Altai A8Ein Super WiFi Base Station

Configuration Manual
For
Firmware Version 1.2.0.604

Version 1.0

Date: 16-Aug-2012

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

Customer Support Centre:
Email: 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.

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.

TABLE OF CONTENTS

1 INTRODUCTION 7

2 A8EIN MODEL AND FIRMWARE VERSION 7

3 NEW FUNCTIONS INTRODUCTION 7

4 GETTING STARTED 8
- 4.1 Setup Local Area Connection on Your PC 8
- 4.2 Check Access 10
- 4.3 Configuration with Web-Admin 10
- 4.4 Interface introduction 11
- 4.5 Logout from A8Ein interface 12

5 SYSTEM STATUS 12
- 5.1 System 12
- 5.2 Interface 14
- 5.3 Log 23

6 SYSTEM CONFIGURATION 25
- 6.1 A8Ein configuration procedures 25
- 6.2 Basic configuration 26
- 6.3 Network Configuration 27
- 6.4 Wireless 32
- 6.5 Thin AP Configuration 57

7 ADMINISTRATION CONFIGURATION 58
- 7.1 Administration general setting 58
- 7.2 Web Admin 58
- 7.3 SNMP setting 59
- 7.4 Certificate management 60
- 7.5 Syslog 60
- 7.6 Firmware Update 61
- 7.7 Restore Factory Default 64
- 7.8 Backup/Restore 67
- 7.9 Customization 68

8 SYSTEM TOOLS 77
- 8.1 Channel Scan 77
- 8.2 iPerf 84

9 A8EIN CPU USAGE 85

10 A8EIN INFORMATION 86

Manual Conventions

Bold	Bold type within paragraph text indicates commands, files names, directory names, paths, output, or returned values.
Italic	Within commands, italics indicate a variable that the user must specify. Titles of manuals or other published documents are also set in italics.
_____	Underline means that you have to pay attention to the words.
`Courier`	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**".

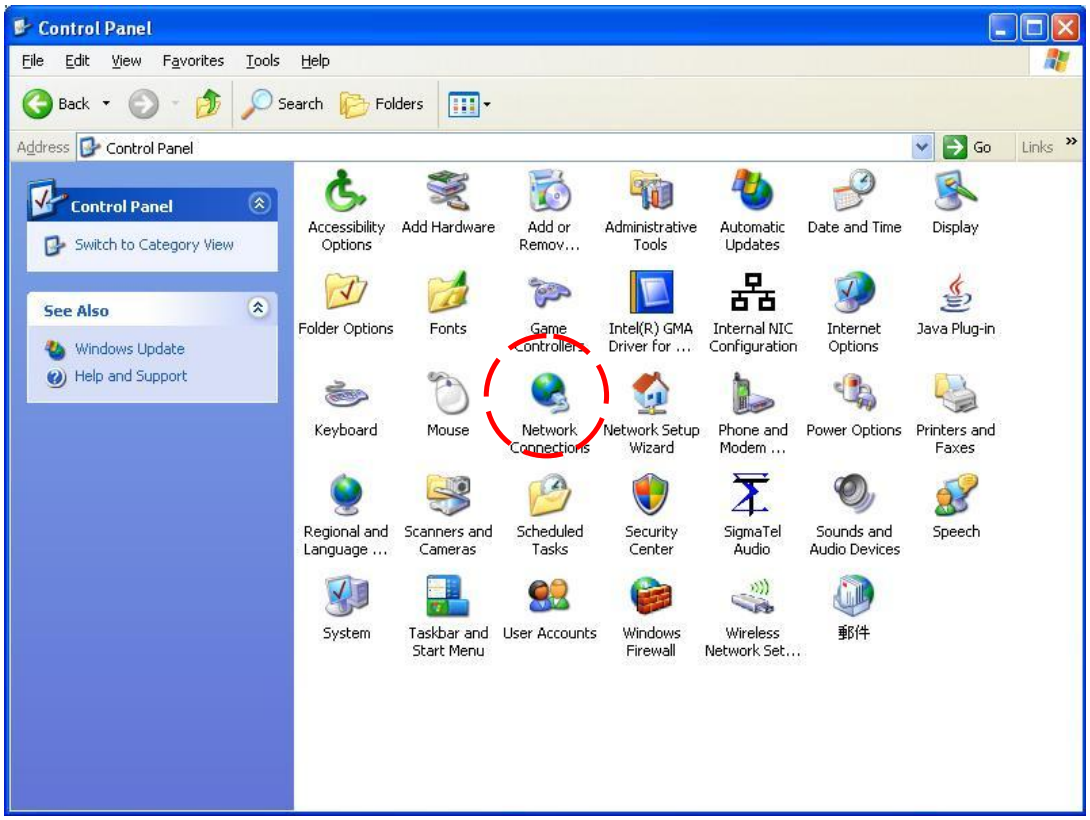


Figure 1 Control Panel in Windows XP

3. Right-click the "**Local Area Connection**" and select "**Properties**".

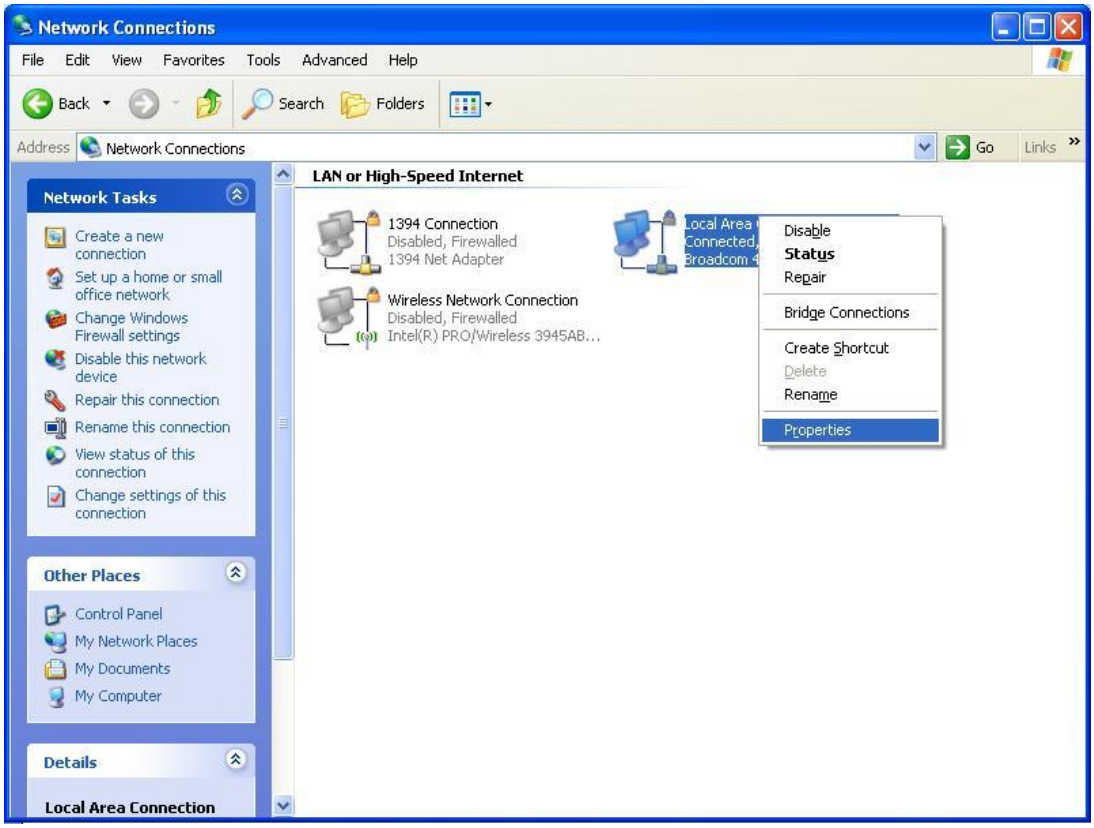


Figure 2 Network Connections in Windows XP

4. After clicking "**Properties**", you will see the diagram as below.

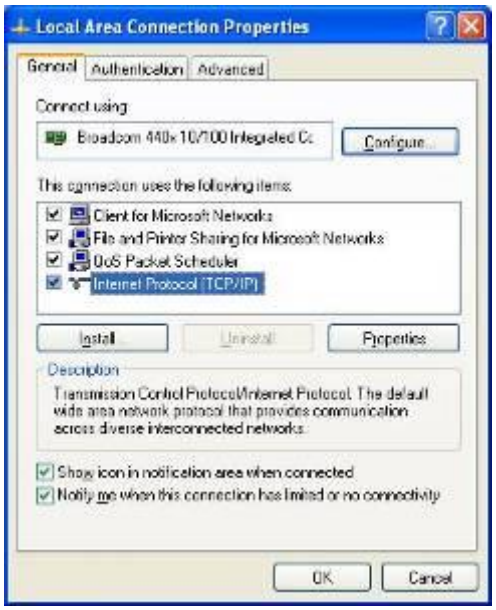


Figure 3 Local Area Connection Properties in Windows XP

5. Mark the "Internet Protocol (TCP/IP)" and click "**Properties**".
6. 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).
7. Using the default "**Subnet mask**" (default: 255.255.255.0) setting in the first time.
8. 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.

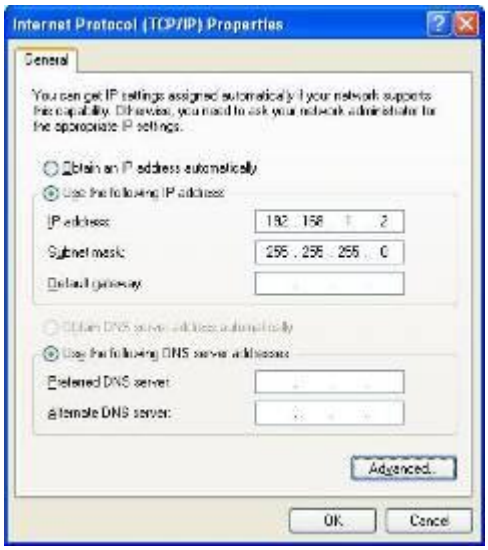


Figure 4 Internet Protocol (TCP/IP) Properties in Windows XP

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	***root***	***superwifi123***

Table 2 A8Ein default User Name and Password

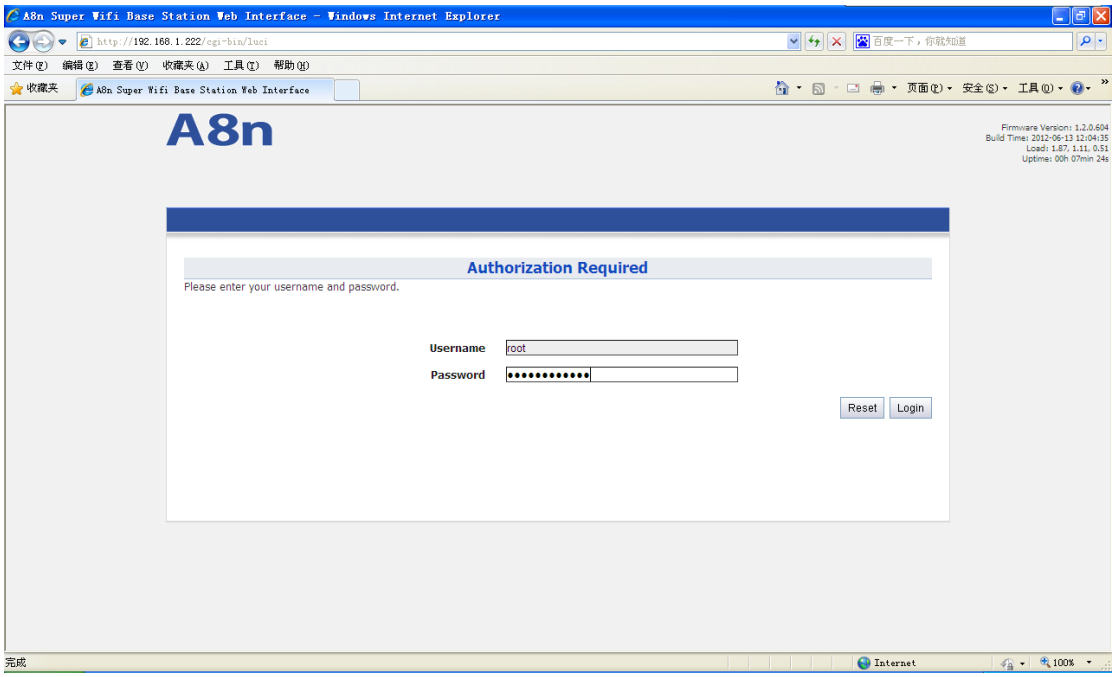


Figure 5 Enter User Name and Password

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.

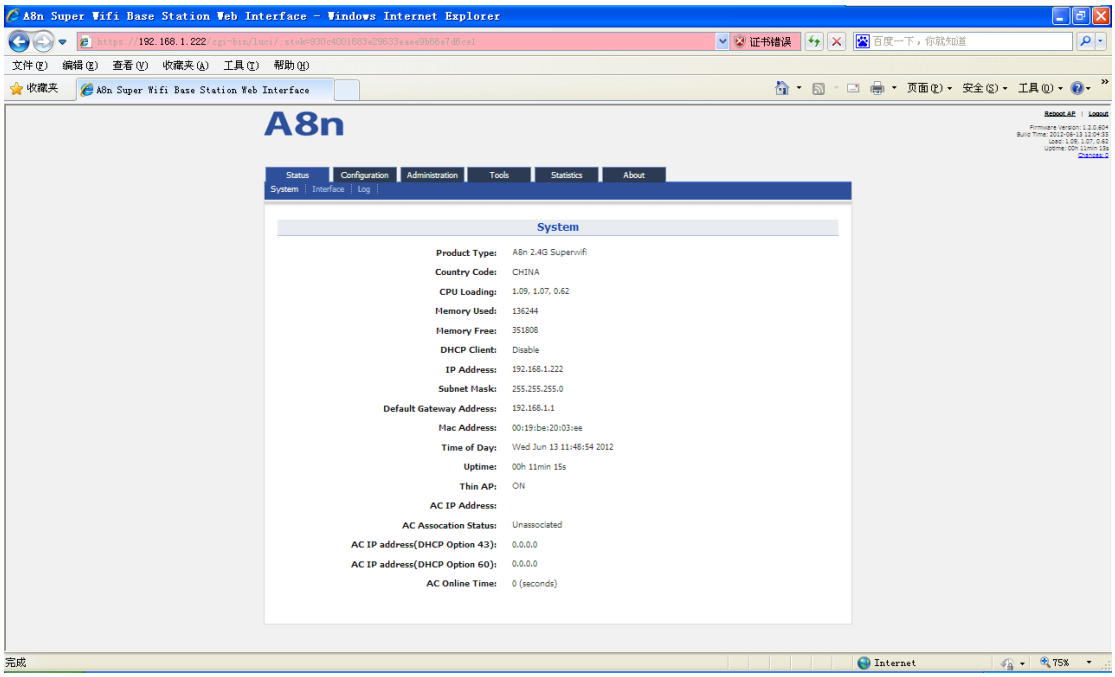


Figure 6 Web-admin Login Page

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

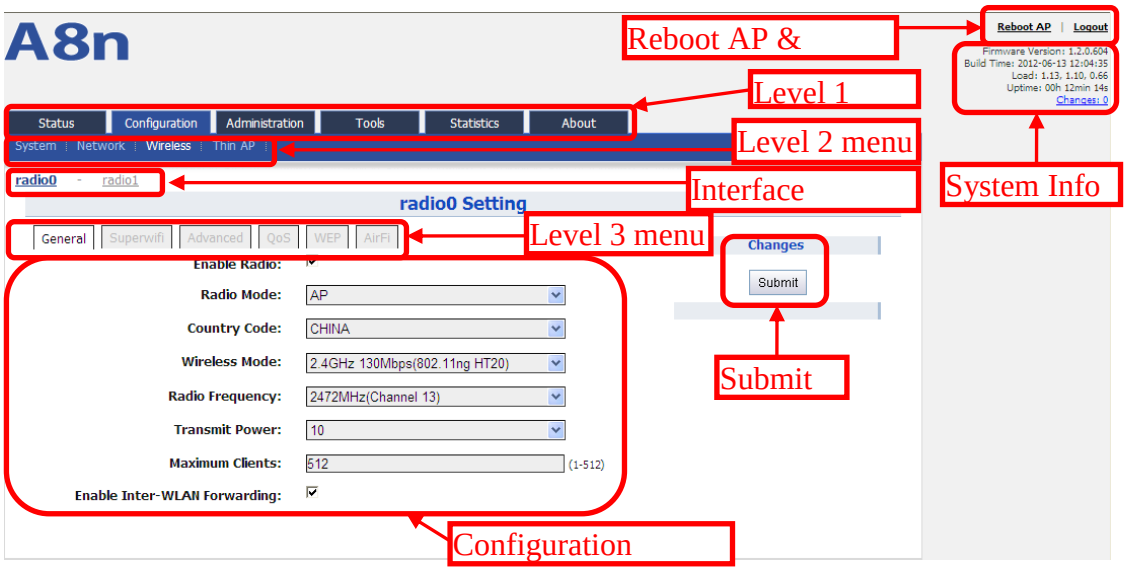


Figure 7 A8Ein webpage

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.

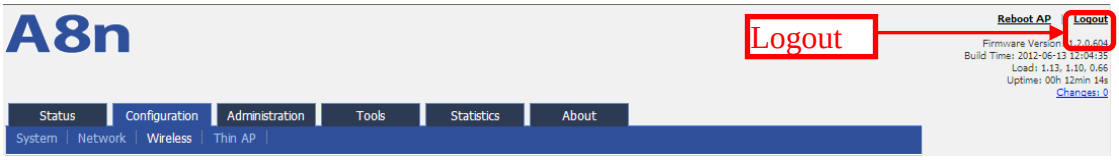


Figure 8 Logout

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.

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.

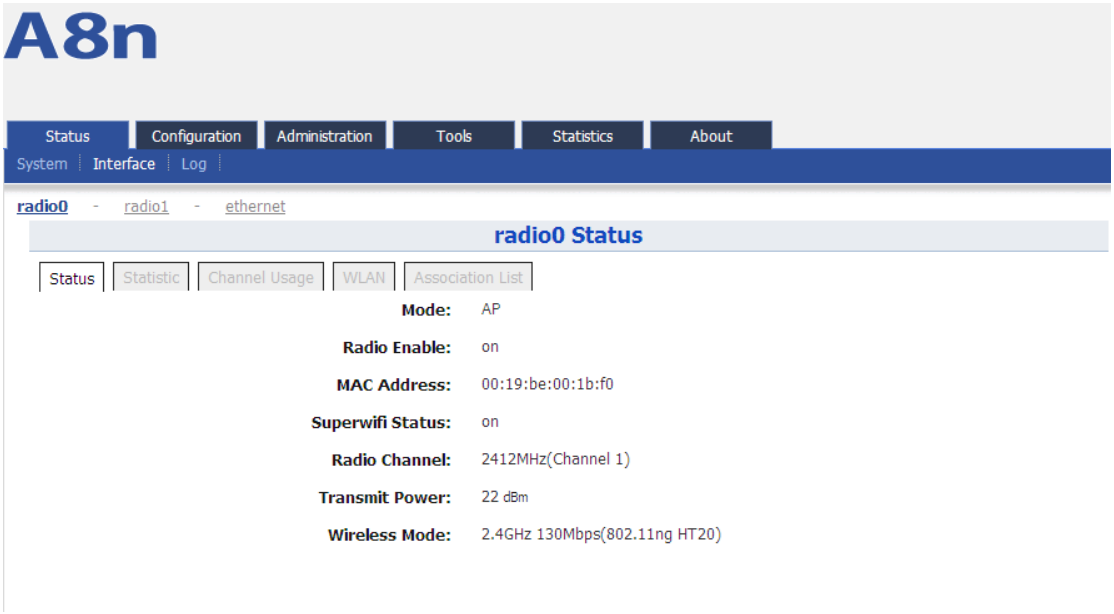


Figure 11 Interface status

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.

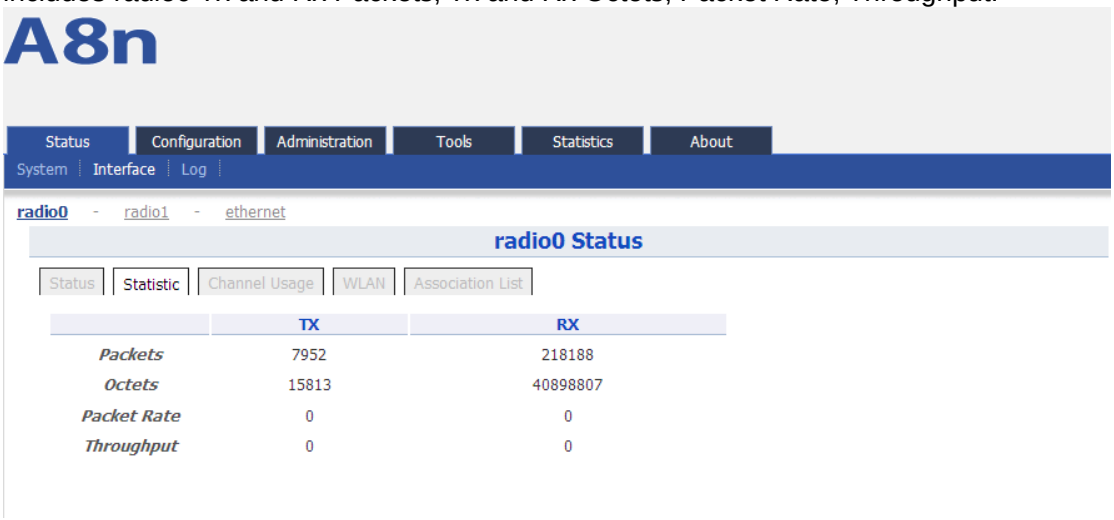


Figure 12 Interface statistic

Packets： radio0 received and sent packets

Octets： radio0 received and sent octets

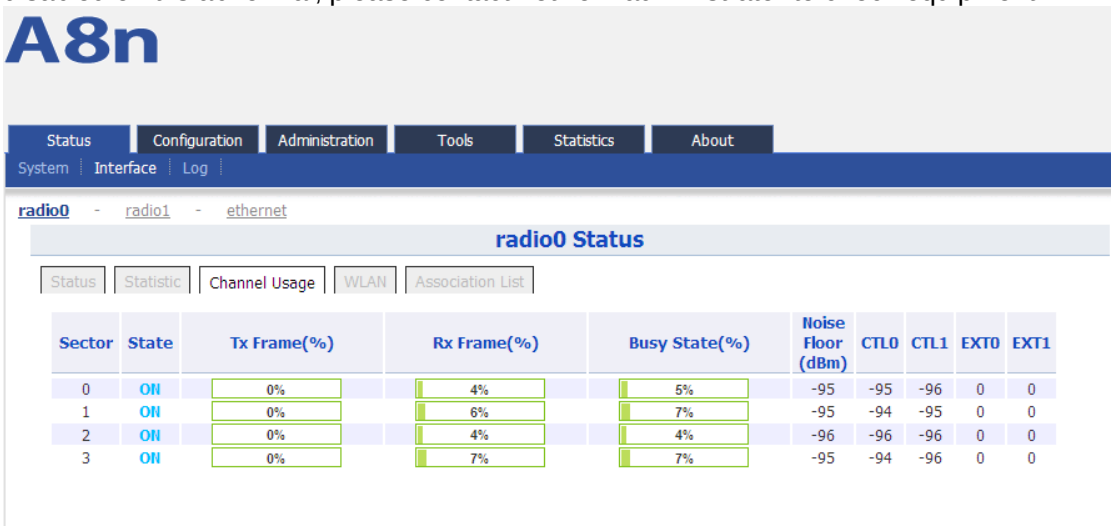
Packet Rate： radio0 packet rate

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.



Sector	State	Tx Frame(%)	Rx Frame(%)	Busy State(%)	Noise Floor (dBm)	CTL0	CTL1	EXT0	EXT1
0	ON	0%	4%	5%	-95	-95	-96	0	0
1	ON	0%	6%	7%	-95	-94	-95	0	0
2	ON	0%	4%	4%	-96	-96	-96	0	0
3	ON	0%	7%	7%	-95	-94	-96	0	0

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”.

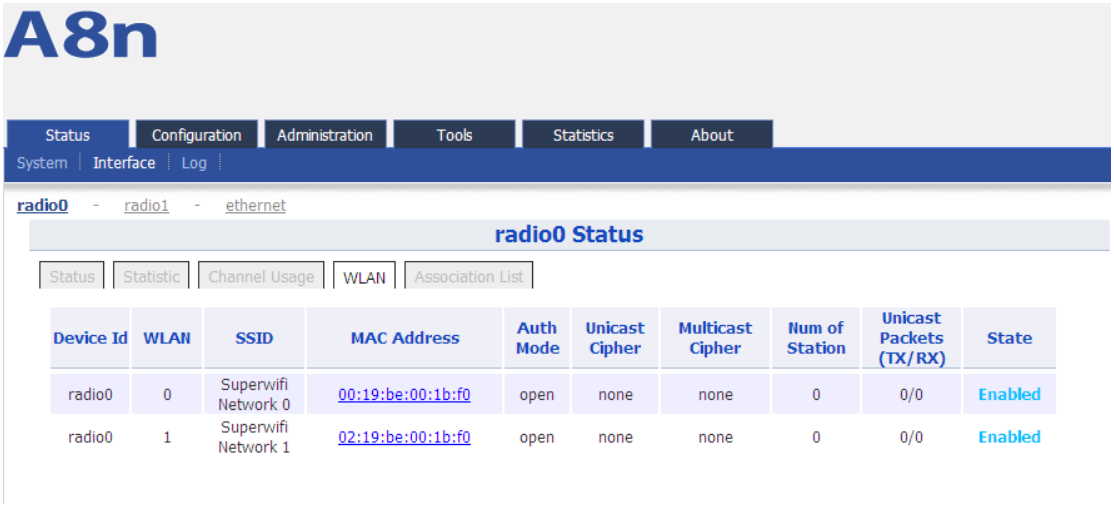


Figure 14 WLAN information

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.

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.

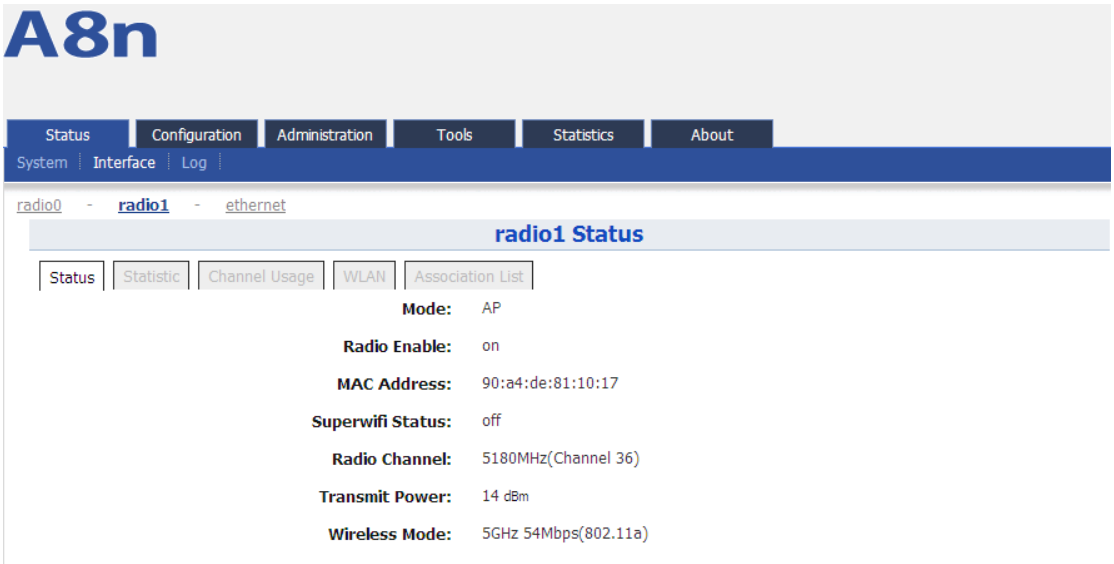


Figure 16 5G interface state

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.

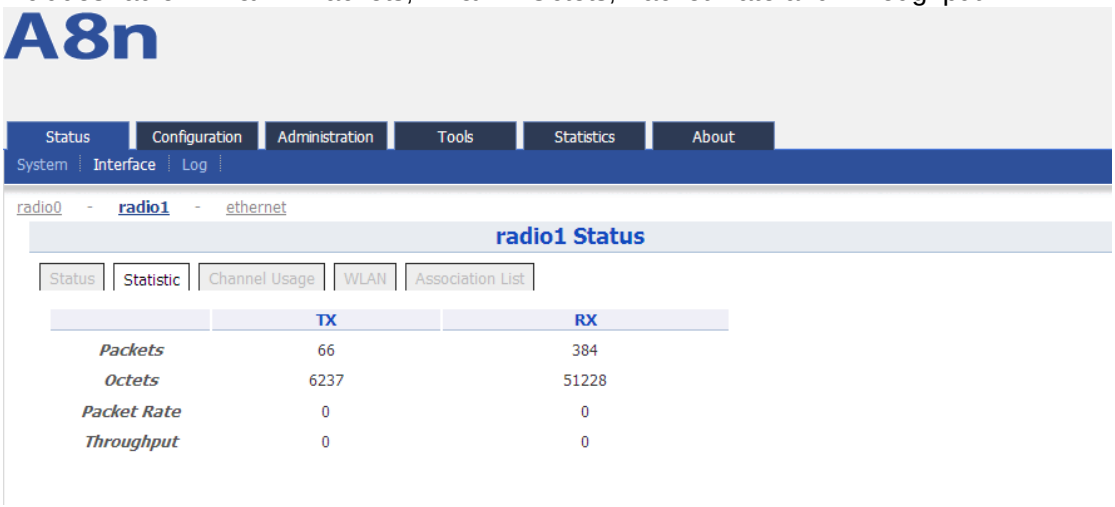


Figure 17 5G interface statistic

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.

