

HT9500C (CNR $\geq$ 54dB, SBS:13~19 adjustable)

PRODUCT DESCRIPTION

As the technology of satellite television developing fast, as the unique advantage of DBS, its developing so quickly and meanwhile, cause the competition and amalgamation of the DVB-S, DVB-T and DVB-C three TV network.

Guangtai HT9500, just in order to apply to this network technology, due to our own technology develop a new broadband type 1550nm External Modulation Optical Transmitter, through multiplexing the frequency, can enlarge the broadcast CATV available band width from 47~862MHz to 47~2700MHz. Not only it can be used into 47~862MHz of analogue digital video transmission, but also transmit in the IF/SAT of 950~2700MHz. It



provide a whole set of high quality, low cost of optical trunk transition and FTTH, FTTH solution for mixed of DBS and CATV.

HT9500 adopts low noise, narrow bandwidth, continuous wave laser as light source and American JDS-U LiNbO3 external modulator as signal modulation, due to adopting owned system optimized control technology & using top class parts. All equipment has complete RS232 communication interface, SNMP network management and 1+1 power back up optional, machine temperature control automatically, and it ensures high reliability and cost performance of the whole unit.

HT9520C: dual fiber output, CATV operating wavelength, CNR $\geq$ 53.5dB, SBS: 13~19dBm adjustable.

HT9520U: dual fiber output, ITU wavelength adjustable, CNR $\geq$ 53.5dB, SBS, 13~19dBm adjustable.

HT9510C: single fiber output, CATV operating wavelength, CNR $\geq$ 52dB, SBS: 13dBm.

HT9510U: single fiber output, ITU wavelength adjustable, CNR $\geq$ 52dB, SBS: 13dBm.

PRODUCT FEATURES

- ▶ High performance: External modulate technology, no laser chirp, low dispersion distortion, high extinction ratio.
- ▶ Narrow line width (<1MHz), low noise, and DFB continuous wave laser; be propitious to reduce dispersion effect.
- ▶ Perfect index: unique creation technology, offers excellent CNR, CTB, CSO & SBS.
- ▶ High bandwidth: 47~2700MHz, can transmit DVB-C and DVB-S at the same time.
- ▶ Original SBS critical adjustable at spot, it can fit for different network.
- ▶ OMI adjustable optimized at spot. AGC/MGC mode is optional at spot.
- ▶ Machine temperature control automatically.
- ▶ ITU standard wavelength, customer can stepping by $\pm 0.05\text{nm}$ at front panel. within the range in the $\pm 200\text{GHz}$ ($\pm 1.6\text{nm}$), the laser wavelength can adjustable and set, it can be applicable in the WDM system and upgrade, enlarge the network (HT9500U).
- ▶ Complete RS232 communication interface and SNMP network management.
- ▶ Excellent P/P ratio.

MAIN APPLICATION

- Applied in over-long trunk of central station, transmit RFTV, IF/SAT. Analog digital mixture transmission >200Km (with dispersion compensation).
- Pure digital transmission (without dispersion compensation) >400Km (with dispersion compensation) >700Km.
- Applied in second transmission of sub-station, it can supply some appreciation service of high quality, high reliable RFTV, IF/SAT and IPTVOD for the user in the second-grade service area. Avoid adopting 1550nm External Modulation Optical Transmitter to cause the CSO deterioration and limit the transmission distance of laser chirp.

TECHNICAL INDEX

Performance			Index	Supplement
Optic feature	Operating wavelength	(nm)	1540~1563	HT9500C
			ITU-TG.692	HT9500U
	Wavelength adjustable range	(nm)	±1.6 (±200GHz)	HT9500U
	Wavelength adjustable mode		±0.05nm stepping	HT9500U
	Linewidth	(MHz)	<0.65	(Δλ)
	Side mode suppression ratio	(dB)	≥45	
	Equivalent noise intensity	(dB/Hz)	≤160	RIN (20~1000MHz)
			≤145	RIN (20~2700MHz)
	Number of output port		1	HT9510
			2	HT9520
	Output power	(dBm)	1×3, 1×5, 1×6, 1×7	HT9510
			2×5, 2×7, 2×8.5, 2×10, 2×11	HT9520
	Return loss	(dB)	≥50	
	Optical fiber connector		SC/APC	Optional LC/APC, FC/APC
RF feature	SBS restrain	HT9520	(dBm)	Adjustable
		HT9510		
	Work bandwidth		(MHz)	47~862
	Input level		(dBmV)	18~28
	Flatness		(dB)	≤±0.75
	Return loss		(dB)	>16
	Input impedance		(Ω)	75
	RF port			F-Female
	Transmit channel			PAL-D/60CH
	CNR1	HT9520	(dB)	≥53.5
				Back to back

