

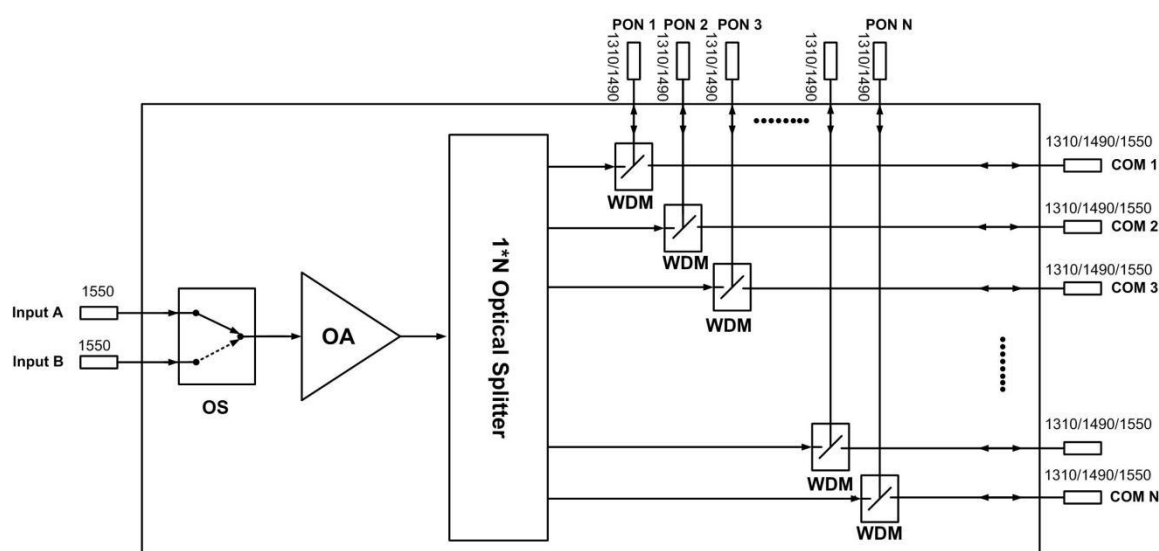
WE-1550-YZB-II Series High-power Optical Amplifier(with PON Port)



1 Product Overview

WE-1550-YZB-II optical amplifier uses well-known high-performance erbium-ytterbium co-doped double-clad fiber and low-noise pump laser. It has a reliable circuit design and efficient heat dissipation design. This device adopts a modular design internally and it has high integration. Ultra wide input optical power range, 2RU 19" height, compatible with EIA racks. The entire machine built-in CWDM can support 64 outputs (max.). It provides SNMP protocol network management software and WEB network management, suitable for amplified transmission of downstream 1550nm optical signal in FTTH network.

2 Block diagram



3 Technique Parameter

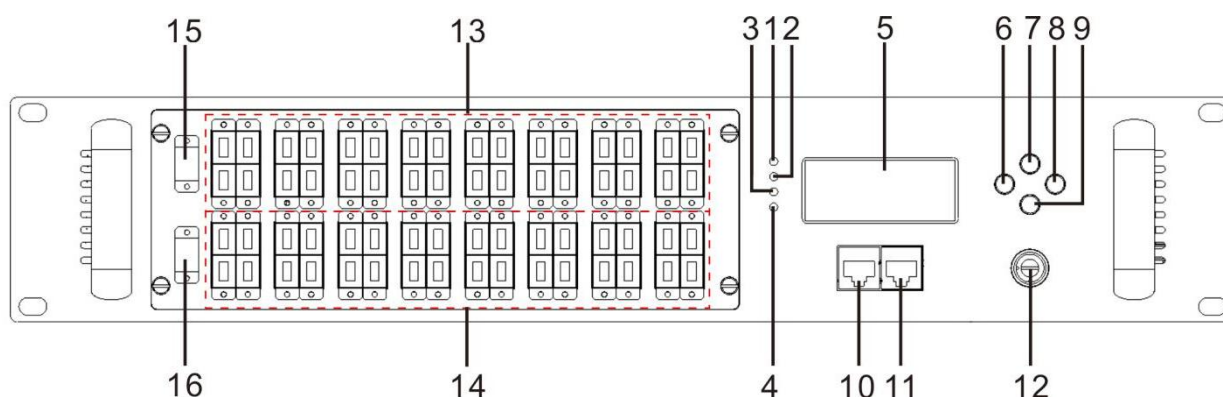
Item	Unit	Technique parameters	Remark
Optical Switch			
Switch time	ms	≤ 500	
Insertion Loss	dB	≤ 1.3	
WDM			
Operating bandwidth	nm	1545 - 1565	
PON passthrough wavelength	nm	1260 - 1360 & 1480 - 1500 & 1570 - 1580	
PON Insertion loss	dB	< 0.8	
Isolation	dB	> 30	
EDFA			
CATV Input optical power range	dBm	-10 - +10	

