

Multiport EYDFA Amplifier

User's Manual

SPA Series

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I. Features

- (1) Single/dual input for choice, built in optical switch for dual input, the switching power can be set by the button in the front panel or by web SNMP.
- (2) Output adjustable by buttons in the front panel or web SNMP, the range is down 4dBm
- (3) Maintenance function of one-time downward attenuation of 6dBm by buttons in the front panel or web SNMP, to facilitate the optical fiber hot-plug operation without turn off the device
- (4) Multi- ports output, can built in 1310/1490/1550WDM.
- (5) Standard RJ 45 port for remote control, we can provide output contract and web manager for choice, and also plug-in SNMP hardware can be reserved for update.
- (6) With laser key to turn on/off the laser.
- (7) With RF test function.
- (8) Adopts JDSU or Oclaro Pump laser
- (9) Led displays the working condition of the machine
- (10) Dual power hot plug power supply for choice, 90V~250V AC or -48V DC

II. Installation

Before installation

1. Please check if there is damage in outside of the machine
2. Please check the spare parts is complete or not, if not complete, please contact the seller.

Installation

1. Please keep at least 1.75inches (4.5cm) space for cooling if the machine installed with other machines.
2. Please check the power supply socket and the grounding of the power supply, the grounding impedance should $\leq 4\Omega$, 220V power supply should be with three cables and the grounding cable should be in the middle, Unfitted grounding will damage the device or influence the signal quality.
3. Please make sure the power supply switch to off in the rear panel

4. Please confirm the fiber port is clean before connection the fiber.

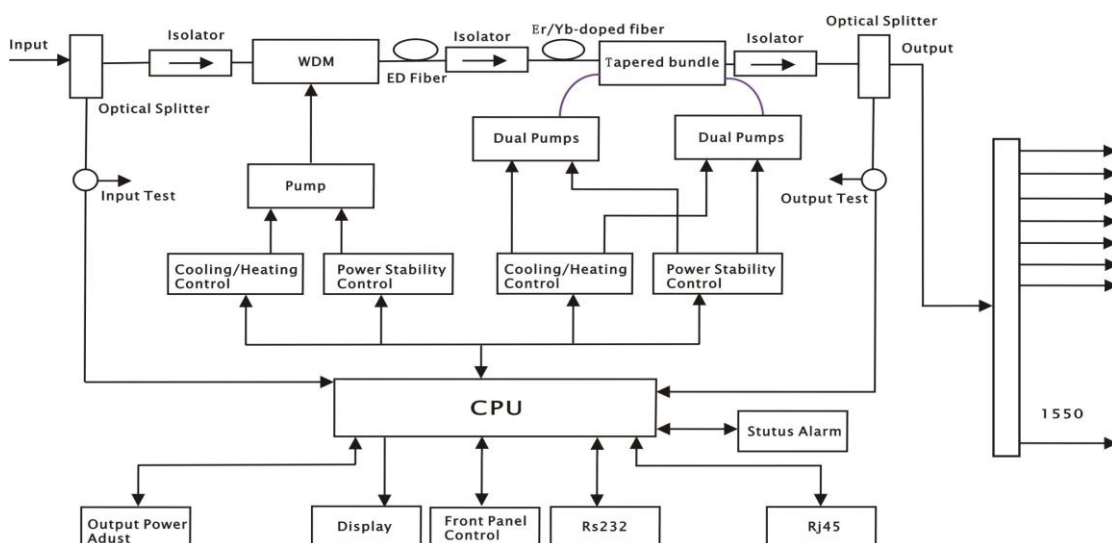
III. Set and Operation

Main Parameters

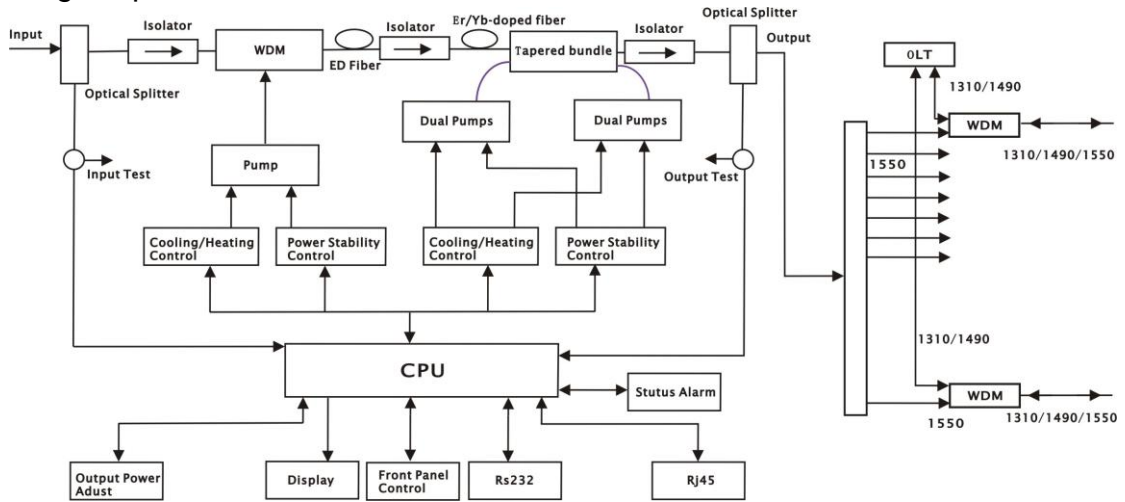
Items	parameter									
Output (dBm)	31	32	33	34	35	36	37	38	39	40
Output (mW)	1250	1600	2000	2500	3200	4000	5000	6400	8000	10000
Input(dBm)	-8~+10									
Range of output adjustment (dBm)	Down 4									
one-time downward attenuation(dBm)	Down 6									
Wavelength (nm)	1540~1565									
Output stability(dB)	<±0.3									
Optical Return Loss (dB)	≥45									
Fiber Connector	FC/APC、SC/APC、SC/IUPC、LC/APC、LC/UPC									
Noise Figure (dB)	<6.0(input 0dBm)									
Web port	RJ45(SNMP)									
Power Consumption (W)	≤80									
Voltage (V)	220VAC(90~265)、-48VDC									
Working Temp (°C)	-0~55									
Size (mm)	370(L)×486(W)×88(H)									
NW (Kg)	8									

