



CSP1040 Four output FTTH Optical Receiver

Summary

CSP1040 4 output ports, each port output level $\geq 88\text{dB } \mu\text{V}$ when the receiving optical power is -5dBm , is mainly used in FTTH, FTTN, FTTC. As RFTV broadcast network's RX unit, it is a kind of high index, low power consumption, and high cost performance RFTV optical receiver.

This series of product adopts high sensitivity receiving tube and 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 CSP1040, it is only need very low optical power to reach 45dB CNR required by the user.

The product builds-in RF interstage gain adjustment. All receiving optical power in the range of $+3\text{dBm}$ to -12dBm has good linearity. According to different receiving optical power, the user can choose high CNR and suitable output level.

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Features

- Very low noise(3.8% modulation, -10dBm receive, $\text{CNR} \geq 45\text{dB}$).
- Receive optic power in the range of $+3\text{dBm}$ to -12dBm , all have good linearity.
- Inside 47~862MHz, all have good flatness property($\text{FL} \leq \pm 1.0\text{dB}$).
- Built-in interstage gain adjustment, can option high CNR and suitable output level according to different optic power.
- Four way high level output, can supply service for more users.
- Zinc die-casting all-in-one metal shell, supply safeguards to opto-electrical sensing device
- Low power consumption, high cost performance

Technical index

Performance		Index	Supplement
Optic	Input wavelength	(nm) 1310, 1490/1550	

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feature	Operation wavelength	(nm)	1260~1600	CSP1040
			1540~1560	CSP1040/WF, CSP1040/WD
	Pass wavelength	(nm)	1310, 1490	CSP1040/WD
	Receiving power	(dB)	+3 ~ -12	
	Responsibility	(A/W)	1310nm ≥ 0.85	
			1550nm ≥ 0.9	
	Channel Isolation	(dB)	≥ 40	1550 & 1490nm, CSP1040/WF, CSP1040/WD
	Optical return loss	(dB)	≥ 55	
Optical fiber connector		SC/APC	CSP1040/WD: LC/APC	
RF feature	Work bandwidth	(MHz)	47 ~ 862	
	Flatness	(dB)	$\leq \pm 1.0$	
	Output level	(dB μ V)	88	Pin: -5dBm
	Output level adjust	(dB)	0 ~ 18	MGC
	Return loss	(dB)	≥ 12	47 ~ 862MHz
	Output impedance	(Ω)	75	
	Output port number		4	
	RF tie-in		F-Female	
Link feature	Test channel	CH	PAL-D/59CH	NTSC/80CH
	OMI	(%)	3.8	
	CNR1	(dB)	56.6	Pin: -2dBm
	CNR2	(dB)	48.5	Pin: -8dBm
	CTB	(dB)	≤ -63	$V_o \leq 88\text{dB}\mu\text{V}$
	CSO	(dB)	≤ -63	$V_o \leq 88\text{dB}\mu\text{V}$
	HUM	(dB)	≤ -60	
General feature	Power supply	(V)	+12VDC	$\pm 1.0\text{V}$
	Power Consume	(W)	≤ 3	+12VC, 190mA

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Work temp	(°C)	-20 ~ +50	
Storage temp	(°C)	-40 ~ 85	
Work relative temp	(%)	5 ~ 59	
Size	(mm)	118×73×29	(W)×(D)×(H)

Test data

Diagram 1: Built-in PAD is 0dB attenuate:

Pin(dBm)	-5	-6	-7	-8	-9	-10	-11
Vo(dBμV)	88	86	84	82	80	78	76
CNR(dB)	52	51	49.5	48.5	47	45	44.3
CTB(dB)	63	66	68	68	70	68	67
CSO(dB)	72	72	74	74	69	68	67

Diagram 2: Built-in PAD is 7dB attenuate:

Pin(dBm)	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11
Vo(dBμV)	89	87	85	83	81	79	77	75	73	71	69
CNR(dB)	57	56	55	54	53	51.5	49.5	48	47	45	44
CTB(dB)	62	63	66	66	68	68	68	68	68	68	64
CSO(dB)	70	72	75	74	73	70	70	68	66	65	62

Remark: 1. Test condition: PAL-D59CH, OMI=3.8%

2. Vo is output level of each port

3. Test sample: CSP1040

Product series

Model	Input wavelength	Operating wavelength	Pass wavelength	Fiber connector
CSP1040	1310/1550nm	1260~1600nm		SC/APC
CSP1040/WD	1310, 1490/1550nm	1540~1560nm	1310~1490nm	LC/APC
CSP1040/WF	1310, 1490/1550nm	1540~1560nm		SC/APC

