H9122LG (47~862MHz)

FTTH Digital TV Low Optical Receiver

PRODUCT DESCRIPTION

Guangtai H9122LG, operating bandwidth of 47~ 862MHz, is a suitable digital television FTTH applications, ultra-low optical receiver, Whether the machine is used analog television or digital television, have high reception sensitivity and excellent intermodulation distortion index.. Due to the built-in optical AGC, at high optical power receiver, played limiting output, so H9122LG in the received optical power over a large dynamic range of +2 dBm ~-21dBm, and have excellent properties.

H9122LG for Analog TV, in Pin =-10dBm when, Vo ≥ 82dBμV, CNR ≥ 45dB.

H9122LG for Digital TV, in Pin =-15dBm when, Vo ≥ 83.4dBμV, MER ≥ 36.7dB.

H9122LG for Digital TV, in Pin =-20dBm when, Vo ≥ 73.2dBμV, MER ≥ 29.2dB.

Digital TV FTTH applications, the H9122LG can save a lot of optical fiber amplifier power resources. For operators, can greatly reduce the cost of building the network. Suitable for rural power digital TV, FTTH, triple play of wide application.

H9122LG optical port mode of the following three selection:

H9122LG: operating wavelength 1260~1620nm.A-Type

H9122LG/WD: Built-in CWDM, suitable for single-fiber triple wavelength system, RFTV operating wavelength 1550nm, pass wavelength 1310/1490nm, can conveniently connect the ONU of EPON, GPON.B-Type

H9122LG/WF: built-in 1310/1490nm filter,suitable for single-fiber triple wavelength system, RFTV operating wavelength 1550nm.A-Type

PRODUCT FEATURES

- ▶Extra-low noise(3.8% modulate, -10dBm receive, CNR ≥ 45dB)
- ▶Wide dynamic receiving optical power range: within Pin=-15, MER≥36.7dB
- ▶Applicable GPON, EPON, compatible with any FTTx PON technology
- ▶Can save a large number of optical power resource, greatly reduce the networkconfiguration cost
- ▶Within 47~862MHz bandwidth, all with excellent flatness feature (FL≤±0.75dB)
- ▶Metal case, offer safeguard for optoelectronic sensitive devices
- ▶Low consumption, high performance, high reliability
- ▶Excellent cost performance in area

