

1RU Single Channel EDFA Product Description

GA11A Series

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Version	Date	Author	Approver	Remarks
V1.0	2/04/2020			1) Not open to the third party

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1 Product Introduction

1.1 Product Introduction

The product is a high stability output power EDFA. The stability Pump Laser and unique ATC (automatic temperature control) and AGC (automatic gain control) circuit are employed in it as the key components to ensure the high stability and reliability of output power. The unique optical circuit design ensures the excellent optical character. The high stability and high precision MPU system are employed to ensure the control adjustment and display are intelligent and user-friendly.

Professional design GFF (gain flattening filter) with excellent optical path design provides the best optimization on flatness and noise. It can provide 40~80 channels, and flatness above 35nm.

The optical circuit is designed especially for digital optical fiber communication system including:

- (1) lower noise figure
- (2) high output booster and high sensitivity Pre-Amplifier improve the system loss budget
- (3) broad input power range and output power are adjustable easily.

The design of dual Power Mixed and hot swap provides longer MTBF. Also, the power system can be backed up.

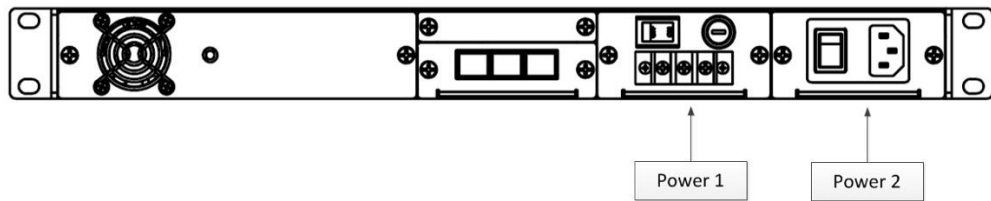
Employing the intelligent temperature control system, the fan is on when the module temperature over 35°C, and it will stop as the temperature is under 30°C, which ensures the thermal stability and fan's long life-time, moreover, the professional air flow design can also ensure the best temperature stability.

Intelligent network management system. Perfectly network interface: Ethernet, RS-485 and RS-232 network interface, and the open mib ensures the connectivity with all other network management system.

Figure 1-1 Front Panel



Figure 1-2 Back Panel



1.2 Features

This Single Channel EDFA has the following features:

- Low noise figure: typical figure is under 4.5dB
- Redundancy hot swap power module: 110/220VAC and -48VDC can plug mix
- Works for 19' or 21' racks
- OLED display shows and controls the system parameters, LED status indication shows the alarm status
- Support ETH, RS232 ports by RJ45
- Network Management interface supporting SNMP via Ethernet port
- AGC (Automatic Gain Control) optical output

2 Technical Specifications

2.1 Environmental Requirements

Table 2-1 Environmental Characteristics

Parameters	Min.	Max.	Unit
Working Temperature	-5	+60	°C
Storage Temperature	-40	+80	°C
Humidity	5	85	%

2.2 Mechanical/ Power/ Interface Characteristics

Table 2-2 Mechanical/ Power/ Interface Characteristics

Parameters	Min.	Typ.	Max.	Unit
Size	1U H×D×W≤44x236x483			mm
Weight	-----	-----	6	Kg
Power Consumption ¹	-----	-----	18	W
Cooling	Air cool fans			
Power Supply ²	85/170	110/220	132/264	VAC
Interface	RS-232, Ethernet			

(1) Actual consumption depends on the output power and environment temperature.

(2) 110VAC, 220VAC and -48VDC are optional.

2.3 Optical Specifications

Table 2-3 Optical Characteristics

Parameter	Symbol	Min	Typ	Max	Units
Wavelength	λ_c	1530	1550	1565	nm
Saturated Output Power ⁽¹⁾	Po	-----	-----	12	dBm
Input Power ⁽¹⁾	Pi	-35	-----	-10	dBm
Noise Figure ⁽²⁾	NF	-----	4.5	-----	dB
Output Power Stability	ΔP_o	-----	± 0.05	± 0.1	dB
Return Loss	RL	-----	-----	-45	dB
Polarization Dependent Gain	PDG	-----	-----	0.3	dB
PMD	PMD	-----	-----	0.5	ps

(1): Optional (BA, LA, PA)

(2): Test at -25dBm input.