Diagram

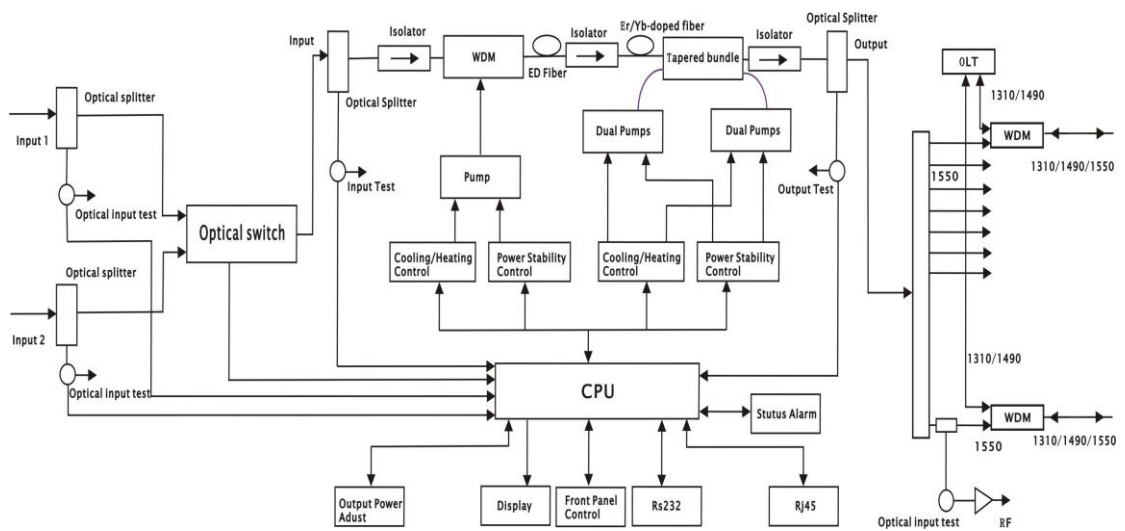
Single input, standard Model



Single input, with WDM

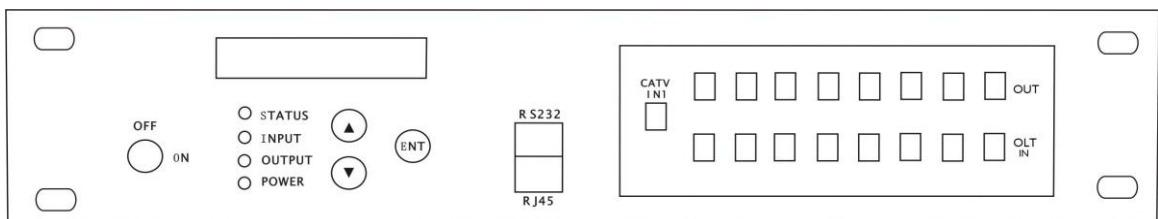


Dual inputs, With WDM



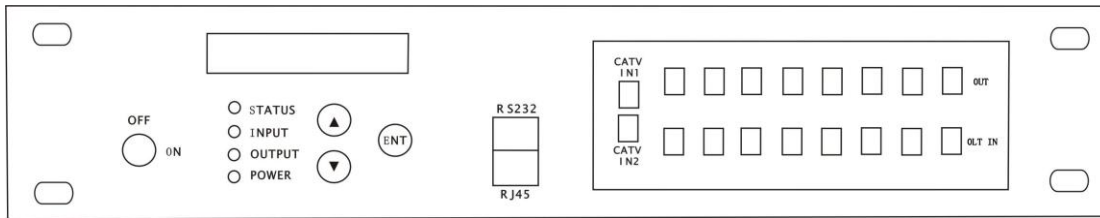
Front Panel

Single input



8 Ports、16Ports、32 Ports or With WDM

Dual inputs



8 Ports、16Ports、32 Ports or With WDM

3.3.1 LED display

Displays the working parameter of the machine

3.3.2 STATUS Indication light

Green: Normal Condition

Red: No input or abnormal condition

3.3.3 INPUT Indication Light

Green: Normal

3.3.4 OUTPUT Indication Light

Green: Normal

3.3.5 POWER Indication Light

