SFT8500A
Standard type
Externally Modulated Optical Transmitter

Product description

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

The production of 1550nm Externally Modulated Optical Transmitter needs an expensive LiNbO3 external modulator and a high power, narrow bandwidth, low noise DFB laser, so it has high request for the production technology and is difficult to be adjusted. Compared with the 1550nm Direct Modulated Optical Transmitter, it has the feature of high cost and high price, which restricts many excellent features of external modulator and makes it unable to be widely used in CATV Network. But in recent years, with the improvement of optical components production technology and the decreasing of price, the advantage of high cost performance of 1550nm externally modulator technique has been highlighted.

SFT8500A, an economical 1550nm Externally Modulated Optical Transmitter, is produced specially for middle and small CATV station. Optical transmitter adopts narrow bandwidth (Typ.=1MHz), low noise and continuous wave DFB laser as the light source, adopts CATV special LiNbO3 external modulator to modulate signal, and adopts a series of unique innovation technique to reach the excellent system control. With 47~862MHz bandwidth, CNR ≥ 53dB, CTB ≤ -65dB, CSO ≤ -65dB, SBS: 13, 16, 18adjustable, Optical transmitter can make CATV network transmit video, audio and data with high performance. The machine is equipped with perfect RS232 communication interface, SNMP network management and 1+1 backup power supply.

SFT8500AC optical transmitter: Standard type, dual fiber output CATV work wavelength, 1MHz laser line width, SBS 13, 16, 18dBm adjustable, SNMP network management optional.
SFT8500AU optical trnasmitter: Standard type, dual fiber output ITU wavelength adjustable, 1MHz laser line width, SBS 13, 16, 18dBm adjustable, SNMP network management optional.

Product features

- High performance: Externally modulated technology for optical transmitter, no laser chirp, low dispersion distortion, high extinction ratio, with excellent characteristic within 40~862MHz in-band.
- Narrow bandwidth (Typ.=1MHz), lower noise, DFB continuous wave laser.
- The operating bandwidth of optical transmitter is up to 47~1080MHz.
- Perfect index: Unique innovation technology, provide excellent CNR, CTB, CSO & SBS.
- ITU standard wavelength adjustable, the user can adjust and set the laser wavelength on the front-panel with ±0.05nm stepping in the range of ±200GHz (±1.6nm), 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 communication interface.
- SNMP network management function optional.
- 1+1 backup power supply optional.
- Casing temperature auto-control.
- Excellent P/P ratio.

Main application

- Used in middle and small CATV center head end, solve the transmission of trunk and distributive network with high quality and low cost.
- Used in second-grade service area of substation. With excellent P/P ratio, provide second-grade users with high quality and high reliability value added service such as RFTV, IPTV, VOD and so on. It can avoid the limitation on transmission bandwidth and distance as well as system CSO deterioration caused by laser chirp for adopting 1550nm direction modulated optical transmitter.

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Model explanation

SFT852[Output power]**A**[Operating wavelength] – [Bandwitch] – [Network management] [Connector] – [Number of power supply] [Power Supply] [ITU Grid Ch. No.]

Product type	SFT	Analogue optical transmitter
Product series	85	1550 nm external modulation 47~862 MHz
Number of output ports	2	2 fiber output
Output power	3	≥3.0 dBm
	5	≥5.0 dBm
	6	≥6.0 dBm
	7	≥7.0 dBm
	9	≥8, 5 dBm
Quality	A	Standard type
Operating wavelength	C	1548~1563 nm
	U	1528~1563 nm ITU wavelength adjustable
Bandwidth	086	47~860 MHz
	100	47~1000 MHz
	108	47~1080 MHz
Network management	0	No
	1	Built-in
Connector	FA	FA/APC
	SA	SA/APC
	LA	LA/APC
Number of power supply	S	Single PS
	D	Dual PS
Power supply	22	220 VAC
	11	110 VAC
	48	-48VDC
ITU Grid Ch. No.	23	1558.98 nm
	30	1553.33 nm
	37	1547.72 nm

