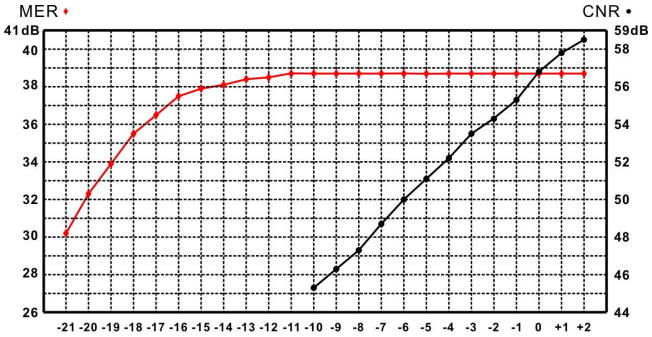
7.0 PRODUCT SERIES

Model	Input wavelength	CATV Operating wavelength	Data pass wavelength	Fiber connector
H1224	1310 or 1550nm	1260~1620nm	-	SC/APC
H1224/WD	1310, 1490/1550nm	1540~1563nm	1310/1490nm	LC/APC
H1224/WF	1310, 1490/1550nm	1540~1563nm	-	SC/APC

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%

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

9.0 MODEL EXPLANATION

H 12 24 / □□ - □□ - □□

FTTx Receiver		Work bandwidth		Output level (Pin=-4dBm)		CWDM		Optical connector		Power standard	
H	FTTH	12	47~1200MHz	24	24dBmV(84dBμV)	NC	Without	LA	LP/APC	OA	External adapter (American Standard)
P	FTTP					WD	Build-in CWDM	LP	LC/UPC		
B	FTTB					WF	Build-in Filter	SA	SC/APC	OE	External adapter (European Standard)
								SP	SC/UPC		
										OC	External adapter (China Standard)

10.0 NOTE

1. The power adapter for this equipment: Input 220V, output DC 6V/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.

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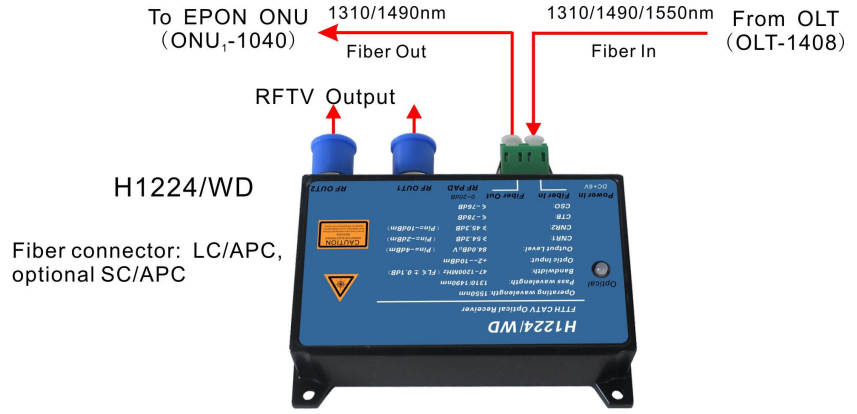
H1224、H1224/WD、H1224/WF

FTTH Digital TV Ultra-low Optical AGC Two Output Optical Receiver

(Pin=-17dBm、Vo≥78dBμV、MER≥36dB)

47~1200MHz



H1224

User Manual

Ver. 2.6 en

Service：0571-85029486 www.catvworld.net

1.0 PRODUCT DESCRIPTION

H1224, the operating bandwidth of 47 ~ 1200MHz, is a low power, high performance, cost-effective triple play, FTTH CATV optical receiver. 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 H1224 within a large dynamic range of the received optical power of +2 dBm ~-21dBm, have excellent characteristics.

H1224 for Analog TV, in Pin =-10dBm when, Vo≥ 69.0dBμV, CNR≥ 45.3dB.

H1224 for Digital TV, in Pin =-17dBm when, Vo≥66.5dBμV, MER≥ 36.5dB.

H1224 for Digital TV,in Pin =-21dBm when, Vo≥58.1dBμV, MER≥ 30.2dB.

Triple play, fiber to the home, using the H1224 can save a lot of optical fiber amplifier power resources. For operators, can greatly reduce the cost of building the network.H1224 optical port mode of the following three selection:

H1224 : RFTV operating in 1260~1620nm wavelength.

H1224/WF：Build-in 1310/1490 filter, RFTV operating wavelength 1550nm.

H1224/WD：Buid-in CWDM，RFTV operating wavelength 1550nm, pass wavelength 1310/1490nm,(Link EPON、GPON ONU).

