



AT5000 OPSW Optical Switch

**Quick Reference
Guide**

Revision 2C

ACT AT5000 OPSW Optical Switch

Quick Reference Guide

ACT Document Number: ACT AT5000 OPSW Optical Switch QRG Revision 2C

Quick Reference Guide Revision 2C

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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: support@ascentcomtec.com



Revision History

Revision	Date	Reason for Change
1A	02/01/2012	Initial release
1B	06/01/2012	Format control and front panel update
1C	07/11/2017	Updated content
1D	06/28/2024	Update chapter1,3,4,5,6 according to the requirement
2A	11/29/2024	Update picture and all chapters according to the new spec
2B	12/12/2024	Update revision history content
2C	09/25/2025	update Front/Rear panel software and hardware

Table of Content

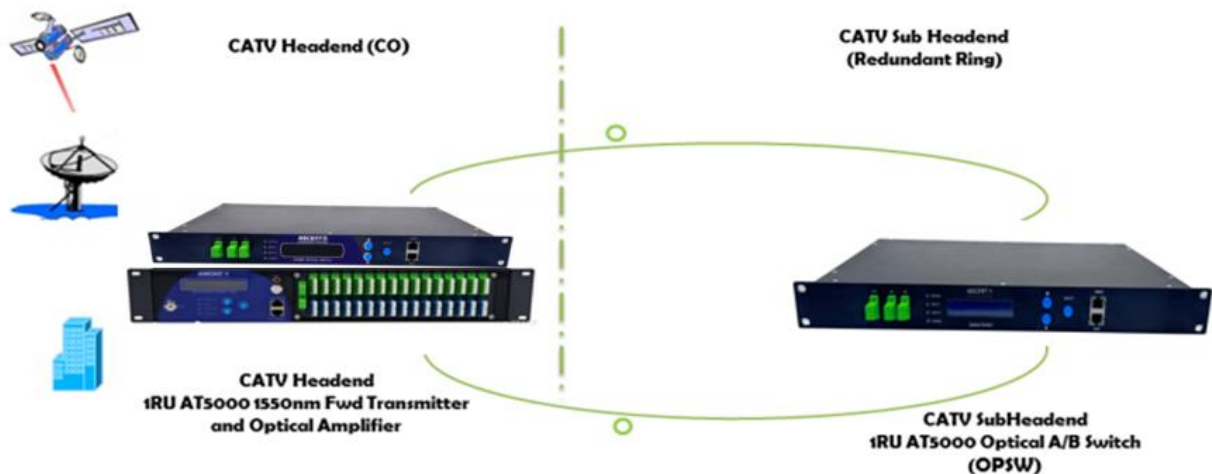
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1 Product Overview

The AT5000 1RU Optical A/B Switch is a high-reliability optical fiber route switching platform designed for applications such as CATV high-quality video transmission, fiber ring redundancy, and FTTX video overlay systems. It ensures the protection of optical paths in network architectures and features low insertion loss and high performance.

The switch is equipped with an electrically operated optical switch that can function in both manual and automatic modes. With a fast-switching time and low loss, it is ideal for fiber ring and redundant standby networks. In automatic mode, the switch detects when the primary line fails or falls below a threshold, transitioning to the standby line and reverting back when the primary line recovers. In manual mode, operators can force switching between lines as needed. The device also includes optional RF detection functionality to monitor signal quality, ensuring reliability by automatically switching lines based on RF thresholds when optical power input is above 0 dBm.

Packaged in a 1RU 19" subrack, the AT5000 OPSW offers an intuitive front-panel LCD for user-friendly operation. When combined with ACT 1RU AT5000 XMOD and EDFA amplifiers, the switch delivers robust fiber protection for long-distance video, medium video overlays, and FTTX networks. Its versatile design meets the reliability demands of traditional HFC and high-density FTTX networks.



2 Features

- It has the function of power-off protection. When the device itself fails or its power supply off, it will automatically remain on the current line before the failure to maintain the working status of the network.
- Any road can be chosen as the main road in automatic mode.
- With intelligent switching function. (See 3.3 for details)
- The Optical Switch is featured in short switching time, low loss, with automatic switching and forced manual switching function.
- Large switching dynamic range
- With RF detection function (optional).
- Built- in dual power supply, automatically switched and hot plug in/out supported.
- The operating 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 operating parameters of the laser deviate from the allowed range set by the software, the system will alarm promptly.
- Standard RJ45 interface is provided, supporting SNMP and web remote network management.

3 Installation

3.1 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.

3.2 Installation

- Please keep a space about 4.5cm between machines for ventilation.
- Please make sure: the socket works very well and well grounded;

