

SUN-EYDFA Series

1550nm Erbium-Ytterbium-Doped Fiber Amplifier

User's Manual



Contents

| I. | Features | (P3) |
|-------------|--|------------------------|
| II. | Installation | (P3) |
| III. | Set and Operation(P | 4-P9) |
| C F F | Main Parameters. Diagram. Front Panel Rear Panel. Panel Operation. | (P4) (P5) .(P6) |
| IV. | Web Server | (P9-P17) |
| V. | Notes | .(P18) |
| VI. | Solution to ordinary problems | .(P18) |
| VII | . Warranty Terms | .(P19) |



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 +0.5dBm~-4.0dBm
- (3) Max multi 32 ports, with built in 1310/1490/1550WDM,max total output 37 dBm
- (4) 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.
- (5) With laser key to turn on/off the laser.
- (6) With RF test function.
- (7) Adopts JDSU or Oclaro Pump laser
- (8) Led displays the working condition of the machine
- (9)Dual power hot plug power supply for choice, 90V \sim 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.
- Please check the power supply socket and the grounding of the power supply, the grounding impedance should ≤4Ω, 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.

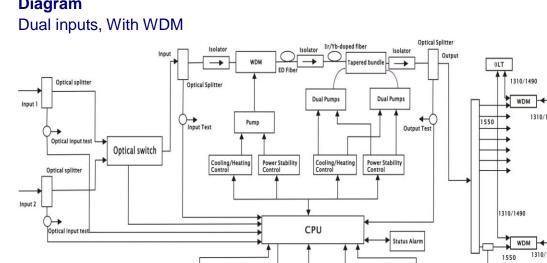


III. Set and Operation

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) | Up 0.5、 down 4.0 | | | | | | | | | |
| Wavelength (nm) | 1530~1565 | | | | | | | | | |
| Output stability(dB) | <±0.3 | | | | | | | | | |
| Optical Return Loss | ≥45 | | | | | | | | | |
| (dB) | | | | | | | | | | |
| Fiber Connector | FC/APC、SC/APC | | | | | | | | | |
| Noise Figure (dB) | <6.0 (input 0dBm) | | | | | | | | | |
| Web port | RJ45 (SNMP) | | | | | | | | | |
| Power Consumption (W) | ≤80 | | | | | | | | | |
| Voltage (V) | 220VAC (90~265)、-48DCV | | | | | | | | | |
| Working Temp (℃) | | -0~55 | | | | | | | | |
| size (mm) | | | | | (L)×486((L)×486(| | | | | |
| NW (Kg) | | | | | | (1U)) (2U) | | | | |