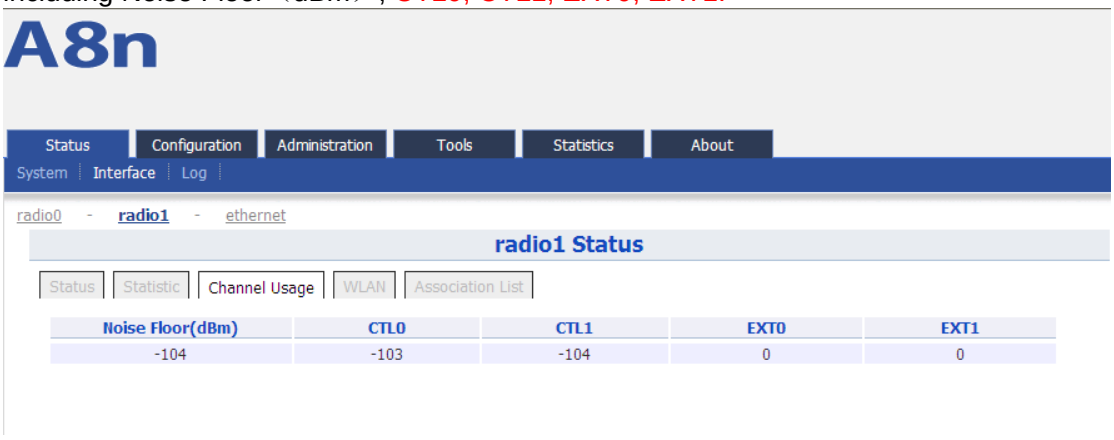


Figure 18 5G interface channel usage

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”.

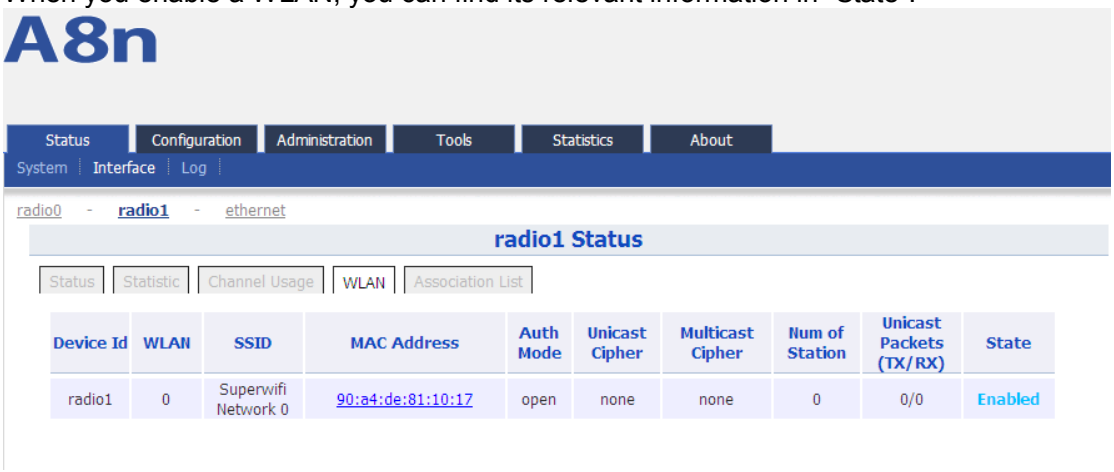


Figure 19 5G interface WLAN information

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.

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-> ethernet -> status to check Ethernet interface status which includes Ethernet MAC Address, Speed, Duplex, Auto-negotiation and Link Detected.

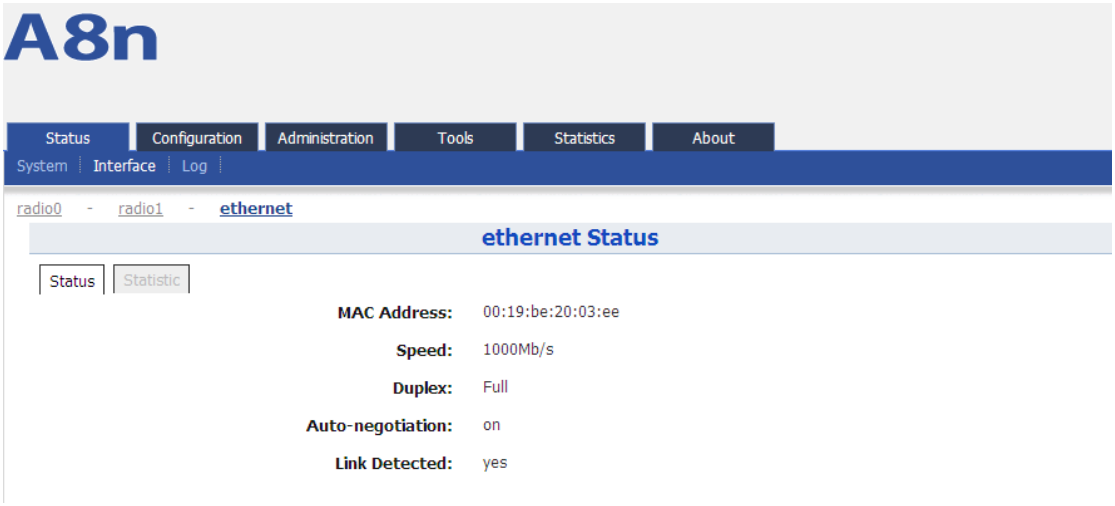


Figure 21 Ethernet interface state

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.

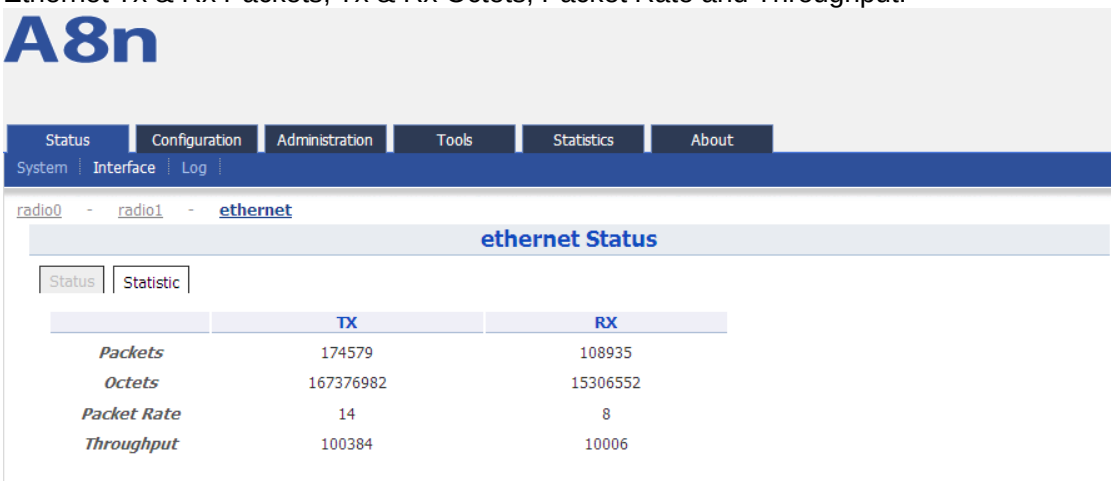


Figure 22 Ethernet interface statistic

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:

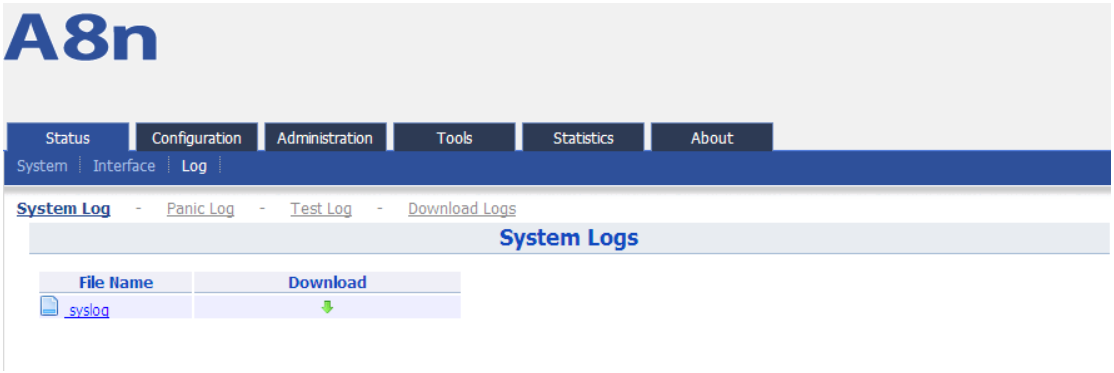


Figure 23 System log

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

Download：Dowload 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:

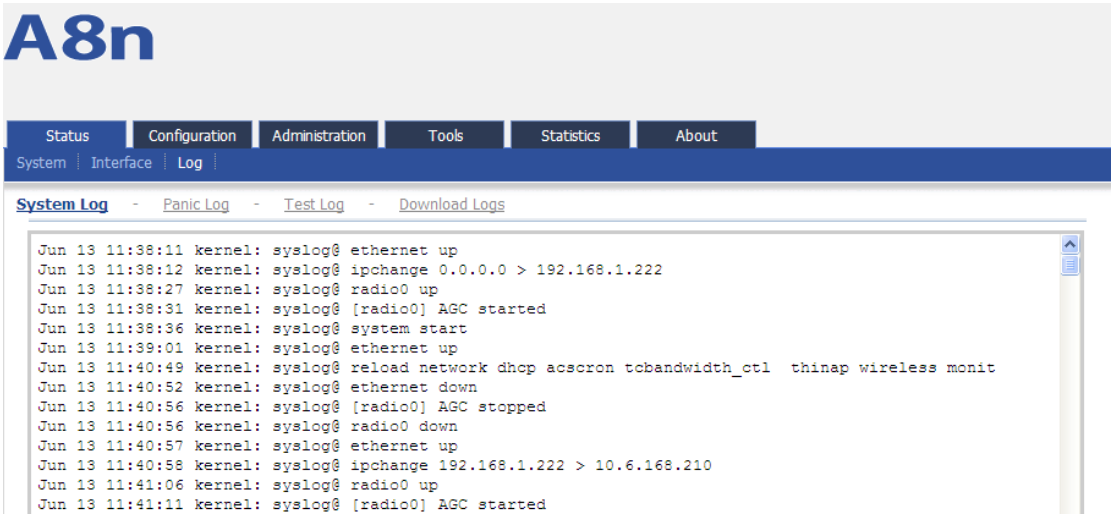


图 **Error! No text of specified style in document.**-1 打开系统日志文件

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

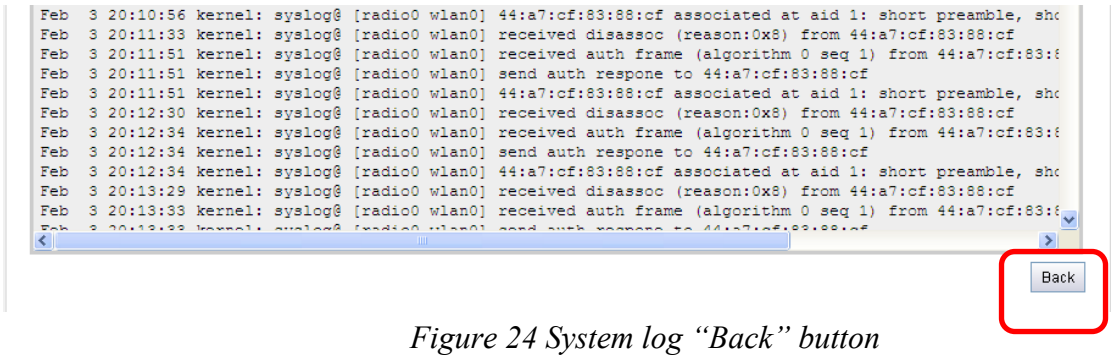


Figure 24 System log "Back" button

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:

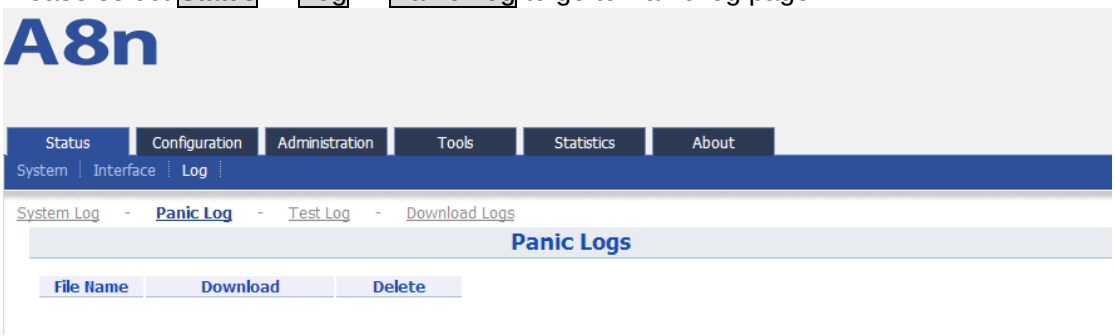


Figure 25 Panic Logs

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:

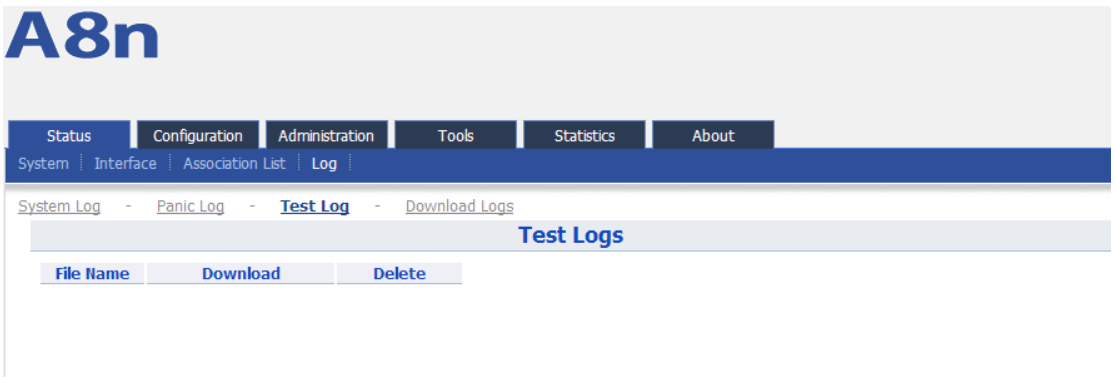


Figure 26 Test Logs

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.

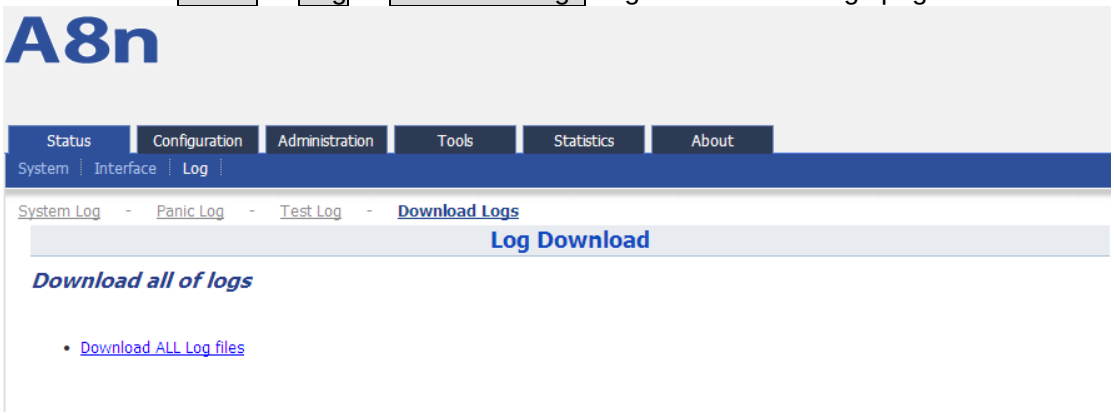


Figure 27 Download Logs

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.

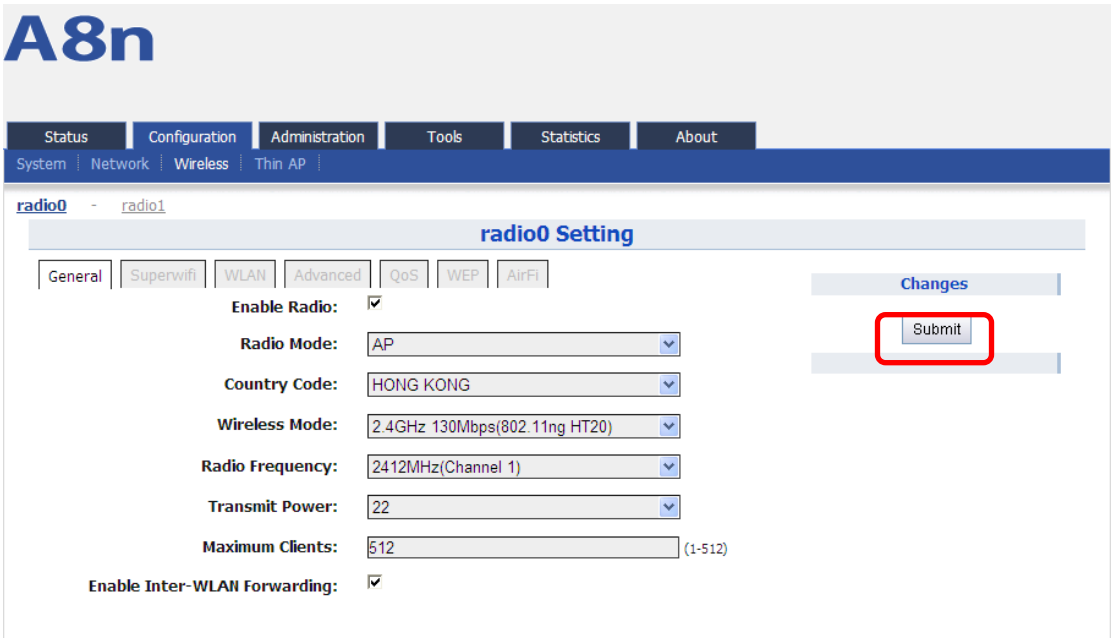


Figure 28 Submit changes

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

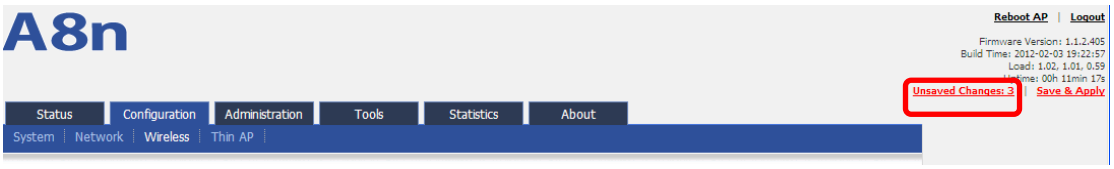


Figure 29 Unsaved changes

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

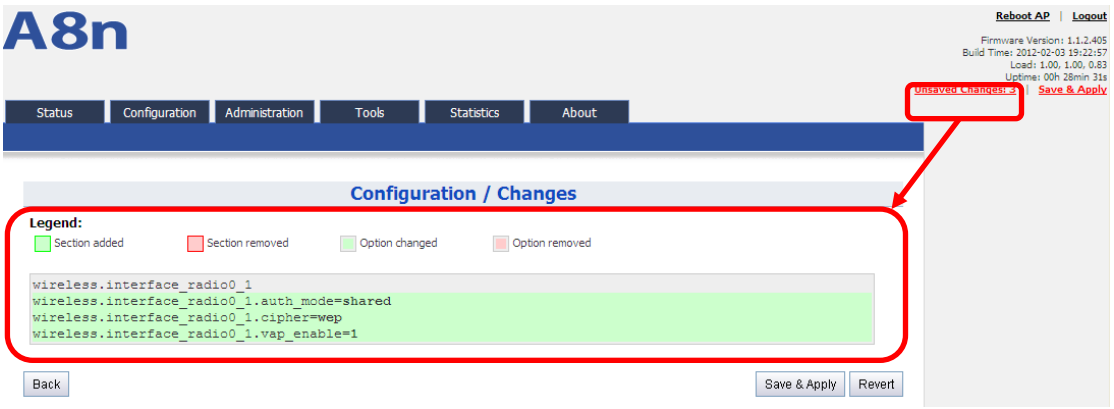


Figure 30 Unsaved changes detail

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

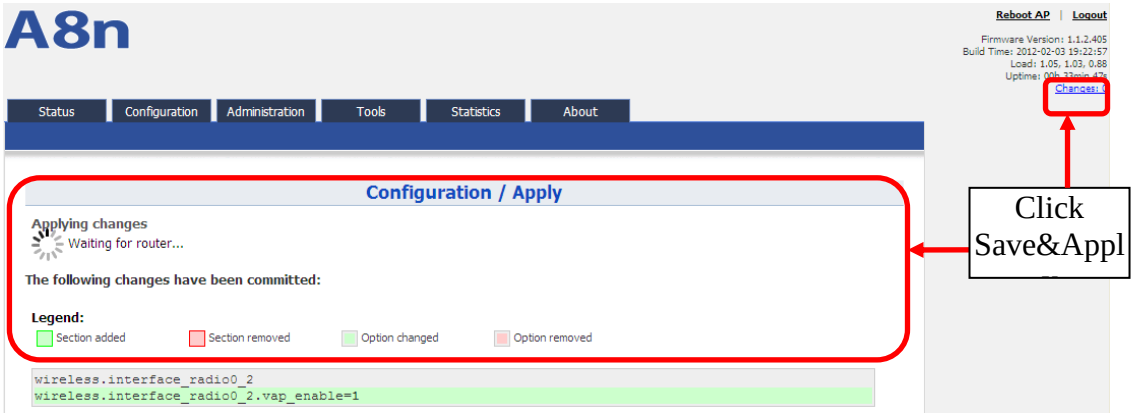


Figure 31 Save and Apply changes

5 You will find "The following changes have been committed"

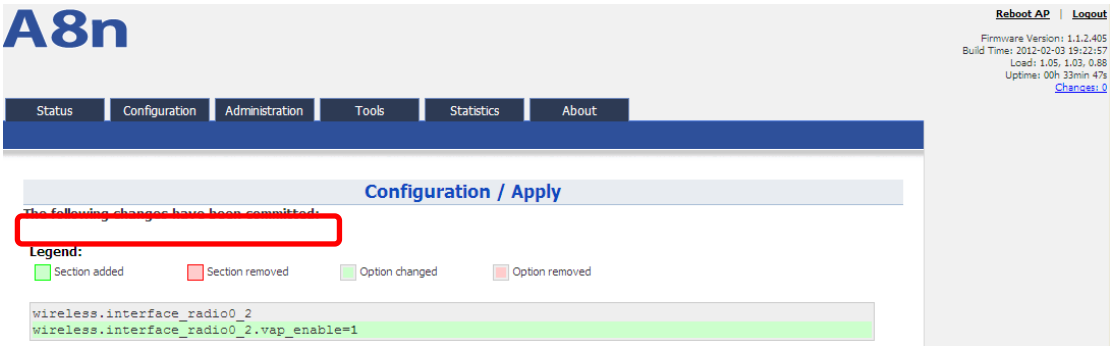


Figure 32 Changes have been committed

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.

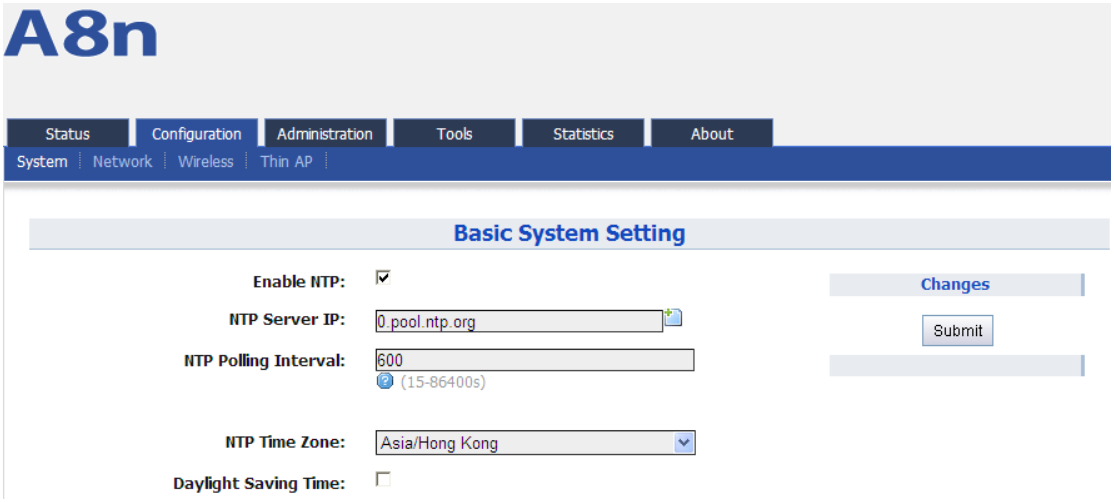


Figure 33 NTP Setting

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（optinal）

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.

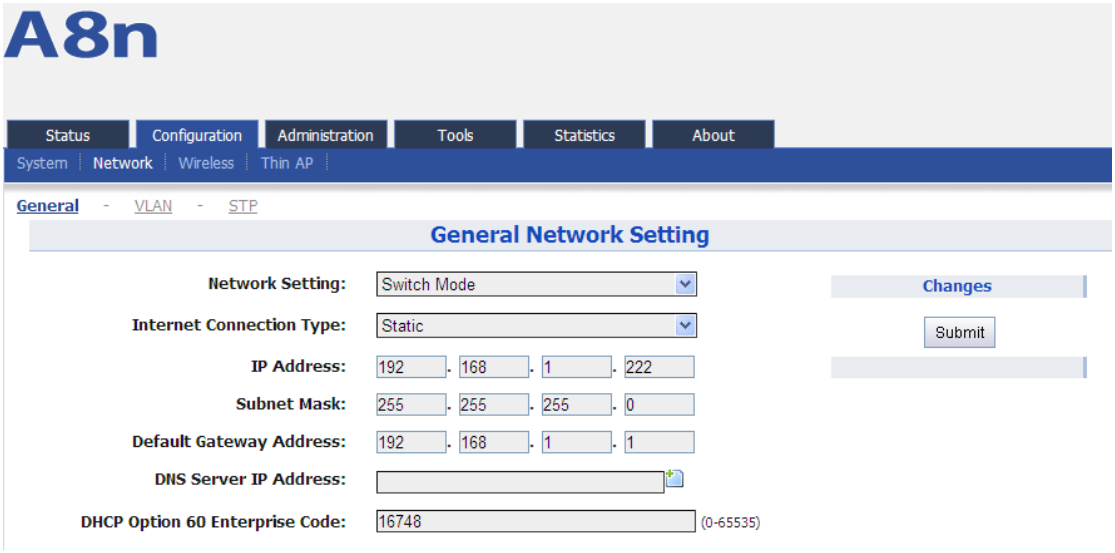


Figure 34 Network Setting

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

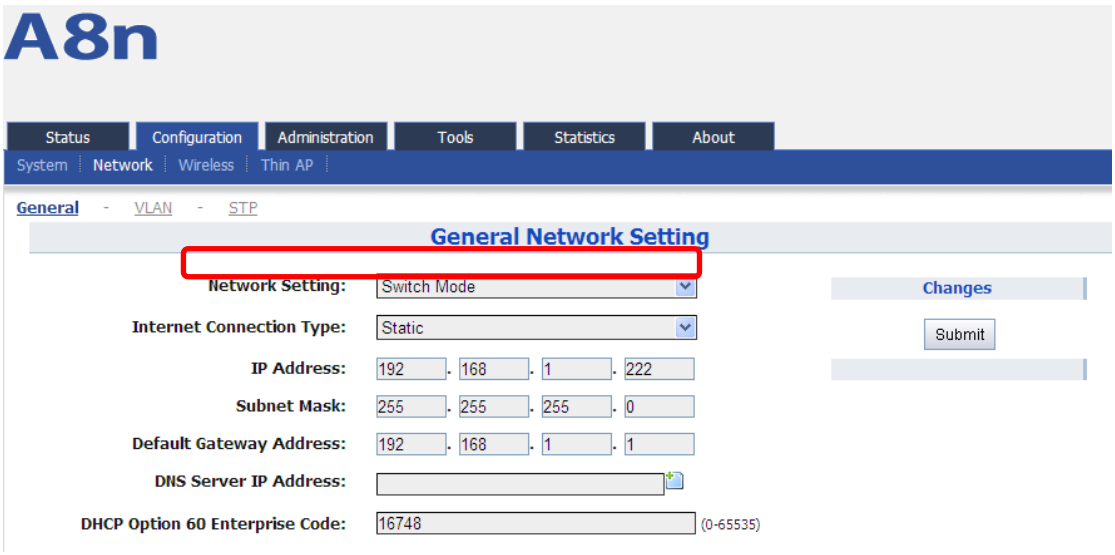


Figure 35 Network Mode

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

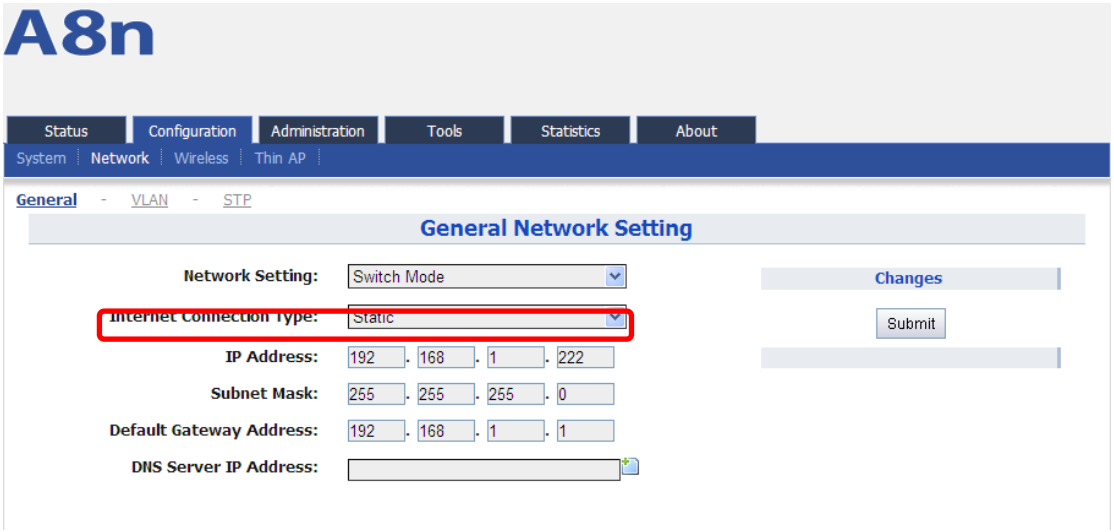


Figure 36 Internet Connection Type

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:

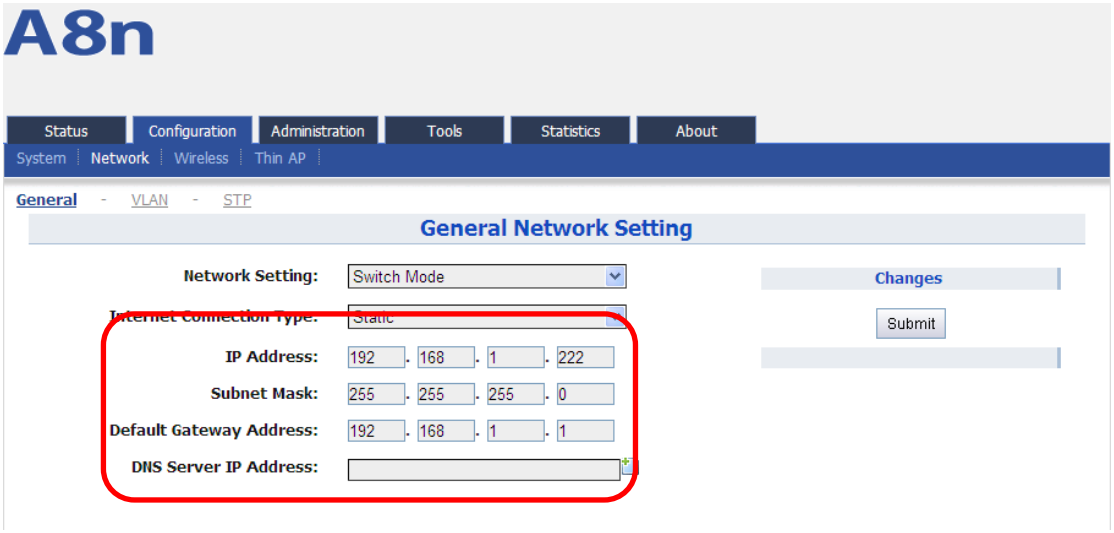


Figure 37 Static IP

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

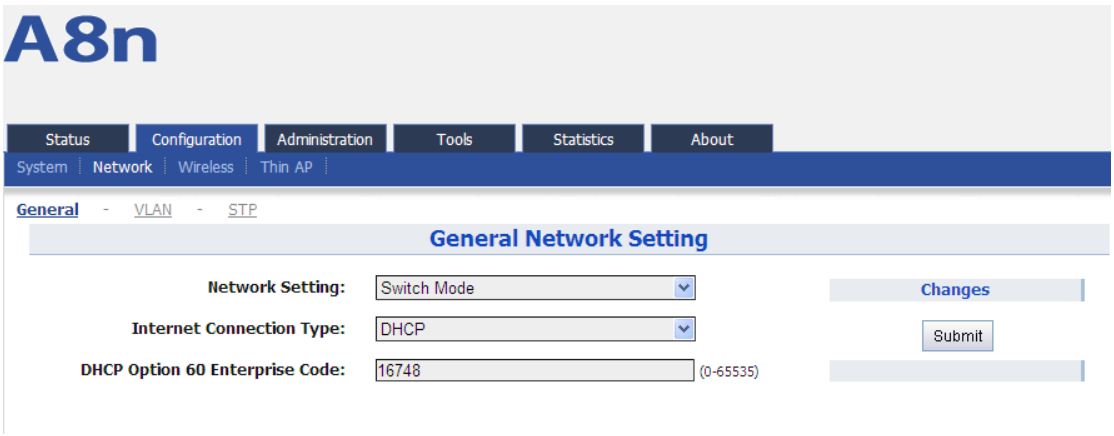


Figure 38 DHCP Client

Procedures：

1 Select Configuration->Network->General

2 Internet ConnectionType: 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.

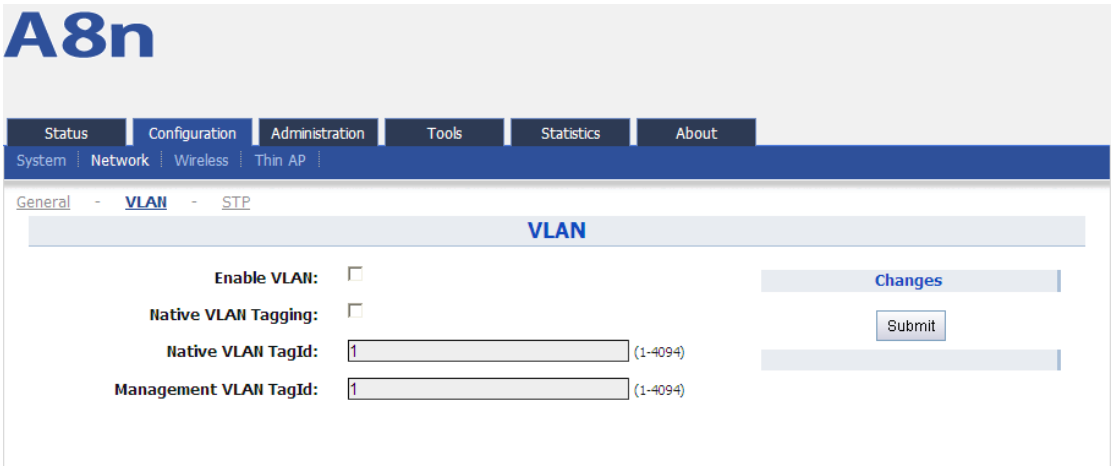


Figure 39 VLAN Setting

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.

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）:

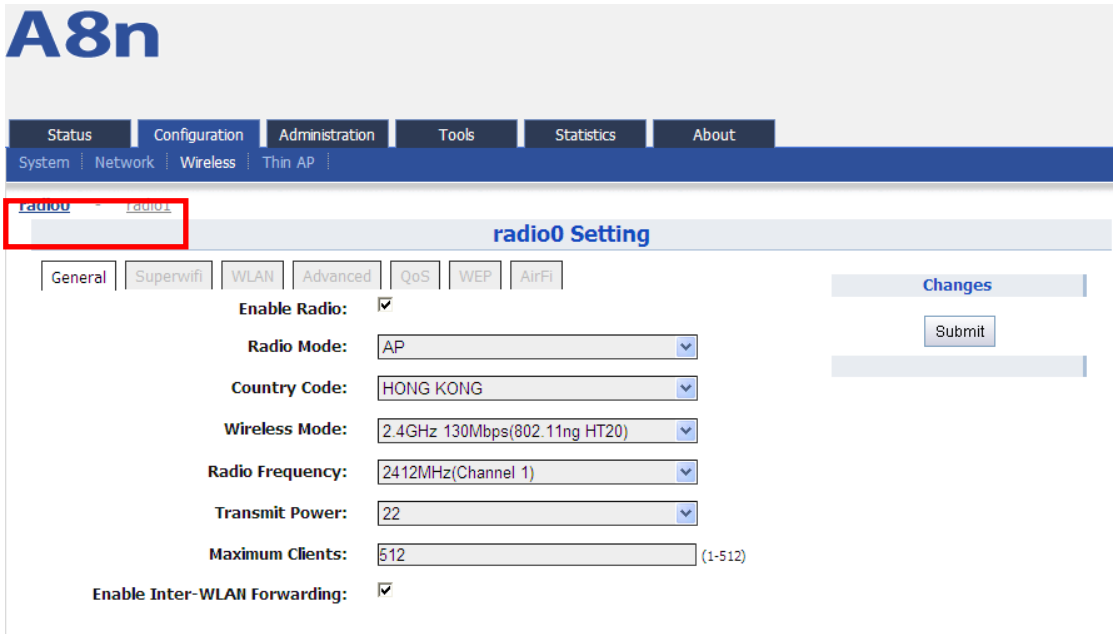


Figure 41 2.4G radio setting

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:

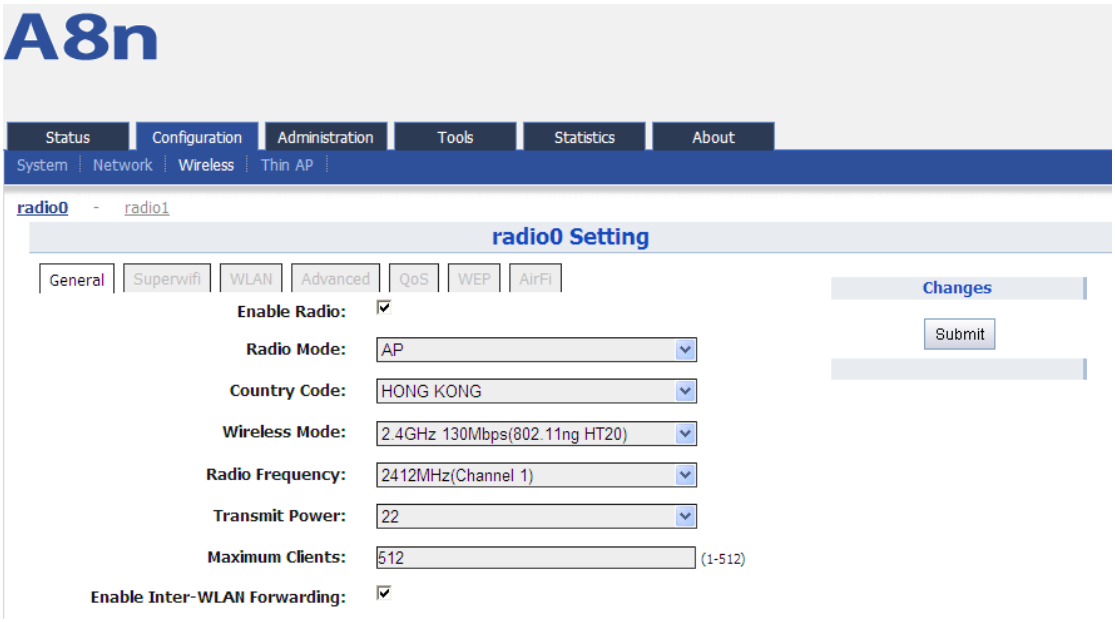


Figure 42 2.4G radio parameters

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

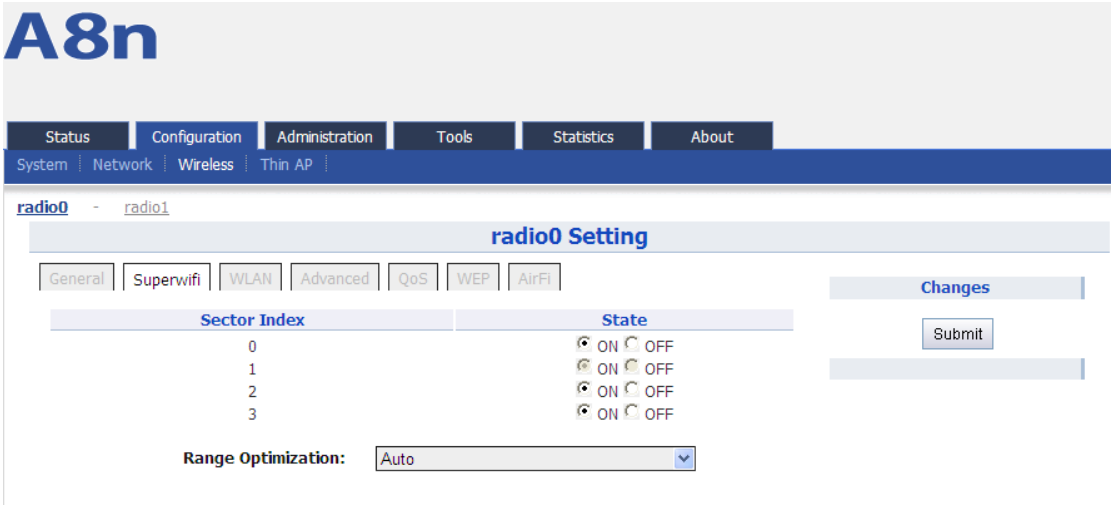


Figure 43 Superwifi setting

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:

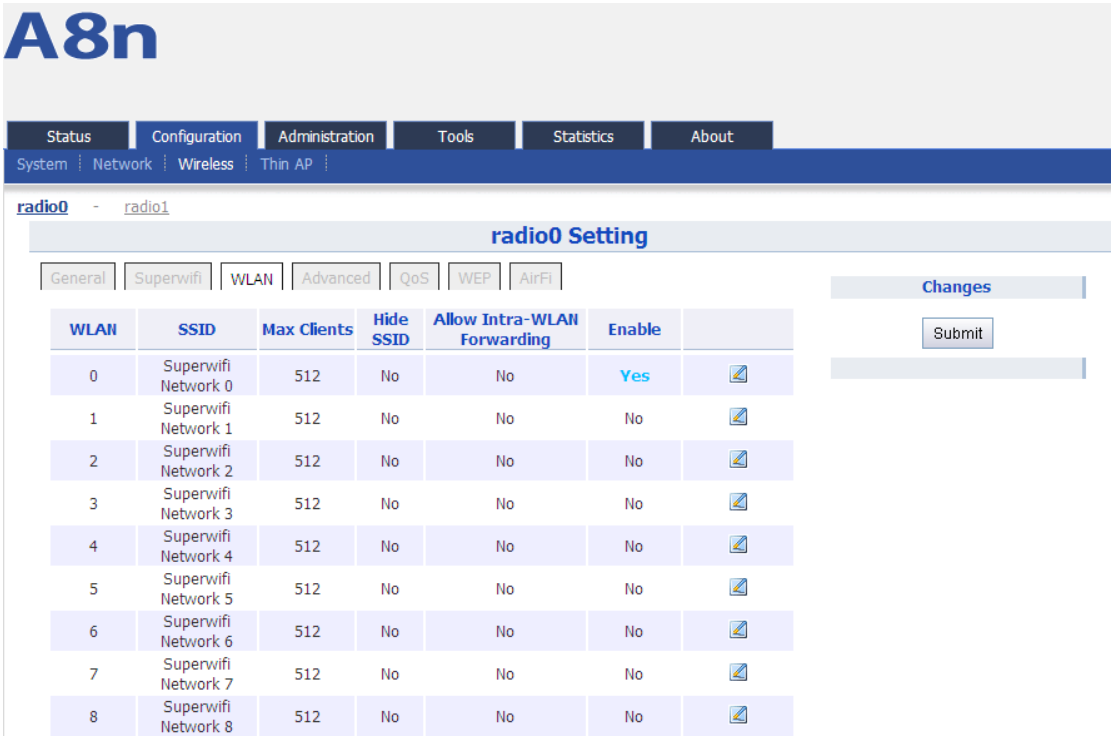


Figure 44 WLAN setting

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.

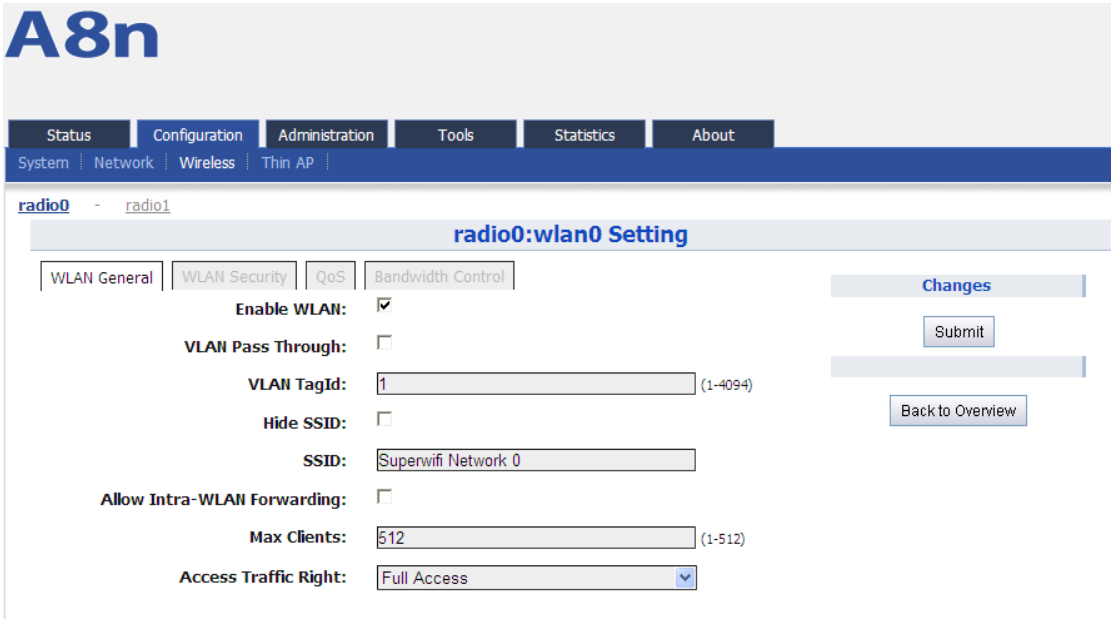


Figure 45 WLAN general setting

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.

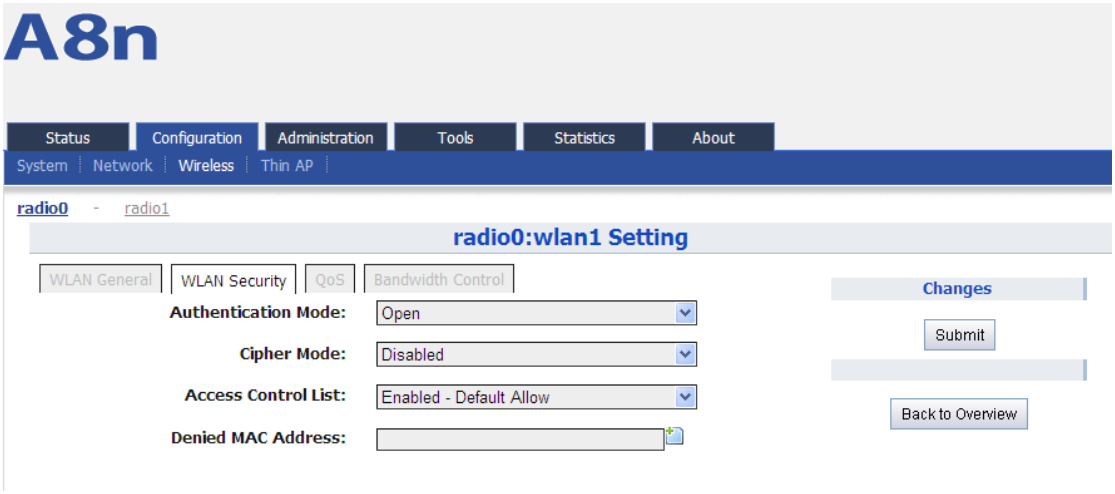


Figure 46 WLAN security setting

6.4.1.7 OPEN

After selecting Open, you can select Disabled or WEP:

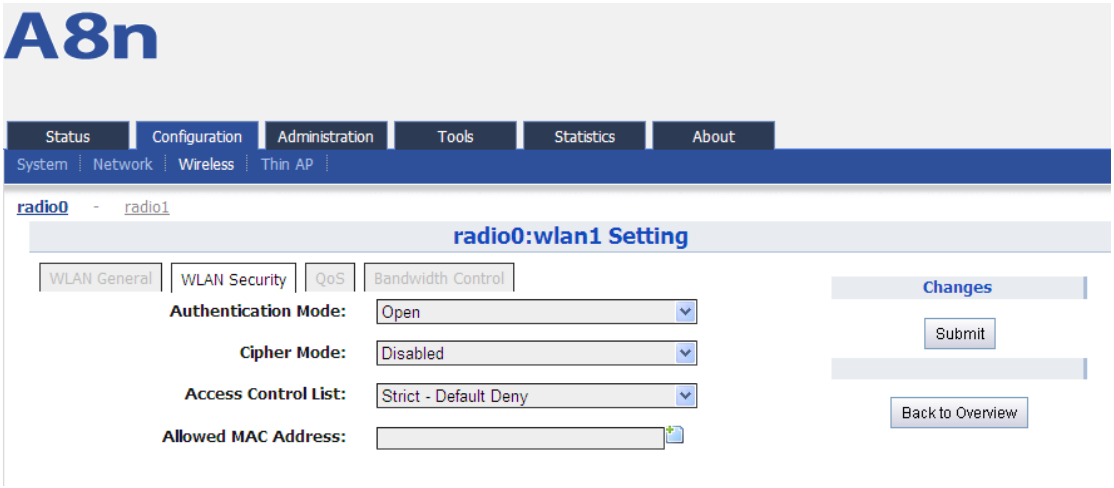


Figure 47 Open & No security

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

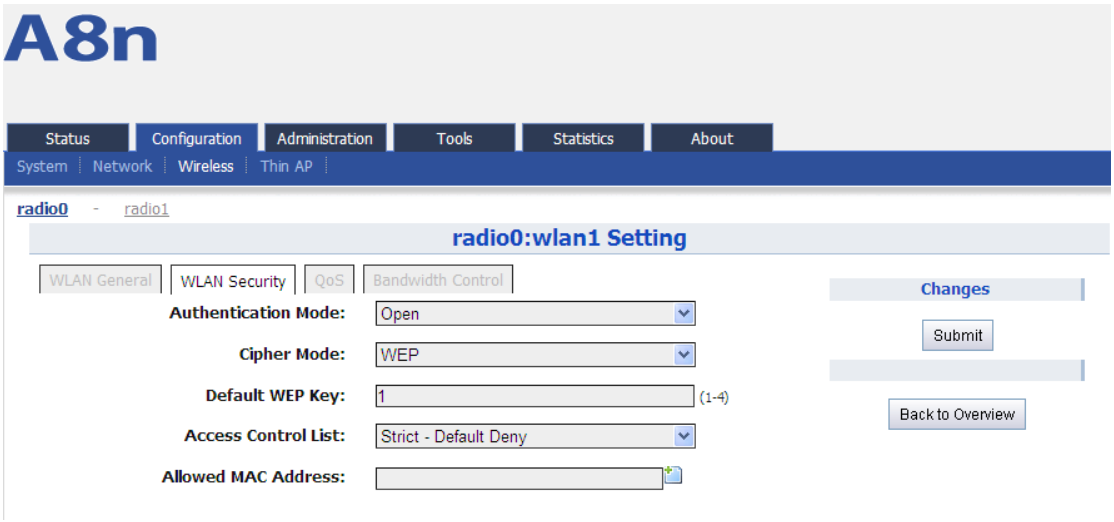


Figure 48 Open & WEP

6.4.1.8 SHARED KEY

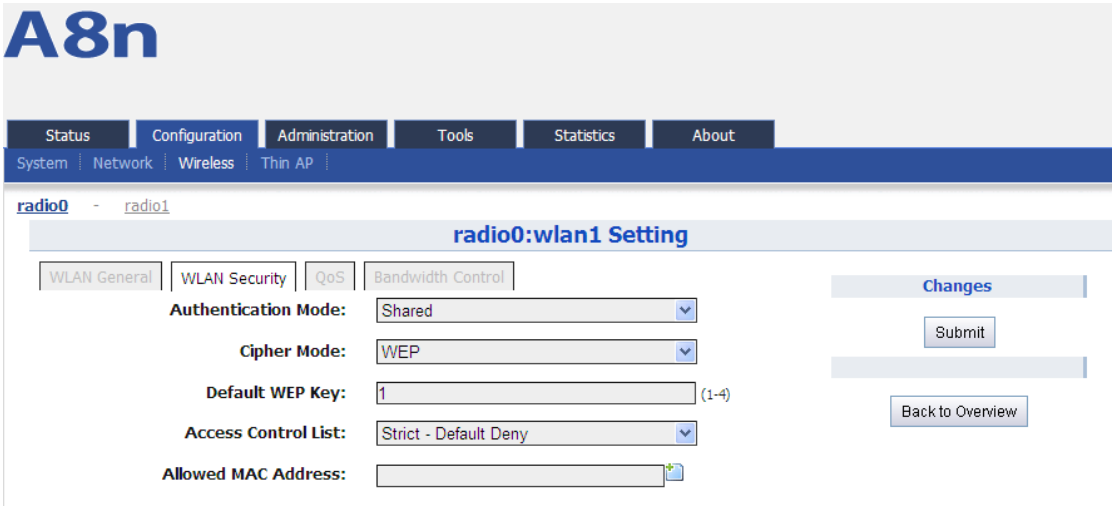


Figure 49 Shared Key

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.

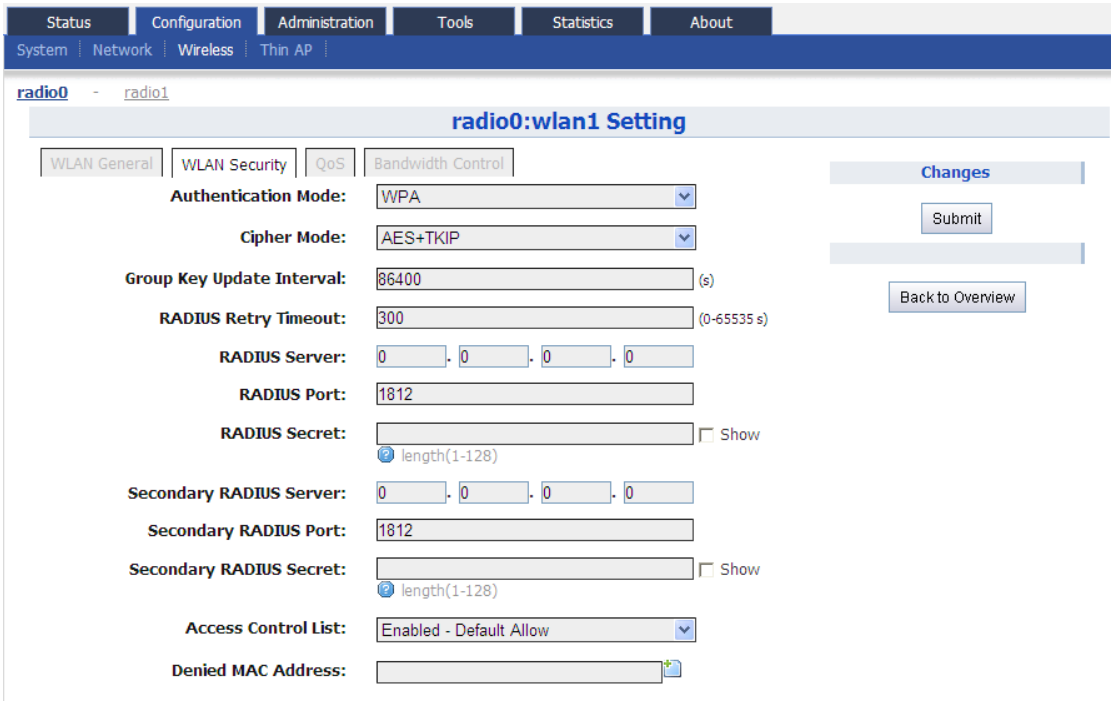


Figure 50 WPA/WPA2

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 (optinal)
8. Secondary Radius Port: set Secondary Radius server port (optinal)
9. Secondary Radius Secret: set Secondary Radius server password (optinal)
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.

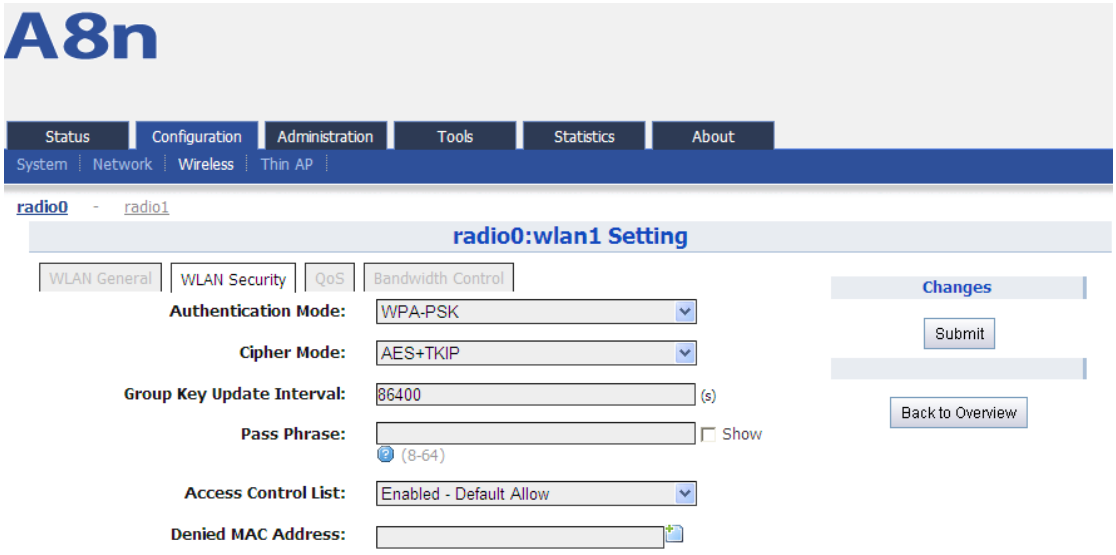


Figure 51 WPA-PSK/WPA2-PSK

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.