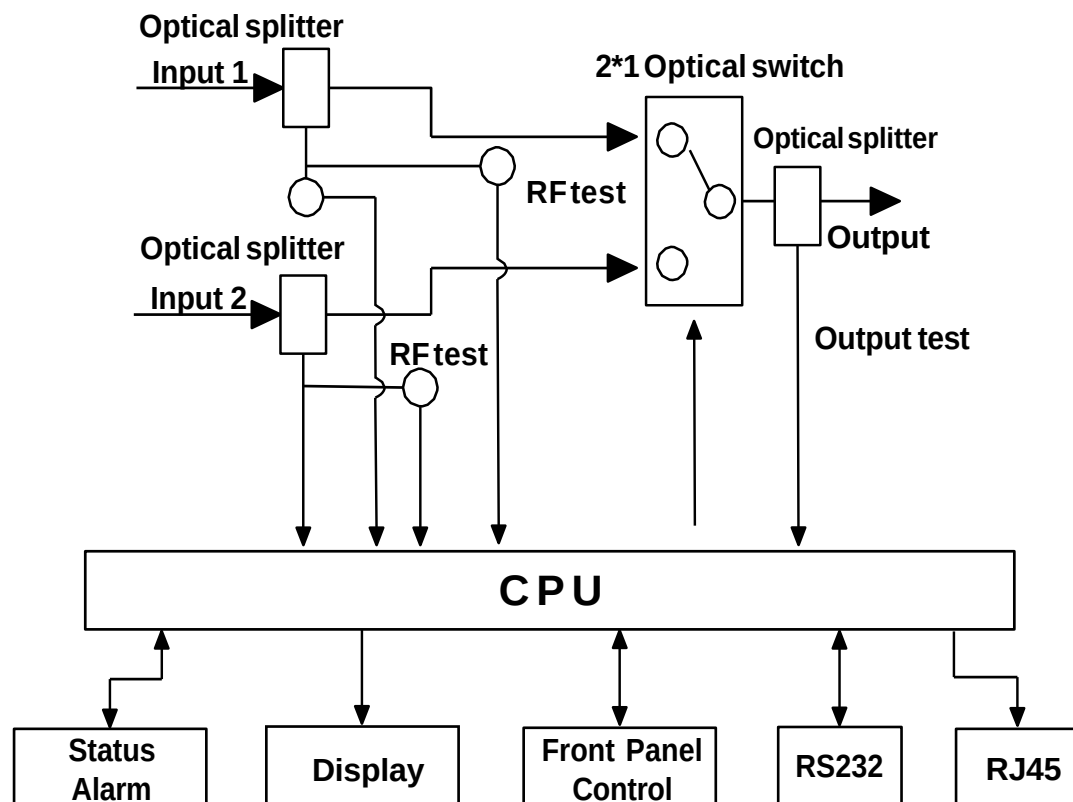
The impedance $\leq 4\Omega$; 220V power with three cables, the middle one should connected to the ground.

Incorrect grounding may hurt the device or influence the quality of signal.

- Please make sure the key is turned to OFF before the power supply connected.
- Please keep the interface of the fiber clean before connecting the fiber. The connector could choose FC/APC or SC/APC.

4 Operation

4.1 Diagram



4.2 Main Technical Parameters

Category	Items	Unit	Index			Remarks
			Min.	Typ.	Max.	
Optical Index	Operating Wavelength	nm	1200		1620	
	Switching Fiber Input Range	dBm	-15		+24	
	Switching Fiber Input Range	dBm	-35		+24	Telecommunication level
	Insertion Loss	dBm	1		1.3	
	Switching Time	ms			8	
	PDL				0.2	
	Optical Return Loss	dB	50			
	Fiber Connector		SC/APC			FC/APC, LC/APC
General Index	RF Detection Function					Optional
	Network Management Interface		SNMP, WEB supported			
	Power Supply	V	90		265	AC
		V	-72		-36	DC
	Power Consumption	W			5	Dual PS, 1+1 standby
	Operating Temp	°C	-5		+65	
	Storage Temp	°C	-40		+85	
	Operating Relative Humidity	%				
	Dimension	mm	240×483×44			D、W、H
	Weight	Kg	2.0			
	Ship weight	Kg	4.0			

4.3 Description of Optical Switch

Working Mode when RF Detection Function is turned off (Standard Mode).

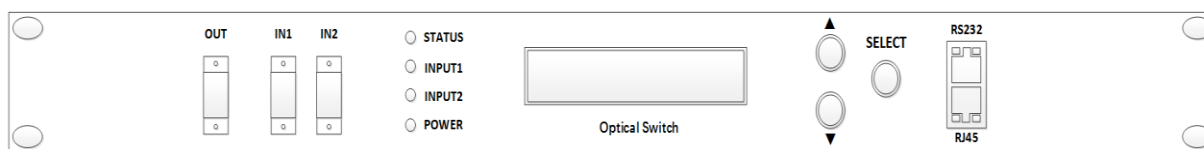
Main Line Input	Standby Line Input	Operating Mode
> Threshold Setting	> Threshold Setting	Main Line
> Threshold Setting	< Threshold Setting	Main Line
< Threshold Setting	> Threshold Setting	Standby Line
< Threshold Setting	< Threshold Setting	Main Line
< Threshold Setting	No Signal	Main Line
No Signal	< Threshold Setting	Standby Line
No Signal	No Signal	Main Line

Working Mode when RF Detection Function is Enabled.

Main Line Input	Standby Line Input	RF Input Status		Working Mode
		Main Line RF	Standby Line RF	
> Threshold Setting	> Threshold Setting	Normal	Normal	Main Line
> Threshold Setting	> Threshold Setting	Normal	Abnormal	Main Line
> Threshold Setting	> Threshold Setting	Abnormal	Normal	Standby Line
> Threshold	> Threshold	Abnormal	Abnormal	Main Line

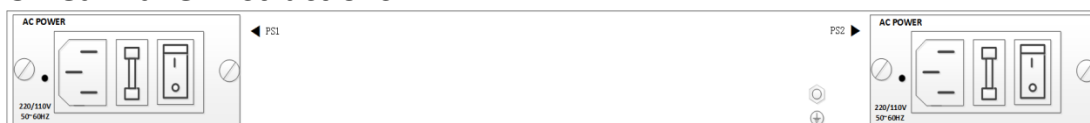
Setting > Threshold Setting < Threshold Setting < Threshold Setting	Setting < Threshold Setting > Threshold Setting < Threshold Setting	No reference to whether the RF signal is normal No reference to whether the RF signal is normal No reference to whether the RF signal is normal	Main Line Standby Line Main Line
---	---	--	---

4.4 Front Panel Instructions



S/N	Identification	Name	Remarks
1	LCD	LCD Display	Device parameters display
2	IN 1	OPT IN 1	Optical signal input port 1
3	IN 2	OPT IN 2	Optical signal input port 2
4	OUT	OPT OUT	Optical signal outlet
5	LED-STATUS	Status Indication	LED Green: The device is working properly LED Red: Device warning or fault
6	LED-INPUT 1	No.1 Line	LED Green: The input is above the threshold LED Red: The input is below the threshold or no input is available LED Green: The input is above the threshold
7	LED-INPUT 2	No.2 Line	LED Red: The input is below the threshold or no input is available
8	LED-STATUS	Status Indication	LED Green: The device is working properly LED Red: Device warning or fault
9	RS232	RS232 Port	Local programming
10	RJ45	RJ45 Port	Remote SNMP and WEB supported
11	▲▼	Buttons	Start menu page turning and set the device
12	SELECT	Buttons	Confirmation after menu page turning and device setting

