
1550nm Internally Modulated Optical Transmitter

User's Manual

ST1550I Series

I. Products Descriptions

This transmitter is a high-index, multi-functional 1550nm internally modulated optical transmitter in top level. 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.

ST1550I series 1550nm 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 network transmission systems.

Features

- 1.1 It adopts original low chirp and high linearity DFB laser as signal source.
- 1.2 The perfect predistortion circuit ensures the perfect performance of CTB and CSO in high standard CNR value.
- 1.3 Automatic gain (AGC) control enables stable output in different RF input level.
- 1.4 Different networks can be optimized by OMI adjustment.
- 1.5 Fully automatic case temperature control, intelligent fans, the fans starts to work when case temperature reaches 30 °C.
- 1.6 Built -in dual backup power supply, hot plug and automatic switch supported.
- 1.7 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.
- 1.8 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, pls contact sales or dealer

2.2 Installation

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

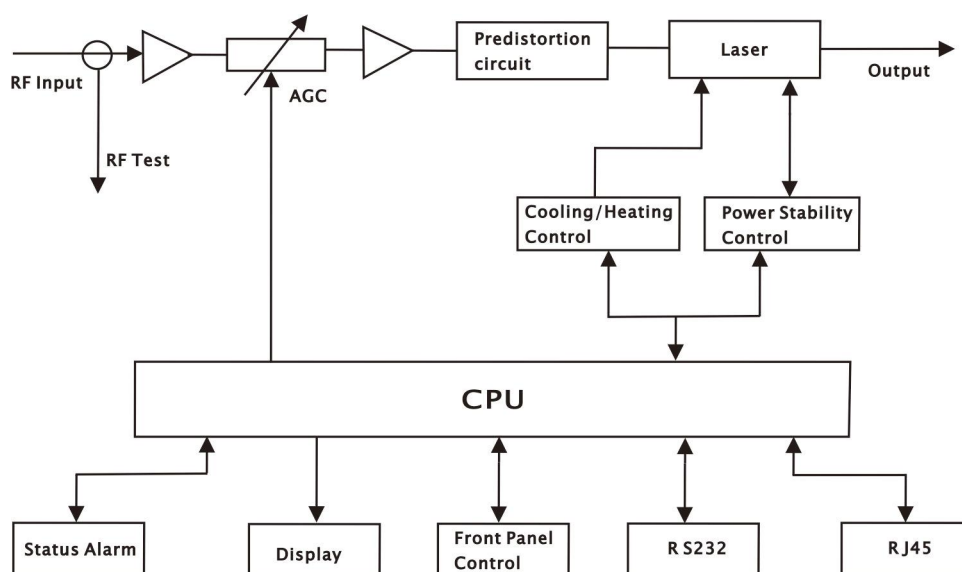
2.2.2 Please make sure: the socket works very well and well grounded; The impedance $\leq 4\Omega$; 220V power with three cables , the middle one should connected to the ground。 Incorrect grounding may hurt the device or influence the quality of signal.

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

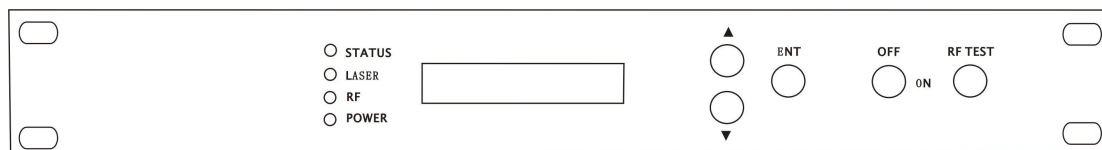
3.1 Diagram



3. 2 Main Technical Parameters

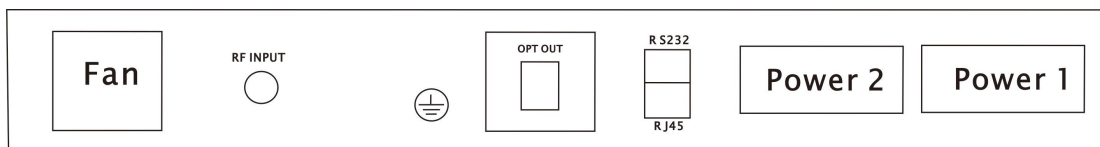
Category	Items	Unit	Index			Remarks
			Min.	Typ.	Max.	
Optical Index	Operating Wavelength Range	nm	1528.77		1563.86	Compatible with ITU wavelength
	No. of Output Ports			1	2	
	Output Power per Port	dBm	3		10	1dBm interval
	Laser Linewidth	MHz		0.65	1.0	
	SMSR	dB	45	50		
	XP	dB	20			
	RIN	dB/Hz			-160	RIN (20~1002MHz)
	Optical Return Loss	dB	50			
Fiber Connector			SC/APC			FC/APC、LC/APC
RF Index	Operating Bandwidth	MHz	47		1002	
	Input Level	dB μ V	75	80	85	AGC
	Flatness	dB	-0.75		+0.75	47~1002MHz
	Return Loss	dB	16			47~1002MHz
	Input Impedance	Ω		75		
	RF connector		F Metric/Imperial			Specified by user
Link Index	No. of Test Channels		PAL-D/59CH			
	CNR	dB	51.0			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			30	Dual Power Supply, 1+1 standby
	Operating Temp	$^{\circ}$ C	-5		+65	Auto case temp control
	Storage Temp	$^{\circ}$ C	-40		+85	
	Operating Relative Humidity	%	5		95	
	Dimension	mm	370×483×44			D、W、H
Weight	Kg	4.1				


