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**1550nm High Power Internally Modulated Optical Transmitter**

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***User's Manual***

***OLT1550 Series***

## **I. Products Descriptions**

1550nm high power internally modulated optical transmitter is mainly used for high power output and wide range coverage of secondary service area (sub front end). There is 1550nm Erbium-doped Fiber Amplifier (EDFA) added on the basis of internally modulated optical transmitter. It adopts high linear DFB laser, with built-in pre-distortion compensation and AGC, APC, ATC control, which greatly improves the comprehensive index of the system.

1550nm high power internally modulated optical transmitter is the core device for the construction of CATV secondary transmission networks. It is mainly used for value-added services such as TV image signal, digital TV signal, telephone signal and data (or compressed data) signal. It is a high-quality but low-cost solution to realize triple play and FTTx transmission systems.

### **Features**

1.1 It adopts original low chirp and high linearity DFB laser as signal source.

1.2 It adopts world's top brand pump laser and erbium-doped fiber, which ensure stable operating of the device.

1.3 The perfect pre-distortion circuit ensures the perfect performance of CTB and CSO in high standard CNR value.

1.4 Fully automatic case temperature control, which ensure long operating life of the device.

1.5 Built -in dual standby power supply, hot plug and automatic switch supported.

1.6 The working parameters of the whole machine are controlled by microprocessor and the LCD status display on the front panel has many functions such as laser status monitoring, parameter display, fault alarm, network management, etc.; once the working parameters of the laser deviate from the allowed range set by the software, the system will alarm promptly.

1.7 Standard RJ45 interface provided, supporting remote network management of SNMP and WEB.

## **II. Installation**

### **2.1 Preparation before Installation**

2.1.1 Please examine the machine to see if there is distinct.

2.1.2 Please examine if the accessories is complete and the quality cards is here.

If not, please contact sales or dealer.

### **2.2 Installation**

2.2.1 Please keep a space about 4.5cm between machines for ventilation.

2.2.2 Please make sure: the socket works very well and well grounded; The impedance  $\leq 4\Omega$ ; 220V power with three cables, the middle one should connected to the ground. Incorrect grounding may hurt the device or influence the quality of signal.

2.2.3 Please make sure the key is turned to OFF before the power supply connected.

2.2.4 Please keep the interface of the fiber clean before connecting the fiber. The connector could choose FC/APC or SC/APC.

## **III. Operation**

### **3.1 Diagram**

### 3. 2 Main Technical Parameters

Category	Items	Unit	Index			Remarks
			Min.	Typ.	Max.	
Optical Index	Laser Wavelength	nm	1528.77		1563.86	Compatible with ITU wavelength
	Max Output Power	dBm	13		26	1dBm interval
	No. of Output Port	No.	1		8	
	Output Uniformity				+0.7	
	Laser Linewidth	MHz		0.65	1.0	
	SMSR	dB	40			SMSR
	XP	dB	20			XP
	RIN	dB/Hz			-160	RIN ( 20~1002MHz )
	Optical Return Loss ( dB )	dB	50			
	PDL	dB			0.3	
	PDG	dB			0.4	
	PMD	Ps			0.3	
	Remnant Pump Power	dBm			-30	
	Fiber Connector		SC/APC			FC/APC、LC/APC
RF Index	Operating Bandwidth	MHz	47		1002	
	Flatness	dB	-0.75		+0.75	47~1002MHz
	Return Loss	dB	16			47~1002MHz
	Input Impedance	$\Omega$		75		
	RF Connector		F Metric/Imperial			Specified by user
Link Index	No. of Test Channels		PAL-D/59CH			NTSC/80CH
	CNR	dB	49.0			TX to RX Rx -1dBm
	CTB	dB	65.0			
	CSO	dB	60.0			
General Index	Network Management Interface		SNMP、WEB Supported			
	Power Supply	V	90		265	AC
			-72		-36	DC
	Power Consumption	W			35	Dual Power Supply, 1+1 standby
	Operating Temp	$^{\circ}\text{C}$	-5		+65	Auto case temp control
	Storage Temp	$^{\circ}\text{C}$	-40		+85	
	Operating Relative Humidity	%	5		95	
	Dimension	mm	443×483×44			D、W、H
Weight	Kg	4.8				

