ZXR10 WAS (V2.0) IP Wireless Access System

W800A Wireless Access Point

User's Manual

ZTE CORPORATION

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W800A Wireless Access Point
User's Manual

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Product Version V2.0
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Preface

About This Manual

This manual, *ZXR10 WAS (V2.0) IP Wireless Access System W800A Wireless Access Point — User's Manual*, is applicable to W800A wireless access point (W800A for short) of the ZXR10 WAS (V2.0) IP wireless access system.

The ZXR10 WAS IP wireless access system is the IP wireless access system developed by ZTE. It consists of a series of wireless access network products, such as wireless network card, wireless access point (AP) and DSL 2-in-1 wireless router.

Serving as the operation guide to W800A, this manual introduces the function features, installation, operation, using and maintenance of W800A. This manual consists of 7 chapters and 2 appendixes.

Chapter 1, Safety Precautions, introduces the safety precautions of this product and safety symbols used in this manual.

Chapter 2, Overview, presents functions, features and technical parameters of W800A.

Chapter 3, Structure and Principle, describes structure and principle of W800A.

Chapter 4, Installation and Debugging, deals with the installation and debugging methods of W800A.

Chapter 5, Command Line Configuration, covers the command line configurations of W800A.

Chapter 6, WEB Configuration, examines WEB configurations of W800A.

Chapter 7, Maintenance, puts forward the daily maintenance and version upgrade methods of W800A.

Appendix A, Packing, Transportation and Storage, outlines the packaging method, storage conditions and transportation precautions of W800A.

Appendix B, Making of Ethernet cables, details the power supply mode of W800A Ethernet and making of Ethernet cables.

Conventions

Four striking symbols are used throughout this manual to emphasize important and critical information during operation:

 Attention,  Caution,  Warning and  Danger: alerting you to pay attention to something.

Statement: The actual product may differ from what is described in this manual due to frequent update of ZTE products and fast development of technologies. Please contact the local ZTE office for the latest updating information of the product.

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1 Safety Precautions

This chapter introduces the safety precautions of this product and safety symbols used in this manual.

1.1 Safety Precautions

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

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 the equipment.

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

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

This equipment is with high temperature and voltage, so only the professional

personnel who had passed the training can install, operate and maintain it.

ZTE assumes no responsibility for consequences resulting from violation of general specifications for safety operations or of safety rules for design, production and use of equipment.

1.2 Symbol Description

See Table 1.2-1 for the safety symbols used in this manual, which serves to remind the readers of the safety precautions to be taken when the equipment is installed, operated and maintained.

Table 1.2-1 Safety Symbols and Descriptions

Safety Symbols	Meaning
	Call for notice
	Call for antistatic measures
	Warn against electric shock
	Caution against scald
	Warn against laser
	Caution against microwave

Four types of safety levels are available: danger, warning, caution and note. To the right of a safety symbol is the text description of its safety level. Under the symbol is the detailed description about its contents. See the following formats.

Danger:

Any failure to take the reminder seriously may lead to important accidents, such as casualties or damage to the equipment.

Cautions:

Any failure to take the reminder seriously may lead to important or severe injury accidents, or damage to the equipment.

Caution:

Any failure to take the reminder seriously may lead to severe injury accidents or damage to the equipment.

Note:

Any failure to take the reminder seriously may lead to injury accidents or damage to the equipment.

Remark, reminder, tip…

The remarks, prompt and tips in addition to safety statements.

2 Overview

This chapter presents functions, features, technical characteristics and parameters of W800A.

2.1 Preface

W800A is a wireless AP product developed by ZTE and is designed totally compliant with the international standards. With it, single-AP connection, multi-AP connection and wireless cellular roaming in large scope are available, greatly improving work efficiency and living quality.

2.2 Functions and Features

Through UTP (RJ45 interface) cable, the W800A can be connected to Ethernet at 10/100 Mbps to provide wireless access service. Once the wireless network card is used and required network parameters are configured correctly, a client which is in the valid coverage range of W800A can be connected to the local LAN through W800A, and then be connected to Internet.

The function features of the W800A are as follows:

- The maximum access rate is 108 Mbps. At most 100 Stations can be accessed.
- MAC layer bridge connection function: 802.3 frame from Ethernet can be received and be converted into 802.11 frame, and then be transmitted to the wireless transceiver; or 802.11 frame from the wireless transceiver can be received and be converted into 802.3 frames, and then be transmitted to Ethernet.
- Transparent bridge connection provides packet transfer between Basic Service Set (BSS) and Distributed System (DS). The maximum transmitting rate is not less than 20 Mbps.
- The load balance adopts the access balance with multiple APs in the same area provided by the internal protocol.

- Static MAC filtration can filter MAC addresses set by users. Up to 99 filtration groups can be set and each of them can be set with 64 MAC address filtration rules.
- It provides two configuration modes: WEB and command line, to configure W800A.
- It provides seamless roaming to enable users to access network easily.
- ESSID provides network authentication to prevent illegal users from accessing the network.
- High capability of interconnection enables it to interconnect with 10/100 Mbps Ethernet, complying with IEEE 802.3 network convention.
- QoS function, compliant with 802.11e, to implement QoS control based on SSID and maps QoS into 802.1p at the uplink port.
- VLAN function,W800A can divide VLAN based on SSID,W800A uplink port supports 802.1q VLAN Trunk.
- It provides SSH information safety function.
- Security, supports 64-bit, 128-bit or 152-bit WEP encryption, 802.1x and extended Athentication ,and also supports Wi-Fi Protected Access (WPA) WLAN security standard, TKIP and AES encryption to further protect data transmission.
- Automatic consistent correction system provides Automatic Scale Back Functionality (ASBF) to automatically correct WLAN to the best connection quality.
- It provides integrated management server to monitor and manage ZTE wireless network equipment, including W800A, in the distributive environment.
- Its configuration server can manage all the APs and download versions through the configuration server.
- The version upgrade function upgrades the W800A software version,supports Remote and Local online version loading.
- The embedded SNMP Agent supports SNMP v1/2c to implement MIB II, IEEE802.11 MIB, IF-MIB, EtherLike-MIB and private MIB.

2.3 Technical Characteristics and Parameters

The technical indices of W800A are shown in Table 2.3-1.

Table 2.3-1 W800A Technical Indices

Items	Technical Indices
Standard	802.11a, 802.11b, 802.11g, 802.1d and 802.3u
Working band	802.11a: 5.15GHz~5.25GHz, 5.25GHz~5.35GHz and 5.725~5.825GHz 802.11b: 2400MHz~2483.5MHz 802.11g: 2400MHz~2483.5MHz Can flexibility chose the frequency band of the different contry
Modulation mode	802.11a: OFDM (64-QAM, 16-QAM and QPSK, BPSK) 802.11b: DSSS (DBPSK, DQPSK and CCK) 802.11g: OFDM (64-QAM, 16-QAM, QPSK and BPSK)
Data rate	802.11a: 6Mbps, 9Mbps, 12Mbps, 18Mbps, 24Mbps, 36Mbps, 48Mbps and 54Mbps 802.11b: Adaptive 1Mbps, 2Mbps, 5.5Mbps and 11Mbps 802.11g: 6Mbps, 9Mbps, 12Mbps, 18Mbps, 24Mbps, 36Mbps, 48Mbps and 54Mbps
Distance (m)	Indoor: 20m ~ 100m; outdoor: 100m ~ 300m
External interfaces	RJ45 interface, serial interface and wireless interface
Channel quantity	802.11b: EU: 13; USA and Canada: 11; France: 4; Japan: 14 802.11a: Up to 24 channels are provides according to different national standards 802.11g: EU: 13; USA and Canada: 11; France: 4
Recommended number of users/maximum number of users	30/100
MAC address capacity	1024
Encryption type	64/128/152-bit WEP encryption 802.1x Authentication TKIP & AES encryption
Dimensions	208mm × 180mm × 47mm (W × L × H)
Weight	1kg (without power supply)
Power supply mode	DC 12V power supply and 48V Ethernet power supply
Specification of power adapter	Input: 100VAC~240VAC, 50Hz~60Hz Output: 12VDC, 1.2A
Working temperature:	-5 ℃ ~ 45 ℃
Storage temperature	-40 ℃ ~ 70 ℃
Working humidity	5% ~ 95%
Storage humidity	10% ~ 100%

3 Structure and Principle

This chapter introduces W800A structure and principle: hardware structure, working principle, interfaces, indicators and networking mode.

3.1 Structure and Working Principle

W800A appearance is shown in Fig. 3.1-1.

Fig. 3.1-1 W800A Appearance

The hardware of W800A comprises the main body, antenna and external power adapter.

The software of W800A comprises the basic service subsystem and network management subsystem.

- The basic service subsystem consists of these items: 802.11a/b/g AP driving, 802.3 Ethernet driving, transparent bridge connection, load balance, TCP/IP protocol stack, dynamic address distribution, static MAC address filtration, SSH, QoS control and VLAN.
- The network management subsystem consists of these items: SNMP Agent, command line configuration module (Telnet configuration and serial interface configuration), WEB page configuration module.

The main board of W800A has two MiniPci wireless network card slots, one or both of them can be used as required. Through software mode, different MiniPci wireless

network cards can be set as different working modes: 802.11a, 802.11b, 802.11g and 802.11b/g. So, W800A can satisfy 5 GHz based on 802.11a standard or 2.4 GHz single frequency wireless access function based on 802.11 b/g standard, to provide 54 Mbps access capacity, and it can also satisfy 2.4 GHz and 5 GHz double frequency wireless access functions based on 802.11 a/b/g, to provide 2 × 54 Mbps access capacity.

The configuration mode of the W800A wireless network card is shown in Table 3.1-1.

Table 3.1-1 Configuration Table of MiniPci Wireless Network Card for W800A

Network Card Quantity	Network Card Types		Function Descriptions
1	2.4 GHz (802.11 b/g standard working mode)		802.11 b/g standard single frequency wireless access, with the maximum capacity of 54Mbps.
1	5 GHz (802.11a standard working mode)		802.11a standard single frequency wireless access, with the maximum capacity of 54Mbps.
2	2.4 GHz (802.11 b/g standard working mode)	2.4 GHz (802.11 b/g standard working mode)	802.11 b/g standard single frequency wireless access, with the maximum capacity of 2 × 54Mbps.
2	2.4 GHz (802.11 b/g standard working mode)	5 GHz (802.11a standard working mode)	802.11 a/b/g standard double frequency wireless access, with the maximum capacity of 2 × 54Mbps.
2	5 GHz (802.11a standard working mode)	5 GHz (802.11a standard working mode)	802.11a standard single frequency wireless access, with the maximum capacity of 2 × 54Mbps.

Note:

Considering the interference owing to close distance between two network cards in one AP , it is not recommended that two network cards are configured with the same frequency mode, when two network cards are used.

3.2 Units/Components

3.2.1 Front Panel

There are three LED indicators on the front panel of the W800A, indicating the equipment status. The meanings of LED indicators are shown in Table 3.2-1.

Table 3.2-1 Description of Indicators on W800A Panel

Indicators	Descriptions
Power	It is W800A power indicator. On: Indicating that the power supply is on.
RUN	During normal operation, the RUN indicator flashes slowly once per second.
ACT	It is the wireless network status indicator. When W800A wireless interface works normally, this indicator is always on.

3.2.2 Rear Control Panel

There are many interfaces and indicators on the rear control panel of W800A, as shown in Fig. 3.2-1.

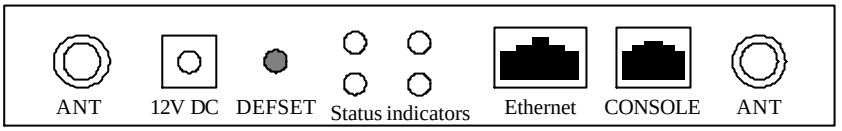


Fig. 3.2-1 Schematic Diagram of the Rear Control Panel of W800A

The indicators and interfaces on the rear control panel are described as follows:

1. 12V DC (Power supply jack)

   Connecting the power adapter.

Note:

Only the accessory power adapter can be used. Never use other power adapters, otherwise, equipment may be damaged.

2. DEFSET (Default button)

   This button serves to reset the W800A and recover the ex-factory default parameter configuration.

3. Status indicator

   10M: ON indicates that Ethernet is connected to the opposite device at the rate of 10 Mbps.

   100M: ON indicates that Ethernet is connected to the opposite device at the rate of 100 Mbps.

   ACT: Flash indicates that Ethernet is receiving or transmitting data.

ALARM: It is the alarm indicator. ON indicates that the device works abnormally.

4. Ethernet (Ethernet RJ45 interface)

   The interface features three functions:

1) When the W800A works normally in the network, this interface serves as the W800A uplink interface, to connect W112P/W105P through the straight through power supply Ethernet cable (AP remote power supply mode), or connect the Ethernet switch downlink interface through the straight through Ethernet cable (using power adapter to power local AP).

2) Before the W800A is installed, this interface can connect with PC wired network interface through the crossed network cable, and then you can log on to the W800A in the WEB or Telnet mode to configure W800A parameters.

3) When a version is loaded to the W800A through the hyper terminal, connect this interface to the PC wired network interface through a crossed network cable and run FTP/TFTP server application software on the PC, to load the running version file to the W800A system.

5. CONSOLE (RJ11 interface for configuration)

   It is connected to the PC serial interface through a serial interface cable, to implement version loading, configuration and debugging to the device through the hyper terminal.

6. ANT (Antenna interface)

   It serves for installing the antenna.

3.3 Networking Modes

The W800A provides wireless access for the indoor wireless users. It can be placed in such positions as office area, lobby or corridor of a hotel.

As the access equipment of wireless and wired network, the W800A provides users with wireless access to Ethernet and data service access. Through different hardware and software configurations, the W800A can construct different modes.

1. AP mode: The W800A implements BSS access to connect BSS to DS, and supports wireless STA access.

2. Bridge connection mode: The W800A serves as both Bridge Server and Bridge Client. Client and Server work together to implement wireless bridge connection.

3. Repeater mode: The W800A serves as the wireless repeater. Serving as wireless AP, The W800A connect the terminal user in wireless mode, also serving as wireless Client,The W800A connect to AP in wireless mode.

The network modes of the W800A are described in detail below:

3.3.1 AP Mode Application

As shown in Fig. 3.3-1, AP1 works under 5 GHz frequency band and supports 802.11a standard, mobile terminals 1 and 2 adopt the network cards in 802.11a mode; AP2 works under 2.4 GHz frequency band and supports 802.11 b/g standard, mobile terminals 3 and 4 adopts the network cards in 802.11b mode. These four terminals can communicate with each other and visit PCs of the external wired LAN through the Ethernet switch or HUB. Mobile terminals 1 and 2 can not be switched to AP2 and mobile terminals 3 and 4 can not be switched to AP1.

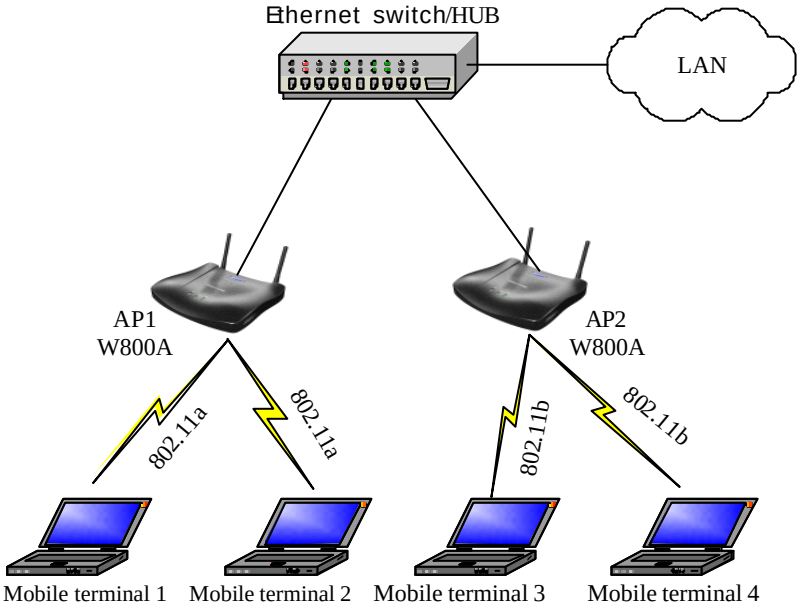


Fig. 3.3-1 Application of the W800A Single Frequency Mode

As shown in Fig. 3.3-2, both AP1 and AP2 simultaneously work under 2.4 GHz and 5 GHz frequency band and support 802.11a/b/g standard. Mobile terminals 1 and 3 adopt

the network cards in 802.11a mode, mobile terminal 2 adopts the network card in 802.11b mode and mobile terminal 4 adopts the network card in 802.11g mode. These four terminals can communicate with each other and visit PCs of the external wired LAN through the Ethernet switch or HUB, and they can be switched between AP1 and AP2 randomly.

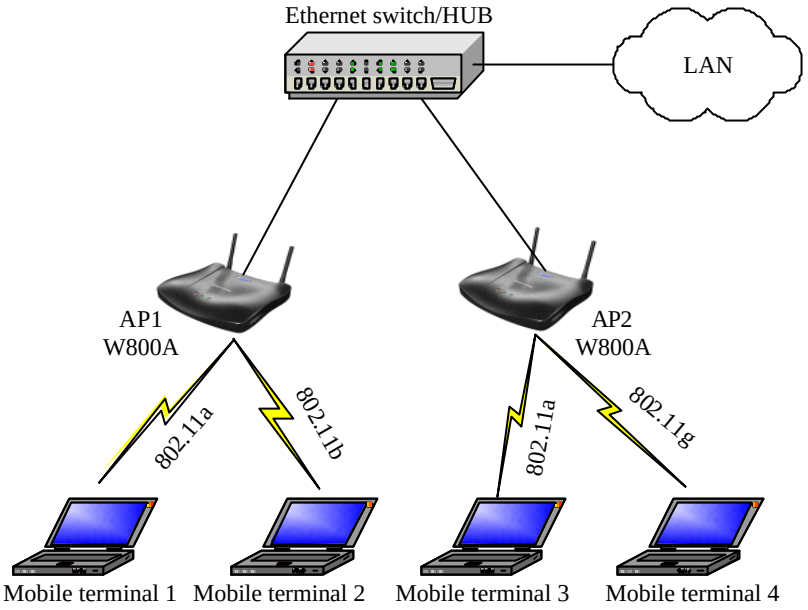


Fig. 3.3-2 Application of the W800A Double Frequency Mode

3.3.2 Bridge Connection Mode Application

As shown in Fig. 3.3-3, two W800As work in Bridge Server and Bridge Client modes separately to implement the bridge connection of wired LAN1 and LAN2. The bandwidth of bridge connection depends on the working mode of the W800A. Bridge Server can serve multiple Bridge Clients at the same time, and it is suggested that the Bridge Client quantity should not more than 4.

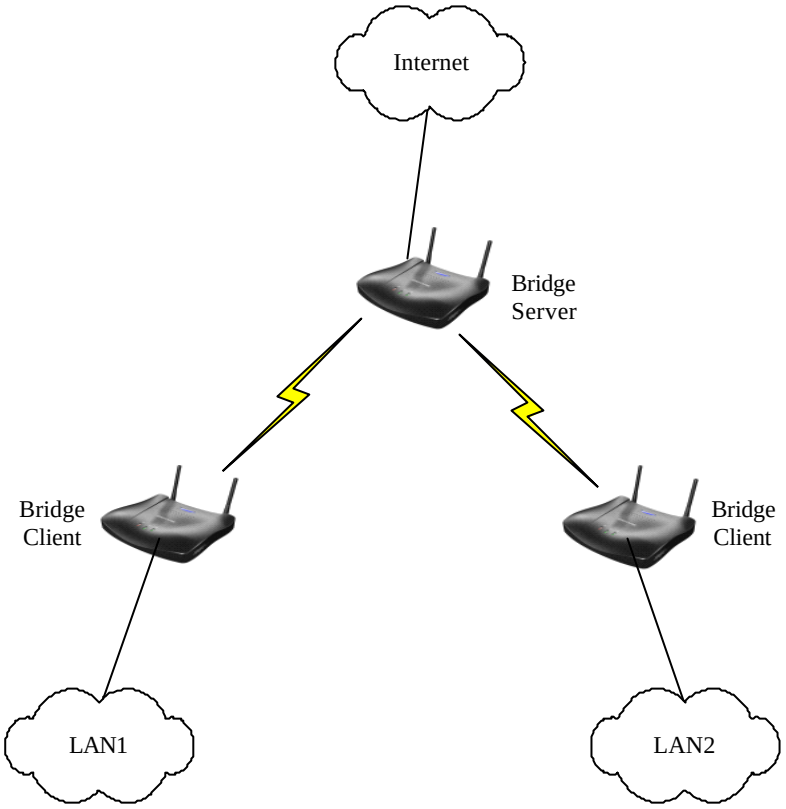


Fig. 3.3-3 Wireless Bridge Connection Mode

3.3.3 Wireless Repeater Mode Application

When two W800As are far from each other or their visual path is blocked, another W800A can be used to implement the wireless repeater function, as shown in Fig. 3.3-4. At this time, two W800As which are far from each other work in Repeater working mode, the middle W800A works in normal AP mode and serves as the interface for connecting the wired network. Three APs can implement mobile STA accesses and work together as the wireless repeater, to guarantee the communication between mobile terminals 1, 2 and 3.

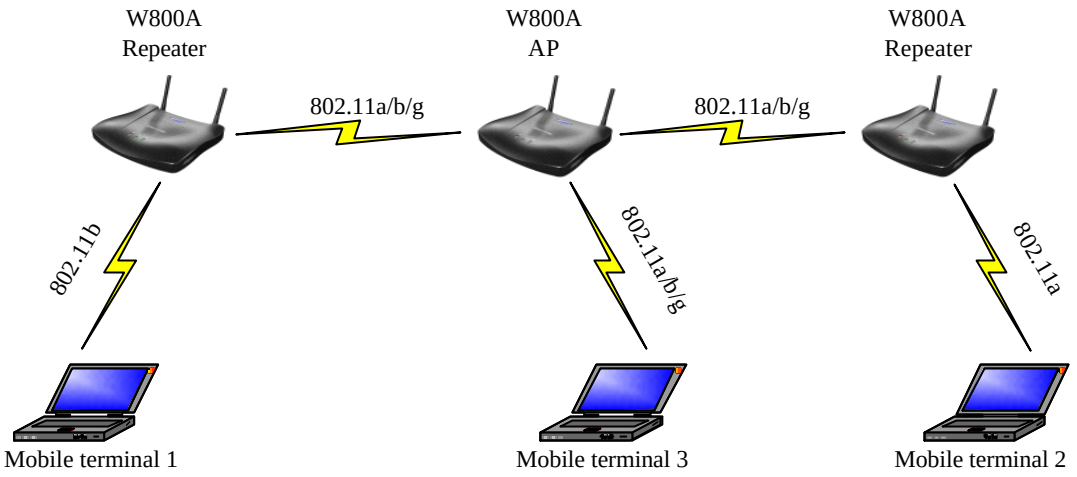


Fig. 3.3-4 Wireless Repeater Mode

4 Installation and Debugging

Warning

This chapter do not apply to W800A with the following antennas: TQJ-5800BKF40-W, TQJ-5800C-5, TQJ-5800BKF8, R0322-025, which must be professionally installed.

This chapter details the methods and procedure of installation and debugging of the W800A for your reference.

4.1 Installation Preparations

4.1.1 Installation Preparation Flow

Before installing the W800A, the engineering personnel should confirm that such work as solution design, project survey and W800A basic configurations have been completed. Brief introductions to the preparations required for installation are as follows.

4.1.1.1 Channel Planning

According to 802.11b wireless LAN international standard and the standard of state radio management committee, the working frequency band of a wireless device in the wireless LAN is 2400 MHz ~ 2483.5 MHz, and the working frequency bandwidth is 83.5 MHz, divided into 14 sub-channels with 22 MHz as the bandwidth for each one. The sub-channel distribution is shown in Fig. 4.1-1.

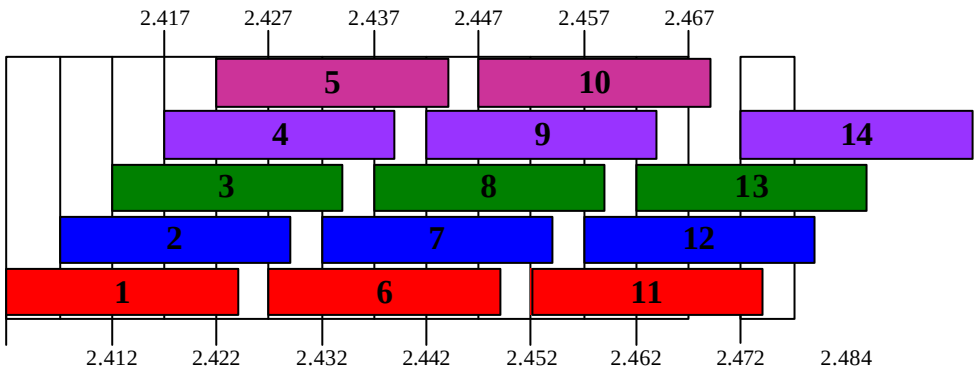


Fig. 4.1-1 Sub-Channel Distribution

Viewed from the above diagram, up to 13 channels are available. The IDs and central frequencies of these 13 channels are described in Table 4.1-1.

Table 4.1-1 IDs and Frequencies of Channels

Channel ID	Central Frequency	Low End/High End Frequency of the Channel
1	2412MHz	2401/2423MHz
2	2417MHz	2411/2433MHz
3	2422MHz	2416/2438MHz
4	2427MHz	2421/2443MHz
5	2432MHz	2426/2448MHz
6	2437MHz	2431/2453MHz
7	2442MHz	2431/2453MHz
8	2447MHz	2436/2458MHz
9	2452MHz	2441/2463MHz
10	2457MHz	2446/2468MHz
11	2462MHz	2451/2473MHz
12	2467MHz	2456/2478MHz
13	2472MHz	2461/2483MHz

When multiple channels work at the same time, the central frequency intervals between two channels should not be less than 25 MHz to avoid mutual interference. As shown in Fig. 4.1-1, in a cell, direct spread spectrum technology can support simultaneous work of up to 3 un-overlapped channels.

In the wireless LAN planning, to realize efficient coverage of APs and avoid mutual interference between channels, the cellular coverage principle of BTS is adopted in the channel distribution. 3 un-overlapped channels (for example, channels 1, 6 and 11) can be used in the same area at the same time, as shown in Fig. 4.1-1.

