



# **Altai A8Ein Super WiFi Base Station**

## **Configuration Manual For Firmware Version 1.2.0.604**

**Version 1.0**

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**Altai Technologies Limited**

Unit 209, 2/Floor,  
East Wing, Building 17  
Hong Kong Science Park,  
Sha Tin, New Territories,  
Hong Kong

Telephone: +852 3758 6000

Fax: +852 2607 4021

Web: [www.altaitechnologies.com](http://www.altaitechnologies.com)

**Customer Support Centre:**

Email: [support@altaitechnologies.com](mailto:support@altaitechnologies.com)



## Radio Frequency Interference Requirements

This device complies with Part 15 of FCC Rules.

Operation is subject to the following conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.
3. This device should not be co-located or operating in conjunction with any other antenna or transmitter.

## 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. If it is not installed and used in accordance with the instructions, harmful interference to radio communications may be caused.

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: To assure continued compliance, (example – use only shielded interface cables when connecting to computer or peripheral devices) 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 Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device

Cet appareil est conforme aux normes d'Industrie Canada exempts de licence RSS (s). Son fonctionnement est soumis aux deux conditions suivantes: (1) cet appareil ne doit pas provoquer d'interférences, et (2) cet appareil doit accepter toute interférence, y compris les interférences pouvant provoquer un fonctionnement indésirable de l'appareil

## Warning

The user is advised to keep away from the base-station and antenna with at least 20cm when the base-station is in operation.

Please install a lightning arrestor to protect the base station from lightning dissipation during rainstorms. Lightning arrestors are mounted outside the structure and must be grounded by means of a ground wire to the nearest ground rod or item that is grounded.



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## Disclaimer

All specifications are subject to changes without prior notice. Altai Technologies assumes no responsibilities for any inaccuracies in this document or for any obligation to update information in this document. This document is provided for information purposes only. Altai Technologies reserves the right to change, modify, transfer, or otherwise revise this publication without notice.



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## Manual Conventions

<b>Bold</b>	Bold type within paragraph text indicates commands, files names, directory names, paths, output, or returned values.
<i>Italic</i>	Within commands, italics indicate a variable that the user must specify. Titles of manuals or other published documents are also set in italics.
<u>      </u>	Underline means that you have to pay attention to the words.
<b>Courier</b>	The courier font indicates output or display.
[ ]	Within commands, items enclosed in square brackets are optional parameters or values that the user can choose to specify or omit.
{ }	Within commands, item enclosed in braces are options which the user must choose from.
	Within commands, the vertical bar separates options.
...	An ellipsis indicates a repetition of preceding parameter.
>	The right angle bracket separates successive menu selection.

**NOTE:** This message denotes neutral or positive information that calls out important points to the text. A note provides information that applies only in special cases.



**Caution:** Cautions call special attention to hazards that can cause system damage or data corruption, to a lesser degree than warnings.



**Warnings:** Warnings call special attention to hazards that can cause system damage, data corruption, personal injury, or death.



## 1 INTRODUCTION

This manual is to summarize how to perform basic configuration for the Altai A8Ein BTS through web-admin interface.

## 2 A8EIN MODEL AND FIRMWARE VERSION

This manual is applicable for the following models, hardware and firmware versions:

Product name : **A8Ein Super WiFi Base Station**

Hardware Platform	Firmware Version	Recommended FPGA Version
V1.2	1.2.0.604	0xa6

*Table 2-1 A8Ein model*

## 3 NEW FUNCTIONS INTRODUCTION

This table is the new functions description:

No.	New functions description	Property	Module	Chapter
1				
2				
3				
4				
5				
6				
7				

*Table Error! No text of specified style in document.-1 New functions introduction*

## 4 GETTING STARTED

### 4.1 SETUP LOCAL AREA CONNECTION ON YOUR PC

A8Ein BTS can be connected to your PC in wired mode or in wireless mode. In the following, wired mode will be introduced. This is because the configurations are similar in wireless mode, except SSID has to be configured in both A8Ein BTS and PC.

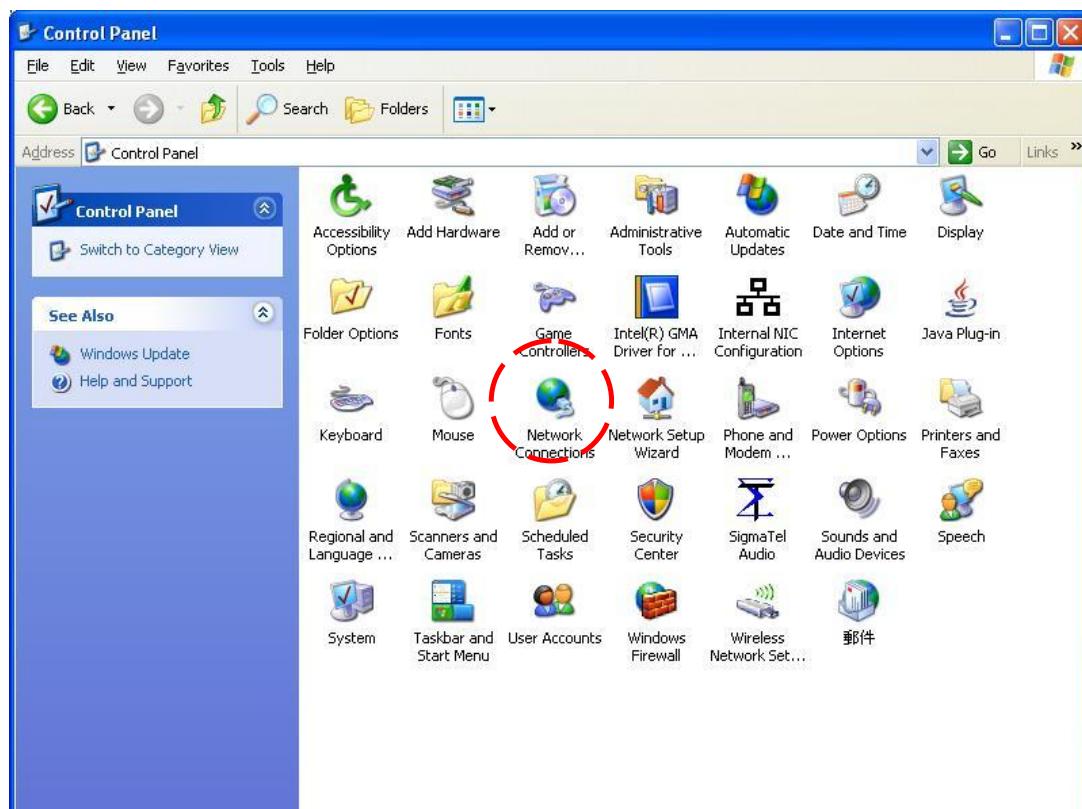
- A8Ein BTS can be connected to your PC directly or by a switch or a hub.

Please kindly refer to the *Altai A8Ein WiFi Base Station Cable Configuration Guide*.

Start Network Configuration on your PC.

For Windows XP user,

1. Click the “start” menu and choose “Control Panel”.
2. Click “Network Connections”.



*Figure 1 Control Panel in Windows XP*

3. Right-click the “Local Area Connection” and select “Properties”.

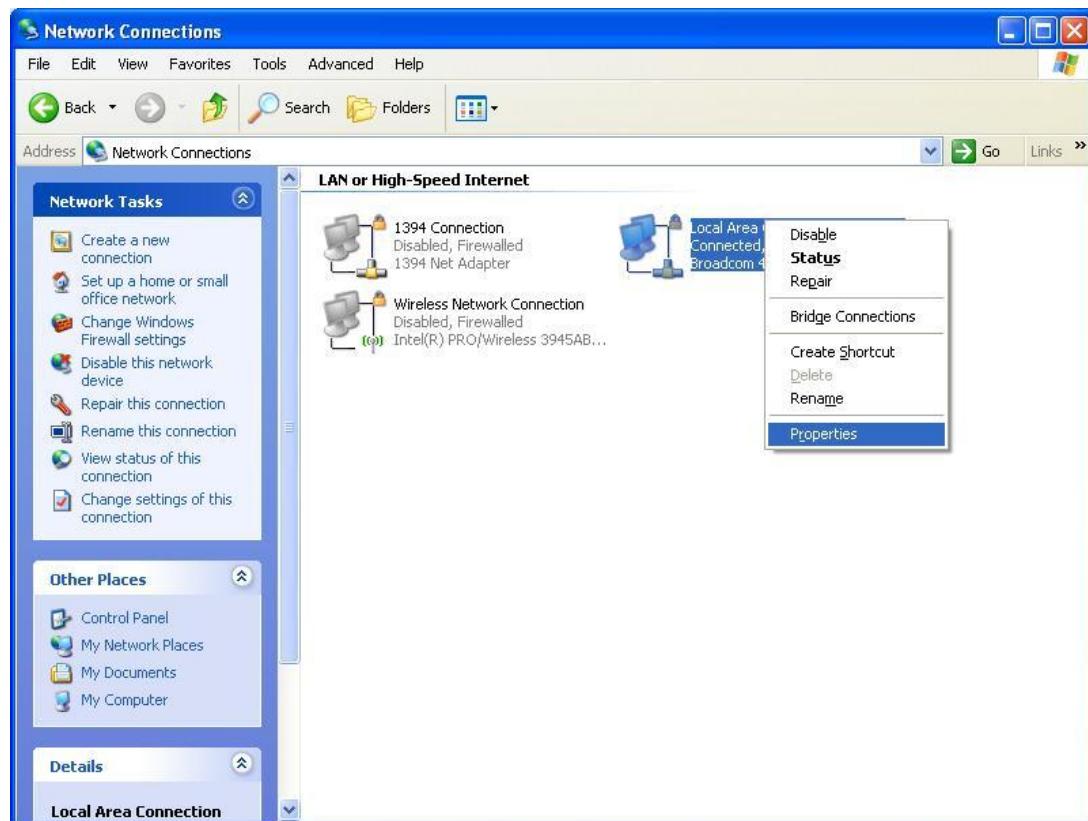


Figure 2 Network Connections in Windows XP

- After clicking “Properties”, you will see the diagram as below.

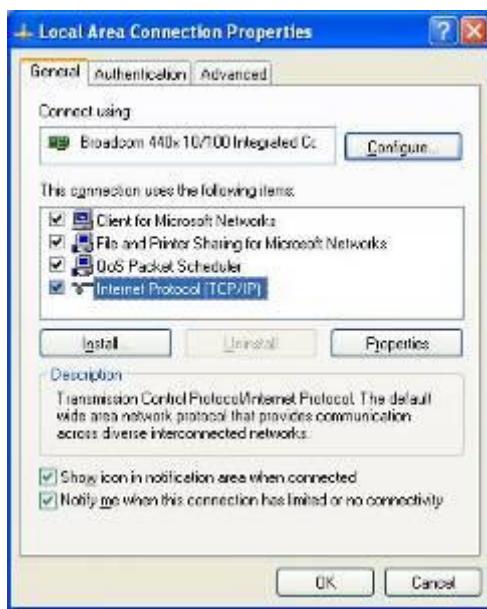


Figure 3 Local Area Connection Properties in Windows XP

- Mark the “Internet Protocol (TCP/IP)” and click “Properties”.
- Type in an “IP address”, for example, 192.168.1.2, which is under the same subnet as the Default IP Address of A8Ein BTS (192.168.1.222).
- Using the default “Subnet mask” (default: 255.255.255.0) setting in the first time.
- Keep the “Default gateway” as “Blank”.



9. Keep the “Preferred DNS server” and “Alternate DNS server” as “Blank” also.

10. Click “OK” when you finish setting and close the Window.

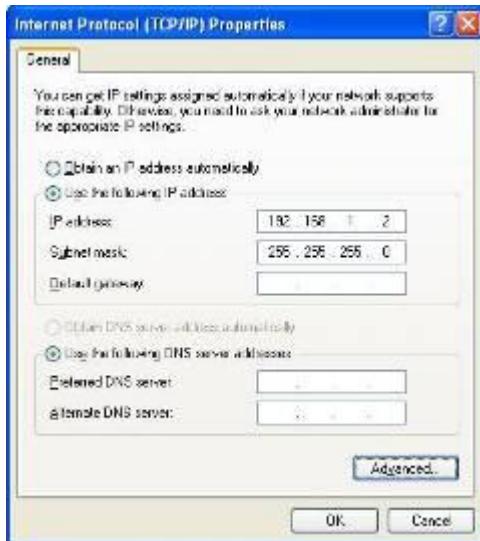


Figure 4 Internet Protocol (TCP/IP) Properties in Windows XP

#### 4.2 CHECK ACCESS

“ping” utility of Command Prompt is a handy tool to check the access to the A8Ein BTS.

1. Go to the Command Prompt by typing “cmd” in “Run”.
2. Type command:

```
ping 192.168.1.222
```

The A8Ein BTS shall respond to your ping request if A8Ein BTS and your PC have a correct connection.

**NOTE:** Using the same PC to ping different A8Ein BTS may cause ping failure. This is because A8Ein BTS has the same default IP address but different MAC addresses. You need to type command “arp -d” in Command Prompt to clear ARP table on PC before each ping.

#### 4.3 CONFIGURATION WITH WEB-ADMIN

The A8Ein can be accessed through a Web Browser, for example, Internet Explorer (IE).

1. Open an IE session and type the IP address of the A8Ein BTS. Example: <http://192.168.1.222> or <https://192.168.1.222>, where 192.168.1.222 is the A8Ein’s IP address. The **default IP Address** is **192.168.1.222**.
2. A window will pop up, as shown in Figure 5. Enter the user name and password in the corresponding fields, which are the same as for the CLI. The **default User Name** and **Password** are shown in Table 2. They are case sensitive.

Firmware version	Default User Name	Default Password
1.2.0.604	<b>root</b>	<b>superwifi123</b>

Table 2 A8Ein default User Name and Password

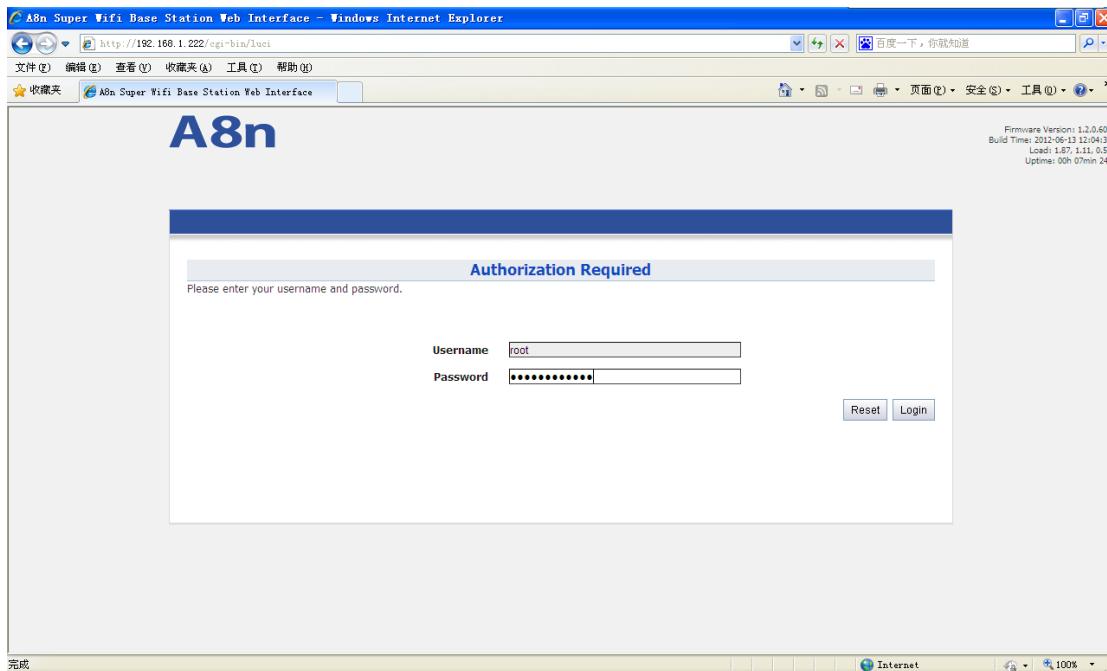


Figure 5 Enter User Name and Password

3. A login page in IE appears, as shown in Figure 6. A **Menu Bar** is located on the top of the IE window. Different functions can be accessed through the menu bar.

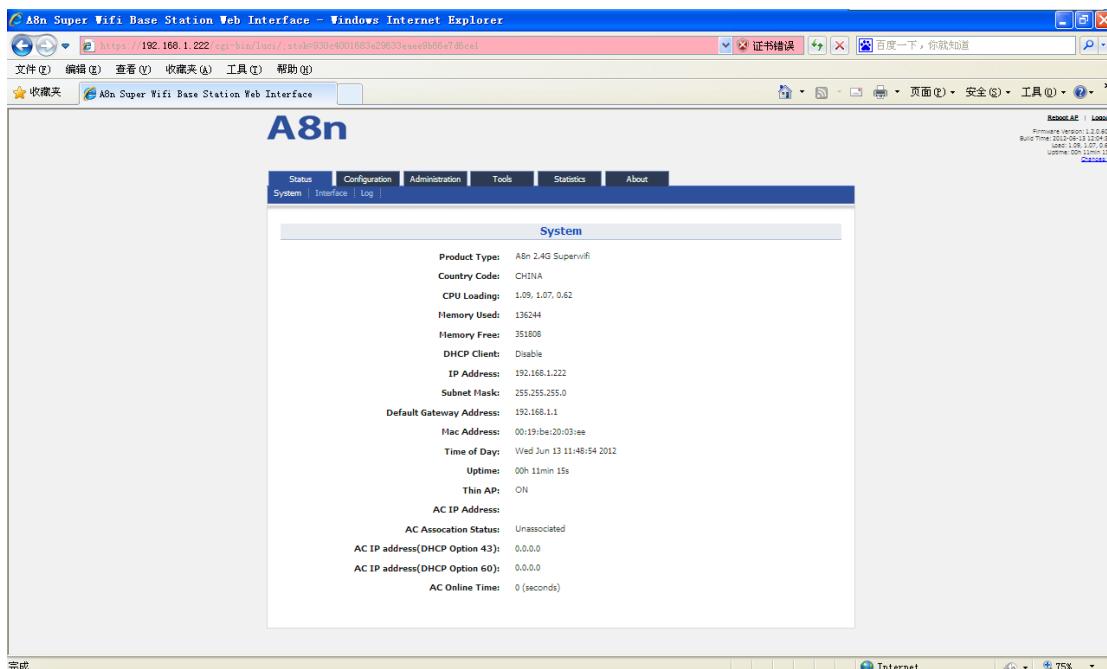


Figure 6 Web-admin Login Page

#### 4.4 INTERFACE INTRODUCTION

A8Ein interface is separated to 5 levels: Level 1 menu, Level 2 menu, Interface selection, Level 3 menu and Configuration options

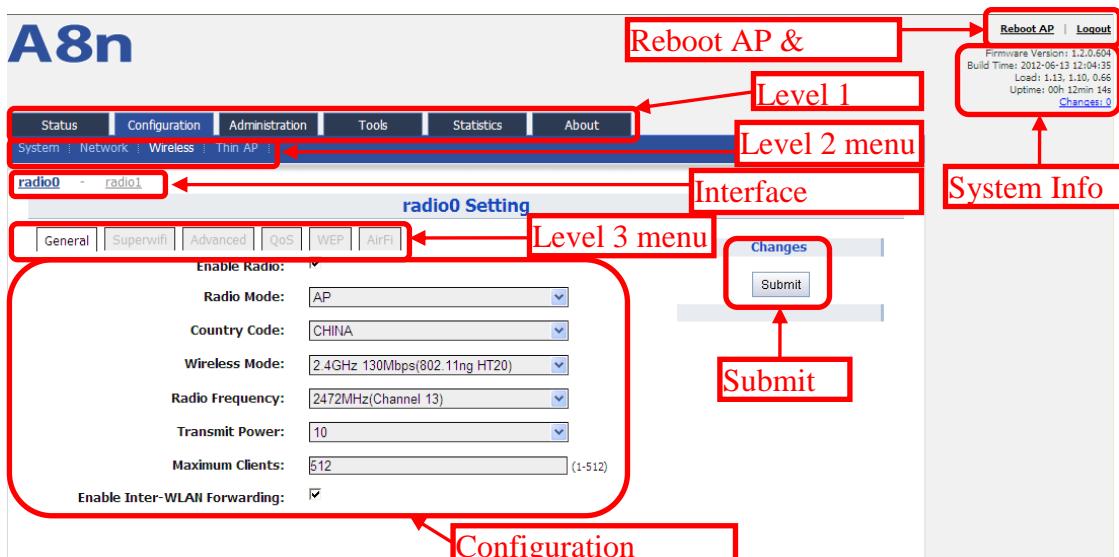


Figure 7 A8Ein webpage

#### 4.5 LOGOUT FROM A8EIN INTERFACE

On the right top corner of A8Ein Web interface, click “Logout” button to logout from A8Ein.

On the other side, you can directly close A8Ein webpage to logout from A8Ein.



Figure 8 Logout

### 5 SYSTEM STATUS

A8Ein Status function gives System information, interface information, Log and Statistics information.

#### 5.1 SYSTEM

You can select **Status->System** to check A8Ein basic information and real-time status.



**A8n**

Status | Configuration | Administration | Tools | Statistics | About

System | Interface | Log |

**System**

<b>Product Type:</b>	A8n 2.4G Superwifi
<b>Country Code:</b>	CHINA
<b>CPU Loading:</b>	1.18, 1.07, 0.96
<b>Memory Used:</b>	137992
<b>Memory Free:</b>	350060
<b>DHCP Client:</b>	Disable
<b>IP Address:</b>	192.168.1.222
<b>Subnet Mask:</b>	255.255.255.0
<b>Default Gateway Address:</b>	192.168.1.1
<b>Mac Address:</b>	00:19:be:20:03:ee
<b>Time of Day:</b>	Wed Jun 13 12:23:10 2012
<b>Uptime:</b>	00h 45min 31s
<b>Thin AP:</b>	ON
<b>AC IP Address:</b>	
<b>AC Assocation Status:</b>	Unassociated
<b>AC IP address(DHCP Option 43):</b>	0.0.0.0
<b>AC IP address(DHCP Option 60):</b>	0.0.0.0
<b>AC Online Time:</b>	0 (seconds)

*Figure 9 System information*

Following information can be found from “System” function:

**Product Type:** : A8Ein base station model.

**Country Code:** : A8Ein country code

**CPU Loading:** : A8Ein CPU loading

**Memory Used:** : A8Ein used memory (Byte)

**Memory Free:** : The rest memory (Byte)

**DHCP Client:** : Enable/disable DHCP Client

**IP Address:** : A8Ein current IP address

**Subnet Mask:** : A8Ein subnet mask

**Default Gateway Address:** : A8Ein gateway address

**Mac Address:** : A8Ein Ethernet interface MAC address

**Time of Day:** : System time

**Uptime:** : Operation time from last time reboot

**Thin AP:** : ON/OFF Thin AP function

**AC IP Address:** : On Thin AP mode, you will find AC IP Address

**AC Association Status** : On Thin AP mode, you will find the connection status between A8Ein and AC

**AC IP Address(DHCP Option 43)** : On Thin AP mode, you will find AC IP Address by DHCP Option 43

**AC IP Address(DHCP Option 60)** : On Thin AP mode, you will find AC IP Address by DHCP Option 60

**AC Online time** : Display AC online time

## 5.2 INTERFACE

You can select **Status -> Interface** to check interface information which includes 2.4GHz (radio0), 5GHz (radio1) and Ethernet information.

