

# **ATS USER MANUAL**

**ATS (Automatic Transfer Switch ) User Manual**

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## I ATS Overview

English Name: Automatic Transfer Switch; ATS for short;

Automatic Transfer Switch is a high reliable switch that provide redundant power to connected equipments. If the primary power source becomes unavailable, the ATS will seamlessly switch to the secondary power source automatically. ATS are divided to basic and intelligent two types. And user can upgrade the basic ATS to a intelligent one easily by inserting a hot swappable Network Management Card, which enable user to monitor and management the ATS with web interface or SNMP browser.

## II Function Description

1. Switching: Switch over between Source A and Source B automatically, transfer time  $10 \leq 16$ ms

2. Monitoring: the total load current; input and output voltage;

Source A and Source B power input; the status of the device

3. Remote controlling: switch over between Source A and Source B

Set the threshold for the total load current and input voltage

4. Automatic alarming: automatically alarm when exceed the threshold

5. System default alarming: when total load current/voltage exceed the limit value

when only single source power up

when automatically switching occur

6. Alarming method: Buzz and flesh alarming

E-mail alarming(only intelligent type)

7. Log recording: record and save the log of the device running and alarming information

User can view and export the data history

8. System support: Single user operation system, support software update

9. Account management: set the authorization of the account

10. Access method: Ethernet connection, web interface through IE browser

SNMP(V1), access and control through standard network management

Serial Connection ( Modbus protocol by defaulted)

11. System setting: system time setting.

Lock devices through software

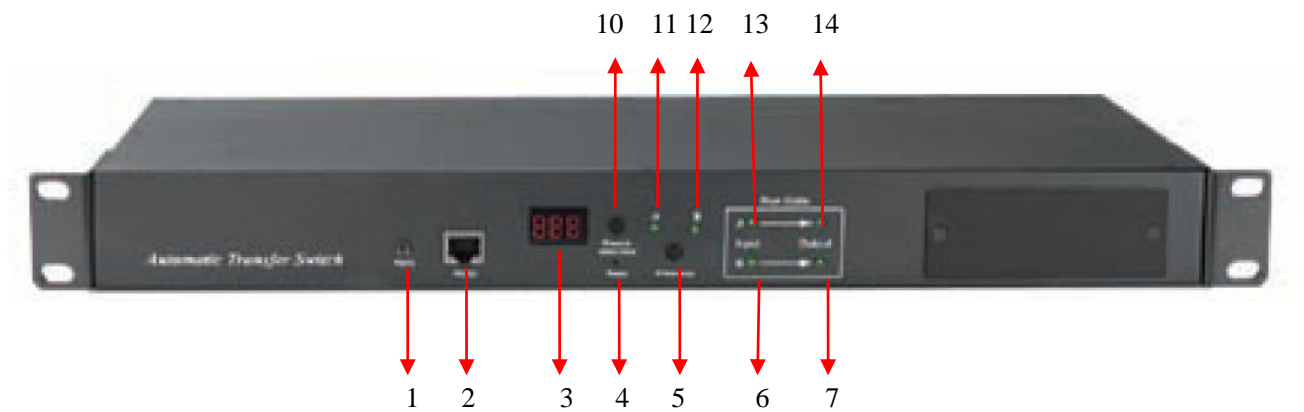
The threshold of the voltage setting

Re-transfer time setting.

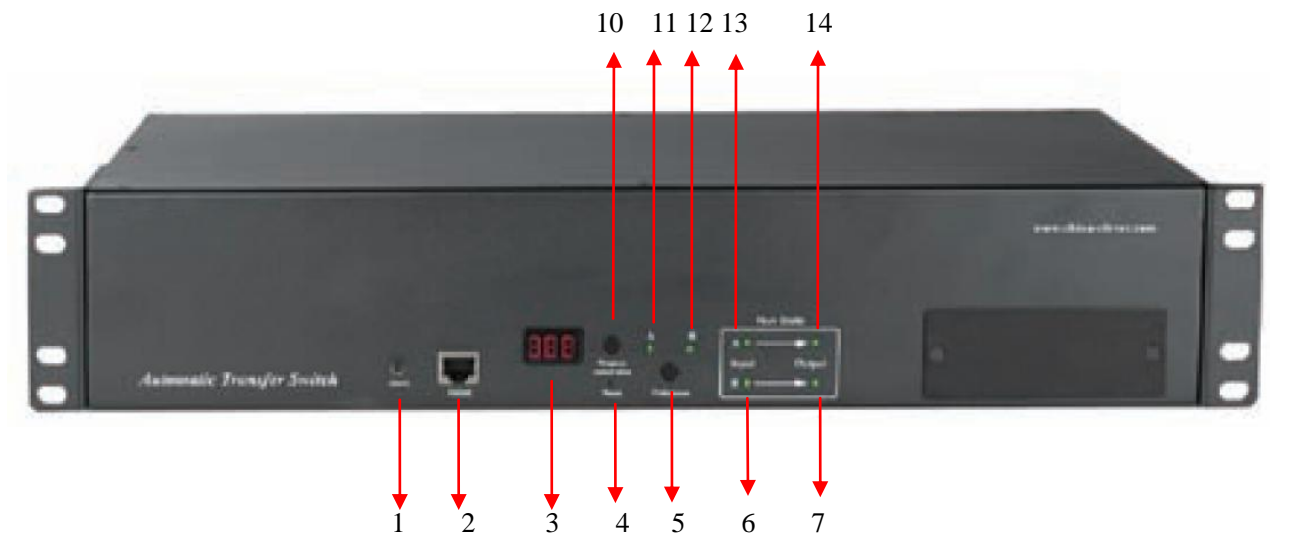
### III Application

1. ATS series product are adoptable to the need of all kinds of server rack; network cabinet and etc.
2. ATS series product are in accordance with the regulation of RoHS.

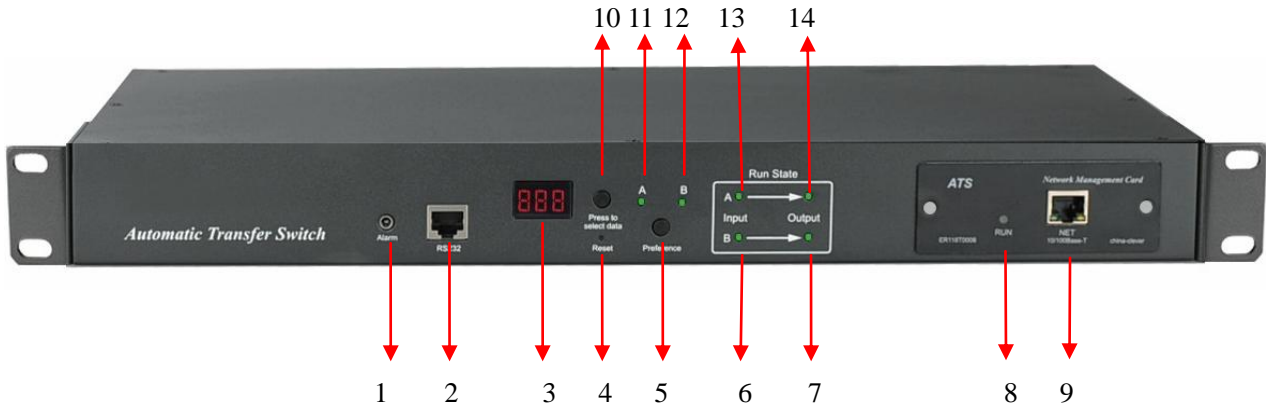
### IV Product Schematic



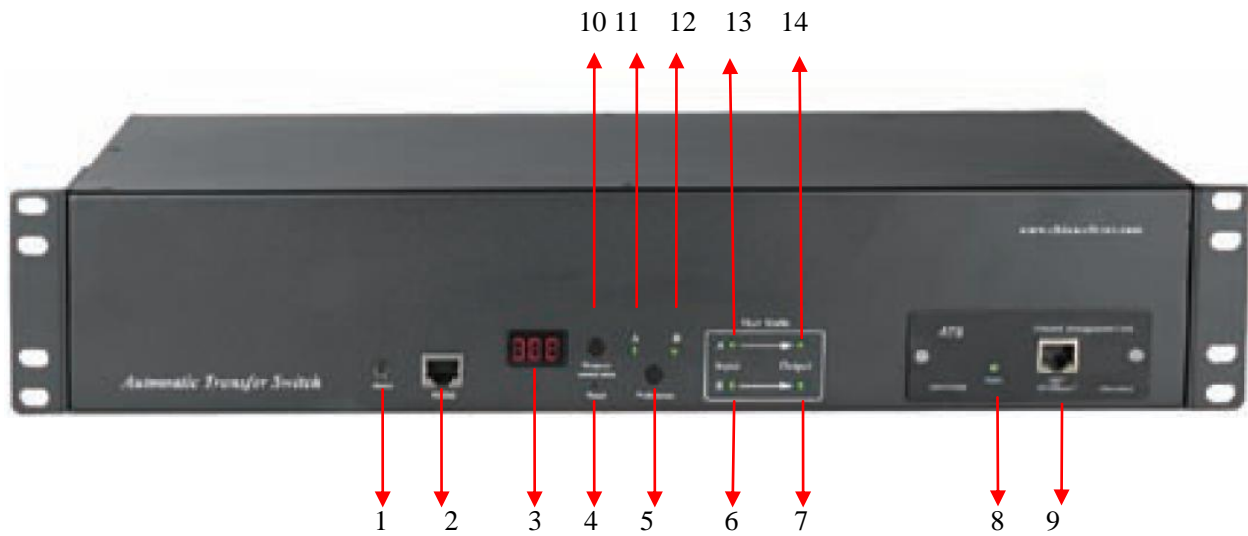
**Basic ATS (1U)**



**Basic ATS (2U)**



**Intelligent ATS (1U)**



**Intelligent ATS (2U)**

1. Alarm: the port of buzz and flesh, used to connect to external annunciator
2. RS485: Serial communication port, connect the device to local PC
3. LED screen: display the current; voltage; IP address and hardware version
4. Reset: Rest button
5. Preference: to select the preferred power source
6. Input indicator of source B
7. Output indicator of source B
8. RUN: Operation indicator
9. NET: Ethernet Port
10. Press to select data: To view power date and information
11. Preference indicator of source A
12. Preference indicator of source B
13. Input indicator of source A
14. Output indicator of source A

## V Mounting method

Horizontal rack mounting

## VI Hardware Introduction

### 1. Self-checking when power on

The buzz beep once when power on, the LED indicator always lights on, digital screen display load current after self-checking **8.8.8.**

### 2. Operation status viewing

Through "press to select date" button, user can view the voltage; IP address(only intelligent type) and device version number

### 3. Select the preferred power source

Use Preferred button to select the primary power source, three options user can have: set the source A as the preferred power source; set the source B as the preferred power source; or user can leave this open. The corresponding indicator will always light on if a choice was made. If not, the two indicator will stay the off status. Please be noted that the intelligent ATS is with the Lock function, if user can not do the setting above, please log on to the Web web interface to unlock.

### 4. Reset operation

If want to manual-reset ATS, Press the Reset button to reset the rack PDU without affecting the outlet status.

### 5. Restore to factory settings

Press and hold the "press to select data" button for 6 seconds, the LED screen will display "IP" when release, then press the Reset to restore to the default IP 192.168.1.163 and default User name and password.

### 6. Serial connection

Use the supplied serial cable, insert the RJ45 connector to RS485 communication port and connect the other end to the serial port of local PC.