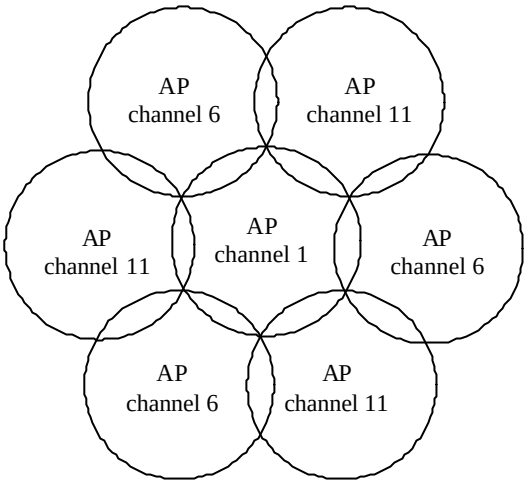


Fig. 4.1-2 Channel Distribution Principle of Adjacent APs

When using APs, for the adjacent APs, we will select their working channels (channels 1, 6 and 11 are usually used) according to the principle shown in Fig. 4.1-1, to guarantee the normal work of the wireless LAN.

The channel distribution principle of 802.11g standard is the same as that of 802.11b.

802.11a standard channels feature anti-interference performance, so no special configuration is required. In the actual networking, you only need make sure that the channels between adjacent APs are different.

4.1.1.2 Configuration before Installation

Before the installation, power on W800As in turn and check whether they can work normally. In the normal case, the Power indicator and ACT indicator on the W800A panel should be always on, and the RUN indicator should flash slowly (about once per second). If the indicator is not in the normal status, you can log on to the W800A in the hyper terminal mode and check whether the version is loaded normally. If necessary, you can reload the version (refer to Section 7.3 Version Loading and Upgrade for detailed procedure).

When you make sure that the W800A works normally, it is required to implement basic configurations for it. The configuration contents are as follows:

1. Configuring the W800A IP addresses, that is, management addresses. At least one management address should be configured for each W800A, for the management configuration of W800A.

2. Configuring the wireless working mode of the W800A wireless interface and the SSID (Service ID), using channel and rate of the corresponding wireless interface.

The detailed configuration methods will be introduced in the subsequent sections.

4.1.2 Tool, Instrument and Document

- One wireless network card.
- One PC for configuration management
- *ZXR10 WAS (V2.0) IP Wireless Access System W800A Wireless Access Point — User's Manual*

4.1.3 Installation Environment Inspection

The W800A can only be used indoors. To guarantee the normal work and longer useful life of the equipment, the indoor temperature range should be -5 ℃ ~ 45 ℃, you should maintain good ventilation and dry air indoors, and the relative humidity range is 5% ~ 95%.

4.1.4 Unpacking Inspection

Generally, the following equipment and accessories are contained in the package of this product.

W800A	1
Power adapter	1
Console configuration cable	1
Delivery attached document CD	1

Note:

Please refer to the packing list in the package. If there is any missing part, please contact ZTE Cooperation.

4.2 Installation

W800A shell is made in plastic with certain mechanical intensity, and can satisfy the using requirement. The material is fire-resistant and satisfies the environment

protection requirement. The ground bolt can be installed on the interface board of the shell, for grounding. The W800A can be used not only on the desktop or ceiling but also on the wall, so it is easily to be used.

The W800A installation process is described in detail as follows:

1. Place the W800A to the proper position according to the engineering planning, for example, evenly place it on the desktop, ceiling or wall.
2. Determine the angle of the antenna.
3. Connect the power cable to the power socket on the W800A backplane.
4. Connect the Ethernet cable to the Ethernet interface on the W800A backplane.

When the W800A is installed on the ceiling, for the ceiling in plaster or floor, the W800A antenna can be directly installed on the ceiling; for the ceiling in metal, if the antenna is directly installed on the ceiling, the antenna signal will be shielded and W800A can not work normally, so you should lead the antenna to the place under the ceiling, through correct antenna feeder. If the W800A is hanged on the wall, reliable fixing method is necessary. If the W800A is placed on the desktop, reliable fixing method is required to ensure the safety of the equipment.

4.3 Power-on and Power-off

The following two power methods are used for the W800A system.

1. Use the in-house power adapter of the W800A.
2. Use PoE.

The terminal PoE module is embedded in the W800A. When PoE power supply is adopted, a standard straight-through cable is used to connect the PoE interface of the PoE source end device W112P or W105P. For the detailed description, refer to Appendix B.

To power on the W800A, connect the power adapter or Ethernet cable for powering the Ethernet for the W800A. After being powered on, the W800A will start automatically, without any operation by users.

To power off the W800A, directly disconnect the W800A power adapter or the cable for powering Ethernet.

4.4 Debugging

After W800A is powered on and started, it is required to implement service debugging. There are three purposes for debugging:

1. Ensure that the route between W800A and Internet/customer server is smooth.
2. Ensure that each client in the W800A coverage area can access Internet normally.
3. Ensure that in the whole engineering coverage area, the clients can be roaming switched between the cells containing APs.

5 Command Line Configuration

This chapter describes the operation methods and configuration commands of the W800A command line configuration.

5.1 Overview

The W800A provides the Command Line Interface (CLI) for configuring the W800A data.

The CLI configuration of the W800A has the following features:

1. You can not only implement local configuration through the hyper terminal software with the serial port, but also implement local or remote configuration in Telnet with the Ethernet interface and wireless network card.
2. The CLI provides five command modes: User, privileged, configure, Ethernet interface configuration and wireless interface configuration modes. One mode is the execution environment for a group of related commands, and one command can be executed only in the corresponding command mode. To obtain the valid commands in the current command mode, input "?" in the current mode.
3. Commands are of two types: information query and function. The information query commands serve to obtain some information to be queried. The function commands serve to change the function configuration of the W800A. The changed configuration is saved in the running configuration information library. To cancel the function configuration, execute the reverse command of the former command (that is, no + key word + former command)
4. CLI provides perfect help system: At any time, you can input "?" to obtain the related help information.
5. The command inputting provides the fuzzy match function: Once the information input by the user is enough for determining a command, no more information is required to be input.
6. CLI provides the command history function: You can select a historical command for executing through "?" or "?" of the keyboard.

7. CLI provides two layers of password protection to reject illegal users. The first layer password authentication appears on the Telnet welcome interface, the safety authentication for accessing the user mode is required at this time. The default user name is "root" and default password is "public". In the user mode, input the enable command and correct password to enter the privileged mode, the default password is "zte".

Notes:

When you implement the configuration in the serial port mode, you can enter the user mode from the hyper terminal interface directly, without any authentication.

8. CLI can automatically page the output commands on the terminal: "—More—" at the lower left corner of the command output window indicates more output commands. At this time, you can press CTRL to display the next page, press ENTER to output the next line and press other keys to exit.
9. W800A CLI provides the basic command line editing function. The short-cut keys for editing command lines are described as follows:

   Ctrl + U: Delete the whole command being input.

   Ctrl + A: Move the cursor to the first character of the command line.

   Ctrl + E: Move the cursor to the last character of the command line.

   Ctrl + X: Delete all the characters before the cursor.

   Ctrl + K: Delete all the characters after the cursor (containing the character at the cursor)

Ctrl + C: Give up all the input contents. Enter the new line and the prompt character will appear.

When the serial port mode is used for configuring the W800A, the serial port attribute configurations of the hyper terminal are shown in Fig. 5.1-1.

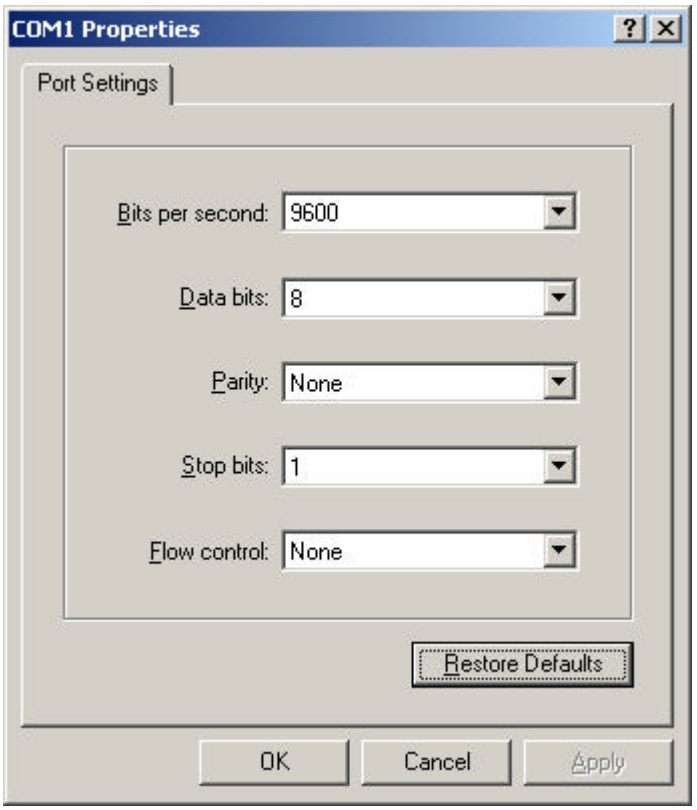


Fig. 5.1-1 Serial Port Configuration

When the Telnet mode is used for configuring the W800A, you just need input "telnet/*W800A working IP address*", as shown in Fig. 5.1-2. By default, the W800A working IP address is 192.168.1.254 and the subnet mask is 55.255.255.0.

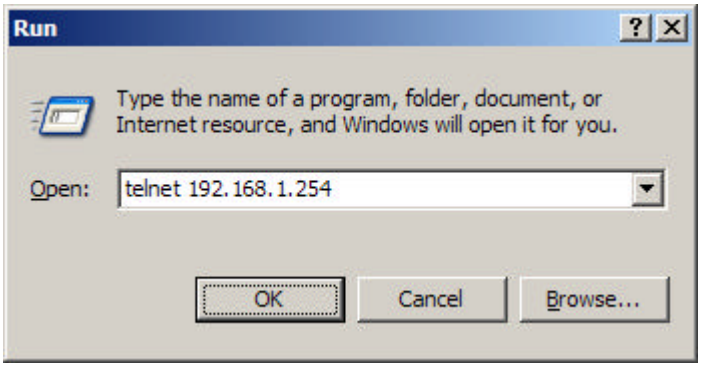


Fig. 5.1-2 Telnet to W800A

These five configuration modes of the W800A and all the available commands under each mode are described in detail as follows: The stipulation of command format are as

follows:

1. **abc** refers to the command or keyword.
2. <*abc*> refers to the contents to be input by the user.
3. abc|def indicates that one of the two will be selected.
4. For the contents included in [ ], the user can choose to input or not input them..
5. For the contents included in { }, the user must input them.

5.2 User Mode

Entering mode: Telnet

Exiting mode: exit

Default prompt character: wlan>

Note: After logging on to the W800A in Telnet, the common user can enter the user mode only once the user name and password authentications are passed. The default user name is "root" and default password is "public". To avoid the case in which the illegal user tries with different passwords, the system will automatically disconnect from the Telnet of a user, after this user inputs wrong password for consecutive three times.

5.2.1 Entering the Privileged Mode

Command mode: User mode

Function: Input the correct password to enter the privileged mode.

Command format: **enable**

Note: After the user inputs the enable command and press ENTER, the system will prompt that password need be input. The default password of privileged mode is "zte".

5.2.2 Exiting the Telnet Configuration

Command mode: User mode.

Function: Exiting the user mode and returning to the system.

Command format: **exit**.

5.3 Privileged Mode

Entering mode: Input the enable command in the user mode and input correct password.

Exiting mode: disable, entering the user mode; exit, exiting the privileged mode and returning to the system.

Default prompt character: wlan #

5.3.1 Network Connectivity Check

Command mode: Privileged mode

Function: Checking the network connectivity.

Command format: **ping** <*A.B.C.D*> [**-n** <*echo-number*>] [**-w** <*timeout*>] [**-l** <*packet-size*>] [**-t**]

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*A.B.C.D*>	IP address	Destination IP address
-n	None	Setting the flag bit of ping packet quantity.
<*echo-number*>	1~40	Quantity of ping packets.
-w	None	Setting the flag bit of the maximum time-out interval.
<*timeout*>	1~2	Maximum time-out interval (unit: second).
-l	None	Setting the flag bit of the buffer area capacity .
<*packet-size*>	0~1504	Buffer area capacity
-t	None	Setting the consecutive ping packets (complete it by <Ctrl + C>)

5.3.2 Saving the Configuration Data to FLASH

Command mode: Privileged mode.

Function: Saving the configuration data to FLASH.

Command format: **write flash.**

5.3.3 Restoring the Default Configuration

Command mode: Privileged mode

Function: Deleting the database, recovering the default configuration of the W800A

and reset it.

Command format: **default enable**

5.3.4 Resetting the Software

Command mode: Privileged mode

Function: Resetting the W800A.

Command format: **reboot**

5.3.5 Entering the Configure Mode

Command mode: Privileged mode

Function: Entering the configure mode.

Command format: **configure terminal**

5.3.6 Exiting the Privileged Mode

Command mode: Privileged mode

Function: Exiting the privileged mode and entering the user mode.

Command format: **disable**

5.3.7 Exiting the Telnet Configuration

Command mode: Privileged mode

Function: Exiting Telnet and returning to the system.

Command format: **exit**

Note: This command can only be used in the CLI in the Telnet mode. If the user logs on in the hyper terminal mode through the serial port, this command is invalid.

5.4 Configure Mode

Entering mode: Input the configure terminal command in the privileged mode.

Exiting mode: exit, entering the privileged mode.

Default prompt character: wlan (config) #

Note: All the configuration commands can be executed in this mode (or its sub-modes).

5.4.1 Bridge Configuration

1. bridge aging-time

   Command mode: Configure mode

   Function: Configuring the aging time of the Bridge Forward Table (FDB) MAC address.

   Command format: **bridge aging-time** <*value*>

   Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*value*>	10~1000000	The aging time of the FDB MAC address (unit: second), 300 by default.

2. bridge forward-table-size

   Command mode: Configure mode

   Function: Configuring the quantity of the FDB MAC addresses.

   Command format: **bridge forward-table-size** <*value*>

   Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*value*>	220~1024	Quantity of the FDB MAC addresses, 1024 by default.

5.4.2 Clearing the Information

Command mode: Configure mode

Function: Clearing the alarm, log or debugging information.

Command format: **clear** {**alarm**|**logcmd**|**trace**}

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
{**alarm**|**logcmd**|**trace**}	Alarm, Logcmd, trace	Clearing the alarm, logcmd or trace information.

5.4.3 Configuring the Configuration Server

Command mode: Configure mode

Function: Configuring the parameters of configuration server: IP address, interception port number of the TCP and the interception port number of UDP.

Command format: **config-server** {**ipaddress** <*A.B.C.D*> [**tcp-port** <*value*[1]>] [**udp-port** <*value*[2]>] | **udp-port** <*value*[2]> [**tcp-port** <*value*[1]>]] | **tcp-port** <*value*[1]> [**ipaddress** <*A.B.C.D*> [**udp-port** <*value*[2]>] | **udp-port** <*value*[2]> [**ipaddress** <*A.B.C.D*>]] | **udp-port** <*value*[2]> [**ipaddress** <*A.B.C.D*> [**tcp-port** <*value*[1]>] | **tcp-port** <*value*[1]> [**ipaddress** <*A.B.C.D*>]]}

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*A.B.C.D*>	IP address	IP address of the configuration server
<*value*[1]>	3000~65535	The interception port number of tcp, 3601 by default.
<*value*[2]>	3000~65535	The interception port number of udp, 3600 by default.

Note: One or multiple parameters can be configured randomly. The un-configured parameters will keep unchanged.

5.4.4 DHCP Server Configuration

1. dhcp server dns

   Command mode: Configure mode

   Function: Configuring the IP address parameters of the master and slave DNS servers of the DHCP server.

   Command format: **dhcp server dns** <*A.B.C.D*[1]> [<*A.B.C.D*[2]>]

   Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*A.B.C.D*[1]>	IP address	IP address of the master DNS server.
<*A.B.C.D*[2]>	IP address	IP address of the slave DNS server (optional).

2. dhcp server gateway

Command mode: Configure mode

Function: Configuring the IP address parameters of the default gateway of the DHCP server.

Command format: **dhcp server gateway** *<A.B.C.D>*

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<A.B.C.D>	IP address	IP address of the gateway.

3. dhcp server leasetime

Command mode: Configure mode

Function: Configuring the address lease time of the DHCP server.

Command format: **dhcp server leasetime** *<value>*

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<value>	60~3600	The address lease time of the DHCP server, 6 by default.

4. dhcp server run

Command mode: Configure mode

Function: Starting, stopping or restarting the DHCP server.

Command format: **dhcp server run** {**start**|**stop**|**restart**}

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
{**start**|**stop**|**restart**}	Start, stop, restart	start: Startup; Stop: Stopping; restart: Restarting.

5. dhcp server start-flag

Command mode: Configure mode

Function: Configuring the start flag of the DHCP server when the system is restarted.

Command format: **dhcp server start-flag** {**true**|**false**}

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
{**true**|**false**}	True, false	The start flag of the DHCP server. If it is "true", the DHCP server will be started when the system is restarted. If it is "false", the DHCP server will not be started when the system is restarted.

5.4.5 DISCOVER Configuration

1. discover device

   Command mode: Configure mode

   Function: Configuring the integrated management multicast address and port number of the equipment.

   Command format: **discover device** <*A.B.C.D*> [<*value*>]

   Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*A.B.C.D*>	IP address with a range of 224.0.0.1 ~ 239.255.255.254.	The integrated management multicast address of the equipment, 224.1.88.89 by default.
<*value*>	0~65535	The interception port number of the integrated management multicast of the equipment, 2801 by default.

2. discover manager

   Command mode: Configure mode

   Function: Configuring the management multicast address and port number of the integrated management server.

   Command format: **discover manager** <*A.B.C.D*> [<*value*>]

   Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*A.B.C.D*>	IP address with a range of 224.0.0.1 ~ 239.255.255.254.	The management multicast address of the integrated management server, 224.1.88.88 by default.
<*value*>	0~65535	The management interception port number of the integrated management server, 2800 by default.

5.4.6 802.1X Parameter Configuration

1. dot1x enable

   Command mode: Configure mode

   Function: Enabling or disabling the 802.1x function.

   Command format: [**no**] **dot1x enable**

2. dot1x max-reauth

   Command mode: Configure mode

   Function: Configuring the maximum times of 802.1x re-authenticating.

   Command format: **dot1x max-reauth** <*value*>

   Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*value*>	0~10	The maximum times of 802.1x re-authenticating, 5 by default.

3. dot1x max-request

   Command mode: Configure mode

   Function: Configuring the maximum times of 802.1x authentication request.

   Command format: **dot1x max-request** <*value*>

   Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*value*>	1~10	The maximum times of 802.1x authentication request, 2 by default.

4. dot1x md5-domain

Command mode: Configure mode

Function: Configuring the domain name in the EAP-MD5 authentication mode.

Command format: **dot1x md5-domain** <*string*>

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*string*>	1 ~ 32 characters	The domain name in the EAP-MD5 authentication mode, USR by default.

5. dot1x nas-id

Command mode: Configure mode

Function: Configuring the 802.1x NAS-ID field information.

Command format: **dot1x nas-id** <*string*>

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*string*>	1 ~ 64 characters	NAS-ID character string, W800A by default.

6. dot1x portenable

Command mode: Configure mode

Function: Enabling or disabling the 802.1x port control function.

Command format: [**no**] **dot1x portenable**

7. dot1x quiet-period

Command mode: Configure mode

Function: Configuring the 802.1x quiet period.

Command format: **dot1x quiet-period** <*value*>

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*value*>	1~255	The 802.1x quiet period (unit: second), 30 by default.

8. dot1x server-timeout

Command mode: Configure mode

Function: Configuring the time-out time of the 802.1x authentication server.

Command format: **dot1x server-timeout** <*value*>

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*value*>	1~255	The authentication server time-out time (unit: second), 60 by default.

9. dot1x sim-domain

Command mode: Configure mode

Function: Configuring the domain name in the EAP-SIM authentication mode.

Command format: **dot1x sim-domain** <*string*>

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*string*>	1 ~ 32 characters	The domain name in the EAP-SIM authentication mode, SIM by default.

10. dot1x supp-timeout

Command mode: Configure mode

Function: Configuring the time-out time of the 802.1x client.

Command format: **dot1x supp-timeout** <*value*>

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*value*>	1~255	The time-out time of the 802.1x client (unit: second), 30 by default.

11. dot1x tx-period

Command mode: Configure mode

Function: Configuring the 802.1x sending period.

Command format: **dot1x tx-period** <*value*>

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*value*>	1~255	The 802.1x sending period (unit: second), 3 by default.

12. dot1x wpa-domain

    Command mode: Configure mode

    Function: Configuring the domain name in the WPA authentication mode.

    Command format: **dot1x wpa-domain** <*string*>

    Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*string*>	1 ~ 32 characters	WPA domain name, WPA by default.

5.4.7 Password Configuration in the Privileged Mode

Command mode: Configure mode

Function: Configuring the password for enabling the privileged mode.

Command format: **enable-password** <*string*>

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*string*>	1 ~ 30 characters	The password for enabling the privileged mode, zte by default.

5.4.8 Erasing the Filtration Rules

Command mode: Configure mode

Function: Erasing the ACL rule according to the global regular numbers.

Command format: **erase mac-access-rule** <*value*>

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*value*>	0~1023	Numbers of the filtration rules.

5.4.9 Exiting the Configure Mode

Command mode: Configure mode

Function: Exiting the configure mode and entering the privileged mode.

Command format: **exit**

5.4.10 IAPP Load Balance Configuration

1. iapp balance

   Command mode: Configure mode

   Function: Configuring the load balance mode and nominal capacity of the load balance group.

   Command format: **iapp balance** <*vlaue*[1]> {**flow** <*value*[2]>|**user** <*value*[3]> }

   Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*value*[1]>	1~65535	Load balance group ID
<*vlaue*[2]>	1~65535	The lower limit of the flow implementing the load balance according to the data flow.
<*vlaue*[3]>	1~30	The lower limit of the users implementing the load balance according to the user quantity.

2. iapp enable-flag

   Command mode: Configure mode

   Function: Configuring the enabling status of the load balance and the limitation of the maximum user quantity.

   Command format: **iapp enable-flag** {**disable**|**balance**|**max-user**}

   Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
{**disable**|**balance**|**max-user**}	Disable, Balance, max-user	disable: Disabling both of them. balance: Enabling the load balance. max-user: Enabling the limitation of maximum user quantity.

Note:

Configurations iapp balance and iapp max-user can not be enabled at the same time.

3. iapp max-user

   Command mode: Configure mode

   Function: Configuring the maximum user quantity (the quantity of the users can be accessed).

   Command format: **iapp max-user** *<value>*

   Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<value>	1~150	The maximum quantity of the wireless users can be accessed by the system, 30 by default.

5.4.11 Entering the Interface Configuration Mode

1. interface ethernet

   Command mode: Configure mode

   Function: Entering the Ethernet interface configuration mode. The command is followed by the unit ID of the Ethernet interface. The equipment can hold multiple Ethernet interfaces.

   Command format: **interface ethernet** {**0**}

   Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
{**0**}	0	The unit ID of the Ethernet interface. The W800A only has one Ethernet interface, so this value is 0 fixedly.

2. interface wlan

   Command mode: Configure mode

   Function: Entering the Wireless interface configuration mode. The command is followed by the unit ID of the wireless interface. The equipment can hold multiple wireless interfaces.

   Command format: **interface wlan** {**0**|**1**}

   Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
{**0**|**1**}	0 or 1	The unit ID of the wireless interface. The W800A

		has two wireless interfaces, so this value is 0 or 1.

5.4.12 IP Network Parameter Configuration

1. ip address

   Command mode: Configure mode

   Function: Adding the IP address of the W800A management interface.

   Command format: [**no**] **ip address** <*A.B.C.D*[1]> <*A.B.C.D*[2]> [**second**]

   Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*A.B.C.D*[1]>	IP address	IP address of the host.
<*A.B.C.D*[2]>	Subnet mask	Subnet mask of the host.
second	second	The main address is without "second" and the standby address is with "second". The main address quantity can only be one and the standby address quantity can be up to nine.

2. ip route

   Command mode: Configure mode

   Function: Configuring the default route address of the system.

   Command format: [**no**] **ip route** <*A.B.C.D*[1]> <*A.B.C.D*[2]> <*A.B.C.D*[3]>

   Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*A.B.C.D*[1]>	IP address	IP address of the host.
<*A.B.C.D*[2]>	Subnet mask	Subnet mask of the host.
<*A.B.C.D*[3]>	IP address	IP address of the router of the next hop.

3. ip pool

   Command mode: Configure mode

   Function: Configuring the IP address pool of the system.

   Command format: [**no**] **ip pool** <*index*> <*A.B.C.D*[1]> <*A.B.C.D*[2]> <*A.B.C.D*[3]>

   Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*index*>	0~9	IP address pool group ID

<*A.B.C.D*[1]>	IP address	Initial IP address of the host address pool.
<*A.B.C.D*[2]>	IP address	End IP address of the host address pool.
<*A.B.C.D*[3]>	Subnet mask	Subnet mask of the address pool address.

5.4.13 Kicking Users

1. kick all

   Command mode: Configure mode

   Function: Kicking all the users.

   Command format: **kick all**

2. kick station

   Command mode: Configure mode

   Function: Kicking the user with the specified MAC address.

   Command format: **kick station** <*xx-xx-xx-xx-xx-xx*>

   Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*xx-xx-xx-xx-xx-xx*>	MAC address	User MAC address

5.4.14 Two-Layer Separation Configuration

1. l2-separate enable

   Command mode: Configure mode

   Function: Enabling or disabling the two-layer separation function.

   Command format: [**no**] **l2-separate enable**

2. l2-separate gateway

   Command mode: Configure mode

   Function: Configuring the gateway MAC address .

   Command format: **l2-separate gateway mac** <*xx-xx-xx-xx-xx-xx*>

   Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*xx-xx-xx-xx-xx-xx*>	MAC address	Gateway MAC address

3. l2-separate mode

   Command mode: Configure mode

   Function: Configuring the two-layer separation working mode.

   Command format: **l2-separate mode** {**simple_mode**|**gateway_mode** }

   Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
{simple_mode| gateway_mode }	simple_mode, gateway_mode	Selecting the simple mode or gateway mode for the two-layer separation.

5.4.15 Log Printing Message Configuration

1. logmsg all-enable

   Command mode: Configure mode

   Function: Enabling or disabling the log printing messages of all the modules.

   Command format: [**no**] **logmsg all-enable**

2. logmsg level

   Command mode: Configure mode

   Function: Configuring the levels of the log printing messages to be output.

   Command format: **logmsg level** {**Lowest**|**Lower**|**Higher**|**Highest**}

   Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
{**Lowest**|**Lower**| **Higher**|**Highest**}	Lowest (Flood), Lower (Info), Higher (Error), Highest (Fatal)	Level of the log printing messages to be output. Only the printing messages higher than this level can be output.

3. logmsg mod-enable

   Command mode: Configure mode

   Function: Determining the module containing the log printing messages.

   Command format: [**no**] **logmsg mod-enable** <*module*>

   Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*module*>	Specified module names: BSP, DATABASE, 80211, BRIDGE, IAPP, DHCP, IPPOOL, DOT1X, RADIUS, ACL, SVCMANAGE, TELNET, WEB, CONSOLE, SNMP, ALARM, R01, TFTP, DISCOVER, QOS	The module containing the log printing messages.

