

H9112G (47~862MHz)

FTTH CATV AGC Optical Receiver

PRODUCT DESCRIPTION

Guangtai H9112G, the operating bandwidth of 47~862MHz, Products with high sensitivity optical receiver tube and special low noise matching circuit, Whether used in analog television or digital television, have high reception sensitivity and excellent intermodulation distortion index. is a low power, high performance, cost-effective triple play, FTTH CATV AGC optical receiver.

H9112G for Analog TV, in Pin $\geq -10\text{dBm}$ when, $V_o \geq 68\text{dB}\mu\text{V}$, $\text{CNR} \geq 45\text{dB}$.

H9112G for Digital TV, in Pin $\geq -15\text{dBm}$ when, $V_o \geq 60\text{dB}\mu\text{V}$, $\text{MER} \geq 36.8\text{dB}$.

H9112G for Digital TV, in Pin $\geq -19\text{dBm}$ when, $V_o \geq 53.1\text{dB}\mu\text{V}$, $\text{MER} \geq 31.2\text{dB}$.

Triple play, fiber to the home, using the H9112G can save a lot of optical fiber amplifier power resources. For operators, can greatly reduce the cost of building the network.

H9112G optical port mode of the following three selection:

H9112G: operating wavelength 1260~1620nm. A - Type

H9112G/WD: Built-in CWDM, suitable for single-fiber triple wavelength system, CATV operating wavelength 1550nm, pass wavelength 1310/1490nm, can conveniently connect the ONU of EPON, GPON. B - Type

H9112G/WF: built-in 1310/1490nm filter, suitable for single-fiber triple wavelength system, CATV operating wavelength 1550nm. A - Type



PRODUCT FEATURES

- ▶ Extra-low noise(3.8% modulate, -10dBm receive, $\text{CNR} \geq 45\text{dB}$)
- ▶ Wide dynamic receiving optical power range: within Pin ≥ -15 , $\text{MER} \geq 36.8\text{dB}$
- ▶ 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 47~862MHz, all have good flatness ($\text{FL} \leq \pm 0.75\text{dB}$)
- ▶ 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

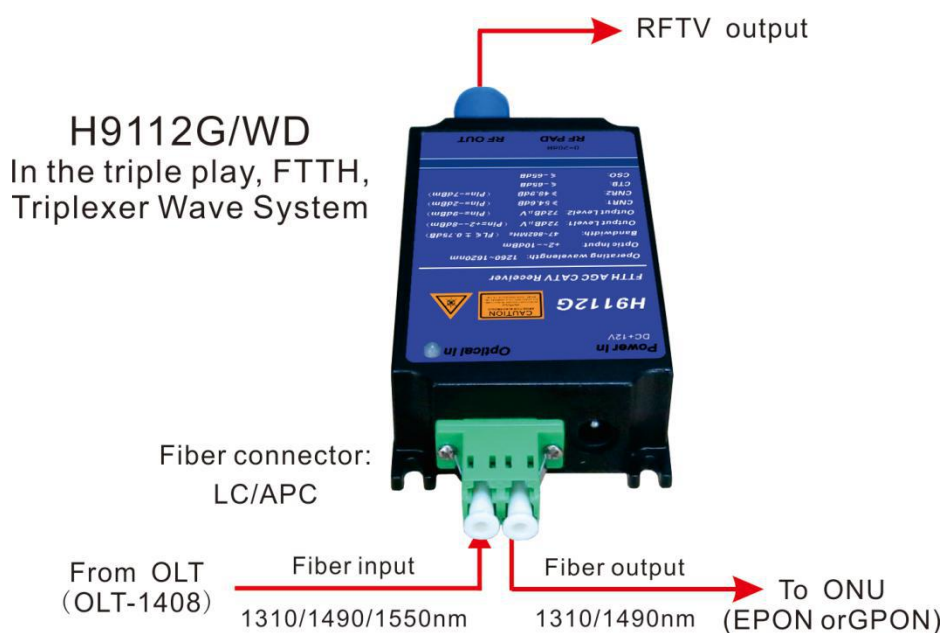
- ▶ CATV FTTH
- ▶ Integration of three networks
- ▶ FTTH PON

