FRACARRO

287554 EDFA 4 WDM, 287553 EDFA 8 WDM
Multi-port EYFA Amplifier user manual

Contents   pages

Product Features

1. Output adjustable by buttons in the front panel or web SNMP, the range is down 4dBm
2. 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
3. Multi- ports output, can built in 1310/1490/1550WDM.
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 250V AC or -48V DC

Installation

Before installation
1. Please be sure there is no visible damage outside 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 4.5cm (1.75inches) space for cooling if the machine is installed with other machines.

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2. Please check the power supply socket and the grounding of the power supply, the grounding impedance should be ≤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 is off in the rear panel
4. Please confirm the fiber port is clean before connection the fiber.

MAIN PARAMETERS

Item	Parameters	
	EDFA 4 WDM	EDFA 8 WDM
Total output power (dBm)	29	31
Total output power (mW)	800	1250
Each port power (dBm)	22	20
Each port power (mW)	160	100
Input(dBm)	-5 ~+10	-8 ~+10
Range of output adjustment dBm)	Down 4	
one-time downward attenuation (dBm) Wavelength (nm)	Down 6 1540~1565	
Output stability (dB)	<±0.3	
Optical Return Loss (dB)	≥45	
Fiber Connector	SC/APC, SC/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
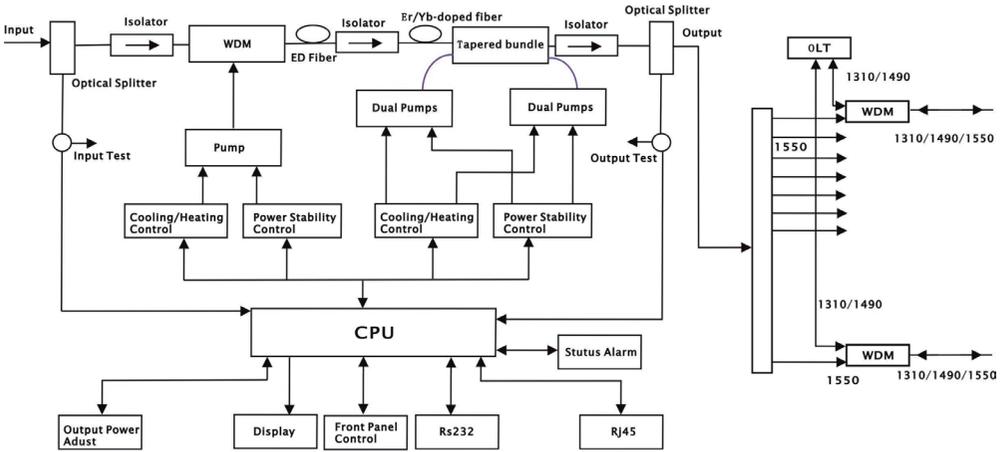
LED - DISPLAY

Single input
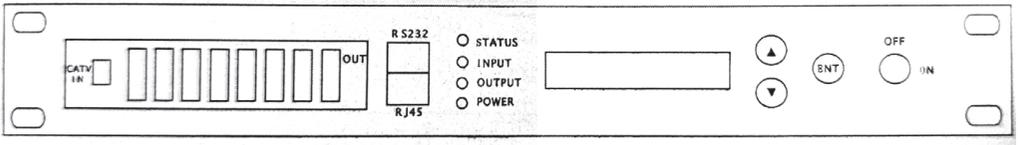
4 Ports With WDM

Dual inputs

8 Ports With WDM

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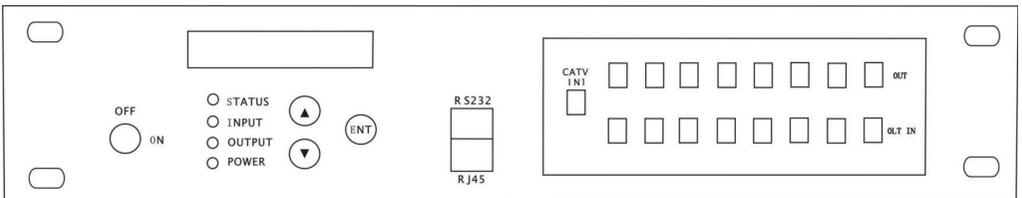
LED - DISPLAY

LED Display
Displays the working parameter of the machine

STATUS Indication light
Green: Normal Condition
Red: No input or abnormal condition

