WIFI Analogue Telephone Adapter
W110/W200

For SIP

User's Manual

Version 1.18

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Prefaces

0.1 About This Manual

This manual is designed to assist users in using Wi-Fi Analogue Telephone Adapter (ATA). Information in this document has been carefully checked for accuracy; however, no guarantee is given as to the correctness of the contents. The information contained in this document is subject to change without notice.

0.2 Copyright Declarations

0.3 Trademarks

Products and Corporate names appearing in this manual may or not be registered trade marks or copyrights of their respective companies, and are used only for identification or explanation and to the owners' benefit, without to infringe.

0.4 Safety Instructions

The most careful attention has been devoted to quality standards in the manufacture of the Wi Fi Analogue Telephone Adapter (ATA). Safety is a major factor in the design of every set. But, safety is your responsibility too.

- Use only the required power voltage. Power Input: AC 110V/220V, 50-60Hz
- To reduce the risk of electric shock, do not disassemble this product. Opening or removing covers may expose the WIFI ATA to hazardous voltages. Incorrect reassembly can cause electric shock when this product is subsequently used.
- Never push objects of any kind into the equipment through housing slots since they may touch hazardous voltage points or short out parts those could result in a risk of electric shock. Never spill liquid of any kind on the product. If liquid is spilled, please refer to the proper service personnel.
- Use only Unshielded Twisted Pair (UTP) Category 5 Ethernet cable to RJ-45 port of the Analogue Telephone Adapter (ATA).

0.5 Warranty

We warrant to the original end user (purchaser) that the WIFI series Analogue Telephone Adapter (WIFI ATA) will be free from any defects in workmanship or materials for a period of one (1) years from the date of purchase from the dealer. Please keep your purchase receipt in a safe place as it serves as proof of date of purchase. During the warranty period, and upon proof of purchase, should the product have indications of failure due to faulty workmanship and/or materials, we will, at our discretion, repair or replace the defective products or components, without charge for either parts or labor, to whatever extent we deem necessary to re-store the product to proper operating condition. Any replacement will consist of a new or re-manufactured functionally equivalent product of equal value, and will be offered solely at our discretion. This warranty will not apply if the product is modified, misused, tampered with, damaged by an act of God, or subjected to abnormal working conditions. The warranty does not cover the bundled or licensed software of other vendors. Defects which do not significantly affect the usability of the product will not be covered by the warranty. We reserve the right to revise the manual and online documentation and to make changes from time to time in the contents hereof without obligation to notify any person of such revision or changes.

Note

Repair or replacement, as provided under this warranty, is the exclusive remedy of the purchaser. This warranty is in lieu of all other warranties, express or implied, including any implied warranty of merchantability or fitness for a particular use or purpose. We shall in no event be held liable for indirect or consequential damages of any kind of character to the purchaser.

Introduce

The W110/W200 series are the low cost WIFI CPE providing providing Internet Access as well as VoIP Solutions. This document describes the usage of ATA (Analogue Telephone Adapter)

1.1 Overview

- An Wireless Analogue Telephone Adapter, or WATA, is a device that allows one to connect to the Internet for Data Access as well connect a normal PSTN telephone to the Internet in order to make or place telephone calls.ATA provides a direct analog interface for PSTN, PBX, fax MAChines, analog telephones, and other devices that require an analog port.
- ATA provides a direct analog interface for PSTN, PBX, fax MAChines, analog telephones, and other devices that require an analog port.
- With a built-in IEEE 802.11b/g wireless AP/CPE, the Wi-Fi ATA offers wireless connectivity via 54Mbps data transmissions.

1.2 Acronyms Table

Acronym:	Full Name:	Acronym:	Full Name:
API	Application Interface	ACI	Audio CODEC Interface
ADC	Analog to Digital Converter	CODEC	Coder / Decoder
DAC	Digital to Analog Converter	DC	Direct Current
DDNS	Dynamic Domain Name System	DHCP	Dynamic Host Configuration Protocol
DMZ	Demilitarized Zone	DNS	Domain Name System
DTMF	Dual Tone Multi Frequency	FXO	Foreign Exchange Office
FXS	Foreign Exchange Station	GMT	Greenwich Mean Time
IP	Internet Protocol	IPsec	Internet Protocol Security
L2TP	The Layer 2 Tunnel Protocol	LAN	Local Area Network
WAN	Wide Area Network	MAC	Media Access Control
MII	Media Independent Interface	NAT	Network Address Translation
NTP	Network Time Protocol	PPTP	Point-to-Point Tunneling Protocol
RTP	Real-Time Transport Protocol	RTCP	Real-Time Transport Control Protocol (also known as RTP control protocol)
SIP	Session Initiation Protocol	SLIC	Subscriber Line Interface Circuit
STUN	Simple Traversal of UDP through NATs	URI	Uniform Resource Identifier
TCP	Transmission Control Protocol	UDP	User Datagram Protocol
UPnP	Universal Plug and Play	VoIP	Voice Over Internet Protocol
RSSI	Received Strength Signal Indicator	SSID	Service Set ID

1.3 Introduction

This Wireless Analogue Telephone Adapter (WATA) provides a total solution for integrating voice-data network and PSTN wirelessly.
W200/W110 is high performance Wireless Router + VoIP gateway that provides small and medium-size offices with faster wireless internet access and VoIP service.

Model	FXO Port	FXS Port	PSTN	WAN Port	LAN Port	RJ-11 port	802.11 b/g	SIP
W110	0	1	1	1	1	2	√	√
W200	0	2	0	1	1	2	√	√

1.4 Front Panel LED Indicators & Rear Panels

W110 /W200

LED	State	Description
1. POWER	On	ATA is power ON
	Off	ATA is power Off
2. LAN port	On	LAN is connected successfully
	Flashing	Data is transmitting
	Off	Ethernet not connected to PC
3. WAN port (0r the 2nd LAN port)	On	ATA network connection established
	Flashing	Data traffic on cable network
	Off	Waiting for network connection
4. Phone 2 (FXS 2)	Off	Telephone Set is On-Hook
	Flashing	Ring Indication
	On	Telephone Set is Off-Hook
5. Phone 1 (FXS 1)	Off	Telephone Set is On-Hook
	Flashing	Ring Indication
	On	Telephone Set is Off-Hook
6. WLAN port	On	Wireless network connection established
	Flashing	Data traffic on cable network
	Off	Waiting for network connection

1.5 WIFI ATA Specification

VoIP Key Features:

- Support SIP protocols: SIP Registration and Digest Authentication.
- Smart VoIP call Dialing Book: VoIP call Book could provide any application VoIP call to any type destination (Domain name/IP address, PSTN or PBX) or hunting number setting.
- NAT traversal: This feature allows ATA to operate behind any NAT/Firewall device. There is no need to change any configuration of NAT/Firewall like setting virtual server.
- Smart-QoS Guaranteed: This bandwidth management feature provide good voice quality when user place VoIP call and access internet at the same time. The ATA will start reserve bandwidth for voice traffic automatically when VoIP call proceeds.
- Voice channels status display: This function displays each port status as On-hook, Off-hook, calling number callee's number, talk duration, codec.

Telephony Specification:

- Voice Codec: G.711(A-law /μ-law), G.729 AB, G.723 (6.3 Kbps / 5.3Kbps), G.276 (16,24,32,40 Kbps)
- FAX support : T.38,G.711 Fax pass-through
- G.168-2000 Line Echo Canceller.
- Call Waiting
- Call Hold/Resume
- Call Transfer: Blind Transfer / Early Attended Transfer / Attended Transfer
- Call Forward: On Busy Forward / No Condition forward / No Answer Forward
- Call Screen: Incoming Call Screen (Reject or Forward Incoming Call) / Outgoing Call Screen (Blocking Outgoing Call)
- Multi-Line Appearance
- DTMF Relay : In-band DTMF Relay / Out-of-band DTMF Relay (RFC2833)
- **3-Way Conference**

IP Specification:

- SIP (RFC 3261) , SDP (RFC 2327), Symmetric RTP,
- STUN (RFC3489), ENUM (RFC 2916), RTP Payload for DTMF Digits (RFC2833), Outbound Proxy Support, uPnP(UpnPTM)
- LAN :NAT, DHCP Server
- WAN: PPPoE client, DHCP client, Fix IP Address, DDNS client
- Network Address Translation: Providing build-in NAT router function.
- Static Routing
- Virtual Server
- Virtual DMZ
- QoS : IP TOS (IP Precedance) / DiffServ

Call Features:

- Voice channels CDR (Call Detail Record)
- Adjustable volume : - 9 db ~ 9 db
- VAD (Voice Activity Detection)
- Dynamic Jitter Buffer
- CNG (Comfort Noise Generation)
- Lost Packet Concealment
- Caller ID Detection: DTMF CID / Bellcore CID / ETSI CID /
- NTT CID Detection (Optional)
- Caller ID Generation: DTMF CID / Bellcore CID / ETSI CID /
- NTT CID Generation (Optional)

Configuration & Management:

- Web-based Graphical User Interface

- Remote management over the IP Network
- FTP firmware upgrade
- Backup and Restore Configuration file
- Auto Provisioning

General Specification:

- AC power : AC100V-240V, DC12V/1.5A,50/60 Hz
- Temperature: 0°C ~ 40°C (Operation)
- Humidity: up to 90% non-condensing
- Emission: FCC Part 15 Class B, CE Mark
- Dimension : 170 x 100 x 35 mm
- Weight: 200g

Wireless LAN:

- Standards : IEEE 802.11g / IEEE 802.11b / IEEE 802.11.(54Mbps)
- Wireless Frequency Range : 2.4GHz - 2.4835 GHz.
- Wireless Distribution System :AP Only Mode, AP-Client Mode, AC Only Mode.
- Security :64/128 bit WEP data encryption ,WPA,WPA-PSK,WPA2,WPA2-PSK,WPA/WPA2 mix mode,WPAPSK/WPA2PSK mix mode.
- Wireless Signal Range : Indoors: Up to 230 ft (70 meters) / Outdoors: Up to 1050 ft (320 meters)
- Modulation Technology :802.11b: 11Mbps,5.5Mbps:CCK,2Mbps DQPSK,1Mbps DBPSK / 802.11g:54Mbps,48Mbps,36Mbps,24Mbps,18Mbps,12Mbps19Mbps,6Mbps OFDM.
- External Antenna Type : 2dBi Gain detachable dipole antenna with reverse SMA connector.

Installation and Setup

2.1 Package Content

Please check enclosed product and its accessories before installation. (Refer to the item number). These contents are from pre-released product. The contents for the final product might change a little bit.

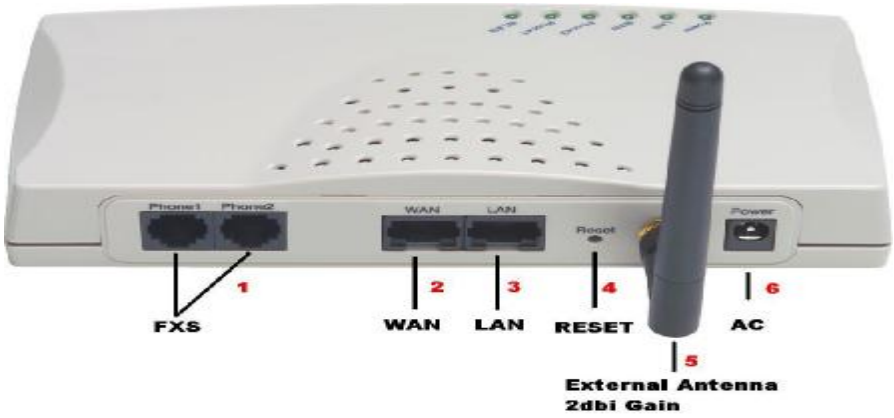
W110/W200 Package

The Wi-Fi ATA packet contents:

Wi-Fi ATA (W110 / W200 Series)	X1
RJ-45	X1
AC Power Adapter	X1

2.2Hardware Installation

Port Description: DEMO Model W110/W200



Item	Port	Description
1	FXS(Foreign Exchange Station)	FXS port can be connected to analog telephone sets or Trunk Line of PBX.
2	WAN(Wide Area Network) /or 2nd LAN port in WATA client mode.	Connect to the network with an Ethernet cable. This port allows your ATA to be connected to an Internet Access device, e.g. router, cable modem, ADSL modem, through a networking cable with RJ-45 connectors used on 10BaseT and 100BaseTX networks.
3	LAN(Local Area Network)	Connect to PC with Ethernet cable. 1 port allows your PC or Switch/Hub to be connected to the ATA through a networking cable with RJ-45 connectors used on 10BaseT and 100BaseTX

		networks.
4	RES(Reset button)	Push this button until 3 seconds, and ATA will be set to factory default configuration.
5	External Antenna 2db Gain (Wireless LAN Area Network).	Used to Wirelessly Connect to 802.11b/g networks. 802.11b: 11Mbps,5.5Mbps:CCK,2Mbps DQPSK,1Mbps DBPSK .802.11g:54Mbps,48Mbps,36Mbps,24Mbps,18Mbps,12Mbps19Mbps,6Mbps OFDM.
6	AC power(DC in 12V)	A power supply cable is inserted

Installation:

1 Connect the 12V DC IN to the power outlet with power adaptor.
2 Connect FXO to PSTN.
3 Connect FXS to a telephone jack with the RJ-11 analog cable.

