



USER OPERATING MANUAL



RADIO

**Manufactured by,
Senao Networks.**

MANUFACTURER	SENAO NETWORKS
MANUFACTURER'S ADDRESS	NO. 528 Fushing 3rd, Hwa-Ya tech. Park Kueishan, Tao Yuan 333, Taiwan
FACTORY NAME	SENAO NETWORKS
FACTORY ADDRESS	NO. 528 Fushing 3rd, Hwa-Ya tech. Park Kueishan, Tao Yuan 333, Taiwan
VERSION	2.0

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Operations in the 5.15-5.25GHz band are restricted to indoor usage only.

IMPORTANT NOTE:

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Professional installation instruction

1. Installation personal

This product is designed for specific application and needs to be installed by a qualified personal who has RF and related rule knowledge. The general user shall not attempt to install or change the setting.

2. Installation location

The product shall be installed at a location where the radiating antenna can be kept **20cm** from nearby person in normal operation condition to meet regulatory RF exposure requirement.

3. External antenna

Use only the antennas which have been approved by the applicant. The non-approved antenna(s) may produce unwanted spurious or excessive RF transmitting power which may lead to the violation of **FCC** limit and is prohibited.

4. Installation procedure

Please refer to user's manual for the detail.

5. Warning

Please carefully select the installation position and make sure that the final output power does not exceed the limit set force in relevant rules. The violation of the rule could lead to serious federal penalty.

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Safety precautions:

Prior to connecting cables to the ODU, the protective earth terminal (screw) of the ODU must be connected to an external protective ground conductor or to a grounded mast.

Only a qualified person using the proper safety equipment should climb the antenna mast. Only trained professional installers should be used when installing or dismantling ODUs and masts.

Do not use product near water (i.e. wet basement, bathtub, sink or near a swimming pool, etc.), to avoid risk of electrocution

Avoid using and/or connecting the equipment during an electrical storm, to avoid risk of electrocution.

1.1 ODU

Description



Figure 1: Radio (SMAC5700)

Thank you for using SMAC5700. It is a powerful, enhanced, enterprise scale product with functions Outdoor Base and Outdoor Subscriber.

SMAC5700 uses the latest wireless technology 802.11n standard. It has faster transmit/receive wireless speed. SMAC5700 gives you a great advantage to save your time and cost to expend your network. It is also compatible with 802.11a.

SMAC5700 is easily to install almost anywhere with Power over Ethernet for quick indoor installation and regular Power by Adapter. SMAC5700 can manage power level control, Narrow bandwidth selection, Traffic shaping and Real-time RSSI indicator. SMAC5700 is fully support of security encryption including Wi-Fi Protected Access (WPA2-PSK), 128 bit - AES Encryption and IEEE 802.1x with RADIUS.

Technical Specification

PRODUCT MODELS		
SMAC5700 SKU : APX-57200-D	SMAC 5700 Base station unit, 200 Mbps, 5.8 GHz, 2 x N-Type connectors	
INTERFACES		
WIRED ETHERNET	Single auto MDI-X RJ45 10/100/1000 Mbps with POE & Data	
WIRELESS INTERFACE	802.11 a/n	
RADIO SPECS		
RANGE	Upto 20 Km / 12 miles	
MIMO	2x2 MIMO	
MODULATION	OFDM	
FREQUENCY BAND	5.725 GHz- 5.850 GHz	
CHANNEL BANDWIDTH	Configurable : 20 MHz, 40 MHz	
DUPLEX TECHNOLOGY	TDD	
DATA RATE	MCS 0 to 15 for max throughput (6.5 – 300 Mbps) with DDRS BPSK, QPSK, 16-QAM and 64-QAM for (6 Mbps – 54 Mbps) – legacy mode	
ADAPTIVE MODULATION & CODING	Supported	
TX POWER	Up to 24dBm	
TX POWER CONTROL	Transmit power control and distance control (ACK timeout)	
RX SENSITIVITY (BER=10 ⁻⁶) (in dBm)	Channel Size	20 MHz
	MCS0 / MCS8	-90
	MCS1 / MCS9	-87
	MCS2 / MCS10	-85
	MCS3 / MCS11	-80
	MCS4 / MCS12	-77
	MCS5 / MCS13	-73

	MCS6 / MCS14	-71
	MCS7 / MCS15	-70
LED INDICATION	Ethernet status and wireless signal strength indication	
LATENCY		
	< 10 m.sec (typical)	

ANTENNA		
APX-57200-D	TYPE	External
	CONNECTOR	2 x N-Type connector with built in Surge Protection

MANAGEMENT	
LOCAL	Serial interface RS-232 available in PCBA
REMOTE	Telnet and SSH, Web/GUI, TFTP, SNMP V2
SNMP	SNMP V1,V2c, V3, Traps, Private MIB
OTHER	Syslog
BACKUP	User can backup all settings to a file via WEB & CLI
PING & TRACEROUTE	Built in functionality from Web GUI
FIRMWARE UPGRADE	Upgrading firmware via web browser & CLI, settings are reserved after upgrade

SECURITY	
ENCRYPTION	AES-128 bit
AUTHENTICATION	802.1X, MAC address, Radius based Authentication

