

# EG-FA2 Fiber Amplifier

Optical



## Description

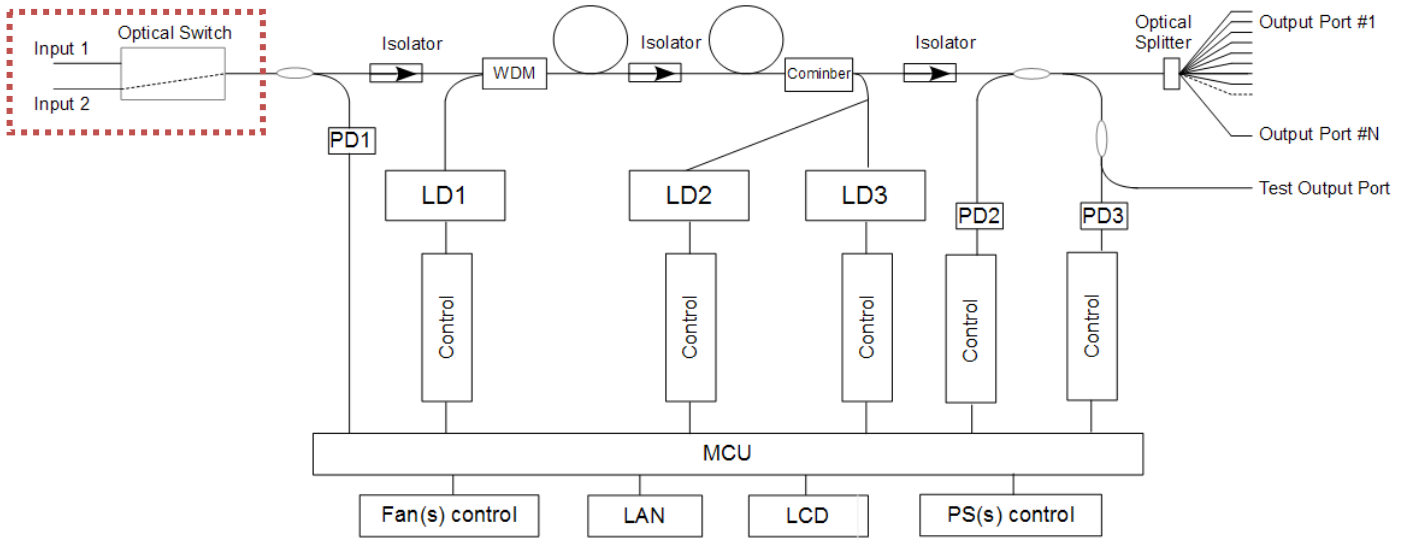
The EG-FA2 is a fiber amplifier and power supply integrated in a 1RU & 2RU shelf. It has been designed and optimized for CATV and the passive optical network (PON) applications including HFC and RFoG. The EG-FA2 provides stable optical outputs over a wide operating temperature range. It is supported with input and output isolators for enhanced system stability and performance. The EG-FA2 incorporates electrical control circuitry with a digital signal processor and includes photodiodes for monitoring the optical input and output power through tap couplers.

The EG-FA2 offers a rich set of features. These include remote management capability through SNMPv2 and telnet. The front panel's LCD touch screen provides the operator with the option to both monitor the status of the amplifier and control/operate the amplifier locally.

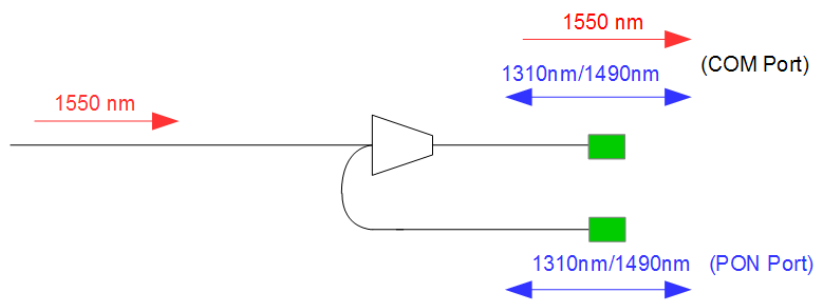
## Features

- Multiple outputs configurations
- Dual redundant power supply
- CATV–field–proven low noise figure
- Wide input dynamic range
- LCD touch screen
- Stable output power over broad operating temperature range.
- Embedded SNMP Agent
- Embedded WEB server
- Automatic Power Control (APC)
- Automatic Current Control (ACC)
- Automatic Gain Control (AGC)
- Alarm for:
  - Loss of input
  - Loss of Output
  - Pump temperature
  - Pump Bias Current

## Block Diagram



## Regular High Power EDFA



## WDM PON (Optional)

## Technical Specifications:

Optical Characteristics		
Parameter	Unit	Value
Optical Input Wavelength	nm	1545 to 1565
Optical Input Power	dBm	-10 to +10
Output Optical Power	dBm	See Ordering Information
Typical Output Power	dBm	≥ 18
Output Power Stabilization Range	%	30 to 100
Port Numbers	--	See Ordering Information
Output Power Tolerance	dB	± 0.5
Port Uniformity	dB	± 0.6
Noise-Figure <sup>1</sup>	dB	≤ 5.5
Optical Test Port	dB	-5 to +5
Return Loss Input/Output	dB	≥ 45
Isolation Output ► Input	dB	≥ 40
Polarization Dependence	dB	≤ 0.3