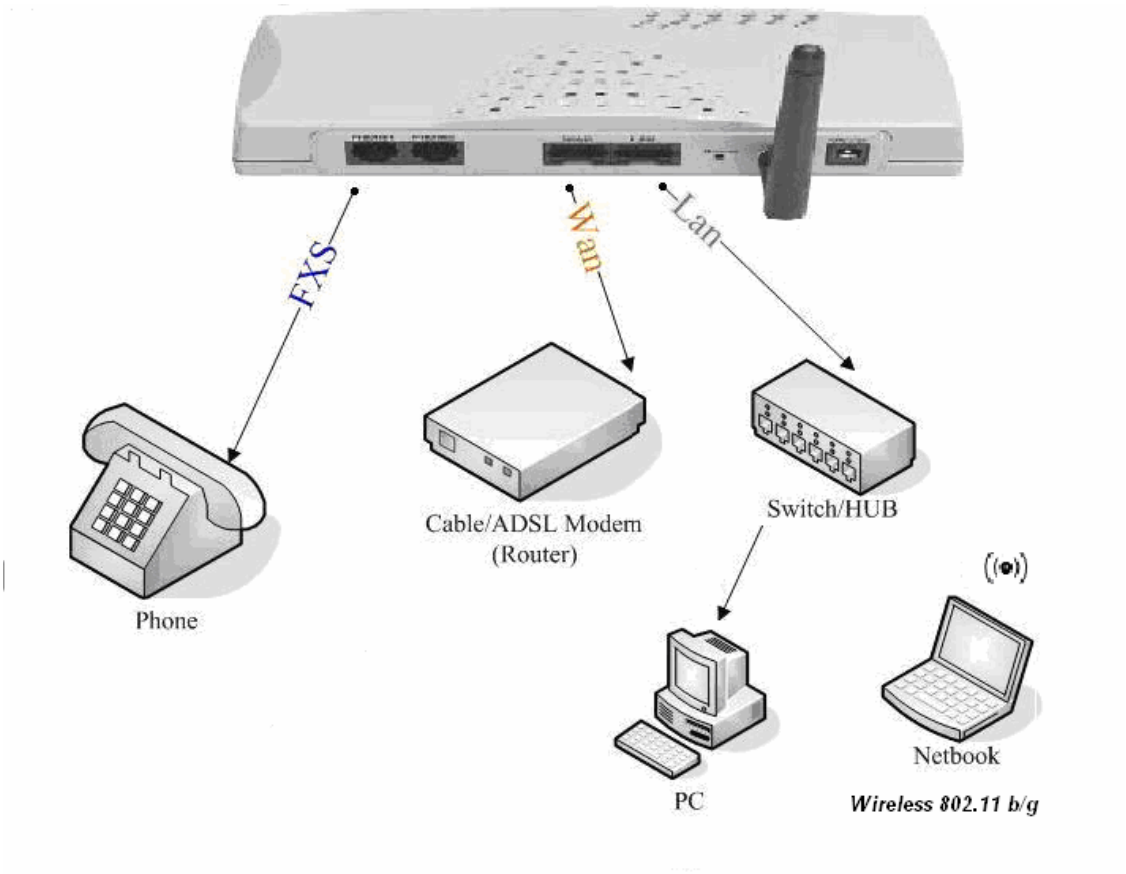
Connecting to a PC:

1 Connect the Ethernet cable (with RJ-45 connector) to any LAN port.
2 Connect the other end of the Ethernet cable to your PC's installed network interface card (NIC).

Connecting to an External Ethernet Hub or Switch:

1 Connect the Ethernet cable (with RJ-45 connector) to WAN port.
2. Connect the other end of the Ethernet cable to DSL/Cable modem or the external Ethernet hub or switch.

W200/W110



2.3Quick Start

How to set your network environment?

ATA default network environment:
For Wan:
IP: 192.168.1.1
Subnet mask: 255.255.255.0
Default Gateway: 192.168.1.254
For Lan:
IP: 222.222.222.1
Subnet mask: 255.255.255.0
Default Gateway: 222.222.222.254

How to connect your pc to the WATA?

1. Configure your LAN port to get an IP address via DHCP.
2. Use RJ-45 cable connect to the LAN Port of the WIFI ATA.
3. Use web browser (IE/Firefox) link to url: Connect to LAN port (default), link to url: http://222.222.222.1
4. Login user name: admin
5. Login password: admin
6. Use this web configuration interface to configure all system functionality; firstly you should change the WAN network environment to yours.

How to use VoIP?

1. Configure SIP user account to register your SIP proxy, use web configuration:
   "SIP Settings" -> "Account Setting"
   a. Port Phone Number
   b. Port Authentication User Name
   c. Port Authentication Password
   d. Confirmed Password
2. Configure SIP registrar server and proxy server, use web configuration:
   "SIP Settings" -> "Server Setting"
   a. Registrar Server Address
   b. Outbound Proxy Address
3. Make sure WIFI ATA has already registered to your proxy, and then you can make a call

How to make a three way conference call?

1. Make a call to the first party.
2. "Flash hook" to hold the call.
3. Dial "**", and then you will hear a dial tone.
4. Make the other call to the third party.
5. Dial "*3" to connect the two party calls for conferencing.

2.4 Wizard Setup

Wizard for Quick Setup WIFI ATA, after finishing the authentication, the Main menu will display 4 parts of configuration, please click “ Wizard Setup ” to enter quick start:

SETUP **1.Operation Mode**
- a . AP Only Mode
- b . AC Only Mode
- c . AP & AC Client Mode

2.Internet Setting
- a. AP Only Mode
- b. AC Only Mode
- c. AP & AC Client Mode

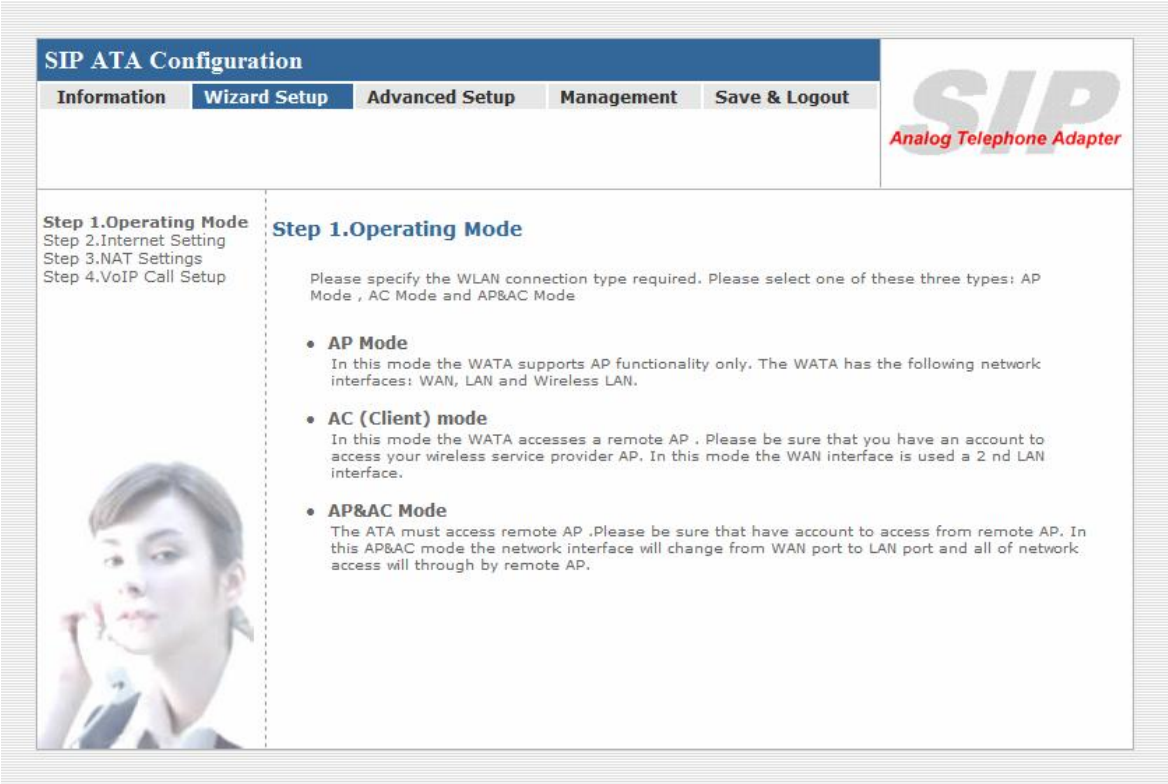
3.NAT Settings
- a . Phone Number
- b . SIP Proxy Server IP

4.VOIP Call Setup
- a . Phone Number
- b . SIP Proxy Server IP

1. Operation Mode:

For most users, Internet access is the primary application. The WIFI ATA support the WAN interface for Internet access and remote access. The following sections will explain more details of WAN Port Internet access and broadband access setup. When you click “**Operation Mode**” from within the Wizard Setup, the following setup page will be show.

Three methods are available for Internet Access:



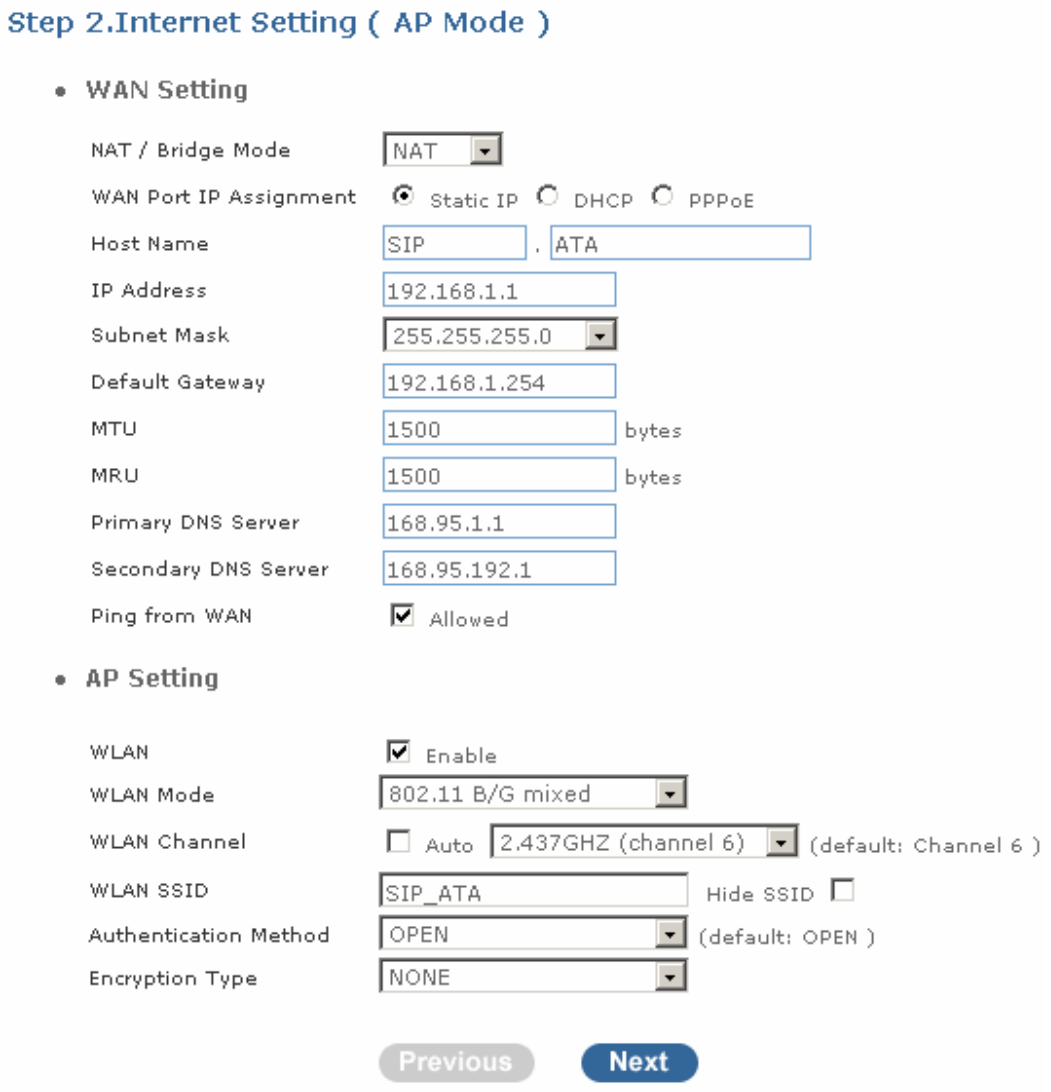
a . AP Only Mode: In this mode the WATA supports AP functionality only. The WATA has the following network interfaces: WAN, LAN and Wireless LAN.

b . AC (Client)Only Mode: In this mode the WATA accesses a remote AP . Please be sure that you have an account to access your wireless service provider AP. In this mode the WAN interface is used a 2nd LAN interface.

c . AP&AC Client Mode : The ATA must access remote AP .Please be sure that have account to access from remote AP. In this AP&AC mode the network interface will change from WAN port to LAN port and all of network access will through by remote AP.