**7. External connection annunciator**

Use the supplied terminal to connect the annunciator, the terminal allow maximum voltage of 50VDC and load current of 5A

**8. Ethernet connection(only intelligent type)**

Use supplied network cable, connect one side to the NET port of device and the other end to network

**9. The software of hardware update method**



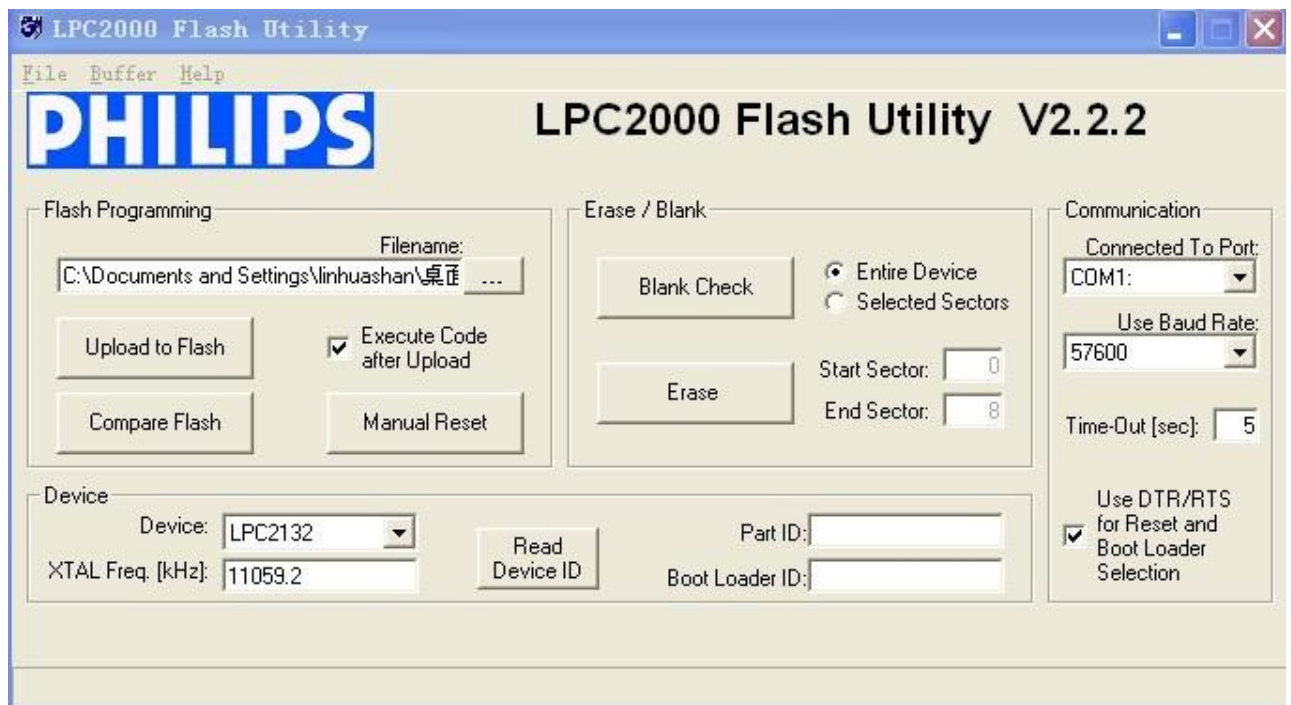
9.1 Save the software update file **ATS.hex** provided by supplier to the local PC.



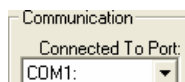
**philips\_flash\_ut...**  
WinRAR ZIP 压缩文件  
2,058 KB

9.2. Open the the software update file **philips\_flash\_ut...**, double-click the setup.exe file to install

9.3. Running the software as below when installation finished



9.4. Insert the RJ45 connector of the update signal cable into the RS485 port of the ATS front panel, connect the other end to the port COM1 of local PC


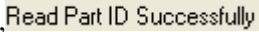



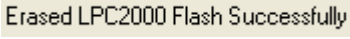
9.5. Select the serial port are using from **COM1**, other items please refer to the above pictures


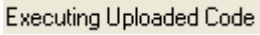


9.6. Click the  from  and submit the file  to the frame

9.7. Power on the ATS.

9.8. Click ,  will be displayed on the interface if read success, if not, please double-check the cable connection and communication port.

9.9. Click ,  will be displayed on the interface if erase success, if not, please double-check the cable connection and communication port

9.10. Click ,  will be displayed on the interface if loading success, if not, please double check the cable and communication port

9.11. Power off the ATS.

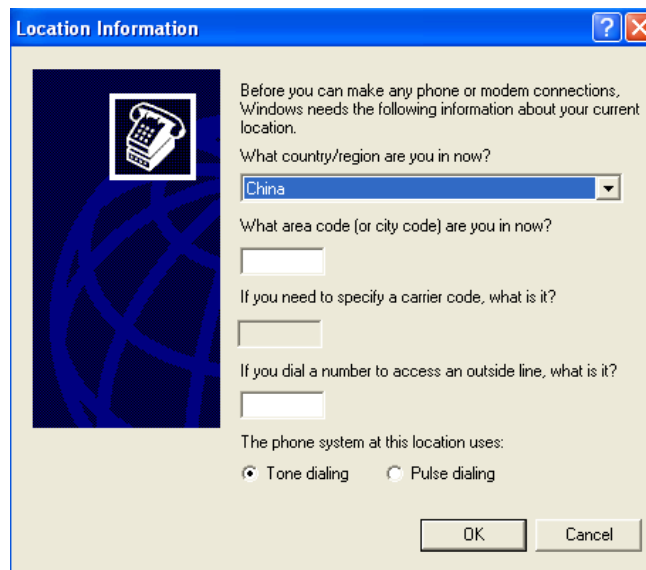
9.1. Power on on the ATS, digital screen will display the new hardware version number, it can perform normal communication after software update success.

## VII Hyper Terminal user guide

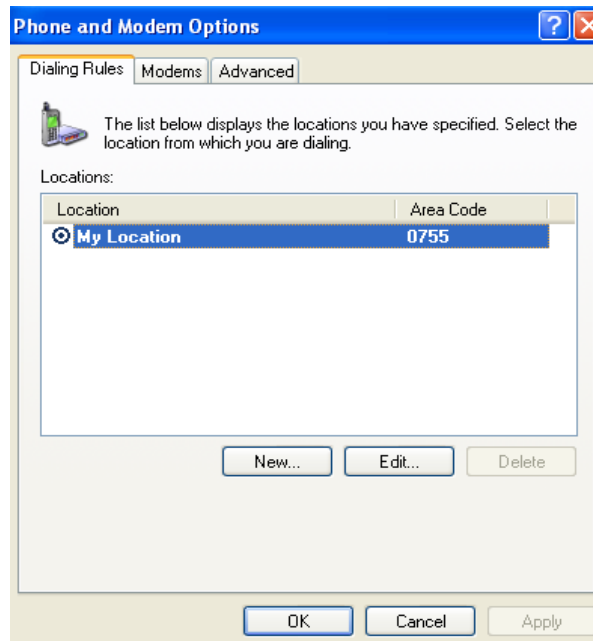
1. Use the supplied serial cable, connect one end to the RS485 port and the other end to serial port of local PC.

Running the Hyper terminal program(like Windows Hyper terminal), Here we take the Windows Hyper Terminal for instance. Click Start→Programs→accessories→communication→Hyper terminal

2. Dialog box as below will pop up if it is the first time that the PC run the Hyper Terminal



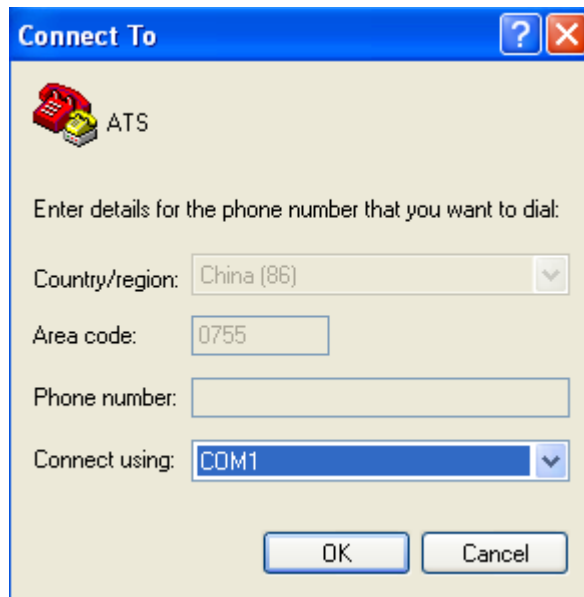
3. Enter one or several numbers at random when it require your area code, for instance 0755 and click OK



4. Click OK, it pop-up the link description window as below:

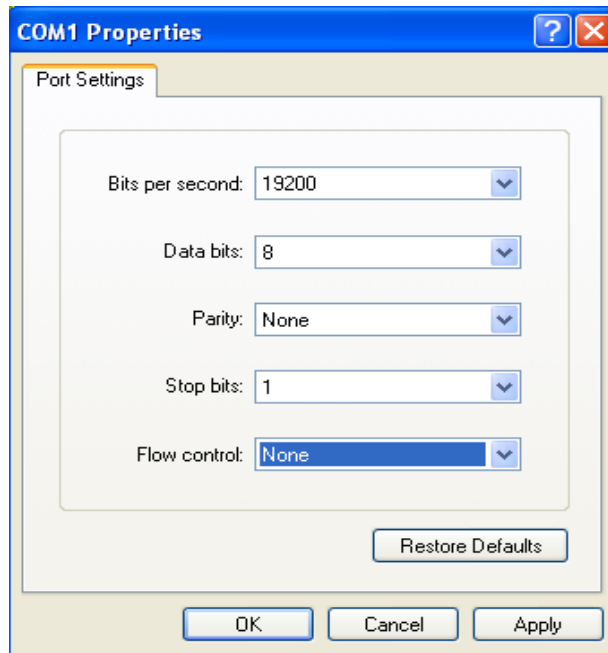


5. Enter a Name like ATS and click OK

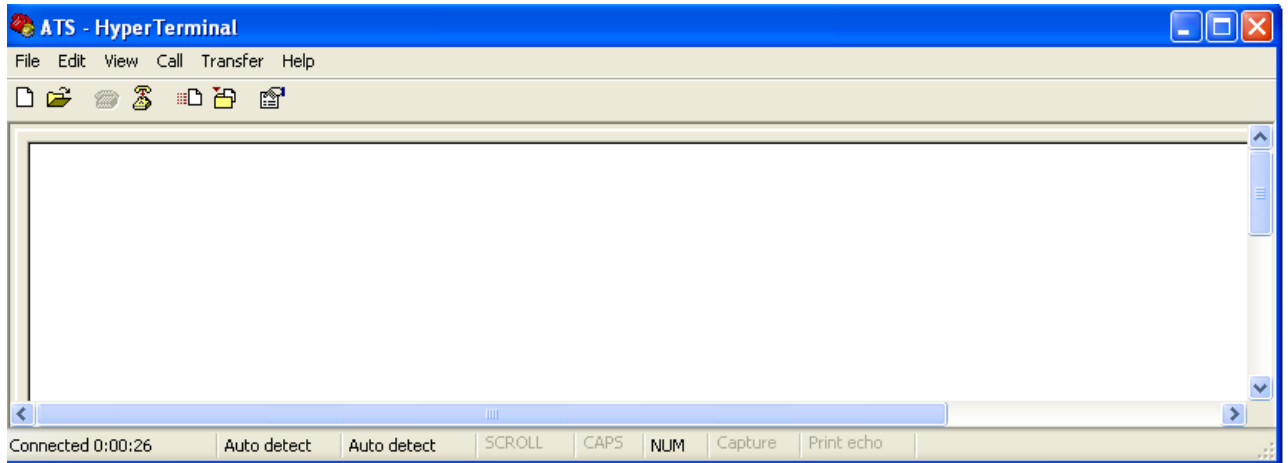


6. Select the COM port will be using and click OK


7. Set the baud rate of ATS as 19200 and enter configuration information for data bits, parity and flow control as provided below, then cick OK

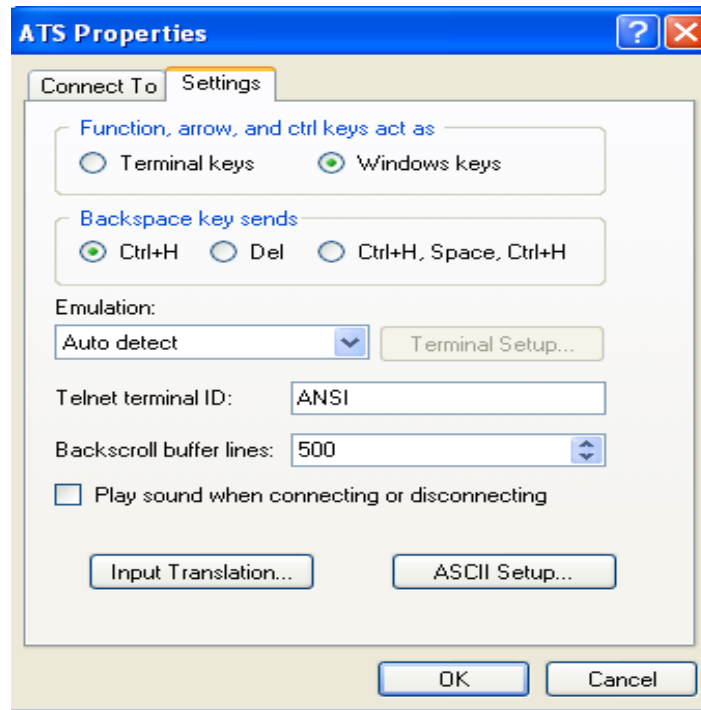


8. If it is not the first time that the PC run the Hyper Terminal, it will goes directly to the window as the 4th item of this chapter, then follow up the instruction from the 4th to 7th and enter the Hyper Terminal monitoring interface as below:

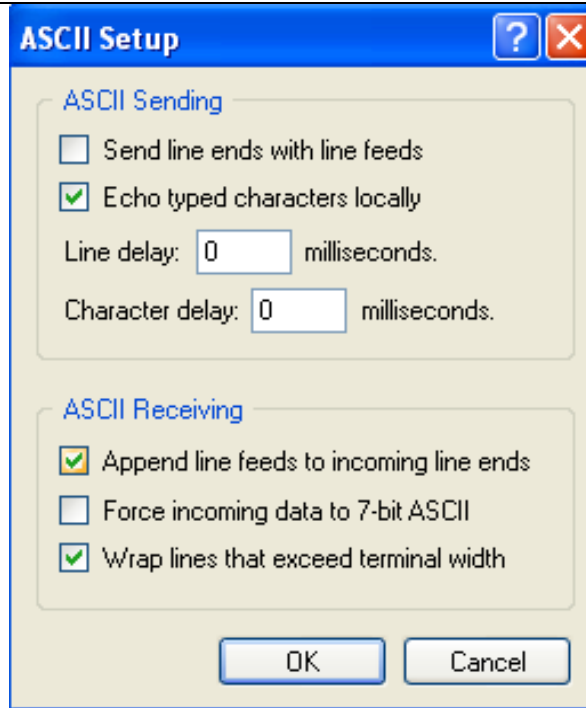


10. Setup ASCII code

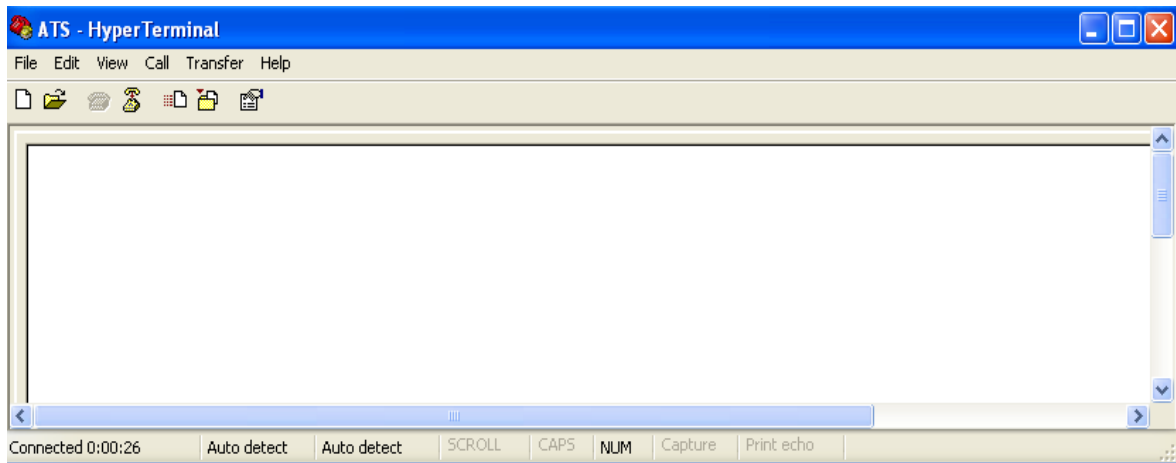
10.1. Click the file in the main menu and select attributes or click on the icon  directly



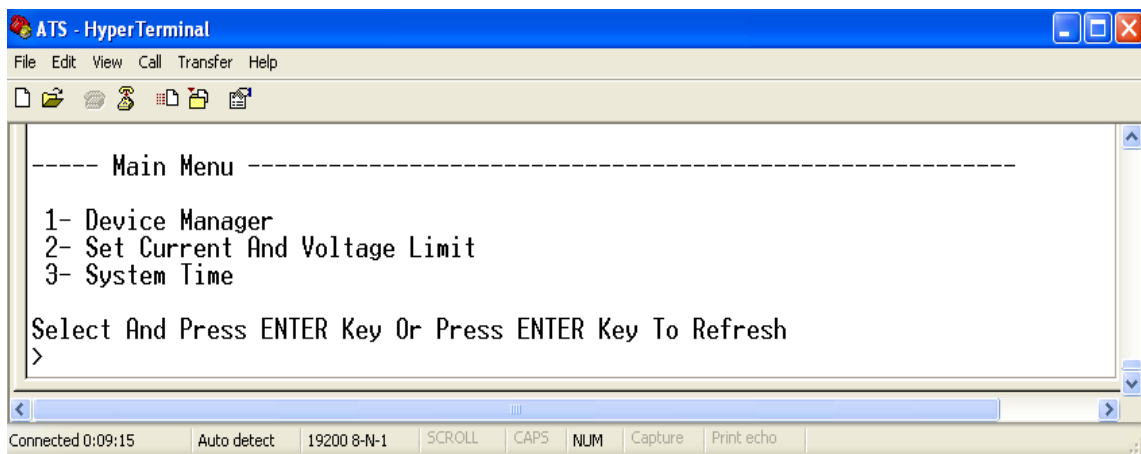
10.2. Click on ASCII Setup,



10.3. Tick off the boxes as window above, then click the OK button and return to the monitoring interface



11. Press Enter, following message will be displayed in the interface if setting success.



Main Menu

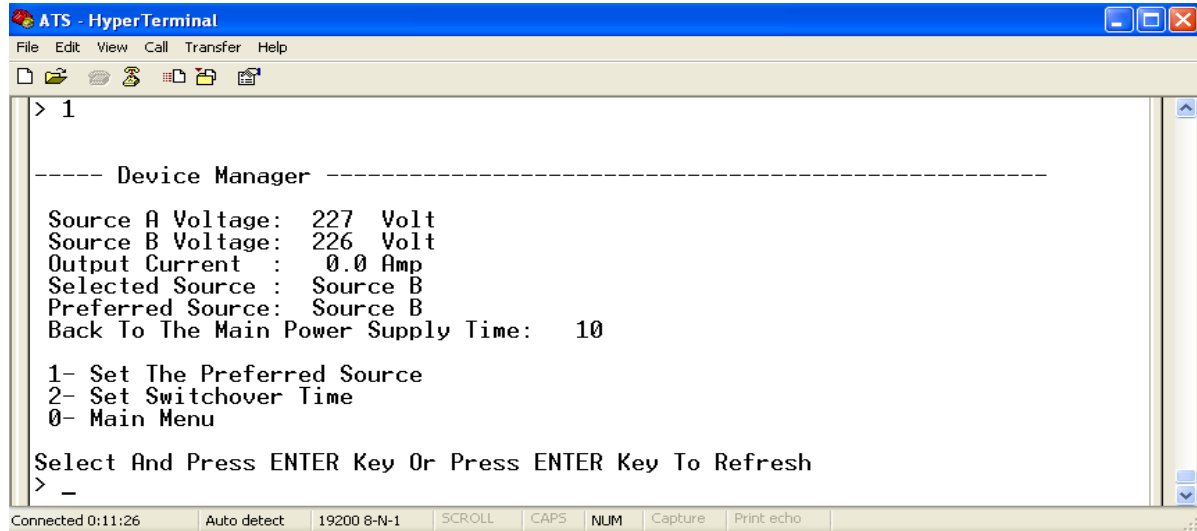
1-Device Manager

2-Set Current And Voltage Limit

3-System Time

12. View the ATS status

Enter 1 and press Enter, the ATS status will be displayed in the interface as below:



Device Manager: Device manager

Source A Voltage: The voltage of the source A

Source B Voltage: The voltage of the source B

Output Current : The output current

Selected Source : The current input power is source B

Preferred Source: The preferred input power is source A

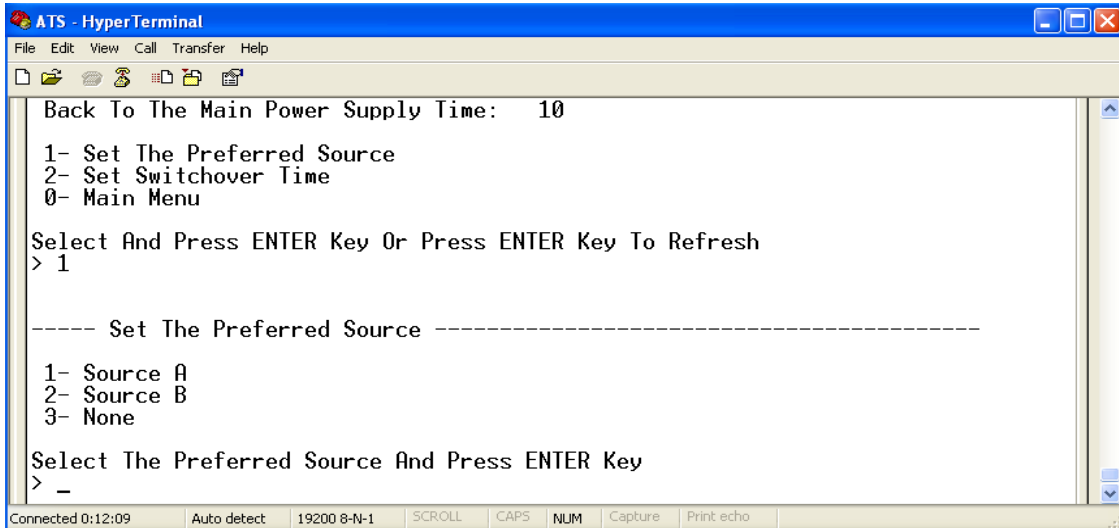
Back To The Main Power Supply Time: Re-transfer time is 10 seconds

1- Set The Preferred Source: Enter 1 then press Enter to set the primary power source

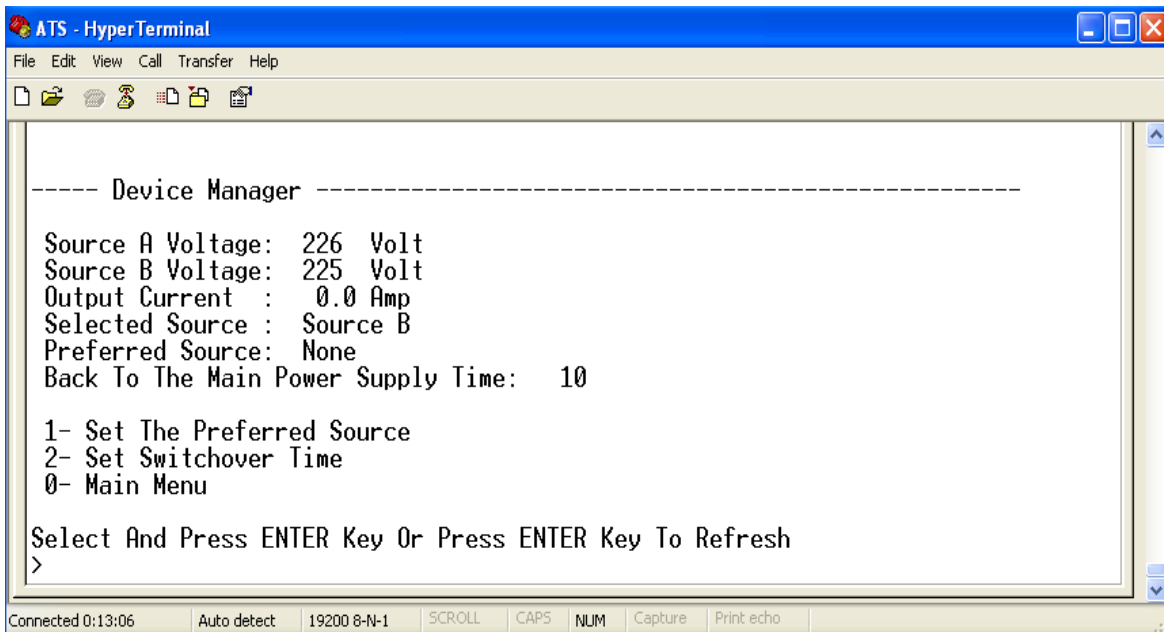
2- Set Switchover Time: Enter 2 then press Enter to set the Re-transfer time