INPUT Indication Light
Green: Normal

OUTPUT Indication Light
Green: Normal

POWER Indication Light
Green: Power Connected

Key
ON: Turn on the laser
OFF: Turn off the laser

RS232
Network management for local computers

RJ45
SNMP, for remote computer network management

Rear Panel

Power 1		Fan	Fan	Fan	Fan
Power 2	⏚				
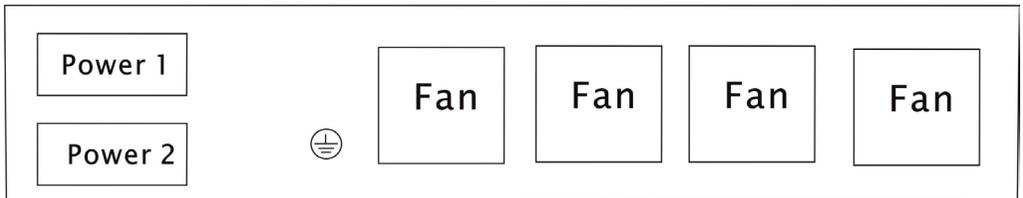
Power Switch 220V
ON: Turn on the power
OFF: Turn off the power

Power Socket
AC220V and DC-48V

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

Single input operation flow chart:

```
                        ┌──────────────┐       ┌──────────────────┐      ┌──────────────────┐
                        │ Setting Info │──────▶│ Setup Outpwr ATT │─────▶│   ATT Setting    │
                        └──────────────┘       │    -04.0dBm      │      │    -04.0dBm      │
                               │               └──────────────────┘      └──────────────────┘
                               │                                                  ▼
                               │                                         ┌──────────────────┐
                               │                                         │     SET OK       │
                               │                                         └──────────────────┘
                               │               ┌──────────────────┐      ┌──────────────────┐
                               │               │  Setup      IP   │─────▶│   IP Setting     │
                               │               │ 192.168.000.000  │      │ 192.168.000.000  │
                               │               └──────────────────┘      └──────────────────┘
                               │                                                  ▼
                               │                                         ┌──────────────────┐
                               │                                         │     SET OK       │
                               │                                         └──────────────────┘
                               │               ┌──────────────────┐      ┌──────────────────┐
                               │               │  Setup    Mask   │─────▶│   Mask Setting   │
                               │               │ 255.255.000.000  │      │ 255.255.000.000  │
                               │               └──────────────────┘      └──────────────────┘
                               │                                                  ▼
