V7

The Maxcom MX700-X10 series mini optical nodes are ideal for use in fiber to the premise applications. Supports extended forward bandwidth up to 1.2 GHz. An excellent platform for delivering upstream and downstream DOCSIS, voice, video, and high-speed data service over FTTX applications. They are designed to be compliant with industry standards to terminate an RF over Glass (RFoG) communications network. Compatible with GPON/EPON, 10G EPON, and XG(S)PON transmission modes, they include a built-in optical MUX for pass-through of the PON downstream and upstream for both 10G PON wavelengths of 1270nm and 1577nm, in addition to E/G-PON 1310 and 1490nm wavelengths. The node is compatible with both 1G PON and 10G PON. It may be used to overlay RFoG based services on to an existing PON network or expand an RFoG network with services delivered with 10G PON transmission modes. The device uses a single fiber and receives downstream signals at 1550nm and uses a 1610nm Isolated DFB return transmitter. Built with maximum toughness and the best warranty in its class.

ONU Features

1. CATV Bi-directional single fiber port, w/ additional port for PON pass through
2. Internal WDM to pass PON wavelengths of 1270nm and 1577nm and 1310nm and 1490nm
3. Compatible with both 1G PON and 10G PON
4. Continuous mode laser operation – Isolated DFB Lasers improve stability (burst mode optional)
5. Superior proven technologies for both RF amplification and optical components
6. AGC for consistent RF level outputs
7. Automatic Optical Control is designed to reduce return noise effectively.
8. Low power consumption, compact in size, built tough, with Maximum reliability
9. Conforms to SCTE 174 standards

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Specifications

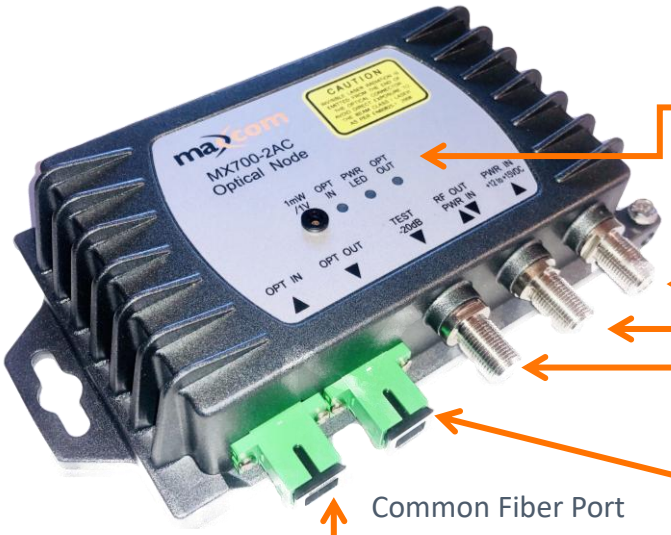
PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
General Optical					
Drop Wavelength Band- Forward	Expanded input 1525~1565nm (Option E53)	1525	1550	1565	nm
Add Wavelength Band- Return	1610	1600	1610	1620	nm
Pass Wavelength 1 - Forward	1490	1475		1500	nm
Pass Wavelength 2 - Forward	1577	1560		1600	nm
Pass Wavelength Band- Return	1270 & 1310	1260		1360	nm
Pass Band Insertion Loss				1	dB
Pass to Add-Drop Crosstalk	Both directions	35			dB
Forward to Return Crosstalk	Both directions	35			dB
Forward Receiver					
Optical Wavelength	Expanded input 1525~1565nm (Option E53)	1525	1550	1565	nm
Monitor Voltage	λ=1550		1		V/mW
Optical Input Power	Optical AGC / Continuous	-6	-1	+2	dBm
Bandwidth (RF frequency Range)(other options available, see matrix)	*Lower bandwidth edge based on Diplex selected	54*	258	1220	MHz
Flatness of Frequency Response	f=54 to 1220MHz		±0.75	±1	dB
Output Return Loss		14	16		dB
Standard Reference Output Level w/AGC when optical input is between -6 and +2 dBm *(may be ordered w/ 20, 30 or 36dBmV output versions)	(Note 1) @ 3.5%/2.7% OMI per Ch. (Analog / Digital)	20		36	dBmV
Slope / EQ	5dB slope ± 2 dB	3	5	7	dB
Optical Input Return Losses		45			dB
C/N	(-1dBm optical input, 3.5% OMI/ch, 79ch NTSC, Digital ch above 550MHz at -6dB offset)	50			dB
CTB				-65	dB
CSO				-60	dB
Equivalent Noise Input	f=55MHz			7	pA/Hz
Return Transmitter					
Optical Wavelength		1600	1610	1620	nm
Optical Output Power	w/ 3mW Isolated DFB laser	2	3	4.5	dBm
Dynamic Input Range	NPR ≥38		20		
RF Input Level	Typical 20-40	15	30	45	dBmV
Bandwidth (RF frequency Range)	Options available, *see ordering matrix next page	5		204	MHz
Flatness of Frequency Response	f=5 to 42MHz		±0.75	±1	dB
Input Return Loss	f=5 to 42MHz	14	16		dB
Optical Output Return Loss		45			dB
Optical Laser turn ON Level (w/burst option)	Follows SCTE 174 (Note 2)		15		dBmV
Optical Laser turn OFF (w/burst option)	Follows SCTE 174 (Note 2)		-4		dBmV
Laser Rise Time to 90% optical ON	(w/burst option)			1.3	μs
Laser Fall Time for optical to 10%	(w/burst option)			1.6	μs
General Parameters					
Total Current Consumption (DC)	W/12VDC Power Adapter		4.5		W
Temperature Range in Fahrenheit degrees	-40°C to +65°C	-40		+149	₀F
Dimensions (including connectors)	Width x Height x Depth	6.77”	4.25”	1.65”	Inch