2. Internet Setting Setup:

a. AP Only Mode



◦ **) WAN Setting**

□NAT / Bridge Mode :

NAT Mode: Network Address Translation (NAT) is a method of connecting multiple computers to the Internet using one IP address.

Bridge Mode : Bridge mode is a connects a local area network (LAN / Wireless) to another local area network that uses the same protocol.

□WAN Port IP Assignment : Three methods are available for Internet Access .Static IP / DHCP / PPPoE type for your select .you should refer to section 3.1 “WAN Setting” in user menu.

◦ **) AP Setting**

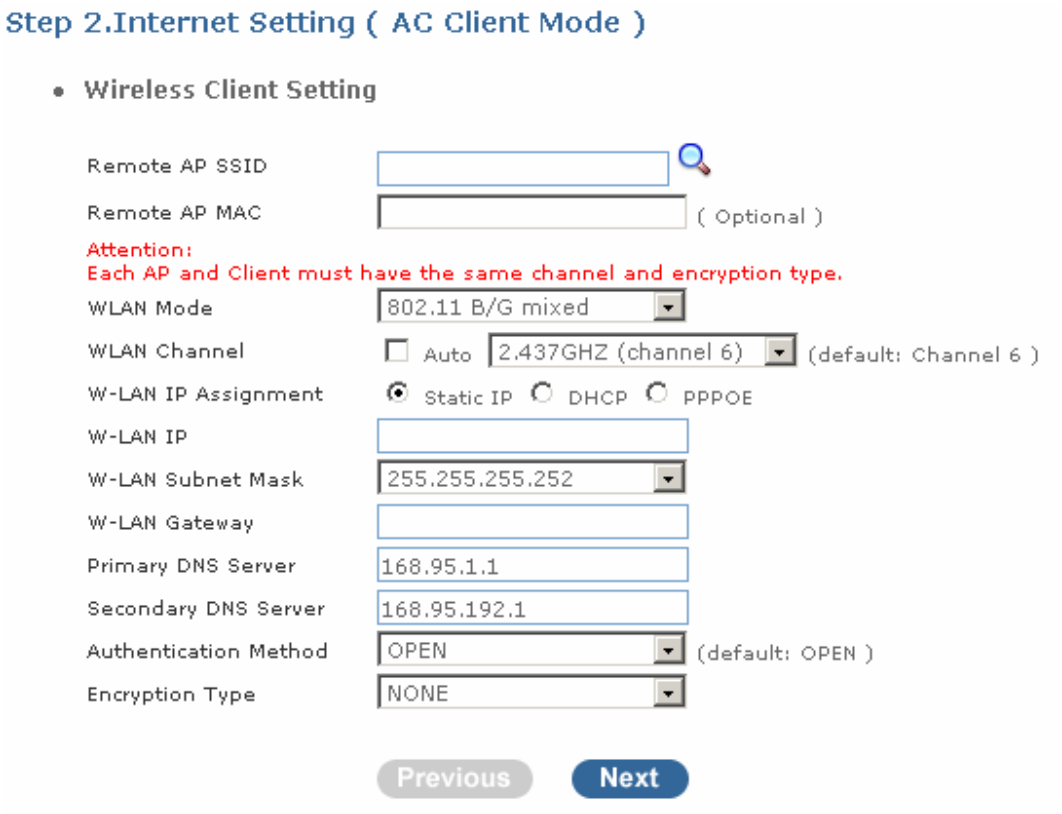
For configuring correctly the WLAN port in client mode. the below instructions will provide a quick start.

IT is advised if possible to use the simplest network settings for first try.

For making sure the WATA is connecting to your wireless router (AP). You need to set up the following:

a. Frequency Channel (optional for Client mode – but in any case define the same as your Wireless Router uses).
b. Authentication method (define the same as your Wireless Router uses)
c. Encryption parameters (define the same as your Wireless Router uses)
    1. Type.
    2. Encryption length.
    3. Keys.

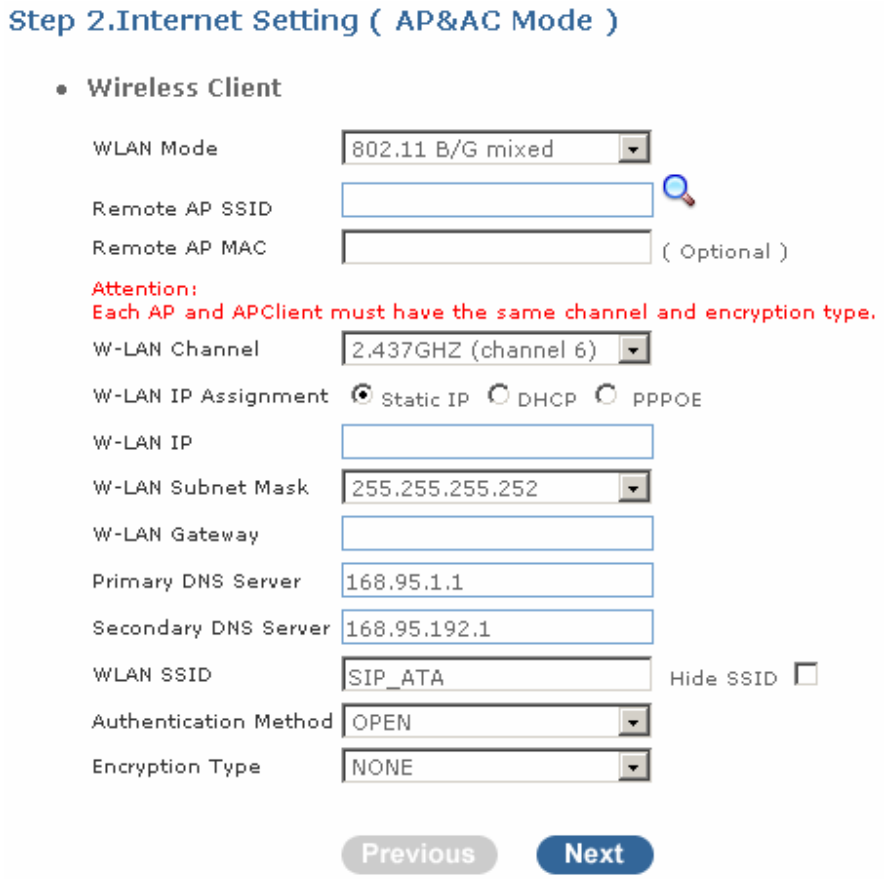
b. AC Client Mode



This paragraph defines the required parameters to set up the WLAN interface as a Client on your wireless access network. You need to define the following parameters:

a. Default WLAN mode – AC Client Mode.
b. Remote SSID - (define the same as your Wireless Router uses)
c. Authorization key - (define the same as your Wireless Router uses)
d. IP (suggest to define it DHCP – so you will get it from your wireless router)
e. IP Gate Way – the IP address of your wireless router

c. AP & AC Client Mode



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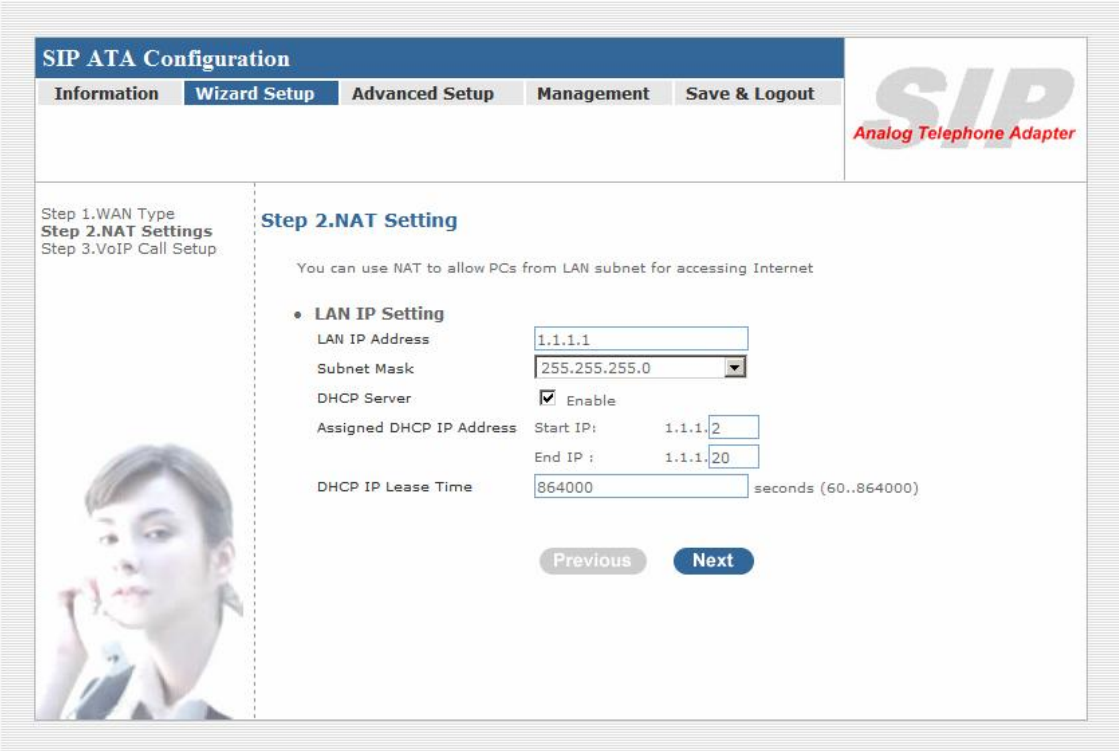
a. Delault WLAN mode – AP & AC Client Mode
b. Remote SSID - (define the same as your Wireless Router uses)
c. Encryption parameters (define the same as your Wireless Router uses)
    1. Type.
    2. Encryption length.
    3. Keys.
d. IP (suggest to define it DHCP – so you will get it from your wireless router)
e. IP Gate Way – the IP address of your wireless router

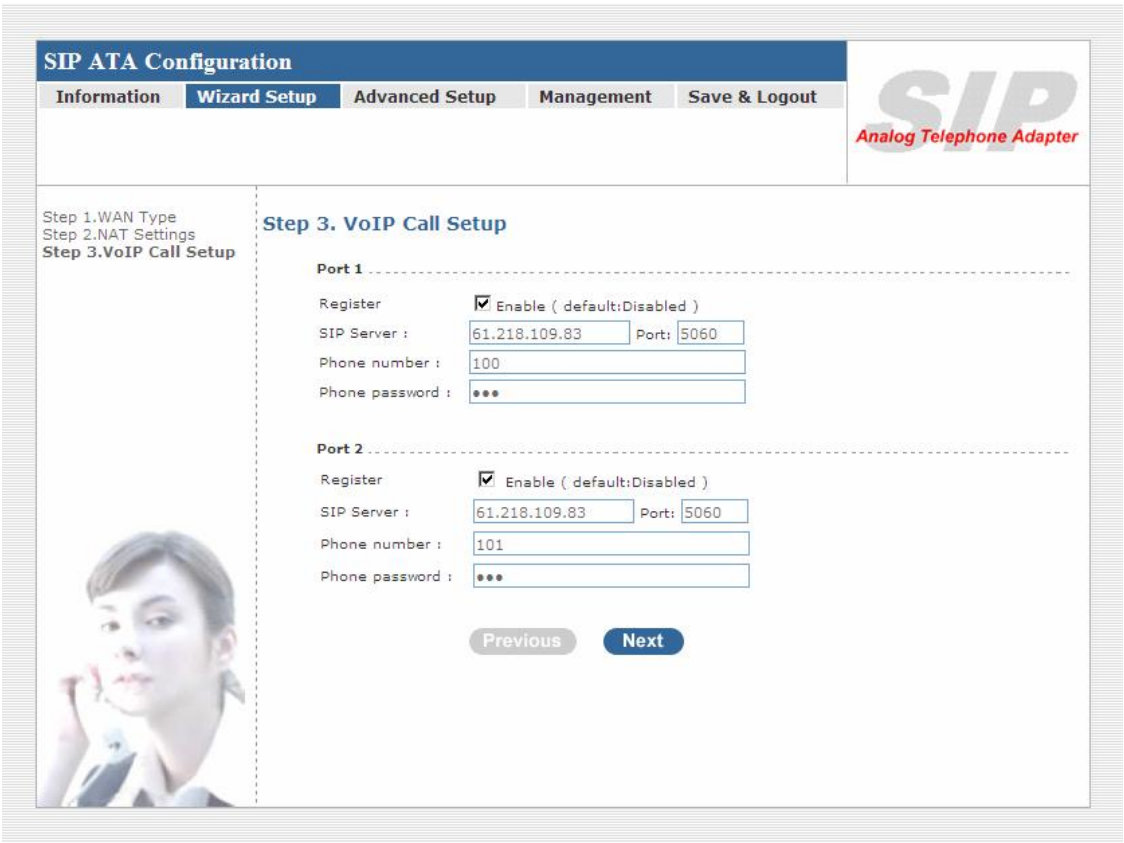
3 .NAT setting :



LAN IP Setting

- **LAN IP Address:** Private IP address for connecting to a local private network (Default: 222.222.222.1).
- **Subnet Mask:** Subnet mask for the local private network (Default: 255.255.255.0).
- **DHCP Server:** Enable to open Lan port DHCP server.
- **Assigned DHCP IP Address:** DHCP server range from start IP to end IP.
- **DHCP IP Lease Time:** Client to ask DHCP server refresh time, range from 60 to 86400 seconds

4 . VoIP Call Setup



Step 1 : configure the numbering with phone/line ports.

