



ACT AT5200 FTTX Multiport EDFA

Quick Reference Guide

**Revision K** 



## ACT AT5200 Multiport Erbium-Doped Fiber Amplifier

### **Quick Reference Guide**

ACT Document Number: AT5200 Multiport EDFA QRG

Quick Reference Guide Revision K

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This document is produced to assist professional and properly trained personnel with installation and maintenance issues for the product. The capabilities, system requirements and/or compatibility with third-party products described herein are subject to change without notice.

For more information, contact ACT: <a href="mailto:support@ascentcomtec.com">support@ascentcomtec.com</a>



#### **Revision History**

Revision	Date	Reason for Change
Α	02/01/2012	Initial release
В	06/01/2012	Update front panel design
С	06/01/2014	Update EMS and GUI
D	04/20/2015	Format control
E	08/15/2016	Minor updates
F	02/14/2017	Updated specifications
G	02/15/2017	Updated GUI section
н	05/13/2019	Updated section 5.4
1	10/13/2020	Updated sections 3 and 4
1	12/08/2020	Updated with OTDR
К	11/10/2023	Minor updates/Update section 3.2



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## Precautions



Exposure to class 1M laser radiation is possible. Access should be restricted to trained personnel only. Do not view exposed fiber or connector ends when handling optical equipment.

- Ensure adequate cooling and ventilation as specified.
- The installation and operation manual should be read and understood before units are put into use.
- Always replace protective caps on optical connectors when not in use.
- The typical connectors fitted are SC/APC 8°. Note: 8° angle polished connectors must be used.

#### Cleaning

Use only a damp cloth for cleaning the front panel. Use a soft dry cloth to clean the top of the unit.

Do not use spray cleaner of any kind.

#### Overloading

Overloading wall outlets and extension cords can result in a risk of fire or electric shock.

Use approved electrical cords.

#### Damage requiring service

Unplug unit and refer servicing only to Ascent Communication Technology qualified service personnel.

#### Servicing

Do not attempt to service this unit yourself. Refer all servicing only to Ascent Communication Technology qualified service personnel.

## 1. Introduction

### 1.1 Overview

AT5200 2RU Erbium-Doped Fiber Amplifier (EDFA) offers a flexible and scalable optical amplification for high quality video transmission in CATV networks. Together with ACT AT5000 series 1550nm transmitter, the AT5200 EDFA provides an ideal video overlay solution in high density FTTX networks to bring the video services to business and home premises.

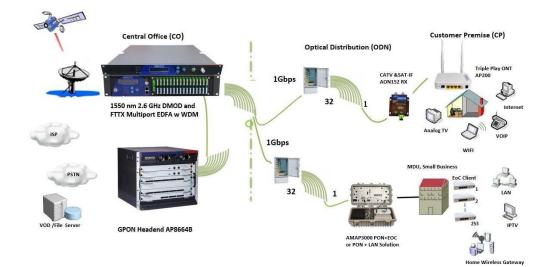
AT5200 EDFA series simplifies the application by offering low noise, high output power, and intuitive front panel LCD display to make operator's life easier. The optical amplifier is packaged in a self-contained 19" sub-rack of 1 or 2 RU with redundant universal mains power supply and SNMP management.

The optical output power level can be ordered from 13 dBm to 26dBm with variable output features available. Multiport EDFAs accommodates up to 16 output ports in 1RU setting and 64 output ports in 2RU setting. Combined with our AT5000 1550nm direct or externally modulated laser transmitter, MSOs can quickly deploy and activate advanced multi-media services in long distance video transmission and high subscriber count FTTH networks.

