PLANET
Networking & Communication

Internet Broadband Router

XRT-501

User's Manual

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FCC Compliance Statement

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the instructions provided with the equipment, may cause interference to radio and TV communication. The equipment has been tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart B of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If you suspect this equipment is causing interference, turn your Ethernet Switch on and off while your radio or TV is showing interference, if the interference disappears when you turn your Ethernet Switch off and reappears when you turn it back on, there is interference being caused by the Ethernet Switch. You can try to correct the interference by one or more of the following measures:

1. Reorient the receiving radio or TV antenna where this may be done safely.
2. To the extent possible, relocate the radio, TV or other receiver away from the Switch.
3. Plug the Ethernet Switch into a different power outlet so that the Switch and the receiver are on different branch circuits.

If necessary, you should consult the place of purchase or an experienced radio/television technician for additional suggestions.

CE mark Warning

The is a class A device, In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

WEEE

To avoid the potential effects on the environment and human health as a result of the presence of hazardous substances in electrical and electronic equipment, end users of electrical and electronic equipment should understand the meaning of the crossed-out wheeled bin symbol. Do not dispose of WEEE as unsorted municipal waste and have to collect such WEEE separately.

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Revision

User’s Manual for PLANET Internet Broadband Router:
Model: XRT-501v1
Rev: 1.0 (Feb. 2008)
Part No.: 2081-B40100-000

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Chapter1 Introduction

Congratulations on purchasing PLANET XRT-501. This XRT-501 is a cost-effective IP Sharing Router that enables multiple users to share the Internet through an ADSL or cable modem. Simply configure your Internet connection settings in XRT-501 and plug your PC to the LAN port and you're ready to share files and access the Internet. As your network grows, you can connect another hub or switch to the router's LAN ports, allowing you to easily expand your network. XRT-501 provides a total solution for the Small Business (SMB) and the Small Office/Home Office (SOHO) markets, giving you an instant network today, and the flexibility to handle tomorrow's expansion and speed.

1.1 Features

- **Internet Access Features**
  - ***All Gigabit Ports Support*** With 5 Auto-negotiation, Auto MDI/MDI-X Ethernet ports. XRT-501 eliminates most cabling inconvenience. One WAN port, 10/100/1000Base-T is connected to your DSL or Cable modem. The other 4 LAN port, 10/100/1000Base-T are used to connect to local LAN.
  - ***Shared Internet Access*** All users on the LAN can access the Internet through the XRT-501 using only a single external IP Address. The local (invalid) IP Addresses are hidden from external sources. This process is called NAT (Network Address Translation).
  - ***Fixed,* PPPoE, Dynamic, *and Direct Connection Support*** Various WAN connections are supported by XRT-501.

- **Advanced Internet Functions**
  - ***Internet Communication Applications.*** XRT-501 supports for Internet communication applications, such as interactive Games, Telephony, and Conferencing applications, which are often difficult to use when behind a Firewall
  - ***Special Internet Applications.*** Using non-standard connections or port numbers are normally blocked by the Firewall. The ability to define and allow such applications is provided, to enable such applications to be used normally.
  - ***Virtual Servers Support.*** This feature allows Internet users to access Internet servers on your LAN. The required setup is quick and easy.
  - ***DMZ. Support.*** XRT-501 can translate public IP addresses to private IP address to allow unrestricted 2-way communication with Servers or individual users on the Internet. This provides the most flexibility to run programs, which are incompatible with Firewalls.
  - ***URL Filter.*** Keyword based URL Filter to block access to undesirable Web sites by LAN users.
  - ***Firewall**.* It supports Stateful Packet Inspection firewall for DoS (Denial of Service) attacks.
  - ***Dynamic DNS Support.*** When used with the Virtual Servers feature, allows users to connect to Servers on your LAN using a Domain Name, even if you have a dynamic IP address which changes every time you connect.
  - ***VPN Pass through Support.*** PCs with VPN (Virtual Private Networking) software using PPTP, L2TP and IPSec are transparently supported - no configuration is required.
  - ***Access Control*** .Using the Access Control feature, you can assign LAN users to different groups, and determine which Internet services are available to each group.
  - ***Password protected Configuration***. Optional password protection is provided to prevent unauthorized users from modifying the configuration data and settings.

- **LAN Features**
  - ***DHCP Server Support.*** Dynamic Host Configuration Protocol provides a dynamic IP address to PCs and other devices upon request. XRT-501 can act as a DHCP Server for devices on your local LAN and WLAN.
  - ***PC database.*** All LAN users can be added manually or discovered automatically by XRT-501, through this built-in user database, administrators are able to have a centralized networking management.
  - ***Routing.*** LANs containing one or more segments are supported via RIP1 (Routing Information Protocol) support and built-in static routing table.

- **Configuration & Management**
  - ***Easy Setup.*** Built-In configuration wizard helps users to complete network installation in a very short time via standard Internet browsers such as Microsoft Internet Explorer, Netscape Communicator…etc.
  - ***Remote Management***.XRT-501 can be managed from any PC on LAN or via Internet anywhere around the world.
  - ***UPnP Support.*** UPnP (Universal Plug and Play) allows automatic discovery and configuration of the XRT-501. UPnP is by supported by Windows ME, XP, or later.
  - ***Logs.*** It provides system log and security log, and log can be saved or mail to a specific account.
  - ***Configuration File Upload/Download.*** Save (download) the configuration data from the Broadband Router to your PC, and restore (upload) a previously-saved configuration file to the Broadband Router.
  - ***Packet Capture Utility.*** XRT-501 provides Easy Installation Utility via enable the capture packet function on the Web UI for monitor the LAN or WAN traffic, and also sends capture log to the specific client which installed capture tool.

1.2 Package Contents

- XRT-501 Unit
- Power Adapter
- Quick Installation Guide
- CD-ROM include User’s Manual and Utility

1.3 Physical Details

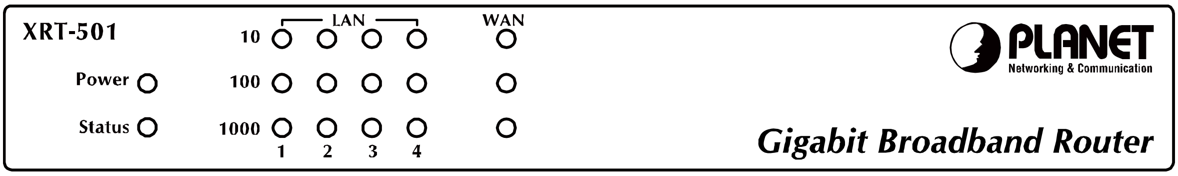
Weight

400g

Dimensions

141 x100 x 27 mm

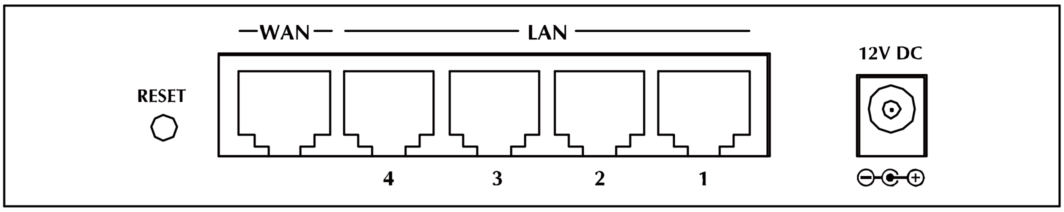
Front Panel



Front Panel LED definition

Power	**ON**	Power on	
	OFF	No power.	
Status (Red)	**ON**	Error condition.	
	OFF	Normal operation.	
	BLINKING	This LED blinks during start up.	
LAN	10	**ON**	Corresponding LAN port is using 10Mpbs
	100		Corresponding LAN port is using 100Mpbs
	1000		Corresponding LAN port is using 1000Mpbs
	10	**OFF**	Corresponding LAN port connection is no active connection.
	100		
	1000		
	10	**FLASHING**	Data is being transmitted or received via the corresponding LAN port.
	100		
	1000		
WAN	10	**ON**	Corresponding WAN (hub) port is using 10Mpbs
	100		Corresponding WAN (hub) port is using 100Mpbs
	1000		Corresponding WAN (hub) port is using 1000Mpbs.
	10	**OFF**	Corresponding WAN port connection is no active connection.
	100		
	1000		
	10	**FLASHING**	Data is being transmitted or received via the WAN port.
	100		
	1000		

Rear Panel



Rear Panel Port and Button Definition

Port	**Description**
RESET	This button has two (2) functions: **Reboot** When pressed and released, XRT-501 will reboot (restart). **Clear All Data** Hold the button longer than 5 seconds then release,

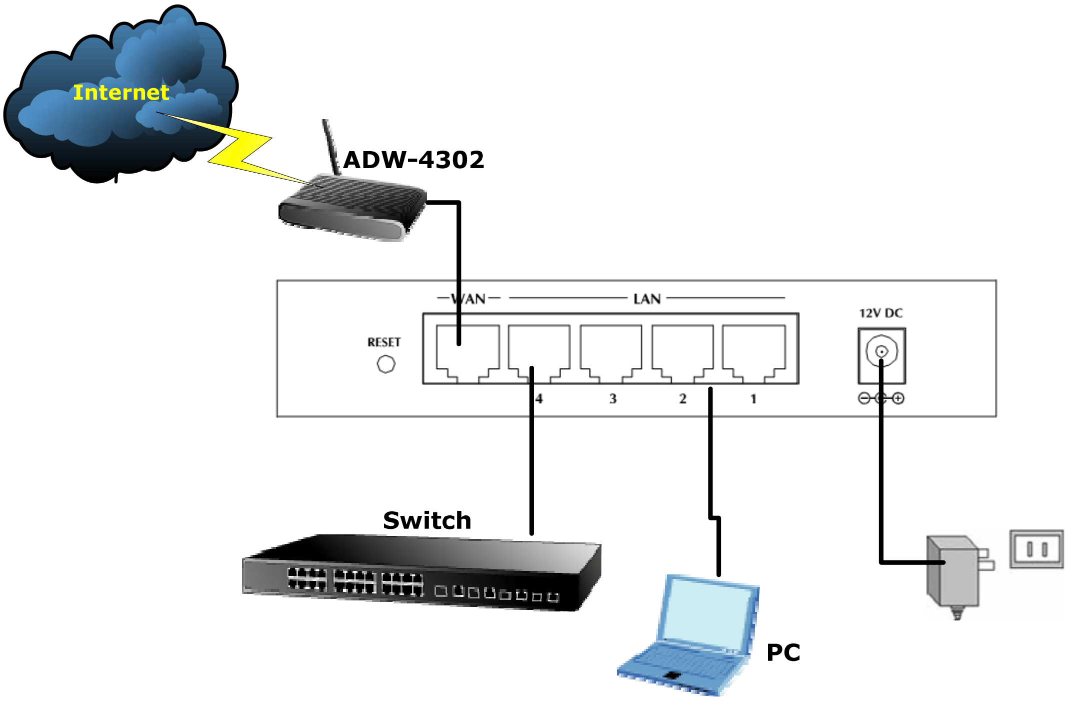
	this can be clear ALL data and restore ALL settings to the factory default values.
WAN	Connect your xDSL or Cable modem and is linked to the Internet.
LAN (1-4)	Connect your LAN's PCs, printer servers, hubs and switches etc.
12VDC	DC Power in.

1.4 Requirements

- DSL or Cable modem for broadband Internet access.
- Network cables. Use standard 10/100/1000BaseT network (UTP) cables with RJ45 connectors.
- TCP/IP network protocol installed on each PC.

1.5 Physical Installation

Setup your network as shown in the setup diagram below



1. Use standard LAN cables to connect PCs to the Switching Hub ports on the XRT-501, or you can directly connect PCs to XRT-501, you may use 10Base-T, 100Base-TX, or 1000Base-T connections, and all connection types can be used simultaneously.
2. If required, connect any port to a normal port on another Hub, using a standard LAN cable. Any LAN port on the XRT-501 will automatically function as an "Uplink" port when required.

3. Connect the DSL or Cable modem to the WAN port on the XRT-501. Use the cable supplied with your DSL/Cable modem. If no cable was supplied, use a standard cable.

4. Connect the supplied Power Adapter and power on.

5. Check the LEDs

- The *Power* LED should be ON.
- *Status* LED should flash, and then turn off. If it stays on, there is a hardware error.
- For each LAN connection, one of the *LAN* LEDs (10, 100, or 1000) should be ON (provided the PC is also ON.)
- One of the *WAN* LEDs (10, 100, or 1000) should be ON, provided the Broadband modem is powered up.

1.6 Configuration

Then, you need to setup your LAN PC clients, so that it can obtain an IP address automatically. By default the XRT-501's DHCP server is enabled, so you can obtain an IP address automatically.

✍**Note** Please make sure that the XRT-501's DHCP server is the only DHCP server available on your LAN. If there is another DHCP on your network, then you'll need to switch one of the DHCP servers off.

Step1➔ Configure your PC to obtain an IP address automatically

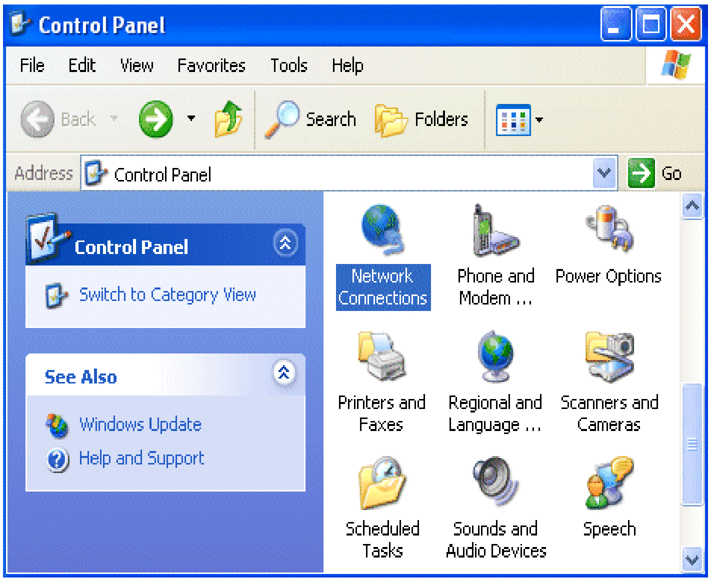
This section will show you how to configure your PC's so that it can obtain an IP address automatically for either Windows 98/Me, 2000 or later operating systems.

For other operating systems (Macintosh, Sun, etc.), please follow the manufacturer's instructions. The following is a step-by-step illustration on how to configure your PC to obtain an IP address automatically for **2a) Windows XP, 2b) Windows 2000, and 2c) Windows 98/Me**

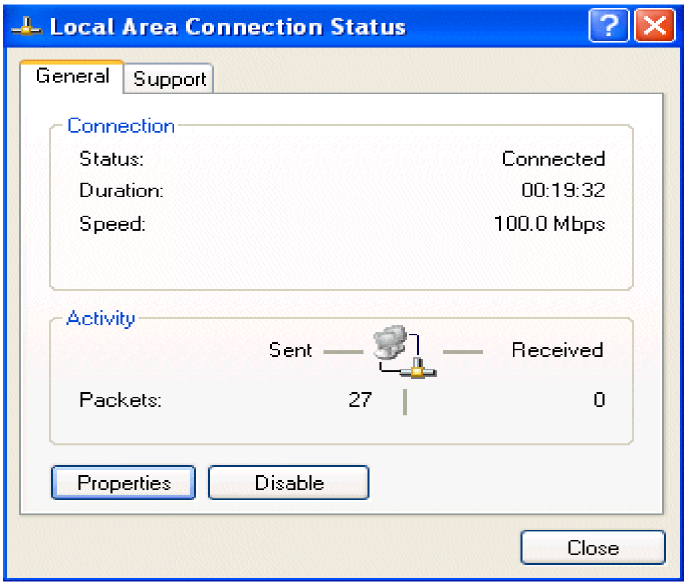
2a) Configuring PC in Windows XP

1. Go to **Start / Control Panel (in Classic View)**. In the Control Panel, double-click on **Network Connections**

2. Double-click **Local Area Connection**.

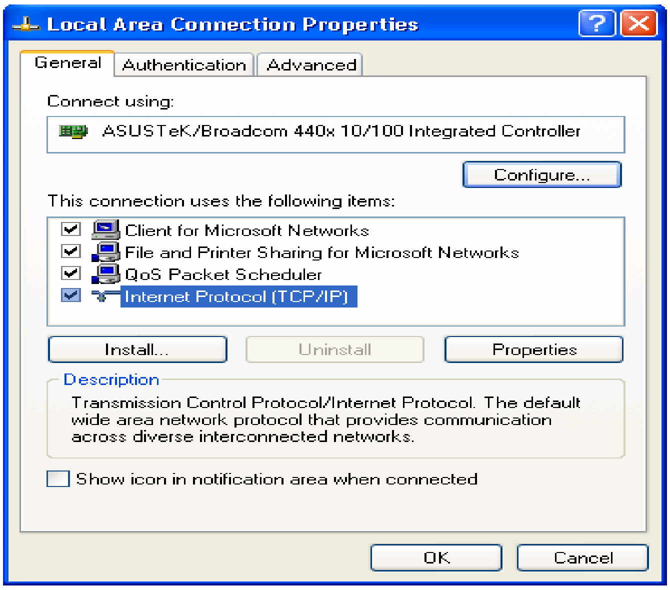


3. In the **Local Area Connection Status** window, click **Properties**.



Status: Connected
Duration: 00:19:32
Speed: 100.0 Mbps
Packets: 27 0

4. Select **Internet Protocol (TCP/IP)** and click **Properties**.



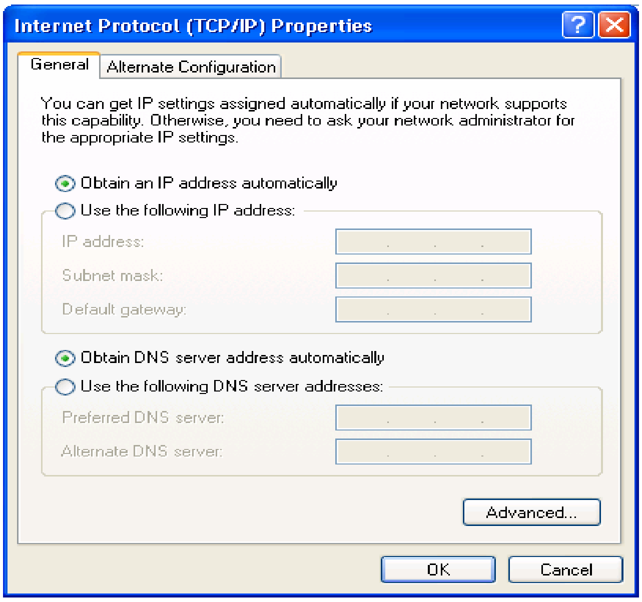
Connect using:
ASUSTeK/Broadcom 440x 10/100 Integrated Controller

This connection uses the following items:
☑ Client for Microsoft Networks
☑ File and Printer Sharing for Microsoft Networks
☑ QoS Packet Scheduler
☑ Internet Protocol (TCP/IP)

Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.