- **Phone Number (FXS):** The representation number is the phone number of the telephone that is connected to Phone port.
- **Line Number (FXO):** Line ports are connected to the extension ports of the PBX system or the PSTN line. They have a common Line Hunting Group Number. When this number is dialed, the ATA will find a free FXO line connected to PBX. This hunting will skip all busy lines and absent lines and find only the idle line to the PBX. After the available line is found, you can hear the dial tone from PBX. After that, you can dial the needed phone number out through PBX.

Step 2: Let the WIFI ATA Register to SIP Proxy Server

- **SIP Proxy Server IP addresses:** There is a SIP Proxy Server address and port fields. Check with your ITSP provider.
- **Phone number / password:** check with your ISP provider.

Step 3: Finishing the Wizard Setup

After completing the Wizard Setup, please click “Finish” bottom. The ATA will save the configuration and rebooting ATA automatically. After 30 Seconds, you could re-login the ATA.

3. Network Setting

- WAN Setting / LAN Setting
- WLAN
- DHCP Setting
- Static Route (Default Router)
- NAT
- Packet Filter
- URL Filter
- Security
- UPNP
- DDNS
- SNMP
- QOS (VLAN)

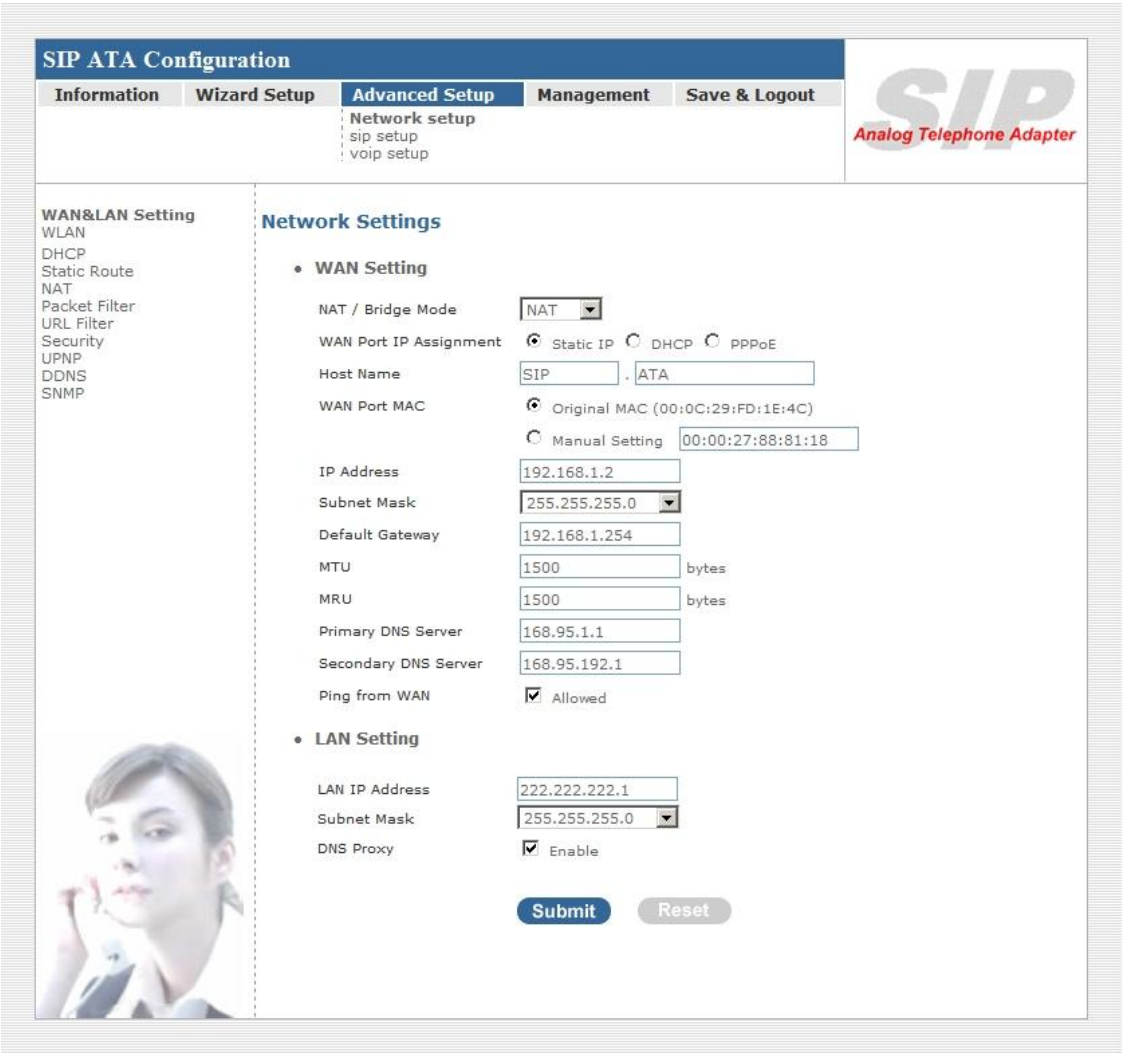
3.1 WAN Setting / LAN Setting

WAN (Wide Area Network) is a network connection connecting one or more LANs together over some distance. For example, the means of connecting two office buildings separated by several kilometers would be referred to as a WAN connection. The size of a WAN and the number of distinct LANs connected to a WAN is not limited by any definition. Therefore, the Internet may be called a WAN.

WAN Settings are settings that are used to connect to your ISP (Internet Service Provider). The WAN settings are provided to you by your ISP and often times referred to as "public settings". Please select the appropriate option for your specific ISP.

For most users, Internet access is the primary application. ATA supports the WAN interface for internet access and remote access. The following sections will explain more details of WAN Port Internet access and broadband access setup. When you click “WAN Setting”, the following setup page will be shown. Three methods are available for Internet Access.

- Static IP
- DHCP
- PPPoE
- LAN Setting



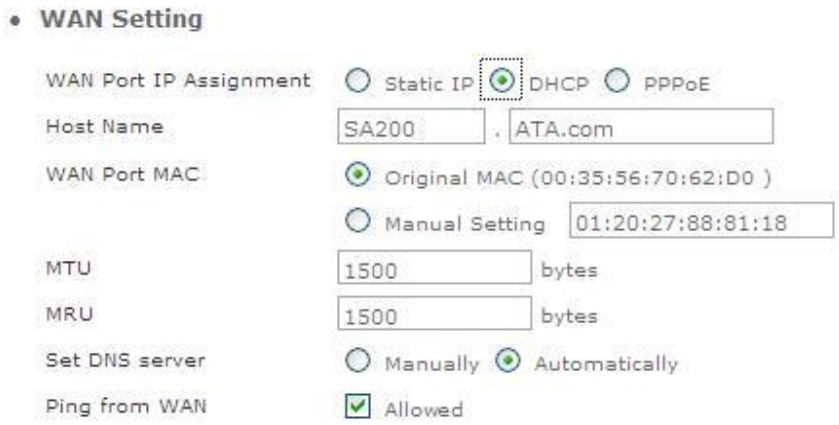
Static IP

If you are a leased line user with a fixed IP address, enter in the IP address, subnet mask, gateway address, and DNS (domain name server) address(es) provided to you by your ISP. Each IP address entered in the fields must be in the appropriate IP form, which are four IP octets separated by a dot (x.x.x.x). The Router will not accept the IP address if it is not in this format.
Example: 168.95.1.2

■IP Address: Check with your ISP provider.
■Subnet Mask: Check with your ISP provider.
■Default Gateway: Check with your ISP provider.

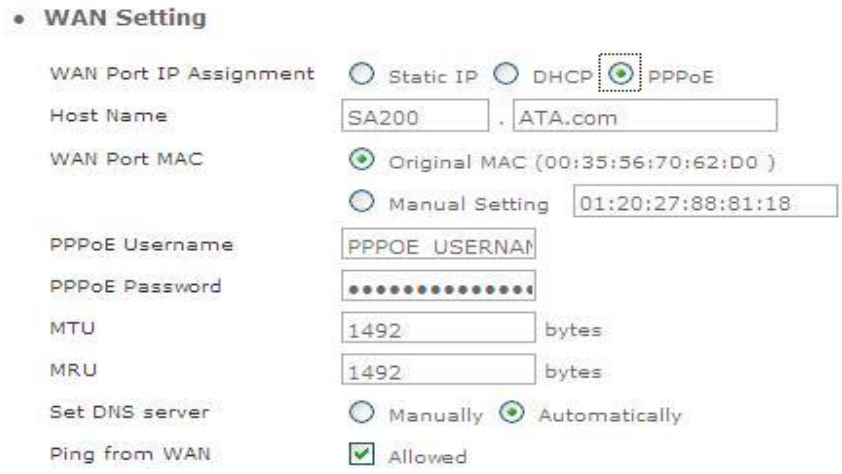
DHCP

Dynamic Host Configuration Protocol (DHCP), Dynamic IP (Get WAN IP Address automatically). If you are connected to the Internet through a Cable modem line, then a dynamic IP will be assigned.
Note: WAN port gets the IP Address, Subnet Mask and default gateway IP address automatically, if DHCP client is successful.



PPPoE

Point-to-Point Protocol over Ethernet (PPPoE). Some ISPs provide DSL-based services and use PPPoE to establish communication link with end-users. If you are connected to the Internet through a DSL line, check with your ISP to see if they use PPPoE. If they do, you need to make sure the following items, PPPoE User name: Enter username provided by your ISP. PPPoE Password: Enter password provided by your ISP.



Host Name

The Host Name field is optional but may be required by some Internet Service Providers. The default host name is the model number of the device. It is a computer that is connected to a TCP/IP network, including the Internet. Each host has a unique IP address. Assign the domain name or IP address of your host computer. When the host operating system is set up it is given a name. This name may reflect the prime use of the computer. For example, a host computer that converts host names to IP addresses using DNS may be called cvs.ata.com and a host computer that is a web server may be called www.ata.com. When we need to find the host name from an IP address we send a request to the host using its IP address. The host will respond with its host name.

WAN Port MAC

The MAC (Media Access Control) Address field is required by some Internet Service Providers (ISP). The default MAC address is set to the MAC address of the WAN interface in the device. It is only necessary to fill the field if required by your ISP.

The WAN port allows your voice gateway to be connected to an Internet Access Device, e.g. router, cable modem, ADSL modem, through a CAT.5 twisted pair Ethernet Cable.

MAC addresses are uniquely set by the network adapter manufacturer and are sometimes called "physical addresses" for this reason. MAC assigns a unique number to each IP network adapter called the MAC address. The MAC address is commonly written as a sequence of 12 hexadecimal digits as follows:00:0f:fd: 88:81:18 The first six hexadecimal digits of the address correspond to a manufacturer's unique identifier, while the last six digits correspond to the device's serial number.

Some Internet service providers track the MAC address of a home router for security purposes. Many routers support a process called cloning that allows the MAC address to be simulated so that it matches one the service provider is expecting. This allows end-user to change their router (and their real MAC address) without having to notify the provider.

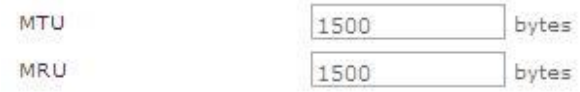
For example, you could allow packets which have your name server's IP on them, but come from another MAC address (one way of spoofing packets).

