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MX-RFOL-XGSPON-AGC

Mini Optical Receiver with PON pass through port

The Maxcom MX-RFOL-XGSPON-AGC series CATV optical receiver supports a bandwidth of 47~1002MHz (optional 1.2 GHz). Works well for Residential, Business, Hospitality and Government applications. As an RF/ Cable TV optical receiver unit, it provides a high index and low power consumption with impressive performance at an exceptionally low cost.

The Maxcom MX-RFOL-XGSPON-AGC series employs a high sensitivity receiving tube and special low noise matching circuit. With a 3.8% OMI, full channel bandwidth, at -8dBm optical receive power, the CNR will continue to reach a high index 45dB. The MX-RFOL-XGSPON-AGC is equipped with a convenient LED display light that will indicate the optical input power between -12 and +2 dBm. Automatic Gain Control (AGC) provides an average RF output of +17 dBmV

The PON Pass through port supports both GPON and XG(S)PON RF Overlays. PON ports pass GPON wavelengths of 1310 and 1490nm, as well as XG(S)PON wavelengths of 1270 and 1577nm.

The Maxcom MX-RFOL-XGSPON-AGC series provides very flexible powering options by offering standard power adapters and remote powering options for instances where power may not be available at the receiver location.

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MHz MEGA HERTZ
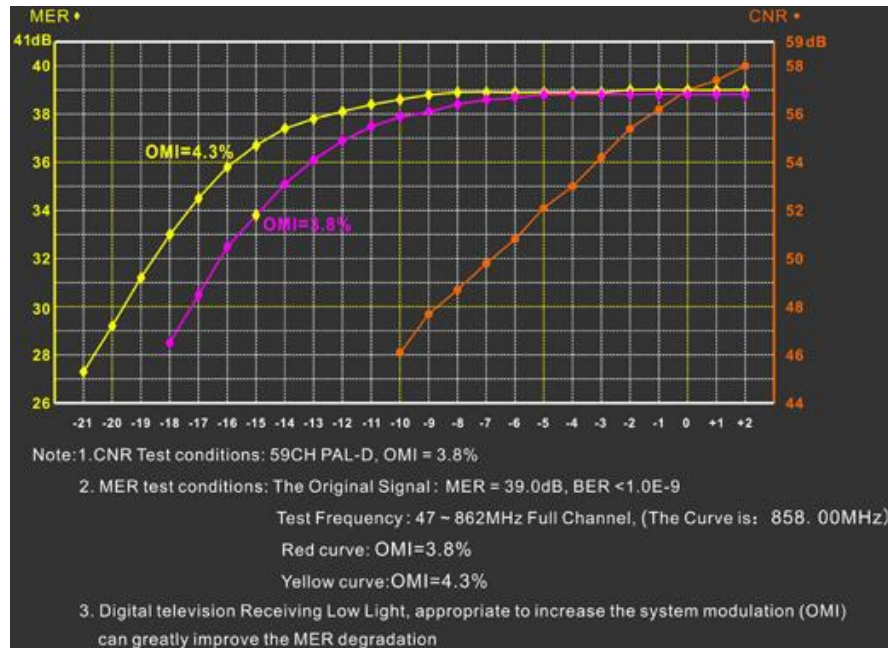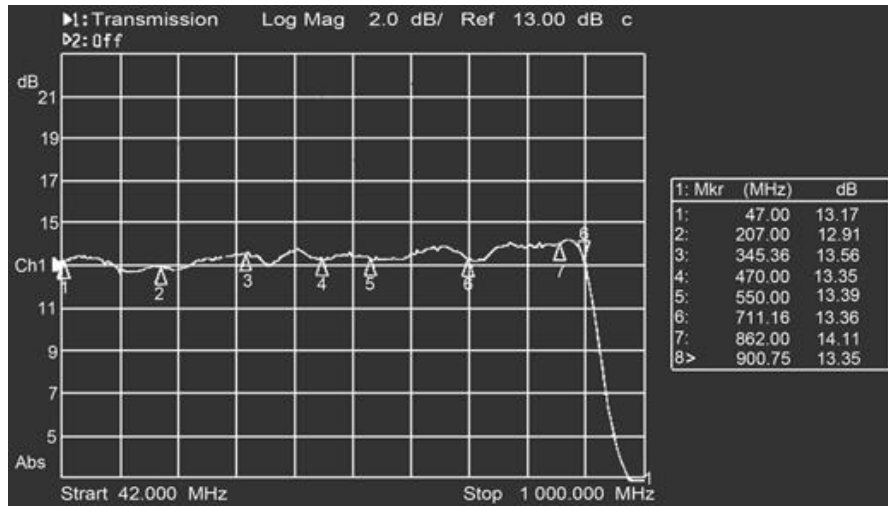
DIGITAL TV TEST DATA （Pin=+2.0dBm~-12.0dBm ）

