H9122 (47~1000MHz)

FTTH CATV Optical Receiver

PRODUCT DESCRIPTION

Guangtai H9122, the operating bandwidth of 47~1000MHz, 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 optical receiver.

H9122 for Analog TV, in Pin =-10dBm when, Vo ≥ 69dBμV, CNR ≥ 45dB.

H9122 for Digital TV, in Pin =-15dBm when, Vo ≥ 62.7dBμV, MER ≥ 36.8dB.

H9122 for Digital TV, in Pin =-20dBm when, Vo ≥ 53.1dBμV, MER ≥ 29.4dB.

Triple play, fiber to the home, using the H9122 can save a lot of optical fiber amplifier power resources. For operators, can greatly reduce the cost of building the network.

H9122 optical port mode of the following three selection:

H9122 :operating wavelength 1260~1620nm. B - Type

H9122/WD1: 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 & C - Type.

H9122/WD2: Built-in CWDM, suitable for single-fiber triple wavelength system, RFTV operating wavelength 1550nm ± 10, pass wavelength 1270/1310/1490/1577nm, can conveniently connect the ONU of GPON、XG-PON & XGS-PON.B - Type & C - Type.

H9122/WF: built-in 1310/1490nm filter,suitable for single-fiber triple wavelength system, CATV operating wavelength 1550nm. B - Type

PRODUCT FEATURES

- Extra-low noise(3.8% modulate, -10dBm receive, CNR ≥ 45dB)
- Wide dynamic receiving optical power range: within Pin=-15, MER≥36.8dB
- Applicable GPON, EPON, XGS-PON, 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 47~1000MHz, all have good flatness (FL ≤± 0.75dB)
- 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

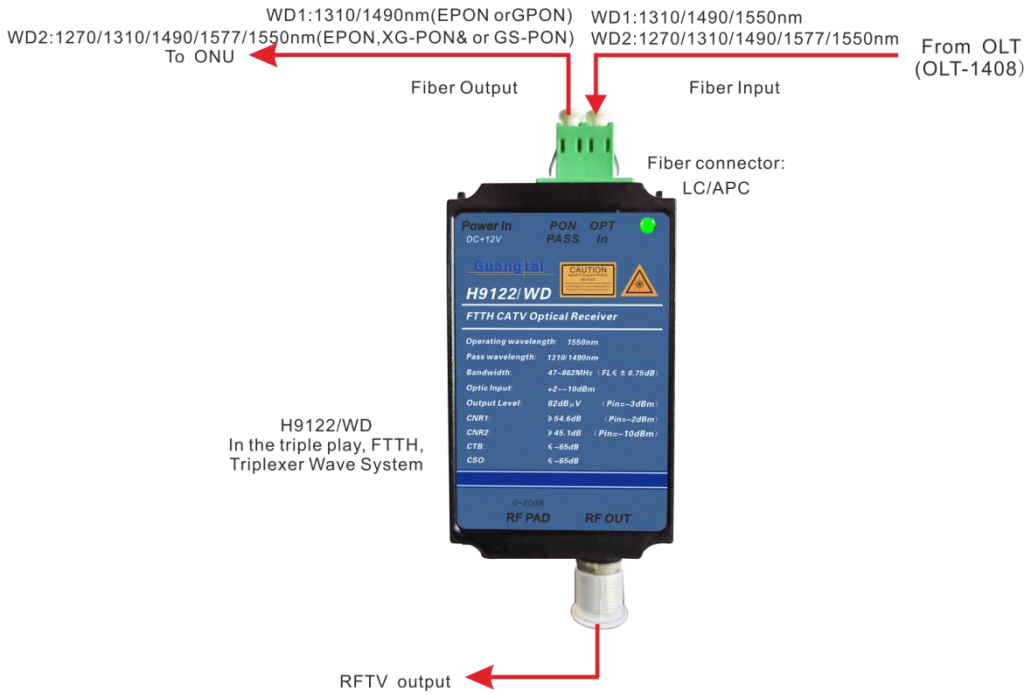
- CATV FTTH
- Integration of three networks
- FTTH PON