Diagram



Output Power Adust

Front Panel Control

Rs232

Display

1310/1490

Optical input test

Rj45

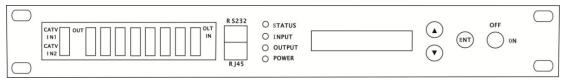
WDM -

1310/1490/1550

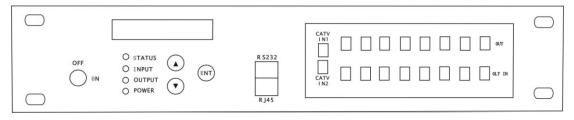
-1310/1490/1550



Front Panel



4 Ports、8 Ports、16Ports or With WDM



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 RS232

Network management for local computers

3.3.7 RJ45

SNMP, for remote computer network management

3.3.8 Key

ON: Turn on the laser



OFF: Turn off the laser

Rear Panel





2U RACK

- 3.4.1 Power Switch (220V)
 - ON: Turn on the power

OFF: Turn off the power

3.4.2 Power Socket

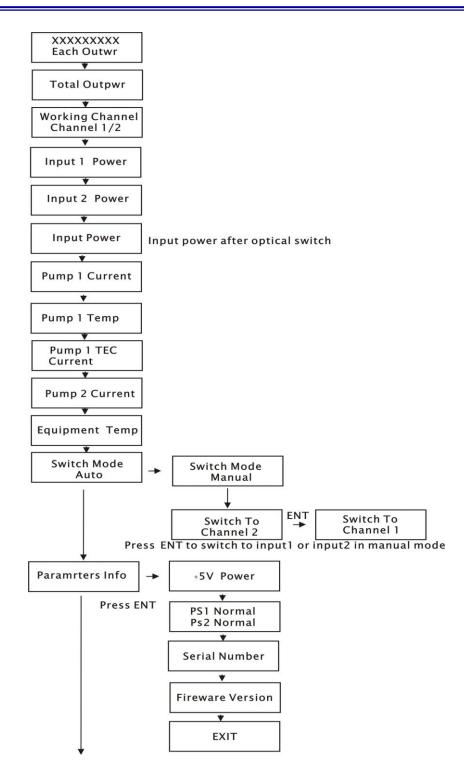
AC220V or DC-48V

Panel Operation

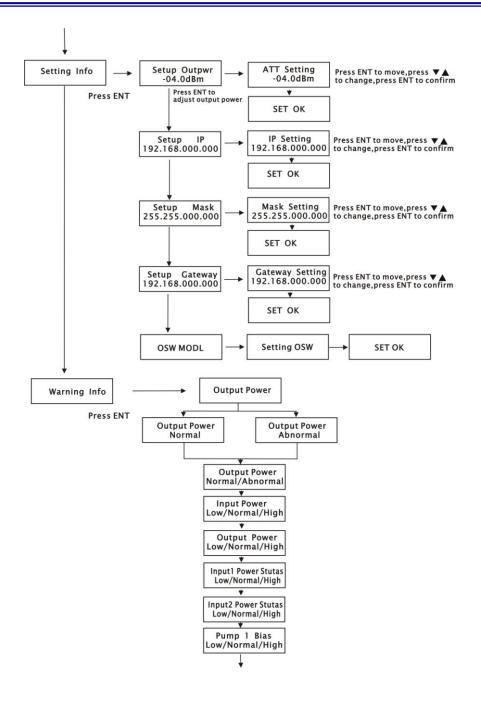
Please Press \blacktriangle for forward, press \blacktriangledown to return.

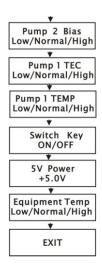
3.5.1 Dual inputs







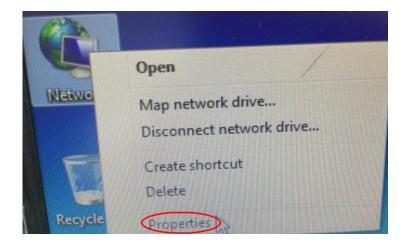




IV. Web server

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.

 Pls find the IP add in the machine, normally it is 192.168.1.XXX, set the IP add of the PC in the same range as following steps:





| Control Panel 🕨 | Network and Internet > Network and Sharing Center - 47 Search Control Panel |
|--|--|
| Control Panel Home | View your basic network information and set up connections |
| Change adapter settings Change advanced sharing settings | ADMIN-PC Network 2 Internet (This computer) View your active networks Connect or disconnect |
| | Network 2 Work network Access type: Internet Connections: Local Area Connection |
| | Set up a new connection or network Set up a wireless, broadband, dial-up, ad hoc, or VPN connection; or set up a router or access point. |
| | Connect to a network Connect or reconnect to a wireless, wired, dial-up, or VPN network connection. Choose homegroup and sharing options |
| | Choose nomegroup and sharing options Access files and printers located on other network computers, or change sharing settings. Troubleshoot problems |
| See also HomeGroup | Diagnose and repair network problems, or get troubleshooting information. |

| General | | | | | | |
|----------|---------------|-----------|----------|---------|-----------|---|
| Connecti | ion ——— | | | | | - |
| IPv4 | Connectivity: | | | | Internet | |
| IPv6 (| Connectivity: | | No | Interne | et access | |
| Media | a State: | | | | Enabled | |
| Durat | ion: | | | | 00:20:39 | |
| Speed | d: | | | 10 | 0.0 Mbps | |
| De | etails | | | | | |
| Activity | | | | | | - |
| | | Sent — | . | — F | Received | |
| Bytes | | 4,344,304 | | 100 | ,897,055 | |
| Pro | perties | Disable | Diagno | se | | |
| | | | | | Close | |