Pin (dBm)	Vo (dBmV)	MER (dB)	BER	
			POST	PRE
2	17.4	35.9	<1.0E-9	<1.0E-9
0	17.3	35.9	<1.0E-9	<1.0E-9
-2	17.6	34.6	<1.0E-9	<1.0E-9
-4	16.9	34.1	<1.0E-9	<1.0E-9
-6	18.1	33.4	<1.0E-9	<1.0E-9
-8	17.5	35.5	<1.0E-9	<1.0E-9
-10	16.8	32.9	<1.0E-9	<1.0E-9
-12	17.3	31.6	<1.0E-9	<1.0E-9

Note- Test condition：Levels may vary based on source OMI and other TX factors

1. Test Signal: MER:37dB, BER:<1.0E-9, QAM64 62CH

2. TX Input level:18dBmV.

3.The Test Frequency:131~862MHz (REF CH 15)

TEST DATA

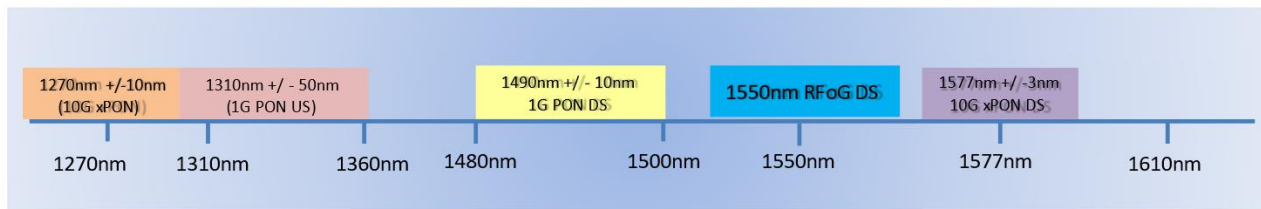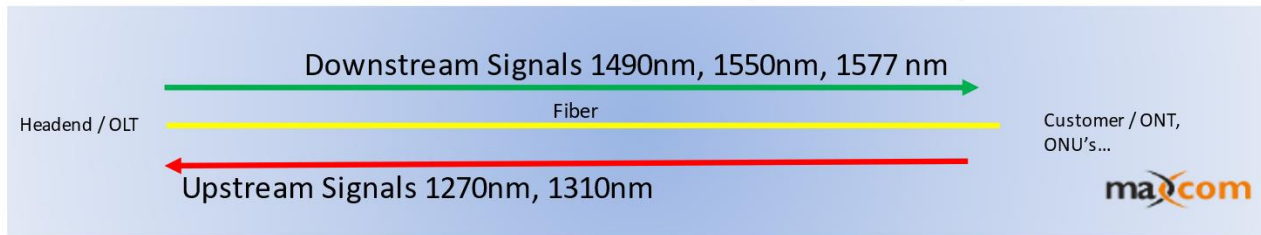| Pin(dBm)	+2	0	-2	-4	-6	-8	-10
Vo(dBmV)	17.4	17.3	17.6	16.9	18.1	17.5	16.8
CNR(dB)	59	57.7	55.6	53.2	50.8	48.5	45.2
CTB(dB)	68	70	70	70	68	65	64
CSO(dB)	65	65	66	66	65	63	62