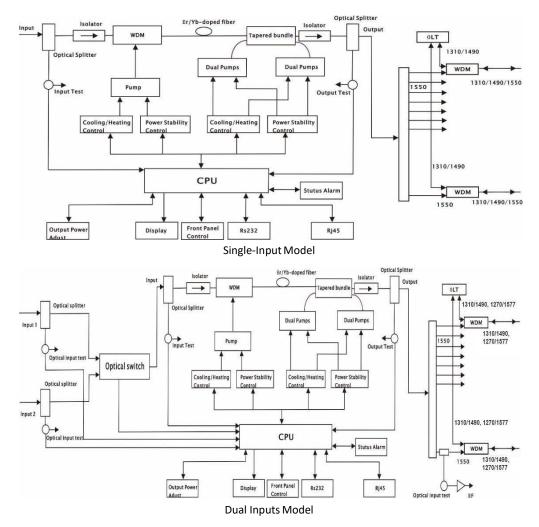
### 1.2 Features

- Low noise, high performance with JDSU & IPG pump laser
- FTTP high power multi-ports optical amplifier with gain spectrum band within 1540 to 1563nm
- Built-in WDM to connect PON OLT Uplink and Combined PON + CATV output
- Up to 64 uplink optical ports (OLT 1310/1490nm)
- Up to 64 combined output ports (1550nm CATV + 1310/1490nm data stream)
- Suitable for analog and digital CATV systems, DOCSIS, FTTH and more applications
- Suitable for 1550 nm DWDM applications for multiple wavelengths on single fibre
- Nominal output powers from 13dBm to 26dBm per port
- Adjustable output power
- Laser cooling: Thermoelectric Cooler (TEC)
- Extend analog and digital CATV to suit long distance feeders or larger FTTH distribution systems
- Local or remote monitoring and configuration
- SNMP/HTTP monitoring, management and control

### **1.3 Application Diagram**



### 1.4 Diagram



## 1.5 Specifications

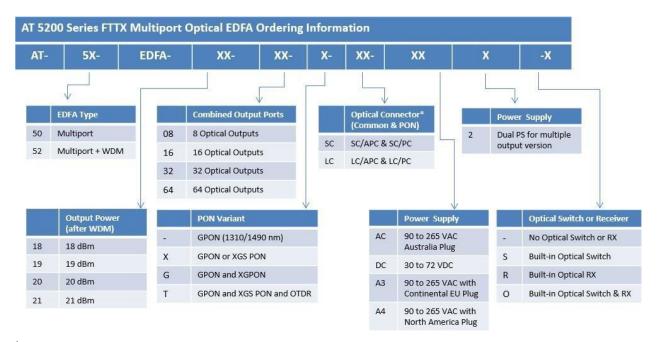
ATE300 EDEA Enhiven Dave	مما التامية في المعالية الم	10// 1 2011
AT5200 EDFA Erbium-Dop	ed Fiber Amplifier	19°1 or 2RU

Parameter	Unit	Min.	Тур.	Max.	Note
Optical Index	•		.,		
CATV Operating Wavelength	nm	1545		1565	
GPON Pass Wavelength	nm		1310/149	C	
XGPON Pass Wavelength	nm		1270/157	7	
OTDR Pass Wavelength	nm		1625 to 165	50	
Optical Input Range	dBm	-8		+10	
Output Power	dBm			41	1 dBm interval
Output Adjustment Range	dB	-4		0	Adjustable, each step 0.1 dB
Output ATT	dB		-6		Output ATT at one time
	-		-		And recover
Output Ports Uniformity	dB			0.7	
Output Power Stability	dB			0.3	
Max No. of OLT PON Ports 2RU				32	SC/APC
				64	LC/APC
Max No. of COM Ports 2RU				32	SC/APC
				64	LC/APC
CATV Pass Loss	dB			0.8	
OLT Pass Loss	dB			0.8	
Isolation between CATV and OLT	dB	40			
Switching Time of Optical Switch	ms			8.0	Optional
Insertion Loss of Optical Switch	dB			0.8	GPON
	dB			1.1	XGPON
	dB			1.4	OTDR
Noise Figure	dB			6.0	Pin: 0 dBm
PDL	dB			0.3	
PDG	dB			0.4	
PMD	ps			0.3	
Remnant Pump Power	dBm			-30	
Optical Return Loss	dB	45			
Fiber Connector		SC/APC			FC/APC
					LC/APC
General Characteristics					
RF Test	dBµV	78		82	Optional
Network Management Interface			WEB suppor		
Power Supply	V	90		265	AC
		-72		-36	DC
Power Consumption	W			100	Dual PS, 1+1 standby, 40dBm
Operating Temperature	°C	-5		+65	
Storage Temperature	°C	-40		+85	
Operating Relative Humidity	%	5		95	



Dimensions (D×W×H)	mm	370 × 483 × 88
Weight	kg	7.5

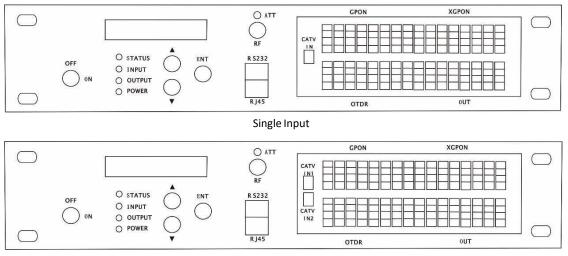
### 1.6 Models and Options



\* The maximum output power per port is 26dBm. Output power is measured after WDM. Contact ACT Sales Representative for more information.

