

M2100TM 23dBm Output Power, 18-28dB Gain EDFA for T&M PN: FOA-R7100TM-EVG2C-AA063

Product Features

- Standalone high-power EDFA with up to 25.5dBm output power
- Remote software management and upgrade
- .Net based DLL for integrating EDFA control into users System
- Web based GUI
- Up to 25.5dBm output power
- APC or AGC control modes
- Flat gain spectrum at 17dB gain
- High-speed, high-performance transient suppression
- Class 1M* laser safety classification
- RoHS compliant



Applications

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 Automated lab or manufacturing testsets

The FOA-R7100TM is a micro-processor controlled Variable Gain EDFA for the C-band. It is optimized for a large input dynamic range while providing excellent noise performance and fast transient suppression, allowing the gain to be kept constant also when there are fast changes in input power.

Page 1

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Optical Specifications

Parameter	UoM	Min.	Тур	Max.	Notes
Number of EDFAs per unit	Тwo				
Wavelength Bandwidth	nm	1527.99		1567.13	
Input Power Range	dBm	-24.3		5.5	Within operating gain range
Output Power Range	dBm	0		23	
Saturated Output Power	dBm	23			
Output Power Stability	dB			±0.10	
Operating Gain Range	dB	18	23	28	
Gain Flatness	dB			1	At OFG only
Gain Setting Accuracy	dB		±0.3	±0.5	
Gain Tilt	dB		-2.0		
Mid-Stage Loss	dB	0		12.5	
				9.5	@ 18dB Gain
Noise Figure	dB			6.5	@ 23dB Gain
				5.5	@ 28dB Gain
Transient Over/Undershoot	dB			±1.5	
Transient Gain Error	dB			0.5	For 16dB add/drop,
Transient Settling Time	μS			150	- 105
In/Out Return Loss	dB	40			With pumps on
Pump leakage	dBm			-30	At EDFA output port
PDG	dB			0.5	
DGD	ps			0.4	
LOS Threshold	dBm			-30	
Power Measurement Accuracy	dB			±0.5	
Power Consumption	W			40	

Operation Modes

The amplifier can work in the following modes:

- Automatic Power Control (APC)
 - o In this mode transient suppression algorithms are not used
- Automatic Gain Control

APR (Automatic Power Reduction)

Three different APR mechanisms are implemented, ensuring Class 1M optical safety at all times, under all foreseeable operating scenarios.

The Power Booster will restart based on the input power (>-3dBm). It will shut down if input power is below -5dBm. If the Power Booster is in automatic restart procedure (ARP) due to APR, it will restart according to following logic:

APR Mechanism	APR-Triggering Event	APR Restart / Return Procedure
C-Band back- reflection	Back-reflected C Band power is continuously monitored and compared to the output power. An increase in the back reflection ratio level indicates an open connector, and triggers APR. The threshold of the ratio between output and reflected power is settable from -28dB to -20dB. If this ratio is higher than the set threshold, the output power of the EDFA is limited to 20dBm, max	Once the back-reflected ratio is within normal range, the power level is increased to nominal operating level
L-Band ASE Transient	ASE in the L-band (1600-1650nm) caused by Raman process of the high-power C-band output of the Power Booster is continuously monitored. Changes in ASE indicate an open or degraded line (e.g. high-loss points). If a change greater than a preset threshold is detected, the EDFA reduces its output power to 20dBm, max	if the ratio of the L-band power level vs output power increases compared to the same ratio measured
Reduced L-Band ASE	ASE in the L-band (1600-1650nm) caused by Raman process of the high-power C-band output of the Power Booster is monitored. Low ASE indicates an open or degraded line (e.g. high-loss points). If the detected ASE is lower than the threshold, the EDFA reduces its output power to 20dBm, max. Default value: -37dBm	directly after the APR event, then the output power is increased to nominal operating level

Communications and Control

Ethernet or RS232

Web based GUI

Optical Connections

The unit is equipped with two optical ports, as described in the table below

Port	Connector type	Note
IN	LC/UPC	Amplifier input
OUT	LC/UPC	Amplifier output
MS1	LC/UPC	Mid-Stage Input
MS2	LC/UPC	Mid-Stage Output
MO1	LC/UPC	1 st Stage Output Monitor Port
MO2	LC/UPC	Main Output Monitor Port





Example GUI

A typical GUI snapshot can be seen in the figure below. The easy to use GUI is web-based and can be accessed using internet explorer by simply entering the IP address of the unit.

M	ain SNMP Management						
[Configuration		ךStatus				CEdfa Alarms
	Operating mode:	Auto Gain Ctrl	Status: OK				Edfa On 🥥
	Manual Gain Set (dB):	15.0	Fans Status:	ок	Gain (dB):	15.0	Gain/Output limited 🥥
	Amplifier Type Set:	Pre Amp 📃 🛄	Internal Power Supply Status:	ок	EDFA Input Power (dBm):	-5.1	Output Loss 🥥
			Pumps Status:	Active	Output Power (dBm):	9.9	Input Loss 🥥
			Internal Module Temp ('C):	25.5	Pump Current (mA):	63.6	End-Of-Life 🧕
	Safety Switches & Thresh	holds	1U PCB Temp ('C):	23.6			High Temperature 🧕 🧕
	Input Loss:	Enabled	Pump Temp ('C):	25.0			Internal Power Supply 🥥
	Input Loss Threshold (dB):	-31.0					
			Production Parameters		History since Reboot		
			HVV Rev: 01A Date	Aug 13 2009	Pumps Off 0		
			FW Ver: 745.0 SN:	23248	Eye Safety 0		
			EMS Rev: 0.11.0C		-Communication	mmand Status —	Reboot ON/OFF
			GUI Rev: 8.00		Connected Shutdown	n In OFF	🕒 Ŭ 💽

Environmental and Safety Information

Parameter	UoM	Min.	Тур	Max.	Notes
Operating Temperature Range	С	15		35	
Operating Relative Humidity	%	10		80	Non-condensing
Storage Temperature	С	-40		85	
Storage Relative Humidity	%	5		95	
Laser Safety Classification					Class 1M

Mechanical Specifications



Front panel connectors are shown in the picture below



Accessories Included

Accessory	Part Number
US AC Power Cable	1133098
EU AC Power Cable	1133099
Ethernet Cable	18-10-0138R



Accessories Available

Accessory	Part Number
19" Bracket Kit	50-60-0102-01R
21" Bracket Kit	50-60-0103-01R
23" Bracket Kit	50-60-0104-01R
ETSI Bracket Kit	50-60-0105-01R
RS-232 Cable	18-10-0007R