NETWORK	
BRIDGING	Transparent Bridging (802.1d)
ROUTING	Static and Dynamic Routing, RIP v1/v2
IP	Ipv4 Static and Dynamic address,IPV6
GATEWAY FEATURES	DHCP Server, DHCP Client, Filter
VLAN	802.1Q – Access VLAN, Trunk and Q-in-Q

FEATURES	
FILTERING	IP source / destination address , TCP/UDP Port Numbers, MAC address Source or Destination, Multicast traffic, Broadcast
BANDWIDTH CONTROL	Flexible uplink and downlink bandwidth control

POWER	
POE (Power Over Ethernet)	Power adapter Input – 100-240V/ 0.6A ,50 to 60Hz Power adapter Output – 48VDC /0.5A

POWER CHORD	6A 250V, 50 Hz 3 Pin Indian type IS:1293		
POE Fuse Rating	2 Amp (2A, 250V), which is used in the location F, and F1.		
SURGE PROTECTION			
	Inbuilt Ethernet Surge Protection		
ENVIRONMENTAL SPECS			
OPERATING, STORAGE TEMPERATURE	HUMIDITY, IP RATING	POWER CONSUMPTION	
-15°C to 60°C -15°C to 80°C	0% - 90%, (non-condensing) IP 67	10W (max)	
MECHANICAL SPECS			
DIMENSIONS (PACKED)	DIMENSIONS (UNPACKED)	WEIGHT (PACKED)	WEIGHT (UNPACKED)
14.6 x 9.25 x 8.07 in (370 x 235 x 205 mm)	6.7x 10.2 x 3.1 in (170 x 260 x 80 mm)	2 Kg (4.41 lbs)	1 Kg (2.2 lbs)

1.0 ODU (Radio)

1.1 System Requirement

The following conditions are the minimum system requirement.

- A computer with an Ethernet interface and operating under Windows XP, Vista, 7 or Linux.
- **Internet Browser** that supports HTTP and JavaScript.

1.2 Hardware Overview

Physical Interface	<ul style="list-style-type: none"> - 1 x LAN Port with PoE support - 2 x RF port
---------------------------	--

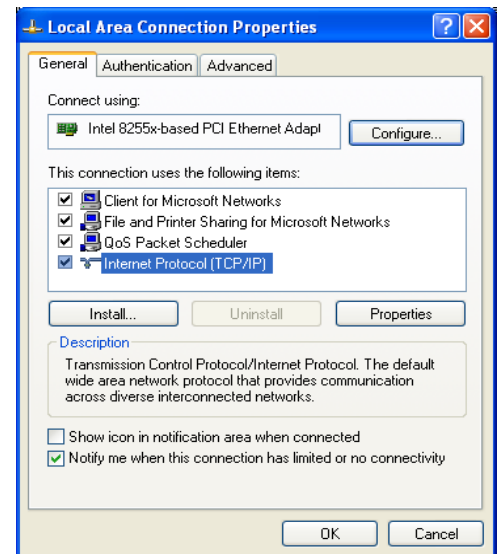
1.3 Computer Configuration Instruction

The default operating mode is Outdoor Base for AP hardware and Outdoor Subscriber for SU hardware. Device will not assign an IP address to the computer/notebook. Therefore, follow the steps to assign an IP address to your Ethernet card.

1.3.1 Assign a Static IP

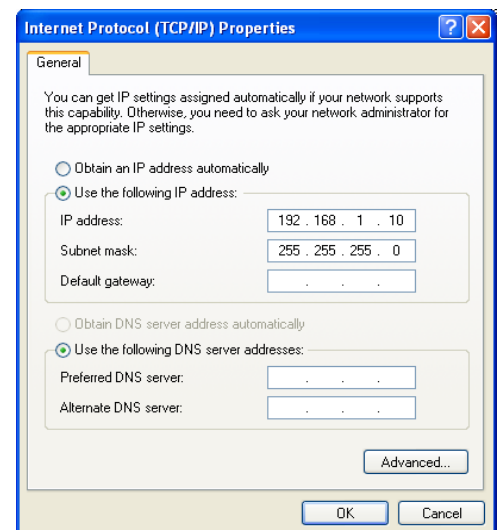
In order to configure SMAC5700, please follow the instruction below:

1. In the **Control Panel**, double click **Network Connections** and then double click on the connection of your **Network Interface Card (NIC)**. You will then see the following screen.



2. Select **Internet Protocol (TCP/IP)** and then click on the **Properties** button. This will allow you to configure the TCP/IP settings of your PC/Notebook

3. Select **Use the following IP address** radio button and then enter the IP address and subnet mask. Ensure that the IP address and subnet mask are on the same subnet as the device.



4. Click on the **OK** button to close this window, and then close LAN properties window.

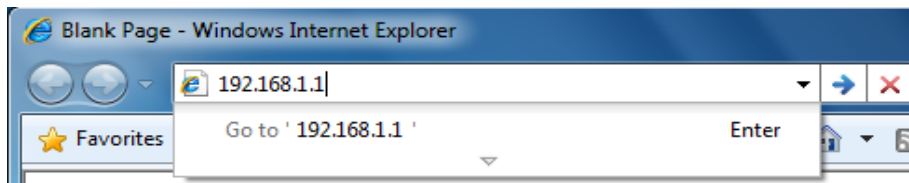
NOTE

IP Address entered in the TCP/IP Properties needs to be at the same subnet of the SMAC5700 IP Address. For example: SMAC5700's default IP Address is **192.168.1.1** so the IP Address in the TCP/IP settings could be **192.168.1.10**.

