

**1550nm CATV Erbium Doped Fiber
Amplifier • HA5400A Series**

Technical Specification

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1.0 PRODUCT DESCRIPTION

HA5400A(1RU) series is a high power multi-ports optical amplifier with gain spectrum band within 1540~1563nm. It is mainly designed for the application of CATV or 1~8 continuous banding channel (ITU wavelength). It offers a flexible and low-cost solution for CATV large area coverage of metropolises and medium-sized cities.

HA5400A optical amplifier adopts the world's top class pump laser and active optical fiber. Perfect APC, ACC and ATC control, excellent design in the ventilation and heat-dissipation ensure the long life and high reliable work of pump laser.

HA5400A has extremely low noise figure, the entire unit adopts twin-stage amplification, and the pre-amplifier adopts low noise EDFA, output cascade adopts high power EDFA. When input optical power $P_{in}=0dBm$, the noise figure of unit is $\leq 5.5dB$ Unlike other kind of product which need high optical power input to maintain lower noise figure.

HA5400A LCD at the front panel offers the work index of all equipment and warning alarms. The laser will switch off automatically if optical power is missing, which offers security protection for the laser. RS232 and RJ45 offer serial communication and SNMP network management port. All the optical port of optical amplifier can be installed in the front panel or back panel.

HA5400A optional two-way optical input (built-in 2x1 optical switch), can be used for self-healing ring network or redundant backup network.

HA5400A with carrier-class reliability and network security management, high quality, high reliability and excellent cost performance and is ideal for system integrators and system operator.

HA5400A: 19" 1RU rack, The total maximum output power of 37dBm (5000mW), optional output port up to 32 optional port .

2.0 PRODUCT FEATURE

- Total output power optional 500~5000mW(27~37dBm)
- 19" 1RU rack, optional output port up to 32 optional port.
- Built-in low noise pre-amplifier, not necessary EDFA cascade, extremely lower the CNR, MER degradation of the system
- Low noise figure $\leq 5.5\text{dB}$
- Perfect RS232, SNMP
- Telecom level safety reliability and network management.
- Simplified machine-room links, improve the system reliability.
- Simple and reliable in construction/maintenance
- Optional dual optical input, built-in 2×1 optical switch
- Dual power supply optional, 1+1 backup
- Can reduce the 98% device space usage
- Can reduce the 85% device purchase cost
- Can reduce 95% power consumption
- The best cost performance in industry.