□ Show icon in notification area when connected

5. Select the **Obtain an IP address automatically** and the **Obtain DNS server address automatically** radio buttons.
6. Click **OK** to finish the configuration.



Internet Protocol (TCP/IP) Properties

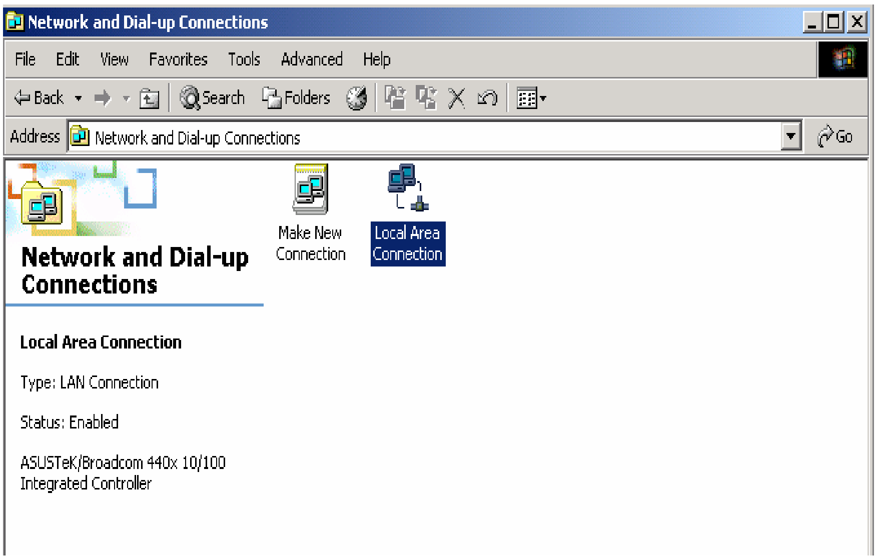
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

● Obtain an IP address automatically
○ Use the following IP address:
IP address:
Subnet mask:
Default gateway:

● Obtain DNS server address automatically
○ Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:

2b) Configuring PC in Windows 2000

1. Go to **Start / Settings / Control Panel**. In the Control Panel, double-click on **Network and Dial-up Connections**.
2. Double-click **Local Area Connection**.



Network and Dial-up Connections

Local Area Connection

Type: LAN Connection

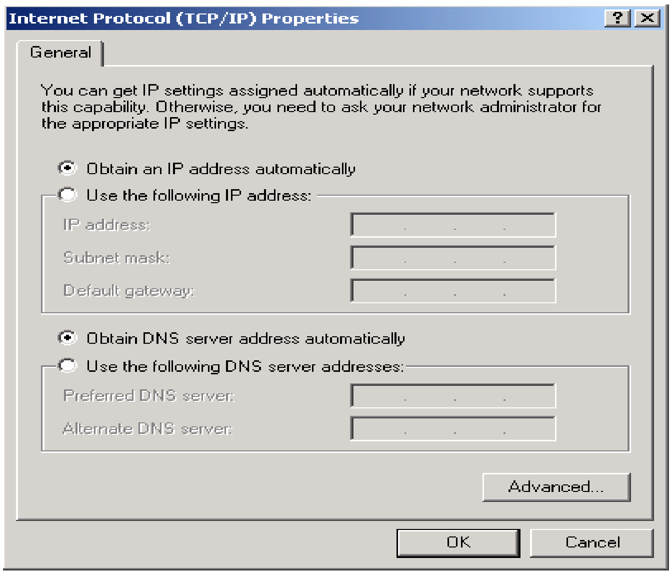
Status: Enabled

ASUSTeK/Broadcom 440x 10/100 Integrated Controller

3. In the **Local Area Connection Status** window click **Properties**.

4. Select **Internet Protocol (TCP/IP)** and click **Properties**.

5. Select the **Obtain an IP address automatically** and the **Obtain DNS server address automatically** radio buttons.
6. Click **OK** to finish the configuration.



Internet Protocol (TCP/IP) Properties

General

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.

● Obtain an IP address automatically

○ Use the following IP address:

IP address: . . .

Subnet mask: . . .

Default gateway: . . .

● Obtain DNS server address automatically

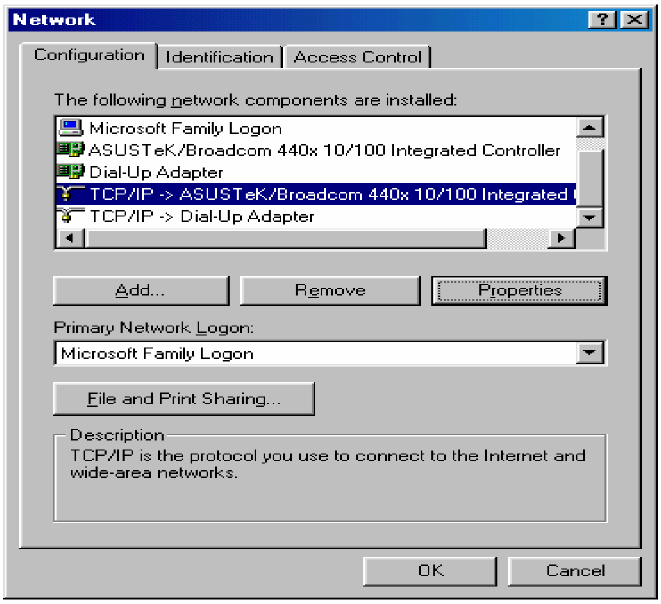
○ Use the following DNS server addresses:

Preferred DNS server: . . .

Alternate DNS server: . . .

2c) Configuring PC in Windows 98/Me

1. Go to **Start / Settings / Control Panel**. In the Control Panel, double-click on **Network** and choose the **Configuration** tab.
2. Select **TCP/IP → NE2000 Compatible**, or the name of your Network Interface Card (NIC) in your PC.



Network

Configuration | Identification | Access Control

The following network components are installed:

- Microsoft Family Logon
- ASUSTeK/Broadcom 440x 10/100 Integrated Controller
- Dial-Up Adapter
- TCP/IP -> ASUSTeK/Broadcom 440x 10/100 Integrated
- TCP/IP -> Dial-Up Adapter

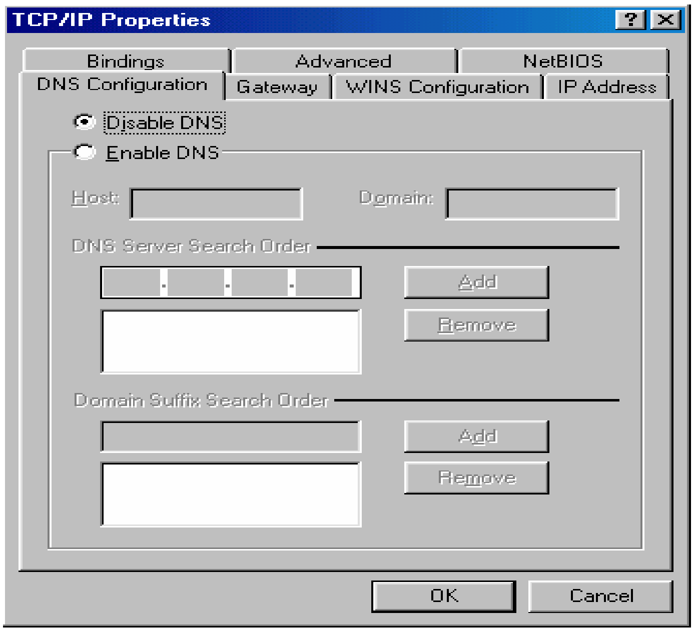
Primary Network Logon:

Microsoft Family Logon

Description

TCP/IP is the protocol you use to connect to the Internet and wide-area networks.

3. Select the **Obtain an IP address automatically** radio button.
4. Then select the **DNS Configuration** tab.
5. Select the **Disable DNS** radio button and click **OK** to finish the configuration.



TCP/IP Properties

● Disable DNS

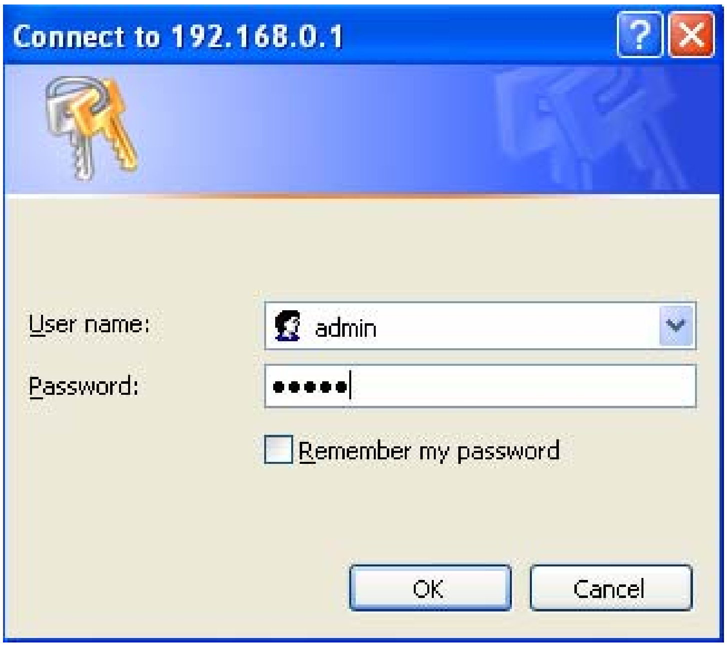
○ Enable DNS

Step2 Configuring with Web Browser

Once your PC has obtained an IP address from your router, please start your Web Browser. In the *Address* box, enter ***http://192.168.0.1***,and then press <enter>

The login screen below will appear. Enter the “User Name” and “Password” and then click <OK> to login.

✍**Note**	By default, the user name and password both are “**admin**”. For security reasons it is recommended to change the password at the first login and memorize it.



Connect to 192.168.0.1

User name: admin

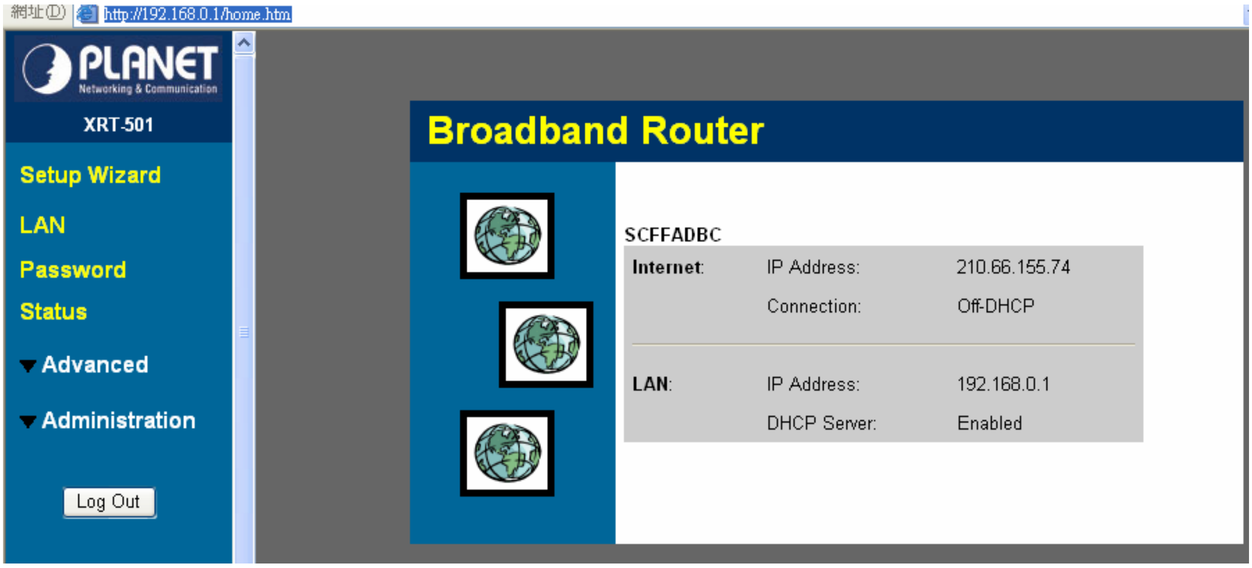
Password: •••••

□ Remember my password

Chapter2 General Setup

2.1 Setup Wizard

The following picture is XRT-501's home screen:

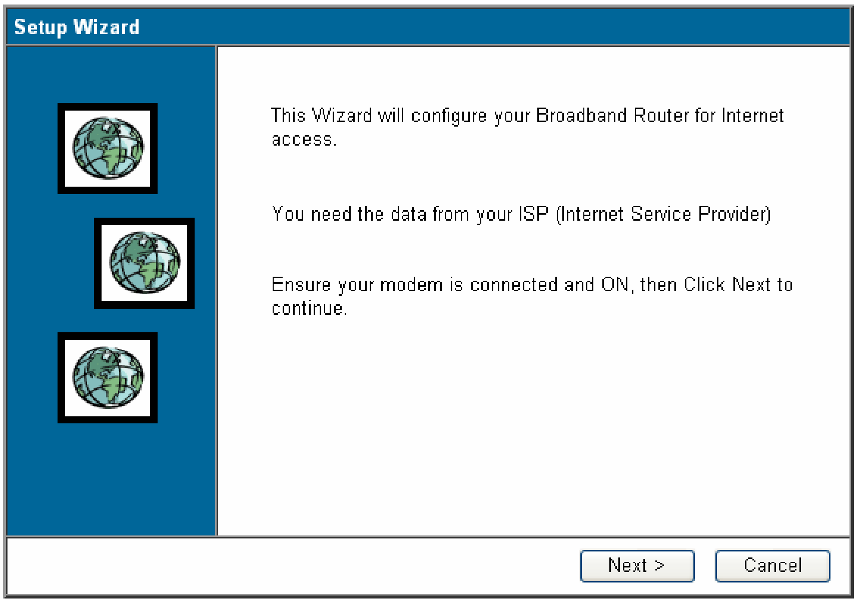


SCFFADBC

Internet:	IP Address:	210.66.155.74
	Connection:	Off-DHCP
LAN:	IP Address:	192.168.0.1
	DHCP Server:	Enabled

This section intends to help you setup the XRT-501 as fast as possible. The setup includes Wizard setup, and different type of Internet connection. For more information about the settings, please also refer to the user's manual in the supplied CD-ROM.

In the Setup Wizard you are required to fill in only the information necessary to access the Internet. Once you click on the **Wizard**, you will see the screen below.



This Wizard will configure your Broadband Router for Internet access.

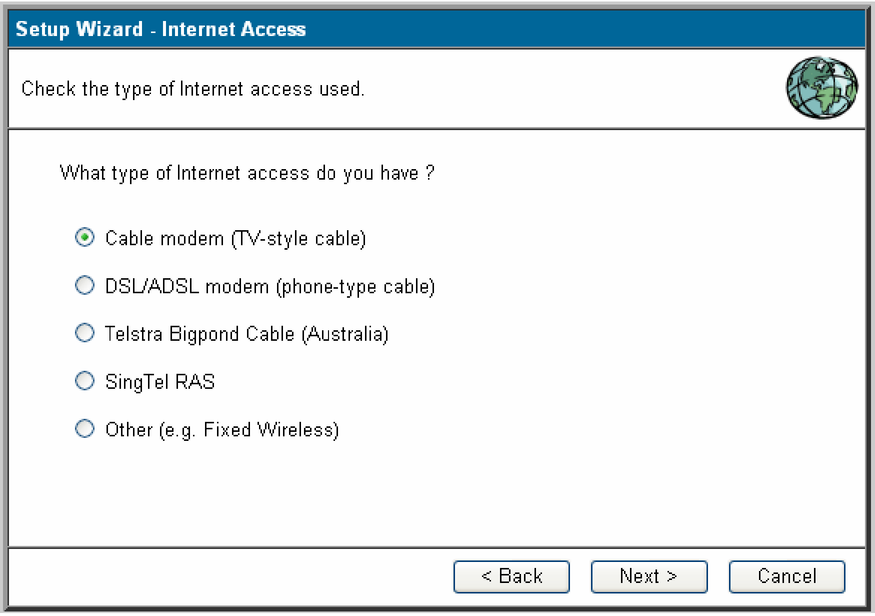
You need the data from your ISP (Internet Service Provider)

Ensure your modem is connected and ON, then Click Next to continue.

Step1) Choose your ISP type

In this section you have to select one of these types of connections that you will be using to connect your XRT-501's WAN port to your ISP (see screen below).

✍**Note** Different ISP's require different methods of connecting to the Internet, please check with your ISP as to the type of connection it requires.



Setup Wizard - Internet Access

Check the type of Internet access used.

