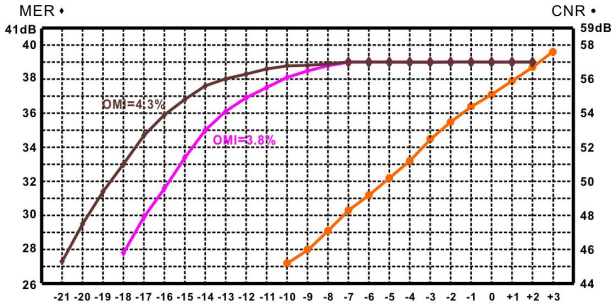
光泰 Guangtai HANGZHOU HUATAI OPTIC TECH. CO., LTD

## 7.0PRODUCT SERIES

| Model | Input wavelength | CATV Operating wavelength | Data pass wavelength | Fiber connector | From |
|---|---|---|---|---|---|
| H1222G | 1310 or 1550nm | 1260~1620nm | - | SC/APC | A -Type |
| H1222G/WF | 1310, 1490/1550nm | 1540~1563nm | - | SC/APC | |
| H1222G/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,
   47 ~ 862MHz full channel.
   Yellow curve: Tx input level = 87dBμV ;
   Red curve: Tx input level = 82.5dBμV

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

## 9.0MODEL EXPLANATION

H 12 22 G / □□ – □ – □□

| FTTx Receiver | | Work bandwidth | | Output level (Pin:-7~+3dBm) | | ALC (AGC) | CWDM | | Exterior | | Optical connector | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H | FTTH | 12 | 47~1200MHz | 22 | 22dBmV(82dBμV) | | NC | Without | A | 38×80×20 mm | LA | LP/APC |
| P | FTTP | | | | | | WD | Build-in CWDM | | | SA | SC/APC |
| B | FTTB | | | | | | WF | Build-in Filter | B | 50×88×22 mm | SA | SC/APC |
| | | | | | | | | | | | SA | SC/APC |

## 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.

# H1222G、H1222G/WD、H1222G/WF

## FTTH CATV Optical Receiver

## (Pin=-15dBm、Vo≥66dBμV、MER≥36dB)

47~1200MHz


**H1222G-A**

**User Manual**

**Ver. 2. 7en**




Service：0571-85029486 www.catvworld.net

## 1.0 PRODUCT DESCRIPTION

Huatai H1222G, 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. Due to the built-in optical AGC, at high optical power receiver, played limiting output, so H1222G in the received optical power over a large dynamic range of +2 dBm ~-20dBm, and have excellent properties.

H1222G for Analog TV, in Pin =-10dBm when, Vo ≥ 76dBμV, CNR ≥ 45.2dB.

H1222G for Digital TV, in Pin =-15dBm when, Vo ≥ 66.6dBμV, MER ≥ 36.8dB.

H1222G for Digital TV, in Pin =-20dBm when, Vo ≥ 57.8dBμV, MER ≥ 30.2dB.

Triple play, fiber to the home, using the H1222G can save a lot of optical fiber amplifier power resources. For operators, can greatly reduce the cost of building the network.H1222G optical port mode and form of the following three selection:

H1222G :operating wavelength 1260~1620nm. A-Type

H1222G/WD: Built-in CWDM, suitable for single-fiber triple wavelength system, RFTV operating wavelength 1550nm, passwavelength 1310/1490nm, can conveniently connect the ONU of EPON, GPON. B-Type

H1222G/WF: built-in 1310/1490nm filter,suitable for single-fiber triple wavelength System, RFTV operating wavelength 1550nm. A-Type

## 2.0 PRODUCT FEATURE

1. Extra-low noise(3.8% modulate, -10dBm receive, CNR ≥ 45.2dB)
2. Wide dynamic receiving optical power range: within Pin=-15, MER≥36.8dB
3. Applicable GPON, EPON, compatible with any FTTx PON technology
4. Can save a large number of optical power resource, 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. High output level can supply for many users
8. 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~-20dBm)