STATUS INDICATION

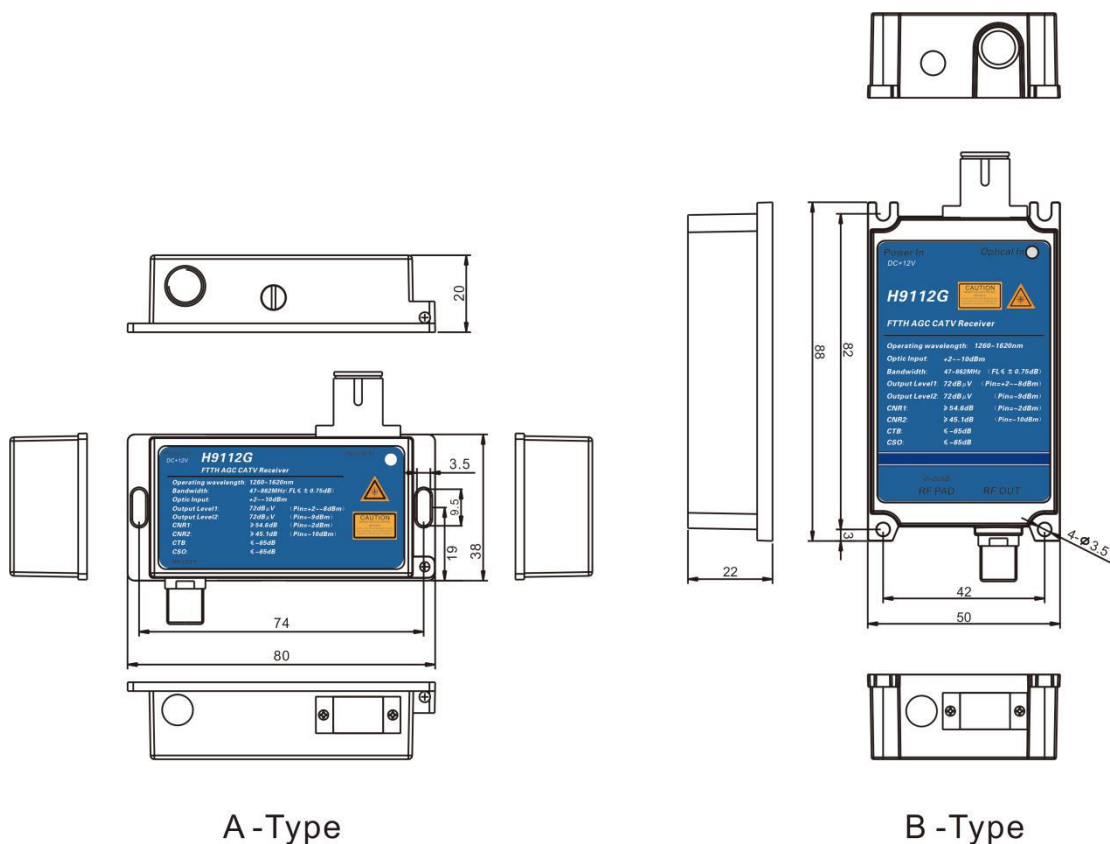
- ▶ Red : $> +2\text{dBm}$
- ▶ Green : $+2 \sim -16\text{dBm}$
- ▶ Orange : $-16 \sim -20\text{dBm}$
- ▶ Red : $< -20\text{dBm}$