### 3.3 Front Panel Instructions

S/N	Identification	Name	Remarks
1	LCD	LCD Display	To display the parameters of the device
2	Power	Power Supply	LED Green, Device working(single,dual power supply)
3	Heat Alarm	Heat Alarm	LED Green, Operating temperature working
			LED Red, Operating temperature is out of the normal range
4	Status	Device Status	LED Green, Device working
			LED Red, Device alarming or faulty
5	Laser In	Fiber Input	LED Green, Input within requested range
			LED Red, no input or out of the requested range
6	Laser Out	Fiber Output	LED Green, Fiber output is within normal range
			LED Off, Fiber output is out of normal range
7	Monitor	Monitor	LED Off, Device working
			LED Red, Device not working
8	SELECT	Buttons	Start menu page turning

### 3.4 Rear panel Instructions

S/N	Identification	Items	Remarks
1	RF	RF Input	RF Input
2	OUT	Optical Output	Optical Output
3	RS232	RS232 Port	Local programming
4	RS485	RS485 Port	Local network management
5	RJ45	RJ45 Port	Remote SNMP and WEB supported
6		Grounding Port	For Grounding
7	Power1	Power Socket1	Hot plug in/out supported
8	Power2	Power Socket 2	Hot plug in /out supported

### 3.5 Front Panel Operation

Press the      to display the following menus in turn, and press the      to reverse the cycle

Input Power

Model No. and Output Power

## IV. Products Series

Total Output Power		No. of Output Port	Output Power per Port
dBm	mW		
13	20	1	13.0
14	25	1	14.0
15	32	1	15.0
16	40	1	16.0
17	50	1	17.0
18	63	1	18.0
19	80	1	19.0
20	100	1	20.0
21	125	1	21.0
		2	17.5
22	160	1	22.0
		2	18.5
23	200	1	23.0
		2	19.5
24	250	1	24.0
		2	20.5
25	320	1	25.0
		2	21.5
		4	18.0
26	400	1	26.0
		2	22.5
		4	19.0
27	500	1	27.0
		2	23.5
		4	20.0

## V. Notes

5.1 Static-sensitive pump laser is applied in the High Power Optical Transmitter, please note that electrostatic protection should be applied in the storage of the High Power Optical Transmitter and it should not be stored with corrosive material, and the storage temperature should be between - 40 °C and + 85 °C.

5.2 As the output power of High Power Optical Transmitter is high, please do not turn on the power supply before the High Power Optical Transmitter is connected to the system or the output ports are not equipped with protection sleeves. Please do not to plug in/out the patch cord when the device is working, otherwise it may burn the output interface, resulting the decrease of the output power.

5.3 Please don't now attempt to look into the optical connectors when power applied, eye damage may result.

5.4 Please don't block the cooling holes of the device and keep it in good ventilation

5.5 Please use anhydrous industrial alcohol instead of medical alcohol to wash the fiber connector if necessary after the power supply of the device turned off.

5.6 For High Power Optical Transmitter, it is easy to burn the fiber output interface and decrease the output power, so the advised best value on each port is lower than 19dBm.

5.7 Please don't test the High Power Optical Transmitter repeatedly, otherwise the fiber connector interface may be hurt and the output power decreased.



## VI. Solution to some ordinary problems

S/N	Fault Phenomenon	Faulty Reason	Solution	Remarks
1	STATUS Red LASER IN Red LASER OUT Red	No input or input too low	Adjust the value of input power	
2	Output power LCD displays normal value, but low value by power meter	Fiber interface hurt caused by wrong operation such as plug in/out patch cord when the power supply is on, it will cause the output lower than LCD display	Replace the fiber connector	The advised optical power per port $\leq 19\text{dBm}$
		Output interface of EDFA or patch cord is dirty.	Clean the output interface with industrial anhydrous alcohol or dust-free paper	
		Power meter error	Change power meter	Top brand power meter is advised
		The wavelength deviation of input optical signal is far from 1550nm	Adjust the wavelength of optical transmitter	
3	The optical power of the output end of the optical amplifier is normal, but the index of the user end is deteriorated	Optical power to fiber is high	Decrease the power to fiber under $19\text{dBm}$	

## VII. Warranty Terms

OLT 1550 Series optical transmitters are covered by LIMITED WARRANTY AS NEGOTIATED, 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:

7.1 Warranty mark pasted on the housing of unit must be in good conditions.

7.2 A clear and readable material describes model number, serial number and troubles should be offered.

7.3 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.