4. logmsg telnet-log

   Command mode: Configure mode

   Function: Configuring the current Telnet window as the output window of the log printing messages

   Command format: [**no**] **logmsg telnet-log**

5.4.16 MAC Filtration Configuration

Command mode: Configure mode

Function: Adding or deleting a number accessing list.

Command format: [**no**] **mac-access-list** <*value*> {**deny**|**permit**} {<*xx-xx-xx-xx-xx-xx*>|**any**}

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*value*>	1~99	MAC filtration group ID
{**deny**|**permit**}	deny, permit	deny: If the condition is satisfied, the MAC communication will be denied. permit: If the condition is satisfied, the MAC communication will be permitted.

Parameter Name	Value Range	Parameter Descriptions
{<*xx-xx-xx-xx-xx-xx*> |**any**}	MAC address or any	The MAC address sending the MAC packet. Two methods can be used for specifying the source address: One is to use the format of 48-bit 6 hexadecimal hyphens, for example: 00-d0-d0-f1-c4-ef. The other is to use the keyword any as the abbreviation of the source 00-00-00-00-00-00. This keyword is not recommended.

5.4.17 MAC Address Authentication Configuration

Command mode: Configure mode

Function: Configuring the MAC address authentication function.

Command format: [**no**] **mac-authen** {**deny**|**permit**} {<*xx-xx-xx-xx-xx-xx*>|**any**}

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
{**deny**|**permit**}	Deny, permit	deny: If the condition is satisfied, the MAC communication will be denied. permit: If the condition is satisfied, the MAC communication will be permitted.
{<*xx-xx-xx-xx-xx-xx*> |**any**}	MAC address or any	The MAC address sending the MAC packet. Two methods can be used for specifying the source address: One is to use the format of 48-bit 6 hexadecimal hyphens, for example: 00-d0-d0-f1-c4-ef; The other is to use the keyword any as the abbreviation of the source 00-00-00-00-00-00, and this keyword is not recommended.

5.4.18 Manager Configuration

Command mode: Configure mode

Function: Adding or deleting the manager account.

Command format: [**no**] **manage-user** <*string*[1]> <*string*[2]>

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*string*[1]>	1 ~ 32 characters	User name
<*string*[2]>	1 ~ 32 characters	User password.

5.4.19 QoS Configuration

1. qos enable

   Command mode: Configure mode

   Function: Enabling or disabling QoS function.

   Command format: [**no**] **qos enable**

2. qos policy

   Command mode: Configure mode

   Function: Configuring QoS policy.

   Command format: **qos policy** {**ESSID**|**802.1p**}

   Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
{**ESSID**|**802.1p**}	ESSID, 802.1p	Indicating the priority policy which is the base of QoS, ESSID by default.

5.4.20 RADIUS Server Configuration

1. radius-server account

   Command mode: Configure mode

   Function: Adding or deleting the accounting server of an ISP.

   Command format: [**no**] **radius-server account** <*string*[1]> {**master**|**slave**} <*A.B.C.D*> <*value*> <*string*[2]>

   Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*string*[1]>	1 ~ 32 characters	ISP name, and only the created ISP can be input.
{**master**|**slave**}	Master, slave	Master or slave flag of the accounting server.
<*A.B.C.D*>	IP address	IP address of the accounting server
<*value*>	0~65535	Port number of the accounting server

Parameter Name	Value Range	Parameter Descriptions
<*string*^{2}>	1 ~ 255 characters	Character string of the accounting shared secret key

2. radius-server authen

   Command mode: Configure mode

   Function: Adding or deleting the authentication server of an ISP.

   Command format: [**no**] **radius-server authen** <*string*^{1}> {**master**|**slave**} <*A.B.C.D*> <*value*> <*string*^{2}>

   Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*string*^{1}>	1 ~ 32 characters	ISP name, and only the created ISP can be input.
{**master**|**slave** }	Master, slave	Master/slave authentication server. The master authentication server can only be one.
<*A.B.C.D*>	IP address	IP address of the authentication server
<*value*>	0~65535	Port number of the authentication server
<*string*^{2}>	1 ~ 255 characters	Character string of the authentication shared secret key

3. radius-server dns

   Command mode: Configure mode

   Function: Adding or deleting the DNS server of an ISP.

   Command format: [**no**] **radius-server dns** <*string*>

   Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*string*>	1 ~ 32 characters	ISP name, and only the created ISP can be input.

4. radius-server isp-name

   Command mode: Configure mode

   Function: Adding or deleting an ISP.

   Command format: [**no**] **radius-server isp-name** <*string*>

   Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*string*>	1 ~ 32 characters	ISP name.

5. radius-server retry-times

Command mode: Configure mode

Function: Configuring the retrying times of the RADIUS authentication of an ISP.

Command format: **radius-server retry-times** <*string*> <*value*>

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*string*>	1 ~ 32 characters	ISP name, and only the created ISP can be input.
<*value*>	1~10	The retrying times of the RADIUS authentication, 3 by default.

6. radius-server timeout

Command mode: Configure mode

Function: Configuring the time-out time of the RADIUS authentication of an ISP.

Command format: **radius-server timeout** <*string*> <*value*>

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*string*>	1 ~ 32 characters	ISP name, and only the created ISP can be input.
<*value*>	1~65535	The time-out time of the RADIUS authentication (unit: second), 2 by default.

5.4.21 SNMP Module Configuration

1. snmp access-host

Command mode: Configure mode

Function: Adding or deleting the IP address of the host which can be accessed.

Command format: [**no**] **snmp access-host** <*A.B.C.D*>

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*A.B.C.D*>	IP address	The host IP address represented by dotted decimal (A.B.C.D) (at most 10).

2. snmp access-mode

Command mode: Configure mode

Function: Configuring the local agent can be accessed by all the hosts or the host in access-host.

Command format: **snmp access-mode** {**all**|**list**}

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
{**all**|**list**}	All, list	all: All the users can access it. list: The users in access-host can access it.

3. snmp authtrap

Command mode: Configure mode

Function: Enabling or disabling the community string authentication.

Command format: [**no**] **snmp authtrap enable**

4. snmp community

Command mode: Configure mode

Function: Configuring the SNMP access community string and its accessing authority.

Command format: **snmp community** <*string*> {**read-only**| **read-write**}

no snmp community <*string*>

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*string*>	1 ~ 32 characters	SNMP access community string name (at most 10). <string> is a character string with at most 32 characters.
{**read-only**| **read-write**}	read-only, read-write	read-only: Read-only authority. read-write: Read-write authority.

5. snmp contact

Command mode: Configure mode

Function: Configuring the name and contact method of the equipment manager.

Command format: **snmp contact** <*End-Mark*> <*string*>

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*End-Mark*>	Any character.	Serving as the end mark of inputting character string.
<*string*>	1 ~ 255 characters	A management variable content in the MIB II system group, containing the name and contact method of the equipment manager.

6. snmp enable

   Command mode: Configure mode

   Function: Enabling or disabling the SNMP management function.

   Command format: [**no**] **snmp enable**

7. snmp location

   Command mode: Configure mode

   Function: Configuring the geographic location information of the managed equipment.

   Command format: **snmp location** <*End-Mark*> <*string*>

   Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*End-Mark*>	Any character.	Serving as the end mark of inputting character string.
<*string*>	1 ~ 255 characters	sysLocation, a management variable in the MIB system group, describing the geographic location of the managed equipment.

8. snmp nodecode

   Command mode: Configure mode

   Function: Configuring the NE code information of the managed equipment.

   Command format: **snmp nodecode** <*value*>

   Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*value*>	0~241920000	A management variable in the MIB system group, describing the NE code of the managed equipment.

9. snmp nodecreatdate

   Command mode: Configure mode

   Function: Configuring the creation time information of the NE of the managed equipment.

   Command format: **snmp nodecreatdate** <*hh:mm:ss*> <*month*> <*day*> <*year*>

   Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*hh:mm:ss*>	0~241920000	hh (hour):mm (minute): ss (second)
<*month*>	1~12	Month
<*day*>	1~31	Date
<*year*>	2002~2130	Year, 4 bits are needed.

   hh:mm:ss month day year is a management variable in the MIB system group, describing the creation time of the NE of the managed equipment.

10. snmp nodeid

    Command mode: Configure mode

    Function: Configuring the NE ID information of the managed equipment.

    Command format: **snmp nodeid** <*string*>

    Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*string*>	0 ~ 31 characters	A management variable in the MIB system group, describing the NE ID of the managed equipment.

11. snmp sysname

    Command mode: Configure mode

    Function: Configuring the name of the managed equipment.

    Command format: **snmp sysname** <*End-Mark*> <*string*>

    Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*End-Mark*>	Any character.	Serving as the end mark of inputting character string.
<*string*>	1 ~ 255 characters	RFC1213, a management variable in the MIB system group, and it is the name of the managed equipment.

12. snmp trap enable

    Command mode: Configure mode

    Function: Enabling or disabling SNMP Agent to send trap.

    Command format: [**no**] **snmp trap enable**

13. snmp traphost

    Command mode: Configure mode

    Function: Adding a trap target host address and trap version number information.

    Command format: [**no**] **snmp traphost** <*A.B.C.D*> [**version** <*value*>]

    Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*A.B.C.D*>	IP address	trap target host address.
<*value*>	1~2	trap version number.

5.4.22 SSH Parameter Configuration

1. ssh server enable

   Command mode: Configure mode

   Function: Enabling or disabling SSH function.

   Command format: [**no**] **ssh server enable**

2. ssh server only

   Command mode: Configure mode

   Function: Enabling or disabling SSH function, and disabling Telnet function.

   Command format: [**no**] **ssh server only**

3. ssh server generate-key rsa

Command mode: Configure mode

Function: Generating SSH server secret key.

Command format: **ssh server generate-key rsa**

4. ssh server auth isp-name

Command mode: Configure mode

Function: Configuring SSH with the ISP name of the authentication server authenticated by radius.

Command format: **ssh server auth isp-name** <*string*>

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*string*>	1 ~ 64 characters	SSH adopts the ISP name of the authentication server authenticated by radius.

5. ssh server auth mode

Command mode: Configure mode

Function: Configuring the SSH authentication mode.

Command format: **ssh server auth mode** {**radius**|**local**}

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
{**radius**|**local**}	Radius, local	SSH authentication mode.

6. ssh server auth type

Command mode: Configure mode

Function: Configuring the SSH authentication type.

Command format: **ssh server auth type** {**chap**|**pap**}

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
{**chap**|**pap**}	Chap, pap	SSH authentication type.

5.4.23 Spanning Tree Parameter Configuration

1. stp bridge forward-delay

Command mode: Configure mode

Function: Configuring the forwarding delay time of the spanning tree protocol bridge.

Command format: **stp bridge forward-delay** <*value*>

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*value*>	4~30	The forwarding delay time of the spanning tree protocol bridge (unit: second), 15 by default.

2. stp bridge hello-time

Command mode: Configure mode

Function: Configuring the hello time of the spanning tree protocol bridge.

Command format: **stp bridge hello-time** <*value*>

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*value*>	1~10	The hello time of the spanning tree protocol bridge (unit: second), 2 by default.

3. stp bridge max-age

Command mode: Configure mode

Function: Configuring the maximum age of the spanning tree protocol bridge.

Command format: **stp bridge max-age** <*value*>

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*value*>	6~40	The maximum age of the spanning tree protocol bridge (unit: second), 20 by default.

4. stp bridge priority

Command mode: Configure mode

Function: Configuring the priority of the spanning tree protocol bridge.

Command format: **stp bridge priority** <*value*>

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*value*>	0~65535	The priority of the spanning tree protocol bridge, 32768 by default.

5. stp enable

   Command mode: Configure mode

   Function: Enabling or disabling the spanning tree protocol function.

   Command format: [**no**] **stp enable**

6. stp interface path-cost

   Command mode: Configure mode

   Function: Configuring the path cost of the spanning tree protocol interface.

   Command format: **stp interface path-cost** {**eth0**|**wlan0**|**wlan1**} <*value*>

   Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
{**eth0**|**wlan0**|**wlan1**}	eth0, wlan0, wlan1	Configured interface.
<*value*>	1~65535	The path cost of the spanning tree protocol interface .

7. stp interface priority

   Command mode: Configure mode

   Function: Configuring the priority of the spanning tree protocol interface.

   Command format: **stp interface priority** {**eth0**|**wlan0**|**wlan1**} <*value*>

   Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
{**eth0**|**wlan0**|**wlan1**}	eth0, wlan0, wlan1	Configured interface.
<*value*>	0~255	The priority of the spanning tree protocol interface, 128 by default.

8. stp interface state

   Command mode: Configure mode

   Function: Configuring the state of the spanning tree protocol interface.

   Command format: **stp interface state** {**eth0**|**wlan0**|**wlan1**} {**enable**|**disable**}

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
{**eth0**|**wlan0**|**wlan1**}	eth0, wlan0, wlan1	Configured interface.
{**enable**|**disable**}	Enable, disable	The state of the spanning tree protocol interface, enable by default.

5.4.24 TELNET Configuration

1. telnet enable

   Command mode: Configure mode

   Function: Enabling or disabling Telnet function.

   Command format: [**no**] **telnet enable**

2. telnet idletime

   Command mode: Configure mode

   Function: Configuring the automatic exiting time when the Telnet window is idle.

   Command format: **telnet idletime** <*value*>

   Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*value*>	300~3600	The automatic exiting time when the Telnet window is idle (unit: second), 300 by default.

5.4.25 Uploading/Downloading TFTP Files

1. tftp dir

   Command mode: Configure mode

   Function: Observing the spare space of the flash disk (unit: byte)

   Command format: **tftp dir**

2. tftp get: downloading files

   Command mode: Configure mode

   Function: With TFTP transmission protocol, downloading files from the TFTP server and save them to the flash disk

Command format: **tftp get** <*A.B.C.D*> {**runbin** | **zxipcmd.dat** | **database.dat**}

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*A.B.C.D*>	IP address	The TFTP server IP address represented by dotted decimal.
{**runbin**| **zxipcmd.dat**| **database.dat**}	Runbin, zxipcmd.dat, database.dat	The full file name (including the extension name) of the version file set to be transmitted on the TFTP server.

3. tftp pic

Command mode: Configure mode

Function: Downloading the picture file on the WEB configuration page from the TFTP server and save them to the flash disk.

Command format: **tftp pic** <*A.B.C.D*>

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*A.B.C.D*>	IP address	The TFTP server IP address represented by dotted decimal.

4. tftp put: uploading files

Command mode: Configure mode

Function: With TFTP transmission protocol, uploading files from the flash disk to the TFTP server.

Command format: **tftp put** <*A.B.C.D*> {**runbin** | **zxipcmd.dat** | **database.dat**}

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
A.B.C.D	IP address	The TFTP server IP address represented by dotted decimal.
{**runbin**| **zxipcmd.dat**| **database.dat**}	Runbin, zxipcmd.dat, database.dat	The full file name (including the extension name) of the file to be transmitted on the flash disk.

5.4.26 VLAN Configuration

1. vlan enable

Command mode: Configure mode

Function: Enabling or disabling VLAN function.

Command format: [**no**] **vlan enable**

2. vlan manager-vlanid

Command mode: Configure mode

Function: Configuring the VLAN of the management interface.

Command format: **vlan manager-vlanid** <*value*>

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*value*>	0~4094	0: The management interface is without VLAN. 1 ~ 4094: The VLAN domain flag of the management interface. The default value is 0.

5.4.27 Web Configuration

Command mode: Configure mode

Function: Enabling or disabling web function.

Command format: [**no**] **web enable**

5.4.28 Nation Zone Configuration

Command mode: Configure mode

Function: Configuring the nation and zone whether the equipment is located, for setting the corresponding channel and frequency band.

Command format: **zone** {**NA**|**CA**|**CN**|**TW**|**FR**|**GE**|**HK**|**KR**|**MX**|**GB**|**US**}

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
{**NA**|**CA**|**CN**|**TW**| **FR**|**GE**|**HK**|**KR**| **MX**|**GB**|**US** }	NA CA CN TW FR GE HK KR MX GB US	NA: Not been configured; CA: Canada; CN: China; TW: Taiwan; FR: France; GE: Germany; HK: Hongkong; KR: Korea; MX: Mexico; GB: Britain; US: USA; The default value is CN.

5.4.29 Showing Parameter Configuration

1. show alarm

1) show alarm all

Command mode: Configure mode

Function: Showing all the alarm information.

Command format: **show alarm all**

2) show alarm bycode

Command mode: Configure mode

Function: Showing the alarm information according to the alarm codes.

Command format: **show alarm bycode** <*value*>

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*value*>	1001~3999	Alarm codes.

3) show alarm bylevel

Command mode: Configure mode

Function: Showing the alarm information according to the alarm levels.

Command format: **show alarm bylevel** <*value*>

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*value*>	1~3	Alarm levels.

2. show bridge

   Command mode: Configure mode

   Function: Showing the bridge configuration parameter information.

   Command format: **show bridge**

3. show config-server

   Command mode: Configure mode

   Function: Showing the parameter information of the configuration server.

   Command format: **show config-server**

4. show dhcp server

   Command mode: Configure mode

   Function: Showing the parameter information of the DHCP server.

   Command format: **show dhcp server**

5. show discover

   Command mode: Configure mode

   Function: Showing the parameter information of the equipment discovering configuration.

   Command format: **show discover**

6. show dot1x-cfg

   Command mode: Configure mode

   Function: Showing 802.1x parameter information.

   Command format: **show dot1x-cfg**

7. show iapp

   Command mode: Configure mode

   Function: Showing the parameter information of the load balance configuration.

Command format: **show iapp**

8. show interface

Command mode: Configure mode

Function: Showing the parameter information of the interface configuration.

Command format: **show interface** {**ethernet**|**wlan**} {**0**|**1**}

9. show ip

1) show ip address

Command mode: Configure mode

Function: Showing IP address information.

Command format: **show ip address**

2) show ip pool

- show ip pool config

Command mode: Configure mode

Function: Showing all the IP address pool information.

Command format: **show ip pool config**

- show ip pool used

Command mode: Configure mode

Function: Showing the used IP address information in the specified IP address pool.

Command format: **show ip pool used** <*value*>

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*value*>	0~9	Serial number of the IP address pool

3) show ip route

Command mode: Configure mode

Function: Showing the parameter information of the IP route configuration.

Command format: **show ip route**

10. show l2-separate

    Command mode: Configure mode

    Function: Showing the parameter information of the 2-layer separation configuration.

    Command format: **show l2-separate**

11. show logmsg

    Command mode: Configure mode

    Function: Showing all the configuration information and configuration historical commands of log printing.

    Command format: **show logmsg** {**config**|**logcmd**}

12. show mac-access-list

    Command mode: Configure mode

    Function: Showing the parameter information of mac-access-list filtration configuration.

    Command format: **show mac-access-list** *<value>*

    Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<value>	1~99	MAC filtration group number.

13. show mac-authen

    Command mode: Configure mode

    Function: Showing the parameter information of mac-authen configuration.

    Command format: **show mac-authen**

14. show manage-mode

    Command mode: Configure mode

    Function: Showing the configuration information of the Telnet, snmp and web.

    Command format: **show manage-mode**

15. show manage-user

Command mode: Configure mode

Function: Showing the parameter information of manage-user configuration.

Command format: **show manage-user**

16. show multi-essid

Command mode: Configure mode

Function: Showing the parameter information of multi-essid configuration.

Command format: **show multi-essid** *<value>*

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<value>	0 or 1	Number of the wireless interface.

17. show qos

Command mode: Configure mode

Function: Showing the parameter information of qos configuration.

Command format: **show qos**

18. show radius

Command mode: Configure mode

Function: Showing the parameter information of radius configuration.

Command format: **show radius**

19. show snmp

1) show snmp access-host

Command mode: Configure mode

Function: Showing the parameter information of snmp access-host configuration.

Command format: **show snmp access-host**

2) show snmp community

Command mode: Configure mode

Function: Showing the parameter information of snmp community

configuration.

Command format: **show snmp community**

3) show snmp nodeinfo

Command mode: Configure mode

Function: Showing the parameter information of snmp nodeinfo configuration.

Command format: **show snmp nodeinfo**

4) show snmp sysinfo

Command mode: Configure mode

Function: Showing the parameter information of snmp sysInfo configuration.

Command format: **show snmp sysinfo**

5) show snmp traphost

Command mode: Configure mode

Function: Showing the parameter information of snmp traphost configuration.

Command format: **show snmp traphost**

20. show station-info

Command mode: Configure mode

Function: Showing the information of the client connected to W800A.

Command format: **show station-info**

21. show ssh

Command mode: Configure mode

Function: Showing the parameter information of SSH configuration.

Command format: **show ssh**

22. show stp

1) show stp bridge

Command mode: Configure mode

Function: Showing the parameter information of stp bridge configuration.

Command format: **show stp bridge**

2) show stp interface

Command mode: Configure mode

Function: Showing the parameter information of stp interface configuration.

Command format: **show stp interface**

23. show telnet-idletime

Command mode: Configure mode

Function: Showing the parameter information of the automatic exiting time when the Telnet window is idle.

Command format: **show telnet-idletime**

24. show trace

Command mode: Configure mode

Function: Showing the printing information of the client.

Command format: **show trace**

25. show version

Command mode: Configure mode

Function: Showing the software version number information.

Command format: **show version**

26. show vlan

Command mode: Configure mode

Function: Showing the vlan configuration information.

Command format: **show vlan**

5.5 Ethernet Interface Configuration Mode

Entering mode: Input the interface Ethernet 0 command in the configure mode.

Exiting mode: exit, entering the configure mode.

Default prompt character: wlan (config-eth) #

Note: All the information of the corresponding interface can be configured in this mode.

5.5.1 Exiting the Ethernet Interface Configuration Mode

Command mode: Ethernet interface configure mode

Function: Exiting the Ethernet interface configuration mode and entering the configure mode.

Command format: **exit**

5.5.2 Ethernet Interface MAC Filtration Configuration

Command mode: Ethernet interface configure mode

Function: Configuring the Ethernet interface MAC filtration.

Command format: [**no**] **macl-bind** <*value*> {**in**}

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*value*>	1~99	The article number of the MAC filtration bound to the interface.
{**in**}	in	The in direction bound to the interface.

5.6 Wireless Interface Configuration Mode

Entering mode: Input the interface wlan {**0**|**1**} command in the configure mode.

Exiting mode: exit, entering the configure mode.

Default prompt character: wlan (config-wlan) #

Note: All the information of the corresponding interface can be configured in this mode.

5.6.1 802.11-Related Parameter Configuration of the Wireless Interface

1. 80211 authmode

   Command mode: Wireless interface configure mode

   Function: Configuring the wireless authentication mode of the AP.

   Command format: **80211 authmode** {**OpenSystem** | **ShareKey**}

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
{**OpenSystem**| **ShareKey**}	OpenSystem, ShareKey	The wireless authentication mode is configured as open system or shared secret key mode.

2. 80211 essid

Command mode: Wireless interface configure mode

Function: Configuring the wireless network ESSID.

Command format: **80211 essid** <*string*>

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*string*>	1 ~ 31 characters	Wireless network ESSID. By default, interface 0 is wireless0 and interface 1 is wireless1.

3. 80211 frg-threshold

Command mode: Wireless interface configure mode

Function: Configuring the fragment threshold.

Command format: **80211 frg-threshold** <*value*>

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*value*>	256 ~ 2346 (even number)	The fragment threshold, 2346 by default.

4. 80211 rts-threshold

Command mode: Wireless interface configure mode

Function: Configuring the RTS threshold.

Command format: **80211 rts-threshold** <*value*>

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*value*>	0~2347	RTS threshold, 2347 by default. .

5. 80211 wirelessmode

Command mode: Wireless interface configure mode

Function: Configuring the wireless standard working mode of the wireless interface.

Command format: **80211 wirelessmode** {**11a**|**11b**|**11g**|**help**} [**channel** <*num*>] [**rate** <*value*>]

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
{**11a**|**11b**|**11g**|**help**}	11a, 11b, 11g, help	11a: Configuring 800A as the 802.11a working mode. 11b: Configuring 800A as the 802.11b working mode. 11g: Configuring 800A as the 802.11g working mode. help: Listing the configurable channels in the current working mode, according to the configured country code.
<*num*>		Configure the 800A working channel. Select the proper channel according to the country code. See Table 5.6-1 for the corresponding relationship of the nation code and selectable channel.
<*value*>	11a: auto, 6Mbps, 9Mbps, 12Mbps, 18Mbps, 24Mbps, 36Mbps, 48Mbps, 54Mbps; 11b: auto, 1Mbps, 2Mbps, 5.5Mbps, 11Mbps; 11g: auto, 6Mbps, 9Mbps, 12Mbps, 18Mbps, 24Mbps, 36Mbps, 48Mbps, 54Mbps	Configuring the 800A working rate.

Table 5.6-1 W800A Working Channels

Abbreviations of Nations and Zones	Full Names of Nations and Zones	11a Available Channel Numbers	11b Available Channel Numbers	11g Available Channel Numbers
CN	CHINA	0 (Auto), 149, 153, 157, 161, 165	0 (Auto), 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13	0 (Auto), 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
CA	CANADA	0 (Auto), 36, 40, 44, 48, 52, 56, 60, 64, 149, 153, 157, 161, 165	0 (Auto), 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11	0 (Auto), 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11
TW	TAIWAN	0 (Auto), 56, 60, 64, 149, 153, 157, 161	0 (Auto), 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13	0 (Auto), 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
FR	FRANCE	0 (Auto), 36, 40, 44, 48, 52, 56, 60, 64	0 (Auto), 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13	0 (Auto), 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
GE	GERMANY	0 (Auto), 36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140	0 (Auto), 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13	0 (Auto), 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
HK	HONG KONG	0 (Auto), 36, 40, 44, 48, 52, 56, 60, 64, 149, 153, 157, 161, 165	0 (Auto), 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13	0 (Auto), 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
KR	KOREA REPULIC	0 (Auto), 149, 153, 157, 161	0 (Auto), 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13	0 (Auto), 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
MX	MEXICO	0 (Auto), 52, 56, 60, 64, 36, 40, 44, 48, 149, 153, 157, 161, 165	0 (Auto), 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11	0 (Auto), 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11
GB	the UNITED KINGDOM	0 (Auto), 36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140	0 (Auto), 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13	0 (Auto), 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
US	the UNITED STATES	0 (Auto), 52, 56, 60, 64, 36, 40, 44, 48, 149, 153, 157, 161, 165	0 (Auto), 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11	0 (Auto), 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

5.6.2 ESSID Hiding Configuration

Command mode: Wireless interface configure mode

Function: Enabling or disabling the ESSID.

Command format: [**no**] **essid-hide enable**

5.6.3 Exiting the Wireless Interface Configuration Mode

Command mode: Wireless interface configure mode

Function: Exiting the wireless interface configuration mode and entering the configure mode.

Command format: **exit**

5.6.4 Enabling the Link Integrity Detection Function

Command mode: Wireless interface configure mode

Function: Enabling or disabling the AP link integrity detection function.

Command format: [**no**] **link-integrity enable**

Note: AP link integrity detection function is: when AP Ethernet links are disconnected, AP will release all the created wireless users and close the wireless interface, denying the connection requests from other wireless terminals; when AP Ethernet links are restored normally, AP will open the wireless interface and receive the wireless user connections. If the AP placement position is difficult to be reached, please be cautious to use this function.