STATUS INDICATION

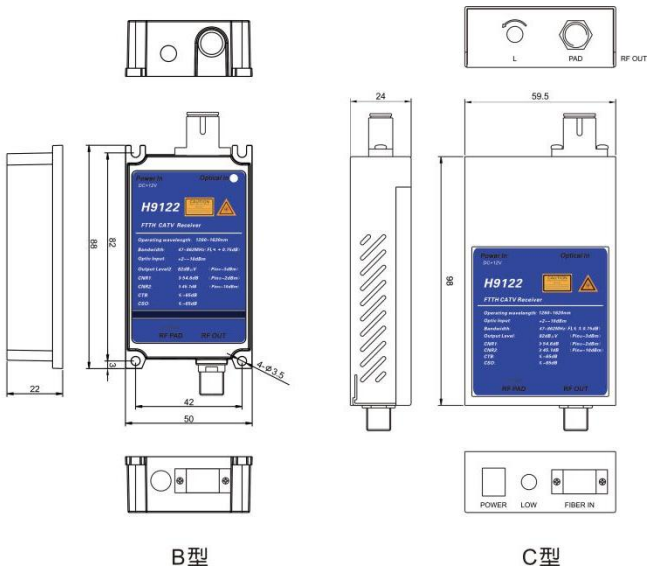
- Red : >+2dBm
- Green : +2~-16dBm
- Orange : -16~-20dBm
- Red : <-20dBm

Note: Users can set the order request

H9122/WD THE APPLICATION IN SINGLE-FIBER THREE-WAVELENGTH



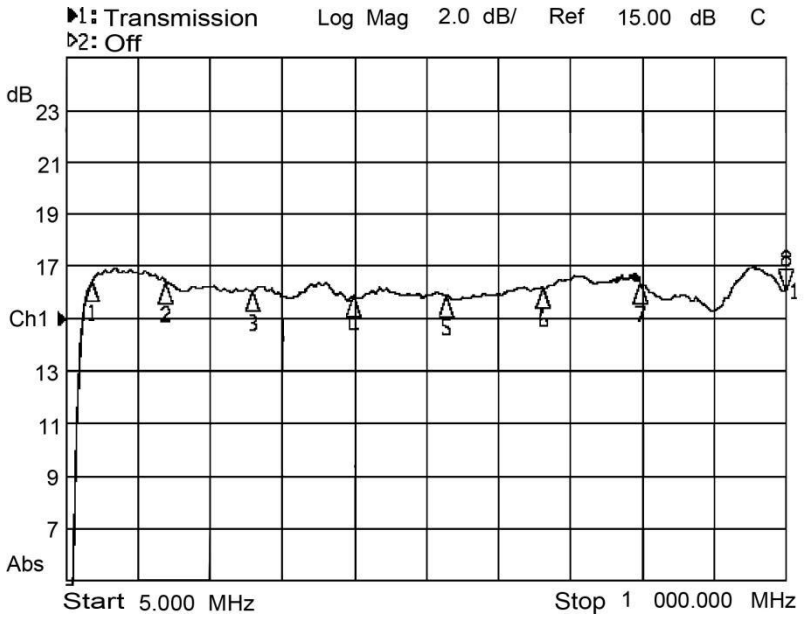
DIMENSIONS



TECHNICAL INDEX

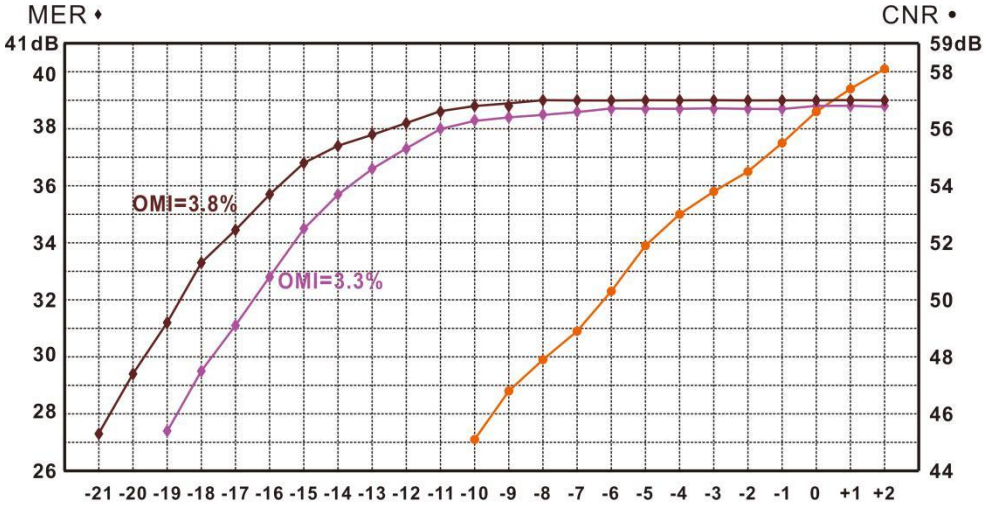
Performance			Index	Supplement
Optic feature	CATV work wavelength	(nm)	1260~1620	H9122(B&C Type)
			1540~1563	H9122/WF, H9122/WD(B&C Type)
	Pass wavelength	(nm)	1310,1490	H9122/WD1(B&C Type)
			1270，1310，1490，1550，1577	H9122/WD2(B&C Type)
	Channel Isolation	(dB)	≥40	1550nm & 1490nm
	Responsivity	(A/W)	≥0.85	1310nm
			≥0.9	1550nm
	Receiving power	(dB)	+2~-10	Analog TV(CNR>45dB)
			+2~-20	Digital TV(MER>29dB)
	Optical return loss	(dB)	≥55	
	Optical fiber connector		SC/APC	H9122, H9122/WF
			LC/APC	H9122/WD
RF feature	Work bandwidth	(MHz)	47~1000	
	Flatness	(dB)	≤±0.75	47 ~ 1000MHz
	Output level	(dBμV)	>82	Analog TV(Pin=-3dBm)
			>82	Digital TV(Pin=-5dBm)
	Output level adjust	(dB)	0~18	MGC
	Return loss	(dB)	≥14	47 ~ 1000MHz
	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)	54.6	Pin=-2dBm
	CNR2	(dB)	45.1	Pin=-10dBm
	CTB	(dB)	≤-65	Pin:0~-10dBm
	CSO	(dB)	≤-65	Pin:0~-10dBm
Digital TV Link feature	OMI	(%)	4.3	
	MER	(dB)	≥36	Pin=-15.0dBm
			≥31	Pin=-19.0dBm
	BER	(dB)	<1.0E-9	Pin :+2.0~-20dBm
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)	50×88×22	B-Type
			59.5×98×24	C-Type