Note 1: Power output is measured at 1220MHz.

Note 2: Burst mode parameter may be adjustable according to customer's request

Diagram of MX700-X10 series

Power Supply included



LED display lights, and test probe port for optical power

12 VDC power port

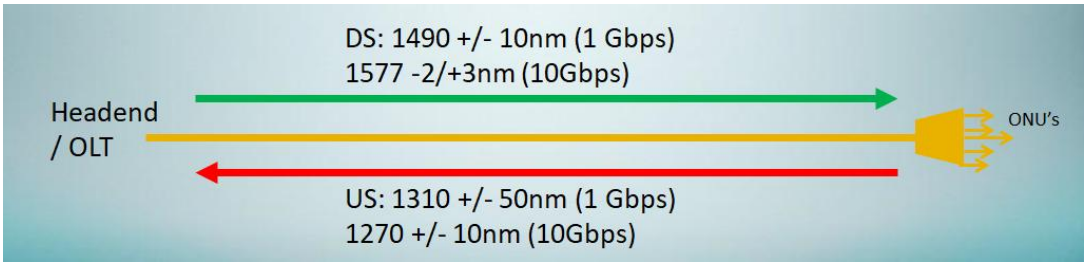
Forward RF output, return RF input, 12 VDC common port

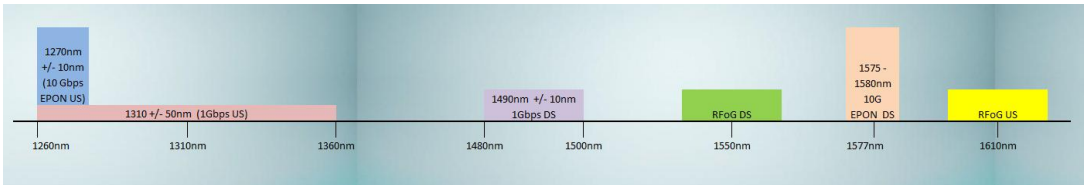
-20 dB Forward Test Point

Common Fiber Port SC/APC

x PON pass-through port

The MX700-X10 Series node is compatible with both 1G PON and 10G PON Wavelengths





Maxcom R-ONU Mini Optical Node Modeling Matrix

Maxcom Mini Optical Node Series		Forward RF Output Level		Return RF Input Level		Laser Type		Tx. Optical Power		Optical Connector		Transmitter wavelength		Sub Split		Power Adaptor		Forward Frequency		Options	
MX700-XXX (A=AGC on forward path, C=Burst mode return laser)		-	XX①		XX②	-	X	-	X	-	XX	-	XXXX	-	XX③	-	XX	-	XX	-	XXX
MX700-2A	Dual fiber I/O, continuous "On" return path (No burst), ,AGC on the forward path	20	20dBmV	20	20dBmV	D	DFB	2	2mW	SA	SC/APC	1310	1310nm	45	42/54	01	North America	1.2G	1220MHz	-	Standard 1540~1565nm
		36	36dBmV	30	30dBmV	I	Isolated DFB	3	3mW			1470	1470nm	57	55/70	02	E.U.	2.6G	2600MHz	E53	Extended input RX wavelength 1525~1565nm
MX700-3A	Single fiber I/O, continuous "On" return path (No burst), ,AGC on the forward path											1490	1490nm	68	65/85			3.0G	3000MHz		
MX700-2AC	Dual fiber I/O, burst mode on the return ,AGC on the forward path											1510	1510nm	81	85/102						
MX700-3AC	Single fiber I/O, burst on the return, AGC on the forward path											1530	1530nm	22	204/258						
MX700-X10AC	One fiber I/O, a 2nd fiber port for GPON & XG(S)PON, burst on the return, AGC on the forward path											1550	1550nm								
MX700-X10A	One fiber I/O, a 2nd fiber port for GPON & XG(S)PON, continuous "On" return path (No burst), ,AGC on the forward path											1570	1570nm								
												1590	1590nm								
												1610	1610nm								

