Dynalink ADSL2+ Wireless Modem Router User Manual

RTA1025W



Safety Notes

For Installation		Use only the type of power source indicated on the marking labels.
		Use only power adapter supplied with the product.
		Do not overload wall outlet or extension cords as this may increase the risk of electric shock or fire. If the power cord is frayed, replace it with a new one.
		Proper ventilation is necessary to prevent the product overheating. Do not block or cover the slots and openings on the device, which are intended for ventilation and proper operation. It is recommended to mount the product with a stack.
		Do not place the product near any source of heat or expose it to direct sunlight.
		Do not expose the product to moisture. Never spill any liquid on the product.
		Do not attempt to connect with any computer accessory or electronic product without instructions from qualified service personnel. This may result in risk of electronic shock or fire.
		Do not place this product on unstable stand or table.
For Using		Power off and unplug this product from the wall outlet when it is not in use or before cleaning. Pay attention to the temperature of the power adapter. The temperature might be high.
		After powering off the product, power on the product at least 15 seconds later.
		Do not block the ventilating openings of this product.
		When the product is expected to be not in use for a period of time, unplug the power cord of the product to prevent it from the damage of storm or sudden increases in rating.
For Service	atter	not attempt to disassemble or open covers of this unit by yourself. Nor should you mpt to service the product yourself, which may void the user's authority to operate it. tact qualified service personnel under the following conditions:
		If the power cord or plug is damaged or frayed.
		If liquid has been spilled into the product.
		If the product has been exposed to rain or water.
		If the product does not operate normally when the operating instructions are followed.
		If the product has been dropped or the cabinet has been damaged.
		If the product exhibits a distinct change in performance.
Warning		This equipment must be installed and operated in accordance with provided instructions and a minimum 20 cm spacing must be provided between computer mounted antenna and person's body (excluding extremities of hands, wrist and feet) during wireless modes of operation.
		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.
Caution		Any changes or modifications not expressly approved by the party responsible for compliance could void the authority to operate equipment.

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Before You Use

Thank you for choosing the Asymmetric Digital Subscriber Line (ADSL) Router. With the asymmetric technology, this device runs over standard copper phone lines. In addition, ADSL allows you to have both voice and data services in use simultaneously all over one phone line.

RTA1025W Wireless ADSL2+ Router is a DSL broadband access device which allows ADSL connectivity while providing 802.11g wireless LAN capabilities for home or office users. It supports ADSL2/ADSL2+ and is backward compatible to ADSL, even offers auto-negotiation capability for different flavors (G.dmt, G.lite, or T1.413 Issue 2) according to central office DSLAM's settings (Digital Subscriber Line Access Multiplexer). Also the feature-rich routing functions are seamlessly integrated to ADSL service for existing corporate or home users. Now users can enjoy various bandwidth-consuming applications via RTA1025W Wireless ADSL2+ Router.

Features

ADSL Compliance

- ANSI T1.413 Issue 2
- S ITU G.992.1 Annex A (G.dmt)
- S ITU G.992.2 Annex A (G.lite)
- **X** ITU G.994.1 (G.hs)
- Support dying gasp
- Maximum Rate: 8 Mbps for downstream and 1 Mbps for upstream

ADSL2 Compliance

- S ITU G.992.3 Annex A (G.dmt)
- S ITU G.992.4 Annex A (G.lite)
- Maximum Rate: 12 Mbps for downstream and 1 Mbps for upstream

ADSL2+ Compliance

- S ITU G.992.5 Annex A (G.dmt)
- Maximum Rate: 24 Mbps for downstream and 1.2 Mbps for upstream

Wireless LAN Compliance Features

- S IEEE 802.11g and IEEE 802.11b
- Data Rate: 54, 48, 36, 24, 18, 12, 9, 6 Mbps for 802.11g/11, 5.5, 2, 1 Mbps for 802.11b
- Modulation Technique: OFDM for 802.11g; CCK (11 Mbps, 5.5 Mbps) for 802.11b; DQPSK (2Mbps) for 802.11b; DBPSK (1 Mbps) for 802.11b
- Solution Network Architecture: infrastructure
- S Operating Frequency: 2.4 ~ 2.5 GHz
- Ø Operating Channels: depending on local regulations. For example, 11Channels (Northern

America), 13 Channels (Europe), and 14 Channels (Japan)

- **K** RF Output Power: 13.5+/-1.5dBm for 802.11g; 17.5+/-1.5dBm for 802.11b
- Antenna Connectors: Hardware diversity support. One external antenna and one internal antenna are provided.
- S Coverage Area: 300m
- Support WEP (Wired Equivalent Privacy) mechanism which uses RC4 with 64-bit or 128-bit key length
- Support 802.1x and WPA/WPA2
- Support the Access Control function: only registered WLAN clients can be allowed to associate to this device
- SSID can be hidden for the security issue (Don't broadcast SSID)
- Support the Repeater function to extend the coverage area
- Support wireless user isolation for the hotspot

ATM Features

- Compliant to ATM Forum UNI 3.1 / 4.0 Permanent Virtual Circuits (PVCs)
- Support up to 16 PVCs for UBR, CBR, VBR-nrt, VBR-rt with traffic shaping
- RFC2684 LLC Encapsulation and VC Multiplexing over AAL5
- RFC2364 Point-to-Point Protocol (PPP) over AAL5
- RFC2225 Classical IP and ARP over ATM
- **RFC2516 PPP over Ethernet: support Relay (Transparent Forwarding and Client functions)**
- Support PPPoA or PPPoE Bridged mode (the IP address got from ISP can be passed to the user's PC and behave as the IP address of the user's PC.)
- Source Cells OAM F4/F5 End-to-End/Segment Loopback Cells

Bridging Features

- Supports self-learning bridge specified in IEEE 802.1D Transparent Bridging
- Supports up to 4096 learning MAC addresses
- Transparent Bridging among 10/100 Mb Ethernet, USB, and 802.11g wireless LAN
- Support Virtual LAN function specified in IEEE 802.1q

Routing Features

- X NAT (Network Address Translation) / PAT (Port Address Translation) let multiple users on the LAN to access the internet for the cost of only one IP address.
- ALGs (Application Level Gateways): such as NetMeeting, MSN Messenger, FTP, Quick Time, mIRC, Real Player, CuSeeMe, VPN pass-through, etc.
- Port Forwarding: the users can setup multiple virtual servers (e.g., Web, FTP, Mail servers) on user's local network.
- Support DMZ
- UPnP IGD (Internet Gateway Device) with NAT traversal capability
- Static routes, RFC1058 RIPv1, RFC1723 RIPv2
- S DNS Relay, Dynamic DNS
- Source Client/Relay/Server
- β Time protocol can be used to get current time from network's time server

- Support IGMP Proxy
- Support IP/Bridge QoS for prioritize the transmission of different traffic classes
- Support port mapping function which allows you to assign all data traffic transmitted among specific Internet connections and LAN ports

Security Features

- PAP (RFC1334), CHAP (RFC1994), and MS-CHAP for PPP session
- Firewall support IP packets filtering based on IP address/Port number/Protocol type
- S Bridge packet filtering (optional)
- Source URL filtering (optional)
- Support DoS (Deny of Services) which detect & protect a number of attacks (such as SYN/FIN/RST Flood, Smurf, WinNuke, Echo Scan, Xmas Tree Scan, etc)

Configuration and Management

- Solution User-friendly embedded web configuration interface with password protection
- Remote management accesses control
- S Telnet session for local or remote management
- Firmware upgrades through HTTP or TFTP
- The boot loader contains very simple web page to allow the users to update the run-time firmware image.
- S Configuration file backup and restore
- SNMPv1/v2 agent with MIB-II, ADSL Line MIB

Unpacking

Check the contents of the package against the pack contents checklist below. If any of the items is missing, then contact the dealer from whom the equipment was purchased.

- S ADSL Router
- Power Adapter and Cord
- S RJ-11 ADSL Line Cable
- S RJ-45 Ethernet Cable
- Ø Quick Start Guide
- S Driver & Utility Software CD
- S USB Cable

Subscription for ADSL Service

To use the ADSL Router, you have to subscribe for ADSL service from your broadband service provider. According to the service type you subscribe, you will get various IP addresses:

Dynamic IP: If you apply for dial-up connection, you will be given an Internet account with username and password. You will get a dynamic IP by dialing up to your ISP.

Static IP address: If you apply for full-time connectivity, you may get either one static IP address or a range of IP addresses from your ISP. The number of IP addresses varies according to different ADSL service provider.

Chapter 1 Overview

This chapter provides you the description for the LED and connector for front and rear view of the router. Before you use/install this router, please take a look at this information first.

Physical Outlook

Front Panel

The following illustrations show the front panel of the ADSL Router:



LED Indicators

The ADSL Router is equipped with several LEDs on the front panel as described in the table below (from right to left):

Function	Color	Definition
	Off	Power is off.
	Solid Green	Power is on and the device operates normally.
	Solid Red	Power on self-test in progress
Power		The device enters the console mode of the boot loader.
		Power on self-test failure if the led always stays solid red.
	Flash Red	Firmware upgrades in progress
DSL	Off	No DSL signal is detected.
	Slow Flash Green	DSL line handshaking in progress
	Fast Flash Green	DSL line training in progress
	Solid Green	DSL line connection is up.
PPP	Off	No PPPoA or PPPoE connection
	Solid Green	At least one PPPoA or PPPoE connection is up. The users can access the Internet now.

Function	Color	Definition
	Off	No Ethernet signal is detected.
Ethernet	Flash Green	User data going through Ethernet port
	Solid Green	Ethernet interface is ready to work.
	Off	No USB signal is detected.
USB	Flash Green	User data going through USB port
	Solid Green	USB interface is ready to work.
	Off	No radio signal is detected.
WLAN	Flash Green	User data going through WLAN port
	Solid Green	WLAN interface is ready to work.

Rear Panel

The following figures illustrate the rear panel of your ADSL Router.



Connector	Description		
12VAC	12VAC Power connector		
	Power switch		
Ethernet 1-4	Ethernet RJ-45 connector		
USB	USB connector (for the model with USB interface only)		
DSL	RJ-11 connector		

Chapter 2 Installation

Choosing a place for the ADSL Router

- Place the ADSL Router close to ADSL wall outlet and power outlet for the cable to reach it easily.
- 2 Avoid placing the device in places where people may walk on the cables. Also keep it away from direct sunlight or heat sources.
- **3** Place the device on a flat and stable stand.

Connecting the ADSL Router

Follow the steps below to connect the related devices.

- Please attach one end of the Ethernet cable with RJ-45 connector to the LAN port of your ADSL Router.
- 0
- Connect the other end of the cable to the Ethernet port of the client PC.



3 Connect the supplied power adapter to the **PWR** port of your ADSL Router, and plug the other end to a power outlet.



4 Turn on the power switch.

USB Driver Installation

If the ADSL Router is connected to a PC through USB interface, you will be prompted for the USB drivers when plugging the USB cable to the PC. Refer to the relevant operating system to install the USB drivers. Otherwise, you may skip this chapter.



Note: This section is for the model with USB interface only. If your router does not support USB interface, please skip this

For Windows ME

- 0 Run the USB installation program from the CD provided by your router package.
- 0 An InstallShield Wizard will appear. Please wait for a moment.
- B When the welcome screen appears, click Next for next step.
- 4 When the InstallShield Wizard Complete appears, click Finish.
- 6 Plug the USB cable between your router and PC.

Note: If the USB device is not detected, check the USB cable ----between the PC and the device. Also verify that the device is power on.

- 6 The system will detect the USB driver automatically. Now, the system will copy the proper files for this router.
- 0 When the file copying finished, the dialog above will close. Now the USB driver is installed properly. You can use the router.

For Windows 2000

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0

Run the USB installation program from the CD provided by your router package. An InstallShield Wizard will appear. Please wait for a moment.





When the welcome screen appears, click Next for next step.



4

When the InstallShield Wizard Complete appears, click Finish.



6

Plug the USB cable between your router and PC.



6

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Note: If the USB device is not detected, check the USB cable between the PC and the device. Also verify that the device is power on.

- The system will detect the USB driver automatically. Now, the system will copy the proper files for this router.
- When the file copying finished, the dialog above will close. Now the USB driver is installed properly. You can use the router.

For Windows XP

Run the USB installation program from the CD provided by your router package.

An InstallShield Wizard will appear. Please wait for a moment.

InstallShield Wizard			
2	Askey ADSL Router USB Driver Setup is prepari InstallShieldR Wizard, which will guide you throu setup process. Please wait.		
		Cancel	

B

When the welcome screen appears, click Next for next step.





When the InstallShield Wizard Complete appears, click Finish.





Plug the USB cable between your router and PC.





0

The system will detect the USB driver automatically.



The system is trying to find proper driver for your router and copying the files automatically.





0

After the file copying is finished, a completing message will appear.



You can use the router now.

Uninstall the USB Driver

For Windows ME

For uninstall the USB driver, please do the following.

The first way:

- Choose Programs Askey Broadband Uninstall Askey ADSL Router USB Driver from the Start menu.
- 2 The InstallShield Wizard dialog will appear.
- A dialog appears to ask you confirm if you want to remove the USB driver or not. Please click **Ok**.
- **4** Unplug the USB cable between your router and your PC.
- S When the Maintenance Complete screen appears, the USB driver is removed successfully. Click Finish.

The second way:

- Choose Settings Control Panel from the Start menu. Choose Add/Remove Programs.
- A dialog appears to ask you choose the program that you want to remove. Please select Askey ADSL Router USB Driver and click Change/Remove.
- **3** The InstallShield Wizard dialog will appear.
- **4** Unplug the USB cable between your router and your PC. Then click **OK**.
- S When the Maintenance Complete screen appears, the USB driver is removed successfully. Click Finish

For Windows 2000

For uninstall the USB driver, there are two ways to do it. Please do as the following:

The first way:



Choose **Programs – Askey Broadband – Uninstall Askey ADSL Router USB Driver** from the **Start** menu.



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The InstallShield Wizard dialog will appear.



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A dialog appears to ask you confirm if you want to remove the USB driver or not. Please click Ok.

Confirm Uninstall	I
Do you want to remove the Askey ADSL Router USB driver ?	
Warning: Please unplug the USB cable now before proceeding with uninstall.	
For Windows 2000 users, before unplugging the cable please click the "Unplug/Remove Hardware" icon in your Windows system tray to stop Askey ADSL router USB driver. Please refer to your Windows Help for help about unplugging hardware.	
Cancel	
Unplug the USB cable between your router and your PC.	

4

Confirm Uninstall	×
Please unplug the USB cable nov	w before proceeding with uninstall.
ОК	Cancel

6

When the Unsafe Removal of Device screen appears, the USB driver is removed successfully. Click OK.

🍜 Unsafe Removal of Device	? ×
You have unplugged or ejected a device without stopping Unplugging or ejecting devices without first stopping them often cause your computer to crash and lose valuable da	n can
To safely unplug or eject any of the following devices, first use the wizard in the Control Panel to stop the device.	Hardware
Askey ADSL Router USB Remote NDIS Device (BCM63xx Ba If you frequently need to unplug this device, Windows can give you on the taskbar to quickly unplug or eject your device. If you would	u an icon
this option, check the following:	
Show Unplug/Eject jcon on the taskbar.	
	OK)

6

When the Maintenance Complete screen appears, the USB driver is removed successfully. Click Finish.



The second way:



Choose Settings – Control Panel from the Start menu. Choose Add/Remove Programs.

🗟 Control Panel			
<u>File E</u> dit <u>V</u> iew F <u>a</u> vorites <u>T</u> o	ools <u>H</u> elp		
🖛 Back 👻 🤿 👻 🔂 🧟 Search	n 🔁 Folders 🧭 階 🧏 🗙 ᡢ 🗐 🎟 •		
Address 🗟 Control Panel	▼ ∂°60		
Content of the second s			
Add/Remove Hardware	🛇 Mouse		
🔚 Add/Remove Programs	Network and Dial-up Connections		
🗃 Administrative Tools	NVIDIA nView Desktop Manager		
🕙 Automatic Updates	Phone and Modem Options		
🐻 Date/Time	🝓 Power Options		
📝 Display	🙆 Printers		
Folder Options	Regional Options		
A Fonts	Canners and Cameras		
Caming Options	Scheduled Tasks		
Internet Options	K Sounds and Multimedia		
🛗 Keyboard	System		
Installs and removes programs and Windows comp			

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A dialog appears to ask you choose the program that you want to remove. Please select **Askey ADSL Router USB Driver** and click **Change/Remove**.

🙀 Add/Remov	e Programs		
1	Currently installed programs:	Sort by: Name	•
Change or Remove Programs	🙀 Askey ADSL Router USB Driver	Size	<u>872кв</u>
	To change this program or remove it from your computer, click Change/Remove.	<u>C</u> hange/Re	move
2	🥭 Internet Explorer Q831167		
Add New Programs	😹 Microsoft Internet Explorer 6 SP1	Size	10.9MB
	NVIDIA Windows 2000/XP Display Drivers		
	😭 Outlook Express Q837009	Size	4.06MB
Add/Remove	SoundMAX	Size	1.95MB
Windows Components	Van Dyke Technologies CRT 3.4	Size	4.34MB
componentes	🛃 Windows 2000 Hotfix - KB329115		
	🛃 Windows 2000 Hotfix - KB820888		
	🛃 Windows 2000 Hotfix - KB822831		
	🛃 Windows 2000 Hotfix - KB823182		
	🛃 Windows 2000 Hotfix - KB823559		•
			Close

The InstallShield Wizard dialog will appear.

Add/Remov	e Programs	
	Currently installed programs:	Sort by: Name
Change or Remove Programs	🛃 Askey ADSL Router USB Driver	Size <u>872KB</u>
	To change this program or remove it from yo computer, click Change/Remove.	our
	😹 Internet Explorer Q831167	
Add New Programs	Microsoft Internet Explorer 6 SP1	Size 10.9MB
_	NVIDIA Windows 2000/XP Display Drivers	
	Outlook Express Q83:	rd
Add/Remove	SoundM0X	OSL Router USB Driver Setup is preparing the
Windows Components	🔲 Van Dyke Technologie 🛛 🔼 InstallShie	eld® Wizard, which will guide you through the rest of the
componentes	Windows 2000 Hotfix	icess. Please wait.
	Windows 2000 Hotfix	
	Windows 2000 Hotfix	Cancel
	Windows 2000 Hotfix - KB823182	
	Windows 2000 Hotfix - KB823559	
	H	_
		Close

4

₿

Unplug the USB cable between your router and your PC. Then click OK.

Confirm Uninstall
Please unplug the USB cable now before proceeding with uninstall.
OK Cancel

When the Maintenance Complete screen appears, the USB driver is removed successfully. Click **Finish.**

⁶



For Windows XP

For uninstall the USB driver, there are two ways to do it. Please do as the following:

The first way:



Choose **Programs – Askey Broadband – Uninstall Askey ADSL Router USB Driver** from the **Start** menu.



0

The InstallShield Wizard dialog will appear.



A dialog appears to ask you confirm if you want to remove the USB driver or not. Please click **Ok**.



- **4** Unplug the USB cable between your router and your PC.
- S When the Unsafe Removal of Device screen appears, the USB driver is removed successfully. Click OK.
- 6 When the Maintenance Complete screen appears, the USB driver is removed successfully. Click **Finish.**

InstallShield Wizard	
	Maintenance Complete
	Askey ADSL Router USB driver has now been uninstalled.
	Click Finish to exit the un-installation process.
	< Back Finish Cancel

The second way:



Choose Settings - Control Panel from the Start menu. Choose Add/Remove Programs.