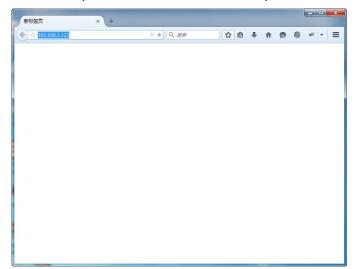


| Local Area Connection Properties | × |
|--|------|
| Networking | |
| Connect using: | |
| Atheros AR8151 PCI-E Gigabit Ethernet Controller (NDIS | 5 E |
| <u>C</u> onfigure. | |
| This connection uses the following items: | |
| Client for Microsoft Networks QoS Packet Scheduler File and Printer Sharing for Microsoft Networks Internet Protocol Version 6 (TCP/IPv6) Internet Protocol Version 4 (TCP/IPv4) | |
| Install Uninstall Properties | |
| Description Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks. | : |
| ОК Са | ncel |



| | automatically if your network supports ed to ask your network administrator |
|-------------------------------|--|
| Obtain an IP address automa | atically |
| Ose the following IP address | : |
| IP address: | 192.168.0.5 |
| Subnet mask: | 255 . 255 . 255 . 0 |
| Default gateway: | 192.168.0.1 |
| Obtain DNS server address a | automatically |
| Ose the following DNS server | r addresses: |
| Preferred DNS server: | 192.168.0.1 |
| Alternate DNS server: | |
| 🔲 Validate settings upon exit | Advanced |

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





Then login version

| Vindows Security | The server 192.168.0.22 at Embedded WEB Manager requires a username | |
|------------------------------------|---|-------------------------|
| The server 192.16 and password. | 8.0.22 at Embedded WEB Mana | ger requires a username |
| sent in an insecu | | |
| connection). | | |
| | User name | |
| | Tustiona | |
| | Remember my credentials | |
| El state | C | OK Cancel |

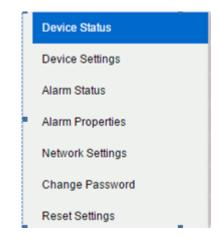
User Name: admin Password: 123456

3. The working condition version:



| Image: Status Device Status Device Status Atam Status Atam Status Atam Properties Network Settings Change Password Reset Settings Device Sutting Device Status Device Status | C Image: Device Status Device Status |
|--|--|
| Device Status Device Status Device Status Alam Status Alam Properties Network Settings Change Password Reset Settings D C Power +5V D C Power +5V Power Supply 1 Normal Power Supply 2 Normal 1 1-1-2 48m 0.0 dBm Channel 1 2 3.9 dBm 0.0 dBm Channel 1 2 | Device Status Device Status Device Status Device Status Alarm Status Alarm Froperties Network Stettings Change Password Reset Stettings DC Power Supply 1 Power Supply 2 Normat |
| Index Ingut Power Threshold Description 1 -1.2 dBm 0.0 dBm Channel 1 2 3.9 dBm 0.0 dBm Channel 2 | Power Supply 1 Normal Power Supply 2 Normal |
| 2 3.9 dBm 0.0 dBm Channel 2 | Index Input Power Threshold Description |
| | |
| | 2 3.9 dBm 0.0 dBm Channel 2 |
| Pump BIAS TEMP TEC | Pump BIAS TEMP TEC |
| 1 567 mA 25.1 °C 0.01 A | |
| 2 4160 mA 0.0 °C 0.00 A | 2 4160 mA 0.0 °C 0.00 A |

4.4 Items guide on the left, click to enter:





| 0 菜单 | | - | | × |
|----------------------------|---|---|---------|-----|
| 🤮 Embedded WEB Manage 🔀 🕂 | | | | - |
| < > C IIII (192.168.1.122 | | | \odot | ABP |
| | Summa Agent WEB Manager Device Settings Image: Ima | | | |
| | | | | |
| | Copyright © 2015, All rights reserved. | | | |