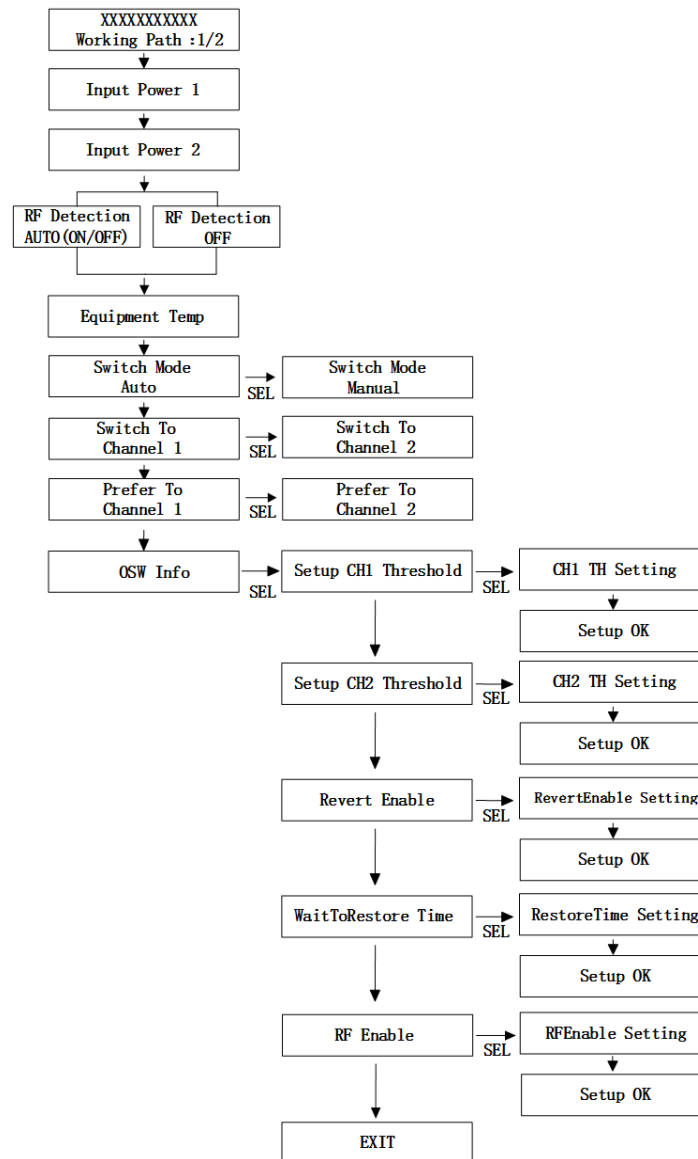
4.5 Rear Panel Instructions

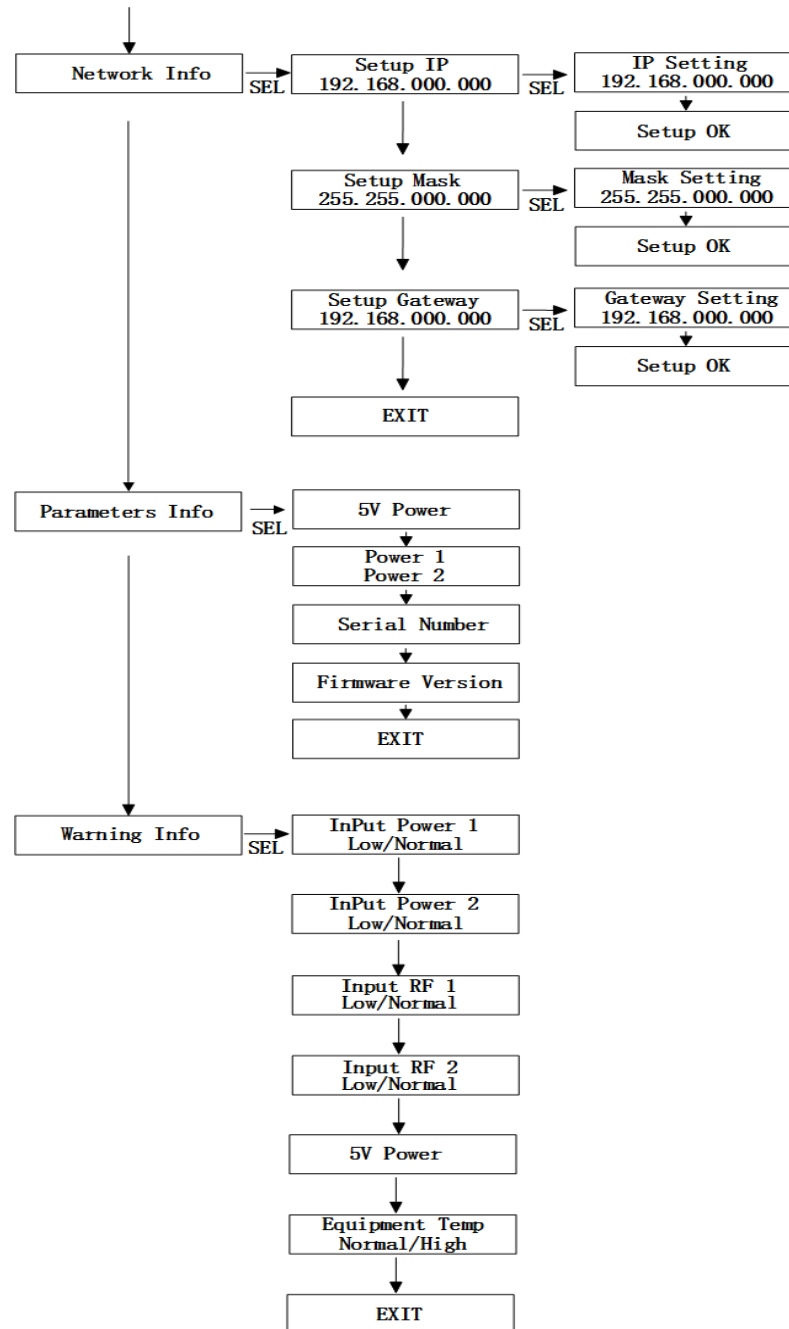


S/N	Identification	Name	Remarks
1	⏏	Grounding Port	For Grounding
2	PS1	Power Socket1	Hot plug in/out supported
3	PS2	Power Socket 2	Hot plug in/out supported