Total Output Power		No. of Output Port	Output Dower nor Dort	
dBm	mW	No. of Output Port	Output Power per Port	
35	3200	16	20.5	
55	5200	32	17.0	
36	4000	16	21.5	
30	4000	32	18.0	
37	5000	16	22.5	
57	5000	32	19.0	
38	6400	32	20.0	
39	8000	32	21.0	
40	10000	32	22.0	

### 1.7 Front Panel Layout (Layout May Vary)



Dual Inputs

Identification	Name	Remarks	
LCD	LCD Display	To display the parameters of the devi	ce
STATUS	Device Status	LED Green, Device working	
		LED Red, Device alarming or faulty	
INPUT	Fiber Input	LED Green, Input within requested rate	nge
		LED Red, no input or out of the reque	sted range or only
		single input connected in dual inputs	model
OUTPUT	Fiber Output	LED Green, Fiber output is within nor	mal range
		LED Red, Fiber output is out of norma	l range
POWER	Power Supply	LED Green, Dual power supply workin	g
		LED Yellow, Single power supply work	ing
CATV IN	CATV Input	1550nm fiber input	Single input
CATV IN1	CATV Input 1	1550nm fiber input 1	Dual Inputs
CATV IN2	CATV Input 2	1550nm fiber input 2	Dual Inputs
GPON	GPON Data Input	OLT Input	CWDM
XGPON	XGPON Data Input	OLT Input	CWDM
OTDR	OTDR Signal Input		
OUT	Fiber Output	Fiber Output	
▲ ▼	Buttons	Start menu page turning and set the c	levice
ENT	Enter	Confirmation after menu page turning	g and device setting
OFF/ON	Кеу	ON pump laser on, OFF pump laser of	f
RF TEST	RF test point	Output level 78 dBµV to 82dBµV	Optional
RS232	RS232 Port	Local programming	
RJ45	RJ45 Port	Remote SNMP and WEB supported	



#### 1.8 Rear Panel Layout



Identification	Items	Remarks
Fan	Fan	For cooling the device
$\bigcirc$	Grounding Port	For grounding
Power1	Power Socket 1	Hot plug in/out supported
Power2	Power Socket 2	Hot plug in/out supported

## 2. Installation

#### 2.1 Preparation before installation

Please examine the machine to see if there is distinct

Please examine if the accessories is complete and the quality cards is here. If not, please contact sales or dealer

#### 2.2 Installation

- Keep a space about 4.5cm between machines for ventilation.
- Make sure that the socket works very well and well grounded; The impedance  $\leq 4\Omega$ ; 220V power

with three cables, the middle one should be connected to the ground  ${\,{}_{\circ}\,}$ 

may hurt the device or influence the quality of signal.

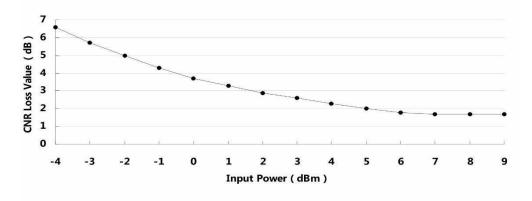
- Make sure the power supply button in the rear panel turn to OFF before the power supply cable connected.
- Keep the interface of the fiber clean before connecting the fiber.

#### 2.3 Notes

- 1. Static-sensitive pump laser is applied in the EDFA, please note that electrostatic protection should be applied in the storage of the EDFA and it should not be stored with corrosive material, and the storage temperature should be between 40 °C and + 85 °C.
- 2. As the output power of EDFA is high, please do not turn on the power supply before the EDFA 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.



- 3. Please don't now attempt to look into the optical connectors when power applied, eye damage may result.
- 4. Please don't block the cooling holes of the device and keep it in good ventilation
- 5. Please use anhydrous industrial alcohol instead of medical alcohol to wash the fiber connector if necessary after the power supply of the device is turned off.
- 6. For high power EDFA, 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.
- 7. Please don't test the EYDFA repeatedly, otherwise the fiber connector interface may be hurt and the output power decreased.
- 8. The change of input optical power has a great influence on CNR. The higher input power, the higher the CNR, the lower input power, and the worse the CNR, as shown in the following figure:



CNR loss value/Input Power

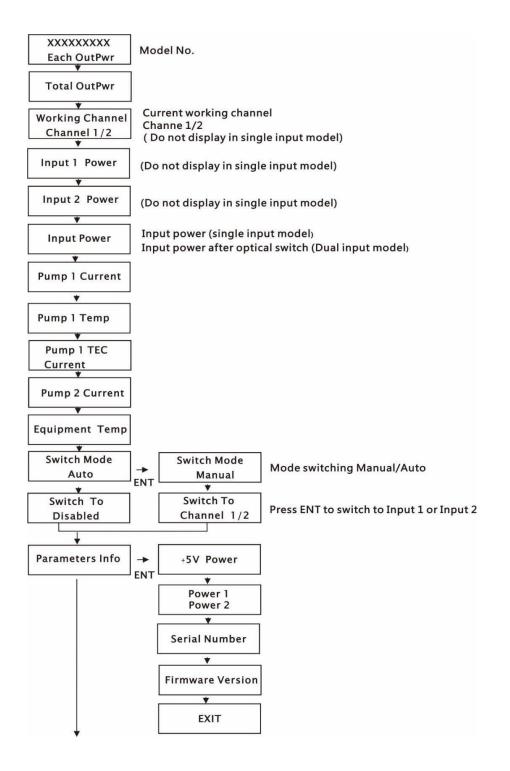
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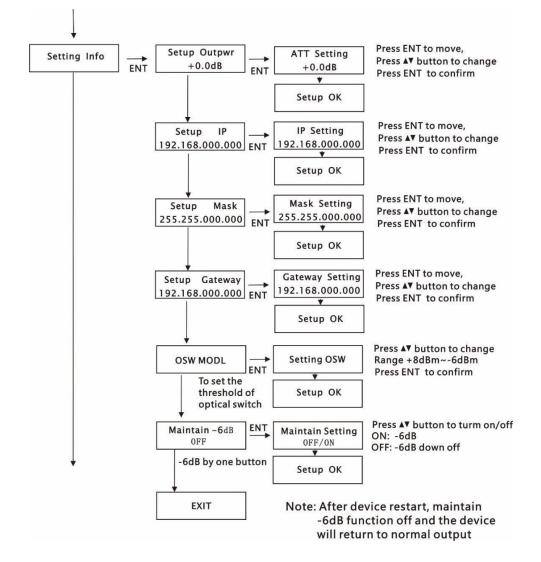
## 3. Management – Operation

### 3.1 Front Panel Operation

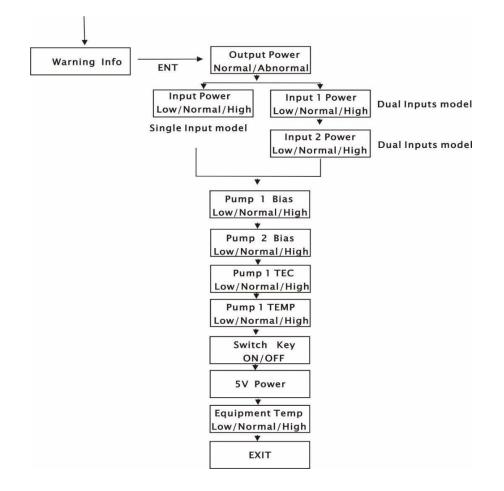
Press the ▼ to display the following menus in turn, and press the ▲ to reverse the cycle











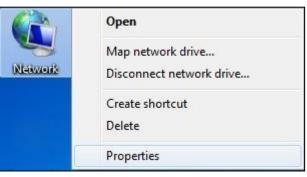


### 3.2 WEB Management Interface (Web GUI)

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.

1. 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

Control Panel )	Network and Internet      Network and Sharing Center
Control Panel Home Change adapter settings Change advanced sharing settings	View your basic network information and set up connections           ADMIN-PC         Unidentified network         Internet           ADMIN-PC         Unidentified network         Internet           View your active networks         Connect or disconnect           View your active network         Access type:         No Internet access           Unidentified network         Access type:         No Internet access           Unidentified network         Access type:         Local Area Connection           Change your networking settings         Set up a new connection or network         Set up a new connection or network           Set up a new connection or network         Set up a new connection or network         Set up a vireless, 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 vireless, wired, dial-up, or VPN network connection.           Choose homegroup and sharing options         Access files and printers located on other network computers, or change sharing settings.
See also HomeGroup	Troubleshoot problems Diagnose and repair network problems, or get troubleshooting information.
Internet Options Windows Firewall	

