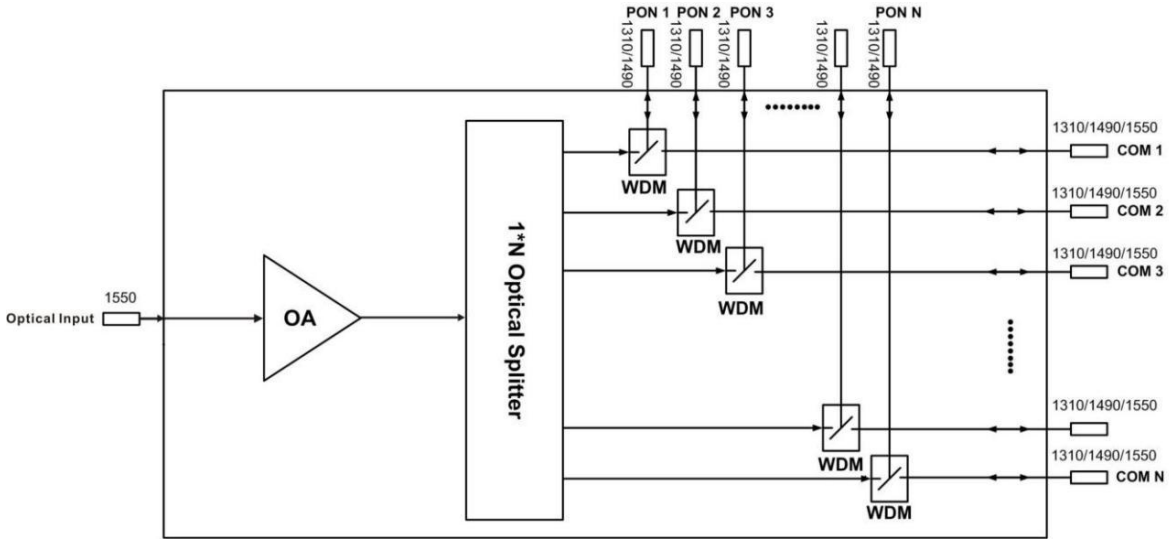
WE-1550-YZB-C Series High-power Optical Amplifier (with PON Port)

1 Product Overview

WE-1550-YZB-C optical fiber amplifier uses well-known high-performance erbium-ytterbium co-doped double-clad fiber and low-noise pump lasers. It has a reliable circuit design and efficient heat dissipation design. This device is with a height of 2RU, a 4.3-inch TFT LCD widescreen display, and touchscreen buttons. The interface offers clear layer differentiation and well-organized menus for easy navigation. The amplifier can support total output power of +39dBm (maximum). The entire device built-in CWDM and support up to 64 output ports (maximum). Optional RF detection is available. 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

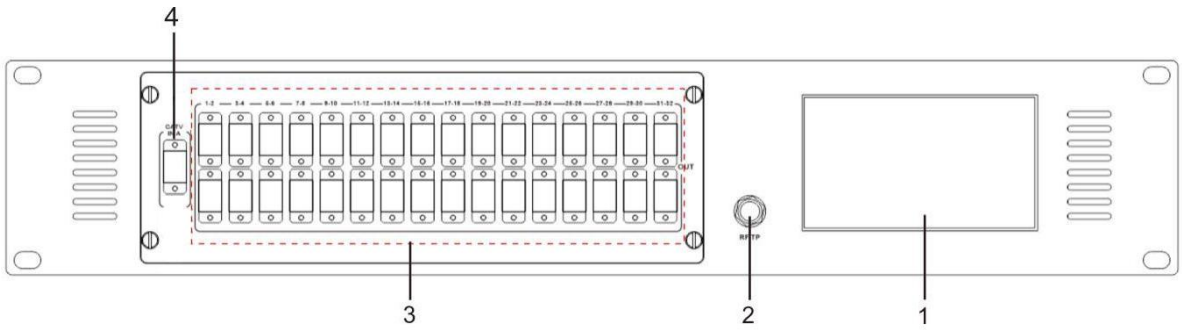
Item	Unit	Technique parameters	Remark
WDM			
Operating bandwidth	nm	1545 - 1565	
PON passthrough wavelength	nm	1260 - 1360 & 1480 - 1500 & 1570 - 1580	Note1
PON Insertion loss	dB	< 0.8	
Isolation	dB	> 30	
EDFA			
CATV Input optical power range	dBm	-5 - +10	
Maximum output optical power	dBm	39	
Output power stability	dBm	±0.5	
Noise figure	dB	≤ 6.0	Optical input power