                               │                                         ┌──────────────────┐
                               │                                         │     SET OK       │
                               │                                         └──────────────────┘
                               │               ┌──────────────────┐      ┌──────────────────┐
                               │               │ Setup   Gateway  │─────▶│ Gateway Setting  │
                               │               │ 192.168.000.000  │      │ 192.168.000.000  │
                               │               └──────────────────┘      └──────────────────┘
                               │                                                  ▼
                               │                                         ┌──────────────────┐
                               │                                         │     SET OK       │
                               │                                         └──────────────────┘
                               │               ┌──────────────────┐      ┌──────────────────┐
                               │               │ Maintain -6dBm   │─────▶│ Maintain Setting │
                               │               │      OFF         │      │      OFF         │
                               │               └──────────────────┘      └──────────────────┘
                               │                                                  ▼
                               │                                         ┌──────────────────┐
                               │                                         │     SET OK       │
                               │                                         └──────────────────┘
                               ▼
                        ┌──────────────┐       ┌──────────────────┐
                        │ Warning Info │──────▶│   Output Power   │
                        └──────────────┘       └──────────────────┘
                                                        ▼
                                               ┌──────────────────┐
                                               │  Output Power    │
                                               │ Normal/Abnormal  │
                                               └──────────────────┘
                                                        ▼
                                               ┌──────────────────┐
                                               │  Input1 Power    │
                                               │ Low/Normal/High  │