Green: Power Connected

3.3.6 Key

ON: Turn on the laser

OFF: Turn off the laser

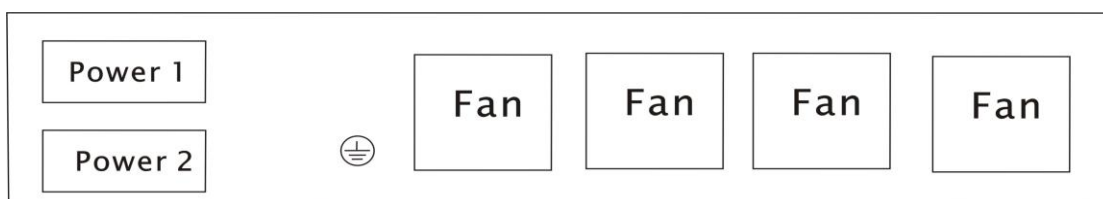
3.3.7 RS232

Network management for local computers

3.3.8 RJ45

SNMP, for remote computer network management

Rear Panel



3.4.1 Power Switch (220V)

ON: Turn on the power

OFF: Turn off the power

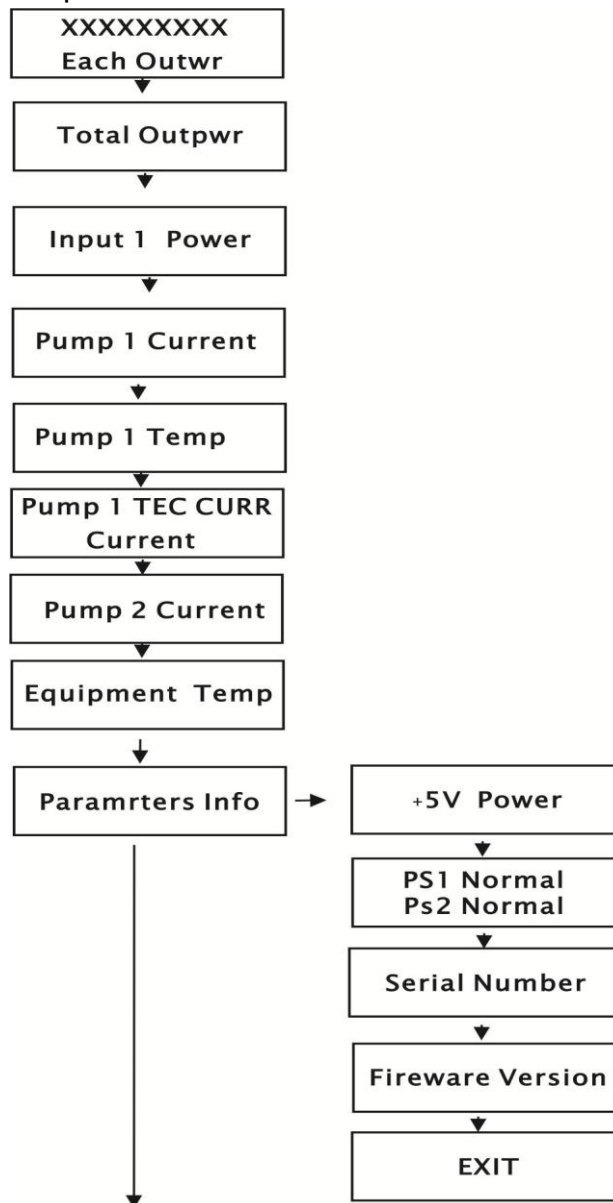
3.4.2 Power Socket

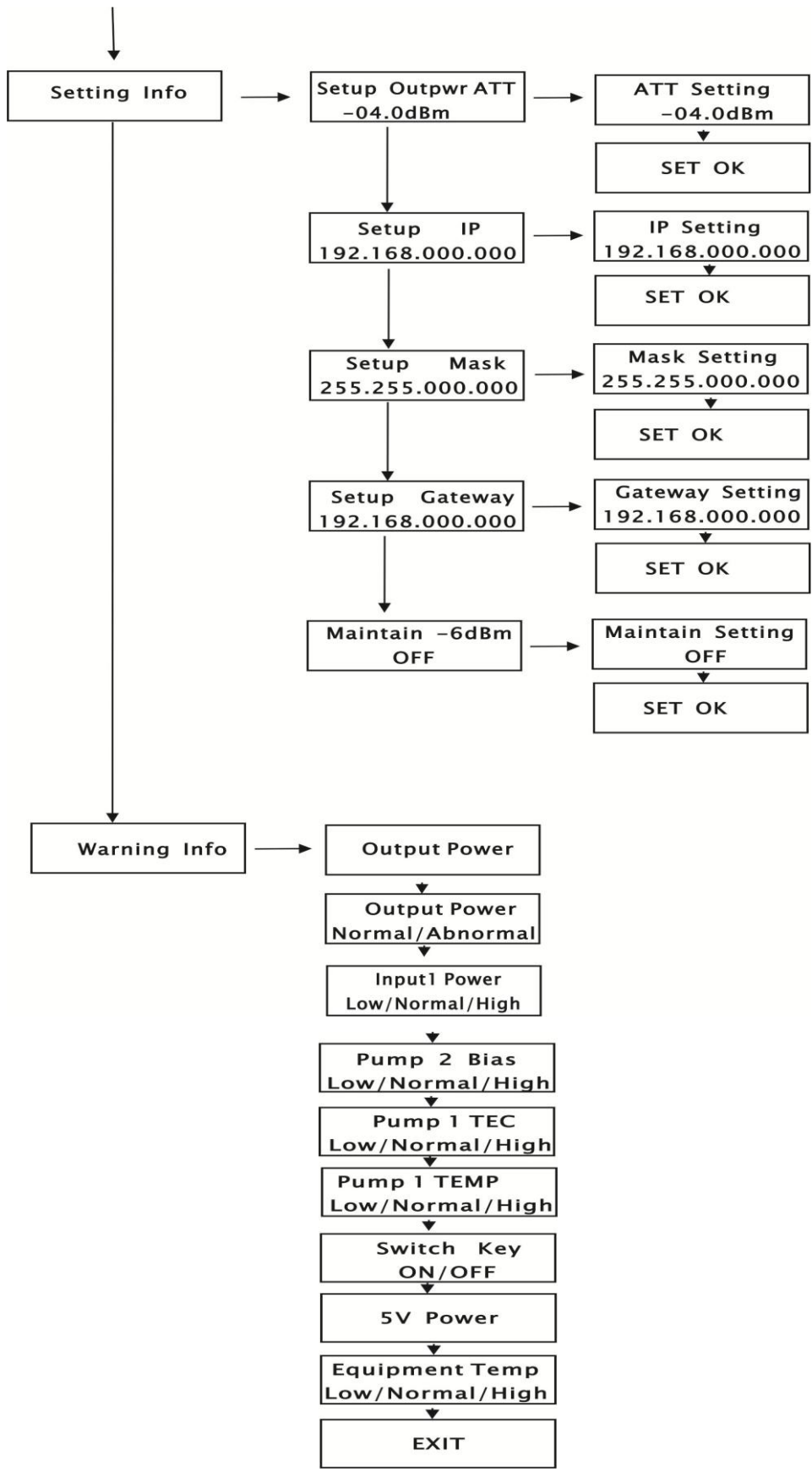
AC220V and DC-48V

Operation Flow Chart

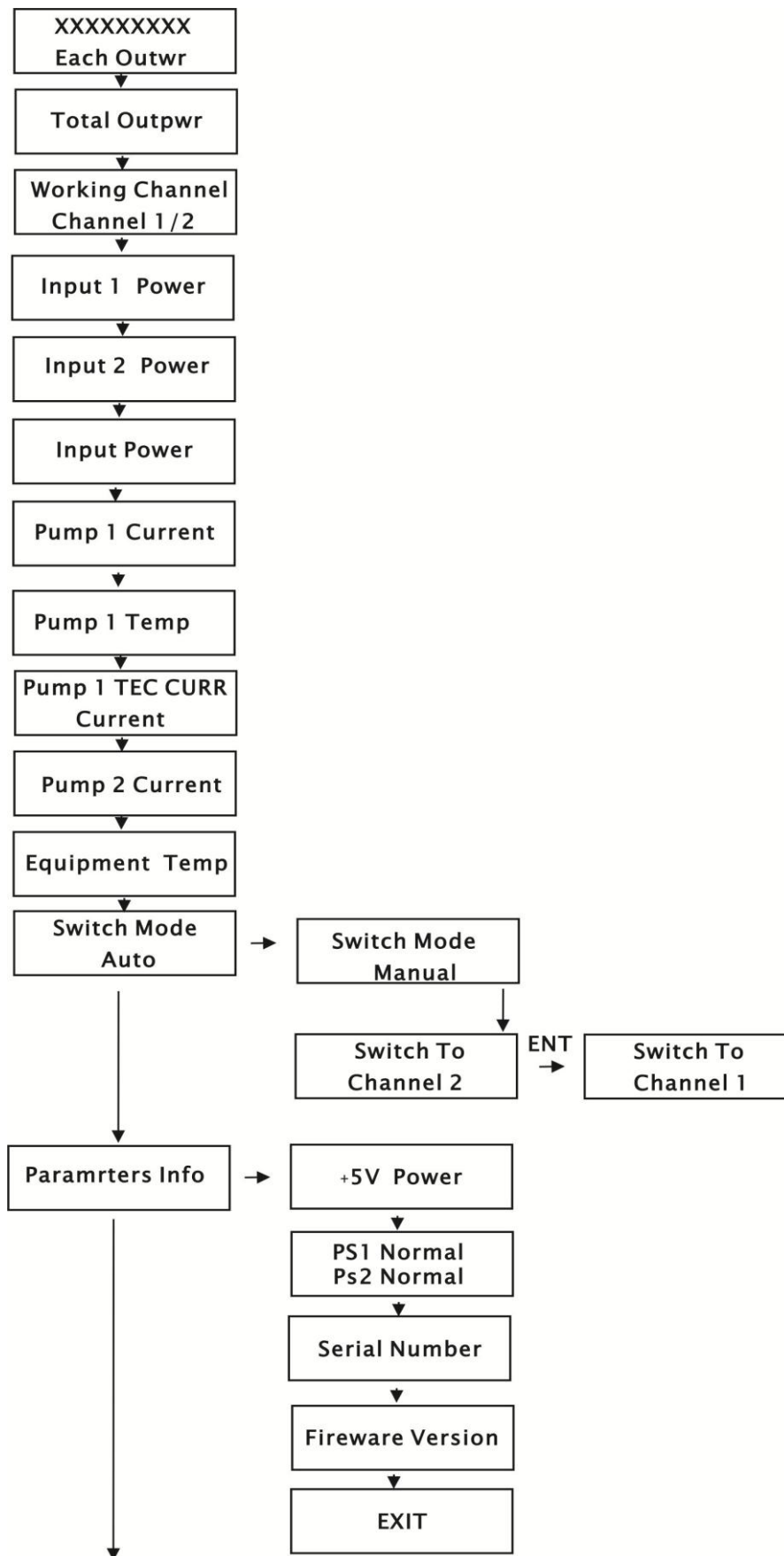
The following menu displays with "▲" button, Use the "▼" button to do the reverse loop, "ESC" as the return button.