What type of Internet access do you have ?

● Cable modem (TV-style cable)

○ DSL/ADSL modem (phone-type cable)

○ Telstra Bigpond Cable (Australia)

○ SingTel RAS

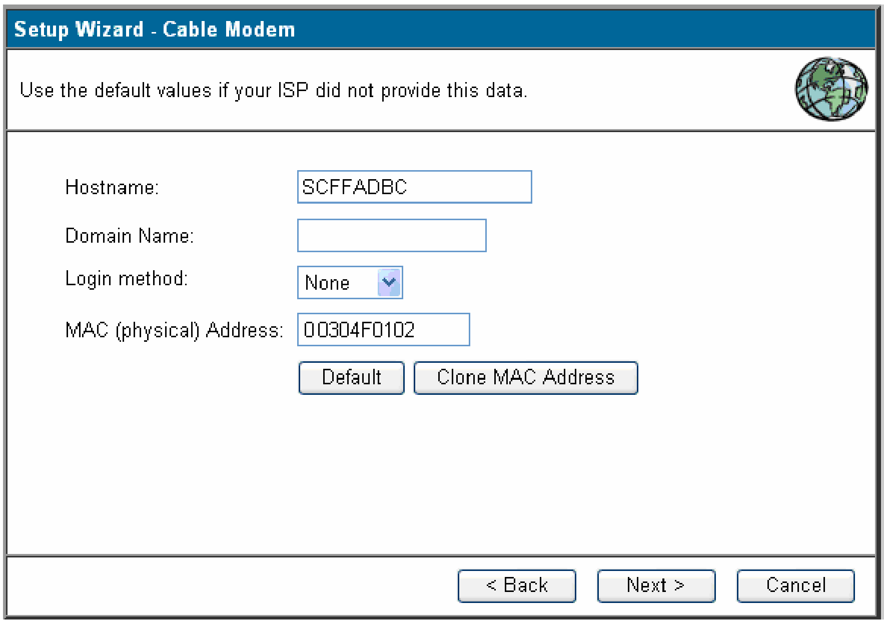
○ Other (e.g. Fixed Wireless)

Parameter	Description
2.1.1 Cable Modem	Your ISP will automatically give you an IP address.
2.1.2 DSL/ADSL	Your ISP has given you an IP address already
2.1.3 Telstra Bigpond Cable	For Telstra BigPond (Australia) use only.
2.1.4 SingTel RAS	For SingTel RAS (Singapore) use.
2.1.5 Other	You can directly to setup the ISP type with Specified (Fixed) or Dynamic IP Address

Click on one of the WAN types and then proceed to the manual's relevant sub-section (**2.1.1, 2.1.2, 2.1.3, 2.1.4, or 2.1.5**). Click on **Back** to return to the previous screen.

2.1.1 Cable mode(TV-Style cable)

Choose Cable Modem if you're ISP will automatically give you an IP address. Some ISP's may also require that you fill in additional information such as MAC address (see screen below).



Setup Wizard - Cable Modem

Use the default values if your ISP did not provide this data.

Hostname: SCFFADBC

Domain Name:

Login method: None

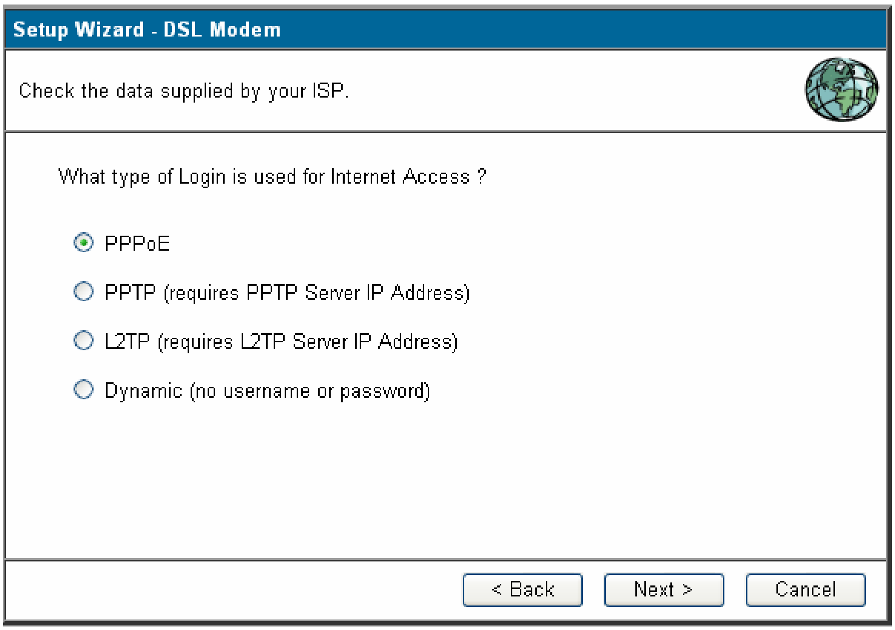
MAC (physical) Address: 00304F0102

Parameter	Description
Host Name	Some ISP's may also require you to use a particular Hostname, Domain name, or MAC (physical) address. If required, please enter Hostname, Domain name provided by your ISP.
Domain Name	
Clone MAC Address	Use “Clone MAC address" button to copy the MAC (physical) address from your PC to the XRT-501.
MAC(physical) Address	Your ISP may require a particular MAC address in order for you to connect to the Internet. This MAC address is the PC’s MAC address that your ISP had **originally connected** your Internet connection to. Type in this MAC address in this section or use the Clone MAC Address button to replace the WAN MAC address with the MAC address of that PC (you have to be using that PC for the Clone MAC Address button to work).

✍**Note** The MAC address section is *optional* and you can skip this section if your ISP does not require these settings for you to connect to the Internet.

2.1.2 DSL/ADSL modem(phone-type cable)

In this section you have to select one of these DSL/ADSL types that you will be using to connect your XRT-501’s WAN port to your ISP (see screen below).



Setup Wizard - DSL Modem

Check the data supplied by your ISP.

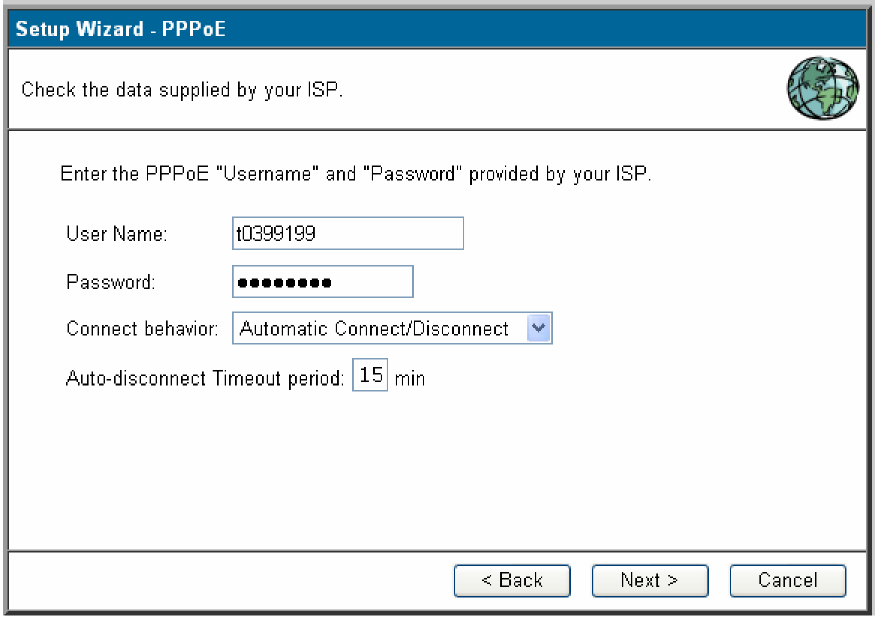
What type of Login is used for Internet Access ?

- ● PPPoE
- ○ PPTP (requires PPTP Server IP Address)
- ○ L2TP (requires L2TP Server IP Address)
- ○ Dynamic (no username or password)

Parameter	Description
2.1.2.1 PPPoE	Your ISP requires you to use a Point-to-Point Protocol over Ethernet (PPPoE) connection.
2.1.2.2 PPTP	Your ISP requires you to use a Point-to-Point Tunneling Protocol (PPTP) connection.
2.1.2.3 L2TP	Layer 2 Tunneling Protocol is a common connection method used in xDSL connections.
2.1.2.4 Dynamic	Your ISP will automatically give you an IP address.

2.1.2.1 PPPoE

Select Dial-Up xDSL (PPPoE) if you're ISP requires the PPPoE protocol to connect you to the Internet. Your ISP should provide all the information required in this section.



Setup Wizard - PPPoE

Check the data supplied by your ISP.

Enter the PPPoE "Username" and "Password" provided by your ISP.

User Name: t0399199

Password: ●●●●●●●●●

Connect behavior: Automatic Connect/Disconnect

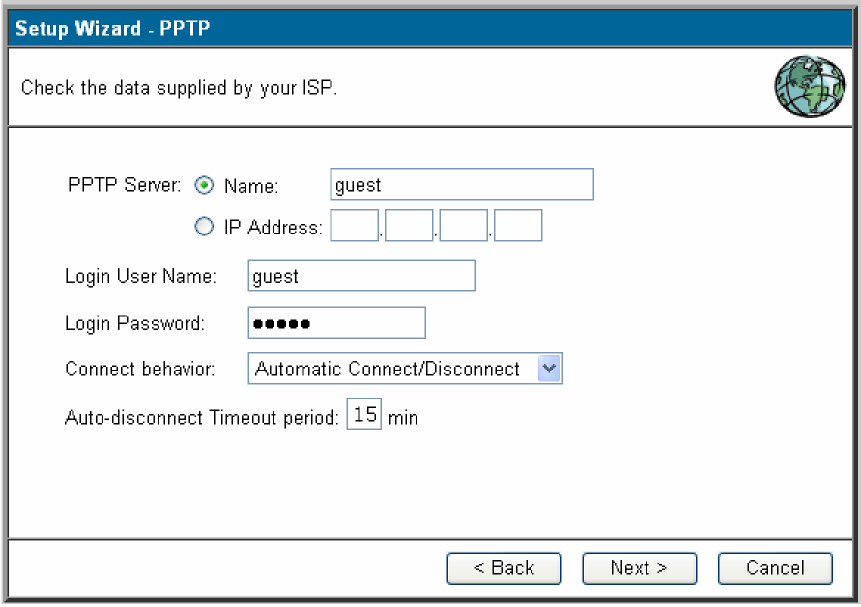
Auto-disconnect Timeout period: 15 min

Parameter	Description

User Name	Enter the User Name provided by your ISP for the PPPoE connection.
Password	Enter the Password provided by your ISP for the PPPoE connection.
Connect behavior	Select the connection behaviors that you wish it be to Automatic Connect, Manual Connect, or Keep alive.
Auto-disconnect Timeout period	You can specify an idle time threshold (minutes) for the WAN port. This means if no packets have been sent (no one using the Internet) during this specified period, the router will automatically disconnect the connection with your ISP.

2.1.2.2 PPTP

Select PPTP if your ISP requires the PPTP protocol to connect you to the Internet. Your ISP should provide all the information required in this section.



Setup Wizard - PPTP

Check the data supplied by your ISP.

PPTP Server: ● Name: guest

○ IP Address: . . .

Login User Name: guest

Login Password: ●●●●●

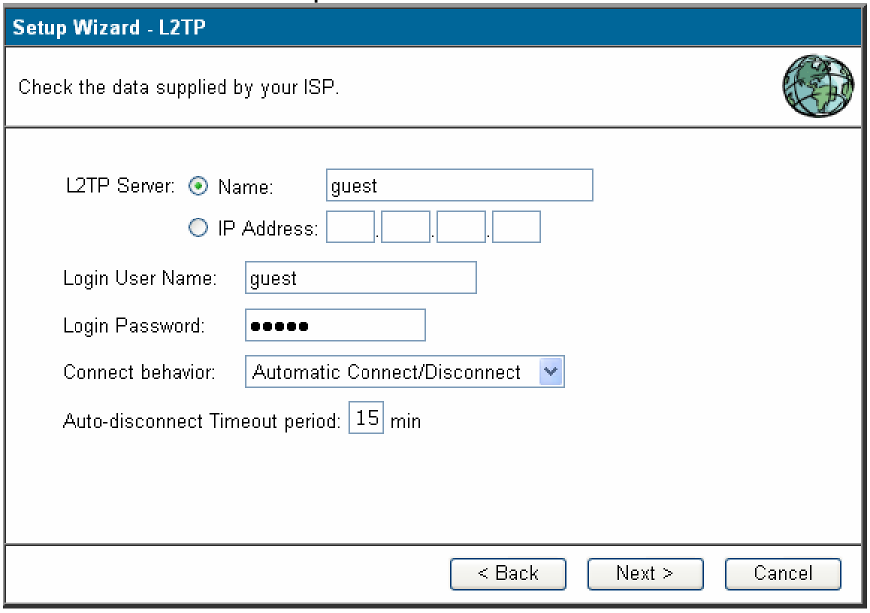
Connect behavior: Automatic Connect/Disconnect

Auto-disconnect Timeout period: 15 min

Parameter	Description
PPTP Server	Specify PPTP Server Name or IP address that you want to connect to.
Login User Name	Enter the User Name provided by your ISP for the PPTP connection.
Login Password	Enter the Password provided by your ISP for the PPTP connection.
Connect behavior	Select the connection behaviors that you wish it be to Automatic Connect, Manual Connect, or Keep alive.
Auto-disconnect Timeout period	You can specify an idle time threshold (minutes) for the WAN port. This means if no packets have been sent (no one using the Internet) during this specified period, the router will automatically disconnect the connection with your ISP.

2.1.2.3 L2TP

Select L2TP if your ISP requires the L2TP protocol to connect you to the Internet. Your ISP should provide all the information required in this section.



Setup Wizard - L2TP

Check the data supplied by your ISP.

L2TP Server: ● Name: guest

○ IP Address: . . .

Login User Name: guest

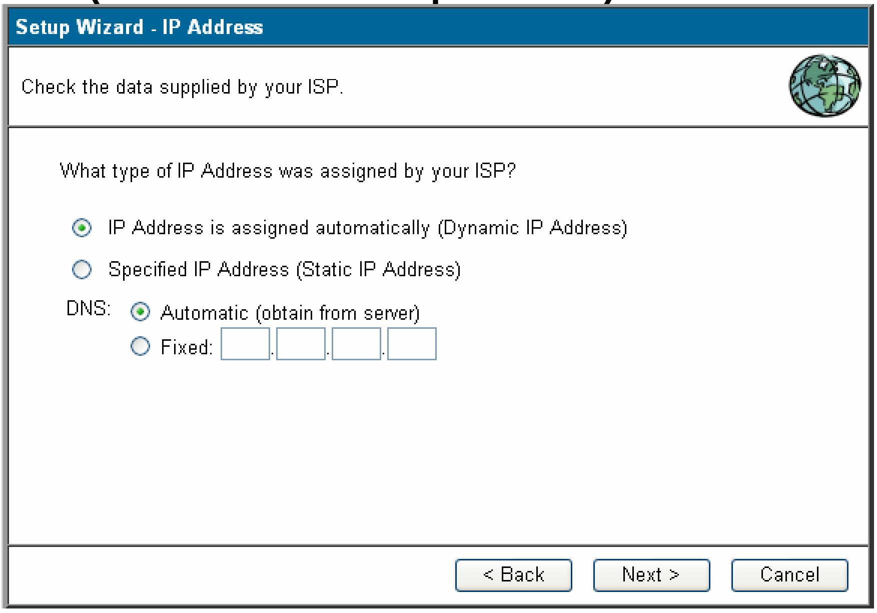
Login Password: ●●●●●

Connect behavior: Automatic Connect/Disconnect

Auto-disconnect Timeout period: 15 min

Parameter	Description
L2TP Sever	Specify L2TP Server Name or IP address that you want to connect to.
Login User Name	Enter the User Name provided by your ISP for the L2TP connection.
Login Password	Enter the Password provided by your ISP for the L2TP connection.
Connect behavior	Select the connection behaviors that you wish it be to Automatic Connect, Manual Connect, or Keep alive.
Auto-disconnect Timeout period	You can specify an idle time threshold (seconds) for the WAN port. This means if no packets have been sent (no one using the Internet) during this specified period, the router will automatically disconnect the connection with your ISP.

2.1.2.4 Dynamic (no user name and password)



Check the data supplied by your ISP.

What type of IP Address was assigned by your ISP?

● IP Address is assigned automatically (Dynamic IP Address)

○ Specified IP Address (Static IP Address)

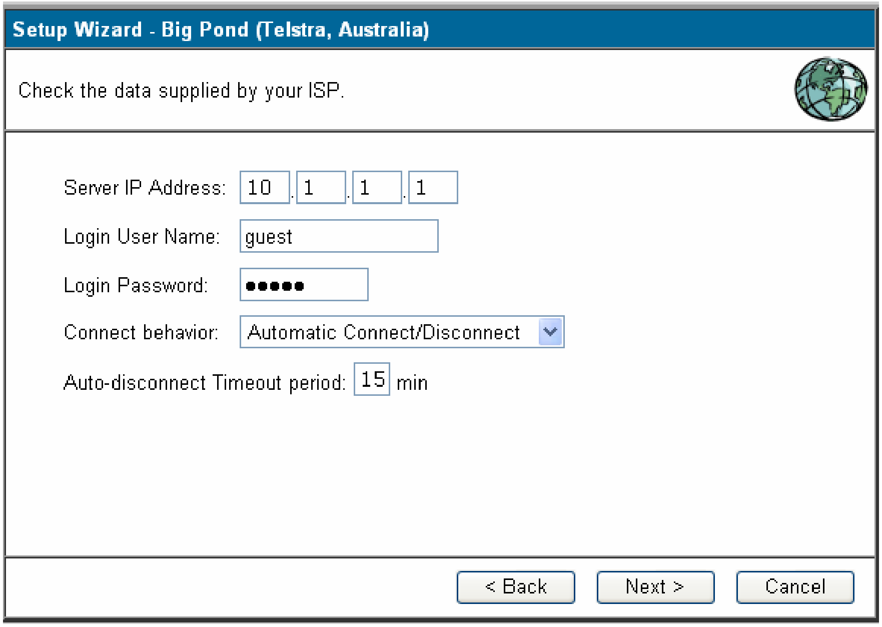
DNS: ● Automatic (obtain from server)

○ Fixed: . . .

