Ver. 2.7sb



1550NM ERBIUM DOPED FIBER AMPLIFIER · MX-A41 SERIES

DATA VERSION

EDFA TECHNICAL SPECIFICATION AND INSTRUCTION



PRODUCT DESCRIPTION

The Maxcom MX-A41 Data Series Erbium Doped Fiber Amplifier (EDFA) has been designed for single wavelength applications in a telecommunications network. The EDFA is suitable for long haul transmission networks. This EDFA is designed as a booster amplifier and is typically placed on the transmitter side of a network. Its purpose is to extend the transmission distance of the transmitter, system ranges of over 200 km are possible when using this EDFA.

This Maxcom optical amplifier is packaged in a 19", 1 RU rack mount housing. Units come standard with dual reliable hot swapable power supplies. AC or -48 VDC power is available. Built for networks where reliability matters.

The MX-A41 series is a booster EDFA with a gain spectrum band within 1529~1562nm. It is designed for the application of single channel wavelength. The MX-A41 booster amplifier is featured with low NF and high-saturated output power. The MX-A41 is commonly applied and is widely compatible with other EDFA's and Transmitters in a telecommunication system operating in the 1529~1562nm range.

The MX-A41 Data series EDFA's are high performance and designed for telecommunication data signals. Maxcom's 1550 optical amplifiers incorporate world class pump lasers and American OFS erbium-doped optical fiber components. Excellent APC, ACC and ATC control, superb design in the ventilation and heat-dissipation ensure long life and exceptionally reliable operation of the pump laser.

The LCD at the front panel offers equipment status and warning alarms. Maxcom EDFA's are also equipped with SNMP and Web access and come standard with monitoring ports. The laser will switch to a stand-by position automatically if optical power is lost, which offers protection for the laser.





EDFA CONTROLS, INDICATORS, AND ALARMS

This section of the manual will give you an overview of the available menus in the MXA41 series EDFA and their descriptions. The operator may scroll through the menus by pushing the bottoms found on the front panel of the EDFA, near the LCD screen.

Operation of the panel - Open Menu

A. Connect the power supply

B. Connect a 1550nm optical signal source to the input, then turn on the laser start-up key switch.

Front panel LED shows "**KEY ON...**", PUMP- Status lamp is Red when OFF, Green when ON INPUT- Status lamp will turn from Red to Green once input signal detected ALARM - Status lamp is Red when alarm condition is met POWER1 - Status lamp is Green (no light when power is off) POWER2 - Status lamp is Green (no light when power is off)

Start-up main menu

By pressing the \blacktriangle/∇ buttons, the following menu items will be displayed. *Menu items may not be in the same sequence shown below.

Model Read-only menu, indicates the model number

S/N

Read-only menu, indicates the serial number of the unit

INPUT

Read-only menu, indicates the input optical power 01 of optical switch SET OUTPUT Adjustable list displays the output optical power in dBm.

LASER TEMP

Read-only menu, indicates the pre pump temperature

LASER CURRENT

Read-only menu, indicates the pre pump current

Power 1

Read-only menu, displays the status of power 1

Power 2

Read-only menu, displays the status of power 2 AMBIENT TEMP



Read-only menu, indicates the case temperature FAN SPEED Read-only menu, indicates the fan speed **CONFIQ IP** Adjustable list, allow user to select Static or DHCP IP Adjustable list, allow user to change the IP address SUBMASK Adjustable list, displays the address of net mask GATEWAY Adjustable list, displays the gateway address **TRAP ADDR1** Adjustable list, displays the TRAP1 address TRAP ADDR2 Adjustable list, displays the TRAP2 address **CONSOLE BAUD** Adjustable list, select Baud rate speed MAC Read-only menu, indicates the MAC address **HW Version** Read-only menu, indicates the version **SW Version** Read-only menu, indicates the version Reboot Adjustable menu, allows user to select RESET SETTINGS Adjustable list, restores device to factory default settings

Modifying Settings

You may easily navigate the menu by using the arrow buttons to select and modify the settings as desired.