5.6.5 Wireless Interface MAC Filtration Configuration

Command mode: Wireless interface configure mode

Function: Configuring the wireless interface MAC filtration.

Command format: [**no**] **macl-bind** <*value*> {**in**}

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*value*>	1~99	The article number of the MAC filtration bound by the interface.
{**in**}	in	The in direction bound to the interface.

5.6.6 Multi-ESSID Configuration

Command mode: Wireless interface configure mode

Function: Configuring the VLAN ID, maximum user quantity and priority corresponding to the ESSID.

Command format: **multi-essid** <*string*> [**vlan-id** <*value*[1]>] [**max-user** <*value*[2]>]

[**priority** <*value*^{3}>]

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*string*>	1 ~ 32 characters	ESSID name.
<*value*^{1}>	1~4094	The VLAN ID corresponding to the ESSID.
<*value*^{2}>	1~30	The maximum user quantity corresponding to the ESSID.
<*value*^{3}>	0~7	The priority corresponding to the ESSID.

5.6.7 Security Parameter Configuration

1. security mode

   Command mode: Wireless interface configure mode

   Function: Configuring the security mode.

   Command format: **security mode** {**none**|**wep64**|**wep128**|**wep152**|**wpa-eap-tls**|**wpa-psk**} {**Alphanumeric**|**Hexadecimal**} {**TKIP**|**AES**}

   Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
{**none**|**wep64**|**wep128**|**wep152**|**wpa-eap-tls**|**wpa-psk**}	none, wep64, wep128, wep152, wpa-eap-tls, wpa-psk	none: No encryption wep64: Encryption of WEP 64-bit secret key mode. wep128: Encryption of WEP 128-bit secret key mode. wep152: Encryption of WEP 152-bit secret key mode. wpa-eap-tls: Encryption of wpa mode. wpa-psk: Encryption of wpa-psk mode.
{**Alphanumeric**|**Hexadecimal**}	Alphanumeric, Hexadecimal	Alphanumeric: WEP secret key is in the character string format. Hexadecimal: WEP secret key is in the hexadecimal format.
{**TKIP**|**AES**}	TKIP, AES	Configuring the WPA encryption mode.

2. security wep set-key

   Command mode: Wireless interface configure mode

   Function: Configuring the WEP encryption secret key.

   Command format: **security wep set-key** {**key1**|**key2**|**key3**|**key4**}

<character/hex>

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
{**key1**|**key2**|**key3**|**key4**}	key1, key2, key3, key4	The article number of the secret key to be configured.
<character/hex>	wep64: 5 characters/10 hexadecimal numerals; wep128: 13 characters/26 hexadecimal numerals; wep152: 16 characters/32 hexadecimal numerals.	If 64-bit encryption is configured, *<string>* can be 5 case-sensitive characters (Alphanumeric format) or 10 hexadecimal numerals (Hexadecimal format). If 128-bit encryption is configured, *<string>* can be 13 case-sensitive characters (Alphanumeric format) or 26 hexadecimal numerals (Hexadecimal format). If 152-bit encryption is configured, *<string>* can be 16 case-sensitive characters (Alphanumeric format) or 52 hexadecimal numerals (Hexadecimal format).

3. security wep use-key

Command mode: Wireless interface configure mode

Function: Configuring the WEP encryption secret key to be used.

Command format: **security wep use-key** {**key1**|**key2**|**key3**|**key4**}

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
{**key1**|**key2**|**key3**|**key4**}	key1, key2, key3, key4	The article number of the secret key to be used.

4. security wpa pre-shared-key

Command mode: Wireless interface configure mode

Function: Configuring the WPA mode to be used.

Command format: **security wpa pre-shared-key** *<string>*

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*string*>	8 ~ 36 characters	Configuring the shared secret key of the WPA encryption.

5. security wpa rekey-interval

Command mode: Wireless interface configure mode

Function: Configuring the WPA mode to be used.

Command format: **security wpa rekey-interval** <*value*>

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
<*value*>	30~3600	Configuring the updating interval of the dynamic secret key (unit: second).

5.6.8 Transmission Power Configuration

Command mode: Wireless interface configure mode

Function: Configuring the transmission power of the equipment.

Command format: **tx-power** {**full**|**half**|**quarter**|**eighth**|**min**}

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
{**full**|**half**|**quarter**|**eighth**|**min**}	full, half, quarter, eighth, min	full: Maximum transmission power; half: Half transmission power; quarter: Quarter transmission power; eight: Eighth transmission power; min: Minimum transmission power;

5.6.9 Working Mode Configuration

Command mode: Wireless interface configure mode

Function: Configuring the working mode of the equipment.

Command format: **workmode** {**ap**|**repeater**}

Parameter descriptions:

Parameter Name	Value Range	Parameter Descriptions
{**ap**|**repeater**}	ap, repeater	The working mode of the equipment.

6 WEB Configuration

This chapter describes the operation methods and interfaces for W800A WEB configuration in detail.

6.1 Overview

For the W800A, a WEB configuration page is provided for W800A parameter configurations. WEB configuration page is in the normal page format, but you need pay attention to the following points:

1. Input *http://W800A working IP address* in the address box of the WEB browser to enter the logon page of the W800A WEB configuration. By default, the W800A working IP address is 192.168.1.254 and the Subnet mask is 255.255.255.0.
2. Currently, WEB configuration only features one operation mode (similar to CLI configuration mode), but it also provides 2-layer password protection. The layer-1 password permits users to browse the current parameter value. When a user logs on and then delivers data for the first time, he must input the previleged user password, if correct, the user need not input password again for delivering data later. The passwords of the two layers are the same as those for entering the user mode and privileged mode in the CLI configuration.
3. After logging on successfully, you enter a WEB page to browse the current parameters. To modify the configuration, select other options or input a new value, and then deliver it. After successful delivery, the new value can be browsed. The WEB configuration will analyze the new value input by the user, if the data is wrong, configuration failure information will be returned.
4. Only one user is permitted to browse or configure the WEB configuration at a certain time. If the user is idle for more than 5 minutes, the system will consider that this user has exited automatically, and at this time, another user can log on to browse or configure the WEB configuration.

The route map of the WEB configuration is shown in Fig. 6.1-1.

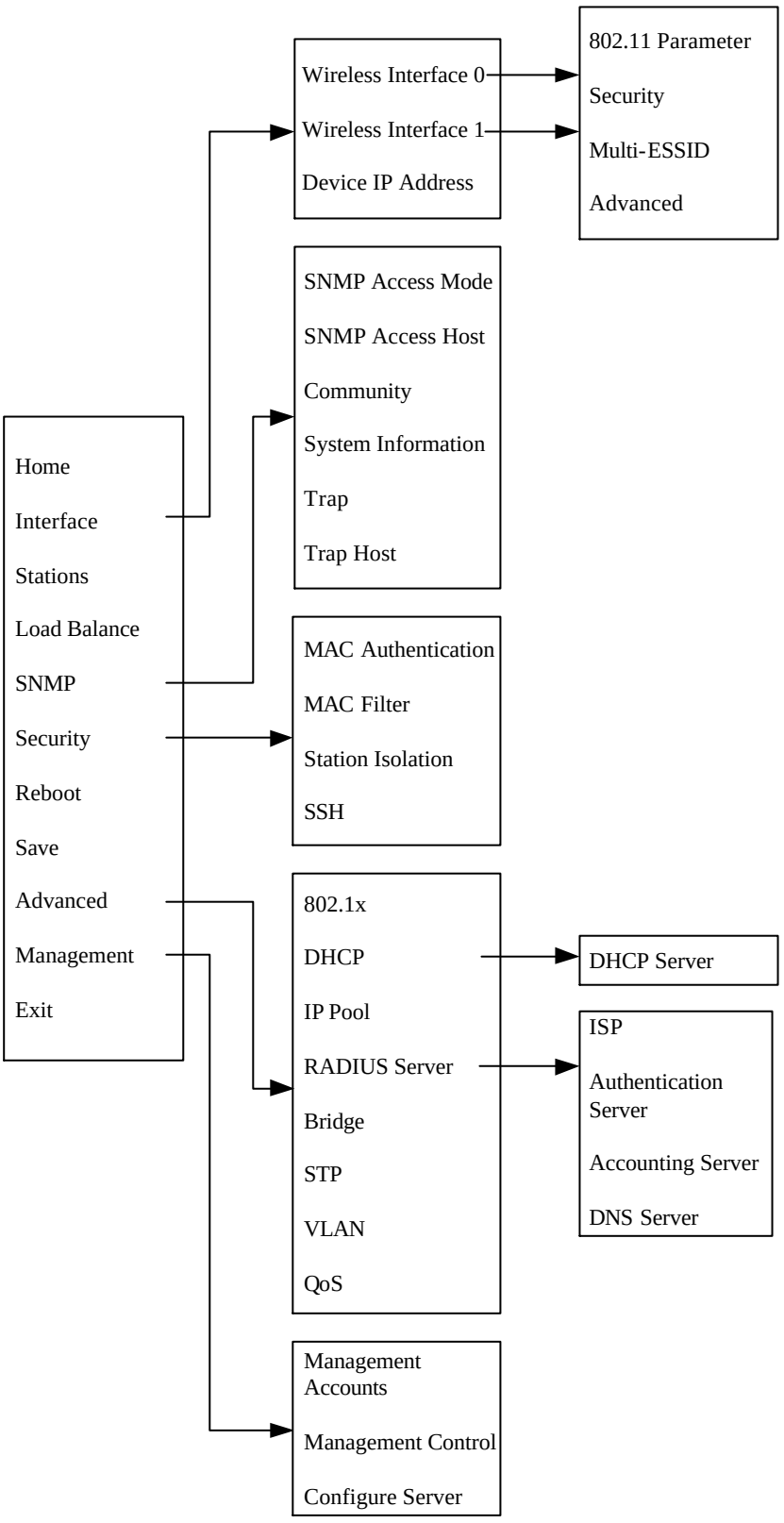


Fig. 6.1-1 Route Map of the WEB Configuration

6.2 Login

Open the WEB browse, input *http://W800A working IP address* in the address box, the WEB configuration login page will appear, as shown in Fig. 6.2-1. In it, input the correct user name and password (by default, the user name is “root” and the password is “public”) to enter the parameter browsing page.

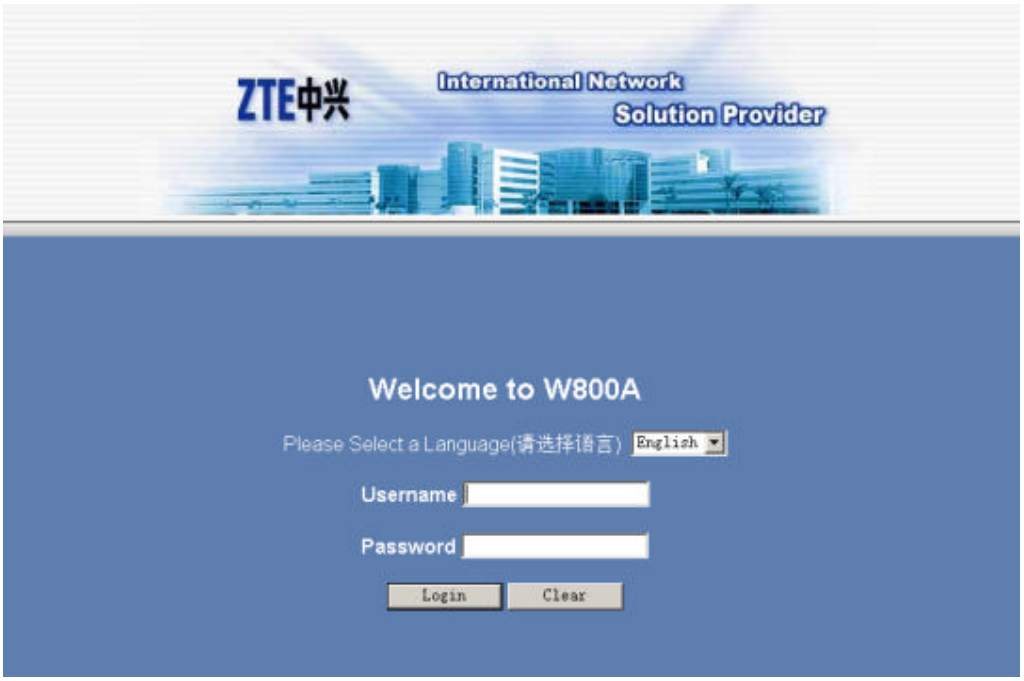


Fig. 6.2-1 Login Page

If a user has logged on the WEB configuration (or you have opened the WEB configuration window), click <Login> and a dialog box will pop up, as shown in Fig. 6.2-2.

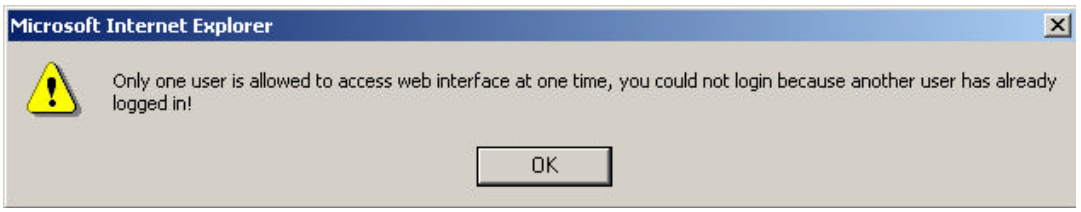


Fig. 6.2-2 Dialog Box for a User Who Has Logged on

If the user name or password is wrong, click <OK> and the corresponding prompt page will appear, as shown in Fig. 6.2-3.

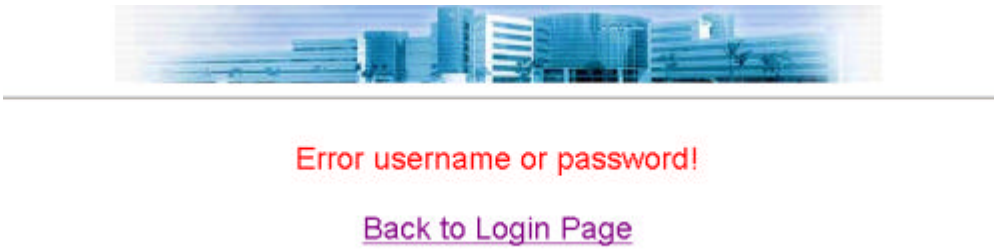


Fig. 6.2-3 Prompt Page for Wrong User Name or Password

6.3 Main Menu

After logging on successfully, you enter the main menu page of the WEB configuration. The main menu comprises: Home, Interface, Stations, Load Balance, SNMP, Security, Reboot, Save, Advanced and Management. The Interface, SNMP, Security, Advanced and Management feature submenus, and other configuration modules only have one WEB page for browsing or configuration. The main menu is in the left part of the WEB page, and the current configuration module selected by the user is shown in the right part, as shown in Fig. 6.3-1.

6.3.1 Home

The contents in this page are read-only: the contents can only be read, instead of being configured. The top line indicates the path of the current page, as shown in Fig. 6.3-1.

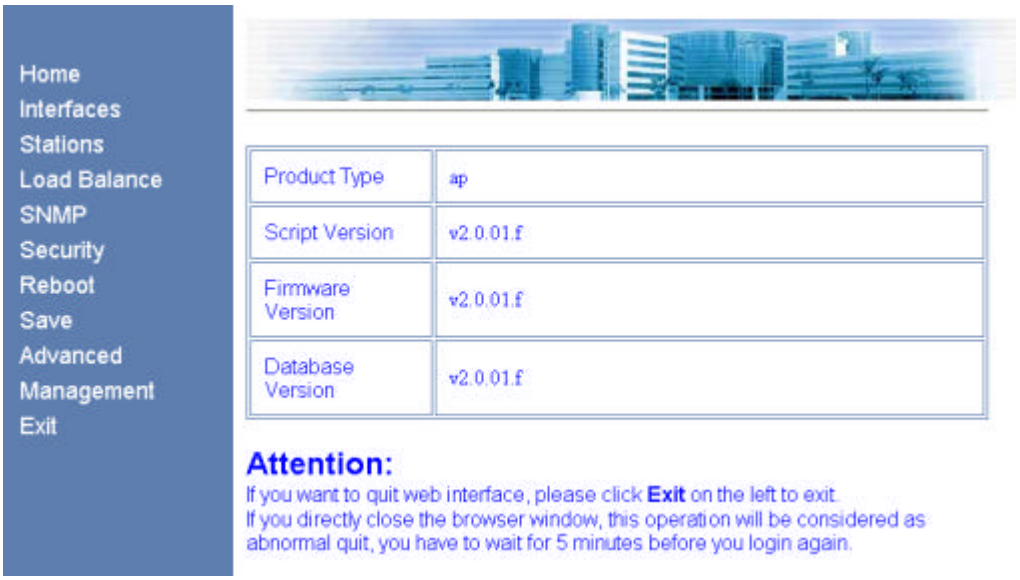


Fig. 6.3-1 Home Page

This page serves to display the basic information of the product, such as product mark and version number.

6.3.2 Interface

In the main menu, click [Interface] to enter the menu page of the interface configuration, as shown in Fig. 6.3-2.

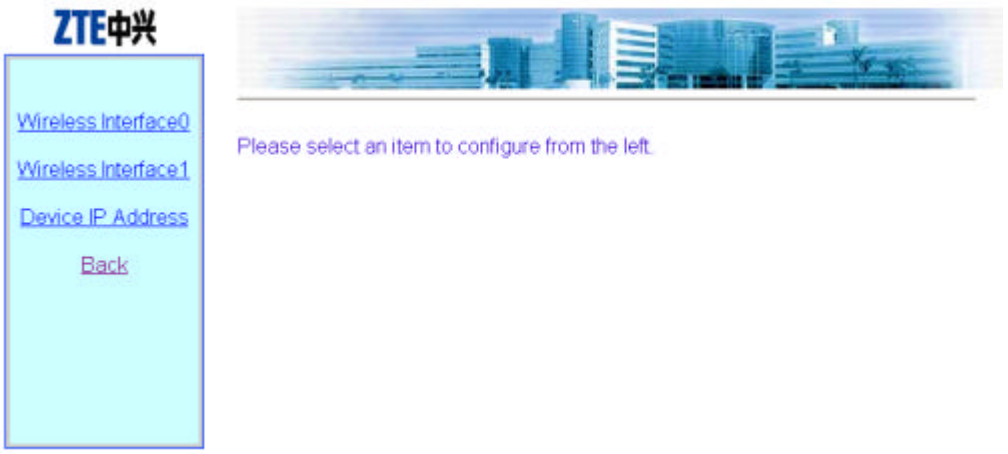


Fig. 6.3-2 Interface Configuration Menu Page

The W800A interface configurations are: wireless interface configuration and device IP address configuration. Two wireless interfaces should be configured separately.

6.3.2.1 Wireless Interface

In the Interface configuration menu, click [Wireless Interface 0] or [Wireless Interface 1] to enter the menu page of the wireless interface configuration, as shown in Fig. 6.3-3.

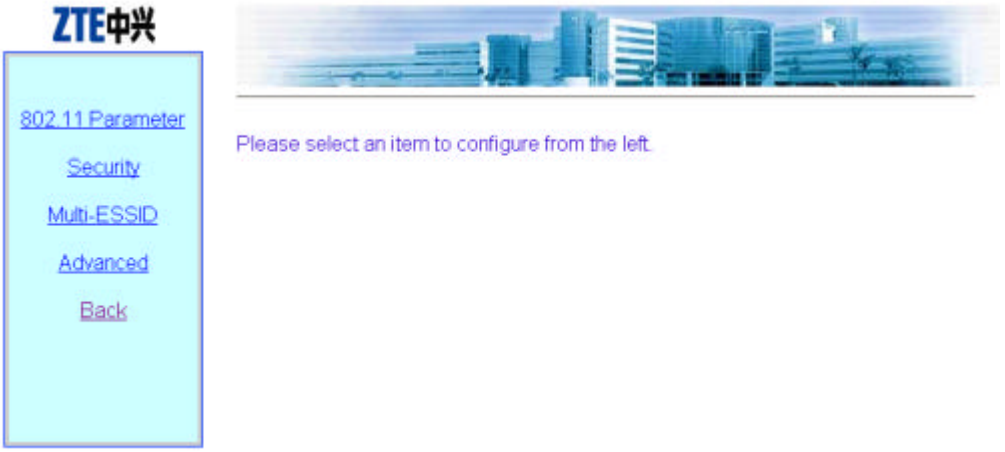


Fig. 6.3-3 Wireless Interface Configuration Menu Page

In the left part of this page, there are wireless interface configuration submenus: 802.11 Parameter, Security, Multi-ESSID and Advanced.

1. 802.11 Parameter

   In the Wireless Interface configuration menu, click [802.11 Parameter] and the page shown in Fig. 6.3-4 will appear.

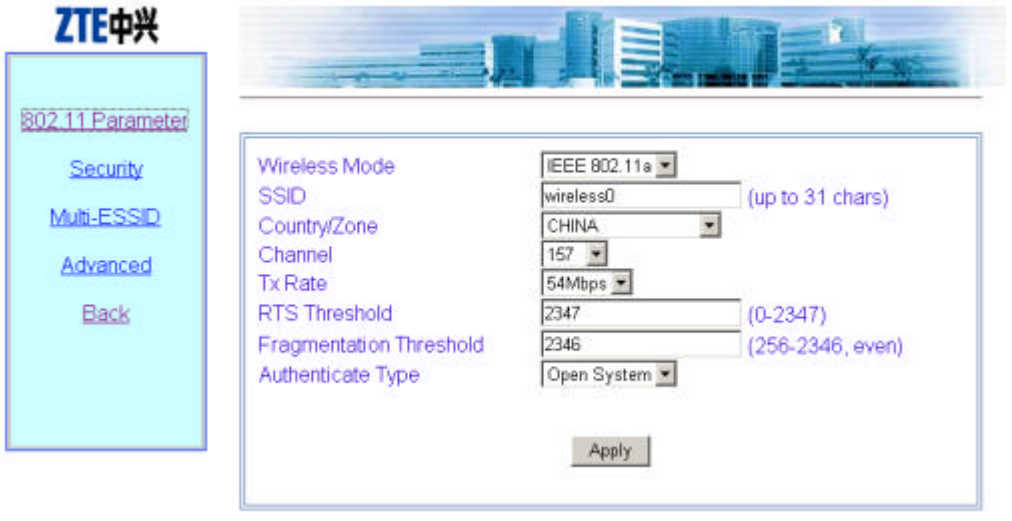


Fig. 6.3-4 802.11 Parameter Configuration Page

This page serves to configure 802.11 parameters of the wireless interface module, such as the Wireless Mode, SSID (service ID), Country/Zone, Channel, Tx Rate, RTS Threshold, Fragmentation Threshold and Authentication Type.

2. Security

In the Wireless Interface configuration menu, click [Security] and the page shown in Fig. 6.3-5 will appear.

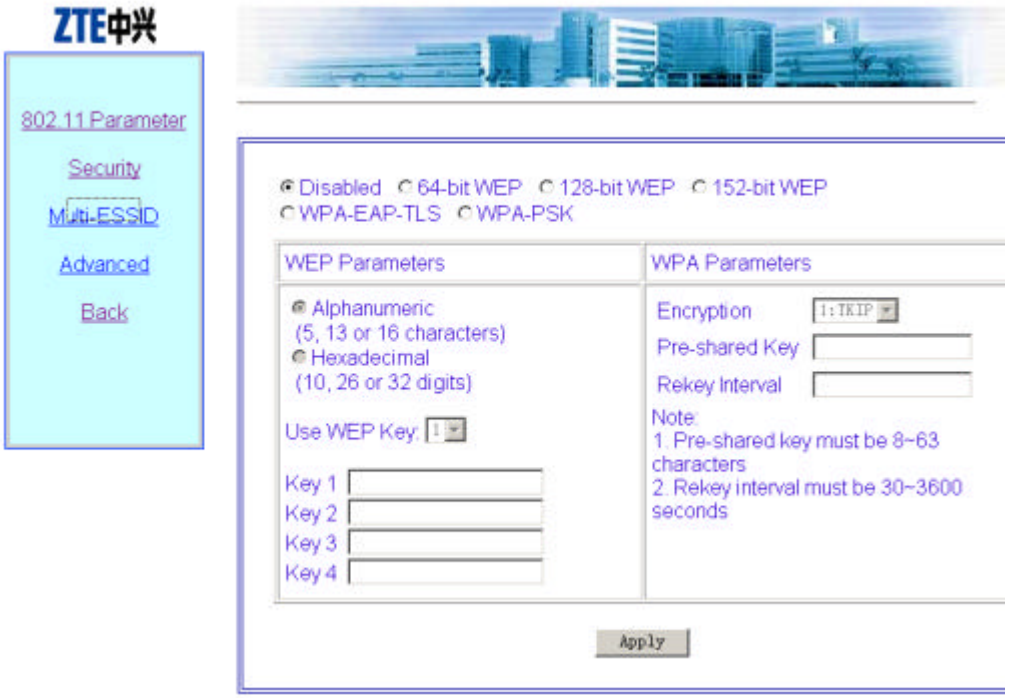


Fig. 6.3-5 Security Configuration Page

This page serves to configure the security parameters of the wireless interface module, such as the security configuration mode, WEP configuration type, WEP key format, WEP key value, the default key used by the WEP, WPA configuration method, WPA shared key and updating circle of the key.

3. Multi-ESSID

In the Wireless Interface configuration menu, click [Multi-ESSID] and the page shown in Fig. 6.3-6 will appear.

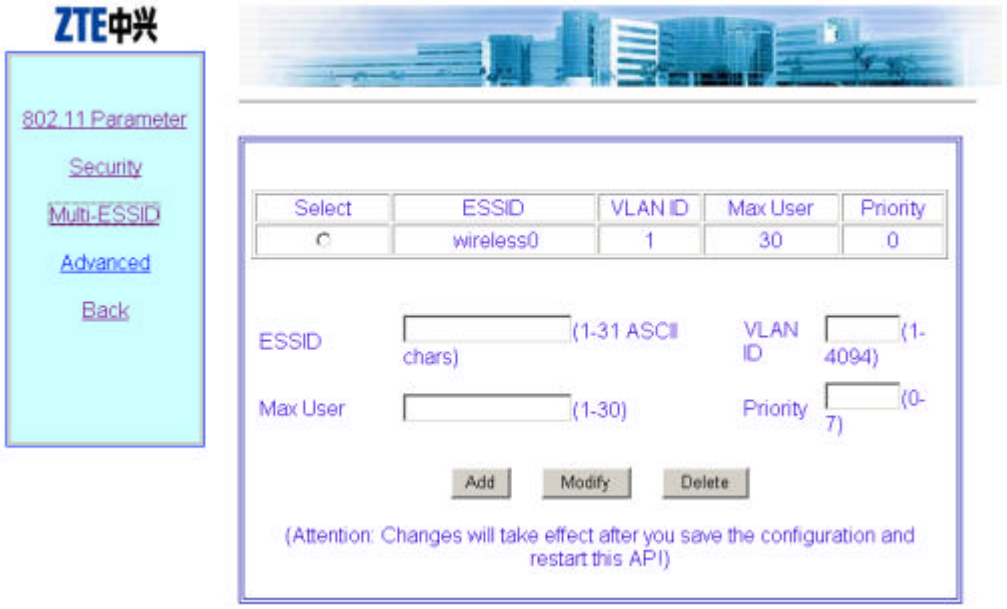


Fig. 6.3-6 Multi-ESSID Configuration Page

This page serves to configure multi-ESSID parameters of the wireless interface module, such as ESSID, VLAN ID, Max User, Priority and selecting mark for operating the selected item. The default ESSID wireless0 can not be deleted.

