

H1228 (47~1200MHz)

FTTH CATV Optical Receiver

PRODUCT DESCRIPTION

Guangtai H1228, the operating bandwidth of 47~ 1200MHz, is a low power, high performance, cost-effective triple play, FTTH CATV optical receiver, Whether used in analog television or digital television. Products with high sensitivity optical receiver tube and special low noise matching circuit. Receiving at high optical power can be adjusted by PAD level, played limiting output, so H1228 within a large dynamic range of the received optical power of +2 dBm ~-21dBm, have excellent characteristics.

H1228 for Analog TV, in Pin =-10dBm when, Vo≥ 75.7dBμV, CNR≥ 45.3dB.

H1228 for Digital TV, in Pin =-16dBm when, Vo≥ 67.2dBμV, MER≥ 36.1dB.

H1228 for Digital TV, in Pin =-20dBm when, Vo≥ 58.8dBμV, MER≥ 30dB.

Triple play, fiber to the home, using theH1228 can save a lot of optical fiber amplifier power resources. For operators, can greatly reduce the cost of building the network.:

H1228 optical port mode and form of the following three selection:

H1228 : CATV operating in 1260~1620nm wavelength. A-Type

H1228/WF: Build-in 1310/1490 filter, CATV operating wavelength 1550nm.A-Type

H1228/WD: Build-in CWDM , CATV operating wavelength 1550nm, pass wavelength 1310/1490nm, (Link EPON 、 GPON ONU).B-Type



PRODUCT FEATURES

- ▶Extra-low noise(3.8% modulate, -10dBm receive, CNR ≥ 45.3dB)
- ▶Wide dynamic receiving optical power range: within Pin=-16, MER≥36.1dB
- ▶Applicable GPON, EPON, compatible with any FTTx PON technology
- ▶Can save a large number of optical power resource, greatly reduce the network configuration cost
- ▶In the range of 47~1200MHz, all have good flatness (FI≤± 1.0dB)
- ▶Metal shell, supply safeguards to opto-electrical sensing device
- ▶High output level can supply for many users
- ▶Low power consumption, high cost performance

MAIN APPLICATION

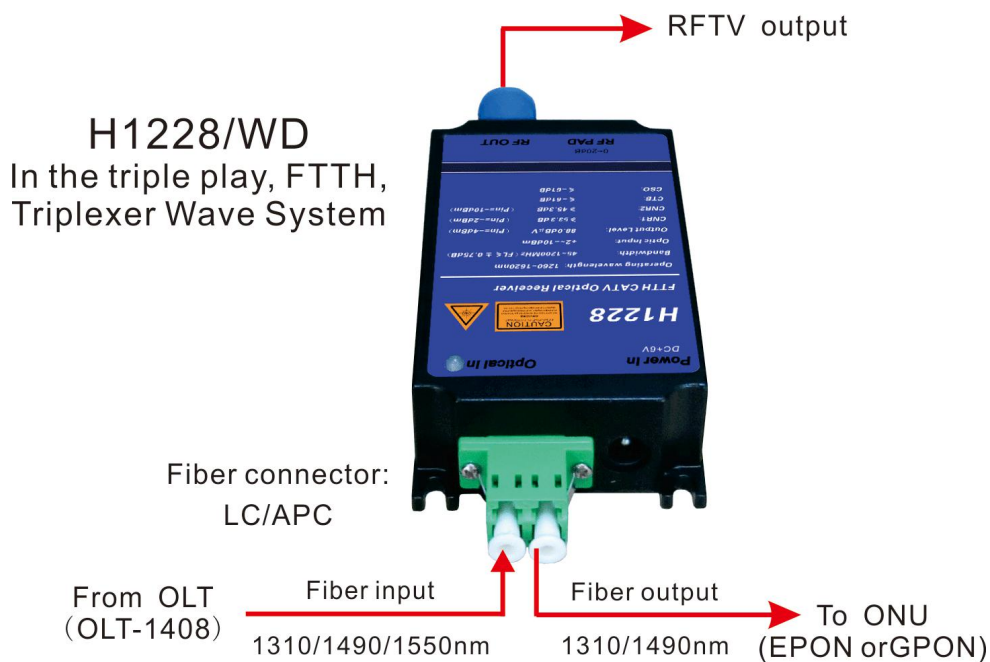
- ▶ Digital TV FTTH
- ▶ Integration of three networks
- ▶ FTTH PON

