



1550nm CATV EYDFA (Erbium Ytterbium Doped Fiber Amplifier) • MXA5800 Series

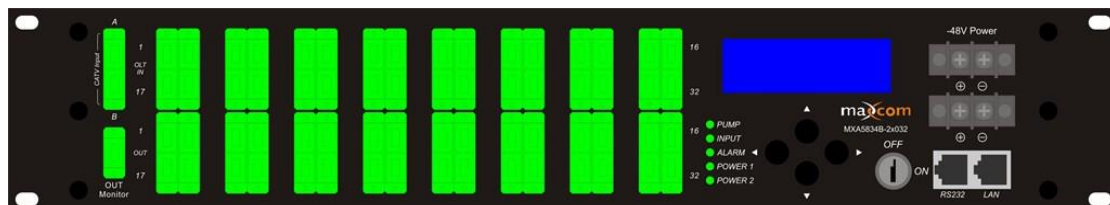
Technical Specifications



8 port model shown with 1U and xPON pass (OLT) ports



16 port model shown with 1U and xPON pass (OLT) ports



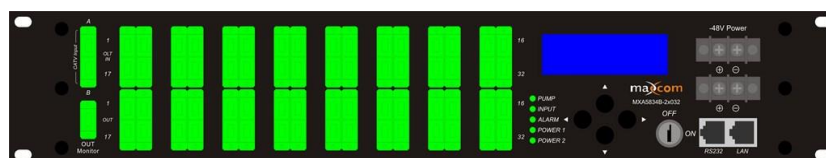
32 port model shown with 2U and xPON pass (OLT) ports

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Sample 1RU and 2RU Models

1.0 PRODUCT DESCRIPTION

The MXA5800 series is a low noise, high performance, FTTx high power multi-port optical amplifier with a gain spectrum band within 1540~1563nm. Each output port for the optical amplifier has built-in high performance CWDM. Every external up-link optical port of the optical amplifier can conveniently connect with an OLT. Each of the 1550nm (CATV)'s output optical ports will multiplex 1310/1490nm's data stream from an external OLT, reducing the quantity of the components and improving the performance and reliability of the system.

The MXA5800 optical amplifier is compatible with FTTx PON Technology. It offers a flexible and low-cost solution for CATV large area coverage.

The MXA5800 has an extremely low noise figure, the entire unit adopts twin-stage amplification, the pre-amplifier adopts a low noise EDFA, and the output cascade adopts high power EDFA. When the input optical power $P_{in}=0\text{dBm}$, the noise figure of the unit is: Typ $\leq 4.5\text{dB}$, Max $\leq 5.0\text{dB}$ unlike other manufactures which need high optical power input to maintain lower noise figures.

Maxcom is a well-known manufacturer of optical amplifiers. The MXA5800 optical amplifier adopts the world's top class pump laser and American made OFS erbium-doped optical fiber. Superb APC, ACC and ATC control, excellent design in the ventilation and heat-dissipation ensure long life and highly reliable operation of the pump laser. RS232 and RJ45 offer serial commutation and SNMP network management ports.

The MXA5800 LCD at the front panel offers access to all equipment indexes and warning alarms. The laser will switch off automatically if optical power is removed, which offers security and protection of the laser. All optical ports of the optical amplifier may be installed on the front panel (and may also be installed in the rear panel at the customer's request).

The MXA5800 with carrier-class reliability and network security management, high quality, high reliability and excellent cost performance is ideal for system integrators and system operators. There is an optional Dual Fiber Input feature available used for self-healing redundancy (built in 2X1 optical switch).

The MXA5800A optical amplifier is available as a 1RU chassis, total output power available up to 33dBm (2000mW), with LC/APC, offers up to 16 optical outputs, with 16pcs uplink (xPON) optical ports.

The MXA5800B optical amplifier is available as a 2RU chassis, total output power up to 40dBm (10000mW), with LC/APC, offers up to 64 optical outputs, with 64pcs uplink (xPON) optical ports. 3RU and 5RU versions are also available with up to 256 ports.

2.0 PRODUCT FEATURES

- 1540~1563nm operating bandwidth for optical amplifier
- 500~80,000mW (27~49dBm) high output power
- Low noise figures (Typ $\leq 4.5\text{dB}$, Max $\leq 5.0\text{dB}$)
- Built-in low noise pre-amplifier, substantially decrease the CNR, MER degradation of the system
- high performance, high reliability
- Optional CWDM ports used with an OLT; 1550nm output optical ports, multiplexes the 1310/1490nm OLT data streams.
- 8~256 uplink optical ports, used with OLT
- 8~256 1550nm output optical ports, multiplexes 1310/1490nm data stream
- Compatible with FTTx PON Technology: EPON/GEAPON, GPON, BPON, DPON
- Optional dual optical input, built-in 2×1 optical switch
- Dual power supply option, 1+1 backup
- RS232, SNMP
- Efficient space, flexible installation and simple operation
- Excellent P/P ratio