				0dBm，λ=1550nm
Return loss	Input	dB	≥ 45	
	Output	dB	≥ 45	
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 - 250V（50/60 Hz） DC 48V	
Power consumption		W	≤ 90	
Operating Temperature Range		℃	-10 - +45	
Maximum operating relative humidity		%	Max 95% No Condensation	
Storage Temperature Range		℃	-30 - +70	
Maximum storage relative humidity		%	Max 95% No Condensation	
Dimension		mm	440(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.

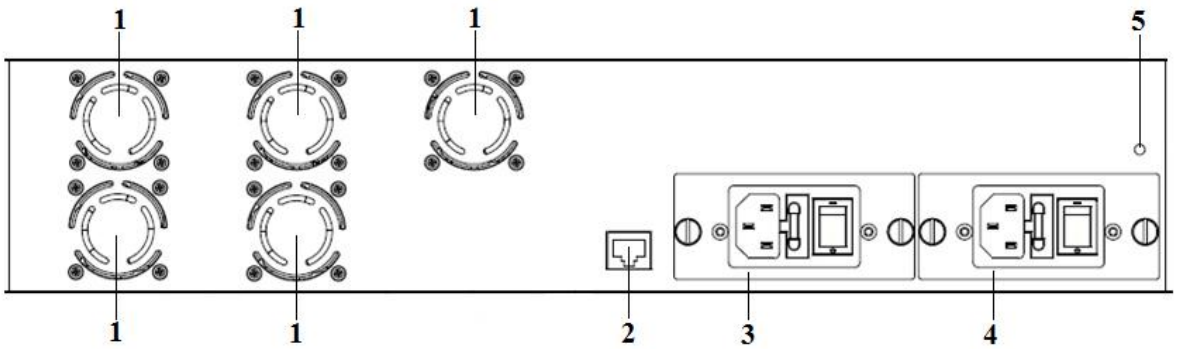
4 External Function Description

4.1 Front Panel Description



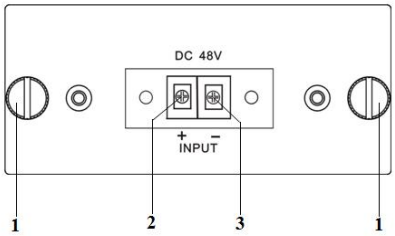
1. TFT LCD touch screen: 4.3 inches, 480 * 272 resolution.
2. RF detection port RFTP: RF detection port (optional).
3. Optical signal output ports.
4. Optical signal input port.
5. Optical signal input B