MTU and MRU

MTU stands for Maximum Transmission Unit, the largest physical packet size, measured in bytes that a network can transmit. Any messages larger than the MTU are divided into smaller packets before being sent.

MRU stands for Maximum Receiving Unit. The largest physical packet size, measured in bytes that a network can receive. Any messages larger than the MRU are divided into smaller packets before being received.

The key is to be deciding how big your bandwidth pipe is and select the best MTU for your configuration. For example, you have a 33.6 modem, you use a MTU and MRU of 576, and if you have a larger pipe you may want to try 1500.



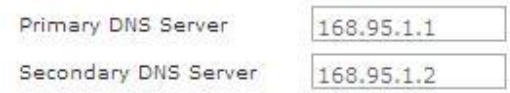
For Static IP, both MTU and MRU are set to 1500 bytes as default value.
For DHCP, both MTU and MRU are set to 1500 bytes as default value.
For PPPoE, both MTU and MRU are set to 1492 bytes as default value.

DNS Server

DNS stands for Domain Name System. Every Internet host must have a unique IP address; also they may have a user-friendly, easy to remember name such as www.ata.com The DNS server converts the user-friendly name into its equivalent IP address.

The original DNS specifications require that each domain name is served by at least 2 DNS servers for redundancy. When you run your DNS, web, and mail servers all on the same MAChine - if this MAChine goes down, it doesn't really matter that the backup DNS server still works.

The recommended practice is to configure the primary and secondary DNS servers on separate MAChines, on separate Internet connections, and in separate geographic locations.



□Primary DNS Server: Sets the IP address of the primary DNS server.

□Secondary DNS Server: Sets the IP address of the secondary DNS server.

Ping From WAN

Ping is a basic Internet program that lets you verify that a particular IP address exists and can accept requests. Ping is used diagnostically to ensure that a host computer you are trying to reach is actually operating.

The default setting is allowed user can ping the host computer from remote site. If you disallow, the host computer doesn't response any user who issues Ping IP address command from any remote sites.

Lan Setting

These are the IP settings of the LAN (Local Area Network) interface for the device. These settings may be referred to as "private settings". You may change the LAN IP address if needed. The LAN IP address is private to your internal network and cannot be seen on the Internet. The default IP address is 222.222.222.1 with a subnet mask of 255.255.255.0.

LAN is a network of computers or other devices that are in relatively close range of each other. For example, devices in a home or office building would be considered part of a local area network.
□LAN IP Address: Assign the IP address of LAN server, default is 222.222.222.1
□Subnet Mask: Select a subnet mask from the pull-down menu, default is 255.255.255.0.

DNS Proxy

A proxy server is a computer network service that allows clients to make indirect network connections to other network services. The default setting is Enable the DNS proxy server.

3.2 WLAN Setting

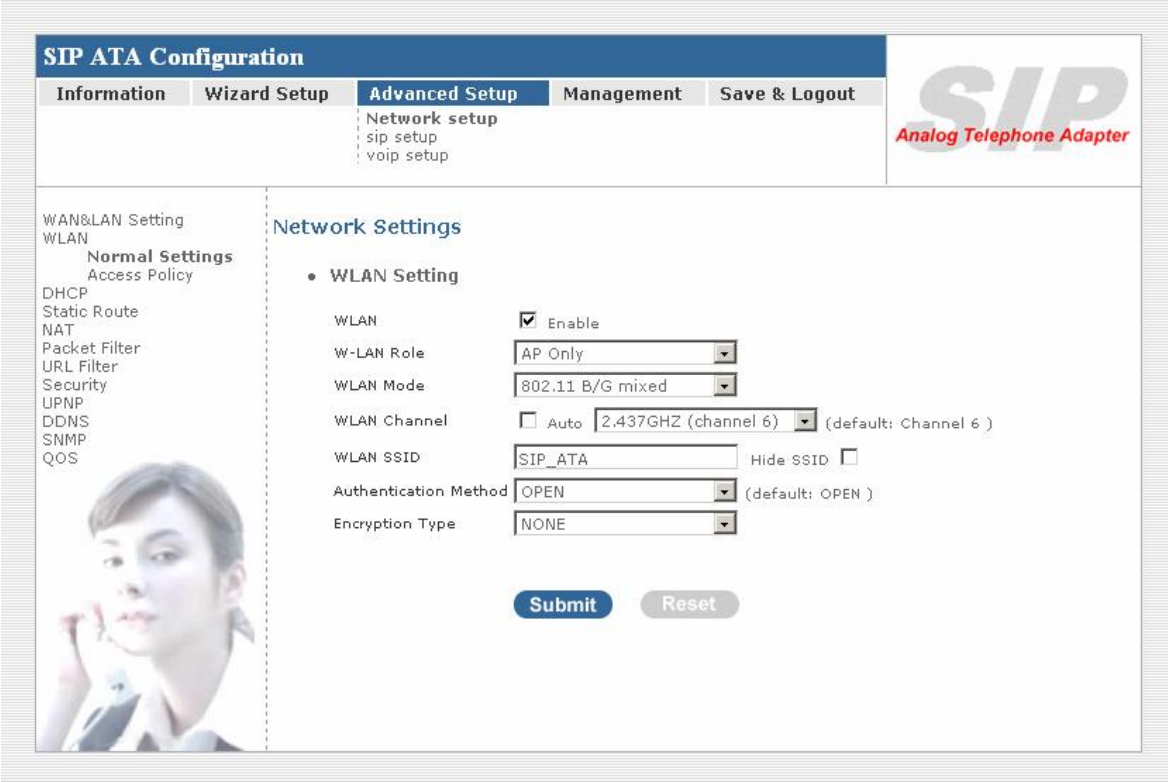
A WLAN is a data communication system that reduces the need for a wired connection, thereby adding new flexibility and convenience to your network. Using electromagnetic waves, WLAN's transmits and receives data over the air, minimizing the need for wired connections and combines data connectivity with user mobility. With a small investment, you can enjoy the same advantages of a wireless LAN; high data rates, security, standards compliance, compact size and extraordinary value.

- Normal Settings
  1 .AP Only Mode
  2 .AP & AC Client Mode
  3 .AC Only Mode
- Access Policy

Normal Settings

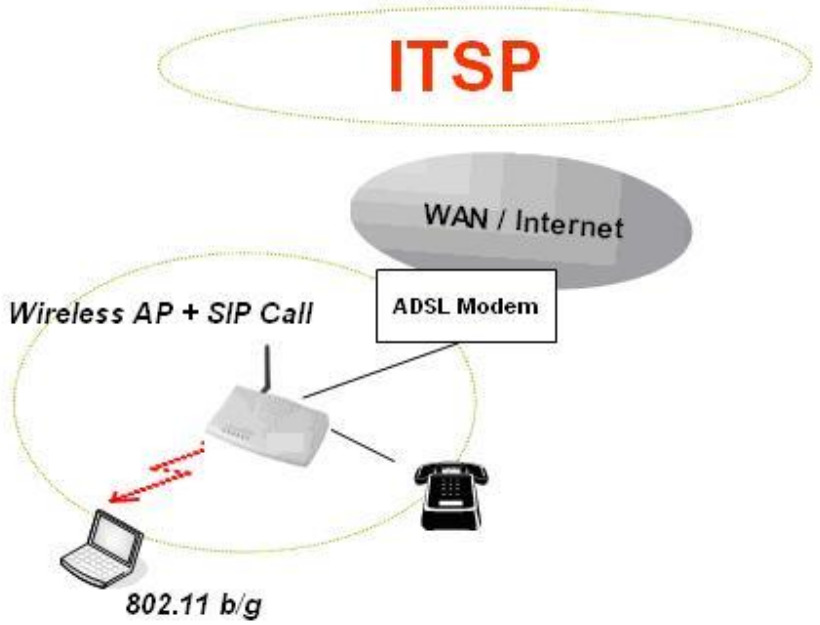
1. AP Only Mode

Access Point Mode ,The AP functions as a wireless hub to which wireless clients can connect. There is no special wireless settings required. The client must make sure that they are configured to match the AP's wireless settings. The AP must be connected to switch or other LAN segment patch cable.

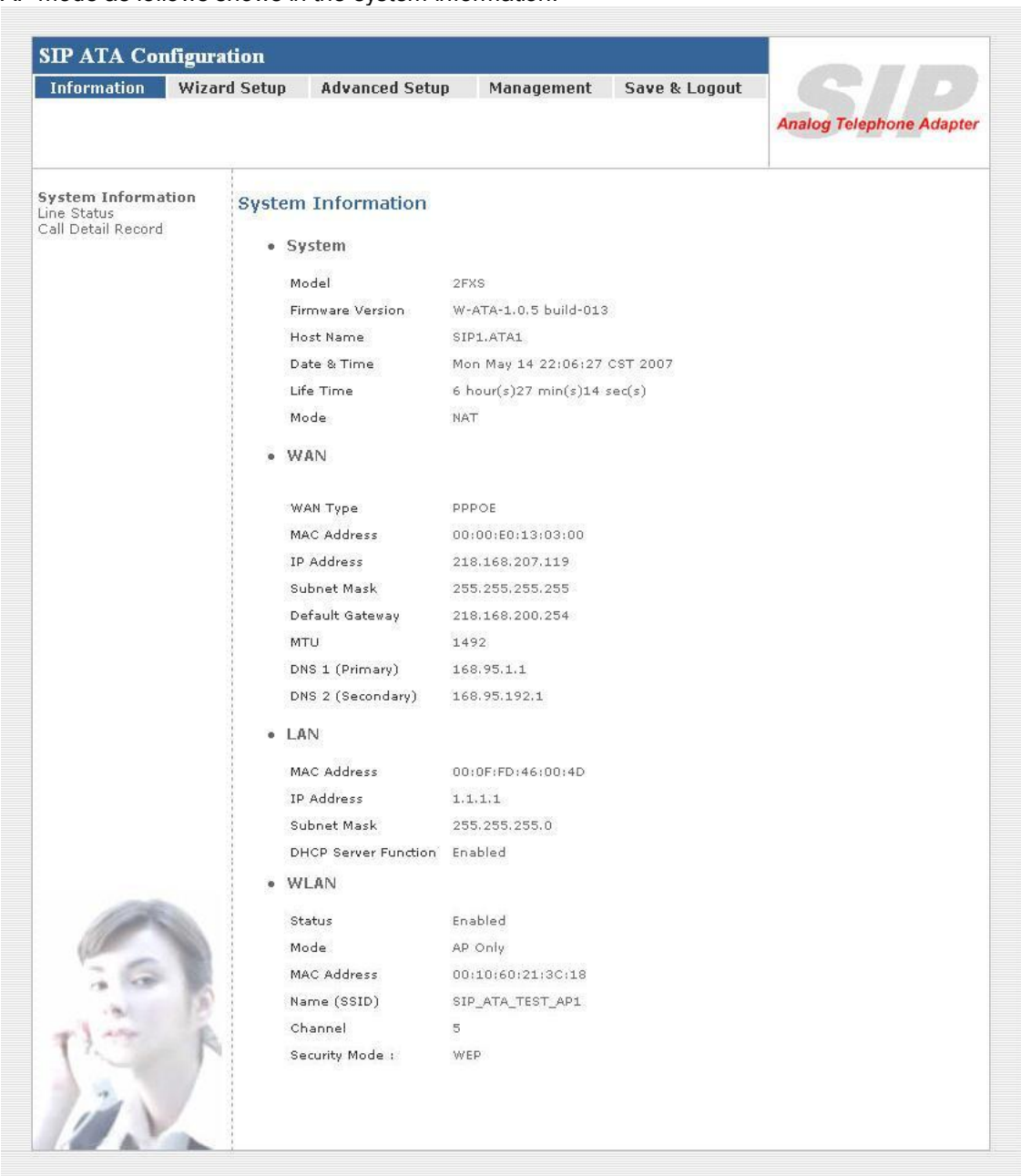


□WLAN – Enable / Disable WLAN Function.(default is uncheck).
□WLAN Mode – For wireless connected type 802.11 B/G mixed / 802.11b only / 802.11G only.
□WLAN SSID –The SSID "Service Set ID entity " identifies the Service Set with which a wireless station is associated. Wireless stations associating to the access point must have the same SSID. Enter a descriptive name for the wireless LAN.(support 20 ACSII characters)
□Hide SSID – Hide SSID prevents outside users from joining the network without knowing the wireless Network's ID, default is check SSID.
□WLAN Frequency –The range of radio frequencies used by IEEE 802.11b/g wireless devices is called a Selection channel. Select a channel ID that is not already in use by a neighboring device.
□WLAN Frequency Auto –Select this option, the WIFI-ATA automatically finds the channel with the least interference and uses that channel for wireless ATA transmission.
□Authentication Method – Select OPEN, WPA, WPA-PSK, WPA2, WPA2-PSK, WPA/WPA2 mix mode, WPAPSK/WPA2PSK mix mode .Default is OPEN mode.

