

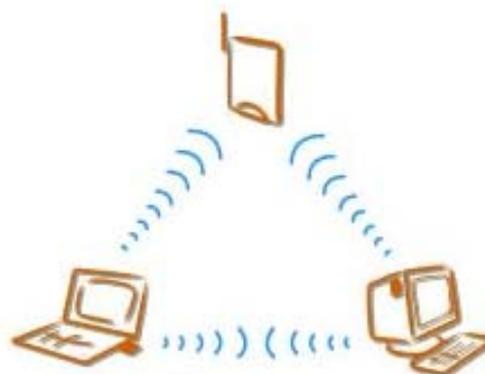


Wireless LAN Router

AWL-700

User Manual

Version 1.1
June 2002





Notice I

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Notice II

FCC Warning

The AWL-700 complies with Part 15 of the FCC rules. Operation is subject to the following two conditions.

- (1) This device may not cause harmful interference.
- (2) This device must accept any interference received, including interference that may cause undesired operation.

Note:

The AWL-700 has been tested and found to comply with the limits for a Class B digital device and a low power transmitter, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential environment. 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.



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Chapter I. Introduction

I.1 Product Introduction

The AWL700 Wireless LAN Router can be used with wireless networking client devices such as the BenQ AWL100 Wireless LAN PC Card and BenQ AWL300 Wireless LAN USB Adapter for wireless access to an office LAN, or sharing of an xDSL/cable modem. The AWL700 also integrates a 4-port auto-sensing crossover Ethernet switch, expanding access to already established wired networks, and allowing IP sharing without the need for additional devices.

The AWL700 also acts as a Network Address Translation (NAT) device and let home users to use private IP addresses to access the Internet from single or multiple global IP addresses. AWL700 provides home users an environment protected by its NAT-type firewall. Its WAN side as an Ethernet interface, which is the same as its LAN interface. It could be plugged easily into any access devices, such as ADSL/Cable modems or routers, and provides instant Ethernet interfaces in their LAN sides to run for NAT functionality, accommodating up to 32 network users while offering with top performance, and is also extremely simple to install.

I.2 Key Features

I.2.1 Being a gateway between two Ethernet interfaces

The AWL700 connects to one Ethernet interface from ADSL/Cable modem's LAN side and used it as its WAN interface. It provides users to share a single valid IP address among them under 10/100 base-TX LAN. Under this configuration, users do not need to apply for valid IP addresses for every single user to access Internet. This function could be enabled or disabled by the device owner. And, if users have applied for many public IP addresses for other purposes, they are also able to use those additional IP addresses to connect to the Internet.



1.2.2 Three ways to acquire WAN's IP address

There are three ways to acquire AWL700's WAN IP address. The first one is to assign its WAN interface as a static valid IP address. Or, the users can acquire AWL700's WAN IP address by PPPoE and it does not require the users to install PPPoE client software in their own hosts. The third one is to obtain DHCP server. Some service providers offer their clients IP addresses by DHCP protocol, and AWL700 can act as a DHCP client via its 10/100 base-TX WAN port to acquire its WAN IP address. In fact, AWL700 is a convenient device, because it provides both 10/100 base-TX WAN port and 10/100 base-TX LAN ports for users to acquire IP address to share.

1.2.3 Act as a DHCP server in its LAN side

AWL700 can act as a DHCP server in its LAN side, and this function can be performed without users to configure their own IP addresses. When users are booting their machines, AWL700 will assign each machine with an IP address and other useful information, such as DNS server's IP address etc.

1.2.4 Virtual Server

Users can set up different kinds of servers behind their AWL700 and remote users can access these inside servers via AWL700's virtual server functionality.

1.2.5 NAT-type Firewall

AWL700 is also guarded by NAT-type firewall. A NAT-type firewall provides users a secure LAN environment and it also denies access for any anonymous people who might have bad intentions on your network.

1.2.6 Web Management

Users can configure and manage AWL700 from their own web browsers (IE or Netscape). This means that users could manage AWL700 no matter where they are and without any proprietary application installed in their PC.

1.2.7 Firmware Upgrade

AWL700 provides an efficient way to upgrade firmware. Users can use web browser to do firmware upgrades and the device also allows TFTP clients to perform this task.



Chapter 2. Hardware Installation

This chapter will describe how to set up AWL700 step by step. After you have set up your AWL700 device, then you may need to configure your **WAN** setting to match the mode that you have applied from your **ISP** or **NSP**.

