Ver. 1.0

1550nm Direct Modulated Optical Transmitter • HT1500A Series

Technical Specification

CONTENT

1.0 PRODUCT DESCRIPTION

External modulation technology, with the laser working in direct current, has the advantage of no laser chirp, low dispersion distortion, large extinction ratio, and high speed. Besides, it also has the disadvantage 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 chip 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 $\leqslant$ 15Km or transmitting digital load with transmission distance$\leqslant$40Km.

HT1500A 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. It can be used in FTTx ($\leqslant$10Km) of second-grade service area (sub-headend), also can be used in WDM narrow-band multiplexing and IP/QAM.

HT1500AC: CATV wavelength.

HT1500AU: ITU standard wavelength.

2.0 PRODUCT FEATURE

- 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 selectdisplay.
- Built-in dual back-up power supply, switch automatically .
- Casing temperature auto-control, ensure the long life of the laser.

3.0 MAIN APPLICATION

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

4.0 Technique index

Performance			Index	Supplement
Optic feature	Wavelength	(nm)	1548~1563	HT1500BC: CATV wavelength
			1530~1563	HT1500BU: ITU 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)
	Output power	(dBm)	6	Optional 3, 10
	Return loss	(dB)	≥55	
	optical fiber connector		SC/APC	Optional FC/APC
RF feature	Work bandwidth	(MHz)	45-862	
	Input level	(dBmV)	20±2	MGC
	Flatness	(dB)	≤±0.75	45~862MHz
	Return loss	(dB)	>16	
	Input impedance	(Ω)	75	RF/INPUT
	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	
	Storage temp.	(°C)	-40~85	
	Operating relative humidity	(%)	5~95	
	Size	(")	19×10×1.75	(W)x(D)x(H)

5.0 PRODUCT SERIES

Model	Distance (Km)	Output power (dBm)	CNR (dB)	CTB (dB)	CSO (dB)	SBS (dBm)
HT1503A-05	5	3	50	-63	-57	17
HT1506A-05		6	50	-63	-57	17
HT1510A-05		10	50	-63	-57	17
HT1503A-10	10	3	50	-63	-57	17
HT1506A-10		6	50	-63	-57	17
HT1510A-10		10	50	-63	-57	17
HT1503A-15	15	3	50	-63	-57	17
HT1506A-15		6	50	-63	-57	17
HT1510A-15		10	50	-63	-57	17

Test condition:

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