Example:



AP mode as follows shows in the system information.

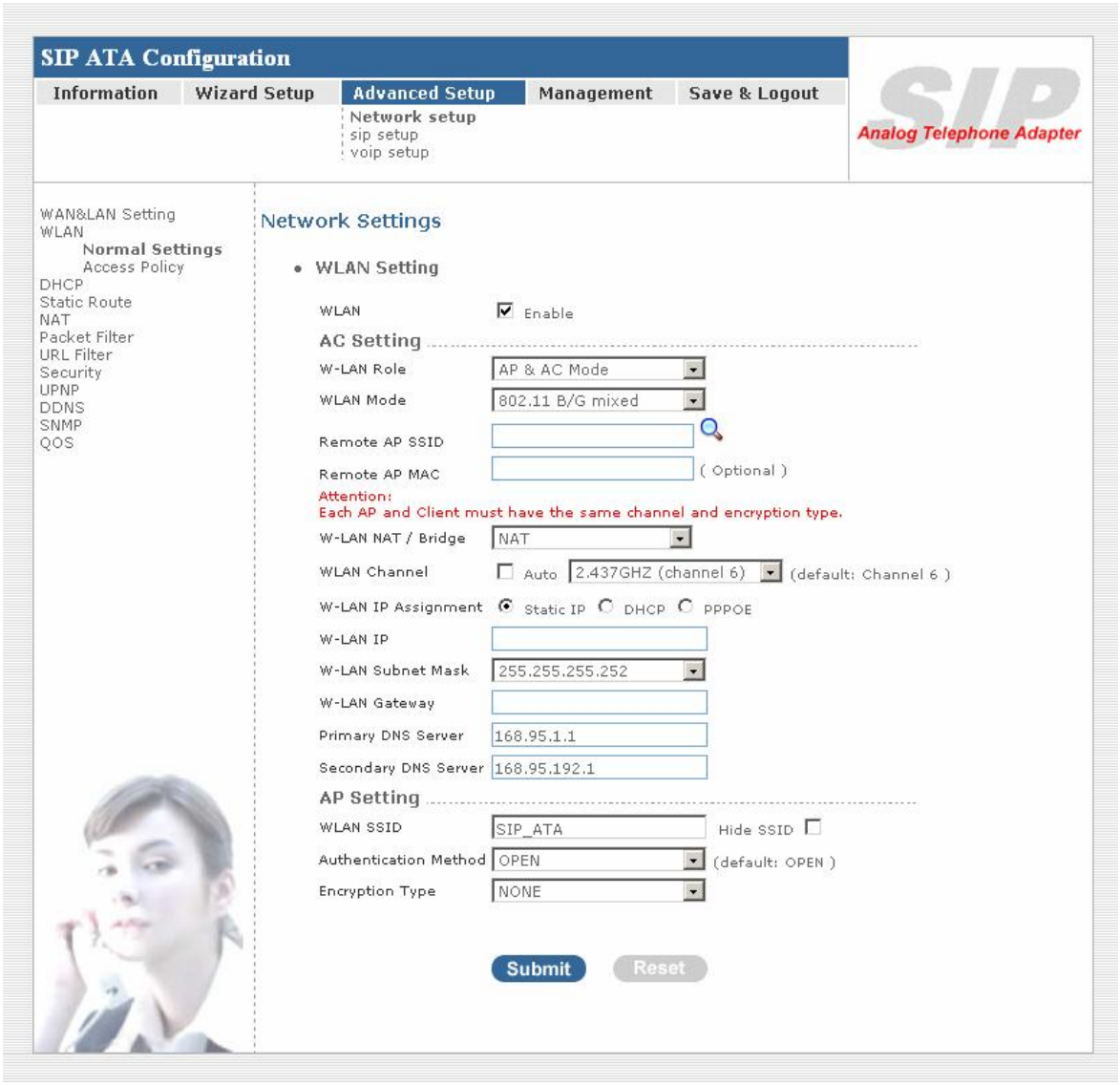


The system information will showed WAN / LAN / WLAN (AP Only) basal message.

2. AP & AC Client Mode

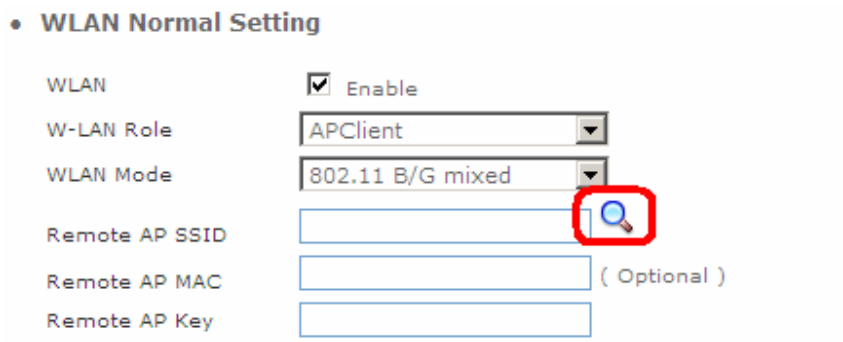
The WIFI ATA can operate in AP-Client and access to another (Outdoor) AP.. The wireless client needs to have the same SSID, Channel, Encryption settings as the main AP. The user may need to change the default IP to avoid IP conflicts.

(Note: When Wi-Fi ATA operate in AP-Client Mode, the WAN and LAN RJ-45 interface will be configured as a 2 port switch for connecting with 2 PCs for access wireless network)

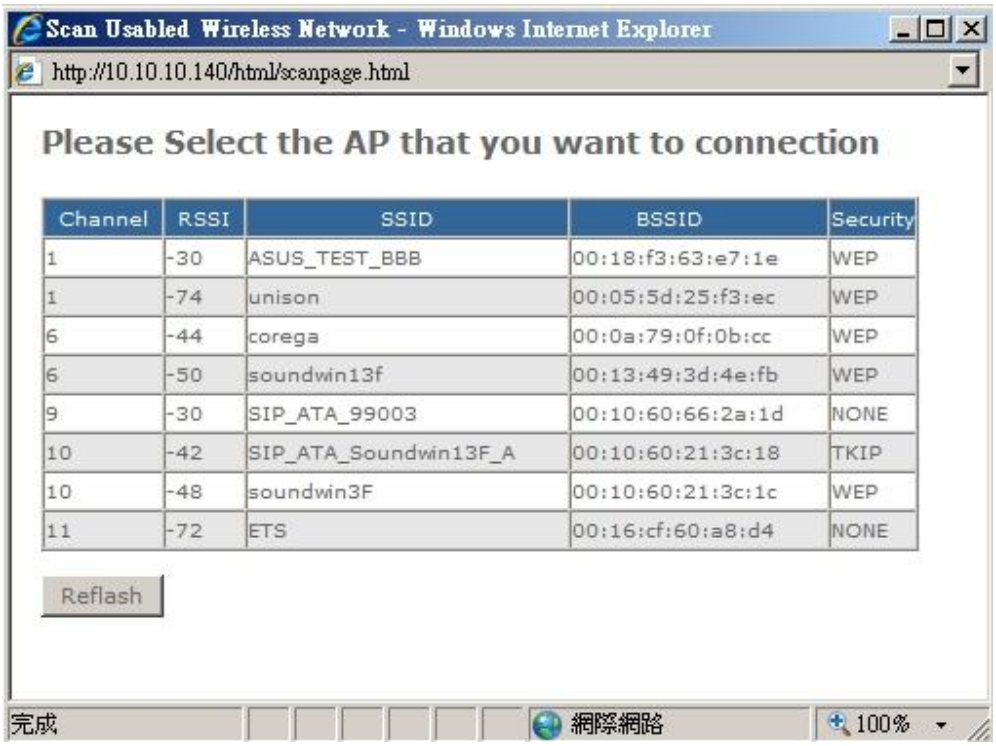


□WLAN Mode : For wireless connected type 802.11 B/G mixed/ 802.11b only / 802.11G only
□Remote AP SSID : Define the same as your Wireless Router uses.
□Remote AP MAC : Define the same as your Wireless Router uses.
□Remote AP KEY : Enter the remote AP Authorization Key (WPA-PSK / WPA2-PSK / WPAPSK ,WPA2PSK Mix Mode to Show)
□W-LAN Channel : Define the same as your Wireless Router uses.
W-LAN IP Assignment : 1. DHCP client 2.Static IP Address

□Static IP : Key in the W-LAN IP address, W-LAN Subnet mask and W-LAN Gateway from WISP
□DHCP Client: when the DHCP Client is enabled, the WIFI ATA will get the IP Address from Outdoor AP of WISP.
WLAN SSID: The service set Identifier assigned to the wireless network(WLAN).Default SSID is SIP_ATA
Hide SSID: Hide SSID prevents outside users from joining the network without knowing the wireless Network's ID, default is check SSID
□Authentication Method : Define the same as your Wireless Router uses.(OPEN / SHARED Mode)
□Encryption Type : Define the same as your Wireless Router uses. (OPEN / SHARED Mode)



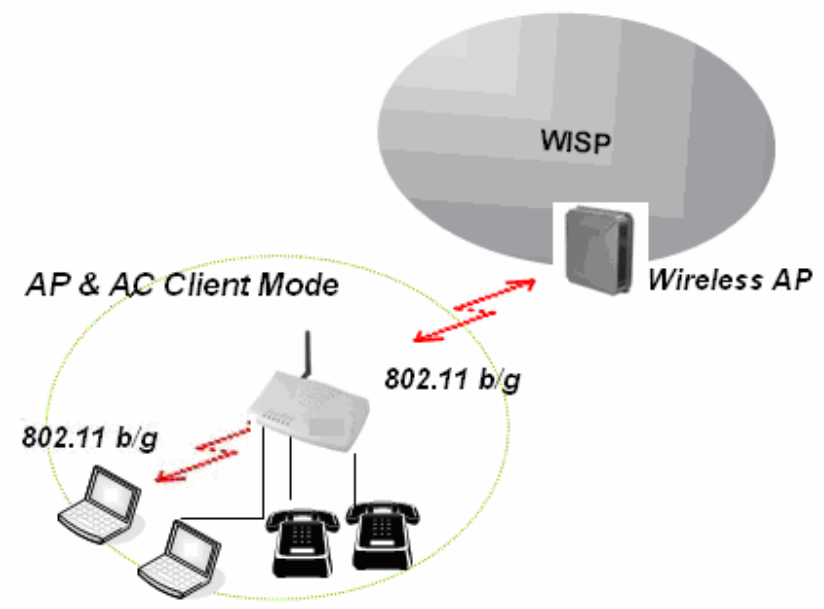
□Scan usable network : Select list to remote AP SSID (Enter Red box)



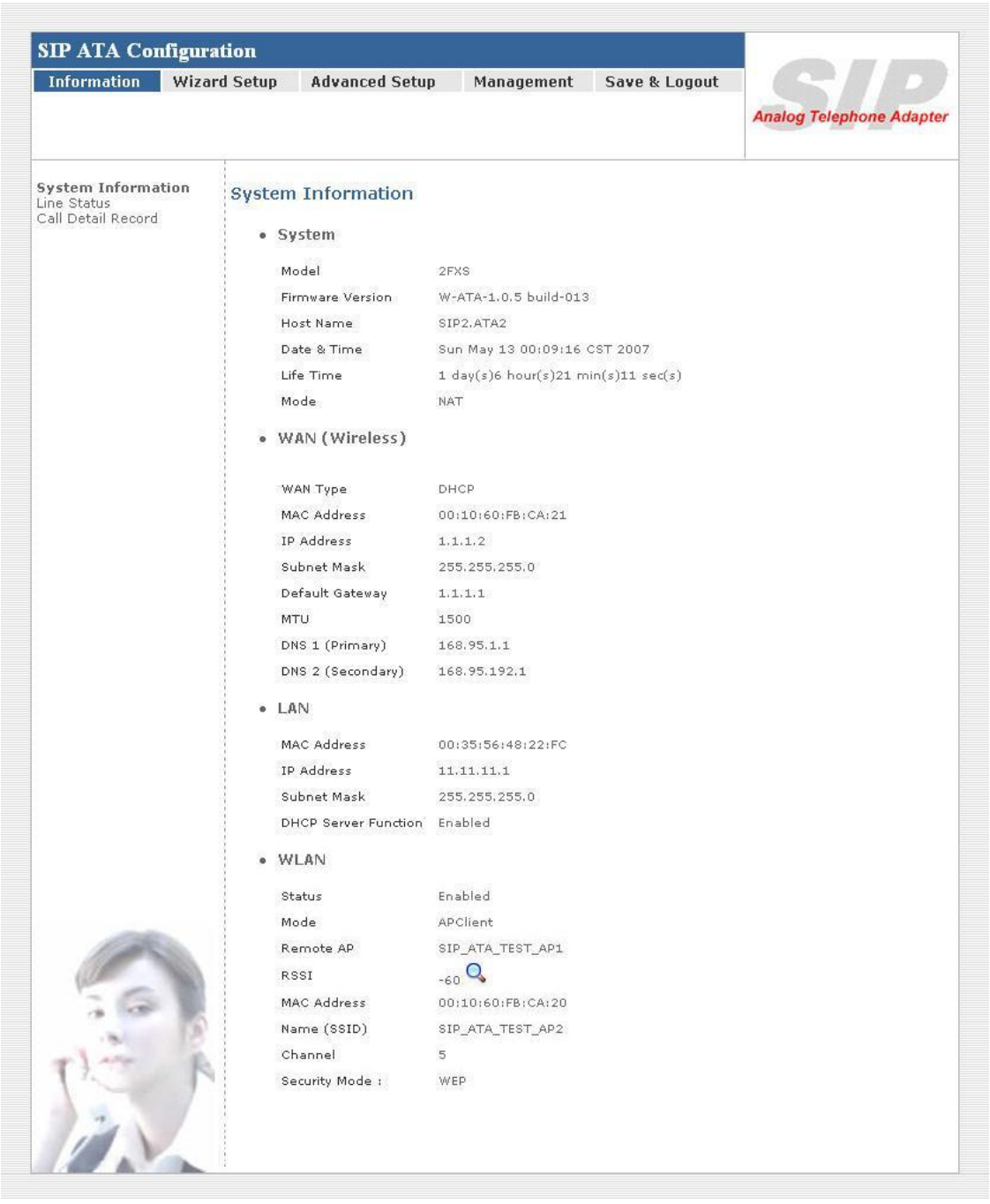
Search remote AP List Page.