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

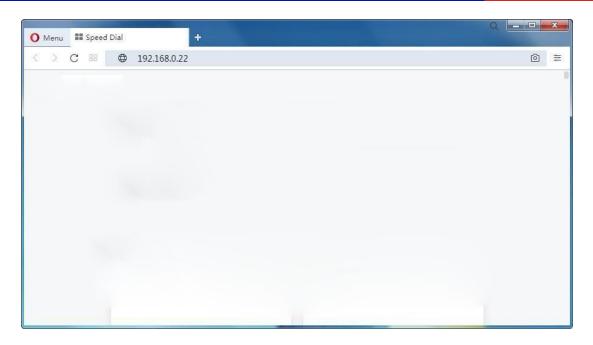
🕴 Local Area Connection Status	🖞 Local Area Connection Properties
General	Networking
Connection       IPv4 Connectivity:       No Internet access         IPv6 Connectivity:       No network access         Media State:       Enabled         Duration:       00:31:50         Speed:       100.0 Mbps         Details	Connect using: Atheros AR8151 PCI-E Gigabit Ethemet Controller (NDIS E Configure This connection uses the following items: Configure This connection uses the following items: Configure This connection uses the following items: Configure This connection uses the following items: Configure Configur
Activity Sent Received	Link-Layer Topology Discovery Responder      Install Uninstall Properties
Bytes: 36,063 159,089	Description Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.
Close	OK Cancel

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.

Internet Protocol Version 4 (TCP/IPv4)	Properties ?			
General				
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.				
Obtain an IP address automatical	у			
Ouse the following IP address:				
IP address:	192.168.0.10			
Subnet mask:	255 . 255 . 255 . 0			
Default gateway:	192.168.0.1			
Obtain DNS server address autom	natically			
Use the following DNS server add	resses:			
Preferred DNS server:				
Alternate DNS server:	· · ·			
Validate settings upon exit	Advanced			
	OK Cancel			

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

Authentication	Required
?	http://192.168.0.22 is requesting your username and password. The site says: "Embedded WEB Manager"
User Name:	
Password:	
	OK Cancel

#### First Time Log-in to WEB Manager

The username/password for the first time log-in to the WEB Manager is **admin/ascent**, we recommend that the customer change the username and password as soon as possible.

#### **Restore Factory Setting**

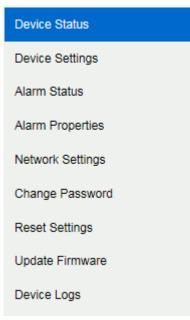
If in future you forget the user name and password you set up, or for any other reasons in need to change to default, the product can be restored to factory setting, click Reset Settings on the left-bar, then click Restore Factory, the setting will revert to default state, and the username and password will become **admin/123456**.



he browser displays t	he device status page	by default						
× +							Υ –	σ×
• http://192.168.0.22/							e ~   ·	5 - E
	Device Status Device Status Device Model Serial Number Internal Temprature Input Power Total Output Power Single Output Power DC Power +5V Power Supply 1	AT-52-EDFA-20-16-LC 231005140067 27.0 -2.8 35.2 20.2 5.1 Normal	°C dBm dBm V					
	Pump BIAS	темр		TEC				
	1 453 mA		4.0	0.09 A				
	2 6830 mA	0.0 °C		0.00 A				
		Copyrigi	ht © 2011-20	)23 Ascent Communic	alion Technology Li	mited		)
	<ul> <li>★ +</li> <li>★ http://192.168.0.22/</li> </ul> Communication Technology Device Status Device Settings Alarm Status Alarm Properties Network Settings Change Password Reset Settings Update Firmware		Internal Temprature     Device Status     Device Status     Alarm Properties     Network Settings     Change Password     Reset Settings     Update Firmware     Device Logs	x       +         chtp://192168.0.2/2       Concention Technology       Att 5000 EDFA by 0000 EDFA by 00000 EDFA by	★ + ★ try/tytestestestestestestestestestestestestest	★ +	x       +         c http://192.168.02/         Cence Status Device Status Device Status Aarm Status Aarm Status Aarm Properties Change Password Reset Status Dudate Firmware Device Logs       Device Status Device Model Af S2 EDFA 20-16-LC Serial Number 200051400067 Internal Temprature 27.0 °C Input Power 28.0 dBm Single Output Power 35.2 dBm Single Output Power 35.2 dBm DC Power +5V 5.1 V Power Supply 1 Normal Device Logs         Pump       BIAS       TEMP         Pump       BIAS       TEMP         1       453 mA       24.8 °C       0.09 A	the state of the state