1.3.2 Logging Method

After complete the IP settings from last section, you can now access the web-based configuration menu.

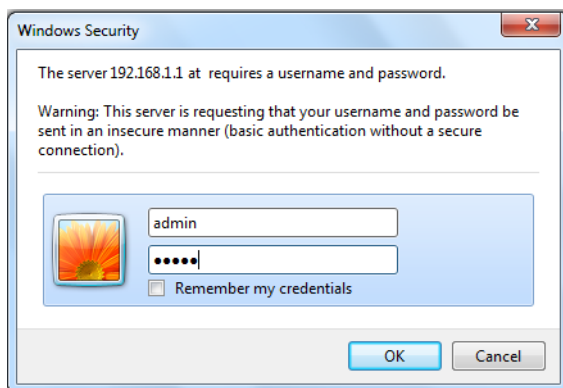
1. Open web browser.



2. Enter IP **192.168.1.1** into you address filter.



If you have changed the SMAC5700 LAN IP address, make sure you enter the correct IP Address.



3. After connected to the SMAC5700 successfully, browser will pop out a Windows Security window. Please enter the correct **Username** and **Password**.

4. The default Username and Password are both **admin**.



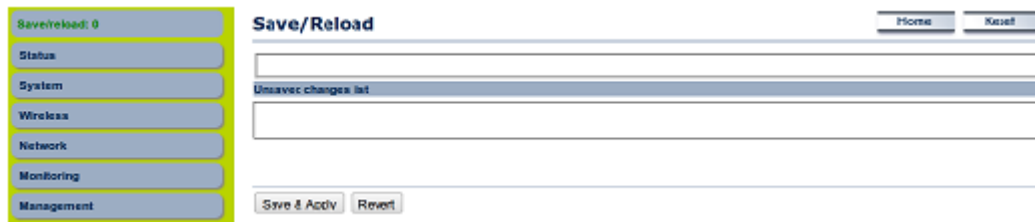
If you have changed the Username and Password, please enter your own Username and Password. **Password length** should be **minimum 8** and **maximum 16**.

1.4 Status

Status section is on the navigation drop-down menu. You will then see the options: Main, Statistics, Wireless Client List, System Log and Connection Status. Each option is described in detail below.

1.4.1 Save/Load

This page allows viewing the modified changes. The changes show in the unsaved changes list table. You can decide to cancel all the changes or to compile to the new setting.



NOTE

If any configuration changes has been made by the user the Save/Reload button will appear in Red color unless clicking the Save& Apply button.

You cannot cancel the specific settings. You can only compile all the settings or revert to the previous settings.

1.4.2 Main

Click on the **Main** link under the **Status** drop-down menu or click **Home** from the top-right of the webpage. The status that is displayed corresponds with the operating mode that is selected. Information such as operating mode, system up time, firmware version, serial number are displayed in the ‘System’ section. LAN IP address, subnet mask, and MAC address are displayed in the ‘LAN’ section. In the ‘Wireless section, the frequency, channel is displayed. The details of each SSID and its security settings are displayed.

System Information	
Device Name (H/W Type)	SMAC5700 (AP)
Customer Name	N/A
Customer Location	N/A
Link ID	N/A
Device Serial Number	1445A S00001
Hardware version	AP-123456789-VER1.1
Ethernet MAC Address	50fe2000cd
Wireless MAC Address	50fe2000cc
Country	Russia1
Current Time	Wed Jan 7 11:01:28 UTC 2015
Firmware Version	smac03-1052-pre-2
Ethernet status	Link is up. Speed=100Mbps. Duplex=full. Negotiated.
Temperature	34.0
Device uptime	0 days, 0 hrs, 50 mins, 21 secs.

1.4.3 Wireless Client List

Click on the **Wireless Client List** link under the **Status** drop-down menu. This page displays the list of Clients that are associated to the SMAC5700.

The MAC addresses and signal strength for each client is displayed. Click on the **Refresh** button to refresh the client list. Default refresh time will be 10 seconds.

Save/reload: 0

Status

Main

Wireless Client List

System Log

System

Wireless

Network

Monitoring

Management

Client List

Home

SSID:#	MAC Address	TX(Bytes)	RX(Bytes)	RSSI(dBm)	Kick and Ban
SSID1:#1	50:fe:f2:00:01:3a	2567016Kb	1735103Kb	-72	Kick

Refresh

NOTE

This will be shown in **Outdoor Base** only

1.4.4 System Log

Click on the **System Log** link under the **Status** drop-down menu. The device automatically logs (records) events of possible interest in its internal memory. If there is not enough internal memory for all events, logs of older events are deleted, but logs of the latest events are retained.