3.3 Front Panel Instructions



S/N	Identification	Name	Remarks
1	LCD	LCD Display	To display the parameters of the transmitter
2	STATUS	Device Working	LED Green, Device working
		Status	LED Red, Device faulty or alarm
3	LASER	Laser Output	Output with in normal range
			Output out of normal range
4	RF	RF Input	LED Green, Input within requested range
			LED Red, no input or out of the requested range
5	POWER	Power Supply	LED Green, Dual power supply working
			LED Yellow, Single power supply working
6	▲ ▼	Buttons	Start menu page turning and set the device
7	ENT	Enter	Confirmation after menu page turning and device setting
8	OFF/ON	Key	ON Laser on , OFF Laser off
9	RF TEST	RF Test Point	RF input level -20dB μ V

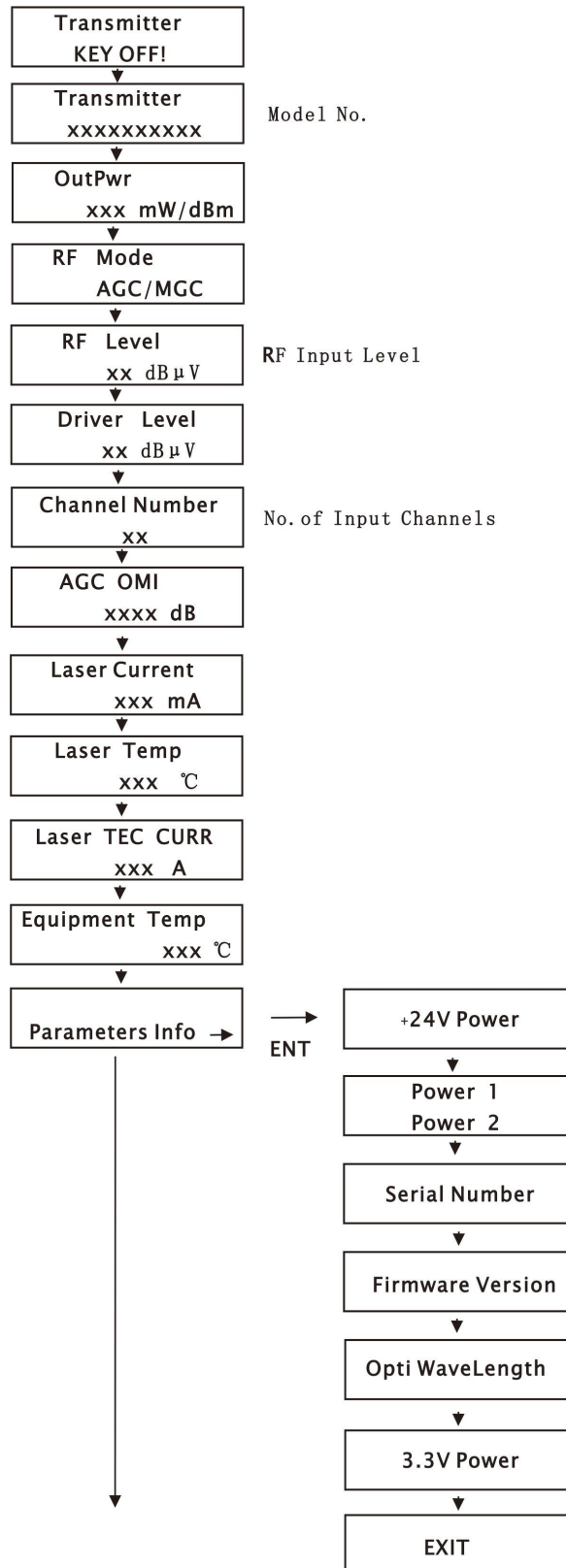
3.4 Rear panel Instructions

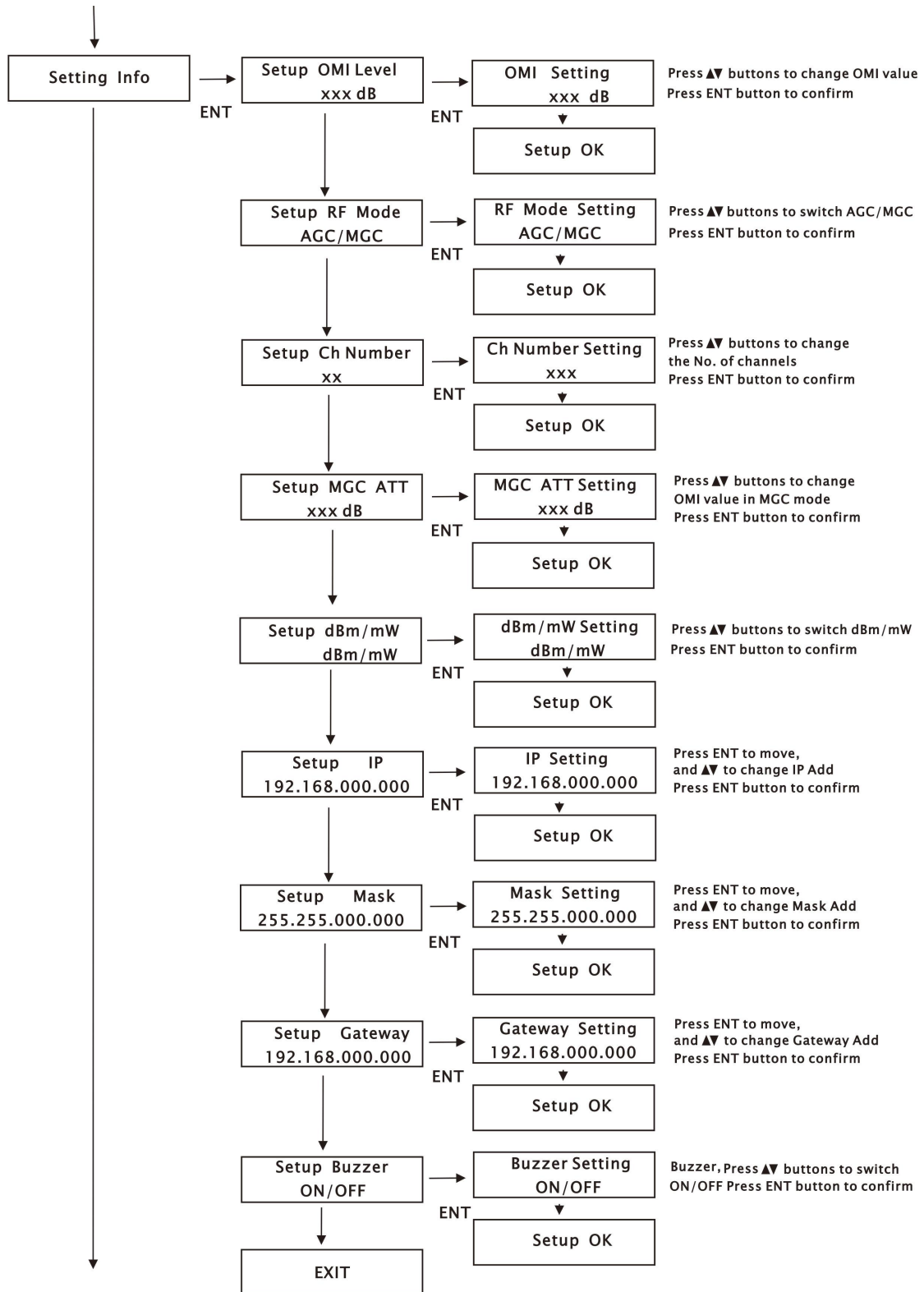


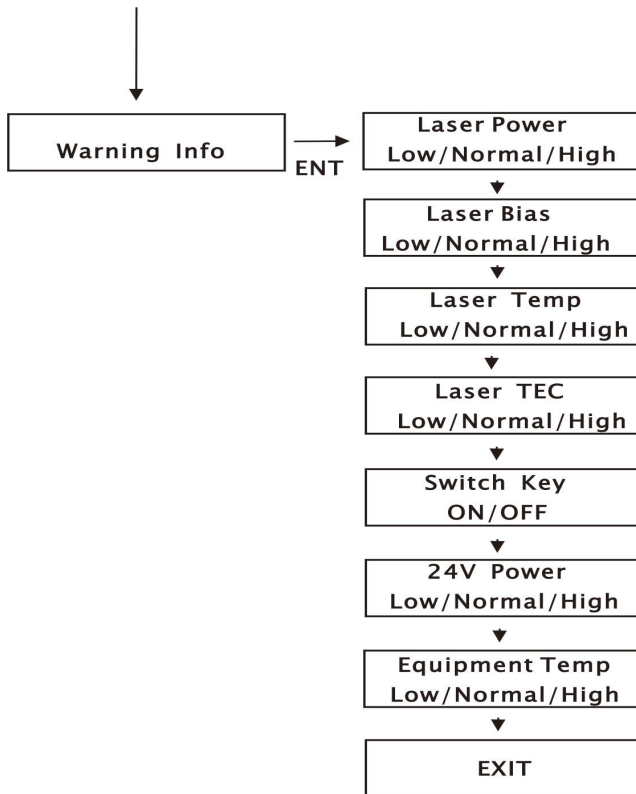