4.2 Rear Panel Description



1. Fan outlet.	2. Ground stud of the chassis.
3. Power supply 1	4. Power supply 2

4.3 DC Power Introduction

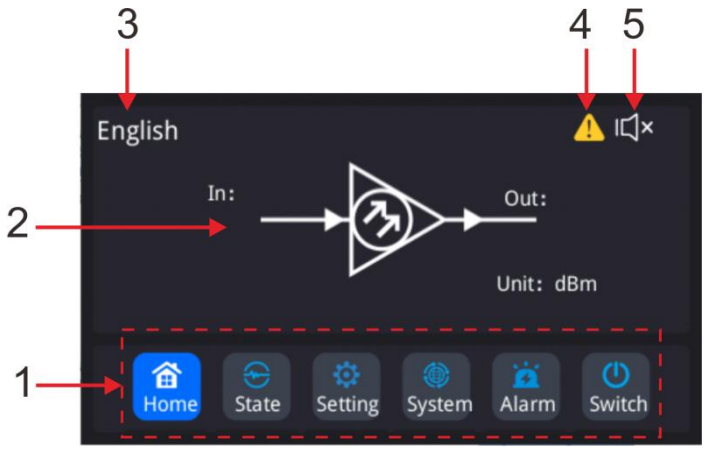


1	Mounting screws
2	+ Positive terminal block
3	- Negative terminal block

5 Menu System

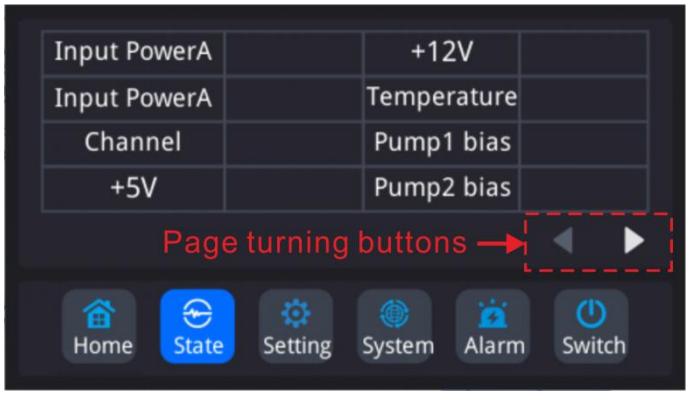
When the device is powered on, the system will automatically turn on. After booting up, enter the following main interface.

5.1 Main Interface Display Description



No.	Display	Descriptions
1	Main menu items	Home, Status, Setting, System, Alarm, Switch. There are six independent menu items
2	In, Out, Unit: dBm	Display the input optical power, output optical power and the unit.
3	System language options, Chinese/English optional	Click on English on the touch screen to display Chinese/English, and select the corresponding option based on actual needs.
4	Alarm identification	When any alarm occurs on the device, this indicator appears. This label is for informational purposes only. If you need to view alarm information, please click on the main menu - Alarm menu below to view specific information.
5	Buzzer switch identification	Click on the buzzer icon on the touch screen to select whether to turn on or off the buzzer

5.2 Status interface displays menu

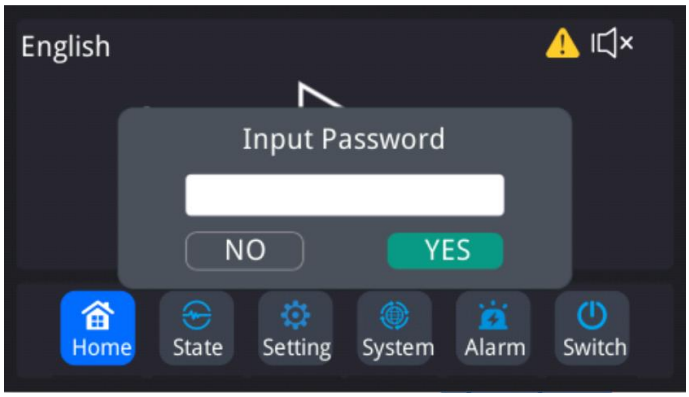


Status interface display menu	Descriptions	
Input Power : xx.x dBm	Input power, accurate to 0.1 dBm	
Output Power: xx.x dBm	Output power, accurate to 0.1 dBm	
Pump1 Power: xx.xdBm	Optical power of pump1, accurate to 0.1dBm	
Pump1 Bias: xxx mA	Bias current of pump1, accurate to 1 mA	
Pump1 Temper: xx℃	Temperature of pump1, accurate to 1°C	
Pump1 Tec: x mA	Cooling current of pump1, accurate to 1 mA	
Pump2 Voltage: x.xx V	Driving voltage of pump 2, accurate to 0.01 V	
Pump2 Bias: x mA	Bias current of pump 2, accurate to 1 mA	
Pump2 Temper: xx.x ℃	Temperature of pump 2, accurate to 0.1°C	
Pump3 Voltage: x.xx V	Driving voltage of pump 3, accurate to 0.01 V	Note: Only when the total power greater than 37dBm, this model has the pump 3 related menu item
Pump3 Bias: x mA	Bias current of pump 3, accurate to 1 mA	
Pump3 Temper: xx.x ℃	Temperature of pump 3, accurate to 0.1°C	
+5V Read: x.x V	+5V power supply voltage , accurate to 0.1 V	
-5V Read: x.x V	-5V power supply voltage , accurate to 0.1 V	
Device Temper: xx.x ℃	The device temperature, accurate to 0.1 °C	
Running Time	Display the running time (Measured in days)	