Save/reload: 0

Status

Main

Wireless Client List

System Log

System

Wireless

Network

Monitoring

Management

System Log

Home Reset

Show log type: All

```

Aug 22 19:00:03 SMACS800 user.notice root: starting ntpclient
Aug 22 19:00:01 SMACS800 cron.err crond[1104]: USER root pid 3014 cmd . /etc/hotplug.d/iface/20-ntpclient start
Aug 22 18:55:03 SMACS800 user.notice root: starting ntpclient
Aug 22 18:55:01 SMACS800 cron.err crond[1104]: USER root pid 595 cmd . /etc/hotplug.d/iface/20-ntpclient start
Aug 22 18:50:03 SMACS800 user.notice root: starting ntpclient
Aug 22 18:50:01 SMACS800 cron.err crond[1104]: USER root pid 1979 cmd . /etc/hotplug.d/iface/20-ntpclient start
Aug 22 18:45:03 SMACS800 user.notice root: starting ntpclient
Aug 22 18:45:01 SMACS800 cron.err crond[1104]: USER root pid 3325 cmd . /etc/hotplug.d/iface/20-ntpclient start
Aug 22 18:40:03 SMACS800 user.notice root: starting ntpclient
Aug 22 18:40:01 SMACS800 cron.err crond[1104]: USER root pid 894 cmd . /etc/hotplug.d/iface/20-ntpclient start
Aug 22 18:35:03 SMACS800 user.notice root: starting ntpclient
Aug 22 18:35:01 SMACS800 cron.err crond[1104]: USER root pid 2172 cmd . /etc/hotplug.d/iface/20-ntpclient start
Aug 22 18:34:43 SMACS800 user.info kernel: br-lan: topology change detected, propagating
Aug 22 18:34:43 SMACS800 user.info kernel: br-lan: port 2(ath0) entering learning state
Aug 22 18:34:43 SMACS800 user.info kernel: br-lan: port 2(ath0) entering forwarding state
Aug 22 18:34:43 SMACS800 user.info kernel: br-lan: port 2(ath0) entering disabled state
Aug 22 18:34:43 SMACS800 daemon.warn dnsmasq[1960]: failed to access /tmp/resolv.conf: No such file or directory
Aug 22 18:34:43 SMACS800 daemon.info dnsmasq[609]: exiting on receipt of SIGTERM
Aug 22 18:34:43 SMACS800 daemon.info dnsmasq[1960]: using local addresses only for domain lan
Aug 22 18:34:43 SMACS800 daemon.info dnsmasq[1960]: started, version 2.52 cachesize 150
Aug 22 18:34:43 SMACS800 daemon.info dnsmasq[1960]: read /etc/hosts - 1 addresses
Aug 22 18:34:43 SMACS800 daemon.info dnsmasq[1960]: compile time options: IPV6 GNU-getopt no-DBus no-lln DHCP TFTP
            
```

Refresh Clear

1.4.5 Connection Status

Click on the **Connection Status** link under the **Status** drop-down menu. This page displays the current status of the network, including network type, SSID, BSSID, connection status, wireless mode, current channel, security, data rate, noise level and signal strength.

Connection Status		Home	Reset
Network Type	Outdoor Subscriber		
SSID	Sifyenc		
BSSID	00:02:0F:D1:C0:3C		
Connection Status	Associated		
Wireless Mode	IEEE 802.11a/n Mixed		
Current Channel	5.79 GHz(Channel Frequency=5.79)		
Security	None		
Tx Data Rate(Mbps)	59 Mbps		
Current noise level	-85 dBm		
Signal strength	-74 dBm		

NOTE

This will be shown in **Outdoor Subscriber** mode only.

1.5 System

1.5.1 Switching Operation Mode

The SMAC5700 supports operation modes: Outdoor Base, Outdoor Subscriber. In order to switching between the operating modes, please go to **System** -> click **Operation mode**.

The screenshot shows the Sify web interface for an 'Outdoor Base'. The left sidebar contains a menu with options: Save/reload: 0, Status, System, Operation Mode (highlighted), IP Settings, Ethernet Settings, Location, Wireless, Network, Monitoring, and Management. The main content area is titled 'System Properties' and features a 'Home' and 'Reset' button. Under 'System Properties', there is a section for 'Operation Mode' with two radio buttons: 'Outdoor Base' (unselected) and 'Outdoor Subscriber' (selected). Below this, there are 'Save & Apply' and 'Cancel' buttons.

Operation Mode: Select an operation mode via **Radio Button**.

Click **Save & Apply** to confirm the changes.

CAUTION

Accept does not compile the changes, you must go to Status -> Save/Load to apply the new settings.

1.5.2 IP Settings:

Go to **System** -> Click **IP settings**

IP Network Setting Select Radio button for **Obtain an IP address automatically** or **Specify an IP address**.

IP Address Specify LAN port IP address.

IP Subnet Mask Specify Subnet Mask.

Default Gateway Specify Default Gateway

Primary DNS Specify Primary DNS

Secondary DNS Specify Secondary DNS

Accept / Cancel Press Accept to confirm the changes or Cancel to return previous settings.



Accept does not compile the changes, you must go to Status -> Save/Load to apply the new settings. IPV6 feature also included in this device.

1.5.3 Ethernet Settings

Go to **System -> Ethernet settings** to change the speed and duplex of the device SMAC5700.