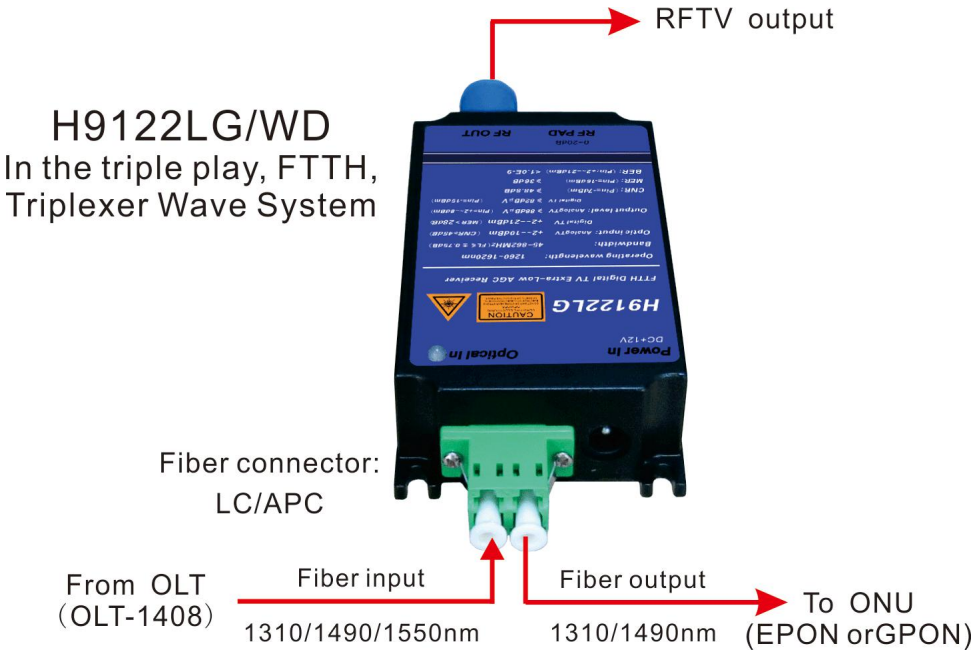
MAIN APPLICATION

- ▶Digital TV FTTH
- ▶Integration of three networks
- ▶FTTH PON

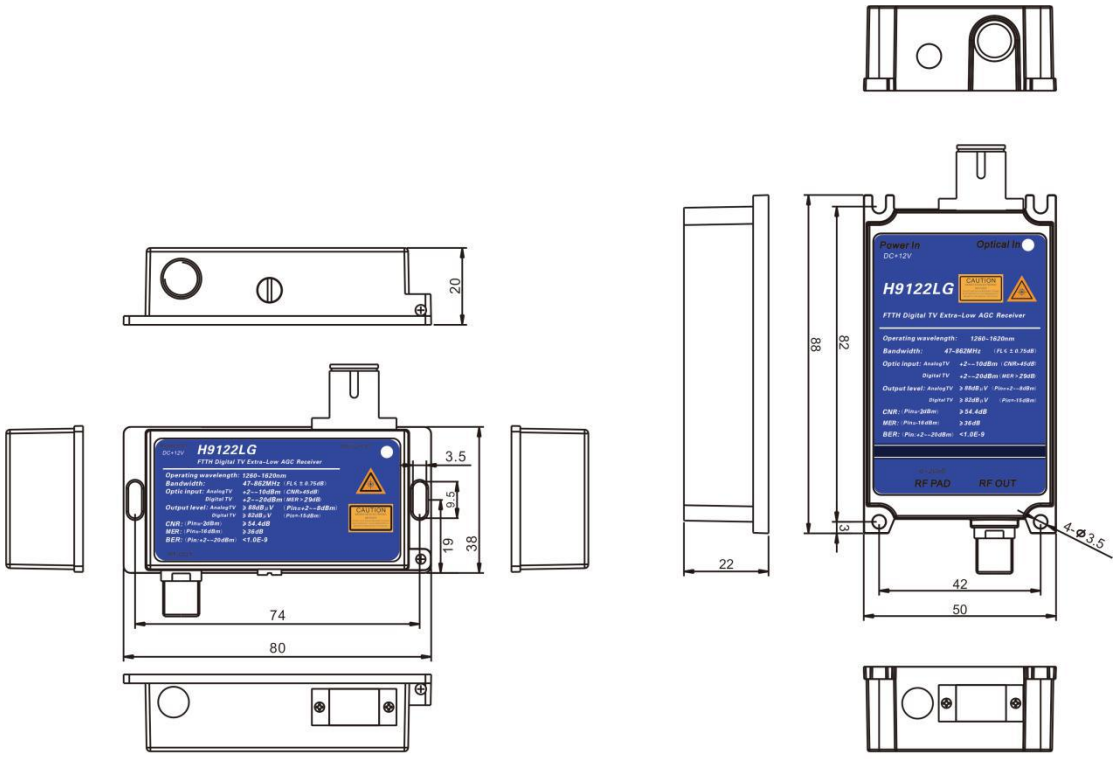
STATUS INDICATION

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

H9122LG/WD THE APPLICATION IN SINGLE-FIBER THREE-WAVELENGTH



DIMENSIONS



A -Type

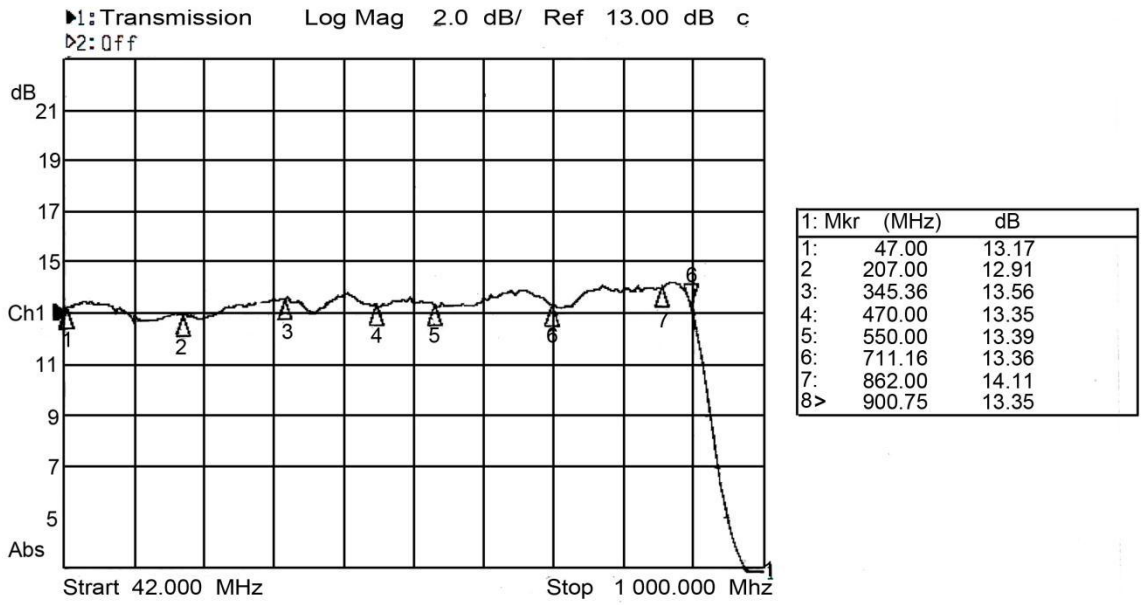
B -Type

TECHNICAL INDEX

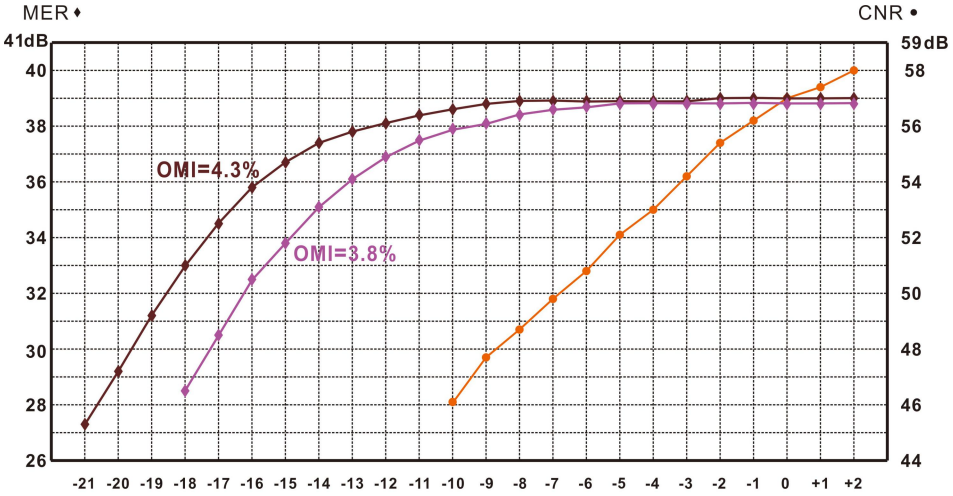
Performance			Index	Supplement
Optic feature	CATV work wavelength	(nm)	1260~1620	H9122LG(A-Type)
			1540~1563	H9122LG/WF, H9122LG/WD(A&B Type)
	Pass wavelength	(nm)	1310,1490	H9122LG/WD (B Type)
	Channel Isolation	(dB)	≥40	1550nm & 1490nm
	Responsivity	(A/W)	≥0.85	1310nm
			≥0.9	1550nm
	Receiving power	(dB)	+2~-10	Analog TV(CNR>43dB)
			+2~-20	Digital TV(MER>29dB)
	Optical return loss	(dB)	≥55	
	Optical fiber connector		SC/APC	H9122LG, H9122LG/WF
			LC/APC	H9122LG/WD
RF feature	Work bandwidth	(MHz)	47~862	
	Flatness	(dB)	≤±0.75	47 ~ 862MHz
	Output level	(dBμV)	>88	Analog TV (Pin=+2.0~-8.0dBm)
			>82	Digital TV (Pin=-15dBm)
	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)	54.4	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=-16.0dBm
			≥29	Pin=-20.0dBm