FLATNESS



1: Mkr	(MHz)	dB
1:	42.00	16.44
2:	144.00	16.39
3:	262.70	16.08
4:	402.50	15.77
5:	531.06	15.86
6:	665.08	16.16
7:	798.81	16.39
8>	1000.00	16.07

CNR, MER DEGRADATTION 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)	93.3	91.2	89.3	87.3	85.1	83.4	81.0	79.5	77.6	75.0	73.1	71.5	69.1
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 ~ -20.0DBM)

Pin (dBm)	Vo (dBm)	MER	BER		Pin (dBm)	Vo (dBm)	MER	BER	
			POST	PRE				POST	PRE
+2.0	97	39.0	<1.0E-9	<1.0E-9	-10.0	72.9	38.8	<1.0E-9	<1.0E-9
+1.0	94.9	39.0	<1.0E-9	<1.0E-9	-11.0	70.5	38.6	<1.0E-9	<1.0E-9
+0.0	92.7	39.0	<1.0E-9	<1.0E-9	-12	68.4	37.8	<1.0E-9	<1.0E-9
-1.0	90.1	39.0	<1.0E-9	<1.0E-9	-13	67.2	37.6	<1.0E-9	<1.0E-9
-2.0	88.8	39.0	<1.0E-9	<1.0E-9	-14	64.9	37.4	<1.0E-9	<1.0E-9
-3.0	86.8	39.0	<1.0E-9	<1.0E-9	-15	62.7	36.8	<1.0E-9	<1.0E-9
-4.0	84.6	39.0	<1.0E-9	<1.0E-9	-16	60.7	35.7	<1.0E-9	<1.0E-9
-5.0	82.2	39.0	<1.0E-9	<1.0E-9	-17	59.1	34.5	<1.0E-9	<1.0E-9
-6.0	80.2	39.0	<1.0E-9	<1.0E-9	-18	57.1	33.3	<1.0E-9	<1.0E-9
-7.0	78.9	39.0	<1.0E-9	<1.0E-9	-19	55.1	31.2	<1.0E-9	<1.0E-9
-8.0	76.0	39.0	<1.0E-9	<1.0E-9	-20	53.1	29.4	<1.0E-9	2.2E-9
-9.0	75.1	38.9	<1.0E-9	<1.0E-9					

PRODUCT SERIES

Model	Input wavelength	CATV operating wavelength	Data pass wavelength	Fiber connector
H9122	1310 or 1550nm	1260~1620nm	-	SC/APC
H9122/WF	1310, 1490 / 1550nm	1540~1563nm	-	SC/APC
H9122/WD	1310, 1490 / 1550nm	1540~1563nm	1310/1490nm	LC/APC
H9122/WD2	1270/1310/1490/1550/1577	1540~1563nm	1270/1310/1490/1577nm	LC/APC

MODEL EXPLANATION

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FTTx Receiver		Work bandwidth		Number of RF output		Output level (Pin=-3dBm)		CWDM		Exterior		Optical connector	
H	FTTH	9	47~1000MHz	1	1ports	22	22dBmV(82dBμV)	NC	Without	A	38×80×22 (mm)	LA	LC/APC
P	FTTP							WD	Build-in CWDM			LP	LC/UPC
B	FTTB							WF	Build-in Filter	B	50×88×22 (mm)	SA	SC/APC
												SP	SC/UPC
										C	59.5×98×24 (mm)		