

HES-55A series
4way multi-satellite & CATV external
modulation optical transmitter
(47~862 & 950~5500MHz)

Technical index

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Catalogue

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1.0 PRODUCT DESCRIPTION

Huatai HES-55A series 1550nm wide band micro-wave external modulation optical transmitter, adopts external modulation technology, without laser chirp, extremely low dispersion distortion, large extinction ratio. It fits for high ratio, high broadband, long distance telecommunication network application.

HES-55A's working bandwidth covering range is 47~862 & 950~5500MHz. It can transmit multi (stacker) 4-way SAT-IF signal and CATV signal by a fiber, to realize one satellite-four polarization-4 way SAT-IF signal of 950~5500MHz (or different satellite 4 way SAT-IF signal), and 47~862 MHz CATV signal, all replacement a fiber to transmit. Users can simultaneously receive all full TV contents of satellite video carried and CATV's analog digital TV. It can provide high quality satellite TV and CATV service up to 3000 SDTV or 600 HDTV channel.

HES-55A can compatible with any FTTx PON technology to realize satellite TV, cable TV, internet integration of three networks. It can choose ITU-T standard wavelength to fit for DWDM system application.

HES-55A adopts low noise, narrow band, continuous wave laser as optical source, it adopts high bandwidth LiNbo3 external modulator as signal to eliminate 1550 nmlaser to control the chirp. Excellent laser APC, ATC control and external modulation bias control, perfect SNMP, RS232 interface, 1+1 power supply backup. High performance, high reliability and excellent performance price ratio. It is the best choice for subscribers.

2.0 PRODUCTS FEATURE

- External technology without laser chirp , extremely low dispersion distortion, large extinction ratio.
- 47~862 & 950~5500MHz RF working bandwidth.
- It adopts frequency-division multiplexing (FDM), and can simultaneously transmit CATV signal and 4-way SAT-IF composite signal $4 \times$ (950~2150MHz) through one fiber.
- Up to 3000 SDTV or 600 HDTV channels and CATV to be used at subscribers end.
- ITU-T standard wavelength adjustable , can be used in DWDM system application.
- Can use EDFA, YEDFA, can compatible with any FTTx PON.
- Wide band LiNbO3 external modulation, narrow band CW DFB laser
- Laser APC、ATC、AWC
- All electronic adjustable
- CATV level AGC control , SAT-IF Level MGC control
- Telecommunication-grade security and reliability and network management
- SNMP support remote management and control
- 1+1 power supply back up,up hot-plug function available
- Excellent performance price ratio in this area.

3.0 MAIN APPLICATION

- CATC and 4-Band Satellite-TV long distance transmit
- CATC and 4-Band Satellite-TV FTTH
- CATV, satellite-TV, Intranet, Triple-play
- Other micro-wave bandwidth long distance application.