2-1 Product Kit

Before installation, make sure that you have the following items:

- ◆ AWL700 Wireless LAN Router
- ◆ Software CD containing user manual and utility
- ◆ Quick Start Guide
- ◆ RJ-45 cable
- ◆ Power adapter
- ◆ Metal stand
- ◆ Screw pack
- ◆ Warranty card

2-2 System Requirements

Before using your AWL700, please check that you have the following required items:

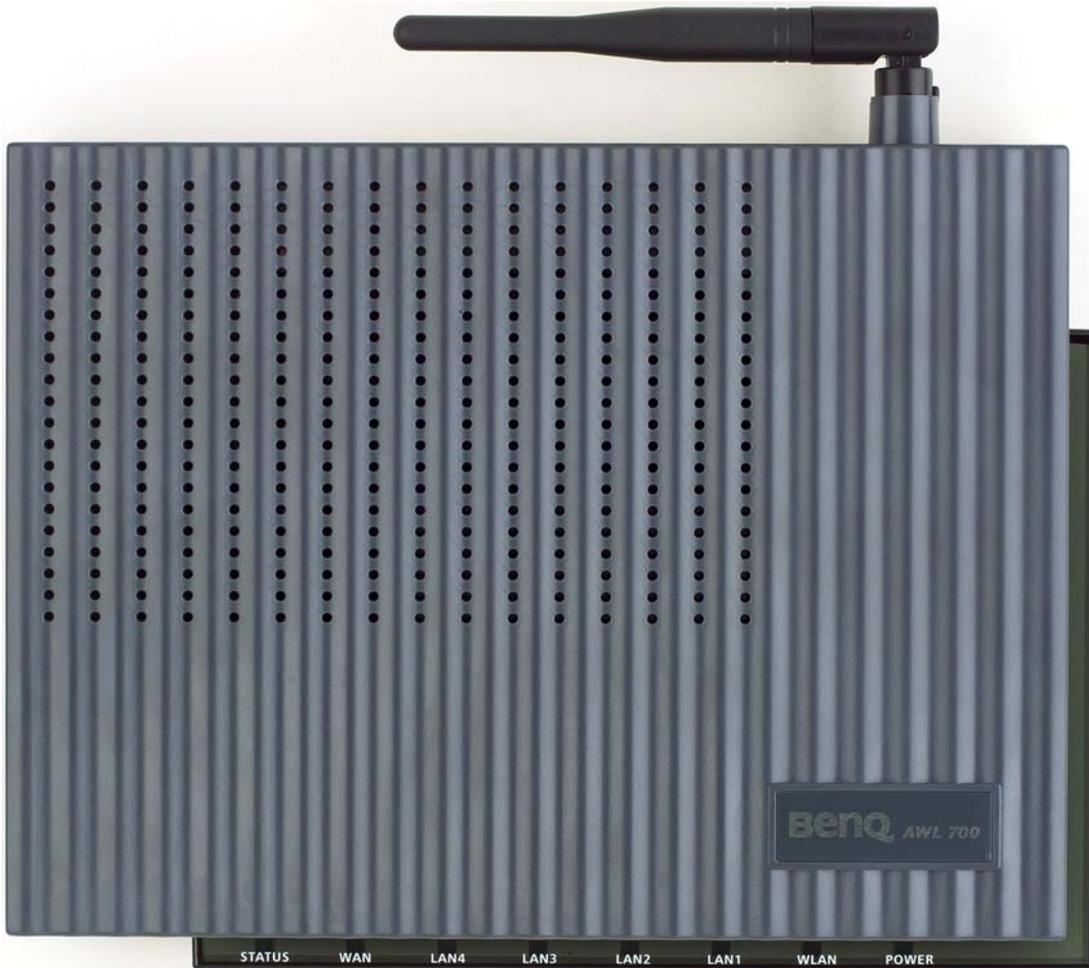
- ◆ Broadband access device (ADSL/cable modem) or Office LAN
- ◆ UTP Cat-5 cable for linking ADSL/cable modem/LAN and the AWL500
- ◆ Wireless LAN PC card (AWL100) or USB adapter (AWL300)
- ◆ Web browser (Internet Explorer 5.0 or higher, or Netscape Navigator 6.2 or higher)



2-3 Mechanical Description

Front panel of the Wireless LAN Router

The following table provides an overview of each LED activity:



LED	State	Indication
Power	On (Green)	When power on AWL700, this LED should always be green.
Status	On (Orange)	When power on AWL700, AWL700 will do some initialization jobs, then this LED will be blinking steadily.
WLAN/ WAN / LAN	Link (Green)	When connect to the ADSL / Cable modem or connect to your PC, the LED should always be green. If this LED is not being lighted, this means link fails.
	TX / RX (Green)	When data is transmitted or received, this LED will be blinking.



Back panel of the Wireless LAN Router:



Back Panel	Description
Reset button	Designed to reset the AWL700 after a system failure or crash. When pressed, the AWL700 will reset.
PWR/DC jack	Where power is input to AWL700 through the power adapter supplied with it. Please do not plug other power adapters into this jack.
WAN port	Where the AWL700 can be connected to ADSL/cable modem/Ethernet LAN via an RJ-45 cable.
LAN1/2/3/4 port	Allows the AWL700 to be connected to client devices such as NIC cards, switches, hubs, and modems with an RJ-45 cable.
Antenna	Where the radio signal carrying network data is transmitted and received.