3.0 MAIN APPLICATION

- AM CATV
- Digital CATV
- DBS & MMDS
- FTTx PON

4.0 Technique index

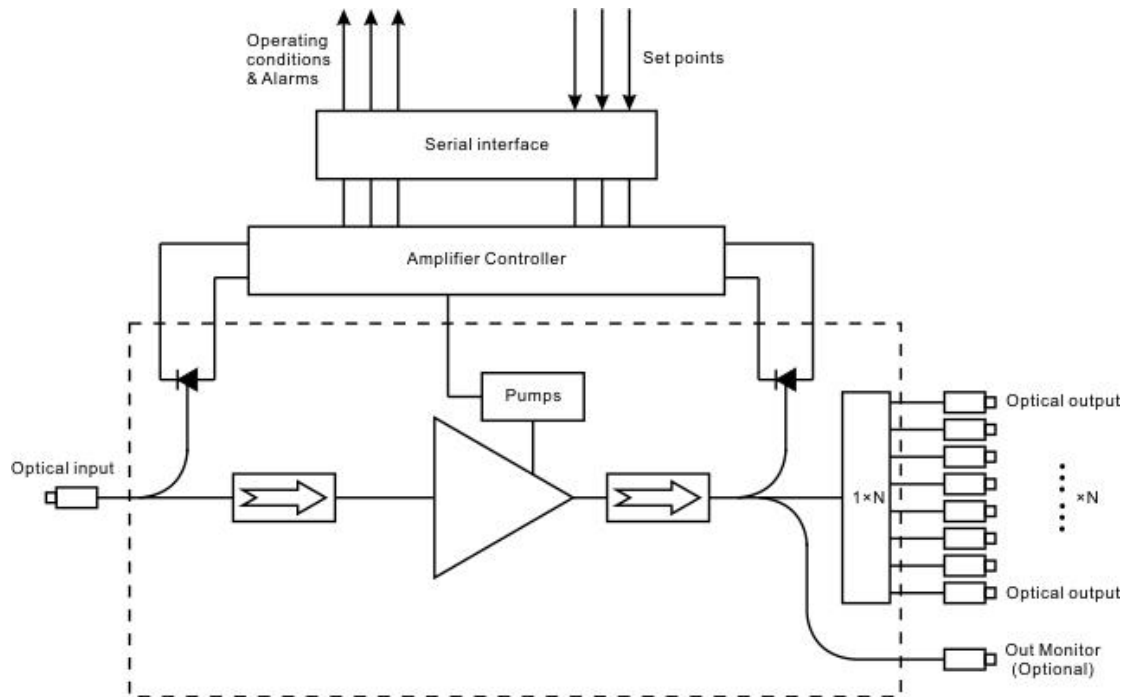
Performance			Index			Supplement
			Min.	Typ.	Max.	
Optical feature	Operating wavelength range	(nm)	1540		1563	CATV
	Input power	(dBm)	-10		+10	
	Total output power ¹⁾	(dBm)			37	
	Number of output ports	(pcs)			32	
	Each output power	(dBm)	0		22	
	Difference of output power	(dB)	-0.5		+0.5	
	Output optical power monitoring	(dB)		-20		Optional
	Output power adjustable range	(dBm)	-6		0	Optional
	Noise figure (Pin=0dBm)	(dB)		4.5	5.5	HA5400A-1x □□□
				5.0	6.0	HA5400A-2x □□□
	Switch time	(ms)			8.0	HA5400A-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 feature	Network management interface		RJ45			SNMP
	Series interface		RS232			
	Power supply	(V)	90		265	220VAC
			30		72	-48VDC
	Power consume	(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")
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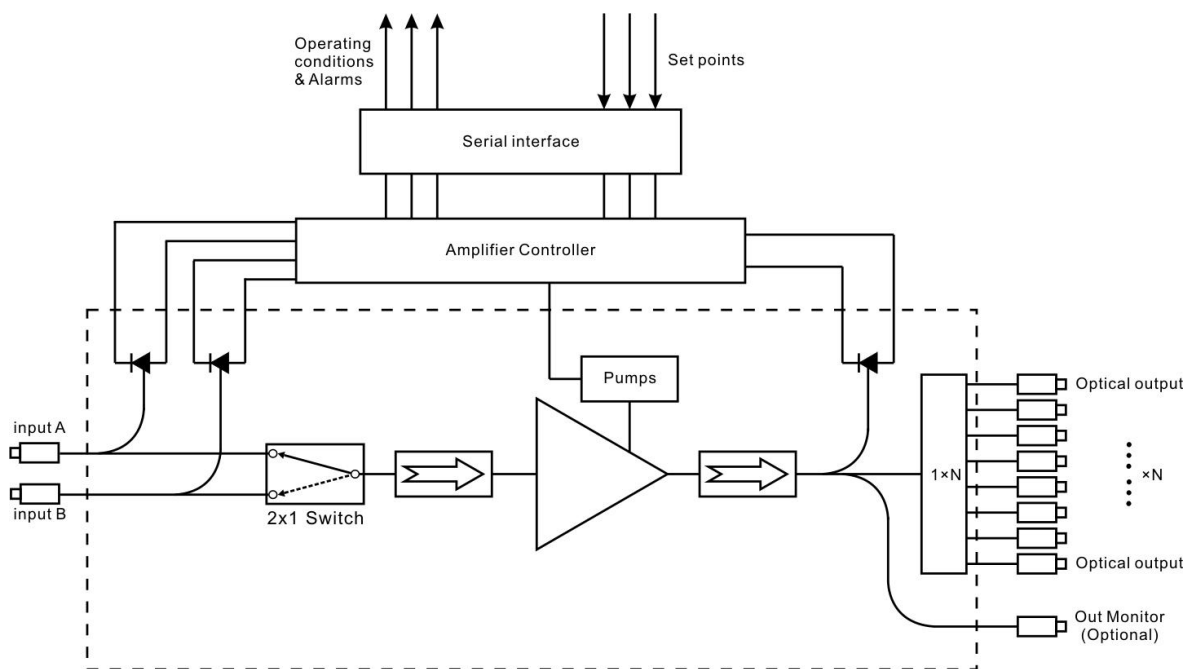
Remark: Output power can be customized by user.