Ports & Output optical power			64x20, 64x19, 64x18	
Maximum output optical power		dBm	≤ 40	
Output power stability		dBm	$\leq \pm 0.5$	
Noise figure		dB	≤ 6.0	Optical input power 0dBm, $\lambda=1550\text{nm}$
Return loss	Input	dB	≥ 50	
	Output	dB	≥ 50	
Pump laser leakage to input power		dB	≤ -30	
Pump laser leakage to output power		dB	≤ -30	
Polarization related gain		dB	< 0.2	
Polarization mode dispersion		Ps	< 0.3	
Adjustable range of optical power		dB	3	
Optical Connector Type			Input port: SC/APC	
			PON port: SC/UPC or LC/UPC	
			COM port: SC/APC or LC/APC	
Power supply voltage		V	AC 100V - 240V (50/60 Hz) DC -36V~-72V	
Power consumption		W	≤ 85	
Operating Temperature Range		$^{\circ}\text{C}$	-5 - +45	
Maximum operating relative humidity		%	Max 95% No Condensation	
Storage Temperature Range		$^{\circ}\text{C}$	-30 - +70	
Maximum storage relative humidity		%	Max 95% No Condensation	
Dimension		mm	483(L)×403(W)×88(H)	

Note 1: The default wavelength is GEPON (1260nm – 1360nm&1480nm – 1500nm). If you need XGPON wavelength (1260nm – 1360nm&1480nm – 1500nm&1570nm – 1580nm), please make a note when ordering.