4. Advanced

In the Wireless Interface configuration menu, click [Advanced] and the page shown in Fig. 6.3-7 will appear.

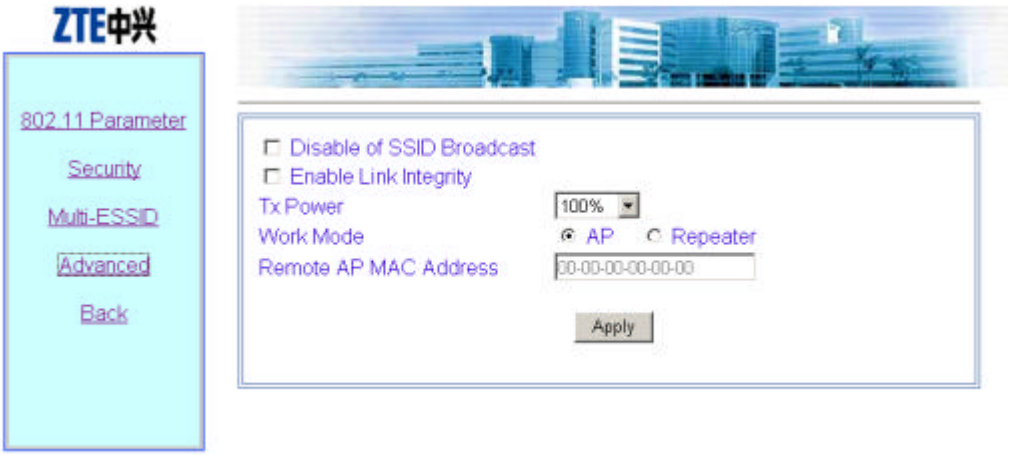


Fig. 6.3-7 Advanced Configuration Page

This page serves to configure the advanced options of the wireless interface module, such as enabling/disabling SSID Broadcast, enabling Link Integrity, Tx Power, Work Mode and Remote AP MAC address in the repeater mode.

6.3.2.2 Device IP Address

In the Interface configuration menu, click [Device IP Address] and the page shown in Fig. 6.3-8 will appear.

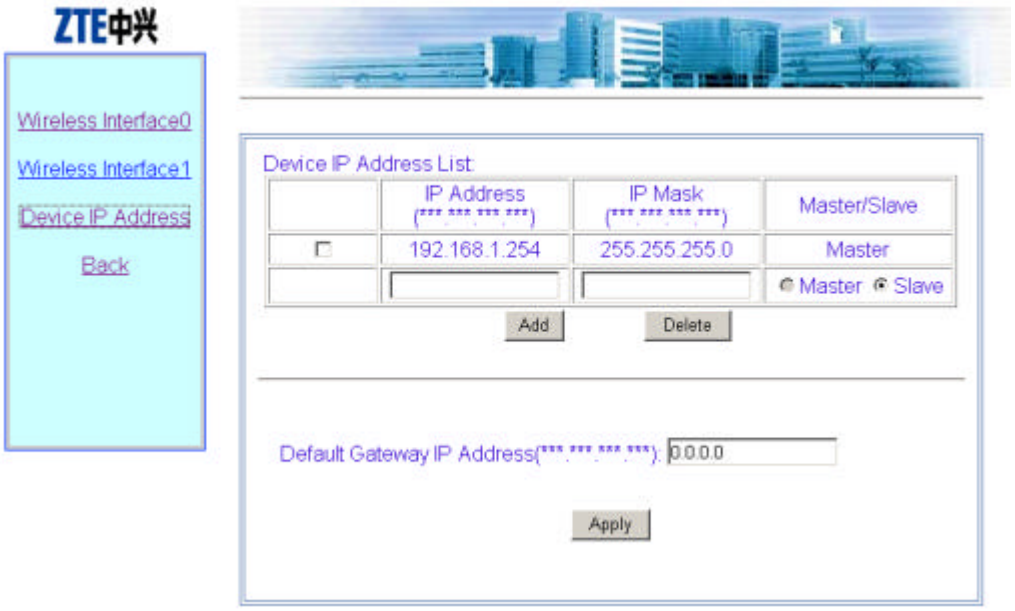


Fig. 6.3-8 Device IP Address Configuration Page

This page serves to configure the equipment IP addresses, such as IP address, IP mask, Master/Slave flag of the IP address and default gateway address. The equipment has only one active IP address and can have up to 9 standby IP addresses.

6.3.3 Stations

In the main menu, click [Stations] and the page shown in Fig. 6.3-9 will appear.

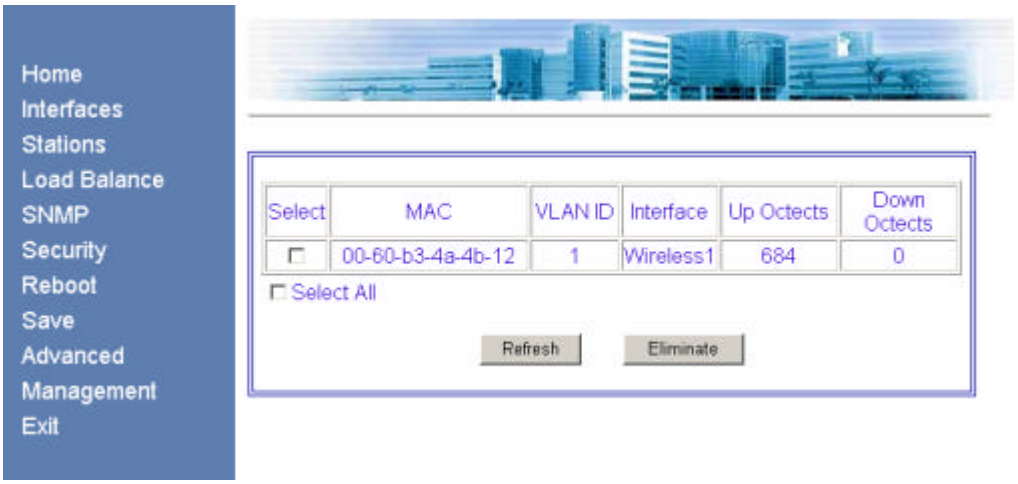


Fig. 6.3-9 Stations Page

This page serves to display the information of the wireless user who has logged on to this W800A, such as the quantity, MAC address, VLAN ID, connection interface and byte quantity of the uplink/downlink flow of the online wireless user. Use [Eliminate] to kick out the selected user.

6.3.4 Load Balance

In the main menu, click [Load Balance] and the page shown in Fig. 6.3-10 will appear.

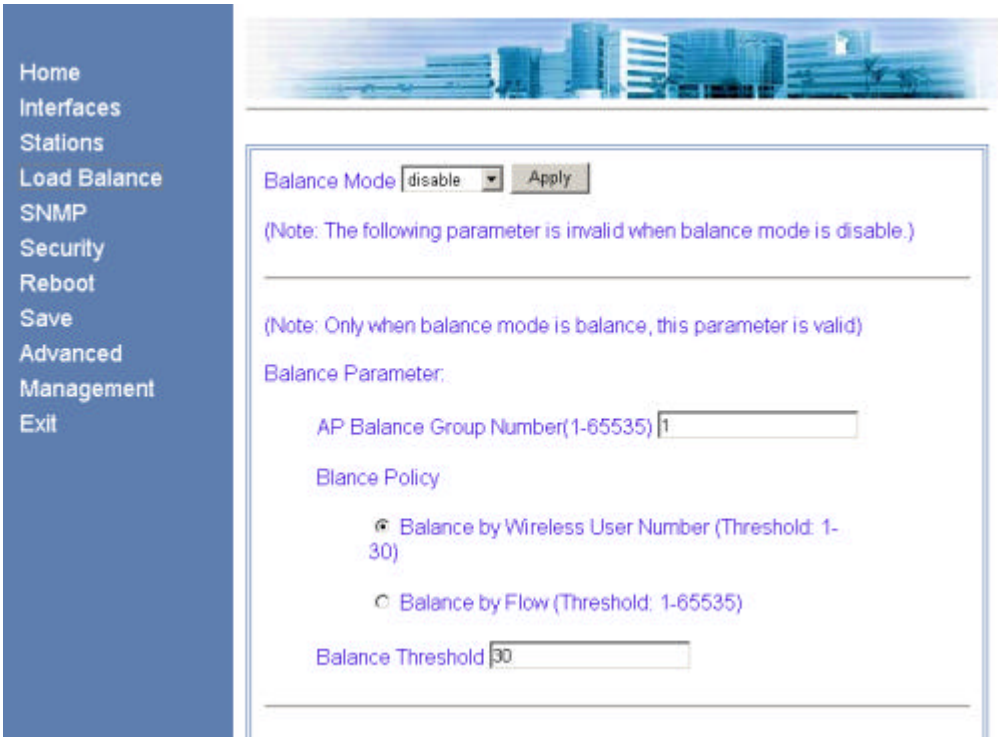


Fig. 6.3-10 Load Balance Configuration Page

This page serves to configure load balance: Balance Mode, Balance Parameters (AP Balance Group Number and Balance Threshold) and Max Wireless User, and these values have their respective value ranges.

Balace Modes are: disable, balance and max-user. When the Balace Mode is “disable”, the load balace is disabled; when the Balace Mode is “balance”, the AP load balance mode is enabled, and the parameters in the Balance Parameter configuration box are valid at this time; when the Balace Mode is “max-user”, the Max Wireless User mode is enabled, and the parameters in the Max Wireless User configuration box are valid.

Note:

Either AP load balance mode or Max Wireless User mode can be selected once.

6.3.5 SNMP

In the main menu, click [SNMP] and the page shown in Fig. 6.3-11 will appear.

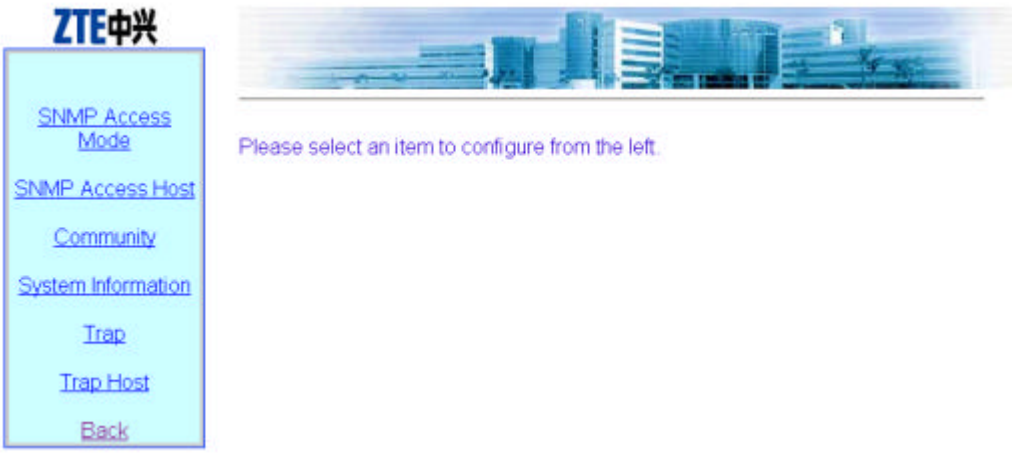


Fig. 6.3-11 SNMP Configuration Menu Page

In the left part of this page, there are SNMP configuration submenus: SNMP Access Mode, SNMP Access Host, Community, System Information, Trap and Trap Host.

6.3.5.1 SNMP Access Mode

In the SNMP configuration menu, click [SNMP Access Mode] and the page shown in Fig. 6.3-12 will appear.

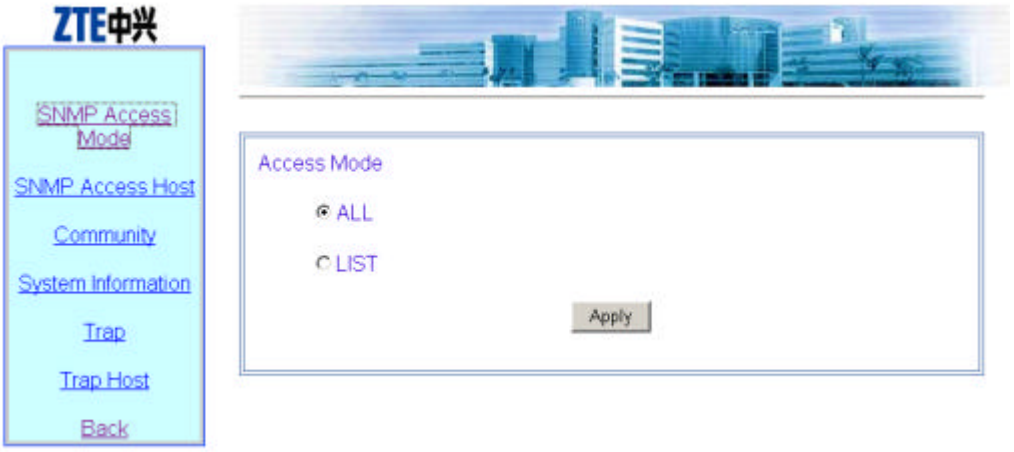


Fig. 6.3-12 SNMP Access Mode Configuration Page

This page serves to configure the SNMP access mode. "all" or "list" can be selected in [Access Mode]. "all" indicates that all the users can access the SNMP. "list" indicates that only the host whose IP address has been configured in the access host configuration can access the SNMP.

6.3.5.2 SNMP Access Host

In the SNMP configuration menu, click [SNMP Access Host] and the page shown in Fig. 6.3-13 will appear.

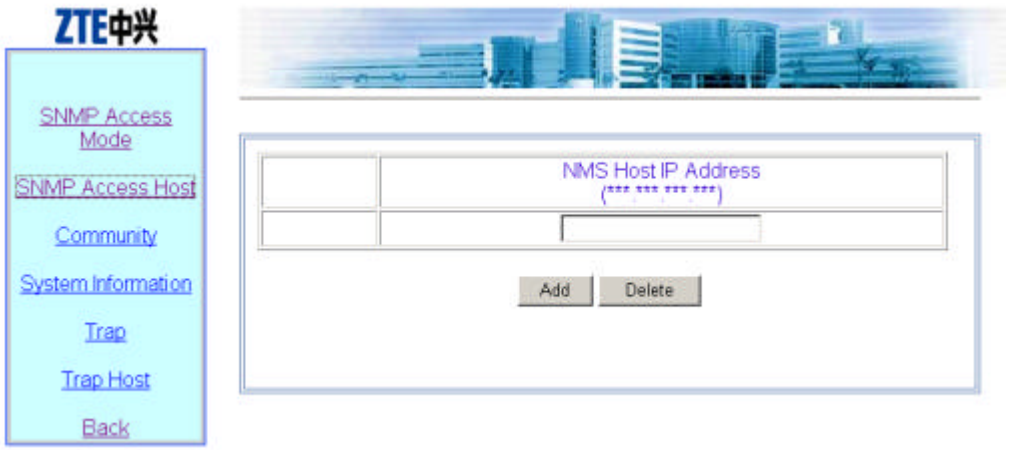


Fig. 6.3-13 SNMP Access Host Configuration Page

This page serves to add or delete the IP address of the access host of the SNMP. The parameters include the IP address of the access host.

This page is a multi-record data configuration page with <Add> and <Delete>. To implement the adding operation, input data in the blank box at the bottom line and click <Add>. To implement the deletion operation, check the record to be deleted (multiple options can be selected) and click <Delete>.

Note:

The other multi-record data configuration pages are similar to this one.

6.3.5.3 Community

In the SNMP configuration menu, click [Community] and the page shown in Fig. 6.3-14 will appear.

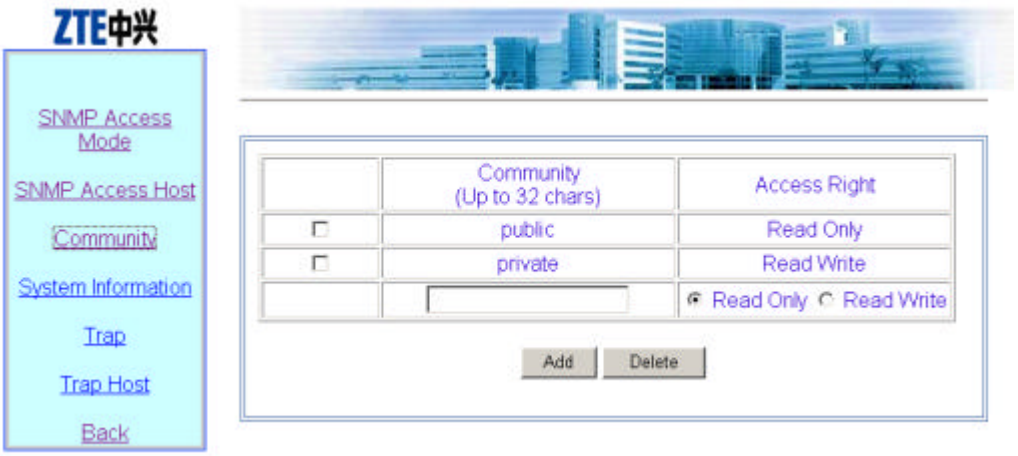


Fig. 6.3-14 Community Configuration Page

This page serves to add or delete the SNMP community strings. The parameters are community string ID and access authority.

6.3.5.4 System information

In the SNMP configuration menu, click [System information] and the page shown in Fig. 6.3-15 will appear.

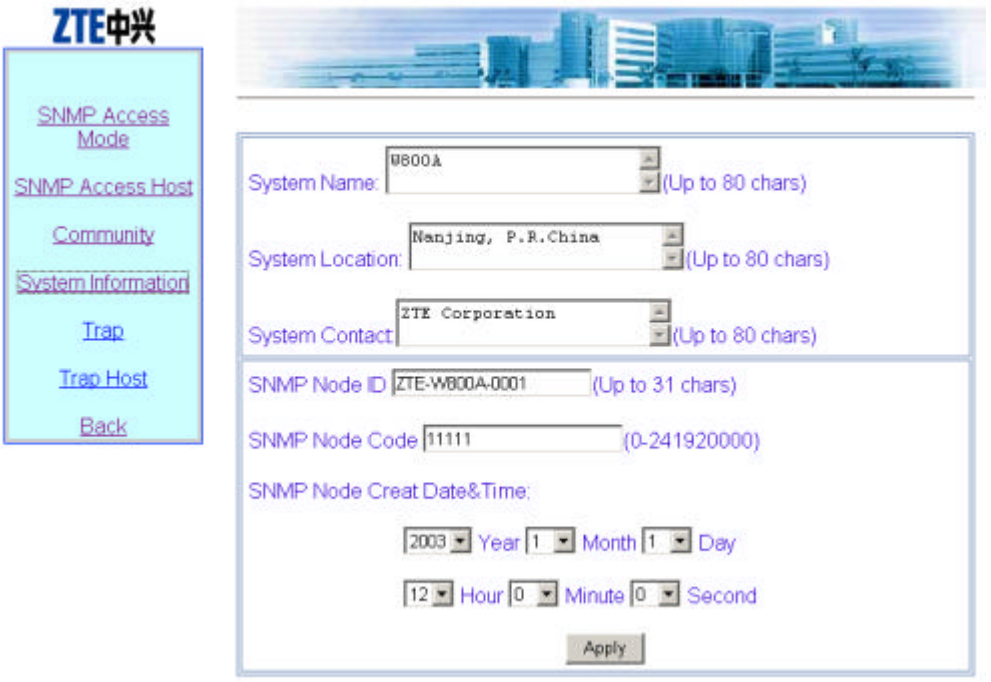


Fig. 6.3-15 System Information Page

This page serves to configure the information of the equipment managed by the current SNMP: System Name, System Location and System Contact. And the related information of the SNMP Node can be configured: ID, code and creation date&time.

6.3.5.5 Trap

In the SNMP configuration menu, click [Trap] and the page shown in Fig. 6.3-16 will appear.

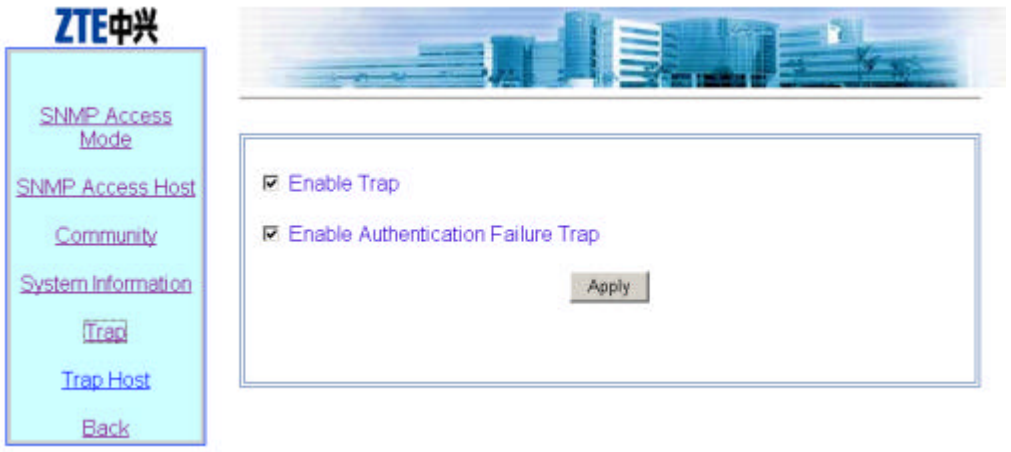


Fig. 6.3-16 Trap Configuration Page

This page serves to configure the SNMP alarm enabling parameters: Whether enabling Trap and whether enabling Authentication failure Trap.

6.3.5.6 Trap Host

In the SNMP configuration menu, click [Trap Host] and the page shown in Fig. 6.3-17 will appear.

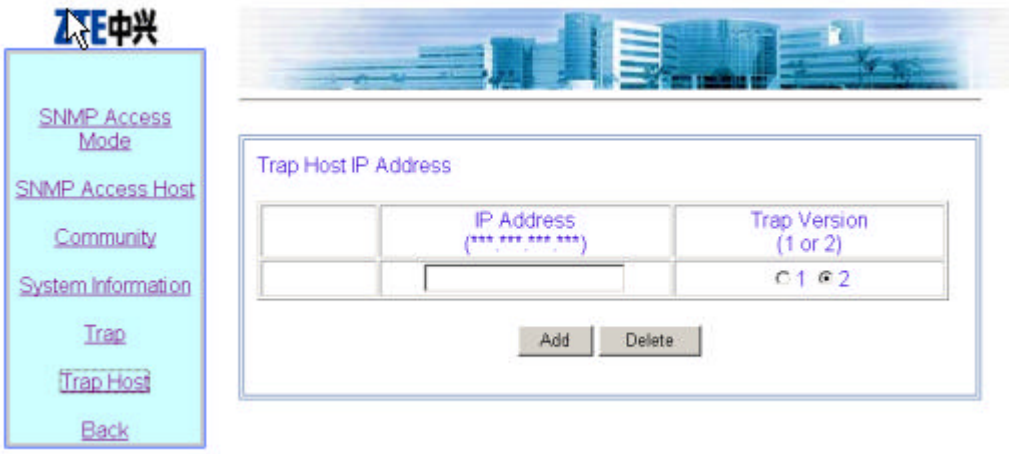


Fig. 6.3-17 Trap Host Configuration Page

This page serves to add or delete the Trap host. The parameters are: The IP address and version of the Trap Host and the IP address of the agent Trap Host.

6.3.6 Security

In the main menu, click [Security] and the page shown in Fig. 6.3-18 will appear.

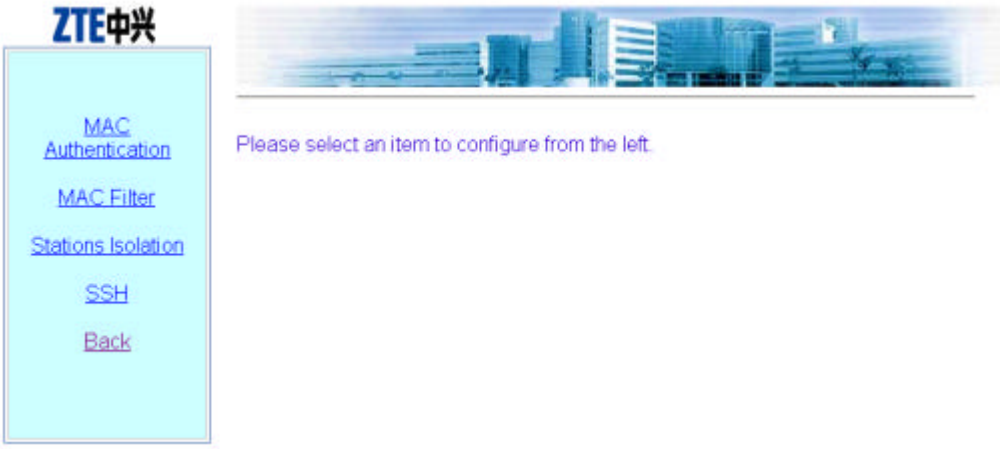


Fig. 6.3-18 Security Configuration Menu Page

In the left part of this page, there are security configuration submenus: MAC Authentication, MAC filtrer, Stations Isolation and SSH.

6.3.6.1 MAC Authentication

In the Security configuration menu, click [MAC Authentication] and the page shown in Fig. 6.3-19 will appear.

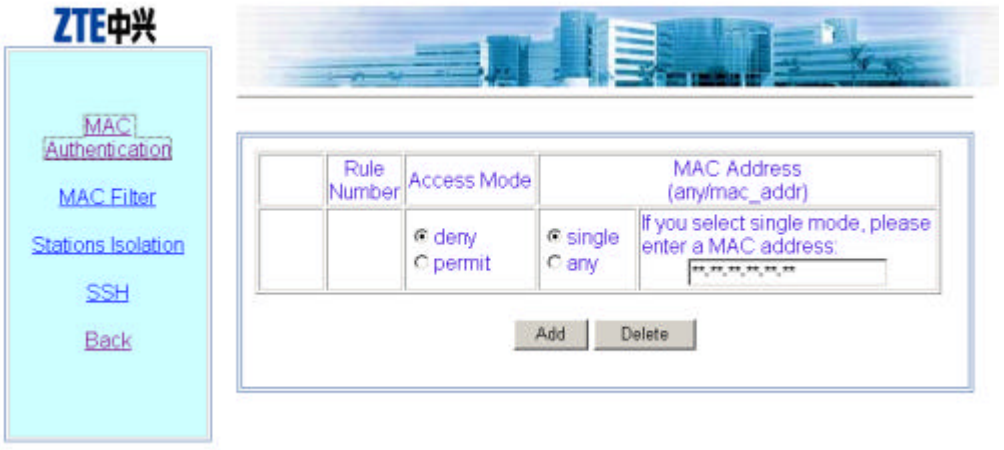


Fig. 6.3-19 MAC Authentication Configuration Page

This page serves to add or delete MAC authentication rule. The parameters are: Access

Mode (“permit” or “deny”) and MAC Address (“single” MAC Address or “any”).

