

DBS & MMDS Optical Transmitter & Receiver

**HDBS-3200
HDBS-3300
HDBS-3900 Series**

Technical Specification

1.0 PRODUCT DESCRIPTION

DVB-S Optical Transmitter & Receiver, the series of HDBS-3200, HDBS-3300 and HDBS-3900, provide a most economical FTTH solution for numerous VSAT distribution applications. In this field, the products have minimal exterior structure and can provide the highest output power.

The products have numerous mechanical structures and assembling mode, and are suitable for different applications. The optical receiver can build-in an optic coupler and is simple and flexible to build network. Nowadays, it is a solution with the lowest cost in the world.

HDBS-3200TX: Desktop type optical transmitter.

HDBS-3213RX: Desktop type optical receiver.

HDBS-3300TX: wall-mounted type optical transmitter.

HDBS-3313RX: wall-mounted type optical receiver.

HDBS-3900TX: out-door rain-proof type optical transmitter.

HDBS-3913RX: out-door rain-proof type optical receiver.

2.0 PRODUCT FEATURE

- Minimal exterior structure in this field.
- Easy to install and maintain.
- Optic receiver can internally installed optic coupler, Group net simple and flexible.
- 950-2400MHz operation bandwidth.
- > 8 mW (9 dBm, at 1310nm) optical output.
- \geq -13dBm optical input.
- >13dB link loss.
- Wavelength optional for optical transmitter: 1310nm, 1550nm, CWDM.
- Automatic gain control (AGC) of transmitter.
- Supply +12VDC or +18VDC to satellite tuner.
- Three different exterior structures are applicable to different installation environment.
- Metal shell, supply safeguards to onto-electrical sensing device
- Low power consumption, high cost performance.

3.0 MAIN APPLICATION

- DVB-S, FTTH, FTTB.
- CATV network integrating DVB-S.
- Sharing SAT receiving antenna, Fiber optic system.

4.0 Technique index

	Performance		Index	Supplement
Optical feature	Wavelength	(nm)	1310	HDBS-3000TB1310
			1550	HDBS-3000TB1550
			1470~1561nm ¹⁾	HDBS-3000TB X X X X
			1200~1600nm	HDBS-3013RX
	Optical output	(mW)	0.5~8	1310nm
			0.5~4	1550nm
	Optical input	(dBm)	-13	HDBS-3013RX
	Return Loss	(dB)	≥55	
	Connector		SC/APC	Optional FC/APC, LC/APC
	Laser Type		Un-cooling DFB	TX With ISO
PD Type		PIN	TX	
Work bandwidth	(MHz)	950~2400		
IF Input Range	(dBm)	-25 to -40	TX With AGC	
IF output range	(dBm)	-15 to -40	RX	
RF feature	Flatness	(dB)	0.5dB	40MHz
			±1.0dB	950~2400MHz
	Input Impedance	(Ω)	75	
	RF Return Loss	(dB)	12	
RF Connector		F-Female		
System feature	C/IM3 ²⁾	(dB)	≥55	
	CNR ³⁾	(dB/Hz)	>115	
	Link Gain ⁴⁾	(dB)	25	
General feature	Power supply	(V)	95~260	
	Operating voltage	(V)	+12VDC	Optional +18VDC
	Power Consume	(A)	0.22	
	Work temp.	(°C)	0~+50	
	Relative humidity	(%)	<85	

Size (W)x(D)x(H)	(mm)	59×98×23	HDBS-3200
		117×72×29	HDBS-3600
		150×135×98	HDBS-3900
Weight	(Kg)	0.2	HDBS-3200
		0.25	HDBS-3300

Notes: 1) CWDM wavelength option: 1470nm, 1490nm, 1510nm, 1530nm, 1550nm, 1570nm, 1590nm and 1610nm.

2) C/IM3 defined as the ratio of signal over the third distortion (IM3) by using a two-tone test (1.0GHz and 1.1GHz).