0

A dialog appears to ask you choose the program that you want to remove. Please select **Askey ADSL Router USB Driver** and click **Change/Remove**.

🐻 Add or Re	move Programs				
5	Currently installed programs:	Show updates	Sort by: Name		*
Change or Remove	ACDSee 5.0 PowerPack		Size	30,66MB	^
Programs	🖄 Adobe Acrobat 5.0		Size	25.17MB	
	💑 Alcohol 120%		Size	4.29MB	
Add New	ស្រ្រី Askey ADSL Router USB Driver		Size	0.85MB	
Programs	To change this program or remove it from your computer	r, dick Change/Remove.	Chang	je/Remove	
<u> </u>	CommView		Size	4.34MB	=
Add/Remove Windows	🕞 Dr. Eye 6.0 SP2 (~by X-X-S-S)		Size	708.00MB	
Components	C Ethereal 0.10.4		Size	29,88MB	
	🛐 FlashGet(JetCar)		Size	2.58MB	
Cab Deceman	FTDI USB Serial Converter Drivers				
Set Program Access and	📢 GRICdial 3.3.2		Size	5.32MB	_
Defaults	😤 Hammer Call Analyzer		Size	15.23MB	
	🕞 Intel(R) Integrated Performance Primitives RTI 3.0		Size	14.21MB	
	iveReg (Symantec Corporation)		Size	1.82MB	
	(2) LiveUpdate 2.5 (Symantec Corporation)		Size	7.85MB	
	🕮 Microsoft .NET Framework 1.1		Size	37.46MB	
	👸 My Web Search (Smiley Central)		Size	2.13MB	-

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The InstallShield Wizard dialog will appear.



Unplug the USB cable between your router and your PC. Then click OK.



6

4

When the Maintenance Complete screen appears, the USB driver is removed successfully. Click **Finish**.

InstallShield Wizard				
	Maintenance Complete			
	Askey ADSL Router USB driver has now been uninstalled.			
	Click Finish to exit the un-installation process.			
	< <u>B</u> ack Finish Cancel			

Chapter 3 Configuration

In order to access the Internet through the router, each host on your network must install/setup TCP/IP. Please follow the steps below for select a network adapter.

Setting TCP/IP on Client PC

To access the ADSL Router via Ethernet, the host computer must meet the following requirements:

- With Ethernet network interface.
- Must have TCP/IP installed.
- Set client PC with obtain an IP address automatically or set fix IP address.
- With a web browser installed: Internet Explorer 5.x or later.

The ADSL Router is configured with the **default IP address of 192.168.1.1** and subnet mask of **255.255.255.0.** As the DHCP server is **Enable** by default, The DHCP clients should be able to access the ADSL Router. Or you could assign an IP address to the host PC first for initial configuration.

You also can manage the ADSL Router through a web browser-based manager: **ADSL ROUTER CONTROL PANEL**. The ADSL Router manager uses the HTTP protocol via a web browser to allow you to set up and manage the device.

To configure the device via web browser, at least one properly-configured PC must be connected to the network (either connected directly or through an external hub/switch to the LAN port of the device).

If TCP/IP is not already installed, follow the steps below for installation.

For Windows 98

1. Click on the **Start** menu, point to **Settings** and click on **Control Panel**.

2. Double-click the Network icon

3. The Network window appears. On the Configuration tab, check out the list of installed network components.

Option 1: If you have **no** TCP/IP protocol, click **Add**.

Option 2: If you have TCP/IP protocol, go to Step 6

Your network interface card.

Programs Favorites

Setting

🥏 Help

Bun.

🚯 Start

🔔 Log Off... 🜒 Shut Dowr

Real Control Panel

81

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Printers

Network

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 $\underline{F}ile \quad \underline{E}dit \quad \underline{V}iew \quad \underline{G}o$

Address 🞯 Control Panel

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ODBC Data

Sources (32bit)

Regional Settings

Configuration | Identification | Access Control |

🍸 TCP/IP ->Intel 82595-Based Ethemet

51

Client for Microsoft Networks
Microsoft Family Logon

Dial-Up Adapter

Add..

Description

Primary Network Logon:

Client for Microsoft Networks

Eile and Print Sharing.

The following network components are installed:

J WinZip

Windows Update

Eolder Options..
Active Desktop

Iaskbar & Start Menu
 Eolder Options...

🚯 Windows Update.

F<u>a</u>vorites

1 Up

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Passwords

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Sounds

<u>H</u>elp

X Cut _ 🗆 🗵

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Cancel

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Copy

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Power

Managemeni

System

🗐 My Computer

Check out if TCP/IP for your NIC is installed or not.

4. Highlight **Protocol** and click **Add**.



OK

5. On the left side of the windows, highlight **Microsoft** and then select **TCP/IP** on the right side. Then click **OK**

6. When returning to **Network** window, highlight **TCP/IP** protocol for your NIC and click **Properties**.

 On IP Address tab: Enable Specify an IP address option. Enter the IP Address: 192.168.1.x (x is between 2 and 254) and Subnet Mask: 255.255.255.0 as in figure below. On Gateway tab: Add a gateway IP address: 192.168.1.1 and click OK



LI 711 TTOPETUES				
Bindings	Adv	anced	N N	etBIOS
DNS Configuration	Gateway	WINS Con	figuration	IP Address
An IP address can If your network doo your network admit the space below.	es not autor	natically assi	gn IP addr	esses, ask
	address au	tomatically		
Specify an IP	address:			
IP Address:	19	2.168.1	. 100	
Sybnet Masl	25	5,255,25	5.0	
		0	ĸ	Cancel
P/IP Properties				? >
Bindings	Adv	anced	N	etBIOS
DNS Configuration	Gateway	WINS Con	figuration	IP Address
The first gateway in The address order machines are used	in the list wi	ed Gateway ill be the ord	list will be I er in which	the default. these
New gateway:				
	•		d	
Installed gateway	ys:			
192 168 1 1		Rem	we I	
		0	ĸ	Cancel

8. When returning to **Network** window, click **OK**

Network ? X
Configuration Identification Access Control
The following network components are installed:
Client for Microsoft Networks Microsoft Family Logon Dial-Up Adapter Intel 82596-Based Ethernet
TCP/IP ->Intel 82595-Based Ethenet
Add Remove Properties
Primary Network Logon:
Client for Microsoft Networks
Eile and Print Sharing Description
Encel -
Copying Files
Source:
Windows 98 CD-ROM
Destination:
Sanning
Comments
58%
Cancel
System Settings Change 🛛 🛛 🔀
You must restart your computer before the new settings will take effect.
Do you want to restart your computer now?
Yes No

9. Wait for Windows copying files.

10. When prompted with **System Settings Change** dialog box, click **Yes** to restart your computer.

For Windows ME

- 1. Click on the **Start** menu, point to **Settings** and click on **Control Panel**.
- 2. Double-click the Network icon.
- The Network window appears. On the Configuration tab, check out the list of installed network components.
 Option 1: If you have no TCP/IP protocol, click Add.
 Option 2: If you have TCP/IP protocol, go to Step 6.
- 4. Highlight **Protocol** and click **Add**.
- On the left side of the windows, highlight Microsoft and then select TCP/IP on the right side. Then click OK.
- 6. While returning to **Network** window, highlight **TCP/IP** protocol for your NIC and click **Properties**.

onfiguration Identifi	ication Access Control
The following netwo	ork components are installed:
Client for Micros Microsoft Family Dial-Up Adapter	r Logon
	I 82595-Based Ethemet
Add	Remove Properties
Primary Network Log	gon:
Client for Microsoft	t Networks 💌
Eile and Print Sh	haring
Description TCP/IP is the prot wide-area network	tocol you use to connect to the Internet and <s.< td=""></s.<>
	OK Cance
P/IP Properties	
Bindings	Advanced NetBIOS
NS Configuration	Galeway winto configuration
An IP address can If your network do	n be automatically assigned to this compute es not automatically assign IP addresses, inistrator for an address, and then type it in
An IP address can If your network don your network admi the space below.	be automatically assigned to this compute es not automatically assign IP addresses, -
An IP address can If your network don your network admi the space below.	addentary where examplification is the automatically assign IP addresses, inistrator for an address, and then type it in address automatically
An IP address can If your network dor your network admi the space below.	addentary where examplification is the automatically assign IP addresses, inistrator for an address, and then type it in address automatically
An IP address can If your network don your network admi the space below. © Obtain an IP © Specify an IF	address automatically assigned to this compute es not automatically assign IP addresses, inistrator for an address, and then type it in address automatically address: 192.168.1.100
An IP address can If your network doi your network admi the space below. © Obtain an IP © Specify an IF IP Address: Sybnet Mas	address automatically assigned to this compute es not automatically assign IP addresses, inistrator for an address, and then type it in address automatically address: 192.168.1.100

 On the IP Address tab, select Specify an IP address. Enter the IP address: 192.168.1.x (x is between 2 and 254), Subnet Mask: 255.255.255.0 and Default gateway: 192.168.1.1. Then click OK.

8. While returning to the **Network** window, click **OK**.

- 9. Wait for Windows copying files.
- 10. When prompted with the **System Settings Change** dialog box, click **Yes** to restart your computer.

For Windows NT

1. Click Start, point to Settings, and then click Control Panel.



MS

Console

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Fonts

60

Multimedia

8

Date/Time

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Internet

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Netw

<u>H</u>elp

Add/Remove Programs

3

Display

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Mouse

rk hardware and software

<u>File E</u>dit <u>V</u>

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Accessibility Options

- 67

Dial-Up Monitor

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Modem:

Network

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Devices

Keyboard

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ODBC:

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? ×

2. Double-click the Network icon.

 The Network window appears. On the Protocols tab, check out the list of installed network components.
 Option 1: If you have no TCP/IP Protocol, click Add.
 Option 2: If you have TCP/IP Protocol installed, go to Step 7.

4. Highlight TCP/IP Protocol and click OK.



Click Yes to use DHCP.	TCP/IP Setup
	If there is a DHCP server on your network, TCP/IP can be configured to dynamically provide an IP address. If you are not sure, ask your system administrator. Do you wish to use DHCP?
	Yes N. No
Insert the Windows NT CD into your CD-ROM drive and type the location of the CD. Then click Continue .	Windows NT Setup Setup needs to copy some Windows NT files. Setup will look for the files in the location specified below. If you want Setup to look in a different place, type the new location. When the location is correct, click Continue.
	d.\1236
Returning to the Network window, you will find the TCP/IP Protocol among the list. Select TCP/IP Protocol and click Properties .	Network ? × Identification Services Protocols Adapters Bindings Network Protocols: * * NetBEUI Protocol * NetBEUI Protocol * NuLink IYEXPX Compatible Transport * * * NULink NetBIOS * TCP/IP Protocol * * Add Bemove Properties Update Description: Transport Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.
Enable Specify an IP address option. Enter the IP Address : 192.168.1.x (x is between 2 and 254) and Subnet Mask : 255.255.255.0 and Default Gateway : 192.168.1.1 as in figure below.	Close Cancel Microsoft TCP/IP Properties ? ▼ IP Address DNS WINS Address Routing An IP address can be automatically assigned to this network card by a DHCP server. If your network does not have a DHCP server, ask your network administrator for an address, and then type it in the space below. Adaptar: [1] Intel 82595-Based Ethernet ▼ C

5.

6.

7.

8.

9. When returning to Network window, click Close.



10. When prompted with Network Settings Change dialog box, click Yes to restart your computer.



For Windows 2000

1. From the Start menu, point to Settings and then click Network and Dial-up Connections.

2. Right-click the Local Area Connection icon and then click Properties.

On the General tab, check out the list of installed network components.
 Option 1: If you have no TCP/IP Protocol, click Install.
 Option 2: If you have TCP/IP Protocol, go to Step 6.





eneral			
Connect using:			
😕 Intel 82595-E	Based Ethernet		
		Γ	Configure
omponents checked	d are used by this conn	ection:	
Internet Proto	er Sharing for Microsoft col (TCP/IP)	HOWOIN	2
		6	s Properties
🗹 🏹 Internet Proto	col (TCP/IP)	6	
Install	col (TCP/IP)	F	^o roperties ne default
Install Install Description Transmission Contr wide area network across diverse inte	Uninstall	F	^o roperties ne default

4. Highlight **Protocol** and then click **Add**.

s

L

5. Click Internet Protocol (TCP/IP) and then click OK.

6. When returning to Local Area Connection Properties window, highlight Internet Protocol (TCP/IP) and then click Properties.

7. Under the General tab, enable Use the following IP Address. Enter the IP address: 192.168.1.x (x is between 2 and 254), Subnet Mask:
255.255.255.0 and Default gateway: 192.168.1.1. Then click OK.

elect Network Component Type ? 🗙
Click the type of network component you want to install:
📇 Client
Service
Trotocol
Description
A protocol is a language your computer uses to communicate with other computers.
Add Cancel
ect Network Protocol
Click the Network Protocol that you want to install, then click OK. If you have
an installation disk for this component, click Have Disk.
Manufacturers: Network Protocol:
Microsoft AppleTalk Protocol DLC Protocol
Internet Protocol (TCP/IP) NetBEUI Protocol
Network Monitor Driver NWLink IPX/SPX/NetBIOS Compatible Transport Pri
Have Disk
OK, Cancel
ocal Area Connection Properties
General
Connect using:
Intel 82595-Based Ethernet
Configure Components checked are used by this connection:
Components checked are used by this connection.
Client for Missmart Networks
Sclient for Microsoft Networks Section 2.2
E File and Printer Sharing for Microsoft Networks
File and Printer Sharing for Microsoft Networks Tinternet Protocol (TCP/IP)
File and Printer Sharing for Microsoft Networks Internet Protocol [[CP/IP] Install Uninstall Properties Description Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.

ternet Protocol (TCP/IP) Prope	erties 🔗
General	
	automatically if your network supports d to ask your network administrator for
C Obtain an IP address automa	atically
☐ Use the following IP address:	
IP address:	192.168.1.100
Subnet mask:	255 . 255 . 255 . 0
Default gateway:	· · ·
C Obtain DNS server address a	automatically
	r addresses:
Preferred DNS server:	· · · ·
Alternate DNS server:	· · ·
	Advanced
	OK Cancel
? 🗙

For Windows XP

From the **Start** menu, point to **Control Panel** and then click **Network and Internet Connections**.

Click Network Connection and then click Properties.

Click **Network Connection** and then click **Properties**.3. On the **General** tab, check out the list of installed network components.

Option 1: If you have **no** TCP/IP Protocol, click **Install**.

Option 2: If you have TCP/IP Protocol, go to Step 6.

Highlight Protocol and then click Add.

Click Internet Protocol(TCP/IP) and then click OK.

On the Local Area Connection Properties window, highlight Internet Protocol (TCP/IP) and then click Properties.

Client for File and f GoS Pac There f	Printer Si ket Sch	haring for Microso eduler	oft Networks
Install		Uninstall	Properties
wide area netw	ork proto	otocol/Internet P ocol that provides nected networks.	
Show icon in n	otificatio	n area when con	nected

📥 Local Area Connection Properties

General Authentication Advanced

Connect using:

Under the General tab, enable Use the following IP address. Enter the IP address: 192.168.1.x (x is between 2 and 254), Subnet Mask: 255.255.0 and Default gateway: 192.168.1.1. Then click Ok.

Internet Protocol (TCP/IP) Pro	operties ? 🔀			
General				
	utomatically if your network supports I to ask your network administrator for			
O Obtain an IP address automatically				
• Use the following IP address:				
IP address:	192.168.1.100			
S <u>u</u> bnet mask:	255 . 255 . 255 . 0			
Default gateway:	192.168.1.1			
O Dbtain DNS server address a	utomatically			
☐ Use the following DNS server	addresses:			
Preferred DNS server:				
Alternate DNS server:				
	Advanced			
	OK Cancel			

Configure PC to get IP address from DHCP

If your ADSL Router operates as a DHCP server for the client PCs on the LAN, you should configure the client PCs to obtain a dynamic IP address. Please follow the previous section to install TCP/IP component. Only that you do not need to specify an IP address when configuring TCP/IP properties.

The following section describe the procedures for CPEs to get IP address:

For Windows 98

On the **IP Address** tab, select **Obtain an IP address automatically**. Then click **OK**.

TCP/IP Properties				? ×
Bindings	i adv	anced	N N	etBIOS)
DNS Configuration	1 1.41	311004		IP Address
An IP address can If your network do your network admi the space below.	es not auton	natically assign	n IP addre	esses, ask
Obtain an IP	address aut	omatically		
C Specify an IF	address:			
<u>I</u> P Address:				
S <u>u</u> bnet Mas	k:			
		OK		Cancel

For Windows ME

On the **IP Address** tab, select **Obtain an IP address automatically**. Then click **OK**.

т	CP/IP Properties				? ×
	Bindings DNS Configuration An IP address can If your network doe	Gateway be automat	tically assigned	guration d to this c	
	your network admir the space below.	nistrator for address au	an address, a		
	IP Address:				
			OK		Cancel

For Windows NT

On the **IP Address** tab, click on the drop-down arrow of **Adapter** to select required adapter. Enable **Obtain an IP address from a DHCP server** and then click **OK**..

licrosoft TCP/IP Prope	rties			?	×
IP Address DNS WI	NS Addres:	Routing	1		1
An IP address can be a by a DHCP server. If yc ask your network admin the space below.	our network	does not	have a l	DHCP server,	
Adapter: [1] Intel 82595-Base	d Etherne	t		<u> </u>	
⊙ Obtain an IP addr	ess from a	DHCP serv	er		
Specify an IP add	ress				
IP Address:					
Sybnet Mask:					
Default <u>G</u> ateway:		a (2)			
			ſ	Advanced	
	OK	 Ca	ncel	Apply	

When prompted with the message below, click **Yes** to continue.



For Windows 2000

Enable **Obtain an IP address automatically** and then click OK.

	ned automatically if your network supports need to ask your network administrator for
Obtain an IP address au	utomatically
C Use the following IP add	dress:
IP address:	
Subnet mask:	
Default gateway:	· · · ·
Obtain DNS server add Use the following DNS : Preferred DNS server: Alternate DNS server:	·

For Windows XP

On the **IP Address** tab, select **Obtain an IP address automatically**. Then click **OK**.

Internet	Protocol (TCP/IP) Properties			
General	Alternate Configuration			
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.				
⊙ OI	btain an IP address automatically			
-OU:	se the following IP address:			
IP ac	ddress: a balancia ba			
Subr	net mask:			
Defa	ault gateway:			
 OI 	btain DNS server address automatically			
-OU:	se the following DNS server addresses:			
Prefe	erred DNS server:			
Alter	nate DNS server:			
	Advanced			
	OK Cancel			

Renew IP Address on Client PC

There is a chance that your PC does not renew its IP address after the ADSL Router is on line and the PC cannot access the Internet. Please follow the procedures below to renew PC's IP address.