0- Main Menu: Enter 0 then press Enter to return to main menu

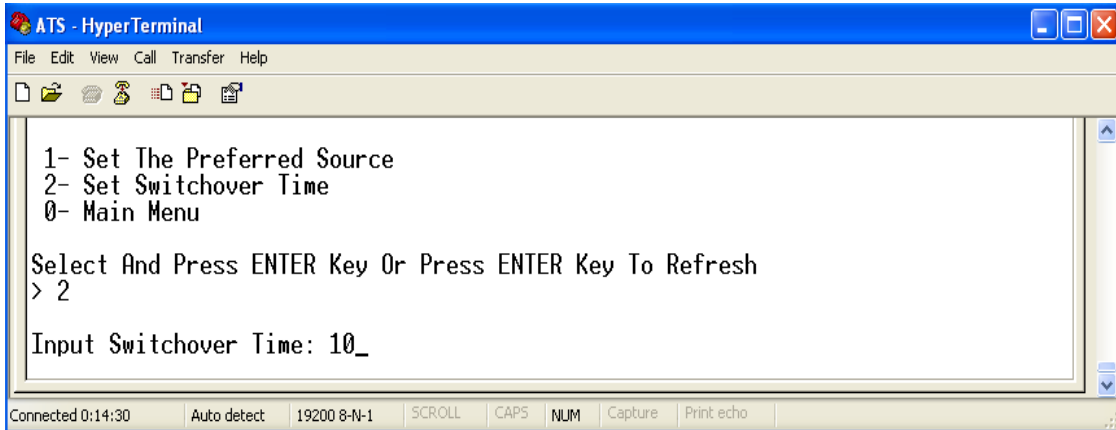
13. Set the preferred power input, follow up the path step by sep: Main Menu=>1 Device Manager=>1 Set The Preferred Source, it will end up with the following window



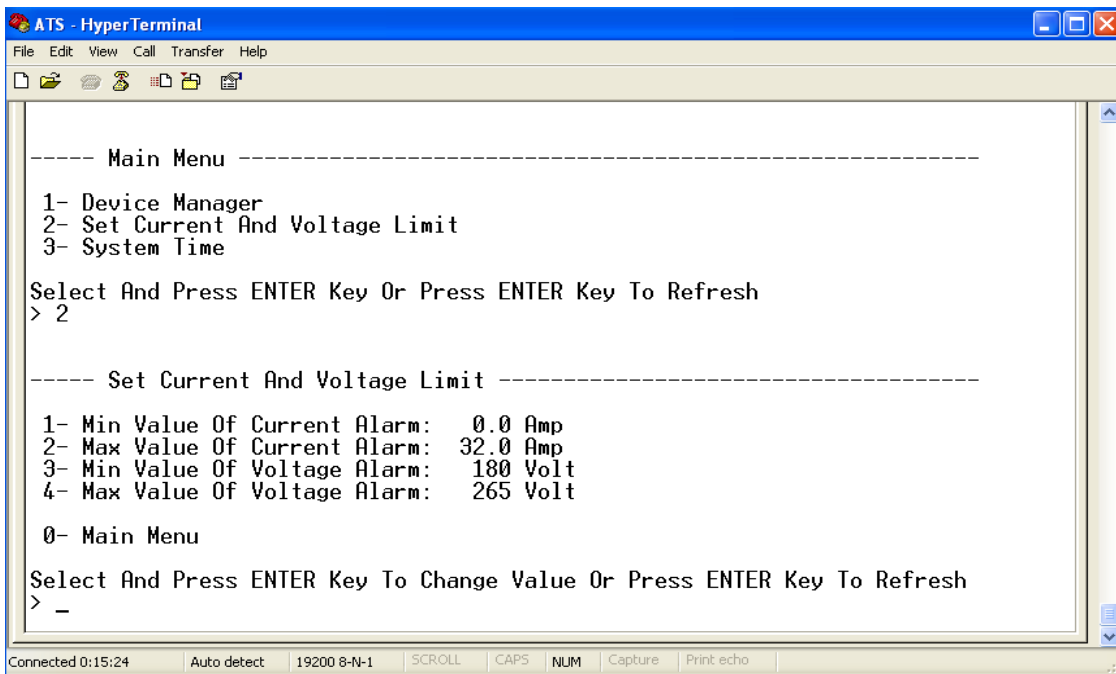
13.1、 Enter the corresponding code, for instance: Enter 1 then press Enter to select input A as the preferred power input. The interface will return to Device Manager interface. See the below window: Preferred Source: Source A means that input A was select as the primary power source



14、 Set the Re-transfer time, the path are: Main Menu=>1 ( Device Manager ) =>2 (Set Switchover Time) enter the value preferred then press Enter. The Re-transfer time ranges from 10 to 60 seconds. The ATS will transfer to the preferred input power after defined time when user give the order to transfer or the preferred input line recover from power failure

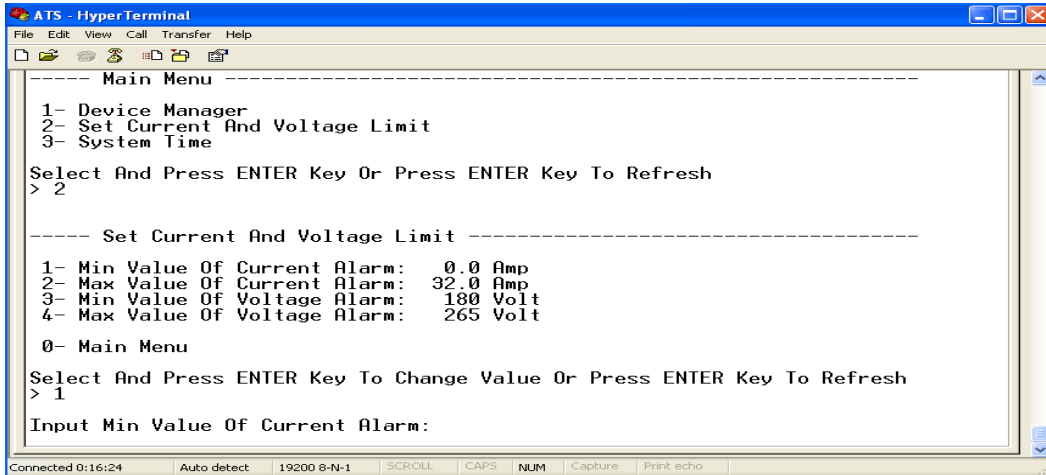


15. Define the threshold voltage and current The Path are Main Menu=>2 (- Set Current And Voltage Limit)



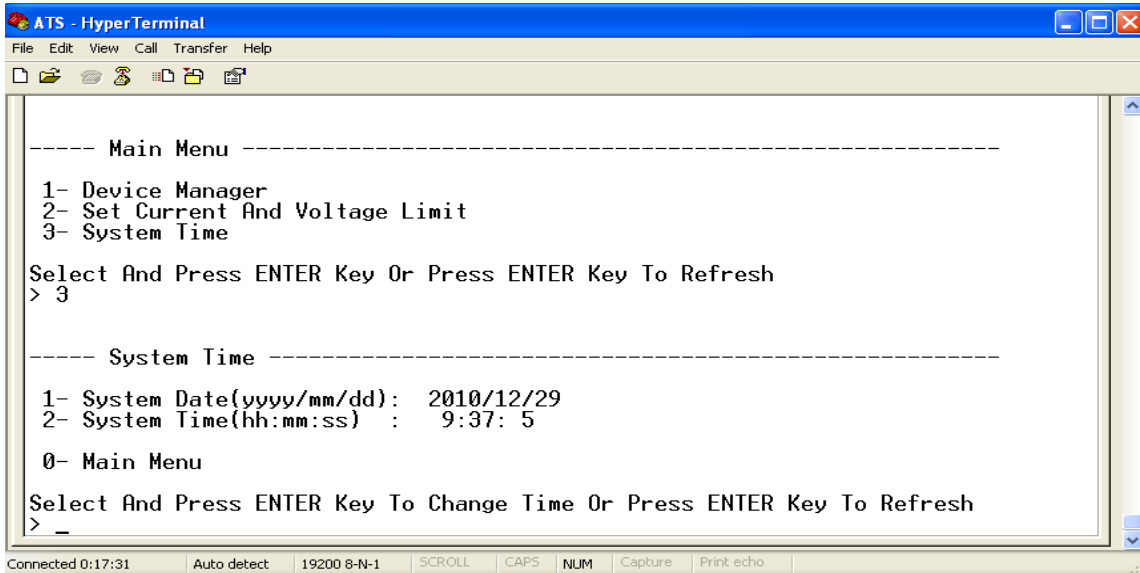
Enter corresponding number to Re-define the item that user want to change, select 1 to set the minimum value of current to alarm; select 2 to set the maximum value of current to alarm; select 3 to set the minimum value of voltage to alarm; select 4 to set the maximum value of voltage to alarm. For instance, If user want to change the value of the minimum current to alarm, enter 1 then press Enter to enter the interface as below:



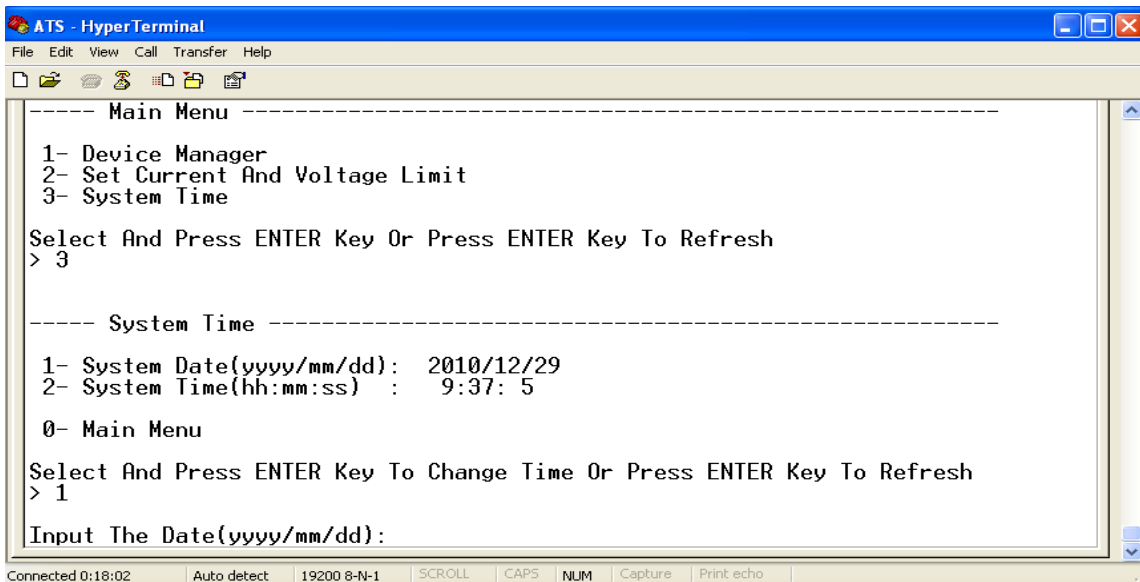


Enter the value wanted, then press Enter. Return to Set Current And Voltage Limit interface, user can view the Re-define value just now.

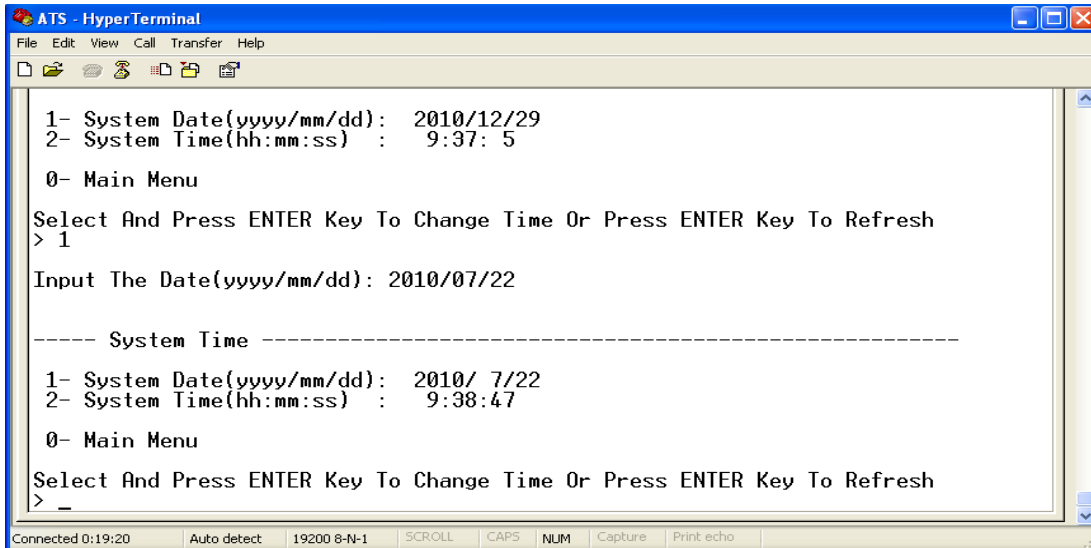
16. Setup the system time of ATS; the path are: Main Menu=>3 ( System Time)