3) Tested by connecting the transmitter and receiver with a short fiber (Back to back operation).

4) Tested at -40dBm RF input.

5.0 LINK PERFORMANCE

Optical input (dB)	Link loss (dB)	CNR (dB)	Link gain (dB)	RF Output level (dBm/Ch.)
-13	14	30.18	-2	-38
-12	13	32.18	0	-36
-11	12	34.13	2	-34
-10	11	38.59	6	-32
-8	9	40.11	8	-30
-7	8	42.18	10	-28
-6	7	44.24	12	-26
-5	6	45.67	14	-24
-4	5	46.53	16	-22
-3	4	46.76	18	-20
-2	3	46.92	20	-18
-1	2	47.01	22	-16
0	1	47.03	24	-14

Remark: 1. Test sample: HDBS-3201TX1310-SA to HDBS-3213RX.

2. Digital satellite receiver's input independence typical is -60dBm
-30dBm.

6.0 PRODUCT SERIES

Mode	Wavelength (nm)	Optical output (mW)	Optical input (dBm)	Connector
HDBS-3200				
HDBS-3200TX1310-SA	1310	0.5	-	SC/APC
HDBS-3201TX1310-SA	1310	1	-	SC/APC
HDBS-3202TX1310-SA	1310	2	-	SC/APC
HDBS-3203TX1310-SA	1310	3	-	SC/APC
HDBS-3204TXX1310-SA	1310	4	-	SC/APC
HDBS-3206TX1310-SA	1310	6	-	SC/APC
HDBS-3208TX1310-SA	1310	8	-	SC/APC
HDBS-3200TX1550-SA	1550	0.5	-	SC/APC
HDBS-3201TX1550-SA	1550	1	-	SC/APC
HDBS-3202TX1550-SA	1550	2	-	SC/APC
HDBS-3203TX1550-SA	1550	3	-	SC/APC
HDBS-3204TX1550-SA	1550	4	-	SC/APC
HDBS-3213RX-SA	1200~1600	-	-13	SC/APC
HDBS-3300				
HDBS-3300TX1310-SA	1310	0.5	-	SC/APC
HDBS-3301TX1310-SA	1310	1	-	SC/APC
HDBS-3302TX1310-SA	1310	2	-	SC/APC
HDBS-3303TX1310-SA	1310	3	-	SC/APC
HDBS-3304TX1310-SA	1310	4	-	SC/APC
HDBS-3306TX1310-SA	1310	6	-	SC/APC
HDBS-3308TX1310-SA	1310	8	-	SC/APC
HDBS-3300TX1550-SA	1550	0.5	-	SC/APC
HDBS-3301TX1550-SA	1550	1	-	SC/APC
HDBS-3302TX1550-SA	1550	2	-	SC/APC
HDBS-3303TX1550-SA	1550	3	-	SC/APC
HDBS-3304TX1550-SA	1550	4	-	SC/APC

HDBS-3313RX-SA	1200~1600	-	-13	SC/APC
HDBS-3900				
HDBS-3900TX1310-SA	1310	0.5	-	SC/APC
HDBS-3901TX1310-SA	1310	1	-	SC/APC
HDBS-3902TX1310-SA	1310	2	-	SC/APC
HDBS-3903TX1310-SA	1310	3	-	SC/APC
HDBS-3904TX1310-SA	1310	4	-	SC/APC
HDBS-3906TX1310-SA	1310	6	-	SC/APC
HDBS-3908TX1310-SA	1310	8	-	SC/APC
HDBS-3909TX1550-SA	1550	0.5	-	SC/APC
HDBS-3901TX1550-SA	1550	1	-	SC/APC
HDBS-3902TX1550-SA	1550	2	-	SC/APC
HDBS-3903TX1550-SA	1550	3	-	SC/APC
HDBS-3904TX1550-SA	1550	4	-	SC/APC
HDBS-3913RX-SA	1200~1600	-	-13	SC/APC

Note: TX option CWDM wavelength.