

SFT1500A

1550nm Direct Modulated AGC Optical Transmitter



Product description

External modulation technology, with the laser working in direct current, has the advantages of no laser chirp, low dispersion distortion, large extinction ratio, and high speed. It also has the disadvantages of high cost and high difficulty in manufacturing.

Direct modulation will lead to high laser chirp (Laser's bias current is modulated by signal and the optical spectrum shifts and shakes). Laser chirp will interact with dispersion effect caused by standard single mode fiber (SMF-28), which will generate serious distortion in the place of 1550nm. This kind of distortion will become more serious with the increase of transmission distance, bandwidth and channel number.

At present, international high performance 1550nm direct modulation has no obvious performance inferior while transmitting an analog and digital multiplexing full channel signal with transmission distance $\leq 15\text{Km}$ or transmitting digital load with transmission distances $\leq 40\text{Km}$.

SFT1500A is a 1550nm direct modulation optical transmitter with high index and AGC function. It adopts high linearity and low chirp DFB laser, built-in pre-distortion compensation and AGC, APC, ATC closed loop control, which improves the system index obviously. SFT1500A direct modulated optical transmitter can be used in FTTx ($\leq 10\text{Km}$) of second-grade service area (Sub-HE), also can be used in WDM narrow-band multiplexing and IP/QAM.

SFT1500AC optical transmitter: CATV wavelength.

SFT1500AU optical transmitter: ITU standard wavelength.

Product features

- Low chirp, high linearity DFB laser, chirp compensation.
- Dual module RF driver, high efficient laser pre-distortion adjustment.
- Full-automatic OMI control, AGC & MGC.
- Intuitionistic modulation status display.
- Built-in dual back-up power supply, switch automatically.
- Casing temperature auto-control, ensure the long life of the laser.

Main application

- Provide IPTV, VOD value-added service in second-grade service area (Sub-HE). Analog digital mixed transmit $< 15\text{Km}$ (common distance $\leq 10\text{km}$). Pure digital load $< 40\text{Km}$.
- WDM narrow band multiplex $> 70\text{Km}$.

Model explanation

SFT15[Output power]**A** [Operating wavelength] - [Transmission distance] - [Network management][Number of output ports][Connector] - [Power Supply]

Product type	SFT	Analogue optical transmitter
Product series	15	1550 nm direct modulation 47~862 MHz
Output power	03	3 dBm (2 mW)
	06	6 dBm (4 mW)
	10	10 dBm (10 mW)
Quality	A	Top class
	C	1548~1563 nm
Operating wavelength	U	1528~1563 nm ITU wavelength adjustable
Transmission distance	05	5 km
	10	10 km
	15	15 km
Network management	0	Without
	N	With
Number of output ports	1	1 port
	2	2 ports
	4	4 ports
	8	8 ports
Connector	FA	FA/APC
	SA	SA/APC
	LA	LA/APC
Power supply	22	220 VAC
	11	110 VAC
	48	-48VDC

Technical index

Performance		Index	Supplement	
Optic feature	Operating wavelength (nm)	1548~1563	SFT1500AC: CATV wavelength	
		1530~1563	SFT1500AU: ITU standard wavelength	
	Linewidth	(MHz)	≤1	FWHM(Δλ)
	Side mode suppression ratio	(dB)	≥45	SMSR
	Extinction ratio	(dB)	≥20	XP
	Equivalent noise intensity	(dB/Hz)	≤-160	RIN (20~1000MHz)
	Number of output port		1	
	Output power	(dBm)	6	3, 10 Options
Return loss	(dB)	≥55		
optical fiber connector		FC / APC	Optional SC / APC	
RF feature	Work bandwidth	(MHz)	47-862	47~1000, 47~1080 optional
	Input level	(dBmV)	20±2	MGC
	Flatness	(dB)	≤±0.75	47~862MHz
	Return loss	(dB)	>16	
	Input impedance	(Ω)	75	
	RF test	(dB)	0±1	
Link feature	Transmit channel		PAL-D / 60CH	NTSC/80CH
	CNR	(dB)	≥50	-1dBm receive
	CTB	(dB)	≤-63	
	CSO	(dB)	≤-57	
	SBS restrain	(dBm)	≥17	
General feature	Network management interface		RJ45, RS232	Support I.E. & SNMP
	Power supply	(V)	90~265 city power	-48VDC optional
	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)		19×10×1.75 (") 483×254×44 (mm)	

Product series

Model	Distance (Km)	Output power (dBm)	SBS Restrain (dBm)	CNR (dB)	CTB (dB)	CSO (dB)
SFT1503A-05	5	3	17	50	-63	-57
SFT1506A-05		6		50	-63	-57
SFT1510A-05		10		50	-63	-57
SFT1503A-10	10	3		50	-63	-57
SFT1506A-10		6		50	-63	-57
SFT1510A-10		10		50	-63	-57
SFT1503A-15	15	3		50	-63	-57
SFT1506A-15		6		50	-63	-57
SFT1510A-15		10		50	-63	-57

Test condition: 1. 47~550MHz, PAL-D/59CH. 2. -1 dBm input receiver.