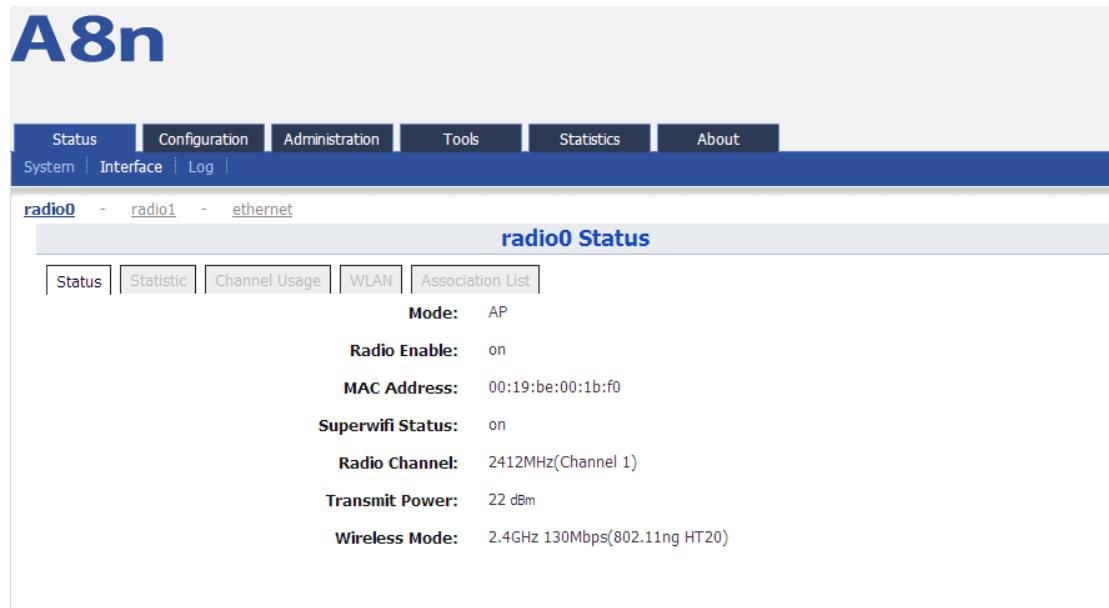


Figure 10 Interface status

### 5.2.1.1 2.4G INTERFACE STATUS

By selecting **Status -> Interface-> radio0**, you can find 2.4G interface (radio0) information which includes following 5 parts: Status, Statistic, Channel Usage, WLAN and Association List.

#### Status

Please select **Status -> Interface-> radio0 -> status** to check radio0 status, the webpage provides radio0 Mode, Radio Enable/Disable, MAC Address, Superwifi Status, Radio Channel, Transmit Power and Wireless Mode.



## A8n

Figure 11 Interface status

**Mode** : Operation mode

**Radio Enable** : radio0 status (ON/OFF)

**MAC Address** : radio0 MAC address

**Superwifi Status** : Superwifi Status (ON/OFF)

**Radio Channel** : radio0 current channel

**Transmit Power** : radio0 transmit power

**Wireless Mode** : radio0 wireless mode

### Statistic

Please select **Status** -> **Interface**-> **radio0** -> **Statistic** to check radio0 statistics information which includes radio0 Tx and Rx Packets, Tx and Rx Octets, Packet Rate, Throughput.

## A8n

	TX	RX
<b>Packets</b>	7952	218188
<b>Octets</b>	15813	40898807
<b>Packet Rate</b>	0	0
<b>Throughput</b>	0	0

Figure 12 Interface statistic

**Packets** : radio0 received and sent packets

**Octets** : radio0 received and sent octets



**Packet Rate**: radio0 packet rate

**Throughput** : radio0 throughput

### Channel usage

Please select **Status** -> **Interface**-> **radio0** -> **Channel Usage** to check radio0 channel usage information including: Sector, state, Tx Frame (%) , Rx Frame (%) , Busy State (%) , Noise Floor (dBm) , **CTL0**, **CTL1**, **EXT0**, **EXT1**

When the state of a sector is ON, it means this sector is enabled. When it is OFF, it means the sector is disabled or it is abnormal, please contact network administrator to check equipment.

## A8n

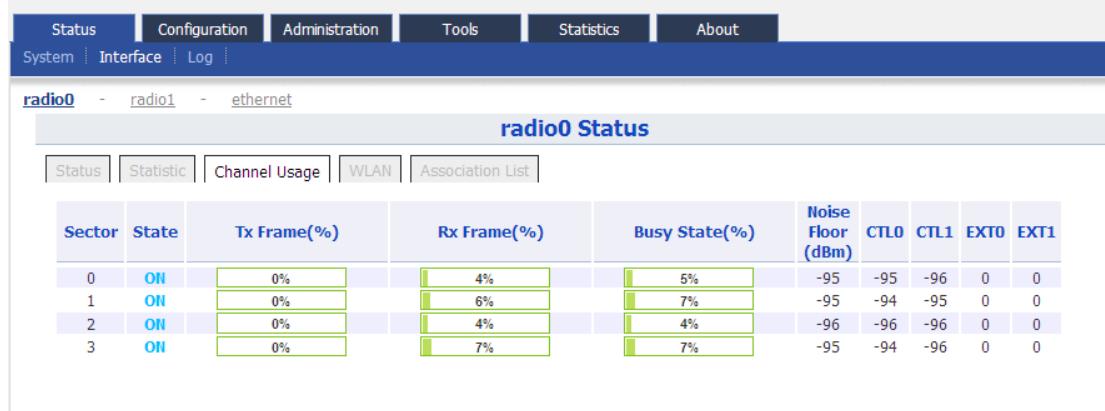


Figure 13 Channel usage

**Sector** : A8Ein has 4 sectors from 0~3

**State** : A8Ein sector state

**Tx Frame(%)** : Sector based transmit frames percentage

**Rx Frame(%)** : Sector based receive frames percentage

**Busy State(%)** : Sector based busy state percentage

**Noise Floor(dBm)** : Sector based noise floor

**CTL0** :

**CTL1** :

**EXT0** :

**EXT1** :

### WLAN

Please select **Status** -> **Interface**-> **radio0** -> **WLAN** to check radio0 wireless network information including: Device Id, WLAN, SSID, MAC Address, Auth Mode, Unicast Cipher, Multicast Cipher, Num of Station, Unicast Packets (TX/RX) , State.

When you enable a WLAN, you can find its relevant information in “State”.



## A8n

Device Id	WLAN	SSID	MAC Address	Auth Mode	Unicast Cipher	Multicast Cipher	Num of Station	Unicast Packets (TX/RX)	State
radio0	0	Superwifi Network 0	00:19:be:00:1b:f0	open	none	none	0	0/0	Enabled
radio0	1	Superwifi Network 1	02:19:be:00:1b:f0	open	none	none	0	0/0	Enabled

Figure 14 WLAN information

**Device Id** : 2.4G interface ID

**WLAN** : Wireless network number

**SSID** : A8Ein default SSID is Superwifi Network x (x is from 0 to 15)

**MAC Address** : 2.4G wireless network MAC address (BSSID)

**Auth Mode** : Authentication mode for each wireless network

**Unicast Cipher** : Unicast cipher mode for each wireless network

**Multicast Cipher** : Multicast cipher mode for each wireless network

**Num of Station** : Associated client number

**Unicast Packets (TX/RX)** : Unicast sent and received packets for each wireless network

**State** : Wireless network state

### Association list

Please select **Status** -> **Interface**-> **radio0** -> **Association List** to get associated client information including: Total Client Association, Client Association Histogram, STA ID, Mac Address, Wlan ID, Sector, SNR, Download/Bytes, Upload/Bytes, Download Rate/kbps, Upload Rate/kbps.

## A8n

STA ID	Mac Address	Wlan ID	Sector	SNR	Download	Upload	Download Rate	Upload Rate
				(dB)	(Bytes)	(Bytes)	(Kbps)	(Kbps)

Figure 15 Association list

**Total Client Association** : Total associated clients



**Client Association Histogram**: Association client history records

**STA ID**: Wireless client ID

**Mac Address**: Wireless client MAC address

**Wlan ID**: Client associated WLAN ID

**Sector**: Client associated sector

**SNR**: Wireless client SNR

**Download**: Wireless client download traffic (Bytes)

**Upload**: Wireless client upload traffic (Bytes)

**Download Rate**: Wireless client download rate (kbps) .

**Upload Rate**: Wireless client upload rate (kbps) .



**Warnings : the interface will self-refresh with 10s interval.**

### 5.2.1.2 5G INTERFACE

Please select **Status** -> **Interface**-> **radio1** to check 5G radio (radio1) state including Status, Statistic, Channel Usage, WLAN, Association List.

#### Status

Please select **Status** -> **Interface**-> **radio1** -> **status** to check radio1 status. In this page, you will find radio1 mode, Radio Enable, MAC Address, Superwifi Status, Radio Channel, Transmit Power, Wireless Mode.

Parameter	Value
Mode:	AP
Radio Enable:	on
MAC Address:	90:a4:de:81:10:17
Superwifi Status:	off
Radio Channel:	5180MHz(Channel 36)
Transmit Power:	14 dBm
Wireless Mode:	5GHz 54Mbps(802.11a)

Figure 16 5G interface state

**Mode**: radio1 operation mode

**Radio Enable**: radio1 enabled or disabled

**MAC Address**: radio1 MAC address

**Superwifi Status**: Superwifi ON/OFF Status



**Radio Channel** : radio1 current channel

**Transmit Power** : radio1 transmit power

**Wireless Mode** : radio1 wireless mode

## Statistic

Please select **Status** -> **Interface**-> **radio1** -> **Statistic** to check radio1 statistic information which includes radio1 Tx & Rx Packets, Tx & Rx Octets, Packet Rate and Throughput.

	TX	RX
Packets	66	384
Octets	6237	51228
Packet Rate	0	0
Throughput	0	0

Figure 17 5G interface statistic

**Packets** : radio1 sent and received packets

**Octets** : radio1 sent and received octets

**Packet Rate** : radio1 packet rate

**Throughput** : radio1 throughput

## Channel usage

Please select **Status** -> **Interface**-> **radio1** -> **Channel Usage** to check radio1 channel usage information including Noise Floor (dBm) , **CTL0**, **CTL1**, **EXT0**, **EXT1**.

Noise Floor(dBm)	CTL0	CTL1	EXT0	EXT1
-104	-103	-104	0	0

Figure 18 5G interface channel usage

**Noise Floor(dBm)** : 5GHz noise floor in A8Ein surrounding environment

**CTL0** : .

**CTL1** : ◦

**EXT0** : ◦

**EXT1** : ◦

## WLAN

Please select **Status** -> **Interface**-> **radio1** -> **WLAN** to check radio1 wireless network information which includes Device Id, WLAN, SSID, MAC Address, Auth Mode, Unicast Cipher, Multicast Cipher, Num of Station, Unicast Packets (TX/RX) and State.

When you enable a WLAN, you can find its relevant information in “State”.

Device Id	WLAN	SSID	MAC Address	Auth Mode	Unicast Cipher	Multicast Cipher	Num of Station	Unicast Packets (TX/RX)	State
radio1	0	Superwifi Network 0	90:a4:de:81:10:17	open	none	none	0	0/0	Enabled

Figure 19 5G interface WLAN information

**Device Id** : 5G interface ID

**WLAN** : Wireless LAN number

**SSID** : A8Ein default SSID is “Superwifi Network x” (x is from 0 to 15)

**MAC Address** : 5G wireless network MAC address (BSSID)

**Auth Mode** : Authentication mode for each wireless network

**Unicast Cipher** : Unicast cipher mode for each wireless network

**Multicast Cipher** : Multicast cipher mode for each wireless network

**Num of Station** : Associated client number

**Unicast Packets (TX/RX)** : Unicast sent and received packets for each wireless network

**State** : Wireless network state

## Association List

Please select **Status** -> **Interface**-> **radio1** -> **Association List** to get associated client information including: Total Client Association, Client Association Histogram, STA ID, Mac Address, Wlan ID, Sector, SNR, Download/Bytes, Upload/Bytes, Download Rate/kbps, Upload Rate/kbps.



# A8n

The screenshot shows the 'radio1 Status' page of the A8n web interface. At the top, there are tabs for Status, Configuration, Administration, Tools, Statistics, and About. Below these are sub-tabs for System, Interface, and Log. The main content area shows a breadcrumb trail: radio0 - radio1 - ethernet. The title 'radio1 Status' is centered above a navigation bar with links for Status, Statistic, Channel Usage, WLAN, and Association List. Underneath is a section for 'Total Client Association' with a value of 0. A link 'Client Association Histogram' leads to a histogram view. A note says 'First 50 stations are listed, for more information, please click [Search](#)'. Below is a table header for 'STA ID', 'Mac Address', 'Wlan ID', 'SNR', 'Download', 'Upload', 'Download Rate', and 'Upload Rate'. The table includes units (dB, Bytes, Kbps).

Figure 20 5G interface association list

**Total Client Association:** Total associated clients

**Client Association Histogram:** Association client history records

**STA ID:** Wireless client ID

**Mac Address:** Wireless client MAC address

**Wlan ID:** Client associated WLAN ID

**Sector:** Client associated sector

**SNR:** Wireless client SNR

**Download:** Wireless client download traffic (Bytes)

**Upload:** Wireless client upload traffic (Bytes)

**Download Rate:** Wireless client download rate (kbps) .

**Upload Rate:** Wireless client upload rate (kbps) .

 **Warnings :** *the interface will self-refresh with 10s interval.*

### 5.2.1.3 ETHERNET INTERFACE

Please select **Status** -> **Interface**-> **Ethernet** to check Ethernet interface information including Status and Statistic.

#### Status

Please select **Status** -> **Interface**-> **etherent** -> **status** to check Ethernet interface status which includes Ethernet MAC Address, Speed, Duplex, Auto-negotiation and Link Detected.



## A8n

radio0 - radio1 - ethernet

**ethernet Status**

Status	Statistic
--------	-----------

**MAC Address:** 00:19:be:20:03:ee  
**Speed:** 1000Mb/s  
**Duplex:** Full  
**Auto-negotiation:** on  
**Link Detected:** yes

Figure 21 Ethernet interface state

**MAC Address** : A8Ein Ethernet MAC address

**Speed** : A8Ein Ethernet speed

**Duplex** : A8Ein Ethernet duplex mode (Full/Half)

**Auto-negotiation** : A8Ein Ethernet auto-negotiation mode ON or OFF, by default it is “ON”.

**Link Detected** : Whether A8Ein Ethernet do link detection, by default it is “yes”.

### Statistic

Please select **Status** -> **Interface**-> **ethernet** -> **Statistic** to check Ethernet statistic information including Ethernet Tx & Rx Packets, Tx & Rx Octets, Packet Rate and Throughput.

## A8n

radio0 - radio1 - ethernet

**ethernet Status**

Status	Statistic
--------	-----------

	TX	RX
<b>Packets</b>	174579	108935
<b>Octets</b>	167376982	15306552
<b>Packet Rate</b>	14	8
<b>Throughput</b>	100384	10006

Figure 22 Ethernet interface statistic

**Packets** : Ethernet sent and received packets

**Octets** : Ethernet sent and received octets

**Packet Rate** : Ethernet interface packet rate

**Throughput** : Ethernet interface throughput



### 5.3 LOG

In order to realize easy monitoring and diagnosis, A8Ein provides log function. Selecting **Status** -> **Log**, you will find 4 sub-items below: System Log, Panic Log, Test Log and Download Logs.

#### System Log

The system log gives A8Ein system information like: software, hardware, system configuration, and self-checking result. Please select **Status** -> **Log** -> **System Log** to check system log:

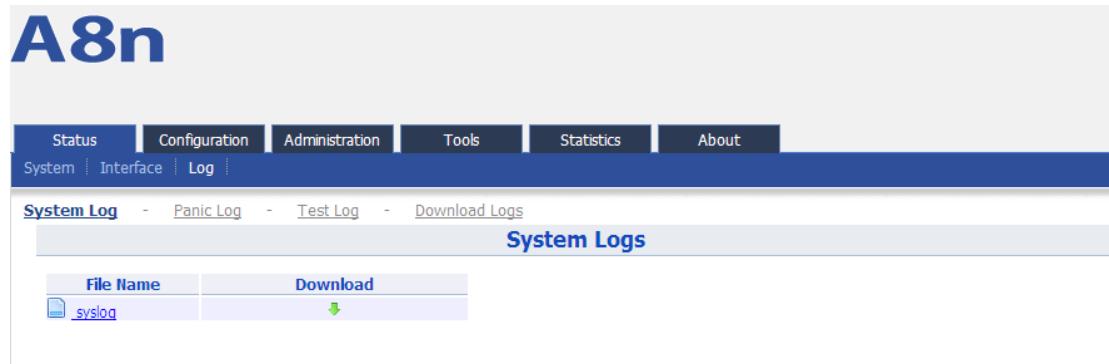


Figure 23 System log

**File Name** : The name of log files, you can click it to open the log file.

**Download** : Download log file. Please click the green downward arrow to download the log file.

Click **File Name**-> **Syslog**, and you will find the log page below:

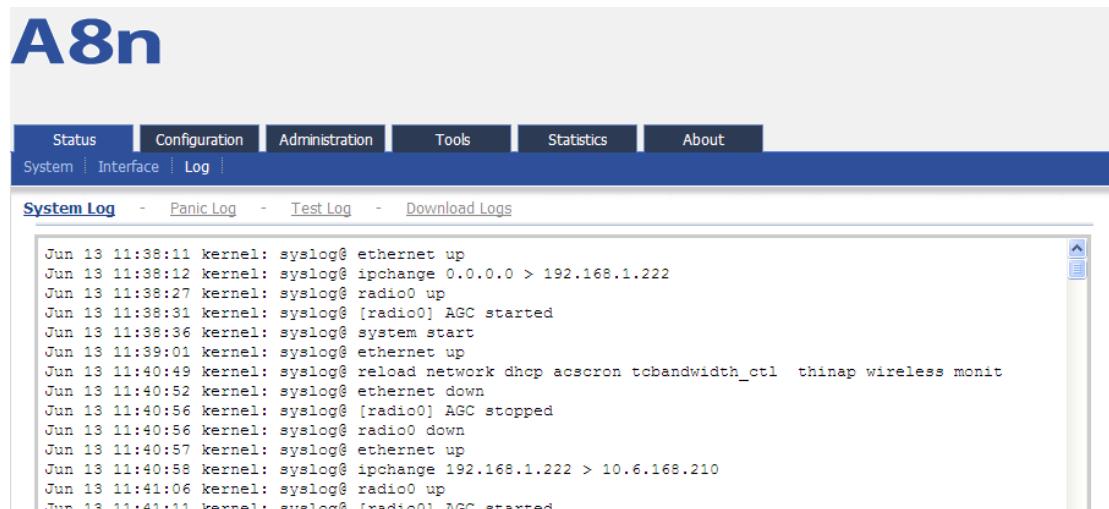


图 Error! No text of specified style in document.-1 打开系统日志文件

Please click **Back** at the end of log to come back the previous page:



```

Feb 3 20:10:56 kernel: syslog@ [radio0 wlan0] 44:a7:cf:83:88:cf associated at aid 1: short preamble, sh
Feb 3 20:11:33 kernel: syslog@ [radio0 wlan0] received disassoc (reason:0x8) from 44:a7:cf:83:88:cf
Feb 3 20:11:51 kernel: syslog@ [radio0 wlan0] received auth frame (algorithm 0 seq 1) from 44:a7:cf:83:88:cf
Feb 3 20:11:51 kernel: syslog@ [radio0 wlan0] send auth response to 44:a7:cf:83:88:cf
Feb 3 20:11:51 kernel: syslog@ [radio0 wlan0] 44:a7:cf:83:88:cf associated at aid 1: short preamble, sh
Feb 3 20:12:30 kernel: syslog@ [radio0 wlan0] received disassoc (reason:0x8) from 44:a7:cf:83:88:cf
Feb 3 20:12:34 kernel: syslog@ [radio0 wlan0] received auth frame (algorithm 0 seq 1) from 44:a7:cf:83:88:cf
Feb 3 20:12:34 kernel: syslog@ [radio0 wlan0] send auth response to 44:a7:cf:83:88:cf
Feb 3 20:12:34 kernel: syslog@ [radio0 wlan0] 44:a7:cf:83:88:cf associated at aid 1: short preamble, sh
Feb 3 20:13:29 kernel: syslog@ [radio0 wlan0] received disassoc (reason:0x8) from 44:a7:cf:83:88:cf
Feb 3 20:13:33 kernel: syslog@ [radio0 wlan0] received auth frame (algorithm 0 seq 1) from 44:a7:cf:83:88:cf
Feb 3 20:13:33 kernel: syslog@ [radio0 wlan0] send auth response to 44:a7:cf:83:88:cf

```

[Back](#)

Figure 24 System log “Back” button

## Panic Log

Panic Log is a self-generated log when the system finds some internal errors and need to reboot itself. Please select **Status** -> **Log** -> **Panic Log** to go to Panic log page:

Figure 25 Panic Logs

**File Name** : The name of Panic log files, you can click it to open the log file.

**Download** : Dowload Panic log file. Please click the green downward arrow to download the log file.

**Delete** : Delete Panic log file.

## Test Log

Please select **Status** -> **Log** -> **Test Log** to go to Test Log page:

Figure 26 Test Logs

**File Name** : The name of Test log files, you can click it to open the log file.

**Download** : Dowload Test log file. Please click the green downward arrow to download the log file.



**Delete** : Delete Test log file.

## Download Logs

Please select **Status** -> **Log** -> **Download Logs** to go to download logs page.

Figure 27 Download Logs

**Download All Log files:** Dowload all log files, clicking this button you can download all types of log files.

## 6 SYSTEM CONFIGURATION

### 6.1 A8EIN CONFIGURATION PROCEDURES

1 Users need to click **Submit** button to store the changed settings.

Figure 28 Submit changes

2 On the right top corner, there is an **Unsaved Changes** button, you can click it to check submitted items.



Figure 29 Unsaved changes

3 Please click **Unsaved Changes** button to check changed setting detail information.

This screenshot shows the 'Configuration / Changes' page. It includes a legend at the top: Section added (green square), Section removed (red square), Option changed (light green square), and Option removed (pink square). Below the legend is a list of configuration changes in a green box, which includes: wireless.interface\_radio0\_1, wireless.interface\_radio0\_1.auth\_mode=shared, wireless.interface\_radio0\_1.cipher=wep, and wireless.interface\_radio0\_1.vap\_enable=1. At the bottom of the page are Back, Save & Apply, and Revert buttons. A red box surrounds the list of changes, and a red arrow points from the 'Unsaved Changes: 3' link in Figure 29 to the 'Section added' entry in the legend here.

Figure 30 Unsaved changes detail

4 Click **Save&Apply** button to perform all submitted changes:

This screenshot shows the 'Configuration / Apply' page. It displays a message: 'Applying changes Waiting for router...' and 'The following changes have been committed:'. Below this is a legend and a list of committed changes in a green box, which includes: wireless.interface\_radio0\_2 and wireless.interface\_radio0\_2.vap\_enable=1. On the right side, there's a status bar with firmware information and a 'Changes: 0' link. A red box surrounds the progress message, and another red box surrounds the 'Save & Appl' button. An annotation 'Click Save & Appl' is placed next to the button.

Figure 31 Save and Apply changes

5 You will find “The following changes have been committed”

This screenshot shows the 'Configuration / Apply' page again. It displays the message 'The following changes have been committed:' followed by a red box. Below this is a legend and a list of committed changes in a green box, which includes: wireless.interface\_radio0\_2 and wireless.interface\_radio0\_2.vap\_enable=1. A red box surrounds the 'Save & Appl' button.

Figure 32 Changes have been committed

6 The whole committing changes progress, it is no need to reboot A8Ein.

## 6.2 BASIC CONFIGURATION

### 6.2.1 NTP CONFIGURATION

NTP is a network time protocol for the A8Ein BTS to synchronize the system time. NTP is disabled by default. If NTP is needed, IP address of the NTP server must be added and A8Ein will synchronize with the NTP server. It is useful to maintain the network and make sure all APs are using the same system time by setting the same NTP server.