Parameter	Description
Dynamic IP Address	Your IP Address is allocated automatically, when you connect to you ISP.

2.1.3 Telstra Bigpond Cable (Australia)

This connection is only for Telstra BigPond (Australia) use.



Check the data supplied by your ISP.

Server IP Address: 10 . 1 . 1 . 1

Login User Name: guest

Login Password: ●●●●●

Connect behavior: Automatic Connect/Disconnect

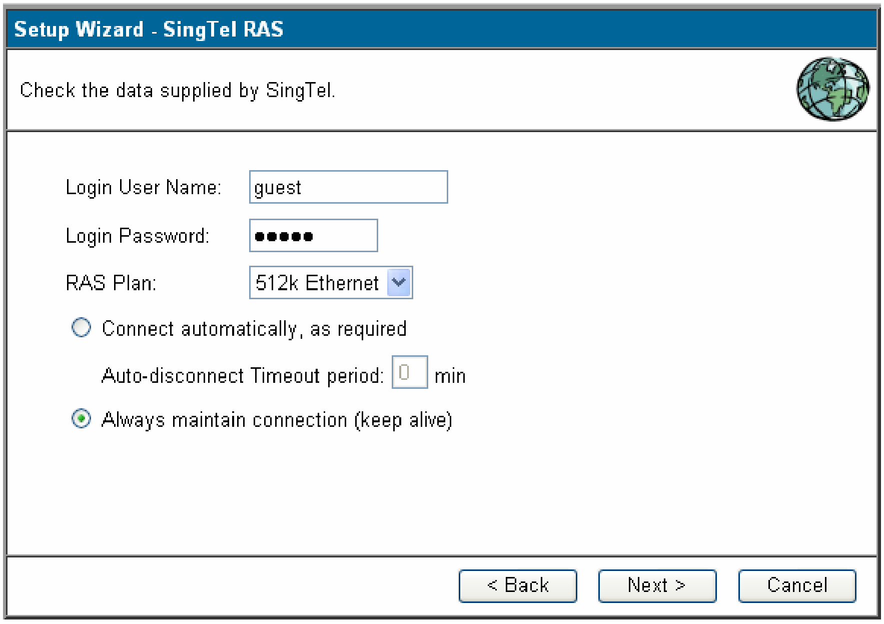
Auto-disconnect Timeout period: 15 min

For this connection method, the following data is required, and these information provided by your ISP.

- User Name
- Password
- Big Pond Server IP address

2.1.4 SingTel RAS

This connection is only for SingTel RAS (Singapore) use.



Setup Wizard - SingTel RAS

Check the data supplied by SingTel.

Login User Name: guest

Login Password: ●●●●●

RAS Plan: 512k Ethernet

○ Connect automatically, as required

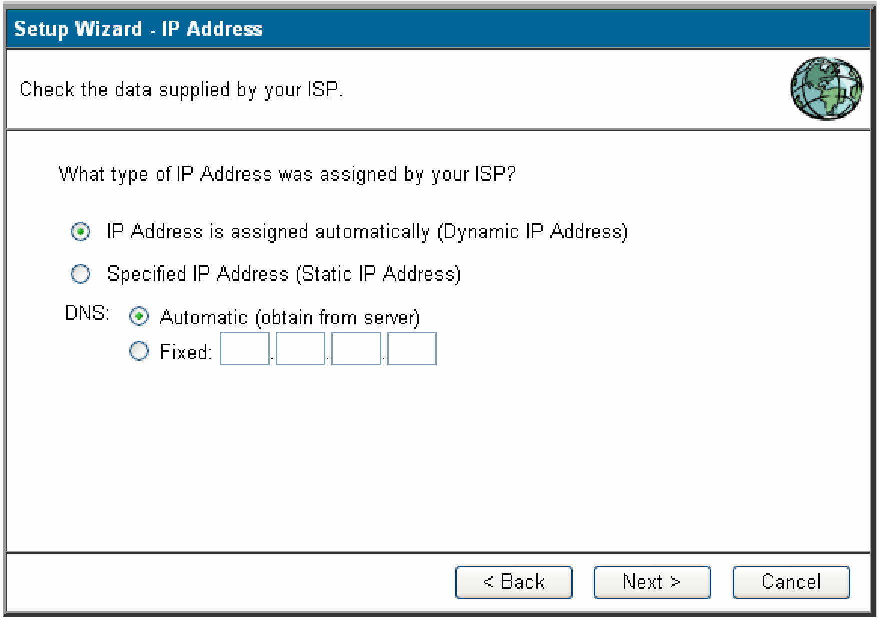
Auto-disconnect Timeout period: 0 min

● Always maintain connection (keep alive)

For this connection method, the following data is required, and these information provided by your ISP.

- User Name
- Password
- RAS Plan

2.1.5 Other



Setup Wizard - IP Address

Check the data supplied by your ISP.

What type of IP Address was assigned by your ISP?

● IP Address is assigned automatically (Dynamic IP Address)

○ Specified IP Address (Static IP Address)

DNS: ● Automatic (obtain from server)

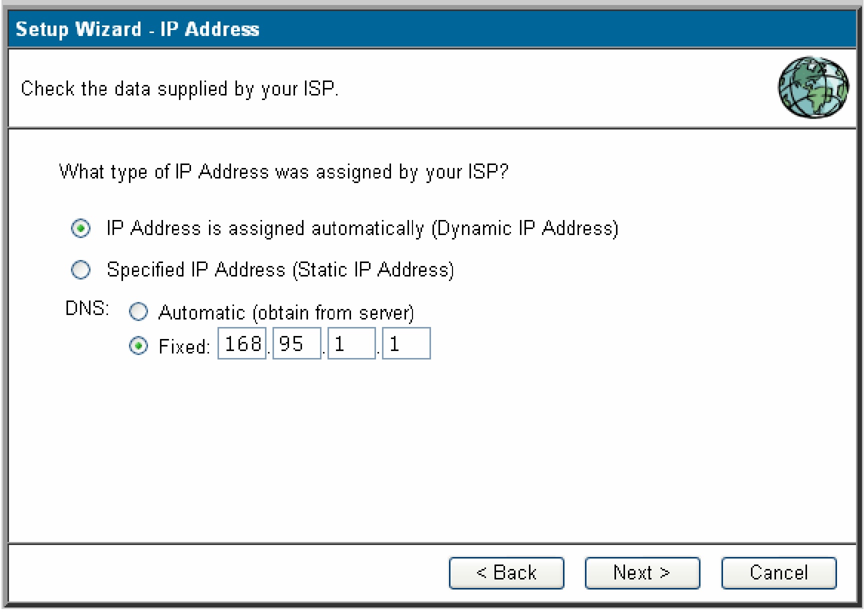
○ Fixed: ___ . ___ . ___ . ___

Parameter	Description
Specified (Fixed) IP Address	The IP Address provided by your ISP, and related information.

Dynamic IP Address	Your IP Address is allocated automatically, when you connect to you ISP.

Step2) DNS

A Domain Name System (DNS) server is like an index of IP addresses and Web addresses. If you type a Web address into your browser, such as www.router.com, a DNS server will find that name in its index and the matching IP address. Most ISPs provide a DNS server for speed and convenience. If your Service Provider connects you to the Internet with dynamic IP settings, it is likely that the DNS server IP address is provided automatically. However, if there is a DNS server that you would rather use, you need to specify the IP address of that DNS server here.



Setup Wizard - IP Address

Check the data supplied by your ISP.

What type of IP Address was assigned by your ISP?

● IP Address is assigned automatically (Dynamic IP Address)

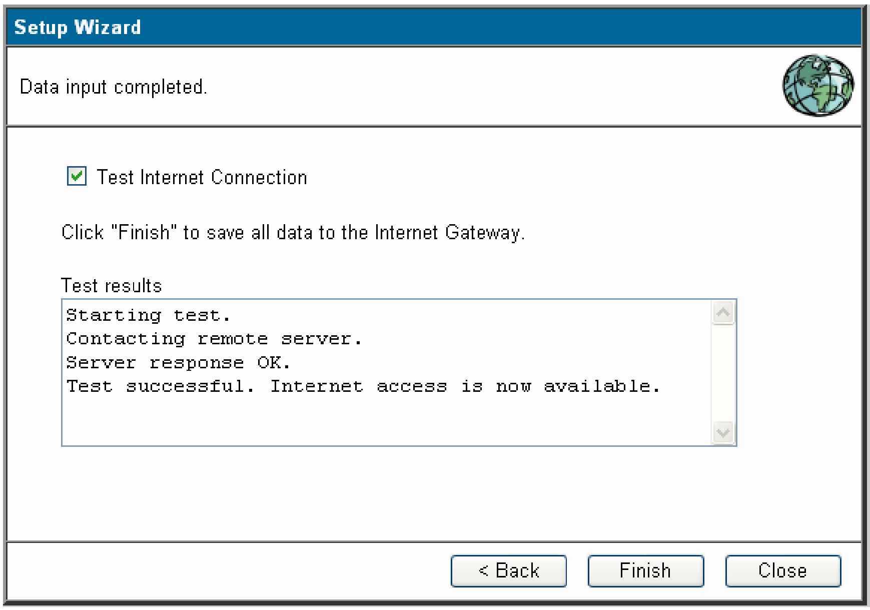
○ Specified IP Address (Static IP Address)

DNS: ○ Automatic (obtain from server)

● Fixed: 168.95.1.1

Parameter	Description
Automatic	It will detect the DNS server automatically
Fixed	This is the ISP's DNS server IP address that they gave you; or you can specify your own preferred DNS server IP address

Step3) Test Internet Connection



Data input completed.

☑ Test Internet Connection

Click "Finish" to save all data to the Internet Gateway.

Test results

```
Starting test.
Contacting remote server.
Server response OK.
Test successful. Internet access is now available.
```

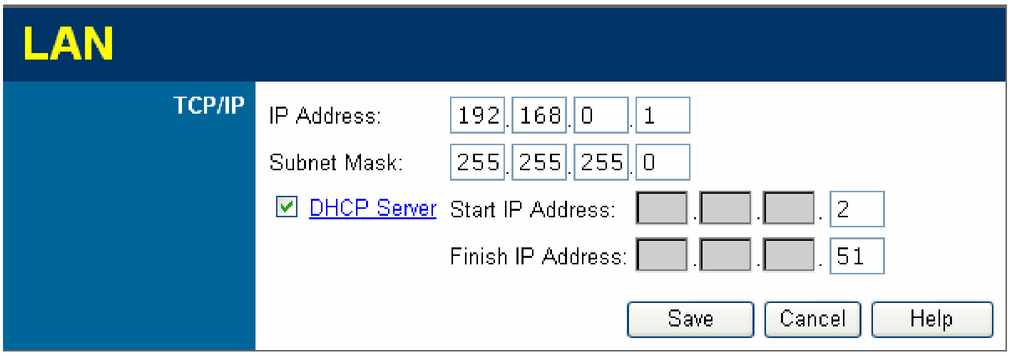
Select **"Test Internet Connection"**, and then click <Finish> when you have finished the configuration above. It will run the test and check the Internet connection can be established or not.

Congratulations! You have completed the connection configuration after test successful, and now you can start using the router.

2.2 LAN

Use the *LAN* link on the main menu to reach the *LAN* screen. An example screen is shown below.

You can specify the LAN segment's IP address, subnet Mask,enable/disable DHCP and select an IP range for your LAN, you also can check DHCP client list in here.



IP Address: 192.168.0.1

Subnet Mask: 255.255.255.0

☑ DHCP Server Start IP Address: . . . 2

Finish IP Address: . . . 51

Parameter	Description
TCP/IP	
IP Address	This is the XRT-501's LAN port IP address, and your LAN clients default gateway IP address. (For XRT-501's default LAN IP address is **192.168.0.1**)

Subnet Mask	The default value 255.255.255.0 is standard for small (class "C") networks. For other networks, use the Subnet Mask for the LAN segment to which the XRT-501 is attached (the same value as the PCs on that LAN segment).
DHCP Server	● If Enabled, the XRT-501 will allocate IP Addresses to PCs (DHCP clients) on your LAN automatically when they start up.The default (and recommended) value is Enabled. ● If you are already using a DHCP Server, this setting must be Disabled, and the existing DHCP server must be re-configured to treat the XRT-501 as the default Gateway. See thefollowing section for further details. The Start IP Address and Finish IP Address fields set the values used by the DHCP server when allocating IP Addresses to DHCP clients. This range also determines the number of DHCP clients supported.See the following section for further details on using DHCP.
Buttons	
Save	Save the data on screen.
Cancel	The "Cancel" button will discard any data you have entered and reload the file from the XRT-501.

What DHCP Does

A DHCP (Dynamic Host Configuration Protocol) Server allocates a valid IP address to a DHCP Client (PC or device) upon request.

- The client request is made when the client device starts up (boots).
- The DHCP Server provides the *Gateway* and *DNS* addresses to the client, as well as allocating an IP Address.
- The XRT-501 can act as a DHCP server.
- Windows 95/98/ME and other non-Server versions of Windows will act as a DHCP client. This is the default Windows setting for the TCP/IP network protocol. However, Windows uses the term *Obtain an IP Address automatically* instead of "DHCP Client".
- You must NOT have two or more DHCP Servers on the same LAN segment. (If your LAN does not have other Routers, this means there must only be one DHCP Server on your LAN.)

Using the XRT-501's DHCP Server

This is the default setting. The DHCP Server settings are on the *LAN* screen. On this screen, you can:

- Enable or Disable the XRT-501's *DHCP Server* function.
- Set the range of IP Addresses allocated to PCs by the DHCP Server function.

✍**Note** You can assign Fixed IP Addresses to some devices while using DHCP, provided that the Fixed IP Addresses are NOT within the range used by the DHCP Server.

Using another DHCP Server

You can only use one DHCP Server per LAN segment. If you wish to use another DHCP Server, rather than the XRT-501's, the following procedure is required.

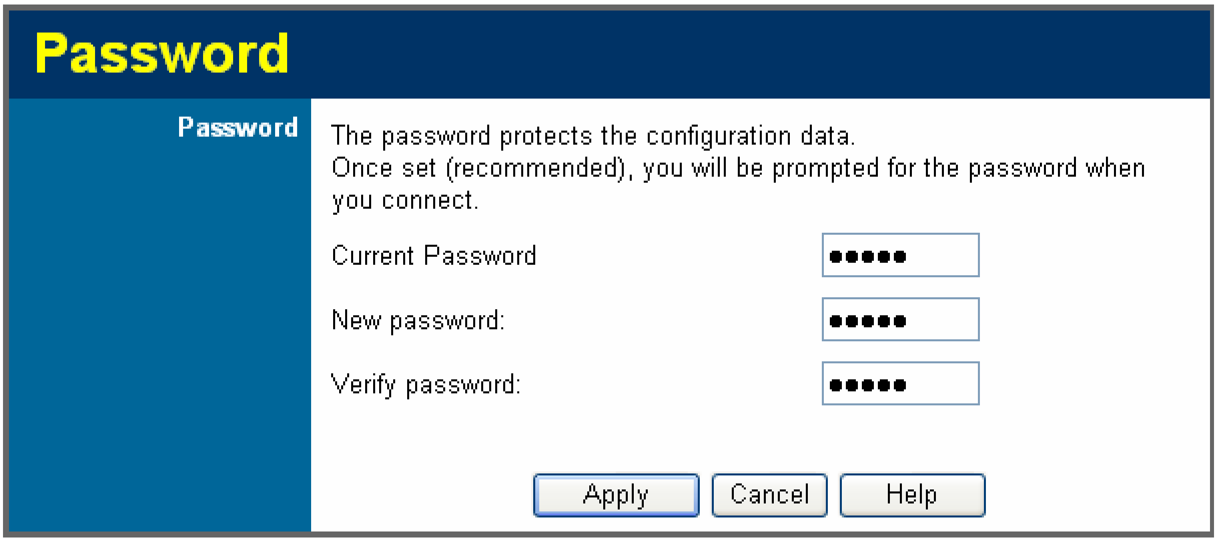
- Disable the DHCP Server feature in the XRT-501. This setting is on the LAN screen.
- Configure the DHCP Server to provide the XRT-501's IP Address as the *Default Gateway*.

To Configure your PCs to use DHCP

This is the default setting for TCP/IP under Windows 98/Me, 2000 or later operating systems.See **1.6 Configuration** for the procedure to check these settings.

2.3 Password

The **Password** settings function allows you to design password to the XRT-501.



Password

Password

The password protects the configuration data.
Once set (recommended), you will be prompted for the password when you connect.