4.6 Front Panel Operation

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





4.7 Notes

- Static-sensitive laser is applied in the optical switch , please note that electrostatic protection should be applied in the storage of the optical switch and it should not be stored with corrosive material, and the storage temperature should be between - 40°C and + 85°C.
- Please don't now attempt to look into the optical connectors when power applied, eye damage may result.
- Please don't block the cooling holes of the device and keep it in good ventilation
- 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.

4.8 Solution to Some Ordinary Problems

S/N	Fault Phenomenon	Faulty Reason	Solution	Remarks
1	INPUT 1 Red	Line1 input signal lower than the threshold	Adjust the input optical signal above the threshold or adjust the threshold below the input optical signal	
2	INPUT 2 Red	Line2 input signal lower than the threshold	Adjust the input optical signal above the threshold or adjust the threshold below the input optical signal	
3	POWER Yellow	Single power supply working	Connect another power supply	

4.9 Warranty Terms

Optical switch is 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:

- Warranty mark pasted on the housing of unit must be in good conditions.
- A clear and readable material describes model number, serial number and troubles should be offered.
- 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.
- 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).

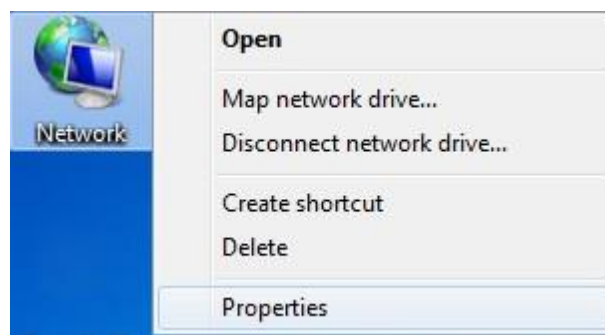
The following situation is not covered by warranty:

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.

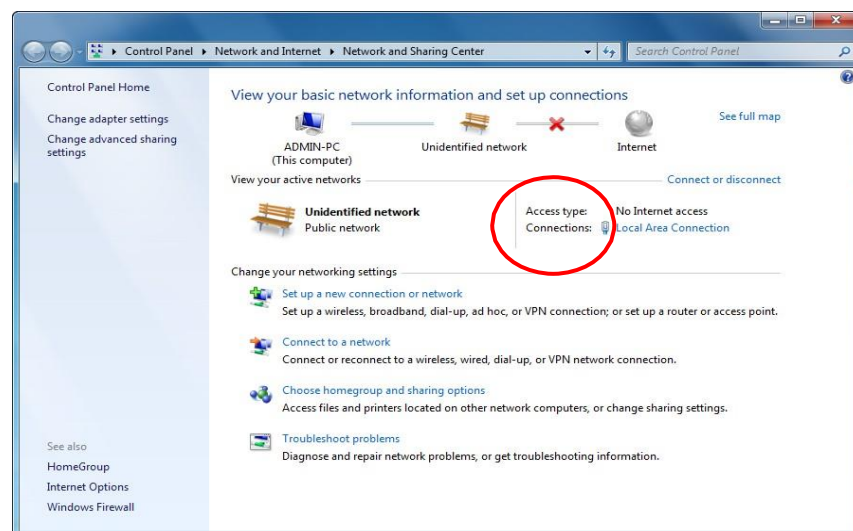
5 Web Management Interface (Web GUI)

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.

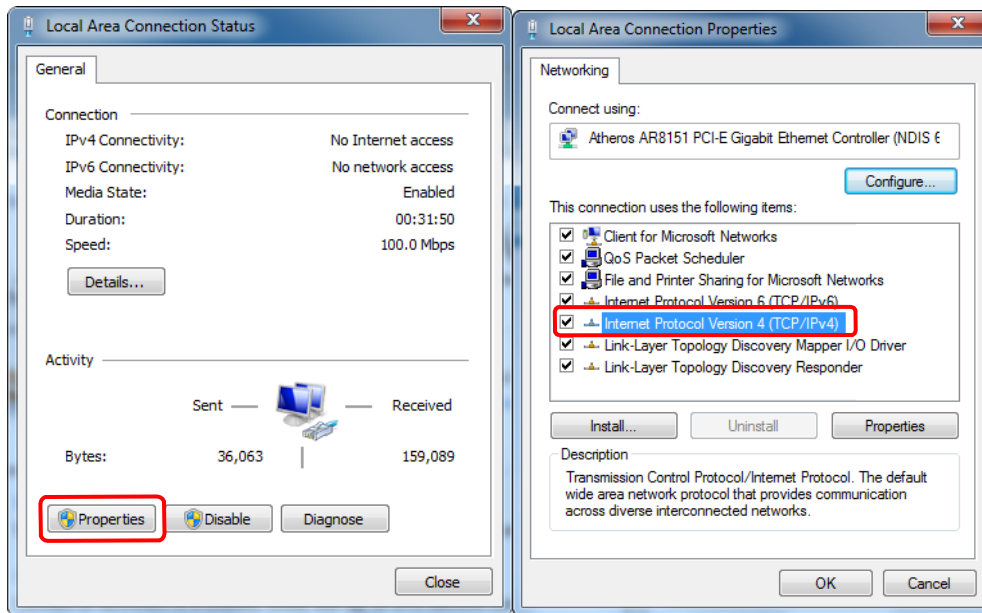
First of all, Please find the IP address of the device in the LCD panel menu. The default IP address is 192.168.0.22. Set the IP address of the computer to the same network segment as the device, find the "network" icon on the desktop of windows system, select the icon, right-click the mouse, and select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