5.3 Setting menu

When clicking on the 'Setting' menu, the screen will automatically pop up the' Input Password 'dialog box. Factory default password: **888888**

When entering the password, you need to first click on the blank checkbox, and then the numeric keypad interface will pop up. Click on the number, and then click [OK]



Item that can be set	Descriptions
Low Input Threshold	Set the low optical input power alarm threshold, range: -10～10.0dBm
High Input Threshold	Set the high optical input power alarm threshold, range: -10.0～10.0dBm

Optical Output Attenuator Value	Set optical output attenuator, range: 0~3dB
Restore Factory	Restore the factory default configuration

5.4 System menu

When clicking on the 'System' menu, the screen will automatically pop up the' Input Password 'dialog box. Factory default password: **888888**

When entering the password, you need to first click on the blank checkbox, and then the numeric keypad interface will pop up. Click on the number, and then click [OK]

IP Addr: xxx.xxx.xxx.xxx	Can modify IP address
Mask:xxx.xxx.xxx.xxx	Can modify subnet mask
Gateway:xxx.xxx.xxx.xxx	Can modify Gateway
Trap Addr1: xxx.xxx.xxx.xxx	Can modify Trap1 address
Trap Addr2: xxx.xxx.xxx.xxx	Can modify Trap2 address
NTP Addr1	Can modify NTP address1
1.22 NTP Addr2	Can modify NTP address2
Administrator password	Can modify the administrator password
SN	Display the device serial number
MAC address	Display MAC address of this device
Firmware Ver: Vx.xx.x.x	Firmware version

5.5 Alarm menu

The alarm page currently only supports single page display, with a maximum of 8 alarm messages displayed on a single page. When an alarm occurs, the alarm icon is displayed in the upper right corner of the homepage. If there is no alarm, it will not be displayed.

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= Hihigh:	Very high optical output power alarm
Pump laser 1 power: xxx	*xxx= Lolow:*	Very low power alarm of pump 1
	xxx= Low:	Low power alarm of pump 1
	xxx= High:	High power alarm of pump 1
	Xxx= Hihigh:	Very high power alarm of pump 1
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 temperature: xxx	*xxx= Lolow:*	Very low temperature alarm of pump x
	xxx= Low:	Low temperature alarm of pump x
	xxx= High:	High temperature alarm of pump x
	Xxx= Hihigh:	Very high temperature alarm of pump x
Pump laser 1 tec: xxx	*xxx= Lolow:*	Very low cooling current of pump 1 alarm
	xxx= Low:	Low cooling current of pump 1 alarm
	xxx= High:	High cooling current of pump 1 alarm

