EDFA-4400A series

1550nm CATV Erbium Doped Fiber Amplifier

Features

- Total output power range: 500~5000mW(27~37dBm)
- 19'' 1RU rack, with configurations up to 32 output ports
- Built-in low noise pre-amplifier, extremely low CNR and MER
- Low noise figure (Typ ≤4.5dB, Max ≤5.5dB)
- Reliable console (RS-232) and network 10/100Base-Tx (RJ-45)SNMP management
- Telecom grade safety, reliability and network management.
- Optional dual optical input, built-in 2 × 1 optical switch
- Optional redundant power supply, 1+1 backup
- Excellent cost/performance ratio

Applications

- Analog CATV
- Digital CATV
- Direct Broadcast Satellite & MMDS
- FTTx PON

Product description

EDFA-4400A (1RU) series is a high power multi-port optical amplifier operating within 1540~1563nm wavelengths. It is mainly designed for CATV applications, offering a flexible and low-cost solution for large area CATV coverage (medium-sized urban areas).

The EDFA-4400A optical amplifier is using a top-class pump laser. With perfect APC, ACC and ATC controls, reliable heat control, ventilation and efficient heat-dissipation design, the EDFA unit has all systems in place for an extended MTBF of the laser pump.

EDFA-4400A has an extremely low noise figure by using a two-stage optical amplification: the pre-amplifier has a low noise EDFA followed by a high power EYDFA. For example, if input optical

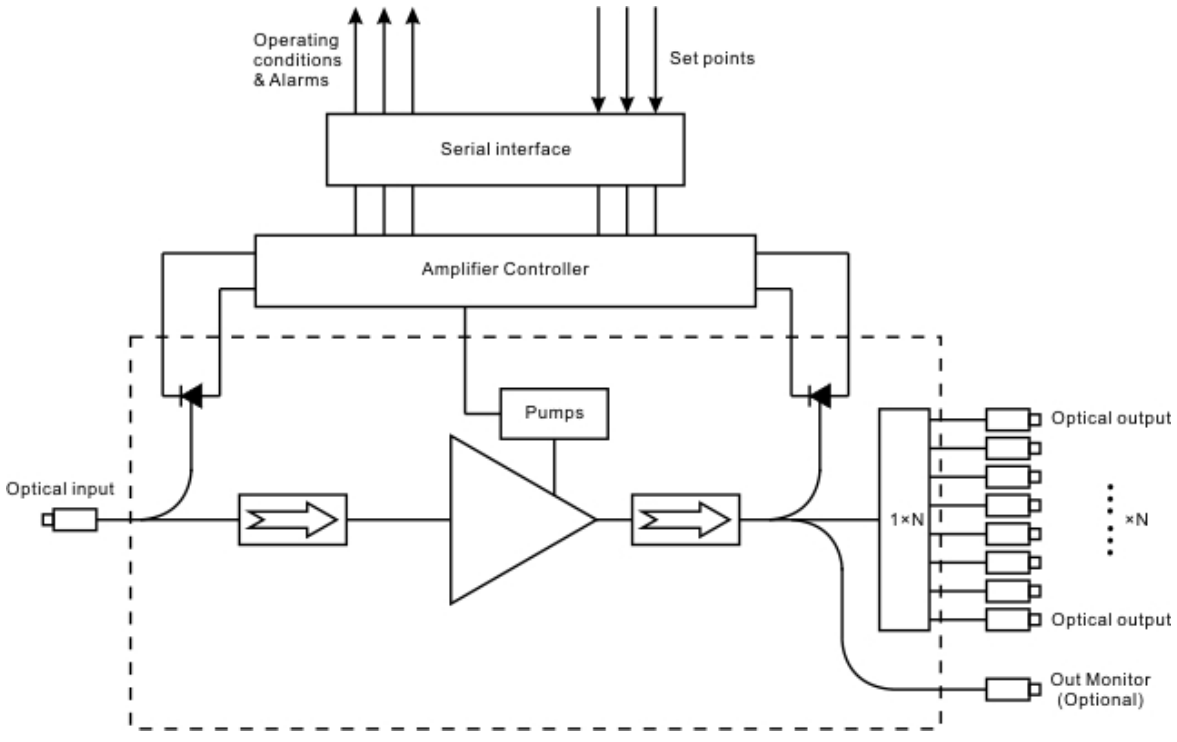
power Pin=0dBm, the noise figure of unit is usually ≤4.5dB and not exceeding max value of ≤5.5dB.