All versions come standard with SC/APC optical connectors, and include the Power Supply

* Note: the series (X10) model is equipped with xPON fiber port with internal optical filter that is configured for default standard wavelengths supporting 1550 forward path RX, 1610 return TX, and PON port supporting both 1 G and 10G PON wavelengths of 1270nm and 1577nm, and 1310 and 1490nm wavelengths. The node is compatible with both 1G GPON and 10G XG(S)PON

Note:①② Please specify levels not included in the Matrix. Note ③ sub split may be customized to customer requirement

RF Over Glass Series

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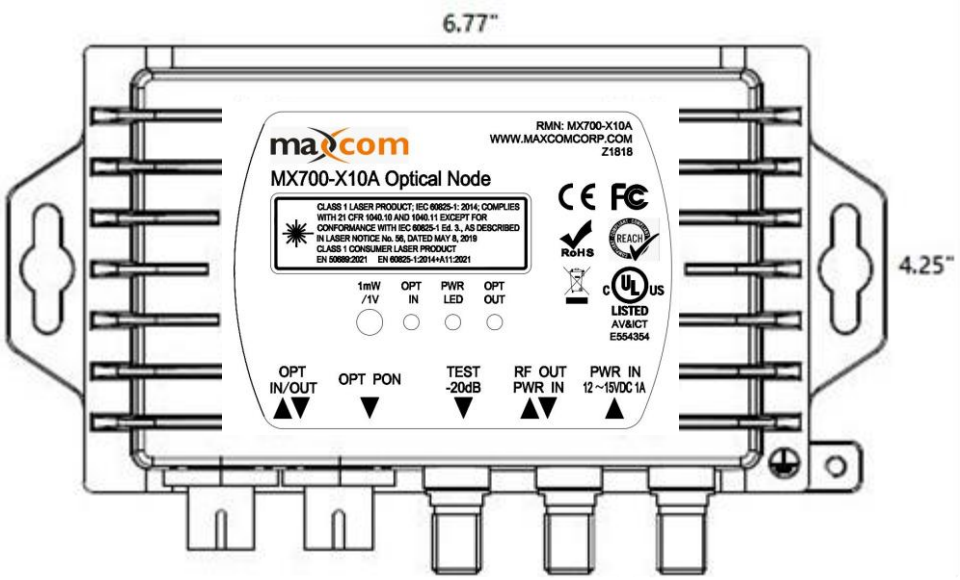