7.4 Returned unit(s) must be prepaid and insured. COD and freight collect can not be acceptable.

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

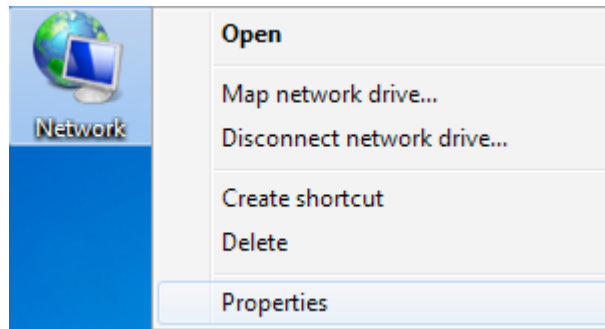
The following situation is not covered by warranty:

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.

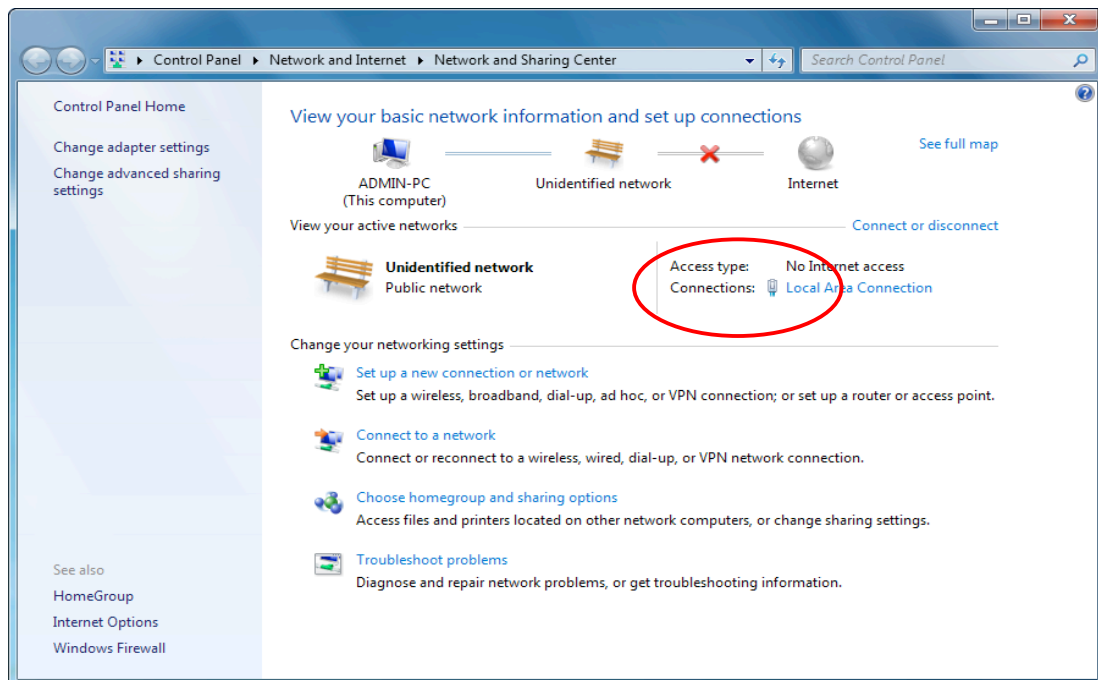
## VIII. Web Server

Web server is built in SNMP module. Users can directly view the basic operating parameters and network parameters of the device through the web browser. Popular web browsers include IE of Microsoft, Chrome of Google, Firefox of Mozilla, Opera of software ASA's, etc. The built-in web server of SNMP supports these popular browsers very well. The following diagrams are illustrated by opera browser.