For Windows 98ME

1. Select **Run** from the **Start** menu.

		Programs
	*	F <u>a</u> vorites
		Documents
		<u>S</u> ettings
		Eind •
	2	<u>H</u> elp
s 98	2	<u>B</u> un
Mobil	<u>چ</u>	Log Off Stella
3		Sh <u>u</u> t Down
	Start	

2. Type **winipcfg** in the dialog box and the click **OK**.

Run	? ×
<u></u>	Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.
<u>O</u> pen:	winipcfg
	OK Cancel Browse

3. When the figure below appears, click Release and then Renew to get an IP address.

	Intel 82595-Based Ethernet	
	Intel 02090-Dased Ethemet	
Adapter Address		
IP Address	192.168. 1 .2	
Subnet Mask	255.255.255.0	
Default Gateway	192.168. 1 .1	
	elease Renew	

For Windows NT

1. Select **Run** from the **Start** menu.



- 2. Select **Run** from the **Start** menu.
- 3. Type **cmd** in the dialog box and the click **OK**.
- 4. Type **ipconfig** at prompt. Then you will see the IP information from DHCP server.
- 5. If you want to get a new IP address, type **ipconfig** /**release** to release the previous IP address and then type **ipconfig** /**renew** to get a new one.



For Windows 2000

- 1. From the **Start** menu, point to **Programs**, **Accessories** and then click **Command Prompt**.
- 2. Type **ipconfig** at prompt. Then you will see the IP information from DHCP server.
- 3. If you want to get a new IP address, type **ipconfig** /**release** to release the previous IP address and then type **ipconfig** /**renew** to get a new one.

For Windows XP

- 1. Type **ipconfig** at prompt. Then you will see the IP information from DHCP server.
- 2. From the Start menu, point to Programs, Accessories and then click Command Prompt.
- 3. Type **ipconfig** at prompt. Then you will see the IP information from DHCP server.
- 4. If you want to get a new IP address, type **ipconfig** /**release** to release the previous IP address and then type **ipconfig** /**renew** to get a new one.



Chapter 4 Web Configuration

Using Web-Based Manager

Once your host PC is properly configured, please proceed as follows:

Connect to 192.16	8.1.1 ? X
31	
WebAdmin	
User name:	🛃 admin 💌
Password:	••••
	Remember my password
	OK Cancel

- 1. Start your web browser and type the private IP address of the ADSL Router in the URL field: **192.168.1.1.**
- 2. After connecting to the device, you will be prompted to enter username and password. By default, the username is **admin** and the password is **admin**. See the example for running under Windows XP.

If you login successfully, the main page will appear. From now on the ADSL Router acts as a web server sending HTML pages/forms on your request. You can fill in these pages/forms and apply them to the ADSL Router.

Outline of Web Manager

For configure the web page, please use **admin** as the username and the password. The main screen will be shown as below.

DSL	Quick Start Status Advanced Wireless Diagnostics Management
	Language: English 💌
Connect to Internet Quick Setup	Connect to Internet Your ADSL router is not ready to connect to ADSL. Status: Down Enter your ADSL user name and password, then click "Connect". Internet Connection: pppoe_8_35 Total Online Time: 0 secs ADSL User Name
	Connect

Title: It indicates the title of this management interface.

Main Menu: Includes Quick Start, Status, Advanced, Wireless, Diagnostics and Management.

MainIt is the current workspace of the web management, containing configuration or statusWindow:information.

To Have the New Settings Take Effect

After select or adjust the settings to your desire, your customizations will be saved to the flash memory before you restart the router. And only after restarting the router, your customizations take effect.

Language

On the top to the right of this web page, it provides a language drop down menu for you to choose proper language to help you to set.



Quick Start

Connect to Internet

A quick way to connect to Internet by using PPPoE interface, click Connect to Internet to open the web page.

Enter the user name and password for your ADSL router and click Connect.

The system will connect automatically.

Connect to Internet

Your DSL router is **not ready to connect** to ADSL. **Status:** Down

Internet Connection:	pppoe 8 35
Total Online Time:	0 secs
ADSL User Name	
Password	

Quick Setup

The quick setup wizard will guide you to configure the DSL router through some steps.

VPI (Virtual Path Identifier): Identifies the virtual path between endpoints in an ATM network. The valid range is from 0 to 255.

VCI (Virtual Channel Identifier):

Identifies the virtual channel endpoints in an ATM network. The valid range is from 32 to 65535 (1 to 31 is reserved for well-known protocols).

After finished entering the VPI/VCI value, please click Next for next step

Connection Type

After clicking on the Next button from the VPI/VCI web page, the following screen will appear. Please choose the connection type and encapsulation mode that you want to use and click Next for next page.

For example, PPP over Ethernet (PPPoE) in this screen is selected.

Quick Setup

This Quick Setup will guide you through the steps necessary to configure your ADSL router

Select the check box below to scan the Internet connection automatically. It is recommended that there is no any PVC configured in your ADSL router before performing auto-scanning connection.

Auto Scan Internet Connection (PVC)

Configure Internet Connection -- ATM PVC

Please enter VPI and VCI numbers for the Internet connection which is provided by your



All original settings will be replaced by new settings after you finish these steps.

Configure Internet Connection - Connection Type

Select the protocol and encapsulation type with the ATM PVC that your ISP has instructed you to use.

Protocol: C PPP over ATM (PPPoA) PPP over Ethernet (PPPoE) C IP over ATM (IPoA) C Bridging

Encapsulation Type: LLC/SNAP 💌

< Back Next >

Next >

PPP over ATM/ PPP over Ethernet

If the type you choose is PPP over ATM or PPP over Ethernet, please refer to the following information.

Protocol

According to the ISP's configuration on the server, you can choose PPPoE and PPPoA modes. If the ISP provides PPPoE service, the connection type selection will be decided as whether the LAN side device is running a PPPoE client or the router is to run the PPPoE client. This router supports both situations simultaneously.

Configure Internet Connection - Connection Type

Select the protocol and encapsulation type with the ATM PVC that your ISP has instructed you to use.

0	PPP over ATM (PPPoA)
•	PPP over Ethernet (PPPoE)
0	IP over ATM (IPoA)
0	Bridging

Encapsulation Type: LLC/SNAP 💌

< Back Next >

Choose PPPoA or PPPoE and click Next.

In this screen, you have to choose the settings for WAN IP. To get the IP address automatically, click the **Obtain an IP address automatically** radio button. Or click **Use the following IP address** button and enter the IP address for WAN interface.

Click Enable NAT if you want.

Click Enable QoS for your necessity.

Type in the number into the field of **MTU**. The default setting is 1492.

Click Next for next screen.

PPP Username:

Type in the username that you got from your ISP.

PPP Password:

Type in the password that you got from your ISP.

Always On:

Check this button to make the connection is always active.

Dial on Demand:

Click this button to make a connection while in demand. Enter the timeout to cut off the network connection if there is no activity for this router.

Manually Connect:

Click this button to make a connection by pressing the Connect button on the Advanced Setup- Internet-Connections web page.

PPP IP extension:

Check this box to invoke the PPP IP extension. When you check this box, only one user is allowed to access into the web page for configuration at one time.

Configure Internet Connection - WAN IP Settings

Enter information provided to you by your ISP to configure the WAN IP settings.

- Obtain an IP address automatically
 O Use the following IP address:
 - WAN IP Address: 0.0.0.0
- 🗹 Enable NAT

✓ Enable QoS Enabling IP QoS for a PVC can improve performance for selected classes of applications. Please assign the priorities for various applications from the <u>Advanced..Quality of Service</u> menu. Be aware that IP QoS also consumes system resources, the number of created PVCs will be reduced consequently.

MTU: 1492 (default: 1492)

< Back Next >

Configure Internet Connection - PPP User Name and Password

In order to establish the Internet connection, please enter PPP user name and password that your ISP has provided.

PPP User Name : PPP Password:			
Session established by: C © C	Always On Dial on Demand, Idle Tim Disconnect if no activity fo Manually Connect Disconnect if no activity fo	or 20 minutes	
		< Back	Next >

Please type the username and password that you got from your ISP. Then click **Next**.

Primary IP Address:

Type in the first IP address that you got from your ISP for your LAN connection.

Subnet Mask:

Type in the subnet mask that you got from your ISP for your LAN connection.

Configure the second IP Address and Subnet Mask for LAN interface:

Check this box to make another set of IP Address and Subnet Mask to connect to your router if they are not included in the range that DHCP server accepts.

Secondary IP Address:

Type in the second IP address that you got from your ISP for your LAN connection.

Subnet Mask:

Type in the subnet mask that you got from your ISP for your LAN connection.

MTU:

Type in the number for the MTU. The default setting is 1500.

DHCP Server On:

Check this item if DHCP service is needed on the LAN. The router will assign IP address, gateway address for each of your PCs.

Start IP Address:

Type in the start point IP address.

End IP Address:

Type in the end point IP address.

Leased Time:

Type in the duration for the time. The default is 1day.

DHCP Server Off:

Check this item if DHCP service isn't needed on the LAN.

Configure LAN side Settings

Enter the ADSL router IP address and subnet mask for LAN interface and then enable DHCF server on LAN interface to provide IP address settings for your computers.

Primary IP Address:	192.168.1.1	
Subnet Mask:	255.255.255.0	
🗌 Configure seconda	ry IP address an	d subnet mask
MTU:	1500 (defaul	t: 1500)
DHCP Server On	Start IP: End IP:	192.168.1.2 192.168.1.254
	Lease Time:	1 days 0 hours 0 minutes
C DHCP Server Off		

< Back Next >

On the Configure LAN side Settings web page, the IP address and subnet mask will be shown on it. You can modify them if needed.

Type in all the necessary settings and click **Next** for next page.

You can check it at this time. If you find something is incorrect, click **Back** to change the settings.

If everything is OK, click Finish to accept these settings.

This Internet Connection -- Summary

Make sure that the settings below match the settings provided by your ISP.

VPI / VCI	CI 8/35						
Connection Type PPPoE LLC/SNAP, Dial on Demand, Idle Timer 20 mins							
NAT	On						
WAN IP Address	VAN IP Address Automatically Assigned						
Default Gateway	Automatically Assigned						
DNS Server	Automatically Assigned						
QoS	On						
203	UI						
AN Configuration:							
	192.168.1.1 / 255.255.255.0						
AN Configuration:							
AN Configuration: Primary LAN IP	192.168.1.1 / 255.255.255.0						

Now, the system will reboot to activate the new settings that you have done in this section.

Reboot DSL Router

The DSL Router has been configured and is rebooting.

Close the DSL Router Configuration window and wait for 2 minutes before reopening your web browser. If necessary, reconfigure your PC's IP address to match your new configuration.

Please wait for 2 minutes for restarting the router.

IP over ATM

If the type you choose is IP over ATM, please refer to the following information.

IPoA is an alternative of LAN emulation. It allows TCP/IP network to access ATM network and uses ATM quality of service's features.

Choose IPoA and click Next

Configure Internet Connection - Connection Type

Select the protocol and encapsulation type with the ATM PVC that your ISP has instructed you to use.

C PPP over ATM (PPPoA) C PPP over Ethernet (PPPoE) P over ATM (IPoA)

C Bridging

Encapsulation Type: LLC/SNAP 💌

< Back Next >

None:

If it is not necessary to set the WAN IP address, please click this button.

Obtain an IP address automatically: Click

this button to make the system get an IP address automatically.

WAN IP Address:

Type in the IP address that you got from ISP for the WAN interface.

WAN Subnet Mask:

Type in the subnet mask address that you got from ISP for the WAN interface.

Obtain DNS server address automatically:

Click this button to make the system get DNS server automatically.

Use the following DNS server address:

If you want to set DNS server by yourself, you have to click on this button to invoke the following entries.

Preferred DNS server:

Type in your preferred DNS server that you got from ISP.

Alternate DNS server: Type in the alternate DNS server that you got from ISP.

Enable NAT: Check **Enable NAT** to enable this function.

Enable QoS:

Check Enable Qos to enable this function.

Please type in the WAN IP address, Subnet Mask and DNS server addresses. Then Click **Next** to get the following page.

Primary IP Address:

Type in the first IP address that you got from your ISP for your LAN connection.

Subnet Mask:

Type in the subnet mask that you got from your ISP for your LAN connection.

Configure Internet Connection - WAN IP Settings

Enter information provided to you by your ISP to configure the WAN IP settings.

C None

Protocol:

- Obtain an IP address automatically
- O Use the following IP address:
- WAN IP Address: WAN Subnet Mask:
- Obtain DNS server address automatically
 O Use the following DNS server addresses:
- Primary DNS server: Secondary DNS server:

🗹 Enable NAT

Enabling IP QoS for a PVC can improve performance for selected classes of applications. Please assign the priorities for various applications from the <u>Advanced...|Quality of Service</u> menu. Be aware that IP QOS also consumes system resources, the number of created PVCs will be reduced consequently.

< Back Next >

[🗹] Enable QoS

Configure the second IP Address and Subnet Mask for LAN interface:

Check this box to make another set of IP Address and Subnet Mask to connect to your router if they are not included in the range that DHCP server accepts.

Secondary IP Address:

Type in the second IP address that you got from your ISP for your LAN connection.

Subnet Mask:

Type in the subnet mask that you got from your ISP for your LAN connection.

DHCP Server On:

Check this item if DHCP service is needed on the LAN. The router will assign IP address, gateway address for each of your PCs.

Start IP Address:

Type in the start point IP address.

End IP Address:

Type in the end point IP address.

Leased Time:

Type in the duration for the time. The default is 1 day.

DHCP Server Off:

Check this item if DHCP service isn't needed on the LAN.

You can check it at this time. If you find something is incorrect, click **Back** to change the settings. If everything is OK, click **Finish** to accept these settings. And the following page will appear. Configure LAN side Settings

Enter the ADSL router IP address and subnet mask for LAN interface and then enable DHCP server on LAN interface to provide IP address settings for your computers.

Primary IP Address:	192.168.1.1							
Subnet Mask:	255.255.255.0							
Configure secondary IP address and subnet mask								
Secondary IP Address:	0.0.0.0							
Subnet Mask:	0.0.0.0							
OHCP Server On	Start IP:	192.168.1.2						
	End IP:	192.168.1.254						
	Lease Time:	1 days 0 hours 0 minutes						
C DHCP Server Off								

< Back Next >

On the Configure LAN side Settings web page, the IP address and subnet mask will be shown on it. You can modify them if needed. Click **Next** for next page.

This Internet Connection -- Summary

Make sure that the settings below match the settings provided by your ISP.

Internet (WAN) Configuration:						
VPI / VCI	8 / 35					
Connection Type	IPoA LLC/SNAP					
NAT	On					
WAN IP Address	Automatically Assigned					
Default Gateway	Automatically Assigned					
DNS Server	Automatically Assigned					
QoS	On					

LAN Configuration:						
Primary LAN IP	192.168.1.1 / 255.255.255.0					
Secondary LAN IP	0.0.0.0 / 0.0.0.0					
DHCP Server	On 192.168.1.2 ~ 192.168.1.254					
DHCP Lease Time	1 days 0 hours 0 minutes					

Click "Finish" to accept these settings, and reboot the system. <a> Back Finish Click "Back" to make any modifications.

Reboot DSL Router

The DSL Router has been configured and is rebooting.

Close the DSL Router Configuration window and wait for 2 minutes before reopening your web browser. If necessary, reconfigure your PC's IP address to match your new configuration.

Now, the system will reboot to activate the new settings that you have done in this section.

Please wait for 2 minutes for restarting the router.

Bridging

If the type you choose is **Bridging**, please refer to the following information.

The bridging mode can configure your router Configure Internet Connection - Connection Type to send packets received on any port such as ATM PVC or Ethernet with a broadcast MAC address to all other ports.

Choose Bridging and click Next.

Select the protocol and encapsulation type with the ATM PVC that your ISP has instructed you to use

> C PPP over ATM (PPPoA) C PPP over Ethernet (PPPoE) C IP over ATM (IPoA) Bridging

Encapsulation Type: LLC/SNAP 💌

< Back Next >

None:

If it is not necessary to set the WAN IP address, please click this button.

Obtain an IP address automatically: Click

this button to make the system get an IP address automatically.

WAN IP Address:

Type in the IP address that you got from ISP for the WAN interface.

WAN Subnet Mask:

Type in the subnet mask address that you got from ISP for the WAN interface.

Obtain DNS server address automatically:

Click this button to make the system get DNS server automatically.

Use the following DNS server address:

If you want to set DNS server by yourself, you have to click on this button to invoke the following entries.

Primary DNS server:

Type in your preferred DNS server that you got from ISP.

Secondary DNS server:

Type in the alternate DNS server that you got from ISP.

Enable NAT: Check Enable NAT to enable this function.

Enable QoS: Check Enable QoS to enable this function.

Primary IP Address: Type in the IP address that you got from your ISP for LAN interface.

Subnet Mask:

Type in the subnet mask that you got from your ISP for LAN interface.

MTU:

Type in the number for the MTU. The default setting is 1500.

DHCP Server On:

Configure Internet Connection - WAN IP Setting

Enter information provided to you by your ISP to configure the WAN IP settings

C None

Protocol:

 Obtain an IP address automatically C Use the following IP address:

WAN IP Address:	
WAN Subnet Mask:	
Default Gateway:	

 Obtain DNS server address automatically O Use the following DNS server addresses

Primary DNS server:	
Secondary DNS server:	

5	Enable	NAT

🗹 Enable QoS

Enabling IP QoS for a PVC can improve performance for selected classes of applications. Please assign the priorities for various applications from the <u>Advanced...|Quality of Service</u> menu. Be aware that IP QoS also consumes system resources, the number of created PVCs will be reduced consequently.

< Back Next >

Check this item if DHCP service is needed on the LAN. The router will assign IP address, gateway address for each of your PCs.

Start IP Address:

Type in the start point IP address.

End IP Address:

Type in the end point IP address.

Leased Time:

Type in the duration for the time. The default C DHCP Server Off is 1day.

DHCP Server Off:

Check this item if DHCP service isn't needed on the LAN.

You can check it at this time. If you find something is incorrect, click **Back** to change the settings. If everything is OK, click Finish to accept these settings. And the following page will appear.

Configure LAN side Settings

		. router IP								enable	DHCP
server	on LAN i	interface t	.o provide	IP a	ddress	settings	for your	compi	uters.		

Primary IP Address:	192.168.1.1
Subnet Mask:	255.255.255.0

Configure secondary IP address and subnet mask

MTU: 1500 (default: 1500)

OHCP Server On	Start IP:	192.168.1.2
	End IP:	192.168.1.254
	Lease Time:	1 days 0 hours 0 minutes

< Back Next >

This Internet Connection -- Summary

Make sure that the settings below match the settings provided by your ISP.

nternet (WAN) Configuration:				
VPI / VCI	8/35			
Connection Type	Bridge LLC/SNAP			
NAT	On			
WAN IP Address	Automatically Assigned			
Default Gateway	Automatically Assigned			
DNS Server	Automatically Assigned			
QoS	On			

LAN Configuration:	
Primary LAN IP	192.168.1.1 / 255.255.255.0
Secondary LAN IP	0.0.0.0 / 0.0.0.0
DHCP Server	On 192.168.1.2 ~ 192.168.1.254
DHCP Lease Time	1 days 0 hours 0 minutes

Click "Finish" to accept these settings, and reboot the system. Click "Back" to make any modifications. < Back Finish

Now, the system will reboot to activate the new settings that you have done in this section.

Please wait for 2 minutes for restarting the router.

Reboot DSL Router

The DSL Router has been configured and is rebooting.

Close the DSL Router Configuration window and wait for 2 minutes before reopening your web browser. If necessary, reconfigure your PC's IP address to match your new configuration.