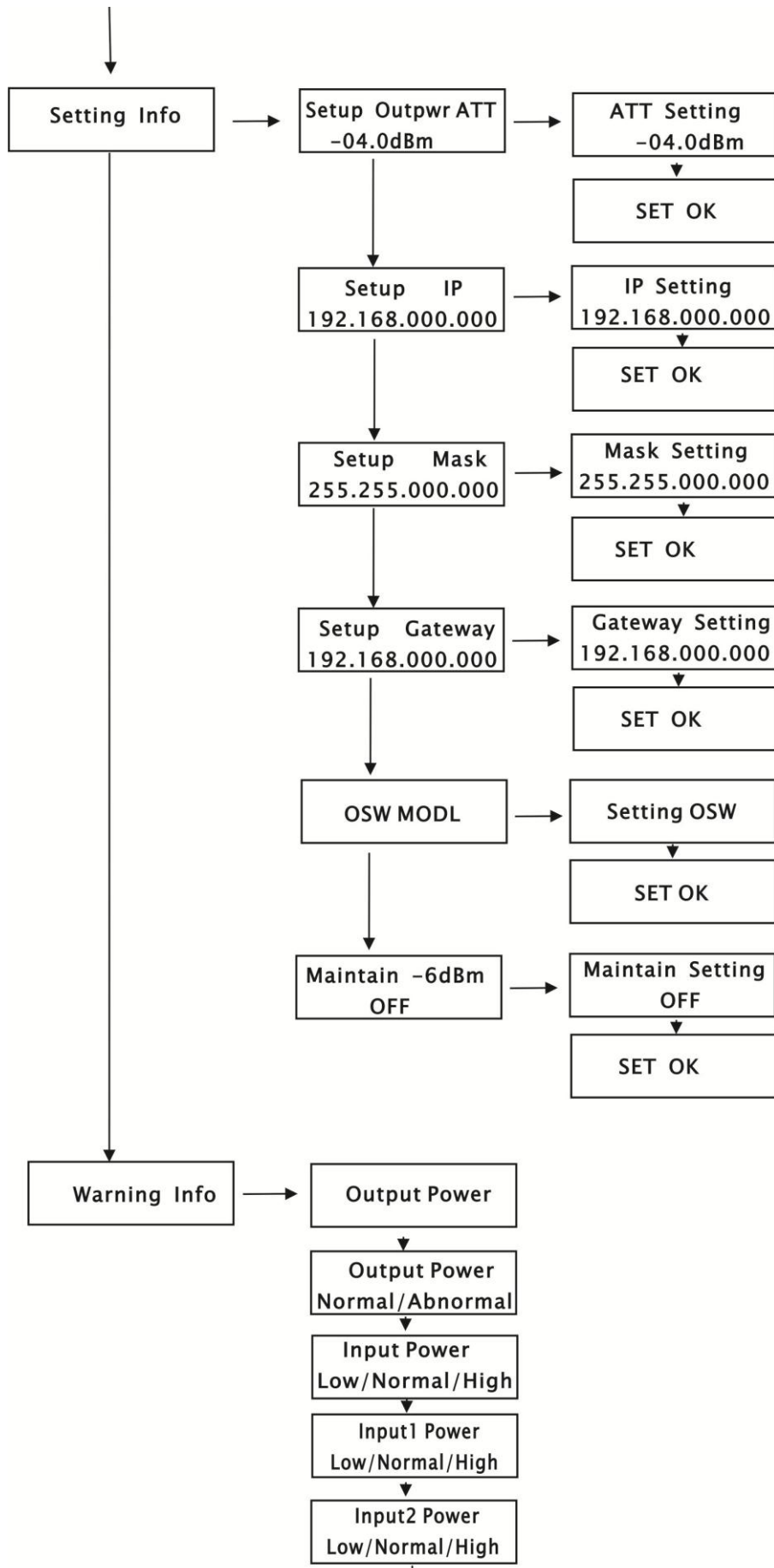
3.5.1 Single input operation flow chart:

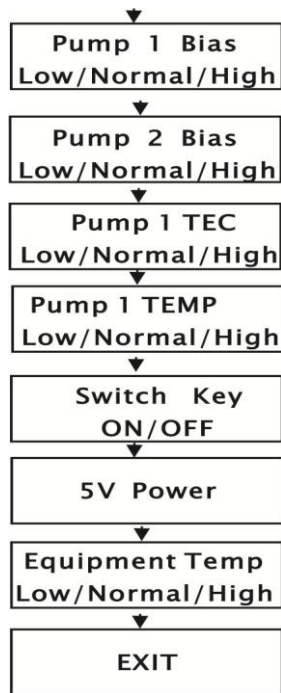




3.5.2 Dual inputs operation flow chart:



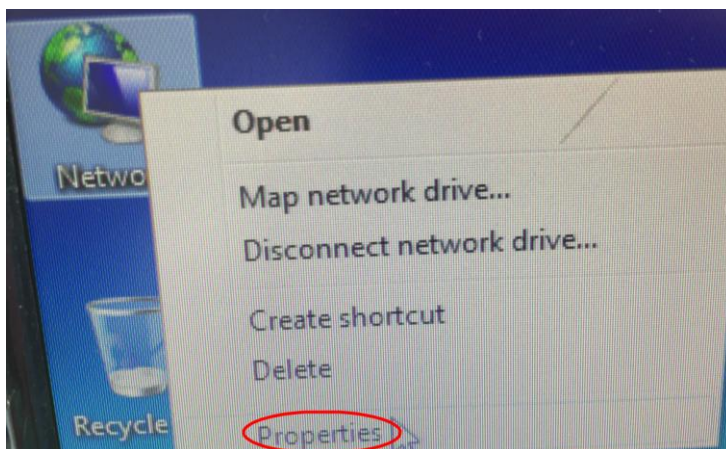


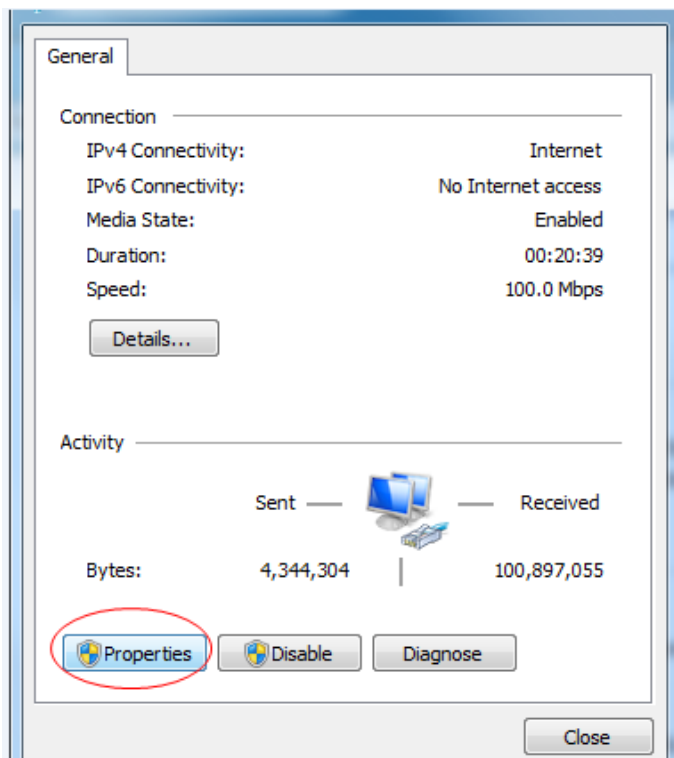
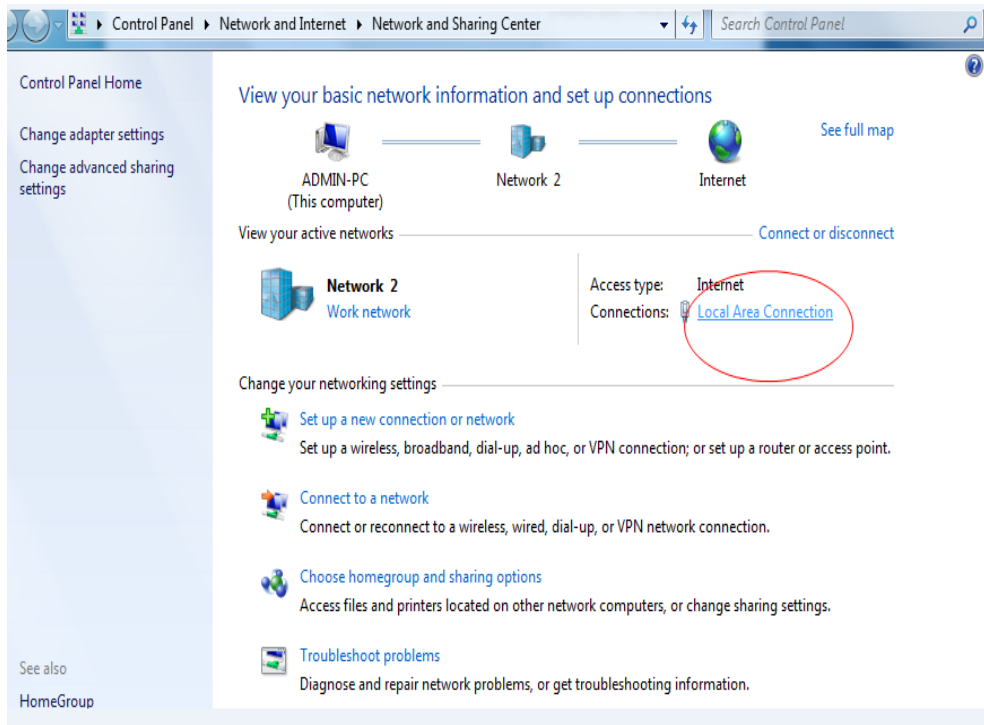


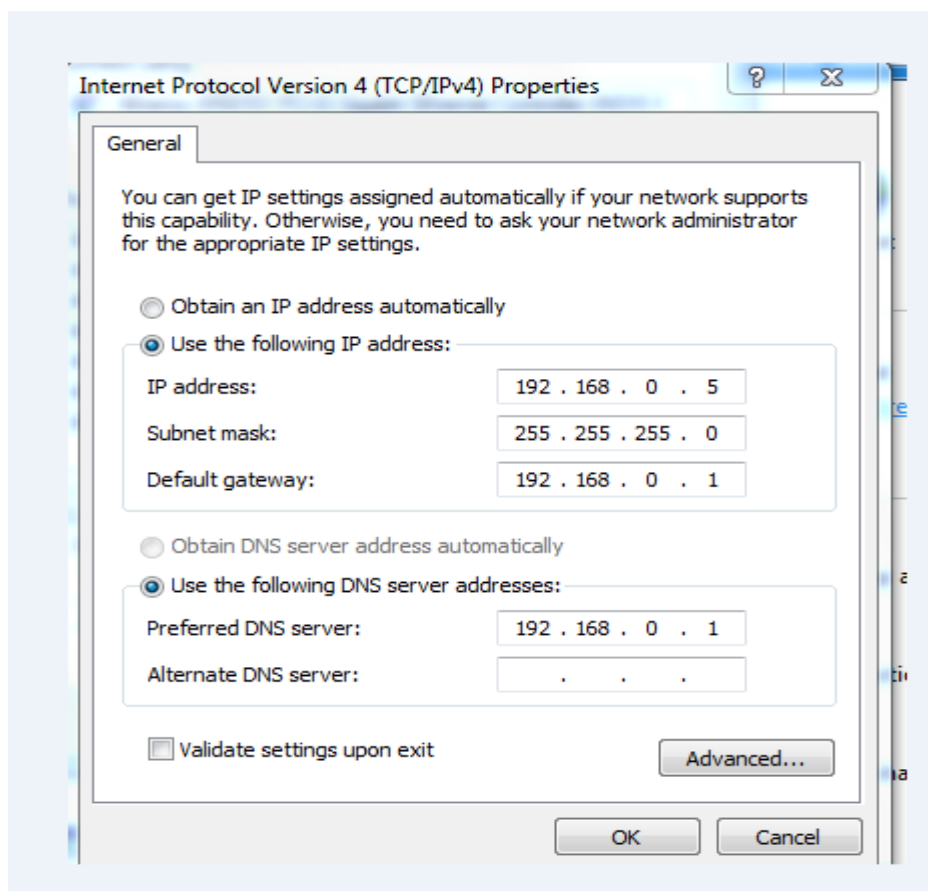
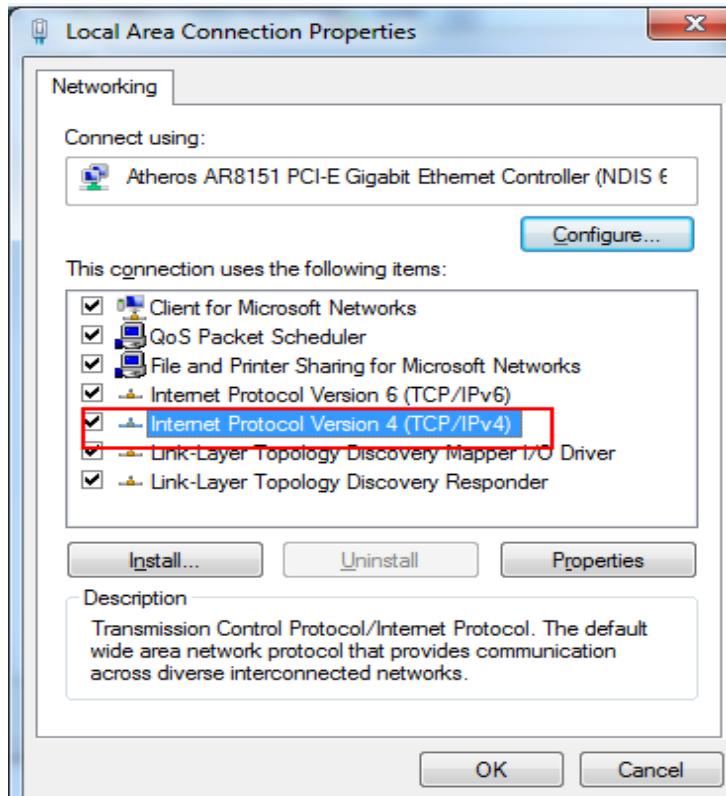
IV. Web server

The user can use web browser to check the working condition and basic parameters of the amplifier, it supports IE, Chrome, Firefox ,opera and other main web browser. The following example are based on Opera browser.