2.4 Connect AWL700 to your ADSL / Cable Modem

- I. Turn off the power of your ADSL / Cable Modem
- II. Pick up the cross-over (short) RJ-45 Category-5 cable and plug one end of this cable into your ADSL / Cable's LAN port
- III. Plug the other end of this cable into AWL700's WAN port

2.5 Connecting PC/Notebook to your AWL700

Wired

- I. Pick up the straight (long) RJ-45 Category-5 cable and plug one end of this cable into any one of four switch ports.
- II. Plug the other end of this cable into the RJ-45 port of your PC's network card

Wireless

- I. Insert WLAN PC Card AWL100 to your notebook and install the driver for that.
- II. Plug WLAN USB Adapter AWL300 to your PC or notebook and install the driver for that.

2.6 Power on

- I. Connect your power cord to power inlet
- II. Turn on ADSL / Cable modem's power
- III. Finish

Chapter 3. Configuration

This chapter illustrates the web-based AWL700 configuration in detail. The AWL700 Wireless LAN Router has a structured menu and a “Quick Installation Wizard” page to help users set up their own AWL700 quickly. This chapter describes each of these menu sections. When the AWL700 boots up at the first time, it has a default IP address 192.168.1.1 assigned to its LAN interface. In order to configure AWL700, please point an Internet browser from the browsing host to <http://192.168.1.1> and you will be presented with the log icon in screen as shown below. You must log in with the correct user name and password to start the AWL700 configuration in a MD5 authenticated web session. For setting up this MD5 authenticated session, the default user name is **admin**, and initially the password is also **admin**. We strongly recommend that – you should change the root password as described in the **Admin Password** section.



Enter Network Password

Please type your user name and password.

Site: 192.168.1.1

Realm: System Setup

User Name: admin

Password: xxxxxx

Save this password in your password list

OK Cancel

Once your log in is successful, you will be presented with a welcome web page. In that page, you can proceed with AWL700 configuration or link to BenQ’s web site for advanced information.



3.1 Quick Installation Wizard

3.1.1 WAN Parameters

AWL700 provides three ways to have an IP address in its WAN interface – Fixed IP, DHCP Client, and PPPoE. There are three radio boxes in this configuration page and you can choose the one, which is suitable for your access environment. If you have applied for a dedicated IP address in your WAN side, you can choose **Fixed IP** mode to connect to the Internet. If you has a DHCP server co-existed in your WAN or If your ISP (NSP) provides DHCP services for you, then you can choose **DHCP Client** mode to acquire an IP address to access the Internet. Finally, most of the ADSL service providers not only provide their customers dedicated IP address but also provide dial-in service. If you apply for dial-in service from your ISP, you can choose **PPPoE** to access Internet except your ISP does not provide PPPoE as her dial-in solution.

• **IP Parameters:**

Mode: DHCP Fixed IP PPPoE

IP Address:

Netmask:

Default Gateway:

IP Address – This is WAN interface’s IP address.

Netmask – This is WAN interface’s subnet mask.

Default Gateway – When AWL700 has no idea where it can forward packets, it deliver those packets to its default gateway.

3.1.2 PPPoE Parameters

When you choose to use PPPoE mode to acquire your WAN IP addresses, you should first set up PPPoE parameters to facilitate AWL700 to communicate with your ISP. When you apply for ADSL dial-in service, you will acquire your PPPoE parameters from your ISP.



• **PPPoE Parameters:**

Username:	<input type="text" value="user@benq.com"/>
Password:	<input type="password" value="*****"/>
Password Confirm:	<input type="password" value="*****"/>
Maximum Idle Time:	<input type="text" value="5"/>
Server Name:	<input type="text" value="PPPoE-server 1"/>
Service Name:	<input type="text" value="PPPoE-link 1"/>

Username – When you apply for a PPPoE service from your ISP, they will give you a set of username and password for the purpose of login. You can fill your username from your ISP in this input field.

Password – You can fill your password from your ISP in this input field.

Password Confirm – Type your password again, and this will confirm your password's value again.

Maximum Idle Time – AWL700 provides a timeout mechanism and this means if there is no any traffic pass through AWL700 during the time that you set up, AWL700 will terminate this link between you and your ISP automatically.

Server Name –Some ISPs provide server name to be an authentication issue, so you need to give your server name from your ISP for valid login. If your ISP does not ask for server name, you can leave it blank or just ignored it.

Service Name – Some ISPs also provide service name to be an authentication issue, so you need to give your service name from your ISP for valid login. If your ISP does not ask for service name, you can leave it blank or just ignored it.

3.1.3 LAN Parameters

This configuration can help you to set up your LAN interface's IP address and its subnet mask.

• **LAN Parameters:**

IP Address:	<input type="text" value="192.168.1.1"/>
Netmask:	<input type="text" value="255.255.255.0"/>

IP Address – Your IP address in LAN interface.

Netmask – Subnet mask in your LAN interface.

3.1.4 IEEE802.11 Parameters

You may make the settings on the Wireless Access Point such as ESSID, Channel, RTS Threshold, Fragment Threshold, Basic Rates, TX Rates and Preamble Type.