Status

Overview

This page is displaying the current status for the DSL connection.

Overview of Device Information

This information reflects the current status of your ADSL router.

ADSL Port	Enabled
Downstream Line Rate	
Upstream Line Rate	
LAN IP Address	192.168.1.1
Default Gateway	
Primary DNS server	192.168.1.1
Secondary DNS server	192.168.1.1
Firmware Version	2.21.05.02k_A2pB018b2.d16d
Boot Loader Version	1.0.37-21.6.3
System Up Time	00:00:15:33

ADSL Line

This page shows all information for ADSL. For knowing the quality of the ADSL connection, please click ADSL BER Test button to have advanced information.

Click More Information to show more detailed information about ADSL Line Status.

ADSL Line Status

Current adsl line status is as the below.

Line Mode	Line	State	Down
Latency Type	Line Up Time Duration		N/A
Line Coding	Line	Line Up Count	
Statistics	Downstream	Upstream	
Line Rate			
Attainable Line Rate			
Noise Margin			
Line Attenuation			
Output Power			

More Information >>

ADSL BER Test

ADSL BER Test

This test determines the quality of the ADSL connection. It is done by transferring idle cells containing a known pattern and comparing the received data with this known pattern to check for errors.

🕽 http://192.168.1.1/berstart.tst?berState=0 - Microsoft Internet Explorer 💻 🗖 🗙
ADSL BER Test - Start
The ADSL Bit Error Rate (BER) test determines the quality of the ADSL connection. The test is done by transferring idle cells containing a known pattern and comparing the received data with this known pattern to check for any errors.
Select the test duration below and click "Start".
Tested Time (sec): 20 💌
Start Close
<u>×</u>

After select the test duration time and click **Start**, the following dialog appears to tell you the test is running. You can stop the test by click **Stop** or close this dialog by click **Close**.



When the test is over, the result will be shown on the following dialog for your reference. Click **Close** to close this dialog.

🚰 http://192.168.1.1/berstop.tst - Microsoft Internet Explorer 📃 🔲 🗙						
ADSL BER Test - Result						
The ADSL BER test complet	ted successfully.					
Tested Time	20					
Total Transferred Bits	0					
Total Error Bits	0					
Error Ratio	Not Applicable					
		Close				
		V				

Internet Connection

This page displays the connection information for your router, such as PVC name, category, protocol, invoking NAT or not, IP address, link status and so on.

Internet Connection

Current Internet connections are listed below

P¥C Name	₩РІ/₩СІ	Category	Protocol	NAT	QoS	WAN IP Address	Status / Online Time
pppoe_8_35	8/35	UBR	PPPoE LLC/SNAP	On	On		Down 00:00:00:00

Traffic Statistics

This table shows the records of data going through the LAN and WAN interface. For each interface, cumulative totals are displayed for **Received** and **Transmitted**.

Traffic Statistics

The statistics of user data going through your DSL Router are listed below.

Interface	Received				Transmitted			
	Bytes	Packets	Errors	Drops	Bytes	Packets	Errors	Drops
Ethernet	183244	1723	0	0	537115	1974	0	0
USB	0	0	0	0	0	0	0	0
Wireless	0	0	0	0	14540	91	0	0
WAN	0	0	0	0	0	0	0	0

Reset

DHCP Table

This table shows all DHCP clients who get their IP addresses from your ADSL Router. For each DHCP client, it shows the **Host Name**, **MAC Address**, **IP Address** and the **Lease Time**.

DHCP Table

Those devices which get their IP addresses from your $\ensuremath{\mathsf{DSL}}$ Router are listed below.

Host Name MAC Address		IP Address	Lease Time	
CN	00:C1:26:0A:69:2B	192.168.1.2	00:23:55:31	

Wireless Client

This table shows the MAC address for all of wireless LAN clients currently associated to your DSL Router.

<u>Wireless Clients Table</u>

All of wireless LAN dients currently associated to your DSL Router are listed below.

NOTE: The list below might include wireless dients which are no longer connected to your DSL Router. You need to wait for a few seconds for the list to be fully updated.

MAC Address On-line Time

Routing Table

This table shows the routing method that your router uses.

Routing Table

All of current routing rules in your DSL Router are listed below.

Destination Netmask		Gateway	Interface	Metric	
192.168.1.0	255.255.255.0	0.0.0.0	br0	0	

ARP Table

This table shows the IP address record for IP-to-Physical translation in your router.

<u>ARP Table</u>

The IP-to-Physical address translation entries recorded in your DSL Router are listed below.

IP address	Paddress Physical Address		Туре
192.168.1.2	00:C1:26:0A:69:2B	br0	Dynamic

Advanced Setup

Local Network- IP Address

This page is the same as you can see in the **Configure LAN side Settings** page while running the **Quick Setup**. It allows you to set IP Address and Subnet Mask values for LAN interface.

Prim

Subr

Host Dom

Primary IP Address:

Type in the first IP address that you got from your ISP for your LAN connection.

Subnet Mask:

Type in the subnet mask that you got from your ISP for your LAN connection.

Configure the second IP Address and Subnet Mask for LAN interface:

Check this box to make another set of IP Address and Subnet Mask to connect to your router if they are not included in the range that DHCP server accepts.

Secondary IP Address:

Type in the second IP address that you got from your ISP for your LAN connection.

Subnet Mask:

Type in the subnet mask that you got from your ISP for your LAN connection.

MTU:

Type in the number for the MTU. The default setting is 1500.

Apply:

Click this button to activate the settings listed above.

Local Network - DHCP Server

This allows you to set DHCP server on LAN interface.

Check this item if DHCP service is needed on the LAN. The router will assign IP address, gateway address for each of your PCs.

Start IP Address:

Type in the start point IP address.

End IP Address: Type in the end point IP address.

Leased Time:

Type in the duration for the time. The default is 1day.

Relay On:

Click this button to have a relay setting. And type in the Server IP in this field.

DHCP Server Off:

Check this item if DHCP service isn't needed on the LAN.

LAN IP Address Configuration

Enter the ADSL router IP address and subnet mask for LAN interface.

ary IP Address:	192.168.1.1
net Mask:	255.255.255.0
Name:	RTA1025W
ain Name:	home

 $\hfill\square$ Configure secondary IP address and subnet mask.

MTU: 1500 (default: 1500)

Apply New settings only take effect after your ADSL router is rebooted. If necessary, reconfigure your PC's IP address to match new settings.

DHCP Server Configuration

Enabling DHCP Server on LAN interface can provide the proper IP address settings to your computer.

NOTE: New settings only take effect after the router is rebooted. If necessary, reconfigure your PC's IP address to match new settings.

DHCP Server	On Start IP:	192.168.1.2
	End IP:	192.168.1.254
	Lease Time:	1 days 0 hours 0 minutes
		Reserved IP Address List
C Relay On	Relay to Server IP:	192.168.1.2

C Server and Relay Off

Apply

Apply: Click this button to activate the settings listed above.

Cancel:

Click this button to discard the settings listed above.

You can reserve one specific IP address for a certain PC for certain purpose. Simply add a mapping entry of MAC address & IP address for that PC by pressing the View Reserved IP Address List button. The following picture will appear.	Mtp://192.168.1.1/view&hcprelist.html - Microsoft Internet Explorer Reserved IP Address List You can reserve one specific ip address for a certain PC by adding the mapping entry of MAC address & IP address. MAC Address IP Address MAC Address IP Address Add Close	
		+
Click the Add button to open another dialog as follows. On PCs MAC Address and Assigned IP Address boxes, please type in the correct information for the one that you want to add and click Apply .	Add a new reserved IP address entry PC's MAC Address: (e.g.,00:90:96:01:2A:38) Assigned IP Address: (e.g.,192.168.1.2) Abddeline	
		-
The new one will be shown on the dialog right away. That is, the specified address will be reserved and not be assigned by DHCP for other computer.	http://192.168.1.1/viewdheprelist.cg?dhcprelist=00.90.96.01:2A:3E,192.168.1.2 Reserved IP Address List You can reserve one specific ip address for a certain PC by adding the mapping entry of MAC address & IP address. MAC Address IP Address Delete 00:90:96:01:2A:3B 192.168.1.2 Im Add Close	

Local Network – UPnP

This allows you to enable the UPnP function through the web page for your router.

UPnP Configuration

Enabling the UPnP IGD and NAT Traversal function allows the users to perform more applications behind NAT without additional configuration settings or ALG support on your ADSL router.

Enable UPnP

Apply

Internet-Connections Setting

To set WAN settings for each service, please open **Advanced– Internet Setting**. This page allows you to add new WAN settings, to edit or remove created WAN settings.

If you click the **Connect** line under the PVC Name item, the system will connect to WAN automatically. If the WAN connection is OK, you can check the detailed information directly.

Internet	Connection	Configuration

Choose Add or Edit to configure Internet connection. Choose Finish to apply the changes and reboot the system

PVC Name	V PI/VCI	Category	Protocol	NAT	QoS	WAN IP Address	мти	Edit
pppoe_8_35 Connect≫	8/35	UBR	PPPoE LLC/SNAP	On	On	Auto assigned	1492	% . 🕅

The Internet connection is NOT active if PVC name is marked with (?). You need to click "Finish" to apply changes and reboot the system for activating this PVC.

Adding a New One

You have to type in the VPI and VCI values in the entry boxes. Then click **Next**. The screen will get into the **Connection Type** page of **Quick Setup** and ask you to fill in the data according to the request of the screen. Refer to **Quick Setup** for more information if you don't know how to set the configuration.

To add a new WAN connection, please click the Add button. The following screen appears.

VPI (Virtual Path Identifier):

Identifies the virtual path between endpoints in an ATM network. The valid range is from 0 to 255.

VCI (Virtual Channel Identifier):

Identifies the virtual channel endpoints in an ATM network. The valid range is from 32 to 65535 (1 to 31 is reserved for well-known protocols).

Service Category:

There are five categories provided here for your selection. Please choose any one of it as you desired.

Configure Internet Connection -- ATM PYC Please enter VPI and VCI numbers for the Internet connection which is provided by your ISP.



Service Category: UBR Without PCR 💌

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If you choose Non Realtime VBR, you have to type in the following data.

The range for Peak Cell Rate is from 1 to 1690.

The range for Sustainable Cell Rate is from 1 to 1689 and must be smaller than Peak Cell Rate.

The range for Maximum Burst Size is from 1 Maximum Burst Size: Cells/s (1-100) to 100.

After click **Next**, you will see the web page listed as the right. Choose the protocol that you want. And click **Next** again.

Configure Internet Connection -- ATM PVC

 $\ensuremath{\mathsf{Please}}$ enter VPI and VCI numbers for the Internet connection which is provided by your ISP.

VPI:	8	(0-255)
VCI:	35	(32-65535)

Service Category:	Realtime	VBR 🔽
Peak Cell Rate:	0	cells/s (1-1690)
Sustainable Cell Rate:	0	cells/s (1-1689)
	-	

< Back Next >

Configure Internet Connection - Connection Type

Select the protocol and encapsulation type over the ATM PVC that your $\ensuremath{\mathsf{ISP}}$ has instructed you to use.

- PPP over ATM (PPPoA)
 - C PPP over Ethernet (PPPoE)
 - $C_{\rm MAC}$ Encapsulation Routing (MER) $C_{\rm IP}$ over ATM (IPoA)
 - C IP over AT C Bridging

Encapsulation Type: VC MUX 💽

Protocol:

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The WAN IP settings will differ slightly according to the protocol that you choose. This graphic is the one that you will get if you choose to add a new interface of PPPoA/PPPoE mode. You can check **Enable NAT** or **Enable Qos** for your necessity. And you can set the MTU value in this page.

Configure Internet Connection - WAN IP Settings

Enter information provided to you by your ISP to configure the WAN IP settings.

- Obtain an IP address automatically
- O Use the following IP address:
 - WAN IP Address: 0.0.0.0
- 🔽 Enable NAT

🗹 Enable QoS

Enabling IP QoS for a PVC can improve performance for selected classes of applications. Please assign the priorities for various applications from the <u>Advanced...|Quality of Service</u> menu. Be aware that IP QoS also consumes system resources, the number of created PVCS will be reduced consequently.

MTU: 1492 (default: 1492)

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If you want to add a new interface of IPoA mode and choose IPoA from the previous web page, you will get a web page as the graphic listed in right side.

Be aware that you can **Enable NAT** in this page. In addition, you can **Add Default Route** in this page, too.

Please refer to **Quick Setup** for more information if you don't know how to set the configuration.

Configure Internet Connection - WAN IP Settings

Enter information provided to you by your ISP to configure the WAN IP settings.

- C None
- Obtain an IP address automatically
- C Use the following IP address: WAN IP Address:
- WAN Subnet Mask:
- Obtain DNS server address automatically
 Use the following DNS server addresses:
 Primary DNS server:
 Secondary DNS server:

🔽 Enable QoS

Enabling IP QoS for a PVC can improve performance for selected classes of	
applications. Please assign the priorities for various applications from the	
Advanced Quality of Service menu. Be aware that IP QoS also consumes system	'n
resources, the number of created PVCs will be reduced consequently.	

🗹 Add Default Route

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[🗹] Enable NAT

If you want to add a new interface of **Bridging** mode and choose **Bridging** from the previous web page, you will get a web page as the graphic listed in right side.

Configure Internet Connection - WAN IP Setting

Enter information provided to you by your ISP to configure the WAN IP settings.

None

$^{\circ}$	Obtain an IP address automatically	
\cap	Ice the following ID address:	

2	Use the following IP	address:
	WAN IP Address:	
	INTERACIONAL DE RECEILO	

WAN Subnet Mask:	
Default Gateway:	

🗹 Enable QoS

Enabling IP QoS for a PVC can improve performance for selected classes of applications. Please assign the priorities for various applications from the <u>Advanced...[Quality of Service</u> menu. Be aware that IP QoS also consumes system resources, the number of created PVCs will be reduced consequently.

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Internet - ADSL Settings

Enable ADSL Port: Check this box to enable this function.

Select the support of line modes: There are several selections for your choosing. Select the one that you need.

Capability Enabled: Check the item that you want to enable.

ADSL Settings			
Enable ADSL Port			
Select the support of line modes:	🗹 G.dmt	🗹 G.lite	₩ T1.413
	ADSL2	☑ READSL2	🗹 ADSL2+
	🗆 Annex M		
Capability Enabled: 🔽 Bit	tswap 🗖 Se	amless Rate 4	Adaptation
Apply			

IP Routing - Static Route

Routing Table shows all static route status and allows you to add new static IP route or delete IP route. A Static IP Routing is a manually defined path, which determines the data transmitting route. If your local network is composed of multiple subnets, you may want to specify a routing path to the routing table.

Destination Network Address:

Display the IP address that the data packets are to be sent.

Netmask:

Display the subnet mask that the data transmitting is passing through.

Gateway:

Display the gateway that the data transmitting is passing through.

WAN Interface:

Display the interface that the data transmitting is passing through.

Remove:

Allow you to remove the selected static route settings.

Adding a New One

To add a static route, please choose Static Route - Add. Type the destination network address, subnet mask and gateway that you get from ISP and click **Apply**.



Destination	Netmask	Gateway	WAN Interface	Delete

Destination Network Address:

The destination IP address of the network where data packets are to be sent.

Subnet Mask:

Type in the subnet mask that you got from ISP.

Gateway IP Address:

Check this box to invoke this function. Type in the gateway that you got from ISP.

WAN Interface:

Check this box to invoke this function and choose the one from the drop down menu.

Add New Static Route

 Enter the Destination Network Address, Netmask, Gateway or available WAN interface then click "Apply" to add the entry to the routing table.

 Destination Network
 (For default route, type 0.0.0.0 or leave blank)

 IP Address:
 192.168.1.10

 Netmask:
 255.255.255.0

 Forward Packets to
 Packets to

pppoa_8_35 💌

Gateway IP Address: O WAN Interface:

Apply

Click **Apply** to view the routing result. This page shows all the routing table of data packets going through your ADSL Router.

Remove Static Route

If you don't want the static route that you created, please click the icon under **Delete** from Routing Table.

Destination	Netmask	Gateway	WAN Interface	Delete
0.0.0.0	255.255.255.0	192.168.1.1		Û

A dialog appears to ask you to confirm the action. Click Yes to remove the static route, or click No to keep the setting.

🚰 ADSL Router - Microsoft Internet Explorer	
Are you sure to delete this entry?	
YES	

Configuring Other Routers on Your LAN

It is essential that all IP packets for devices that are not on the local LAN can be passed to the Router, so that they can be forwarded to the external LAN, WAN, or Internet. To achieve this, the local LAN must be configured to use the Router as the default route or default gateway.

Local Router

The local router is the Router installed on the same LAN segment as the Router. This router requires that the default route is the Router itself. Typically, routers have a special entry for the default route. It should be configured as follows.

Destination:	Normally 0.0.0.0 but check your router documentation.
Subnet Mask:	Normally 0.0.0.0 but check your router documentation.
Gateway:	The IP Address of the Router.

Other Routers on the Local LAN

Other routers on the local LAN must use the Router's Local Router as the Default Route. The entries will be the same as the Router's local router, with the exception of the Gateway IP Address.

- □ For a router with a direct connection to the Router's local Router, the Gateway IP Address is the address of the Router's local router.
- □ For routers which must forward packets to another router before reaching the Router's local router, the Gateway IP Address is the address of the intermediate router.

Example – Static Route

Here provides you an example of Static Route.



For the Router's Routing Table

For the LAN shown above, with 2 routers and 3 LAN segments, the Router requires to add 2 static routes as follows:

ADSL Router	Destination	192.168.10.0
	Subnet Mask	255.255.255.0 (Standard Class C)
	Gateway	192.168.1.254 (Router B)

IP Routing – Dynamic Routing

Routing Information Protocol (RIP) is utilized as a means of exchanging routing information between routers. It helps the routers to determine optimal routes. This page allows you to enable/disable this function.

Version:

It incorporates the RIP information when receiving and broadcasting the RIP packets. From the radio buttons, select a RIP version to be accepted, 1, 2 or both.

Operation:

There are two modes for you to choose, Active and Passive. Select Active for transmitting and receiving data, or select Passive for receiving data only.

Enabled:

Click Enabled to enable the RIP function on different interface. Otherwise, disable this function.

Click Apply to invoke the settings set here.

Dynamic Routing

You can enable RIP function on serveral interfaces of your DSL router. Select the desired RIP version and operatin, followed by ticking the 'Enabled' checkbox to do so when clicking "Apply", or leave unticked if you would like to disable RIP on those interfaces.

Interface	Version	Operation	Enabled
LAN	2 💌	Active 💌	
oppoa_8_35	2 -	Passive -	

Apply

DNS Server

If **Enable Automatic Assigned DNS** checkbox is selected, this router will accept the **first** received DNS assignment from one of the PPPoA, PPPoE or MER/DHCP enabled PVC(s) during the connection establishment. If the checkbox is not selected, it is necessary for you to enter the primary and optional secondary DNS server IP addresses. After type in the address, click **Apply** button to save it and invoke it.

Enable Automatic Assigned DNS:

Check this box to enable this function, or uncheck this box to disable it.

Primary DNS server: Type in your primary DNS server.

Secondary DNS server:

Type in the secondary DNS server.

If you are satisfied the settings, click Apply.