6.3.6.2 MAC Filter

In the Security configuration menu, click [MAC Filter] and the page shown in Fig. 6.3-20 will appear.

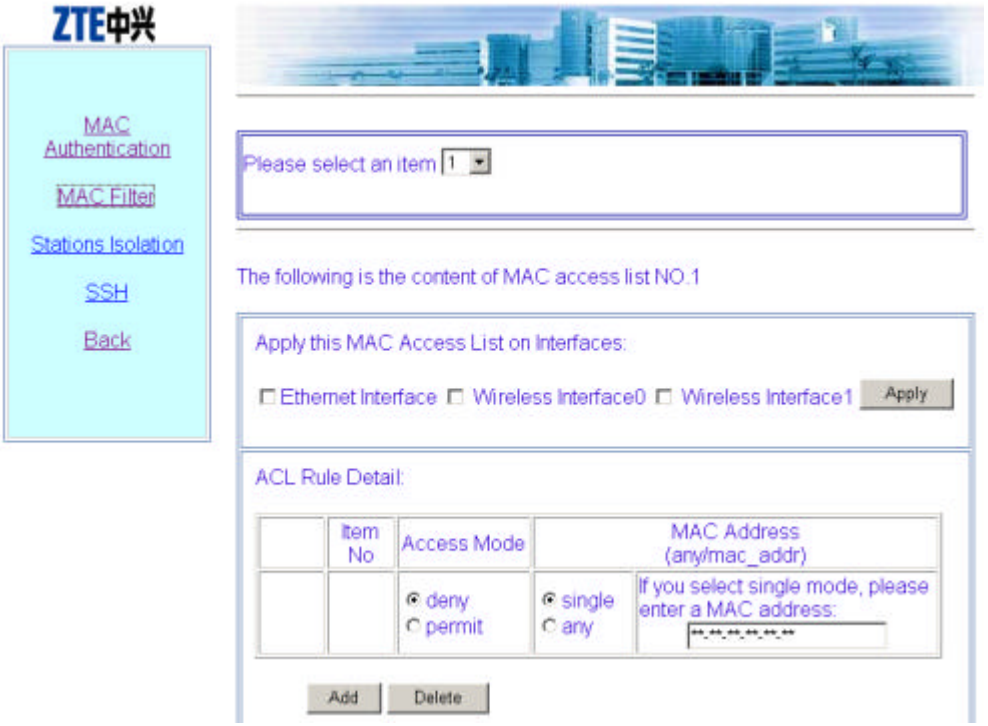


Fig. 6.3-20 MAC Filter Configuration Page

This page serves to enable a group of filter rules or add/delete the filter rules in the filter rule group. The parameters are: Access Mode and MAC Address.

6.3.6.3 Stations Isolation

In the Security configuration menu, click [Stations Isolation] and the page shown in Fig. 6.3-21 will appear.

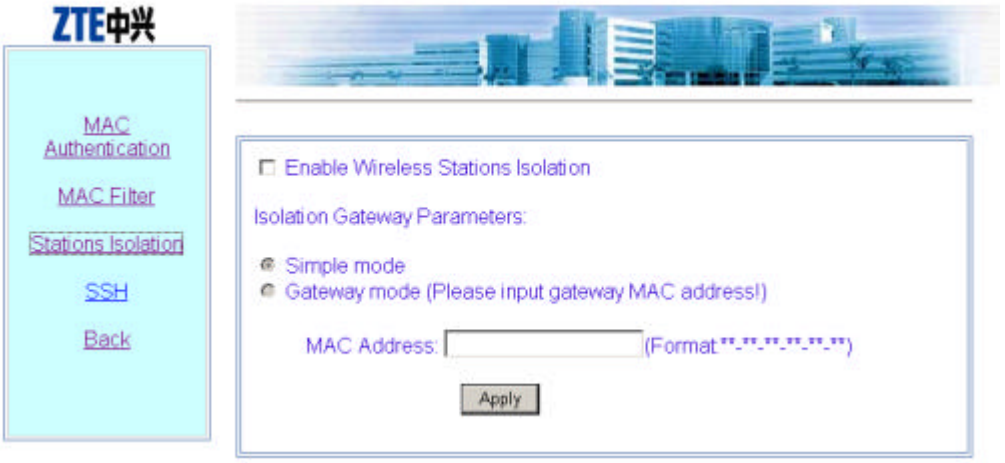


Fig. 6.3-21 Stations Isolation Configuration Page

This page serves to enable or disable Stations Isolation and configure the gateway MAC address of Stations Isolation.

6.3.6.4 SSH

In the Security configuration menu, click [SSH] and the page shown in Fig. 6.3-22 will appear.

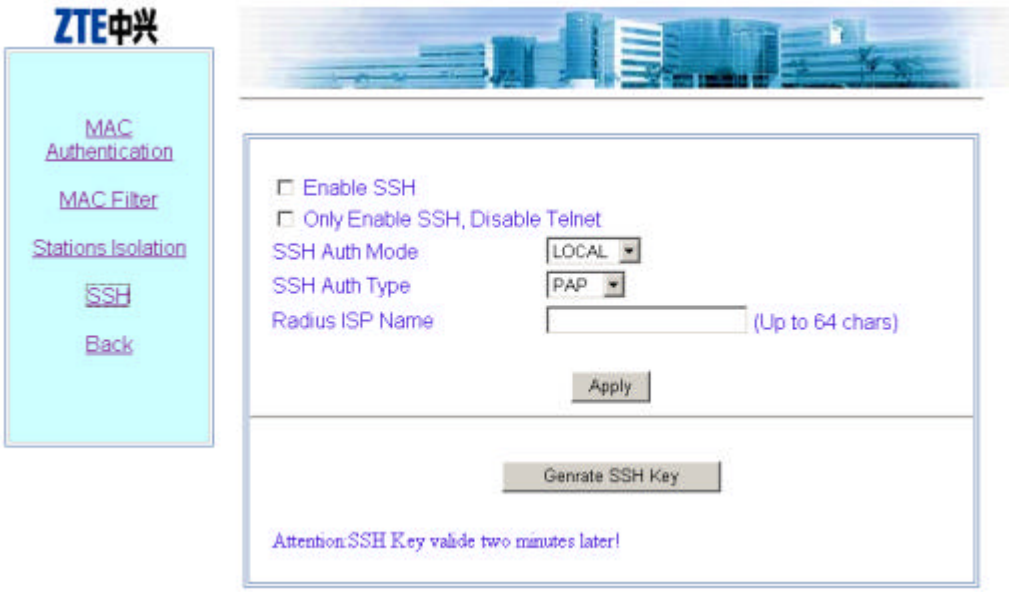


Fig. 6.3-22 SSH Configuration Page

This page serves to enable or disable SSH function and configure SSH-related

parameters: Authentication mode and type of the SSH server and the ISP name of RADIUS authentication.

6.3.7 Reboot

In the main menu, click [Reboot] and the page shown in Fig. 6.3-23 will appear.

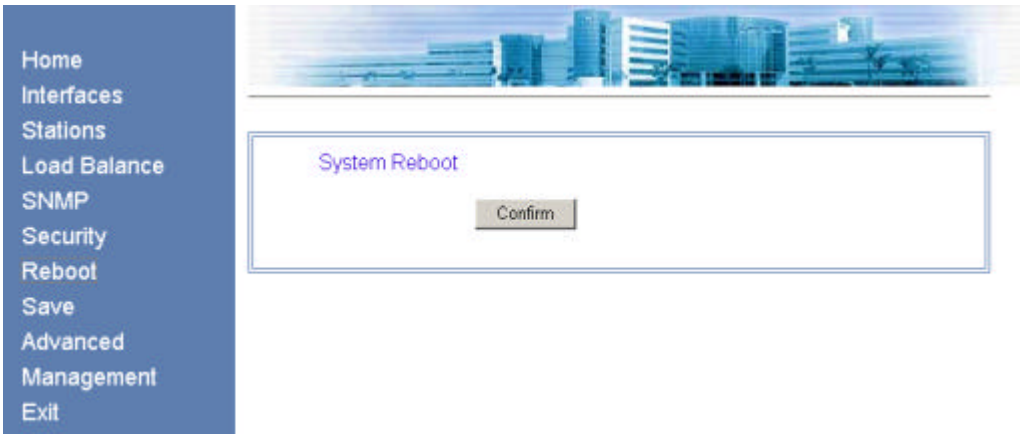


Fig. 6.3-23 Reboot Page

This page serves to execute the reboot. Click <confirm> and the input box of the privileged mode password will appear, as shown in Fig. 6.3-24.

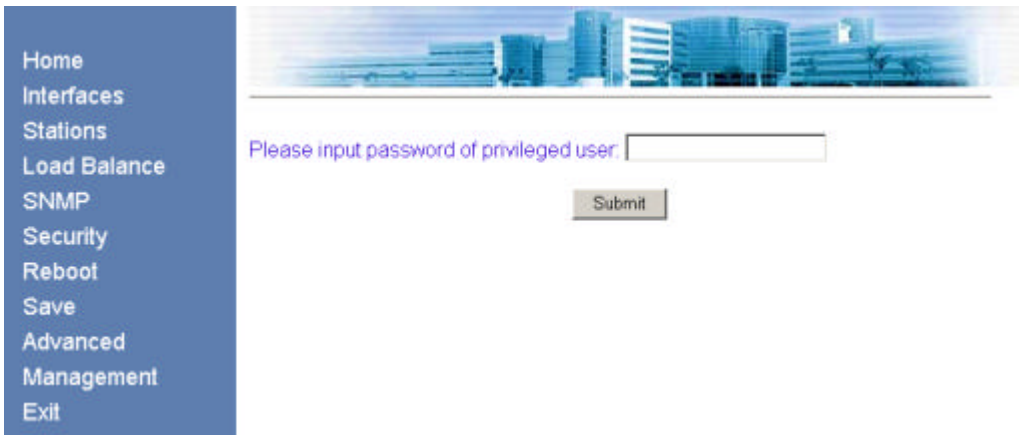


Fig. 6.3-24 Page of Inputting the Privileged Password

Input the correct password and a dialog box of closing the window will pop up, as shown in Fig. 6.3-25.

Fig. 6.3-25 Page of Closing the Window

6.3.8 Save

In the main menu, click [Save] and the page shown in Fig. 6.3-26 will appear.

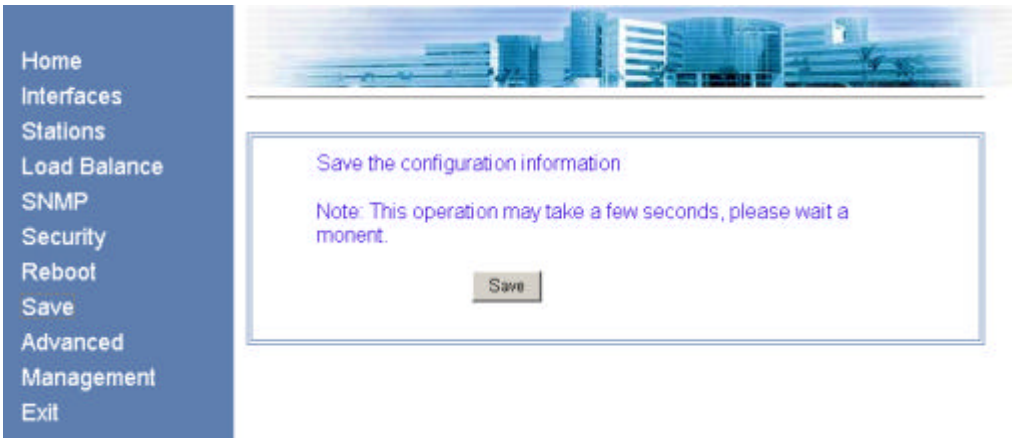


Fig. 6.3-26 Save Page

This page serves to write the configured parameters into flash.

6.3.9 Advanced

In the main menu, click [Advanced] and the page shown in Fig. 6.3-27 will appear.

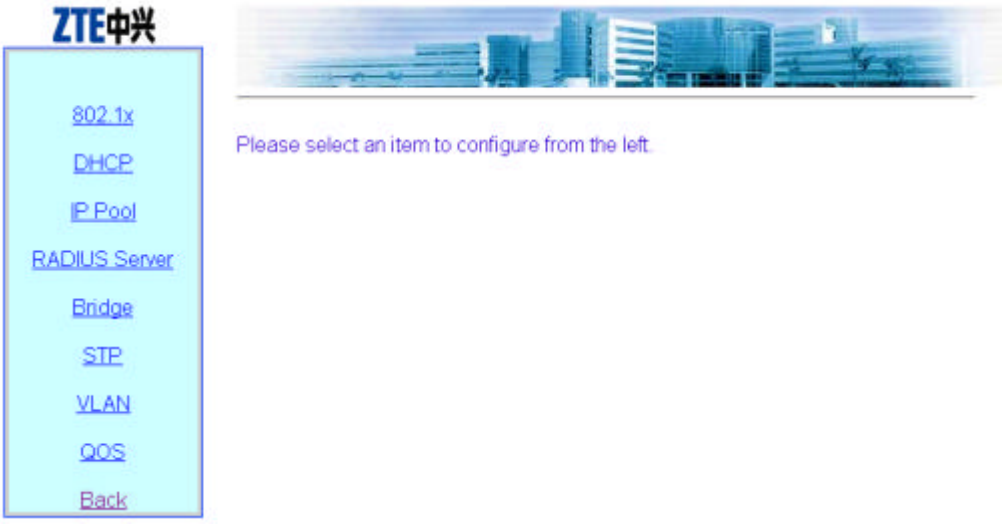


Fig. 6.3-27 Advanced Option Configuration Menu Page

In the left part of this page, there are advanced option configuration submenus: 802.1x, DHCP, IP Pool, RADIUS Server, Bridge, STP, VLAN and QoS.

6.3.9.1 802.1x

In the Advanced configuration menu, click [802.1x] and the page shown in Fig. 6.3-28 will appear.

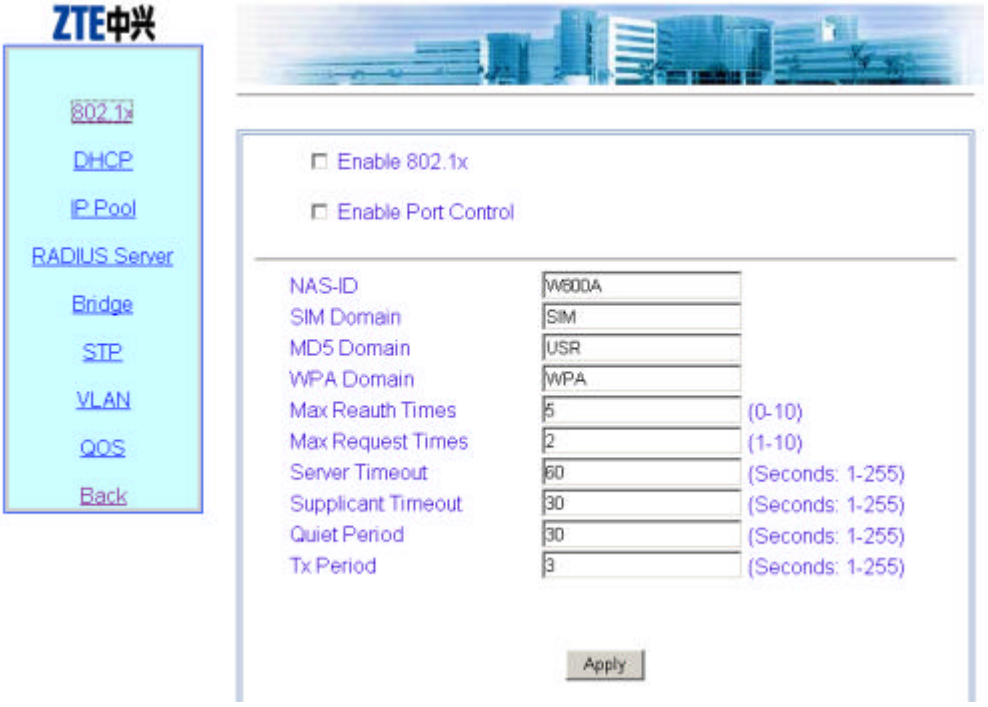


Fig. 6.3-28 802.1x Configuration Page

This page serves to configure 802.1x authentication parameters: Enabling 802.1x, enabling port control, NAS-ID, SIM authentication domain name, MD5 authentication domain name, WPA authentication domain name, maximum re-authentication times, maximum request times, server time-out time, supplicant time-out time, quiet period and retransmission period.

6.3.9.2 DHCP

In the Advanced configuration menu, click [DHCP] and the page shown in Fig. 6.3-29 will appear.

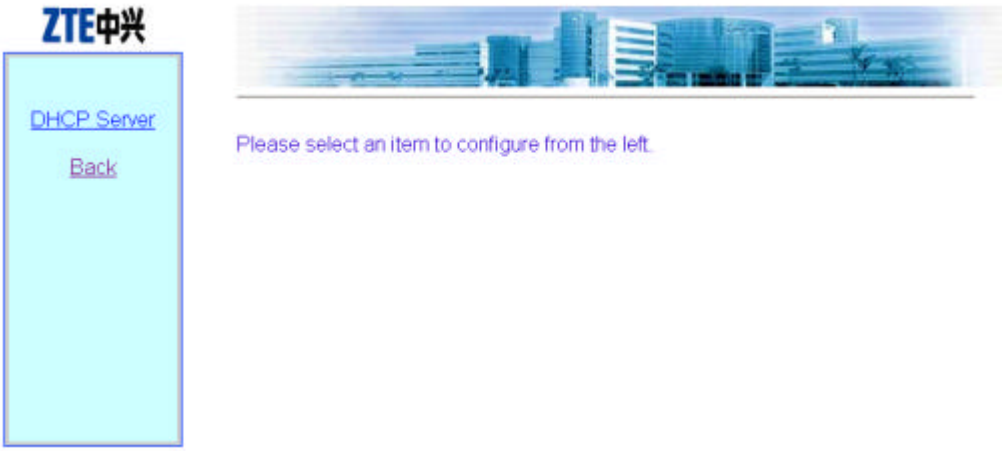


Fig. 6.3-29 DHCP Configuration Menu Page

In the left part of this page, there are DHCP module submenus, including DHCP Server configuration.

1. DHCP Server

   In the DHCP configuration menu, click [DHCP Server] and the page shown in Fig. 6.3-30 will appear.

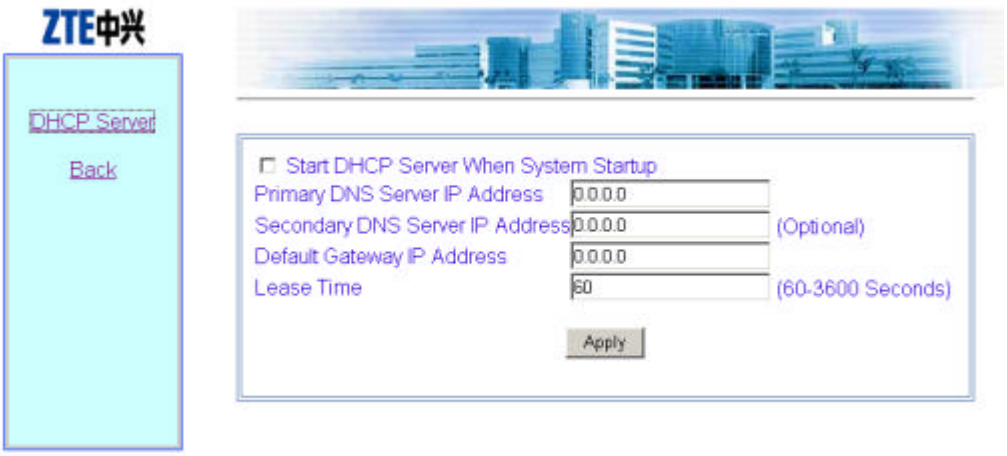


Fig. 6.3-30 DHCP Server Configuration Page

This page serves to configure the related parameters of the DHCP server: The IP address of the primary/secondary DNS server, gateway IP address, lease time and whether the DHCP server is enabled when the system is started.

6.3.9.3 IP Pool

In the Advanced configuration menu, click [IP Pool] and the page shown in Fig. 6.3-31 will appear.

Fig. 6.3-31 IP Pool Configuration Page

This page serves to add or delete the address pool. The parameters are: IP pool ID, begin IP address, end IP address and IP subnet mask. The IP pool can contain up to 200

addresses.

6.3.9.4 RADIUS Server

In the Advanced configuration menu, click [RADIUS Server] and the page shown in Fig. 6.3-32 will appear.

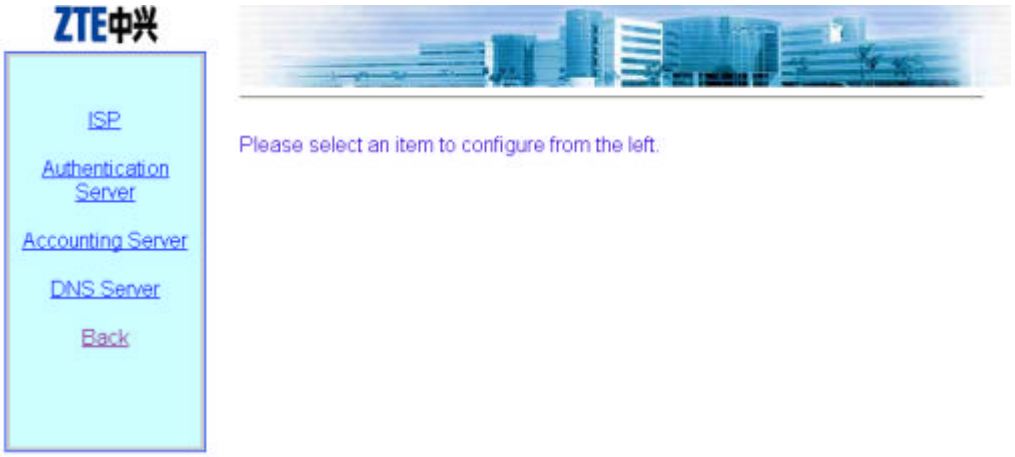


Fig. 6.3-32 RADIUS Server Configuration Menu Page

The RADIUS Server configuration menu are: ISP, Authentication Server, Accounting Server and DNS Server.

1. ISP

   In the RADIUS Server configuration menu, click [ISP] and the page shown in Fig. 6.3-33 will appear.

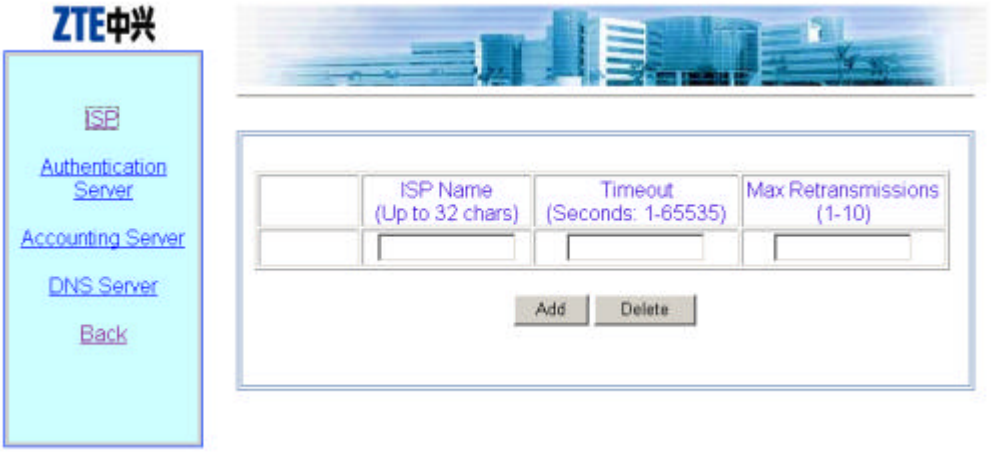


Fig. 6.3-33 ISP Configuration Page

This page serves to configure the ISP. The parameters are ISP name, time-out time and max retransmission times.

2. Authentication Server

In the RADIUS Server configuration menu, click [Authentication Server] and the page shown in Fig. 6.3-34 will appear.

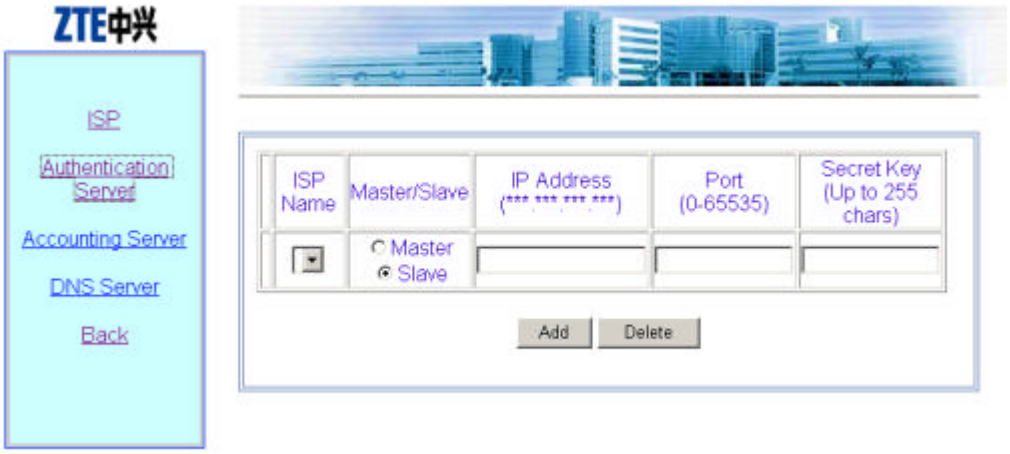


Fig. 6.3-34 Authentication Server Configuration Page

This page serves to configure the authentication server. The parameters are: ISP Name(selected from the configured ISPs), Master/Slave flag, IP Address Port ID and Secret Key.

3. Accounting Server

In the RADIUS Server configuration menu, click [Accounting Server] and the page shown in Fig. 6.3-35 will appear.