• IEEE802.11 Parameters:

ESS ID:

Channel:

RTS Threshold:

Frag Threshold:

Basic Rates: 1-2(Mbps) 1-2-5.5-11(Mbps)

TX Rates: 1-2(Mbps) 1-2-5.5-11(Mbps)

Preamble Type: Short Preamble Long Preamble

ESSID – The ESSID is a unique ID given to the Access Point. Wireless clients associating to the Access Point must have the same ESSID. The ESSID can have up to 32 characters.

Channel – You may select any of the available channels as an operational channel for your Access Point.

RTS Threshold – RTS Threshold is a mechanism implemented to prevent the “Hidden Node” problem. “Hidden Node” is a situation in which two stations are within range of the same Access Point, but are not within range of each other. Therefore, they are hidden nodes to each other. When a hidden station starts data transmission with the Access Point, it might not notice that the other station is already using the wireless medium. When these two stations send data at the same time, they might collide when arriving simultaneously at the Access Point. The collision will most certainly result in a loss of messages for both stations. Thus, the RTS Threshold mechanism will provide the solution to prevent data collisions. When the RTS is activated, the station and its Access Point will use a Request to Send/Clear to send protocol (RTS/CTS). The station will send an RTS to the Access Point, informing that it is going to transmit the data. Upon receipt, the Access Point will respond with a CTS message to all station within its range to notify all other stations to defer transmission. It will also confirm to the requesting station that the Access Point has reserved the channel for transmission.

Fragmentation Threshold – Fragmentation mechanism is used for improving the efficiency when there is high traffic within the wireless network. If you transmit large files in a wireless network, you can enable the Fragmentation Threshold and specify the packet size. The mechanism will split the packet into the packet size you set.

Rates Set – By default the unit adaptively selects the highest possible rate for transmission. In case of obstacles or interference, the system will step down. Select the Basic Rates to be used among the following options: 1 - 2 (Mbps), 1 - 2 - 5.5 - 11 (Mbps).



Select the TX Rates set among the following options, (1 – 2 - 5.5 - 11 Mbps) or (1 - 2 Mbps).

Preamble Type – Preamble is the first sub field of PPDU, which is the appropriate frame format for transmission to PHY (Physical layer). There are two options, Short Preamble and Long Preamble.

3.1.5 Remote Control Parameters

AWL700 provides some remote control features to help user’s remote management for AWL700. In this configuration tags, you can set up a dedicated remote host to control your AWL700, reject or accept “Ping” packets from the Internet, and set up the listening port of AWL700’s built-in web server.

• **Remote Control Parameters:**

Remote Control IP:

Ping Reply: Disable Enable

HTTP Public Port:

Remote Control IP – AWL700 can be managed by a dedicated host, which is located anywhere in the Internet, if you fill a host’s IP address into this input field. Please note that if you have configured this feature, you could not manage your AWL700 by any host, which IP address is not that one in Remote Control IP input field.

Ping Reply – If you would not like to let your AWL700 respond to “Ping” packets from the Internet, you can disable the “Ping Reply” or you can enable this feature to reply “Ping” packets.

HTTP Public Port – In AWL700, it has a built-in web server to process all configurations through web browsers. Its default listening port is 80, however, you can assign the other port number to instead 80. It is useful if you also have a web server in your LAN interface and would like to set up it to be a web virtual server.

3.2 Information

3.2.1 Statistics

This configuration page can bring traffic information to user who has the idea to know the quantity of received or transmitted Ethernet and Wireless packets in AWL700. You can see the number of received or transmitted packets and bytes count. This information will be dynamically changed and be updated every three seconds.



Wireless Receive		Wireless Transmit	
Unicast Packets	0	Unicast Packets	0
Unicast Bytes	0	Unicast Bytes	0
Multicast Packets	824	Multicast Packets	5023
Multicast Bytes	40197	Multicast Bytes	688784

Ethernet Receive		Ethernet Transmit	
Packets	6092	Packets	2045
Total Bytes	749967	Total Bytes	507880

3.2.2 Status

In AWL700, you can search system information in "Status" page. AWL700 divides this page into two parts, one is for WAN information, and the other is for LAN information. This information is quite useful for users to see if system is in a right status.

- **WAN Parameters:**

Host Name	Wireless Router
Domain Name	Benq.com
Mode	PPPoE
IP Address	10.0.0.1
Default Gateway	10.0.0.254
WAN MAC Address	00:03:9d:40:12:03
LAN MAC Address	00:03:9d:40:12:04
RIP V2	Disable
DNS Name Server 1	168.95.1.1
DNS Name Server 2	0.0.0.0
DNS Name Server 3	

- **LAN Parameters:**

IP Address	192.168.1.1
DHCP Server	Enable
NAT	Enable
RIP V2	Disable

3.2.3 Associated Table

This is a list of all the stations that have ever associated. This table provides information to track how many stations have ever associated with the Access Point.