| Pin (dBm) | Vo (dBμV) | MER | BER | | Pin (dBm) | Vo (dBμV) | MER | BER | |
|---|---|---|---|---|---|---|---|---|---|
| | | | POST | PER | | | | POST | PER |
| +2.0 | 85.6 | 39.0 | <1.0E-9 | <1.0E-9 | -10.0 | 76.3 | 38.8 | <1.0E-9 | <1.0E-9 |
| +1.0 | 84.6 | 39.0 | <1.0E-9 | <1.0E-9 | -11.0 | 74.1 | 38.6 | <1.0E-9 | <1.0E-9 |
| +0.0 | 84.4 | 39.0 | <1.0E-9 | <1.0E-9 | -12.0 | 72.1 | 38.3 | <1.0E-9 | <1.0E-9 |
| -1.0 | 84.4 | 39.0 | <1.0E-9 | <1.0E-9 | -13.0 | 70.4 | 37.8 | <1.0E-9 | <1.0E-9 |
| -2.0 | 84.1 | 39.0 | <1.0E-9 | <1.0E-9 | -14.0 | 68.9 | 378.6 | <1.0E-9 | <1.0E-9 |
| -3.0 | 83.6 | 39.0 | <1.0E-9 | <1.0E-9 | -15.0 | 66.6 | 36.8 | <1.0E-9 | <1.0E-9 |
| -4.0 | 84.0 | 39.0 | <1.0E-9 | <1.0E-9 | -16.0 | 64.3 | 35.9 | <1.0E-9 | <1.0E-9 |
| -5.0 | 83.5 | 39.0 | <1.0E-9 | <1.0E-9 | -17.0 | 62.1 | 34.7 | <1.0E-9 | <1.0E-9 |
| -6.0 | 83.7 | 39.0 | <1.0E-9 | <1.0E-9 | -18.0 | 60.2 | 33.0 | <1.0E-9 | <1.0E-9 |
| -7.0 | 81.8 | 39.0 | <1.0E-9 | <1.0E-9 | -19.0 | 58.7 | 31.4 | <1.0E-9 | <1.0E-9 |
| -8.0 | 81.5 | 39.0 | <1.0E-9 | <1.0E-9 | -20.0 | 56.6 | 29.4 | <1.0E-9 | <1.0E-9 |
| -9.0 | 79.4 | 38.8 | <1.0E-9 | <1.0E-9 | | | | | |

Remak : 1. The Original Signal : MER = 39.0dB, BER <1.0E-9

2. Test Frequency : The Curve is: 858.00MHz, OMI = 4.3%



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## 6.0 TECHNICAL INDEX

| Performance | | | Index | Supplement |
|---|---|---|---|---|
| Optic feature | CATV Work wavelength | (nm) | 1260~1620 | H1222G（A-Type） |
| | | | 1540~1563 | H1222G/WF,H1222G/WD（A & B-Type） |
| | Pass wavelength | (nm) | 1310，1490 | H1222G/WD（B -Type） |
| | Channel Isolation | (dB) | ≥40 | 1550nm & 1490nm |
| | Responsivity | (A/W) | ≥0.85 | 1310nm |
| | | | ≥0.9 | 1550nm |
| | Receiving power | (dBm) | +3~-10 | Analog TV(CNR>45dB) |
| | | | +2~-20 | Digital TV(MER>29dB) |
| | Optical return loss | (dB) | ≥55 | |
| | Optical fiber connector | | SC/APC | H1222G，H1222G./WF |
| | | | LC/APC | H1222G/WD |
| RF Feature | Work bandwidth | (MHz) | 47 ~ 1200 | |
| | Flatness | (dB) | ≤±1.0 | 47~1200MHz |
| | Output level | (dBμV) | >82 | Analog TV（Pin＝+3~-7dBm） |
| | | | >82 | Digital TV （Pin＝-6dBm） |
| | Output level adjust | （dB） | 0~18 | MGC |
| | ALC(AGC) character (ΔVo) | (dB) | ≤±1.0 | Pin=+2.0~-8.0dBm |
| | 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) | 53.5 | Pin=-2dBm |
| | CNR2 | (dB) | 45.2 | Pin=-10dBm |
| | CTB | (dB) | ≤-65 | Pin：0~-10dBm |
| | CSO | (dB) | ≤-62 | Pin：0~-10dBm |
| DigitalTV Link Feature | OMI | (%) | 4.3 | |
| | MER | (dB) | ≥36 | Pin=-15dBm |
| | | | ≥29 | Pin=-20dBm |
| | BER | (dB) | <1.0E-9 | Pin:+2~-20dBm |
| General feature | Power supply | (V) | DC+6V | Optional:DC+12V |
| | Power Consume | (W) | ≤2 | +6VDC/+12VDC,220mA |
| | Work temp | (℃) | -20 ~ +55 | |
| | Storage temp | (℃) | -40 ~ 85 | |
| | Work relative temp | (%) | 5 ~ 95 | |
| | Size | (mm) | 38×80×20 | A -Type |
| | | | 50×88×22 | B -Type |