	BER	(dB)	<1.0E-9	Pin :+2.0~-20dBm
General feature	Power supply	(V)	DC+12V	±1.0V
	Power Consume	(W)	≤5.5	+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 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)	87.0	87.5	88.6	88.7	89.2	88.7	88.7	89.2	89.4	88.7	86.5	84.9	82.6
PAD(dB)	0	0	0	0	0	0	0	0	0	0	0	0	0
CNR(dB)	57.0	56.3	55.9	55.2	54.4	53.2	52.0	51.1	49.8	48.8	47.7	46.7	45.1
CTB(dB)	70.5	70.1	71.9	72.6	74.0	72.7	72.7	73.1	73.3	71.2	72.8	70.2	72.3
CSO(dB)	66.6	69.5	73.3	72.0	70.0	68.7	69.2	71.4	74.2	70.7	65.2	67.9	72.1

DIGITAL TV TEST DATA (PIN=+2.0DBM ~ -20.0DBM)

Pin (dBm)	Vo (dBm)	MER	BER	
			POST	PRE
+2.0	98.4	39.0	<1.0E-9	<1.0E-9
+1.0	99.0	39.0	<1.0E-9	<1.0E-9
+0.0	100.3	39.0	<1.0E-9	<1.0E-9
-1.0	101.2	39.0	<1.0E-9	<1.0E-9
-2.0	101.0	39.0	<1.0E-9	<1.0E-9
-3.0	100.9	38.9	<1.0E-9	<1.0E-9
-4.0	101.3	38.9	<1.0E-9	<1.0E-9
-5.0	100.7	38.9	<1.0E-9	<1.0E-9
-6.0	100.9	38.9	<1.0E-9	<1.0E-9
-7.0	99.6	38.9	<1.0E-9	<1.0E-9
-8.0	97.7	38.9	<1.0E-9	<1.0E-9
-9.0	95.2	38.8	<1.0E-9	<1.0E-9

Pin (dBm)	Vo (dBm)	MER	BER	
			POST	PRE
-10.0	93.3	38.6	<1.0E-9	<1.0E-9
-11.0	91.2	38.4	<1.0E-9	<1.0E-9
-12	89.4	38.1	<1.0E-9	<1.0E-9
-13	87.9	37.8	<1.0E-9	<1.0E-9
-14	85.5	37.4	<1.0E-9	<1.0E-9
-15	83.4	36.7	<1.0E-9	<1.0E-9
-16	81.4	35.8	<1.0E-9	<1.0E-9
-17	79.3	34.5	<1.0E-9	<1.0E-9
-18	77.7	33.0	<1.0E-9	<1.0E-9
-19	75.4	31.2	<1.0E-9	<1.0E-9
-20	73.2	29.2	<1.0E-9	<1.0E-9

PRODUCT SERIES

Model	Input wavelength	CATV operating wavelength	Data pass wavelength	Fiber connector	Form
H9122LG	1310 or 1550nm	1260~1620nm	-	SC/APC	A - Type
H9122LG/WF	1310, 1490 / 1550nm	1540~1563nm	-	SC/APC	
H9122LG/WD	1310, 1490 / 1550nm	1540~1563nm	1310/1490nm	LC/APC	B - Type

MODEL EXPLANATION

H 9 1 22 LG / □□ - □ - □□

FTTx receiver		Work bandwidth		RF output ports		Output level(Pin=-15dBm)		LG	CWDM		Exterior		Optical Connector	
H	FTTH	9	47~862MHz	1	1port	22	22dBmV(82dBμV)	Ultra-low Optical receiver AGC	NC	Without	A	38×80×22 mm	LA	LC/APC
P	FTTP								WD	Built-in WDM			LP	LC/UPC
B	FTTB								WF	Built-in Filter	B	50×88×22 mm	SA	SC/APC
													SP	SC/UPC