Save/reload: 0

Status

System

Operation Mode

IP Settings

Ethernet Settings

Location

Wireless

Network

Monitoring

Management

Ethernet Settings

Home Reset

Speed/Duplex Settings

- Auto negotiation
- 10Mbps-Half
- 10Mbps-Full
- 100Mbps-Half
- 100Mbps-Full

Accept Cancel

NOTE

The moment you click “**Accept**” the changes will take effect immediately, there is no need to save/reload.

1.5.4 Location

Go to **System -> Location** to configure the customer name, customer location, customer email ID, customer mobile number & Link ID.

Save/reload: 0

Status

System

Operation Mode

IP Settings

Location

Spanning Tree Settings

Ethernet Settings

Wireless

Network

Monitoring

Management

Install location

Home

Customer name	BH SU Talwandi
Customer location	Talwandi
Customer email	N/A
Customer phone	N/A
Link ID1	N/A

Save and Apply Cancel

1.5.5 Spanning Tree Settings

Go to **System -> Spanning Tree settings** to enable the spanning tree option and configure the STP parameters like hello time, Max Age, Forward Delay & Priority.



Accept does not compile the changes, you must go to Status -> Save/Load to apply the new settings.

1.5.6 Service Settings

Go to **System -> Service settings** to enable/disable the HTTPS/HTTP,SSH/TELNET options. Also upload the certificate for safety login through HTTPS.



The moment you click “**Accept**” the changes will take effect immediately, there is no need to save/reload

1.6 Wireless Configuration

This section will guide you through all the wireless settings. Please read the instruction carefully. Inappropriate setting could lower the performance or affect the network structure. Before you continue, please make sure you have chosen the correct operating mode.

1.6.1 Wireless Network

This section is the basic wireless settings. Please read the description carefully and check the steps on chapter 10 in case you need more detail information.

For Outdoor Base Mode

Under **Wireless** → Click **wireless Network**

Wireless Network Home

Wireless Mode: 802.11 A/N Mixed
 Channel HT Mode: 20MHz
 Extension Channel: Upper Channel
 Channel / Frequency: Ch93-5.465GHz Auto
 AP Detection:

Current Profiles					
SSID	Security	Isolation	VID	Enable	Edit
KOTA_34_V	None	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	<input type="button" value="Edit"/>
		<input type="checkbox"/>		<input type="checkbox"/>	<input type="button" value="Edit"/>
		<input type="checkbox"/>		<input type="checkbox"/>	<input type="button" value="Edit"/>
		<input type="checkbox"/>		<input type="checkbox"/>	<input type="button" value="Edit"/>

Wireless Mode The wireless mode supports **802.11a/n** mixed modes. It is compatible with the most common known wireless band.

Channel HT Mode The default channel bandwidth is **20 MHz**. The larger channel can provide better transmit quality and speed. 40 MHz options also available

Extension Channel Specify the upper channel or lower channel selection. It may influence the Auto channel function

Channel / Frequency Specify the channel/frequency.

Auto Place a **Check** mark to enable Auto channel selection.

Current Profile Configure the SSID, it can help to divide group of clients to access the network. Just **Edit** to configure the profile.



Accept does not compile the changes, you must go to Status -> Save/Load to apply the new settings.

For Outdoor Subscriber

Under **Wireless** → Click **wireless Network**

Home Reset

Wireless Network

Save/reload: 0

Status

System

Wireless

Wireless Network

Wireless Advanced Settings

Network

Monitoring

Management

Wireless Mode	802.11 A/N Mixed ▼
Specify the static SSID Or press the Site Survey button to search for any available WLAN Service :	
SSID	SifySMAC (1 to 32 characters)
	Site Survey
Prefered BSSID	<input type="checkbox"/> [] : [] : [] : [] : [] : []
Security Mode (WPA2-PSK-AES)	Disabled ▼

Accept Cancel

Wireless Mode	The wireless mode supports 802.11a/n mixed modes. It is compatible with the most common known wireless band.
Channel HT Mode	Automatically detect the change when changed on Outdoor base
Channel / Frequency	Automatically detect the change when changed on Outdoor base
Accept / Cancel	Press Accept to confirm the changes or Cancel to return previous settings.
Current Profile	Configure the SSID, it can help to divide group of clients to access the network .Just Edit to configure the profile.



Accept does not compile the changes, you must go to Status -> Save/Load to apply the new settings. Please refer to the chapter 4.4.1 for more detail.

1.6.2 Wireless Security Settings

Wireless Security Settings section will guide you to the entire Security mode configuration:

We strongly recommend that WPA2-PSK as your security settings.