4 External Function Description

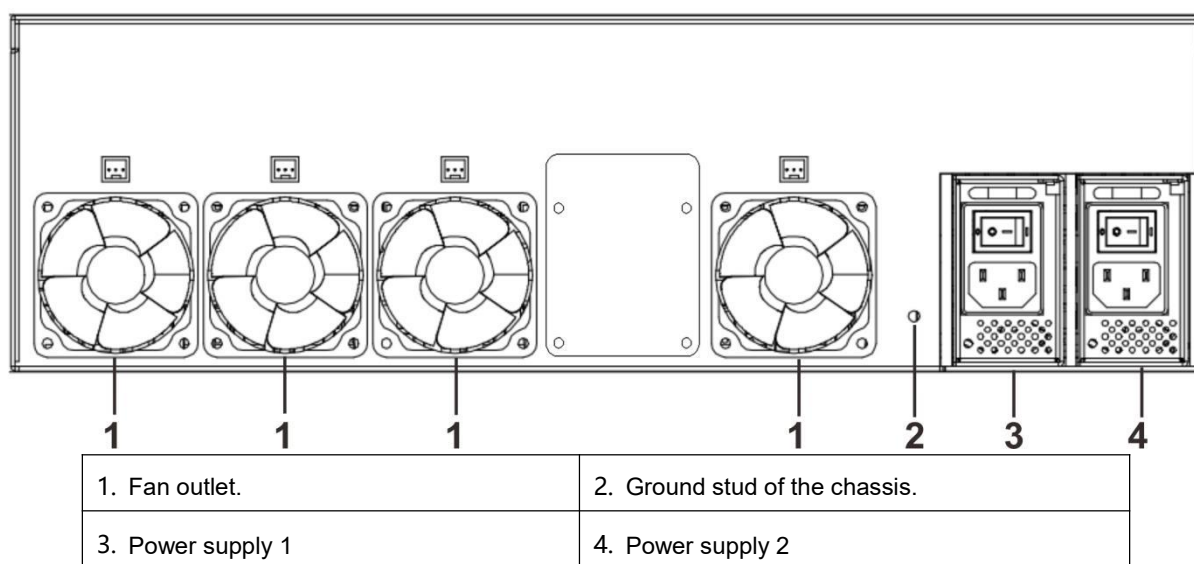
4.1 Front Panel Description



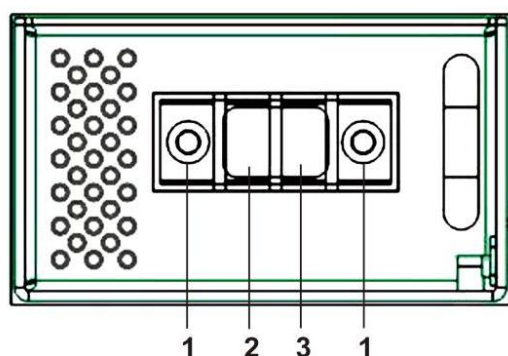
1. Power indicator:	One switching power supply is working – yellow; Two switching power supplies are working – green. Abnormal—flashing red.	
2. Optical input power indicator:	Normal range— green.	Abnormal range—flashing red.
3. Optical output power indicator:	Normal range— green.	Abnormal range—flashing red.
4. Pump working status indicator:	TEC, temperature, pump power, any alarm appears—flashing red. It indicates that the machine has fault Pump laser is working normally— green.	

5. 160×32 dot-matrix LCD screen: displays all the parameters of the device.
6. Display the exit or cancel key of the setup menu.
7. Display the up or increase key of the setup menu.
8. Display the enter key of the setup menu.
9. Display the down or decrease key of the setup menu.
10. RS232 interface.
11. RJ45 interface.
12. Pump laser switching key: "ON" means the pump laser is open and "OFF" means the pump laser is closed. Ensure the key is on "OFF" position before power on. After passing self-test, rotate the key to "ON" position according to the displayed message.
13. PON port, max. 32 ports optional. (The diagram above is a schematic diagram, please refer to the silk screen content for the actual configuration.)
14. COM port, max. 32 ports optional. (The diagram above is a schematic diagram, please refer to the silk screen content for the actual configuration.)
15. Optical signal input A
16. Optical signal input B

4.2 Rear Panel Description



4.3 DC Power Introduction



1	Mounting screws
2	+ Positive terminal block
3	- Negative terminal block

2.4 Set Output Power	Set the optical output power
2.5 Set IP Address	Set IP address
2.6 Set Mask	Set subnet mask
2.7 Set Gateway	Set gateway
2.8 Set Trap Address1	Set trap address1
2.9 Set Trap Address2	Set trap address2
2.10 Set NTP Server1	Set NTP server1 address
2.11 Set NTP Server2	Set NTP server2 address
2.12 Set UTC Offset	Set UTC offset
2.13 Set Buzzer Enable	Set buzzer on or off
2.14 Restore Factory	Restore the factory default configuration

5.4 Setup menu

3.1 Ip Addr	Set IP address
3.2 Mask	Set subnet mask
3.3 Gateway	Set gateway
3.4 Trap1	Set trap1 address
3.5 Trap2	Set trap2 address
3.6 NTP1	Set NTP server1
3.7 NTP2	Set NTP server2
3.8 UTC	Set UTC
3.9 MAC	The MAC address of the EDFA
3.10 SN	The serial number of the EDFA
3.11 Firmware Ver	The current software version of the EDFA
3.12 Set Buzzer Enable	Set the buzzer enable or disable.
3.14 Set Restore Factory	Restore the factory configuration, set content as shown above