16.1. Select 1 to modify date; the path are: Main Menu=>3 ( System Time) => 1

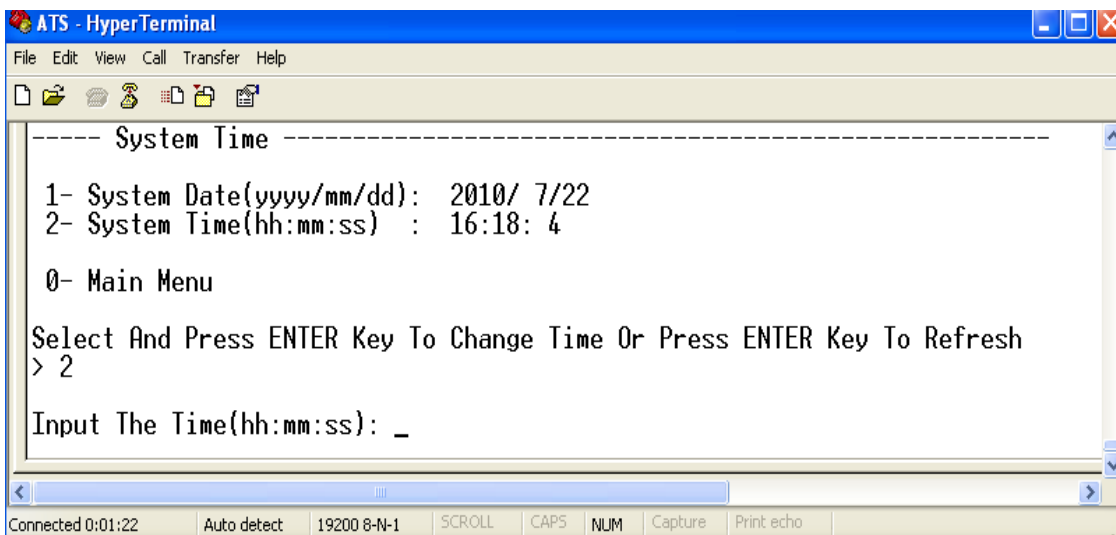


Enter the correct date format in the window. For instance 2010/07/22

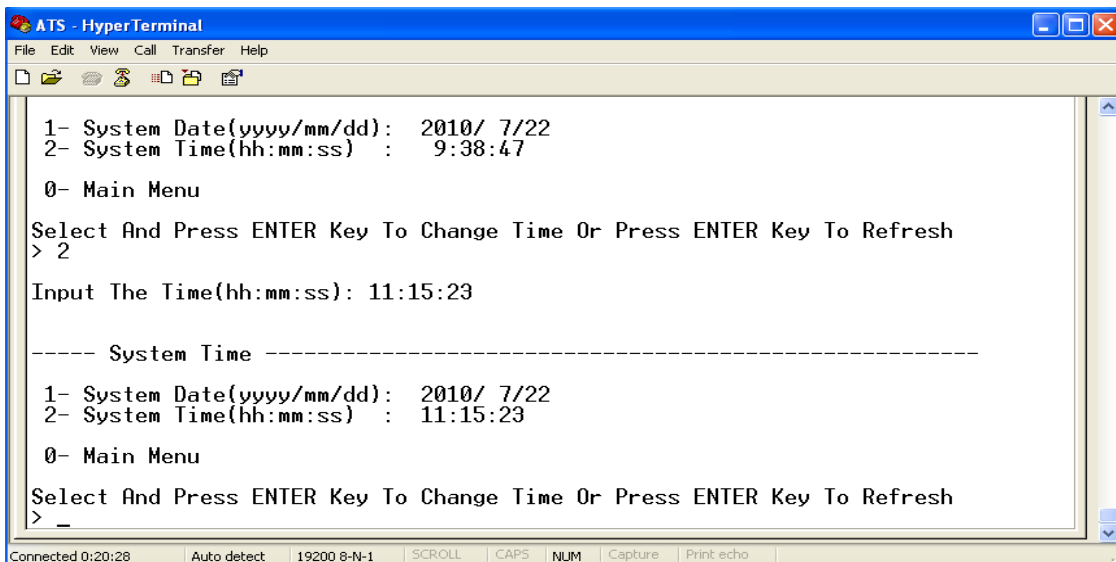


The above window shows that the setting is a success.

### 16.2. Timing re-define the path are Main Menu=>3 ( System Time ) =>2



Enter the correct time form in the window; for instance 11:15:23



The above window show that the setting is a success.

## VIII Software user guide

### 1. Software Introduction

ATS monitoring and management software using the embedded Web Server system, supports HTTP and SNMP. It helps to monitor the total load current; input/output of the voltage timely so that the user can manual or automatic switch the input power between source A and source B to ensure uninterrupted power supply of the crucial devices. When abnormality detected, the software will send E-mail/TRAP message to administrator. In addition, the system support system operation and alarm records inquiring and exporting. It support multiple account and single user logging.

### 2. Software configuration

#### 2.1. Device default settings

Device default IP: 192.168.1.163

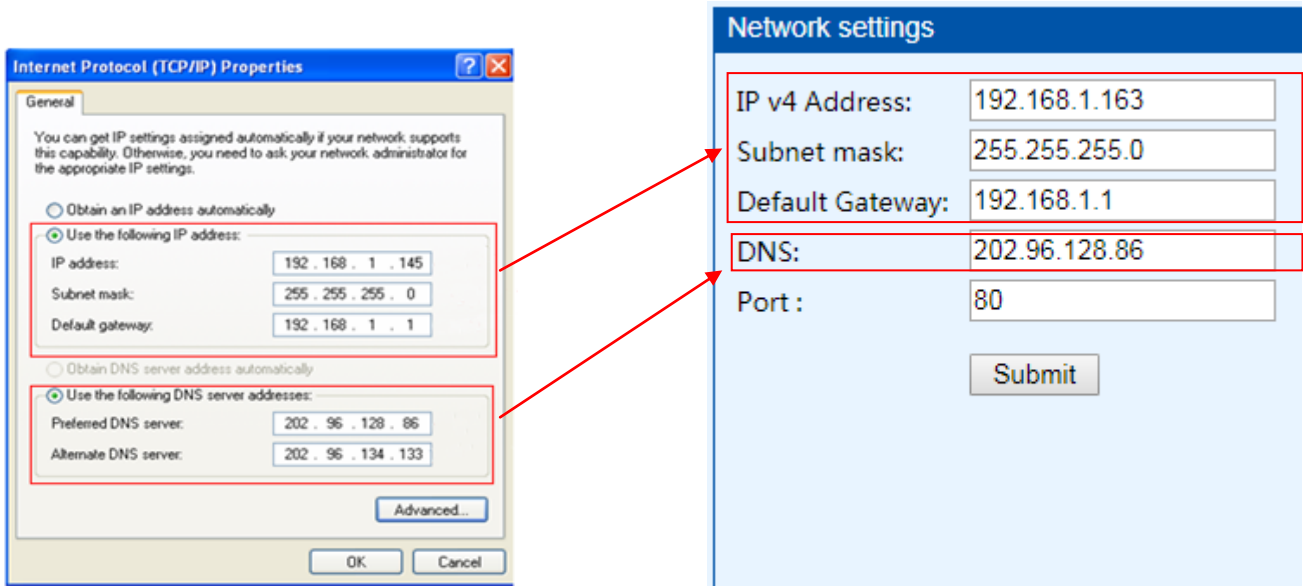
Default user name: admin

Default password: admin

Note: Both the default user name and password are in lowercase, user can't log on to the interface with Uppercase

#### 2.2. Device configuration when first log in

- Connect the device to PC directly
- Rework the network configuration of PC, make sure the changed PC IP address and the IP of the ATS is in the same segment, the default of the IP address is 192.168.1.163; Default subnet Mask is 255.255.255.0; Default gateway is 192.168.1.1. For instance, change the network configuration of the PC to IP: 192.168.1.145; log on to the management interface.
- Click the "Network Config" on the left menu to rework the IP of the ATS, see the below interface, change the IP address of the ATS and make sure it is in the same segment where the PC IP is;
- Restore the PC network configuration, Sign in to the management interface with the changed IP address of ATS



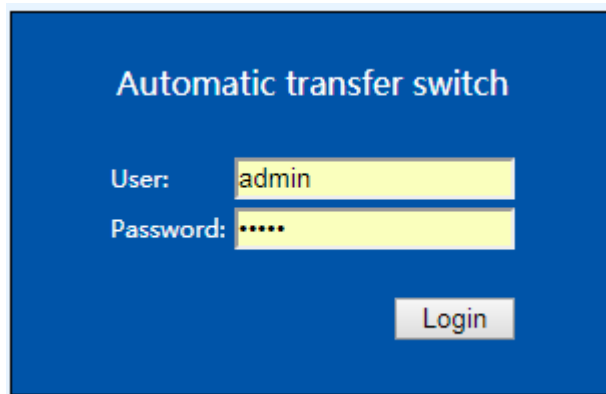
### 3. Access method

Connect the device to LAN or WAN, user can access and manage the device through Web and SNMP, please see detail information as below.

#### 3.1 Web

Device support HTTP and HTTPS protocols, we recommend user to access through IE 6.0、IE 7.0、IE 8.0、IE 9.0、Firefox and Google chrome, the Web access method are as below:

- Open the browser
- Enter the IP address of the ATS in the address bar, support HTTP protocol(user can enable or disable the HTTP function according to situation, for more information please refer to Network Config menu )
- Enter the valid user name and password in the login window



- The below interface will show up if log success.

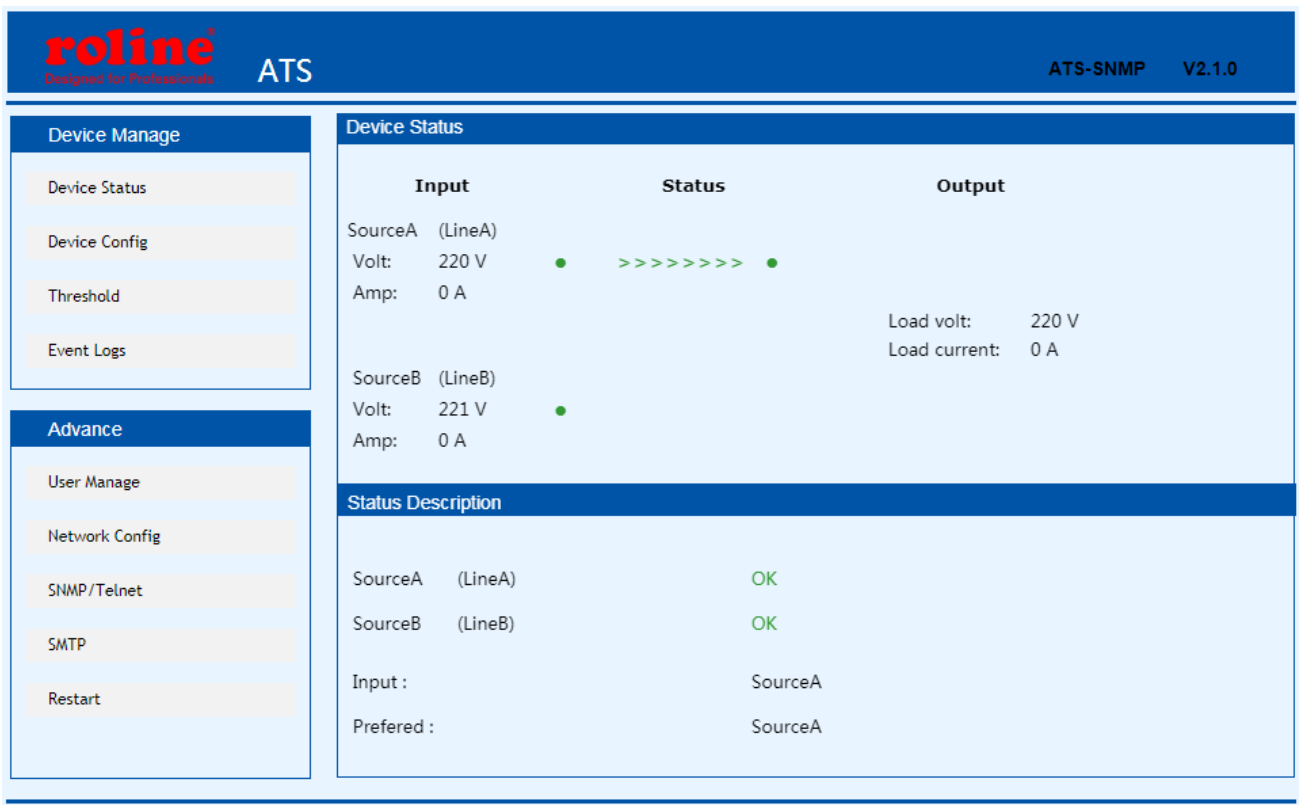


Figure 1 Device Status

### 3.1.1 Device Status

Device Status interface display the status of the power input as well as the current & voltage status of the Device.