For example, press \blacktriangleright key to modify the address menu item that needs to be changed, press \blacktriangleright to shift the value, push $\land \lor$ to increase/decrease value, then shift the value to the next digit as desired, press \blacktriangleright to the save, press \blacktriangleleft all the way to the left and exit.

For example, modify the IP setup menu, IP: 192.168.0001.050; if changing the number 0 to a 1, use ► key to choose the place of 0, then press ▲ key to change the 0 to 1, then press ► to save modified IP:192.168.0001.051



Technique index

	Performance		Index	Cupplement				
>			Min.	Typ. Max.		Supplement		
Optical feature	Wavelength range	(nm)	1529		1562	C-Band		
	Input power	(dBm)	-20	-20 -16 -		"D" Data version		
	Maximum output power ¹⁾	(dBm)	0		+14	Pin= -18dBm (based on model#) 4100 = 0dBm out 4105 = +5dBm out 4110 = +10dBm out 4114 = +14 dBm out		
	Output power adjustable	(dBm)	-6		0	MXA4100/P		
	Number of output ports	Quan	1 s (ado	tandard out litional availa	1 standard 2,4,8,16,32 optional			
	Fiber ports	Туре		SC/APC	(Or customer specified)			
	Noise figure	(dB)			6.3	Max output/gain		
	Polarization dependence	(dB)			0.3			
	Polarization dependence	(dB)			0.3			
	Polarization mode	(ps)			0.3			
	Input/output isolation	(dB)	30					
	Pump power leakage	(dBm)			-30			
	Echo loss	(dB)	55			APC		
General feature	SNMP network			RJ45				
	Serial interface			RS232				
	Power supply (Dual Hot	(V)	90		265	120VAC standard		
	Swappable)		-48VDC		125VDC	-48VDC, or 125VDC optional		
	Power consumption	(W)			100			
	Operating temp.	(°C)	-20		+65			
	Storage temp.	(°C)	-40		80			
	Oper. Relative Humidity	(%)	5		95			
	Size (W)×(D)×(H)	(")	1	9×14.5×1.7	1RU (19″)			

Remark: User may customize output power





Software Functions, Monitors and Alarms

	In service firmware upgrades							
	Auto shut down when loss of input							
	Fixed Gain Control mode and Power limiting (FGA)							
Functions	Output power control mode (APC)							
	Pump current control mode (ACC)							
	Pump Maximum Working Current Limit Protection							
	Total input power							
	Total output power							
Monitors	Pump status							
	Chassis temperature							
	Loss-of-signal alarm							
	Chassis temperature alarm							
Alarms	Pump temperature alarm							
	Pump bias alarm							

TYPIICAL DESIGN EXAMPLE





EDFA Model Number Ordering Matrix

MXA-		<u>4</u>		<u>1</u>				- נ	[-□	-	
Product Series	c W)perating avelength	Production Type		Satur Output (dE	Saturation Dutput Power (dBm)		Power Supply		Operating Temperature (Celsius)		Number of output ports		
Model Series	4	1529-1562nm (C-Band)	1	Booster Amp	00	0 dBm	SA	SC/APC	11	110VAC	E	Extended -20 to +65	1	Single Output
					05	5 dBm	LA	LC/APC	22	220VAC			2	Dual Output
-		Ó			10	10 dBm	FA	FC/APC	48	-48VDC			*	Custom number of outputs
					14	14 dBm			25	125 VDC				

Please consult with your Maxcom Rep for ordering options Output Monitor port - Included Adjustable Output feature - Included Dual Hot Swappable Power Supplies -SNMP - Web GUI access- Included

All units come **standard** with SC/APC connectors for **input**, **output**, **and monitor ports**. Specify alternative connector types Standard Dual AC powering, or specify as needed.