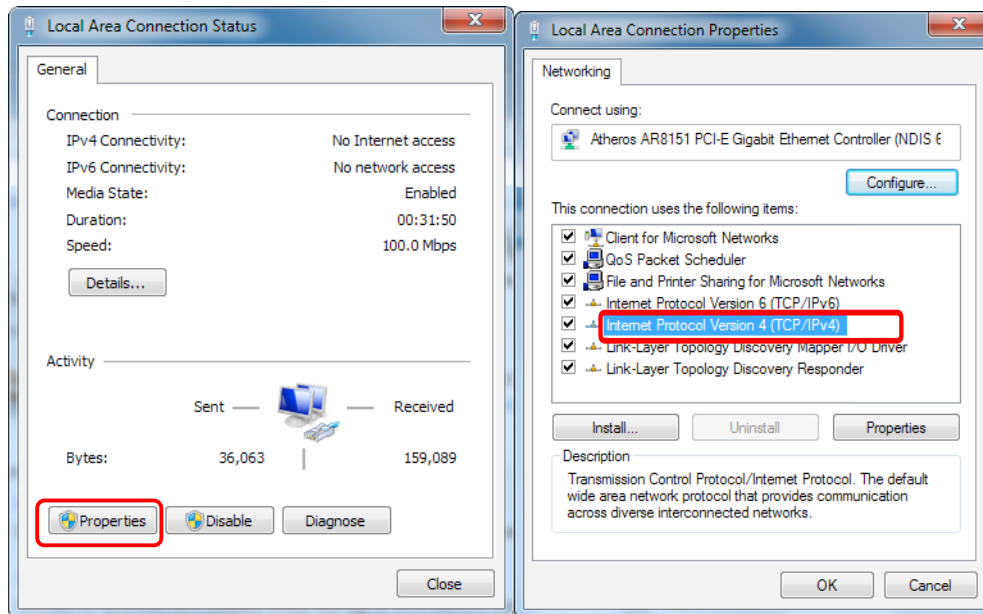
8.1 First of all, Please find the IP address of the device in the LCD panel menu. The default IP address is 192.168.0.22. Set the IP address of the computer to the same network segment as the device, find the "network" icon on the desktop of windows system, select the icon, right-click the mouse, and select "properties" in the pop-up menu



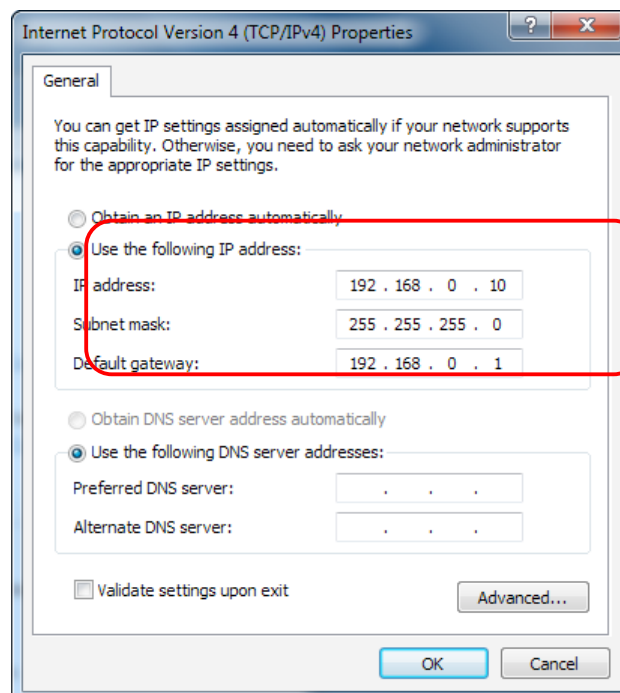
Click "Local Area Connection" in the pop-up version