The LCD front panel provides a quick review of all equipment settings and monitors any potential alarms. Laser of the EDFA will switch off automatically if input optical power is missing, offering protection of the laser pump and overall extended life of the equipment. Management is available through local RS-232 console and RJ-45 Ethernet based SNMP.

The EDFA-4400A has an optional two-way optical input (with a built-in 2x1 optical switch), for redundant network operation. Considering all reliability and MTBF figures, the EDFA-4400A series are an excellent choice for CATV operators.

Maximum output power of the EDFA-4400A series is 5000mW (37dBm) and the total number of ports that can be offered into the 1RU profile of the unit is 32.

Functional block diagram



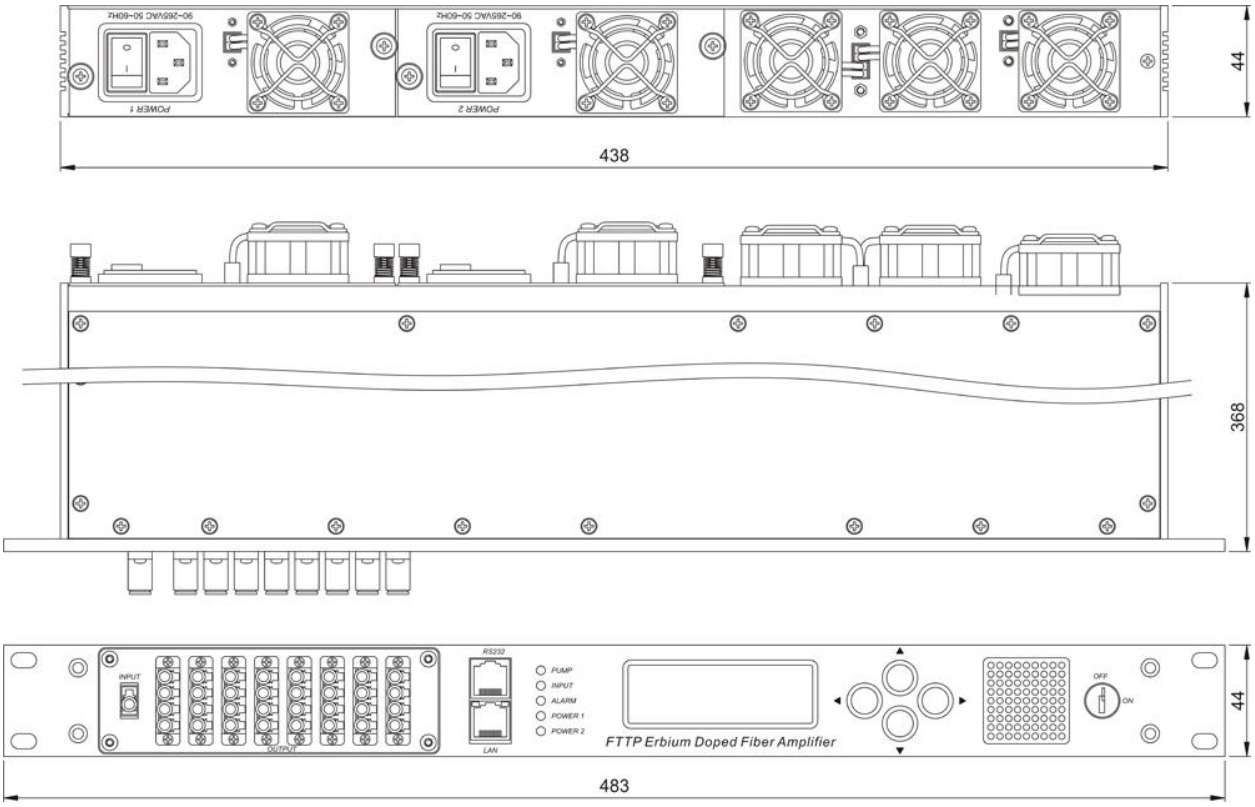
EDFA-4400A operational diagram (single input)