DNS Server Configuration

If Enable Automatic Assigned DNS checkbox is selected, this router will accept the first received DNS assignment from the PPPoA, PPPoE or MER/DHCP enabled PVC(s) during the connection establishment. If the checkbox is not selected, enter the primary and optional secondary DNS server IP addresses. Click "Apply" to save it.

Enable Automatic Assigned DNS

Primary DNS server:	
Secondary DNS server:	

Apply If changing from unselected Automatic Assigned DNS to selected Automatic Assigned DNS, you must restart your ADSL router to get DNS addresses automatically.

Virtual Servers-Port Forwarding

The Router implements NAT to let your entire local network appear as a single machine to the Internet. The typical situation is that you have local servers for different services and you want to make them publicly accessible. With NAT applied, it will translate the internal IP addresses of these servers to a single IP address that is unique on the Internet. NAT function not only eliminates the need for multiple public IP addresses but also provides a measure of security for your LAN.

When the router receives an incoming IP packet requesting for access to your local server, the router will recognize the service type according to the port number in this packet (e.g., port 80 indicates HTTP service and port 21 indicates FTP service). By specifying the port number, you tell the router which service should be forwarded to the local IP address you specify.

After you setting the virtual server you should modify the filter rule whichever port and service you set on virtual server. Because the firewall has protect the route by filter rule so that you should update the filter rule after you set up virtual server.

Virtual Server allows you to make servers on your LAN accessible to Internet users. Normally, Internet users would not be able to access a server on your LAN because:

- □ Your server does not have a valid external IP Address.
- Attempts to connect to devices on your LAN are blocked by the firewall in this device.

The Virtual Server feature solves these problems and allows Internet users to connect to your servers, as illustrated below:



IP Address seen by Internet Users

Please note that, in the above picture, both Internet users are connecting to the same IP address, but using different protocols.

To Internet users, all virtual servers on your LAN have the same IP Address. This IP Address is allocated by your ISP. This address should be static, rather than dynamic, to make it easier for Internet users to connect to your Servers. However, you can use Dynamic DNS feature to allow users to connect to your virtual servers by using a URL, instead of an IP address.

To set a virtual server, please open the Port Forwarding Virtual Servers item from the Advanced Setup - NAT menu.

Create the port forwa software to work on					
Application Name	Externa	l Packet	Internal	Host	Delete
Application Name	Protocol	Port	IP Address	Port	Delete

Add

Add New Port Forwarding

To add a new Port Forwarding, please click Add from the Port Forwarding web page.

Pre-defined

Choose one of the services from the list, such as SNMP, FTP, IPSEC and so on.

User defined:

Type a new service name for building a customized service for specific reason.

Forwarded to Internet Host IP Address:

Type in the address for using to be forwarded to Internet.

Add New Port Forwarding Rule

Application Name:				
O Pre-defined:	Audio/Video	•	Gamerades	-
O User defined:				
Forward to Interna	l Host IP Address:			_

Forward to Internal Host IP Address:

Apply

Add New Port Forwarding Rule



Apply

Add New Port Forwarding Rule

Application Name:



IP addresses can be automatically redirected to local servers configured with private IP addresses. In other words, depending on the requested service (TCP/UDP port number), the router redirects the external service request to the appropriate server (located at another internal IP address).

After adding a new virtual server, click **Apply.**

The following screen will be shown to display the status for new ones.

If you do not want the new server that you added, please check the **Delete** box of that one and click the **Delete** button to discard it.

Or if you want to add another one again, click **Add** to add a new one.

Port Forwarding

Create the port forwarding rules to allow certain applications or server software to work on your computers if the Internet connection uses NAT.

Application Name	External Packet		Internal	Host	Delete
Аррисации Name	Protocol	Port	IP Address	Port	Delete
Camerades	TCP/UDP	2047 - 2048	192.168.1.10	2047 - 2048	
				Select	

Add Delete

Connecting to the Virtual Servers

Once configured, anyone on the Internet can connect to your Virtual Servers. They must use the Internet IP Address (the IP Address allocated to you by your ISP.) For example,

Http://203.70.212.52

Ftp://203.70.212.52

It is more convenient if you are using a Fixed IP Address from your ISP, rather than Dynamic. However, you can use the Dynamic DNS feature to allow users to connect to your Virtual Server through a URL, rather than an IP Address.

Virtual Servers-Port Triggering

When the router detects outbound traffic on a specific port, it will set up the port forwarding rules temporarily on the port ranges that you specify to allow inbound traffic. It is supposed to increase the support for Internet gaming, video conferencing, and Internet telephony due to the applications require multiple connection.

To add a new port triggering, click **Add** to open this web page. Than choose an application name from the Pre-defined list box. The system provides 9 items for your choice. Or define by yourself by typing the words into the field of User defined.

Click Apply to complete the setting.

Port Triggering

Port triggering funcion is a conditional port forwarding feature. When your ADSL router detects outbound traffic on a specific port (trigger port), it will set up the port forwarding rules temporarily on the port ranges you specify to allow inbound traffic. This is supposed to increase the support for Internet gaming, video conferencing, and Internet telephony due to these applications require multiple connection.



ICQ Napster

Net2Phone QuickTime 4 Client Rainbow Six Rogue Spear

Apply

Virtual Servers - DMZ Host

Direct Mapping Zone (DMZ) uses a technology that makes Router forwarding all incoming packet to internal specific server.

To close the function of DMZ Host, please click Discarded.

DMZ Host

A DMZ host is a computer on your local network that can be accessed from the Internet regardless of port forwarding and firewall settings. Those IP packets from the Internet that do NOT belong to any applications configured in the port forwarding table will be:

To activate a DMZ host, please click Forwarded to the DMZ host radio button and type the IP Address into the field of IP address of DMZ host, then click **Apply**.

Discarded
 Forwarded to the DMZ host

IP address of DMZ host:

Apply

This feature allows one computer on your LAN to be exposed to all users on the Internet, allowing unrestricted 2-way communication between the specified IP address and other Internet users or Servers.

- □ This allows almost any application to be used on the specified IP address.
- □ The specified IP address will receive all "Unknown" connections and data.
- □ If the DMZ feature is enabled, you must type in numbers to specify an IP address.
- □ The DMZ feature can be Enabled and Disabled on the NAT setting screen.

NAT - Dynamic DNS

This page allows you to access into virtual servers with a domain name and password.

Dynamic DNS:

Selects Enable to enable DDNS; select Disabled to disable this function.

Internet Connection:

Selects the interface that you want to use for connecting Internet.

User Name:

Type in the user name that you registered in www.dyndns.org.

Password:

Type in the password that you registered in www.dyndns.org.

Domain Name:

Type in the domain name that you registered in www.dyndns.org. You can use letters and dash for naming, yet other characters are not allowed to use for preventing from making troubles.

Status:

It displays current status.

Dynamic DNS Configuration

This page allows you to provide Internet users with a domain name (instead of an IP address) to access your virtual servers. This ADSL router supports dynamic DNS service provided by the provider '<u>http://www.dyndns.org</u>' or '<u>http://www.tzo.com</u>'. Please register this service at these providers first.

Dynamic DNS: O Di	isabled 💽 Enabled
Dynamic DNS Provider:	DynDNS.org 💌
Internet Connection:	pppoe_8_35 💌
User Name:	
Password:	
Domain Name:	
Status:	

Apply

Firewall

The firewall is a software that interrupts the data between the Internet and your computer. It is the TCP/IP equivalent of a security gate at the entrance to your company. All data must pass through it, and the firewall (functions as a security guard) will allow only authorized data to be passed into the LAN.

What the firewall can do? It can:

- □ deny or permit any packet from passing through explicitly
 - distinguish between various interfaces and match on the following fields:
 - source and destination IP address
 - port

To keep track of the performance of IP Filter, a logging device is used which supports logging of the TCP/UDP and IP packet headers and the first 129 bytes of the packet (including headers) when a packet is successfully **passed** through, a packet is **blocked** from passing through and it matches a rule setup to look for suspicious packets

Filtering by IP address

An example for firewall setup:



This picture is the most common and easiest way to employ the firewall. Basically, you can install a packet-filtering router at the Internet gateway and then configures the filter rule in the router to block or filter protocols and addresses. The systems behind the router usually have a direct access to the Internet, however some dangerous services such as NIS and NFS are usually blocked.

For the security of your router, set the firewall is an important issue.

Choose **Disabled** to disable the firewall function.

IP Filtering

This page allows you to specify the IP packet filtering rules to prevent the services accessed from the Internet hosts or limit the Internet access for local hosts.

IP Filtering:	Oisabled	C Enabled	Apply
n meening.	Disableu	 Enabled 	11440

To open the IP Filtering, please click the **Enabled** radio button. The web page will be shown as the right picture.

Select the direction to filter packets:

The way of the data transmission. In Bound means the data is transferred from outside onto your computer. Out Bound means the data is transferred from your computer onto outside through Internet. Please choose **Outbound traffic** or **Inbound traffic** as the direction for filtering packets.

IP Filtering

This page allows you to specify the IP packet filtering rules to prevent the services accessed from the Internet hosts or limit the Internet access for local hosts.

IP Filtering:	🔘 Disabled	Enabled			A	ply
Select the dir	rection to filter pack	ets: 📀 Outb	ound tra	íffic 🤇) Inbour	d traffic
Durational	Course ID odds	Dent ID edds	Port F	Range	Allow	Edit
Protocol	Source IP addr	Dest IP addr	Start	End	Allow	Fait

Add

Then, to add a new IP Filtering, click Add.

This page provides some settings for you to adjust for adding a new outbound IP Filtering.

Allow Traffic:

No stops the data transmission, **Yes** lets the data pass through.

Add New Outbound IP Filtering Rule

Allow Traffic	 Yes 	🔘 No
Protocol:	ТСР	
Source IP address:	ALL 🖌	
Destination IP address:	ALL 💌	
Port Range:	Start	End



Protocol:

Protocol:

Here provide several default policies for security levels for you to choose. If you don't want to use the predefined setting, you can use **User Defined** to set a customized protocol for your necessity. When you choose **User Defined** setting, you have to type in a port number in the "as" field.

тср 💌
TCP
UDP
ICMP
AH
ESP
GRE
ALL
User Defined

Add New Outbound IP Filtering Rule

Allow Traffic	 Yes 	🔘 No
Protocol:	User Defined ⊻	as 📃

Source/Destination IP address:

To specify IP address to allow or deny data transmission, please pull down the drop-down menu to choose a proper one. All: This setting means that all the IP addressed in the network are allowed or denied to pass through in Internet. If you choose Single, an IP address field will appear to the right side. You have to type in the specific IP address as the start/end point to let the router identify for granting or denying pass through. If you choose Subnet, the IP address and Netmask will appear to the right side. Please type in the specific IP address and netmask as the start/end point to let the router identify for granting or denying pass through.

Port Range:

The port range is from 0 to 65535. Please type in the start point and end point for the IP Filtering.

After finish the settings, click **Apply**. A new one will be added and shown on the web page.



A new IP filtering setting for Outbound traffic is created in the web page. To edit the setting, please click the pencil mark to get into the editing page. To delete the setting, click the trash mark to erase it. To set another IP filtering, click **Add** again.

IP Filtering

This page allows you to specify the IP packet filtering rules to prevent the services accessed from the Internet hosts or limit the Internet access for local hosts.

IP Filtering:	O Disabled	Enabled			A	pply
elect the dir	rection to filter pac	kets: 💿 Out	bound tr	affic 🤇) Inbou	nd traffi
					All	- 414
Destacal	Courses ID addr	Doct ID adde	Port	Range	Allow	гdit
Protocol	Source IP addr	Dest IP addr	Port Start	Range End	Allow	Edit

For adding a new Inbound IP Filtering, click **Inbound traffic** in the item of **Select the direction to filter packets.** Use the same way to add a new one as stated above.

Add New Inbound IP Filtering Rule

Allow Traffic	Yes	🔘 No
Protocol:	TCP 💌	
Source IP address:	ALL 💌	
Destination IP address:	ALL 🖌	
Port Range:	Start	End
Apply		

Quality of Service

QoS is an industry-wide initiative to provide preferential treatment to certain subsets of data, enabling that data to traverse the Internet or intranet with higher quality transmission service.

This page allows you to set the quality of the data transmitting through this device.

To add a new QoS setting, please **Add** in the page of Quality of Service, a page same as the right side will appear.

For Layer 3 IP packets, the settings that you can adjust are different with Layer 2 Bridge packets.

Traffic Class Name:

Type in a name as the traffic class for identification.

Prioritize Packet:

There are two selections for you to choose. Each one will guide to different settings for adjusting for different application.

Protocol:

Choose the proper interface for this function. If you don't know how to select, simply use the default one, TCP/UDP.

Source IP Address/ Subnet Mask:

You have to type in the source IP address (ex: 192.168.1.50) and subnet mask (ex:255.255.255.0) for the application (ex: FTP, HTTP and so on) that you want to

Traffic Name Priorit	Priority	ority IP Precedence IP TOS 802.	IP TOS	802.1P	Source IP		Destination IP		Delete
	Precedence					Address	Start Port		
					Netmask	End Port	Netmask	End Port	

This page allows you to classify the upstream traffic (to the Internet) by assigning the transmission priority for various user data. All of specified conditions in the traffic rule must be satisfied for the rule to take effect.
Traffic Class Name:
Traffic Conditions
Prioritize Packets: C Layer 3 IP packets C Layer 2 Bridge packets
Protocol: TCP/UDP
Source IP Address: Subnet Mask:
Source Port: Start End
Destination IP Address: Subnet Mask:
Destination Port: Start End
Assign Priority for this Traffic Rule
Traffic Priority:
IP Precedence: No Change The corresponding 'Precedence' value in the IP header of the upstream packets
Will be overwritten by selected value. IP Type of Service: No Change IT he corresponding TOS' value in the IP header of the uptream packets will be overwritten by selected value.
antiv

Protocol:

Add New QoS Traffic Rule


Low

5 6

7

invoke the QoS traffic rule.

Source Port:

Except the IP address, you also have to enter the source port. Type in the source port for the traffic rule. The range is from 0 to 65535.

Destination IP Address/Subnet Mask:

You have to type in the destination IP address (ex: 192.168.1.254) and subnet mask (ex:255.255.255.0) for the application that you want to invoke the QoS traffic rule.

Destination Port:

Type in the destination port for the traffic rule. The range is from 0 to 65535.

Traffic Priority:

There are three options – Low, Medium, and High that you can choose.

IP Precedence:

The number you choose here decides the type of the IP address processed. No change is the default setting.

IP type of Service:

The system provides some types of service for you to choose. The default one is No change.

After you click **Apply**, the new QoS setting will be shown on the graphic as the right side. To delete the one you set, simply click the check button below **Delete** item and click **Delete** button.

For Layer 2 Bridge packets, the settings that you can adjust are as follows:

802.1p Priority:

Each incoming packet will be mapped to a specific priority level, so that these levels may be acted on individually to deliver traffic differentiation. Please choose the number for the 802.1p Priority.

Traffic Priority:

IP Precedence:

IP Type of Service:

IP Type of Service:

Apply.

Apply -



No Change	Ŧ
No Change	
Normal Service	
Minimize Cost	
Maximize Reliability	
Maximize Throughput	
Minimize Delay	

Add Delete

Traffic Name	Priority	riority IP	IP TOS	802.1P	Source IP		Destination IP		Delete
		Precedence			Address Netmask	Start Port End Port	Address Netmask	Start Port End Port	
Number	Low	No Change	No Change		192.168.1.25 255.255.255.0	123 321	192.168.1.100 255.255.255.0	123 321	

Add New QoS Traffic Rule

This page allows you to classify the upstream traffic (to the Internet) by assigning the transmission prionty for various user data. All of specified conditions in the traffic rule must be satisfied for the rule to take effect.



IGMP Proxy

The Internet Group Management Protocol (IGMP) is an Internet protocol that provides a way for an Internet computer to report its multicast group membership to adjacent routers.



The hosts interact with the system through the exchange of IGMP messages. When you want to configure IGMP proxy, the system will interact with other router through the exchange of IGMP messages. However, when acting as the proxy, the system performs the host portion of the IGMP task as follows:

- > When it is queried, the system will send group membership reports to the group.
- When one of the hosts joins a multicast address group to which none of other hosts belong, the system will send unsolicited group membership reports to that group.
- When the last of hosts in a particular multicast group leaves the group, the system will send a leave group membership report to the routers group.

Internet Connection:

This field displays the internet connection that you currently use.

IGMP Proxy Configuration

Enabling IGMP proxy function can allow the users on your local network to play the multimedia (video or audio) which sent from the servers on the Internet.

IGMP Proxy Enabled

9

IGMP Proxy Enabled:

Check this box to enable this function or uncheck this box to disable this function.

After finish the settings, click Apply.

pppoe_8_35

Internet Connection

Apply

Wireless

The Wireless setting must match the other Wireless stations.

Basic

To set the basic configuration for the wireless features, please open Basic item from the Wireless menu.

Apply

Enable Wireless Network:

Click this check box to enable the wireless network function.

Hide Wireless Network:

Checking this box can hide the SSID of this access point. Then other people in the network cannot find the SSID of this device.

Wireless Network Name (SSID):

The system will detect the SSID of your router and displayed in this field for your reference.

The SSID is the identification

characters of a router. The default words will be shown on this page. If you do not check the Hide Access Point item, the router will periodically broadcasts its SSID to allow the wireless clients within the range to recognize its presence. This can create a security hole since any wireless clients which got the broadcast might associate to your system.

Please be noted that if you want to communicate, all wireless clients should use the same SSID with the router or access point.

Channel:

The frequency in which the radio links are about to be established. Select one channel that you want from the drop down list.

As an administrator of network, he/she must search which channels are available and then assign one available channel as the communication channel. All the other clients that want to transmission through this device should choose the same channel that you set in this field.

Transmission Mode:

It decides the mode of data transmission. Choose the one that you want to use from the drop-down menu. There are **802.11b only**, **802.11g only** and **Mixed Mode** provided here.

Transmission Rate:

It decides the speed of data transmission. Choose any one of it by using the drop-down menu. This setting will change by the

Wireless Basic Settings This page allows you to configure basic features of your wireless network. You can er or disable the wireless interface, hide the network from active scans, set the wireless network name (also known as SSID) and select the working channel. Enable Wireless Network Hide Wireless Network (Hidden SSID) Wireless Network Name (SSID): RTA1025W-000004 Channel: 11 💌 Transmission Mode: mixed mode 💌 Transmission Rate Auto -Turbo Mode: Oisabled C Enabled Apply Transmission Mode: mixed mode 🔻 mixed mode Transmission Rate 802.11b only 802.11g only Turbo Mode: Enabled Apply Transmission Mode: 802.11b only 💌 Auto Transmission Rate Ŧ 1 Mbit/s Turbo Mode: Enabled 2 Mbit/s 5.5 Mbit/s 11 Mbit/s Apply Auto Transmission Mode: 802.11g only 💌 Auto -Transmission Rate 1 Mbit/s Turbo Mode: 2 Mbit/s 5.5 Mbit/s

6 Mbit/s 9 Mbit/s

11 Mbit/s

12 Mbit/s

18 Mbit/s

24 Mbit/s

36 Mbit/s

48 Mbit/s 54 Mbit/s

Auto

transmission mode that you set above. If you choose **802.11b only** as the transmission mode, the transmission rate settings include 1, 2, 5.5, 11Mbit/s and auto. If you choose **802.11g**, the transmission rate settings include 1, 2, 5.5,6,9, 11,12,18,24,36,48, 54Mbit/s and auto. If you choose **mixed mode**, only Auto is available.