For Outdoor Base:

Under **Wireless** → Click **wireless Network**

SSID Profile

Wireless Setting

SSID	<input type="text" value="SifySMAC"/> (1 to 32 characters)
VLAN ID	<input type="text" value="1"/> (1~4094)
Suppressed SSID	<input type="checkbox"/>
Station Separation	<input checked="" type="radio"/> Enable <input type="radio"/> Disable

Wireless Security

Security Mode	<input type="text" value="WPA2-PSK"/> ▼
Encryption	<input type="text" value="Both(TKIP+AES)"/> ▼
Passphrase	<input type="text"/> (8 to 63 characters) or (64 Hexadecimal characters)
Group Key Update Interval	<input type="text" value="3600"/> seconds(30~3600, 0: disabled)

Security Mode	Select Enabled from the drop down list to begin the configuration.
Encryption	Advanced Encryption System.
Passphrase	Specify the security password.
Passphrase Length	64 Hexadecimal characters password length.(minimum 8 characters)

For Outdoor Subscriber:

Under **Wireless** → Click **wireless Network**

Wireless Network

Save/reload: 0

Status

System

Wireless

Wireless Network

Wireless Advanced Settings

Network

Monitoring

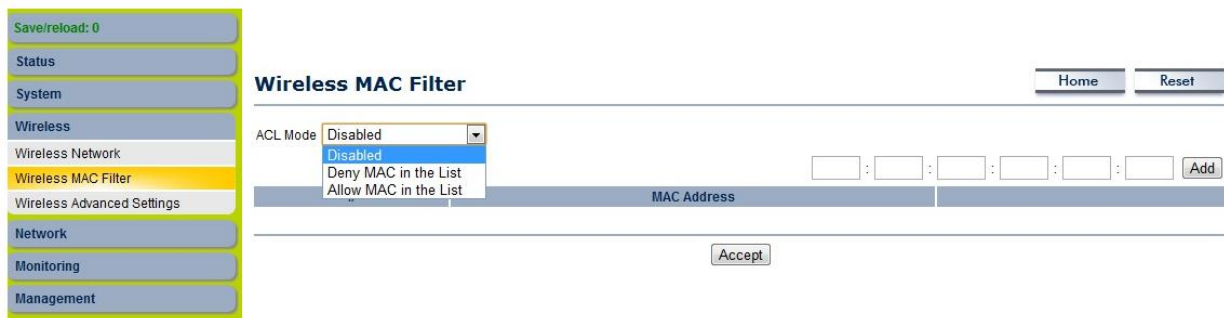
Management

Wireless Mode	<input type="text" value="802.11 A/N Mixed"/> ▼
SSID	Specify the static SSID Or press the Site Survey button to search for any available WLAN Service : <input type="text" value="SifySMAC"/> (1 to 32 characters) <input type="button" value="Site Survey"/>
Preferred BSSID	<input type="checkbox"/> <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/>
Security Mode (WPA2-PSK-AES)	<input type="text" value="Enabled"/> ▼
Passphrase (WPA2-PSK-AES)	<input type="text"/> (8 to 63 characters)

Security Mode	Select WPA2-PSK from the drop down list to begin the configuration.
Encryption	Select AES for Encryption type.
Passphrase	Specify the security password.
Passphrase Length	64 Hexadecimal characters password length.(minimum 8 characters)

1.6.3 Wireless MAC Filter

Wireless MAC Filters is used to Allow or Deny wireless clients, by their MAC addresses, accessing the Network. You can manually add a MAC address to restrict the permission to access SMAC5700. The default setting is Disable Wireless MAC Filters.



ACL Mode	ACL Mode can help to deny or allow certain Client to access the network. Select Disable Deny MAC in the list or Allow MAC in the list from the drop down list.
MAC Address Filter	Specify the Wireless MAC address manually.
Add	Press Add to add the Wireless MAC address in the table.
Apply	Press Apply to apply the changes.

1.6.4 Wireless Advanced Settings

Under **Wireless** → Click **Wireless Advanced Settings**

Data Rate

Select Data Rate from the drop down list. Data rate will affect the efficiency of the throughput. If the data rate is set to a small number, the lower through will get but it can transmit to longer distance.

Transmit Power

Select Transmit Power to increase or decrease Transmit Power. Higher transmit power will sometimes cause unable to connect to the network. On the other hand, the lower transmit power will cause client unable to connect to the device.

RTS/CTS Threshold

Specify Threshold package size for RTC/CTS. Using small number of the threshold will cause RTS/CTS packets to be sent more often to consuming more of the available bandwidth. In addition, if the heavy load traffic occurs, the wireless network can be recovered easily from interferences or collisions.

Distance

Specify distance rage between AP and Clients. Longer distance may lose high connection speed.

Short GI	Short GI is improved of 802.11n and 802.11a/g. It can increase 10% of the internet speed during the data transmission. For example, the 802.11a/g's GI is 800us; the short GI will be 400us.
Aggregation	Aggregation is to merge the typical size of data's header to one data. It is useful for the small size but larger amount packets.
Wireless Traffic Shaping	Place a Check to enable Wireless Traffic Shaping function.
Incoming Traffic Limit	Specify the wireless transmission speed for downloading in Kbits/seconds
Outgoing Traffic Limit	Specify the wireless transmission speed for uploading in kbits/seconds
Accept / Cancel	Press Accept to confirm the changes or Cancel to return previous settings.



1. Changing Wireless Advanced Settings may cause insufficient wireless connection quality.
2. Accept does not compile the changes; you must go to Status -> Save/Load to apply the new settings.

1.7 Management Settings

Management section is on the navigation drop-down menu. You will then see seven options: administration, management VLAN, SNMP settings, backup/restore settings, firmware upgrade, time settings, and log. Each option is described below.