STATUS INDICATION

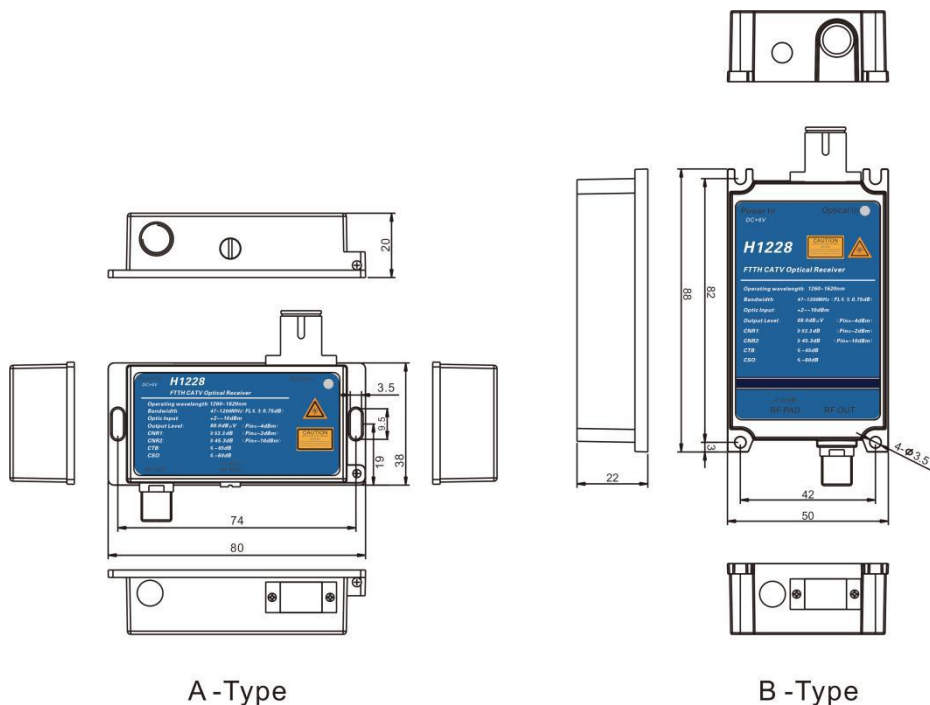
- ▶ Red : >0dBm
- ▶ Green : 0~-7dBm
- ▶ Orange : -7~-10dBm
- ▶ Red : <-10dBm