Transmission Mode:

Transmission Rate

Turbo Mode:



Apply

Turbo Mode:

Check **Enabled** to invoke this function for speeding up the transmission, or check **Disabled** to close this function.

Click **Apply** to invoke the settings.

Security

To configure security features for the Wireless interface, please open Security item from Wireless menu. This web page offers four authentication protocols for you to secure your data while connecting to networks. There are four selections including None WPA, 802.1X, WPA, and WPA-PSK. Different item leads different web page settings. Please read the following information carefully.

For WPA Disabled



Protected by WEP only

For Wiresless Security Disabled

Wireless Security: The **Disabled** item offers you the less protection for wireless communication. If you choose **Disabled**, the Encryption Keys will not be shown on this page.

Wireless Security

This page allow you to protect your wireless network by specifying WEP, 802.1x, or WPA wireless security. Before setting up security, ensure that your wireless adaptors support the same type of security. Most support WEP, but not all support WPA or 802.1x

Wireless Security: Disabled 💌

Apply

For 64-Bit WEP

Wireless Security: Select the WEP mode for the WEP key function. You can choose **64-bit** or **128-bit** for your necessity. If selected, data is encrypted using the key before being transmitted. For example, if you set 128-bit in this field, then the receiving station must be set to use 128 Bit Encryption, and have the same Key value too. Otherwise, it will not be able to decrypt the data. Please choose 64-Bit WEP for this page.

Authentication Type:

The ADSL Router supports two authentication types: **Open System** and **Shared key**. This should be considered with the WEP (Wired Equivalent Privacy) mechanism.

Open System means that it allows any client to authenticate and attempt to communicate with a bridge. The client can only communicate if its WEP keys match the router's WEP keys.

Wireless Security

This page allow you to protect your wireless network by specifying WEP, 802.1x, or WPA wireless security. Before setting up security, ensure that your wireless adaptors support the same type of security. Most support WEP, but not all support WPA or 802.1x

Wireless Security:	64-bit WEP
Authentication Type:	Open System 💌
Encryption Keys	
Enter 5 ASCII charact	ers or 10 hexadecimal digits for 64-bit encryption keys

Default Transmission Key: 1 💌

Apply After enabling security and clicking Apply, you will lose the connection with your wireless ADSL router. You should now set-up security on your wireless adapters in order to re-establish the connection. **Shared Key** means that a bridge or router will send an unencrypted text string to any client attempting to communicate with the router. The client requesting authentication encrypts the text and sends back to the router. Both unencrypted and encrypted can be monitored, yet it leaves the bridge open to attack from any intruder if he calculates the WEP key by comparing the text strings That is why shared key authentication can be less secure than open authentication.

Format:

Choose the typing method of encryption key. You have to click either **Hexadecimal digits** or **ASCII characters** and type the keys on the fields of Key 1 to Key 4.

Key 1 to 4:

Type the encryption key length and fill out WEP keys. For **64-bit** WEP mode, the number you can type is that 5 characters or 10 hexadecimal digits.

Default Transmission Key:

Select one of network key that you set on the Key boxes as the default one.

After finished settings, click **Apply** for activation.

For 128-Bit WEP

Wireless Security: Select the WEP mode for the WEP key function. You can choose **64-bit** or **128-bit** for your necessity. If selected, data is encrypted using the key before being transmitted. For example, if you set 128-bit in this field, then the receiving station must be set to use 128 Bit Encryption, and have the same Key value too. Otherwise, it will not be able to decrypt the data. Please choose 128-Bit WEP for this page.

Authentication Type:

The ADSL Router supports two authentication types: **Open System** and **Shared key**. This should be considered with the WEP (Wired Equivalent Privacy) mechanism.

Open System means that it allows any client to authenticate and attempt to communicate with a bridge. The client can only communicate if its WEP keys match the router's WEP keys.

Shared Key means that a bridge or router will send an unencrypted text string to any client attempting to communicate with the router. The

Wireless Security

This page allow you to protect your wireless network by specifying WEP, 802.1x, or WPA wireless security. Before setting up security, ensure that your wireless adaptors support the same type of security. Most support WEP, but not all support WPA or 802.1x

Wireless Security: 128-bit WEP -

Authentication Type: Open System 💌

Encryption Keys

Enter 13 ASCII characters or 26 hexadecimal digits for 128-bit encryption keys. Format: C Hexadecimal digits (0-9,A-F,and a-f are valid)

	 ASCII characters (any printable characters are valid)
Key1:	
Key2:	
КеуЗ:	
Key4:	

Default Transmission Key: 1 💌

Apply After enabling security and clicking Apply, you will lose the connection with your wireless ADSL router. You should now set-up security on your wireless adapters in order to re-establish the connection.

client requesting authentication encrypts the text and sends back to the router. Both unencrypted and encrypted can be monitored, yet it leaves the bridge open to attack from any intruder if he calculates the WEP key by comparing the text strings That is why shared key authentication can be less secure than open authentication.

Format:

Choose the typing method of encryption key. You have to click either **Hexadecimal digits** or **ASCII characters** and type the keys on the fields of Key 1 to Key 4.

Key 1 to 4:

Type the encryption key length and fill out WEP keys. As for **128-bit** WEP mode, the number you can type is that 13 characters or 26 hexadecimal digits.

Default Transmission Key:

Select one of network key that you set on the Key boxes as the default one.

After finished settings, click **Apply** for activation.

For 802.1X Wireless Network



When a wireless client requests access to a network, it is required to be authenticated by a central authentication server (RADIUS Server). Only an authenticated user can be granted by the network access and thereby unauthorized is blocked.

Wireless Security: Choose 802.1x as the authentication protocol, your data transmission between the router and the clients will be protected with the settings that you set in this web page.

RADIUS Server IP Address: RADIUS

Server is a protocol for carrying authentication, authorization, and configuration information between a Network Access Server which desires to authenticate its links and a shared Authentication Server. Please type in the IP Address for the RADIUS Server.

RADIUS UDP Port: Except for the IP address of the RADIUS Server, you have to enter the port number for the server. Port 1812 is the reserved RADIUS-authentication port described in RFC 2138. Earlier AP (RADIUS clients) use port 1945. The default value will be shown on this box. You can keep and use it.

RADIUS Share Secret: A share secret is like a password, which is used between RADIUS Server and the specific AP (RADIUS client) to verify identity. Both RADIUS Server and the AP (RADIUS client) must be use the same shared secret for successful communication to occur. Type in the words for the share secret.

After finished settings, click **Apply** for activation.

Wireless Security

This page allow you to protect your wireless network by specifying WEP, 802.1x, or WPA wireless security. Before setting up security, ensure that your wireless adaptors support the same type of security. Most support WEP, but not all support WPA or 802.1x



Apply After enabling security and clicking Apply, you will lose the connection with your wireless ADSL router. You should now set-up security on your wireless adapters in order to re-establish the connection.

Example for Configuration 802.1x environment

You will need the following components for establishing an 802.1x environment in your network.

- □ Windows 2000 Server: RADIUS server installed using "Internet Authentication Service". Certificate Services is installed
- AP (Router): It should be connected to Windows 2000 Advanced Server through the LAN port. The DHCP server for the router is used and 802.1x must be enabled.
- □ 802.1x client: A WLAN card supporting WEP is used.
- □ Authentication Mechanism

For WPA (Wi-Fi Protected Access)

WiFi-Protected Access: The WPA is suitable for enterprises. It must be used in conjunction with an authentication server such as RADIUS to provide centralized access control and management. It can provides stronger encryption and authentication solution than others WPA mode.

WPA Group Rekey Interval: Type in the time for the WAP group rekey interval. The unit is second.

RADIUS Server IP Address: RADIUS

Server is a protocol for carrying authentication, authorization, and configuration information between a Network Access Server which desires to authenticate its links and a shared Authentication Server. Please type in the IP Address for the RADIUS Server.

RADIUS UDP Port: Except for the IP address of the RADIUS Server, you have to enter the port number for the server. Port 1812 is the reserved RADIUS-authentication port described in RFC 2138. Earlier RADIUS clients use port 1945. The default value will be shown on this box. You can keep and use it.

RADIUS Share Secret: A share secret is like a password, which is used between IAS and the specific RADIUS client to verify identity. Both IAS and the RADIUS client must be use the same shared secret for successful communication to occur. Type in the words for the share secret.

Data Encryption (WPA): Select the data encryption for the WPA mode. There are three types that you can choose, TKIP, AES, TKIP+AES.

TKIP takes the original master key only as a starting point and derives its encryption keys mathematically from this master key. Then it regularly changes and rotates the encryption keys so that the same encryption key will be never used twice.

AES provides security between client workstations operating in ad hoc mode. It uses a mathematical ciphering algorithm that employs variable key sizes of 128, 192 or 256 bits.

TKIP+AES combines the features and functions of TKIP and AES.

After finished settings, click **Apply** for activation.

Wireless Security

This page allow you to protect your wireless network by specifying WEP, 802.1x, or WPA wireless security. Before setting up security, ensure that your wireless adaptors support the same type of security. Most support WEP, but not all support WPA or 802.1x

Wireless Security:	WPA 💌	
WPA Group Rekey Interval:	0 seconds	
RADIUS Server IP Address:	0.0.0.0	
RADIUS UDP Port:	1812	
RADIUS Shared Secret:		
Data Encryption (WPA):	TKIP	

Apply After enabling security and clicking Apply, you will lose the connection with your wireless ADSL router. You should now set-up security on your wireless adapters in order to re-establish the connection.

For WPA-PSK

WiFi-Protected Access: WPA-PSK is useful for small places such as home environment without having authentication servers. It allows the use of manually-entered keys or passwords and is designed to be easy to set up for home users.

Format:

Choose the typing method of encryption key. You have to click either **Hexadecimal digits** or **ASCII characters** and type the keys on the field of Pre-Share Key.

Pre-Share Key: Please type the key to be between 8 and 63 characters, or 64 hexadecimal digits. Only the devices with a matching key that you set here can join this network.

WPA Group Rekey Interval: Type in the time for the WAP group rekey interval. The unit is second.

Data Encryption (WPA): Select the data encryption for the WPA mode. There are three types that you can choose, TKIP, AES, TKIP+AES.

TKIP takes the original master key only as a starting point and derives its encryption keys mathematically from this master key. Then it regularly changes and rotates the encryption keys so that the same encryption key will be never used twice.

AES provides security between client workstations operating in ad hoc mode. It uses a mathematical ciphering algorithm that employs variable key sizes of 128, 192 or 256 bits.

TKIP+AES combines the features and functions of TKIP and AES.

After finished settings, click **Apply** for activation.

Wireless Security

This page allow you to protect your wireless network by specifying WEP, 802.1x, or WPA wireless security. Before setting up security, ensure that your wireless adaptors support the same type of security. Most support WEP, but not all support WPA or 802.1x

Wireless Security: WPA-PSK 💌

WPA Pre-Shared Key

Enter the key to be between 8 and 63 ASCII characters, or 64 hexadecimal digits

Format:	C Hexadecimal digits (0-9,A-F,and a-f are valid)			
	€ ASCII characters (any printable characters are valid)			
Pre-Shared Key:				
WPA Group Rekey Interval:	0 seconds			
Data Encryption (WPA):	TKIP			

Apply After enabling security and clicking Apply, you will lose the connection with your wireless ADSL router. You should now set-up security on your wireless adapters in order to re-establish the connection.

Access Controls

The web page allows you to enable the wireless MAC control configuration.

Access Control:

Click Off to disable this function. Click On in Allow mode to make any wireless MAC address can be linked to. And click On in Deny mode to disturb any wireless MAC address to be linked to.

View Access Control List: Click this button to view the wireless access control list and to add a new access control.

The Wireless Access Control List dialog allows you to add a new MAC address and view current MAC address that you had added.

Wireless MAC Access Control

This page lets you to specify the wireless adaptors that are allowed to connect to your ADSL router. This offers additional protection against unwanted connections. Click "Apply" to configure the wireless access control mode.

Access Control: 💿 Off

- On in Allow mode (Only those wireless adaptors listed in the access control table are allowed to connect to your ADSL router, others are
- denied.) C On in Deny mode (Only those wireless adaptors listed in the access control table cannot connect to your ADSL router, others are allowed.)

View Access Control List Apply



MAC address filters, click on the Add button from the Wireless Access Control List dialog to show next page.

MAC Address of Wireless:

You have to type in the MAC Address that you want it to be linked to your router. And click Apply.

The result of adding a new MAC address will be shown the example as the right picture.

If you want to delete the added MAC address, simple click the delete button (like a trash can), a dialog box will be shown to ask you. Click Yes, then the new one will be erased.

Repeater

The web page allows you to configure the wireless distribution system for the wireless network.

AP Mode:

Repeaters.

Choose either one of the selection as the AP mode.

Search Other Repeaters:

Click the **Scan Now** button to scan search other repeater in the wireless network. The result will be shown under below.

Click **Apply** to invoke the wireless repeater options.

If you click Manual as the Search Other

MAC Address of Remote Wireless

Repeaters, your will need to type the MAC

address for wireless repeaters in the boxes of

Wireless Repeater

This page allows you to configure wireless repeater feature (also known as Wireless Distribution System) for your wireless network. Click "Apply" to configure the wireless repeater options.

AP Mode:	AP Mode: © Access Point and Wireless Repeater Function C Wireless Repeater only					
Search Othe	er Repeater:	s: 💽 Auto	0	Manual	Sca	n Now
ss	ID	MAC Addre	55	Transmission	Mode	Select
Annly						

Apply

Wireless Repeater

This page allows you to configure wireless repeater feature (also known as Wireless Distribution System) for your wireless network. Click "Apply" to configure the wireless repeater options.

Search Other Repeaters: O Auto 💿 Manual

MAC Address of Remote Wireless Repeaters: (e.g.,00:90:96:01:02:03)

The right page shows an example of executing the function of wireless repeater.

Wireless Repeater

Apply

This page allows you to configure wireless repeater feature (also known as Wireless Distribution System) for your wireless network. Click "Apply" to configure the wireless repeater options.

AP Mode: © Access Point and Wireless Repeater Function C Wireless Repeater only

Search Other Repeaters:
 C Auto
 C Manual
 Scan Now

СН	SSID	MAC Address	Transmission Mode	Select
12	EMI	00:90:96:AF:47:75	802.11g	E
1	ADSL_D200	00:90:96:FA:76:B2	802.11g	Π
2	Askey-WLan	00:90:96:28:CC:72	802.11b	Π
З	roy	00:90:96:67:8E:99	802.11g	Π
6	EMI-2	00:90:96:52:2D:74	802.11g	Π

Apply

executing the function of wireless repeater.

When you finish to set, please click **Apply** to invoke really.

Diagnostics

To check the link status for the network and your computer, a diagnostic test can guide you to detect the network problem. The testing items are listed and accomplished one by one. If the previous one is failed, than the items below that failed one will be failed too. Use this diagnostic test to detect the connectivity mistakes whenever you happen to the linked problem.

For the item which pass through the diagnostics, a PASS word will be shown on the right side of that item.

If not, a Fail word will be there.

N/A means that item is not necessary for the system to test.

Diagnostic Tests

This DSL Router is capable of testing your DSL connection. The individual tests are listed below. If a test displays a fail status, click "Run Diagnostic tests" again to make sure the fail status is consistent. If the test continues to fail, click "Help" and follow the troubleshooting procedures.

Select the Internet Connection: pppoa_8_35 💌

Run Diagnostic Tests

Test the connection to your local network
Test your Ethernet Connection: PASS Help

Test ADSL Synchronization:	FAIL	Help
Test ATM OAM F5 segment ping:	N/A	Help
Test ATM OAM F5 end-to-end ping:	N/A	Help
Test ATM OAM F4 segment ping:	N/A	Help
Test ATM OAM F4 end-to-end ping:	N/A	Help

Test the connection to your Internet service provider Test PPP server connection: N/A <u>Help</u> Test authentication with ISP: N/A Help Test the assigned IP address: N/A Help Ping default gateway: N/A Help Ping primary Domain Name Server: N/A Help

The Help link lets you know what the result (Pass, Down, Fail) represents for. In this page you still can rerun diagnostic test at any time.

ADSL Synchronization Test

Pass:	Indicates that the DSL router has detected a DSL signal from the telephone company. A solid DSL LED on the router also indicates the detection of a DSL signal from the telephone company.
e . 11	Indicates that the DSL router does not detect a signal from the telephon

Fail: Indicates that the DSL router does not detect a signal from the telephone company's DSL network. The DSL LED will continue to flash green.

If the test fails, follow the troubleshooting procedures listed below and rerun the diagnostics tests by dicking "Rerun Diagnostic Tests" at the bottom of this page. If all the tests pass, close and restart your Web browser to access the Internet.

Troubleshooting:

- 1. Make sure your phone line is plugged into the router.
- After turning on your DSL router, wait for at least one minute to establish a connection. Run the diagnostic tests again by clicking "Rerun Diagnostic Tests" at the bottom of this page.
- Make sure there is no DSL micro filter on the phone cord connecting the DSL router to the wall jack.
- Make sure you are using the phone cord that was supplied with your DSL router or another similar phone cord with four copper wires visible in the plug.
- If your DSL has been functioning properly for a long period of time and you suddenly are experiencing this problem, there may be a problem with the DSL network. You may need to wait from 30 minutes to a couple of hours, and if you still do not have a solid DSL LED on your router, call Technical Support.
- Turn off the power to the DSL router, wait 10 seconds and turn it back on. Wait at least one minute and if the DSL LED on the router remains a solid color, dose your Web browser and restart it.

Rerun Diagnostic Tests

Contact ISP Technical Support if you have tried all of the above and still are experiencing a fail condition.

Management

Admin Account

This page allows you to type in the password for accessing into your DSL Router.

For the **Admin Account**, the default setting for user password is **admin**. If you want to change the username and the password, please retype the new password in the Confirm field for confirmation. Then click Apply.

Admin Account

Admin account has unrestricted access to change and view configuration of your DSL Router

User Name:	admin
New Password:	****
Confirm New Dessword	****

Apply

Remote Access

There are four interfaces for the remote access. Please choose one of them if you want to enable the remote access control.

Select the Internet Connect:

Select one connection item from the drop down list to enable the function.

Web Browser:

Choose this box if you want to have remote control through HTTP. The default port number will be shown in the box. Modify this number whenever you want.

Telnet:

Choose this box if you want to have remote control through telnet.

FTP:

Choose this box if you want to have remote control through FTP.

SNMP:

Choose this box if you want to have remote control through SNMP agent.

TFTP:

Choose this box if you want to have remote control through TFTP.

Secure Shell (SSH):

Choose this box if you want to have remote control through SSH.

Ping:

Choose this box if you want to have remote control through ping command under DOS prompt.

Remote Access Control

Enable remote access to let an expert, e.g. helpdesk, configure your ADSL router remotely

Select the Internet Connection: pppoe_8_35 💌

To allow remote access to your router via

Web Browser

Web server port on WAN interface: 8080 ET ETP

🗖 Telnet

□ SNMP T TETP

 Secure Shell (SSH)
 PING If enabling remote access to your router via PING, all Internet hosts can ping to your router.

Authorized Host IP Address List Apply

Interntet Time

The router's clock must synchronize with global Internet's time. The time you set in the screen will be adapted to system log.

Update:

Click this button to refresh the current time.