Association Number	MAC
1	00:03:9d:00:01:30

3.3 Advanced Setting



3.3.1 DNS Setup

In “DNS Setup” page, user can input two DNS servers that AWL700 can use these two servers to complete its DNS relay function. Please note that the DNS relay is a default setting in AWL700, however AWL700 will choose ISP’s DNS server to be the first choice to relay its DNS packets if user use PPPoE or DHCP client to connect to Internet. These two DNS server are to be the second and third priority to relay DNS packets by AWL700.

• **DNS Parameters:**

DNS Name Server 1:	<input type="text" value="168.95.1.1"/>
DNS Name Server 2:	<input type="text" value="168.95.192.1"/>

DNS Name Server 1 – First backup DNS server. Since we use the DNS server offered by ISP to be the first choice to complete DNS relay function.

DNS Name Server 2 – Second backup DNS server.

3.3.2 DHCP Setup

3.3.2.1 DHCP Clone MAC Address

AWL700 provides “MAC clone” function to let users change their WAN MAC address. This feature is provided for authentication purpose if your ISP would like to ask you to offer this information.

• **DHCP Clone MAC Address:**

Host Name:	<input type="text" value="Wireless Router"/>
MAC Address:	<input type="text" value="00"/> ; <input type="text" value="03"/> ; <input type="text" value="9d"/> ; <input type="text" value="40"/> ; <input type="text" value="12"/> ; <input type="text" value="03"/>

Host Name – Your host’s name.

MAC Address – MAC address that you want to change in your WAN interface. Generally, this MAC address will be the authenticated information to offer to your ISP or NSP.

3.3.2.2 DHCP Server Parameters

AWL700 can act as a DHCP server in user’s LAN interface. It can make users to acquire their IP addresses without doing a lot of configuration. AWL700 can offer hosts parameters that are shown below.



• **DHCP Server Parameters:**

Trigger DHCP Service: Disable Enable

Default Gateway:

Netmask:

Name Server 1:

Name Server 2:

Name Server 3:

DHCP Start IP:

DHCP End IP:

Default Gateway – Tell hosts where they can deliver their packets if they do not know how to deal with those packets. In fact, it should be the AWL700 itself.

Netmask – Tell hosts their netmask.

Name Server 1, 2, 3 – AWL700 will offer DNS server to its hosts to help hosts activate their DNS function. Since AWL700 has DNS relay function, it offers hosts itself to be a default name server.

DHCP Start IP – You can assign the first IP address of DHCP.

DHCP End IP – You can assign the End IP address of DHCP.

3.3.2.3 Table of fixed host entries

DHCP server can assign IP addresses and some options, such as gateway's IP address, DNS server, etc., to hosts in AWL700's LAN interface. Usually, DHCP server assigns IP addresses dynamically. However, users can assign MAC address and IP address to be one pair. When DHCP server receive request from that host which MAC address is one of those pairs in its mapping table, DHCP server will assign that mapping IP address to host.

• **Table of fixed host entries:**

MAC Address			IP Address																	
<input type="text" value="00"/>	<input type="text" value=":"/>	<input type="text" value="03"/>	<input type="text" value=":"/>	<input type="text" value="9d"/>	<input type="text" value=":"/>	<input type="text" value="40"/>	<input type="text" value=":"/>	<input type="text" value="12"/>	<input type="text" value=":"/>	<input type="text" value="0e"/>	<input type="text" value="192"/>	<input type="text" value="."/>	<input type="text" value="168"/>	<input type="text" value="."/>	<input type="text" value="1"/>	<input type="text" value="."/>	<input type="text" value="3"/>			
<input type="button" value="Add"/>			<input type="button" value="Delete"/>			<input type="button" value="Update"/>														
No	MAC Address					IP Address														
1	:	00	:	03	:	9d	:	40	:	12	:	0e	:	192	.	168	.	1	.	3