1.7.1 Administration

Click on the **Administration** link under the **Management** menu. This option allows you to create a user name and password for the device. Also we can provide Admin / User access & telnet by creating separate passwords. By default, this device is configured with a user name and password **admin**. For security reasons it is highly recommended that you create a new user name and password.

Password	Specify a Password for logging in Admin telnet / WEB as well as User
Confirm Password	Re-enter the Password for confirmation. Password length should be minimum 8 and maximum 16.
Save/Apply / Cancel	Press Save/Apply to apply the changes or Cancel to return previous settings.



Press Save/Apply will change the setting immediately. It will not be able to undo the action.

1.7.2 SNMP Settings

Click on the **SNMP Settings** link under the **Management** menu. This is a networking management protocol used to monitor network-attached devices. SNMP allows messages (called protocol data units) to be sent to various parts of a network. Upon receiving these messages, SNMP-compatible devices (called agents) return data stored in their Management Information Bases. It can support SNMP V3 feature also.

Enable/Disable Select the Radio button to Enable or Disable SNMP function.

Contact Specify the contact details of the device.

Location Specify the location of the device.

Community Name(Read only) Specify the password for access the SNMP community for read only access. By default its public; better keep it in default password.

Community Name(Read/Write) User cant able to change the default SNMP Read/Write password.

Trap Destination IP Address Specify the IP address that will receive the SNMP trap.

Trap Destination Community Name Specify the Destination Community name.

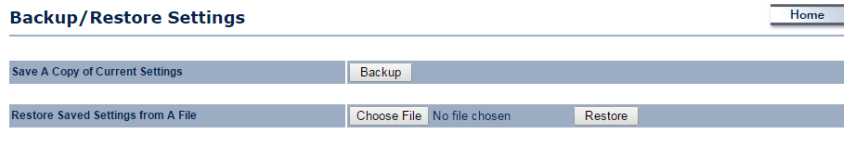
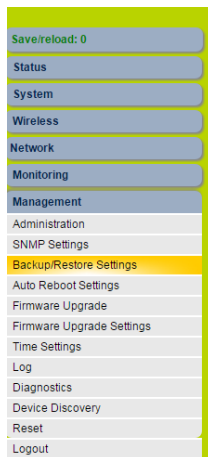
Save/Apply / Cancel Press Save/Apply to apply the changes or Cancel to return previous settings.



Press Save/Apply will change the setting immediately. It will not be able to undo the action.

1.7.3 Backup/Restore Settings

Click on the **Backup/Restore Setting** link under the **Management** menu. This option is used to save the current settings of the device in a file on your local disk or load settings on to the device from a local disk. This feature is very handy for administrators who have several devices that need to be configured with the same settings.



Save A Copy of Current Settings

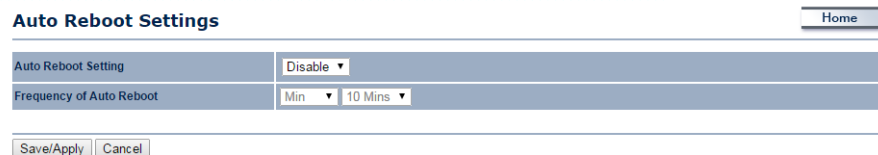
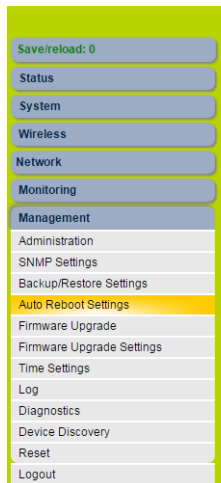
Click on **Backup** to save current configured settings.

Restore Saved Settings from a File

SMAC5700 can restore a previous setting that has been saved. Click on Browse to select the file and Restore.

1.7.4 Auto reboot settings

Click on the **Auto reboot setting** link under the **Management** menu for auto rebooting the radio.



1.7.5 Firmware Upgrade

Click on the **Firmware Upgrade** link under the **Management** menu. This page is used to upgrade the firmware of the device. Make sure that downloaded the appropriate firmware from your vendor.



Firmware Upgrade

[Home](#) [Reset](#)

Current firmware version: smac02a-1011

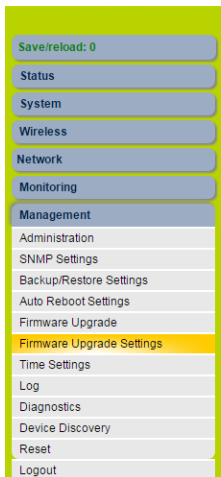
Locate and select the upgrade file from your hard disk:



Upgrade process may take few minutes (approximate 3 minutes); please do not power off the device and it may cause the device crashed or unusable. SMAC5700 will restart automatically once the upgrade is completed.

1.7.6 Firmware Upgrade Settings

Click on the **Firmware Upgrade Settings** link under the **Management** menu. This page is used to upgrade the firmware from remote. Latest firmware can be uploaded in server and connected devices can upgrade automatically when reboots.