Note: Users can set the order request

PRINCIPLE



DIMENSIONS

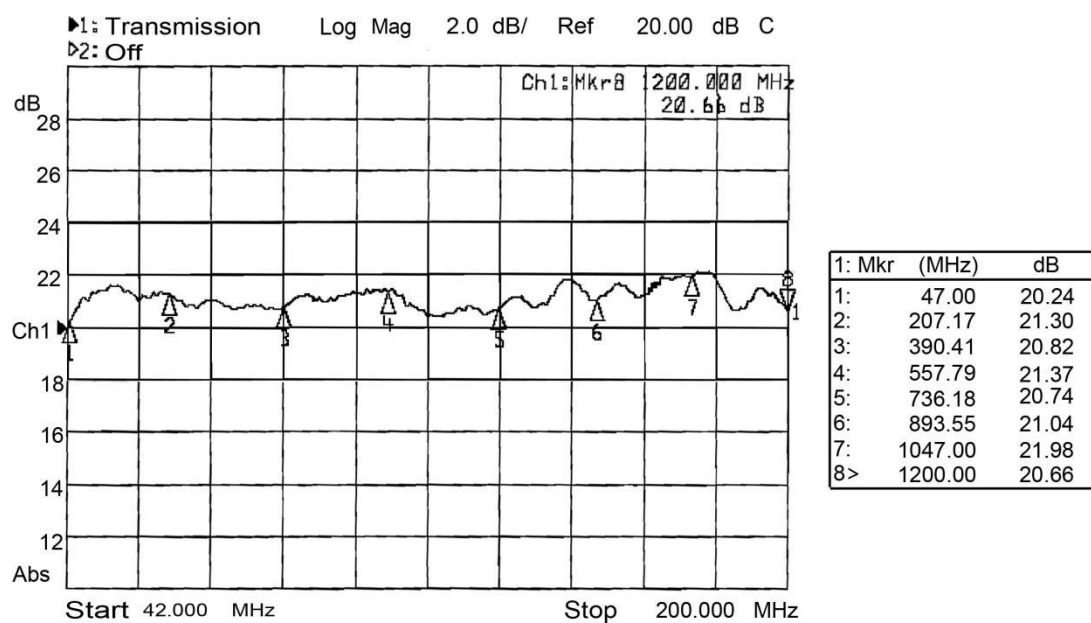


TECHNICAL INDEX

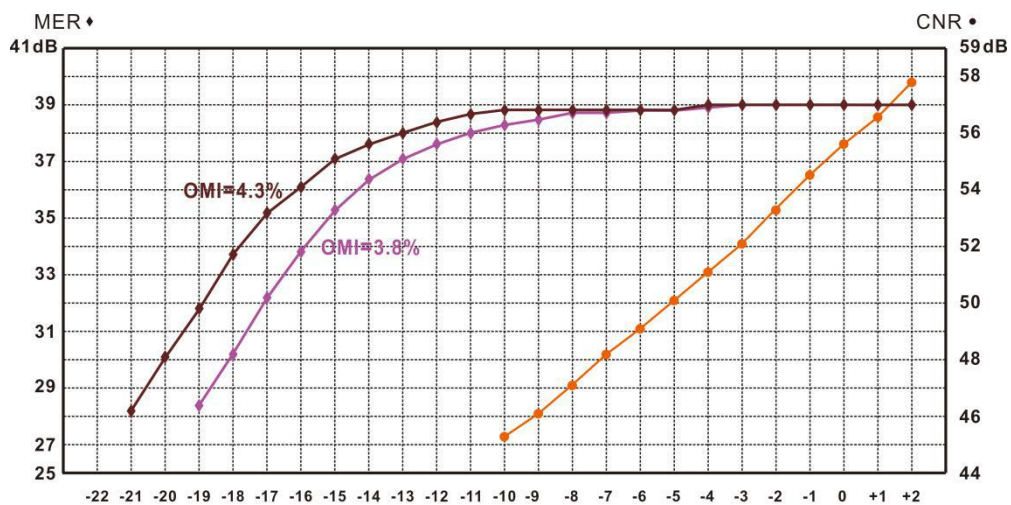
Performance			Index	Supplement
Optic feature	CATV work wavelength	(nm)	1260~1620	H1228(A-Type)
			1540~1563	H1228/WF, H1228/WD(A&B Type)
	Pass wavelength	(nm)	1310,1490	H1228/WD (B Type)
	Channel Isolation	(dB)	≥40	1550nm & 1490nm
	Responsivity	(A/W)	≥0.85	1310nm
			≥0.9	1550nm
	Receiving power	(dB)	+2~-10	Analog TV(CNR>45dB)
			+2~-20	Digital TV(MER>30dB)
	Optical return loss	(dB)	≥55	
RF feature	Optical fiber connector		SC/APC	H1228, H1228/WF
			LC/APC	H1228/WD
	Work bandwidth	(MHz)	47~1200	
	Flatness	(dB)	≤±1.0	47 ~ 1200MHz
	Output level	(dBμV)	>88	Analog TV (Pin = -4dBm)
			>88	Digital TV (Pin=-5dBm)
	Output level adjust	(dB)	0~18	MGC
	Return loss	(dB)	≥14	47 ~ 862MHz
	Output impedance	(Ω)	75	
Analog TV Link feature	Output port number		1	
	RF tie-in		F-Female	
	Test channel	(CH)	59CH(PAL-D)	
	OMI	(%)	3.8	
	CNR1	(dB)	53.3	Pin=-2dBm
	CNR2	(dB)	45.3	Pin=-10dBm
Digital TV Link feature	CTB	(dB)	≤-63	Pin:0~-10dBm
	CSO	(dB)	≤-60	Pin:0~-10dBm
	OMI	(%)	4.3	
	MER	(dB)	≥36	Pin=-16.0dBm
			≥30	Pin=-20.0dBm
	BER	(dB)	<1.0E-9	Pin :+2.0~-20dBm

General feature	Power supply	(V)	+6VDC	±1.0V
	Power Consume	(W)	≤1.5	+6VDC/+12VDC, 230mA
	Work temp	(℃)	-20 ~ +55	
	Storage temp	(℃)	-40 ~ 85	
	Work relative temp	(%)	5 ~ 95	
	Size(W)×(D)×(H)	(mm)	38×80×22	A-Type
			50×88×22	B-Type

FLATNESS



CNR, MER DEGRADATION TABLE



Note: 1. CNR Test conditions: 59CH PAL-D, OMI = 3.8%

2. MER test conditions: The Original Signal: MER = 39.0dB, BER < 1.0E-9,

Test Frequency: 47 ~ 862MHz Full Channel, (The Curve is: 858.00MHz) .

