



XM01-AFA0, XM01-AFA1, XM01-AFA2 FTTH Optical Receiver (Pin=-16 dBm, Vo≥64 dBμV, MER≥35 dB) 47~862 MHz

1.0 PRODUCT DESCRIPTION

XenOpt XM01-AFAx the operating bandwidth of 47 ~ 862 MHz, is a low power, high performance, cost effective triple play, FTTH CATV optical receiver. Products with high sensitivity optical receiver tube and XenOpt special low noise matching circuit.

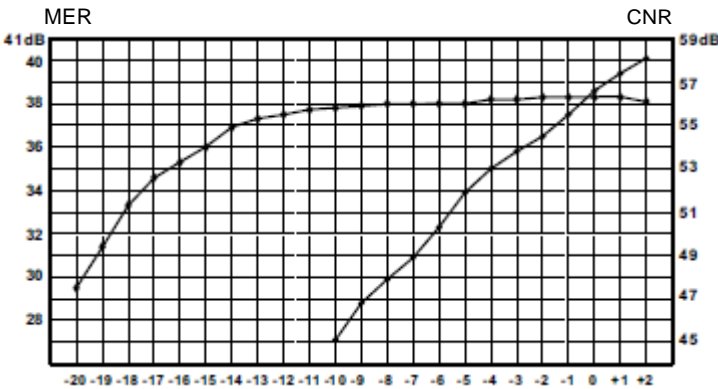
XM01-AFA for Analog TV, in Pin=-10 dBm, when Vo≥69 dBμV, CNR ≥ 45 dB
 XM01-AFA for Digital TV, in Pin=-16 dBm, when Vo≥64 dBμV, MER ≥ 35 dB
 XM01-AFA for Digital TV, in Pin=-20 dBm, when Vo≥56 dBμV, MER ≥ 29 dB
 Triple play, fiber to the home, using the XM01-AFAx can have a lot of optical fiber amplifier power resources. Operators can greatly reduce the cost of building the network. XM01-AFAx port modes come with the following three types optional:

- XM01-AFA1: operating wavelength 1260~1620 nm
- XM01-AFA0: built-in CWDM suitable for single-fiber triple wavelength system, RFTV, operating wavelength 1550 nm, passwavelength 1310/1490 nm, can conveniently connect the ONU of EPON, GPON.
- XM01-AFA2: built-in 1310/1490 filter, suitable for single-fiber triple wavelength system, RFTV operating wavelength 1550 nm

2.0 PRODUCT FEATURE

1. Extra low noise (3,8% modulate, -10 dBm receive, CNR ≥ 45 dB)
2. Wide dynamic receiving optical power range: within Pin=-16, MER ≥ 35 dB
3. Can save a large number of optical power resource, greatly reduce the network configuration cost.
4. In the range of 47~862 MHz, all have good flatness (FL ± ±0,75 dB)
5. Metal shell, supply safeguards to opto-electrical sensing device
6. High level output can supply for many users
7. Low power consumption, high cost performance

5.0 CNR, MER DEGRADATION TABLE



Note: 1. CNR test condition: 59CH PAL-D, OMI=3.8%
 2. Digital TV test signal: The original signal MER=35.3dB, BER<1.0E-9 Tx Input Level: 87dBμV

6.0 PRODUCT SERIES

Model	Input wavelength	CATV Operating wavelength	Data pass wavelength	Fiber connector
XM01-AFA0	1310, 1490/1550nm	1540~1563nm	1310/1490nm	SC/APC
XM01-AFA1	1310, 1490/1550nm	1540~1563nm	1310/1490nm	LC/APC
XM01-AFA2	1310, 1490/1550nm	1540~1563nm	1310/1490nm	Custom

7.0 MODEL EXPLANATION

- XM01-AFA0 – SC/APC size (mm) 59,5 x 98 x 24
- XM01-AFA1 – SC/APC size (mm) 50 x 88 x 22
- XM01-AFA2 – Custom

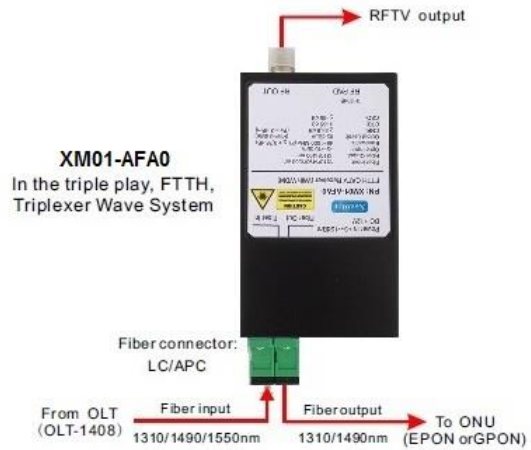
8.0 NOTE

1. The power adapter for this equipment: Input 220V, output DC 12 V (0.6A)
2. Keep the optical connector clean, the bad link will cause too low RF output level
3. The built-in RF adjustable attenuator (PAD) of equipment can debug suitable level for system users. User should not adjust by themselves, to avoid the device damage.