Please select **Configuration** -> **System** to configure NTP setting.

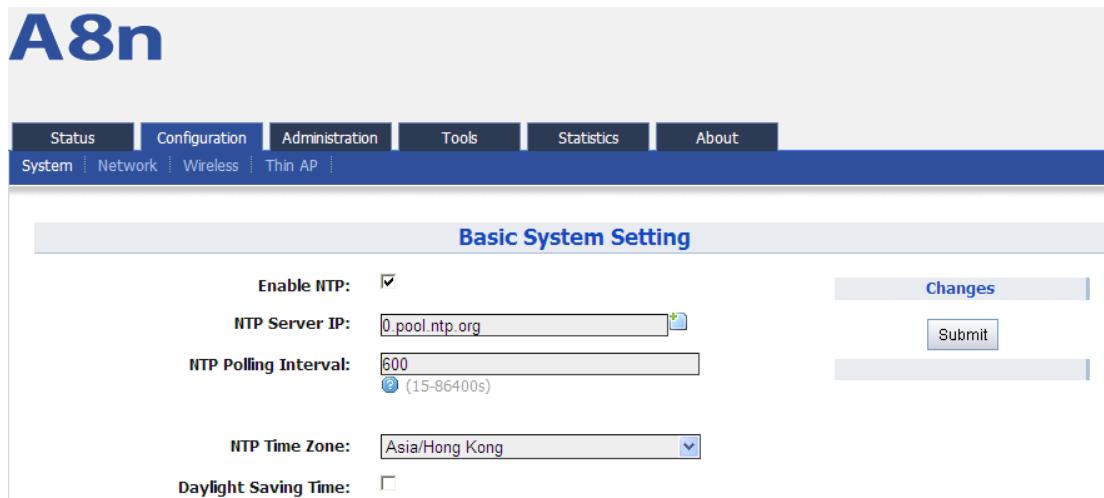


Figure 33 NTP Setting

**Enable NTP:** Enable or disable NTP function, by default it is selected.

**NTP Server IP:** NTP server IP address, please click “” to add new NTP server IP address.

**NTP Polling Interval:** By default, it is 600s

**NTP Time Zone:** Time Zone setting, by default it is Asia/Hong Kong.

**Daylight Saving Time:** By default, it is not selected.

Procedures :

- 1 Select **Configuration**->**System**, to go to system setting page.
- 2 Select **Enabled NTP** to enable NTP.
- 3 Add NTP IP address in **NTP Server IP**.
- 4 Set **NTP Polling Interval**.
- 5 Choose local **NTP Time Zone**.
- 6 Set **Daylight Saving Time** (optional)
- 7 Click **Submit**
- 8 Click **Save&Apply** to commit changes.

## 6.3 NETWORK CONFIGURATION

Please select **Configuration** -> **Network** to go to Network configuration page.

### 6.3.1 GENERAL NETWORK CONFIGURATION

Please select **Configuration** -> **Network** -> **General** and start to configure general settings.

**General** - **VLAN** - **STP**

**General Network Setting**

**Network Setting:** Switch Mode

**Internet Connection Type:** Static

**IP Address:** 192 . 168 . 1 . 222

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

**Default Gateway Address:** 192 . 168 . 1 . 1

**DNS Server IP Address:** [empty]

**DHCP Option 60 Enterprise Code:** 16748 (0-65535)

**Changes** **Submit**

Figure 34 Network Setting

**Network Setting** : Currently, it only has Switch Mode

**Internet Connection Type** : Static IP or DHCP client

**IP Address** : If A8Ein uses static IP, please give it a fixed IP

**Subnet Mask** : If A8Ein uses static IP, please give it a subnet mask

**Default Gateway Address** : If A8Ein uses static IP, please give it a Gateway address

**DNS Server IP Address** : If A8Ein uses static IP, please set DNS IP address

**DHCP Option 60 Enterprise Code** : DHCP Option 60 enterprise code is used to communicate with AC in Thin AP mode.

#### 1.1.1.1 Network setting

Switch Mode

**General** - **VLAN** - **STP**

**General Network Setting**

**Network Setting:** Switch Mode

**Internet Connection Type:** Static

**IP Address:** 192 . 168 . 1 . 222

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

**Default Gateway Address:** 192 . 168 . 1 . 1

**DNS Server IP Address:** [empty]

**DHCP Option 60 Enterprise Code:** 16748 (0-65535)

**Changes** **Submit**

Figure 35 Network Mode

In switch mode, A8Ein works as a switch to deliver data between Ethernet interface and wireless interfaces.

Configuration procedures :

- 1 Select **Configuration->Network->General** to go to configuration page.
- 2 **Network Setting:** Switch Mode.
- 3 Click **Submit**.
- 4 Click **Save&Apply** to apply changes.

#### *1.1.1.2 Internet Connection Type*

In switch mode, there are 2 types: Static IP or DHCP client

The screenshot shows the A8n web interface with the following details:

- Header:** Status, Configuration, Administration, Tools, Statistics, About.
- Sub-Header:** System, Network, Wireless, Thin AP.
- Current View:** General - VLAN - STP.
- Section:** General Network Setting.
- Form Fields:**
  - Network Setting: Switch Mode
  - Internet Connection Type: Static (highlighted with a red box)
  - IP Address: 192.168.1.222
  - Subnet Mask: 255.255.255.0
  - Default Gateway Address: 192.168.1.1
  - DNS Server IP Address: (empty)
- Buttons:** Changes, Submit.

*Figure 36 Internet Connection Type*

Procedures :

- 1 Select **Configuration->Network->General**
- 2 **Internet Connection Type:** choose Static or DHCP
- 3 Click **Submit**
- 4 Click **Save&Apply** to apply.

#### **1) Static IP**

Users need manually configure A8Ein IP address, subnet mask, gateway address and DNS server IP address:



# A8n

The screenshot shows the 'General' tab selected under 'Network'. The 'Internet Connection Type' dropdown is set to 'Static'. A red box highlights the IP address, Subnet Mask, Default Gateway Address, and DNS Server IP Address input fields. To the right of the highlighted area are 'Changes' and 'Submit' buttons.

Setting	Value
Internet Connection Type	Static
IP Address	192.168.1.222
Subnet Mask	255.255.255.0
Default Gateway Address	192.168.1.1
DNS Server IP Address	

Figure 37 Static IP

## Procedures :

- 1 Select Configuration->Network->General
- 2 Internet Connection Type : choose "Static"
- 3 IP Address : input IP address
- 4 Subnet Mask : input subnet mask
- 5 Default Gateway Address : input gateway address
- 6 DNS Server IP Address: input DNS address
- 7 Click Submit
- 8 Click Save&Apply to apply

## 2) DHCP

A8Ein will get IP from DHCP server

The screenshot shows the 'General' tab selected under 'Network'. The 'Internet Connection Type' dropdown is set to 'DHCP'. A red box highlights the 'DHCP Option 60 Enterprise Code' input field, which contains the value '16748'. To the right of the highlighted area are 'Changes' and 'Submit' buttons.

Setting	Value
Internet Connection Type	DHCP
DHCP Option 60 Enterprise Code	16748

Figure 38 DHCP Client

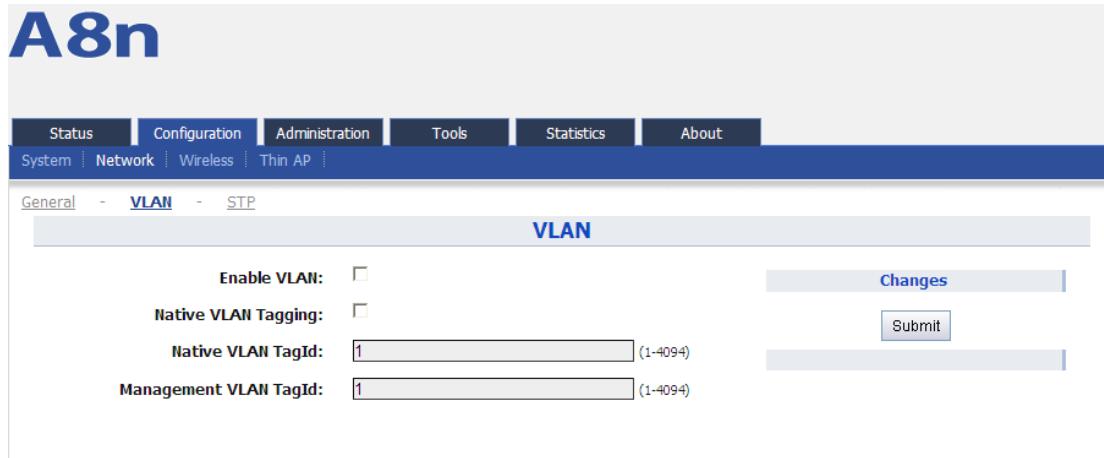
## Procedures :

- 1 Select Configuration->Network->General

- 2 **Internet Connection Type**: choose DHCP;
- 3 Click **Submit**
- 4 Click **Save&Apply** to apply

### 6.3.2 VLAN FUNCTION

Select **Configuration** -> **Network** -> **VLAN** to access to VLAN configuration page.



*Figure 39 VLAN Setting*

By default, A8Ein VLAN setting is disabled.

**Enable VLAN** : Enable or Disable VLAN function

**Native VLAN Tagging** : By default, it is not selected.

**Native VLAN TagId** : Native VLAN ID

**Management VLAN TagId** : Management VLAN ID .

Procedures :

- 1 Select **Configuration**->**Network**->**VLAN**
- 2 **Enable VLAN**: Enable or disable VLAN
- 3 **Native VLAN Tagging**: Enable or disable native VLAN tagging
- 4 **Native VLAN TagId**: input Native VLAN ID
- 5 **Management VLAN TagId**: input management VLAN ID
- 6 **VLAN TagId**: input VLAN ID
- 7 Click **Submit**
- 8 Click **Save&Apply** to apply

### 6.3.3 STP

Select **Configuration** -> **Network** -> **STP** to access STP configuration page.



# A8n

Figure 40 STP Setting

**Enable STP Mode** : By default, it is disabled

Procedures :

- 1 Select Configuration->Network->STP
- 2 **Enable STP Mode** : Select it to enable STP function. By default, it is disabled.
- 3 Click **Submit**
- 4 Click **Save&Apply** to apply

## 6.4 WIRELESS

Select Configuration -> Wireless to access wireless network configuration page. There are 2 interfaces, 2.4G (radio0) and 5G (radio1) :

Figure 41 2.4G radio setting

### 6.4.1.1 2.4G RADIO

Select Configuration -> Wireless -> radio0 to change 2.4G radio setting. You can configure the items below: General, Superwifi, WLAN, Advanced, QoS, WEP, AirFi.

#### 6.4.1.2 2.4G GENERAL CONFIGURATION

Select **Configuration** -> **Wireless** -> **radio0**-> **General** to access 2.4G general configuration page:

The screenshot shows the A8n web interface with the following navigation bar: Status, Configuration, Administration, Tools, Statistics, About. Under System, Network, Wireless, Thin AP are visible. The main title is "radio0 Setting". Below it, there are tabs: General (selected), Superwifi, WLAN, Advanced, QoS, WEP, AirFi. On the right, there are "Changes" and "Submit" buttons. The "radio0" tab is selected. The "radio0 Setting" section contains the following fields:

- Enable Radio:** checked
- Radio Mode:** AP
- Country Code:** HONG KONG
- Wireless Mode:** 2.4GHz 130Mbps(802.11ng HT20)
- Radio Frequency:** 2412MHz(Channel 1)
- Transmit Power:** 22
- Maximum Clients:** 512 (1-512)
- Enable Inter-WLAN Forwarding:** checked

Figure 42 2.4G radio parameters

**Enable Radio**: Enable or disable 2.4G radio, by default it is enabled.

**Radio Mode**: 2.4G Radio mode

**Country Code**: By default, it is HONG KONG

**Wireless Mode**: By default, it is 2.4GHz 130Mbps(802.11ng HT20)

**Radio Frequency**: By default, it is 2412MHz(Channel 1)

**Transmit Power**: By default, it is 22

**Maximum Clients**: By default, it is 512

**Enable Inter-WLAN Forwarding**: By default, it is allowed.

**Disable HT20/HT40 Auto Switch**: In HT40 mode, enable or disable auto switch between HT40 and HT20.

Procedures :

- 1 Select **Configuration**->**Wireless** ->**Radio0**->**General**
- 2 **Enable Radio**: Select to enable 2.4G Radio
- 3 **Radio Mode**: Select to AP mode
- 4 **Country Code**: Select your country code
- 5 **Wireless Mode**: Select wireless mode
- 6 **Transmit Power**: Set transmit power
- 7 **Maximum Clients**: Set 2.4G maximum clients
- 8 Click **Submit**

- 
- 9 Click **Save&Apply** to apply

#### **6.4.1.3 SUPERWIFI**

Select **Configuration** -> **Wireless** -> **radio0**-> **Superwifi** to access to superwifi configuration page

Sector Index	State
0	<input checked="" type="radio"/> ON <input type="radio"/> OFF
1	<input checked="" type="radio"/> ON <input type="radio"/> OFF
2	<input checked="" type="radio"/> ON <input type="radio"/> OFF
3	<input checked="" type="radio"/> ON <input type="radio"/> OFF

*Figure 43 Superwifi setting*

Procedures :

1. Select **Configuration**->**Wireless**->**radio0**->**Superwifi**
2. **State**: enable or disable the sector
3. **Range Optimization**: optimized for the coverage range
4. Click **Submit**
5. Click **Save&Apply** to apply

#### **6.4.1.4 2.4G WLAN**

Select **Configuration** -> **Wireless** -> **radio0**-> **WLAN** to access to 2.4G radio WLAN setting page:

# A8n

WLAN	SSID	Max Clients	Hide SSID	Allow Intra-WLAN Forwarding	Enable	
0	Superwifi Network 0	512	No	No	Yes	
1	Superwifi Network 1	512	No	No	No	
2	Superwifi Network 2	512	No	No	No	
3	Superwifi Network 3	512	No	No	No	
4	Superwifi Network 4	512	No	No	No	
5	Superwifi Network 5	512	No	No	No	
6	Superwifi Network 6	512	No	No	No	
7	Superwifi Network 7	512	No	No	No	
8	Superwifi Network 8	512	No	No	No	

Figure 44 WLAN setting

A8Ein2.4G radio supports maximum 16 WLAN, and they can be configured separately.

[WLAN] : WLAN number, from 0-15

[SSID] : Support maximum 32 characters, default SSID is : Superwifi Network X, X is WLAN number.

[Max Clients] : Max. associated clients

[Hide SSID] : By default, it is disabled.

[Allow Intra-WLAN Forwarding] : Allow or block inter-WLAN communication

## 6.4.1.5 WLAN X(0-15) GENERAL CONFIGURATION

Select Configuration -> Wireless -> radio0-> WLAN to edit “” WLAN, and then select WLAN General.



# A8n

Status   Configuration   Administration   Tools   Statistics   About

System   Network   Wireless   Thin AP

radio0 - radio1

**radio0:wlan0 Setting**

<a href="#">WLAN General</a>	<a href="#">WLAN Security</a>	<a href="#">QoS</a>	<a href="#">Bandwidth Control</a>	<a href="#">Changes</a>
<input checked="" type="checkbox"/> <b>Enable WLAN:</b>				<a href="#">Submit</a>
<input type="checkbox"/> <b>VLAN Pass Through:</b>				<a href="#">Back to Overview</a>
<b>VLAN TagId:</b> <input type="text" value="1"/> (1-4094)				
<input type="checkbox"/> <b>Hide SSID:</b>				
<b>SSID:</b> <input type="text" value="Superwifi Network 0"/>				
<input type="checkbox"/> <b>Allow Intra-WLAN Forwarding:</b>				
<b>Max Clients:</b> <input type="text" value="512"/> (1-512)				
<b>Access Traffic Right:</b> <input type="button" value="Full Access"/>				

Figure 45 WLAN general setting

**Enable WLAN** : Enable or disable this WLAN

**VLAN Pass Through** : VLAN pass through this WLAN

**VLAN TagId** : set VLAN ID

**Hide SSID** : Hide this SSID or not

**SSID** : set SSID

**Allow Intra-WLAN Forwarding** : Allow or block inter-WLAN communication

**Max Clients** : Maximum value is 512

**Back to Overview** : Go back to previous page

## Procedures :

1. Select **Configuration** -> **Wireless** -> **radio0**-> **WLAN** to edit “” WLAN, and then select **WLAN General**.
2. **Enable WLAN**: select to enable this WLAN
3. **VLAN Pass Through**: allow or don't allow VLAN pass through
4. **VLAN TagId**: Set VLAN ID
5. **SSID**: set SSID
6. **Allow Intra-WLAN Forwarding**: Allow or block
7. **Max Clients**: Maximum is 512
8. Click **Submit**
9. Click **Save&Apply** to apply



#### 6.4.1.6 WLAN X(0-15) SECURITY

A8Ein 2.4GHz supports Open, Shared Key, WPA, WPA-PSK, WPA2, WPA2-PSK, WAPI, WAPI-PSK authentication mode, and Disabled, WEP, AES, TKIP, SMS4 cipher mode.

Select Configuration -> Wireless -> radio0-> WLAN to edit “” WLAN, and then select WLAN Security to access to security configuration page.

Figure 46 WLAN security setting

#### 6.4.1.7 OPEN

After selecting Open, you can select Disabled or WEP:

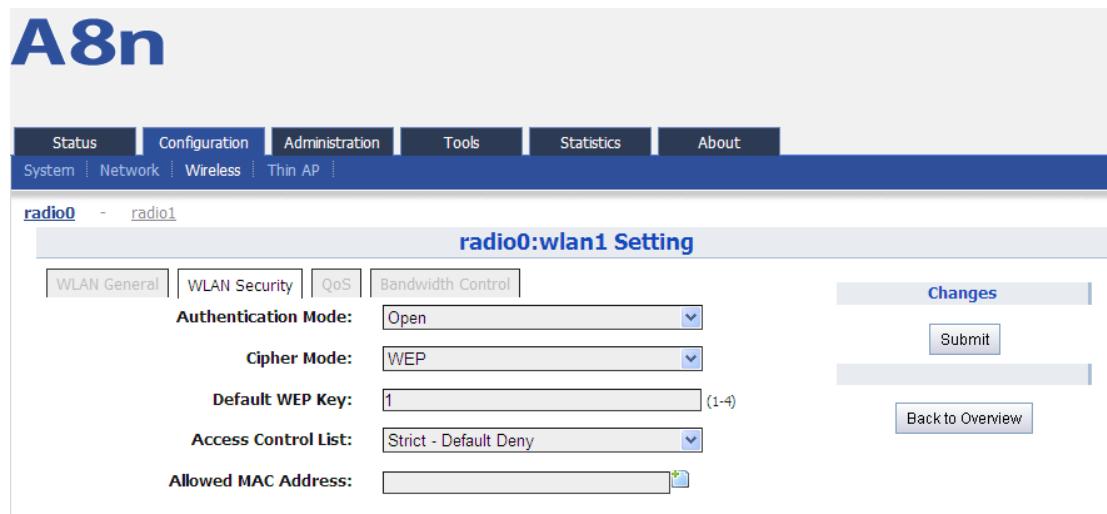
Figure 47 Open & No security

Open & No security procedures :

1. Select Configuration -> Wireless -> radio0-> WLAN to edit “” WLAN, and then select WLAN Security to access to security configuration page
2. Authentication Mode choose Open
3. Cipher Mode choose Disabled
4. Click Submit
5. Click Save&Apply to apply

### Open – WEP Procedures :

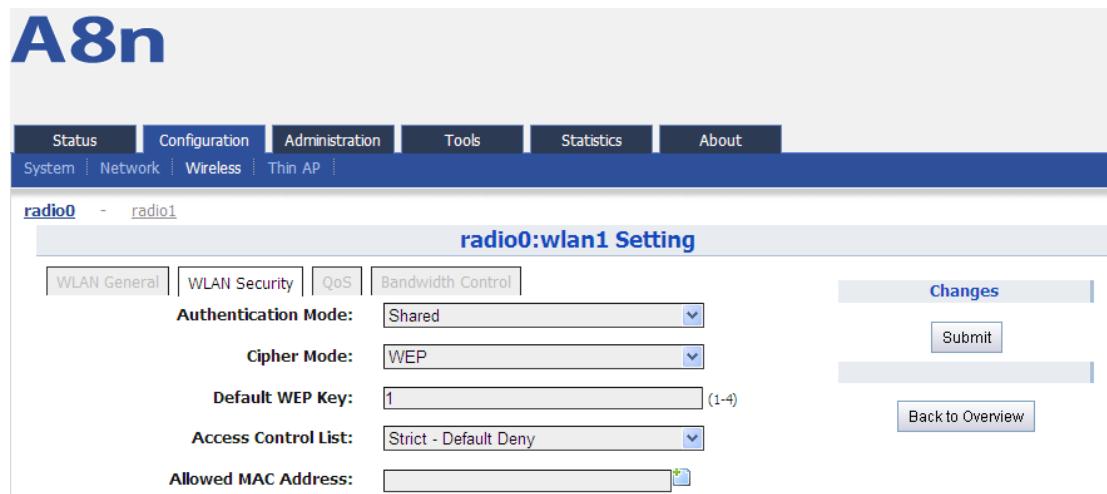
1. Select **Configuration** -> **Wireless** -> **radio0**-> **WLAN** to edit “” WLAN, and then select **WLAN Security** to access to security configuration page
2. **Authentication Mode**: choose Open
3. **Cipher Mode**: choose WEP
4. **Default WEP Key**: set the password
5. Click **Submit**
6. Click **Save&Apply** to apply



The screenshot shows the A8n web interface for configuring radio0:wlan1. The top navigation bar includes Status, Configuration, Administration, Tools, Statistics, and About. Below it, System, Network, Wireless, and Thin AP tabs are present. The main content area is titled "radio0:wlan1 Setting". It features tabs for WLAN General, WLAN Security (which is selected), QoS, and Bandwidth Control. Under WLAN Security, the "Authentication Mode" dropdown is set to "Open", "Cipher Mode" is "WEP", and the "Default WEP Key" field contains "1". Other settings include "Access Control List" (set to "Strict - Default Deny") and "Allowed MAC Address". On the right side, there are "Changes" and "Submit" buttons, along with a "Back to Overview" link.

*Figure 48 Open & WEP*

### 6.4.1.8 SHARED KEY



This screenshot shows the same A8n web interface as Figure 48, but with the "Authentication Mode" dropdown set to "Shared". All other settings (Cipher Mode, Default WEP Key, Access Control List, and Allowed MAC Address) remain the same as in Figure 48. The "Submit" and "Back to Overview" buttons are also present.

