

# 1550nm CATV Erbium Doped Fiber Amplifier · KYAD-XXB-XxXXX

## Technical Specification



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## 1.0 PRODUCT DESCRIPTION

KYAD-XXB-XxXXX is a low noise, high performance, FTTP high power, multi-ports optical amplifier with gain spectrum band within 1540~1563nm. Each output port for optical amplifier has built-in well-performed CWDM. Every external up-link optical port of optical amplifier can connect with OLT PON port very conveniently. Each 1550nm (CATV)'s output optical port multiplex 1310/1490nm's data stream, in order to reduce the quantity of the component and improve the index and reliability of the system.

KYAD-XXB-XxXXX optical amplifier can be compatible with any FTTx PON Technology. It offers a flexible and low-cost solution for three-network integration and Fiber to the Home.

KYAD-XXB-XxXXX 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 EYDFA. When input optical power  $P_{in}=0\text{dBm}$ , the noise figure of unit is: Typ  $\leq 4.5\text{dB}$ , Max  $\leq 5.0\text{dB}$  Unlike other kind of product which need high optical power input to maintain lower noise figure.

KYAD-XXB-XxXXX 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. RS232 and RJ45 offer serial commutation and SNMP network management port.

KYAD-XXB-XxXXX 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. All the optical port of optical amplifier can be installed in the front panel or back panel.

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

KYAD-XXB-XxXXX 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.

KYAD-XXB-XxXXX optical amplifier: 19" 2RU chassis, total output power up to 41dBm (13000mW), use LC/APC, offers 64 optical outputs at most, 64pcs uplink optical ports.

## 2.0 PRODUCT FEATURE

- 1540~1563nm operating bandwidth for optical amplifier
- Each output optical port is with built-in high performance CWDM, single fiber three wavelengths, which can save optical fiber resources largely.
- Simplified machine-room links, improve the system reliability, and largely reduce the .network maintenance cost
- Can compatible with any FTTx PON technology: EPON/GEAPON, GPON, BPON, DPON
- Total output power optional 1260~13000 ( 31~41dBm )
- 19" 2U rack up to optional 64 up-link ports, which used in OLT; And 64 1550nm output optical ports, multiplex the 1310/1490nm data stream.
- Built-in low noise pre-amplifier, not necessary EDFA cascade, extremely lower the CNR, MER degradation of the system
- Low noise figure ( Typ  $\leq 4.5\text{dB}$ , Max  $\leq 5.0\text{dB}$  )
- Perfect RS232 ,SNMP
- Telecom level safety reliability and network management
- Efficient space, 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
- Industry's best price-performance