Technical Specifications

Characteristics			Values			Remarks
			Min.	Typ.	Max.	
Optical features	Operating wavelength range	(nm)	1540		1563	CATV
	Input power	(dBm)	-10		+10	
	Total output power[1)]	(dBm)			37	
	Number of output ports	(pcs)			32	
	Each output power	(dBm)	0		22	
	Difference of output power	(dB)	-0.5		+0.5	
	Output optical power monitoring	(dB)		-20		Optional
	Output power adjustable range	(dBm)	-6		0	Optional
	Noise figure (Pin=0dBm)	(dB)		4.5	5.5	EDFA-4400A-1x
				5.0	6.0	EDFA-4400A-2x
	Switch time	(ms)			8.0	EDFA-4400A-2x
	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 features	Network management interface		RJ45			SNMP
	Serial interface		RS232			
	Power supply	(V)	90		265	220VAC
			30		72	-48VDC
	Power consumption	(W)			50	
	Operating temp.	(°C)	-5		65	
	Storage temp.	(°C)	-40		80	
	Relative humidity	(%)	5		95	
	Size (W)×(D)×(H)	(")	19×14.3×1.75			1RU (19″)

Mechanical dimensions

All models from the EDFA-4400A series have the following physical dimensions (as shown in drawings below):



Part numbering system on the EDFA-4400A series

EDFA-44XXA-YxZZZ-CCC-PP-MO

XX = total output power in dBm (value range: 27 ~ 37)
Y = number of optical inputs (value range: 1 or 2)
ZZZ = number of optical outputs (values are: 008, 016 or 032)
CCC = optical connector type (possible values: SCA, SCP, LCA, LCP)
PP = power (values: AC, DC, AA, DD, AD, where A= AC PS 90-240V, D = DC48V power supply; AC and DC denote single power, all other are redundant options)
MO = Monitoring ports (if present, 1% monitoring ports for input and output signal are present on the EDFA unit)

Ordering information (available models in the EDFA-4400A series)

Model number	Total output power	Number of output port	Each port output power	Connector
EDFA-4427A-1×008	27dBm(500mW)	8	16.5	SC/APC, LC/APC
EDFA-4427A-2×008				
EDFA-4428A-1×008	28dBm(630mW)	8	17.5	SC/APC, LC/APC
EDFA-4428A-2×008				
EDFA-4429A-1×008	29dBm(800mW)	8	18.5	SC/APC, LC/APC
EDFA-4429A-2×008				
EDFA-4429A-1×016		16	15.0	
EDFA-4429A-2×016				
EDFA-4430A-1×008	30dBm(1000mW)	8	19.5	SC/APC, LC/APC
EDFA-4430A-2×008				
EDFA-4430A-1×016		16	16.0	
EDFA-4430A-2×016				
EDFA-4431A-1×008	31dBm(1260mW)	8	20.5	SC/APC, LC/APC
EDFA-4431A-2×008				
EDFA-4431A-1×016		16	17.0	
EDFA-4431A-2×016				
EDFA-4432A-1×008	32dBm(1600mW)	8	21.5	SC/APC, LC/APC
EDFA-4432A-2×008				
EDFA-4432A-1×016		16	18.0	
EDFA-4432A-2×016				
EDFA-4433A-1×016	33dBm(2000mW)	16	19.0	SC/APC, LC/APC
EDFA-4433A-2×016				
EDFA-4433A-1×032		32	15.5	LC/APC
EDFA-4433A-2×032				
EDFA-4434A-1×016	34dBm(2500mW)	16	20.0	SC/APC, LC/APC
EDFA-4434A-2×016				
EDFA-4434A-1×032		32	16.5	LC/APC
EDFA-4434A-2×032				
EDFA-4435A-1×016	35dBm(3200mW)	16	21.0	SC/APC, LC/APC
EDFA-4435A-2×016				
EDFA-4435A-1×032		32	17.5	LC/APC
EDFA-4435A-2×032				
EDFA-4436A-1×016	36dBm(4000mW)	16	22.0	SC/APC, LC/APC
EDFA-4436A-2×016				
EDFA-4436A-1×032		32	18.5	LC/APC
EDFA-4436A-2×032				
EDFA-4437A-1×032	37dBm(5000mW)	32	19.5	LC/APC
EDFA-4437A-2×032				

LASER SAFETY

This is a Class 1 Laser Product according to IEC 60825-1:1993:+A1:1997+A2:2001. This product complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated (July 26, 2001)

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