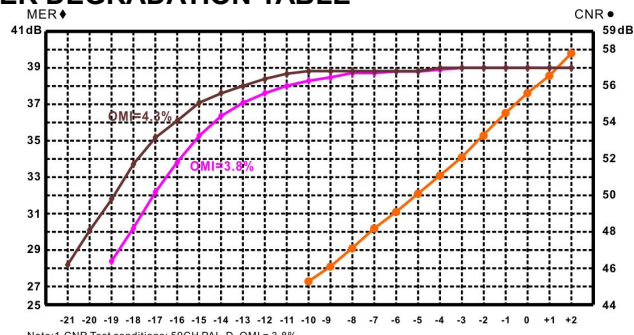


7.0 PRODUCT SERIES

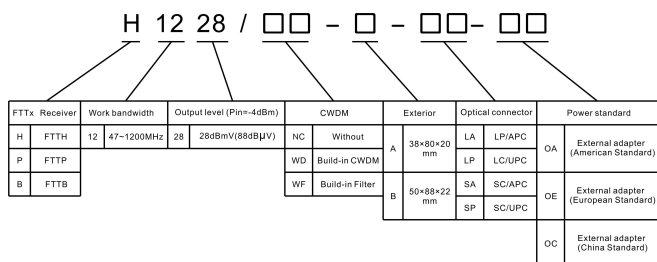
Model	Input wavelength	CATV Operating wavelength	Data pass wavelength	Fiber connector	From
H1228	1310or1550nm	1260~1620nm	-	SC/APC	A -Type
H1228/WF	1310, 1490/1550nm	1540~1563nm	-	SC/APC	
H1228/WD	1310, 1490/1550nm	1540~1563nm	1310/1490nm	LC/APC	B -Type

8.0 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.

9.0 MODEL EXPLANATION



10.0.NOTE

1. The power adapter for this equipment: Input 220V, output DC 6V or DC 12V(0.6A)
2. Keep the optical connector clean, the bad link will cause too low RF output level
3. The built-in RF adjustable attenuator(PAD) of equipment can debug suitable level for system users .User Should not adjust by themselves, to avoid the device damage.

H1228、H1228/WD、H1228/WF
FTTH CATV Optical Receiver
 (Pin=-16dBm、Vo≥67dBμV、MER≥36dB)
 47~1200MHz



H1228-A

User Manual

Ver. 2.6. en

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1.0 PRODUCT DESCRIPTION

Huatai 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 Huatai 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 ≥ 75.7dB μ V, CNR ≥ 45.3dB.

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

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

Triple play, fiber to the home, using the H1228 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: Buid-in CWDM, CATV operating wavelength 1550nm, pass wavelength

1310/1490nm,(Link EPON、 GPON ONU),B- Type

2.0 PRODUCT FEATURE

- 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
- Within 47~1200MHz bandwidth, all with excellent flatness feature (FL±1.0dB)
- Metal case, offer safeguard for optoelectronic sensitive devices
- High output level, can be used by many users
- Low power consume, high performance, high cost performance

5.0 TEST DATA(Pin=+2.0dBm~-21dBm)

Pin (dBm)	Vo (dBμV)	PAD (dB)	MER	BER		Pin (dBm)	Vo (dBμV)	PAD (dB)	MER	BER	
				POST	PER					POST	PER
+2.0	102.7	0	39.0	<1.0E-9	<1.0E-9	-10.0	78.9	0	38.8	<1.0E-9	<1.0E-9
+1.0	100.9	0	39.0	<1.0E-9	<1.0E-9	-11.0	77.0	0	38.7	<1.0E-9	<1.0E-9
+0.0	98.8	0	39.0	<1.0E-9	<1.0E-9	-12.0	74.7	0	38.4	<1.0E-9	<1.0E-9
-1.0	96.0	0	39.0	<1.0E-9	<1.0E-9	-13.0	72.8	0	38.0	<1.0E-9	<1.0E-9
-2.0	94.7	0	39.0	<1.0E-9	<1.0E-9	-14.0	70.7	0	37.6	<1.0E-9	<1.0E-9
-3.0	92.6	0	39.0	<1.0E-9	<1.0E-9	-15.0	68.7	0	37.1	<1.0E-9	<1.0E-9
-4.0	90.6	0	39.0	<1.0E-9	<1.0E-9	-16.0	67.2	0	36.1	<1.0E-9	<1.0E-9
-5.0	88.6	0	38.8	<1.0E-9	<1.0E-9	-17.0	65.0	0	35.2	<1.0E-9	<1.0E-9
-6.0	87.1	0	38.8	<1.0E-9	<1.0E-9	-18.0	62.9	0	33.7	<1.0E-9	<1.0E-9
-7.0	84.8	0	38.8	<1.0E-9	<1.0E-9	-19.0	60.4	0	31.8	<1.0E-9	<1.0E-9
-8.0	82.5	0	38.8	<1.0E-9	<1.0E-9	-20.0	58.8	0	30.1	<1.0E-9	<1.0E-9
-9.0	80.5	0	38.8	<1.0E-9	<1.0E-9	-21.0	57.4	0	28.2	<1.0E-9	5.0E-6

Remark: 1. Teat Signal: MER: 39.0 (dB), BER : <1.0E-9
2. Tx input level:87dBμV;

3.0 MAIN APPLICATION

- CATV FTTH
- Integration of three network
- FTTH PON

4.0 STATUS INDICATION

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

6.0 TECHNICAL INDEX

Performance		Index	Supplement
Optic feature	CATV Work wavelength	(nm)	1260~1620 H1228 (A-Tyoe)
			1540~1563 H1228/WF,H1228/WD (A & B -Tyoe)
	Pass wavelength	(nm)	1310, 1490 H1228/WD (B -Tyoe)
	Channel Isolation	(dB)	≥40 1550nm & 1490nm
	Responsivity	(A/W)	≥0.85 1310nm
			≥0.9 1550nm
	Receiving power	(dBm)	+2~-10 Analog TV (CNR>45dB)
+2~-20 Digital TV (MER>30dB)			
Optical return loss	(dB)	≥55	
			SC/APC H1228, H1228/WF
Optical fiber connector		LC/APC H1228/WD	
RF Feature	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
	Output port number		1
RF tie-in		F-Female	
Analog TV Link Feature	Test channel	(CH)	59CH(PAL-D)
	OMI	(%)	3.8
	CNR1	(dB)	53.3 Pin=-2dBm
	CNR2	(dB)	45.3 Pin=-10dBm
	CTB	(dB)	≤-62 Pin: 0~-10dBm
	CSO	(dB)	≤-60 Pin: 0~-10dBm
DigitalTV Link Feature	OMI	(%)	4.3
	MER	(dB)	≥36 Pin=-16dBm
			≥30 Pin=-20dBm
BER	(dB)	<1.0E-9 Pin:+2~-20dBm	
General feature	Power supply	(V)	DC+6V Optional:DC+12V
	Power Consume	(W)	≤3 +6VDC/+12VDC,230mA
	Work temp	(°C)	-20 ~ +55
	Storage temp	(°C)	-40 ~ 85
	Work relative temp	(%)	5 ~ 95
	Size	(mm)	38×80×20 A -Type
50×88×22 B -Type			