S/N	Identification	Items	Remarks
1	RF INPUT	RF Input	RF Input
2	OPT OUT	Optical Output	Optical Output
3	RS232	RS232 Port	Local programming
4	RJ45	RJ45 Port	Remote SNMP and WEB supported
5	Fan	Fan	For device cooling
6		Grounding Port	For Grounding
7	Power1	Power Socket1	Hot plug in/out supported
8	Power2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







IV. Notes

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

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

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

4.4 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.

4.5 RF input level should not be too high, otherwise the laser will be overloaded and damaged.

V. Solution to Some Ordinary Problems

S/N	Fault Phenomenon	Faulty Reason	Solution	Remarks
1	POWER Yellow	Single power supply working	Connect another power supply	
2	STATUS Green LASER Green RF Red POWER Yellow	No RF input	Connect RF Input	
3	STATUS Red LASER Red RF Red LCD Display "KEY OFF"	The key turned to OFF	Turn the key to ON	
4	Output power LCD displays normal value, but low value by power meter	Output interface 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

VI. 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:

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

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

5.3 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.

5.4 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).

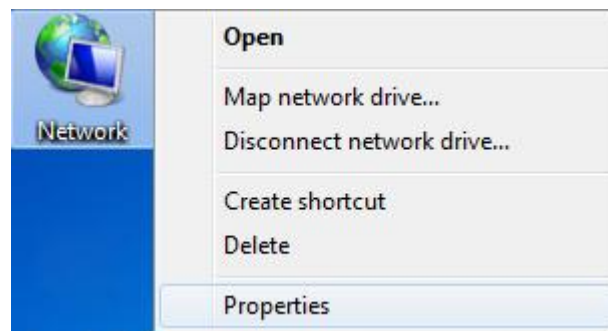
The following situation is not covered by warranty:

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.

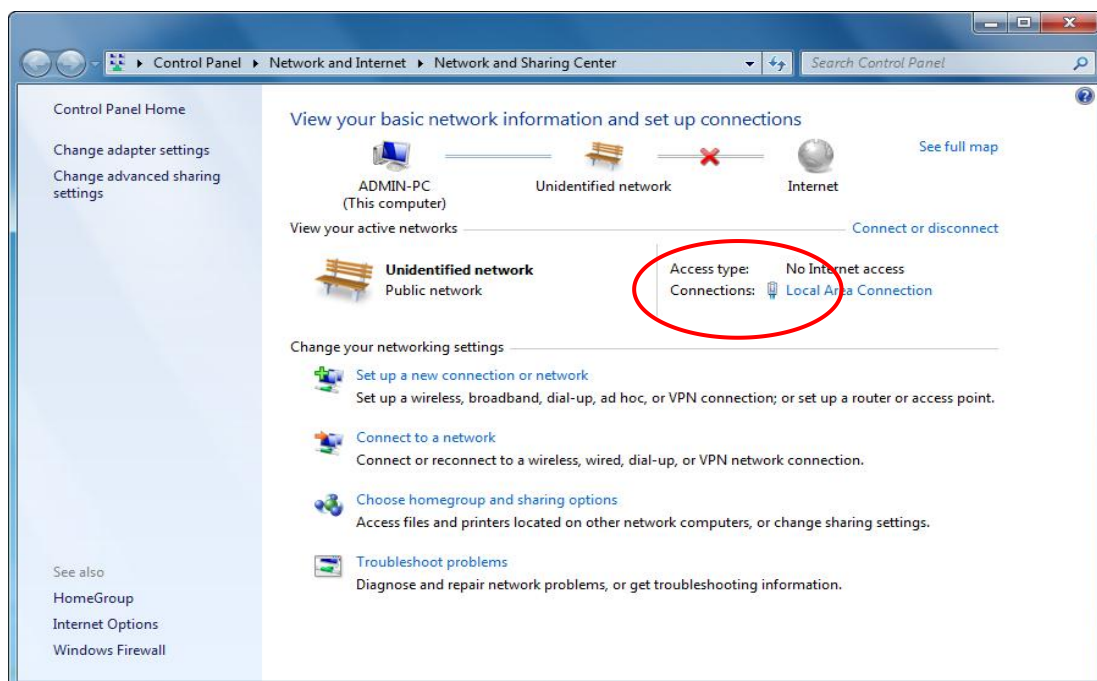
VII. Web Server

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.

