low noise and continuous wave DFB laser, which is propitious to reduce the dispersion effect. Adopting ITU standard wavelength, users can select the DWDM wavelength ITU-TG.692 standard wavelength $\pm$200GHz ($\pm$1.6nm) as $\pm$0.05nm stepping. The MXT8500T transmitter can achieve a high index of back to back CNR $\geqslant$ 53.5dB, CTB $\leqslant$ -65dB, CSO $\leqslant$ -65dB, SBS: 13~19dBm continuous adjustable. The unit is equipped with a RS232 communication interface, SNMP network management, 1+1 back-up power supply , hot-plug function available, chassis temperature is auto-control. Units are equipped with dual fiber outputs.

The LCD at the front panel offers equipment status and warning alarms. The laser will switch off automatically if optical power is lost, which offers security protection for the laser.

When combined with EDFA optical amplifiers, the MX-T8500T-HC allows system operators to cost-effectively transport a full slate of

wideband video and data services over very long distances, or alternatively allows them to distribute signals to many remote optical receiver/node locations. It is also designed to operate seamlessly with optical transmitters, receivers and nodes from most leading manufacturers.

The MX-T8500T-HP, an advanced type externally modulated optical transmitter with high index, high reliability and excellent cost performance, is applicable for primary links and distribution network links in large and long distance CATV systems, head-end, hubs and OTN's.

2.0 PRODUCT FEATURES

- Externally modulated technology, no laser chirp, low dispersion distortion, high extinction ratio, with excellent characteristic within 40~862MHz (1000 MHz available
- 1+1 power supply back , up hot-plug function available.
- Narrow line width (Typ=0.35 MHz), low noise, and DFB continuous wave laser, effectively reduce the dispersion effect.
- Operating bandwidth is up to 47~1000MHz.
- CNR ≥ 53.5dB and excellent CTB, CSO index.
- SBS: 13~19dBm, continuously adjustable.
- ITU standard wavelength adjustable , users can adjust and select the wavelength
- AGC/MGC mode is optional at the unit; OMI can be optimized at the unit.
- RS232 communicate interface.
- Advanced SNMP network management function.
- Casing temperature auto-control.

3.0 MAIN APPLICATION

- Used in very-long trunk and distribution networks in large and medium sized cable television system headends.
  Analogue digital hybrid transmission > 200Km (with dispersion compensation).
  Pure digital transmission (without dispersion compensation) > 400Km,
  (with dispersion compensation) >700Km.
- VAS in DWDM fiber CATV system
- CFG dispersion compensates system.

4.0 Technical index

Performance			Index		Supplement
Optic feature	Operating wavelength	(nm)	ITU-TG.692 standard wavelength		
	Wavelength ADJ. range	(nm)	±1.6		±200GHz
	Wavelength ADJ. mode		±0.05nm stepping		
	Wavelength stability	(Pm/°C)	-1~0		Tc=20~70°C
	Line width	(MHz)	Typ.=0.35		FWHM(△λ), (-3dB fullwidth)
	Side mode suppression ratio	(dB)	≥45		SMSR
	Equivalent noise intensity	(dB/Hz)	≤-160		RIN (20~1000MHz)
	Number of output port		2		
	Output power	(dBm)	2x7 dBm, 2×8.5dBm or 2x10dBm		Optional 2x7, 2×8.5, 2×10
	Return loss	(dB)	≥50		
	Optical fiber connector		SC/APC		
RF feature	Work bandwidth	(MHz)	47-862		
	Input level	(dBmV)	18~28		AGC
	Flatness	(dB)	≤±0.75		47~862MHz
	Return loss	(dB)	>16		
	Input impedance	(Ω)	75		
	RF connector		F-Female		
Link feature	Transmit channel		PAL-D/60CH	PAL-D/99CH	
	CNR1	(dB)	≥54	≥52.5	Back to back
	CNR2	(dB)	≥52.5	≥50.5	65Km optical fiber, 0dBm receive
	CTB	(dB)	≤-65	≤-65	
	CSO	(dB)	≤-65	≤-65	
	SBS restrain	(dBm)	13~19		Adjustable

General Information	SNMP network management interface		RJ45	
	Communication interface		RS232	
	Power supply	(V)	90~265VAC (standard 120vac)	-48VDC optional
		(V)	-48	30~72
	Power Consume	(W)	≤50	Single ps operation
General Information	Operating temp.	(°C)	0~65	Unit temp. automatically controlled
	Storage temp.	(°C)	-40~85	
	Operating relative humidity	(%)	5~95	
	Size	(")	19×14.5×1.75	(W)x(D)x(H)

5.0 PRODUCT SERIES

Model	Output Power(dBm)	Operating wavelength(nm)	SBS Restrain(dBm)	System index (59 routes PAL-D)			
				CNR1	CNR2	CTB	CSO
MX-T8527T	Dual fiber 2×7dBm	ITU channel wavelength ±200GHz	13~18 Adjustable	⩾54	⩾52.5	⩽-65	⩽-65
MX-T8529T	Dual fiber 2×8.5dBm			⩾54	⩾52.5	⩽-65	⩽-65
MX-T85210	Dual fiber 2×10dBm			⩾54	⩾52.5	⩽-65	⩽-65

Output values up to 13 dBm available

Test condition:

CNR1: Tx to Rx, 0dBm receiving.

CNR2: 16dBm EDFA (NF4.5~5.5dB), 65km fiber, 0dBm receiving.