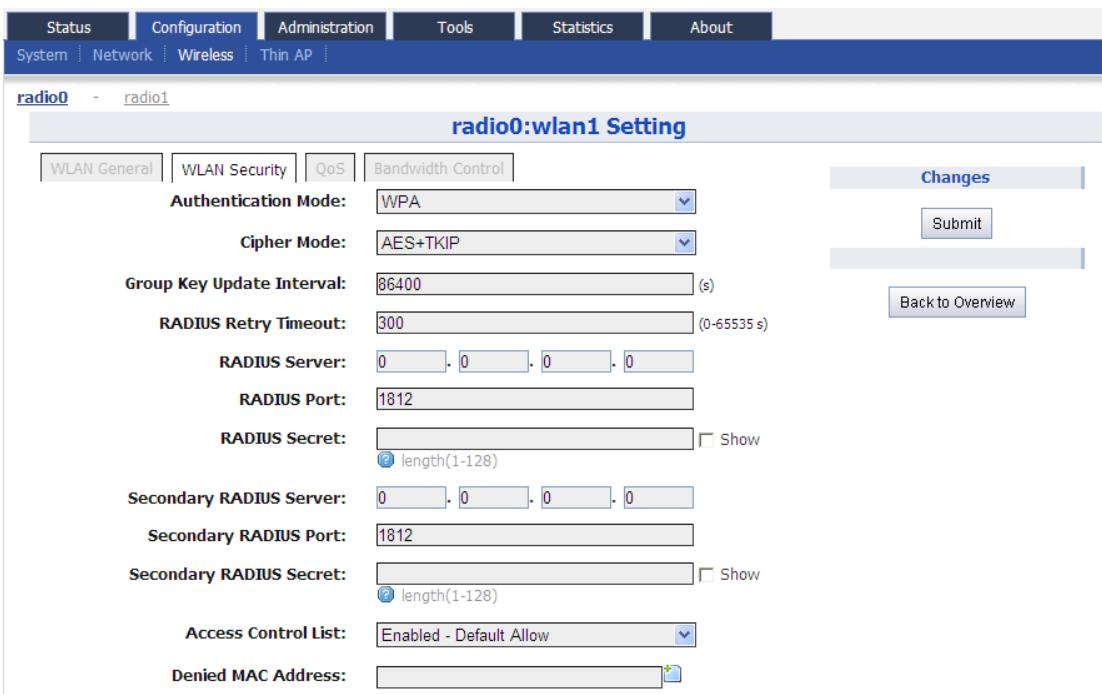
*Figure 49 Shared Key*

### Shared key Procedures :

1. Select **Configuration** -> **Wireless** -> **radio0**-> **WLAN** to edit “” WLAN, and then select **WLAN Security** to access to security configuration page
2. **Authentication Mode**: choose Shared
3. **Cipher Mode**: choose WEP
4. **Default WEP Key**: set the password
5. Click **Submit**
6. Click **Save&Apply** to apply

#### **6.4.1.9 WPA/WPA2**

WPA/WPA2 can be enabled by selecting WPA, WPA2 for Authentication Mode. The AES and TKIP are the two available options for Ciper mode.



*Figure 50 WPA/WPA2*

**Authentication Mode** : WPA or WPA2

**Cipher Mode** : AES and TKIP can be choosed.

**Radius Server** : set Radius server IP address

**Radius Port** : set Radius server port

**Radius Secret** : set Radius password

**Secondary Radius Server** : set Secondary Radius server IP address

**Secondary Radius Port** : set Secondary Radius server port

**Secondary Radius Secret** : set Secondary Radius server password



## WPA/WPA2 Procedures :

1. Select **Configuration** -> **Wireless** -> **radio0**-> **WLAN** to edit “” WLAN, and then select **WLAN Security** to access to security configuration page
2. **Authentication Mode**: choose WPA or WPA2
3. **Cipher Mode**: choose AES+TKIP
4. **Radius Server**: set Radius server IP address
5. **Radius Port**: set Radius server port
6. **Radius Secret**: set Radius password
7. **Secondary Radius Server**: set Secondary Radius server IP address (optional)
8. **Secondary Radius Port**: set Secondary Radius server port (optional)
9. **Secondary Radius Secret**: set Secondary Radius server password (optional)
10. Click **Submit**
11. Click **Save&Apply** to apply

### 6.4.1.10 WPA-PSK/WPA2-PSK

WPA-PSK can be enabled by selecting **WPA-PSK**, **WPA2-PSK** for Authentication Mode. The **AES** and **TKIP** are the two available options for Cipher Mode.

Figure 51 WPA-PSK/WPA2-PSK

**Authentication Mode** : WPA or WPA2

**Cipher Mode** : AES and TKIP can be choosed.

**Group Key Update Interval** : By default, it is 3600

**Pass Phrase** : from 8-64 bits

## WPA-PSK/WPA2-PSK Procedures :



1. Select **Configuration** -> **Wireless** -> **radio0**-> **WLAN** to edit “” WLAN, and then select **WLAN Security** to access to security configuration page
2. **Authentication Mode**: choose WPA-PSK or WPA2-PSK
3. **Cipher Mode**: choose AES+TKIP
4. **Group Key Update Interval**: set interval
5. **Pass Phrase**: set the password
6. Click **Submit**
7. Click **Save&Apply** to apply

#### 6.4.1.11 ACL 配置

A8Ein supports ACL ( Access Control List ) , it bases on MAC address filter.

The screenshot shows the 'radio0:wlan1 Setting' page. At the top, there are tabs for WLAN General, WLAN Security, and QoS. The 'WLAN Security' tab is active. Below the tabs, there are three dropdown menus: 'Authentication Mode' (set to 'Open'), 'Cipher Mode' (set to 'Disabled'), and 'Access Control List' (set to 'Disabled'). A red box highlights the 'Access Control List' dropdown. To the right of the dropdowns are 'Changes' and 'Submit' buttons. At the bottom right is a 'Back to Overview' link.

Figure 52 ACL - Disable

The screenshot shows the same 'radio0:wlan1 Setting' page as Figure 52, but with different settings. The 'Access Control List' dropdown is now set to 'Enabled - Default Allow'. Below it, there is a 'Denied MAC Address' input field with a small '+' button next to it. Both the 'Access Control List' dropdown and the 'Denied MAC Address' field are highlighted with a red box. The rest of the interface is identical to Figure 52.

Figure 53 ACL – Deny MAC address



radio0

### radio0:wlan1 Setting

[WLAN General](#) [WLAN Security](#) [QoS](#)

**Authentication Mode:** Open **Changes**

**Cipher Mode:** Disabled **Submit**

**Access Control List:** Enabled - Default Deny **Back to Overview**

**Allowed MAC Address:**

Figure 54 ACL – Allow MAC address

**Access Control List :** There are 3 modes: Disabled, Enabled-Default Allow, Strict-Default Deny

**Denied MAC Address :** All MAC address in the list will be blocked.

**Allowed MAC Address :** Only MAC address in the list can access.

ACL Procedures :

1. Select **Configuration** -> **Wireless** -> **radio0**-> **WLAN** to edit “” WLAN, and then select **WLAN Security** to access to security configuration page
2. **Access Control List** choose the control mode.
3. **Denied MAC Address**: input MAC address
4. **Allowed MAC Address**: input MAC address
5. Click **Submit**
6. Click **Save&Apply** to apply

radio0

### radio0:wlan1 Setting

[WLAN General](#) [WLAN Security](#) [QoS](#)

**Authentication Mode:** Open **Changes**

**Cipher Mode:** Disabled **Submit**

**Access Control List:** Enabled - Default Allow **Back to Overview**

**Denied MAC Address:**

Figure 55 ACL – Add Denied MAC address



radio0

### radio0:wlan1 Setting

WLAN General WLAN Security QoS

Authentication Mode: Open Changes  
Cipher Mode: Disabled Submit  
Access Control List: Strict - Default Deny Back to Overview  
Allowed MAC Address: 00:00:00:bb:cc:dd  
00:00:00:bc:bc:bc

Figure 56 ACL – Add Allowed MAC address

#### 6.4.1.12 WLAN X(0-15) QoS

Select Configuration -> Wireless -> radio0-> WLAN to edit “” WLAN, and then select QoS to access to QoS configuration page

A8n

Status Configuration Administration Tools Statistics About  
System Network Wireless Thin AP

radio0 - radio1

### radio0:wlan1 Setting

WLAN General WLAN Security QoS Bandwidth Control

Enable DSCP-to-WMM Mapping:  Changes  
Submit Back to Overview

DSCP	
(0-63)	
BestEffort (BE)	24
Background(BK)	16
Video(VI)	40
Voice(VO)	56

WLAN(Client-side) WMM Parameters

	CWMIN (0-15)	CWMAX (0-15)	AIFS (0-15)	TXOP (0-8192)	ACM
BestEffort (BE)	4	10	3	0	<input type="checkbox"/>
Background(BK)	4	10	7	0	<input type="checkbox"/>
Video(VI)	3	4	2	3008	<input type="checkbox"/>
Voice(VO)	2	3	2	1504	<input type="checkbox"/>

Radio(AP-side) WMM Parameters

	CWMIN	CWMAX	AIFS	TXOP	NOACK
BestEffort (BE)	4	6	3	0	0
Background(BK)	4	10	7	0	0
Video(VI)	3	4	1	3008	0
Voice(VO)	2	3	1	1504	0

Figure 57 WLAN QoS

Enable DSCP-to-WMM Mapping: : Enable mapping from DSCP to WMM.

DSCP: : 4 priorities: BestEffort、Background、Video、Voice

WLAN ( Client-side ) WMM Parameters: : Set CWMIN、CWMAX、AIFS、TXOP value



## Radio(AP-side) WMM Parameters : list WMM parameters

WLAN X QoS configuration procedures :

1. Select Configuration -> Wireless -> radio0-> WLAN to edit “” WLAN, and then select QoS to access to QoS configuration page
2. Enable DSCP-to-WMM Mapping (optional)
3. DSCP choose one of priorities
4. WLAN (Client-side) WMM Parameters Set CWMIN, CWMAX, AIFS, TXOP value
5. Click Submit
6. Click Save&Apply to apply

### 6.4.1.13 WLAN X(0-15) BANDWIDTH CONTROL

Figure 58 WLAN Bandwidth Control

Uplink : uplink bandwidth control, from 0-1000000Kbps

Downlink : downlink bandwidth control, from 0-1000000Kbps

WLAN X bandwidth control procedures :

1. Select Configuration -> Wireless -> radio0-> WLAN to edit “” WLAN, and then select Bandwidth Control to access to QoS configuration page
2. Uplink set uplink bandwidth limitation
3. Downlink set downlink bandwidth limitation
4. Click Submit
5. Click Save&Apply to apply

### 6.4.1.14 2.4G ADVANCED CONFIGURATION



# A8n

The screenshot shows the 'radio0 Setting' page with the 'Advanced' tab selected. The configuration includes:

- AMPDU:** checked
- AMSDU:** checked
- ShortGI:** unchecked
- Data Rate:** best (Mbps)
- Beacon Interval:** 400 (40-3500 ms)
- DTIM:** 1 (1-255)
- Fragmentation Threshold:** 2346 (256-2346 bytes)
- RTS/CTS Threshold:** 2346 (256-2346 bytes)
- Distance:** 2 (0-31km)
- IGMP Snooping:** Disable
- Multicast Traffic:** checked
- Multicast Data Rate:** min (Mbps)

Figure 59 2.4G Radio Advanced setting

A8Ein provides advanced parameter setting, it would change A8Ein performance. **Default setting is recommended.**

**Data Rate** : Default setting is “**best**”. The transmission data rate that appears on the drop-down menu is dependent on the Wireless Mode specified. The numbered data rates denote fixed rates for transmission.

**Beacon Interval** : Default setting is 100 ms (equivalent to 10 beacons per second). The amount of time between A8Ein BTS beacon transmissions for each supported BSS, with each BSS using the same beacon interval. The beacon interval can be configured between 20 and 1000 ms.

**DTIM** : Default setting is 1. DTIM Interval, always a multiple of the beacon period, determines how often the beacon contains a traffic indicator map (TIM). The TIM alerts clients in sleep state to stay awake long enough to receive their data frames. The value range is from 1 to 255.

**Fragmentation Threshold** : Default setting is 2346 bytes. The fragmentation threshold, specified in bytes, determines whether data packets will be fragmented and at what size. Frames that are smaller than the specified fragmentation threshold value will not be fragmented. Frames that are larger than the fragmentation threshold will be fragmented into smaller packets and transmitted a piece at a time instead of all at once. The setting must be within the range of 256 to 2346 bytes. It is recommended to use the default value or only minor reductions of this default value.

**IGMP Snooping** : AP is a Layer 2 device when it is configured as Switch mode. However, IGMP Snooping implementation on AP is a little bit different than that of standard Layer 2 Switch.

Each Virtual AP (VAP) port is similar to a Layer 2 switch port. With IGMP Snooping enabled in the AP, clients associated to a VAP will only receive multicast packets if there is at least one client joined the multicast group in that VAP. Unlike ordinary IGMP Snooping implementation, where Layer 2 switch converts multicast to unicast and delivers them to devices registered with the multicast group, AP should simply send out the multicast



packets from the VAP which has at least one client joined the multicast group. This is done because the wireless media is a broadcast media. It does not need to be sent multiple times when there are more than one registered clients.

When IGMP Snooping is turned on, multicast packets should be dropped at the VAP exit if there is no client from the VAP who has joined the corresponding multicast group.

The IGMP snooping forwarding table (port and multicast MAC address mapping table) should support aging mechanism to age out the entry which has no multicast traffic for a period of time (120 seconds in A8Ein).

The default setting of the IGMP Snooping is “Disabled”.

**Multicast Traffic** : Default setting is "Enabled ". If set to "Enabled", the system allows multicast traffic in all VAPs. If set to "Disabled", all multicast traffic in all VAPs will be dropped.

A8Ein supports “**Multicast Traffic Data Rate Setting**” to transmit all multicast traffic of the 2.4G interface at the configured multicast data rate. The multicast data rate must be set to any of the basic data rates. Default setting is 1 Mbps

Advanced configuration procedures :

1. Select **Configuration->Wireless->radio0->Advanced**
2. **AMPDU**: selected by default
3. **AMSDU**: selected by default
4. **ShortGI**: un-selected by default
5. **Data Rate**: by default it is “best”
6. **Beacon Interval**: set beacon interval
7. **Distance**: set target area distance
8. **IGMP Snooping**: choose IGMP snooping mode
9. **Multicast Traffic**: allow or block multicast traffic
10. **Multicast Data Rate**: set multicast data rate
11. Click **Submit**
12. Click **Save&Apply** to apply

#### 6.4.1.15 2.4G WIRELESS QOS CONFIGURATION

	CWMIN (0-15)	CWMAX (0-15)	AIFS (0-15)	TXOP (0-8192)	NOACK
BestEffort (BE)	4	6	3	0	<input type="checkbox"/>
Background(BK)	4	10	7	0	<input type="checkbox"/>
Video(VI)	3	4	1	3008	<input type="checkbox"/>
Voice(VO)	2	3	1	1504	<input type="checkbox"/>

Figure 60 2.4G Radio QoS Parameters

QoS parameters configuration procedures :

1. Select Configuration->Wireless->radio0->QoS
2. Set values for this Priority-WMM table
3. Click Submit
4. Click Save&Apply to apply

#### 6.4.1.16 2.4G WEP KEY

Figure 61 2.4G Radio WEP Key

Procedures :

1. Select Configuration->Wireless->radio0->WEP
2. Key Entry Method: select the key format
3. Input key phrase in related WEP Key
4. Click Submit



5. Click **Save&Apply** to apply

#### 6.4.1.17 2.4G RADIO AIRFI SETTING

Figure 62 2.4G AirFi

Procedures :

1. Select **Configuration->Wireless->radio0->AirFi**
2. **AirFi Mode:** enable AirFi to get enhanced throughput experience
3. **AirFi Offset:** Level I is recommended
4. Click **Submit**
5. Click **Save&Apply** to apply

#### 6.4.2 5G WIRELESS SETTING

##### 6.4.2.1 5G GENERAL SETTING

Figure 63 5G General setting



- Enable Radio** : Enable or disable 5G radio, by default it is enabled.
- Radio Mode** : You can choose AP or station mode
- Country Code** : By default, it is HONG KONG
- Wireless Mode** : By default, it is 5GHz 54Mbps(802.11a)
- Radio Frequency** : By default, it is Auto
- Transmit Power** : By default, it is 17
- Maximum Clients** : By default, it is 512
- Enable Inter-WLAN Forwarding** : By default, it is allowed.
- Disable HT20/HT40 Auto Switch** : In HT40 mode, enable or disable auto switch between HT40 and HT20.

Procedures :

- 10 Select Configuration->Wireless->Radio1->General
- 11 **Enable Radio** : Select to enable 5G Radio
- 12 **Radio Mode** : Select to AP mode
- 13 **Country Code** : Select your country code
- 14 **Wireless Mode** : Select wireless mode
- 15 **Transmit Power** : Set transmit power
- 16 **Maximum Clients** : Set 5G maximum clients
- 17 Click **Submit**
- 18 Click **Save&Apply** to apply

#### 6.4.2.2 5G WLAN

WLAN	SSID	Max Clients	Hide SSID	Allow Intra-WLAN Forwarding	Enable	
0	Superwifi Network 0	512	No	No	Yes	<input type="checkbox"/>
1	Superwifi Network 1	512	No	No	No	<input type="checkbox"/>
2	Superwifi Network 2	512	No	No	No	<input type="checkbox"/>
3	Superwifi Network 3	512	No	No	No	<input type="checkbox"/>
4	Superwifi Network 4	512	No	No	No	<input type="checkbox"/>
5	Superwifi Network 5	512	No	No	No	<input type="checkbox"/>
6	Superwifi Network 6	512	No	No	No	<input type="checkbox"/>

Figure 64 5G WLAN setting



The screenshot shows the A8n web interface. At the top, there's a navigation bar with tabs: Status, Configuration, Administration, Tools, Statistics, About, System, Network, Wireless, Thin AP. Below the navigation bar, it says "radio0 - radio1". Under "radio1 Setting", there are tabs for General, WLAN, Advanced, and WEP. The WLAN tab is selected. It shows a table with columns: WLAN, SSID, Enable. The first row has values: 0, Network 0, Yes. There's a "Changes" button and a "Submit" button.

Figure 65 5G WLAN information

A8Ein2.4G radio supports maximum 16 WLAN, and they can be configured separately.

**[WLAN]** : WLAN number, from 0-15

**[SSID]** : Support maximum 32 characters, default SSID is : Superwifi Network X, X is WLAN number.

**[Max Clients]** : Max. associated clients

**[Hide SSID]** : By default, it is disabled.

**[Allow Intra-WLAN Forwarding]** : Allow or block inter-WLAN communication

#### 6.4.2.3 WLAN X(0-15) BASIC SETTING

The screenshot shows the A8n web interface under "radio1:wlan1 Setting". The navigation bar is the same as in Figure 65. The WLAN tab is selected. It shows fields for WLAN General, WLAN Security, QoS, Bandwidth Control. Under WLAN General, "Enable WLAN" is checked. Other fields include "VLAN Pass Through" (unchecked), "VLAN TagId" (set to 1), "Hide SSID" (unchecked), "SSID" (set to Superwifi Network 1), "Allow Intra-WLAN Forwarding" (unchecked), "Max Clients" (set to 512), and "Access Traffic Right" (set to Full Access). There are "Changes" and "Submit" buttons, and a "Back to Overview" link.

Figure 66 5G WLAN General setting



# A8n

The screenshot shows the A8n web interface with the following navigation bar:

- Status
- Configuration
- Administration
- Tools
- Statistics
- About

Sub-navigation bar:

- System
- Network
- Wireless
- Thin AP

Current page: radio0 - radio1

Section: radio1:wlan0 Setting

Tab: WLAN General (selected)

Fields:

- Enable WLAN:
- WLAN Mode: Station
- SSID: [empty input field]
- Target BSSID: [empty input field]

Buttons:

- Changes
- Submit
- Back to Overview

Figure 67 5G Station Mode WLAN General setting

**Enable WLAN**: Enable or disable this WLAN

**VLAN Pass Through**: VLAN pass through this WLAN

**VLAN TagId**: set VLAN ID

**Hide SSID**: Hide this SSID or not

**SSID**: set SSID

**Allow Intra-WLAN Forwarding**: Allow or block inter-WLAN communication

**Max Clients**: Maximum value is 512

**Back to Overview**: Go back to previous page

Procedures :

10. Select Configuration -> Wireless -> radio1-> WLAN to edit “” WLAN, and then select WLAN General.
11. Enable WLAN select to enable this WLAN
12. VLAN Pass Through allow or don't allow VLAN pass through
13. VLAN TagId Set VLAN ID
14. SSID set SSID
15. Allow Intra-WLAN Forwarding: Allow or block
16. Max Clients Maximum is 512
17. Click Submit
18. Click Save&Apply to apply

#### 6.4.2.4 WLAN X(0-15) SECURITY

A8Ein 5GHz supports Open, Shared Key, WPA, WPA-PSK, WPA2, WPA2-PSK, WAPI, WAPI-PSK authentication mode, and Disabled, WEP, AES, TKIP, SMS4 cipher mode.

Select Configuration -> Wireless -> radio1-> WLAN to edit “” WLAN, and then select WLAN Security to access to security configuration page.



**Note: Please refer to 6.4.1.5 WLAN security setting**

The screenshot shows the A8n web interface with the title "A8n" at the top. The navigation bar includes links for Status, Configuration, Administration, Tools, Statistics, About, System, Network, Wireless, and Thin AP. Below the navigation bar, the path "radio0 - radio1" is shown. The main content area is titled "radio1:wlan1 Setting". It features tabs for WLAN General, WLAN Security (which is selected), QoS, and Bandwidth Control. Under "WLAN Security", there are dropdown menus for Authentication Mode (set to Open), Cipher Mode (set to Disabled), Access Control List (set to Enabled - Default Allow), and Denied MAC Address (empty). On the right side, there are "Changes" and "Submit" buttons, and a "Back to Overview" link.

Figure 68 5G AP Mode WLAN Security setting

The screenshot shows the A8n web interface with the title "A8n" at the top. The navigation bar includes links for Status, Configuration, Administration, Tools, Statistics, About, System, Network, Wireless, and Thin AP. Below the navigation bar, the path "radio0 - radio1" is shown. The main content area is titled "radio1:wlan0 Setting". It features tabs for WLAN General, WLAN Security (selected), QoS, and Bandwidth Control. Under "WLAN Security", there are dropdown menus for Authentication Mode (set to Open) and Cipher Mode (set to Disabled). On the right side, there are "Changes" and "Submit" buttons, and a "Back to Overview" link.