5.5 Warning menu

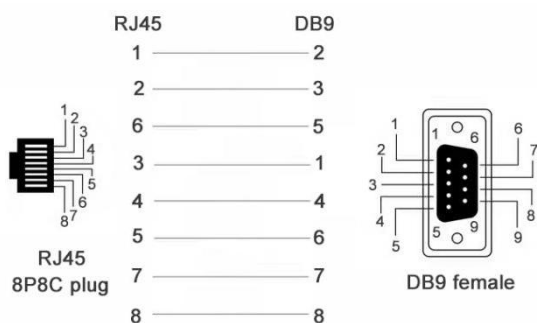
Input power: xxx	xxx= Lolow:	Very low optical input power alarm
	xxx= Low:	Low optical input power alarm
	xxx= High:	High optical input power alarm
	Xxx= Hihigh:	Very high optical input power alarm
Output power: xxx	xxx= Lolow:	Very low optical output power alarm
	xxx= Low:	Low optical output power alarm
	xxx= High:	High optical output power alarm
	Xxx= Hihigh:	Very high optical output power alarm
System temperature: xxx	xxx= Lolow:	Very low device temperature alarm
	xxx= Low:	Low device temperature alarm
	xxx= High:	High device temperature alarm
	Xxx= Hihigh:	Very high device temperature alarm
Pump laser current: xxx	xxx= Lolow:	Very low current alarm of pump x
	xxx= Low:	Low current alarm of pump x
	xxx= High:	High current alarm of pump x
	Xxx= Hihigh:	Very high current alarm of pump x
Pump laser power: xxx	xxx= Lolow:	Very low power alarm of pump x
	xxx= Low:	Low power alarm of pump x
	xxx= High:	High power alarm of pump x
	Xxx= Hihigh:	Very high power alarm of pump x

Pump laser temperature: xxx	xxx= <i>Lolow</i> :	Very low temperature alarm of pump x
	xxx= <i>Low</i> :	Low temperature alarm of pump x
	xxx= <i>High</i> :	High temperature alarm of pump x
	Xxx= <i>Hihigh</i> :	Very high temperature alarm of pump x
Power supply voltage: xxx	xxx= <i>Lolow</i> :	Very low +5V DC power supply alarm
	xxx= <i>Low</i> :	Low +5V DC power supply alarm
	xxx= <i>High</i> :	High +5V DC power supply alarm
	Xxx= <i>Hihigh</i> :	Very high +5V DC power supply alarm
Fan	<i>Fan invalid</i>	Cooling fan is invalid
Invalid Power	<i>Left</i>	Left power supply is invalid
	<i>Right</i>	Right power supply is invalid

6.Communication Setup Descriptions

6.1 Communication Interface Description

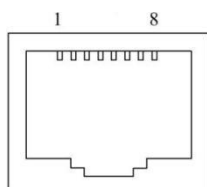
1) Connection description: RJ45 to DB-9



RJ-45 PIN	DB9 female PIN
1	2
2	3
6	5
3	1
4	4
5	6
7	7
8	8

The communication is asynchronous, and the byte frame format is: 1 start bit, 8 data bits, 1 stop bit, no parity; baud rate: 38400 bps.

2) LAN communication interface adopts RJ45 standard connector, the pin definitions as follow:



LAN

1: TX+	2: TX-	3: RX+
4: No Connect	5: No Connect	6: RX-
7: No Connect	8: No Connect	

6.2 WEB Network Management

(1)Opening the IE browser and entering the equipment IP address leads to the following interface:

Login

http://192.168.39.110

Username

Password

Login

Cancel

(2) Enter the user name admin and password 123456 (factory default), to show the following interface:

Optical Amplifier

Status	status	
Settings	Input power	-99.0 dBm
Network	Output power	0.0 dBm
Update	Pump1 bias	8 mA
Alarm	Pump1 temperature	25.2 °C
About	Pump1 tec	-77 mA
	Pump2 bias	64 mA
	Pump2 temperature	28.0 °C
	Pump3 bias	32 mA
	Pump3 temperature	28.0 °C
	Output powerB	0.0 dBm
	Device temperature	29.9 °C
	DC +5V	5.1 V

There are 6 sub-interfaces:

- 1) Status interface: mainly describes the display menus, including input and output optical power, pump laser operating current and temperature, etc.
- 2) Settings interface: some relevant parameters of the device can be set through this interface.
- 3) Network interface: can set the network configuration parameters.
- 4) Update interface: can upgrade the firmware files.
- 5) Alarm interface: can obtain the real-time alarm information by reviewing the alarm log tables.
- 6) About interface: can review the basic information of the EDFA.