Remarks:1. Test condition: NTSC-D79CH, OMI=3.8%
2. Built-in PAD is 0dB attenuate.
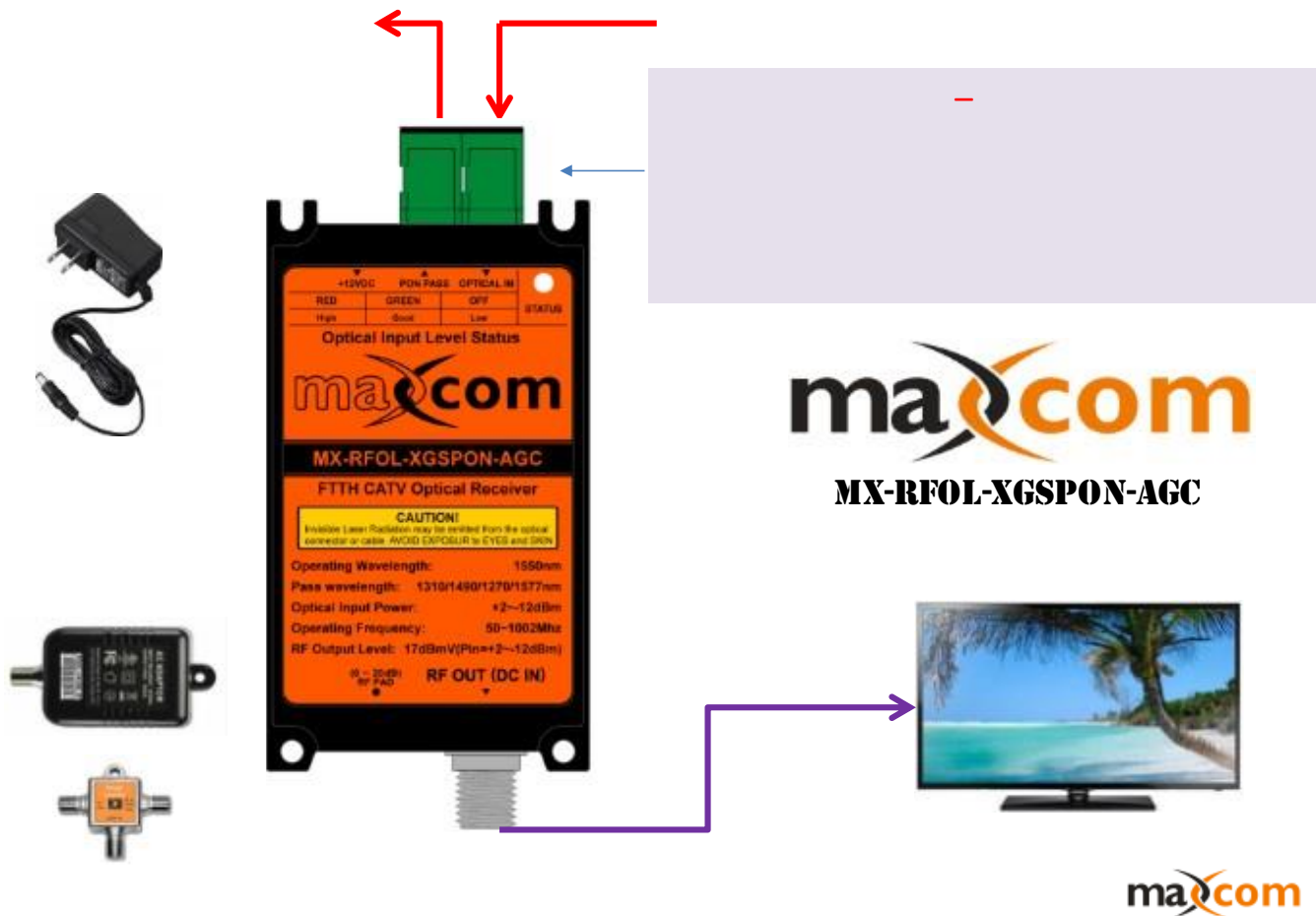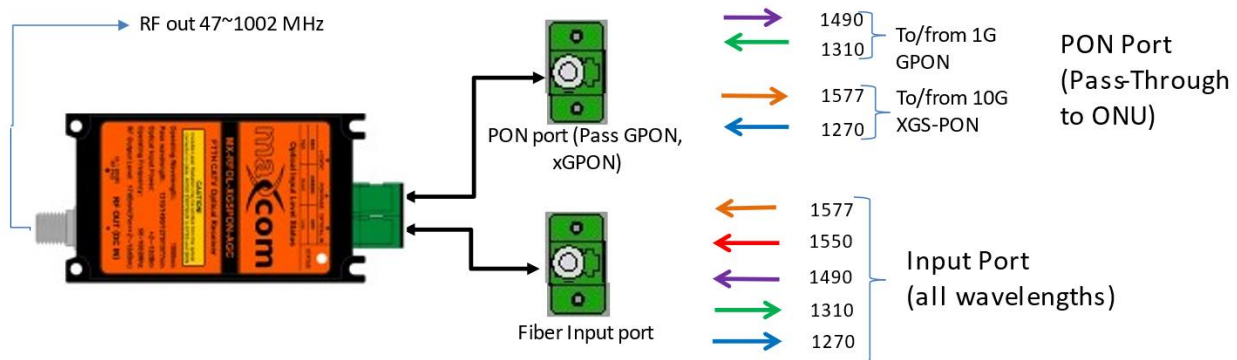3. Test sample: MX-RFOL-XGSPON