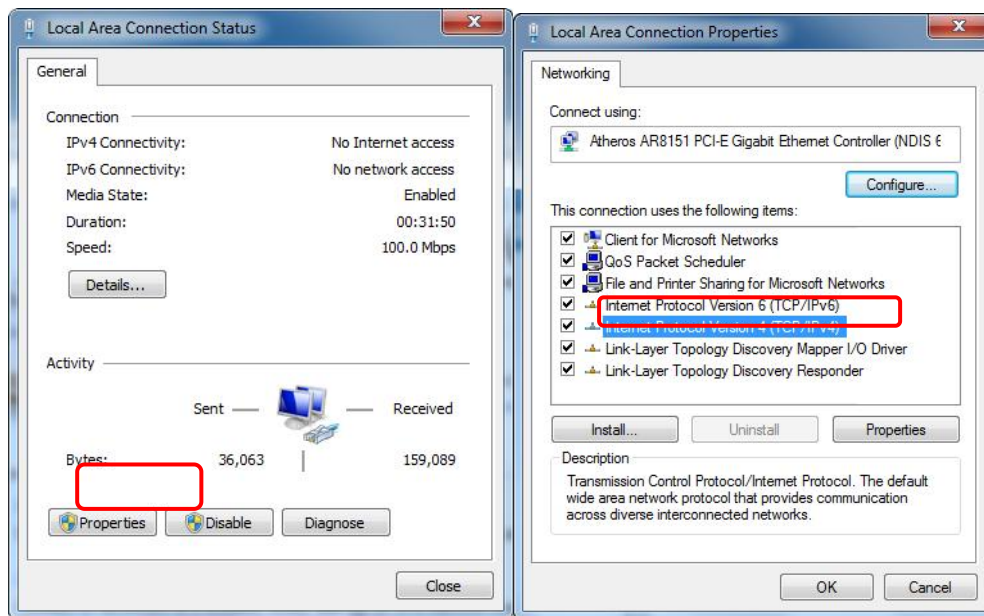
7.1 First of all, Please find the IP address of the device in the LCD panel menu. The default IP address is 192.168.0.22. Set the IP address of the computer to the same network segment as the device, find the "network" icon on the desktop of windows system, select the icon, right-click the mouse, and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



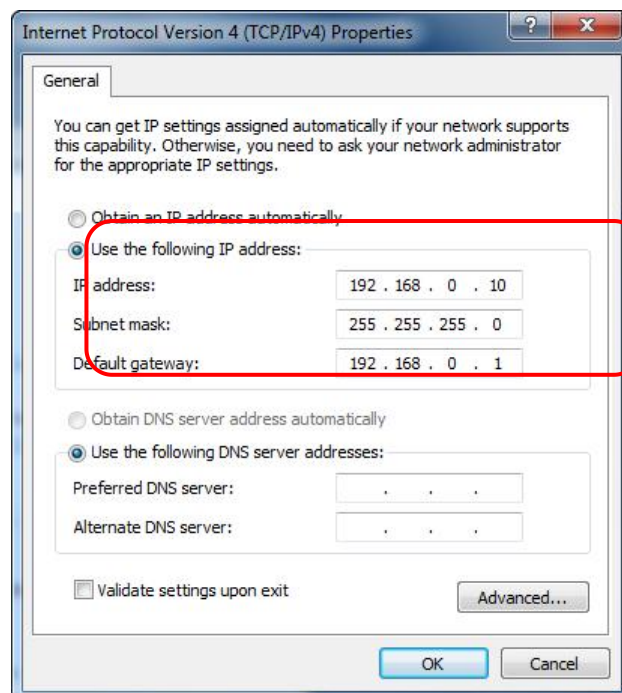
Click "Local Area Connection" in the pop-up version