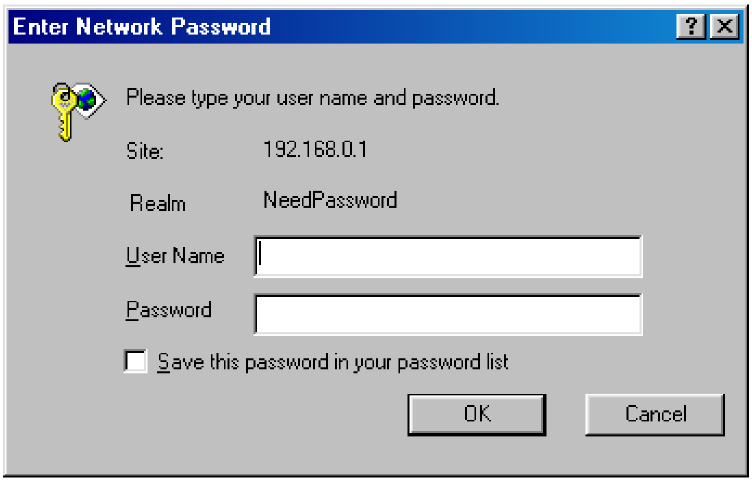
Current Password ●●●●●

New password: ●●●●●

Verify password: ●●●●●

Parameter	Description
Current assword	Enter the current password for verification.
Password	Type a new password in order to access the Web-Based

	management website.
Verify Password	Re-Type the password for confirmation.



Please type your user name and password.

Site: 192.168.0.1

Realm NeedPassword

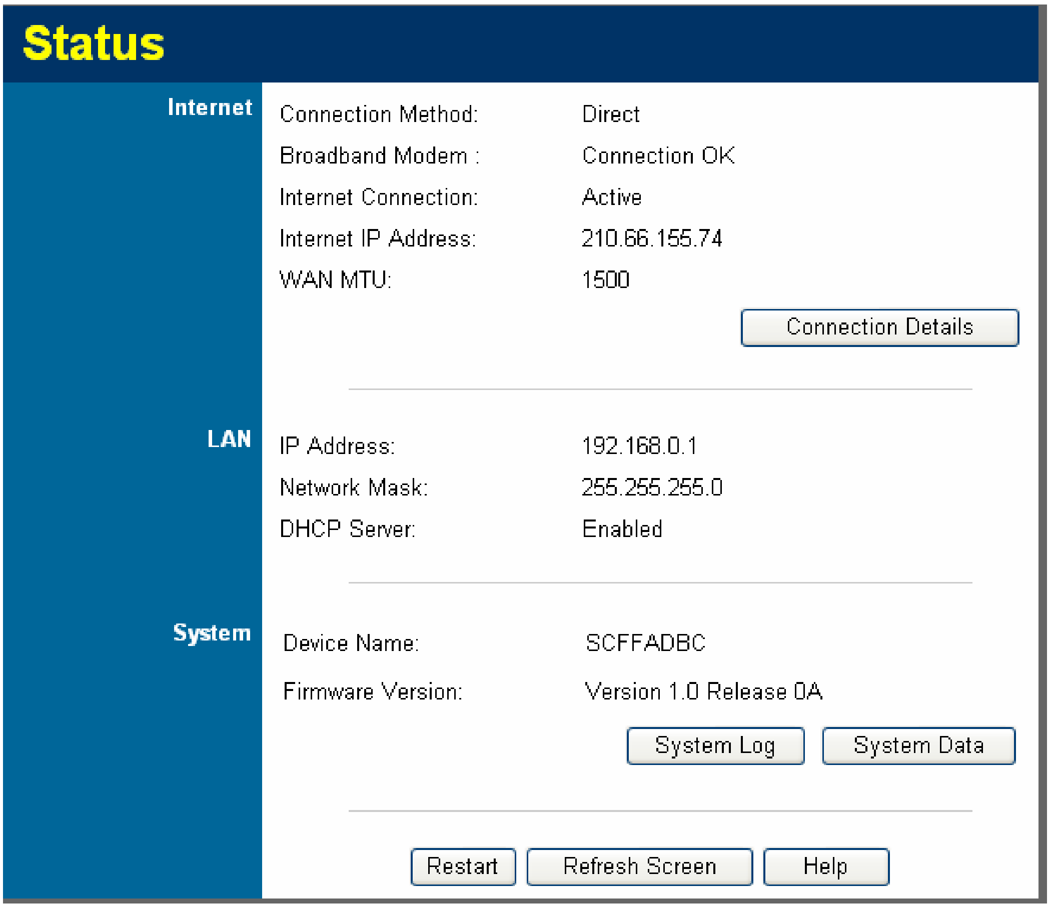
User Name

Password

□ Save this password in your password list

2.4 Status

Use the ***Status*** link on the main menu to check XRT-501 system status and concurrent hardware information.

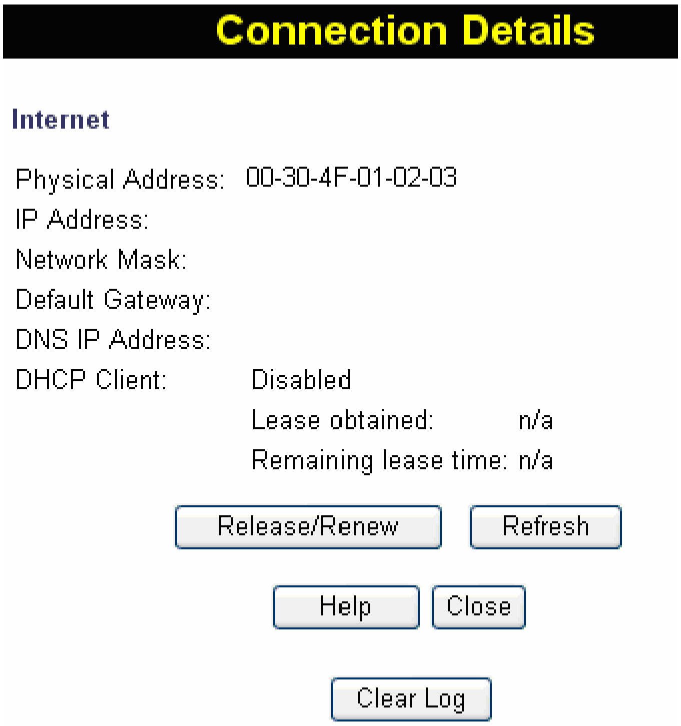


Connection Method:	Direct
Broadband Modem :	Connection OK
Internet Connection:	Active
Internet IP Address:	210.66.155.74
WAN MTU:	1500
IP Address:	192.168.0.1
Network Mask:	255.255.255.0
DHCP Server:	Enabled
Device Name:	SCFFADBC
Firmware Version:	Version 1.0 Release 0A

Parameter	Description
Internet	
Connection Method	This indicates the current connection method, as set in the Setup Wizard.
Broadband Modem	This shows the connection status of the modem.
Internet Connection	Current connection status: Active,Idle,Unknown, and Failed. If there is an error, you can click the "Connection Details" button to find out more information.
Internet IP Address	This IP Address is allocated by the ISP (Internet Service Provider).
WAN MTU	Displays the current value of MTU.
LAN	
IP Address	The IP Address of the XRT-501.
Network Mask	The Network Mask (Subnet Mask) for the IP Address above.
DHCP Server	This shows the status of the DHCP Server function - either "Enabled" or "Disabled". For additional information about the PCs on your LAN, and the IP addresses allocated to them, use the *PC Database* option on the *Advanced* menu.
System	
Device Name	This displays the current name of the XRT-501.
Firmware Version	The current version of the firmware installed in the XRT-501.
Buttons	
"Connection Details" Button	Click this button to open a Sub-Window and view a detailed description of the current connection. Depending on the type of connection, a "log" may also be available.
System Data	Display all system information in a sub-window.
System Data	Display all system log in a sub-window.
Restart	Clicking this button will restart (reboot) the XRT-501. All existing connections though the XRT-501 will be terminated, but will usually re-connect automatically.
Refresh Screen	Update the data displayed on screen.

Connection Details - Fixed/Dynamic IP Address

If your access method is "Direct" (no login), a screen like the following example will be displayed when the "Connection Details" button is clicked.



Connection Details

Internet

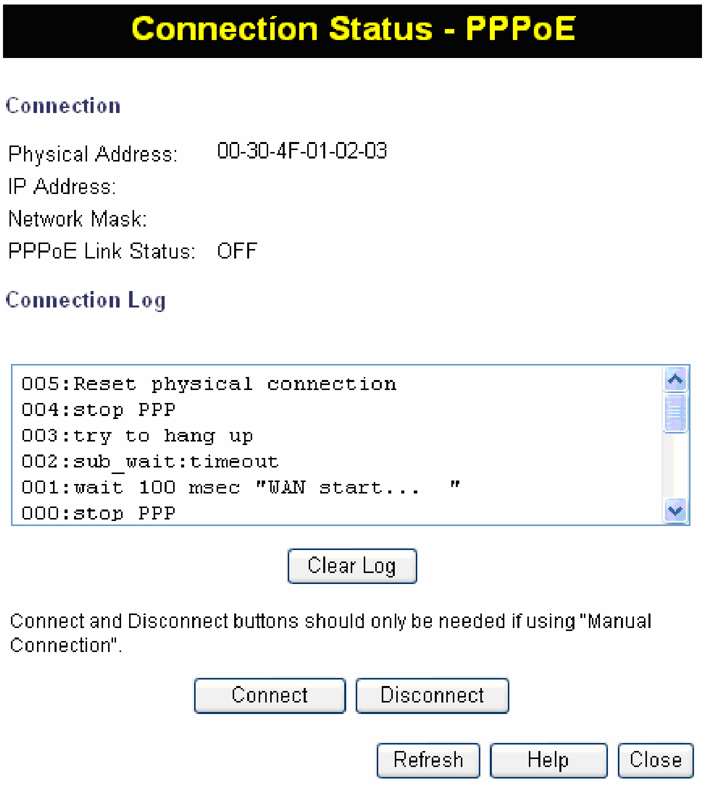
Physical Address: 00-30-4F-01-02-03
IP Address:
Network Mask:
Default Gateway:
DNS IP Address:
DHCP Client: Disabled
Lease obtained: n/a
Remaining lease time: n/a

Parameter	Description
Internet	
Physical Address	The hardware address of this device, as seen by remote devices on the Internet.(This is different as the hardware address by the devices on the local LAN.)
IP Address	The IP Address of this device, as seen by Internet users. This address is allocated by your ISP (Internet Service Provider).
Network Mask	The Network Mask associated with the IP Address above.
Default Gateway	The IP Address of the remote Gateway or Router associated with the IP Address above.
DNS IP Address	The IP Address of the Domain Name Server which is currently used.
DHCP Client	This will show "Enabled" or "Disabled", depending on whether or not this device is functioning as a DHCP client. If "Enabled", the "Remaining lease time" field indicates when the IP Address allocated by the DHCP Server will expire. The lease is automatically renewed on expiry;

	use the "Renew" button if you wish to manually renew the lease immediately.
Buttons	
Release/Renew Button will display EITHER "Release" OR "Renew"	This button is only useful if the IP address shown above is allocated automatically on connection. (Dynamic IP address). If you have a Fixed (Static) IP address, this button has no effect. ● If the ISP's DHCP Server has NOT allocated an IP Address for the XRT-501, this button will say "Renew". Clicking the "Renew" button will attempt to re-establish the connection and obtain an IP Address from the ISP's DHCP Server. ● If an IP Address has been allocated to XRT-501 (by the ISP's DHCP Server), this button will say "Release". Clicking the "Release" button will break the connection and release the IP Address.
Refresh	Update the data shown on screen.

Connection Status - PPPoE

If using PPPoE (PPP over Ethernet), a screen like the following example will be displayed when the "Connection Details" button is clicked.



Connection Status - PPPoE

Connection

Physical Address: 00-30-4F-01-02-03
IP Address:
Network Mask:
PPPoE Link Status: OFF

Connection Log

```
005:Reset physical connection
004:stop PPP
003:try to hang up
002:sub_wait:timeout
001:wait 100 msec "WAN start...   "
000:stop PPP
```

Connect and Disconnect buttons should only be needed if using "Manual Connection".

Parameter	Description
Internet	
Physical Address	The hardware address of this device, as seen by remote devices on the Internet. ((This is different as the hardware address by the devices on the local LAN.)
IP Address	The IP Address of this device, as seen by Internet users. This address is allocated by your ISP (Internet Service Provider).
Network Mask	The Network Mask associated with the IP Address above.
PPPoE Link Status	This indicates whether or not the connection is currently established. ● If the connection does not exist, the "Connect" button can be used to establish a connection. ● If the connection currently exists, the "Disconnect" button can be used to break the connection.
Connection Log	
Connection Log	The Connection Log shows status messages relating to the existing connection. The most common messages are listed in the table below. The "Clear Log" button will restart the Log, while the Refresh button will update the messages shown on screen.
Buttons	
Connect	If not connected, establish a connection to your ISP.
Disconnect	If connected to your ISP, hang up the connection.
Clear Log	Delete all data currently in the Log. This will make it easier to read new messages.
Refresh	Update the data on screen.

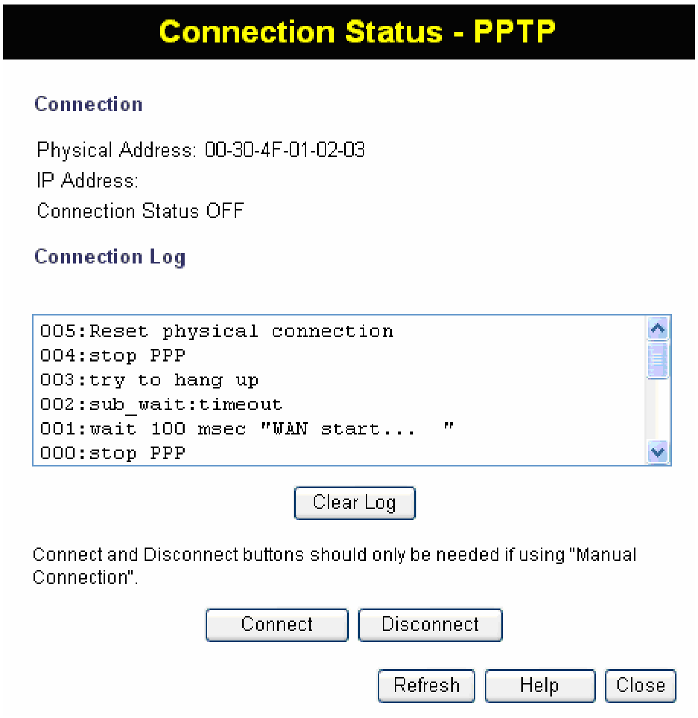
Connection Log Messages

Parameter	Description
Connection Log Messages	

Connect on Demand	Connection attempt has been triggered by the "Connect automatically, as required" setting.
Manual connection	Connection attempt started by the "Connect" button.
Reset physical connection	Preparing line for connection attempt.
Connecting to remote server	Attempting to connect to the ISP's server.
Remote Server located	ISP's Server has responded to connection attempt.
Start PPP	Attempting to login to ISP's Server and establish a PPP connection.
PPP up successfully	Able to login to ISP's Server and establish a PPP connection.
Idle time-out reached	The connection has been idle for the time period specified in the "Idle Time-out" field. The connection will now be terminated.
Disconnecting	The current connection is being terminated, due to either the "Idle Time-out" above, or "Disconnect" button being clicked.
Error: Remote Server not found	ISP's Server did not respond. This could be a Server problem, or a problem with the link to the Server.
Error: PPP Connection failed	Unable to establish a PPP connection with the ISP's Server. This could be a login problem (name or password) or a Server problem.
Error: Connection to Server lost	The existing connection has been lost. This could be caused by a power failure, a link failure, or Server failure.
Error: Invalid or unknown packet type	The data received from the ISP's Server could not be processed. This could be caused by data corruption (from a bad link), or the Server using a protocol which is not supported by this device.

Connection Status - PPTP

If using PPTP (Peer-to-Peer Tunneling Protocol), a screen like the following example will be displayed when the "Connection Details" button is clicked.



Connection Status - PPTP

Connection

Physical Address: 00-30-4F-01-02-03
IP Address:
Connection Status OFF

Connection Log

```
005:Reset physical connection
004:stop PPP
003:try to hang up
002:sub_wait:timeout
001:wait 100 msec "WAN start...  "
000:stop PPP
```

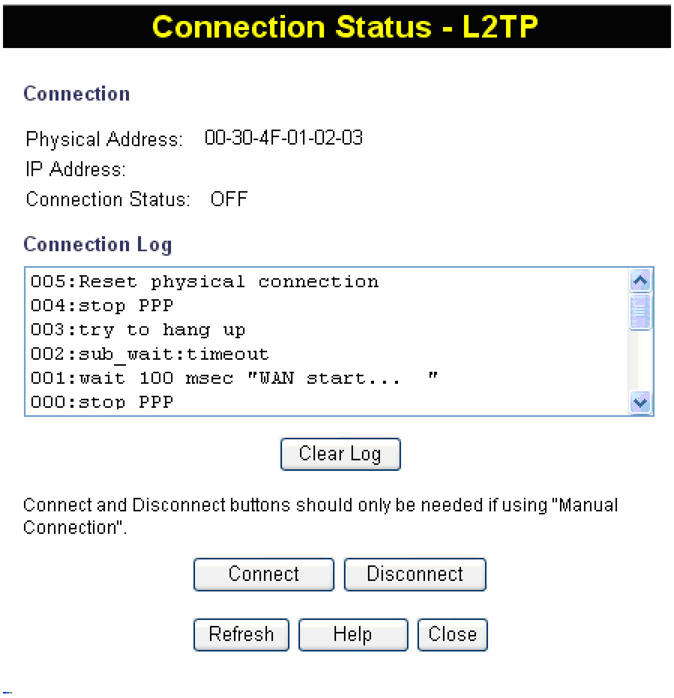
Connect and Disconnect buttons should only be needed if using "Manual Connection".

Parameter	Description
Connection	
Physical Address	The hardware address of this device, as seen by remote devices on the Internet. (This is different as the hardware address by the devices on the local LAN.)
IP Address	The IP Address of this device, as seen by Internet users. This address is allocated by your ISP (Internet Service Provider).
PPTP Status	This indicates whether or not the connection is currently established. ● If the connection does not exist, the "Connect" button can be used to establish a connection. ● If the connection currently exists, the "Disconnect" button can be used to break the connection.
Connection Log	
Connection Log	The Connection Log shows status messages relating to the existing connection.The "Clear Log" button will restart the Log, while the Refresh button will update the messages shown on screen.
Buttons	
Connect	If not connected, establish a connection to your ISP.