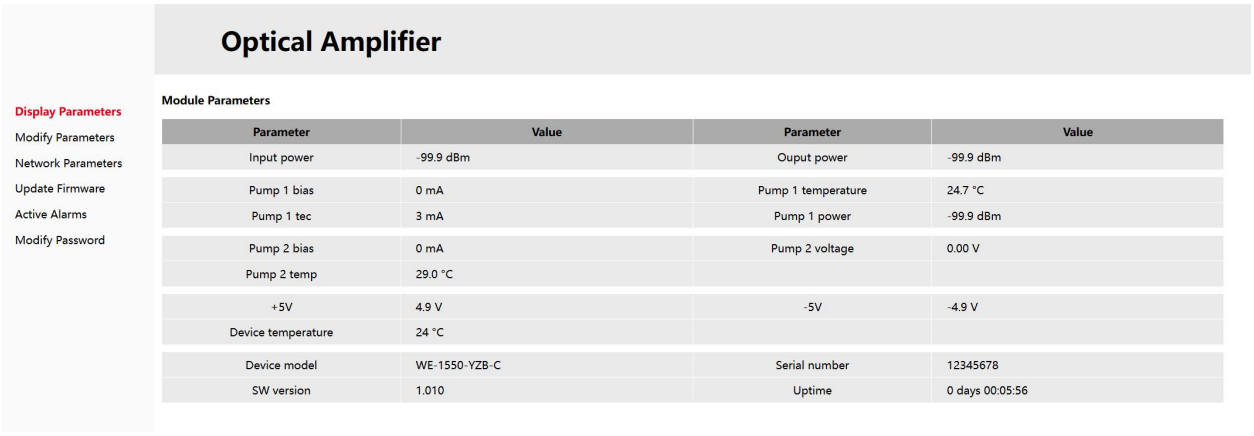
	Xxx= Hihigh:	Very high cooling current of pump 1 alarm
+5V: xxx	*xxx= Lolow:*	Very low +5V DC power supply alarm
	xxx= Low:	Low +5V DC power supply alarm
	xxx= High:	High +5V DC power supply alarm
	Xxx= Hihigh:	Very high +5V DC power supply alarm
-5V: xxx	*xxx= Lolow:*	Very low -5V DC power supply alarm
	xxx= Low:	Low -5V DC power supply alarm
	xxx= High:	High -5V DC power supply alarm
	Xxx= Hihigh:	Very high -5V DC power supply alarm
Device 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
Fan		Fan invalid
Invalid Power		Left/Right

5.6 Switch interface

Click on the [Switch] to manually turn on and off the device. When the machine is in the shutdown state, press the [Switch] button to enter the startup initialization state. The entire process lasts for about ten seconds. Do not touch the screen at this time and wait patiently for the machine to start up.

6 WEB Network Management

(1) Opening the IE browser and entering the equipment IP address, Enter the user name admin and password 123456 (factory default), to show the following interface:



There are 6 sub-interfaces:

1) Display Parameters：mainly describes the display menus, including input and output optical power, pump laser operating current and temperature, etc.

2) Modify Parameters：some relevant parameters of the device can be set through this interface.

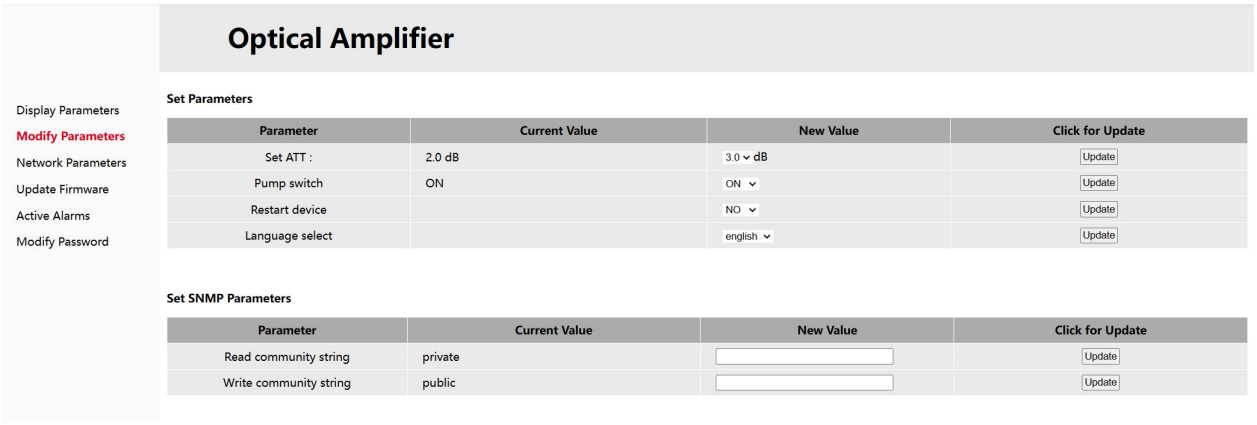
3) Network Parameters：can set the network configuration parameters.

4) Update firmware：can upgrade the firmware files.

5) Active Alarm：can obtain the real-time alarm information by reviewing the alarm log tables.

6) Modify Password：can modify the password in this interface.