		HT9510		≥52	
	CNR2	HT9520	(dB)	≥51.5	65Km optical fiber, 0dBm receive
		HT9510		≥50.5	50Km optical fiber, 0dBm receive
	CTB		(dB)	≤-65	
	CSO		(dB)	≤-65	
	HUM		(dB)	≤-60	
IF feature	Work bandwidth		(MHz)	950~2700	
	Input level		(dBmV)	-25~ -14	AGC
	Flatness		(dB)	0.5	40MHZ
				±1.5	950~2700MHZ
	Return loss		(dB)	≥10	
	Input impedance		(Ω)	75	Option 50Ω
	IF connector			F-Female	75Ω
				SM & BNC	50Ω
	Transmit channel			36CH	Comment 2
	IM3		(dB)	≤-65	
General feature	SNMP network management interface			RJ45	
	Communication interface			RS232	
	Power supply		(V)	90~265VAC	-48VDC optional
	Power Consume		(W)	≤50	Single power works
	Work 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)×(D)×(H)

COMMENT 1: CATV: NTSC 74CH (70MHZ TO 550MHZ) AND 64QAM(550MHZ TO 770MHZ, ANALOGUE-10DB).

COMMENT 2: SAT-IF: QPSK OR FM 36CH (950MHZ TO 2602MHZ)

PRODUCT SERIES

Model	Output Power (dBm)	Operating wavelength(nm)	SBS Restrain (dBm)	System index (59 routes PAL-D)(dB)			
				CNR1	CNR2	CTB	CSO
HT9513C	Single fiber 1×3	1540~1563	13	≥52	≥49.5	≤-65	≤-65
HT9515C	Single fiber 1×5			≥52	≥50	≤-65	≤-65
HT9516C	Single fiber 1×6			≥52	≥50.5	≤-65	≤-65
HT9517C	Single fiber 1×7			≥52	≥50.5	≤-65	≤-65
HT9513U	Single fiber 1×3	1528~1563nm ITU wavelength adjustable	13	≥52	≥49.5	≤-65	≤-65
HT9515U	Single fiber 1×5			≥52	≥50	≤-65	≤-65
HT9516U	Single fiber 1×6			≥52	≥50.5	≤-65	≤-65
HT9517U	Single fiber 1×7			≥52	≥50.5	≤-65	≤-65
HT9525C	Dual fiber 2×5	1540~1563	13~19 Adjustable	≥53.5	≥51.0	≤-65	≤-65
HT9527C	Dual fiber 2×7			≥53.5	≥51.5	≤-65	≤-65
HT9529C	Dual fiber 2×8.5			≥53.5	≥52	≤-65	≤-65
HT9520C	Dual fiber 2×10			≥53.5	≥52	≤-65	≤-65
HT9521C	Dual fiber 2×11			≥53.5	≥52	≤-65	≤-65
HT9525U	Dual fiber 2×5	1528~1563nm ITU wavelength adjustable	13~19 Adjustable	≥53.5	≥51.0	≤-65	≤-65
HT9527U	Dual fiber 2×7			≥53.5	≥51.5	≤-65	≤-65
HT9529U	Dual fiber 2×8.5			≥53.5	≥52	≤-65	≤-65
HT9520U	Dual fiber 2×10			≥53.5	≥52	≤-65	≤-65
HT9521U	Dual fiber 2×11			≥53.5	≥52	≤-65	≤-65

MODEL EXPLANATION

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Product type		Product series		Number of output port		Output power		Operating wavelength		Network management		Connector		Number of power supply		Power supply	
HT	Analogue optical transmitter	85	1550nm external modulation 47~862MHz	1	Single fiber output	5	5dBm	C	1548~1563nm	0	No	FA	FC/APC	S	Single PS	22	220VAC
				2	Dual fiber output	6	6dBm	U	1528~1563nm ITU wavelength adjustable	1	Built-in	SA	SC/APC	D	Dual PS	11	110VAC
		95	1550nm external modulation 47~2700MHz			7	7dBm					LA	LC/APC			48	-48VDC
						9	8.5dBm										
		35	1550nm external modulation 950~2700MHz			0	10dBm										
						1	11dBm										