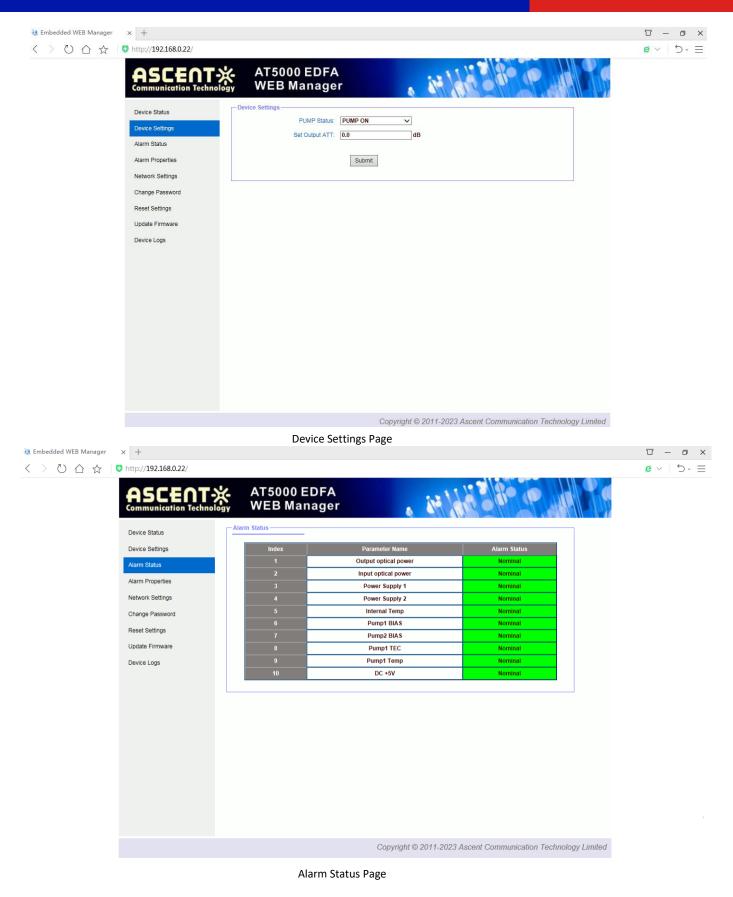
Real Time Device Status Page

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



Page Navigation Bar







		munication Technolog
🔅 Embedded WEB Manager 🛛 🗙 🕂		ΰ – σ ×
< 〉 心 ☆ 🛛 http://192.168.0.22/		e ~   5 - Ξ
ASCENT	🔆 AT5000 EDFA	
Communication Techno		
Device Status	- Alarm Properties	]
Device Settings	Index Parameter Name HIHI HI LO LOLO Deadband Action	
Alarm Status	1         Output optical power (dBm)         ☑ 27.0         ☑ 26.0         ☑ 11.0         ☑ 10.0         0.5         Set	
Alarm Properties	2 Input optical power (dBm)	
Network Settings	3 Internal Temp (°C) ♥ 85 ♥ 70 ♥ 5 ♥ 0 2 Set	
Change Password	4 Pump1 BlAS (mA) ♀ 900 ♀ 800 ♀ 100 ♀ 80 20 Set	
Reset Settings Update Firmware	5 Pump2 BIAS (mA)	
Device Logs	6         Pump1 TEC (A)         ☑         2.00         ☑         1.50         ☑         -2.00         0.10         Set           7         Pump1 Temp (°c)         ☑         35.0         ☑         30.0         ☑         15.0         1.0         Set	
	8 DC +5V (V) V 6.5 V 6.0 V 4.0 V 3.5 0.2 Set	
	Index Parameter Name Control Action	
	1 Power Supply 1 EnableMajor V Set	
	2 Power Supply 2 EnableMajor V Set	
	Alarm Properties Settings Page	
🭇 Embedded WEB Manager 🛛 🗙 🕂		ΰ – σ ×
< > 🕐 🏠 🏠 📑 http://192.168.0.22/		≡ -C   ~ B
Device Status	Network Settings Device MAC: D8: 29: 16: 57: 05: D7	^
Device Settings	Update Identifier: OA138SG04	
Alarm Status	Agent Version: V3.2.0 Refresh	
Alarm Properties	Static IP Address: 192 , 168 , 0 , 22 Set	
Network Settings Change Password	Subnet Mask: 255 . 255 . 0 0 Set	
Reset Settings	Default Gateway: 192 , 168 , 0 , 1 Set	
Update Firmware	Trap Address 1: 0 , 0 , 0 , 0 Set	
Device Logs	Trap Address 2: 0 0 0 Set	
	Trap Address 3: 0 0 0 Set	
	Trap Address 4: 0 0 0 0 Set	
	Trap Address 5: 0 , 0 , 0 , 0 Set	
	Trap Address 6: 0 0 0 0 Set	
	Trap Address 7: 0 , 0 , 0 , 0 Set	
	Trap Address 8: 0, 0, 0, 0 Set	
	IPv6 Global Unicast:	
	IPv6 Local Link: fe80::da29:16ff:fe57:5d7	