4.0 Related products

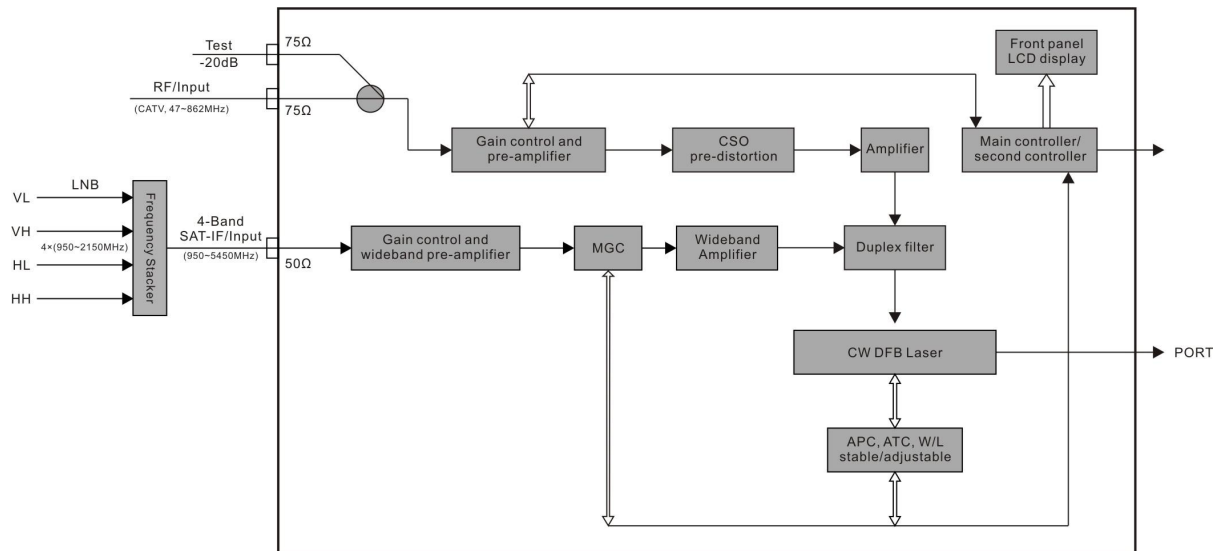
- Applicable receiver: HRS-55A

5.0 Technical index

Feature		Min.	Typ.	Max.	Supplement		
Optical feature	Operating wavelength	(nm)	1540	1550	1563	CC	
		(nm)	1528		1543	CB	
		(nm)	1528		1563	XX	
	Wavelength adjustable range	(nm)	-1.6		+1.6		
	Wavelength adjustable mode	(nm)	±0.01 stepping				
	side mode suppression ratio	(dB)	45				
	Extinction ratio	(dB)	20				
	Bandwidth	(MHz)		0.65	1		
	Equivalent noise intensity	(dB/Hz)	145			To 5500MHz	
	Output port		1		4		
	Each port output optical power	(dBm)		3			1×03, 2×03, 4×03
				5			1×05, 2×05, 4×05
				7			1×07, 2×07
				9			1×09
				10			1×10
SBS	(dBm)	13			P2P, 60Km Fiber		
Return loss	(dB)	50			APC		
Optical fiber connector		SC/APC			FC/APC, LC/APC optional		
RF feature	Work bandwidth	(MHz)	47		862		
	Input level	(dBmV)	18		28	AGC	
	Flatness	(dB)	-0.75		+0.75	47~862MHz	
	Return loss	(dB)	16			47~750MHz	
	Input impedance	(Ω)		75			
	RF interface		F-Female				
	Transmit channel		PAL-D/60CH				
	CNR1		52.5			Bank to Back	
	CNR2		50.5			65Km optical fiber, 0dBm receive	
	CTB				-65		