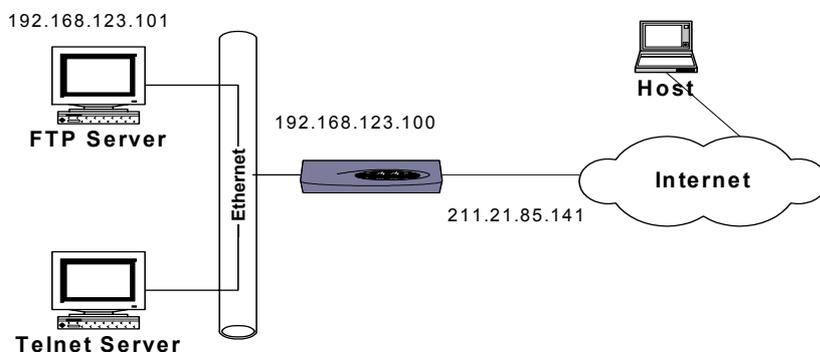
3.3.3 NAT/DMZ Setup



NAT is a mechanism that can convert your private IP addresses into single public IP address. In AWL700, we do offer dynamic NAT, static NAT, and NAPT functions. **Dynamic NAT** means that you can assign a range of private IP addresses to map to a range of public IP addresses in the WAN interface. When one public IP address is mapped to one host, this public IP address could not be assigned to the others. **Static NAT** means you can set up a private IP address and public IP address to be a pair. In AWL700, we offer five sets to do static NAT. This function is very similar to **DMZ** (demilitarized zone) one, so In AWL700, this also acts as “**Virtual DMZ**” host setting. **NAPT** is a special function of NAT, which will record packet’s Port and IP address and convert it to public IP address in the WAN side and give this session one unique port number. Most of the famous applications are supported by AWL700 such as HTTP, FTP, Telnet, NetMeeting, Real Player, QuickTime, ...etc. NAT function is default as enabled in AWL700.

3.3.3.1 Table of current virtual server entries

Sometimes there are servers located in the LAN interface and wish to be accessed by any remote host. However, we could not access these servers located in the LAN interface directly because of the enabling of NAT. We could use **Virtual Server** to let remote hosts access internal servers. In this configuration page, you can enter a public port that is bound on a server located in the LAN interface. For example, FTP server’s public port is 21, Telnet server’s public port is 23, and HTTP server’s public port is 80. After that, you should offer a host that maps to this public port. In configuration figure below, you can map port 21 to that host which IP address is **192.168.123.101** and the remote host can access FTP server in the LAN interface by accessing **211.21.85.141** through FTP client application installed in the remote host itself. When you access AWL700’s WAN side, it can convert your FTP packets and let them pass through the NAT.





Protocol	Service Name	Port Number	Server IP Address	Server Port Number	
<input checked="" type="radio"/> TCP <input type="radio"/> UDP <input type="radio"/> None	FTP	21	192.168.123.101	21	
Change					
No	Protocol	S Name	Port Num	Server IP	S Port
1	: None		0		0
2	: None		0		0
3	: None		0		0
4	: None		0		0

Protocol – Which protocol type does the server provide?

Service Name – 10 characters to name this service

Port Number – The port, which is opened to others in the Internet side.

Server IP Address – The server’s private IP address in the LAN side

Server Port Number – The port of which the inside server is listening

3.3.3.2 Dynamic NAT

- Table of NAT local address range pool:

Index	Base Address	Number of Address
1	192.168.1.10	5
2		0
3		0
4		0
5		0

- Table of NAT global address range pool:

Index	Base Address	Number of Address
1		0
2	211.21.83.14	10
3		0
4		0
5		0

In the first table, you can assign a range of private IP addresses that can be converted to public ones.

Base Address – The first IP address that you wish to be converted.

Number of Address – Limits the range that configured by users. If you have five hosts to be converted to public IP addresses, you can limit this range to 5.

In the second table, you can assign a range of public IP addresses that wait to be mapped



to any private IP address at configured range in the first table.

Base Address – The first IP address that you wish to be mapped to.

Number of Address – Limits the range that configured by users. If you have ten IP addresses to be mapped to private IP addresses, you can limit this range to 10.

3.3.3.3 Static NAT

In AWL700, we provide static NAT function and this function also acts as **virtual DMZ** function. This means that you can put your server in the LAN side and give it a mapped public IP address. And this looks like you provide your server to be accessed by anyone in the Internet. So, please be carefully to use this feature. You can also regard this function as one-to-one mapped NAT function. Please note that, all traffics that do not meet NAT requirement can be dealt with **NAPT**.

- **Table of fixed NAT address mapping (DMZ Setup):**

Index	Local Address	Global Address
1	192.168.1.2	10.82.141.44
2	192.168.1.3	10.82.141.15
3		
4		
5		

Local Address – Local host's IP address

Global Address – The public IP address wait to be mapped to a private IP address. Please note that users could not change the first global address in the first entry because in AWL700, we can reuse the NAPT's WAN IP address to do the static NAT conversion.

3.3.4 RIP Setup

3.3.4.1 RIP Parameters

AWL700 can act as a router, which use RIP-v2 (Routing Information Protocol version 2) to exchange routing information with other RIP routers. However, the default value is "disable" in AWL700. If you have to use RIP to deal with packets passed through AWL700, you can choose "enable" to turn on this feature. "Enable" means RIP can be sent and received from that interface.

• **RIP Parameters:**

- RIP mode: Disable Enable
- WAN Interface RIP Mode: Disable Enable
- Wireless Interface RIP Mode: Disable Enable
- LAN Interface RIP Mode: Disable Enable

3.3.4.2 Routing Table

In AWL700, you can add or delete route into or from **Routing Table**. If you would like to forward packets to a specific host, you can add a static route for that host.

• **Routing Table:**

Routing Table			
Network Address:	10	82	141 . 1
Netmask Address:	255	255	255 . 0
Gateway Address:	192	168	1 . 1
<input type="button" value="Add"/> <input type="button" value="Delete"/> <input type="button" value="Update"/>			
Network_Address	Netmask_Address	Gateway_Address	
1 : 0.0.0.0	0.0.0.0	10.0.0.254	
2 : 10.82.141.1	255.255.255.0	192.168.1.1	

Network Address – Host or network that you would like to forward your packets

Netmask Address – Network mask.