Note: Users can set the order request

H9112G/WD THE APPLICATION IN SINGLE-FIBER THREE-WAVELENGTH



DIMENSIONS

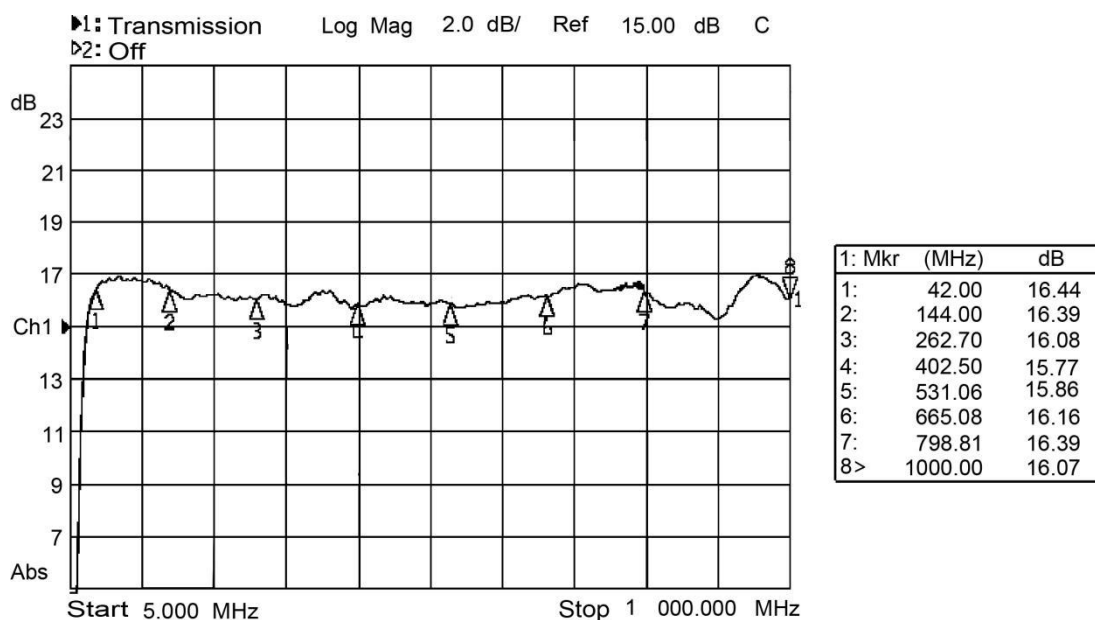


TECHNICAL INDEX

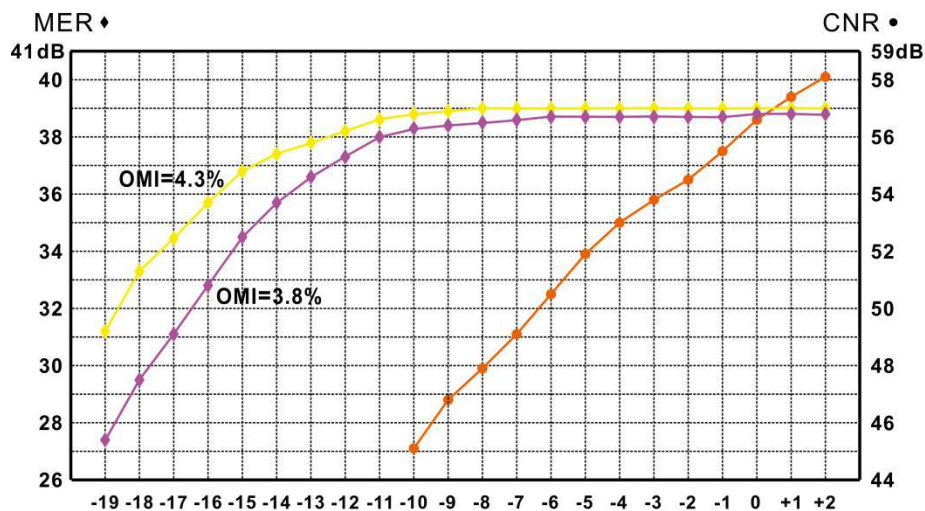
Performance			Index	Supplement
Optic feature	CATV work wavelength	(nm)	1260~1620	H9112G(A-Type)
			1540~1563	H9112G/WF, H9112G/WD(A&B Type)
	Pass wavelength	(nm)	1310,1490	H9112G/WD (B Type)
	Channel Isolation	(dB)	≥40	1550nm & 1490nm
	Responsivity	(A/W)	≥0.85	1310nm
			≥0.9	1550nm
	Receiving power	(dB)	+2~-10	Analog TV(CNR>45dB)
			+2~-19	Digital TV(MER>29dB)
	Optical return loss	(dB)	≥55	
	Optical fiber connector		SC/APC	H9112G, H9112G/WF
			LC/APC	H9112G/WD
RF feature	Work bandwidth	(MHz)	47~862	
	Flatness	(dB)	≤±0.75	47 ~ 862MHz
	Output level	(dBμV)	>72	Analog TV (Pin=+2~-8dBm)
			>72	Digital TV (Pin=-9dBm)
	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	
Analog TV Link feature	RF tie-in		F-Female	
	Test channel	(CH)	59CH(PAL-D)	
	OMI	(%)	3.8	
	CNR1	(dB)	54.6	Pin=-2dBm
	CNR2	(dB)	45	Pin=-10dBm
	CTB	(dB)	≤-65	Pin:0~-10dBm
Digital TV Link feature	CSO	(dB)	≤-65	Pin:0~-10dBm
	OMI	(%)	4.3	
	MER	(dB)	≥36	Pin=-15.0dBm
			≥29	Pin=-19.0dBm