- 1) The Status section shows the current operating status of ATS: Green means OK; Red means abnormality; Grey means power failure
- 2) The Input section shows the voltage of source A and Source B, when voltage abnormality detected, the value of the voltage displayed in the interface will turn to red.
- 3) The Output section shows the value of the output current and voltage, when current abnormality detected, the value of the current will turn to red.
- 4) The Status Description shows the connection status of the source A and source B, OK mean normal and displayed in green, "abnormal" means abnormality detected, when the the device disconnected, "abnormal" will be displayed in red

### 3.1.2 Device Config

Device Config shows the preferred power source; re-transfer time; hardware lock and source name.

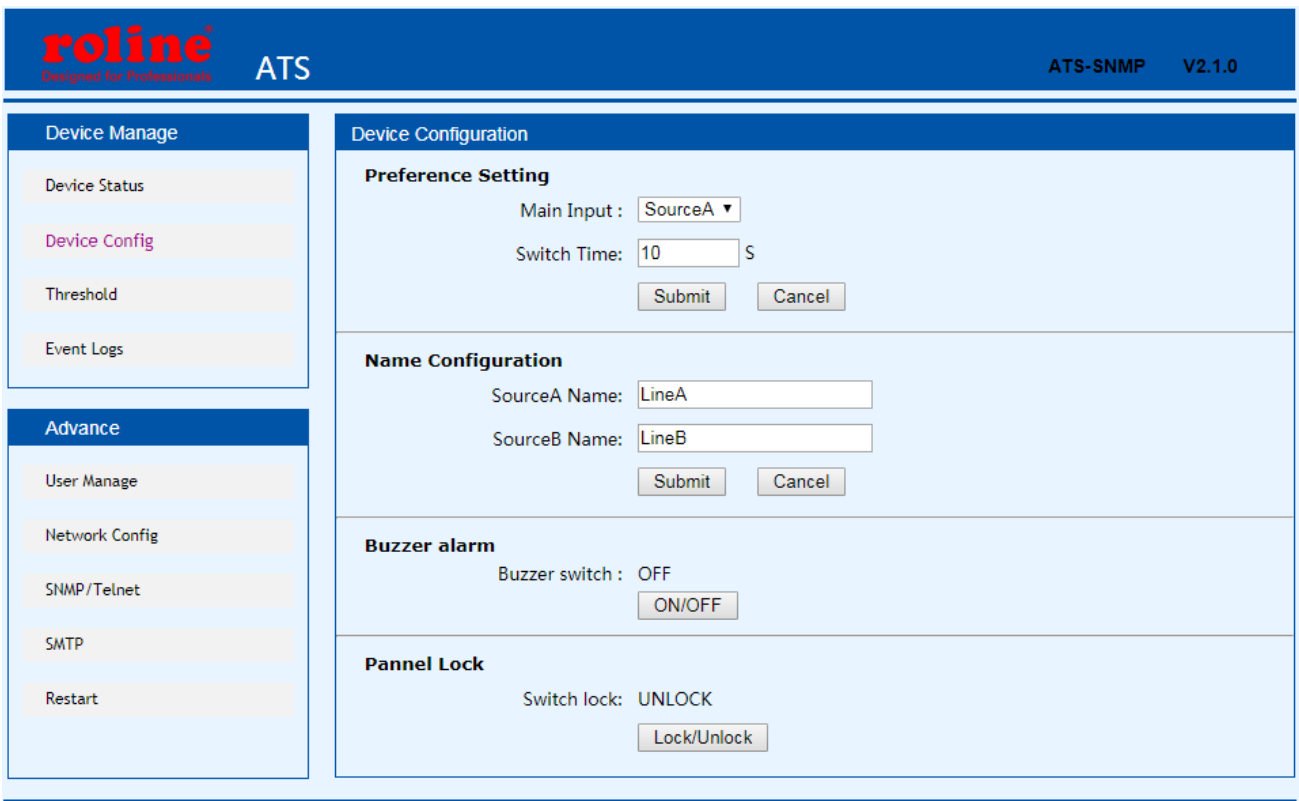


Figure 2 Device Config

- 1) Preference Setting: To Select preferred power source from the drop-down list of main Input;
- 2) Preference settings: To define the re-transfer time between 10 to 60 seconds.
- 3) Name Configuration: To name the power source, only allow 5 byte of letters and numbers
- 4) Buzzer alarm: Set to "off", the equipment alarm mute; set to "on", the device alarm buzzer
- 5) Panel Lock: To luck or unlock the hardware

### 3.1.3 Threshold Setting

Threshold interface display user-defined minimum and maximum of current and voltage

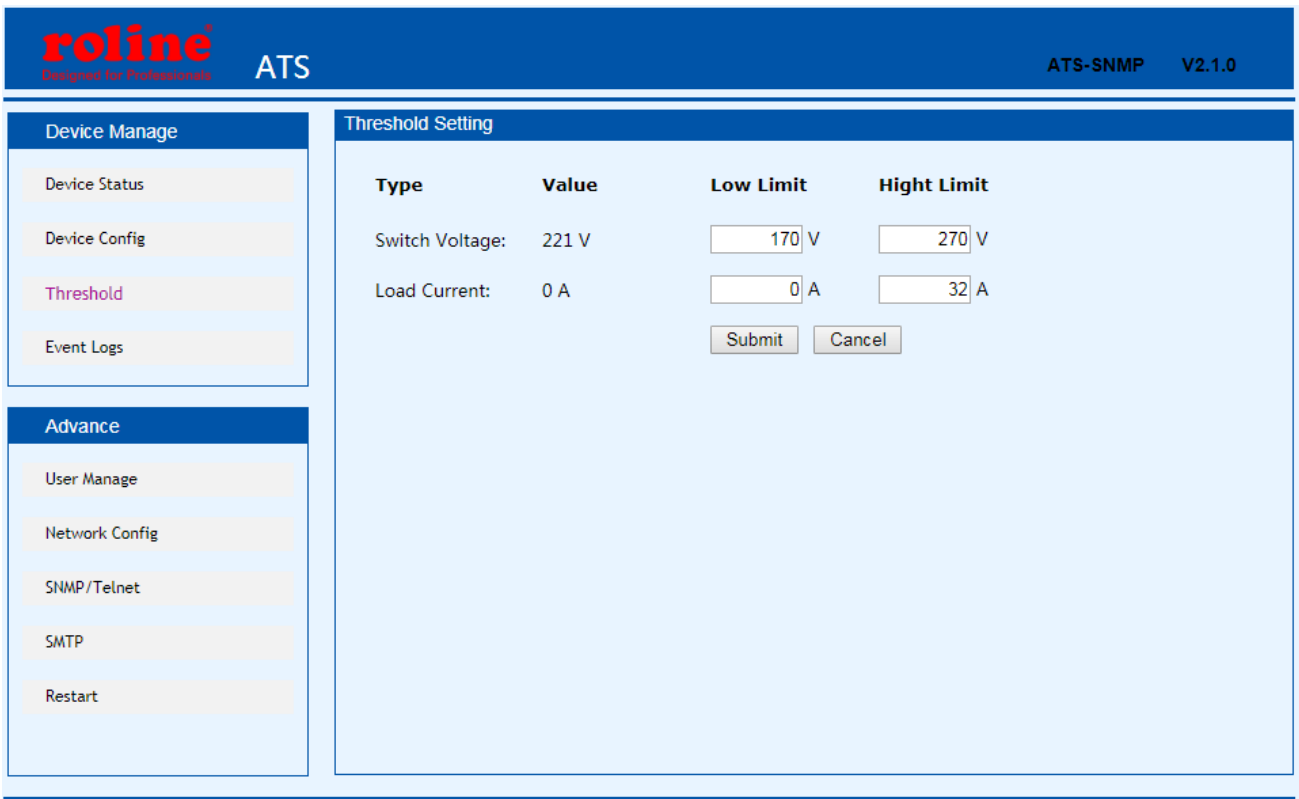


Figure 3 Threshold interface

- 1) The default acceptable current range is between 0A to 32A, If the current is not within this range, device will alarm.
- 2) The default acceptable voltage range is between 080V to 280V, If the current is not within this range, device will alarm.

### 3.1.4 Event logs

User can adjust the system time and record, view and export event logs. There are alarm events and operation events, the details are as below:

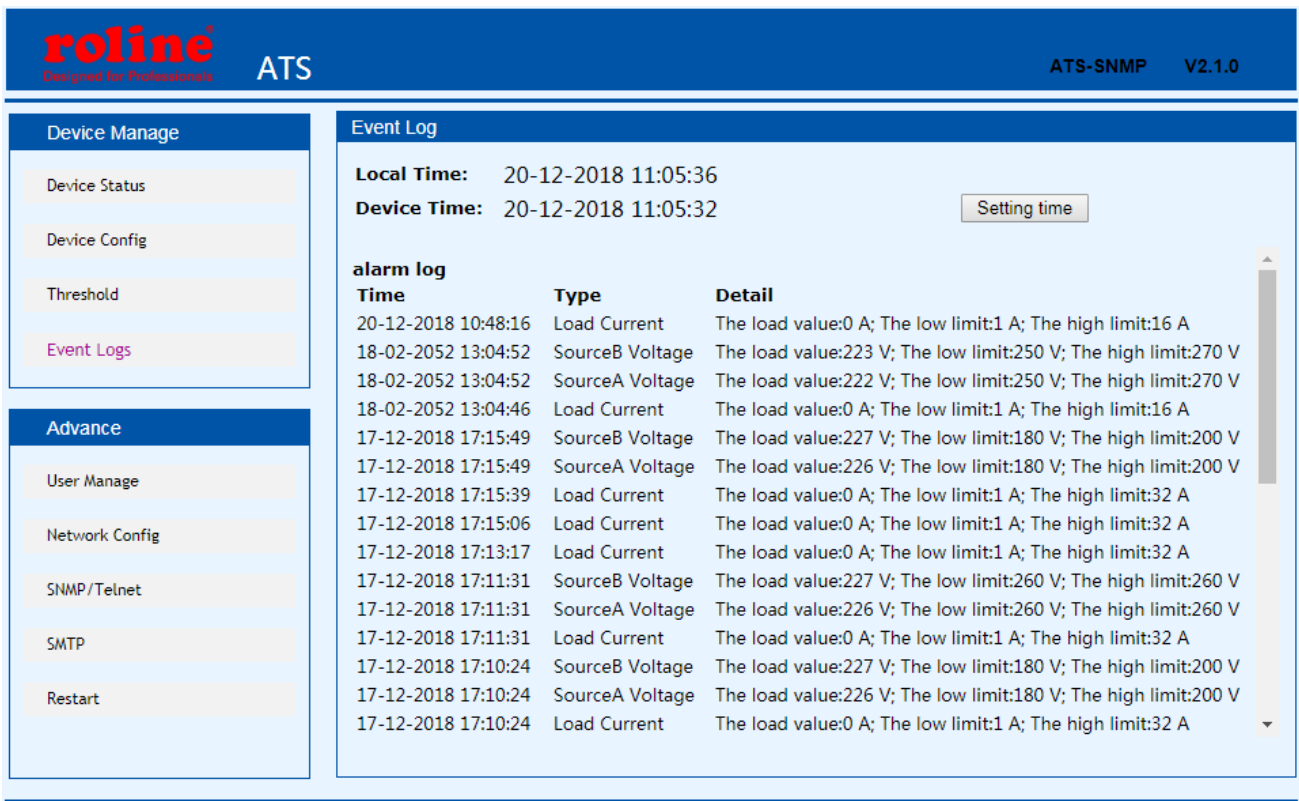


Figure 4 Events logs interface

- 1) Click on Setting time to adjust the system time to PC time.
- 2) The alarm logs can be viewed from the alarm log down list.
- 3) The operate log from the drop down list can view the event logs like preferred source setting, re-transfer time settings and threshold settings.
- 4) Click Export can export the current logs to a excel format.
- 5) Click Clear all records to delete all alarm or operate logs.

Note: the maximum records of each page is 30, when alarm logs is up to 180 and operate logs up to 60, the alarm logs or operate logs will be delete automatically if new logs generated.