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Set

Set

Trap IPv6 Host1:

Trap IPv6 Host2: ::



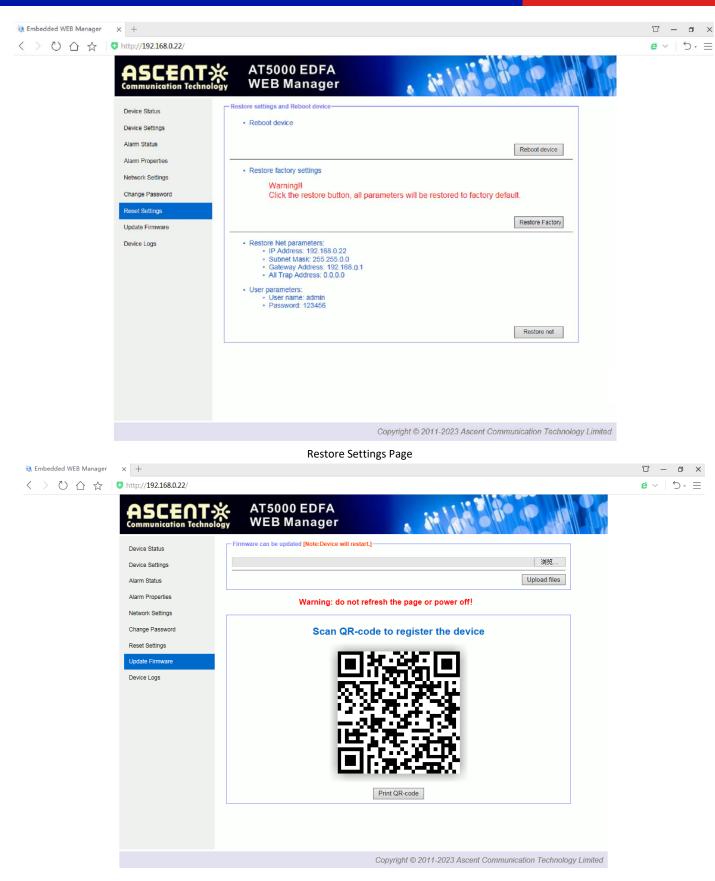
<table-of-contents> Embedded WEB Manager</table-of-contents>	× +						Υ –	o ×
< > ひ ☆	http://192.168.0.22/						<b>e</b> ~   •	5- ≡
		AT5000 EDF WEB Manag		14	8° 10 11			
	Device Status	IPv6 Local Link:	fe80::da29:16ff:fe57:5d7			^		
	Device Settings	Trap IPv6 Host1:	::		Set			
	Alarm Status	Trap IPv6 Host2:	::		Set			
	Alarm Properties	Trap IPv6 Host3:	::		Set			
	Network Settings	Trap IPv6 Host4:	::		Set			
	Change Password	Trap IPv6 Host5:	::		Set			
	Reset Settings	Trap IPv6 Host6:	::		Set			
	Update Firmware	Trap IPv6 Host7:	::		Set			
	Device Logs	Trap IPv6 Host8:	::		Set			
	-	NTP:	Enable V		Set			
		NTP Host:	pool.ntp.org		Set			
		DNS1:	223.5.5.5		Set			
		DNS2:	0.0.0.0		Set			
		Read Community:	public		Set			
		Write Community:	public		Set			
		Trap Community:	public		Set			
		SNMP Version:	V1 ~		Set	~		
			Copyright @	© 2011-2023 Ascent Co	ommunication Technolog	y Limited		

Network Settings Page

😣 Embedded WEB Manager 🛛 🗙 🕂							Υ –	o ×
く 〉 ひ 合 ☆ 📑 http://	//192.168.0.22/						<b>e</b> ~	5 · ∃
A		AT5000 EDFA WEB Manager		12 10 00				
Devic Alarm Alarm Netwo Chan Reset Updat	ce Status ce Settings n Status n Properties oork Settings rge Password et Settings ate Firmware ce Logs	Ige Password Username: Password: New Username: New Password: Confirm Password: Submit	Reset					
			Copyright © 2	2011-2023 Ascent Comm	nunication Technology L	.imited		