Technical index

Performance			Index		Supplement
Optic feature	Operating wavelength (nm)		1548~1563		SFT8500AC
			ITU-TG.692		SFT8500AU
	Wavelength ADJ. range	(nm)	±1.6 (±200GHz)		SFT8500AU
	Wavelength ADJ. mode		±0.05nm stepping		SFT8500AU
	Linewidth	(MHz)	≤1		FWHM(Δλ)
	Side mode suppression ratio	(dB)	≥45		SMSR
	Equivalent noise intensity	(dB/Hz)	≤-160		RIN (20~1000MHz)
	Number of output port		2		
	Output power	(dBm)	2x5		Optional 2 ×3, 2 ×6, 2 ×7, 2×9
	Return loss	(dB)	≥60		
	optical fiber connector		SC / APC		Optional LC / APC, FC / APC
RF feature	Work bandwidth	(MHz)	47-862		47~1000, 47~1080 optional
	Input level	(dBmV)	18~28		AGC
	Flatness	(dB)	≤±0.75		47~862MHz
			≤±1.5		862~1000MHz (Optional)
	Return loss	(dB)	>16		
	Input impedance	(Ω)	75		
	RF port		F-Female		
Link feature	Transmit channel		PAL-D / 60CH	PAL-D / 99CH	
	CNR1	(dB)	≥53.0	≥51.5	Back to back
	CNR2	(dB)	≥51.5	≥50.0	50Km optical fiber, 0dBm receive
	CTB	(dB)	≤-65	≤-65	
	CSO	(dB)	≤-65	≤-65	
	SBS restrain	(dBm)	13, 16, 18 [1]		Adjustable
General feature	SNMP network management interface		RJ45		
	Communication interface		RS232		
	Power supply	(VAC)	90~265		50 / 60Hz
		(VDC)	-48		30~72
	Power Consume	(W)	≤50		Single power works
	Work temp.	(°C)	-5~65		Machine temp. control automatically
	Storage temp.	(°C)	-40~85		
	Operating relative humidity	(%)	5~95		
	Size (W)x(D)x(H)		19×14.5×1.75 (") 483×368×44 (mm)		

Remark: [1]SBS=18dBm, EDFA 18dbm output fiber, port to port <40km

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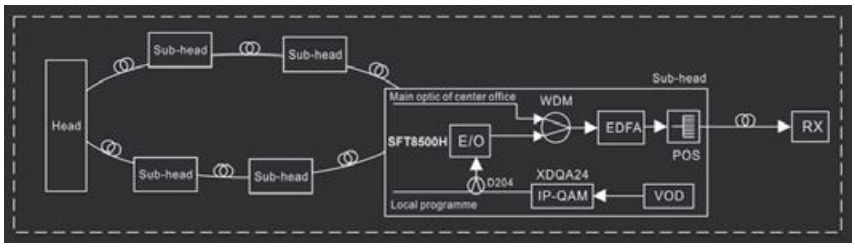
Product series

Model	Num-ber of output port	Output power of each port	Operating wavelength (nm)	SBS Restrain (dBm)	System index (59 routes PAL-D)			
					CNR1	CNR2	CTB	CSO
SFT8523AC	2	≥3.0	1548~1563	13, 16, 18 Adju-stable	≥53	≥50.5	≤-65	≤-65
SFT8525AC	2	≥5.0			≥53	≥51.0	≤-65	≤-65
SFT8526AC	2	≥6.0			≥53	≥51.5	≤-65	≤-65
SFT8527AC	2	≥7.0			≥53	≥51.5	≤-65	≤-65
SFT8529AC	2	≥8.5			≥53	≥51.5	≤-65	≤-65
SFT8523AU	2	≥3.0	1528~1563nm ITU wave-length ADJ.		≥53	≥50.5	≤-65	≤-65
SFT8525AU	2	≥5.0			≥53	≥51.0	≤-65	≤-65
SFT8526AU	2	≥6.0			≥53	≥51.5	≤-65	≤-65
SFT8527AU	2	≥7.0			≥53	≥51.5	≤-65	≤-65
SFT8529AU	2	≥8.5			≥53	≥51.5	≤-65	≤-65

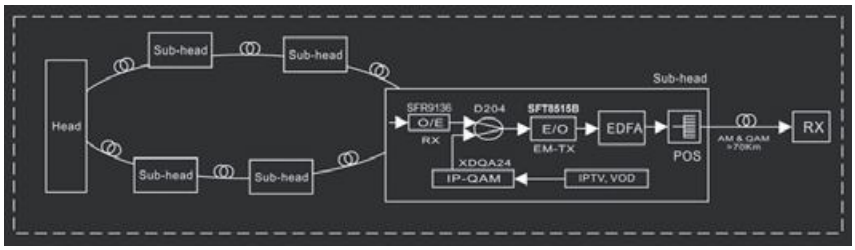
Test condition: CNR1: Tx to Rx, 0dBm receiving. CNR2: 16dBm EDFA (NF4.5~5.5dB), 65km fiber, 0dBm receiving.

Network application

SFT8500A optical transmitter is typically used in the sub-station full optical relay for spotting local program and providing IPTV, VOA value-added business.



Applied in second transmission of sub-station (FTTx), supply with IP/QAM, VOD VAS



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