	BER	(dB)	<1.0E-9	Pin :+2.0~-19dBm
General feature	Power supply	(V)	DC+12V	±1.0V
	Power Consume	(W)	≤3	+12VDC, 210mA
	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)	74.6	74.4	73.9	73.7	73.5	73.4	73.1	73.4	73.1	73.0	72.5	70.3	68.1
PAD(dB)	0	0	0	0	0	0	0	0	0	0	0	0	0
CNR(dB)	58.1	57.3	56.7	55.4	54.6	53.8	53.0	51.9	50.4	50.1	47.9	46.8	45.1
CTB(dB)	65.7	70.0	70.9	72.1	71.1	75.0	74.0	72.0	70.6	69.3	68.5	67.6	65.7
CSO(dB)	67.2	69.6	70.9	70.7	70.3	72.8	72.0	68.6	65.4	67.4	69.8	65.3	66.7

DIGITAL TV TEST DATA (PIN=+2.0DBM ~ -19.0DBM)

Pin (dBm)	Vo (dBm)	MER	BER	
			POST	PRE
+2.0	80.6	39.0	<1.0E-9	<1.0E-9
+1.0	80.4	39.0	<1.0E-9	<1.0E-9
+0.0	80.2	39.0	<1.0E-9	<1.0E-9
-1.0	80.1	39.0	<1.0E-9	<1.0E-9
-2.0	79.5	39.0	<1.0E-9	<1.0E-9
-3.0	79.3	39.0	<1.0E-9	<1.0E-9
-4.0	79.0	39.0	<1.0E-9	<1.0E-9
-5.0	78.8	39.0	<1.0E-9	<1.0E-9
-6.0	78.6	39.0	<1.0E-9	<1.0E-9
-7.0	78.2	39.0	<1.0E-9	<1.0E-9
-8.0	74.0	39.0	<1.0E-9	<1.0E-9

Pin (dBm)	Vo (dBm)	MER	BER	
			POST	PRE
-9.0	72.1	38.9	<1.0E-9	<1.0E-9
-10.0	70.9	38.8	<1.0E-9	<1.0E-9
-11.0	68.5	38.6	<1.0E-9	<1.0E-9
-12	66.4	37.8	<1.0E-9	<1.0E-9
-13	65.2	37.6	<1.0E-9	<1.0E-9
-14	62.9	37.4	<1.0E-9	<1.0E-9
-15	60.7	36.8	<1.0E-9	<1.0E-9
-16	58.7	35.7	<1.0E-9	<1.0E-9
-17	57.1	34.5	<1.0E-9	<1.0E-9
-18	55.1	33.3	<1.0E-9	<1.0E-9
-19	53.1	31.2	<1.0E-9	<1.0E-9

PRODUCT SERIES

Model	Input wavelength	CATV operating wavelength	Data pass wavelength	Fiber connector	Form
H9112G	1310 or 1550nm	1260~1620nm	-	SC/APC	A - Type
H9112G/WF	1310, 1490 / 1550nm	1540~1563nm	-	SC/APC	
H9112G/WD	1310, 1490 / 1550nm	1540~1563nm	1310/1490nm	LC/APC	B - Type

MODEL EXPLANATION