Figure 69 5G Station Mode WLAN Security setting



#### 6.4.2.5 WLAN X(0-15) QoS SETTING

**A8n**

Status Configuration Administration Tools Statistics About  
System Network Wireless Thin AP

radio0 - radio1      **radio0:wlan1 Setting**

WLAN General WLAN Security QoS Bandwidth Control

Enable DSCP-to-WMM Mapping:

**DSCP**  
(0-63)

BestEffort (BE)	24
Background(BK)	16
Video(VI)	40
Voice(VO)	56

Changes      Submit      Back to Overview

**WLAN(Client-side) WMM Parameters**

	CWMIN (0-15)	CWMAX (0-15)	AIFS (0-15)	TXOP (0-8192)	ACM
BestEffort (BE)	4	10	3	0	<input type="checkbox"/>
Background(BK)	4	10	7	0	<input type="checkbox"/>
Video(VI)	3	4	2	3008	<input type="checkbox"/>
Voice(VO)	2	3	2	1504	<input type="checkbox"/>

**Radio(AP-side) WMM Parameters**

	CWMIN	CWMAX	AIFS	TXOP	NOACK
BestEffort (BE)	4	6	3	0	0
Background(BK)	4	10	7	0	0
Video(VI)	3	4	1	3008	0
Voice(VO)	2	3	1	1504	0

Figure 70 5G AP Mode QoS setting

**A8n**

Status Configuration Administration Tools Statistics About  
System Network Wireless Thin AP

radio0 - radio1      **radio1:wlan0 Setting**

WLAN General WLAN Security QoS

Enable DSCP-to-WMM Mapping:

**DSCP**  
(0-63)

BestEffort (BE)	24
Background(BK)	16
Video(VI)	40
Voice(VO)	56

Changes      Submit      Back to Overview

Figure 71 5G Station Mode QoS setting

**Enable DSCP-to-WMM Mapping:** Enable mapping from DSCP to WMM.

**DSCP:** 4 priorities: BestEffort、Background、Video、Voice

**WLAN (Client-side) WMM Parameters:** Set CWMIN、CWMAX、AIFS、TXOP value

**Radio(AP-side) WMM Parameters :** list WMM parameters

WLAN X QoS configuration procedures :

1. Select **Configuration** -> **Wireless** -> **radio1**-> **WLAN** to edit “” WLAN, and then select **QoS** to access to QoS configuration page
2. **Enable DSCP-to-WMM Mapping**: (optional)
3. **DSCP**: choose one of priorities
4. **WLAN (Client-side) WMM Parameters**: Set CWMIN、CWMAX、AIFS、TXOP value
5. Click **Submit**
6. Click **Save&Apply** to apply

#### **6.4.2.6 WLAN X(0-15) BANDWIDTH CONTROL**



		WLAN Total (0-1000000 Kbps, 0: Disable)	Per Station (0-1000000 Kbps, 0: Disable)
Uplink	<input type="text" value="0"/>	<input type="text" value="0"/>	
Downlink	<input type="text" value="0"/>	<input type="text" value="0"/>	

**Changes**      **Submit**      [Back to Overview](#)

*Figure 72 5G Bandwidth Control*

**Uplink** : uplink bandwidth control, from 0-1000000Kbps

**Downlink** : downlink bandwidth control, from 0-1000000Kbps

WLAN X bandwidth control procedures :

6. Select **Configuration** -> **Wireless** -> **radio1**-> **WLAN** to edit “” WLAN, and then select **Bandwidth Control** to access to QoS configuration page
7. **Uplink** set uplink bandwidth limitation
8. **Downlink** set downlink bandwidth limitation
9. Click **Submit**
10. Click **Save&Apply** to apply



#### 6.4.2.7 5G ADVANCED CONFIGURATION

**A8n**

Status Configuration Administration Tools Statistics About

System Network Wireless Thin AP

radio0 - radio1

**radio1 Setting**

General WLAN Advanced QoS WEP AirFi Changes Submit

**AMPDU:**

**AMSDU:**

**ShortGI:**

**Data Rate:** best (Mbps)

**Beacon Interval:** 400 (40-3500)

**DTIM:** 1 (1-255)

**Fragmentation Threshold:** 2346 (256-2346)

**RTS/CTS Threshold:** 2346 (256-2346)

**Distance:** 2 (0-31km)

**IGMP Snooping:** Disable

**Multicast Traffic:**

**Multicast Data Rate:** min (Mbps)

Figure 73 5G AP Mode Advanced Setting

**A8n**

Status Configuration Administration Tools Statistics About

System Network Wireless Thin AP

radio0 - radio1

**radio1 Setting**

General WLAN Advanced WEP Changes Submit

**Data Rate:** best (Mbps)

**Fragmentation Threshold:** 2346 (256-2346)

**RTS/CTS Threshold:** 2346 (256-2346)

**Distance:** 2 (0-31km)

**IGMP Snooping:** Disable

**Multicast Traffic:**

**Multicast Data Rate:** min (Mbps)

Figure 74 5G Station Mode Advanced Setting



**Note: Please refer to 6.4.1.13 2.4G Advanced configuration**

- o

#### 6.4.2.8 5G WIRELESS QoS CONFIGURATION

	CWMin (0-15)	CWMax (0-15)	AIFS (0-15)	TXOP (0-8192)	NOACK
<i>BestEffort (BE)</i>	4	6	3	0	<input type="checkbox"/>
<i>Background(BK)</i>	4	10	7	0	<input type="checkbox"/>
<i>Video(VI)</i>	3	4	1	3008	<input type="checkbox"/>
<i>Voice(VO)</i>	2	3	1	1504	<input type="checkbox"/>

Figure 75 5G QoS parameters

QoS parameters configuration procedures :

5. Select Configuration->Wireless->radio1->QoS
6. Set values for this Priority-WMM table
7. Click Submit
8. Click Save&Apply to apply

#### 6.4.2.9 5G WEP KEY

Figure 76 5G WEP Key

Procedures :

6. Select Configuration->Wireless->radio1->WEP
7. Key Entry Method: select the key format
8. Input key phrase in related WEP Key
9. Click Submit
10. Click Save&Apply to apply

#### 6.4.2.10 5G WIRELESS AIRFI SETTING

The screenshot shows the A8n web interface with the title 'A8n' at the top. The navigation bar includes links for Status, Configuration, Administration, Tools, Statistics, About, System, Network, Wireless, and Thin AP. Below the navigation bar, the path 'radio0 - radio1' is shown. The main content area is titled 'radio1 Setting' and contains tabs for General, WLAN, Advanced, QoS, WEP, and AirFi. The 'AirFi' tab is selected. Under the 'AirFi' tab, there is a checkbox labeled 'AirFi Mode' which is currently unchecked. Below it is a dropdown menu labeled 'AirFi Offset' with the value 'Level I' selected. On the right side of the screen, there are 'Changes' and 'Submit' buttons.

Figure 77 5G AirFi

Procedures :

6. Select Configuration->Wireless->radio1->AirFi
7. AirFi Mode: enable AirFi to get enhanced throughput experience
8. AirFi Offset: Level I is recommended
9. Click Submit
10. Click Save&Apply to apply

#### 6.5 THIN AP CONFIGURATION

The screenshot shows the A8n web interface with the title 'A8n' at the top. The navigation bar includes links for Status, Configuration, Administration, Tools, Statistics, About, System, Network, Wireless, and Thin AP. Below the navigation bar, the path 'radio0 - radio1' is shown. The main content area is titled 'Thin AP Configuration' and contains fields for 'Thin AP' (checkbox), 'AC IP Address' (text input), 'AP Name' (text input), 'AP Location' (text input), and 'AC debug level' (dropdown menu). On the right side of the screen, there are 'Changes' and 'Submit' buttons.

Figure 78 Thin AP configuration

**Thin AP** : Enable or disable Thin AP mode

**AC IP Address** : Set static IP address or automatically get AC IP address

**AP Name** : Thin AP name

**AP Location** : Thin AP location information

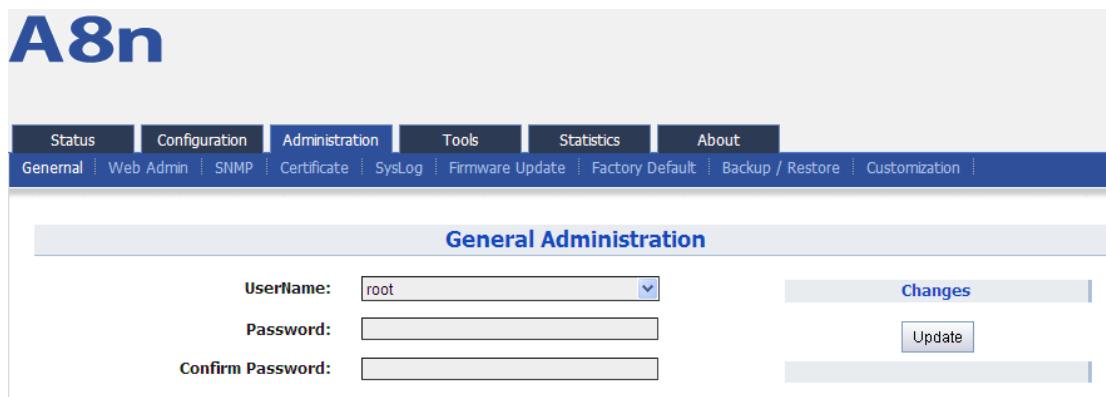
**AC debug level** : AC debug level, from 0-10

## 7 ADMINISTRATION CONFIGURATION

### 7.1 ADMINISTRATION GENERAL SETTING

Please select **Administration** -> **General** to change login username and password.

There are 2 types of user account : root and admin. Default username is : **root**, default password is : **superwifi123** .

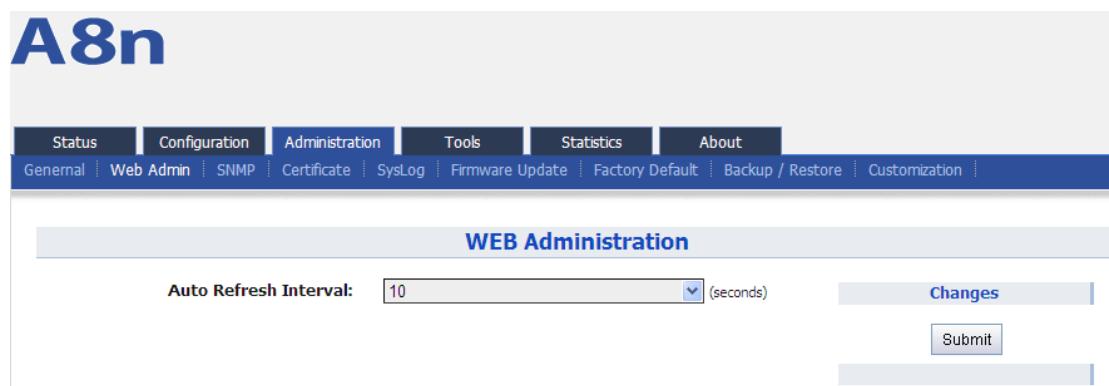


*Figure 79 General Administration*

Procedures :

1. Select **Administration** -> **General**,
2. **UserName**: choose “root” or “admin” user
3. **Password**: set password
4. **Confirm Password**: input password again to confirm
5. Click **Submit**
6. Click **Save&Apply** to apply

### 7.2 WEB ADMIN



*Figure 80 WEB Administration*

**Auto Refresh Interval** : set auto refresh interval

### 7.3 SNMP SETTING

Trap Host ID	Trap Host IP	Trap Port	Trap Community	Enable
1		162	public	No
2		162	public	No
3		162	public	No
4		162	public	No

Figure 81 SNMP Configuration

**Read Community**: SNMP protocol read community, by default it is “public”

**Write Community**: SNMP protocol write community, by default it is “write”

**Show**: show write community phrase

**Trap Host ID**: SNMP Trap host ID, it supports Max. 4 Trap Host

**Trap Host**: Trap Host IP address

**Trap Port**: Trap port, by default it is 162

**Trap Community**: Trap community information

**Enable**: Trap Host state (enabled or disabled)

Press : to edit Trap Host

Figure 82 SNMP Trap Host



## 7.4 CERTIFICATE MANAGEMENT

The screenshot shows the 'Certificate Management' page of the A8n web interface. At the top, there are two input fields: 'Http Cert File:' and 'Http Key File:', each with a 'Browse...' button and an 'Upload' button. Below these fields is a large text area containing the base64-encoded content of a certificate. The text starts with '-----BEGIN CERTIFICATE-----' and ends with '-----END CERTIFICATE-----'. The content is a standard X.509 certificate.

```

-----BEGIN CERTIFICATE-----
MIICBTCCAw4CCQC9nFKw4ItaNTANBgkqhkiG9w0BAQUFADBFHQswCQYDVQQGEwJD
TjELMAkGA1UEBwwCQ04xDTALBgNvBAcMBeFXU1QxDTALBgNvBAcMBeFXU1QxDTAL
BgNvBAMMBEfxU1QwHrcNMTExmjA4MDYmMz2WhcNmjExMjA1MDYwMzMzWjBHMQsw
CQYDVQQGEwJDtjELMAkGA1UEBwwCQ04xDTALBgNvBAcMBeFXU1QxDTALBgNvBAcM
BeFXU1QxDTALBgNvBAMMBEfxU1QwgZ8wDQYJKoZIhvCNQEBBQADgY0AMIGJAoGB
AoCPThPmxFrhymk+6EI8XTyKtF90GMf07zEbCMxhFSWKeyX8m84cB0bJVP0
o+5VSNh13Sn2YBMis1PQaw7j3wQ2QhVO3AH6fhyNKkkwnrTGeSo+SJ06tF9zm2q
quc4dvmTHtc1C4grNuagB1pczhJx4o7lqH7zOChZKxijAgMBAAEwDQYJKoZIhvCN
AQEFBQADgYEABohsA2dBe2avLtZ1PJpVmceyL0i1+z66XC7WkIqt9eefyXgqaDe
Bc0hJ3d2b80TKeguFRBmyNmFAxzbpuU/k32peCin1DRGBSHz8AdvSe1N+liyuLhY
vCyVqI+ghDkSWXZPsGm9qLLataduMWDW8PCuho9LfNhNwe01b1VP2VM=
-----END CERTIFICATE-----
-----BEGIN RSA PRIVATE KEY-----
MIICXgIBAAKBgQDnQj0xz5pBa4cppFuHCPFO8syrT/dBiTH9O8xGwjM14RUiins1
/JzPOkATmyvT9KpuVuYjZd0jbdmATIzrT0Gso498ENkIVItwb+n4cjSp0MJ60xnk
jvkIdPLRfc5maqrnOhb5rR7XNQuIK1rmoAdaQs4SceKOyKh+8zgoWF4owIDAQAB
AoGBAMHqLzoxZLe6Kn05/L0dvmjpq937FMN4dcAT3h92znGFV9XUZA21J6GUrd
Od0mZFezN9qNBnNw51LH3BCV3vAfKezk9ferOwqJRpVG+zAmIFH3OPjjE4fJxnlo
dIs1VB24kaAUzoHa4NXjRFo9eQHQR4GyH5e9DxAVtRDWjJWhAKEA9Je75+bSIBs

```

Figure 83 Certificate Management

### Procedures :

1. Press **Administration** -> **Certificate**
2. **Http Cert File:** click "browse" to choose Http Certificate file, and then click **Upload**.
3. **Http Key File:** click "browse" to choose Http Key file, and then click **Upload**.

## 7.5 SYSLOG

The screenshot shows the 'System Log Configuration' page of the A8n web interface. It includes fields for enabling syslog, specifying a server IP address (0.0.0.0), and setting the severity level (Informational). There are also 'Changes' and 'Submit' buttons.

Enable Syslog:	<input checked="" type="checkbox"/>	Changes
Server IP Address:	0 . 0 . 0 . 0	Submit
Severity:	Informational	

Figure 84 System Log Configuration

Syslog severity
Emergency
Alert
Critical
Error
Warning
Notice
Information
Debug

Table 7-1 Syslog severity

Procedures :

1. Select **Administration** -> **SysLog**
2. **Enable Syslog** enable syslog function
3. **Server IP Address** The events which meet the severity condition will be sent to Syslog server
4. **Severity**
5. Click **Submit**
6. Click **Save&Apply** to apply

## 7.6 FIRMWARE UPDATE

Go to **Administration** -> **Firmware Update** to update the firmware of A8Ein :

Figure 85 Firmware Upgrade

**Caution:** Do not interrupt the process of firmware update. Please maintain network connection and power supply. A8Ein will not function properly if interruption happened during firmware update.

Procedures:

1. Go to **Administration** -> **Firmware Update**,



2. Press **Browse**, select the firmware,

The screenshot shows the A8n web interface with the title 'A8n'. The navigation bar includes links for Status, Configuration, Administration, Tools, Statistics, and About. Under Administration, 'Firmware Update' is selected. On the left, there's a 'Flash Firmware' section with a 'Browse' button for selecting a firmware image. A checkbox labeled 'Keep configuration files' is checked. A file selection dialog box is overlaid on the page, titled 'Choose File to Upload'. It shows a file named 'A8n\_1.2.0.614\_2012-07-30.bin' selected from a folder path 'F:\product release\A8n\1.2.0.6xx\A8'. The dialog has 'Open' and 'Cancel' buttons at the bottom.

Figure 86 Select firmware file

3. Press **Upload image** to begin the update, the **keep configuration files** allow user to keep the current configuration after update,

The screenshot shows the A8n web interface with the title 'A8n'. The navigation bar includes links for Status, Configuration, Administration, Tools, Statistics, and About. Under Administration, 'Firmware Update' is selected. On the left, there's a 'Flash Firmware' section with a 'Browse' button for selecting a firmware image. A checkbox labeled 'Keep configuration files' is checked. A red box highlights the 'Upload image' button, which is located to the right of the 'Keep configuration files' checkbox.

Figure 87 Press Upload Image to start firmware update

4. A8Ein will run the checksum on the firmware, once it validate the firmware, press proceed to continue,



# A8n

The flash image was uploaded. Below is the checksum and file size listed, compare them with the original file to ensure data integrity. Click "Proceed" below to start the flash procedure.

- Checksum: b12cef0a969d176a7be99346fd62bfe3
- Size: 9.31 MB

**Flash Firmware**

**Firmware Update**

**Proceed** **Cancel**

Figure 88 Press “Proceed”

5. You will find following notification:

The system is flashing now.  
DO NOT POWER OFF THE DEVICE!  
Wait a few minutes until you try to reconnect. It might be necessary to renew the address of your computer to reach the device again, depending on your settings.

```
Firmware upgrade start...
AWRT CTL set: usyslog info -> Firmware update start(keep configuration files)
Saving config files...
Disabling process monitor...
Switching to ramdisk...
Performing system upgrade...
```

Figure 89 Progress of firmware update

6. A8Ein will reboot and load the Main page after firmware update.

7. Login with username and password, check the firmware version on the top right corner or go to the “About” page.



**Product Information**  
Product Type: A8n 2.4G Superwifi  
Product Code: SD.A8-N000-00  
Product Serial Number: 1AH121120007  
Product Model: WA8011N  
AC Power: not supported  
DC Power: not supported  
PoE: supported  
Housing: N  
Heater: supported

**Hardware Version**  
Version: 1.2  
RF1 Version: 1.1  
RF2 Version: 0.0

**Software Version**  
Version: 1.2.0.604  
Build Time: 2017-05-12 17:00:35  
Load: 1.01, 0.71, 0.31  
Uptime: 00h 05min 05s  
Changes: 0

**Radio Information(radio0)**  
Antenna Type: 3  
Filters: 0/0/1/0/1/0

**Radio Information(radio1)**  
Antenna Type: 5  
Filters: 0/0/0/0/0/0

**Company Information**  
Company Name: Company  
Technical Support:  
Web Site: http://

Figure 90 Information after firmware update

## 7.7 RESTORE FACTORY DEFAULT

There are 2 ways to reset the system back to factory default settings.

- via user interfaces (eg. SSH/Console/Web)
- via hardware reset button

### 7.7.1 RESET BACK TO FACTORY DEFAULT VIA USER INTERFACES

Under **Administration** -> **Factory Default**, user can reset the A8Ein back to Factory Default Configuration.

**Restore to Factory Default**

Retain Network Address

All Settings would be reset to factory defaults.

**Warning:** If the checkbox is unchecked, Web and Telnet connections with the current IP address will be lost once the default settings are applied.

Figure 91 Restore to Factory Default

Procedures:

**Reset to Factory Default** : Press this button to reset A8Ein to Factory Default Configuration.

**Retain Network Address**: Select this if user doesn't wish to reset the IP address configuration to factory default.

Once restore to factory default configuration, user can login to the A8Ein with the following information:

A8Ein default IP address : **192.168.1.222**

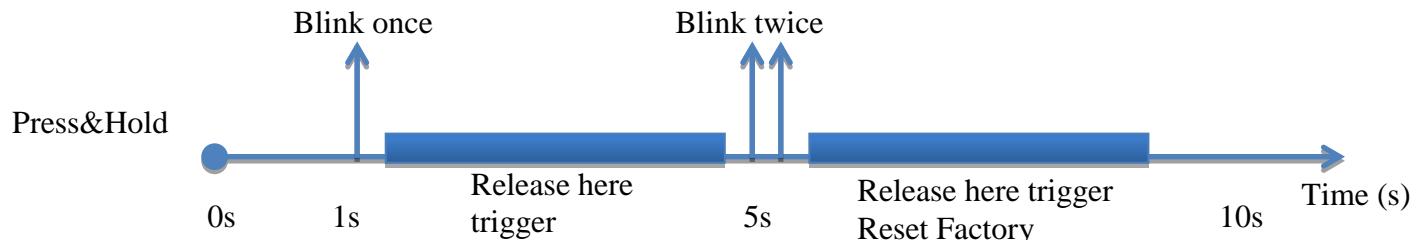
Username : **root**

Password : **superwifi123**

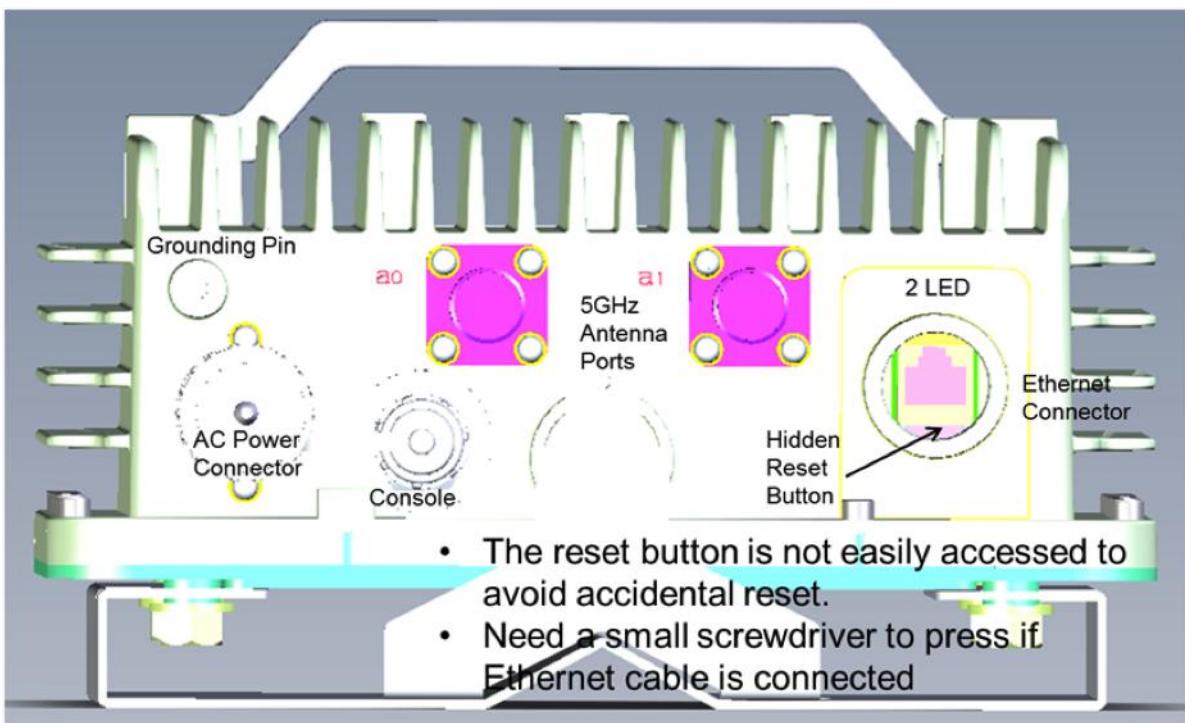
### **7.7.2 RESET BACK TO FACTORY DEFAULT VIA RESET BUTTON**

Hardware reset button have 2 functions:

- Soft-reboot [equivalent to UI: Reboot].
  - Press & Hold the reset button until you see Power LED blink once
  - Then release it immediately
- Reset to factory default [equivalent to UI: Reset factory (NOT retain network address)]
  - Press & Hold the reset button until you see Power LED blink once
  - Continue pressing the button until you see Power LED blink twice consecutively
  - Then release it immediately



The reset button's location is shown in following.



### 7.7.3 FACTORY DEFAULT SETTING

Current A8Ein factory default settings are:

- Admin Username: admin
- Admin Password: admin
- Superuser Username: root
- Superuser Password: superwifi123

Radio0 setting:

- Radio Enable: Enabled
- Operation Mode: AP
- SSID: Superwifi Network <0..15>
- Channel: 1
- Wireless mode: auto, default to 11NG
- ShortGI: Disabled
- AMPDU: Enabled
- Sector: All enabled
- Power: 23dBm

Radio1 setting:

- Radio Enable: Disabled

Network:

- Switch mode with all interface bridged on a virtual interface called br-lan:
  - Ethernet interface: eth0
  - VAP interfaces: athXXX
  - Bridge interface: br-lan
  - Permanent 2<sup>nd</sup> IP Interface:br-lan:1



- Network interface setting:
  - br-lan: Static IP = 192.168.1.222
  - br-lan:1:Static IP = 192.168.99.xxx (**Error! Reference source not found. Permanent IP**)

## 7.8 BACKUP/RESTORE

A8Ein supports Backup/Restore , Press **Administration** -> **Backup/Restore** to open the configuration interface

The screenshot shows the 'Admin Backup/Restore' section of the A8Ein web interface. At the top, there's a navigation bar with tabs for Status, Configuration, Administration, Tools, Statistics, and About. Below the navigation bar, a secondary menu bar includes General, Web Admin, SNMP, Certificate, SysLog, Firmware Update, Factory Default, **Backup / Restore**, Customization, and Help. The main content area is titled 'Admin Backup/Restore' and contains a sub-section titled 'Backup / Restore'. It includes a note: 'Here you can backup and restore your router configuration and - if possible - reset the router to the default settings.' Below this note is a list item with a bullet point: '• [Create backup](#)'. There is also a 'Backup Archive:' input field with a '浏览...' button next to it, and a 'Restore backup' button.