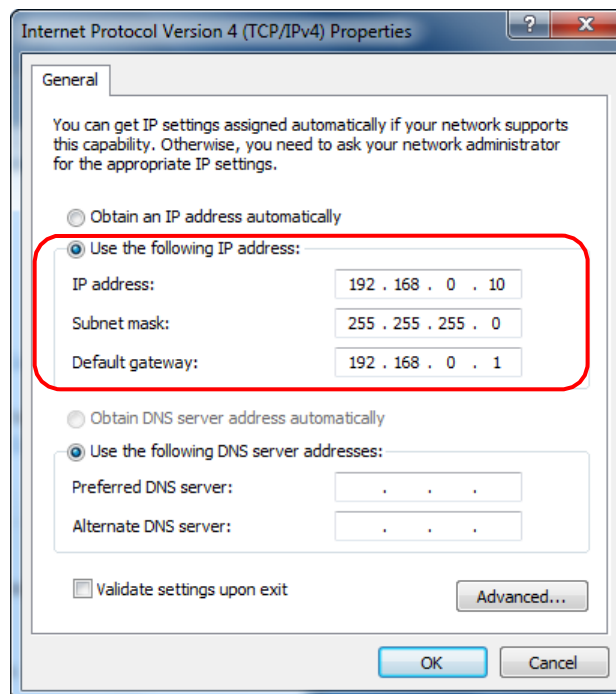
Click "Local Area Connection" in the pop-up version



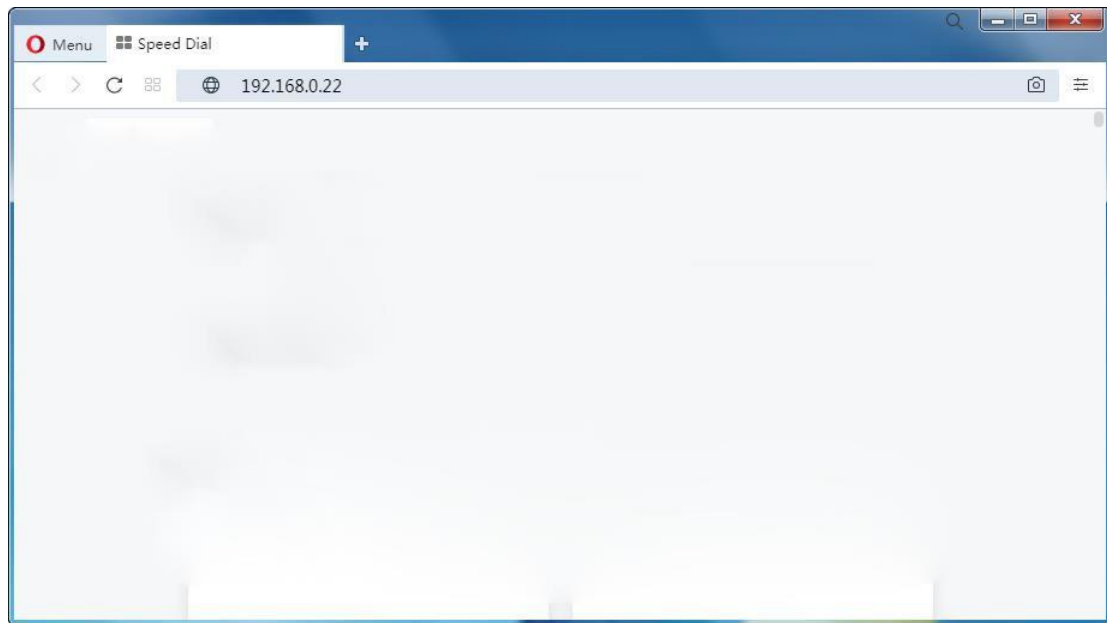
In the "Local Area Connection Status" menu, select "Properties", and then double-click "Internet Protocol Version 4 (TCP / IPv4)".



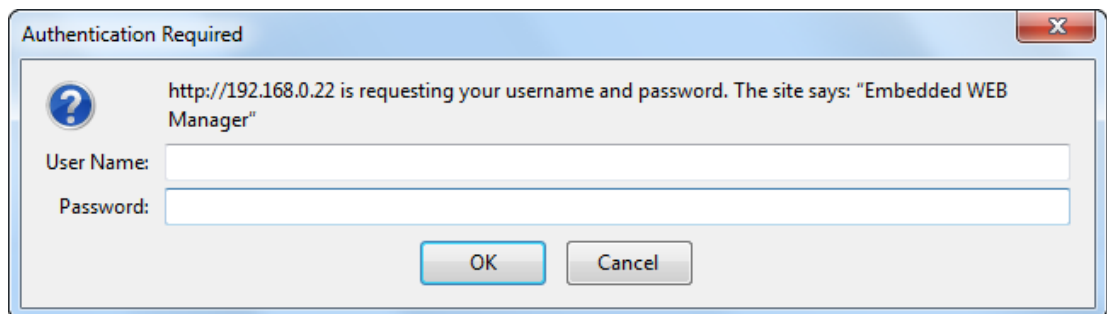
Set the IP address to make the IP address and the device in the same network segment, so that the computer can access the device.



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: "ascent", and then enter.