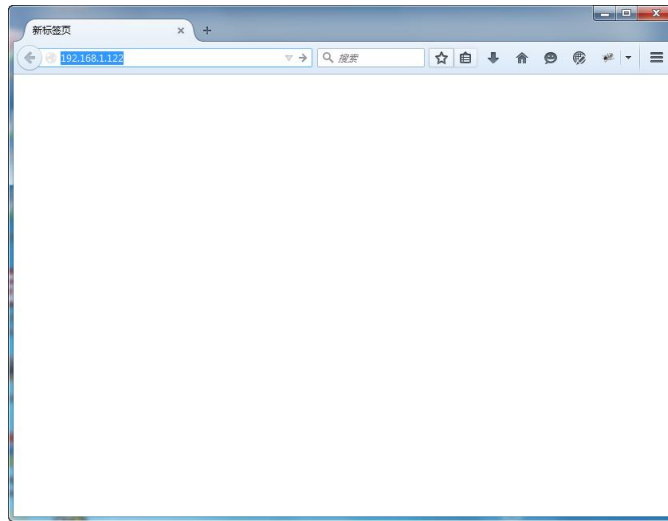
1. Pls find the IP add in the machine, normally it is 192.168.0.XXX, set the IP add of the PC in the same range as following steps:



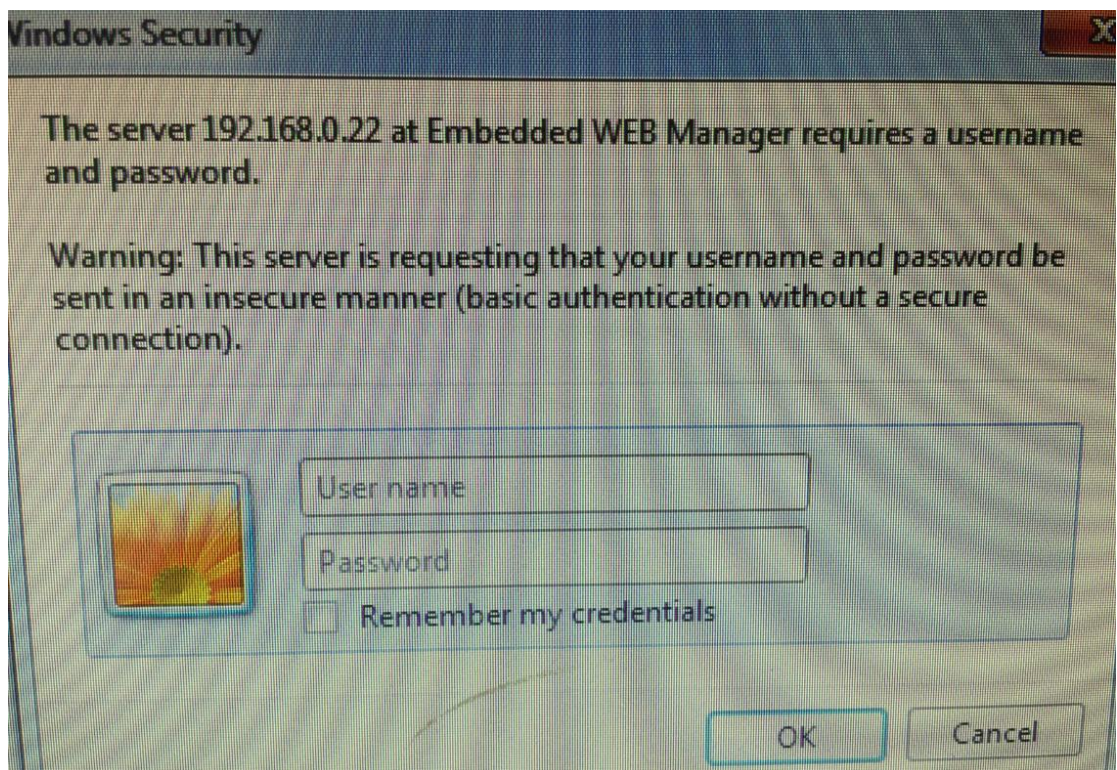




2 .Open web browser, input the IP add, For example: 192.168.0.22

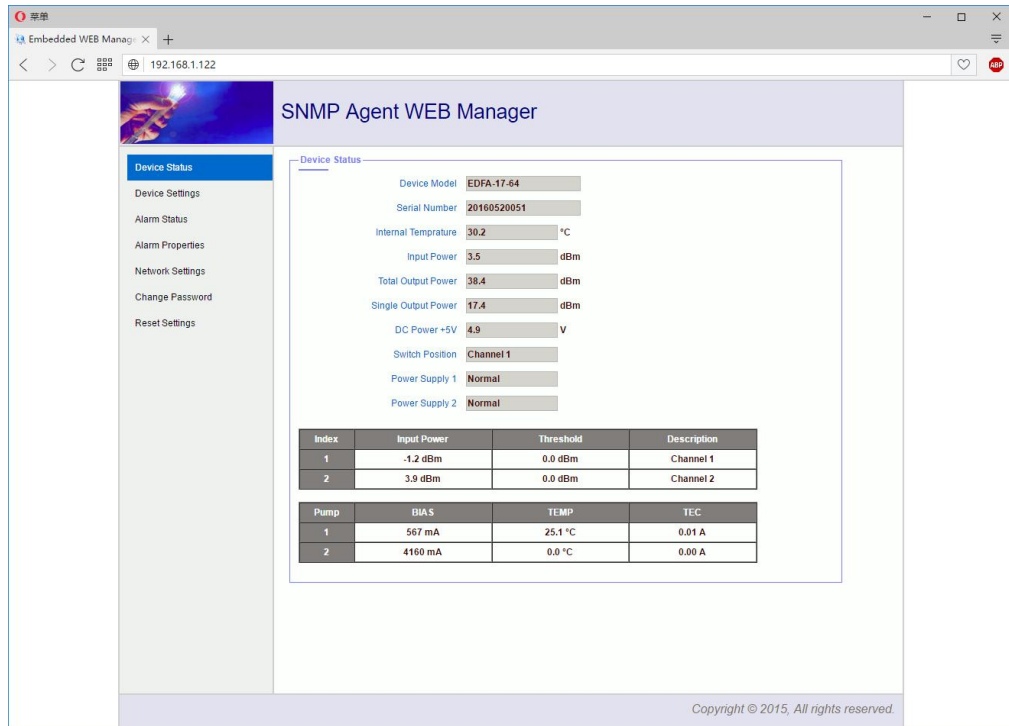


Then login version



User Name: admin
Password: 123456

3.The working condition version:



The screenshot displays the 'SNMP Agent WEB Manager' interface. The browser address bar shows '192.168.1.122'. The main content area is titled 'Device Status' and contains the following information:

- Device Model: EDFA-17-64
- Serial Number: 20160520051
- Internal Temperature: 30.2 °C
- Input Power: 3.5 dBm
- Total Output Power: 38.4 dBm
- Single Output Power: 17.4 dBm
- DC Power +5V: 4.9 V
- Switch Position: Channel 1
- Power Supply 1: Normal
- Power Supply 2: Normal

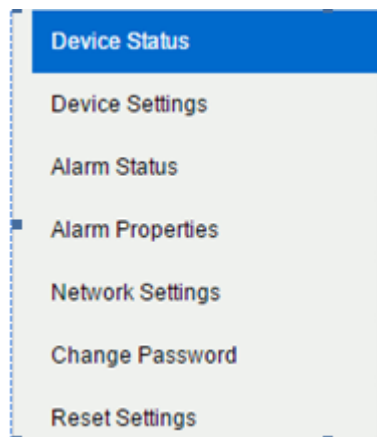
Below the status information are two tables:

Index	Input Power	Threshold	Description
1	-1.2 dBm	0.0 dBm	Channel 1
2	3.9 dBm	0.0 dBm	Channel 2

Pump	BIAS	TEMP	TEC
1	567 mA	25.1 °C	0.01 A
2	4160 mA	0.0 °C	0.00 A

At the bottom right of the interface, there is a copyright notice: 'Copyright © 2015, All rights reserved.'

4.4 Items guide on the left, click to enter:



- Device Status
- Device Settings
- Alarm Status
- Alarm Properties
- Network Settings
- Change Password
- Reset Settings

Embedded WEB Manager 192.168.1.122

SNMP Agent WEB Manager

- Device Status
- Device Settings**
- Alarm Status
- Alarm Properties
- Network Settings
- Change Password
- Reset Settings

Device Settings

Threshold: dBm

Set Output ATT: dB

Switch Mode:

Switch To:

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Embedded WEB Manager 192.168.1.122

SNMP Agent WEB Manager

- Device Status
- Device Settings
- Alarm Status**
- Alarm Properties
- Network Settings
- Change Password
- Reset Settings

Alarm Status

Index	Parameter Name	Alarm Status
1	Output optical power	Nominal
2	Input optical power	Nominal
3	Power Supply 1	Nominal
4	Power Supply 2	Nominal
5	Internal Temp	Nominal
6	Pump1 BIAS	Nominal
7	Pump2 BIAS	Nominal
8	Pump1 TEC	Nominal
9	Pump1 Temp	Nominal
10	DC +5V	Nominal
11	Channel 1	Discrete Major
12	Channel 2	Nominal
13	Channel 1 input	LO
14	Channel 2 input	Nominal

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Embedded WEB Manager 192.168.1.122

SNMP Agent WEB Manager

- Device Status
- Device Settings
- Alarm Status
- Alarm Properties**
- Network Settings
- Change Password
- Reset Settings

Alarm Properties

Index	Parameter Name	HHI	HI	LO	LOLO	Deadband	Action
1	Output optical power (dBm)	<input checked="" type="checkbox"/> 27.0	<input checked="" type="checkbox"/> 26.0	<input checked="" type="checkbox"/> 11.0	<input checked="" type="checkbox"/> 10.0	0.5	Set
2	Input optical power (dBm)	<input checked="" type="checkbox"/> 10.0	<input checked="" type="checkbox"/> 8.0	<input checked="" type="checkbox"/> -3.0	<input checked="" type="checkbox"/> -10.0	0.2	Set
3	Internal Temp (°C)	<input checked="" type="checkbox"/> 85	<input checked="" type="checkbox"/> 70	<input checked="" type="checkbox"/> 5	<input checked="" type="checkbox"/> 0	2	Set
4	Pump1 BIAS (mA)	<input checked="" type="checkbox"/> 900	<input checked="" type="checkbox"/> 800	<input checked="" type="checkbox"/> 100	<input checked="" type="checkbox"/> 80	20	Set
5	Pump2 BIAS (mA)	<input checked="" type="checkbox"/> 15000	<input checked="" type="checkbox"/> 10000	<input checked="" type="checkbox"/> 100	<input checked="" type="checkbox"/> 80	20	Set
6	Pump1 TEC (A)	<input checked="" type="checkbox"/> 2.00	<input checked="" type="checkbox"/> 1.50	<input checked="" type="checkbox"/> -1.50	<input checked="" type="checkbox"/> -2.00	0.10	Set
7	Pump1 Temp (°C)	<input checked="" type="checkbox"/> 35.0	<input checked="" type="checkbox"/> 30.0	<input checked="" type="checkbox"/> 20.0	<input checked="" type="checkbox"/> 15.0	1.0	Set
8	DC +5V (V)	<input checked="" type="checkbox"/> 6.5	<input checked="" type="checkbox"/> 6.0	<input checked="" type="checkbox"/> 4.0	<input checked="" type="checkbox"/> 3.5	0.2	Set
9	Channel 1 input (dBm)	<input checked="" type="checkbox"/> 10.0	<input checked="" type="checkbox"/> 7.5	<input checked="" type="checkbox"/> 3.5	<input checked="" type="checkbox"/> -10.0	0.2	Set
10	Channel 2 input (dBm)	<input checked="" type="checkbox"/> 10.0	<input checked="" type="checkbox"/> 7.5	<input checked="" type="checkbox"/> 3.5	<input checked="" type="checkbox"/> -10.0	0.2	Set

Index	Parameter Name	Control	Action
1	Power Supply 1	EnableMajor	Set
2	Power Supply 2	EnableMajor	Set
3	Channel 1	EnableMajor	Set
4	Channel 2	EnableMajor	Set

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Embedded WEB Manager 192.168.1.122

SNMP Agent WEB Manager

- Device Status
- Device Settings
- Alarm Status
- Alarm Properties
- Network Settings**
- Change Password
- Reset Settings