(2) Click **Modify Parameters** to open the following interface:

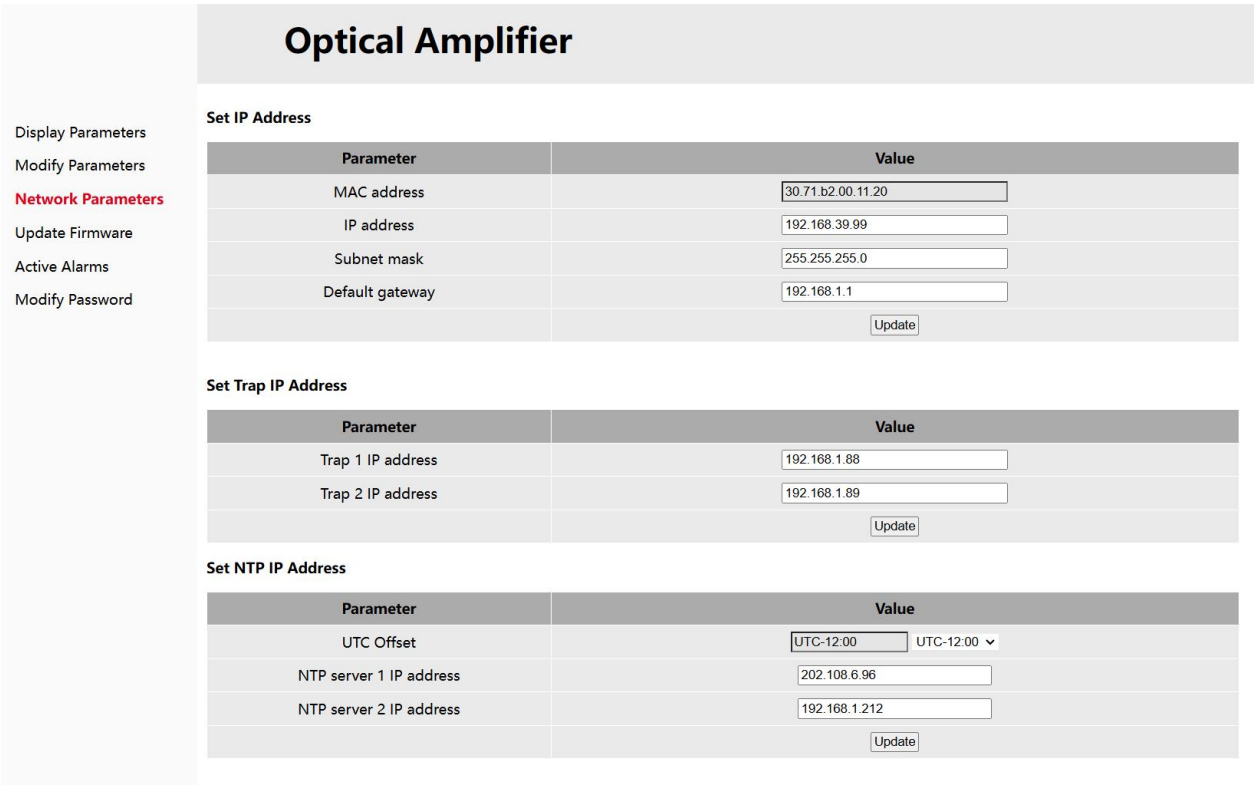


In this interface, you can set the relevant information.