Figure 92 A8Ein Backup/Restore

Procedures :

1. Select **Administration**->**Backup/Restore**
2. Press **Create backup** and save it.

This screenshot is identical to Figure 92, showing the 'Admin Backup/Restore' section of the A8Ein web interface. The 'Backup / Restore' sub-section is visible with its instructions and the 'Create backup' link. The 'Backup Archive:' input field shows the message 'Choose File No file chosen'.

Figure 93 A8Ein Backup

3. To restore configuration, Under **Backup Archive:**, press **Browse...**, and select the backup file, press **Restore backup** to start restore.

# A8n

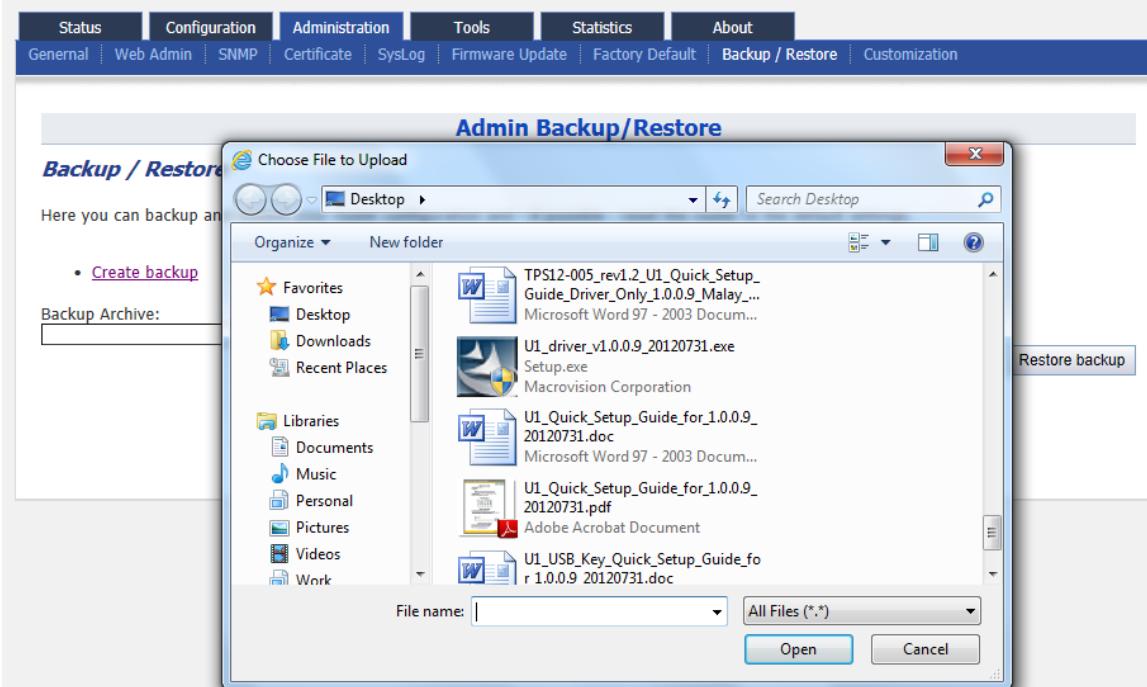


Figure 94 Select the backup file

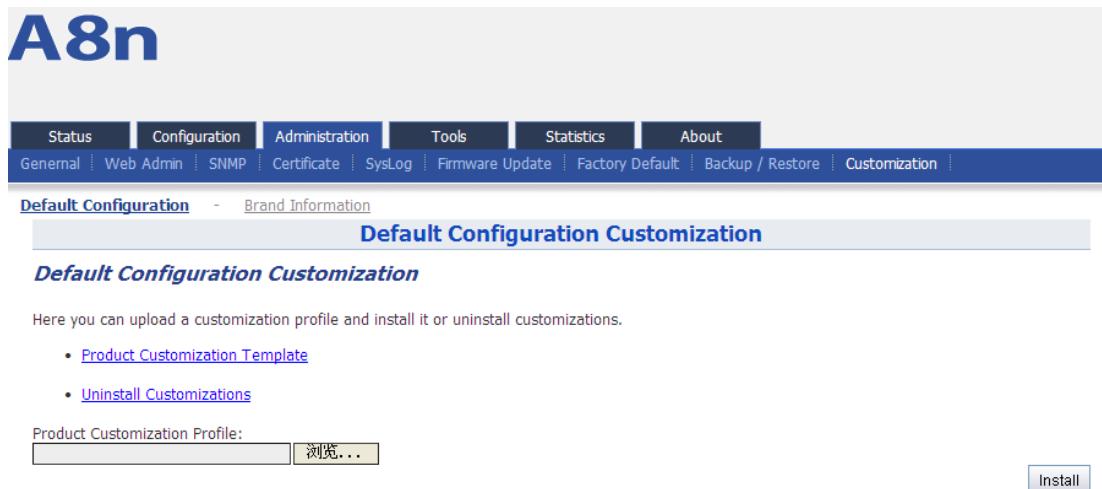
# A8n



Figure 95 Press “Restore backup” to start restore

## 7.9 CUSTOMIZATION

A8Ein supports customization , user can press on **Administration** -> **Customization** to open the configuration interface shown as below :



The screenshot shows the A8n web-admin Configuration interface. At the top, there's a navigation bar with links for Status, Configuration, Administration, Tools, Statistics, and About. Below this is a secondary navigation bar with links for General, Web Admin, SNMP, Certificate, SysLog, Firmware Update, Factory Default, Backup / Restore, and Customization. The main content area has a title 'Default Configuration Customization'. Underneath, it says 'Default Configuration Customization' and provides instructions: 'Here you can upload a customization profile and install it or uninstall customizations.' It lists two items: 'Product Customization Template' and 'Uninstall Customizations'. There's a 'Product Customization Profile' input field with a 'Browse...' button, and an 'Install' button.

*Figure 96 Customization Interface*

There are 2 items in Customization: Default Configuration and Brand Information .

Default Configuration is use for customize the default configuration during except factory default ;

Brand Information is use for customize the brand of the A8Ein.

Details in Customization:

**Product Customization Template** : Click on the link to download product customized template from A8Ein.

**Unistall Customizations** : To unistall product customization, remove the product customized template from A8Ein.

**Product Customization Profile** : Click "Browse" button to select edited product customized template.

**Brand Information Customization Template** : Click on the link to download brand information customized template from A8Ein.

**Brand Information Customization Profile** : Click "Browse" button to select edited brand customized template.

**Install** : Click this button to execute uploaded product and brand customization template.

Procedures:

**First, download the Product Customization Template and Brand Customization Template from A8Ein**

1、Press the “Porduct Customization Template” link to donwload the template.



**A8n**

Status | Configuration | Administration | Tools | Statistics | About

General | Web Admin | SNMP | Certificate | SysLog | Firmware Update | Factory Default | Backup / Restore | Customization

[Default Configuration](#) - [Brand Information](#)

### Default Configuration Customization

Default Configuration Customization

Here you can upload a customization profile and install it.

- Product Customization Template

Product Customization Profile:

Figure 97 Download Template

2、Press “Save” and save it to a folder.

**A8n**

Status | Configuration | Administration | Tools | Statistics | About

General | Web Admin | SNMP | Certificate | SysLog | Firmware Update | Factory Default | Backup / Restore | Customization

[Default Configuration](#) - [Brand Information](#)

### Default Configuration Customization

Default Configuration Customization

Here you can upload a customization profile and install it.

- Product Customization Template

Product Customization Profile:

File name:

Save as type:

Figure 98 Save the products custom templates to the specified directory

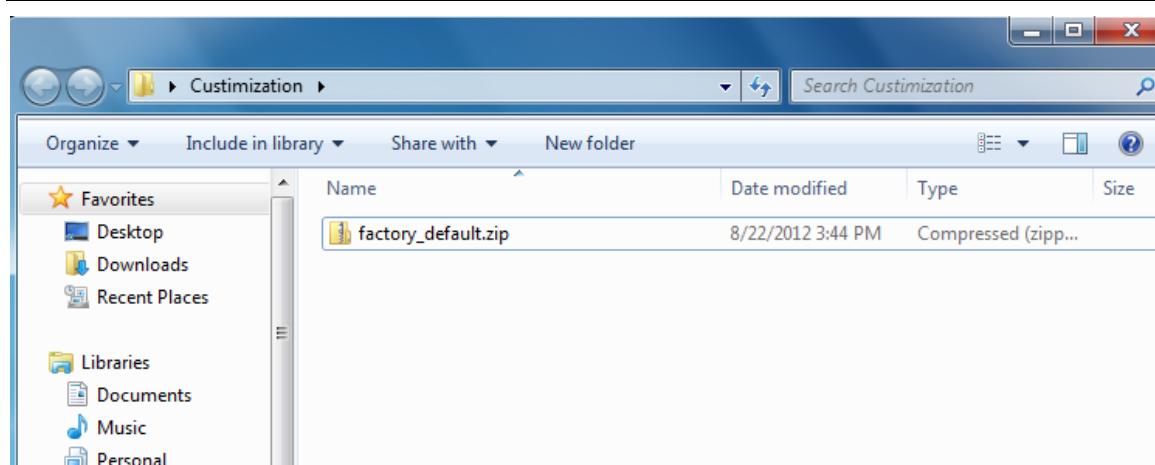


Figure 99 Custom template file downloaded

**Next**, edit the template , don't unzip the file during edit, use 7-zip software to open the template file , and edit the files inside ( WinRAR compression software does not support direct editing in a compressed file

#### 1、Use 7-Zip to extract the archive:

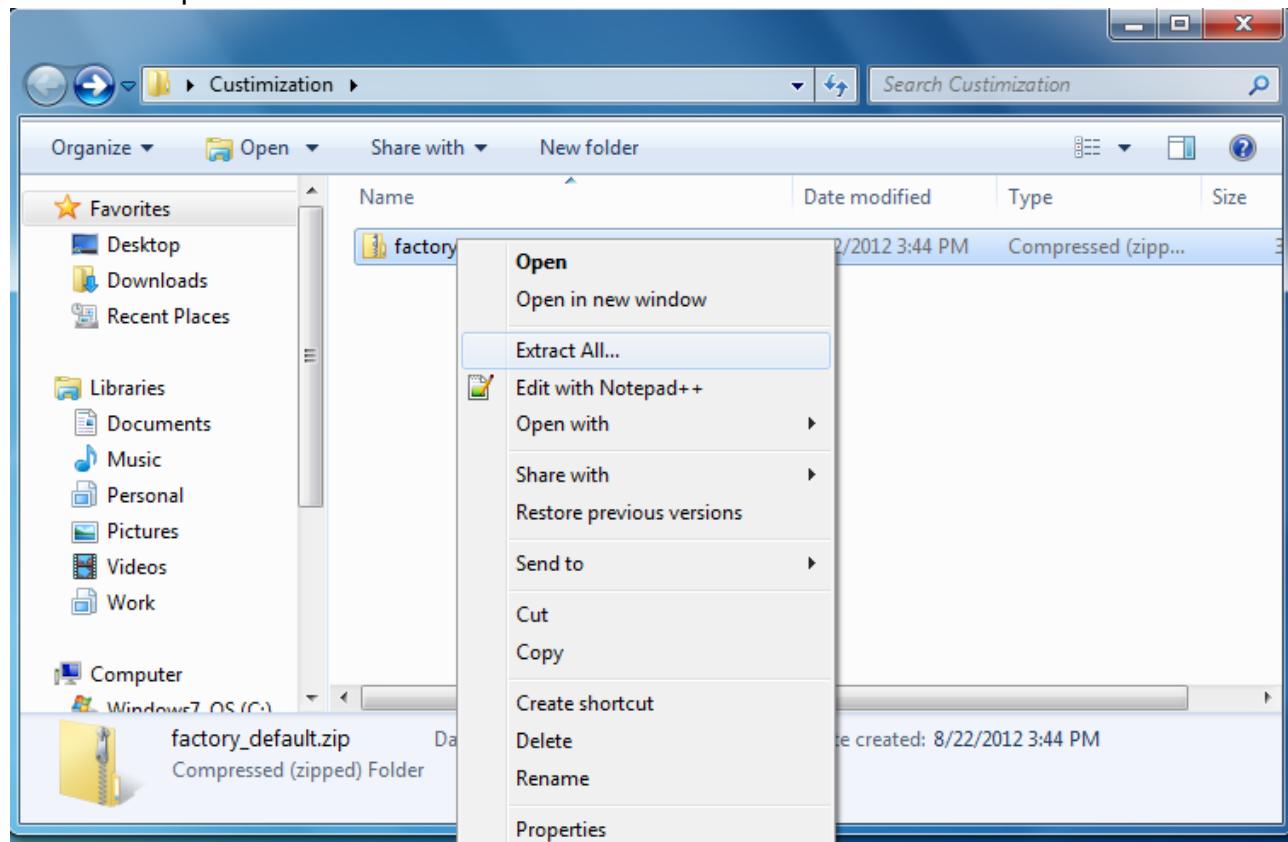


Figure 100 Use 7-zip to open the archive

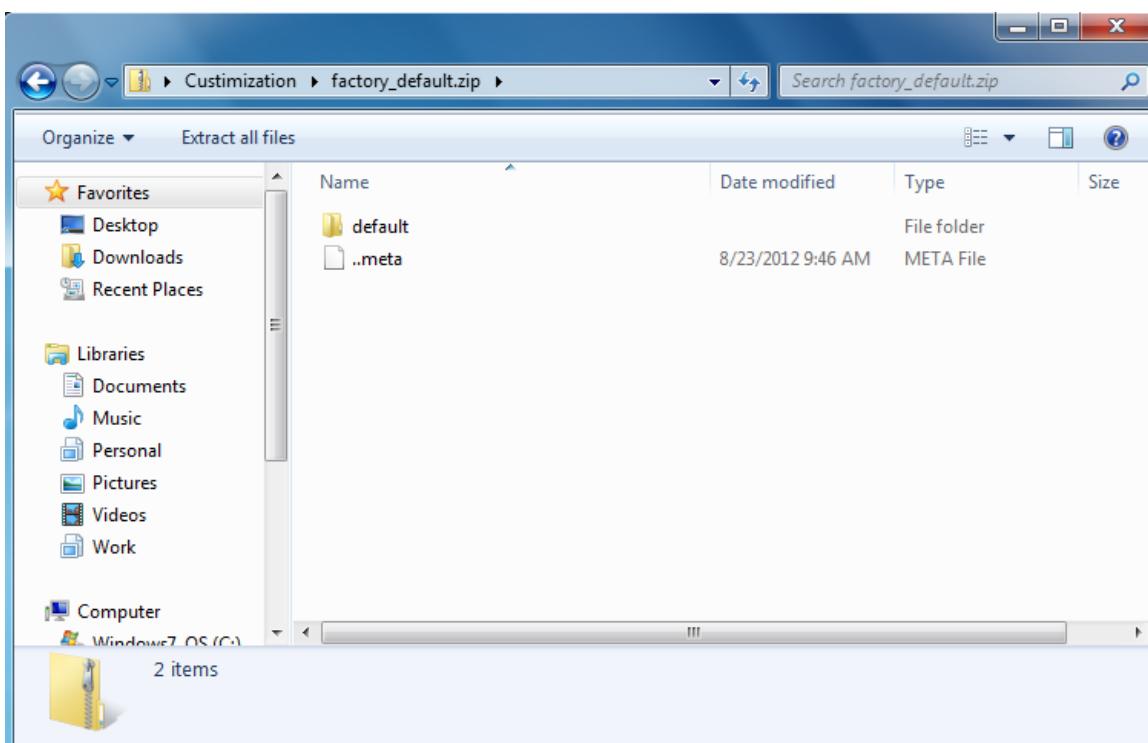


Figure 101 factory\_default menu

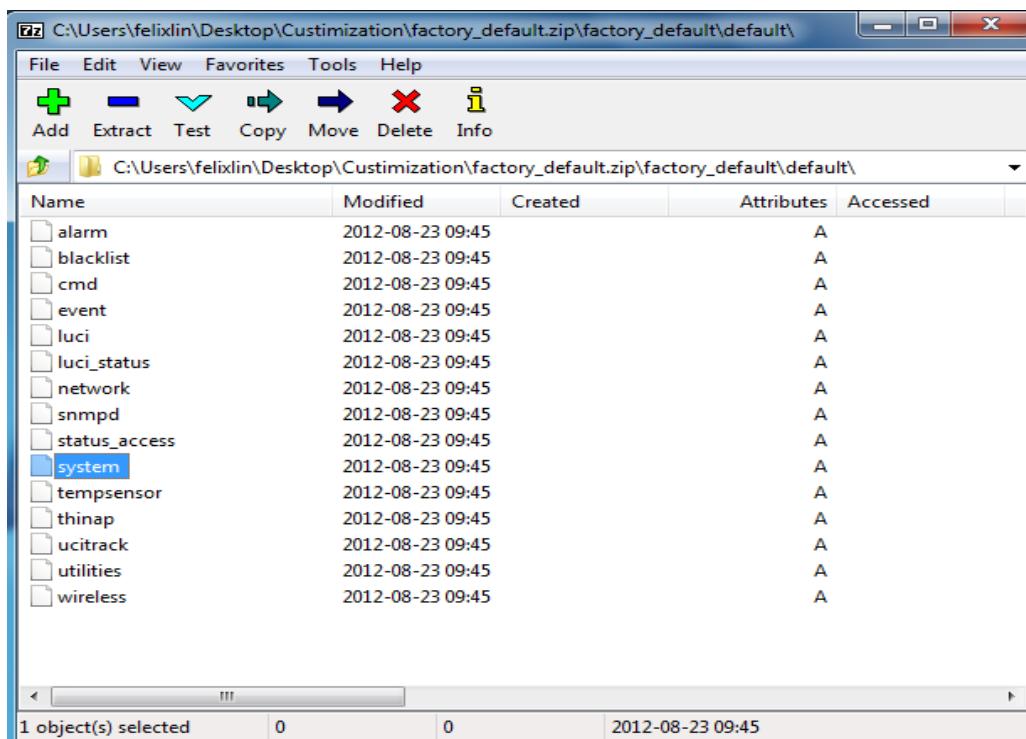


Figure 102 files under "default"

The important customize file are system、network、wireless. They are used for customize the system, network, wireless default configuration information.

Use 7-zip software to open the Brand customize template compressed file download from A8Ein,

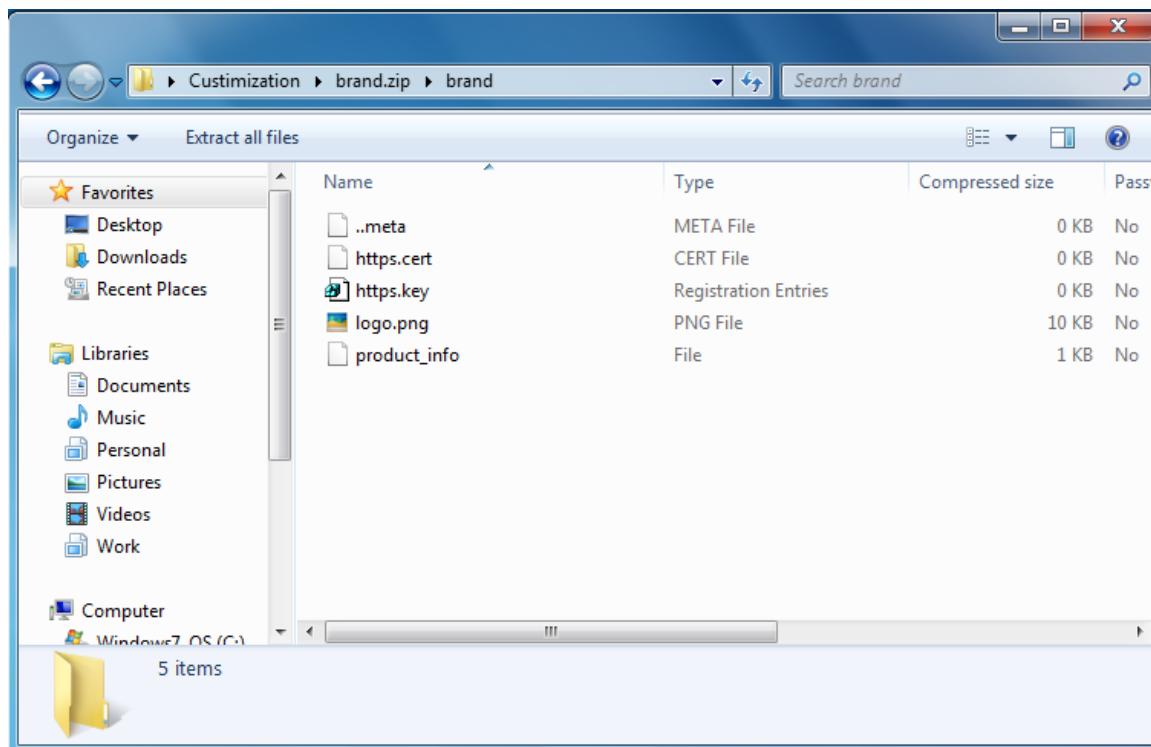


Figure 103 "Product\_info" and logo.png

2、To edit the file, right click on the file and select "Edit the file to customize (open with notepad), click the "Save" and exit after edit. The following shows "Product\_info" brand customized template customization process. Use the same method to edit the Product customization template.