The browser displays the device status page by default

The screenshot shows the AT5000 OPSW 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, Reset Settings, Update Firmware, and Device Logs. The main content area is titled 'Device Status' and contains the following information:

- Device Model: OSW138EG03
- Serial Number: serialNumber
- Device Version: 1.0.0
- Unit Temperature: 18 °C
- RF Enable: Enable

Below this, there are two dropdown menus: 'OSW Path' set to 'Channel1' and 'OSW Mode' set to 'Automatic'. There are two tables:

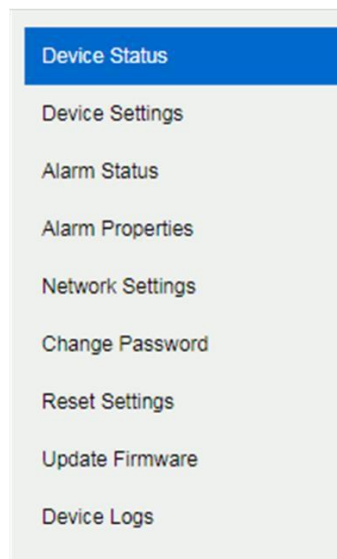
Index	Optical Input Power	Optical Threshold	Status	Description
1	-60.0 dBm	2.0 dBm	Fault	Channel1
2	-60.0 dBm	4.0 dBm	Fault	Channel2

Below the tables, there are two power supply status indicators: 'Power Supply 1: Normal' and 'Power Supply 2: Fault'. There is another table for power supply details:

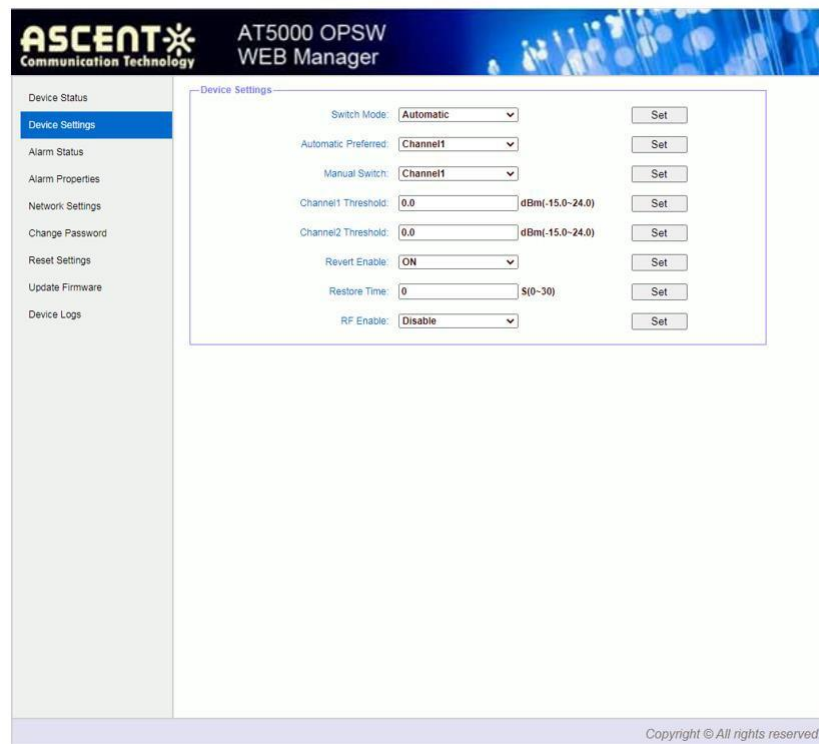
Index	Power Name	Power Voltage
1	DC+5V	4.8 V

At the bottom right of the page, it says 'Copyright © All rights reserved.'

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



Device Setting Page:



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AT5000 OPSW
WEB Manager

Device Status

Device Settings

Alarm Status

Alarm Properties

Network Settings

Change Password

Reset Settings

Update Firmware

Device Logs

Device Settings

Switch Mode: **Automatic**

Automatic Preferred: **Channel1**

Manual Switch: **Channel1**

Channel1 Threshold: **0.0** dBm(-15.0~24.0)

Channel2 Threshold: **0.0** dBm(-15.0~24.0)

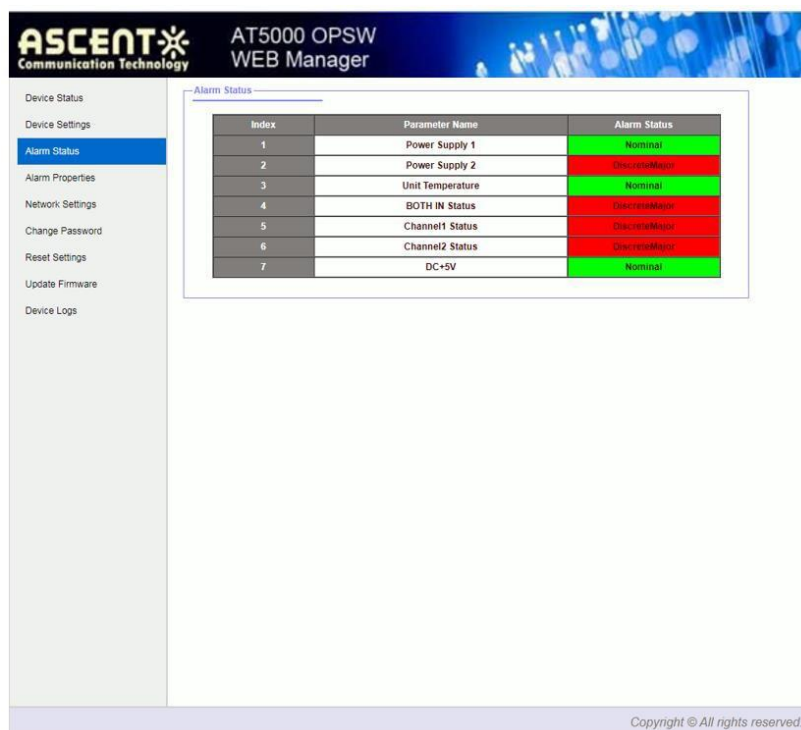
Revert Enable: **ON**

Restore Time: **0** s(0~30)

RF Enable: **Disable**

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Alarm Status Page:



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AT5000 OPSW
WEB Manager

Device Status

Device Settings

Alarm Status

Alarm Properties

Network Settings

Change Password

Reset Settings

Update Firmware

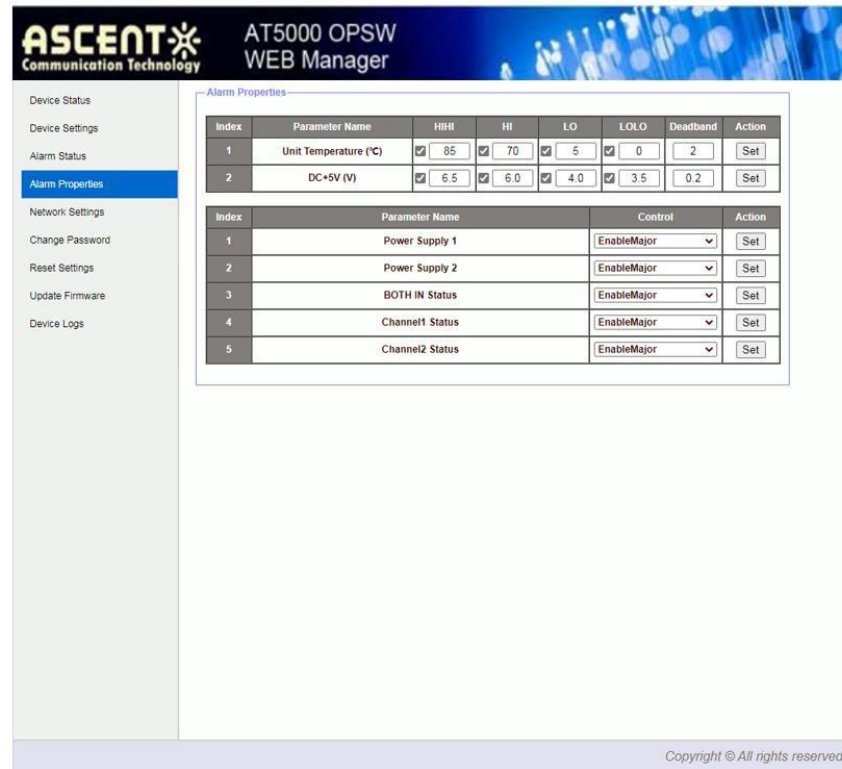
Device Logs

Alarm Status

Index	Parameter Name	Alarm Status
1	Power Supply 1	Nominal
2	Power Supply 2	Discrete Major
3	Unit Temperature	Nominal
4	BOTH IN Status	Discrete Major
5	Channel1 Status	Discrete Major
6	Channel2 Status	Discrete Major
7	DC+5V	Nominal

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Alarm Properties Setting Page:



ASCENT Communication Technology **AT5000 OPSW WEB Manager**

Device Status
Device Settings
Alarm Status
Alarm Properties
Network Settings
Change Password
Reset Settings
Update Firmware
Device Logs

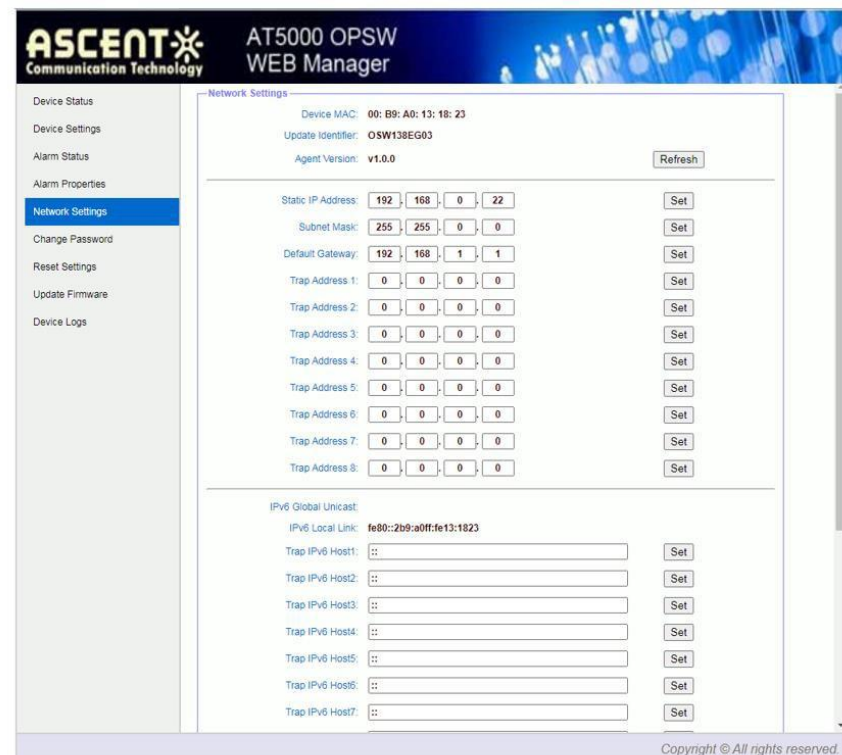
Alarm Properties

Index	Parameter Name	HHH	HI	LO	LOLO	Deadband	Action				
1	Unit Temperature (°C)	☒	85	☒	70	☒	5	☒	0	2	Set
2	DC+5V (V)	☒	6.5	☒	6.0	☒	4.0	☒	3.5	0.2	Set

Index	Parameter Name	Control	Action
1	Power Supply 1	EnableMajor	Set
2	Power Supply 2	EnableMajor	Set
3	BOTH IN Status	EnableMajor	Set
4	Channel1 Status	EnableMajor	Set
5	Channel2 Status	EnableMajor	Set

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Network Settings Page:



ASCENT Communication Technology **AT5000 OPSW WEB Manager**

Device Status
Device Settings
Alarm Status
Alarm Properties
Network Settings
Change Password
Reset Settings
Update Firmware
Device Logs

Network Settings

Device MAC: 00: B9: A0: 13: 18: 23
Update Identifier: OSW138EG03
Agent Version: v1.0.0

Static IP Address: 192 168 0 22
Subnet Mask: 255 255 0 0
Default Gateway: 192 168 1 1
Trap Address 1: 0 0 0 0
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