                                               └──────────────────┘
                                                        ▼
                                               ┌──────────────────┐
                                               │  Pump 2 Bias     │
                                               │ Low/Normal/High  │
                                               └──────────────────┘
                                                        ▼
                                               ┌──────────────────┐
                                               │  Pump 1 TEC      │
                                               │ Low/Normal/High  │
                                               └──────────────────┘
                                                        ▼
                                               ┌──────────────────┐
                                               │  Pump 1 TEMP     │
                                               │ Low/Normal/High  │
                                               └──────────────────┘
                                                        ▼
                                               ┌──────────────────┐
                                               │  Switch  Key     │
                                               │     ON/OFF       │
                                               └──────────────────┘
                                                        ▼
                                               ┌──────────────────┐
                                               │    5V Power      │
                                               └──────────────────┘
                                                        ▼
                                               ┌──────────────────┐
                                               │ Equipment Temp   │
                                               │ Low/Normal/High  │
                                               └──────────────────┘
                                                        ▼
                                               ┌──────────────────┐
                                               │      EXIT        │
                                               └──────────────────┘
```
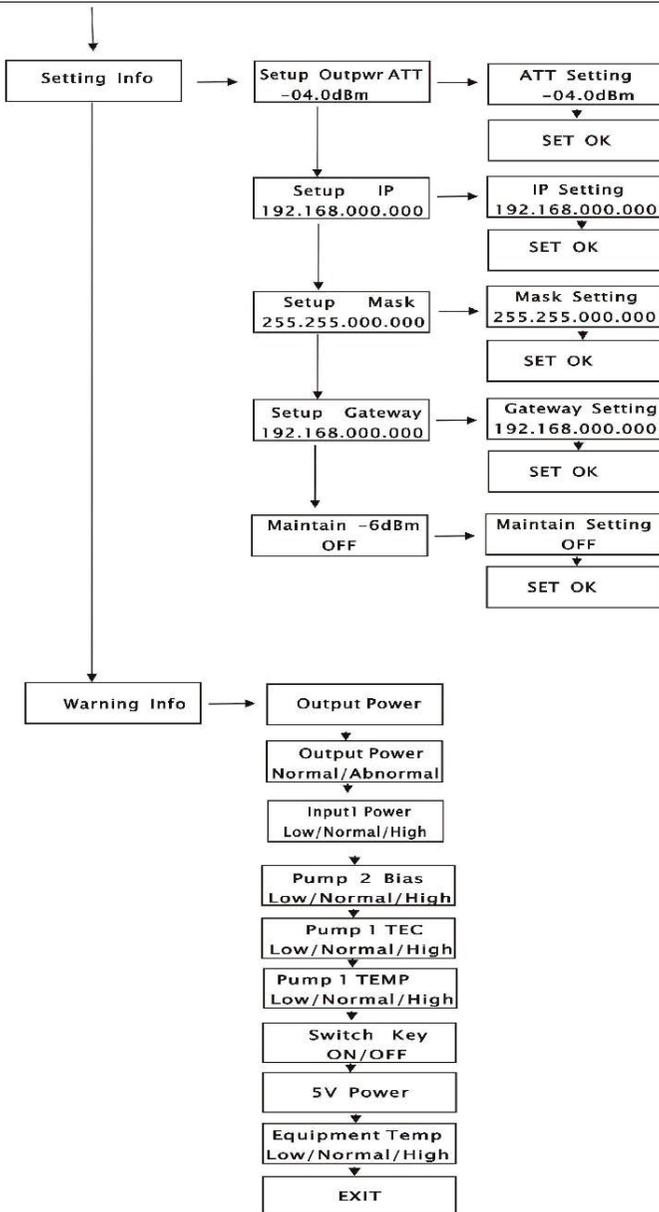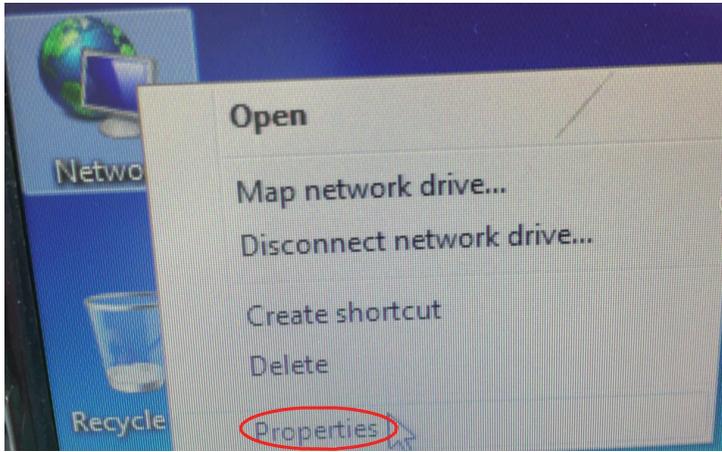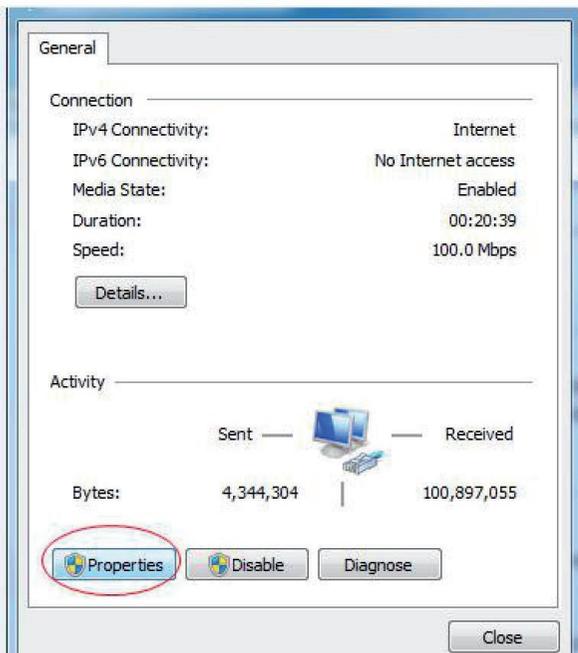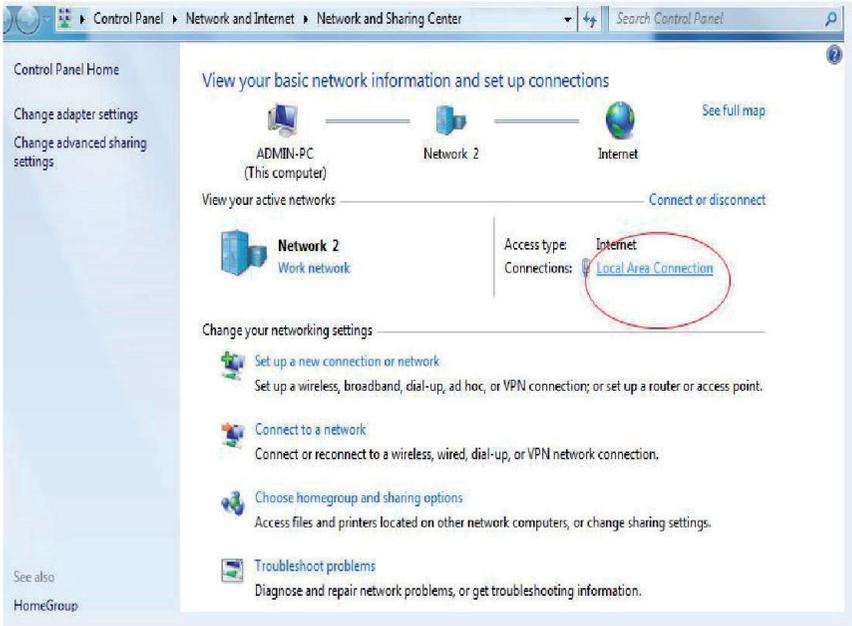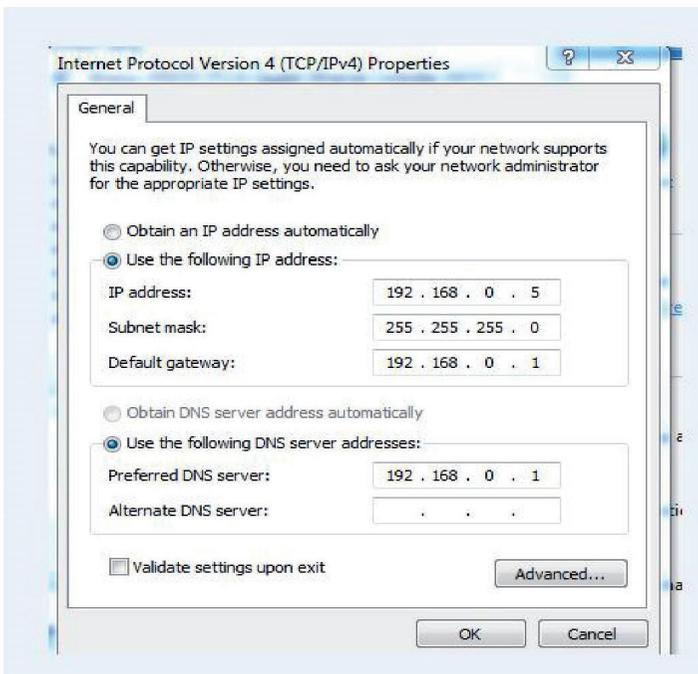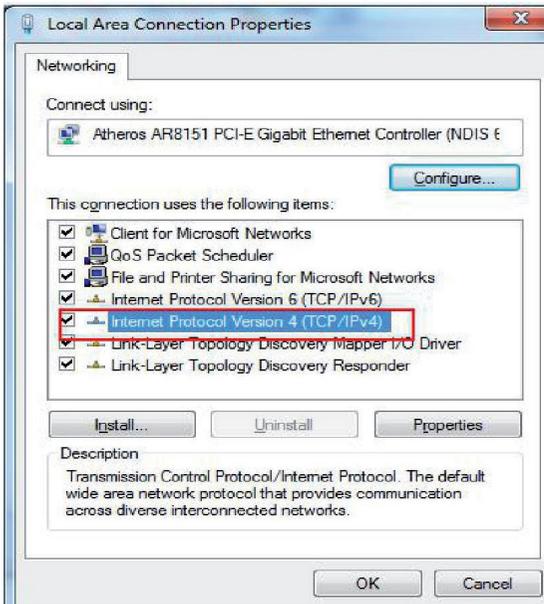
WEB SERVER