9.0 TEST DATA (Pin=+2.0dBm~-20dBm)

Remark: 1. Test signal: MER 38,0 (dB), BER<1,0E-9
 2. Channel Load: Digital TV 32 QAM

XM01-AFAx-170105152400



3.0 MAIN APPLICATION

1. CATV FTTH
2. Integration of three networks
3. FTTH PON

4.0 TECHNICAL INDEX

Optic feature	Unit	Index	Supplement
CATV Work wavelength	(nm)	1260~1620	H9122
Pass wavelength	(nm)	1540~1563	H9122/WF, H9122/WD
Channel Isolation	(dB)	≥40	1550nm & 1490nm
Responsibility	(A/W)	≥0.85	1310nm
		≥0.9	1550nm
Receiving power	(dB)	+2~-10	Analog TV (CNR>45dB)
		+2~-20	Digital TV (MER>28dB)
Optical return loss	(dB)	≥55	
Optical fiber connector		SC/APC	H9122, H9122/WF
		LC/APC	H9122/WD
RF Feature			
Work bandwidth	(MHz)	47~862	
Flatness	(dB)	±0.75	47~862MHz
Output level	(dBμV)	>82	Analog TV (Pin=-3dBm)
		>64	Digital TV (Pin=-16dBm)
Output level adjust	(dB)	0~18	MGC
Return loss	(dB)	≥14	47~862MHz
Output impedance	(nm)	75	
Output port number		1	
RF tie-in		F-Female	F-male optional
Analog TV Link feature			
Test channel	(CH)	59CH(PAL-D)	
OMI	(%)	3.8	
CNR1	(dB)	54.6	Pin=-2dBm
CNR2	(dB)	48.9	Pin=-7dBm
CTB	(dB)	≤-65	Pin: 0~-10dBm
CSO	(dB)	≤-65	Pin: 0~-10dBm
Digital TV Link feature			
MER	(dB)	≥37	Pin: +2~-13.0dBm
		≥36	Pin=-15.0dBm
		≥29	Pin=-20.0dBm
BER		<1.0E-9	Pin: +2~-20.0dBm
General feature			
Power supply	(V)	DC+12V	±1.0V
Power Consume	(W)	≤3	+12VDC, 210mA
Work temp	(°C)	-20~+50	
Storage temp	(°C)	-40~85	
Work relative temp	(%)	5~95	
Size (W)×(D)×(H)	(mm)	50×88×22	A Type
		59.5×98×23	B Type

Pin (dBm)	Vo (dBμV)	MER	BER		Pin (dBm)	Vo (dBμV)	MER	BER	
			POST	PER				POST	PER
+2.0	100.6	38.1	<1.0E-9	<1.0E-9	-10.0	78.1	37.8	<1.0E-9	<1.0E-9
+1.0	98.0	38.3	<1.0E-9	<1.0E-9	-11.0	74.2	37.7	<1.0E-9	<1.0E-9
+0.0	96.1	38.3	<1.0E-9	<1.0E-9	-12.0	72.0	37.5	<1.0E-9	<1.0E-9
-1.0	94.0	38.3	<1.0E-9	<1.0E-9	-13.0	70.0	37.3	<1.0E-9	<1.0E-9
-2.0	92.1	38.3	<1.0E-9	<1.0E-9	-14.0	68.1	36.9	<1.0E-9	<1.0E-9
-3.0	90.1	38.2	<1.0E-9	<1.0E-9	-15.0	66.3	36.0	<1.0E-9	<1.0E-9
-4.0	87.9	38.1	<1.0E-9	<1.0E-9	-16.0	64.0	35.3	<1.0E-9	<1.0E-9
-5.0	85.7	38.0	<1.0E-9	<1.0E-9	-17.0	61.5	34.6	<1.0E-9	<1.0E-9
-6.0	83.5	38.0	<1.0E-9	<1.0E-9	-18.0	60.4	33.3	<1.0E-9	<1.0E-9
-7.0	81.2	38.0	<1.0E-9	<1.0E-9	-19.0	57.7	31.4	<1.0E-9	<1.0E-9
-8.0	79.9	38.0	<1.0E-9	<1.0E-9	-20.0	56.6	29.5	<1.0E-9	2.2E-9
-9.0	78.1	37.9	<1.0E-9	<1.0E-9					