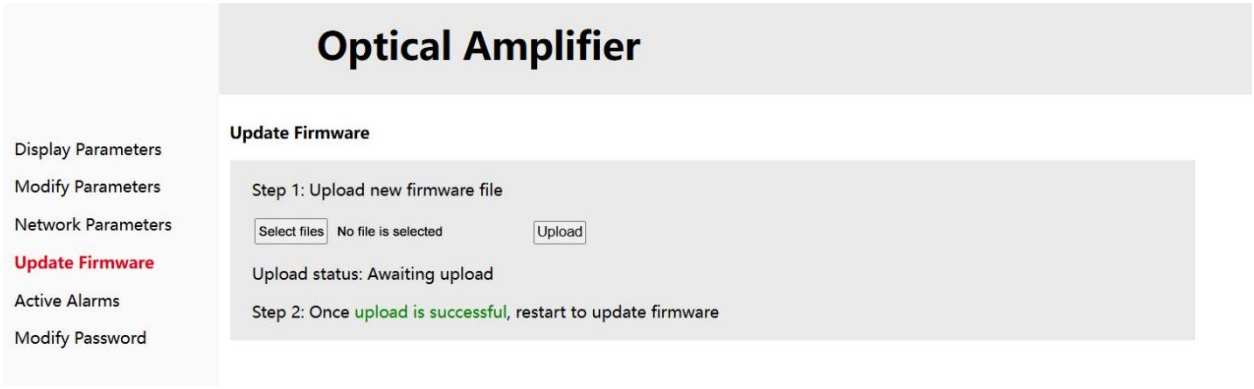
The interface displays the current device value, which can be selected or modified according to actual needs. Click Apply to confirm the update of new parameters.

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.

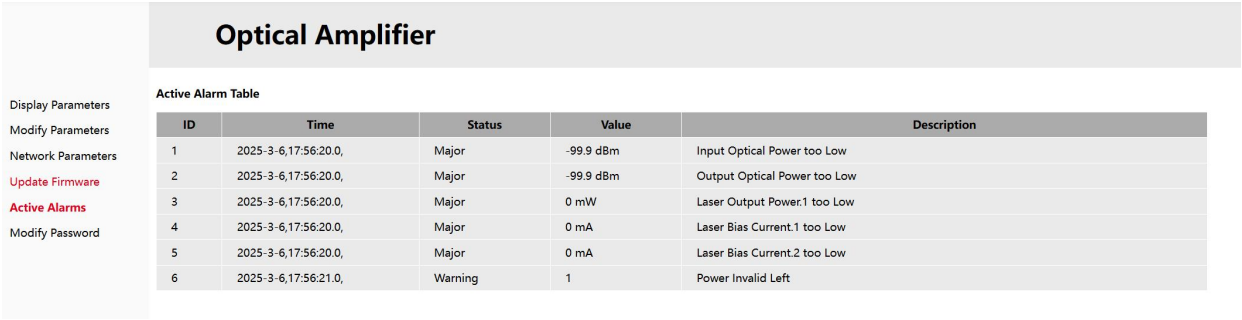
(3) Click **Network Parameters** to open the following interface:



(4) Click **Update Firmware** to open the following interface:

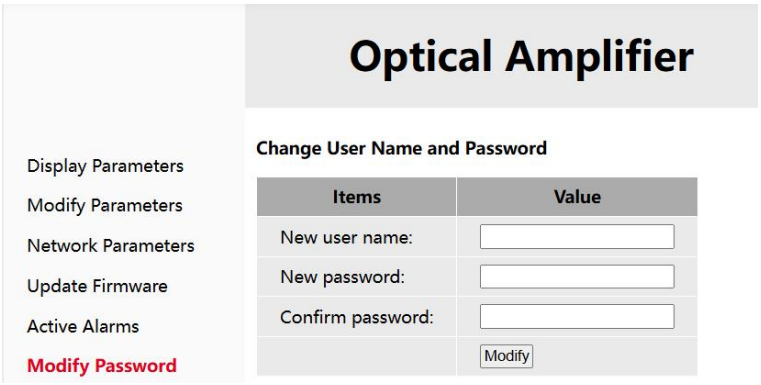


(5) Click **Active Alarm** to open the following interface:



ID	Time	Status	Value	Description
1	2025-3-6,17:56:20.0,	Major	-99.9 dBm	Input Optical Power too Low
2	2025-3-6,17:56:20.0,	Major	-99.9 dBm	Output Optical Power too Low
3	2025-3-6,17:56:20.0,	Major	0 mW	Laser Output Power.1 too Low
4	2025-3-6,17:56:20.0,	Major	0 mA	Laser Bias Current.1 too Low
5	2025-3-6,17:56:20.0,	Major	0 mA	Laser Bias Current.2 too Low
6	2025-3-6,17:56:21.0,	Warning	1	Power Invalid Left

(6) Click **Modify Password** to open the following interface:



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 ＜4Ω, 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.