## 3.0 MAIN APPLICATION

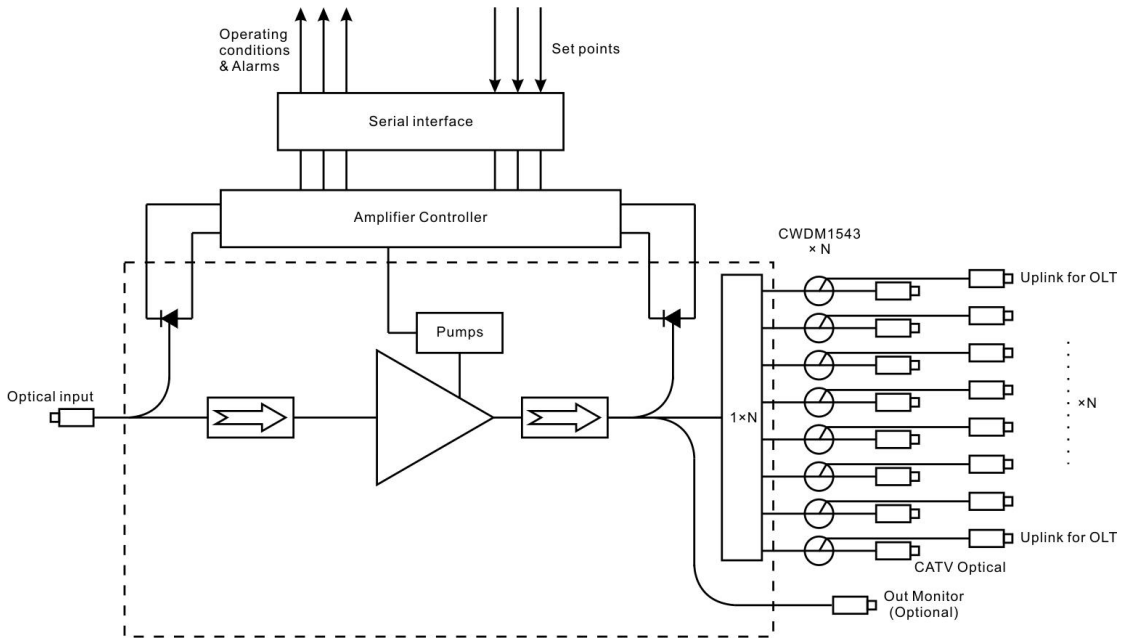
- FTTx PON
- RFoG

## 4.0 Technique index

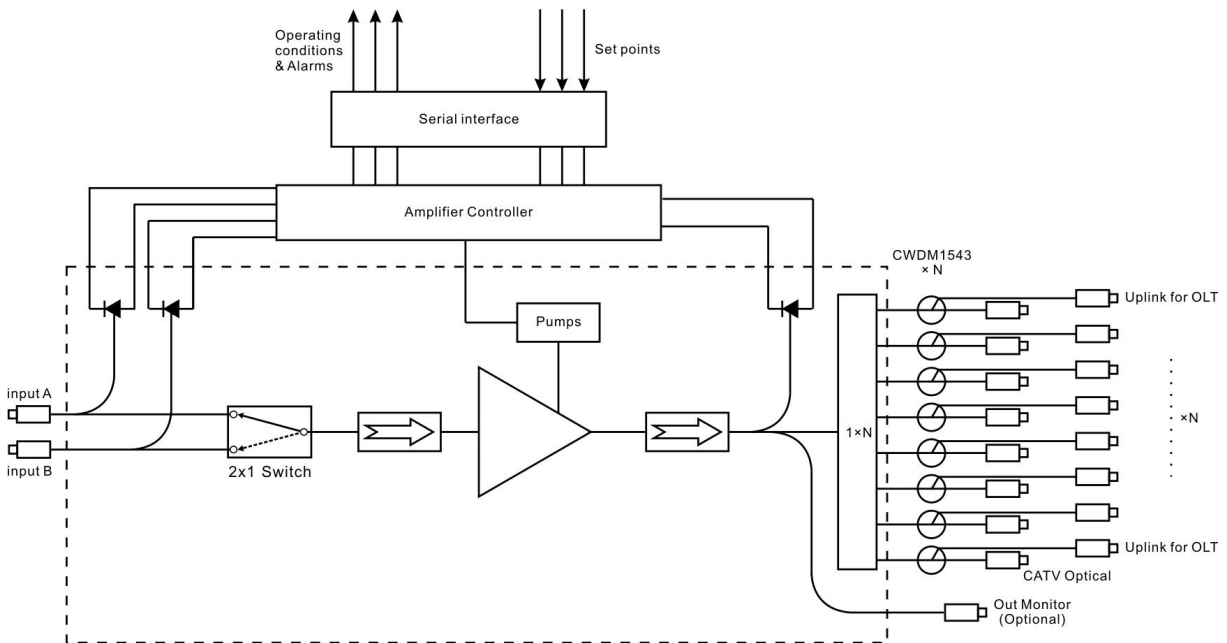
Performance			Index			Supplement
			Min.	Typ.	Max.	
Optical feature	CATV operation wavelength	(nm)	1540		1563	CATV
	OLT pass wavelength	(nm)		1310/1490		
	CATV pass wavelength loss	(dB)			0.8	1550nm
	OLT pass wavelength loss	(dB)			0.8	1310/1490nm
	CATV & OLT isolation	(dB)	40			
	Number of uplink optical ports (for OLT)	(pcs)			64	
	CATV input power (Pi)	(dBm)	-10		+10	
	Total output power <sup>1)</sup>	(dBm)			41	
	Number of output ports	(pcs)			64	
	Each port output power	(dBm)	0		22	
	Difference of each output power	(dB)	-0.5		+0.5	
	Output optical power monitoring	(dB)		-20		
	Output power adjustable range	(dBm)	-6		0	
	Noise figure	(dB)		4.5	5.0	KYAD-XXB-1xXXX
				5.0	6.0	KYAD-XXB-2xXXX
	Switch time	(ms)			8.0	KYAD-XXB-2xXXX
	Output power adjustable range	(dBm)	-6		0	
	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
	Serial interface		RS232			
	Power supply	(V)	90		265	220VAC
			30		72	-48VDC
	Power consume	(W)			50	
	Operation temp.	(°C)	-5		65	
	Storage temp.	(°C)	-40		80	
	Operation relative humidity	(%)	5		95	
Size (W)×(D)×(H)	(")	19×14.7×3.5			KYAD-XXB (2U)	