IPv6 Global Unicast
IPv6 Local Link: fe80::2b9:a0ff:fe13:1823
Trap IPv6 Host1: ::
Trap IPv6 Host2: ::
Trap IPv6 Host3: ::
Trap IPv6 Host4: ::
Trap IPv6 Host5: ::
Trap IPv6 Host6: ::
Trap IPv6 Host7: ::

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The screenshot shows the 'Network Settings' page of the AT5000 OPSW WEB Manager. The left sidebar contains a menu with options: Device Status, Device Settings, Alarm Status, Alarm Properties, Network Settings (highlighted), Change Password, Reset Settings, Update Firmware, and Device Logs. The main content area is titled 'AT5000 OPSW WEB Manager' and features the Ascent Communication Technology logo. It contains several configuration sections: Trap Address 5 through 8, each with a numeric input field and a 'Set' button; IPv6 Global Unicast settings including an IPv6 Local Link field and eight Trap IPv6 Host fields, each with a 'Set' button; NTP settings with a dropdown menu set to 'Enable', an NTP Host field, and two DNS fields (DNS1 and DNS2), each with a 'Set' button; and SNMP settings with Read, Write, and Trap Community fields, each with a 'Set' button, and an SNMP Version dropdown menu set to 'V1' with a 'Set' button. A copyright notice 'Copyright © All rights reserved.' is visible at the bottom right.

Page to Change User Name and Password:

The screenshot shows the 'Change Password' page of the AT5000 OPSW WEB Manager. The left sidebar is identical to the previous screenshot, with 'Change Password' highlighted. The main content area is titled 'AT5000 OPSW WEB Manager' and features the Ascent Communication Technology logo. It contains a 'Change Password' section with five input fields: Username, Password, New Username, New Password, and Confirm Password. Below these fields are 'Submit' and 'Reset' buttons. A copyright notice 'Copyright © All rights reserved.' is visible at the bottom right.

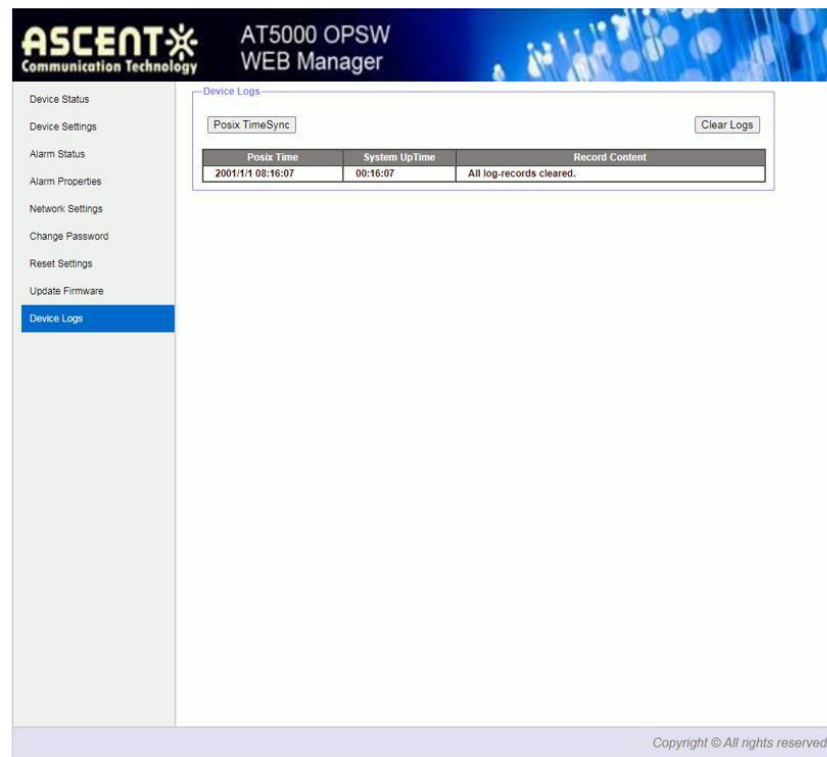
Restore Page:

The screenshot shows the 'Restore settings and Reboot device' section of the AT5000 OPSW WEB Manager. The left sidebar contains a menu with 'Reset Settings' highlighted. The main content area has three sections: 'Reboot device' with a 'Reboot device' button; 'Restore factory settings' with a red warning message 'Warning!! Click the restore button, all parameters will be restored to factory default.' and a 'Restore Factory' button; and 'Restore Net parameters' with a list of default values (IP Address: 192.168.0.22, Subnet Mask: 255.255.0.0, Gateway Address: 192.168.1.1, All Trap Address: 0.0.0.0) and a 'Restore net' button. The footer contains the copyright notice 'Copyright © All rights reserved.'

Update Firmware Page:

The screenshot shows the 'Update Firmware' section of the AT5000 OPSW WEB Manager. The left sidebar contains a menu with 'Update Firmware' highlighted. The main content area has a section titled 'Firmware can be updated [Note: Device will restart.]' with a file selection area containing '选择文件' and '未选择文件' buttons, and an 'Upload files' button. Below this is a red warning message 'Warning: do not refresh the page or power off !'. The next section is titled 'Scan QR-code to register the device' and features a large QR code with a 'Print QR-code' button below it. The footer contains the copyright notice 'Copyright © All rights reserved.'

Device Logs Page:



The screenshot displays the AT5000 OPSW WEB Manager interface. The top header includes the ASCENT Communication Technology logo and the title 'AT5000 OPSW WEB Manager'. A sidebar on the left lists navigation options: Device Status, Device Settings, Alarm Status, Alarm Properties, Network Settings, Change Password, Reset Settings, Update Firmware, and Device Logs (which is highlighted). The main content area is titled 'Device Logs' and contains a 'Posix TimeSync' button and a 'Clear Logs' button. Below these buttons is a table with the following data:

Posix Time	System UpTime	Record Content
2001/1/1 00:16:07	00:16:07	All log-records cleared.

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