3.0 MAIN APPLICATIONS

- FTTx PON
- RFoG

4.0 TECHNIQUE INDEX

Performance			Index			Supplement
			Min.	Typ.	Max.	
Optical feature	CATV operation wavelength	(nm)	1540		1563	CATV
	OLT pass wavelength	(nm)		1310/1490		
	CATV pass wavelength loss	(dB)			0.8	1550nm
	OLT pass wavelength loss	(dB)			0.8	1310/1490nm
	CATV & OLT isolation	(dB)	40			
	Number of uplink optical ports (for OLT)	(pcs)			16	1U
					64	2U
					128	3U
					256	5U
	CATV input power (Pi)	(dBm)	-10		+10	
	Typical output power	(dBm)	0			
	Noise figure	(dB)		4.5	5.0	Pin=0dBm
	Total output power ¹⁾	(dBm)			35	1U
					38	2U
					45	3U
					49	5U
	Number of output ports	(pcs)			16	1U
					64	2U
					128	3U
					256	5U
	Each port output power	(dBm)	10		22	
	Difference of each output power	(dB)	-0.5		+0.5	
	Output power adjustable range	(dBm)	-6		0	
	Polarization dependence loss	(dB)			0.3	

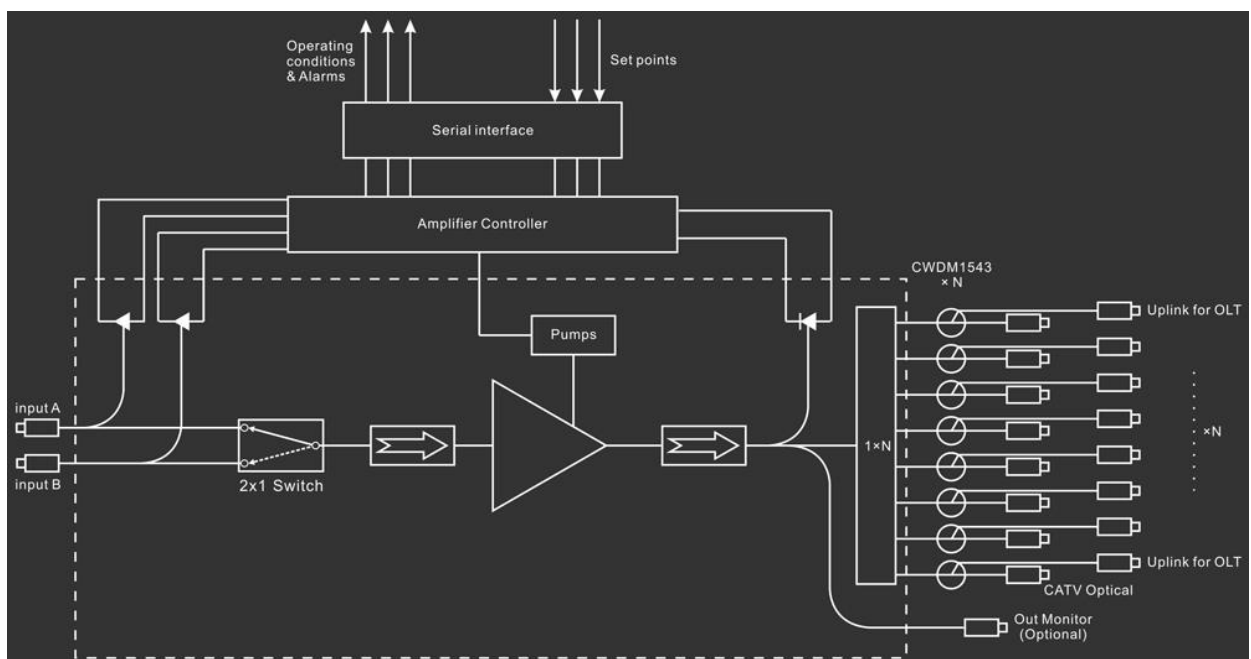
	Polarization dependence gain	(dB)			0.4	
	Polarization mode dispersion	(ps)			0.3	
	Input/output isolation	(dB)	30			
	Pump power leakage	(dBm)			-30	
	Echo loss	(dB)	55			APC
General feature	Network management interface		RJ45			SNMP
	Serial interface		RS232			
	Power supply	(V)	90		265	110/220VAC
			30		72	-48VDC
	Power consume	(W)			360	
	Operation temp.	(°C)	-5		65	
	Storage temp.	(°C)	-40		80	
	Operation relative humidity	(%)	5		95	
	Size (W)×(D)×(H)	(")	19×14.5×1.75			MXA5800A (1U)
		(")	19×14.7×3.5			MXA5800B (2U)
			19×14.7×5.25			MXA5800C (3U)
			19×14.7×8.75			MXA5800E (5U)

Note: the above are standard options; the output port number or each port output power may be customized.