Disconnect	If connected to your ISP, hang up the connection.
Clear Log	Delete all data currently in the Log. This will make it easier to read new messages.
Refresh	Update the data on screen.

Connection Status - L2TP

If using L2TP, a screen like the following example will be displayed when the "Connection Details" button is clicked.



Physical Address: 00-30-4F-01-02-03
IP Address:
Connection Status: OFF

```
005:Reset physical connection
004:stop PPP
003:try to hang up
002:sub_wait:timeout
001:wait 100 msec "WAN start...  "
000:stop PPP
```

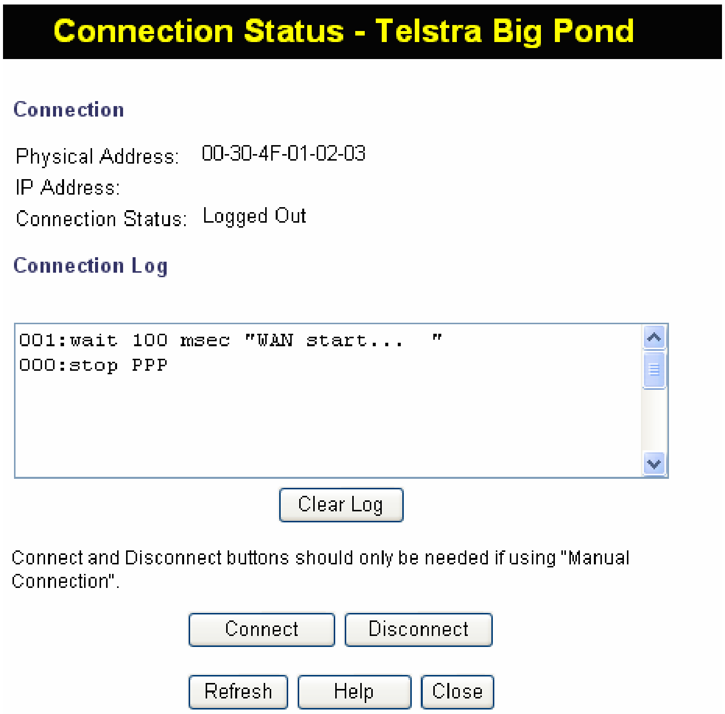
Connect and Disconnect buttons should only be needed if using "Manual Connection".

Parameter	Description
Connection	
Physical Address	The hardware address of this device, as seen by remote devices on the Internet. (This is different as the hardware address by the devices on the local LAN.)
IP Address	The IP Address of this device, as seen by Internet users. This address is allocated by your ISP (Internet Service Provider).
Connection Status	This indicates whether or not the connection is currently established. ● If the connection does not exist, the "Connect" button can be used to establish a connection. ● If the connection currently exists, the "Disconnect" button can be used to break the connection.

Connection Log	
Connection Log	The Connection Log shows status messages relating to the existing connection. The "Clear Log" button will restart the Log, while the Refresh button will update the messages shown on screen.
Buttons	
Connect	If not connected, establish a connection to your ISP.
Disconnect	If connected to your ISP, hang up the connection.
Clear Log	Delete all data currently in the Log. This will make it easier to read new messages.
Refresh	Update the data on screen.

Connection Status - Telstra Big Pond

An example screen is shown below.



Connection Status - Telstra Big Pond

Connection

Physical Address: 00-30-4F-01-02-03

IP Address:

Connection Status: Logged Out

Connection Log

```
001:wait 100 msec "WAN start...   "
000:stop PPP
```

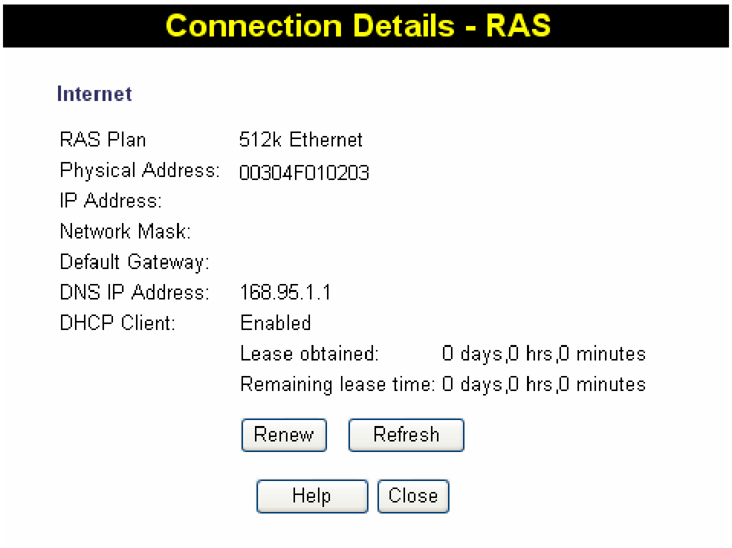
Connect and Disconnect buttons should only be needed if using "Manual Connection".

Parameter	Description
Connection	
Physical Address	The hardware address of this device, as seen by remote devices. (This is different as the hardware address by the devices on the local LAN.)
IP Address	The IP Address of this device, as seen by Internet users.

	This address is allocated by your ISP (Internet Service Provider).
Connection Status	This indicates whether or not the connection is currently established. ● If the connection does not exist, the "Connect" button can be used to establish a connection. ● If the connection currently exists, the "Disconnect" button can be used to break the connection. Normally, it is not necessary to use the Connect and Disconnect buttons unless the setting "Connect automatically, as required" is disabled.
Connection Log	
Connection Log	The Connection Log shows status messages relating to the existing connection.
Buttons	
Connect	If not connected, establish a connection to Telstra Big Pond.
Disconnect	If connected to Telstra Big Pond, terminate the connection.
Clear Log	Delete all data currently in the Log. This will make it easier to read new messages.
Refresh	Update the data on screen.

Connection Details - SingTel RAS

If using the SingTel RAS access method, a screen like the following example will be displayed when the "Connection Details" button is clicked.



Connection Details - RAS

Internet

RAS Plan	512k Ethernet	
Physical Address:	00304F010203	
IP Address:		
Network Mask:		
Default Gateway:		
DNS IP Address:	168.95.1.1	
DHCP Client:	Enabled	
	Lease obtained:	0 days,0 hrs,0 minutes
	Remaining lease time:	0 days,0 hrs,0 minutes

Parameter	Description
Internet	
RAS Plan	The RAS Plan which is currently used.
Physical Address	The hardware address of this device, as seen by remote devices on the Internet. (This is different as the hardware address by the devices on the local LAN.)
IP Address	The IP Address of this device, as seen by Internet users. This address is allocated by your ISP (Internet Service Provider).
Network Mask	The Network Mask associated with the IP Address above.
Default Gateway	The IP Address of the remote Gateway or Router associated with the IP Address above.
DNS IP Address	The IP Address of the Domain Name Server which is currently used.
DHCP Client	This will show "Enabled" or "Disabled", depending on whether or not this device is functioning as a DHCP client. ● If "Enabled" the "Remaining lease time" field indicates when the IP Address allocated by the DHCP Server will expire. The lease is automatically renewed on expiry; use the "Renew" button if you wish to manually renew the lease immediately.
Buttons	
Release/Renew Button will display EITHER "Release" OR "Renew"	This button is only useful if the IP address shown above is allocated automatically on connection. (Dynamic IP address). If you have a Fixed (Static) IP address, this button has no effect. ● If the ISP's DHCP Server has NOT allocated an IP Address for the XRT-501, this button will say "Renew". Clicking the "Renew" button will attempt to re-establish the connection and obtain an IP Address from the ISP's DHCP Server. ● If an IP Address has been allocated to the XRT-501 (by the ISP's DHCP Server), this button will say "Release". Clicking the "Release" button will break the connection and release the IP Address.

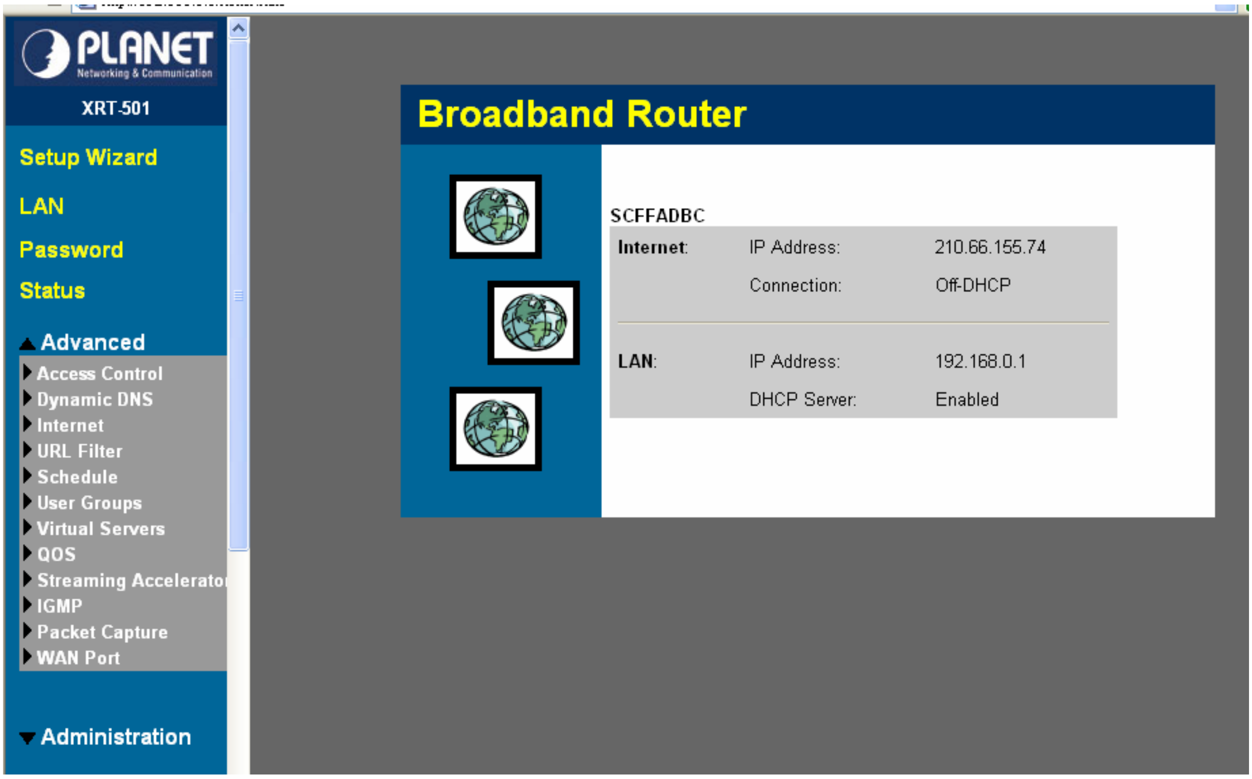
Refresh	Update the data shown on screen.

Chapter3 Advance Features

If you have already configured the Wizard, you do NOT need to configure anything for you to start using the Internet.

Advance features that allow you to configure the router to meet your network's needs such as: Special Applications, DMZ, Virtual Servers, Qos, and Firewall options…etc.

Below is a general description of what advance functions are available for the XRT-501.



SCFFADBC

Internet:	IP Address:	210.66.155.74
	Connection:	Off-DHCP
LAN:	IP Address:	192.168.0.1
	DHCP Server:	Enabled

Parameter	Description
3.1 Access Control	To restrict the level of Internet Access available to PCs on your LAN
3.2 Dynamic DNS	You can configure DDNS service in this section.
3.3 Internet	This section allows you to configure the Communication Applications, Special Applications, DMZ, and Mulit-DMZ functions relating to Internet access.
3.4 URL Filiter	This section allow you to restrict access to some Web sites from particular PCs by entering a full URL address or just keyword of the Web site.
3.5 Schedule	Two separate sessions or periods can be defined.
3.6 User Groups	This section allow you to configure PCs to different group and using the specify service.
3.7 Virtual Servers	You can configure the Virtual Server in this section. This

	allows you to specify what user/packet can pass your router’s NAT.
3.8 QoS	You can configure the QoS control by four level.
3.9 Streaming Accelerator	Thist will get accelerate via enable this function.
3.10 IGMP	IGMP (Internet Group Multicast Protocol): It is a session-layer protocol used to establish membership in a multicast group.
3.11 Packet Capture	It provides the feauture can monitor the LAN or WAN traffic.
3.12 WAN Port	This section allows you to select the connection method in order to establish a connection with your ISP (same as the Wizard section)

Select one of the above advance features selections and proceed to the manual’s relevant subsection.

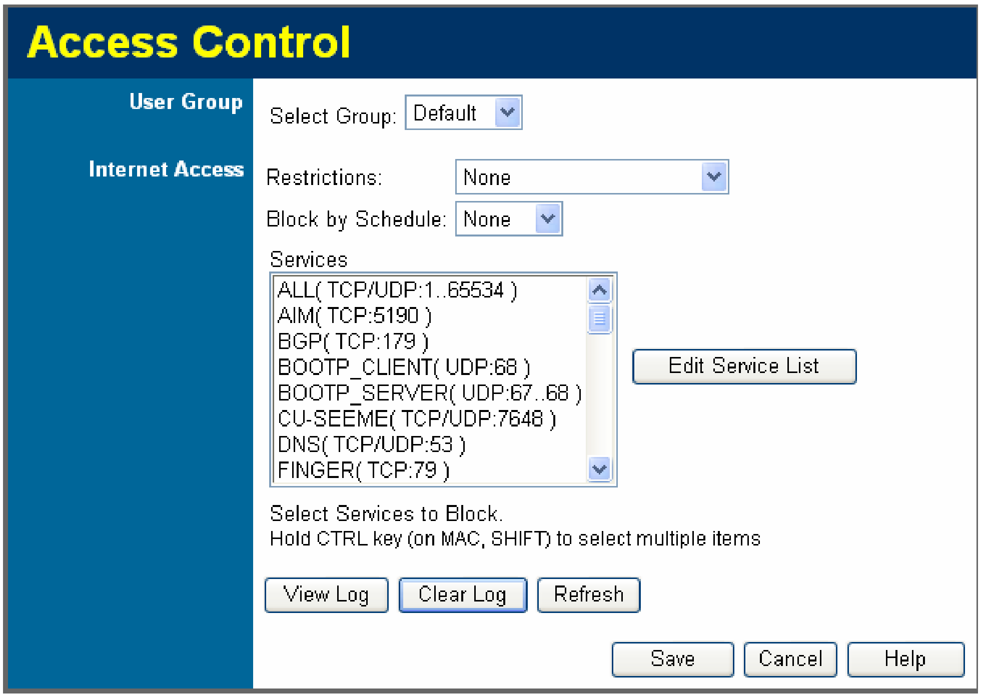
3.1 Access Control

The Access Control feature allows administrators to restrict the level of Internet Access available to PCs on your LAN. With the default settings, everyone has unrestricted Internet access.

To use this feature:

- Set the desired restrictions on the "Default" group. All PCs are in the "Default" group unless explicitly moved to another group.
- Set the desired restrictions on the other groups ("Group 1", "Group 2", "Group 3" and "Group 4") as needed.
- Assign PC to the groups as required.

✍**Note**	Restrictions are imposed by blocking "Services", or types of connections. All common Services are Pre-Defined.If required, you can also define your own Services.



Select Group: Default

Restrictions: None

Block by Schedule: None

Services

ALL(TCP/UDP:1..65534)
AIM(TCP:5190)
BGP(TCP:179)
BOOTP_CLIENT(UDP:68)
BOOTP_SERVER(UDP:67..68)
CU-SEEME(TCP/UDP:7648)
DNS(TCP/UDP:53)
FINGER(TCP:79)

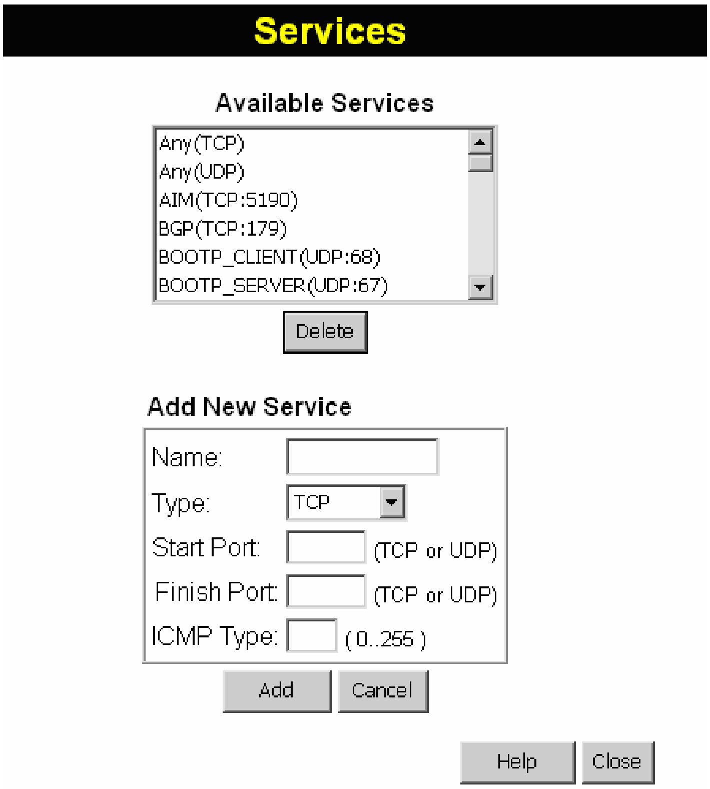
Select Services to Block.
Hold CTRL key (on MAC, SHIFT) to select multiple items

Parameter	Description
Group	
Group	Select the desired Group. The screen will update to display the settings for the selected Group. Groups are named "Default", "Group 1", "Group 2", "Group 3" and "Group 4", and cannot be re-named.
Internet Access	
Restrictions	Select the desired options for the current group: ● **None:**Nothing is blocked. Use this to create the least restrictive group. ● **Block all Internet access:** All traffic via the WAN port is blocked. Use this to create the most restrictive group. ● **Block selected Services:** You can select which Services are to block. Use this to gain fine control over the Internet access for a group.
Block by Schedule	● If Internet access is being blocked, you can choose to apply the blocking only during scheduled times. ● If access is not blocked, no Scheduling is possible, and this setting has no effect. You can define or modify the Schedule using the **Schedule** option on the **Advanced** menu.
Services	This lists all defined Services. Select the Services you

	wish to block. To select multiple services, hold the **CTRL** key while selecting. (On the Macintosh, hold the **SHIFT** key rather than CTRL.)
Edit Service List Button	If you wish to define additional Services, or manage the Service list, click this button to open the "Services" screen.
Buttons	
Edit Service List	If you wish to define additional Services, or manage the Service list, click this button to open the "Services" screen.
Save	Save the data on screen.
Cancel	Reverse any changes made since the last "Save".
View Log	Click this to open a sub-window where you can view the "Access Control" log. This log shows attempted Internet accesses which have been blocked by the Access Control feature.
Clear Log	Click this to clear and restart the "Access Control" log, making new entries easier to read.
Refresh	Update the data on screen.