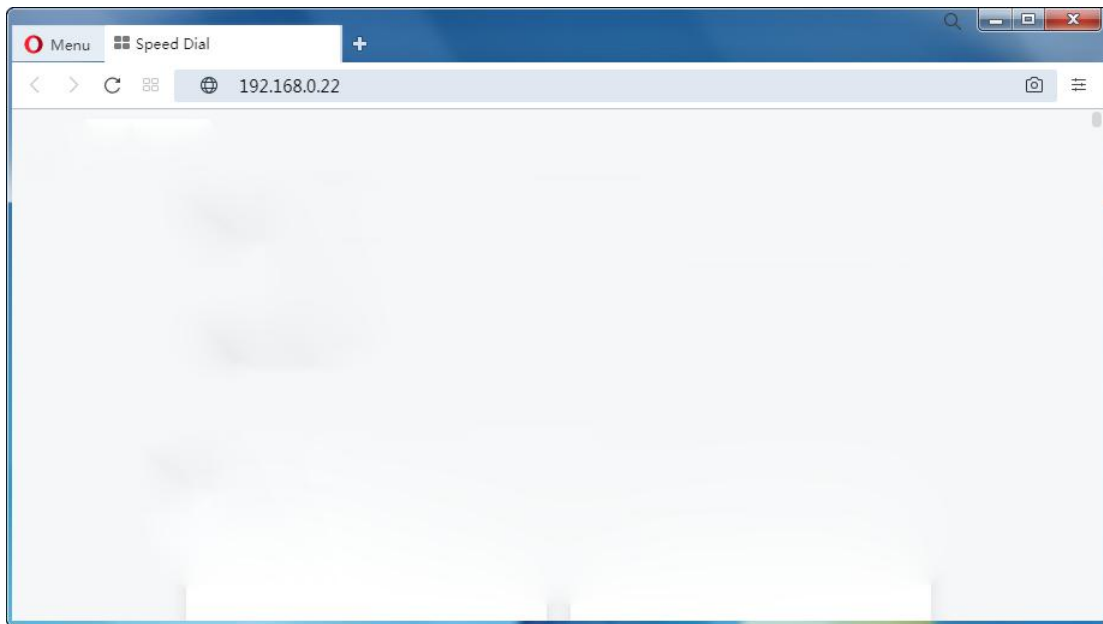
In the “Local Area Connection Status” menu, select “Properties”, and then double-click “Internet Protocol Version 4 (TCP / IPv4)”.



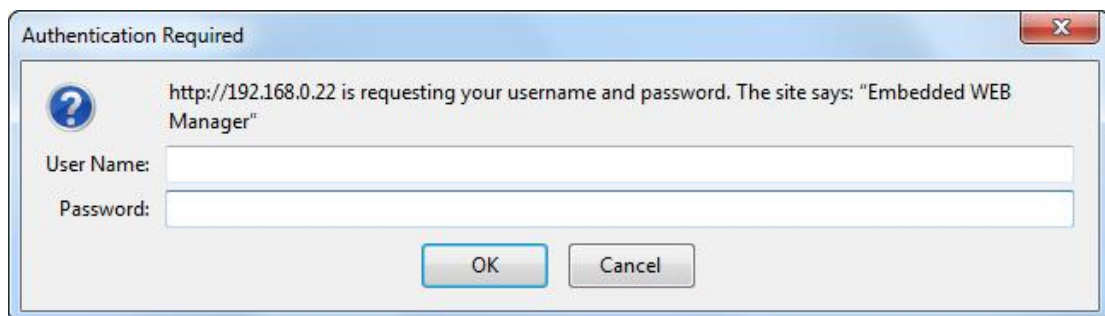
Set the IP address to make the IP address and the device in the same network segment, so that the computer can access the device.



7.2 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.

7.3 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), Device Settings, Alarm Status, Alarm Properties, Network Settings, Change Password, and Reset Settings. The main content area is titled 'Device Status' and contains a table of device parameters:

Parameter	Value	Unit
Device Model	Optical Transmitter	
Serial Number	200620103375	
Device Version	1.9.3	
Unit Temperature	33.0	°C
Input RF Level	66.0	dBuV
Laser Driver Level	78.0	dBuV
Laser Status	ON	
Laser Wavelength	1555.75	nm
Laser Output	4.3	mW
Laser BIAS	39.0	mA
Laser TEMP	23.8	°C
Laser TEC	0.029	A
DC Power +3.3V	3.3	V
Power Supply 1	Normal	
Power Supply 2	Fault	

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Real Time Device Status Page

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

The navigation bar is a vertical list of menu items. The top item, 'Device Status', is highlighted with a blue background. The other items are on a light gray background.