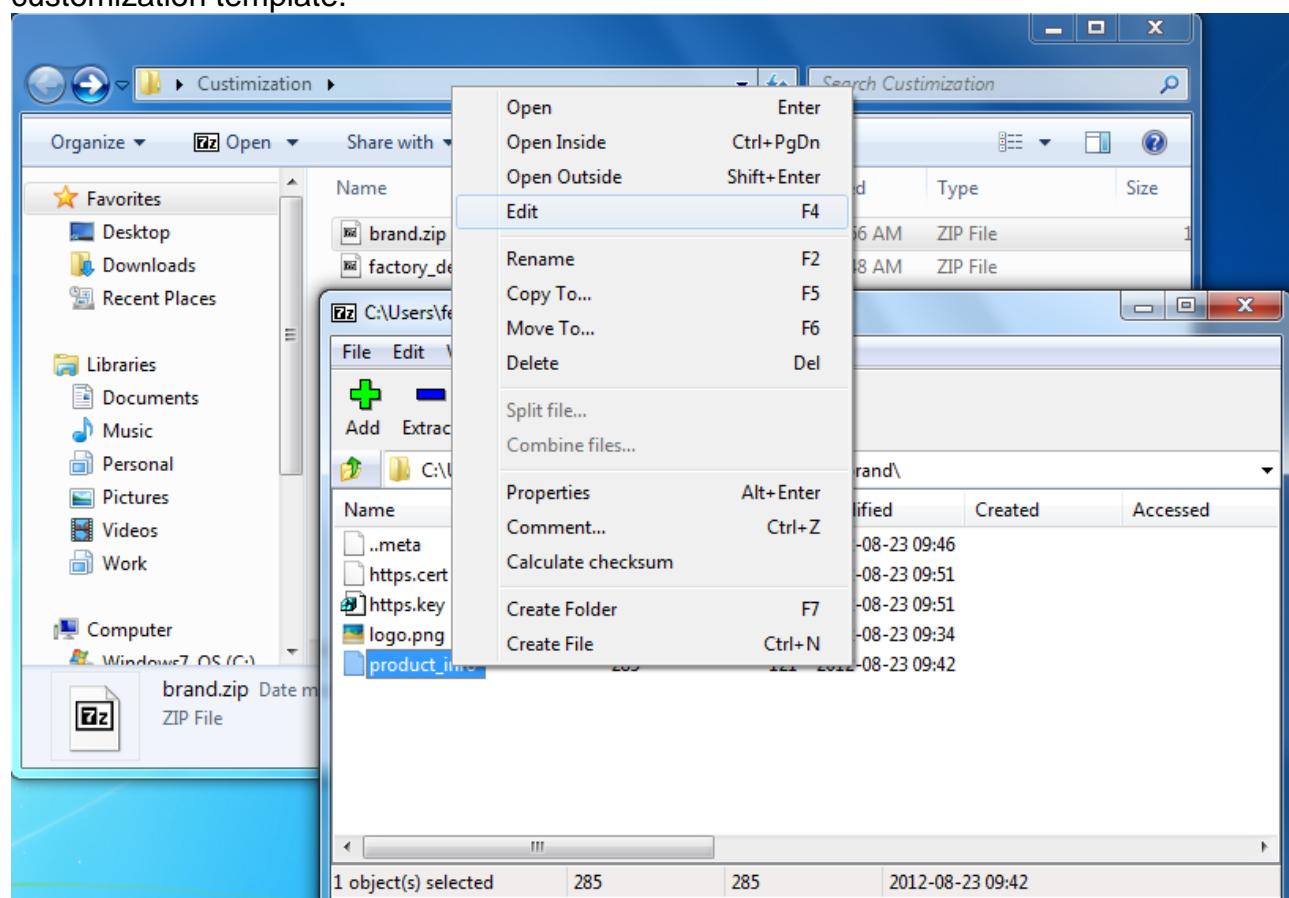
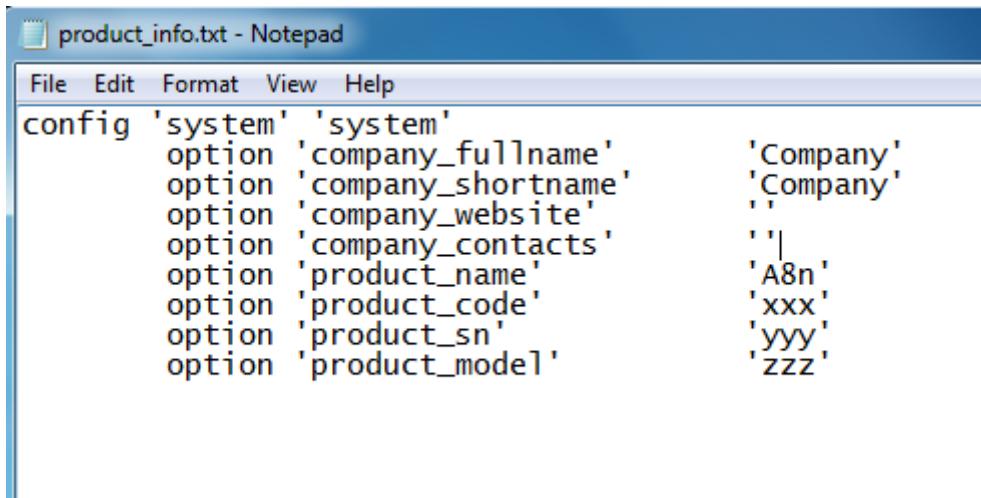
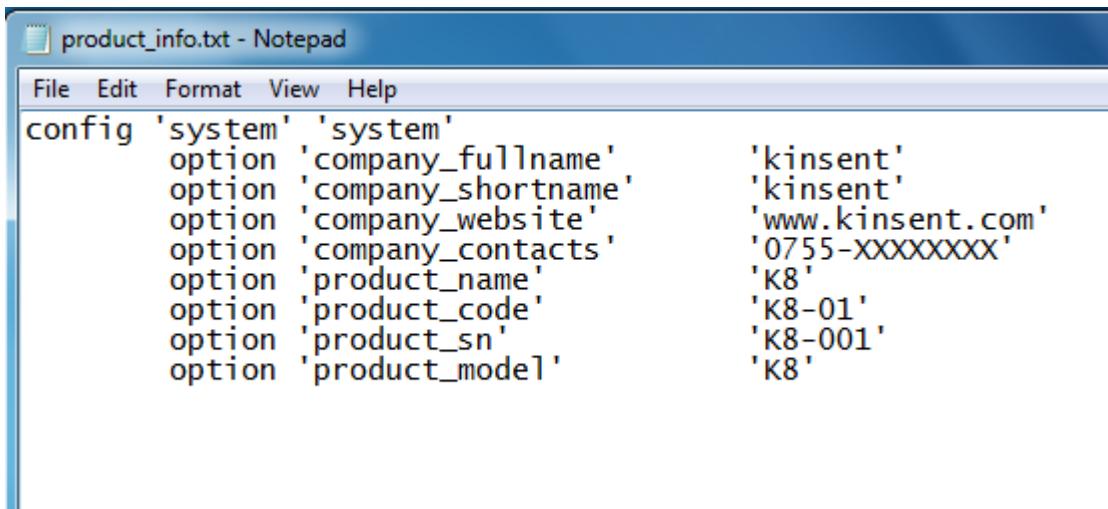


Figure 104 Select "Product\_info", Right-click and select "Edit"



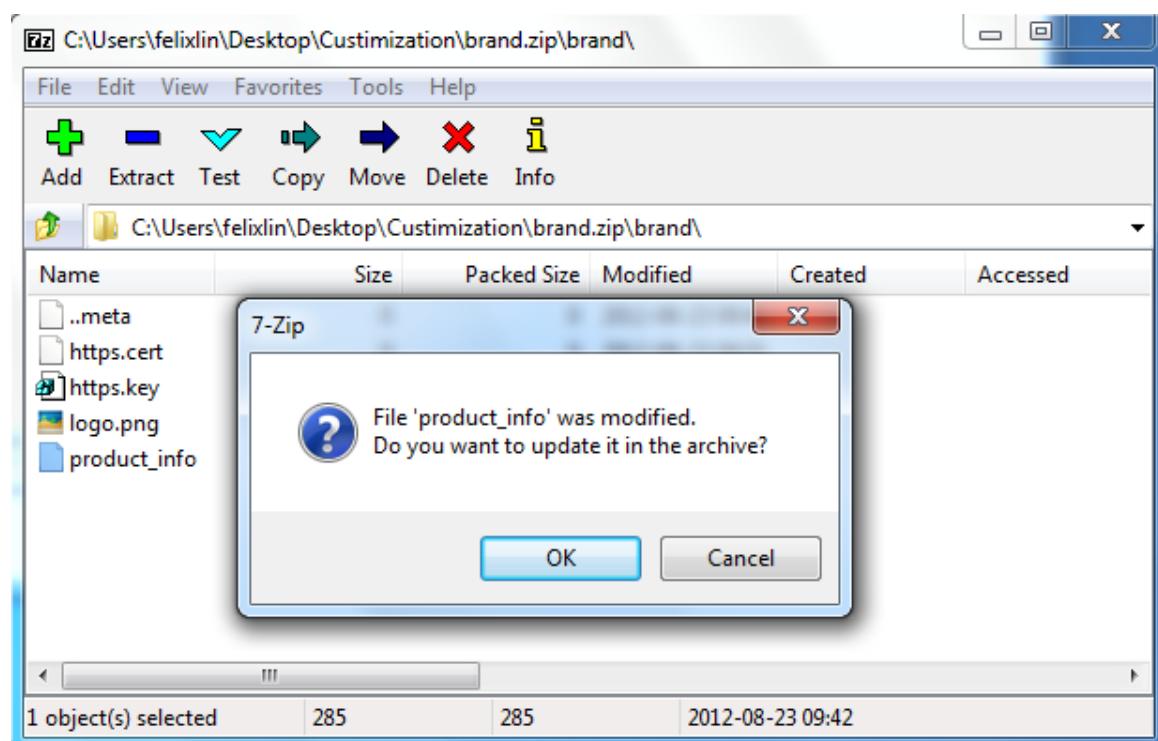
```
product_info.txt - Notepad
File Edit Format View Help
config 'system' 'system'
    option 'company_fullname'      'Company'
    option 'company_shortname'     'Company'
    option 'company_website'       ''
    option 'company_contacts'      ''
    option 'product_name'          'A8n'
    option 'product_code'          'xxx'
    option 'product_sn'            'yyy'
    option 'product_model'         'zzz'
```

Figure 105 Initial information of “product\_info” before the customization



```
product_info.txt - Notepad
File Edit Format View Help
config 'system' 'system'
    option 'company_fullname'      'kinsent'
    option 'company_shortname'     'kinsent'
    option 'company_website'       'www.kinsent.com'
    option 'company_contacts'      '0755-XXXXXXX'
    option 'product_name'          'K8'
    option 'product_code'          'K8-01'
    option 'product_sn'            'K8-001'
    option 'product_model'         'K8'
```

Figure 106 Customized “product\_info”



*Figure 107 Save the customized file and exit, click "OK" to update*

3、Create a logo and save it in png format. Rename it to logo.png. Replace the logo.png under the brand.zip with the customized logo

Example:



*Figure 108 customized logo*

**Finally** , under **Administration** -> **Customization** select “Default Configuration”, press “Browse” >select the customized product template and press “Install” to upload ;under Brand Information, press “Browse”, select the customized brand template and press “install” to upload.

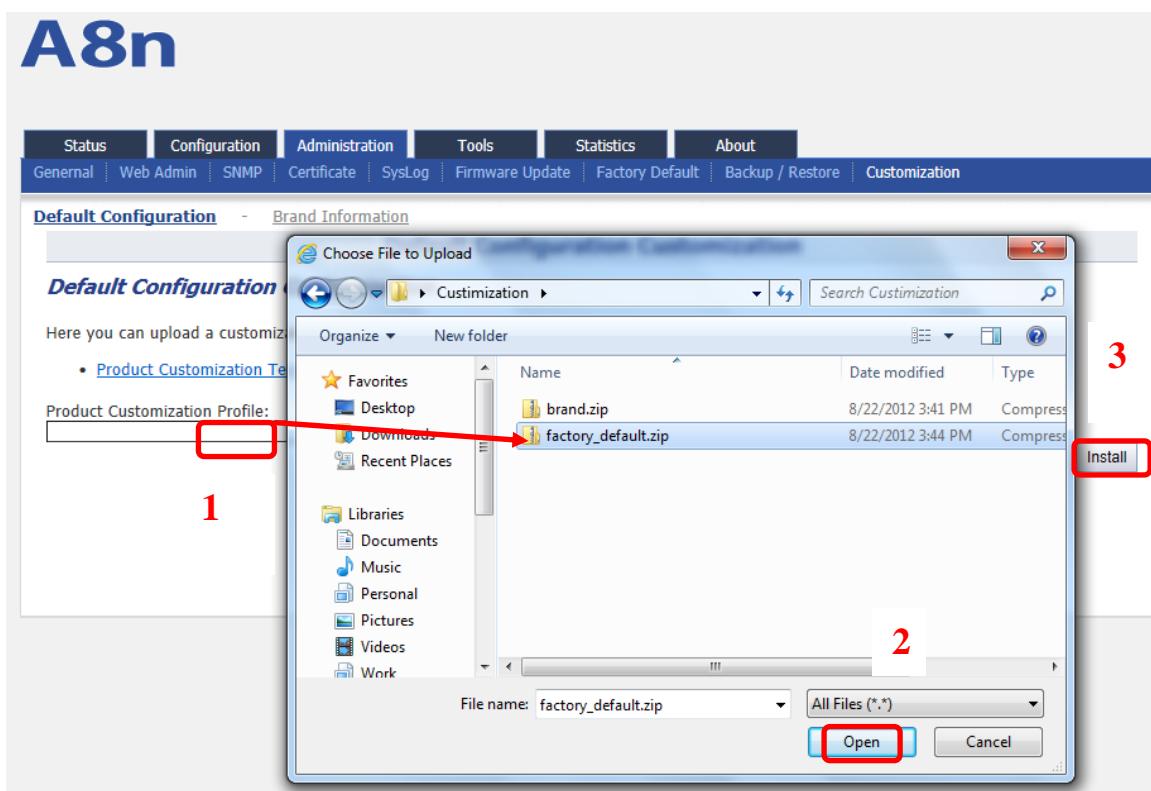


Figure 109 Upload Product Customization Template

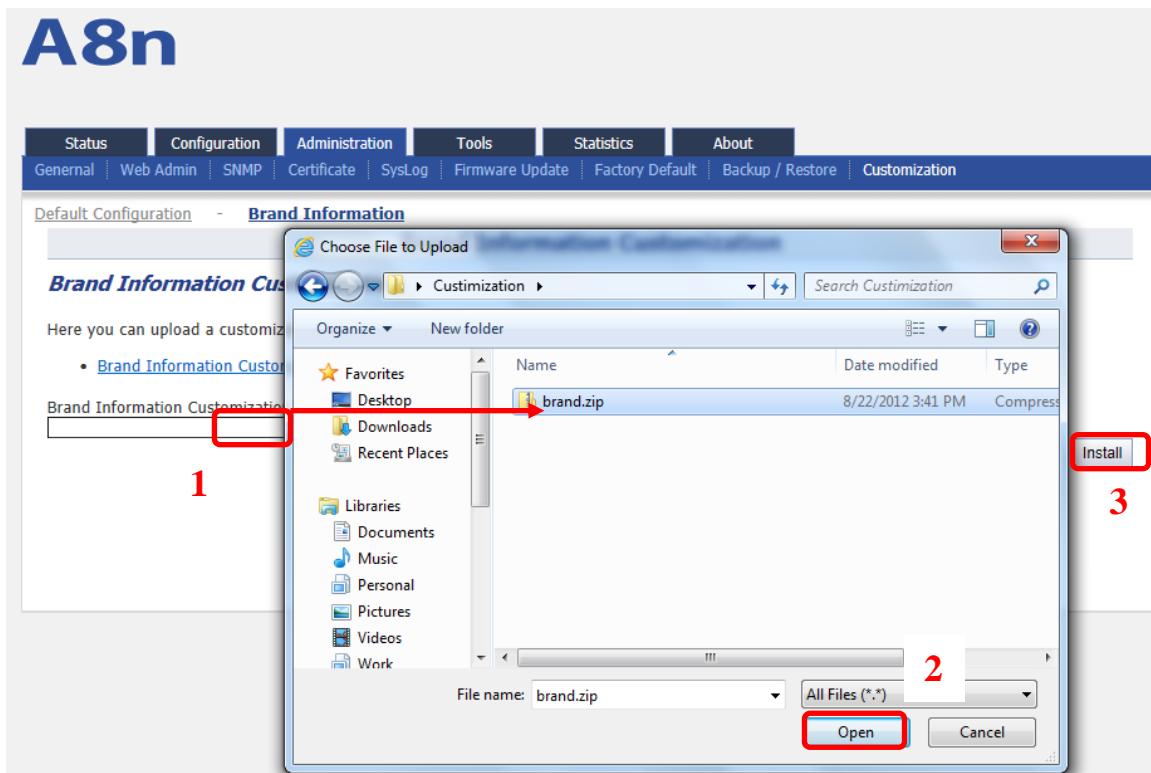


Figure 110 Upload Brand Customization Template

After upload , press the “Reboot AP” button on the top righ corner of the page , reboot A8Ein.

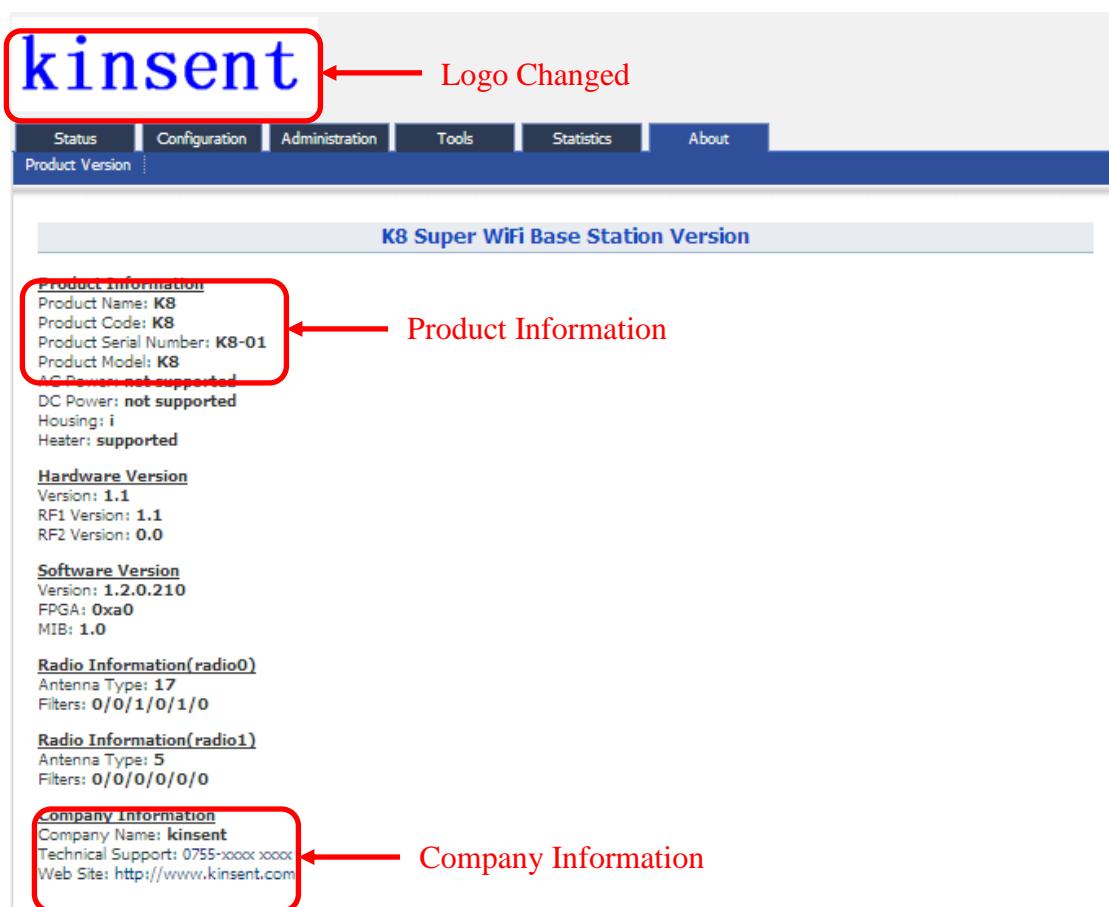


Figure 111 Changes in Product and Company Information

\* The customized configuration will only take effect when reset to factory default.

## 8 SYSTEM TOOLS

A8Ein provides useful tools , this enable the user to have better radio planning.

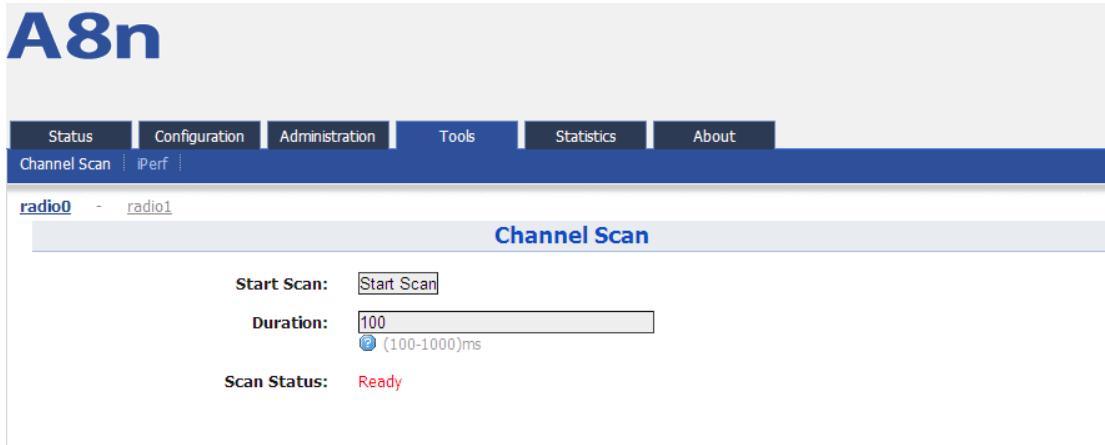
### 8.1 CHANNEL SCAN

Through the channel scan tool of A8Ein , user is able to know the status of 2.4GHz/5GHz channels around the A8Ein, this provides useful information to the user on how to configure A8Ein and radio planning.

Press on [Tools] -> [Channel Scan] to open the channel scan , for 2.4G select “radio0” or for 5G, select “radio1”.

#### 8.1.1 2.4G CHANNEL SCAN

Press [Tools] -> [Channel Scan] -> [radio0] for 2.4G channel scan.



*Figure 112 2.4G Channel Scan*

Details of 2.4G Channel Scan :

[Start Scan] : Press [Start Scan] to start 2.4G channel scan .

[Duration] : The switching time of the channel scanning interval , setting range is 100-1000ms , default is 100ms.

[Scan Status] : A8Ein Base station channel scan status , “Ready” means it can start scan. “Success” means scan finished.

Procedures :

1. In the main menu, select [Tools] -> [Channel Scan] -> [radio1]
2. Press [Start Scan]
3. Wait until the scan status change to “Success”. The scanning will take approximately 20 seconds

Result will be divided into 6 parts: Channel Usage Info, Overall BSS Info, Sector 0 BSS Info, Sector 1 BSS Info, Sector 2 BSS Info and Sector 3 BSS Info.

Channel Usage Info:



# A8n

Status Configuration Administration Tools Statistics About

Channel Scan iPerf

radio0 - radio1

### Channel Scan

**Start Scan:**

**Duration:**  ms  
 (100-1000)ms

**Scan Status:** Success

**Scan Time:** Wed Jul 4 15:05:50 2012

### Channel Scan Result

**Sector0**

CH	1	2	3	4	5	6	7	8	9	10	11	12	13
Noise Floor	-95	-95	-97	-97	-96	-97	-97	-96	-97	-97	-97	-97	-98
Noise Floor (CT0)	-95	-95	-97	-97	-96	-97	-97	-96	-97	-97	-97	-97	-98
Noise Floor (CT1)	-95	-95	-95	-95	-95	-96	-95	-95	-96	-97	-97	-97	-96
Noise Floor (EX0)	0	0	0	0	0	0	0	0	0	0	0	0	0
Noise Floor (EX1)	0	0	0	0	0	0	0	0	0	0	0	0	0
Busy %	2	2	1	0	0	0	0	0	1	0	1	0	0
#BSS	1	0	0	0	0	0	0	0	0	0	0	0	0

**Sector1**

CH	1	2	3	4	5	6	7	8	9	10	11	12	13
Noise Floor	-93	-95	-95	-95	-95	-95	-95	-95	-95	-95	-96	-95	-97
Noise Floor (CT0)	-93	-95	-95	-95	-95	-95	-95	-95	-95	-95	-96	-95	-97
Noise Floor (CT1)	-95	-95	-96	-95	-95	-96	-94	-95	-94	-94	-96	-96	-96
Noise Floor (EX0)	0	0	0	0	0	0	0	0	0	0	0	0	0
Noise Floor (EX1)	0	0	0	0	0	0	0	0	0	0	0	0	0
Busy %	2	0	0	0	0	0	0	0	0	0	4	0	0
#BSS	1	0	0	0	0	0	0	0	0	0	1	0	0

**Sector2**

CH	1	2	3	4	5	6	7	8	9	10	11	12	13
Noise Floor	-95	-96	-96	-96	-96	-96	-96	-95	-96	-97	-97	-97	-97
Noise Floor (CT0)	-95	-96	-96	-96	-96	-96	-96	-95	-96	-97	-97	-97	-97
Noise Floor (CT1)	-96	-97	-97	-97	-96	-97	-96	-96	-97	-97	-98	-98	-98
Noise Floor (EX0)	0	0	0	0	0	0	0	0	0	0	0	0	0
Noise Floor (EX1)	0	0	0	0	0	0	0	0	0	0	0	0	0
Busy %	3	0	0	1	0	0	2	0	0	0	8	0	0
#BSS	0	0	0	0	0	0	0	0	0	0	1	0	0

**Sector3**

CH	1	2	3	4	5	6	7	8	9	10	11	12	13
Noise Floor	-95	-95	-95	-95	-96	-96	-95	-96	-96	-96	-96	-96	-96
Noise Floor (CT0)	-95	-95	-95	-95	-96	-96	-95	-96	-96	-96	-96	-96	-96
Noise Floor (CT1)	-94	-95	-95	-95	-95	-95	-95	-95	-95	-96	-95	-96	-96
Noise Floor (EX0)	0	0	0	0	0	0	0	0	0	0	0	0	0
Noise Floor (EX1)	0	0	0	0	0	0	0	0	0	0	0	0	0
Busy %	2	1	3	0	0	0	0	2	0	0	4	0	0
#BSS	1	0	1	0	0	0	0	0	0	0	0	0	0

Figure 113 2.4G Channel Scan

Press **Channel Usage Info** for the result of Noise Floor and Business from every sector antenna.