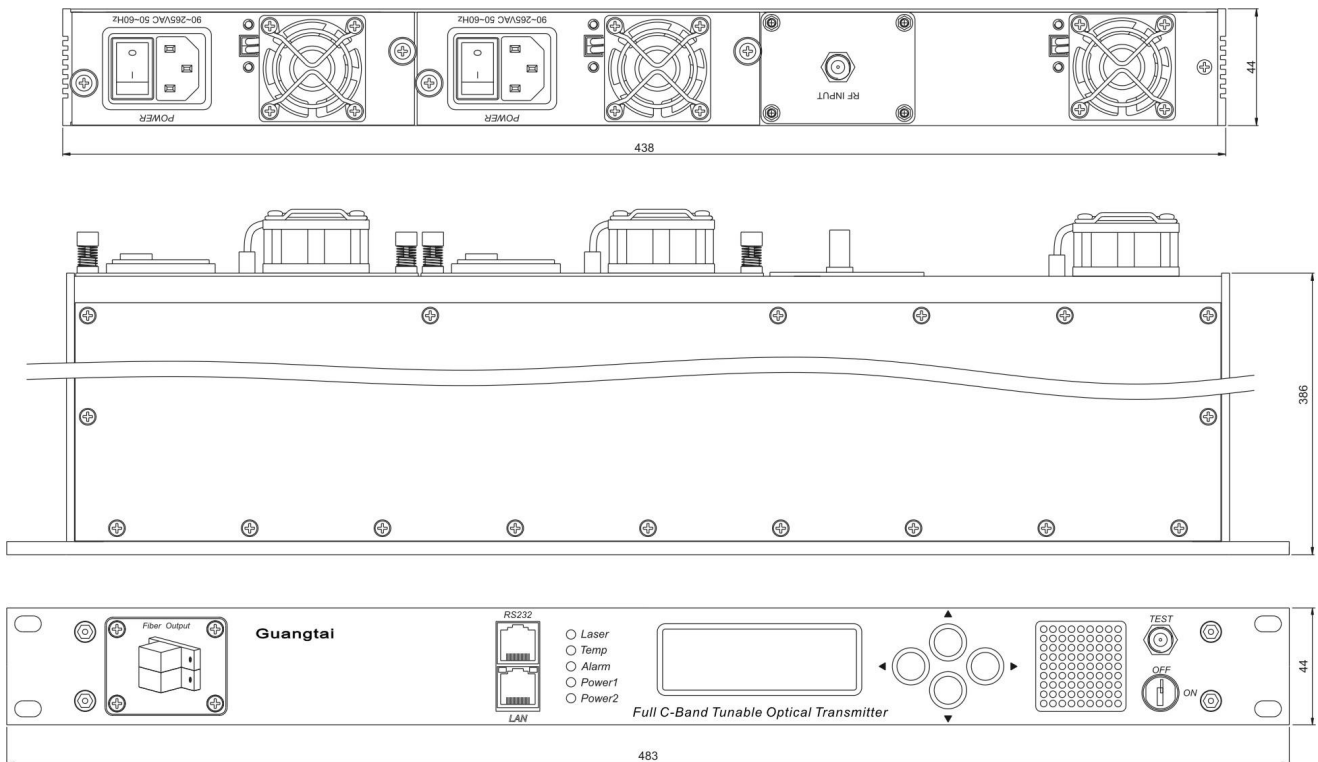
	CSO				-65		
	HUM				-63		
IF feature	Typical application	(MHz)	950		5500		
	frequency response	(dB)	-1.5		+1.5	950~5500MHz	
	IM2	(dB)	40			2 tone measurement, OMI=20% per carrier	
	IM3	(dB)	40				
	Input level	(dBm)			-20	Nominal input level	
	Input impedance	(Ω)			50		
	RF return loss	(dB)	8				
	RF connector		SMA-Female				
Complete performance	SNMP interface		RJ45				
	Telecommunication port		RS232				
	Power supply	AC	(V)	90	220	265	
		DC		-30	-48	-72	
	Power loss	(W)			50		
	Working Temp.	($^{\circ}$ C)	-5		+65		
	Storage Temp.	($^{\circ}$ C)	-40		+85		
	Relative humidity	(%)	5		95		
	Size (W) \times (D) \times (H)	(")	19 \times 14.5 \times 1.75				