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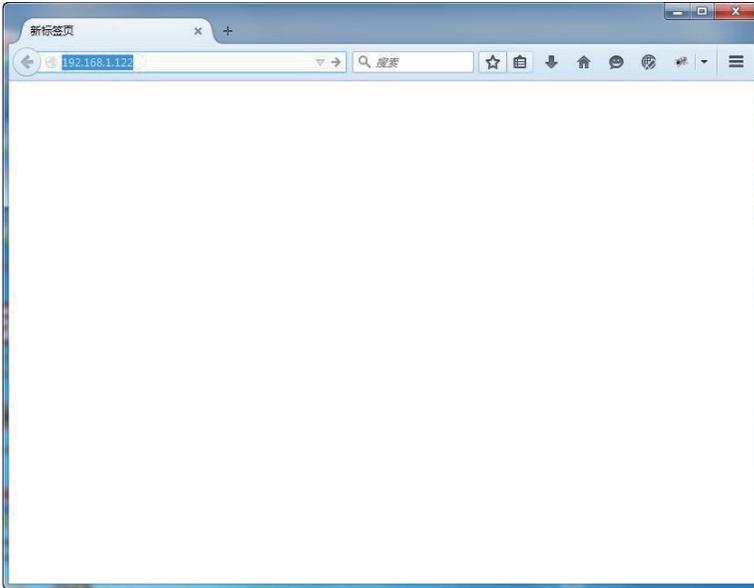
1.Please find the IP add in the machine, normally it is 192.168.0.XXX, set the IP add of the PC in the same range as following steps:

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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:

4.4 Items guide on the left, click to enter:
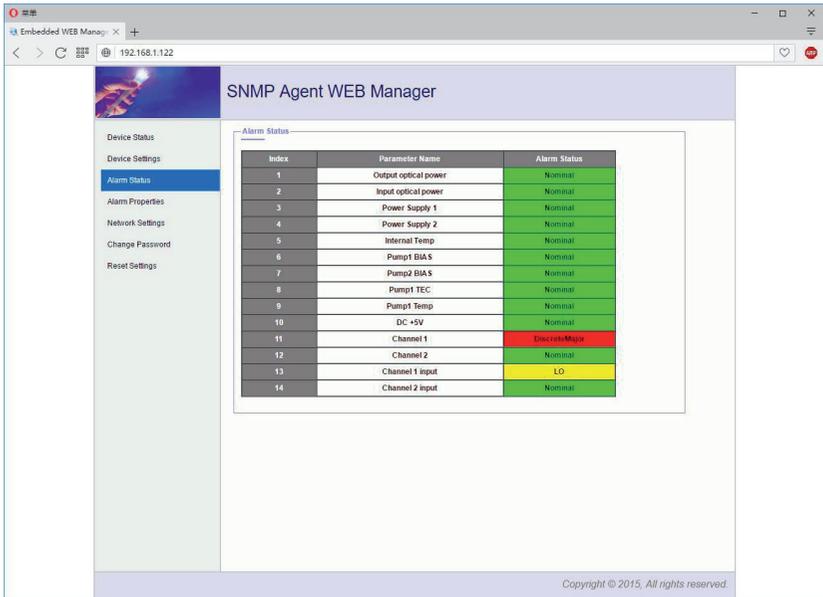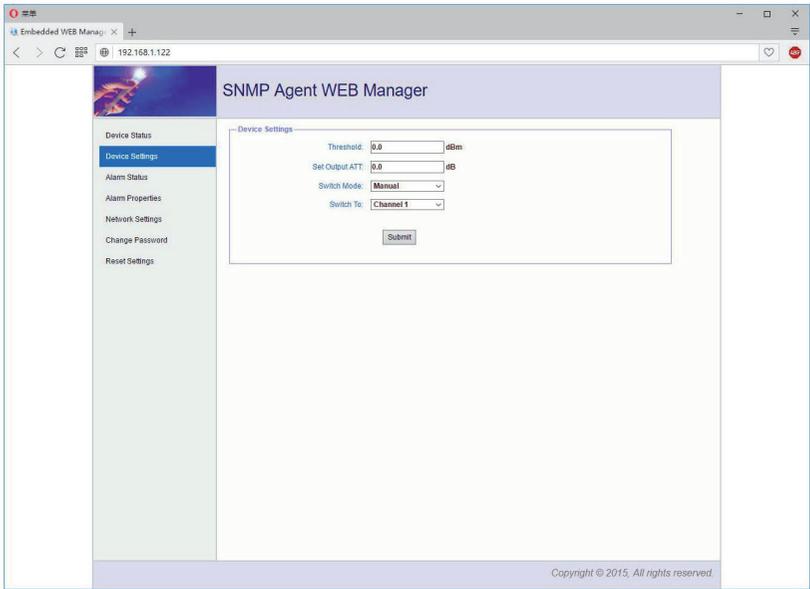
SNMP Agent WEB Manager

Alarm Properties

Index	Parameter Name	HIHI	HI	LO	LOLO	Deadband	Action
1	Output optical power (dBm)	☑ 27.0	☑ 26.0	☑ 11.0	☑ 10.0	0.5	Set
2	Input optical power (dBm)	☑ 10.0	☑ 8.0	☑ -3.0	☑ -10.0	0.2	Set
3	Internal Temp (°C)	☑ 85	☑ 70	☑ 5	☑ 0	2	Set
4	Pump1 BIAS (mA)	☑ 900	☑ 800	☑ 100	☑ 80	20	Set
5	Pump2 BIAS (mA)	☑ 15000	☑ 10000	☑ 100	☑ 80	20	Set
6	Pump1 TEC (A)	☑ 2.00	☑ 1.50	☑ -1.50	☑ -2.00	0.10	Set
7	Pump1 Temp (°C)	☑ 35.0	☑ 30.0	☑ 20.0	☑ 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	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

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

SNMP Agent WEB Manager

Network Settings

Device MAC: 00 : B9 : A0 : 12 : 47 : 32
Update Identifier: OA138TG02
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

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

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SNMP Agent WEB Manager

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

Change Password

Username:
Password:
New Username:
New Password:
Confirm Password:

Submit   Reset

SNMP Agent WEB Manager

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

Reset Settings

Main parameters:

- Net parameters:
  - IP Address: 192.168.1.8
  - Subnet Mask: 255.255.255.0
  - Gateway Address: 192.168.1.1
  - TRAP Address 1: 192.168.1.200
  - TRAP Address 2: 255.255.255.255
- User parameters:
  - User name: admin
  - Password: 123456

Reset

Warning!!
Click the "Reset" button, all above parameters will be reset to factory default.

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 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.
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.**

SOLUTION TO SOME ORDINARY PROBLEM

1. Power supply light STATUS: green
   LED light LASER: red
   VFD display: NO LASER INPUT
   Reason: N0 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(-3~10dB)
                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.**

For further information (i.e. complete user manual, any firmware updates, etc.) please refer to the technical section of our website www.fracarro.it or www.fracarro.com

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