Overall BSS Info:



# A8n

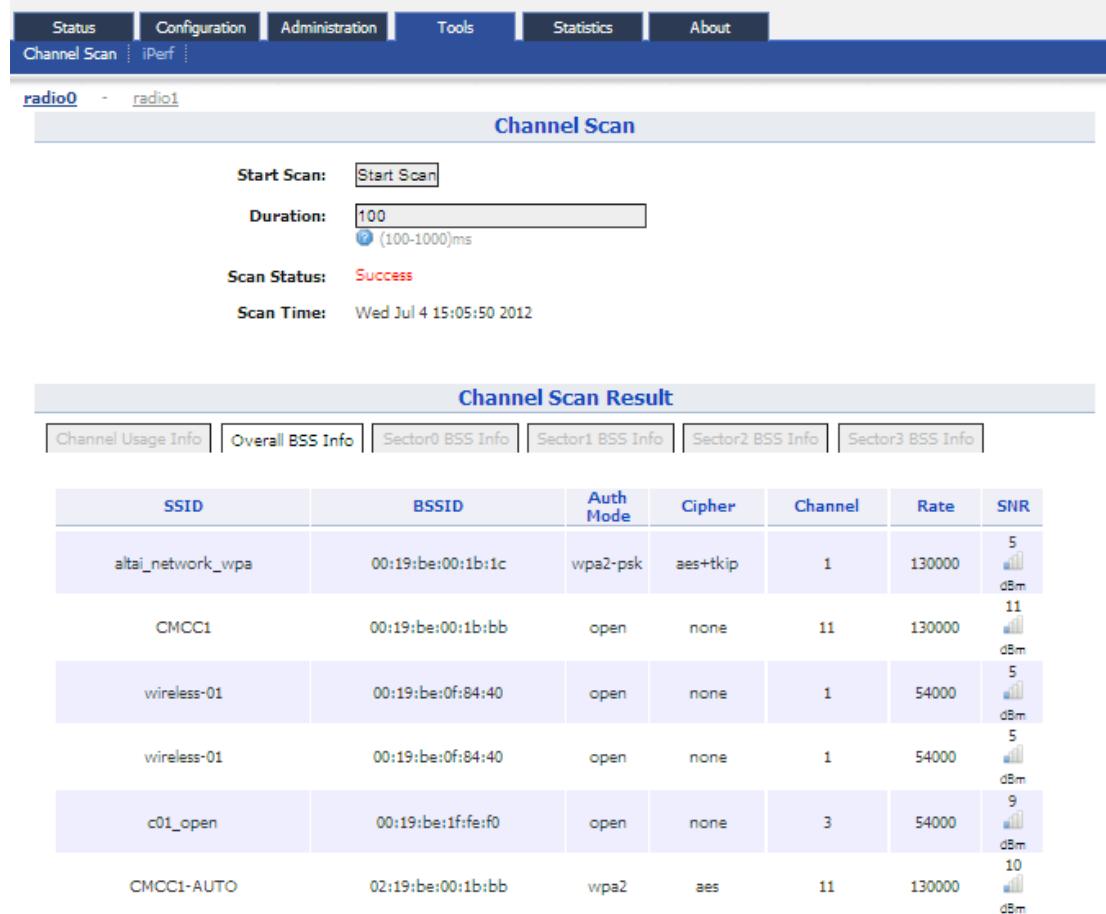


Figure 114 2.4G Overall BSS Info



Press Overall BSS Info to view 2.4G BSS Info around A8Ein. It includes SSID, BSSID, Authentication Mode, Cipher, Channel, Date Rate and SNR.

Sector 0, 1, 2, 3 BSS Info:

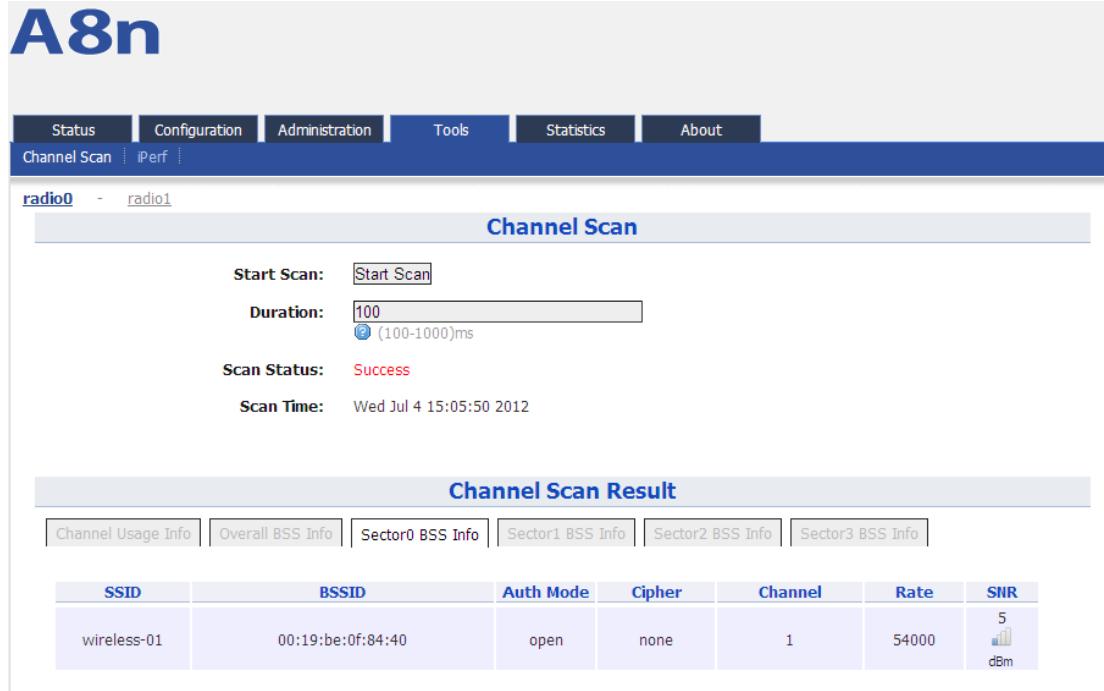


Figure 115 Sector 0 BSS Info

Press Sector0 BSS Info、Sector1 BSS Info、Sector2 BSS Info、Sector3 BSS Info to view the BSS Info of Sector 0、1、2、3.

Base on A8Ein 5G Channel Scan Result , user can select 5G channel with lower noise floor, less busy and less SSID as the channel for A8Ein's SSID.



**Caution : During the process of channel scan, all WiFi clients associated to A8 via 2.4G channel will be drop for approximately 15-20 seconds.**

### 8.1.2 5G CHANNEL SCAN

Press **Tools** -> **Channel Scan** -> **radio1** to start the 5G channel scan.

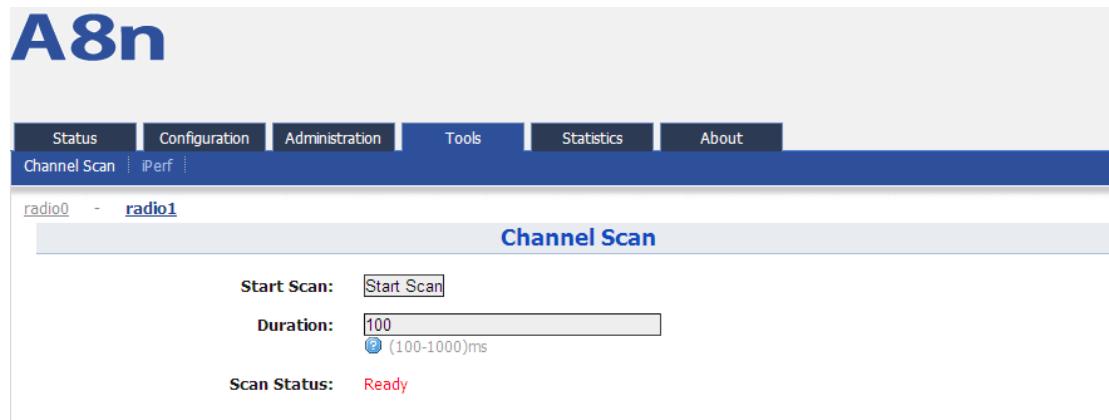


Figure 116 5G Channel Scan

Details of 5G channel scan :

**Start Scan** : Press **Start Scan** to start 5G channel scan.

**Duration** : The switching time of the channel scanning interval , setting range is 100-1000ms , default is 100ms.

**Scan Status** : A8Ein Base station channel scan status , “Ready” means it can start scan. “Success” means scan finished.

Procedures :

4. In the main menu, select **Tools** -> **Channel Scan** -> **radio1**
5. Press **Start Scan**
6. Wait until the scan status change to “Success”. The scanning will take approximately 20 seconds

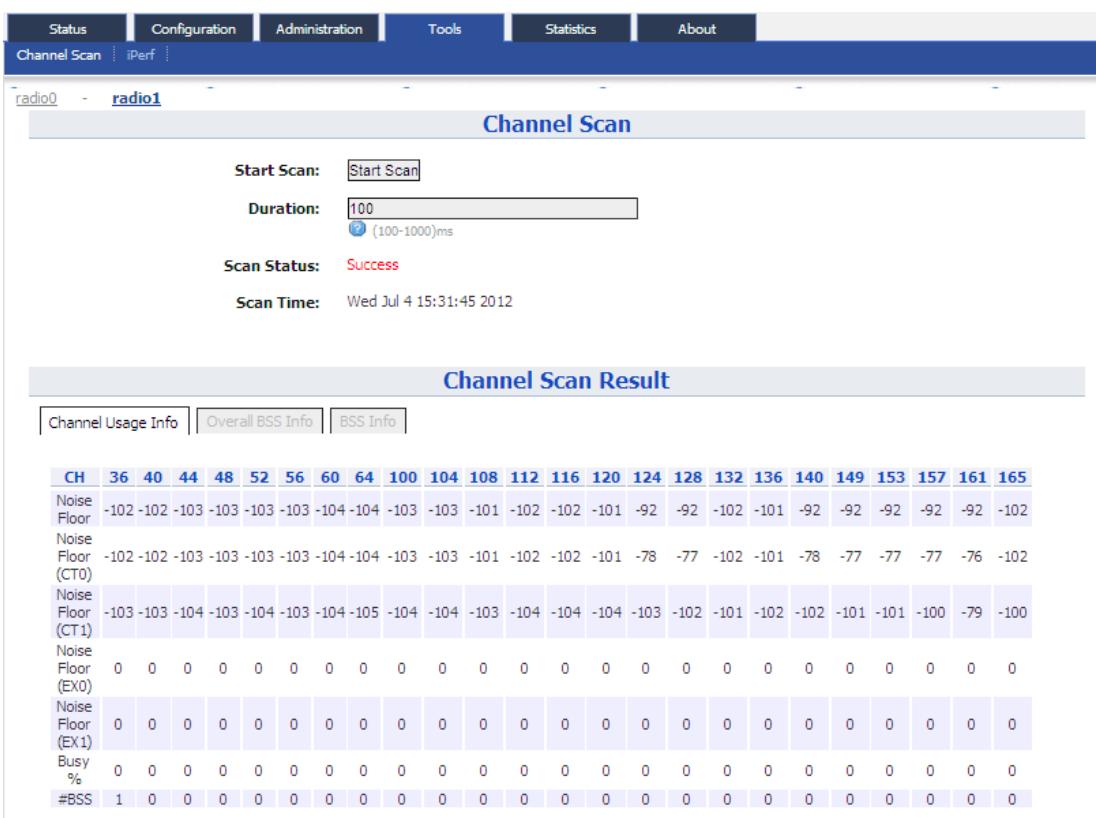


Figure 117 5G Channel Usage

From the Channel Scan Result , press on **Channel Usage Info** user will see the condition of 5G channel around A8Ein.

Overall BBS Info :

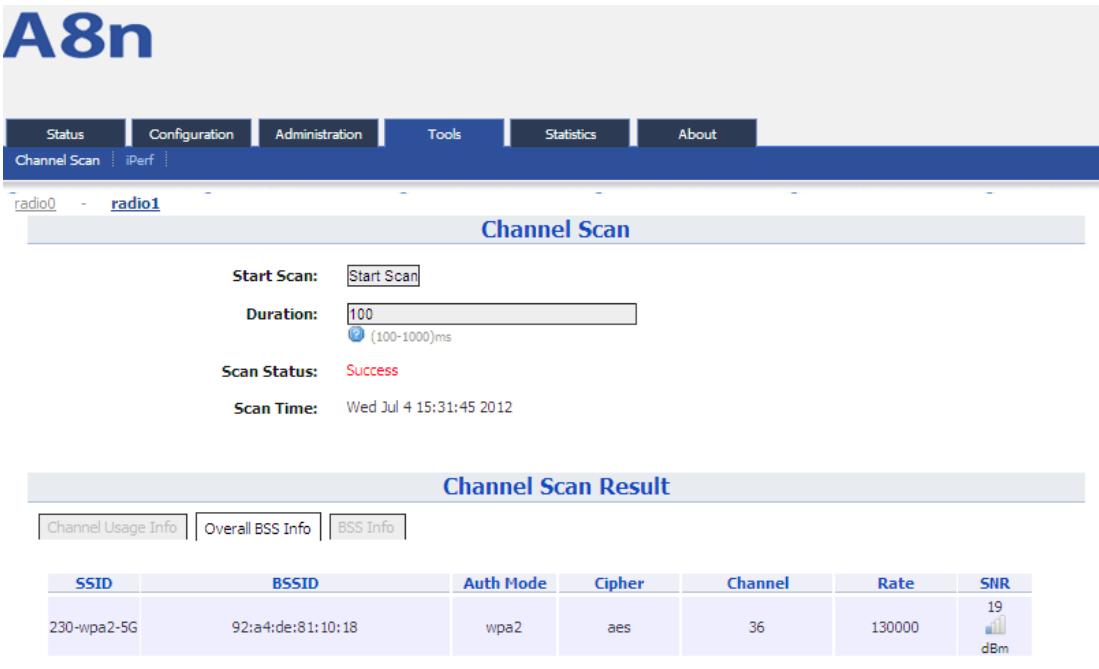
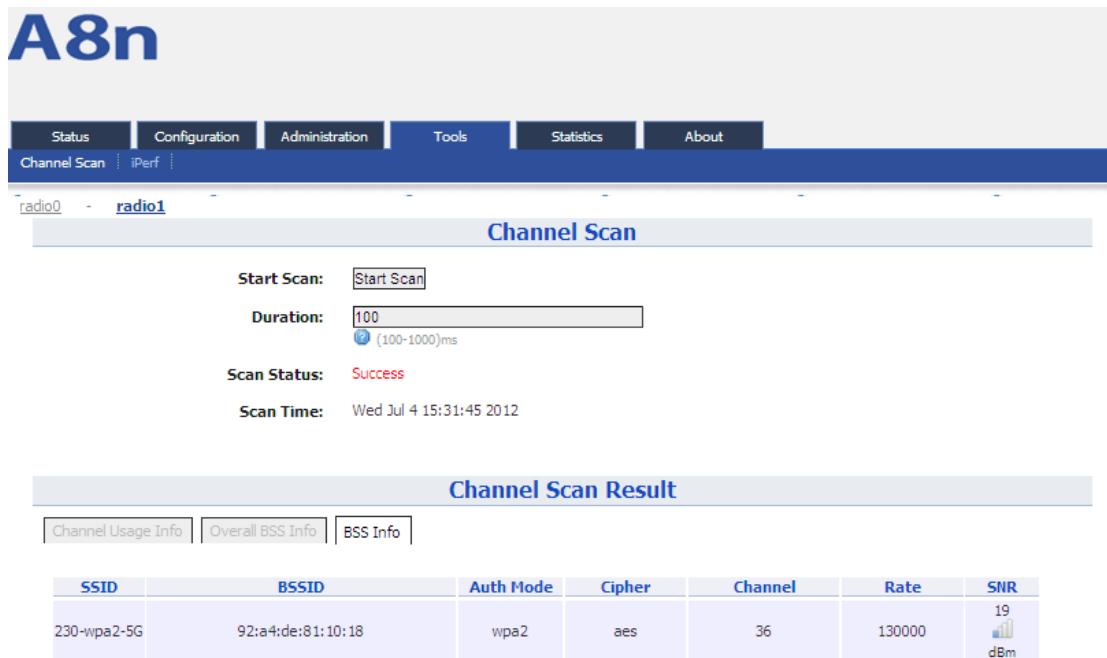


Figure 118 5G BSS Info

In Channel Scan Result, press **Overall BSS Info** for 5G BSS Info, it shows information of BSSID around A8Ein.

## BSS Info :

*Figure 119 BSS information*

In Channel Scan Result, press **BSS Info** and it shows information of BSSID from A8Ein.

Base on A8Ein 5G Channel Scan Result , user can select 5G channel with lower noise floor, less busy and less SSID as the channel for A8Ein's SSID.



**Caution .During the process of channel scan, all WiFi clients associated to A8 via 5G channel will be drop for approximately 15-20 seconds.**

## 8.2 iPERF

With build-in iPerf in A8Ein , user can use one terminal with WiFi adapter to test the throughput performance of A8Ein.

Click on **Tools -> iPerf** to open up the iPerf interface shown in the picture below :

Server ID	Server Type	Server Port	Server Status	
1	TCP	5001	OFF	
2	UDP	5002	OFF	

Figure 120 iPerf interface

Details of iPerf configuration interface:

**Server ID** : iPerf Server ID.

**Server Type** : iPerf Server Type.

**Server Port** : iPerf Server Port number.

**Server Status** : iPerf Server Status.

click on this icon to configure iPerf Server.

The button will appear the following interface:

Enable Server:

Server ID: 1

Server Type:  UDP Server  TCP Server

Port: 5001 (0-65535)

Changes

Submit

Back to Overview

Figure 121 iPerf Server Configuration Interface

Details of iPerf Server configuration interface:

**Enable Server** : Enable or disable iPerf Server.

**Server ID** : iPerf Server ID.

**Server Type** : Select TCP or UDP server.

**Port** : Select port number of TCP or UDP.

#### Procedures :

1. In the main menu, select **Tools->iPerf** enter the iPerf configuration page;
2. Press  to configure the iPerf server parameters;
3. **Enable Server**: Select Enable;
4. **Server Type**: select A8Ein as TCP Server or UDP server;
5. Select the port number of TCP server or UDP server;
6. Press **Submit** and start the test.

## 9 A8EIN CPU USAGE

A8Ein provides information of CPU Usage of the device.

Click on **Statistics** -> **Processor** and it shows A8Ein CPU processing and usage , A8Ein utilize dual core CPU , you may select “1” or “0” to check the status of each CPU. Picture below shows the statistic of Processor 1 , Processor 0 will have the same layout as Processor 1.

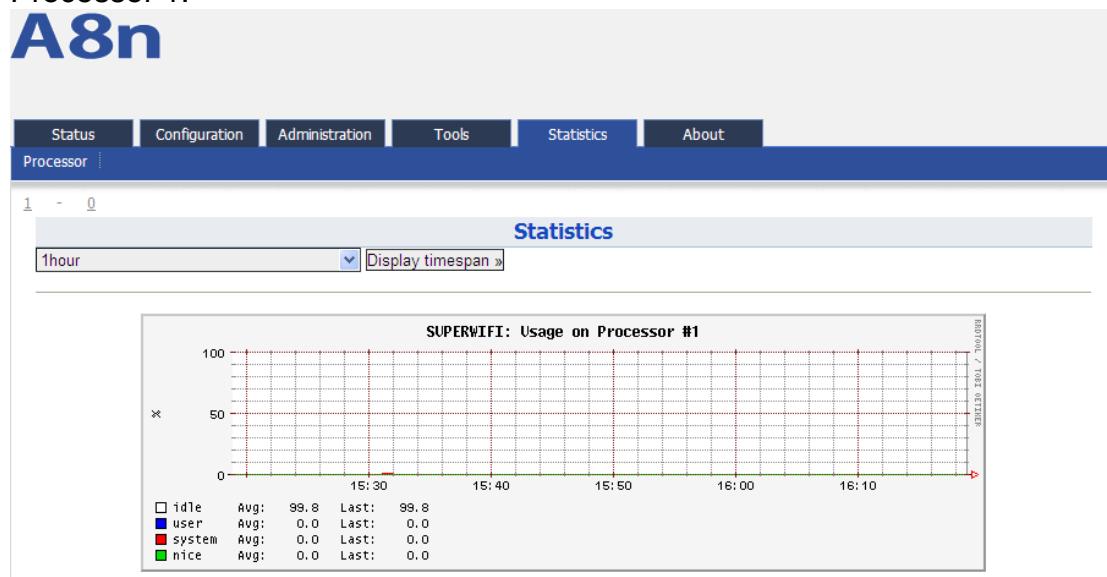


Figure 122 Processor 1 Usage

Details of Processor 1 usage are listed below :

On the top left corner, you can select the display timespan of usage , options available are 10 minutes 、 1 hour 、 1 day 、 1 week 、 1 month or 1 year 。

**Display timespan** : this allow user to select the duration CPU usage.

Steps :

1. In the main menu, select **Statics->Processor** into the CPU processor usage statistics interface;
2. Select the CPU that will display at the statistic chart.
3. Click **Display timespan** to select the timespan.

## 10 A8EIN INFORMATION

The “About” in the web layout shows the hardware and software version, information of radio, product and company

**A8n**

Status Configuration Administration Tools Statistics About

Product Version

**A8n Super WiFi Base Station Version**

**Hardware Version**  
Version: 1.0  
RF1 Version: 0.0  
RF2 Version: 0.0

**Software Version**  
Version: 1.1.2.405  
FPGA: 0x7f  
MIB: 1.0

**Radio Information(radio0)**  
Antenna Type: External but not included  
Filters: 0/0/0/0/0/0

**Product Information**  
Product Name: A8n  
Product Code: a8n-  
Product Serial Number: 1AA082300021  
Product Model: WA8011A-A  
AC Power: supported  
DC Power: supported  
Housing: N  
Heater: supported

**Company Information**  
Company Name: Company  
Technical Support:  
Web Site: <http://>

Figure 123 A8Ein “About”

Details of A8Ein Information :

**Production Information:** This shows the name, code, serial number, product mode, supported power supply and etc.

**Hardware Version:** Display the version of hardware, and RF

**Software Version:** Display the version of firmware, FPGA, and MIB

**Radio Information:** Display the antenna type and filer

**Company Information:** Display information of Altai