Change Password Page





Update Firmware



×

💐 Embedded WEB Manager	× +					Υ – O
	http://192.168.0.22/					e < 5.
		AT5000 ED WEB Mana		· it is a for the		
	Device Status	Device Logs			^	
	Device Settings	Posix TimeSync		Clear Logs		
	Alarm Status	Posix Time	System UpTime	Record Content		
	Alarm Properties	1970年1月1日 8:00:20 1970年1月1日 8:00:19	00:00:20 00:00:19	Output optical power NOMINAL 11.8dBm Output optical power LO 10.7dBm		
	Network Settings	1970年1月1日 8:00:16	00:00:16	Pump2 BIAS NOMINAL 990mA		
	Change Password	1970年1月1日 8:00:16 1970年1月1日 8:00:12	00:00:16 00:00:12	Pump1 BIAS NOMINAL 453mA Input optical power NOMINAL -2.8dBm		
	Reset Settings	1970年1月1日 8:00:06 1970年1月1日 8:00:06	00:00:06 00:00:06	DC +5V NOMINAL 5.3V Pump1 Temp NOMINAL 23.5°C		
	Update Firmware	1970年1月1日 8:00:06		al Temp NOMINAL 26°C		
	Device Logs	1970年1月1日 8:00:05 1970年1月1日 8:00:05	00:00:05	V LOLO 0V Pump1 Temp LOLO 0°C		
		1970年1月1日 8:00:05	00:00:05	Pump2 BIAS LOLO 0mA		
		1970年1月1日 8:00:05	00:00:05	Pump1 BIAS LOLO 0mA		
		1970年1月1日 8:00:05	00:00:05	Internal Temp LOLO 0°C		
		1970年1月1日 8:00:05	00:00:05	Input optical power LOLO -102.4dBm		
		1970年1月1日 8:00:05	00:00:05	Output optical power LOLO 0dBm		
		1970年1月1日 8:00:00	00:00:00	Device started.		
		1970年1月1日 8:06:06	00:06:06	Pump2 BIAS LOLO 20mA		
		1970年1月1日 8:06:06	00:06:06	Pump1 BIAS LOLO 0mA		
		1970年1月1日 8:06:06	00:06:06	Output optical power LOLO -60.0dBm		
		1970年1月1日 8:05:01	00:05:01	Power Supply 2 MAJOR		
		1970年1月1日 8:04:59	00:04:59	Power Supply 1 NOMINAL		
		1970年1月1日 8:04:57	00:04:57	Power Supply 1 MAJOR		
		1970年1月1日 8:04:51	00:04:51	Output optical power NOMINAL 11.4dBm		
		1970年1月1日 8:04:46	00:04:46	Pump2 BIAS NOMINAL 970mA		
		1970年1月1日 8:04:46	00:04:46	Pump1 BIAS NOMINAL 453mA		
		1970年1月1日 8:04:41	00:04:41	Pump2 BIAS LOLO 20mA	~	
		1970年1月1日 8:04:41	00:04:41	Pump1 BIAS LOLO 0mA	3	
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Device Logs

## 4. Troubleshooting

### 4.1 Fiber Optic Maintenance

Any time the fiber leads to the amplifier are disconnected, there is the potential for contamination of the ends of the fiber connectors. Dirt or other contaminants on these components can reduce the amplifier's performance and can result in permanent damage to the device. It is recommended that the fiber connectors be cleaned prior to connection, or reconnection, to the system.

### 4.2 Troubleshooting Conditions

<b>S/N</b> 1	<b>Fault Phenomenon</b> Power Yellow	Faulty Reason Single power supply working	Solution Connect another power supply	Remarks
2	STATUS Green INPUT Yellow OUTPUT Green	Single optical input	Connect another input	Dual Model
3	STATUS Red INPUT Yellow OUTPUT Red	No input or input too low	Adjust the value of input power	
4	STATUS Red INPUT Green	The key turned to OFF	Turn the key to ON	



	OUTPUT Red LCD Display "KEY OFF"			
5	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 ≤ 19 dBm
		Output interface of EYDFA 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	
6	LCD display shows output is about 0 to 4dB lower than specified value	Checking if the ATT attenuation in "setting info" is enabled	Turn off "ATT" function	
7	LCD display shows output is about 6dB	Checking if the "Maintain -6dB" function in "Setting Info" enabled	Turn off "-6dB" function	
8	The optical power of the output end of the optical amplifier is normal, but the index of the user end is	Optical power to fiber is high	Decrease the power to fiber under 19 dBm	

deteriorated





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