TECHNICAL INDEX

	Performance		Index	Supplement
Optic feature	Input wavelength	(nm)	1550	1540nm ~ 1560nm
	Pass wavelength 1	(nm)	1310 & 1490nm	GPON wavelengths
	Pass wavelength 2	(nm)	1270 & 1577nm	XG(S)PON wavelengths
	Insertion loss of PON port	(dB)	< .81	Typ < .75 on PON wavelength.
	Channel Isolation	(dB)	≥40	1550 & 1490nm
	Responsivity	(A/W)	≥0.9	1550nm
	Receiving power	(dBm)	+3 ~ -12 Typical	(+2~-10 AGC range)*best performance (+2~-18 Digital)*performance degraded if less than -12 dBm
	Optical return loss	(dB)	≥55	
	Optical fiber connector		SC/APC	
RF feature	Work bandwidth	(MHz)	47 ~ 1002	Optional to 1.2 GHz
	Flatness	(dB)	≤±1.0	
	Output level (Vo1)	(dBmV)	17	Pin: +2dBm
	Output level (Vo2)	(dBmV)	17	Pin: -2dBm
	Output level adjust	(dB)	0 ~ 18	Built-in Manual RF PAD adjust
	Return loss	(dB)	≥12	47 ~ 1002 MHz
	Output impedance	(Ω)	75	
	Output port number		1	
	RF tie-in		F-Female	
Link feature	Test channel	CH	59CH (PAL-D)	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
	HUM	(dB)	≤-60	
General feature	Power supply	(V)	+12VDC	±1.0V
	Power Consume	(W)	≤2	+12VC, 200mA
	Operating temperature	(℃)	-40 ~ +65	
	Storage temperature	(℃)	-40 ~ 85	
	Working relative humidity	(%)	5 ~ 90	
	Size*	(mm) inch	59×98×23 MM 2 5/16 x 3 7/8 x 15/16"	(W)×(D)×(H) *Not including F port or fiber connector

Levels may vary based on source OMI and other TX factors

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WAVELENGTH DETAIL for GPON, xGPON, and RF Overlay:

Downstream Signals 1490nm, 1550nm, 1577 nm

Headend / OLT   Fiber   Customer / ONT, ONU's...

Upstream Signals 1270nm, 1310nm

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| 1270nm +/-10nm (10G xPON) | 1310nm +/- 50nm (1G PON US) | 1490nm +/- 10nm 1G PON DS | 1550nm RFoG DS | 1577nm +/-3nm 10G xPON DS |

1270nm   1310nm   1360nm   1480nm   1500nm   1550nm   1577nm   1610nm

Built-in WDM

RF out 47~1002 MHz

PON port (Pass GPON, xGPON)

Fiber Input port

1490 → / 1310 ←   To/from 1G GPON   **PON Port (Pass-Through to ONU)**

1577 → / 1270 ←   To/from 10G XGS-PON

1577 ←
1550 ←
1490 ←
1310 →
1270 →

Input Port (all wavelengths)

+12VDC	PON PASS	OPTICAL IN	
RED	GREEN	OFF	STATUS
High	Good	Low	

Optical Input Level Status

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MX-RFOL-XGSPON-AGC

FTTH CATV Optical Receiver

CAUTION!
Invisible Laser Radiation may be emitted from the optical connector or cable. AVOID EXPOSURE to EYES and SKIN

Operating Wavelength: 1550nm
Pass wavelength: 1310/1490/1270/1577nm
Optical Input Power: +2~-12dBm
Operating Frequency: 50~1002Mhz
RF Output Level: 17dBmV(Pin+2~-12dBm)