2.0 PRODUCT FEATURE

1. Extra-low noise(3.8% modulate, -10dBm receive, CNR ≥ 45.3dB)
2. Wide dynamic receiving optical power range: within Pin=-17, MER≥36.5dB
3. Can save a large number of optical power resource,
4. Greatly reduce the network configuration cost
5. In the range of 47~1200MHz, all have good flatness (FL ≤± 1.0dB)
6. Metal shell, supply safeguards to opto-electrical sensing device
7. Interface on the same side, easy to install
8. High output level can supply for many users
9. Low power consumption, high cost performance

3.0 MAIN APPLICATION

1. CATV FTTH
2. Integration of three network
3. FTTH PON

4.0 STATUS INDICATION

1. RED: >0dBm
2. GREEN: 0～-7dBm
3. ORANGE: -7～-10dBm
4. RED: <-10dBm

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	104.0	0	38.7	<1.0E-9	<1.0E-9	-10.0	79.9	0	38.7	<1.0E-9	<1.0E-9
+1.0	102.0	0	38.7	<1.0E-9	<1.0E-9	-11.0	78.4	0	38.7	<1.0E-9	<1.0E-9
+0.0	100.0	0	38.7	<1.0E-9	<1.0E-9	-12.0	76.7	0	38.5	<1.0E-9	<1.0E-9
-1.0	98.2	0	38.7	<1.0E-9	<1.0E-9	-13.0	74.1	0	38.3	<1.0E-9	<1.0E-9
-2.0	96.2	0	38.7	<1.0E-9	<1.0E-9	-14.0	72.0	0	38.1	<1.0E-9	<1.0E-9
-3.0	94.0	0	38.7	<1.0E-9	<1.0E-9	-15.0	69.8	0	37.9	<1.0E-9	<1.0E-9
-4.0	91.9	0	38.7	<1.0E-9	<1.0E-9	-16.0	68.5	0	37.2	<1.0E-9	<1.0E-9
-5.0	89.9	0	38.7	<1.0E-9	<1.0E-9	-17.0	66.5	0	36.5	<1.0E-9	<1.0E-9
-6.0	88.5	0	38.7	<1.0E-9	<1.0E-9	-18.0	64.2	0	35.4	<1.0E-9	2.7E-7
-7.0	86.2	0	38.7	<1.0E-9	<1.0E-9	-19.0	61.7	0	33.9	<1.0E-9	5.0E-6
-8.0	84.0	0	38.7	<1.0E-9	<1.0E-9	-20.0	60.0	0	32.3	<1.0E-9	5.0E-6
-9.0	82.1	0	38.7	<1.0E-9	<1.0E-9	-21.0	58.1	0	30.2	<1.0E-9	5.0E-6

Remark: 1. Teat Signal：MER：39.0 (dB), BER : <1.0E-9
2. Tx input level:82.6dBμV; 3.Test bandwidth: 47~862MHz

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6.0 TECHNICAL INDEX

Performance			Index	Supplement
Optic feature	CATV Work wavelength	(nm)	1260~1620	H1224
			1540~1563	H1224/WF,H1224/WD
	Pass wavelength	(nm)	1310，1490	H1224/WD
	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~-21	Digital TV(MER>30dB)
	Optical return loss	(dB)	≥55	
	Optical fiber connector		SC/APC	H1224，H1224./WF
			LC/APC	H1224/WD
RF Feature	Work bandwidth	(MHz)	47 ~1200	
	Flatness	(dB)	≤±1.0	47~1200MHz
	Output level	(dBμV)	>84	AnalogTV（Pin＝-4dBm）
			>84	Digital TV（Pin＝-5dBm）
	ALC(AGC) character (ΔVo)	(dB)	≤±1.0	Pin=+2.0~-8.0dBm
	Output level adjust	（dB）	0~18	MGC
	Return loss	(dB)	≥14	47 ~ 862MHz
	Output impedance	(Ω)	75	
	Output port number		2	
	RF tie-in		F-Female	
Analog TV Link Feature	Test channel	(CH)	59CH(PAL-D)	
	OMI	(%)	3.8	
	CNR1	(dB)	54..3	Pin=-2dBm
	CNR2	(dB)	45.3	Pin=-10dBm
	CTB	(dB)	≤-78	Pin：0~-10dBm
	CSO	(dB)	≤-76	Pin：0~-10dBm
DigitalTV Link Feature	OMI	(%)	4.3	
	MER	(dB)	≥36	Pin=-17dBm
			≥30	Pin=-21dBm
	BER	(dB)	<1.0E-9	Pin:+2~-21dBm
General feature	Power supply	(V)	DC+6V	Optional:DC+12V
	Power Consume	(W)	≤1.5	+6VDC/+12VDC,220mA
	Work temp	(℃)	-20 ~ +55	
	Storage temp	(℃)	-40 ~ 85	
	Work relative temp	(%)	5 ~ 95	
	Size	(mm)	86×50×22	