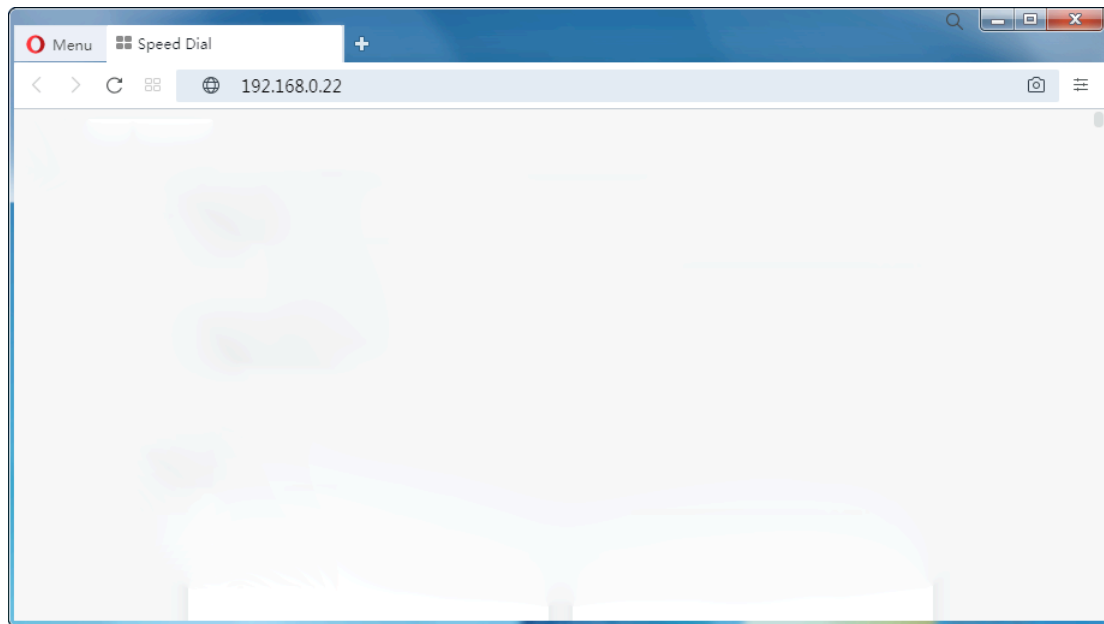
In the “Local Area Connection Status” menu, select “Properties”, and then double-click “Internet Protocol Version 4 (TCP / IPv4)”.



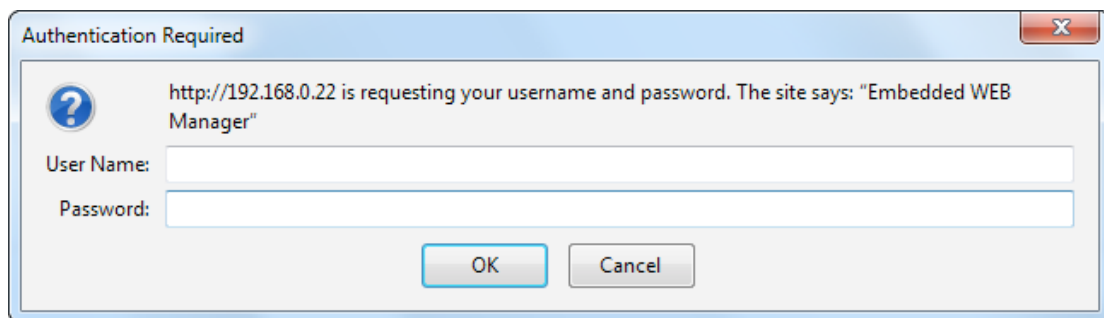
Set the IP address to make the IP address and the device in the same network segment, so that the computer can access the device.



8.2 Open the web browser and enter the IP address of the device in the address bar of the browser, such as 192.168.0.22



The browser will pop up a login box



In the pop-up login user name box, enter User Name: "admin" (Note: all lowercase letters), password: "123456", and then enter.

### 8.3 The browser displays the device status page by default

The screenshot shows the 'SNMP Agent WEB Manager' interface. On the left is a navigation menu with the following items: Device Status (highlighted), Alarm Status, Alarm Properties, Network Settings, Change Password, and Reset Settings. The main content area is titled 'Device Status' and contains the following parameters:

- Device Model: TX-PT-2-V1
- Serial Number: 20160316311
- Unit Temperature: 31 °C
- Input Power: -99.9 dBm
- Output Power: -99.9 dBm
- DC Power +5V: 5.0 V
- DC Power -5V: -5.0 V