6.0 HES-55A electrical functional block diagram

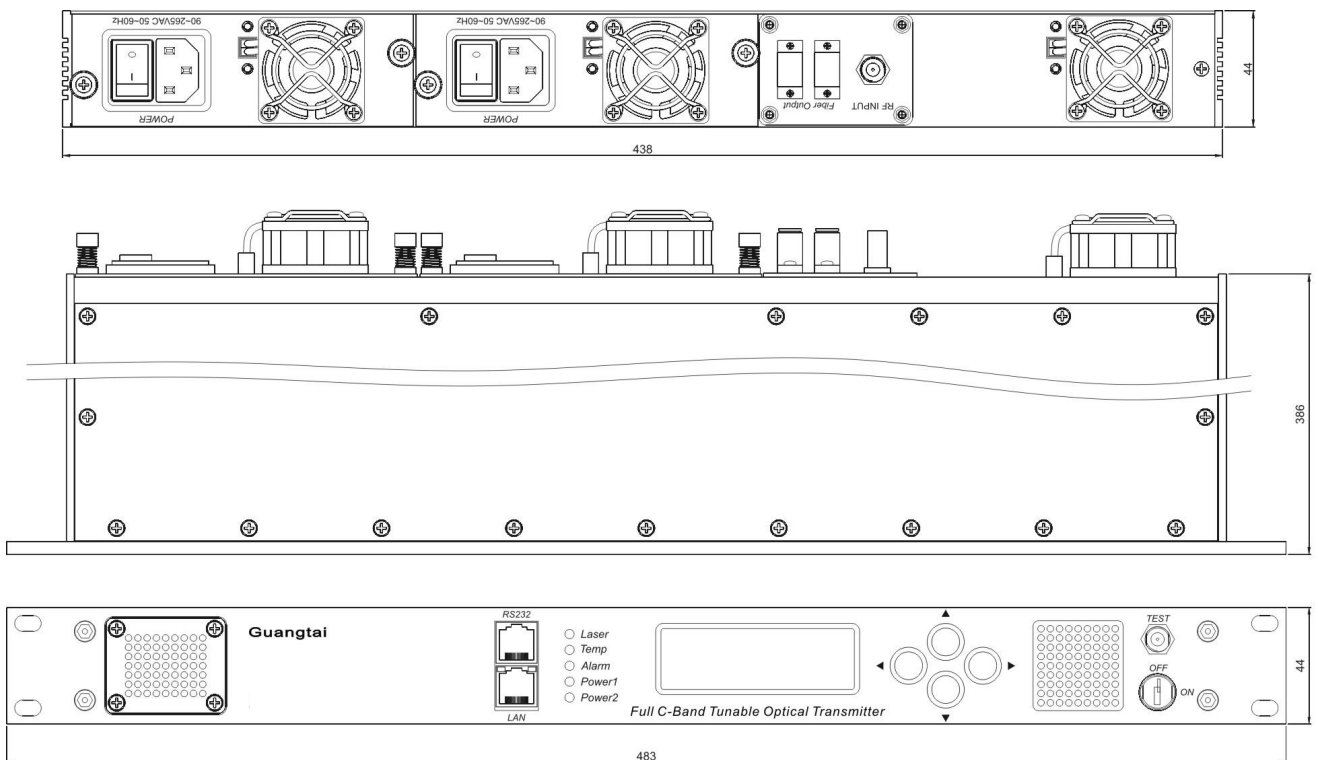


7.0 CHASSIS LENGTH

7.1 Optical port on front panel



7.2 Optical port on back panel



8.0 Product series

Model number	Work bandwidth	Optical output port	Each port output power
HES-55A-1×03-XX	47~862 & 950~5500MHz	1	3dBm
HES-55A-1×05- XX		1	5dBm
HES-55A-1×07- XX		1	7dBm
HES-55A-1×09- XX		1	9dBm
HES-55A-1×10- XX	47~862 & 950~5500MHz	1	10dBm
HES-55A-2×03- XX		2	3dBm
HES-55A-2×05- XX		2	5dBm
HES-55A-2×06- XX		2	6dBm
HES-55A-4×03- XX	47~862 & 950~5500MHz	4	3dBm

Remarks: Work wavelength: CB:1528~1543nm

CC:1540~1563nm

XX:1528~1563nm

9.0 Ordering instructions

HES - 55A - □ × □□ - □□ - □ / □□ - □□

Product type		Operating bandwidth		Number of output port		Output power		Wavelength		Optical port position		Connector		Power supply		
HES	Satellite Externally Modulated Optical Transmitter	55A	47~862MHz & 950~5500MHz Analog TV + SAT-IF	1	1 output port	03	3dBm	CC	1540~1563nm	F	Front panel	SA	SC/APC	48	-48VDC	
				2	2 output ports	05	5dBm	CB	1528~1543nm	B	Back panel	FA	FC/APC	22	220VAC	
HDS	Satellite Direct Modulated Optical Transmitter	55D	47~5500MHz Digital TV + SAT-IF	4 4 output ports		07	7dBm	XX	1528~1563nm			LA		LC/APC	11	110VAC
						09	9dBm									
HRS	Satellite Optical Receiver	55S	950~5500MHz SAT-IF			10	10dBm									