

EMOT-TC (47~1080MHz, CNR1 \geq 54dB, SBS:13~19 adjustable) Top-class Externally Modulated Optical Transmitter



Product Description

1550nm externally modulated technology has no laser chirp, low dispersion distortion, and great extinction rate, with excellent characteristic within 47~1080MHz. External Modulator doesn't generate CSO distortion after reasonable bias. It can be followed by amplifier when used in large area coverage of over-long trunk and local networks. Adopting WDM, it can multiplex optical channels with multi-wavelength through one fiber. 1550nm optical fiber CATV follows the current development trend of triple-play and fiber to home.

EMOT-TC is a series of 1550nm externally modulated optical transmitter achieving the highest standards of today. The whole-unit's optical source adopts narrow line width (Typ.=0.3MHz), low noise and continuous wave DFB laser, which is propitious to reduce dispersion effect. Adopting ITU standard wavelength, users can adjust and set the wavelength on the front panel within the range of $\pm 200\text{GHz}$ ($\pm 1.6\text{nm}$) as $\pm 0.05\text{nm}$ stepping. It is applicable for the network upgrading and expansion of WDM system. The whole unit signal modulation adopts CATV special LiNbO₃ external modulator of JDS-U and optimized control technology with independent intellectual property, so it can reach high index of back to back CNR $\geq 54\text{dB}$, CTB $\leq -65\text{dB}$, CSO $\leq -65\text{dB}$, SBS: 13~19dBm continuous adjustable. The whole unit is equipped with RS232 communication interface, SNMP network management, 1+1 back-up power supply and casing temperature auto-control. All the optical port can be installed in the front panel (The back panel is also available if needed).

EMOT-TC, top type externally modulated optical transmitter with its high index, high reliability and excellent cost performance, is applicable for the over-long trunk of large and middle CATV station head-end, WDM system and CFG dispersion compensation system.

Product Features

- Externally modulated technology, no laser chirp, low dispersion distortion, high extinction ratio, used in the over-long trunk of large and medium sized cable television head-end.
- Narrow line width (Typ=0.3 MHz), low noise, and DFB continuous wave laser, be propitious to reduce dispersion effect.
- The work bandwidth is up to 47~1080MHz.
- CNR \geq 54dB and excellent CTB, CSO index.
- SBS: 13~19dBm, continuous adjustable.
- ITU standard wavelength adjustable , users can adjust and set the wavelength on the front panel with ± 0.05 nm stepping in the range of ± 200 GHz (± 1.6 nm), used in the network upgrading and expansion of WDM system.
- AGC/MGC mode is optional at spot; OMI can be optimized at spot.
- RS232 communicate interface.
- Advanced SNMP network management function.
- 1+1 powers supply back up.
- Casing temperature auto-control.

Main Applications

- Used in the over-long trunk and distribution net in the large and middle cable television central station head-end.
 - 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.

Technical Index

Performance			Index	Supplement
Optic feature	Operating wavelength	(nm)	1547~1563nm, ITU-T G.692 standard wavelength	
	Wavelength ADJ. range	(nm)	± 1.6	± 200 GHz
	Wavelength ADJ. mode		± 0.05 nm stepping	
	Wavelength stability	(Pm/°C)	-1~0	Tc=20~70°C
	Linewidth	(MHz)	Typ.=0.35	FWHM($\Delta\lambda$), (-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)	2×10		Optional 2×7, 2×9, 2×11
	Return loss	(dB)	≥50		
	Optical fiber connector		SC/APC		Optional FC/APC, LC/APC
RF feature	Work bandwidth	(MHz)	47-1000		EMOT-8500TC-100
			47-1080		EMOT-8500TC-108
	Input level	(dBmV)	18~28		AGC
	Flatness	(dB)	≤±0.75		47~1000MHz
			≤±1.5		1000~1080MHz
	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 feature	SNMP network management interface		RJ45		
	Communication interface		RS232		
	Power supply	(VAC)	90~265VAC		50/60Hz
		(VDC)	-48		30~72
	Power Consume	(W)	≤50		Single power works
	Operating temp.	(°C)	0~50		Machine temp. control automatically
	Storage temp.	(°C)	-40~85		

	Operating relative humidity	(%)	5~95	
	Size	(")	19×14.5×1.75	(W)x(D)x(H)

Product Series

Model	Output Power(dBm)	Operating wavelength(nm)	SBS Restrain(dBm)	System index (59 routes PAL-D)			
				CNR1	CNR2	CTB	CSO
EMOT-TC-27	Dual fiber 2×7	1547~1563 or ITU wavelength ±200GHz ajdustable	13~19 Adjustable	≥54	≥52.5	≤-65	≤-65
EMOT-TC-29	Dual fiber 2×8.5			≥54	≥52.5	≤-65	≤-65
EMOT-TC-20	Dual fiber 2×10			≥54	≥52.5	≤-65	≤-65
EMOT-TC-21	Dual fiber 2×11			≥54	≥52.5	≤-65	≤-65

Test condition: CNR1: Tx to Rx, 0dBm receiving.

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