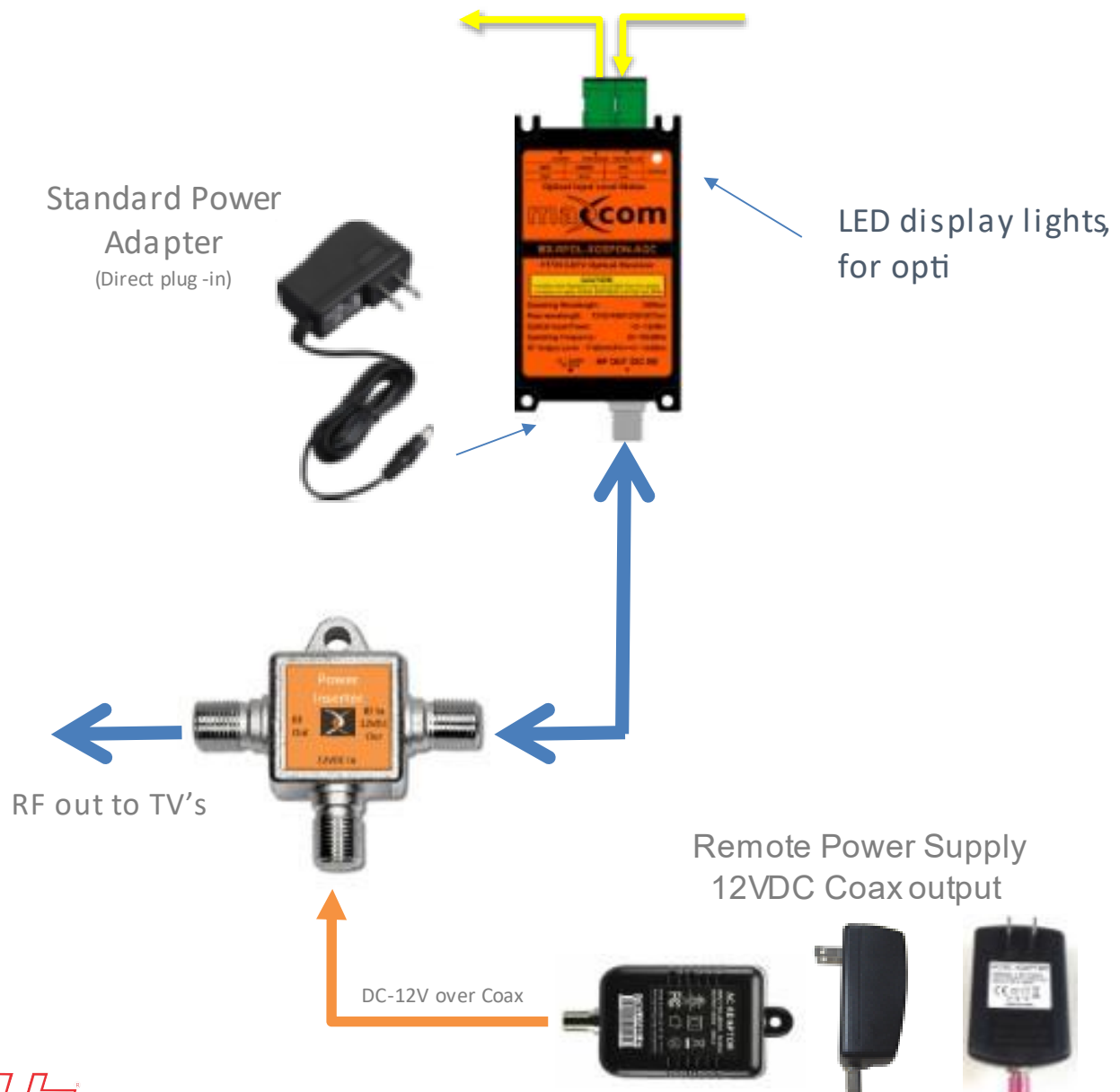(0 ~ 20dB) RF PAD   **RF OUT (DC IN)**

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Functional Diagram of MX-RFOL-XGSPON-AGC Receiver

MX-RFOL-XGSPON-AGC

New Flexible RF Overlay Fiber Receiver with GPON and XG(S)PON WDM Port

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Standard Power Adapter
(Direct plug-in)

LED display lights, for opti

RF out to TV's

Remote Power Supply 12VDC Coax output

DC-12V over Coax

Provided by: Mega Hertz | 800-883-8839 | info@go2mhz.com | www.go2mhz.com

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https://www.go2mhz.com/product/mini-optical-receiver-with-pon/