Gateway Address – Host that you would like packets to go from.

3.3.5 Security Setup

To prevent unauthorized wireless stations from accessing data transmitted over the network, the 11Mbps Wireless LAN Access Point offers WEP (Wired Equivalency Privacy). You can set up 4 encryption keys but choose one key to encrypt your data.



Security Setup

- **WEP Encryption:**

- Choose Encryption: Disable (no encryption)
 WEP64 (Key is 5 hex byte. Ex:1122334455)
 WEP128 (Key is 13 hex byte. Ex:112233445566778899aabbccdd)

Use Key: Key 1
 Key 2
 Key 3
 Key 4

- **Authentication Type:**

- Open System
 Shared Key
 Both

Apply

The 11Mbps Wireless Access Point allows you to create 4 data encryption keys to secure your data from being eavesdropped by unauthorized wireless user. To activate and set the WEP keys, do the following:

From the WEP encryption item, list three options:

Disable – Allows wireless adapters to communicate with Wireless Access Points without any data encryption.

WEP64 – Requires wireless stations to use data encryption with 64 bits algorithm when communicating with the Wireless Access Point.

WEP128 - Allows wireless clients to communicate with the Wireless Access Point with data 128 Bit encryption algorithms.

When WEP64 is selected, enter 10 digit hexadecimal values in the range of "A-F", "a-f" and "0-9", (e.g. 1234567890).

When WEP128 is selected, enter 26 digit hexadecimal values in the range of "A-F", "a-f" and "0-9" (e.g. 11223344556677889900aabbdd).



Then enter the 4 WEP keys in the Key 1, Key 2, Key 3 and Key 4 entry field. Select one WEP key as an active key before enabling use of encryption

NOTE

The WEP key must be set up exactly the same on the Wireless Access Points as they are on the wireless client stations. If you use Key 1 on the Wireless LAN Access Point, the same value must be assigned to Key 1 for all client stations.

3.3.6 Access Control

The Access Control Table enables you to restrict wireless stations accessing the Wireless Access Points by identifying the MAC address of the wireless devices.

Access Control Setup

• **Access Control Parameters:**

- Disable (open to public)
- Enable (allow network access from stations in the MAC list)

Reverse Access: Disable Enable

MAC Address: ; ; ; ; ;

MAC List:

1	: 00:00:00:00:00:00	<input type="button" value="Delete"/>
2	: 00:00:00:00:00:00	
3	: 00:00:00:00:00:00	
4	: 00:00:00:00:00:00	
5	: 00:00:00:00:00:00	

Use the following buttons to manage the Access Control Table:

Enable – allow network access from stations in the list

Change – to change and add the entries in the table if you enter the incorrect MAC address

Reverse Access – Change to Enable for reverse access (Only those Mac Address in the table are prohibited)



Delete – to remove MAC addresses one at a time

NOTE

Be sure to **press “Apply” bottom after modifying the configuration before leave this page or “Save Setting”**

3.3.7 802.1x Security setup

802.1x is enterprise-class security mechanism. It gives user higher security and protection by way of backend radius server. Please reference IEEE 802.1x, RFC 2284, RFC 2138 and RFC 2866 for details.



802.1x Security Setup

● MAC Authenticate Parameter:

Wireless Interface: Disable Enable
LAN Interface: Disable Enable

● EAP Authenticate Parameter:

Wireless Interface: Disable Enable

● Radius Parameters:

Radius IP:
Radius Port:
Radius Secret Key:
Radius NAS ID:
Authenticate Timeout:
Authenticate Retry:

● Radius Accounting Parameters:

Accounting Service: Disable Enable
Accounting IP:
Accounting Port:
Accounting Secret:
Accounting NAS ID:
Authenticate Timeout:
Authenticate Retry:

● MAC Authenticate Parameter

Wireless Interface– **Enable RADIUS authentication through MAC address of Wireless LAN card.**

LAN Interface– **Enable RADIUS authentication through MAC address of Ethernet LAN card.**

● EAP Authenticate Parameter

Wireless Interface– **Enable EAP-MD5 certification for wireless interface.**

● Radius Parameters

Radius IP – **A specify IP address of the remote RADIUS server.**

Radius Port – **For auth-port port-number, specify the UDP destination port for**



authentication requests.