## 5.0 OPTIC/ELECTRICAL SCHEMA

### 5.1 KYAD-XXB-1xXXX (conventional)

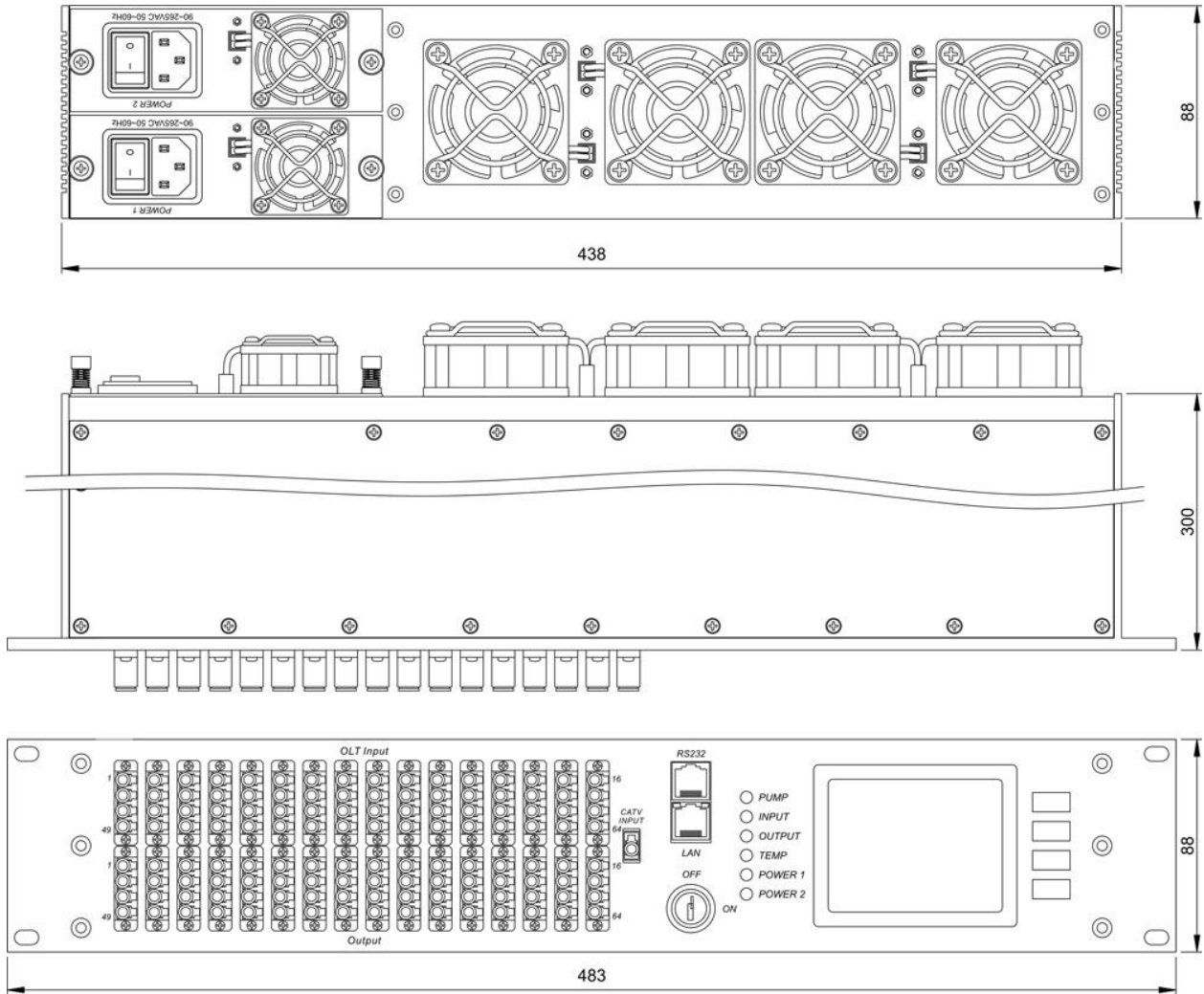


### 5.2 KYAD-XXB-2xXXX (Built-in Optical Switch)

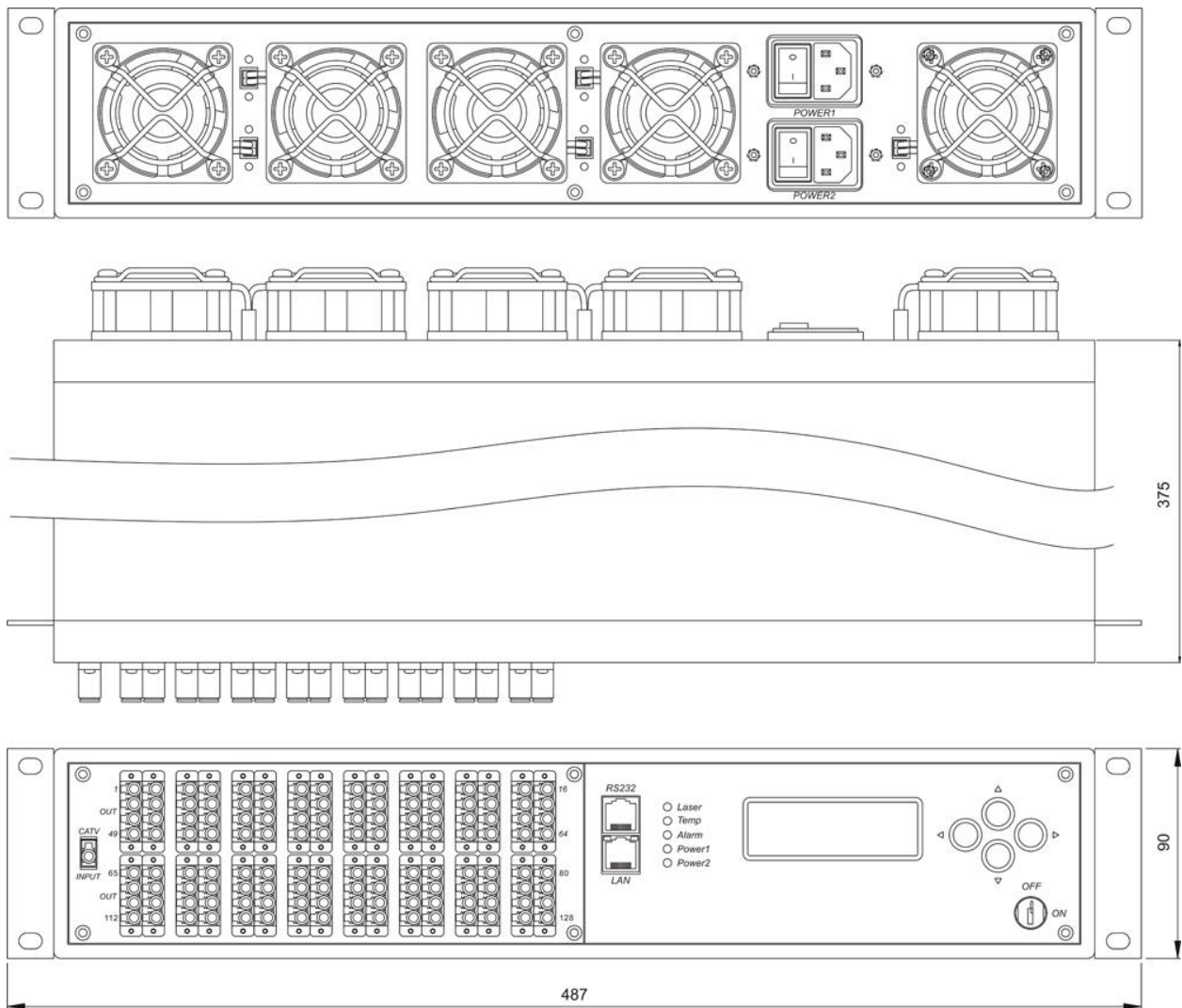


## 6.0 Chassis size chart

### 6.1 2U Hot plug frame



## 6.2 2U Frame





## 7.0 PRODUCT SERIES

Model number	Total output power	Number of output port	Each port output power	Connector
KYAD-31B-1×032	31dBm (1260mW)	32	13.0	SC/APC、LC/APC
KYAD-31B-2×032				
KYAD-32B-1×032	32dBm (1600mW)	32	14.0	SC/APC、LC/APC
KYAD-32B-2×032				
KYAD-33B-1×032	33dBm (2000mW)	32	15.0	SC/APC、LC/APC
KYAD-33B-2×032				
KYAD-34B-1×032	34dBm (2500mW)	32	16.0	SC/APC、LC/APC
KYAD-34B-2×032				
KYAD-35B-1×032	35dBm (3200mW)	32	17.0	SC/APC、LC/APC