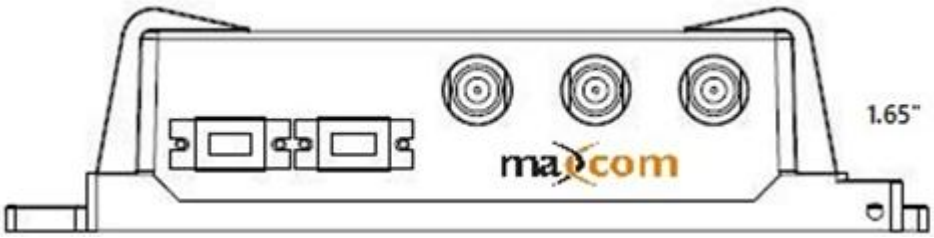

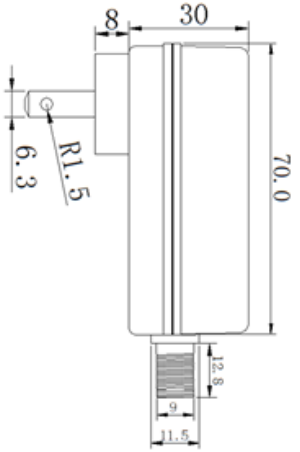

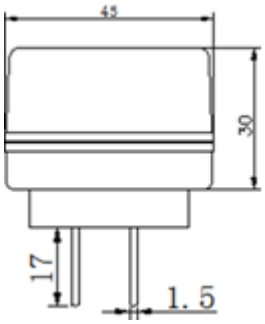

Power supply included

*North American and EURO shown

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RF Over Glass Series

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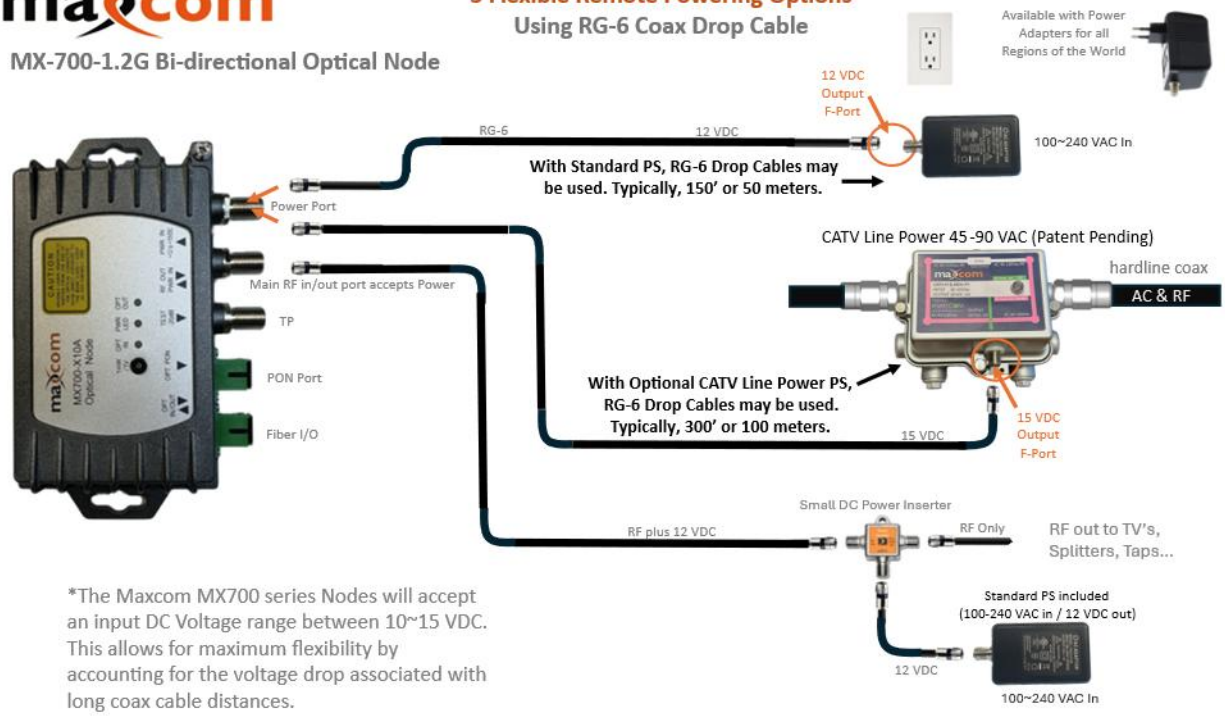
POWERING GUIDE:

MX-700-1.2G Bi-directional Optical Node

3 Flexible Remote Powering Options
Using RG-6 Coax Drop Cable



*The Maxcom MX700 series Nodes will accept an input DC Voltage range between 10~15 VDC. This allows for maximum flexibility by accounting for the voltage drop associated with long coax cable distances.

MX-700 Node Power Draw:
0.3 amps @ 15 VDC
0.375 amps @ 12 VDC

Included: The Standard100~240 VAC to 12 VDC switching power pack is supplied with the MX-700 Node.

Optional: The CATV Line Power 45~90 VAC to 15 VDC outdoor power supply is may be ordered separately from Maxcom. Part # MX700-RLPS-15 (Pre-Release, coming soon)

MX-700 Certifications:

RMN: MX700-X10A
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Z1818

CLASS 1 LASER PRODUCT; IEC 60825-1: 2014; COMPLIES WITH 21 CFR 1040.10 AND 1040.11 EXCEPT FOR CONFORMANCE WITH IEC 60825-1 Ed. 3., AS DESCRIBED IN LASER NOTICE No. 56, DATED MAY 8, 2019
CLASS 1 CONSUMER LASER PRODUCT
EN 50689:2021 EN 60825-1:2014+A11:2021

c UL us LISTED
AV&ICT
E554354

Standard PS Certifications:

	Maxcom PS cert info by Yingjiao
SAFETY & EMC	
Safety Regulations:	UL62368-1, EN62368-1 2014+A11:2017
Standard(s) for Safety:	UL 60950-1 & CSA C22.2 No. 60950-1-03 - Information Technology Equipment - Safety - Part 1: General Requirements
Isolation Resistance:	I/P-O/P, I/P-FG, O/P-FG: 100M Ohms / 500VDC
EMC Emission:	Compliance to BS EN/EN55032 (CISPR32), BS EN/EN61204-3 Class B, BS EN/EN61000-3-2,-3, EAC TP TC 020, CNS13438 Class B

CB SCHEME

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