Note: After scan and select the Outdoor AP, the channel and encryption method should be set the identical with the remote AP .

Example:



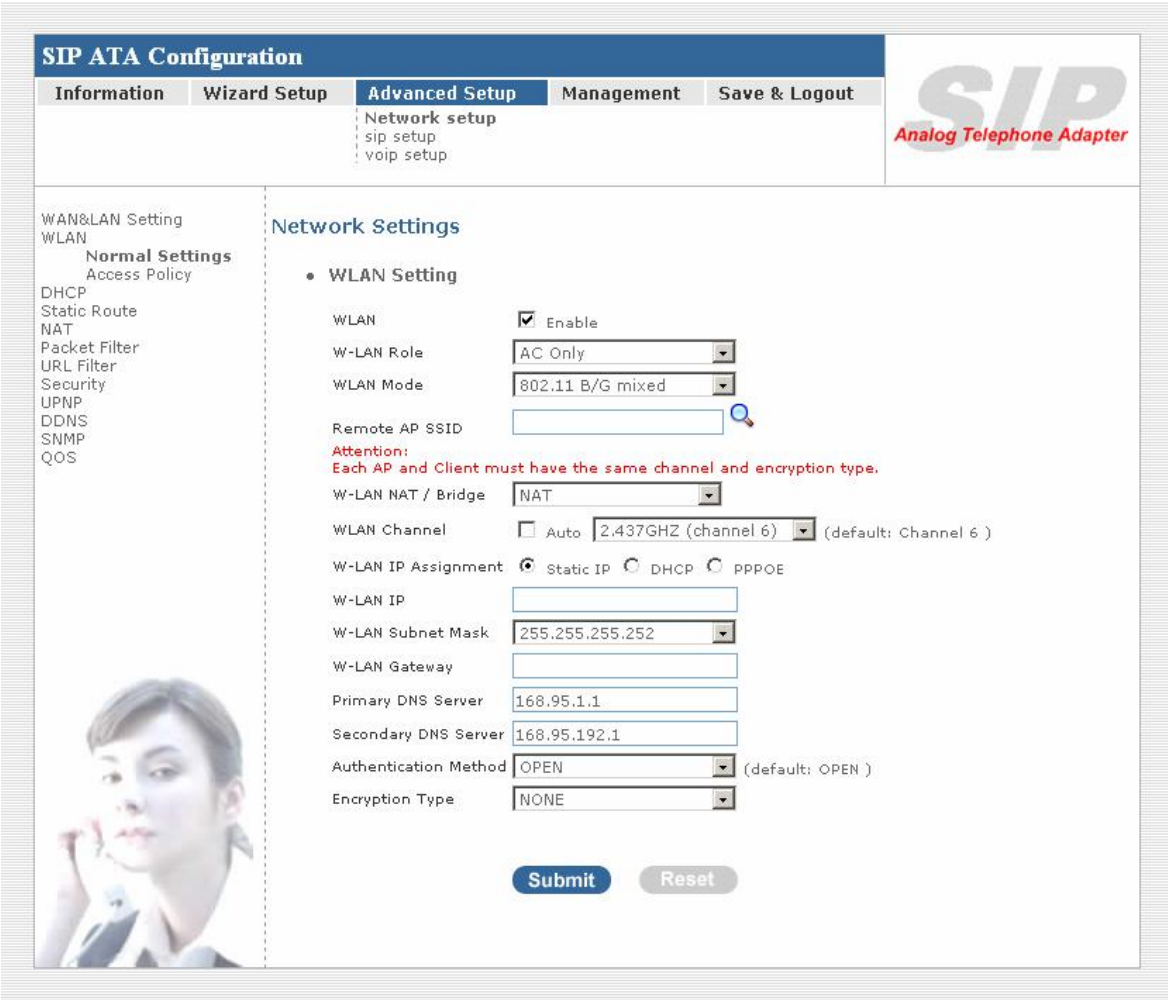
AP & AC Client mode as follows shows in the system information.



The system information will showed WAN (Wireless) / LAN / WLAN information like mode and RSSI as below.

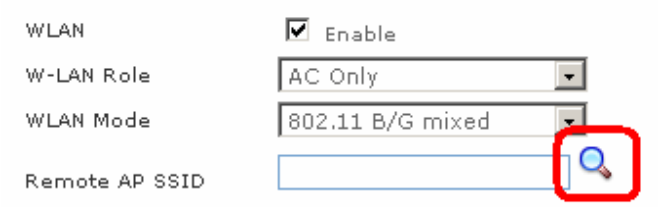
3. AC Client Only Mode

Use “AC Client Only Mode" to link the regional networks of two different areas wirelessly through two WIFI APs, but join Switch/Hub and PC with the network line of entity under WIFI ATA AP2 .
(Note: When Wi-Fi ATA operate in AP-Client Mode, the WAN and LAN RJ-45 interface will be configured as a 2 port switch for connecting with 2 PCs for access wireless network)

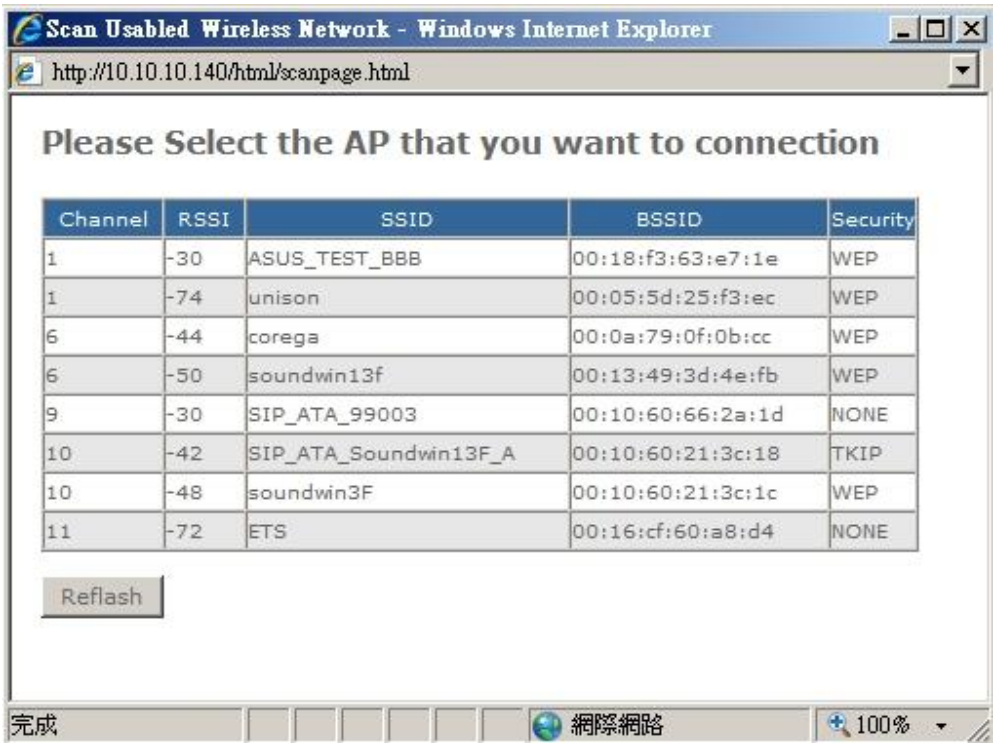


□WLAN Mode : For wireless connected type 802.11 B/G mixed/ 802.11b only / 802.11G only
□Remote AP SSID : Define the same as your Wireless Router uses.
□Remote AP KEY : Enter the remote AP Authorization Key (WPA-PSK / WPA2-PSK / WPAPSK ,WPA2PSK Mix Mode to Show)
□W-LAN Channel : Define the same as your Wireless Router uses.
W-LAN IP Assignment : 1. DHCP client 2.Static IP Address
- □Static IP : Key in the W-LAN IP address, W-LAN Subnet mask and W-LAN Gateway from AP of WISP
- □DHCP Client: when the DHCP Client is enabled, the WIFI ATA will get the IP Address from Outdoor AP of WISP.
- □PPPoE Client: Enter User Name / Password provided by your ISP , the WIFI ATA will get the IP Address from Outdoor AP of WISP.

□Remote AP SSID : Define the same as your Wireless Router uses.
□Authentication Method : Define the same as your Wireless Router uses.(OPEN / SHARED Mode)
□Encryption Type : Define the same as your Wireless Router uses. (OPEN / SHARED Mode)



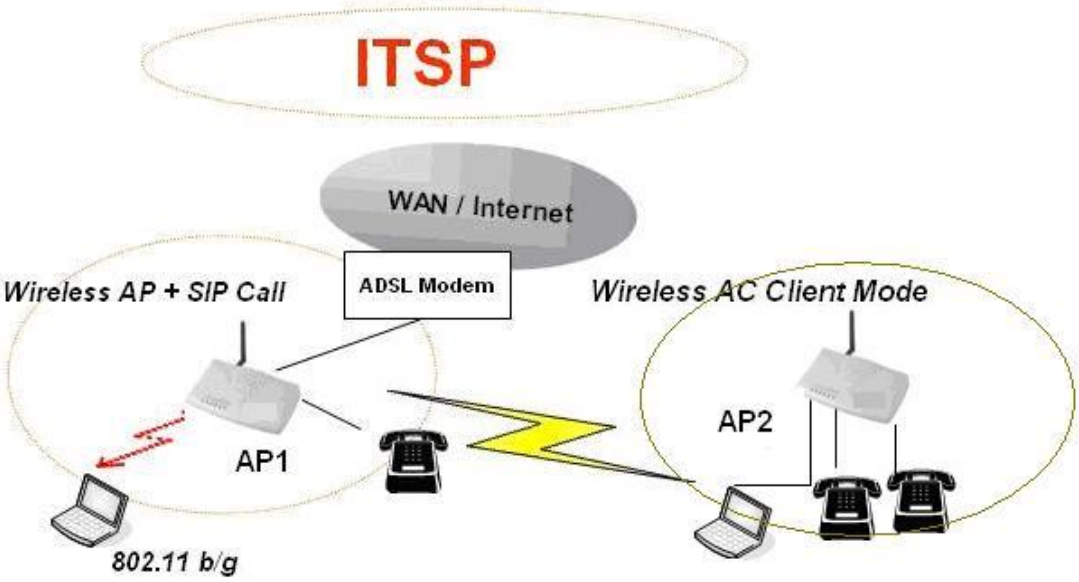
□Scan usable network : Select list to remote AP SSID (Enter Red box)