3 System Interface

Figure 3-1 System Interface

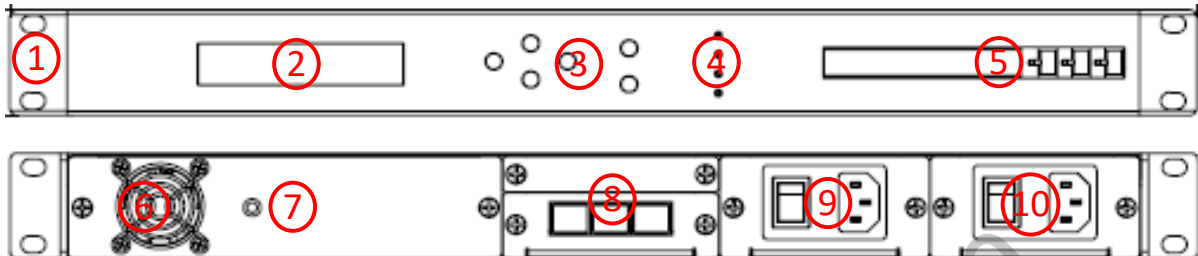


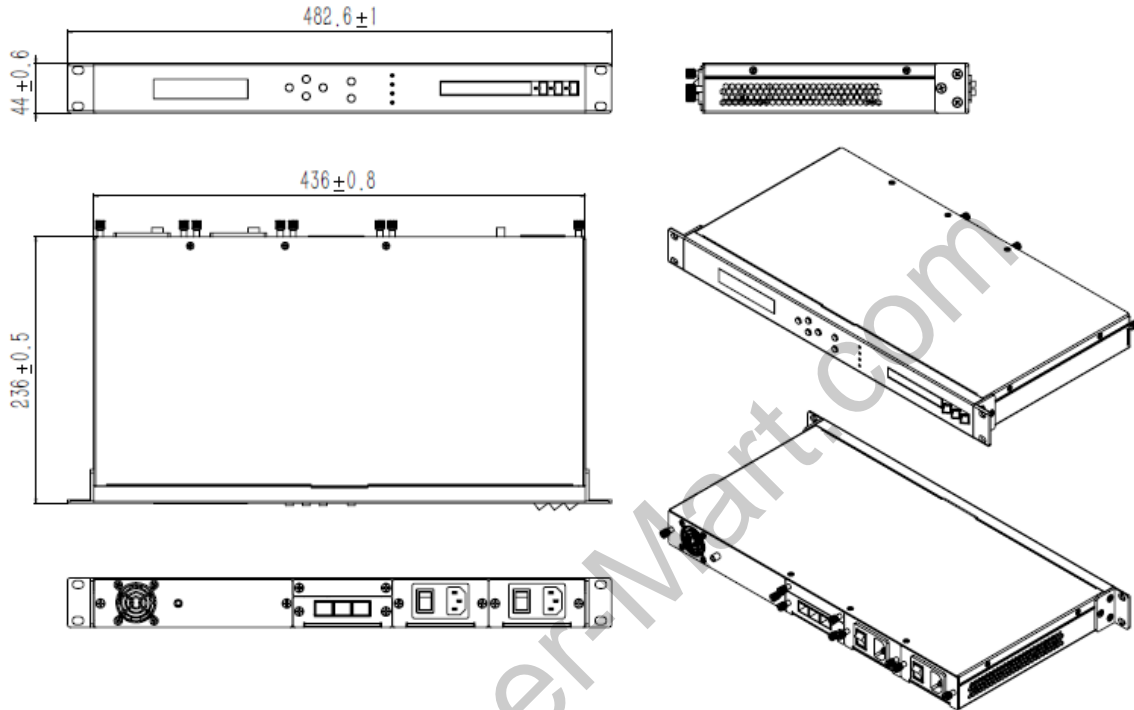
Table 3-1 Interface Definition

No.	Function	Remark
1	Mounting brackets	Φ4
2	OLED Screen	
3	Press key	
4	Indicator light	
5	Optical interface	LC/UPC
6	FAN	
7	Grounding Stud	
8	SNMP、RS232 communication with indicators	SNMPV1.V2C
9/10	Power Supply (110VAC/-48VDC optional)	

4 Mechanical Dimensions

Size: 44*236*483mm

Figure 4-1 Structure Diagram



5 Order Information

Model	Application	-	Type	-	Output	-	Power	Interface
GA11A: 1RU EDFA	3: C band single channel		1:BA 2:LA 3:PA		010: -10dBm 000: 0dBm ... 22: 22dBm		33:dual 110~220VAC 44:dual -48VDC	1: SC/UPC 2: SC/APC 3: FC/UPC 4: FC/APC 5: LC/UPC 6: LC/APC

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