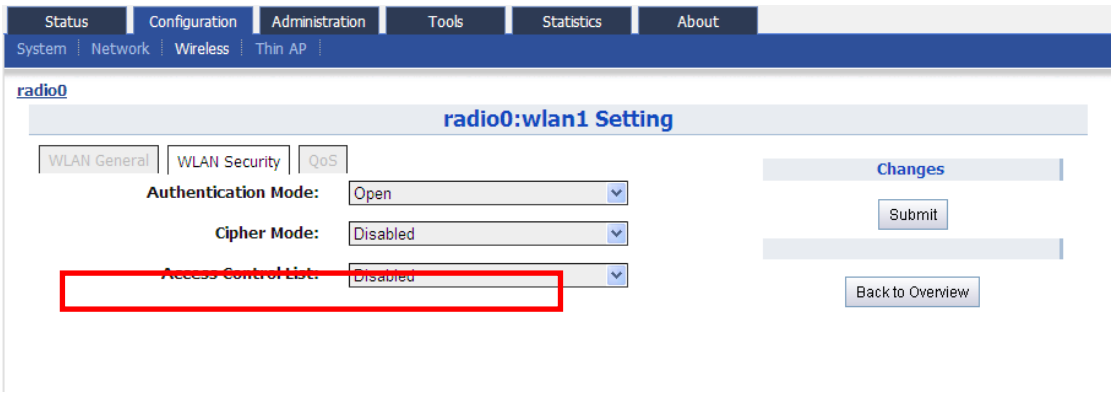


Figure 52 ACL - Disable

Figure 53 ACL – Deny MAC address

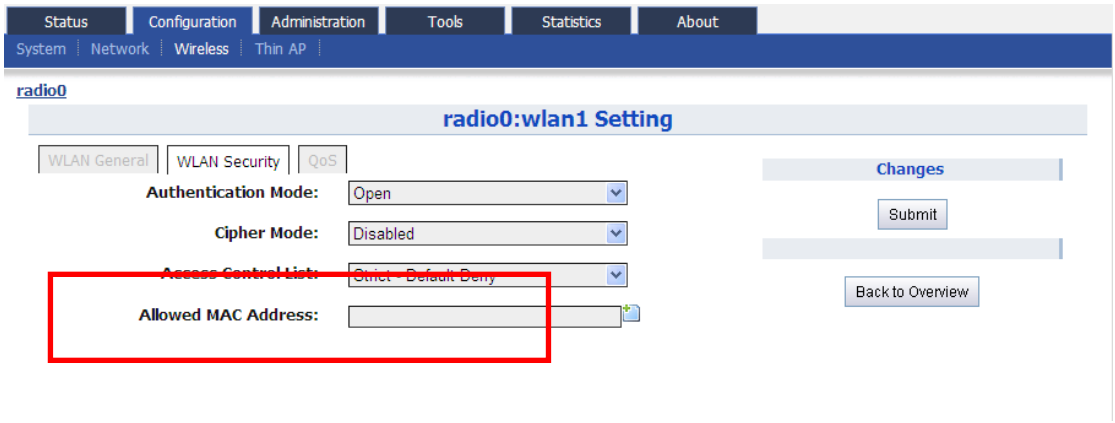


Figure 54 ACL – Allow MAC address

Access Control List：There area 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

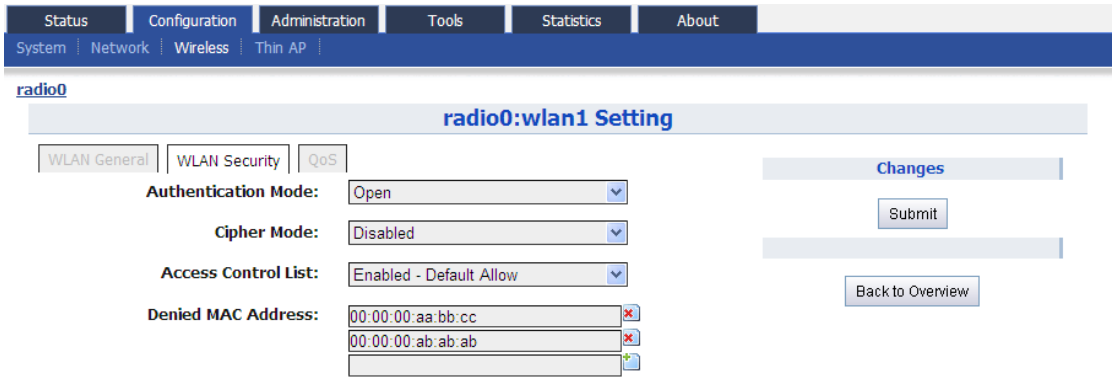


Figure 55 ACL – Add Denied MAC address

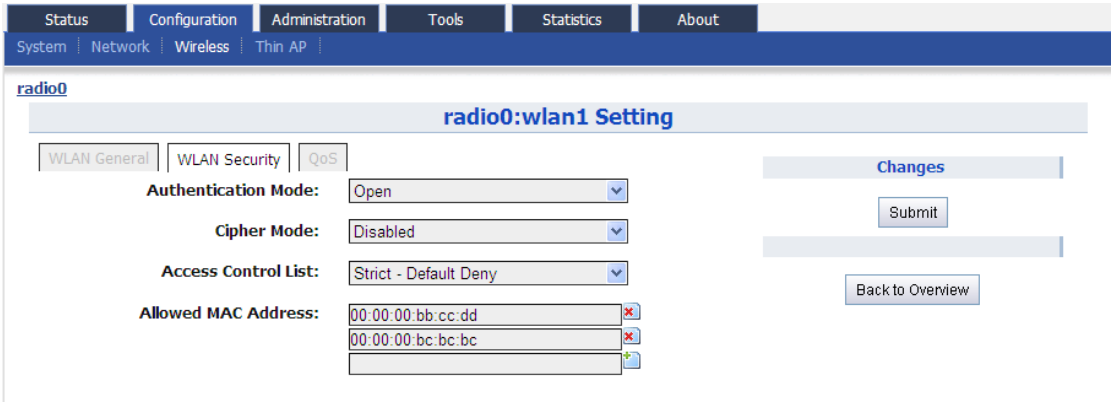


Figure 56 ACL – Add Allowed MAC address

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

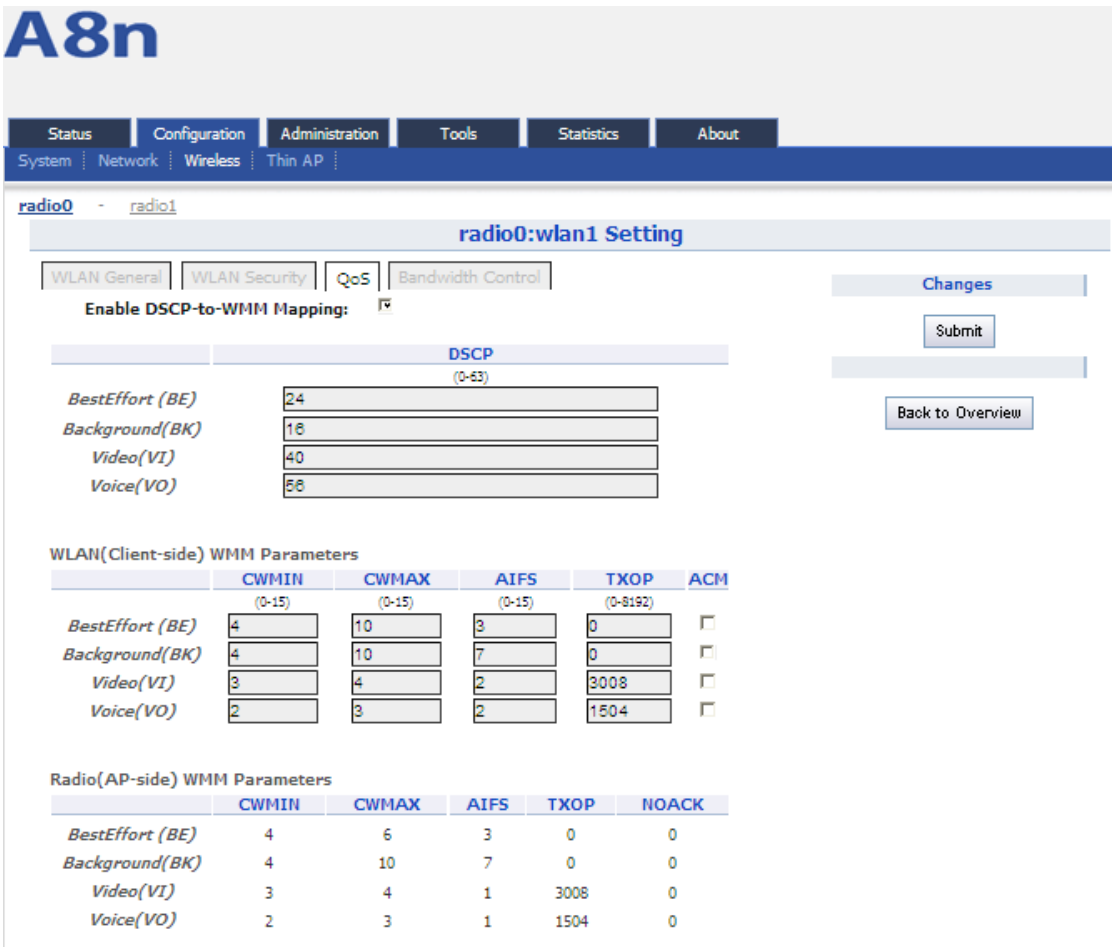


Figure 57 WLAN QoS

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: (optinal)
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

