

UNYx

FWR-1000GSD
FTTH Filter Optical Receiver



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1. Introduction

Fiber to the home broadband access is the ultimate development goal, FTTH filtering optical receiver FWR-1000GSD is the target terminal products for this goal. It selects low optical power receiving and RF technique which can achieve the requirement of FTTH that CATV & xPON optical network receiving 1550nm wavelength in CATV signal., FWR-1000GSD is provided with the optical power receiving monitoring indicator LED on the panel($\geq -15\text{dBm}$).“FWR-1000GSD”means the function of filtering.

2. Main Technical Parameter

	Item	Unit	FWR-1000GSD
Optical characteristic	input wavelength	nm	1540~1560
	responsivity	(A/W)	$\geq 0.85/\geq 0.9$
	receive power range	dB	+2~-15
	reflection loss	dB	≥ 50
	fiber linker	/	SC/APC
RF characteristic	bandwidth/flatness	MHz/dB	45~1000
	output level	dBuv	AGC: -2~-12dBm/82
	reflection loss	dB	≥ 14 (characteristic impedance75 Ω)
	RF output impedance	Ω	75(RF Output Interface Metric F)
	MER (Closed Equalization)	dB	$\geq 25(64\text{QAM})$ $\geq 31(256\text{QAM})$
	MER (Open Equalization)	dB	$\geq 32(64\text{QAM})$ $\geq 34(256\text{QAM})$
	Bit Error Rate(BER)	/	$\leq 1 \times 10^{-4}$
	CNR/CTB/CSO	dB	$\geq 43/\geq 54/\geq 54(-9\text{dBm/Nominal Level})$
Others	Power Supply/Consumption	V/W	External AC90~250V→DC5/ ≤ 2
	Working/Storage Temperature	$^{\circ}\text{C}$	-25~55 / -40~75
	Working/Storage Humidity	%	5~90(No Condensation)
	size	mm	90×60×22

3. Direction for Use

3.1 Power Input

FWR-1000GSD is the external power supply input port, First should be the DC+5V external voltage stabilizer output line connected to the machine POWER IN, then put DC+5V external manual switch insert 100/240 V, DC5V Face posted power light, show Power part is regular work.

3.2 Optical Input

1540-1560nm CATV optical signal reception, clean the end face by alcohol cotton ball before connection, when optical signal is input, and the optical receiving power range is at +2~-15dBm, the Laser indicator in the surface turns from red to green, shows that the photoelectric part is working normally; when the optical receiving power is >+2dBm, the Laser indicator turns yellow, shows the input optical power too high alarm, when the optical power <-15dBm, the Laser indicator turns red, shows the under-optical power alarm. PON port is connected to the ONU. When connecting, pay attention to cleaning the end of the patch cord, the insertion loss should be ≤ 1 dB.

3.3 RF Output Level Adjustment : CATV: it's the RF output port, optical control AGC. When the optical input signal is input at -12~-2dBm, RF constant output at 82dBuV output(1.5dB). When the optical input signal is less than -15dBm, the RF output level also decreases. The relationship is that the optical signal drops by 1dB, and the RF output drops by 2dB; however, the output level increases due to the excessive modulation of the pre-stage optical transmitter, otherwise it is smaller, the output level error is $\pm 2\sim 3$ dB. The output level of the unit is the analog level, the digital level field strength meter measures 8dB, and the spectrum analyzer measures 10dB; when optical receiving power is > -2dBm, the RF output level will also increase. The relationship is that the optical signal rises by 1dB and the RF output level rises by 2dB. This level will increase and meantime the MER index decreases. It is recommended that the optical receiving power should be designed within the optical control AGC range to prevent the optical receiving power from being too high to reduce the CTB/CSO index, and the optical receiving power is too small to reduce the CNR/MER index, and affect normal reception of CATV signals.

4. Install & Test Attentions

4.1 This device is indoor structure and should not be used in places that are easily invaded by rainwater; it should have proper space in the indoor box to heat dissipation; the shielding net of the output cable must be grounded, and the grounding resistance should be less than 4 Ω .

4.2 Patch cord input and cable output must be reserved for a certain length to avoid accidents. Please do not remove the seal if optical interface not to use. It's equipped with: IN SC/APC. During connection, better to apply same adapters, do not apply different types.

4.3 RF output is directly connected to the user branch or distributor. The branch and distributor output null terminals must be connected with a 75 Ω dummy load. Otherwise, the set-top box will cause mosaic due to the input impedance mismatch.

5. Accessory: 1. Outlay Power Supply AC90~250V / DC5V 500mA 1PCS