Pump	BIAS	TEMP	TEC
1	211 mA	25.0 °C	-0.97 A
2	396 mA	25.0 °C	-0.96 A
3			

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Real Time Device Status Page

### 8.4 The left side of the page is the menu navigation bar. Click to enter the corresponding menu page

The navigation menu bar is shown with the following items:

- Device Status (highlighted in blue)
- Alarm Status
- Alarm Properties
- Network Settings
- Change Password
- Reset Settings

Page Navigation Bar



# SNMP Agent WEB Manager

- Device Status
- 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	Box Temp	Nominal
4	Pump1 BIAS	Nominal
5	Pump2 BIAS	Nominal
6	Pump1 TEC	Nominal
7	Pump2 TEC	Nominal
8	Pump1 Temp	Nominal
9	Pump2 Temp	Nominal
10	DC +5V	Nominal
11	DC -5V	Nominal

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Alarm Status Page



# SNMP Agent WEB Manager

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

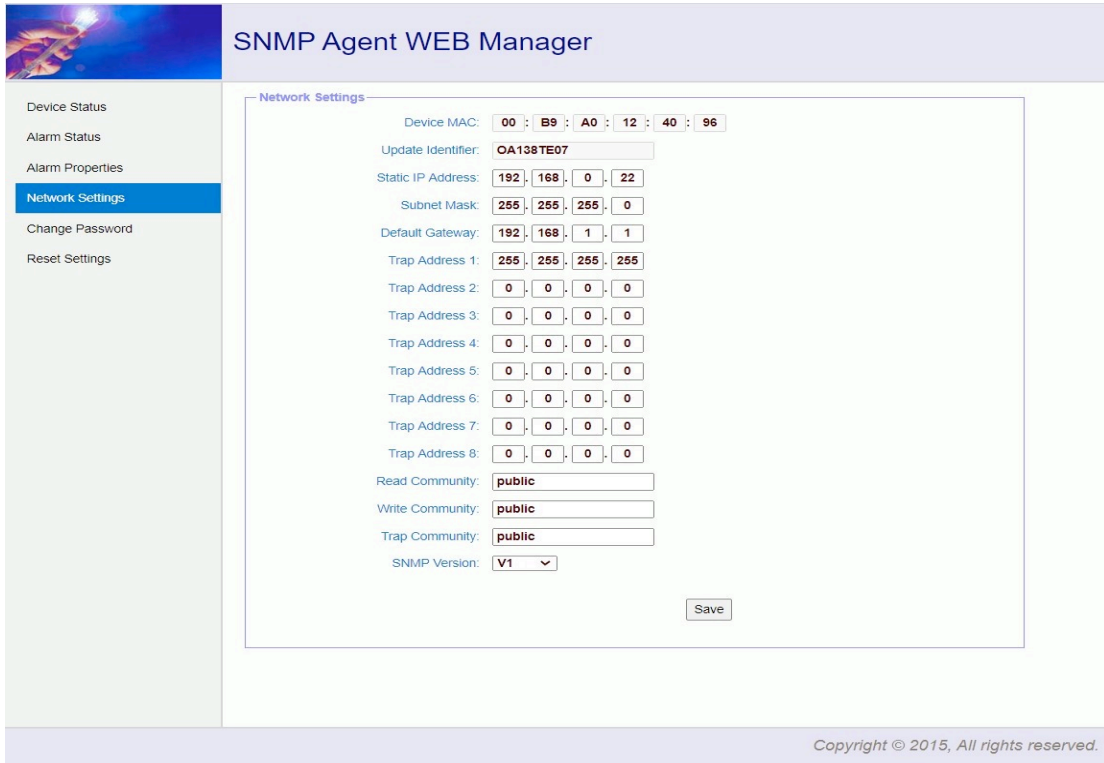
## Alarm Properties

Index	Parameter Name	HIHI	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	1.0	Set
2	Input optical power (dBm)	<input checked="" type="checkbox"/> 10.0	<input checked="" type="checkbox"/> 8.0	<input checked="" type="checkbox"/> -5.0	<input checked="" type="checkbox"/> -10.0	1.0	Set
3	Box Temp (°C)	<input checked="" type="checkbox"/> 85	<input checked="" type="checkbox"/> 70	<input checked="" type="checkbox"/> 0	<input checked="" type="checkbox"/> -5	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	10	Set
5	Pump2 BIAS (mA)	<input checked="" type="checkbox"/> 900	<input checked="" type="checkbox"/> 800	<input checked="" type="checkbox"/> 100	<input checked="" type="checkbox"/> 80	10	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	Pump2 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
8	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
9	Pump2 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
10	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
11	DC -5V (V)	<input checked="" type="checkbox"/> -3.5	<input checked="" type="checkbox"/> -4.0	<input checked="" type="checkbox"/> -6.0	<input checked="" type="checkbox"/> -6.5	0.2	Set