Firmware Upgrade Settings

[Home](#)

Auto Firmware Upgrade	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Select Firmware Type(PTMP/WDS)	<input checked="" type="radio"/> Support PTMP firmware alone <input type="radio"/> Support WDS firmware alone
IP/Domain Name	<input type="text" value="N/A"/>

1.7.7 Time Settings

Click on the **Time Settings** link under the **Management** menu. This page allows you to configure the time on the device. You may do this manually or by connecting to a NTP server.

Manually Set Date and Time

Manually setup the date and time.

Automatically Get Date and Time

Specify the Time Zone from the drop down list and Place a **Check** to specify the IP address of the NTP Server manually or uses default NTP Server.

Save/Apply / Cancel

Press Save/Apply to apply the changes or Cancel to return previous settings.



Press Save/Apply will change the setting immediately. It will not be able to undo the action.

1.7.8 Log

Click on the **Log** link under the **Management** menu. The **Log** page displays a list of events that are triggered on the Ethernet and Wireless interface. This log can be referred when an unknown error occurs on the system or when a report needs to be sent to the technical support department for debugging purposes.

Syslog	Select Enable or Disable Syslog function from the drop down list.
Log Server IP Address	Specify the Log Server IP address.
Local Log	Select Enable or Disable Local Log service.
Save/Apply / Cancel	Press Save/Apply to apply the changes or Cancel to return previous settings.



Press Save/Apply will change the setting immediately. It will not be able to undo the action.

1.7.9 Diagnostics

Click on the **Diagnostics** link under the **Management** menu. This function allows you to detect connection quality and trace the routing table to the target.

Diagnostics Home

Ping Test Parameters

Target IP / Domain Name	<input type="text"/>
Ping Packet Size	64 Bytes
Number of Pings	4

Traceroute Test Parameters

Traceroute target	<input type="text"/>
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Speed Test

Target Address	<input type="text"/>
Time period	20 Sec
Check Interval	5 Sec
IPv4 Port	5001

1.8 Device Discovery

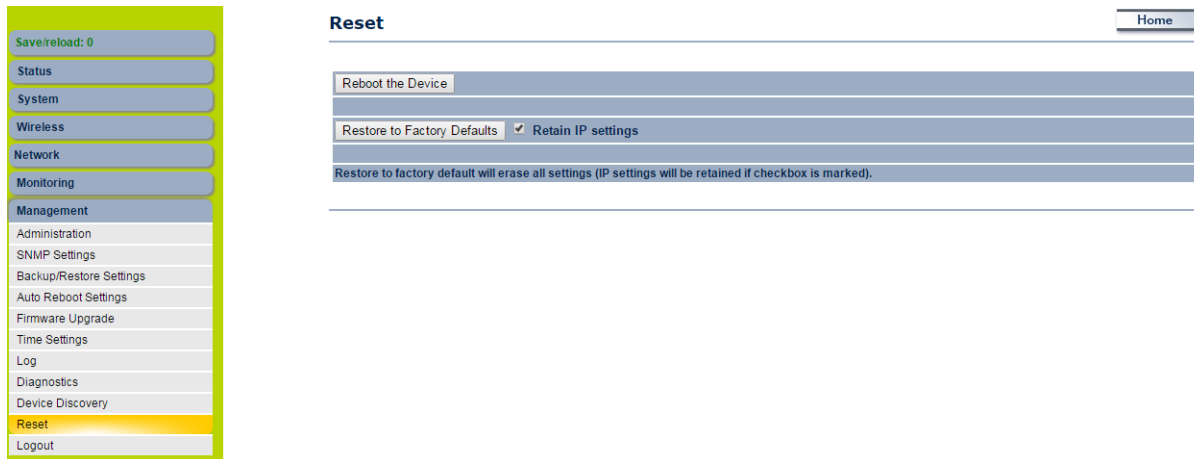
. Click on the **Device discovery** link under the **Management** menu. This function displays the device information as well as associated SU information.

Device Discovery

Device Name	Operation Mode	IP Address	System MAC Address	Firmware Version
SMAC5700	Access Point	221.134.211.35	50:FE:F2:00:01:3A	-

1.8.1 Reset

Click on the **Reset** link under the **Management** menu. This page is used to reboot & reset the device to factory default. We can restore the factory setting with retain the IP setting, hence IP reachability will be available & all other parameters will go to factory settings.



The screenshot displays the 'Reset' page in a web interface. On the left, a vertical navigation menu lists various system functions, with 'Reset' highlighted in yellow. The main content area features a 'Reset' title and a 'Home' button. Below the title, there are two primary options: 'Reboot the Device' and 'Restore to Factory Defaults'. The 'Restore to Factory Defaults' option includes a checked checkbox for 'Retain IP settings'. A warning message below these options states: 'Restore to factory default will erase all settings (IP settings will be retained if checkbox is marked).'

1.9 LED Indication

LED indication in Outdoor Subscriber (SU) mode and LED blinking format is given below.

NAME	Condition	Signal Strength
WLAN_LED	GREEN blinking fast	Excellent (less than -63)
	GREEN blinking slow	Good (-64 to -74 dBm)
	Alternate GREEN and AMBER	Average (-75 to -80 dBm)
	AMBER blinking	Poor (above -81 dBm)
	OFF	Wireless Link DOWN