If a prompt message like Insufficient Permissions pop-up, please add the site to the trust list and adjust the trusted site to lowest security level. Follow the following steps to adjust the browser security level: Click Tools →Internet Options → Security → Custom Level → To enable the Script ActiveX controls marked safe for scripting. → OK →OK

### 3. 1. 5 User Manage

User manage interface display the account information, the user name and password can changed in this interface



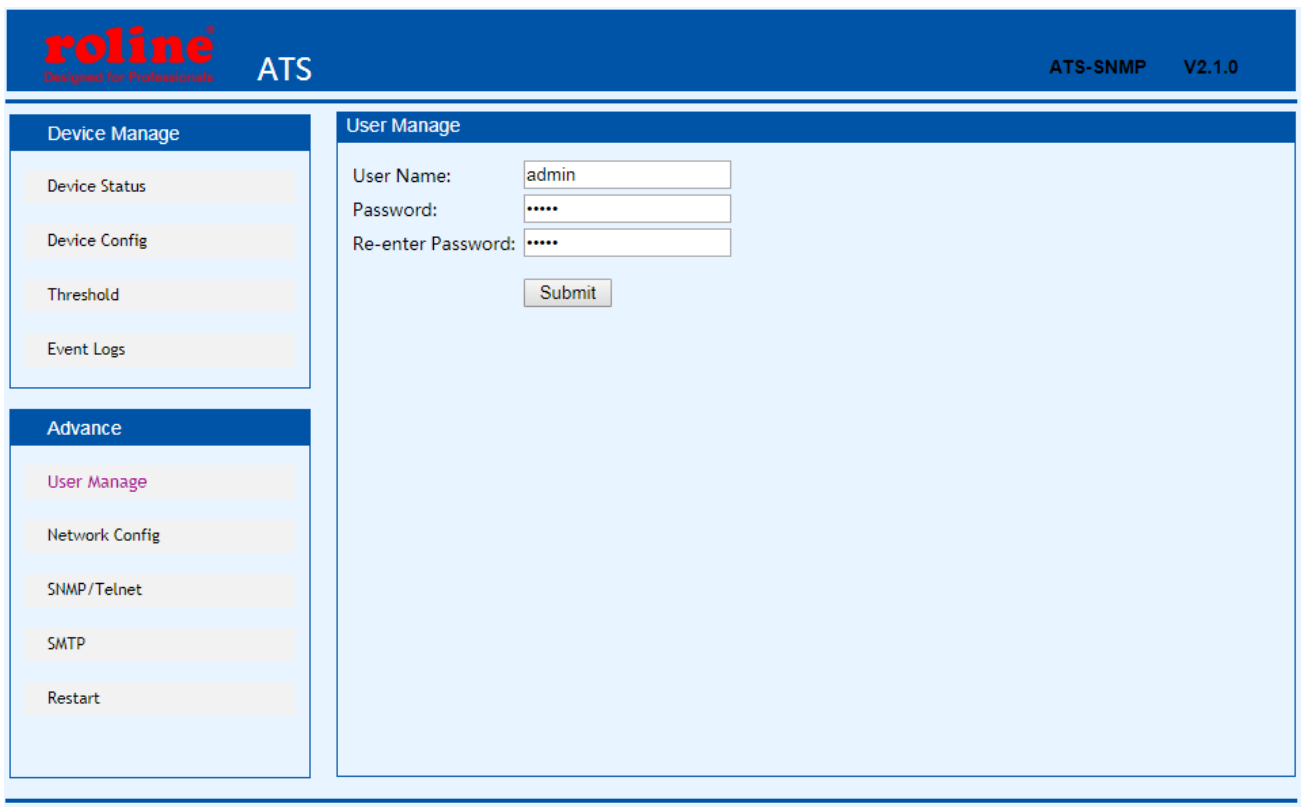


Figure 5 User Manager

- (1) User number supports only letters, numbers, hyphen, underscore with limited 7 characters
- (2) Password can be any character with limited 7 characters

### 3.1.6 Network Config

To configure the network like IP address, subnet mask, default gateway, DNS, HTTP and port.

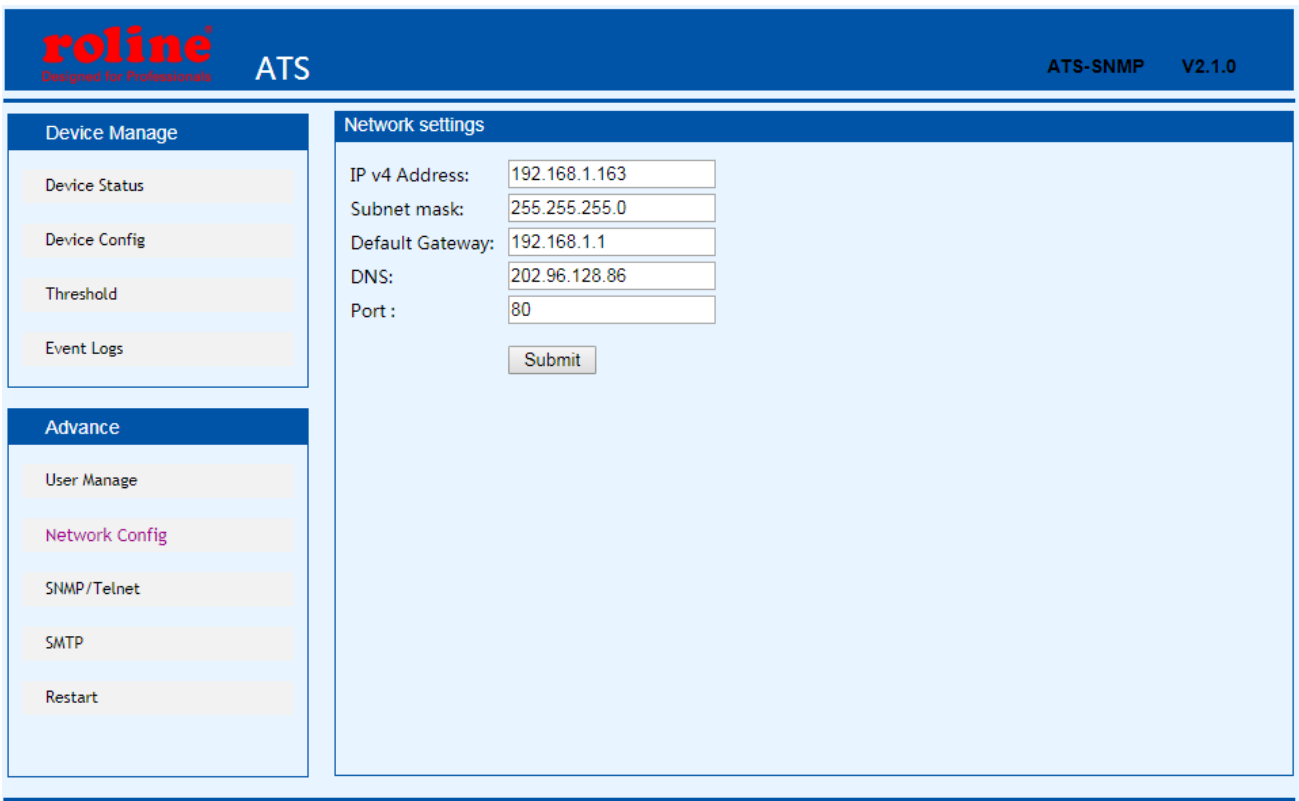


Figure 6 Network config

a. Network Configuration

- (1) IP Address: default address is 192.168.1.163
- (2) Subnet Mask: default address is 255.255.255.0
- (3) Gateway: Default gateway is 192.168.1.1
- (4) DNS: Default one is 0.0.0.0

**Note:** Network configuration will take effect after restart. The changed IP address can be the same as other devices and must be in the same segment as PC

b. HTTP

- (1) To Enable or disable the HTTP function by selecting from the drop down list, default status is enabled.
- (2) Configure and save the HTTP port according to network environment, the port range from 1-65535 and default one is 80.

3. 1. 7 SNMP Settings

To configurate the SNMP access method as below:

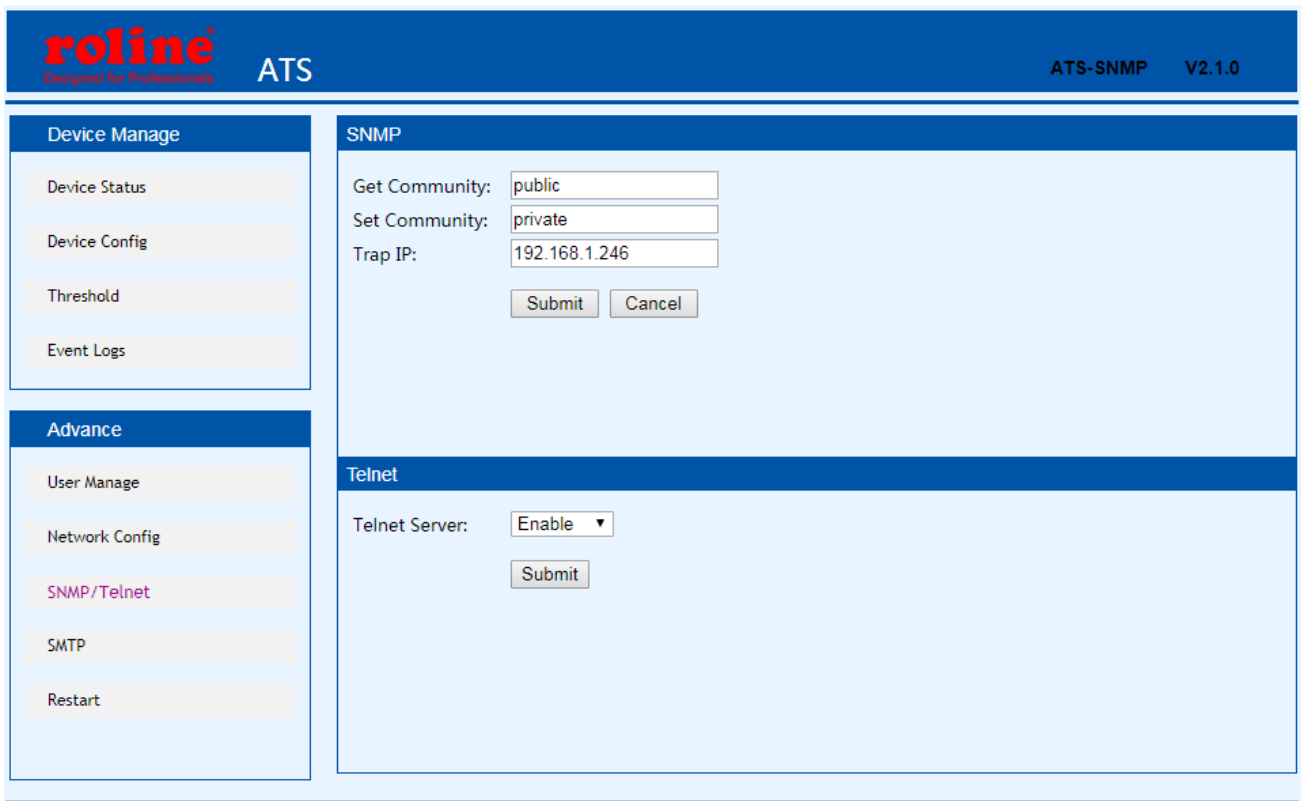


Figure 7 SNMP interface

- (1) SNMP is enabled by default
- (2) Set “get” “set” character string to get and set community. getting the community is to offer read-only channel mark of visiting the MIB object, setting the community is to offer the read-write channel mark of visiting MIB object, TRAPPING the community is the style mark of all TRAP information generated and sent . The default status of these three item were: public、 private、 private. The length of the community string can reach 30 character at most.
- (3) Set the Trap destination, enter the address of the SNMP platform in the trap destination box, the trap information will be sent to corresponding address.
- (4) SNMP Contact to define the contact information of the SNMP system
- (6) SNMP Location defines the server location of SNMP

**Note: SNMP configuration will take effect after restart.**

**The Text box to enter letters, numbers, not allowed to enter Chinese, space, special symbols.**

### 3.1.8 Email alarm

User can use the Simple Mail Transfer Protocol(SMTP) to send e-mail administrator when an event occurs.