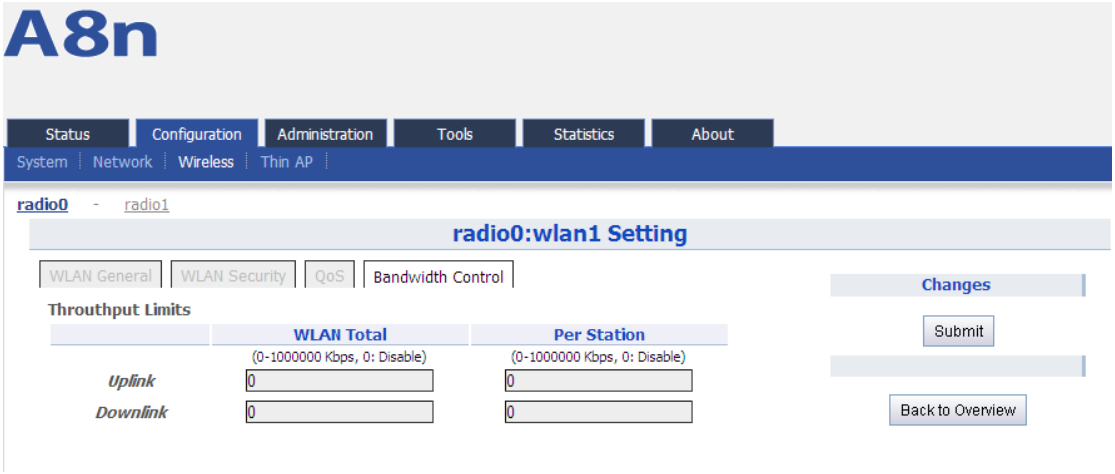


Figure 58 WLAN Bandwidth Control

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

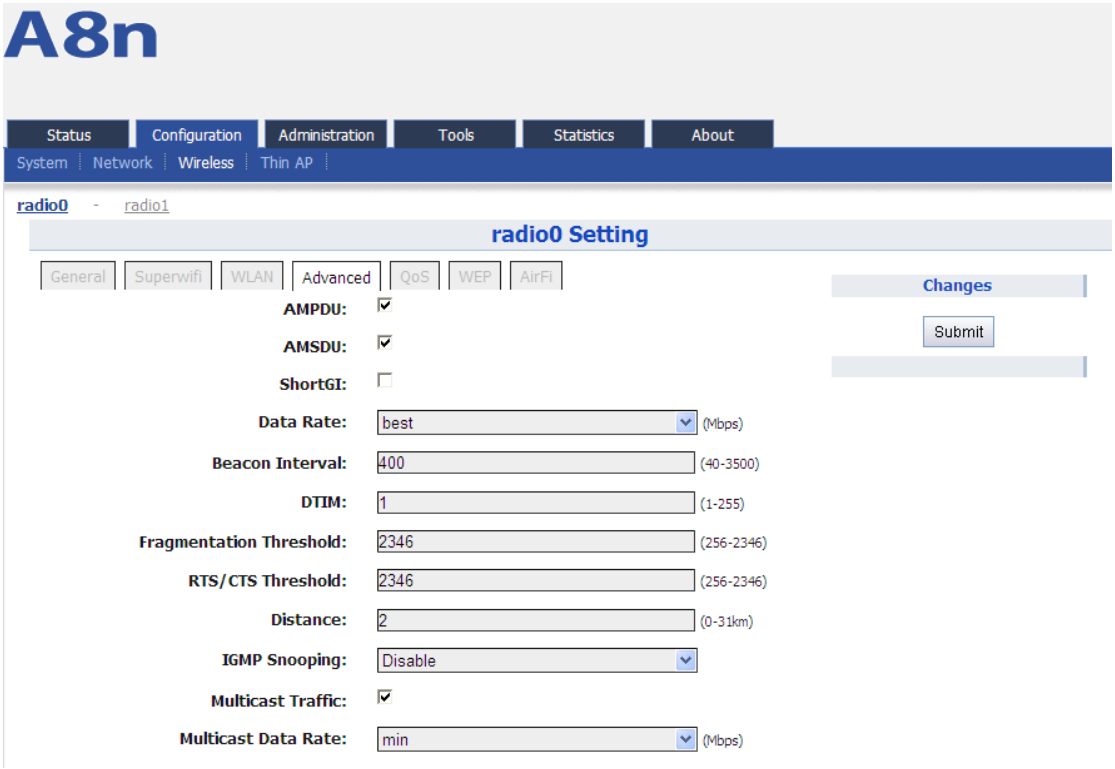


Figure 59 2.4G Radio Advanced setting

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

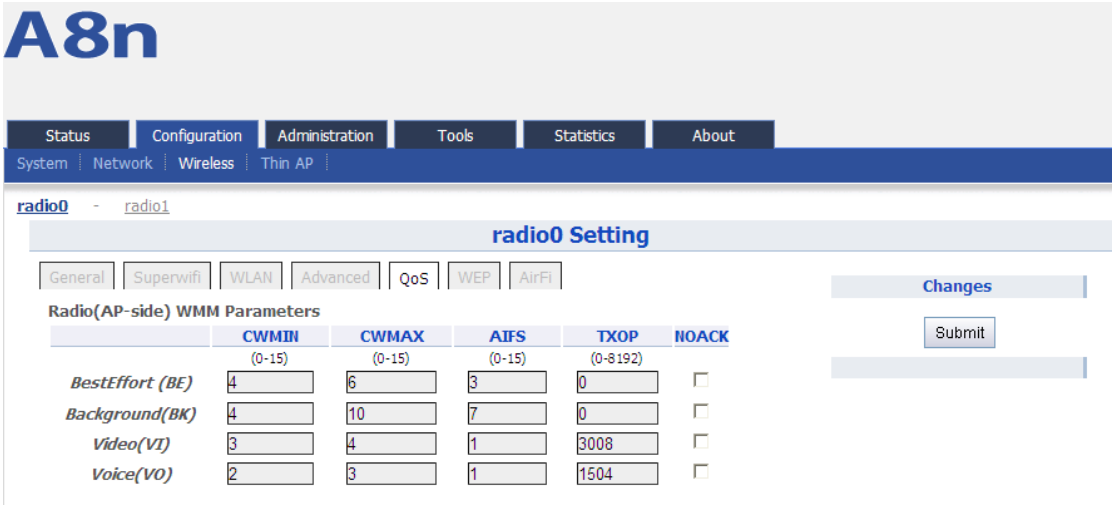


Figure 60 2.4G Radio QoS Parameters

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

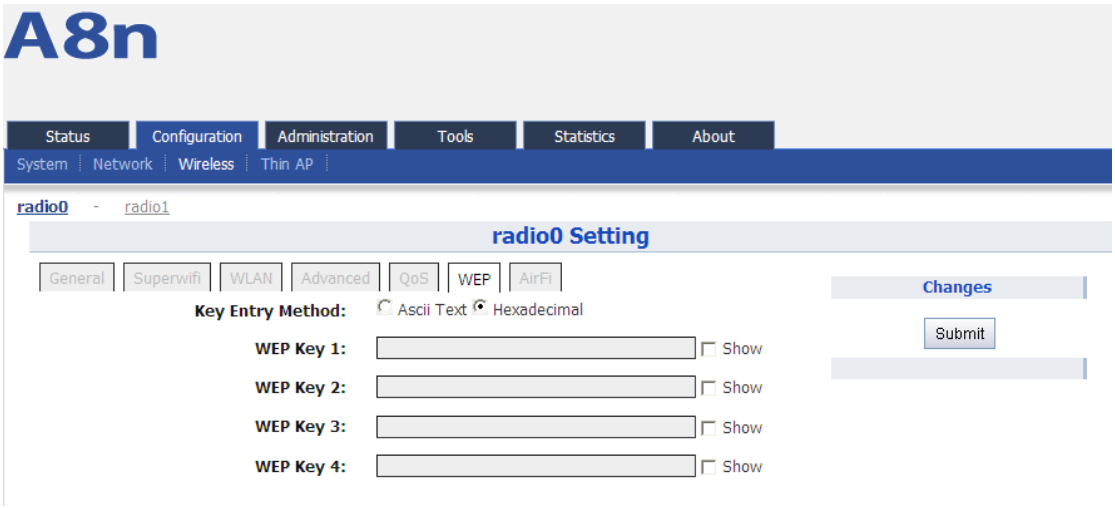


Figure 61 2.4G Radio WEP Key

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

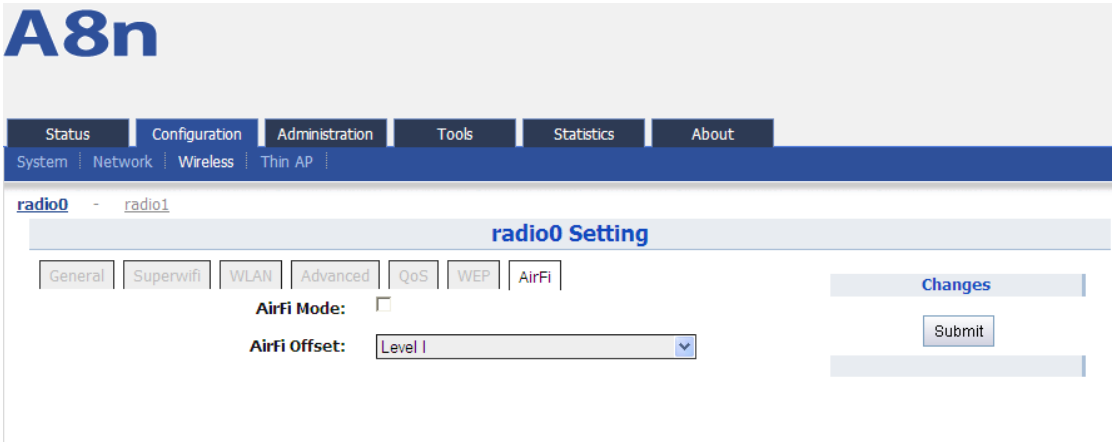


Figure 62 2.4G AirFi

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

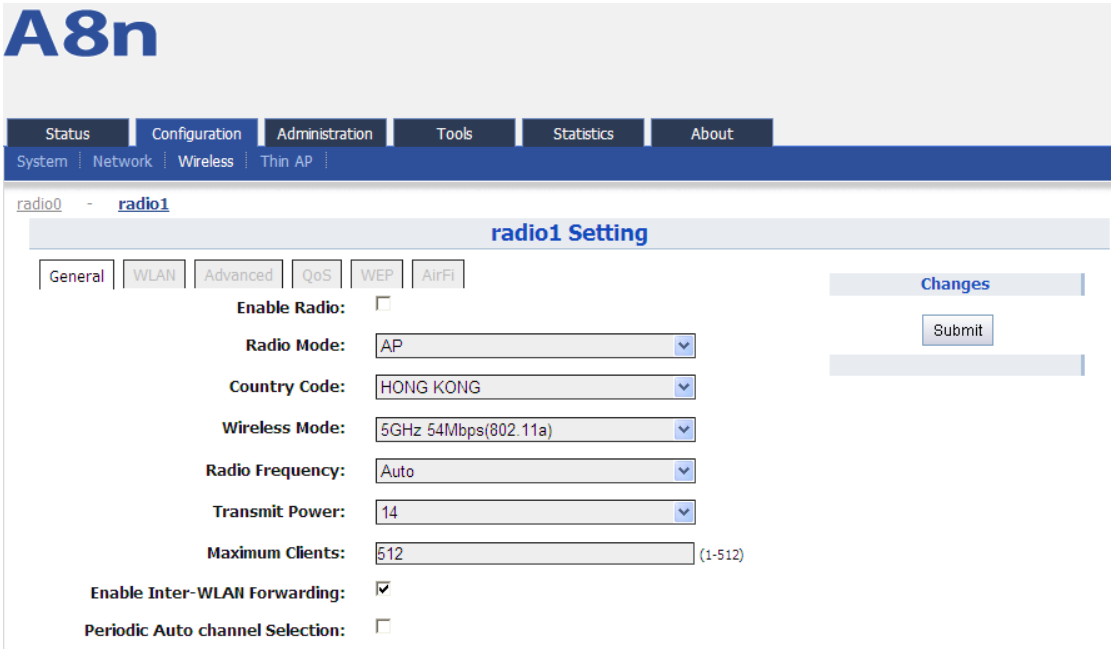


Figure 63 5G General setting

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

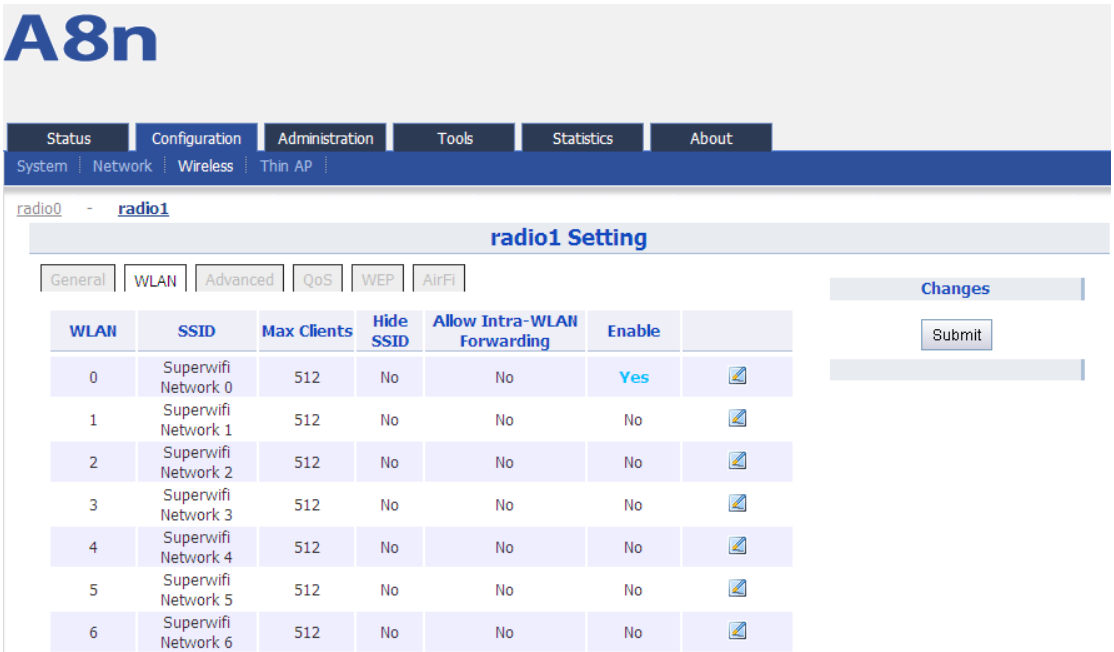


Figure 64 5G WLAN setting

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

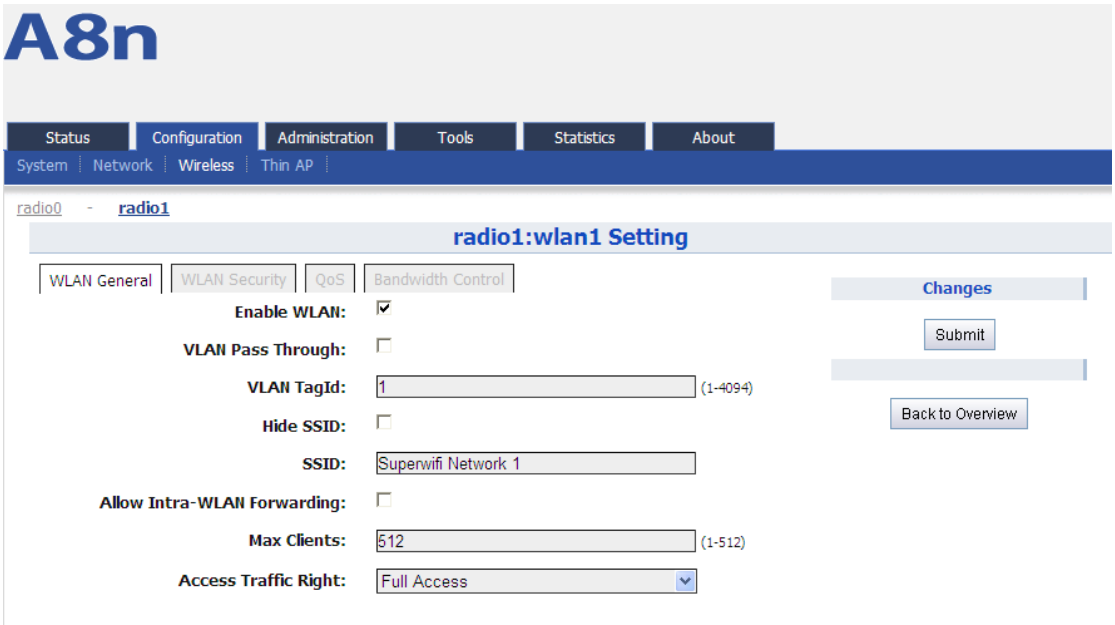


Figure 66 5G WLAN General setting

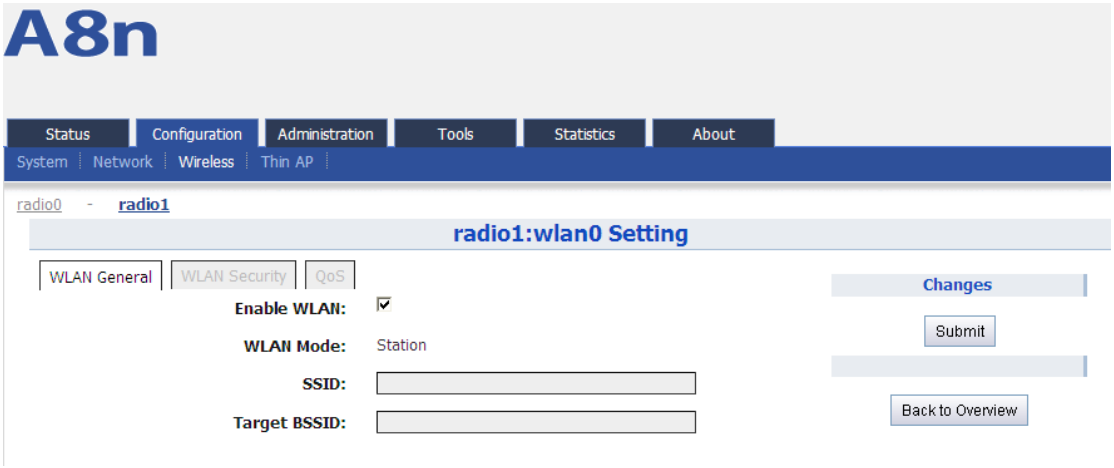


Figure 67 5G Station Mode WLAN General setting

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

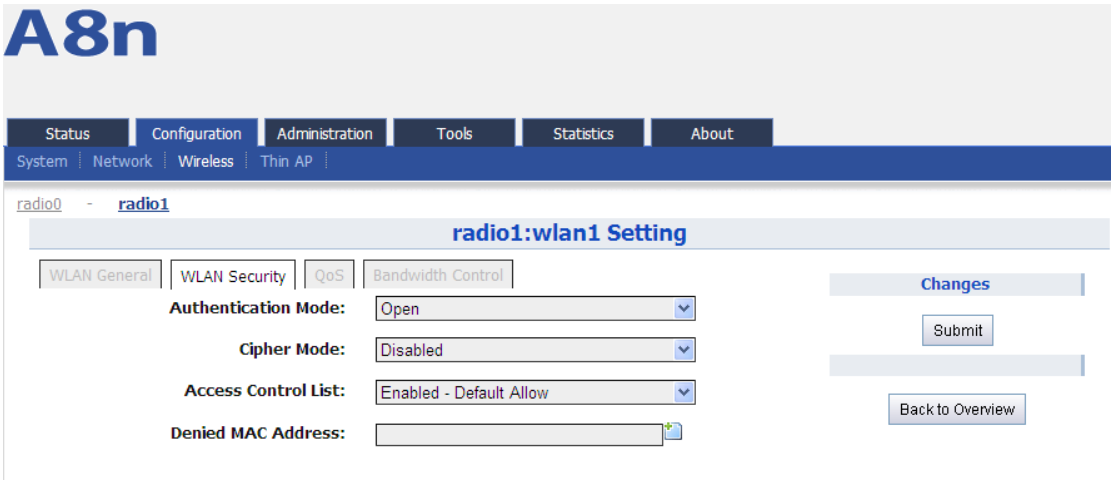


Figure 68 5G AP Mode WLAN Security setting

Figure 69 5G Station Mode WLAN Security setting

6.4.2.5 WLAN X(0-15) QoS SETTING

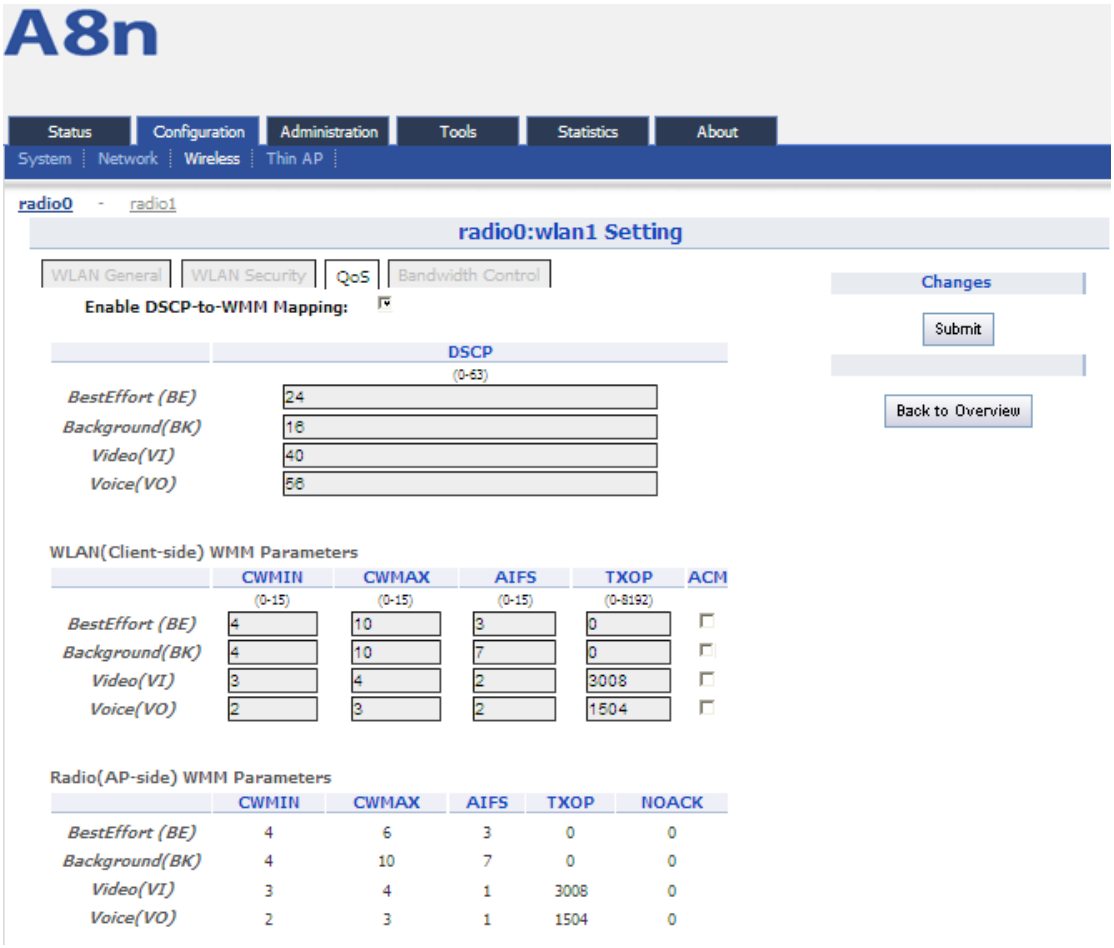


Figure 70 5G AP Mode QoS setting

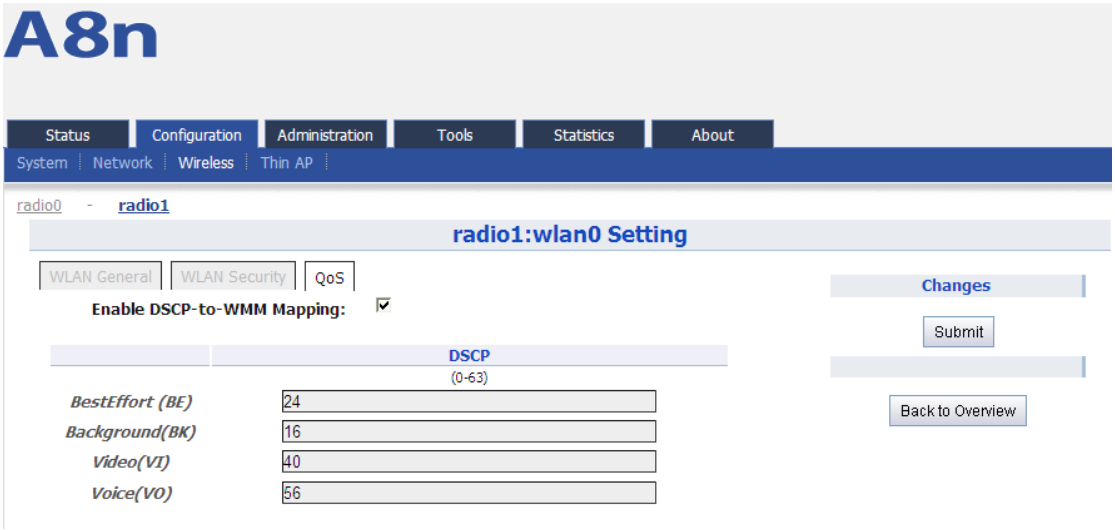


Figure 71 5G Station Mode QoS setting

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: (optinal)
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

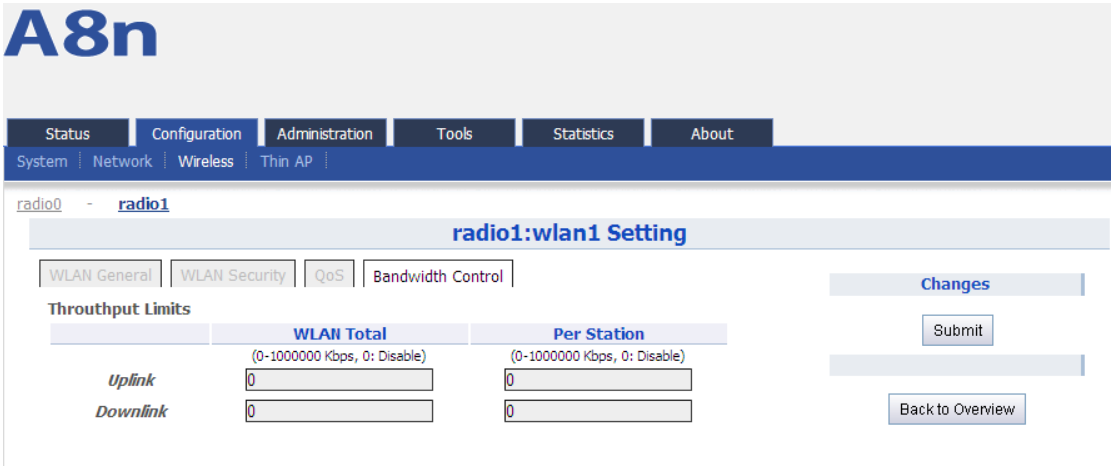


Figure 72 5G Bandwidth Control

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

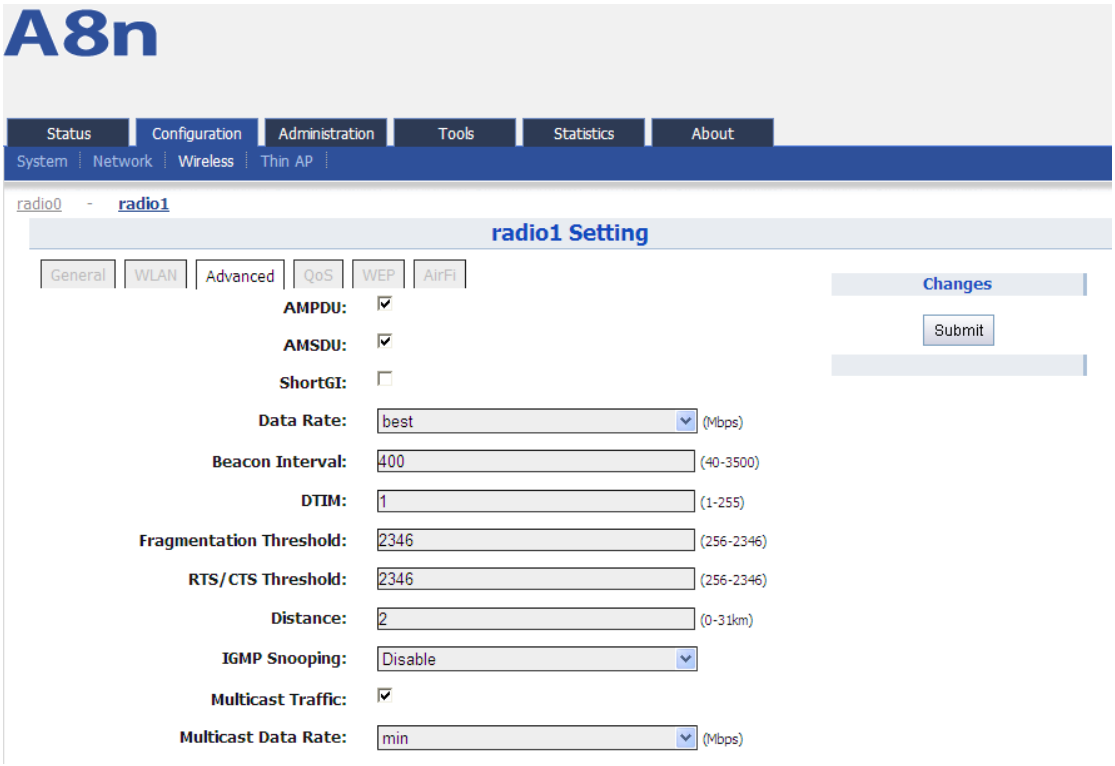


Figure 73 5G AP Mode Advanced Setting

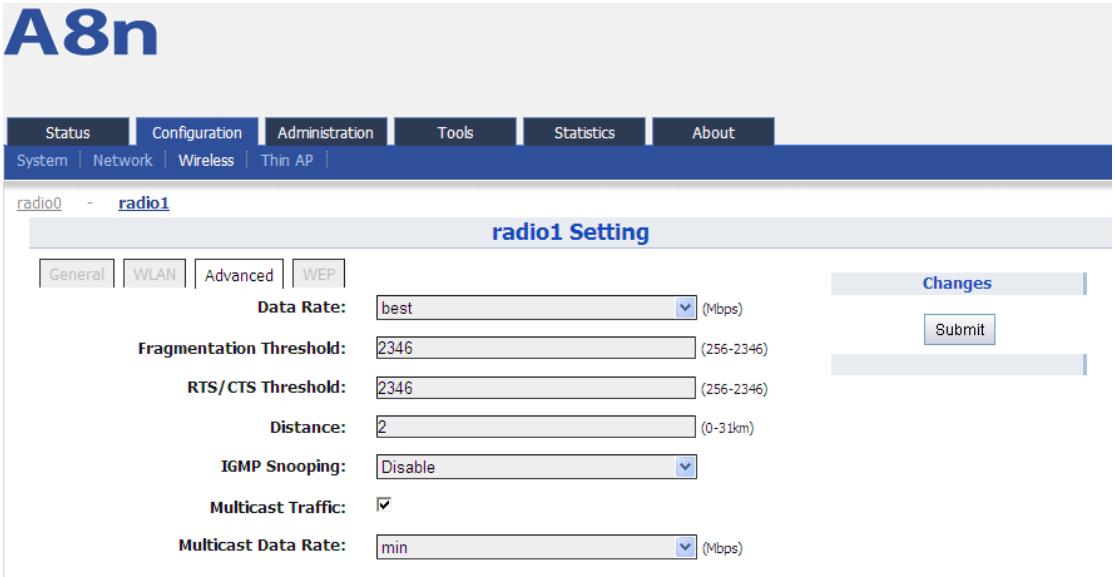


Figure 74 5G Station Mode Advanced Setting

Note: Please refer to 6.4.1.13 2.4G Advanced configuration

6.4.2.8 5G WIRELESS QOS CONFIGURATION

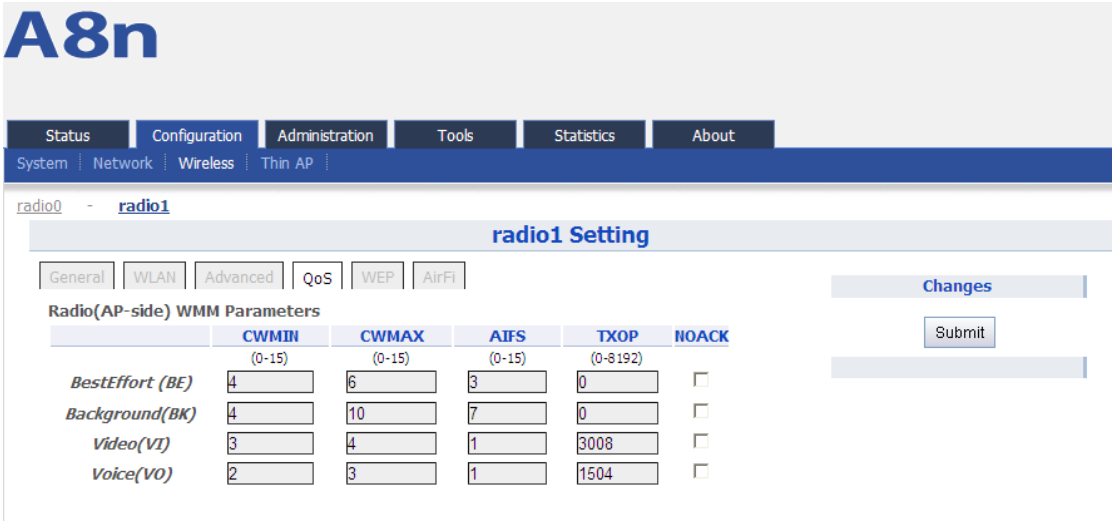


Figure 75 5G QoS parameters

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

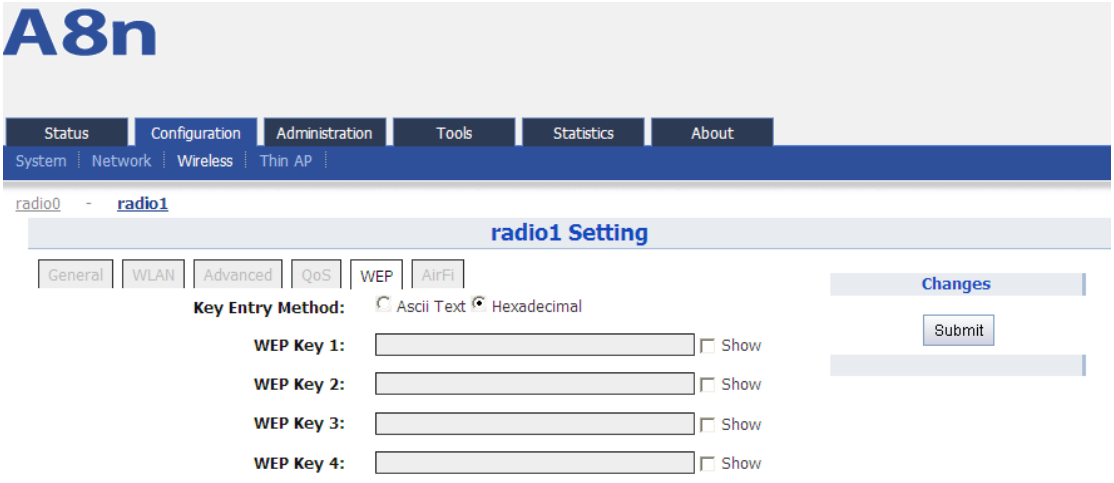


Figure 76 5G WEP Key

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

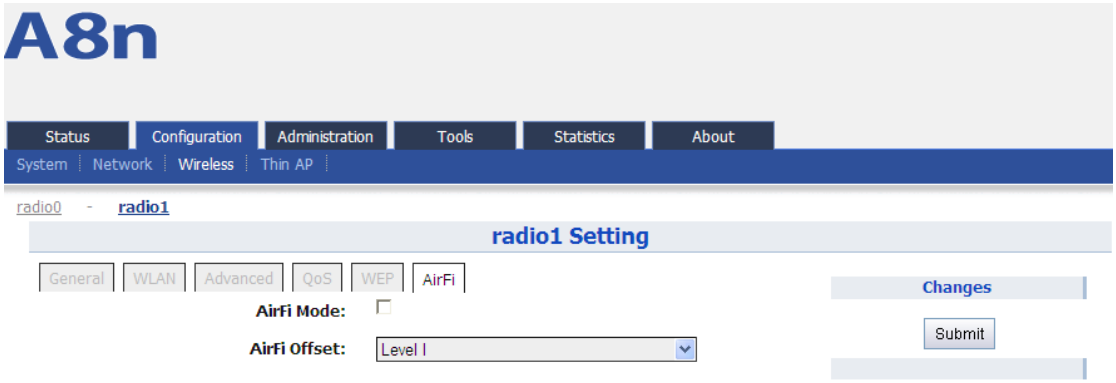


Figure 77 5G AirFi

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

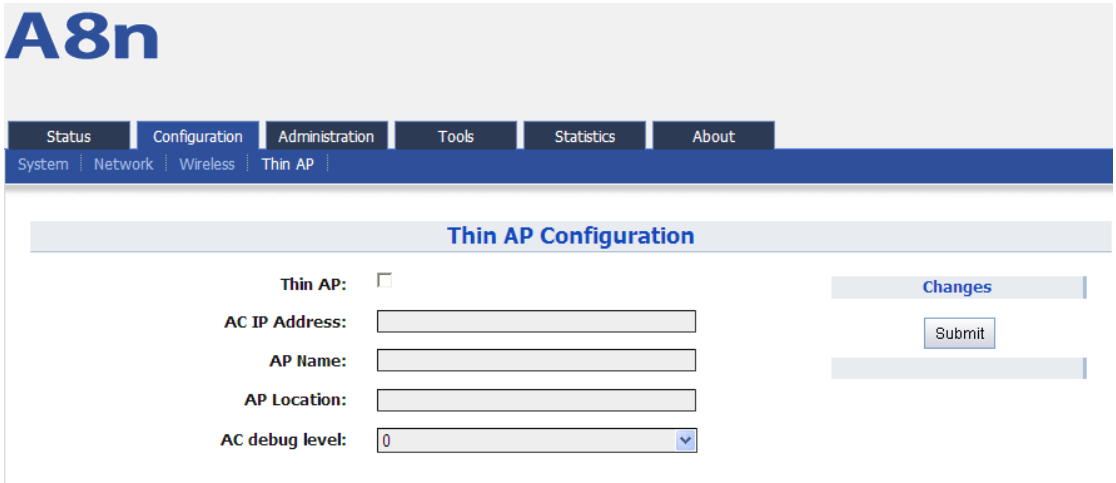


Figure 78 Thin AP configuration

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**。

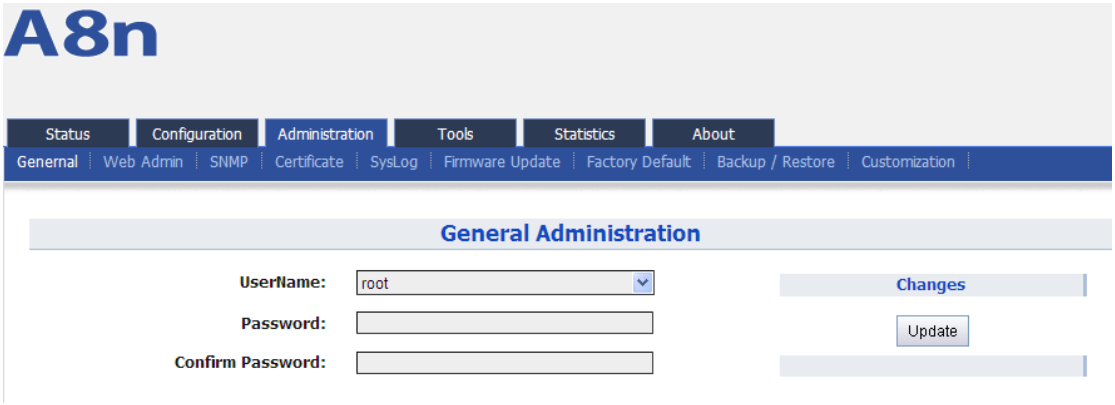


Figure 79 General Administration

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

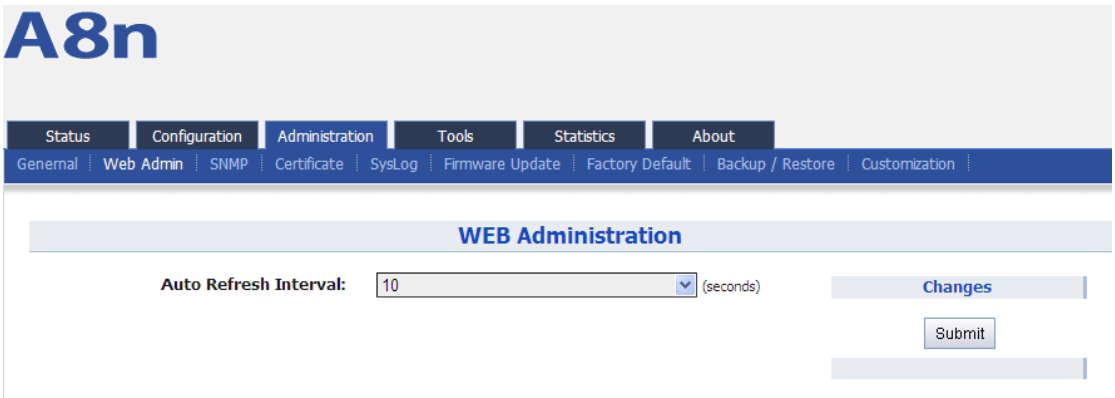


Figure 80 WEB Administration

Auto Refresh Interval：set auto refresh interval

7.3 SNMP SETTING

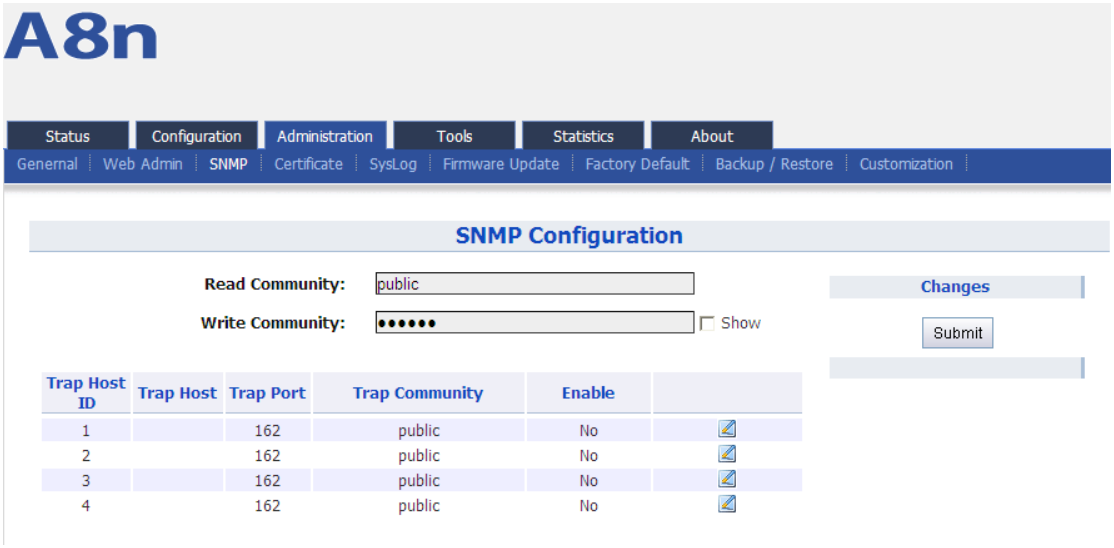


Figure 81 SNMP Configuration

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

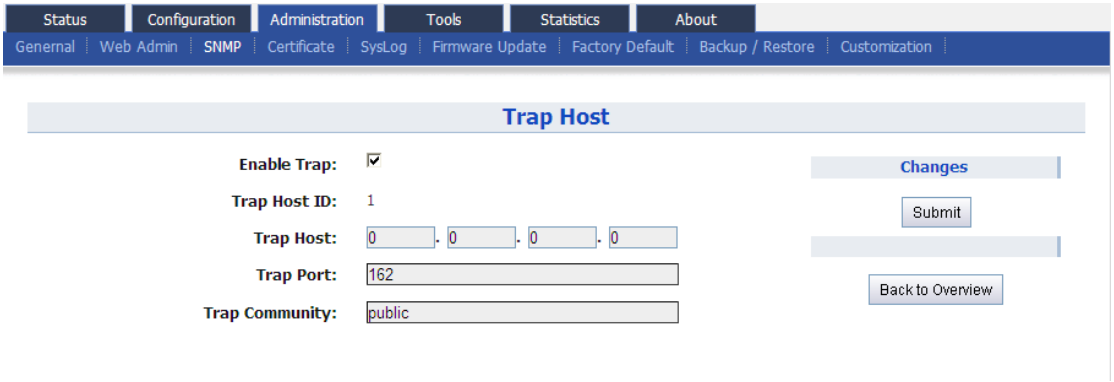


Figure 82 SNMP Trap Host

7.4 CERTIFICATE MANAGEMENT

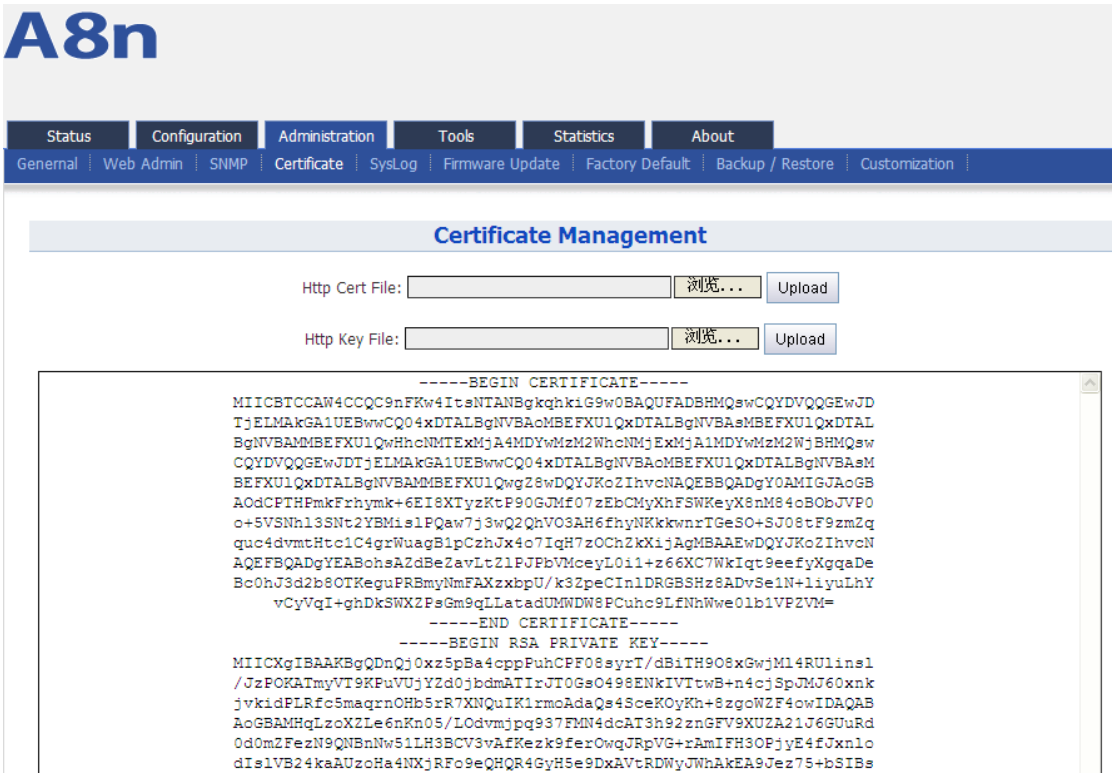


Figure 83 Certificate Management

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

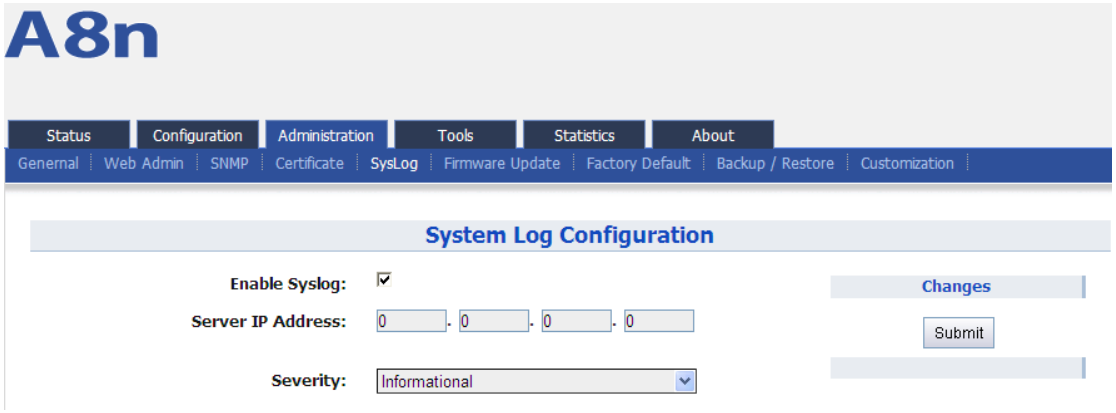


Figure 84 System Log Configuration

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：

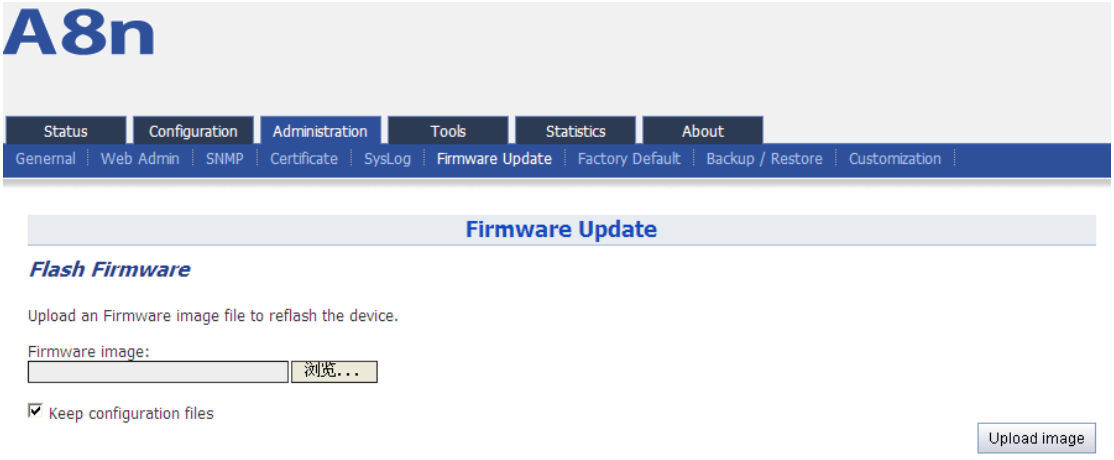


Figure 85 Firmware Upgrade

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 Aministration -> Firmware Update,