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

Page Navigation Bar

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

- Laser Status: Laser ON (dropdown)
- OMI Mode: AGC (dropdown)
- OMI Value: 0.0 (text input) dB
- MGC ATT: 9.0 (text input) dB
- Channel: 84 (text input)
- Submit button

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Device Setting Page

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

Index	Parameter Name	Alarm Status
1	Tamper Status	Nominal
2	Box Temp	Nominal
3	Drive Level	Nominal
4	Input RF level	Nominal
5	Laser Temp	Nominal
6	Laser BIAS	Nominal
7	Laser Opt-output	Nominal
8	Laser TEC	Nominal
9	DC +3.3V	Nominal

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Alarm Status Page



SNMP Agent WEB Manager

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


Alarm Properties

Index	Parameter Name	HiHi	Hi	LO	LOLO	Deadband	Action
1	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
2	Drive Level (dBuV)	<input checked="" type="checkbox"/> 120	<input checked="" type="checkbox"/> 110	<input checked="" type="checkbox"/> 90	<input checked="" type="checkbox"/> 60	1	Set
3	Input RF level (dBuV)	<input checked="" type="checkbox"/> 100	<input checked="" type="checkbox"/> 90	<input checked="" type="checkbox"/> 70	<input checked="" type="checkbox"/> 60	1	Set
4	Laser Temp (°C)	<input checked="" type="checkbox"/> 40.0	<input checked="" type="checkbox"/> 35.0	<input checked="" type="checkbox"/> 15.0	<input checked="" type="checkbox"/> 10.0	1.0	Set
5	Laser BIAS (mA)	<input checked="" type="checkbox"/> 150.0	<input checked="" type="checkbox"/> 120.0	<input checked="" type="checkbox"/> 20.0	<input checked="" type="checkbox"/> 10.0	1.0	Set
6	Laser Opt-output (mW)	<input checked="" type="checkbox"/> 40.0	<input checked="" type="checkbox"/> 38.0	<input checked="" type="checkbox"/> 1.0	<input checked="" type="checkbox"/> 0.5	0.1	Set
7	Laser TEC (A)	<input checked="" type="checkbox"/> 3.00	<input checked="" type="checkbox"/> 2.00	<input checked="" type="checkbox"/> -2.00	<input checked="" type="checkbox"/> -3.00	0.10	Set
8	DC +3.3V (V)	<input checked="" type="checkbox"/> 4.1	<input checked="" type="checkbox"/> 3.8	<input checked="" type="checkbox"/> 2.8	<input checked="" type="checkbox"/> 2.5	0.1	Set

Index	Parameter Name	Control	Action
1	Tamper Status	EnableMajor	Set

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Alarm Properties Setting Page



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 : 11 : 3C : 4B**

Update Identifier: **OTD138SG01**

Agent Version: **V1.5.0**

Static IP Address: **192 . 168 . 0 . 22**

Subnet Mask: **255 . 255 . 0 . 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**