Radius Secret Key– **For key string, specify the authentication and encryption key used between the Authenticator and the RADIUS daemon running on the RADIUS server. The key is a text string that must match the encryption key used on the RADIUS server.**

Radius NAS ID – **The RADIUS Client authenticate name.**

Authenticate Timeout – **Number of seconds that is the Authenticator should wait for a response before retransmit the request.**

Authenticate Retry – **Number of times that is the Authenticator authenticates process.**

- Radius Accounting Parameters

Accounting Service – **The charging service.**

Accounting IP – **A specify IP address of the remote Accounting server.**

Accounting Port –**Specify the UDP port for Accounting server requests.**

Accounting Secret – **For key string, specify the authentication and encryption key used between the Authenticator and the Accounting server. The key is a text string that must match the encryption key used on the RADIUS server.**

Accounting NAS ID –**The RADIUS Client authenticate name.**

Authenticate Timeout – **Number of seconds that is the Authenticator should wait for a response before retransmit the request.**

Authenticate Retry – **Number of times that is the Authenticator authenticates process.**

3.4 User Account

You may change the default password by entering the new password. Enter the new password in the Confirm Change field to make the new setting take affect.

User Account Setup

◆ **User Account Table:**

Index	Username	Account Type	Authority
1	admin	Administrator	Read/Write/Add User Account
2	guest	Normal User	Read
3			
4			
5			

◆ **Add/Delete User Account:**

Index	Username	New Password	Password Confirm	Account Type	Add/Delete
<input type="text" value="0"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="radio"/> Administrator <input type="radio"/> Power User <input type="radio"/> Normal User	<input type="radio"/> Add <input type="radio"/> Delete

Apply

There are two default user account. One is admin(password:admin) and the other is guest(password:guest). And user could add more user account to differentiate their access right. Administrator type give highest rights including reading web page, writing web page and adding user account. Power user type give rights including reading web page and writing page. Normal user could only read web page.

3.5 Save Setting

If you have already configured your AWL700 and wished to save your configuration, please select “Save Setting” page to save all your configurations. Please note that, after you have saved you configurations, AWL700 will prompt “Reboot System” page to notify you to reboot your system. It is necessary to reboot AWL700 to ensure you configurations are activated.

Utility - Save Configuration

This page offers you the opportunity to save your configuration.

!!

Continue with SAVE?

Submit

3.6 Reboot System

AWL700 offers a remote reboot function to reboot your AWL700. This means users do not need to approach to their AWL700s to reset systems.

Utility - Reboot System

Click the below button to reboot AWL700. You may lose Internet connection until the web page goes back to Quick Installation Wizard. It may takes about 10 seconds.

!!

Continue to Reboot?

Reboot

NOTE

ALL settings will not take effect until “Save Setting” and “Reboot System” performed.

3.7 Update Firmware

AWL700 provides firmware update function by your web browser. If users would like to change their firmware version, they can do this by choosing the newer or older firmware file in their PC, then push the "Upgrade" button to begin the updating process. This progress requires one minute to complete the updating process, so AWL700 will pop up a page to ask users to wait for one minute. When all progresses have been done, the web browser will connect to AWL700's web server automatically, and **please do not press any key before all progresses are completed.**

Utility - Firmware Upgrade

!!

Firmware Filename	E:\awl700.bin	瀏覽...
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Upgrade Cancel

Utility - Firmware Upgrade

Firmware Transfer OK. Please wait a minute .This unit will restart automatically.

!!



3.8 Web Language

Here, you can choose different web language. The second item in the following diagram is traditional Chinese and the third is simplified Chinese.

Web Language

- ENGLISH
- 繁體中文
- 简体中文

Apply



3.9 Load Default Setting

Every AWL700 will have its default setting when it is shipped to users. This can prevent users from corrupting the configurations and making AWL700 function abnormally. If this situation has occurred, you can go to this page and try to load AWL700's default setting. After you have loaded the default setting of AWL700, all your previous configurations will be lost forever.

Utility - Load Default Configuration

This page offers you the opportunity to load your default configuration.

!!

Continue with LOAD DEFAULT?

Apply



Chapter 4 Appendix

TCP/IP Configuration for Windows 98/Me/2000

1. Double click **Start** icon, and choose the **settings**, then click **Control Panel**.
2. Double click the Network icon. See the **Configuration** tab, and select the TCP/IP line that has been associated to your network card.
3. Click Properties button to set the TCP/IP protocol for your AWL700 gateway.
4. Please choose one setting method from a. Fixed IP address or b. DHCP.
 - a. Fixed IP setting:
 1. Select **Specify an IP address** in the IP address tab. The default IP address for AWL700 is 192.168.1.1. According to the data, please fill in 192.168.1. ××× (××× is between 1 to 253) for IP address field and 255.255.255.0 for Subnet Mask field.
 2. In the **Gateway** tab add the IP address of AWL700 (default IP is 192.168.1.1) in the New **Gateway** field and click **Add** button.
 3. In the **DNS configuration** tab, please choose **Enable DNS**, fill in the **Host** name, then add DNS values which are provided by your ISP into **DNS Server Search Order** and click **Add** button.
 4. Restart your computer.
 - b. DHCP setting:
 1. Select Obtain an IP address automatically in the IP address tab.
 2. Do not need to input values in **Gateway** tab.
 3. Choose **Disable DNS** in the DNS Configuration tab.
 4. Restart your computer.