(3) Click **Setting** to open the following interface:

Optical Amplifier

Status	settings		
Settings	Set Output power	22.0 dB	<input type="text"/> dB (20.3~23.3)
Network	<input type="button" value="Apply"/>		
Update	settings		
Alarm	LOW Input Threshold	-10.0 dBm	<input type="text"/> dBm
About	<input type="button" value="Apply"/>		
	settings		
	HIGH Input Threshold	10.0 dBm	<input type="text"/> dBm
	<input type="button" value="Apply"/>		
	set pump		
	Set Pump Status	ON	ON ▼
	<input type="button" value="Apply"/>		
	set work mode		
	Set EDFA Mode	APC	ACC ▼
	<input type="button" value="Apply"/>		
	restore factory config		
	Restore Factory		NO ▼
	<input type="button" value="Apply"/>		
	restart		
	Restart Device		NO ▼
	<input type="button" value="Apply"/>		

In this interface, you can set the relevant information.

The interface displays the current device value, which can be selected or modified according to actual needs. Click Apply to confirm the update of new parameters.

Steps to change parameters: Find the item that needs to be changed in the item column, then select or enter a new value in the corresponding column, and finally click the corresponding Apply to update the parameters.

(4)Click **Network** to open the following interface:

Optical Amplifier

Status	IP settings	
Settings	MAC address	30:71:B5:00:99:88
Network	IP address	192.168.39.108
Update	Subnet mask	255.255.255.0
Alarm	Default gateway	192.168.1.1
About	<input type="button" value="Apply"/>	

Web password	
New UserName	<input type="text"/>
New password	<input type="text"/>
Confirm new password	<input type="text"/>
<input type="button" value="Apply"/>	

SNMP settings	
Read-only community	private
Read-write community	public
<input type="button" value="Apply"/>	

SNMP trap address	
Trap address1	192.168.39.105
Trap address2	192.168.1.78
<input type="button" value="Apply"/>	

NTP settings	
UTC Offset	UTC+1:00 UTC-12:00 ▼
NTP server IP address1	85.214.143.181
NTP server IP address2	141.82.25.201
<input type="button" value="Apply"/>	

(5)Click **Update** to open the following interface:

Optical Amplifier

Status	Update firmware	
Settings	Step 1: upload new firmware file	
Network	<input type="button" value="Select files"/> No files selected <input type="button" value="Upload"/>	
Update	Upload status: awaiting upload	
Alarm	Step 2: once upload is successful , restart to update firmware	
About		

(6)Click **Alarm** to open the following interface:

Optical Amplifier

Status	Active Alarm Table				
Settings	No.	Time	Status	Value	Description
Network	1	2024-1-7,6:56:34	Major	-99.0 dBm	input optical power too Low
Update	2	2024-1-7,6:56:34	Major	0.0 dBm	output optical power too Low
Alarm	3	2024-1-7,6:56:34	Major	7 mA	laser bias current1 too Low
About	4	2024-1-7,6:56:34	Major	96 mA	laser bias current2 too Low
	5	2024-1-7,6:56:34	Minor	1	Power Number
	6	2024-1-7,6:56:34	Major	0.0 dBm	outputB optical power too Low
	7	2024-1-7,6:56:34	Major	64 mA	laser bias current3 too Low

(7)Click **About** to open the following interface:

Optical Amplifier

Status	System information	
Settings	Device model	EDFA
Network	Serial number	SN123456
Update	Firmware version	V1.10.103
Alarm	Uptime	0 days 00:09:45
About		

7 Attention

- Ensure the package is not defaced. If the equipment is damaged due to transportation or other reasons, please don't electrify to avoid worse damage.
- Before powering on, make sure that the grounding terminals of the chassis and power socket are reliably grounded, and the grounding resistance should be $<4\Omega$, which can effectively protect against surges and static electricity.
- Optical amplifier is a highly technical professional equipment, its installation and debugging must be operated by professional technicians. Read this manual carefully before operating to avoid damage to equipment caused by fault operation or accident harm to the operator.
- When installing and debugging optical equipment, invisible laser beams may be emitted inside the fiber connector. Avoiding permanent harm to the body and eye, the fiber connector should not aim at the human body and human should not look directly at the fiber connector with the naked eye!
- There must be no shielding outside the ventilation holes of the device. Poor ventilation will cause the index to decrease, and in serious cases will cause damage to the device.
- When cleaning the fiber end face, you must confirm that the optical source is turned off.
- When the fiber connector is not in use, put a dust cover to avoid dust pollution and keep the end surface of the optical fiber clean.
- When installing the fiber connector, apply appropriate force to avoid damage to the adapter. Otherwise, the output optical power may decrease.