Index	Parameter Name	Control	Action
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Alarm Properties Setting Page



**SNMP Agent WEB Manager**

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

**Network Settings**

Device MAC: 00 : B9 : A0 : 12 : 40 : 96

Update Identifier: OA138TE07

Static IP Address: 192 . 168 . 0 . 22

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

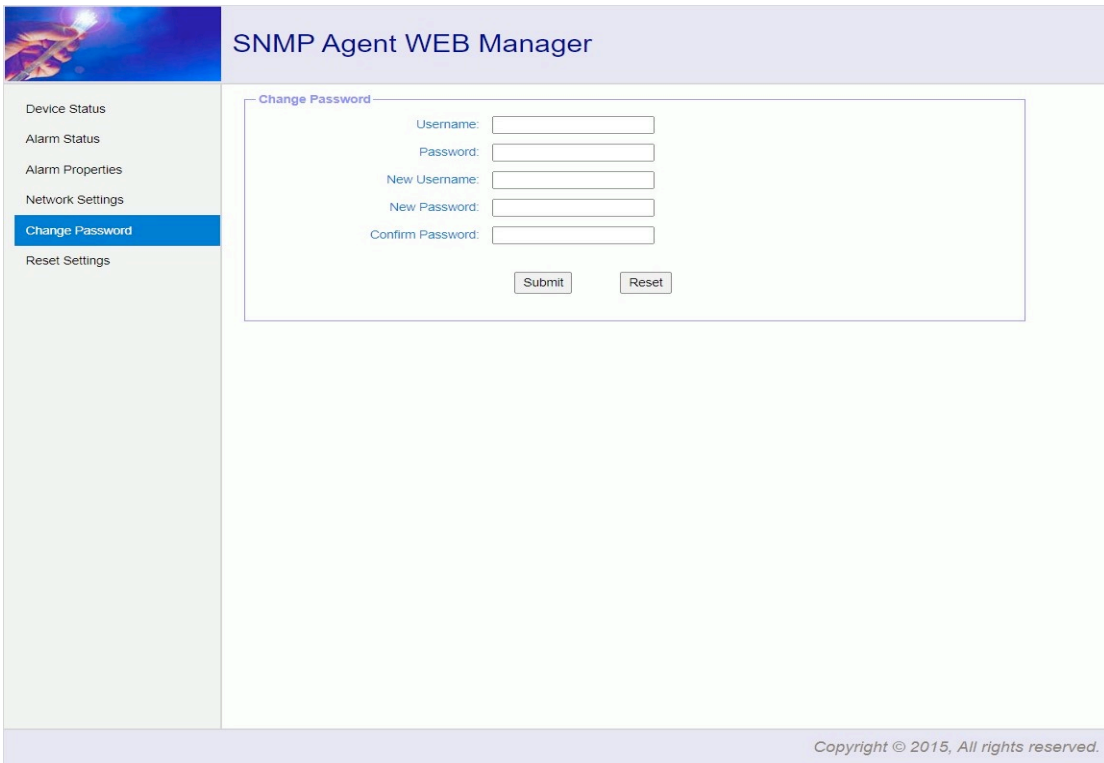
Trap Community: public

SNMP Version: V1

Save

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Network Setting Page



**SNMP Agent WEB Manager**

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

**Change Password**

Username:

Password:

New Username:

New Password:

Confirm Password:

Submit    Reset

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Page to Change User Name and Password



**SNMP Agent WEB Manager**

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

**Restore 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

**Warning!!**  
Click the restore button, all above parameters will be restored to factory default.

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## Restore Page