

SFH9122

FTTH 47~862MHz CATV optical receiver



Product description

SFH9122 product series, 47~862MHz operate bandwidth, output level $V_o=82\text{dB}\mu\text{V}$ ($P_{in}=-2\text{dBm}$), suitable for FTTH optical fiber access network, which is a low power consumption, high performance, and excellent cost performance RFTV broadcast network ONU(Optical network unit).

This series product adopts high sensitivity receiving tube and Huatai special low noise matching circuit. Under 3.8% modulation, when transmitting in full channels and with receiving power of -10dBm, the CNR can still reach high index of 45dB. Therefore, if adopting SFH9122, it is only need very low optical power to reach 45dB CNR required by the user.

SFH9122 optical port have following three modes:

SFH9122/NC: RFTV operates in 1210~1600nm wavelength.

SFH9122/WF: built-in channel filter, RFTV operating in 1550nm wavelength.

SFH9122/WD: built-in CWDM, RFTV operating in 1550nm wavelength, via 1310/1490nm wavelength, (casemate EPON, GPON ONU).

Product feature

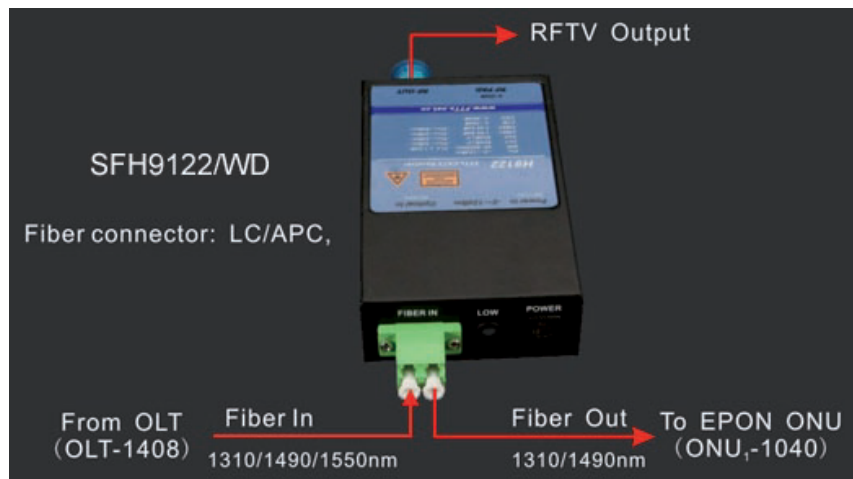
- Extra-low noise (3.8% modulate, -10dBm receive, $\text{CNR} \geq 45\text{dB}$)
- All receiving optical power in the range of +3dBm to -12dBm has good linearity
- In the range of 47~862MHz, all have good flatness ($\text{FL} \leq \pm 1.0\text{dB}$)
- Metal shell, supply safeguards to opto-electrical sensing device
- High output level can supply for many users
- Low power consumption, high cost performance

Main application

- FTTH
- FTTP, FTTO



Principle



Status indicator

- Input optical power status indicator :

$\leq -13\text{dBm}$	LED off
+3dBm ~ -12dBm	Green
+3dBm	Red

Model explanation

SFH9122 / [CWDM] – [Connector]

Product type	SF	Analogue optical
FTTx Receiver	H	FTTH
	P	FTTP
	B	FTTB
Work bandwidth	9	47~862MHz
Number of RF outputs	1	1 port
Output level (Pin=-2dBm)	22	22dBmV (82dBμV)
CWDM	NC	Without
	WD	Build-in CWDM
	WF	Build-in Filter
Connector	SA	SA/APC
	LA	LA/APC

Technical index

Performance			Index	Supplement
Optic feature	CATV work wavelength	(nm)	1250~1600	SFH9122/NC
			1540~1560	SFH9122/WF, SFH9122/WD
	Input wavelength	(nm)	1310, 1490/1550	
	Pass wavelength	(nm)	1310, 1490	
	Channel Isolation	(dB)	≥40	1550 & 1490nm
	Responsivity	(A/W)	≥0.85	1310nm
			≥0.9	1550nm
	Receiving power	(dBm)	+3~-12	
	Return loss	(dB)	≥55	
Optical fiber connector		SC/APC	SFH9122/WD: LC/APC	
RF feature	Work bandwidth	(MHz)	47-862	
	Flatness	(dB)	≤±1.0	47~862MHz
	Output level	(dBμV)	92	Pin: +3dBm
			82	Pin: -2dBm
	Output level adjust	(dB)	0~18	MGC
	Return loss	(dB)	>14	
	Input impedance	(Ω)	75	
	Output port number	(dB)	1	
RF tie-in	(dB)	F-Female		
Link feature	Test channel		PAL-D/59CH	NTSC/80CH
	OMI	(%)	3.8	
	CNR1	(dB)	≥56.6	Pin: -2dBm
	CNR2	(dB)	≥48.5	Pin: -8dBm
	CTB	(dB)	≤-70	Pin: -2dBm
	CSO	(dB)	≤-66	Pin: -2dBm
General feature	HUM	(dB)	≤-60	
	Power supply	(V)	+12VDC	±1.0V
	Power Consume	(W)	≤2	+12VC, 100mA
	Work temp.	(°C)	-20~50	
	Storage temp.	(°C)	-40~85	
	Operating relative humidity	(%)	5~95	
Size (W)x(D)x(H)			2.3×3.9×0.9 (") 59×98×23 (mm)	

Test Data

Pin(dBm)	+3	+2	+1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10
Vo(dBμV)	92.2	90.2	88.2	86.2	84.2	82.2	80.2	78.2	76.2	74.2	72.2	70.2	68.2	66.2
CNR(dB)	60	59	58.6	57.7	56.7	55.6	54.4	53.2	51.9	50.8	49.3	48.5	46.4	45.2
CTB(dB)	66	68	70	70	70	70	72	70	68	68	66	65	65	64
CSO(dB)	65	65	65	65	65	66	68	66	65	65	65	63	63	62

Remark: 1. Test condition: PAL-D59CH, OMI=3.8%. 2. Built-in PAD is 0dB attenuate. 3. Test sample: SFH9122

Product series

Model	Input wavelength	Operating wavelength	Pass wavelength	Fiber connector
SFH9122/NC	1310/1550nm	1250~1600nm	-	SC/APC
SFH9122/WD	1310, 1490/1550nm	1540~1560nm	1310~1490nm	LC/APC
SFH9122/WF	1310, 1490/1550nm	1540~1560nm	-	SC/APC