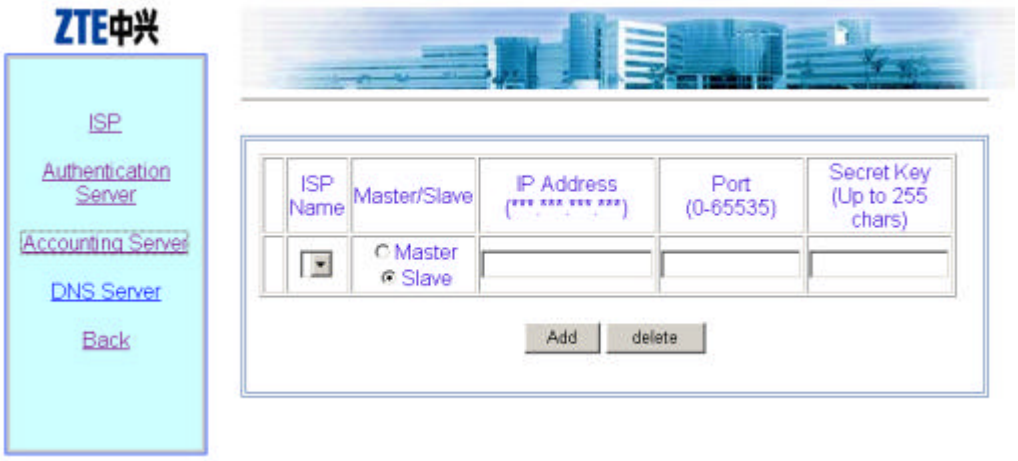


Fig. 6.3-35 Accounting Server Configuration Page

This page serves to configure the accounting server. The parameters are: ISP name (selected from the configured ISPs), Master/Slave flag, IP Address Port ID and Secret Key.

4. DNS Server

In the RADIUS Server configuration menu, click [DNS Server] and the page shown in Fig. 6.3-36 will appear.

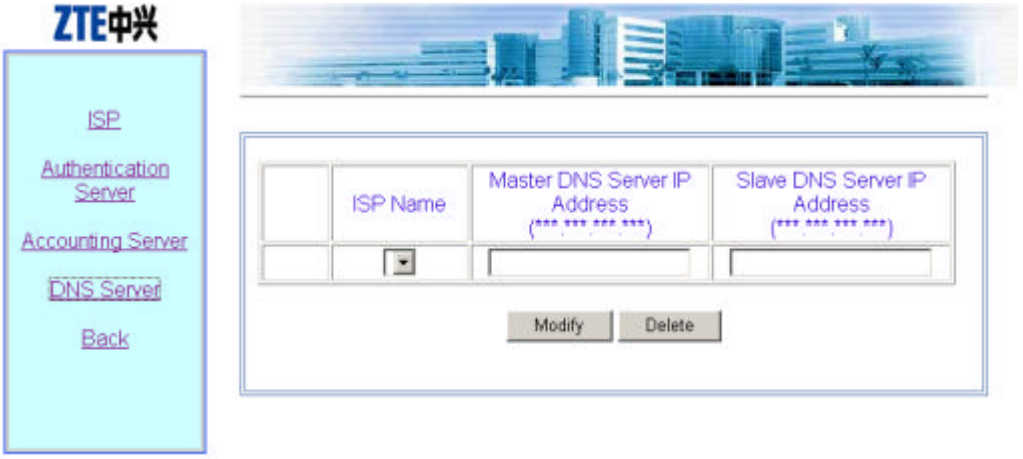


Fig. 6.3-36 DNS Server Configuration Page

This page serves to configure the DNS. The parameters are: ISP name (selected from the configured ISPs), IP addresses of the master and slave DNS servers.

6.3.9.5 Bridge

In the Advanced configuration menu, click [Bridge] and the page shown in Fig. 6.3-37 will appear.

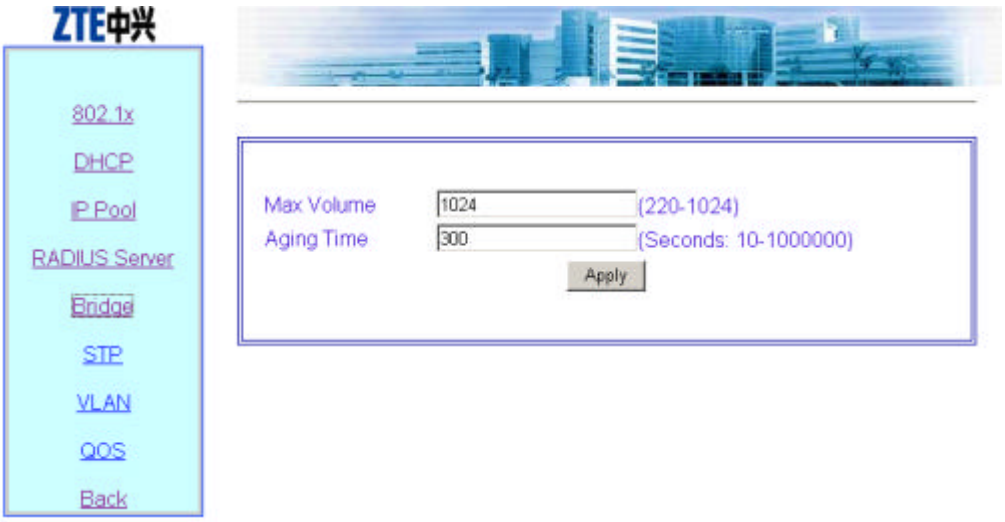


Fig. 6.3-37 Bridge Configuration Page

This page serves to configure the bridge parameters. The parameters are Max Volume and Aging Time.

6.3.9.6 STP

In the Advanced configuration menu, click [STP] and the page shown in Fig. 6.3-38 will appear.

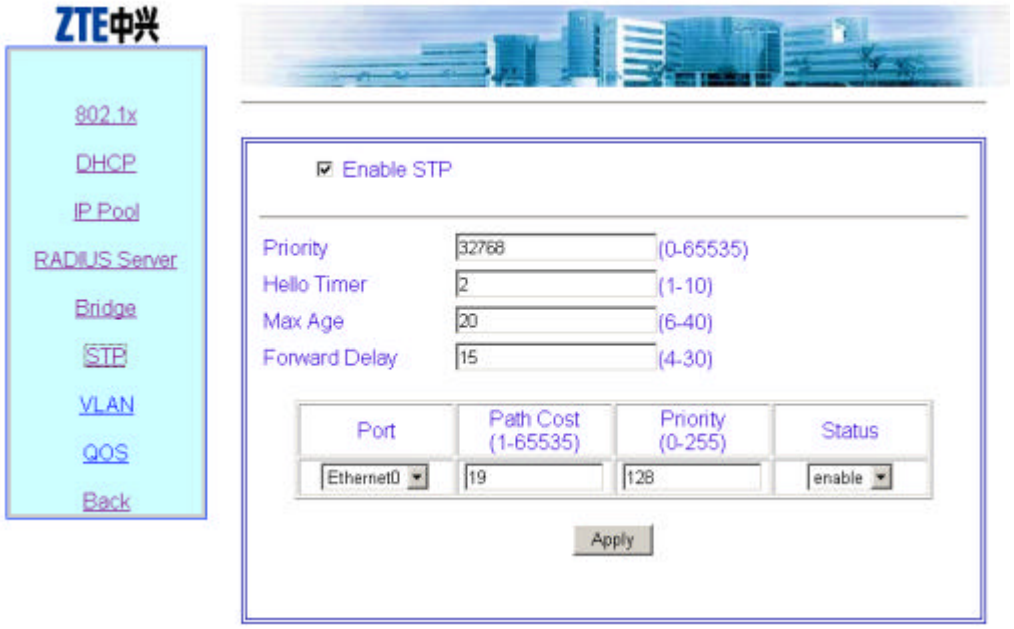


Fig. 6.3-38 STP Configuration Page

This page serves to configure the STP parameters: Whether the STP is enabled, bridge priority, Hello Timer, Max Age, Forward Delay, application port, port path cost, port priority and port status.

6.3.9.7 VLAN

In the Advanced configuration menu, click [VLAN] and the page shown in Fig. 6.3-39 will appear.

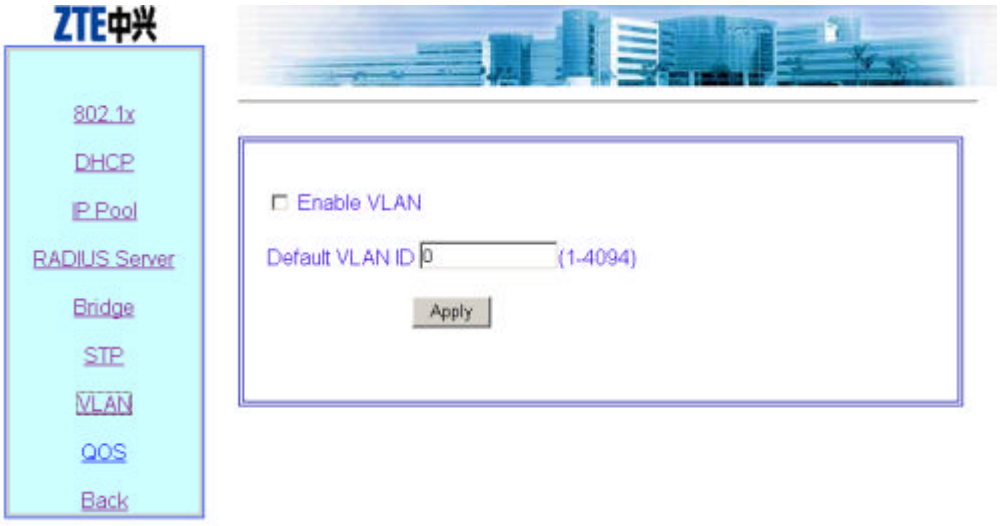


Fig. 6.3-39 VLAN Configuration Page

This page serves to enable/disable the VLAN and configure its parameter. The parameter is default VLAN ID.

6.3.9.8 QoS

In the Advanced configuration menu, click [QoS] and the page shown in Fig. 6.3-40 will appear.

Fig. 6.3-40 QoS Configuration Page

This page serves to enable/disable the QoS and configure its parameter. The parameter is QoS configuration policy.

6.3.10 Management

In the main menu, click [Management] and the page shown in Fig. 6.3-41 will appear.

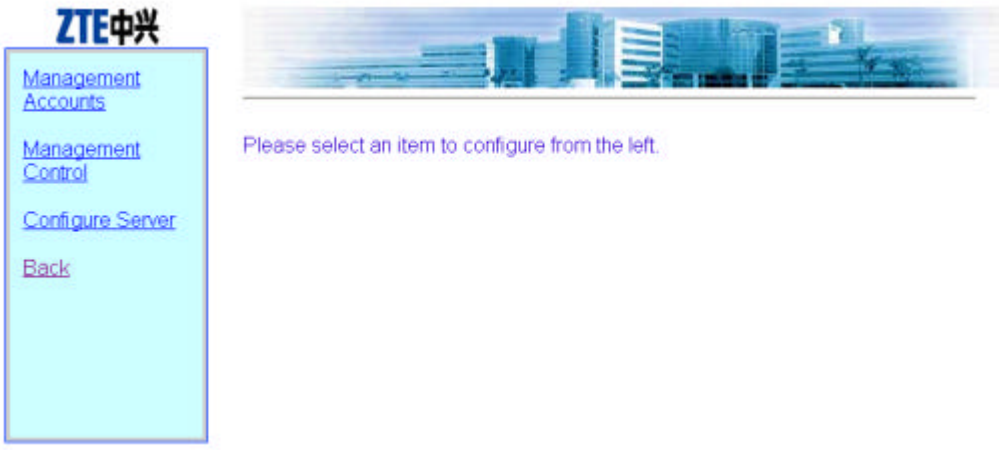


Fig. 6.3-41 Management Configuration Menu Page

In the left part of this page, there are management configuration submenus: Management Accounts, Management Control and configure Server.

6.3.10.1 Management Accounts

In the Management configuration menu, click [Management Accounts] and the page shown in Fig. 6.3-42 will appear.

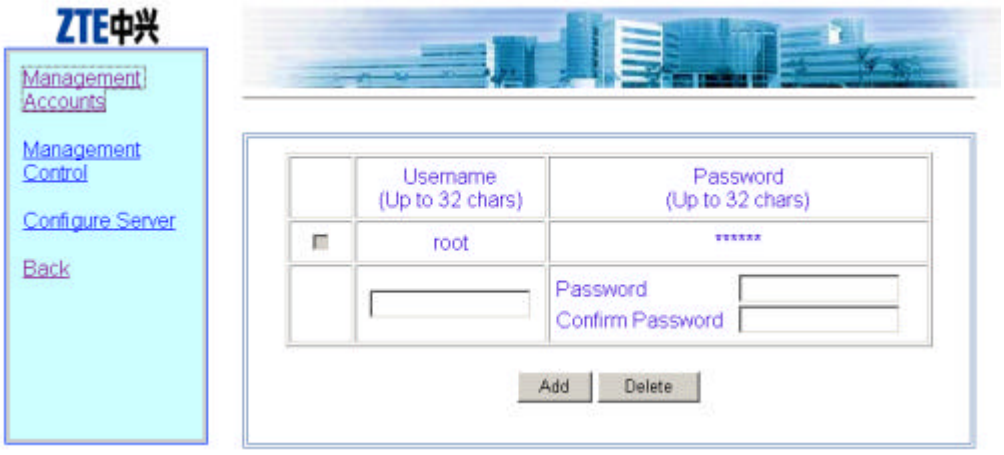


Fig. 6.3-42 Management Accounts Configuration Page

This page serves to add or delete the user name and password of the administrator.

6.3.10.2 Management Control

In the Management configuration menu, click [Management Control] and the page

shown in Fig. 6.3-43 will appear.

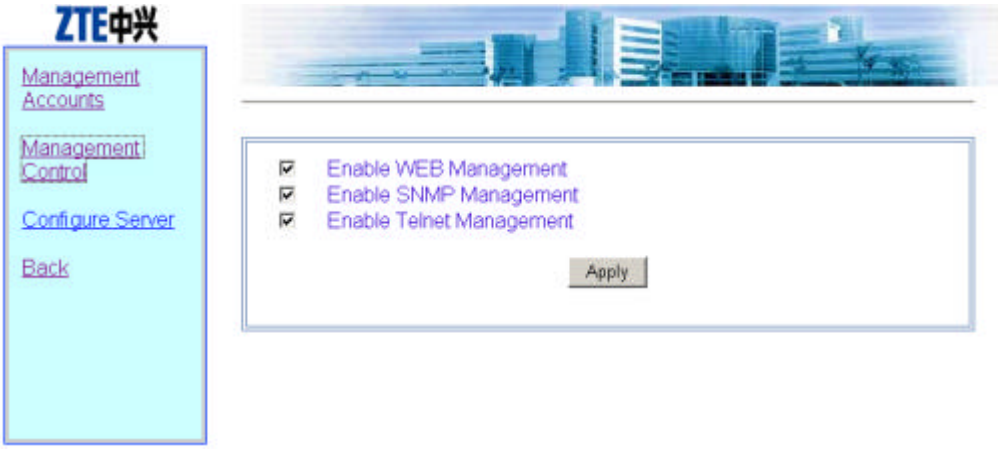


Fig. 6.3-43 Management Control Page

This page serves to enable or disable the WEB, SNMP and Telnet management.

6.3.10.3 Configure Server

In the Management configuration menu, click [Configure Server] and the page shown in Fig. 6.3-44 will appear.

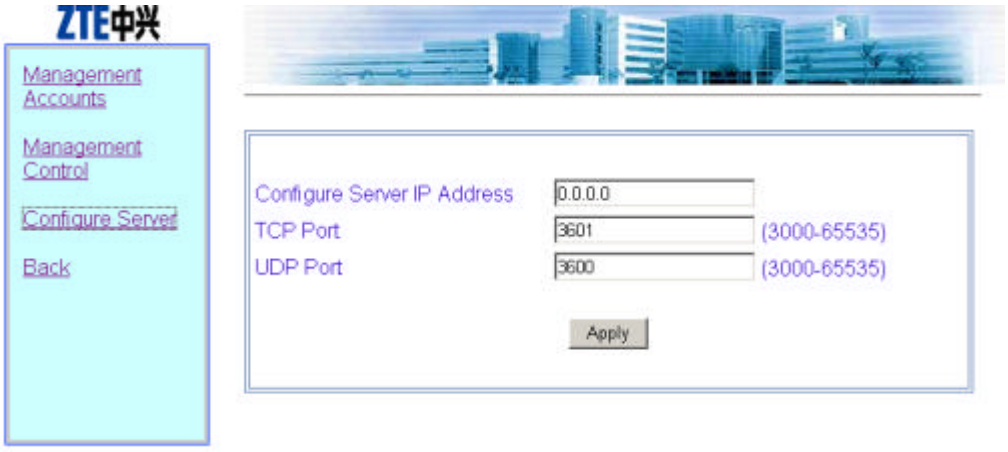


Fig. 6.3-44 Configure Server Configuration Page

This page serves to configure the configuration server parameters: IP address, TCP port ID and UDP port ID.

6.4 Data Submitting Flow of WEB Configuration

After modifying the configuration parameters in the WEB configuration page, the user must submit the modification for confirmation. In the submitting, the system will analyze the data input by the user, if these data are not in the specified range, the system will prompt the wrong parameter. The user should modify it and re-submit it, as shown in Fig. 6.4-1.

Fig. 6.4-1 Prompt of Wrong Data Input

After the data passes the analysis, if the user submits data for the first time after he logs on, the page shown in Fig. 6.4-2 will appear, prompting the user to input superuser password; if the user has submitted the data and the password is correct, he can directly enter the next page to see whether the data is submitted successfully.

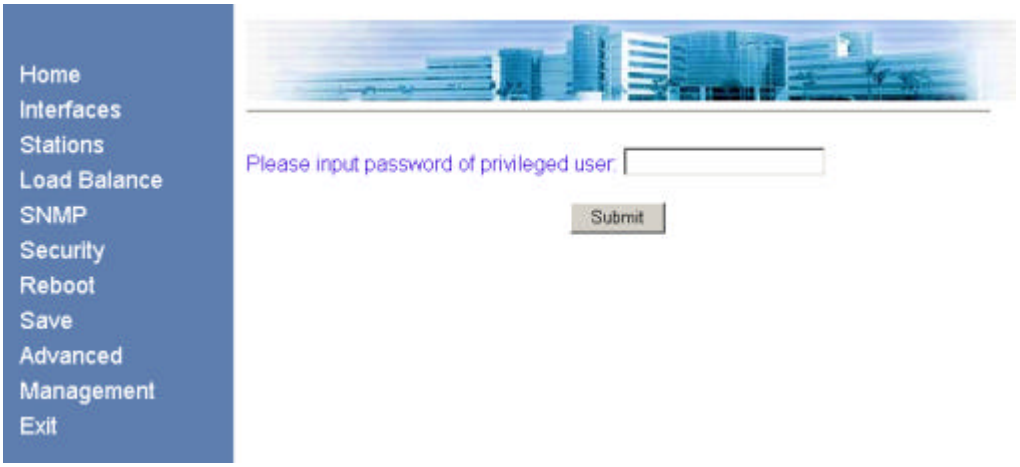


Fig. 6.4-2 Prompt Page of Inputting Superuser Password

If the input password is wrong, the system will enter the page shown in Fig. 6.4-3, prompting wrong password.

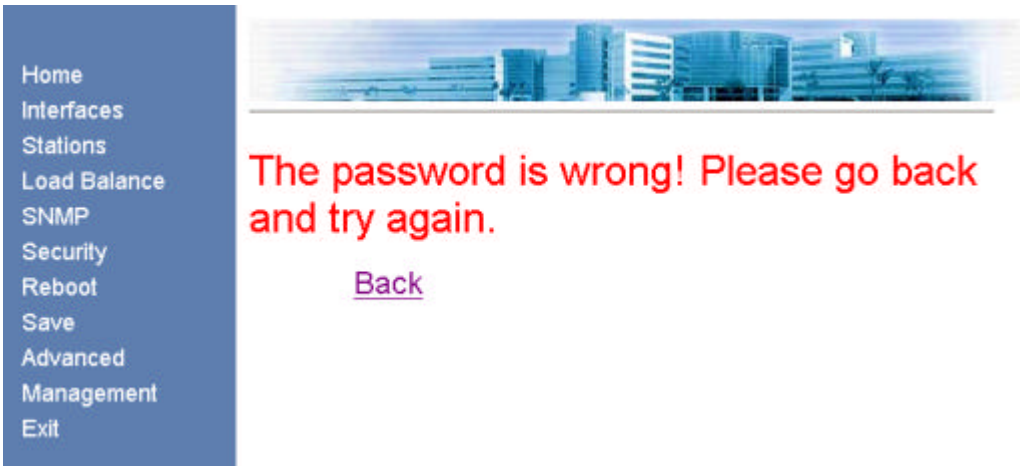


Fig. 6.4-3 Prompt Page of Wrong Superuser Password

If the superuser password is input correctly, the system will re-analyze the input data to determine whether they satisfy the requirements, and return the corresponding prompt information page according to the success/failure of the configuration. If the configuration is successful, the page shown in Fig. 6.4-4 will appear. Click <Back> to return to the WEB page before submission, and the submitted new parameter values will be displayed.

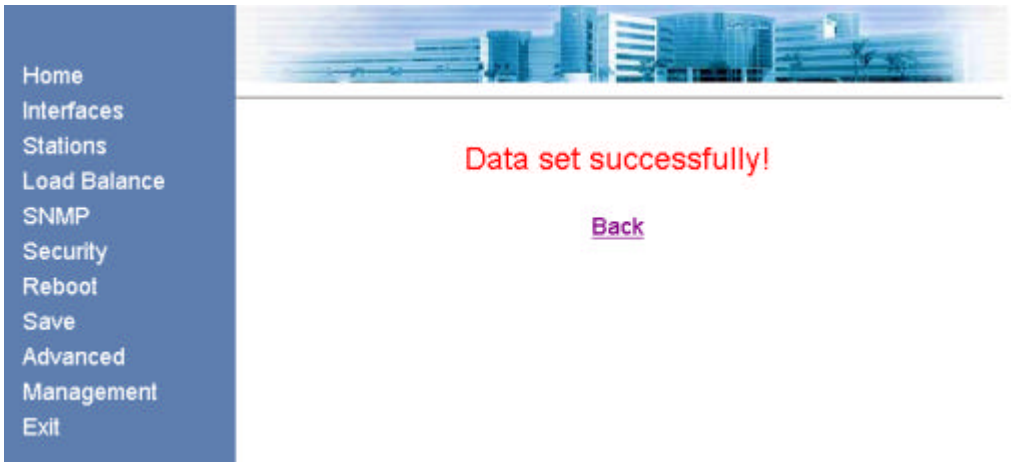


Fig. 6.4-4 Prompt Page of Successful Data Submission

7 Maintenance

This chapter introduces the daily maintenance work of the W800A and the loading and upgrade of the version

7.1 Maintenance Descriptions

To guarantee the normal and stable running of the equipment, please pay attention to the following suggestion and make the daily maintenance according to the daily maintenance operation instructions.

1. Keep the equipment room clean and neat, take dustproof dampproof measures and prevent rats and insects from damaging the cables and other devices.
2. According to related contents of the daily maintenance operation instructions, make routine checks and test every day and make records.
3. Contact the local ZTE office at once when you cannot handle the problems. Handle any emergency calmly.
4. Handle major faults, such as breakdown, according to the major fault handling procedure and contact the local ZTE office immediately.
5. Never reset and load the devices or change data, unless necessary. Back up the data before modifying the data (if necessary). After the running of the device with changed data is confirmed normal, backup the new data. Be sure to separate the new data from the old data. Delete the old data after confirming that everything is OK one week later.
6. Please paste the necessary contact information, such as the phone number and fax number of the local ZTE office, on a conspicuous place of the equipment room, and make sure that all the personnel in the equipment room know this information.

7.2 Daily Maintenance

The running conditions of the device can be detected through the following operations:

1. From the Ethernet switch, PING the management port addresses of all the APs of this switch, to check whether the AP wired ports work normally.
2. For the hot spots adopting the DHCP mode, check whether the legal users can obtain such parameters as IP address, gateway and DNS.
3. Check whether the exit route between the user and Internet is smooth.
4. With the wireless network card, in the AP signal coverage ranges, observe the signal strength and link quality of different areas, PING the gateway IP address, observe packet losses, and check whether Internet access is normal.
5. Make roaming and handover operations in different AP signal coverage ranges, and observe packet losses when pinging the gateway IP addresses, and check whether Internet accesses are normal.

7.3 Version Loading and Upgrade

Before delivering the W800A, the file set and graphical file set of the running version have been loaded into the W800A flash.

The running version file set comprises the following files:

runbin	Running software
database.dat	Database file
zxipcmd.dat	Command script file

The graphical file set is the graph library of the WEB configuration page.

Version loading comprises boot loading and tftp online loading. Boot loading serves to load the running version. Tftp online loading serves to load the running version file and graphical file set. The FTP server software and TFTP server software will be used in version loading. Here, we take Wftpd and Tftpd as examples.

7.3.1 BOOT Loading

Boot bading serves to load the running version. Before loading, please prepare the serial port cables and crossover cables and operate as follows:

1. Separately connect the two ends of the serial port cable to the CONSOLE port of the W800A and the serial port of the PC. Separately connect the two ends of the crossover cable to the Ethernet port of the W800A and the wired network port of the PC.
2. Start the hyper terminal on the PC and run Wftpd.exe to start the FTP server. Please refer to Section 7.3.1.1 for the configurations of the PC serial port and FTP server.
3. Power on the W800A and install or upgrade the version, according to the related commands in Section 7.3.1.2.

7.3.1.1 Configurations of the PC Serial Port and FTP Server

1. Serial port configuration

   For the W800A, the PC serial port configuration is shown in Fig. 7.3-1.

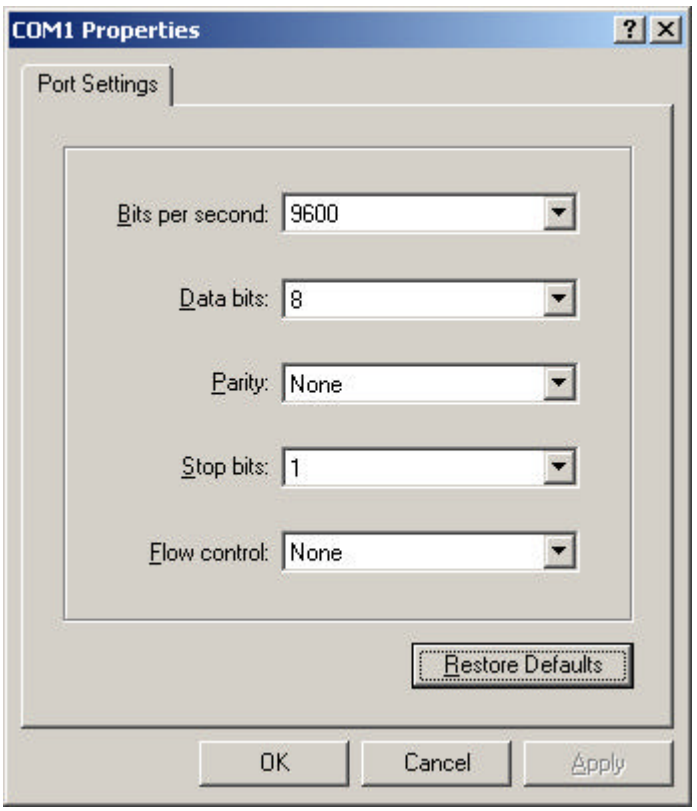


Fig. 7.3-1 Serial Port Configuration

2. FTP server configuration

In the menu of the Wftpd window, select [Security ? Users/Rights…], the interface shown in Fig. 7.3-2 will appear.