5.0 PRODUCT SERIES

Model number	Total output power	Number of output port	Each port output power	Connector
MXA5827A-08	27dBm(500mW)	8	16.0	SC/APC、LC/APC
MXA5828A-08	28dBm(630mW)	8	17.0	SC/APC、LC/APC
MXA5829A-08	29dBm(800mW)	8	18.0	SC/APC、LC/APC
MXA5830A-08	30dBm(1000mW)	8	19.0	SC/APC、LC/APC
MXA5830A-16		16	15.5	LC/APC
MXA5831A-08	31dBm(1260mW)	8	20.0	SC/APC、LC/APC
MXA5831A-16		16	16.5	LC/APC
MXA5831B-32		32	13.0	SC/APC、LC/APC
MXA5832A-08	32dBm(1600mW)	8	21.0	SC/APC、LC/APC
MXA5832A-16		16	17.5	LC/APC
MXA5832B-32		32	14.0	SC/APC、LC/APC
MXA5833A-08	33dBm(2000mW)	8	22.0	SC/APC、LC/APC
MXA5833A-16		16	18.5	LC/APC
MXA5833B-32		32	15.0	SC/APC、LC/APC
MXA5834A-16	34dBm(2500mW)	16	19.5	LC/APC
MXA5834B-32		32	16.0	SC/APC、LC/APC
MXA5835A-16	35dBm(3200mW)	16	20.5	LC/APC
MXA5835B-32		32	17.0	SC/APC、LC/APC
MXA5836B-16	36dBm(4000mW)	16	21.5	SC/APC、LC/APC
MXA5836B-32		32	18.0	SC/APC、LC/APC
MXA5837B-32	37dBm(5000mW)	32	19.0	SC/APC、LC/APC
MXA5837B-64		64	15.5	LC/APC
MXA5838B-32	38dBm(6300mW)	32	20.0	SC/APC、LC/APC
MXA5838B-64		64	16.5	LC/APC
MXA5839C-32	39dBm(8000mW)	32	21.0	SC/APC、LC/APC
MXA5839C-64		64	17.5	SC/APC、LC/APC
MXA5840C-32	40dBm(10000mW)	32	22.0	SC/APC、LC/APC
MXA5840C-64		64	18.5	SC/APC、LC/APC
MXA5840C-128		128	15.0	LC/APC
MXA5841C-64	41dBm(13000mW)	64	19.5	SC/APC、LC/APC
MXA5841C-128		128	16.0	LC/APC
MXA5842C-64	42dBm(16000mW)	64	20.5	SC/APC、LC/APC

MXA5842C-128		128	17.0	LC/APC
MXA5843C-64	43dBm(20000mW)	64	21.5	SC/APC、LC/APC
MXA5843C-128		128	18.0	LC/APC
MXA5844C-128	44dBm(25000mW)	128	19.0	LC/APC
MXA5844E-256		256	15.5	LC/APC
MXA5845C-128	45dBm(32000nW)	128	20.0	LC/APC
MXA5845E-256		256	16.5	LC/APC
MXA5846E-128	46dBm(40000mW)	128	21.0	SC/APC、LC/APC
MXA5846E-256		256	17.5	LC/APC
MXA5847E-128	47dBm(50000mW)	128	22.0	SC/APC、LC/APC
MXA5847E-256		256	18.5	LC/APC
MXA5848E-256	48dBm(64000mW)	256	19.5	LC/APC
MXA5849E-256	49dBm(80000mW)	256	20.5	LC/APC



Sample Diagram showing 8 output ports (with optional 8 xPON CWDM ports)
with optional dual inputs and auto detect switch for redundancy

6.0 MODEL EXPLANATION

Model Number Ordering Matrix

MXA		5		8		□ □		□ -		□ X		□ □ □ -		□ □ -		□ /		□ □ -		M □ □	
Product Series		Operating Wavelength		Production Type		Total Output Power (dBm)		Exterior		Number of Input Ports		Number of output ports		Optical Connector type		Power Option		Power Supply		Output optical port monitor	
Model Series		5	1540-1563nm	8	FTTxPON EYDFA	27	27	A	1RU	1	Single Input (without switch)	8	8 ports	LA	LC/APC	S	Single PS	11	110VAC	00	Without
						28	28	B	2RU	2	Dual Input (With Switch)	16	16 ports	SA	SC/APC	D	Dual PS	48	-48VDC	M0	With Output Port Monitor
						29	29	C	3RU			32	32 ports			P	Dual PS Hot Pluggable	41	-48VDC & 110VAC		
						30	30	E	5RU			64	64 ports								
						31	31					128	124 ports								
						32	32					256	256 ports								
						33	33														
						34	34														
						35	35														
						36	36														
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47	47																				
48	48																				
49	49																				

*Note - Some options only available of certain chassis or models
Please consult with your Maxcom Rep for ordering options

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