5.0 OPTIC/ELECTRICAL SCHEMA

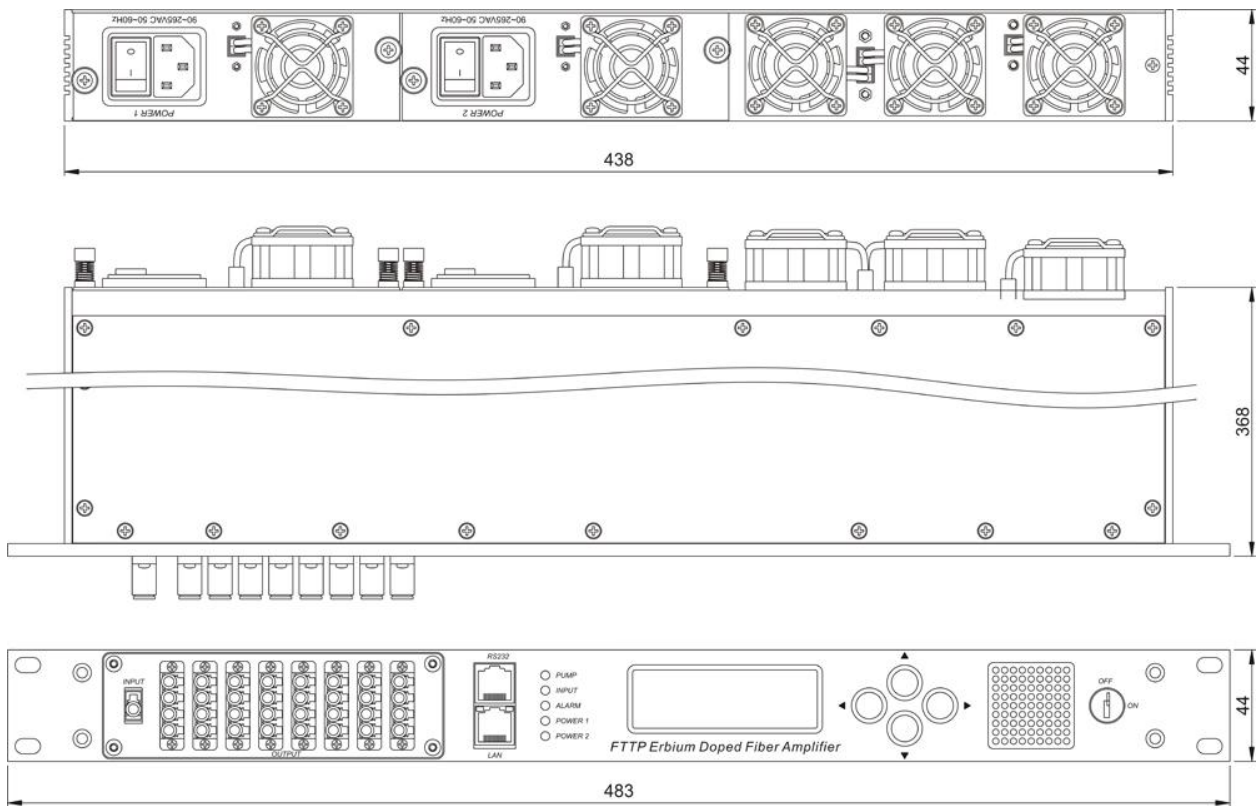
5.1 HA5400A-1x □□□ (conventional)



5.2 HA5400A-2x □□□ (Built-in Optical Switch)



6.0 1U hot plug frame



7.0 Product series

Model number	Total output power	Number of output port	Each port output power	Connector
HA5427A-1×008	27dBm(500mW)	8	16.5	SC/APC、LC/APC
HA5427A-2×008				
HA5428A-1×008	28dBm(630mW)	8	17.5	SC/APC、LC/APC
HA5428A-2×008				
HA5429A-1×008	29dBm(800mW)	8	18.5	SC/APC、LC/APC
HA5429A-2×008				
HA5429A-1×016		16	15.0	
HA5429A-2×016				
HA5430A-1×008	30dBm(1000mW)	8	19.5	SC/APC、LC/APC
HA5430A-2×008				
HA5430A-1×016		16	16.0	
HA5430A-2×016				
HA5431A-1×008	31dBm(1260mW)	8	20.5	SC/APC、LC/APC
HA5431A-2×008				
HA5431A-1×016		16	17.0	
HA5431A-2×016				
HA5432A-1×008	32dBm(1600mW)	8	21.5	SC/APC、LC/APC
HA5432A-2×008				
HA5432A-1×016		16	18.0	
HA5432A-2×016				
HA5433A-1×016	33dBm(2000mW)	16	19.0	SC/APC、LC/APC
HA5433A-2×016				
HA5433A-1×032		32	15.5	LC/APC
HA5433A-2×032				
HA5434A-1×016	34dBm(2500mW)	16	20.0	SC/APC、LC/APC
HA5434A-2×016				
HA5434A-1×032		32	16.5	LC/APC
HA5434A-2×032				
HA5435A-1×016	35dBm(3200mW)	16	21.0	SC/APC、LC/APC

HA5435A-2×016		32	17.5	LC/APC
HA5435A-1×032				
HA5435A-2×032				
HA5436A-1×016	36dBm(4000mW)	16	22.0	SC/APC、LC/APC
HA5436A-2×016				
HA5436A-1×032		32	18.5	LC/APC
HA5436A-2×032				
HA5437A-1×032	37dBm(5000mW)	32	19.5	LC/APC
HA5437A-2×032				

8.0 Model explanation

HA 5 4 □□ A - □ □ × □□□ - □□ - □ / □□ - M□□

Product series	Operating Wavelength		Product type	Total Output Power(dBm)		Exterior		Function		Enter the port number		The output port number		Connector		Power mode		Power supply		Output Optical port Monitoring		
	Amplifier of communication class	5		1540~1563nm	4	High-output Multi-port output	27	27	A	1RU	O	Without	1	Single input (Without Switch)	008	8 ports	LA	LC/APC	S	Single PS	22	220VAC
					28	28	B	2RU	P	Optical power adj.			016	16 ports	LP	LC/U/PC	D	Dual PS	48	-48VDC		
					29	29	C	3RU					032	32 ports	SA	SC/APC	P	Dual PS Hot plug	42	-48VDC & 220VAC	MO	With output optical port monitoring
					30	30	E	5RU			2	Dual input (With Switch)			SP	SC/U/PC						
					31	31																
					32	32																
					33	33																
					34	34																
					35	35																
					36	36																
					37	37																