Network Settings

Device MAC: 00 : B9 : A0 : 12 : 47 : 32

Update Identifier: DA138TG02

Static IP Address: 192 . 168 . 1 . 122

Subnet Mask: 255 . 255 . 255 . 0

Default Gateway: 192 . 168 . 1 . 1

Trap Address 1: 255 . 255 . 255 . 255

Trap Address 2: 0 . 0 . 0 . 0

Trap Address 3: 0 . 0 . 0 . 0

Trap Address 4: 0 . 0 . 0 . 0

Trap Address 5: 0 . 0 . 0 . 0

Trap Address 6: 0 . 0 . 0 . 0

Trap Address 7: 0 . 0 . 0 . 0

Trap Address 8: 0 . 0 . 0 . 0

Read Community: public

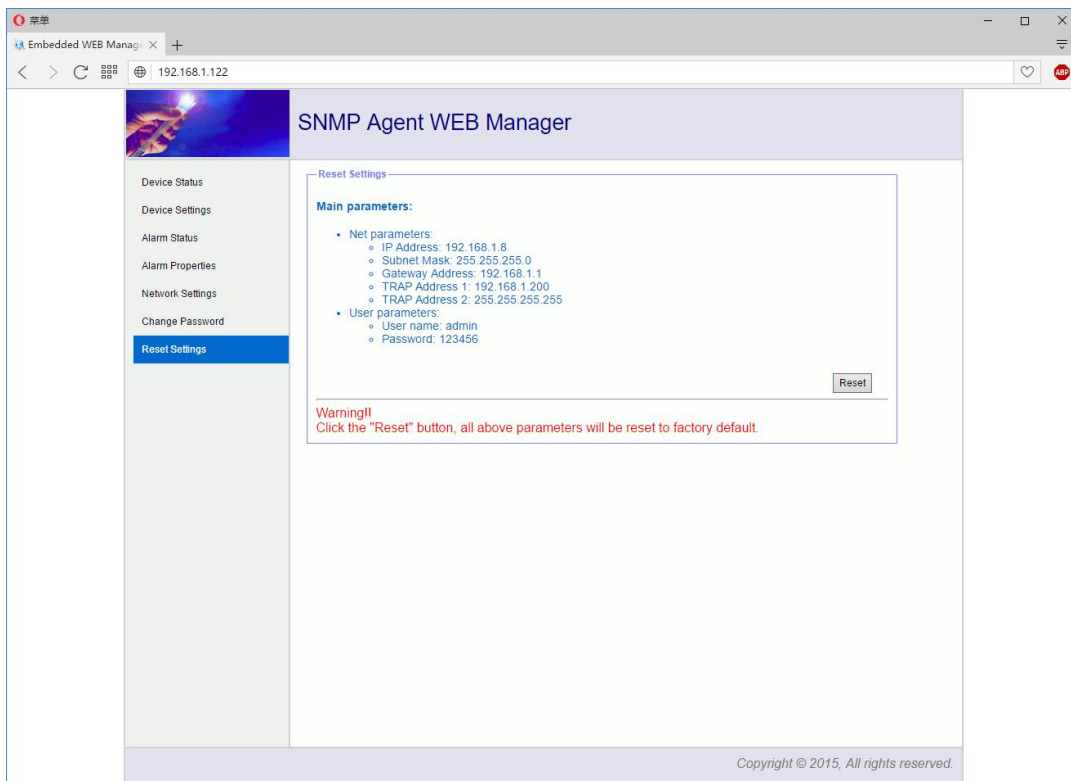
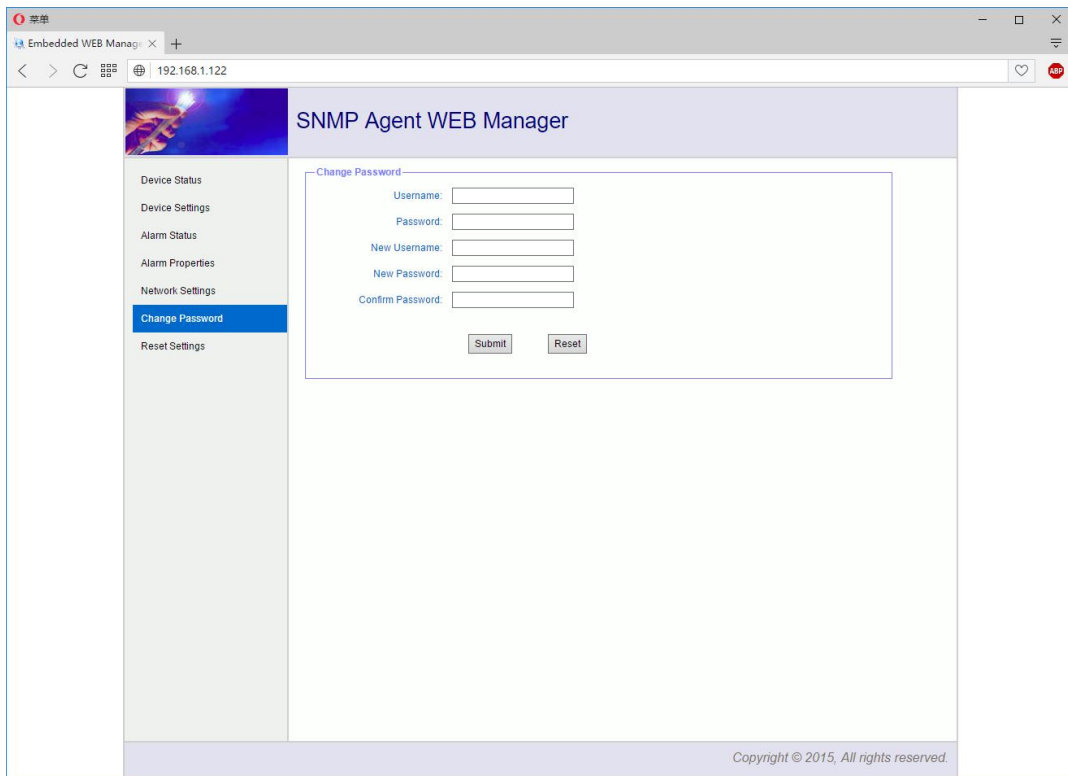
Write Community: public

Trap Community: public

SNMP Version: V1

Save

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V. Notes

1. The main component of the amplifier laser is sensitive to the static electricity, so please keep the amplifier away from the static electricity. Furthermore, please keep it away from caustic things. Please keep the amplifier in temperature between -25°C and 65°C .
2. Please make sure the power is earthed.
3. Please don't now attempt to look into the optical connectors when power applied, eye damage may result.
4. Please don't block up the heating dispersion hole and keep the machine aired.
5. Please don't unfold the machine or remove any parts of the machine.
- 6. Please don't insert the patch cord when the power is on**
- 7. Please don't test the EDFA more than repeatedly.**

VI. Solution to some ordinary problem

1. Power supply light STATUS: green
LED light LASER: red
VFD display: NO LASER INPUT
Reason: NO 1550nm optical input
Solution: Input 1550nm optical signal
2. In LED n it displays the right optical power, but not enough by test meter
Reason: 1. the optical meter is not very correct
2. the input optical power is out of the requested value($-3\sim 10\text{dB}$)
3. too big loss in the test pigtail
4. There is dust in the connectors
Solution:
Use absolute alcohol to wash the all the connects and the test point of optical meter

Note:

1. **Don't use Chinese optical meter to test EDFA.**
2. **Don't test EDFA with pigtail again and again, it will hurt the fiber connector and make the factual power become smaller.**

VII. Warranty Term

SPA Series optical amplifiers are covered by **TWO YEARS LIMITED WARRANTY**, which starts from the initial date of your purchase. We provide its customer whole-life technical supports. If warranty is expired, repair service only charges parts (if required). In the event that a unit must be returned for service, before returning the unit, please be advised that:

1. Warranty mark pasted on the housing of unit must be in good conditions.
2. A clear and readable material describes model number, serial number and troubles should be offered.
3. Please pack the unit in its original container. If the original container is no longer available, please pack the unit in at least 3 inches of shock absorbing material.

NOTE: we **do not** assume responsibility for damage caused by improper packing of returned unit(s).

The following situation is not covered by warranty:

1. The unit fails to perform because of operators' faults.
2. Warranty mark is modified, damaged and/or removed.
3. Damage caused by Force Majeure.
4. The unit has been unauthorized alteration and/or repaired.
5. Other troubles caused by operators' faults.