3.1.1 Services

This screen is displayed when the *Edit Service List* button on the *Access Control* screen is clicked.



Services

Available Services

- Any(TCP)
- Any(UDP)
- AIM(TCP:5190)
- BGP(TCP:179)
- BOOTP_CLIENT(UDP:68)
- BOOTP_SERVER(UDP:67)

Add New Service

Name:		
Type:	TCP	
Start Port:		(TCP or UDP)
Finish Port:		(TCP or UDP)
ICMP Type:		(0..255)

Parameter	Description
Available Services	
Available Services	This lists all the available services.
"Delete" button	Use this to delete any Service you have added. Pre-defined Services can not be deleted.
Add New Service	
Name	Enter a descriptive name to identify this service.
Type	Select the protocol (TCP, UDP, ICMP) used to the remote system or service.
Start Port	For TCP and UDP Services, enter the beginning of the range of port numbers used by the service. If the service uses a single port number, enter it in both the "Start" and "Finish" fields.
Finish Port	For TCP and UDP Services, enter the end of the range of port numbers used by the service. If the service uses a single port number, enter it in both the "Start" and "Finish" fields.
ICMP Type	For ICMP Services, enter the type number of the required service.
Buttons	

Delete	Delete the selected service from the list.
Add	Add a new entry to the Service list, using the data shown in the "Add New Service" area on screen.
Cancel	Clear the " Add New Service " area, ready for entering data for a new Service.

3.1.2 Access Control Log

To check the operation of the Access Control feature, an *Access Control Log* is provided. Click the *View Log* button on the *Access Control* screen to view this log.

This log shows attempted Internet accesses which have been **blocked** by the *Access Control* function.

Parameter	Description
Date/Time	Date and Time of the attempted access.
Name	If known, the name of the PC whose access was blocked.
Source IP address	The IP Address of the PC or device whose access request was blocked
MAC address	The hardware or physical address of the PC or device whose access request was blocked
Destination	The destination URL or IP address
Port	It shows the port number.

3.2 DDNS(Dynamic DNS)

Dynamic DNS (Domain Name Server)

This free service is very useful when combined with the *Virtual Server* feature. It allows Internet users to connect to your Virtual Servers using a URL, rather than an IP Address. This also solves the problem of having a dynamic IP address. With a dynamic IP address, your IP address may change whenever you connect, which makes it difficult to connect to you.

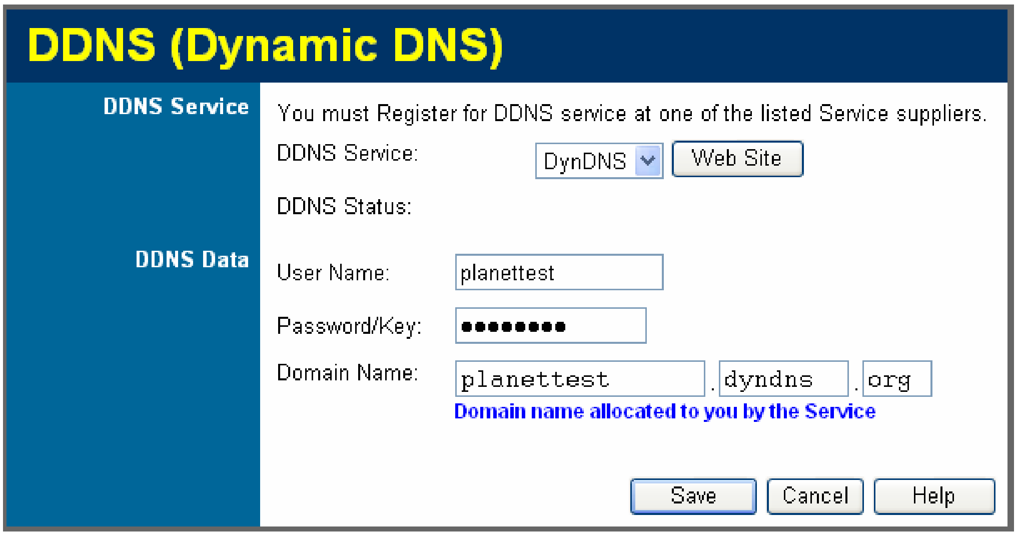
The Service works as follows:

- You must register for the service at one of the listed DDNS Service Providers.
- After registration, follow the service provider's procedure to request a Domain Name and have it allocated to you.
- Enter your DDNS data on the XRT-501's DDNS screen.
- The XRT-501 will then automatically ensure that your current IP Address is recorded at the DDNS server.
- If the DDNS Service provides software to perform this "IP address update"; you

should disable the "Update" function, or not use the software at all.

- From the Internet, users will be able to connect to your Virtual Servers (or DMZ PC) using your Domain Name.

Select *Advanced* on the main menu, then *Dynamic DNS*, to see a screen like the following:



You must Register for DDNS service at one of the listed Service suppliers.

DDNS Service: DynDNS

DDNS Status:

User Name: planettest

Password/Key: ●●●●●●●●●

Domain Name: planettest . dyndns . org

Domain name allocated to you by the Service

Parameter	Description
DDNS Service	
DDNS Service	Select the desired DDNS Service provider.
Web Site Button	Click this button to open a new window and connect to the Web site for the selected DDNS service provider.
DDNS Status	This message is returned by the DDNS Server. Normally, this message should be something like "Update successful" (current IP address was updated on the DDNS server). ● If the message is "No host", this indicates the host name entered was not allocated to you. ● If you see some other error message, you need to contact the DDNS Service and correct the problem.
DDNS Data	
User Name	Enter your Username for the DDNS Service.
Password/Key	Enter your current password for the DDNS Service.
Domain Name	Enter the domain name allocated to you by the DDNS Service. If you have more than one name, enter the name you wish to use.
Buttons	

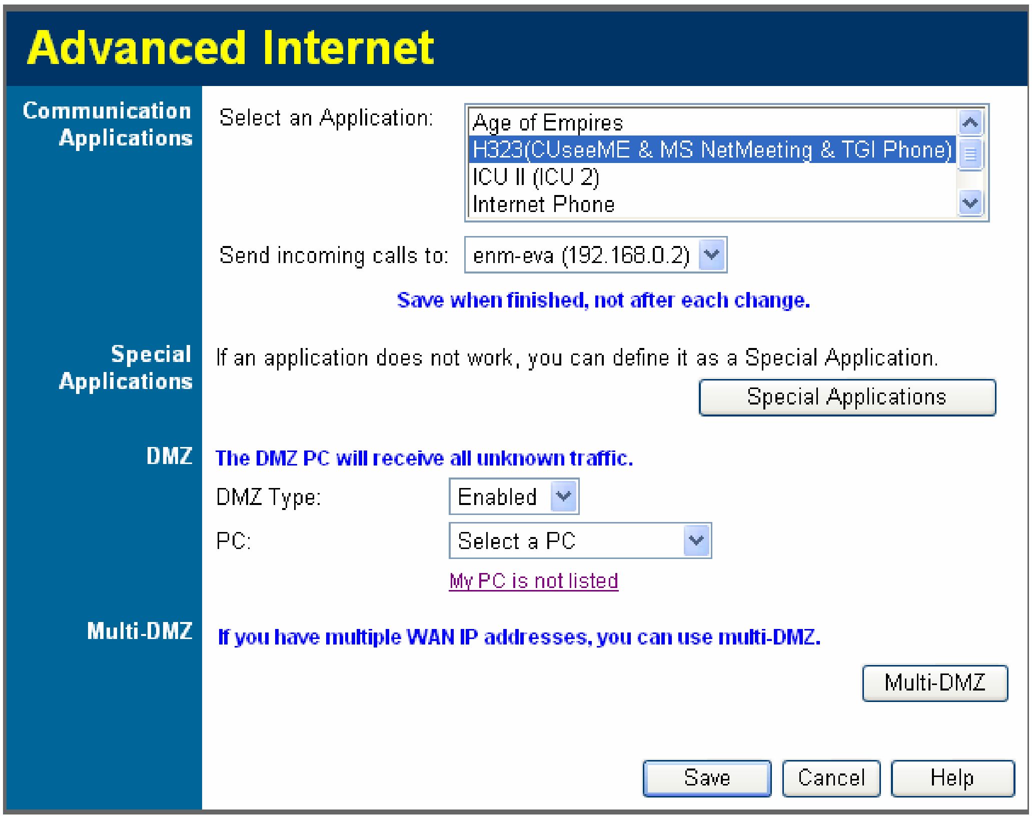
Save	Save the data on screen.
Cancel	Reverse any changes made since the last "Save".

3.3 Advanced Internet

This section allows configuration of all advanced features relating to Internet access.

- Communication Applications
- Special Applications
- DMZ
- Multi-DMZ

An example screen is shown below.



Advanced Internet

Communication Applications

Select an Application: Age of Empires
H323(CUseeME & MS NetMeeting & TGI Phone)
ICU II (ICU 2)
Internet Phone

Send incoming calls to: enm-eva (192.168.0.2)

Save when finished, not after each change.

Special Applications

If an application does not work, you can define it as a Special Application.

DMZ

The DMZ PC will receive all unknown traffic.

DMZ Type: Enabled

PC: Select a PC

My PC is not listed

Multi-DMZ

If you have multiple WAN IP addresses, you can use multi-DMZ.

3.3.1 Communication Applications

Most applications are supported transparently by the XRT-501. But sometimes it is not clear which PC should receive an incoming connection. This problem could arise with the ***Communication Applications*** listed on this screen.

If this problem arises, you can use this screen to set which PC should receive an incoming connection, as described below.

Parameter	Description

Communication Applications	
Select an Application	This lists applications which may generate incoming connections, where the destination PC (on your local LAN) is unknown.
Send incoming calls to	This lists the PCs on your LAN.If necessary, you can add PCs manually, using the "PC Database" option on the advanced menu. For each application listed above, you can choose a destination PC.There is no need to "Save" after each change; you can set the destination PC for each application, then click "Save".

3.3.2 Special Applications

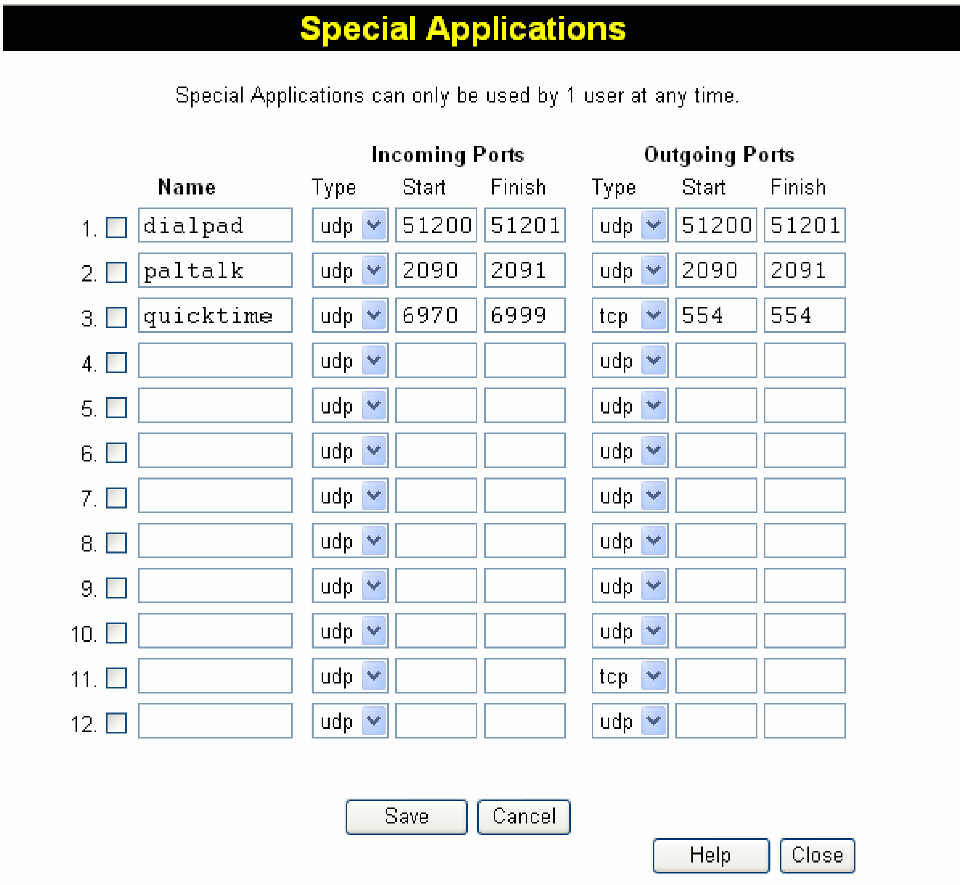
If you use Internet applications which use non-standard connections or port numbers, you may find that they do not function correctly because they are blocked by the XRT-501's firewall. In this case, you can define the application as a "Special Application".

Special Applications Screen

This screen can be reached by clicking the *Special Applications* button on the *Internet* screen.

You can then define your Special Applications. You will need detailed information about the application; this is normally available from the supplier of the application.

Also, note that the terms "Incoming" and "Outgoing" on this screen refer to traffic from the client (PC) viewpoint



Special Applications

Special Applications can only be used by 1 user at any time.

		Incoming Ports			Outgoing Ports		
	Name	Type	Start	Finish	Type	Start	Finish
1. ☐	dialpad	udp	51200	51201	udp	51200	51201
2. ☐	paltalk	udp	2090	2091	udp	2090	2091
3. ☐	quicktime	udp	6970	6999	tcp	554	554
4. ☐		udp			udp		
5. ☐		udp			udp		
6. ☐		udp			udp		
7. ☐		udp			udp		
8. ☐		udp			udp		
9. ☐		udp			udp		
10. ☐		udp			udp		
11. ☐		udp			tcp		
12. ☐		udp			udp		

Parameter	Description
Checkbox	Use this to Enable or Disable this Special Application as required.
Name	Enter a descriptive name to identify this Special Application.
Incoming Ports	● **Type:** Select the protocol (TCP or UDP) used when you receive data from the special application or service. (Note: Some applications use different protocols for outgoing and incoming data). ● **Start:** Enter the beginning of the range of port numbers used by the application server, for data you receive. If the application uses a single port number, enter it in both the "Start" and "Finish" fields. ● **Finish:**Enter the end of the range of port numbers used by the application server, for data you receive.
Outgoing Ports	● **Type**:Select the protocol (TCP or UDP) used when you send data to the remote system or service. ● **Start:**Enter the beginning of the range of port numbers used by the application server, for data you send to it. If the application uses a single port

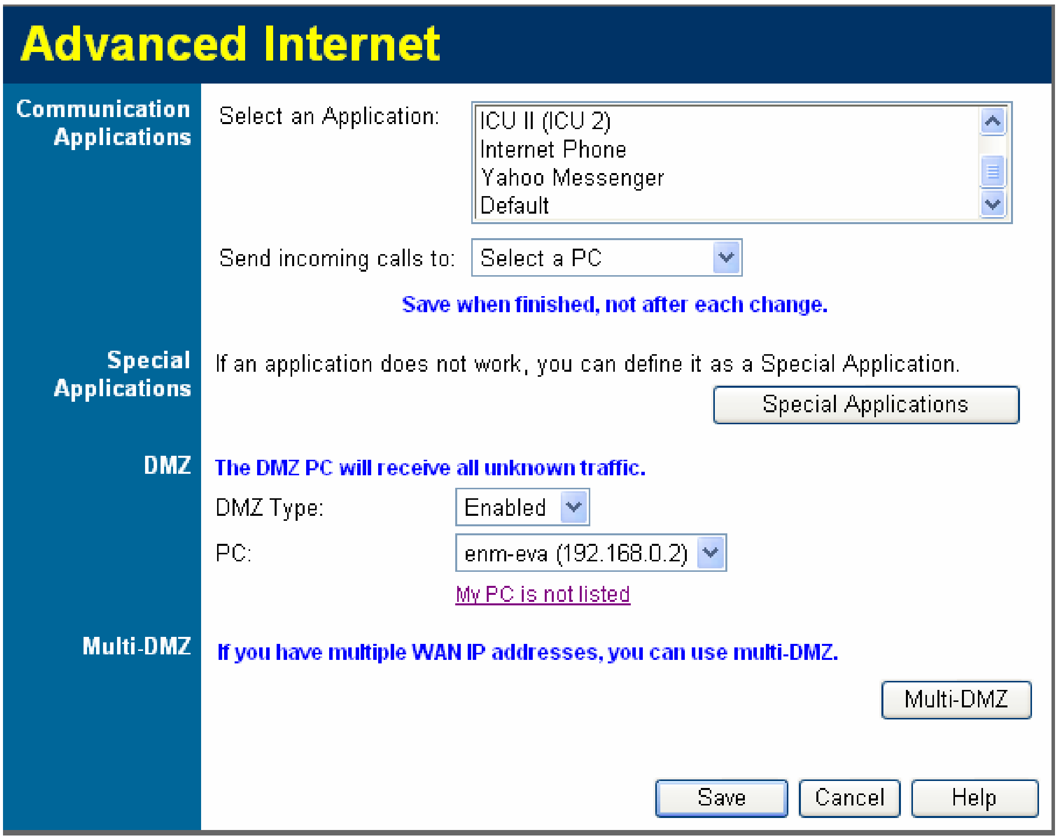
	number, enter it in both the "Start" and "Finish" fields. ● **Finish:** Enter the end of the range of port numbers used by the application server, for data you send to it. If the application uses a single port number, enter it in both the "Start" and "Finish" fields.
Buttons	
Save	Save the data on screen.
Cancel	Reverse any changes made since the last "Save".