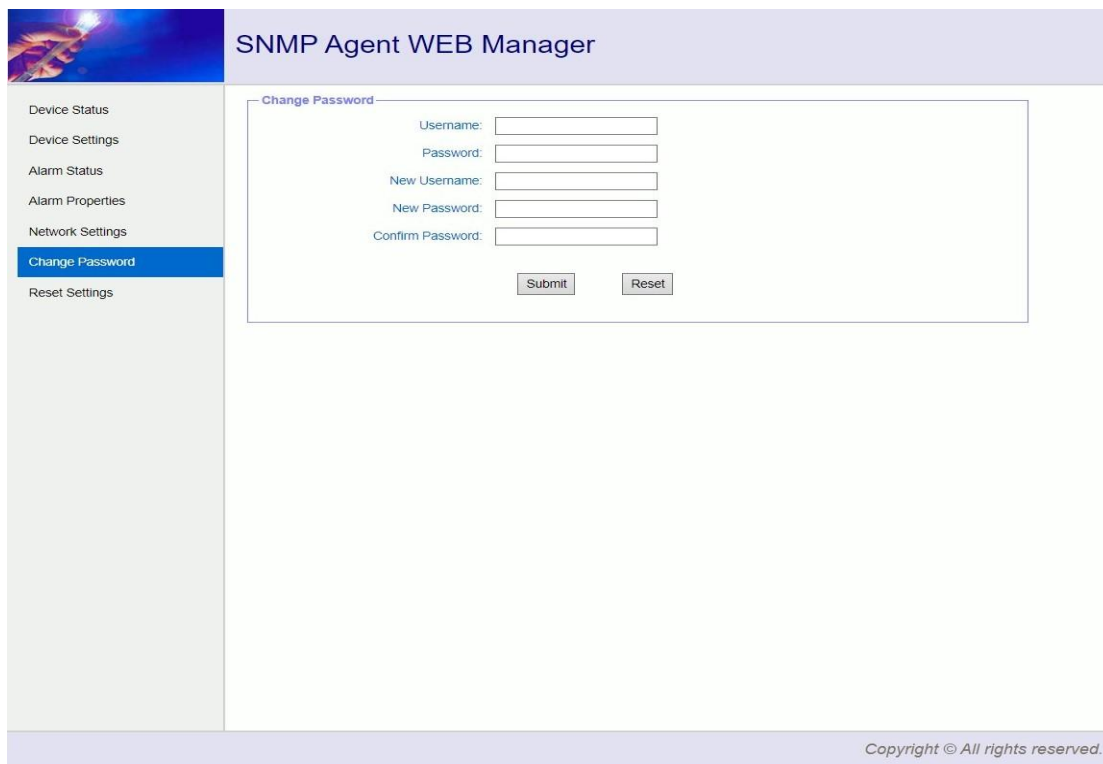
Write Community: **public**

Trap Community: **public**

SNMP Version: **V1**

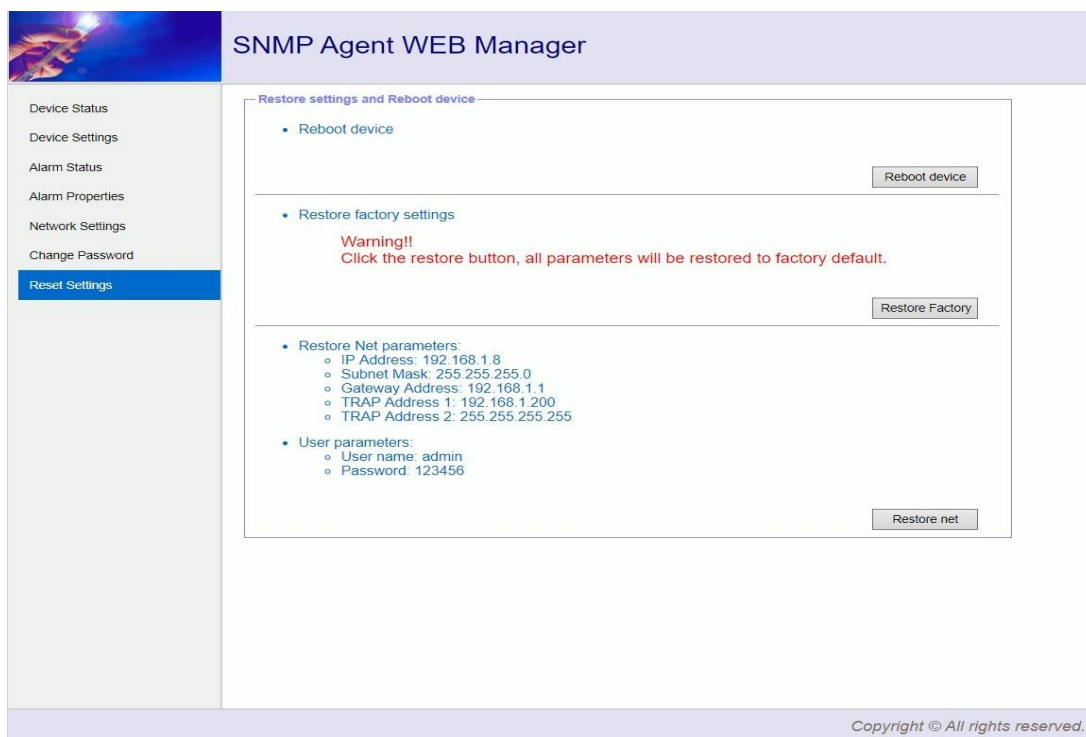
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Network Setting Page



The image shows the 'Change Password' page in the SNMP Agent WEB Manager. The page has a light purple header with the title 'SNMP Agent WEB Manager'. On the left is a vertical navigation menu with items: Device Status, Device Settings, Alarm Status, Alarm Properties, Network Settings, Change Password (highlighted in blue), and Reset Settings. The main content area is titled 'Change Password' and contains five input fields: Username, Password, New Username, New Password, and Confirm Password. Below the fields are 'Submit' and 'Reset' buttons. A footer at the bottom right contains the text 'Copyright © All rights reserved.'

Page to Change User Name and Password



The image shows the 'Restore settings and Reboot device' page in the SNMP Agent WEB Manager. The page has a light purple header with the title 'SNMP Agent WEB Manager'. On the left is a vertical navigation menu with items: Device Status, Device Settings, Alarm Status, Alarm Properties, Network Settings, Change Password, and Reset Settings (highlighted in blue). The main content area is titled 'Restore settings and Reboot device' and contains three sections:

- Reboot device**: A section with a 'Reboot device' button.
- Restore factory settings**: A section with a red warning message: 'Warning!! Click the restore button, all parameters will be restored to factory default.' and a 'Restore Factory' button.
- Restore Net parameters**: A section listing network 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, and TRAP Address 2: 255.255.255.255. Below this is a 'Restore net' button.

 A footer at the bottom right contains the text 'Copyright © All rights reserved.'

Restore Page