Red curve: OMI=3.8%

Brown curve: OMI=4.3%

3. Digital television Receiving Low Light, appropriate to increase the system modulation (OMI), can greatly improve the MER degradation.

ANALOG TV TEST DATA

(PAL-D59CH, OMI = 3.8%)

Pin(dBm)	+2	-1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10
Vo(dBμV)	84.4	82.0	85.6	84.4	86.4	84.4	87.6	85.5	83.7	81.6	79.2	77.6	75.7
PAD(dB)	15	15	10	10	5	5	0	0	0	0	0	0	0
CNR(dB)	57.8	56.6	55.6	54.6	53.3	52.1	51.1	50.1	49.1	48.2	47.1	46.1	45.3
CTB(dB)	63.6	63.3	63.7	63.5	63.0	64.3	62.5	62.2	62.7	68.0	67.4	65.1	66.3
CSO(dB)	63.8	64.0	64.2	63.8	63.4	62.3	63.2	63.2	63.5	63.4	62.5	62.3	61.5

DIGITAL TV TEST DATA (PIN=+2.0DBM ~ -20.0DBM)

Pin (dBm)	Vo (dBm)	MER	BER	
			POST	PRE
+2.0	102.7	39.0	<1.0E-9	<1.0E-9
+1.0	100.9	39.0	<1.0E-9	<1.0E-9
+0.0	98.8	39.0	<1.0E-9	<1.0E-9
-1.0	96.5	39.0	<1.0E-9	<1.0E-9
-2.0	94.7	39.0	<1.0E-9	<1.0E-9
-3.0	92.6	39.0	<1.0E-9	<1.0E-9
-4.0	90.6	39.0	<1.0E-9	<1.0E-9
-5.0	88.6	38.8	<1.0E-9	<1.0E-9
-6.0	86.1	38.8	<1.0E-9	<1.0E-9
-7.0	84.8	38.8	<1.0E-9	<1.0E-9
-8.0	82.5	38.8	<1.0E-9	<1.0E-9
-9.0	80.5	38.8	<1.0E-9	<1.0E-9

Pin (dBm)	Vo (dBm)	MER	BER	
			POST	PRE
-10.0	78.9	38.8	<1.0E-9	<1.0E-9
-11.0	77.0	38.7	<1.0E-9	<1.0E-9
-12.0	74.7	38.4	<1.0E-9	<1.0E-9
-13.0	72.8	38.0	<1.0E-9	<1.0E-9
-14.0	70.7	37.6	<1.0E-9	<1.0E-9
-15.0	68.7	37.1	<1.0E-9	<1.0E-9
-16.0	67.2	36.1	<1.0E-9	<1.0E-9
-17.0	65.0	35.2	<1.0E-9	<1.0E-9
-18.0	62.9	33.7	<1.0E-9	<1.0E-9
-19.0	60.4	31.8	<1.0E-9	<1.0E-9
-20.0	58.8	30.1	<1.0E-9	<1.0E-9
-21.0	57.5	28.2	<1.0E-9	5.0E-6

PRODUCT SERIES

Model	Input wavelength	CATV operating wavelength	Data pass wavelength	Fiber connector	Form
H1228	1310 or 1550nm	1260~1620nm	-	SC/APC	A - Type
H1228/WF	1310, 1490 / 1550nm	1540~1563nm	-	SC/APC	
H1228/WD	1310, 1490 / 1550nm	1540~1563nm	1310/1490nm	LC/APC	B - Type

MODEL EXPLANATION

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FTTx Receiver		Work bandwidth		Output level (Pin=-4dBm)		CWDM		Exterior		Optical connector		Power standard	
H	FTTH	12	47~1200MHz	28	28dBmV(88dBμV)	NC	Without	A	38×80×22 mm	LA	LP/APC	OA	External adapter (American Standard)
P	FTTP					WD	Build-in CWDM			LP	LC/UPC		
B	FTTB					WF	Build-in Filter	B	50×88×22 mm	SA	SC/APC	OE	External adapter (European Standard)
										SP	SC/UPC		
												OC	External adapter (China Standard)