2. Press Browse，select the firmware,

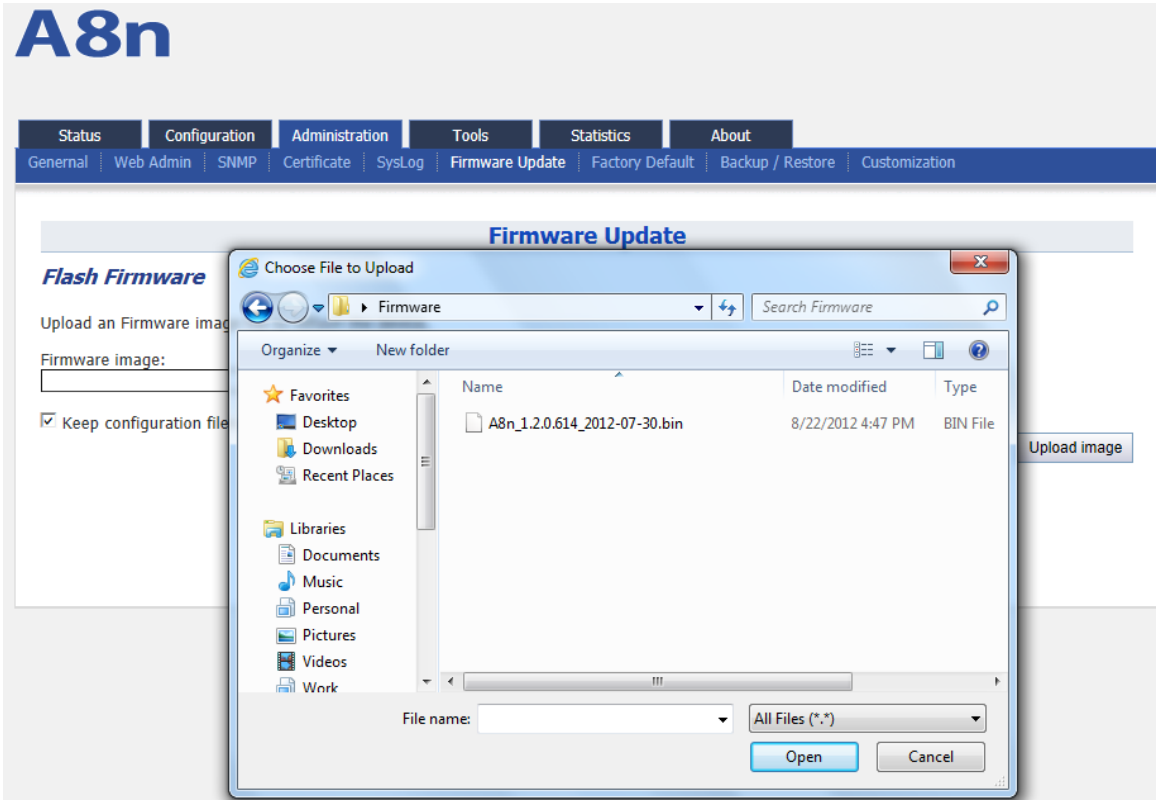


Figure 86 Select firmware file

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

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,

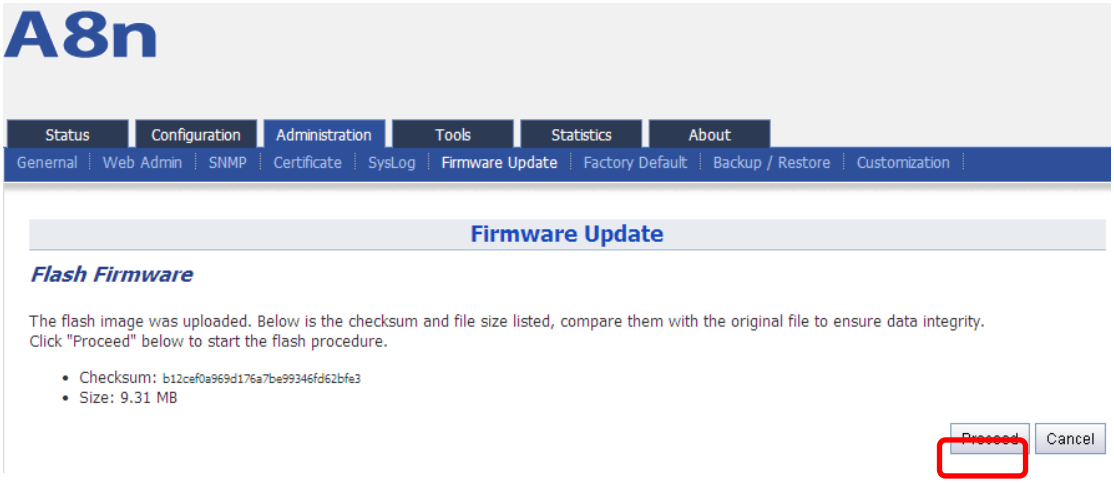


Figure 88 Press “Proceed”

5. You will find following notification:

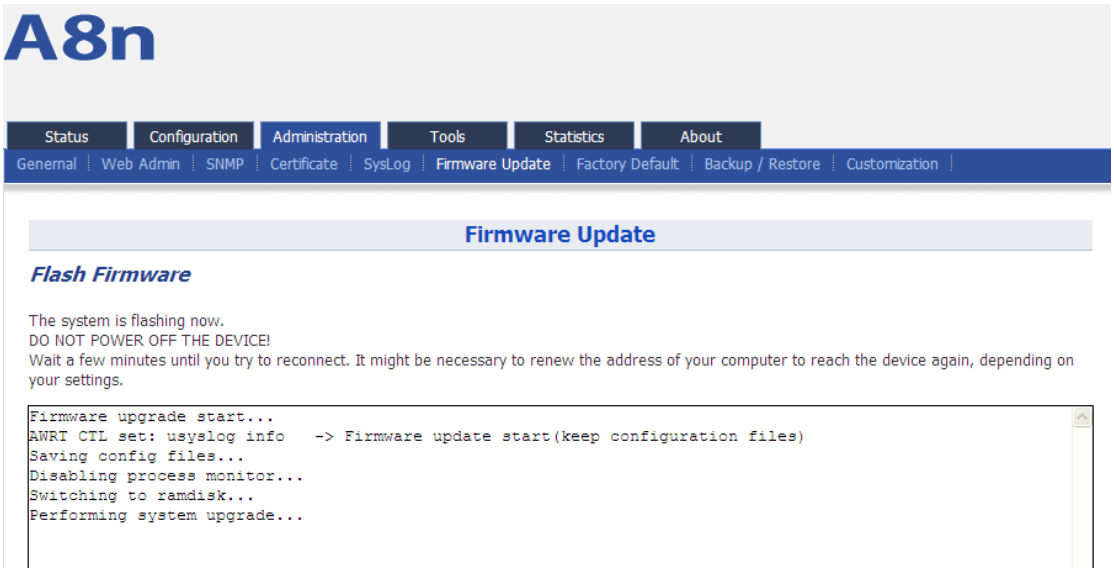


Figure 89 Progress of firmware update

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.

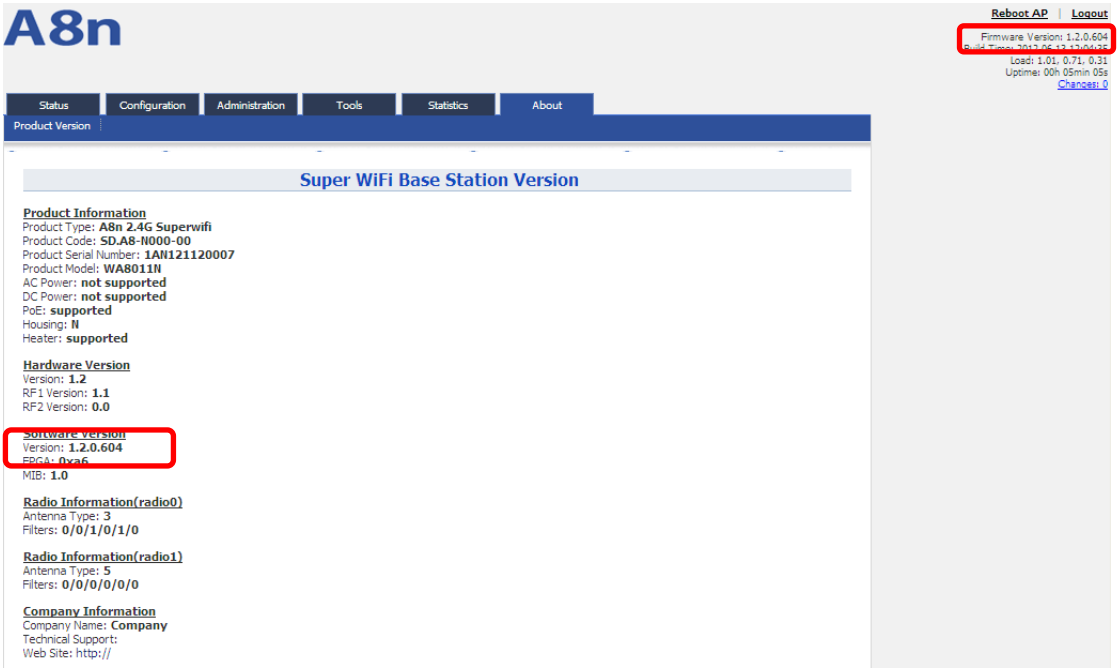


Figure 90 Information after firmware update

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 Aministration -> Factory Default, user can reset the A8Ein back to Factory Default Configuration.

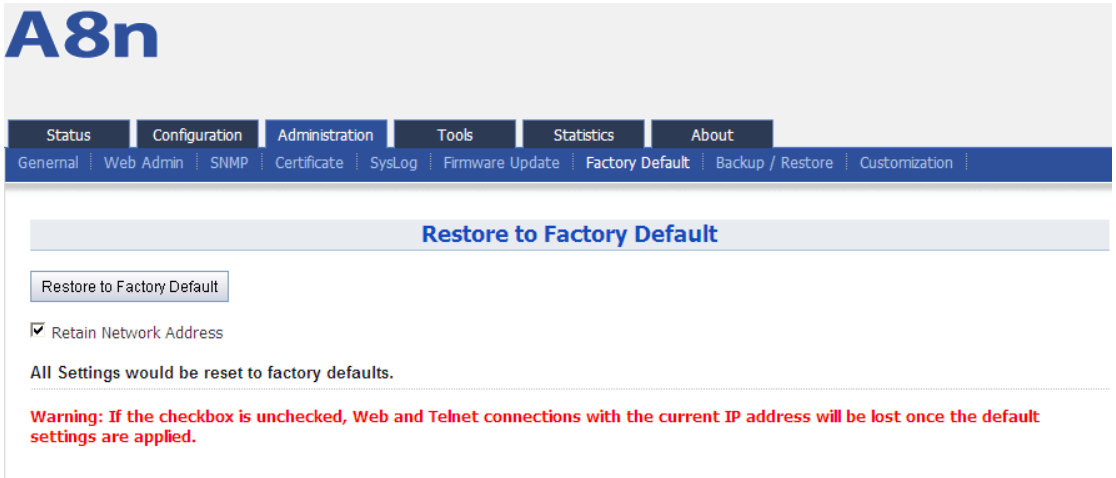


Figure 91 Restore to Factory Default

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**

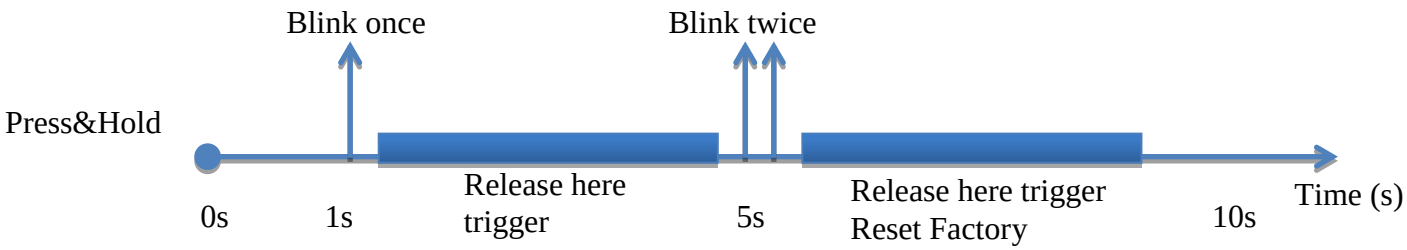
Username：**root**

Password：**superwifi123**

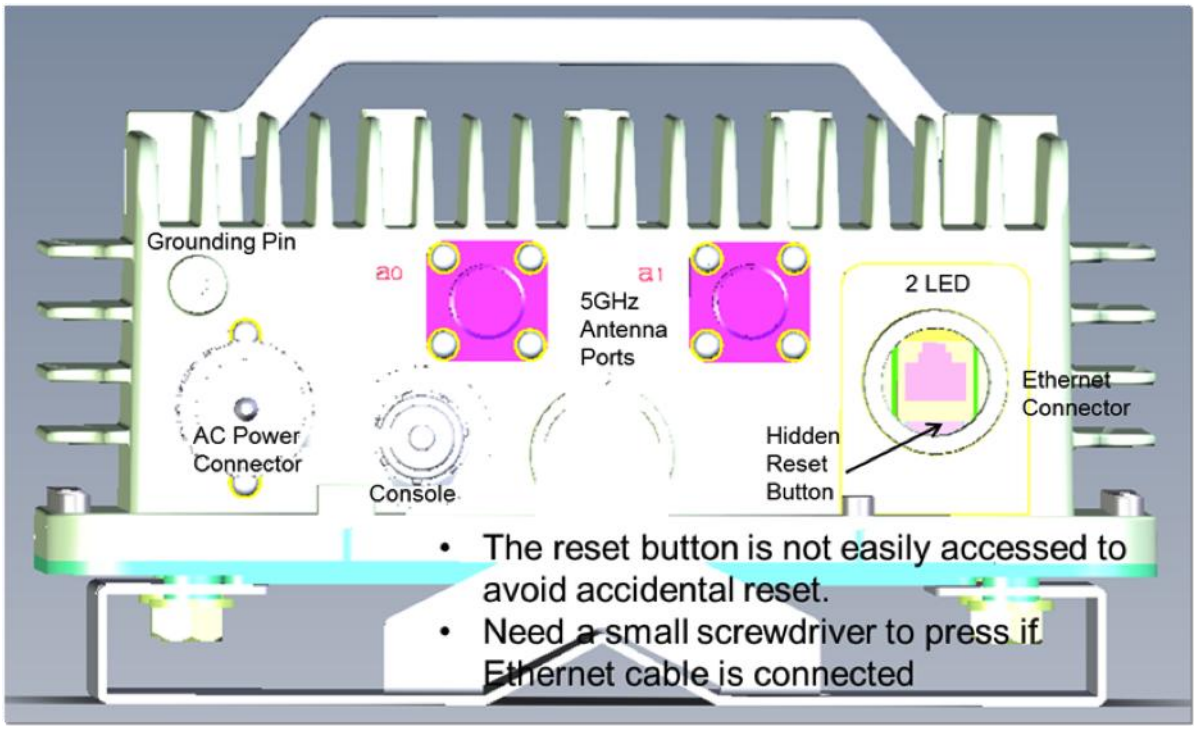
7.7.2 RESET BACK TO FACTORY DEFAULT VIA RESET BUTTON

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 2nd 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

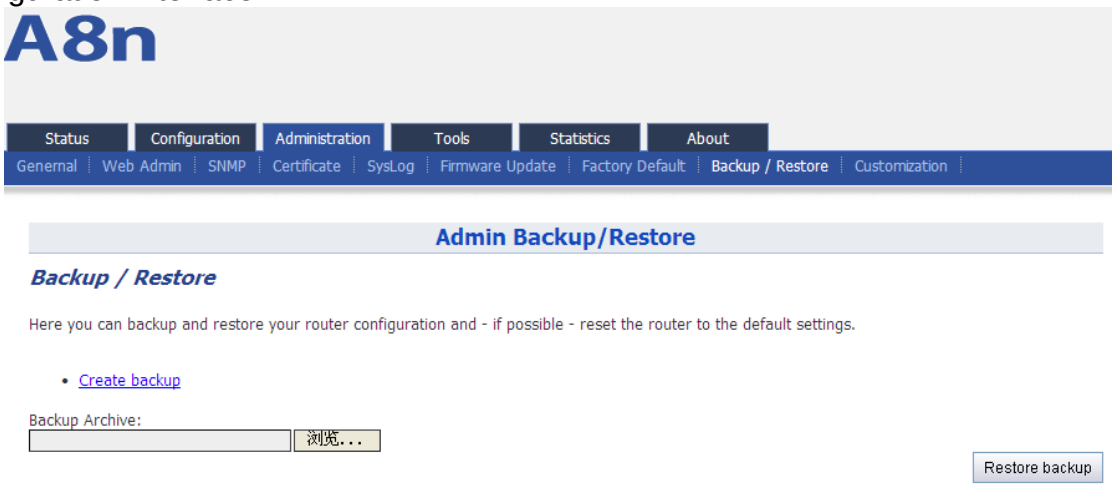


Figure 92 A8Ein Backup/Restore

Procedures：

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

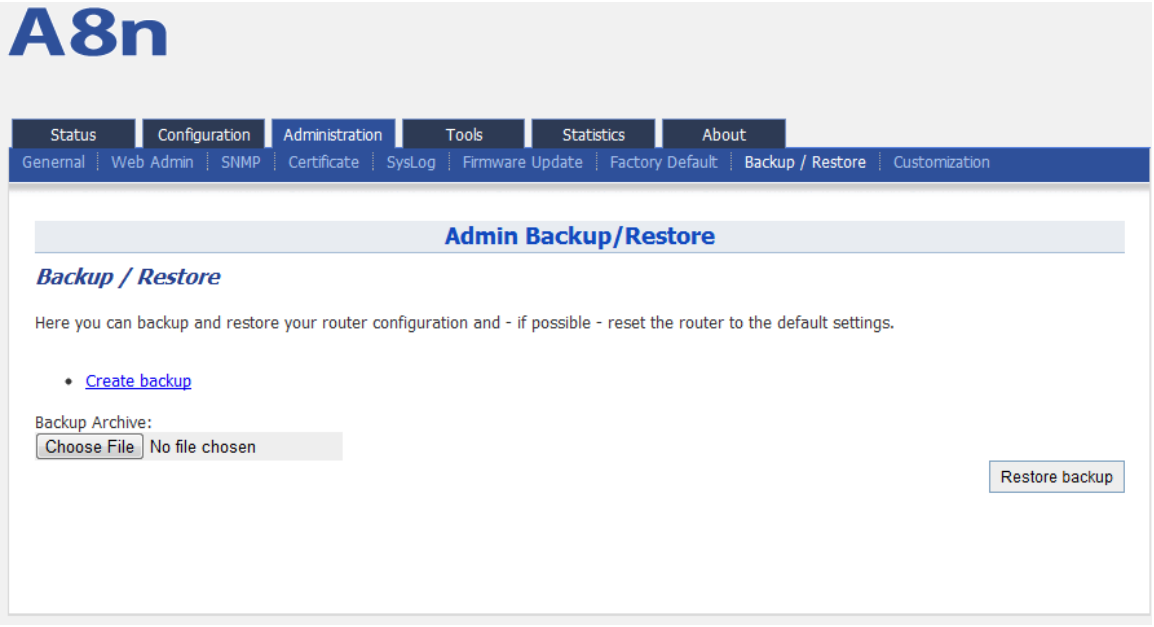


Figure 93 A8Ein Backup

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

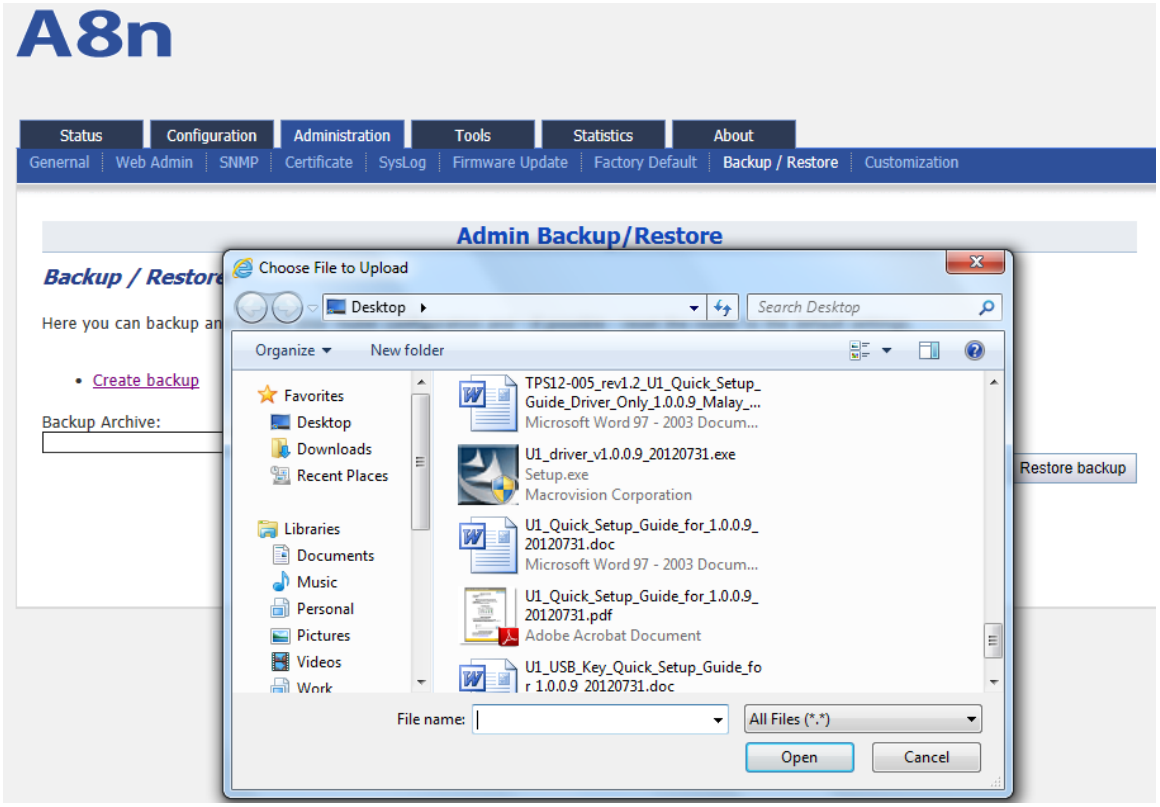


Figure 94 Select the backup file

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：

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 uninstall 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.

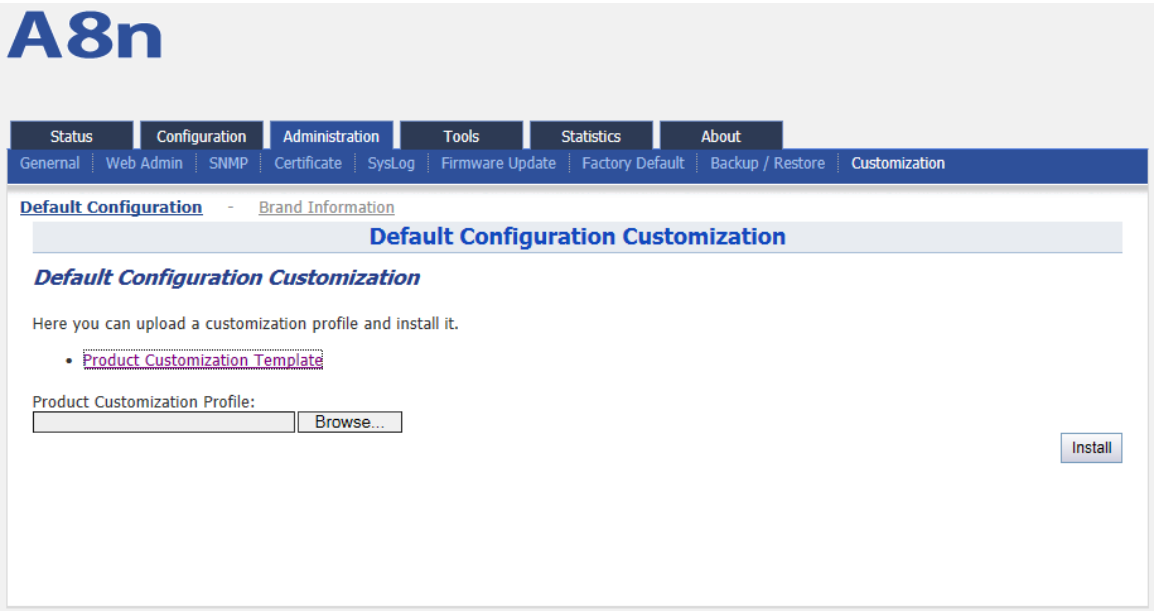


Figure 97 Download Template

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

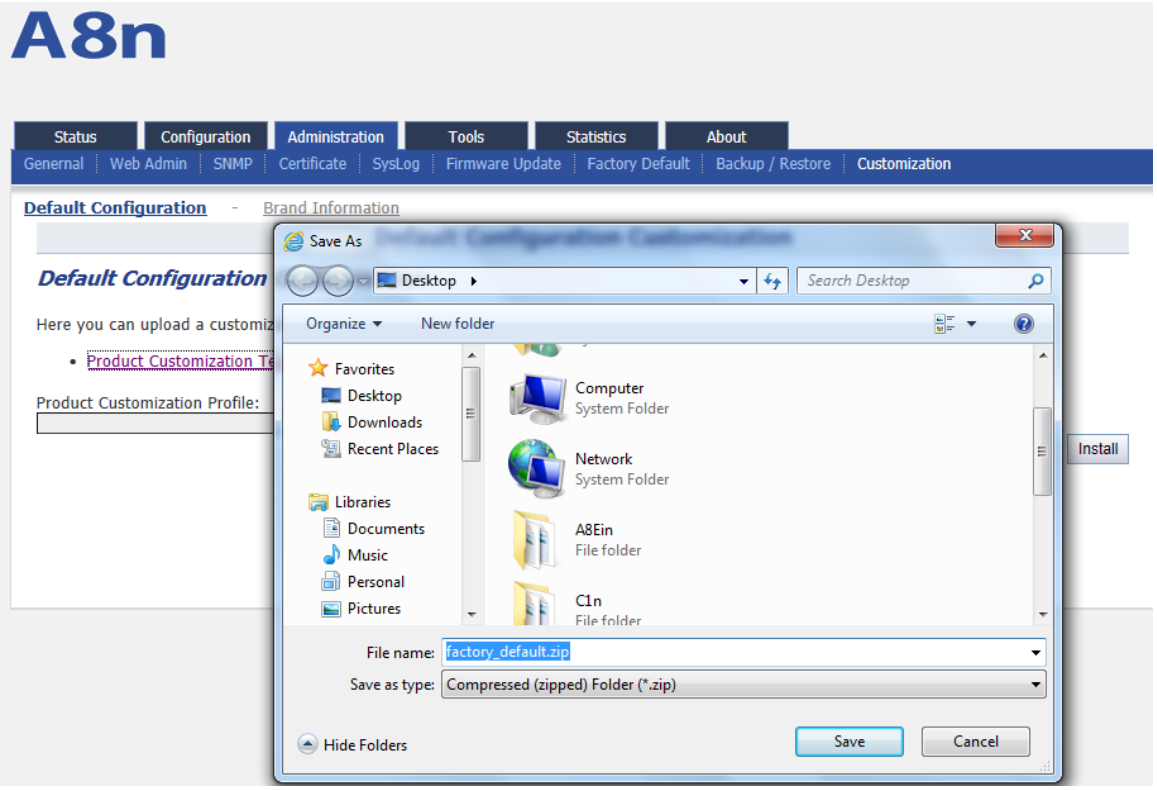


Figure 98 Save the products custom templates to the specified directory

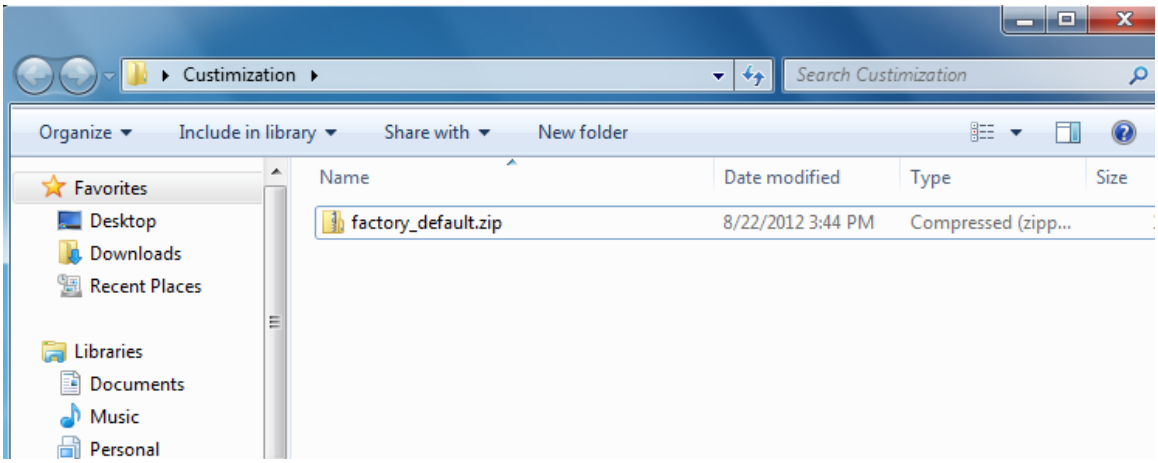


Figure 99 Custom template file downloaded

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:

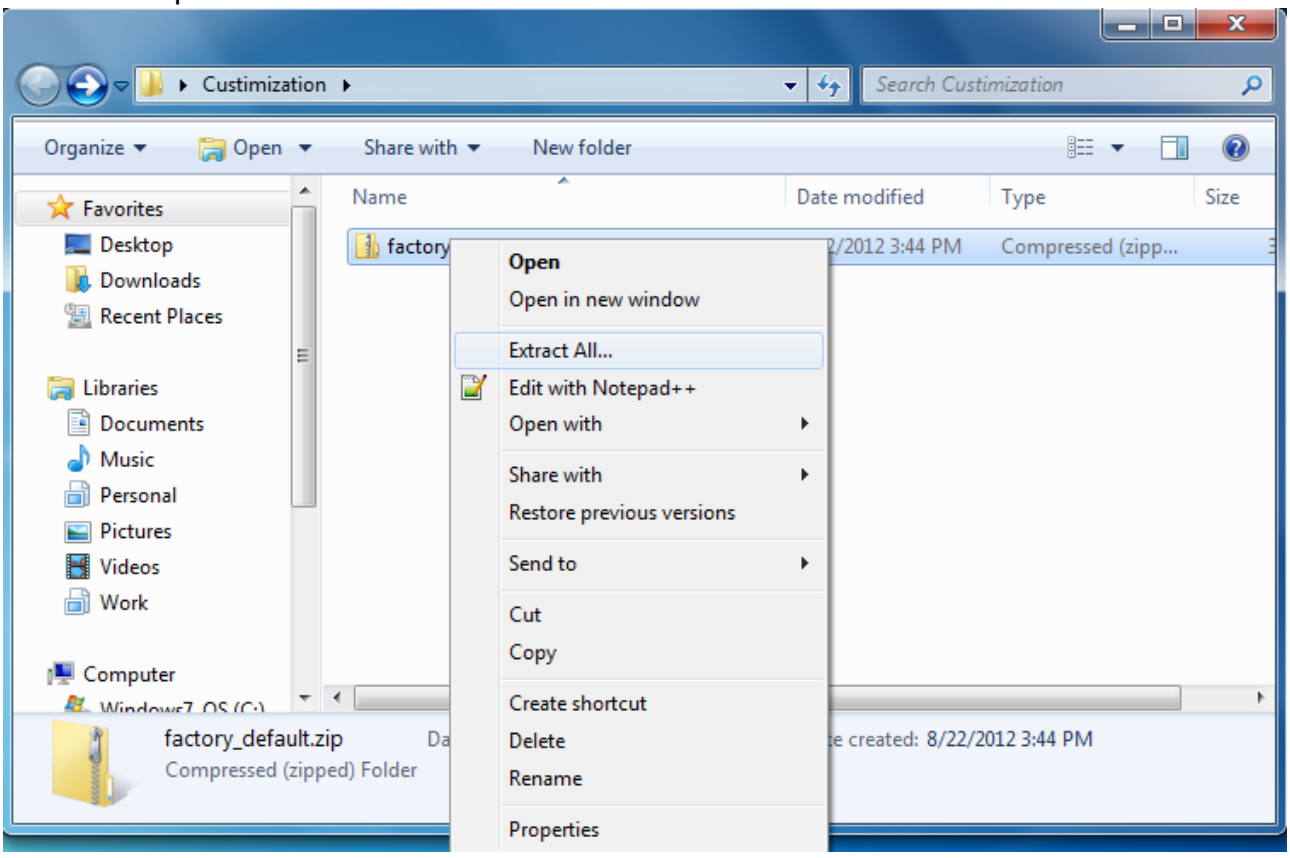


Figure 100 Use 7-zip to open the archive

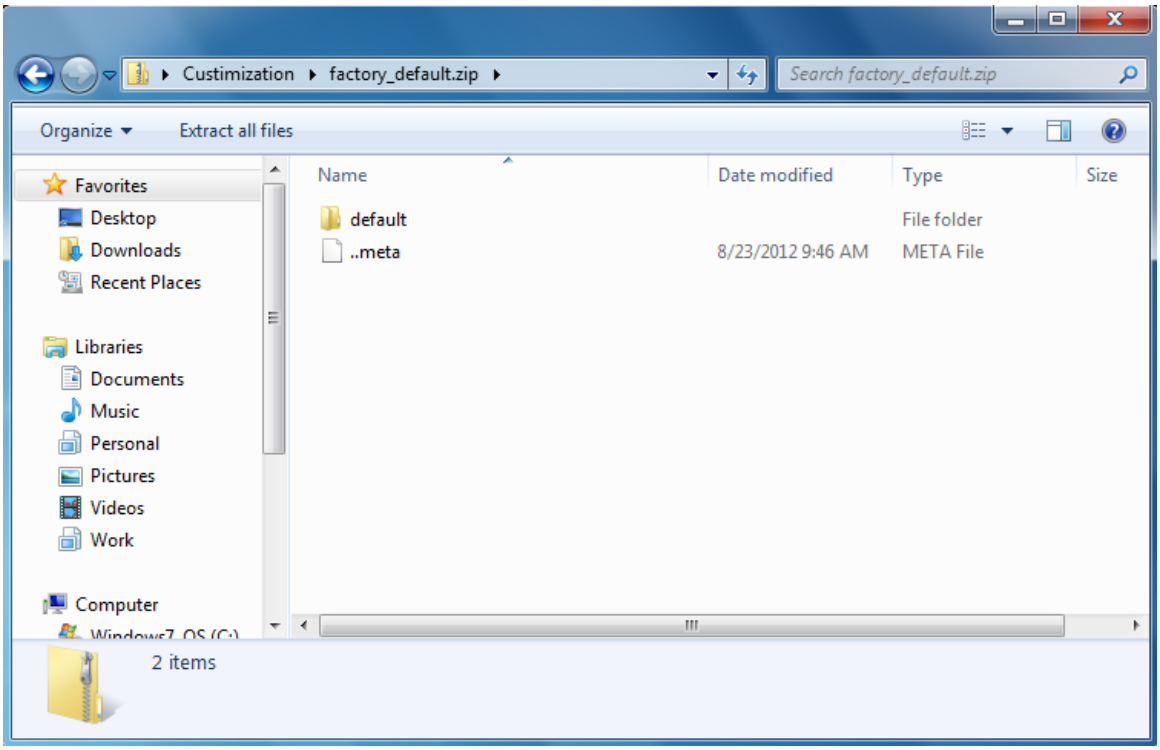


Figure 101 factory_default menu

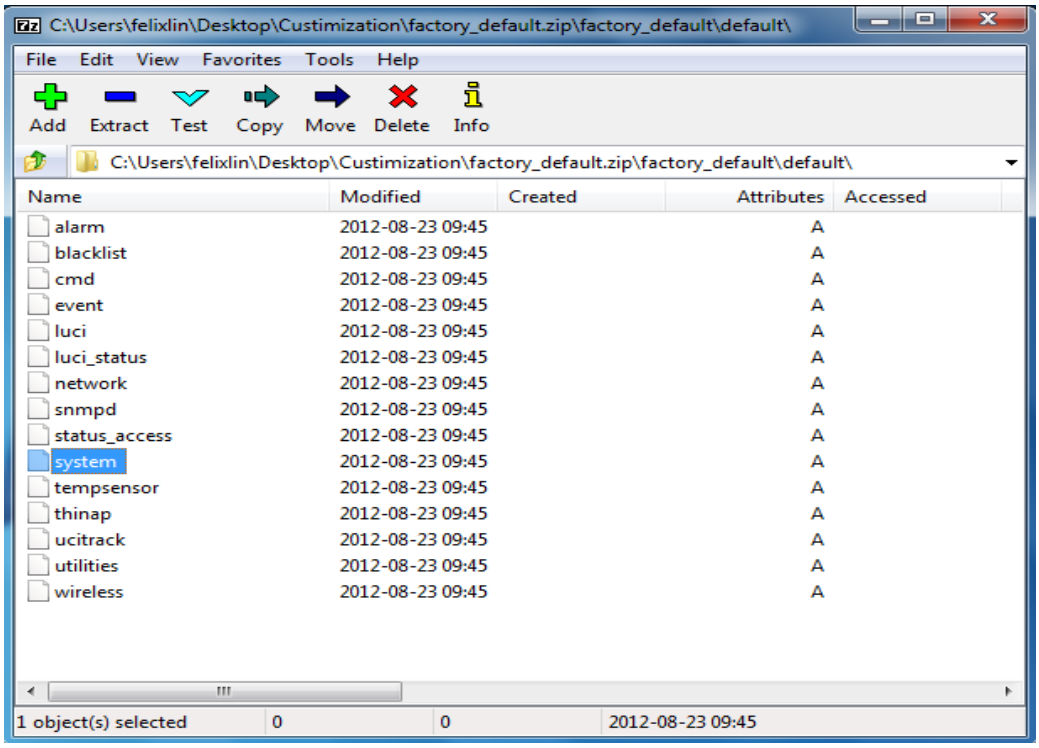


Figure 102 files under "default"

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,

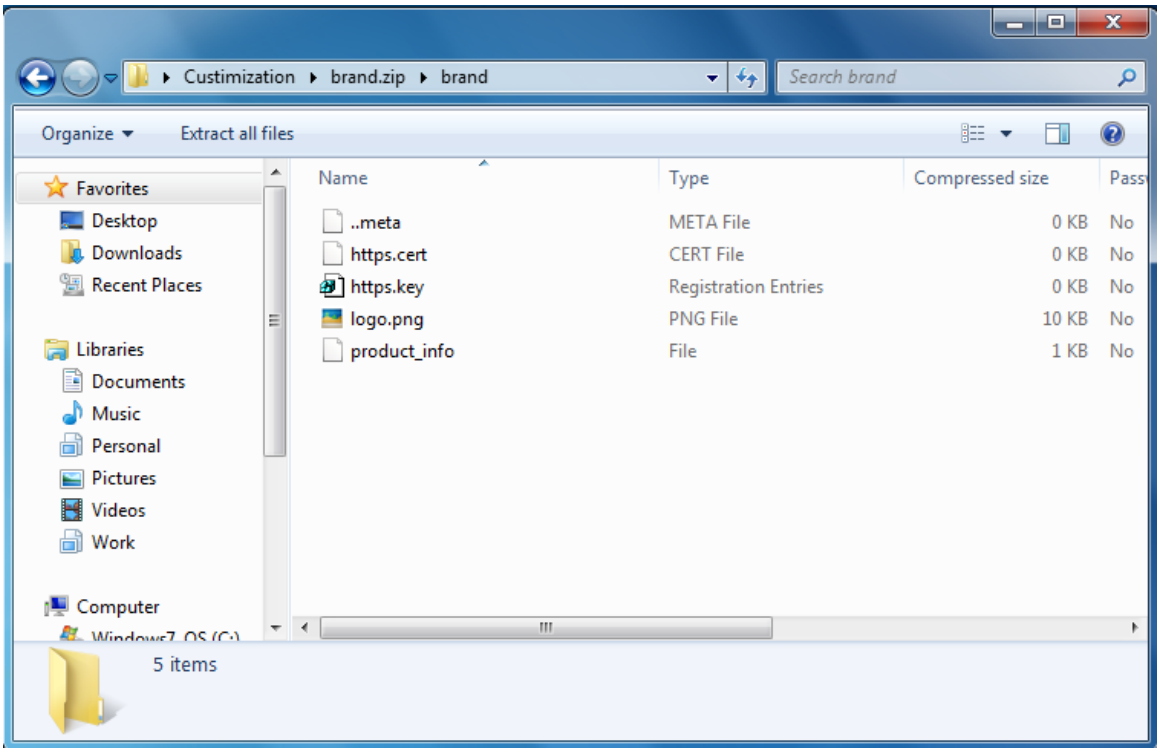


Figure 103 "Product_info" and logo.png

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.

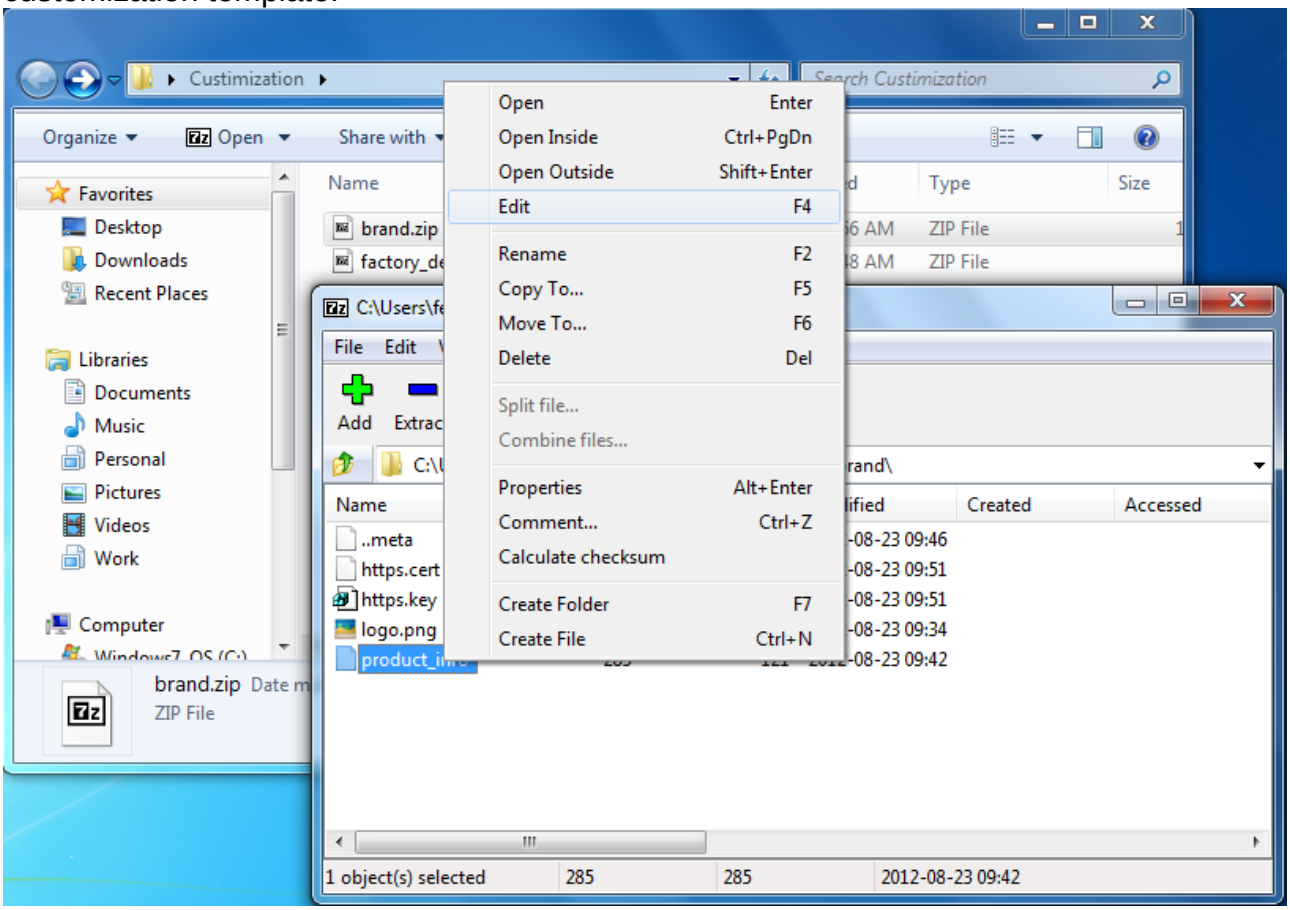


Figure 104 Select "Product_info", Right-click and select "Edit"

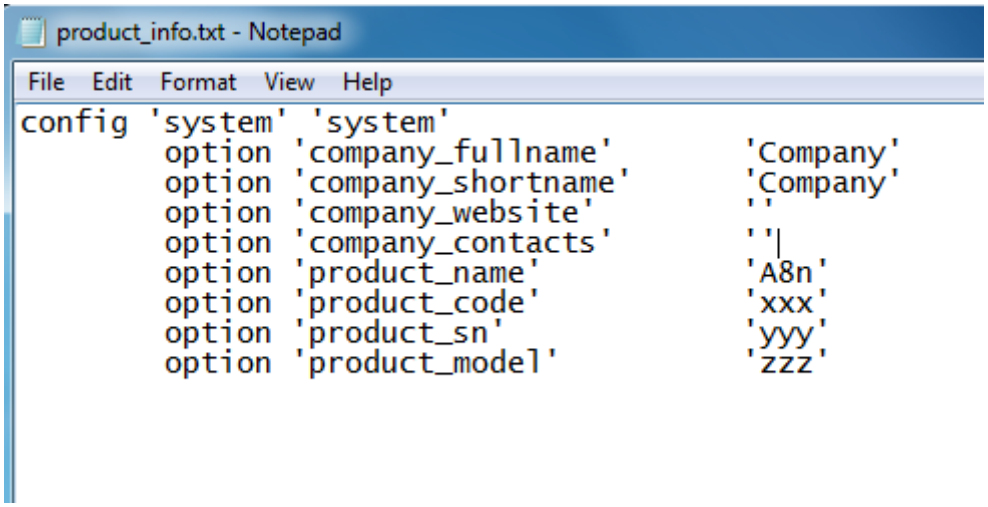


Figure 105 Initial information of "product_info" before the customization

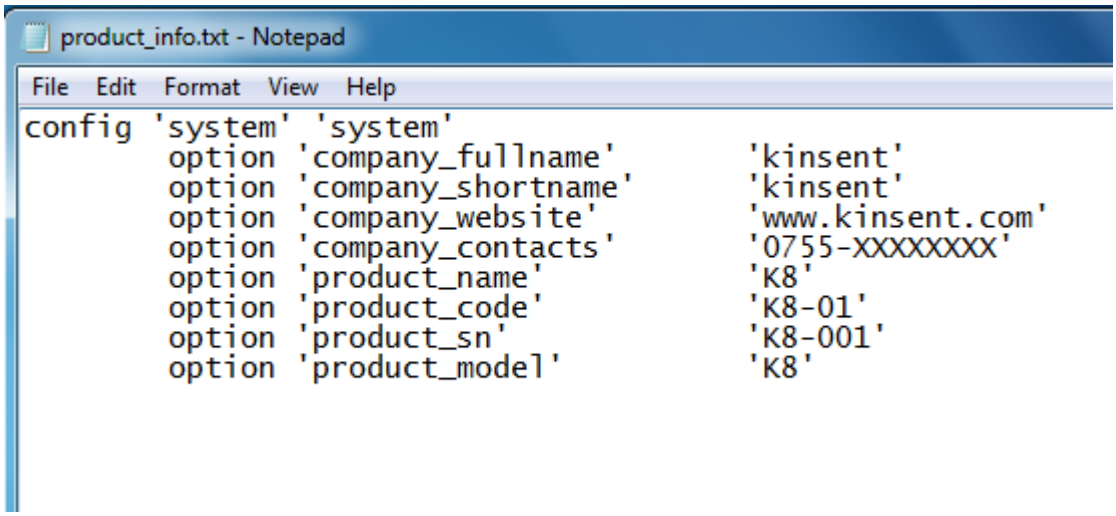


Figure 106 Customized "product_info"

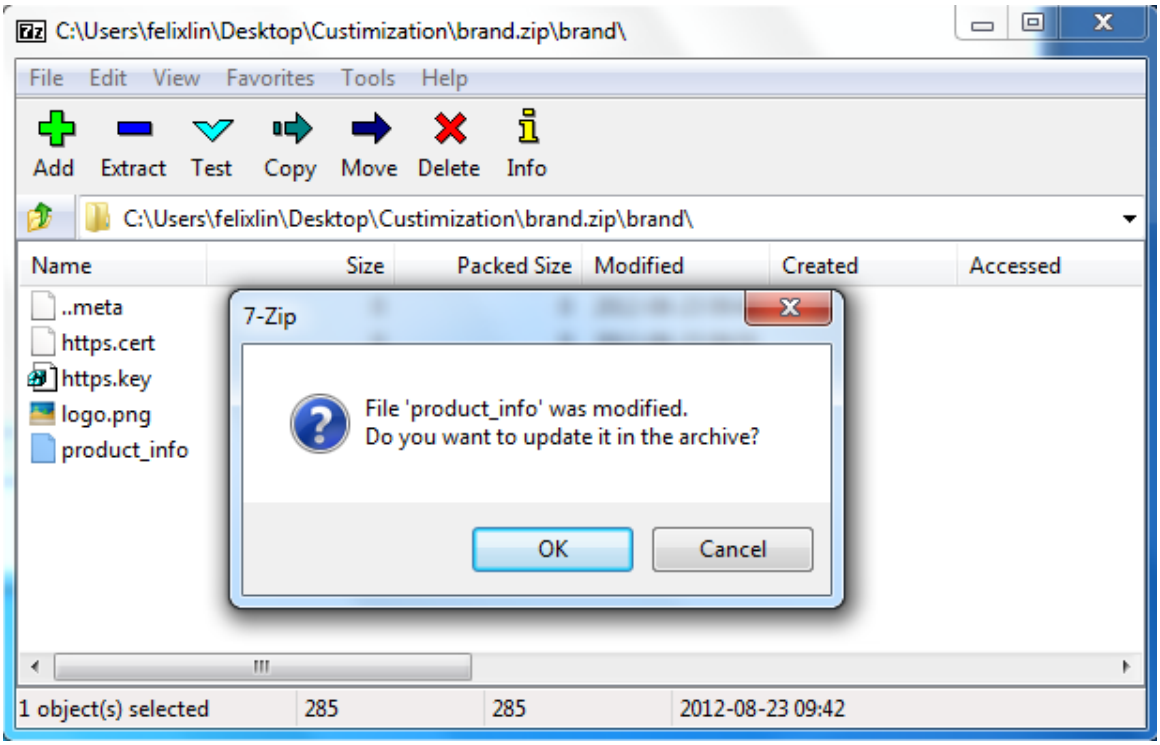


Figure 107 Save the customized file and exit, click "OK" to update

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.

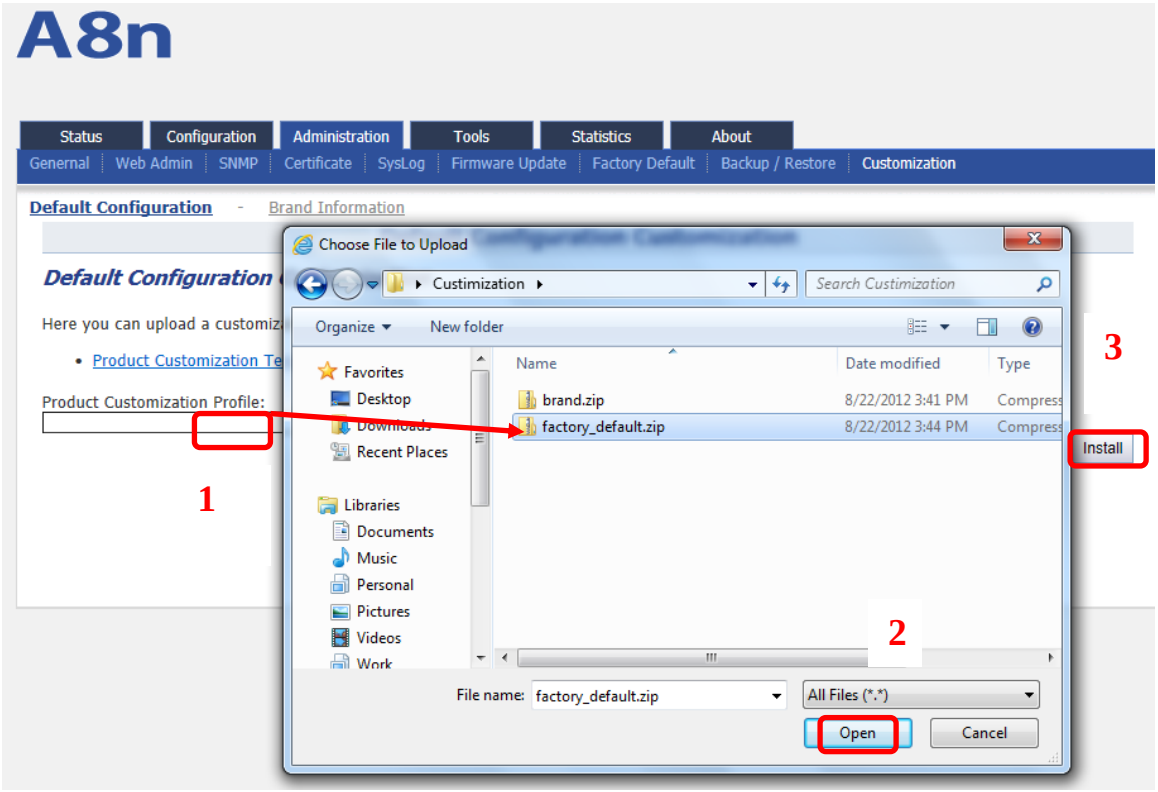


Figure 109 Upload Product Customization Template

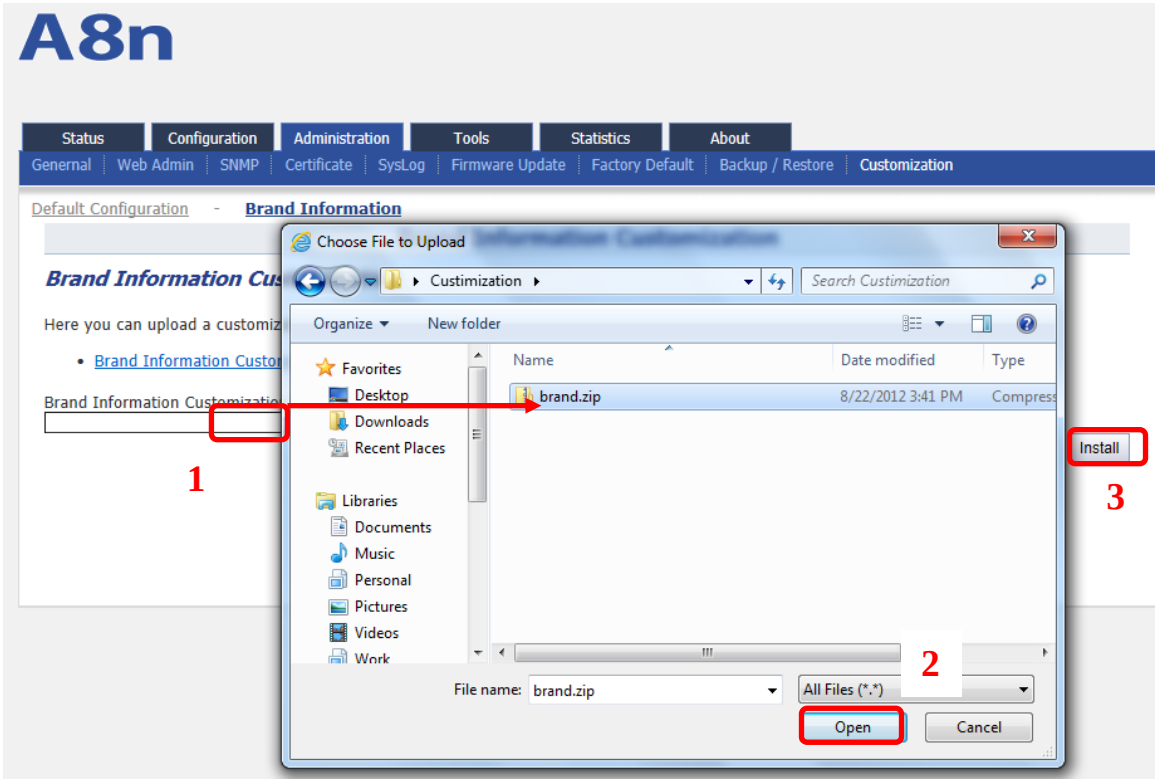


Figure 110 Upload Brand Customization Template

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

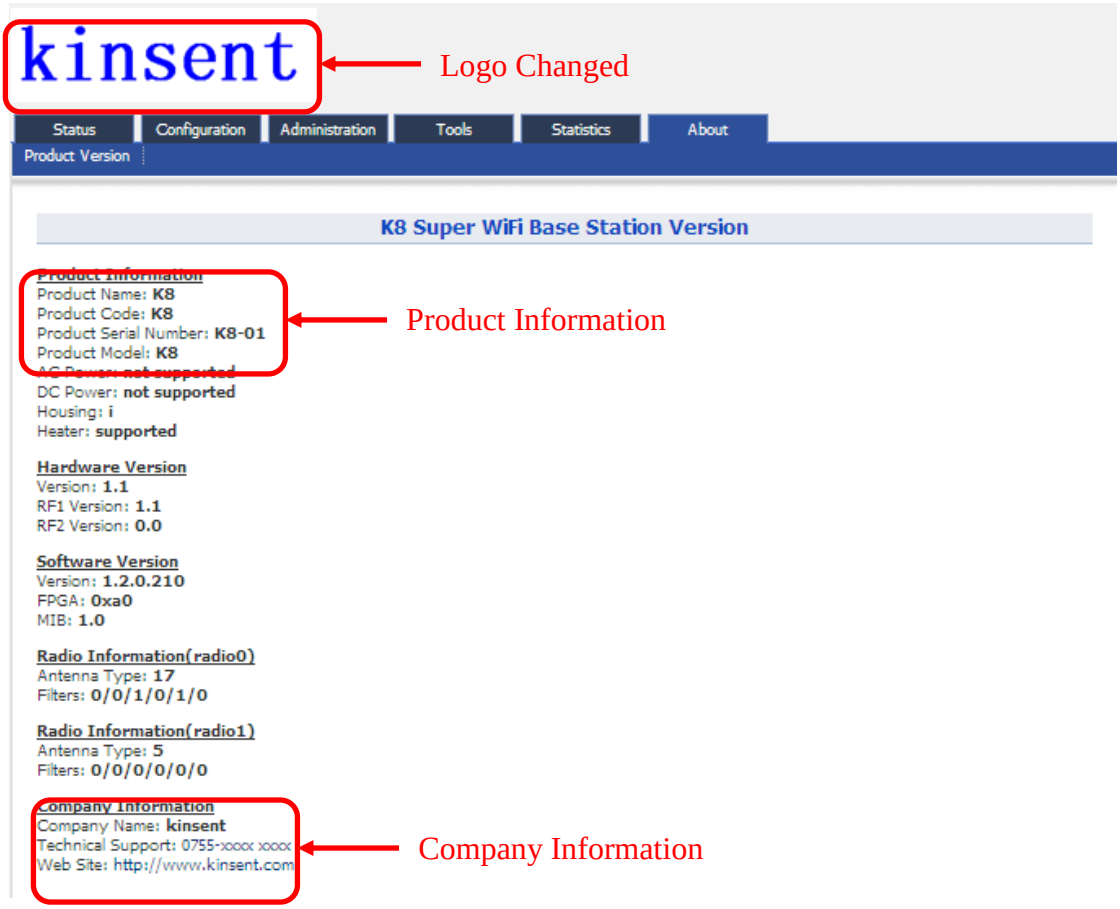


Figure 111 Changes in Product and Company Information

*** 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.

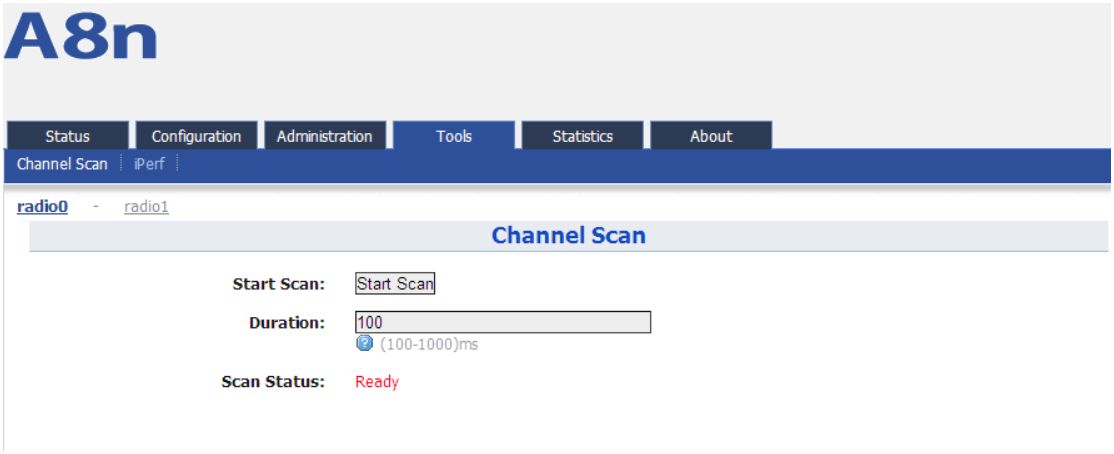


Figure 112 2.4G Channel Scan

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:

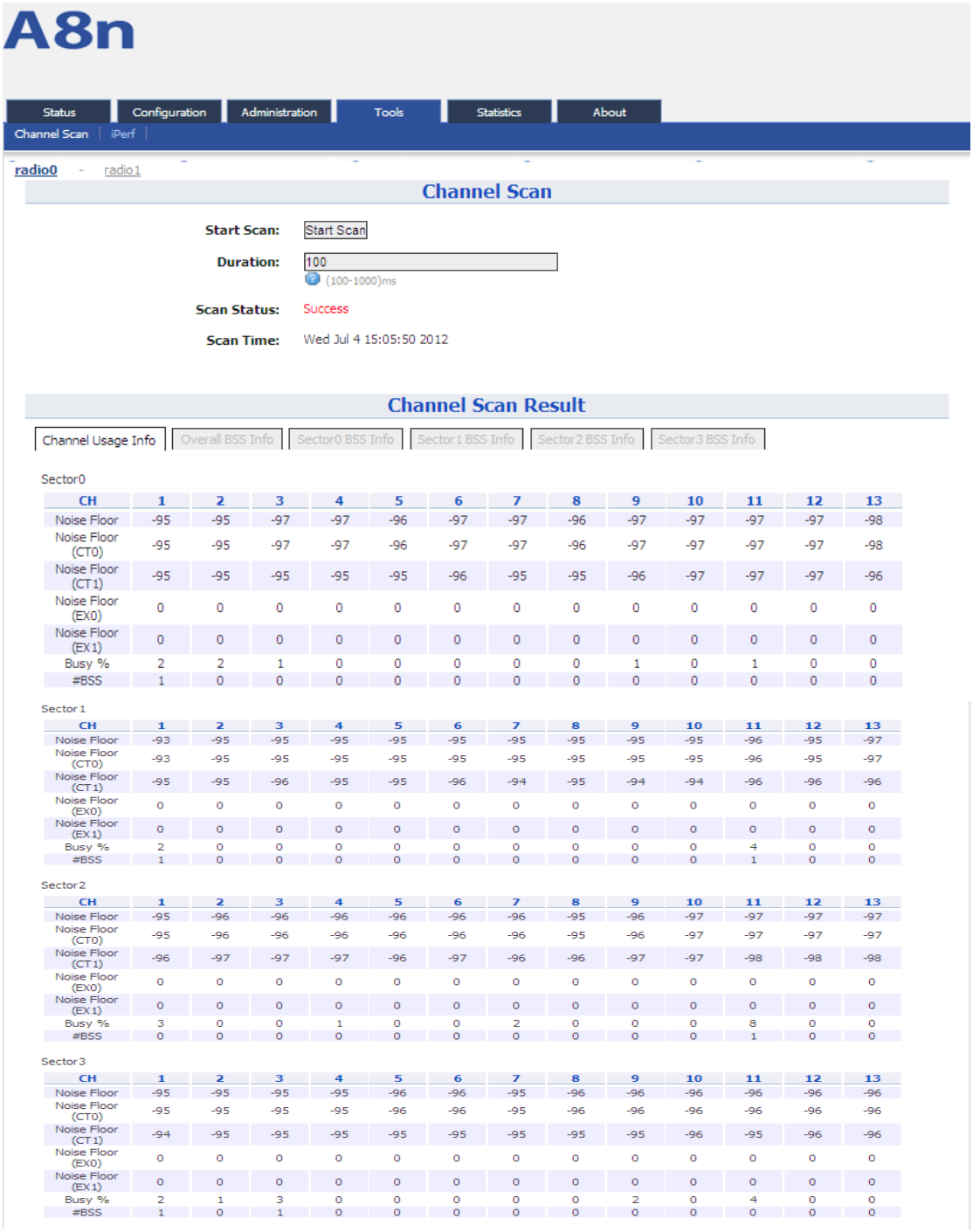


Figure 113 2.4G Channel Scan

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

Overall BSS Info:

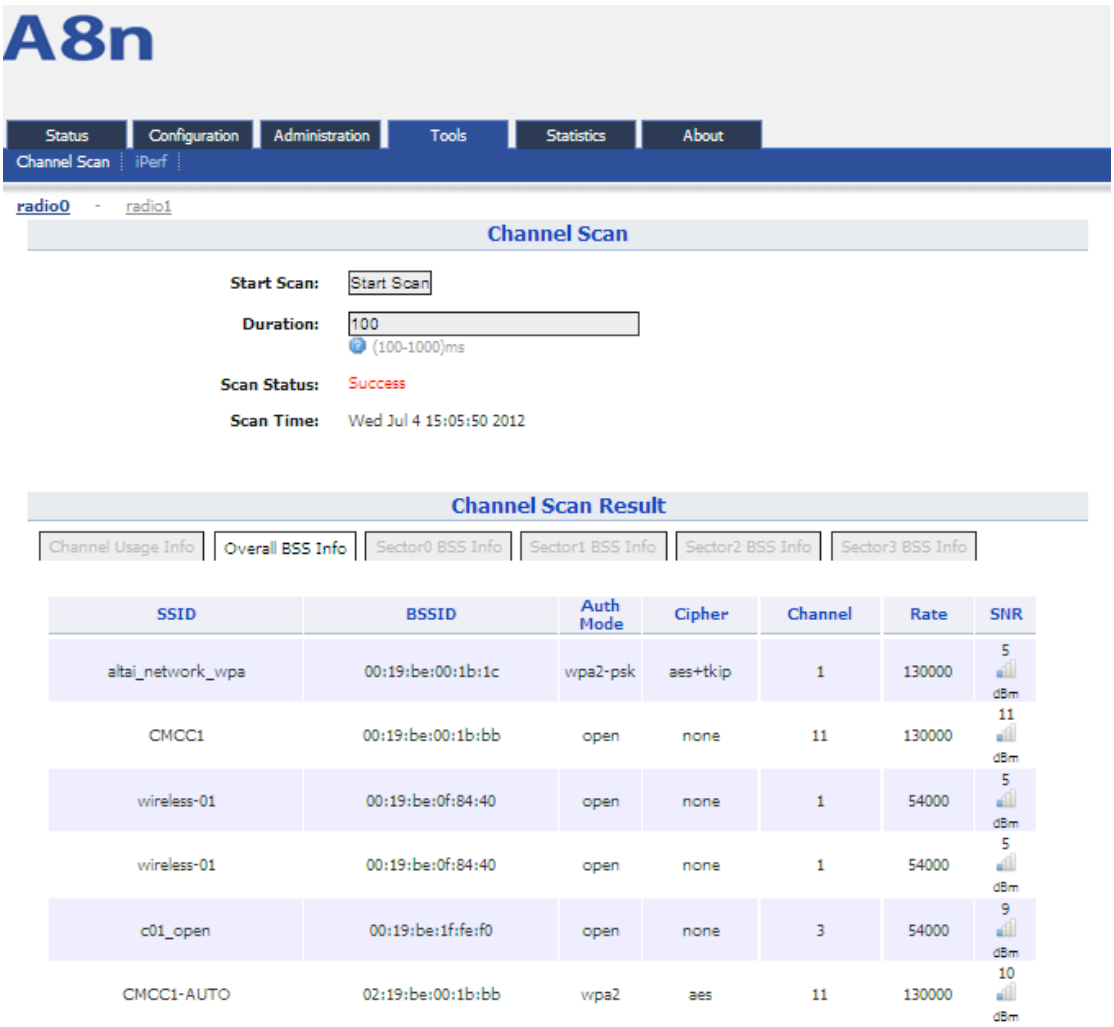


Figure 114 2.4G Overall BSS Info

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:

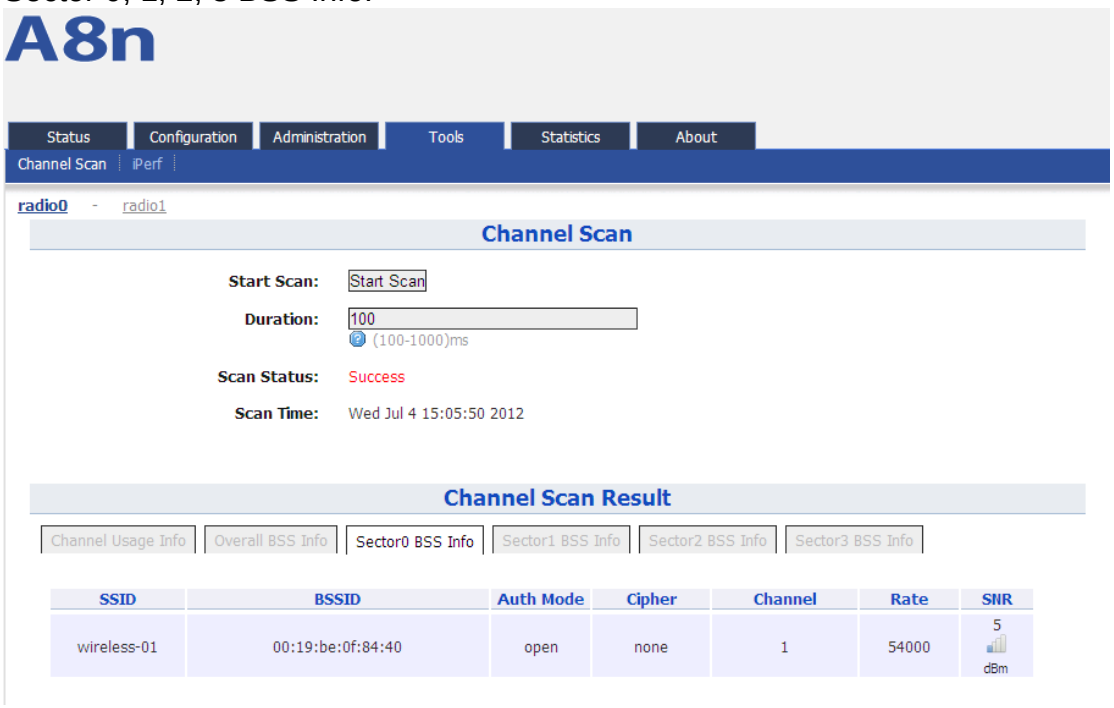


Figure 115 Sector 0 BSS Info

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 onA8Ein 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.

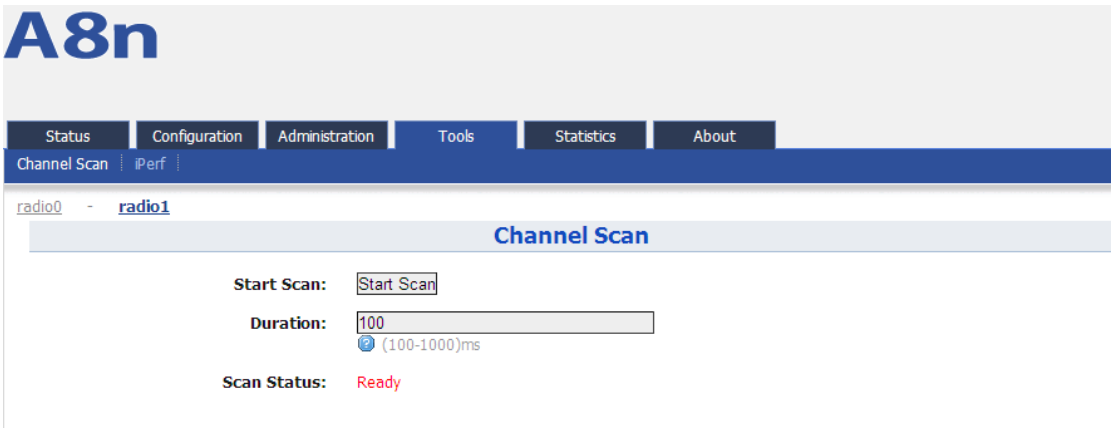


Figure 116 5G Channel Scan

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

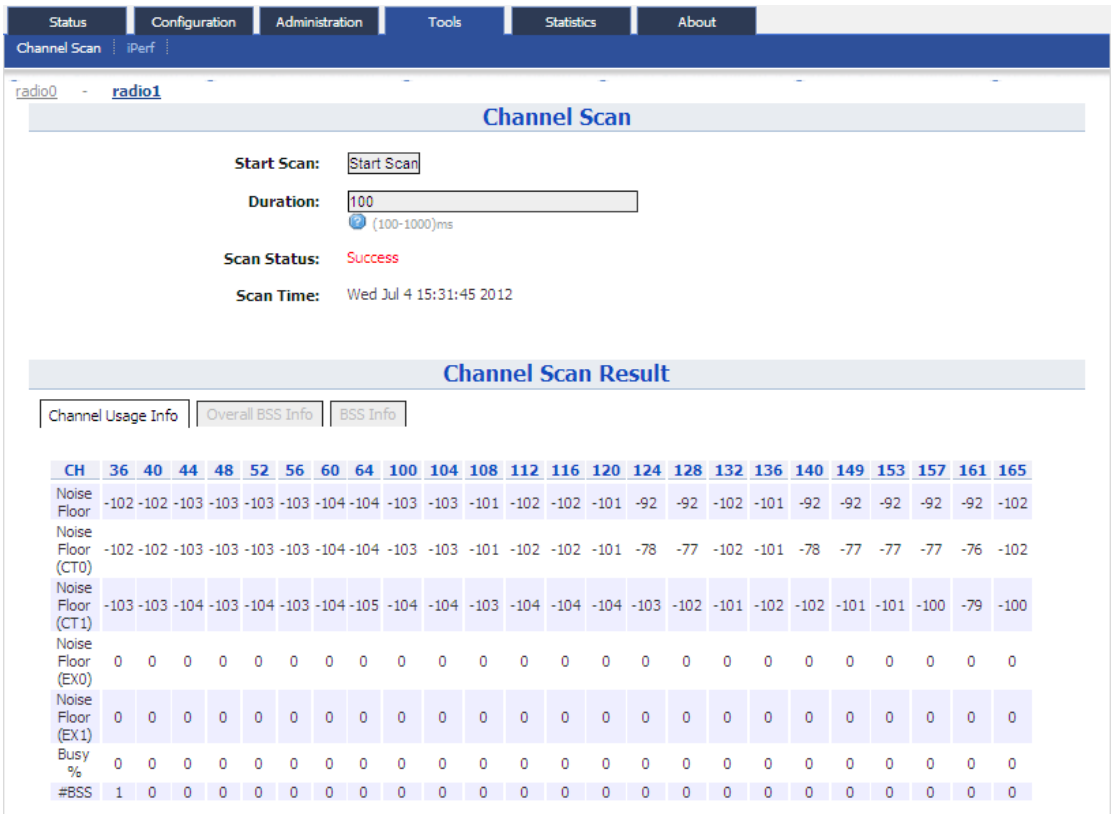


Figure 117 5G Channel Usage

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

Overall BBS Info：

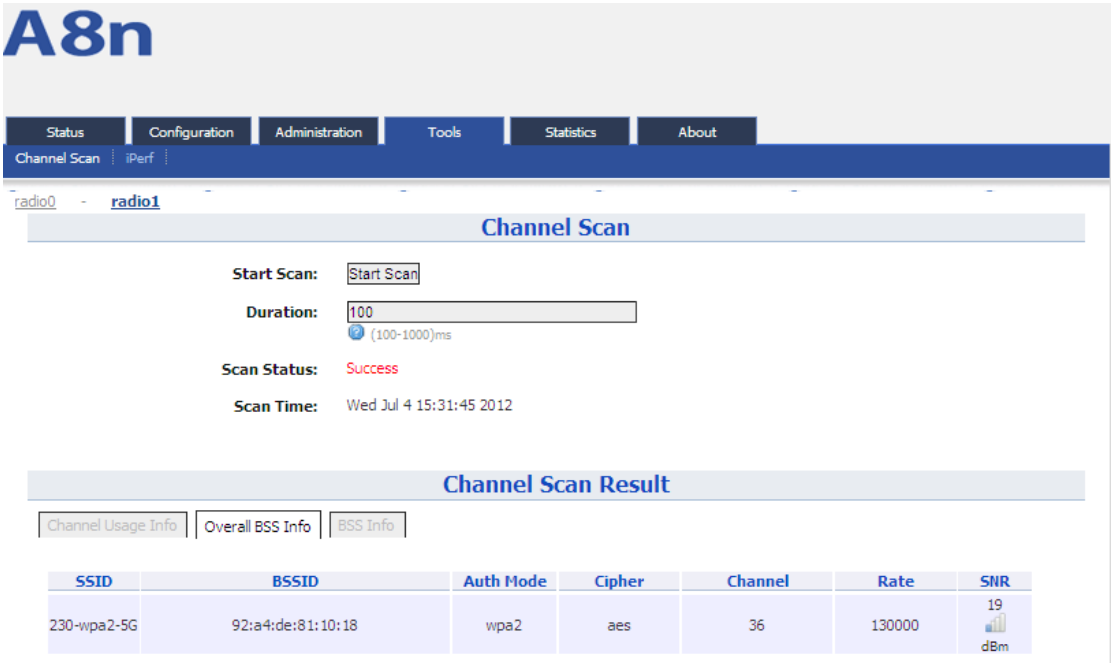


Figure 118 5G BSS Info

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

BSS Info：

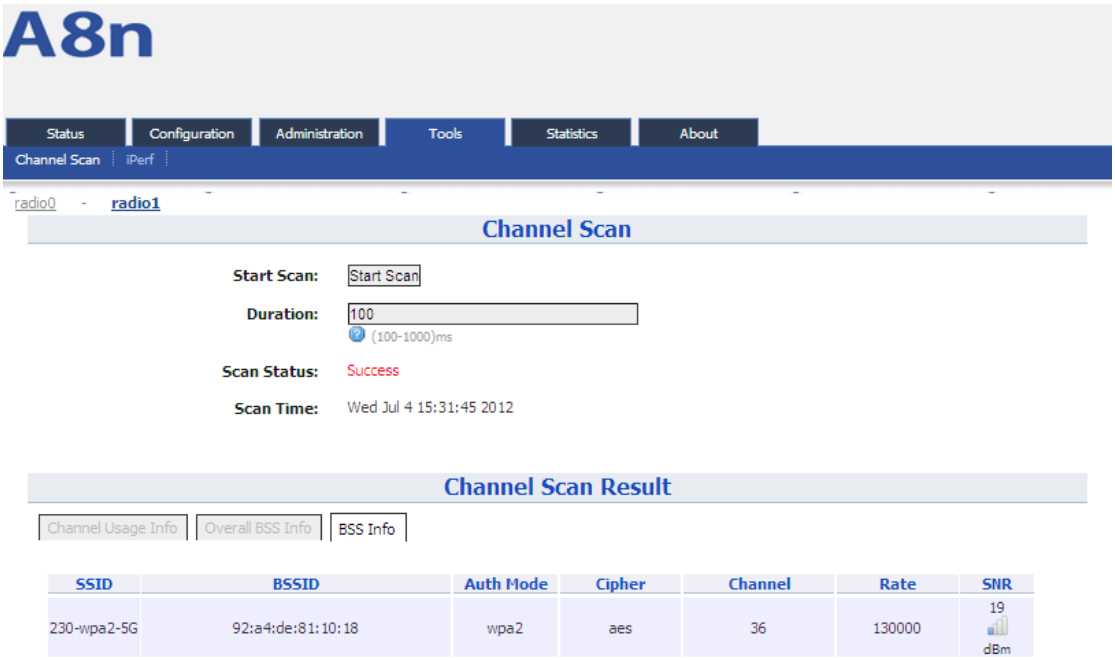


Figure 119 BSS information

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

Base onA8Ein 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：

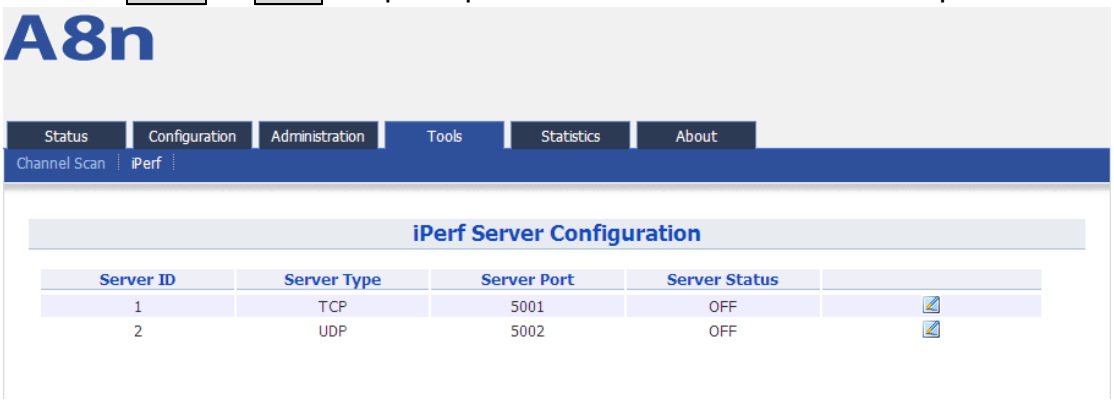


Figure 120 iPerf interface

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:

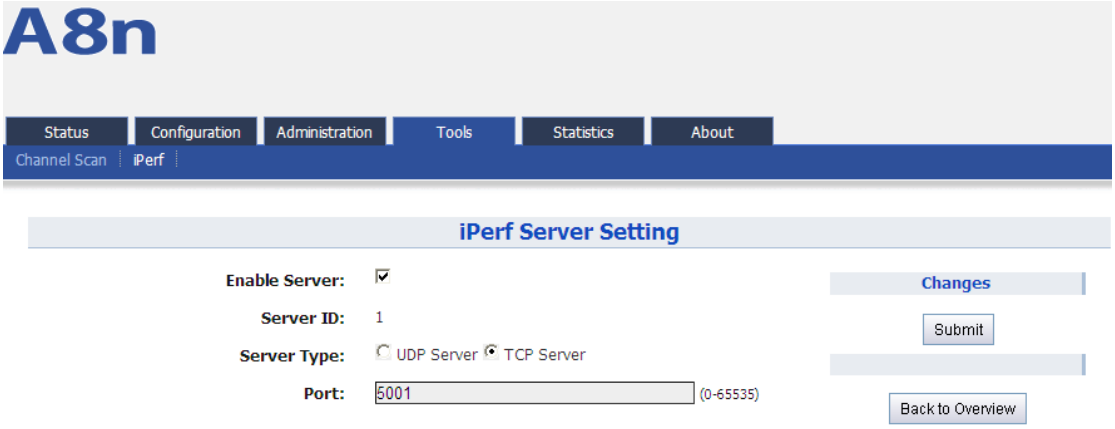


Figure 121 iPerf Server Configuration Interface

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 iPert 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 Processer 1，Processer 0 will have the same layout as Processor 1.

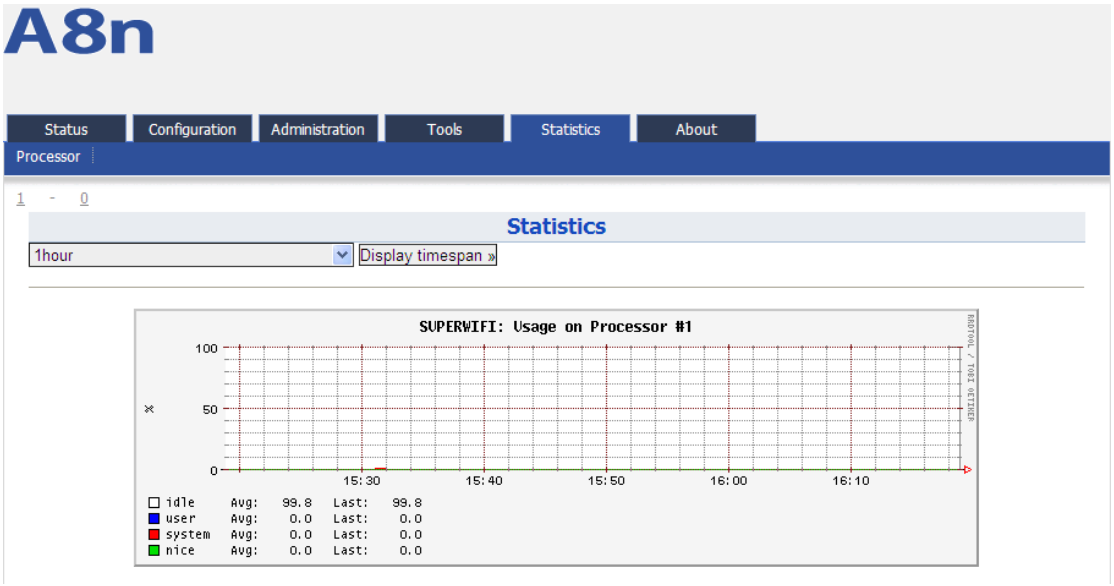


Figure 122 Processer 1 Usage

Details of Processer 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

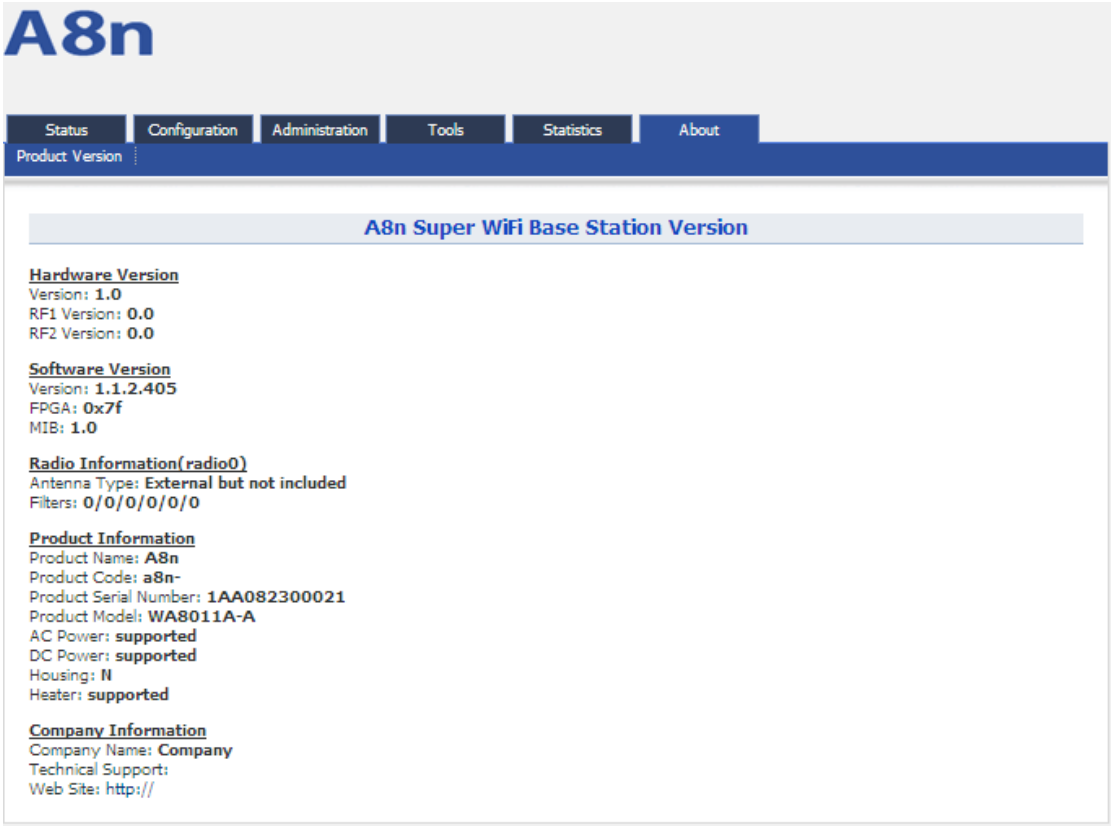


Figure 123 A8Ein “About”

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