Set Time by:

The default setting is Manual. If you select Time Server, you don't need to type in the time setting manually. The system will set automatically.

Primary Time Server/ Secondary Time Server:

Set the start time by typing the year, the month, the day, the hour, and the date to help the router perform tasks.

Timezone:

Choose the time zone of your country where you are going to use the router.

Apply:

Save the data on the screen and apply the data after restarting the router.

Internet Time

To synchronize your router with other network devices, you can set its time manually or with an Internet time server.

Current time:	1970/01/01, 02:19 Update Now	
Set Time by:	C Time Server © Manual	
Time:	Year 1970 Month 01 Day 01 Hour 02 Minute 19	
Time Zone:	(GMT+08:00) Taipei	-

Apply

Internet Time

To synchronize your router with other network devices, you can set its time manually or with an Internet time server.

Current time: 1970/01/0	1, 00:59 Update Now
Set Time by:	C Time Server C Manual
Primery Time Server:	time.windows.com
Secondary Time Server:	time.nist.gov
Time Zone:	(GMT+08:00) Taipei

Apply

System Log

As shown in the web page, you can view the system log and configure system log whenever you want.

System Log

The System Log dialog allows you to view the System Log and configure the System Log options.

Click "View System Log" to view the System Log.

Click "Configure System Log" to configure the System Log options.

View System Log Configure System Log

Configure System Log

After you click Configure System Log, the following screen will appear. You can enable or disable the log function, choose log level, display level and proper mode as you like. Then click Apply.

System Log Configuration

This dialog allows you to configure System Log settings. All events greater than or equal to the selected level will be logged or displayed. If the selected mode is "Remote" or "Both" events will be sent to the specified UDP port of the specified log server.

Select the desired values and click "Apply" to configure the system log options.

Log Level:	Informational 💌
Display Level:	Error
Mode:	Local 💌

Apply

Log:

There are 8 types for log level and display Log Level: Informational 👻 level for your choose. The default is Emergency Debugging. Display Level: Alert Critical Mode: Error Warning Notice Informational Debugging Apply The mode selection includes Local, Remote Informational 💌 Log Level: and **Both**. The default one is Local. If you choose Remote or Both, all the events will Error Display Level: + be sent to the specified UDP port of the specified log server. Local • Mode: Local Remote Both Apply **Viewing System Log** For viewing the system log, please click the System Log View System Log button. The System Log dialog allows you to view the System Log and configure the System Log options.

Click "View System Log" to view the System Log.

Click "Configure System Log" to configure the System Log options.

View System Log Configure System Log

The screen will be shown immediately for your reference.

logview.cmd - Microsoft Internet Explorer	
System Log	Refresh Clo
Date/Time Facility Severity Mes	ssage

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SNMP Setting

The SNMP, the abbreviation of Simple Network Management Protocol, is used to refer to a collection of specifications for network management that include the protocol itself, the definition of data structures and associated concepts.

A management station performs the monitoring function by retrieving the value of MIB objects. The management station and agents are linked by a network management protocol that is SNMP. The SNMP includes three key capabilities, get, set and trap. A single management station can handle many agents as long as SNMP remains relatively "simple", so the number can be high (hundreds or so).

The **following picture** is the typical configuration of protocols for SNMP. As for a stand-alone management station, a manager process controls access to a central MIB at the management station and provides an interface to the network manager. The manager process achieves network management by using SNMP, which will be implemented on top of the UDP, IP and the relevant network-dependent protocols (e.g., Ethernet).



For an agent device that supports other applications, such as FTP, both TCP and UDP are required. An agent may issue a trap message in response to an event that effects the MIB and the underlying managed resources.

Note: There are no ongoing connections are maintained between a management station and its agents. Instead, each exchange is a separate transaction between a management station and an agent.

Each agent is responsible for notifying the management station of any *unusual event*; for example, if the agent crashes and is rebooted, a link fails or an overload condition as defined by the packet load crosses some threshold. These events are communicated in SNMP messages known as traps.

Please select the SNMP menu from Management. The dialog will appear.

SNMP Agent:

Choose Disable to close this function; choose Enabled to open this function.

Read Community:

The default setting is **public**, please type in the data that your ISP provided.

Write Community:

The default setting is **private**, please type in the data that your ISP provided.

Enable TRAP Service:

Check this box to enable this function, otherwise uncheck this box to disable this function.

TRAP Manager IP:

Type in an IP address as the remote workstation. If there is any abnormal condition happened, you can advice remote

SNMP Configuration

Simple Network Management Protocol (SNMP) allows a management application t retrieve statistics and status from the SNMP agent in this device.
Select the desired values and click "Apply" to configure the SNMP options.
SNMP Agent © Disabled © Enabled
Read Community public Write Community private
Enable Trap Service Trap Manager IP 0.0.0.0

10.05	0.5	20	20.0	83
Δ	n	n	V	

workstation by way of SNMP agent.

Backup Config

To backup your configuration for the router to your computer, you can use **Backup Config** web page to save the settings.

And when you want to restore the settings in the future, simply open Backup Config web page and use **Browse** button to located the file and click **Restore**.

Backup Configuration

Use to save your DSL Router's current settings into the computer.

Backup

Restore Configuration

Use to reset your DSL Router with settings previously saved on the computer.

瀏覽...

Backup File:

Restore

Update Firmware

If you have to or want to update the firmware for this router, you can open the update software web page and choose the correct file by pressing **Browse**. Then click the **Update Software** button. The system will execute the update procedure automatically. When it is finished, the system will tell you the update is successfully.

Update Firmware

Step 1: Obtain an updated firmware image file from your ISP.
 Step 2: Enter the path to the image file location in the box below or click "Browse" to locate the image file.
 Step 3: Click "Update Firmware" once to upload the new image file.



Update Firmware The update process takes about 2 minutes to complete, then your ADSL router will report.

Reset Router

To make effect the settings that you set for this router, please open the **Reset Router** web page and click the **Reboot** button to invoke all settings.

You can restore your web pages default settings. Simply check **Reset to factory default settings** and click **Reboot**.

Reset Router

This page allows you to restart your ADSL router after changing settings that require rebooting. It also allows you to reset all settings to factory default settings if you have problems with your current configuration.

🗆 Reset to factory default settings

Reboot After clicking "Reboot", please wait for 2 minutes to let the system reboot.

Restore Factory Default Settings

The DSL Router configuration has been restored to factory default settings and the router is rebooting.

Close the DSL Router Configuration window and wait for 2 minutes before reopening your web browser. If necessary, reconfigure your PC's IP address to match your new configuration.

UPnP for XP

Universal plug and play (UPnP) is an architecture for pervasive peer to peer network connectivity of intelligent appliances and PCs of all form factors. It is designed to bring easy-to-use, flexible, standards-based connectivity to ad-hoc or unmanaged networks whether in the home, in a small business, public spaces, or attached to the Internet.

Only Windows XP supports UPnP function.

Please follow the steps below for installing UPnP components.

- 1. Click on the **Start** menu, point to **Settings** and click on **Control Panel**.
- 2. Select Add or Remove Programs > Add/Remove Windows Components to open Windows Components Wizard dialog box

3. Select Network Services and click Details. Click the Universal Plug and Play check box.

Vindows Components You can add or remove components of Windows XP.	
To add or remove a component, click the checkbox. A s part of the component will be installed. To see what's inc Details.	
Components:	0.0 MB 🔨
Image Queuing MSN Explorer	135 MB
V Thetworking Services	0.3 MB
Other Network File and Print Services	0.0 MB
V MIIIndate Boot Certificates	0.0 MB 🚩
Description: Contains a variety of specialized, network-re	slated services and protocols.
Total disk space required: 0.2 MB Space available on disk: 1034.2 MB	Details
< <u>B</u> ack	Next> Car
working Services add or remove a component, click the check box. A s he component will be installed. To see what's included	haded box means that only
working Services add or remove a component, click the check box A s he component will be installed. To see what's included bgomponents of Networking Services:	haded box means that only in a component, click De
working Services add or remove a component, click the check box A s incomponent will be installed. To see what's included becomponents of Networking Services.	haded box means that only in a component, click De 0.0 ME
working Services add or remove a component, click the check box. A s he component will be installed. To see what's included becomponents of Networking Services: PIPL listener Simple TCP/IP Services	haded box means that only in a component, click De
working Services add or remove a component, click the check box. A s the component will be installed. To see what's included becomponents of Networking Services: C RP Listener Simple TCP/IP Services	haded box means that only in a component, click De 0.0 MB 0.0 MB
working Services add or remove a component, click the check box. A s the component will be installed to see what's included boomponents of Networking Services. RIP Listener Simple TCP/IP Services Universal Plug and Play	haded box means that only in a component, click De 0.0 ME 0.2 ME
working Services add or remove a component, click the check box A s the component will be installed. To see what's included bgomponents of Networking Services: Simple TCP/IP Services Universal Plug and Play Scription: Listens for route updates sent by routers th Protocol version 1 (RIPv1).	haded box means that onl in a component, click De 0.0 ME 0.2 ME 0.2 ME
working Services add or remove a component, click the check box A s the component will be installed. To see what's included begomponents of Networking Services: Simple TCP/IP Services Universal Plug and Play scription: Listens for route updates sent by routers th Protocol version 1 (RIPv1).	haded box means that only in a component, click De 0.0 ME 0.2 ME

- 4. Click Ok. The system will install UPnP components automatically
- 5. After finishing the installation, go to **My Network Places**. You will find an icon (e.g., RTAXXX) for UPnP function.



6. Double click on the icon, the ADSL router will open another web page with port for UPnP function. The IE address will be changed as shown as the graphic.

🕘 Wire	less ADSI	Router C	ontrol	Panel	- Microsoft	Internet Ex	plorer
Ele Ec	lit ⊻jew	Favorites	ĭools	Help			
G Bad	sk •) - 💌	2	(ا	O Search	🕂 Favorites	😵 Med
Address	🎒 http://1	92.168.1.1/	index.htr	nl			

7. Now, the NAT traversal function will be provided. The ADSL router will create a new virtual server automatically for mapping while the router detecting the computer running some Internet applications.

Chapter 5 Connection Mode

Prior to configuring the ADSL Router, you must decide whether to configure the ADSL Router as a bridge or as a router. This chapter presents some deployment examples for your reference. Each mode includes its general configure procedures. For more detailed information about web configuration, refer to "Web Configuration".

- □ PPP over ATM (PPPoA)
- □ PPPoA IP Extension
- \Box PPP over Ethernet (PPPoE)
- □ PPPoE IP Extension
- □ Numbered IP over ATM (IPoA)
- □ Numbered IP over ATM (IPoA)+NAT
- □ Unnumbered IP over ATM (IPoA)
- □ Unnumbered IP over ATM (IPoA)+NAT
- □ Bridging

For making sure that you can connect the ADSL to your computer well and get into Internet successfully, please make sure the following first.

- □ Make sure you have installed a network interface card into your computer.
- □ Make sure the connection between the ADSL and your computer is OK.
- □ Check to see the TCP/IP protocol and set the IP address as "Auto Get IP Address".

When you are sure all above is Ok, you can open the Browser and type in "192.168.1.1" and start to do the web configuration with different connection modes.

This chapter is going to introduce the function of each connection mode and tell you the basic configuring steps that you have to do. If you did not follow the configuring steps for using these connection modes, you might get some connection problems and cannot connect to Internet well.

PPP over ATM (PPPoA) Mode



Description:

In this deployment environment, the PPPoA session is between the ADSL WAN interface and BRAS. The ADSL Router gets a public IP address from BRAS when connecting to DSLAM. The multiple client PCs will get private IP address from the DHCP server enabled on private LAN. The enabled NAT mechanism will translate the IP information for clients to access the Internet.

- 1. Start up your browser and type **192.168.1.1** as the address to enter this ADSL web-based manager.
- Go to Quick Start -Quick Setup. Uncheck Auto Scan Internet Connection (PVC). Type in the VCI and VPI value. Then click the Next button. eg: VPI - 0 VCI - 38
- 3. On the **Configure Internet Connection -Connection Type** page, select the **PPP over ATM** (**PPPoA**) then click the **Next** button.
- 4. In the WAN IP Settings page, select Obtain an IP address automatically and check Enable NAT box. Click Next.
- 5. In the **PPP Username and Password** page, enter the PPP username and password that you got from your ISP. Select **Dial on Demand** and type in the number for inactivity timeout. The default is 20. Or select **Always on**. Then click **Next**.
- 6. In the Configure LAN side Settings page, type in the IP address and subnet mask for your LAN. Check DHCP Server on box. And type in the start and end points. Then type in the leased time that you want. And click Next. eg: Primary IP address:192.168.1.1 Subnet Mask:255.255.255.0 Start IP Address:192.168.1.2 End IP Address: 192.168.1.254
- 7. Check the network information. Make sure the settings match the settings provided by ISP. Click **Finish**.



PPP over ATM (PPPoA) IP Extension Mode

Description:

In this deployment environment, the PPPoA session is between the ADSL WAN interface and BRAS. The ADSL Router acts as a bridge and gets a public IP address from BRAS for your computer. And only the one that got the public IP address is allowed to access into Internet. Moreover, no NAT translation will be done at this case.

- 1. Start up your browser and type **192.168.1.1** as the address to enter this ADSL web-based manager.
- 2. Go to Advanced Internet Connections. And click Add.
- Type in the VCI and VPI value. Then click the Next button. eg: VPI – 0 VCI – 38
- 4. On the **Configure Internet Connection -Connection Type** page, select the **PPP over ATM** (**PPPoA**) then click the **Next** button.
- 5. In the WAN IP Settings page, select Obtain an IP address automatically, uncheck Enable NAT box and check PPP IP extension then click Next.
- 6. In the **PPP Username and Password** page, enter the PPP username and password that you got from your ISP. Select **Dial on Demand** and type in the number for inactivity timeout. The default is 20. Or select **Always on**. Then click **Next**.
- In the Configure LAN side Settings page, type in the IP address and subnet mask for your LAN. And click Next. eg: Primary IP address:192.168.1.1 Subnet Mask:255.255.255.0
- 8. Check the network information. Make sure the settings match the settings provided by ISP. Click **Finish**.

PPP over Ethernet (PPPoE) Mode



Description:

In this deployment environment, the PPPoE session is between the ADSL WAN interface and BRAS. The ADSL Router gets a public IP address from BRAS when connecting to DSLAM. The multiple client PCs will get private IP address from the DHCP server enabled on private LAN. The enabled NAT mechanism will translate the IP information for clients to access the Internet.

- 1. Start up your browser and type **192.168.1.1** as the address to enter this ADSL web-based manager.
- Go to Quick Start -Quick Setup. Uncheck Auto Scan Internet Connection (PVC). Type in the VCI and VPI value. Then click the Next button. eg: VPI - 0 VCI - 39
- 3. On the **Configure Internet Connection -Connection Type** page, select the **PPP over Ethernet (PPPoE)** then click the **Next** button.
- 4. In the WAN IP Settings page, select Obtain an IP address automatically and check Enable NAT box. Click Next.
- 5. In the **PPP Username and Password** page, enter the PPP username and password that you got from your ISP. Select **Dial on Demand** and type in the number for inactivity timeout. The default is 20. Or select **Always on**. Then click **Next**.
- 6. In the Configure LAN side Settings page, type in the IP address and subnet mask for your LAN. Check DHCP Server on box. And type in the start and end points. Then type in the leased time that you want. And click Next. eg: Primary IP address:192.168.1.1
 Subnet Mask:255.255.255.0
 Start IP Address: 192.168.1.2
 End IP Address: 192.168.1.254
- 7. Check the network information. Make sure the settings match the settings provided by ISP. Click **Finish**.



PPP over Ethernet (PPPoE) IP Extension Mode

Description:

In this deployment environment, the PPPoE session is between the ADSL WAN interface and BRAS. The ADSL Router acts as a bridge and gets a public IP address from BRAS for your computer. And only the one that got the public IP address is allowed to access into Internet. The real IP that you got is acquired from ISP. Moreover, no NAT translation will be done at this case.

- 1. Start up your browser and type **192.168.1.1** as the address to enter this ADSL web-based manager.
- 2. Go to Advanced Internet Connections. And click Add.
- Type in the VCI and VPI value. Then click the Next button. eg: VPI - 0 VCI - 39
- 4. On the **Configure Internet Connection -Connection Type** page, select the **PPP over Ethernet (PPPoE)** then click the **Next** button.
- 5. In the WAN IP Settings page, select Obtain an IP address automatically, uncheck Enable NAT box and check PPP IP extension then click Next.
- 6. In the **PPP Username and Password** page, enter the PPP username and password that you got from your ISP. Select **Dial on Demand** and type in the number for inactivity timeout. The default is 20. Or select **Always on**. Then click **Next**.
- In the Configure LAN side Settings page, type in the IP address and subnet mask for your LAN. And click Next. eg: Primary IP address:192.168.1.1 Subnet Mask:255.255.255.0
- 8. Check the network information. Make sure the settings match the settings provided by ISP. Click **Finish**.

Numbered IP over ATM (IPoA)



Description:

If you apply for multiple IP addresses from your ISP, you can assign these public IP addresses to the ADSL Router and public server, e.g., Web or FTP server. Typically the first IP is network address, the second is used as router IP address and the last one is subnet broadcasting. Other remaining IP addresses can be assigned to PCs on the LAN.

The following example uses the LAN IP address ranging from 10.3.75.49 to 10.3.75.54 and the subnet mask for LAN is 255.255.255.248. The WAN address is 10.3.70.1, and the subnet mask for WAN is 255.255.255.252.

- 1. Start up your browser and type **192.168.1.1** as the address to enter this ADSL web-based manager.
- Go to Quick Start -Quick Setup. Uncheck Auto Scan Internet Connection (PVC). Type in the VCI and VPI value. Then click the Next button.
 VPI 0
 VCI 32
- 3. On the **Configure Internet Connection -Connection Type** page, select the **IP over ATM** (**IPoA**) then click the **Next** button.
- 4. In the WAN IP Settings page, select Use the following IP address and type in the IP address, subnet mask and gateway that you got from ISP. Then, select Use the following DNS Server Address. Type in the Primary DNS server and Secondary DNS server. Uncheck Enable NAT. Click Next for next page.
 WAN IP Address: 10.3.70.1
 WAN Subnet Mask: 255.255.255.252
 Primary DNS server: 168.95.1.1
 Secondary DNS server: 168.95.192.1
- 5. In the Configure LAN side Settings page, type in the IP address and subnet mask for your LAN.
 Primary IP Address: 192.168.1.1
 Subnet mask: 255.255.255.0
 Start IP Address: 192.168.1.2
 End IP Address: 192.168.1.254
- Check Configure the second IP Address and Subnet Mask for LAN Interface and type in the second IP address and subnet mask. Then click Next. Secondary IP Address: 10.3.75.49 Subnet mask: 255.255.255.248

- 7. Check the network information. Make sure the settings match the settings provided by ISP. Click **Finish**.
- Set TCP/IP for your computer. Specify an IP Address, subnet mask and set default gateway. eg: IP Address: 10.3.75.51 Subnet Mask: 255.255.255.248 Gateway: 10.3.75.49
- 9. Now the router is well configured. You can access into Internet.



Numbered IP over ATM (IPoA)+NAT

Description:

In this deployment environment, we make up a private IP network of 192.168.1.1. NAT function is enabled (on ADSL Router or use another NAT box connected to hub) to support multiple clients to access the Router and some public servers (WWW, FTP).