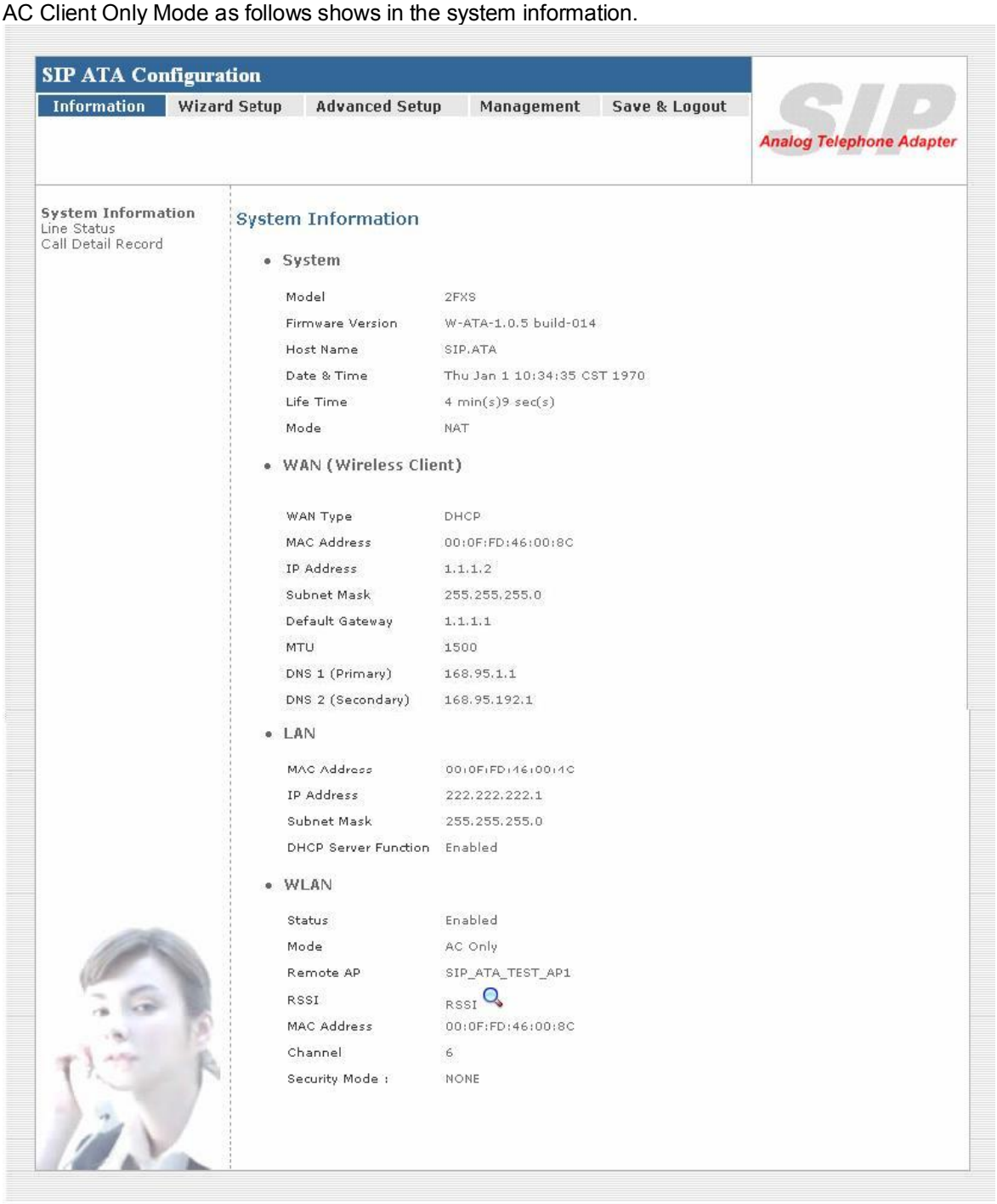
Search remote AP List Page.

Note: After scan and select the Outdoor AP, the channel and encryption method should be set the identical with the remote AP .

Example:

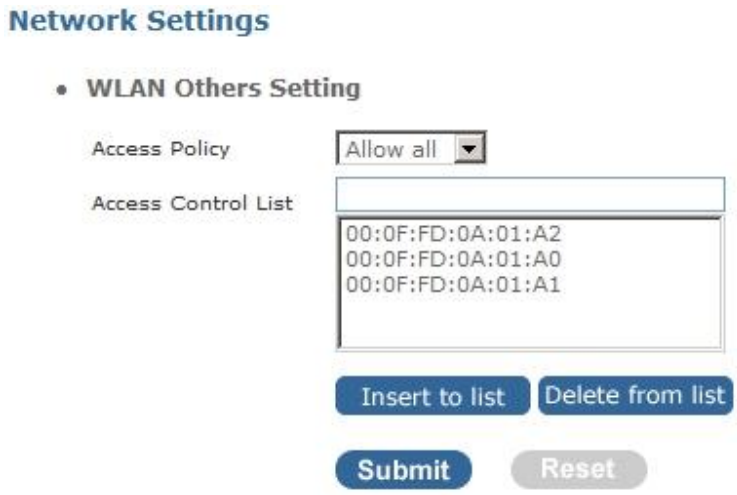

ITSP
WAN / Internet
ADSL Modem
Wireless AP + SIP Call
Wireless AC Client Mode
AP1
AP2
802.11 b/g

AC Client Only Mode as follows shows in the system information.



The system information will showed WAN (Wireless) / LAN / WLAN information like mode and RSSI as below.

Access Policy (For AP mode only)



Note: This option refers to AP mode only (not AP – Client mode)

□Access Policy : In WIFI-ATA security, an access control list is a list of " allow all / Reject all" to an MAC.

□Access Control List : MAX MAC List : 64.

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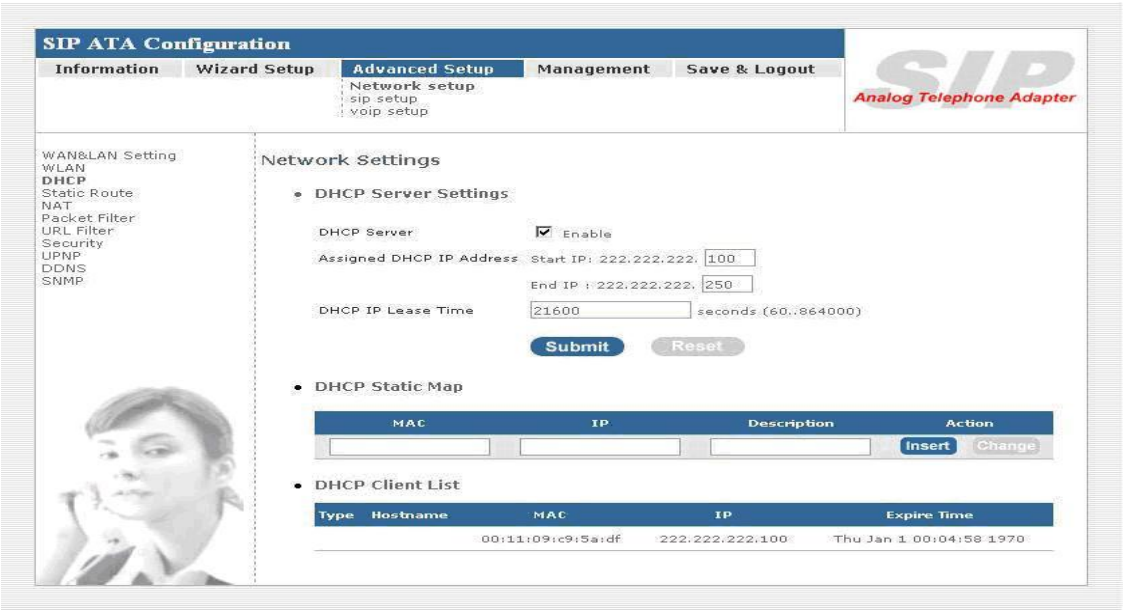
3.3 DHCP Server Setting

DHCP stands for Dynamic Host Control Protocol. The DHCP server gives out IP addresses when a device is starting up and request an IP address to be logged on to the network. The device must be set as a DHCP client to "Obtain the IP address automatically". By default, the DHCP Server is enabled in the unit. The DHCP address pool contains the range of the IP address that will automatically be assigned to the clients on the network.

DHCP client computers connected to the unit will have their information displayed in the DHCP Client List table. The table will show the Type, Host Name, IP Address, MAC Address, Description, and Expired Time of the DHCP lease for each client computer.

DHCP Server is a useful tool that automates the assignment of IP addresses to numbers of computers in your network. The server maintains a pool of IP addresses that you use to create scopes. (A DHCP scope is a collection of IP addresses and TCP/IP configuration parameters that are available for DHCP clients to lease.) Then, the server automatically allocates these IP addresses and related TCP/IP configuration settings to DHCP-enabled clients in the network. The DHCP Server leases the IP addresses to clients for a period that you specify when you create a scope. A lease becomes inactive when it expires. Through the DHCP Server, you can reserve specific IP addresses permanently for hardware devices that must have a static IP address (e.g., a DNS Server).

An advantage of using DHCP is that the service assigns addresses dynamically. The DHCP Server returns addresses that are no longer in use to the IP addresses pool so that the server can reallocate them to other MAChines in the network. If you disable this DHCP, you would have to manually configure IP for new computers, keep track of IP addresses so that you could reassign addresses that clients aren't using, and reconfigure computers that you move from one subnet to another. The DHCP Static MAP table lists all MAC and IP address which are active now.



When you enable the DHCP server,

□Assigned DHCP IP Address: Enter the starting IP address for the DHCP server's IP assignment and the ending IP address for the DHCP server's IP assignment.

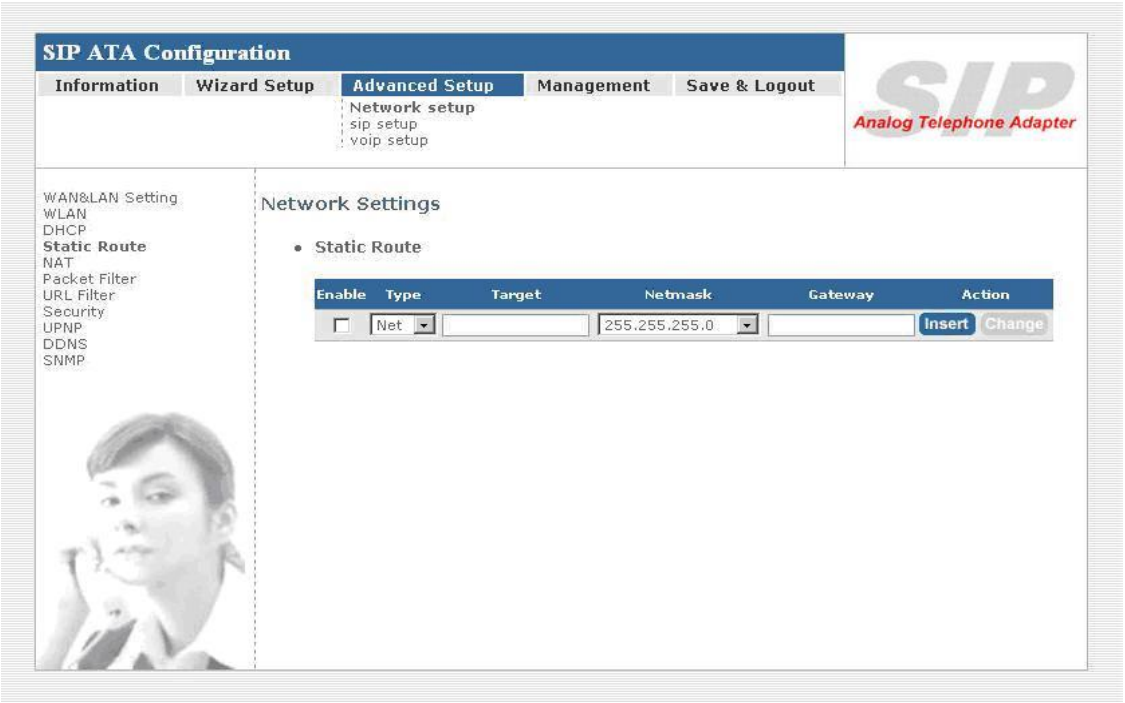
□DHCP IP Lease Time - Assign the length of time for the IP lease, default setting is 86400 seconds.

3.4 Static Router

Static routes are special routes that the network administrator manually enters into the router configuration. You could build an entire network based on static routes. The problem with doing this is that when a network failure occurs, the static route will not change without you performing the change. This isn't a good thing if the failure occurs during the middle of the night, or while you are on vacation.

The route table allows the user to configure and define all the static routes supported by the

router.



□Enable - Enable/Disable the static route.
□Type - Indicates the type of route as follows, Host for local connection and Net for network connection.
□Target - Defines the base IP address (Network Number) that will be compared with the destination IP address (after an AND with NetMask) to see if this is the target route.
□NetMask - The subnet mask that will be AND'd with the destination IP address and then compared with the Target to see if this is the target route.
□Gateway - The IP address of the next hop router that will be used to route traffic for this route. If this route is local (defines the locally connected hosts and Type = Host) then this IP address MUST be the IP address of the router
□Action - Insert a new Static Router entry or update a specified entry

3.5 NAT *(for either AP or Client or AP/Client mode)*

NAT (Network Address Translation) serves three purposes:
1. Provides security by hiding internal IP addresses. Acts like firewall.
2. Enables a company to access internal IP addresses. Internal IP addresses that are only available within the company will not conflict with public IP.
3. Allows a company to combine multiple ISDN connections into a single internet connection.