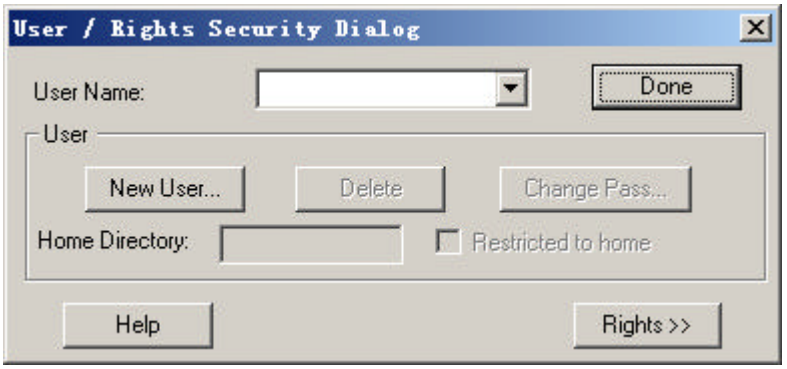


Fig. 7.3-2 Wftpd User Configuration Interface

Add a new user and configure the corresponding password and home directory (the path of the loading file in the PC), as shown in Fig. 7.3-3.

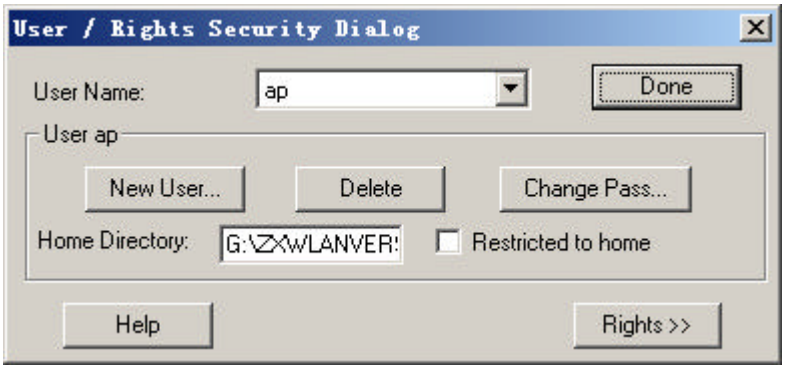


Fig. 7.3-3 Interface of Adding a New Wftpd User

7.3.1.2 BOOT Loading Command

Power on the W800A. When "3" is displayed on the hyper terminal, press any key according to the prompt, and then the prompt [WLAN Boot] will appear.

```
                    WLAN System Boot

CPU: IDT 79EB438
BSP version: 1.2/0
Creation date: Nov  7 2003, 09:43:40
```

```
Press any key to stop auto-boot...
 3
[WLAN Boot]:
```

1. p command

   Function: Displaying the boot parameter.

   Command format: **p**

   Example:

```
[WLAN Boot]: p

boot device              : idt
unit number              : 0
processor number         : 0
host name                : W800A
file name                : vxWorks
inet on ethernet (e) : 168.1.8.88
host inet (h)          : 168.1.8.185
user (u)                 : target
ftp password (pw)    : target
flags (f)                : 0x0

[WLAN Boot]:
```

2. c command

   Function: Modifying the boot parameter.

   Command format: **c**

   Description:

   Modify the following parameters as required:

   file name : File name

   inet on Ethernet (e) : The W800A IP address (for communicating with the host in the version loading).

   host inet (h) : The PC IP address

   user (u) : User name

   ftp password (pw): Password

Example: Change file name into b.hex, change inet on ethernet into 168.1.100.100, change host inet into 168.1.1.200, change user into ap, and change ftp password into ap. The related configurations of user and ftp password should be implemented on the FTP server.

```
[WLAN Boot]: c

'.' = clear field;  '-' = go to previous field;  ^D = quit

boot device              : idt0
processor number         : 0
host name                : W800A
file name                : vxWorks b.hex
inet on ethernet (e) : 168.1.8.88 168.1.1.100
inet on backplane (b):
host inet (h)            : 168.1.8.185 168.1.1.200
gateway inet (g)         :
user (u)                 : target ap
ftp password (pw) (blank = use rsh): target ap
flags (f)                : 0x0
target name (tn)         :
startup script (s)       :
other (o)                :

[WLAN Boot]:
```

3. % command

Function: Formatting the flash disk.

Command format: %

Example: The screen displays the prompt of inputting password, which is zxwlan by default. After each reboot, you need only input the password once. And then the system asks you to confirm flash formatting. Press <y> to begin formatting or press any key to cancel formatting.

```
[WLAN Boot]: %
Please Input Password:
password is right
 This operation will format the Flash disk and you will lose data!!
 Now press 'y' to format the Flash disk. and others to abort.
 are you sure (y/n):
```

```
now is formatting.....

Formatting is OK!
[WLAN Boot]:
```

4. & command

   Function: Loading the running file runbin to the flash.

   Command format: **&**

   Example:

```
[WLAN Boot]: &

boot device              : idt
unit number              : 0
processor number         : 0
host name                : W800A
file name                : vxWorks
inet on ethernet (e) : 168.1.1.100
host inet (h)            : 168.1.1.200
user (u)                 : ap
ftp password (pw)    : ap
flags (f)                : 0x0

Attached TCP/IP interface to idt0.

Loading runbin to flash... received file length  124162
.........
flash receive FLASH:/runbin OK!! length 124162

 the version loading is OK!
[WLAN Boot]:
```

5. # command

   Function: Loading files database.dat and zxipcmd.dat to the flash.

   Command format: **#**

   Example:

```
[WLAN Boot]:#
boot device              : idt
unit number              : 0
```

```
processor number       : 0
host name              : W800A
file name              : vxWorks
inet on ethernet (e) : 168.1.1.100
host inet (h)          : 168.1.1.200
user (u)               : ap
ftp password (pw)    : ap
flags (f)              : 0x0

Attached TCP/IP interface to idt0.
Attaching network interface lo0... done.
Loading zxipcmd.dat to flash... received file length  136a0
flash receive FLASH:/zxipcmd.dat OK!! length 136a0
Loading database.dat to flash... received file length  c64a
flash receive FLASH:/database.dat OK!! length c64a
  the database files loading to flash is OK!
[WLAN Boot]:
```

6. + command

   Function: Loading a specified file to the flash.

   Command format: **+**

   Example: Through the c command, modify the file name parameter: Modify vxworks into b.hex, and then load b.hex into the flash through the + command.

```
[WLAN Boot]: +

boot device            : idt
unit number            : 0
processor number       : 0
host name              : W800A
file name              : b.hex
inet on ethernet (e) : 168.1.1.100
host inet (h)          : 168.1.1.200
user (u)               : ap
ftp password (pw)    : ap
flags (f)              : 0x0

Attached TCP/IP interface to idt0.
filename1 = FLASH:/b.hex
Loading w.hex to flash... received file length  6bc3
```

```
flash receive FLASH:/b.hex OK!! length 6bc3

 the file loading to flash is OK!
[WLAN Boot]:
```

7. s command

   Function: Displaying the files and available space in the flash.

   Command format: **s**

   Example:

```
[WLAN Boot]: s
      fileName          size
      --------          ------
           runbin       1196386
     zxipcmd.dat         79520
   database.dat          79520
          b.hex          27587
available size 563200
[WLAN Boot]:
```

8. - command

   Function: Deleting a file in the flash.

   Command format: **-** *<filename>*

   Example:

```
[WLAN Boot]: - b.hex
delete FLASH:/b.hex OK!!
[WLAN Boot]: s
      fileName          size
      --------          ------
           runbin       1196386
     zxipcmd.dat         79520
   database.dat          79520
available size 591872
[WLAN Boot]:
```

9. v command

   Function: Displaying the version information of the running software runbin.

   Command format: **v**

Example:

```
[WLAN Boot]: v
Version File  Information
product   version_id  offset file_identify run_start filesize
  ap        v2.0.01.a       0x100      0x7f450000          0x80010000   0x124162
[WLAN Boot]:
```

10. r command

Function: Displaying boot version information.

Command format: **r**

Example:

```
[WLAN Boot]:r
BOOTROM_VER V1.0 2003.11.22
[WLAN Boot]:
```

11. * command

Function: Running the version software and starting the W800A functions.

Command format: *****

Example:

```
WLAN Boot]: *

boot device              : idt
unit number              : 0
processor number         : 0
host name                : W800A
file name                : vxWorks
inet on ethernet (e) : 168.1.8.88
host inet (h)            : 168.1.8.185
user (u)                 : target
ftp password (pw)    : target
flags (f)                : 0x0

Attaching to TFFS... done.
Loading FLASH:/runbin...HI ! offset_addr = 256 Starting at 0x80010000...
(Omitted)

[ZXWLAN]:shell restarted.
```

```
                    Welcome to ZTE W800A
wlan>
```

7.3.2 TFTP Online Loading

When the W800A works normally, through the TFTP transmission protocol, you can download files from the host and save them into the equipment flash. The size of the online loaded files are limited by the flash space, which is only 2M. At present, Tftp online loading can load the running version file and graphical file set.

7.3.2.1 Starting the TFTP Server

Set the PC IP address and W800A management interface address in the same network section and run Tftpd.exe (or other TFTP server software supporting the extension TFTP). In the menu of the Tftpd window, click [Tftpd ? Configure] to configure the path of the file to be downloaded, as shown in Fig. 7.3-4.

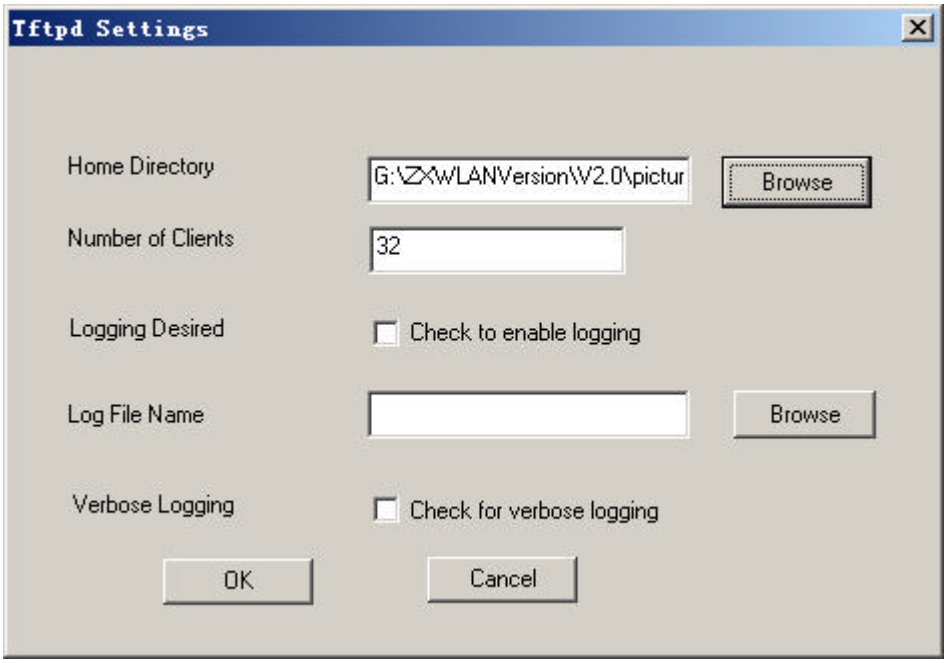


Fig. 7.3-4 TFTP Configuration Interface

In the menu of the Tftpd window, click [Tftpd ? Start] to start the TFTP server.

7.3.2.2 TFTP File Loading Commands

Through the Telnet client, log on to the W800A and enter the configure mode, execute the tftp command to load the required file.

1. Load the running version file

   Command mode: Configure mode

   Command format: **tftp get** <*A.B.C.D*> <*file-name*>

   Description: <*A.B.C.D*> is the TFTP host address, <*file-name*> is the file to be loaded, such as files runbin, database.dat and zxipcmd.dat.

   Example:

```
wlan(config)#tftp get 192.168.1.250 database.dat
tftp store of database.dat to host 192.168.1.250 (192.168.1.250) started
% Start .....
Have send 10240 BYTE:20 %
Have send 20480 BYTE:40 %
Have send 30720 BYTE:60 %
Have send 40960 BYTE:80 %
Have send 51200 BYTE:100 %
% Put file successful!!
Done with tftp send of database.dat
wlan(config)#
```

2. Load the graphical file set.

   Command mode: Configure mode

   Command format: **tftp pic** <*A.B.C.D*>

   Description: <*A.B.C.D*> is the TFTP host address.

   Example:

```
wlan(config)#tftp pic 192.168.1.250
tftp fetch of zte.gif from host 192.168.1.250 (192.168.1.250) started
% Get file successful!!
Done with tftp get of zte.gif

tftp fetch of back.gif from host 192.168.1.250 (192.168.1.250) started
% Get file successful!!
Done with tftp get of back.gif

(Omitted)
tftp fetch of login41.gif from host 192.168.1.250 (192.168.1.250) started
% Get file successful!!
Done with tftp get of login41.gif
```

```
tftp fetch of login44.jpg from host 192.168.1.250 (192.168.1.250) started
% Get file successful!!
Done with tftp get of login44.jpg
wlan(config)#
```

7.4 Alarms and Handling

Table 7.4-1 lists the possible alarms in the W800A running process and describes the levels, causes and handling of the alarms.

Table 7.4-1 Summary of the Alarm Information

Alarm Name	Level	Possible Cause	Handling	Remarks
System Reboot!	1	The system is restarted.		
Wireless Card Error!	1	The wireless network card does not exist .	Make sure that the wireless network card is inserted correctly .	
System Task Suspend!	1	The system task has been suspended.	Record the suspended task position and contact with ZTE to solve the fault.	
Ethernet Interface Link Status!	2	Wired interface connection is up or down.	Make sure that the wired interface is connected correctly.	
IP Address Conflicting!	3	The addresses are configured incorrectly, so the addresses conflict.	Re-configure the addresses.	
IP Address Add!	3	An address has been added in the system.	Make sure that the added address is valid.	
IP Address Delete!	3	An address has been deleted in the system.	Make sure that the address is deleted correctly.	
WEP mode Changed!	3	WEP encryption mode has been changed.		
WEP key Changed!	3	WEP encryption secret key has been changed.		
ESSID Changed!	3	ESSID has been changed	Inform the related users that the 800A ESSID is changed.	
Channel Changed!	3	The channel has been changed.		
Telnet Access Failed Number Overload	3	The Telnet terminal quantity exceeds the maximum.	Disable the unnecessary terminals and log on again.	
Station Up!	3	A user has connected to 800A.		

Alarm Name	Level	Possible Cause	Handling	Remarks
Station Down!	3	A user has cancelled the connection with 800A.		
Iapp Detected AP Address Conflicting!	3	Iapp has detected the user address conflict.	Inform the user to change the address.	
No Authentication Station Try to Access AP!	3	An un-authenticated user has tried to access 800A.		
Wireless Mode Changed!	3	The wireless mode has been changed.	Inform the related users.	

Appendix A Package, Transportation and Storage

It describes the packing methods, storage conditions and transportation precautions. It serves as a guide to the transportation, unpacking, installation and relocation of the equipment.

A.1 Package

Table A.1-1 W800A Packing List

Name	Dimensions	Quantity	Remarks
W800A	208mm × 180mm × 47mm	1	
Power adapter		1	
Console configuration cable		1	
Delivery attached document CD		1	
Warranty card	32K	1	
Certificate of quality	32K	1	

A.2 Transportation

Handle it with care. Never place it upside down in transportation.

A.3 Storage

Pack it before storage. The storage temperature/humidity requirements are:

Storage temperature: -40 °C ~ 70 °C

Relative humidity: 10% ~ 100%

Appendix B Making of Ethernet Cable

It introduces the power supply mode of W800A Ethernet and making of Ethernet cables.

B.1 W800A System Application Modes

The common application networking mode of the IP wireless access system is shown in Fig. B.1-1.

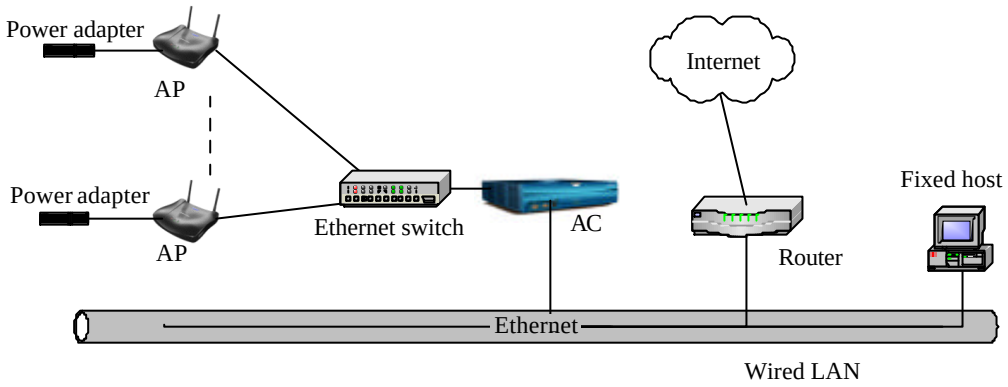
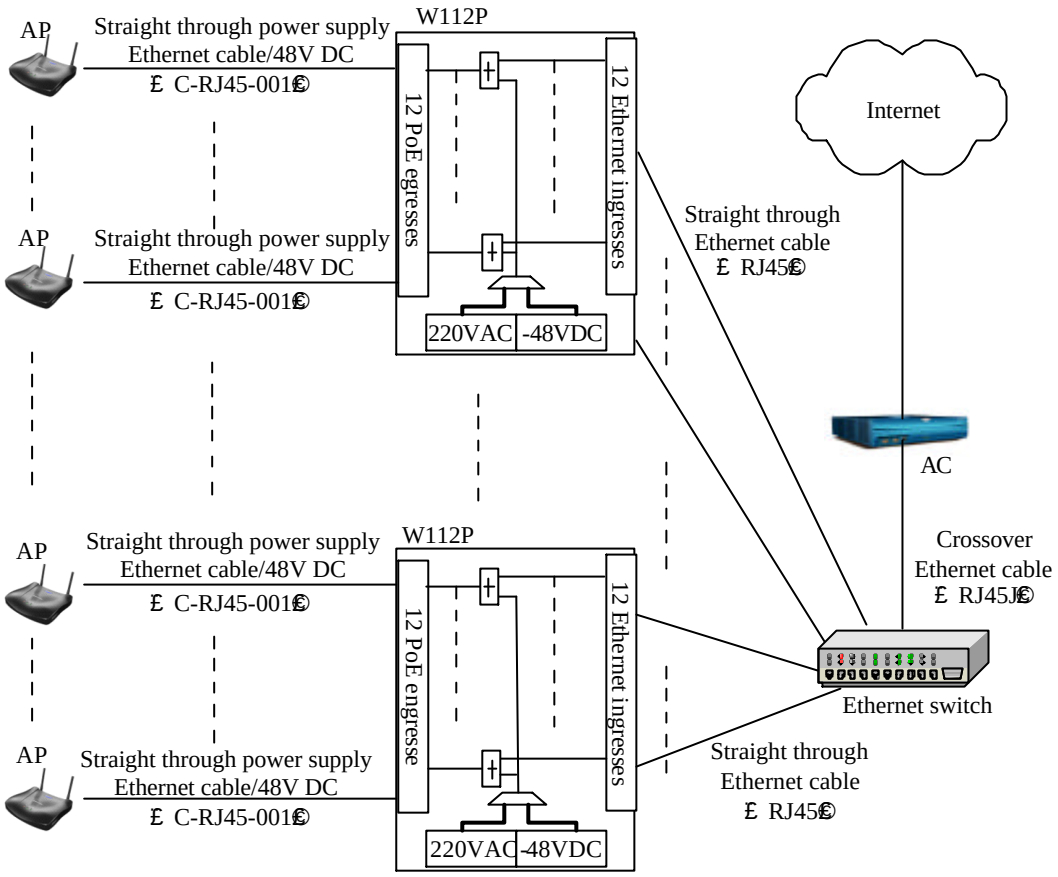


Fig. B.1-1 Common Application Networking Mode of the IP Wireless Access System

AP serves to access the wireless users in this way: It accesses the Ethernet switch through 10/100 M Ethernet in the uplink way, and it is authenticated by AC and then accesses Internet through the router. AC servers as the authentication and accounting equipment in the system. Some areas with low requirements may be configured with no AC according to the actual requirements. In the system, AP and Ethernet switch, Ethernet switch and AC, and AC and router are connected through 10/100 M Ethernet.

In the common application mode, the attached power adapters of the devices convert the external power voltage into the suitable DC working voltage.

The wireless LAN system, especially APs, features wide distribution range, the engineering environment is rather complicated and some areas can not provide AC power, so the remote power supply is required at this time. The IP wireless access system provides the Ethernet power supply (PoE) solution, as shown in Fig. B.1-2.



The ratio of AP: W112P is 12:1 at most

W112P: Power source end of the Ethernet Power Supply (PoE)

Fig. B.1-2 Application of the System with Ethernet Power Supply

In Fig. B.1-2, Ethernet cables are: straight through Ethernet cable, straight through Ethernet power cable and crossover Ethernet cable. In practical applications, AP and AC may come from different producers, so the network cables should be determined according to the detailed configurations.

According to the Ethernet specifications, 100 Base-T Ethernet features less than 100m transmission distance and 10 Base-T Ethernet features not greater than 300m transmission distance. So, in the wireless LAN system, no matter whether Ethernet power supply is adopted, when the total routing length (L) between the AP and Ethernet switch is greater than 100m (less than 300m), it is suggested to configure the Ethernet switch port as 100 M.

B.2 Making of Ethernet Cables

B.2.1 Making of Straight Through Ethernet Cables (RJ45)

In IP wireless access system, the following network cables must adopt the straight through Ethernet cables:

1. The Ethernet cable between the Ethernet switch (end A) and W112P (end B).
2. When no Ethernet switch is used, AP will directly connect with the AC downlink port, at this time, the Ethernet cable between the AC (end A) and AP (end B) must be straight through Ethernet cable.
3. In the cases where no Ethernet switch is used, as when the system adopts the Ethernet power supply, the AC downlink port will directly connect with W112P, at this time, the Ethernet cable between the AC (end A) and W112P (end B) must be straight through Ethernet cable.

The connections of the straight through Ethernet cables are shown in Table B.2-1.

Table B.2-1 Connections of Straight Through Ethernet Cables (RJ45)

End A	Signal Name	Conductor Color	End B	Signal Name	Conductor Color
1	Data receiving Rx+	White/orange	1	Data transmitting Tx+	White/orange
2	Data receiving Rx-	Orange	2	Data transmitting Tx-	Orange
3	Data transmitting Tx+	White/green	3	Data receiving Rx+	White/green
4	MATCH1	Blue	4	MATCH1	Blue
5	MATCH2	White/blue	5	MATCH2	White/blue
6	Data transmitting Tx-	Green	6	Data receiving Rx-	Green
7	MATCH3	White/brown	7	MATCH3	White/brown
8	MATCH4	Brown	8	MATCH4	Brown

B.2.2 Making of Straight Through Power Supply Ethernet Cables (C-RJ45-001)

The Ethernet cable between the W112P (end A) and AP (end B) not only serves as the Ethernet data signal cable, but also provides -48V DC power for two twisted pairs 4&5 and 7&8 on the load balance, to power AP remotely.

The connection method of this cable is the same as that of the straight through cable without power supply, and the connection table is shown in Table B.2-2.

Table B.2-2 Connections of Straight Through Power Supply Ethernet Cables (C-RJ45-001)

End A	Signal Name	Conductor Color	End B	Signal Name	Conductor Color
1	Data receiving Rx+	White/orange	1	Data transmitting Tx+	White/orange
2	Data receiving Rx-	Orange	2	Data transmitting Tx-	Orange
3	Data transmitting Tx+	White/green	3	Data receiving Rx+	White/green
4	GND	Blue	4	GND	Blue
5	GND	White/blue	5	GND	White/blue
6	Data transmitting Tx-	Green	6	Data receiving Rx-	Green
7	-48V	White/brown	7	-48V	White/brown
8	-48V	Brown	8	-48V	Brown

Note:

These cables contain -48 V DC power supply. Do prevent any short circuits; otherwise, the signal will be interrupted and the equipment may not work normally, and even the equipment protection action will be activated. GND and -48 V each occupy one twisted pair. These twisted pairs should be separate, otherwise short circuit may occur.

B.2.3 Making of Crossover Ethernet Cables (RJ45J)

The connections of the crossover Ethernet cables are shown in Table B.2-3.

Table B.2-3 Connections of Crossover Ethernet Cables (RJ45J)

End A	Signal Name	Conductor Color	End B	Signal Name	Conductor Color
1	Data receiving Rx+	White/orange	3	Data transmitting Tx+	White/green
2	Data receiving Rx-	Orange	6	Data transmitting Tx-	Green
3	Data transmitting Tx+	White/green	1	Data receiving Rx+	White/orange
4	MATCH1	Blue	4	MATCH1	Blue
5	MATCH2	White/blue	5	MATCH2	White/blue
6	Data transmitting Tx-	Green	2	Data receiving Rx-	Orange
7	MATCH3	White/brown	7	MATCH3	White/brown
8	MATCH4	Brown	8	MATCH4	Brown

Note:

The signals and connection methods mentioned here are designed according to the signal definitions of the ZTE AC equipment interface. If the AC in the actual engineering is not from ZTE, modify the cable making methods according to the actual conditions.

B.2.4 Ethernet Cable Label

After the Ethernet cable is crimped, paste labels on ends A and B of the network cable, indicating name and length of this cable.

1. Label of the straight through Ethernet cable

   The label of the straight through Ethernet cable (RJ45) is shown in Fig. B.2-1.

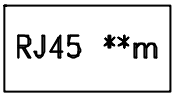


Fig. B.2-1 Label of the Straight Through Ethernet Cable

   In the diagram, "**m" indicates the actual length of the cable.

2. Label of the straight through power supply Ethernet cable

   The label of the straight through power supply Ethernet cable (C-RJ45-001) is shown in Fig. B.2-2.

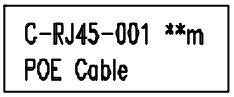


Fig. B.2-2 Label of the Straight Through Power Supply Ethernet Cable

   In the diagram, "**m" indicates the actual length of the cable; "PoE Cable" indicates that this is the Ethernet power cable.

3. Label of the Crossover Ethernet Cable

   The label of the crossover Ethernet cable (RJ45J) is shown in Fig. B.2-3.

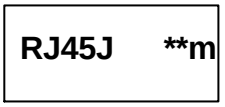


Fig. B.2-3 Label of the Crossover Ethernet cable

In the diagram, "**m" indicates the actual length of the cable; "J" after "RJ45" indicates that this is the crossover Ethernet cable.

Warning:

Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. Any change to the equipment will void FCC grant.

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