

IT8500T ($\text{CNR} \geq 54\text{dB}$, SBS:13~19 adjustable) **Top-class ITU wavelength adjustable Externally** **Modulated Optic transmitter**



Description

RFTV is a unidirectional analogue and digital video broadcast. It adopts high efficiency modulation mode for RF carrier wave and its economical efficiency, flexibility and bandwidth validity is beyond comparison of IPTV. By adopting EPON, GEON or P2P access mode to realize triple-play and FTTx, RFTV broadcasting network in 1550nm optical wavelength still plays an important role and 1550nm externally modulated optic transmitter is the core equipment in this system.

1550nm externally modulated optic transmitter technology has no laser chirp, low dispersion distortion, and great extinction rate, with excellent characteristic within 40~862MHz. External Modulator doesn't generate CSO distortion after reasonable bias. It can be connected by amplifiers when applied 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 optic transmitter CATV follows the current development trend of triple-play and fiber to home.

Idealphotonics is the well-known manufacture in analog externally modulated optic transmitter around the world. IT8500T is a series of 1550nm externally modulated optic 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. IT8500T EM optic transmitter is applicable for the network upgrading and expansion of WDM system. The

whole unit signal modulation adopts CATV special LiNbO₃ external modulator of American JDS-U company and Huatai optimized control technology with independent intellectual property, so IT8500T EM optic transmitter 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 perfect RS232 communication interface, SNMP network management, 1+1 back-up power supply, hot-plug function available, chassis temperature auto-control. All the optical port of EM optic transmitter can be installed in the front panel (The back panel is also available if needed).

Idealphotonics IT8500T, top type externally modulated optic 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.

Feature

Externally modulated technology for IT8500T optic transmitter, no laser chirp, low dispersion distortion, high extinction ratio, with excellent characteristic within 40~862MHz, used in the over-long trunk of large and medium sized cable television head-end.

1+1 powers supply back, up hot-plug function available.

Narrow line width (Typ=0.3 MHz), low noise, and DFB continuous wave laser, be propitious to reduce dispersion effect.

The work bandwidth for IT8500T optic transmitter is up to 47~862MHz.

CNR $\geq 54\text{dB}$ 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 $\pm 0.05\text{nm}$ stepping in the range of $\pm 200\text{GHz}$ ($\pm 1.6\text{nm}$), used in the network upgrading and expansion of WDM system.

AGC/MGC mode is optional at spot; OMI can be optimized at spot.

Perfect RS232 communicate interface.

Advanced SNMP network management function.

Casing temperature auto-control.

Application

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.

Specification

Performance			Index		Supplement
Optic feature	Operating wavelength	(nm)	ITU-TG.692 standard wavelength		
	Wavelength ADJ. range	(nm)	± 1.6		$\pm 200\text{GHz}$
	Wavelength ADJ. mode		$\pm 0.05\text{nm}$ stepping		
	Wavelength stability	(Pm/°C)	$-1 \sim 0$		$T_c = 20 \sim 70^\circ\text{C}$
	Linewidth	(MHz)	Typ.=0.35		FWHM($\Delta\lambda$), (-3dB full width)
	Side mode suppression ratio	(dB)	≥ 45		SMSR
	Equivalent noise intensity	(dB/Hz)	≤ -160		RIN (20~1000MHz)
	Number of output port		2		
	Output power of each port	(dBm)	7.0, 8.5, 10, 12, 13		2×7, 2×9, 2×10, 2×12, 2×13,
	Return loss	(dB)	≥ 50		
	Optical fiber connector		SC / APC		Optional FC / APC, LC / APC
RF feature	Work bandwidth	(MHz)	47-862		
	Input level	(dBmV)	18~28		AGC
	Flatness	(dB)	$\leq \pm 0.75$		47~862MHz
	Return loss	(dB)	> 16		
	Input impedance	(Ω)	75		
	RF connector		F-Female		
Link feature	Transmit channel		PAL-D 60CH	/ PAL-D 99CH	

re	CNR1	(dB)	≥54.0	≥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)	-5~65		Machine temp. control automatically
	Storage temp.	(°C)	-40~85		
	Operating relative humidity	(%)	5~95		
	Size		19×15.2×1.75 (") 483×386×44 (mm)		(W)x(D)x(H)

Test condition:

CNR1: Tx to Rx, 0dBmReceiving.

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

Product series

Model	Number of output port	Output power of each port	Operating wavelength(nm)	SBS Restrained(dB m)	System index (59 routes PAL-D)			
					CNR1	CNR2	CTB	CSO

IT852 7T	2	≥ 7.0	ITU wavelength $\pm 200\text{GHz}$ ajdustable	13~19 Adjustable	≥ 54	≥ 52.5	≤ -65	≤ -65
IT852 9T	2	≥ 8.5			≥ 54	≥ 52.5	≤ -65	≤ -65
IT852 10T	2	≥ 10			≥ 54	≥ 52.5	≤ -65	≤ -65
IT852 12T	2	≥ 12			≥ 54	≥ 52.5	≤ -65	≤ -65
IT852 13T	2	≥ 13			≥ 54	≥ 52.5	≤ -65	≤ -65

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

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

Ordering information

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Product type		Product series		Number of output port		Output power		Quality	ITU Grid Ch. No.		Optical port position		Connector		power supply mode		Power supply		
HT	Analogue optical transmitter	85	1550nm external modulation 47~862MHz	2	2 fiber output	7	≥7.0dBm	T	Top-class	23	1558.98nm	F	Front panel	FA	FC/APC	HP	Dual PS, Hot plug	22	220VAC
						9	≥8.5dBm			31	1552.52nm			B	Back panel			SA	SC/APC
						10	≥10dBm			37	1547.72nm	LA	LC/APC					48	-48VDC
						12	≥12dBm			□□	15XX.XXnm	42	-48VDC& 220VAC						
						13	≥13dBm												