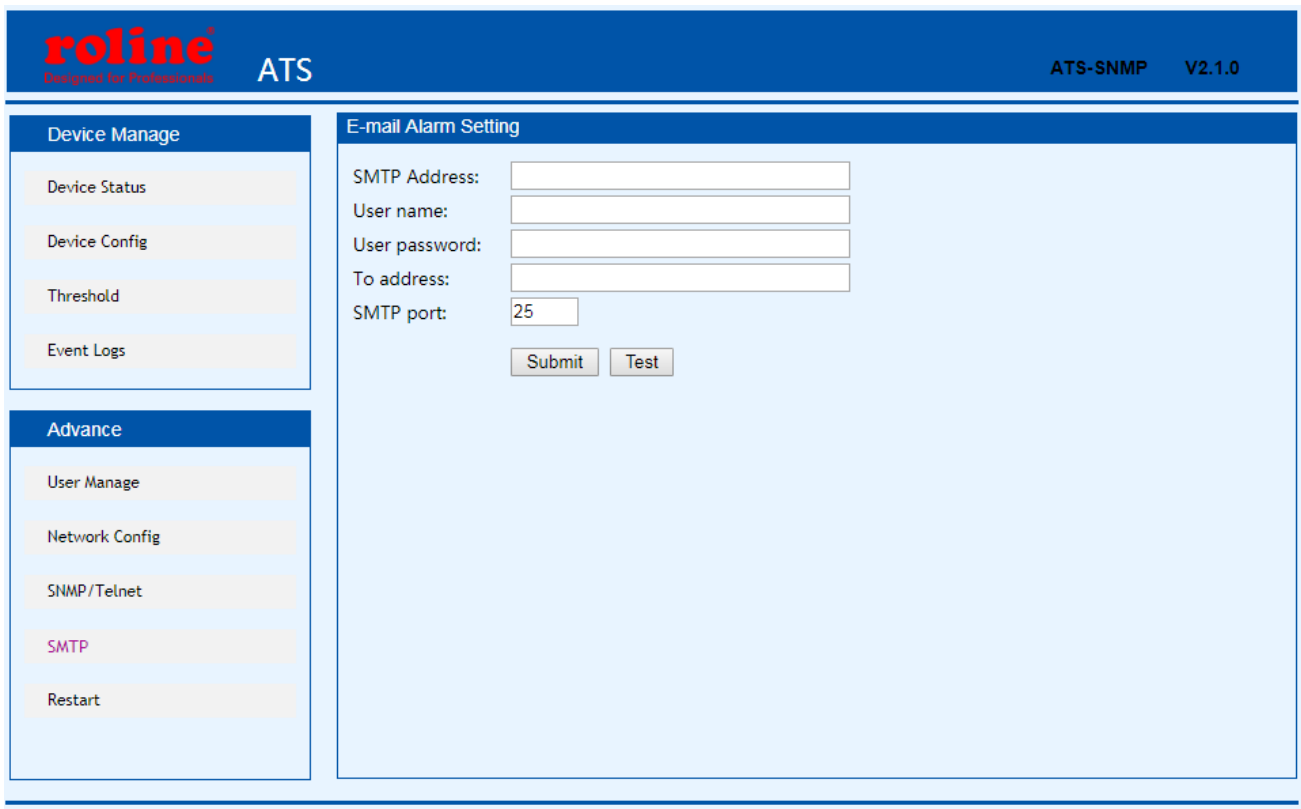


Figure 8 Email alarm

- (1) E-mail is enabled by default
- (2) SMTP address is the outgoing email server address, support up to 25 character. E.g Sina SMTP address is smtp.sina.com;
- (3) SMTP port is the outgoing email port( regular port is 25), range from 0 to 65535, enter the corresponding port according to mail level.
- (4) User name: Enter the sender's e-mail address , make sure this e-mail address is accordant with the SMTP address
- (5) Password: require the password of the sender's e-mail address
- (6) Recipients address: enter the recipients e-mail address which limited 25 character.

**Note:** Click Test after configuration to make sure the settings is correct.

The Text box to enter letters, numbers, not allowed to enter Chinese, space, special symbols.

Telnet Settings : select “Enable” or “Disable” and save, make sure to restart the software after modification.

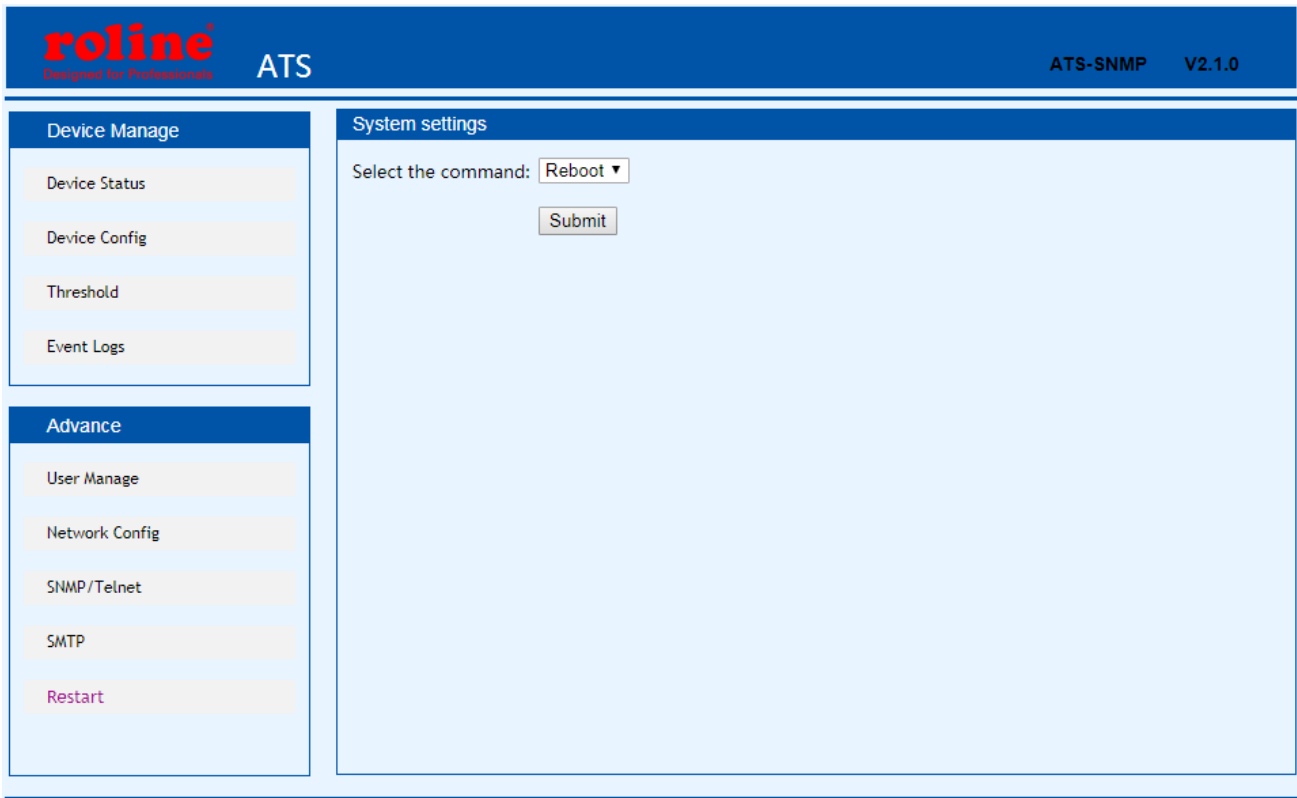
### 3. 1. 9 Restart

User can restart the system or restore to factory settings in the Restart interface.

Restart is to refresh the system software like changing the IP address, SMTP, HTTP port, restart the system

will not affect the power supply.

Reset system setting is to restore the system to default IP, system configuration, user name and password



Note: Make sure there is no power failure, no internet disconnection, and no operation on the web interface during restart, If the device is directly connected to PC, the local connection will be disconnected and connected automatically

### 3.2 SNMP

SNMP(Simple Network Management Protocol), the device software supports V1 version of SNMP, A MIB file which contains an enterprise number will be attached to the software, network management systems offer network management of devices through SNMP and the user can change the output port name, view the device and sensor status, receive alarm information through the SNMP approach.

The user has to enable the SNMP function through the IE browser, please refer to the 13th item of IE access method SNMP introduction. Install corresponding SNMP management software after completing the SNMP start setting, set up the configuration according to the software menu provided by the SNMP software company, load in MIB file on the SNMP management platform, user can monitor and manage the device status information and alarm Trap information after translating and editing successfully, the details information of device

status are as detailed in figure 2-1:

- 1) SNMP software display the device information, power input information, status of the current /voltage and threshold information through mib description table format as below:

Name	OID	Description
sourceaname	1.3.6.1.4.1.30966.10.1.1.1	The name of power source A
sourcebname	1.3.6.1.4.1.30966.10.1.1.2	The name of power source B
prefered	1.3.6.1.4.1.30966.10.1.1.3	The preferred power source
supply	1.3.6.1.4.1.30966.10.1.1.4	The current power supply
switchtime	1.3.6.1.4.1.30966.10.1.1.5	Re-transfer time
sourceavol	1.3.6.1.4.1.30966.10.1.1.6	the voltage of power source A
sourcebvol	1.3.6.1.4.1.30966.10.1.1.7	the voltage of power source B
outputVol	1.3.6.1.4.1.30966.10.1.1.8	The current voltage
sourceacur	1.3.6.1.4.1.30966.10.1.1.9	The current load of power source A
sourcebcur	1.3.6.1.4.1.30966.10.1.1.10	The current load of power source B
outputcur	1.3.6.1.4.1.30966.10.1.1.11	The current output load
voltlowlimit	1.3.6.1.4.1.30966.10.1.1.12	The minimum value of voltage
volthighlimit	1.3.6.1.4.1.30966.10.1.1.13	The maximum value of voltage
curentlowlimit	1.3.6.1.4.1.30966.10.1.1.14	The minimum value of load
curenthighlimit	1.3.6.1.4.1.30966.10.1.1.15	The maximum value of load
sourcea	1.3.6.1.4.1.30966.10.1.1.16	A power status
sourceb	1.3.6.1.4.1.30966.10.1.1.17	B power status
buzzer	1.3.6.1.4.1.30966.10.1.1.18	Buzzer switch and status

Figure 2-1 ATS MIB Description information table

**Note:** Considering the the decimal value of load is not allowed when the load current of both power source, current output load, the maximum/minimum value is bing monitored by SNMP, the value of curentlowlimit、curenthighlimit、sourceacur、sourcebcur、outputcur is 10 times larger than the actual value,

- 2) TRAP information will be sent to the Trap Destination according to the SNMP settings in the IE browser, TRAP information includes the alarming time, device name, alarm types and status, TRAP information as below:

Minor 06/19/2013 14:30:29 ATS

sourceavol.0.0 [1] snmpTrapEnterprise.0 (ObjectID): sourceavol

## IX Performance parameters

Function	ITEM		performance parameters			
Input	Power input		2 power input			
	Rating voltage		220VAC			
	Voltage range		180VAC~260VAC			
	Rating power		50/60HZ			
	Frequency range		Rating power $\pm 5$ HZ			
	Overload & breaker		Optional, one one of them can be added			
	Surge protector					
	Max load current		16A; 32A			
	1U cabinet	Power input method		Plug	Load current	
		1	IEC 320 C20 x 2			16A
2		cable		IEC60309 $\times 2$	16A	
2U	1	cable		IEC60309 $\times 2$	32A	
Output	1U cabinet	Power output		connector	Output socket	Outlet quantity
		1	Socket		IEC320 C13	6
					IEC320 C19	2
	2U cabinet	2	cable	IEC60309 16A		1
		1	Socket		IEC320 C13	12
					IEC320 C19	4
	2	Cable	IEC60309/32A		1	
Max load cuurent		16A、 32A;				
Communication/alar ming port	Logic prot		headphone, 1; to connect the annunciator;			
	Network port		RJ45, 1; (intelligent)			
	Serial communication port		RJ45, 1;			
	phone alarming port		RJ11, 1; (intelligent ATS)			
Transfer	Transfer polarity		L、 N (double polarity);			
	Transfer time		$10 \leq 16$ ms;			
Display	Output current		Digital display	LED tub、 three digit、 red;		
			Display resolution	100mA $\pm 1\% + 1D$ ;		
	Output voltage		Digital display	LED tube、 three digit、 red;		

		Display resolution	1V ±1%+3D;
	IP address	Left circulation display; (intelligent ATS)	
Mounting method	Horizontal rack mount	Occupy 1 or 2 U;	
Case colour	colour	black;	
Association	Brackets	One set;	
	Network cable	2M, blue (1 piece)	
	User manual	One set (Include a CD)	
Working temperature	-5~40℃;		
Storage temperature	-20~70℃;		
Working humidity	30%~90%		

## X Accessories list

1. One serial cable
2. One network cable (only intelligent ATS)
3. Four φ6×16mm cross bolt
4. One user manual and CD
5. Optional accessories
  - 5.1. Circuit breaker(either circuit breaker or surge protection)
  - 5.2 Surge protection module(either surge protection or circuit breaker)

## XI Quality guarantee

The product are guaranteed for two years from the date of purchase. We will repair or replace the defective products covered by this warranty. If product has already exceeded the warranty period or the the problem are caused because of illegal operation, a corresponding fee will be charged.

The below cases are not covered by the warranty:

1. Problem caused because of improper maintenance
2. Problem caused because of unauthorized change, modify or improper use
3. The device are not used in the stipulate physical environment



Repair notice:

1. Please make sure to use protective hard carton when arrange the shipment to repair, the problem occurred in the shipment is not covered by the warranty.
2. Please make a short note about the problem and the operation process
3. Please pay for the shipping cost as well as the customs duty
4. Please list your name, address as well as phone number that we can contact you at any time.