If you apply for multiple IP addresses from your ISP, you can assign these public IP addresses to the ADSL Router and public server, e.g., Web or FTP server. Typically the first IP is network address, the second is used as router IP address and the last one is subnet broadcasting. Other remaining IP addresses can be assigned to PCs on the LAN.

The following example uses the LAN IP address ranging from 10.3.75.49 to 10.3.75.54 and the subnet mask for LAN is 255.255.255.248. The WAN address is 10.3.70.1, and the subnet mask for WAN is 255.255.255.252.

- 1. Start up your browser and type **192.168.1.1** as the address to enter this ADSL web-based manager.
- Go to Quick Start -Quick Setup. Uncheck Auto Scan Internet Connection (PVC). Type in the VCI and VPI value. Then click the Next button.
 VPI 0
 VCI 32
- 3. On the **Configure Internet Connection -Connection Type** page, select the **IP over ATM** (**IPoA**) then click the **Next** button.
- In the WAN IP Settings page, select Use the following IP address and type in the IP address, subnet mask and gateway that you got from ISP. Then, select Use the following DNS Server Address. Type in the Primary DNS server and Secondary DNS server.
 WAN IP Address: 10.3.70.1
 WAN Subnet Mask: 255.255.255.252
 Primary DNS server: 168.95.1.1
 Secondary DNS server: 168.95.192.1
- 5. Check the Enable NAT box. And click Next.
- 6. In the Configure LAN side Settings page, type in the IP address and subnet mask for your

LAN. Primary IP Address: 192.168.1.1 Subnet mask: 255.255.255.0 Start IP Address: 192.168.1.2 End IP Address: 192.168.1.254

- Check Configure the second IP Address and Subnet Mask for LAN Interface and type in the second IP address and subnet mask. Then click Next.
 Secondary IP Address: 10.3.75.49
 Subnet mask: 255.255.258.248
- 8. Check the network information. Make sure the settings match the settings provided by ISP. Click **Finish**.
- 9. Now the router is well configured. You can access into Internet.

Unnumbered IP over ATM (IPoA)



Description:

If you apply for multiple IP addresses from your ISP, you can assign these public IP addresses to the ADSL Router and public server, e.g., Web or FTP server. Typically the first IP is network address, the second is used as router IP address and the last one is subnet broadcasting. Other remaining IP addresses can be assigned to PCs on the LAN.

The following example uses the LAN IP address ranging from 10.3.75.49 to 10.3.75.54 and the subnet mask for LAN is 255.255.255.248. The WAN address is 10.3.70.1, and the subnet mask for WAN is 255.255.255.252.

- 1. Start up your browser and type **192.168.1.1** as the address to enter this ADSL web-based manager.
- Go to Quick Start -Quick Setup. Uncheck Auto Scan Internet Connection (PVC). Type in the VCI and VPI value. Then click the Next button. VPI - 0 VCI - 32
- 3. On the **Configure Internet Connection -Connection Type** page, select the **IP over ATM** (**IPoA**) then click the **Next** button.
- In the WAN IP Settings page, select None for WAN IP address settings. Then, select Use the following DNS Server Address. Type in the Primary DNS server and Secondary DNS server. Uncheck Enable NAT. Then Click Next for next page. Primary DNS server: 168.95.1.1 Secondary DNS server: 168.95.192.1
- 5. In the Configure LAN side Settings page, type in the IP address and subnet mask for your LAN.
 Primary IP Address: 192.168.1.1
 Subnet mask: 255.255.255.0
 Start IP Address: 192.168.1.2
 End IP Address: 192.168.1.254
- Check Configure the second IP Address and Subnet Mask for LAN Interface and type in the second IP address and subnet mask. Then click Next. Secondary IP Address: 10.3.75.49 Subnet mask: 255.255.255.248
- 7. Check the network information. Make sure the settings match the settings provided by ISP. Click **Finish**.
- 8. Set TCP/IP for your computer. Specify an IP Address, subnet mask and set default gateway. eg:

IP Address: 10.3.75.51 Subnet Mask: 255.255.255.248 Gateway: 10.3.75.49

9. Now the router is well configured. You can access into Internet.





Description:

In this deployment environment, we make up a private IP network of 192.168.1.1. NAT function is enabled (on ADSL Router or use another NAT box connected to hub) to support multiple clients to access the Router and some public servers (WWW, FTP).

If you apply for multiple IP addresses from your ISP, you can assign these public IP addresses to the ADSL Router and public server, e.g., Web or FTP server. Typically the first IP is network address, the second is used as router IP address and the last one is subnet broadcasting. Other remaining IP addresses can be assigned to PCs on the LAN.

The following example uses the LAN IP address ranging from 10.3.75.49 to 10.3.75.54 and the subnet mask for LAN is 255.255.255.248. The WAN address is 10.3.70.1, and the subnet mask for WAN is 255.255.255.252.

- 1. Start up your browser and type **192.168.1.1** as the address to enter this ADSL web-based manager.
- Go to Quick Start -Quick Setup. Uncheck Auto Scan Internet Connection (PVC). Type in the VCI and VPI value. Then click the Next button.
 VPI 0
 VCI 32
- 3. On the **Configure Internet Connection -Connection Type** page, select the **IP over ATM** (**IPoA**) then click the **Next** button.
- In the WAN IP Settings page, select None for WAN IP address settings. Then, select Use the following DNS Server Address. Type in the Primary DNS server and Secondary DNS server. Click Next for next page.
 Primary DNS server: 168.95.1.1 Secondary DNS server: 168.95.192.1
- 5. Check the Enable NAT box. And click Next.
- 6. In the **Configure LAN side Settings** page, type in the IP address and subnet mask for your LAN.

Primary IP Address: 192.168.1.1 Subnet mask: 255.255.255.0 Start IP Address: 192.168.1.2 End IP Address: 192.168.1.254

- Check Configure the second IP Address and Subnet Mask for LAN Interface and type in the second IP address and subnet mask. Then click Next. Secondary IP Address: 10.3.75.49 Subnet mask: 255.255.255.248
- 8. Check the network information. Make sure the settings match the settings provided by ISP. Click **Finish**.
- 9. Now the router is well configured. You can access into Internet.

Bridge Mode



Description:

In this example, the ADSL Router acts as a bridge which bridging PC IP address from LAN to WAN. PC IP address can be a static public address that is pre-assigned by ISP or a dynamic public address that is assigned by ISP DHCP server, or can be got from PPPoE software.

Therefore, it does not require a public IP address. It only has a default private IP address (192.168.1.1) for management purpose.

- 1. Choose a client PC and set the IP as 192.168.1.x (x is between 2 and 254) and the gateway as 192.168.1.1.
- 2. Start up your browser and type **192.168.1.1** as the address to enter the web-based manager.
- Go to Quick Start -Quick Setup. Uncheck Auto Scan Internet Connection (PVC). Type in the VCI and VPI value. Then click the Next button. eg: VPI - 0 VCI - 32
- 4. On the **Configure Internet Connection -Connection Type** page, select the **Bridging** then click the **Next** button.
- In the Configure LAN side Settings page, type in the IP address and subnet mask for your LAN. Finally click Next. eg: Primary IP address:192.168.1.1 Subnet Mask:255.255.255.0
- 6. Check the network information. Make sure the settings match the settings provided by ISP. Click **Finish**.
- Set TCP/IP for your computer. Specify an IP Address, subnet mask and set default gateway. eg: IP Address: 10.3.86.81 Subnet Mask: 255.255.255.248 Gateway: 10.3.86.1
- 8. Click **OK**. Now the router is well configured. You can access into Internet.

Chapter 6 Troubleshooting

If the suggested solutions in this section do not resolve your issue, contact your system administrator or Internet service provider.

Problems with LAN

PCs on the LAN cannot get IP addresses from the ADSL Router.

The chances are that the interface used as DHCP server is modified and the client PCs do not renew IP addresses.

If your DHCP server is enabled on Private IP Address previously and you modify the interface to Public IP Address, the client PCs should renew IP addresses.

The PC on the LAN cannot access the Web page of the ADSL Router.

Check that your PC is on the same subnet with the ADSL Router.

The virtual server can't be access after setting virtual server.

Check the filter rule of the port that virtual server service setting for example, the virtual server service set FTP 21 you need update the filter rule of the ftp 21 **Direction** setting: Choose filter the packets that incoming action (In Bound) are **Allow** on the interface.

Problems with WAN

You cannot access the Internet.

□ Check the physical connection between the ADSL Router and the LAN.

If the LAN LED on the front panel is off or keeps blinking, there may be problem on the cable connecting to the ADSL Router.

At the DOS prompt, ping the IP address of the ADSL Router, e.g, ping 192.168.1.1. If the following response occurs:

Relay from 192.168.1.1 bytes=32 time=100ms TTL=253

Then the connection between the ADSL Router and the network is OK.

If you get a failed ping with the response of:

Request time out

Then the connection is fail. Check the cable between the ADSL Router and the network.

□ Check the DNS setting of the ADSL Router.

At the DOS prompt, ping the IP address of the DNS provided by your ISP. For example, if your

DNS IP is 168.95.1.1, then ping 168.95.1.1. If the following response occurs:

Relay from 168.95.1.1 bytes=32 time=100ms TTL=253

Then the connection to the DNS is OK.

If you get a failed ping with the response of:

Request time out

Then the DNS is not reachable. Check your DNS setting on the ADSL Router.

Problems with Upgrading

The following lists the error messages that you may see during upgrading and the action to take.

Error: All the ADSL LEDs light up and cannot light off as usual.

Possible cause: When users execute firmware upgrade and save settings to the router, the power for the router is lost for some unknown reasons, the normal web page for the router might be damaged. After power on your router, the LEDs might not work normally.

Boot Loader, Version 1.0.37-5.5.05

This device is currently running on the boot loader.

Update Firmware

Step 2: Enter th locate ti	an updated firmware image file from your ISP. he path to the image file location in the box below or click "Browse" to he image file. Ipdate Firmware" once to upload the new image file.	
NOTE: The upda	ate process takes about 2 minutes to complete, and your DSL Router v	vill reboot.
New Firmware Fi	ïle Name:	Browse

Update Firmware

Action: Use the browser to connect to the router for executing image upgrade.

Error Message: Image uploading failed. The selected file contains an illegal image.
 Possible cause: The firmware file format is invalid.

Action: Check the file format is correct, otherwise download a firmware file with correct format.

Error Message: Image uploading failed. The system is out of memory.
 Possible cause: It may be caused by the lack of memory.

Action: Reboot your ADSL Router and perform the upgrade task again.

Error Message: Image uploading failed. No image file was selected.
 Possible cause: You did not select a file correctly.

Action: Download a compatible firmware from the web.

Chapter 7 Glossary

ARP (Address Resolution Protocol)

ARP is a TCP/IP protocol for mapping an IP address to a physical machine address that is recognized in the local network, such as an Ethernet address.

A host wishing to obtain a physical address broadcasts an ARP request onto the TCP/IP network. The host on the network that has the IP address in the request then replies with its physical hardware address.

Inverse ARP (In-ARP), on the other hand, is used by a host to discover its IP address. In this case, the host broadcasts its physical address and a RARP server replies with the host's IP address.

DHCP (Dynamic Host Configuration Protocol)

When operates as a DHCP server, the ADSL Router assign IP addresses to the client PCs on the LAN. The client PCs "leases" these Private IP addresses for a user-defined amount of time. After the lease time expires, the private IP address is made available for assigning to other network devices.

The DHCP IP address can be a single, fixed public IP address, an ISP assigned public IP address, or a private IP address.

If you enable DHCP server on a private IP address, a public IP address will have to be assigned to the NAT IP address, and NAT has to be enabled so that the DHCP IP address can be translated into a public IP address. By this, the client PCs are able to access the Internet.

LAN (Local Area Network) & WAN (Wide Area Network)

A LAN is a computer network limited to the immediate area, usually the same building or floor of a building. A WAN, on the other hand, is an outside connection to another network or the Internet.

The Ethernet side of the ADSL Router is called the LAN port. It is a twisted-pair Ethernet 10Base-T interface. A hub can be connected to the LAN port. More than one computers, such as server or printer, can be connected through this hub to the ADSL Router and composes a LAN.

The DSL port of the ADSL Router composes the WAN interface, which supports PPP or RFC 1483 connecting to another remote DSL device.

NAT (Network Address Translation) IP Address

NAT is an Internet standard that translates a private IP within one network to a public IP address, either a static or dynamic one. NAT provides a type of firewall by hiding internal IP addresses. It also enables a company to use more internal IP addresses.

If the IP addresses given by your ISP are not enough for each PC on the LAN and the ADSL Router, you need to use NAT. With NAT, you make up a private IP network for the LAN and assign an IP address from that network to each PC. One of some public addresses is configured and mapped to a private workstation address when accesses are made through the gateway to a public network.

For example, the ADSL Router is assigned with the public IP address of 168.111.2.1. With NAT enabled, it creates a Virtual LAN. Each PC on the Virtual LAN is assigned with a private IP address with default value of 192.168.1.2 to 192.168.1.254. These PCs are not accessible by the outside world but they can communicate with the outside world through the public IP 168.111.2.1.

Private IP Address

Private IP addresses are also LAN IP addresses, but are considered "illegal" IP addresses to the Internet. They are private to an enterprise while still permitting full network layer connectivity between all hosts inside an enterprise as well as all public hosts of different enterprises.

The ADSL Router uses private IP addresses by assigning them to the LAN that cannot be directly accessed by the Internet or remote server. To access the Internet, private network should have an agent to translate the private IP address to public IP address.

Public IP Address

Public IP addresses are LAN IP addresses that can be considered "legal" for the Internet, because they can be recognized and accessed by any device on the other side of the DSL connection. In most cases they are allocated by your ISP.

If you are given a range of fixed IP addresses, then one can be assigned to the router and the others to network devices on the LAN, such as computer workstations, ftp servers, and web servers.

PVC (Permanent Virtual Circuit)

A PVC is a logical point-to-point circuit between customer sites. PVCs are low-delay circuits because routing decisions do not need to be made along the way. Permanent means that the circuit is preprogrammed by the carrier as a path through the network. It does not need to be set up or turned down for each session.

RIP (Routing Information Protocol)

RIP is a routing protocol that uses the distance-vector routing algorithms to calculate least-hops routes to a destination. It is used on the Internet and is common in the NetWare environment. It exchanges routing information with other routers. It includes V1, V2 and V1&V2, which controls the sending and receiving of RIP packets over Ethernet.

UDP (User Datagram Protocol)

UDP is a connectionless transport service that dispenses with the reliability services provided by TCP. UDP gives applications a direct interface with IP and the ability to address a particular application process running on a host via a port number without setting up a connection session.

Virtual Server

You can designate virtual servers, e.g., a FTP, web, telnet or mail server, on your local network and make them accessible to the outside world. A virtual server means that it is not a dedicated server -- that is, the entire computer is not dedicated to running on the public network but in the private network.

VPI (Virtual Path Identifier) & VCI (Virtual Channel Identifier)

A VPI is a 8-bit field while VCI is a 16-bit field in the ATM cell header. A VPI identifies a link formed by a virtual path and a VCI identifies a channel within a virtual path. In this way, the cells belonging to the same connection can be distinguished. A unique and separate VPI/VCI identifier is assigned in advance to indicate which type of cell is following, unassigned cells, physical layer OAM cells, metasignaling channel or a generic broadcast signaling channel. Your ISP should supply you with the values.

Appendix A Specifications

Interface	One RJ-11 port for ADSL connection			
	• Four RJ-45 ports for IEEE 802.3/802.3u 10/100 Base-T			
	auto-sensing and auto-crossover Ethernet connection			
	 One USB port compliant to USB v1.1 for 12 Mbps connection rate 			
	• On-board wireless LAN module for IEEE 802.11g (2.4 GHz) wireless LAN connection			
	 One hidden reset button for restoring to factory of settings 			
Regulatory	EMI: FCC part 15 Class B, CE			
Approvals and	Immunity: FCC part 68 Class B			
Compliance	Safety: UL, CB, LV	D		
Power Requirement	Power Adaptor:	Input 110±10 or 230±10 VAC;		
and Operation	-	Output 12 VAC, 1A		
Environment	Power Consumptio	n: less than 10 Watt		
Requirement	Ambient Temperat	ure: 0 to 40°C (32 to 96°F)		
	Relative Humidity:	20% to 90% (non-condensing)		
Physical	Dimensions:	190mm(L) x 130mm(W) x 40mm(H)		
	Weight:	350g		

Appendix B

Server Setup for 802.1x Client

Getting Client Certificate

- 1. Please connect the client to a network that doesn't require port authentictaion.
- 2. Open up Microsoft Explorer in Windows XP, and go to http://<yourserver>/certsrv.
- 3. Authenticate to the server using your account that you created at the end of the server setup. (e.g. 123) and click OK. A dialog box might appear for you to choose.
- 4. Make sure that **Request a certificate** is selected, and click **Next**.



5. Make sure that User certificate request: User Certificate is selected, and click Next.

6. Click **Submit** in this dialog.

7. Now, you'll see status messages on the screen, then your certificate will be returned to you. Click **Install this certificate.**

8. You'll receive a confirmation message about accepting the certificate, click **Yes**



Enable 802.1x authentication and Encryption for wireless card

1. Open up the properties for your wireless connection, either by

Right-click on **My Network Places** on the desktop, select **Properties**, <u>or</u> Open up the **Control Panel**, select **Network Connections** (located under **Network and Internet Connections** if in Category View)

- 2. Right Click on the Wireless Network Connection, and select Properties.
- 3. Select the Authentication Tab, and ensure that Enable network access control using IEEE 802.1X is selected, and Smart Card or other Certificate is selected from the EAP type.

L Wirel	ess Network Con	nection Prop	erties	? 🔀
General	Wireless Networks	Authentication	Advanced	
wired a	his option to provide : nd wireless Ethernet r ble network access c	networks.		я
EAP typ	pe: Smart Card or o	ther Certificate	and the second	
			Prope	rties
💽 Autł	nenticate as compute	r when computer	information is a	vailable
	nenticate as guest wh vailable	ien user or compu	uter information	is
			к <u></u> с	ancel

- 4. Click on the Wireless Networks tab.
- 5. Select the wireless network on which you want to enable dynamic WEP from under Available Networks, and select Configure.

	Authen	tication Ad	vanced
Use Windows	to configure my wire	eless network	settings
Available netwo	orks:		
To connect to	an available network	, click Config	jure.
i 123		~	Configure
🗼 rtest			
1		~	Refresh
below:			Move up
💡 umd		1000	Move down
♀ umd ▲ 123			move down
· · · · · · · · · · · · · · · · · · ·	Remove (Properties	
Add	Remove (]
123 Add			Advanced
Add			₪]

6. Select **Data encryption (WEP** enabled), and ensure **The key is** provided for me automatically is also selected.

Wireless Network Pro	perties 🛛 🕐 🔀					
Network name (SSID):	123					
Wireless network key (W	EP)					
This network requires a k	This network requires a key for the following:					
Data encryption (W	(EP enabled)					
Network Authentic	ation (Shared mode)					
Network key						
Key format	ASCII characters					
Key length:	104 bits (13 characters) 💌					
Key index (advanced)	0					
V The key is provided f	or me automatically					
This is a computer-to-co access points are not u	omputer (ad hoc) network; wireless sed					

7. Now you're ready to configure your router (AP) with 802.1x authentication.