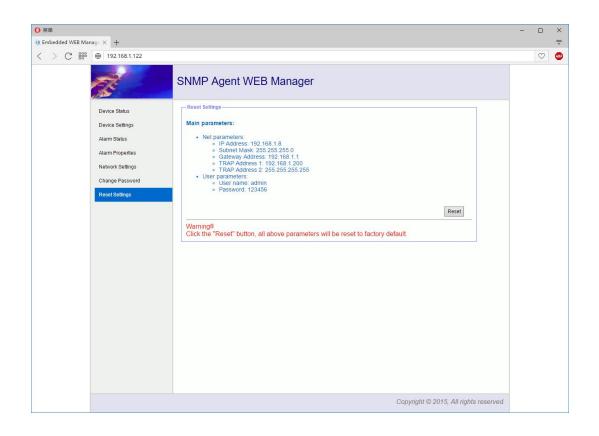
| bedded WEB Manag > C 闘 ∉ | | | | | - | |
|-----------------------------|------------------|-------|----------------------|---------------|---|---------|
| > C 🎟 🕯 | € 192.168.1.122 | | | | | |
| | | | | | | \odot |
| | 1 | | NEB Manager | | | |
| | Device Status | | | | | |
| | Device Settings | Index | Parameter Name | Alarm Status | | |
| | Alarm Status | 1 | Output optical power | Nominal | | |
| | Alarm Properties | 2 | Input optical power | Nominal | | |
| | | 3 | Power Supply 1 | Nominal | | |
| | Network Settings | 4 | Power Supply 2 | Nominal | | |
| | Change Password | 5 | Internal Temp | Nominal | | |
| | Reset Settings | 6 | Pump1 BIAS | Nominal | | |
| | reserverings | 7 | Pump2 BIAS | Nominal | | |
| | | 8 | Pump1 TEC | Nominal | | |
| | | 9 | Pump1 Temp | Nominal | | |
| | | 10 | DC +5V | Nominal | | |
| | | 11 | Channel 1 | DiscreteMajor | | |
| | | 12 | Channel 2 | Nominal | | |
| | | 13 | Channel 1 input | LO | | |
| | | 14 | Channel 2 input | Nominal | | |



| 菜单 Embedded WEB Mar | nage × + | | | | | | | | - | | 1 |
|------------------------|------------------|------------|----------------------------|-----------------|---------|-------------|---------------------------|--------------|---|--------------|---|
| C # | 192.168.1.122 | | | | | | | | | \heartsuit | |
| | | SNMP | Agent WEB Mar | nager | | | | | | | |
| | Device Status | Alarm Prop | perties | | | | | | | | |
| | Device Settings | Index | Parameter Name | ніні ні | LO | LOLO Dea | adband Action | 1 | | | |
| | Alarm Status | 1 | Output optical power (dBm) | 27.0 26.0 | 11.0 | 2 10.0 | 0.5 Set | | | | |
| | Alarm Properties | 2 | Input optical power (dBm) | 10.0 2 8.0 | -3.0 | -10.0 | 0.2 Set | | | | |
| | Network Settings | 3 | Internal Temp (`C) | ✓ 85 ✓ 70 | 5 | | 2 Set | | | | |
| | Change Password | 4 | Pump1 BIAS (mA) | 900 🗹 800 | 2 100 | 80 | 20 Set | | | | |
| | Reset Settings | 5 | Pump2 BIAS (mA) | ☑ 15000 ☑ 10000 | 100 | 80 | 20 Set | | | | |
| | | 6 | Pump1 TEC (A) | 2.00 2.50 | -1.50 | -2.00 | 0.10 Set | | | | |
| | | 7 | Pump1 Temp ('C) | 35.0 30.0 | 20.0 | 2 15.0 | 1.0 Set | | | | |
| | | 8 | DC +5V (V) | 6.5 6.0 | ☑ 4.0 🖸 | 3.5 | 0.2 Set | | | | |
| | | 9 | Channel 1 input (dBm) | ☑ 10.0 ☑ 7.5 | 3.5 | -10.0 | 0.2 Set | | | | |
| | | 10 | Channel 2 input (dBm) | ✓ 10.0 ✓ 7.5 | 3.5 | -10.0 | 0.2 Set | | | | |
| | | Index | Para | ameter Name | | Control | Action | 1 | | | |
| | | 1 | Po | wer Supply 1 | | EnableMajor | ✓ Set | | | | |
| | | 2 | Por | wer Supply 2 | | EnableMajor | ∽ Set | | | | |
| | | 3 | | Channel 1 | | EnableMajor | ∽ Set | | | | |
| | | 4 | | Channel 2 | | EnableMajor | ✓ Set | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
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| | | | | | | Copyright | © 2015, All right | ts reserved. | | | |



| O 菜单 | | - | | × |
|---------------------------|--|---|---------|---|
| 🔅 Embedded WEB Manage 🗙 🕂 | | | | - |
| < > C Ⅲ ⊕ 192.168.1.122 | | | \odot | A |
| | SNMP Agent WEB Manager | | | |
| | Copyright © 2015, All rights reserved. | | | |



V. Notes

- 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℃and 65℃.
- 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.
- 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 5 times.

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($-3 \sim 10$ 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

SUN-EYDFA Series optical amplifiers are covered by **TWO YEAR 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.

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