KYAD-35B-2×032				
KYAD-36B-1×016	36dBm (4000mW)	16	21.5	SC/APC、LC/APC
KYAD-36B-2×016		32	18.0	SC/APC、LC/APC
KYAD-36B-1×032				
KYAD-36B-2×032				
KYAD-37B-1×032	37dBm (5000mW)	32	19.0	SC/APC、LC/APC
KYAD-37B-2×032		64	15.5	LC/APC
KYAD-37B-1×064				
KYAD-37B-2×064				
KYAD-38B-1×032	38dBm (6300mW)	32	20.0	SC/APC、LC/APC
KYAD-38B-2×032		64	16.5	LC/APC
KYAD-38B-1×064				
KYAD-38B-2×064				
KYAD-39B-1×032	39dBm(8000mW)	32	21.0	SC/APC、LC/APC
KYAD-39B-2×032		64	17.5	LC/APC
KYAD-39B-1×064				
KYAD-39B-2×064				
KYAD-40B-1×032	40dBm(10000mW)	32	22.0	SC/APC、LC/APC
KYAD-40B-2×032		64	18.5	LC/APC
KYAD-40B-1×064				
KYAD-40B-2×064				
KYAD-41B-1×032	41dBm(13000mW)	32	23	SC/APC、LC/APC
KYAD-41B-2×032		64	19.5	LC/APC
KYAD-41B-1×064				
KYAD-41B-2×064				