1. Noise figure at 0dBm input power, nominal output power and signal wavelength 1550nm.

PON Characteristics (Optional)		
Parameter	Unit	Value
PON Wavelengths	nm	1260 to 1360 & 1480 to 1500
Insertion Loss	dB	< 1
Isolation CATV ► PON	dB	50 @ 1545 to 1565 nm
Isolation COM ► PON	dB	15 @ 1545 to 1565 nm
Return Loss	dB	≥ 50

Optical Switch for 2 Inputs (Optional)		
Parameter	Unit	Value
Insertion Loss	dB	< 0.7
Crosstalk	dB	≤ -55
Repeatability	dB	± 0.05
Switch Time	ms	≤ 10
Return Loss	dB	≥ 50

<b>General Characteristics</b>		
<b>Parameter</b>	<b>Unit</b>	<b>Value</b>
Power Supply	pcs	2 (1 default, +1 optional)
Chassis Type	--	1U, 2U 19" Rack Mounted
AC Input Voltage	Vac	90 to 132 Or 176 to 264
DC Input Voltage	Vdc	36 to 72
Power Consumption	W	≤ 65
Dimension (W x H x D)	mm	484 x 44 x 435 (1U)
	mm	484 x 88 x 380 (2U)
Operating Temperature Range	°C	-5 to +65

<b>Management Interface</b>	
<b>Parameter</b>	<b>Value</b>
Data Link Layer	Ethernet 10/100 Base-T (and LLDP optional)
Network Layer	IPv4, ICMP
Transport Layer	UDP, TCP
Application Layer	SNMPv1/v2c, Web
Connectors	10/100 Base-T
Front Panel Management	3.5" 480 x 320 Color Touch Screen LCD for 2U 2.4" 320 x 240 Color Touch Screen LCD for 1U

<b>Control Mode</b>	
<b>Parameter</b>	<b>Value</b>
Stabilization Mode	Pump Current
	Output Optical Power
	Optical Gain
Automatic Pump Shutdown Mode	Low Input Power (LOS)
	High Back Reflection
	Overheating

Note: 2RU include Dual power supply and SNMP as standard configuration. 1RU is single power supply and without SNMP

## Ordering Information

EG-FA2-□		□		□		□		□		□		□ Optional		□ Optional		□ Optional	
Output Ports		Output Power per Port		Chassis		Optical Connector COM Port		Power Supply		Power Cord		WDM PON		PON Optical Connector (if WDM present)		Optical Switch	
1	1 Port	15	15dBm	1U	1U 19"	SA	SC/APC	A1	One AC Input 120VAC	CN	Chinese	PON	GPON/EPON	SA	SC/APC	OSW	Present
2	2 Ports	16	16dBm	2U	2U 19"	SU	SC/UPC	A2	One AC Input 240VAC	EU	Europe	10P	10 GPON/10 EPON	SU	SC/UPC	000	No Optical Switch
4	4 Ports	17	17dBm			LA	LC/APC	A3	Two AC Input 120VAC	US	USA	000	No PON	LA	LC/APC		
8	8 Ports	18	18dBm			LU	LC/UPC	A4	Two AC Input 240VAC	UK	British			LU	LC/UPC		
16	16 Ports	19	19dBm					D1	One DC Input	00	none			NA	Not Applicable		
32	32 Ports	20	20dBm					DD	Two DC Input								
64	64 Ports	21	21dBm														
		22	22dBm														
		23	23dBm														
		24	24dBm														

### Accessories;

- EG-FA2-FAN1-SMALL Used in 1U housing and 2U shorter housing (336mm) where **total** output power of the unit is lower than 38dBm.
- EG-FA2-FAN2-LARGE Used in 2U longer housing (416mm) where **total** output power of the unit is higher or equal to 38dBm.

### Ordering notes;

Max output power is 24dBm, higher power possible but not for general availability.

- 1U, 1 port, output power available: 14 through 24dBm \*\*PON option not available for this series
- 1U, 4 ports, output power available: 18 through 24dBm
- 1U, 8 ports, output power available: 16 through 24dBm \*\* For PON option, 24dBm not available
- 1U, 16 ports, output power available: 16 through 21dBm \*\* For PON option, 21dBm not available
- 2U, 16 ports, output power available: 16 through 24dBm \*\* Better heat dissipation than 1U but still within tolerance.
- 2U, 32 ports, output power available: 16 through 22dBm
- 2U, 64 ports, output power available: 16 through 19dBm \*\* SC/APC duplex.
- OSW option: not available in 1 port output.

note:

- 128/256 ports: special configuration, not general availability.
- 3RU: future use for high quantity of ports, not for general availability.
- default output test point is optical but it is possible to order it with RF test port instead.
- input port is of the same type as COM port.