Using a Special Application

- Configure the *Special Applications* screen as required.
- On your PC, use the application normally. Remember that only one PC can use each Special application at any time. Also, when one PC is finished using a particular Special Application, there may need to be a "Time-out" before another PC can use the same Special Application. The "Time-out" period may be up to 3 minutes.

✍**Note** If an application still cannot function correctly, try using the "DMZ" feature.

3.3.3 DMZ



Advanced Internet

Select an Application: ICU II (ICU 2) / Internet Phone / Yahoo Messenger / Default

Send incoming calls to: Select a PC

Save when finished, not after each change.

If an application does not work, you can define it as a Special Application.

The DMZ PC will receive all unknown traffic.

DMZ Type: Enabled

PC: enm-eva (192.168.0.2)

My PC is not listed

If you have multiple WAN IP addresses, you can use multi-DMZ.

- The "DMZ" PC will receive all "Unknown" connections and data. This feature is normally used with applications which do not usually work when behind a Firewall.
- The DMZ PC is effectively outside the Firewall, making it more vulnerable to attacks. For this reason, you should only enable the DMZ feature when required.
- If Enabled, you must select the PC to be used as the "DMZ" PC.

Select the desired option

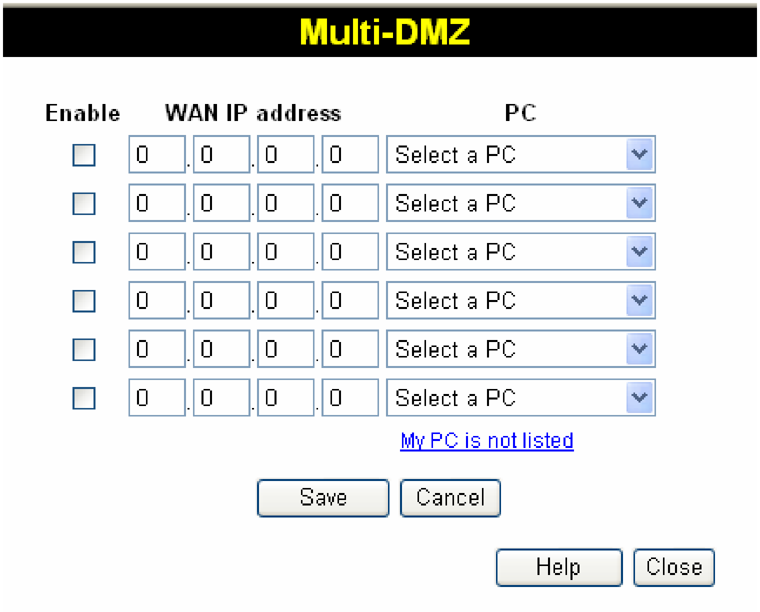
- **Disabled:**DMZ is disabled.
- **Enabled:**The selected PC will receive any "unknown" connections and data, as described above.

3.3.4 Multi-DMZ

This feature is only available if your ISP has allocated you multiple Internet IP addresses. If you have multiple Internet IP addresses, you can assign one DMZ PC for each Internet IP address.

- The "DMZ PC" will receive all "Unknown" connections and data received for the Internet IP address associated with it.

- All outgoing traffic from the DMZ PC will be assigned the WAN IP address associated with it, rather than the shared IP address on the WAN port. Note that ONLY the DMZ PC will use the WAN (Internet) IP address you enter on this screen.



Multi-DMZ

Enable	WAN IP address	PC
□	0 . 0 . 0 . 0	Select a PC
□	0 . 0 . 0 . 0	Select a PC
□	0 . 0 . 0 . 0	Select a PC
□	0 . 0 . 0 . 0	Select a PC
□	0 . 0 . 0 . 0	Select a PC
□	0 . 0 . 0 . 0	Select a PC

To use this feature:

- Enter an IP address allocated to you by your ISP into the **WAN IP address** field.
- Select the **PC** to be the DMZ PC for traffic sent to this IP address.
- **Enable** this DMZ.

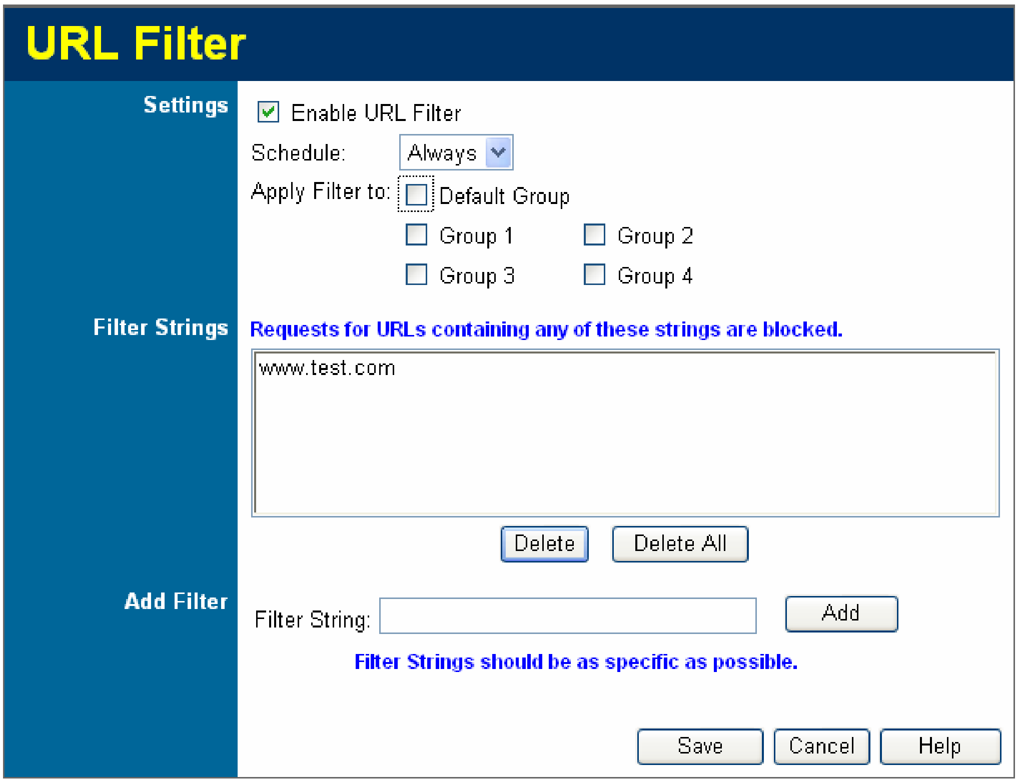
✍**Note**	The "DMZ PC" is effectively outside the Firewall, making it more vulnerable to attacks. For this reason, you should only enable the DMZ feature when required.

3.4 URL Filter

The URL Filter allows you to block access to undesirable Web site, and use this feature, you must define "filter strings". If the "filter string" appears in a requested URL, the request is blocked.

Enabling the *URL Filter* also affects the Internet *Access Log*. If Enabled, the "Destination" field in the log will display the URL. Otherwise, it will display the IP Address.

An example screen is shown below.



URL Filter

Settings

☑ Enable URL Filter

Schedule: Always

Apply Filter to: □ Default Group

□ Group 1 □ Group 2

□ Group 3 □ Group 4

Filter Strings

Requests for URLs containing any of these strings are blocked.

www.test.com

Add Filter

Filter String:

Filter Strings should be as specific as possible.

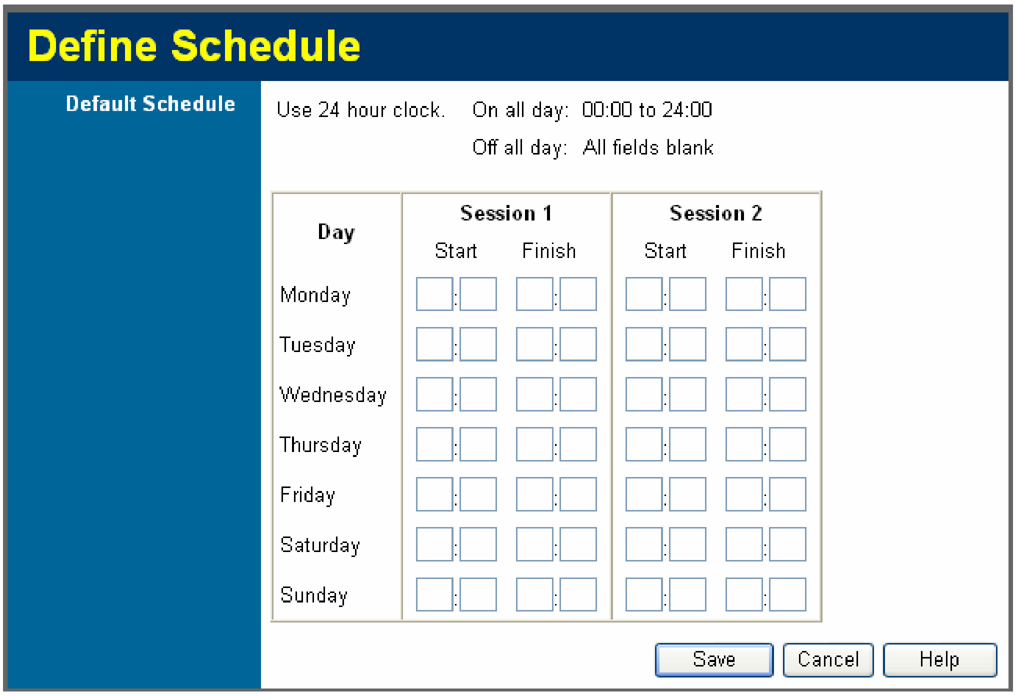
Parameter	Description
Settings	
Enable	This lists any existing entries. If you have not entered any values, this list will be empty.
Schedule	If you always want filtering to be active, select "Always". Otherwise, select the schedule to use. You can define the schedule using the *Schedule* menu option, on the *Advanced* menu.
Apply Filter to	Select the groups you wish the filter to apply to. Group membership can be set on the "User Groups" screen, on the "Administration" menu.
Filter Strings	
Filter Strings	This lists any existing entries. If you have not entered any values, this list will be empty.
Delete	Use this to delete the selected entry or entries, as required. Multiple entries can be selected by holding down the **CTRL** key while selecting. (On the Macintosh, hold the **SHIFT** key while selecting.)
Delete All	Use this button to delete all entries, if required.
Buttons	

Delete/Delete All	Use these buttons to delete the selected entry or all entries, as required. Multiple entries can be selected by holding down the **CTRL** key while selecting.(On the Macintosh, hold the **SHIFT** key while selecting.)
Add	Use this to add the current Filter String to the site list.

3.5 Define Schedule

The schedule can be used for the **Access Control** and **URL Filter** features.

- Two separate sessions or periods can be defined.
- Times must be entered using a 24 hours clock.
- If the time for a particular day is blank, no action will be performed.



Define Schedule

Default Schedule

Use 24 hour clock. On all day: 00:00 to 24:00

Off all day: All fields blank

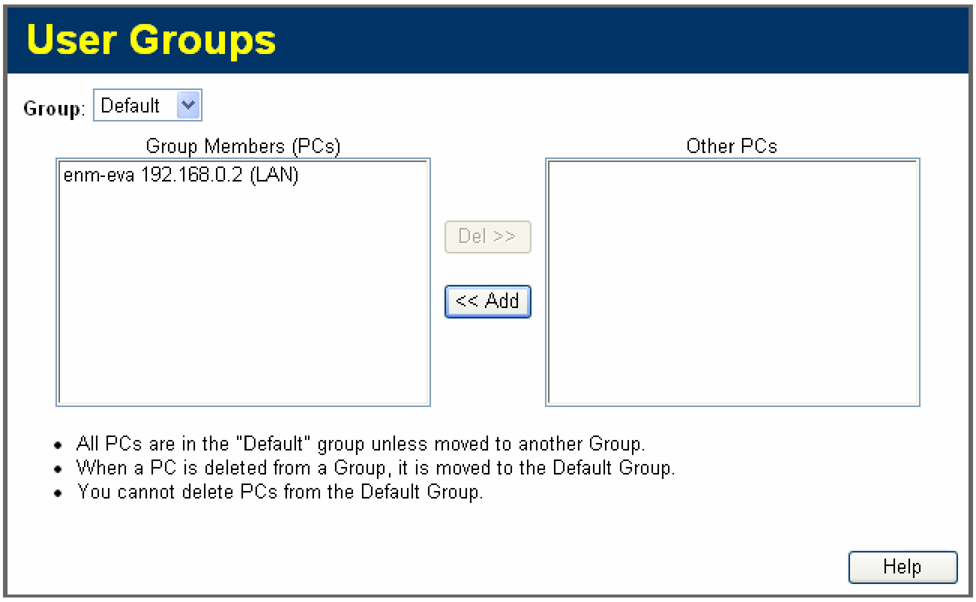
Day	Session 1		Session 2	
	Start	Finish	Start	Finish
Monday	:	:	:	:
Tuesday	:	:	:	:
Wednesday	:	:	:	:
Thursday	:	:	:	:
Friday	:	:	:	:
Saturday	:	:	:	:
Sunday	:	:	:	:

Parameter	Description
Day	Each day of the week can scheduled independently.
Session 1 **Session 2**	Two separate sessions or periods can be defined. Session 2 can be left blank if not required.
Start Time	Enter the start using a 24 hours clock.
Finish Time	Enter the finish time using a 24 hours clock.

3.6 User Groups

User Groups are used by the **Access Control** and the **URL Filter** features.

- Groups are pre-named "Default", "Group 1", "Group 2", "Group 3" and "Group 4", and cannot be renamed.
- All PCs are in the "Default" group, unless moved to another group.
- A PC can be a member of 1 group only.
- PCs must be in the "PC Database". If required, you can manually add PCs to the PC Database, using the *PC Database* option on the *Administration* menu.



enm-eva 192.168.0.2 (LAN)

- All PCs are in the "Default" group unless moved to another Group.
- When a PC is deleted from a Group, it is moved to the Default Group.
- You cannot delete PCs from the Default Group.

Parameter	Description
Group List	Select the desired Group. The screen will update to display the PCs for the selected Group.
Group Members	This lists all PCs, which are currently members of the selected group.
Other PCs	This lists all other PCs – those, which are not currently members of the selected group.
Del >>	Use this button to remove members from the current Group.Select the members you wish to delete from this group, and click this button. (Members can not be deleted from the "Default" group.)
<< Add	Use this button to add members to the current Group. In the "Other PCs" list, select the members you wish to add to this group, and click this button. The PCs will be moved from their existing group to the current group.

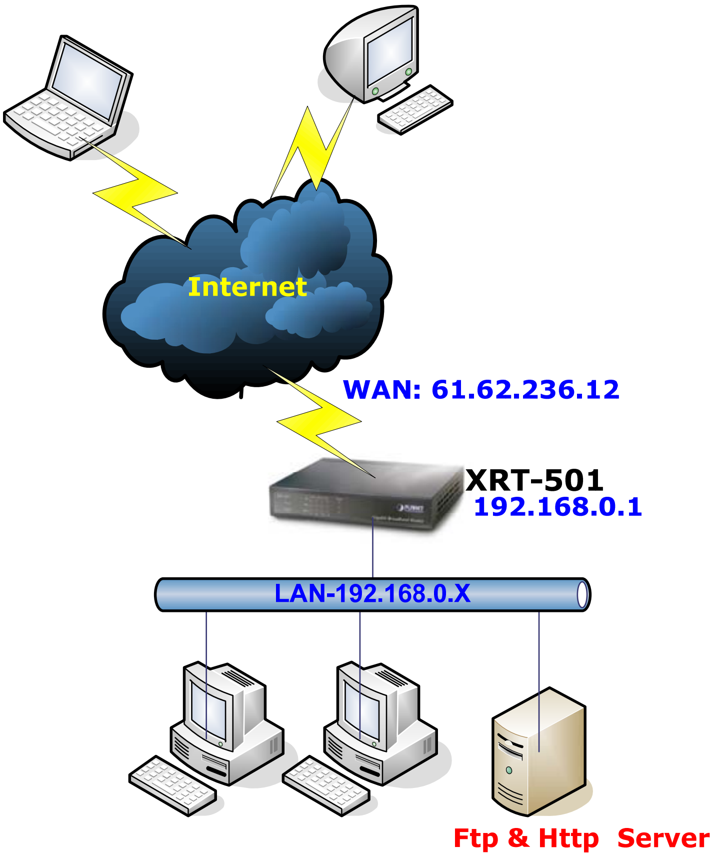
✍**Note** If PCs are not assigned to any group will be in the “Default” Group, and also PCs deleted from any other Group will be added to the “Default” Group.

3.7 Virtual Servers

This feature, sometimes called *Port Forwarding*, 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

Note that, in this illustration, both Internet users are connecting to the same IP Address, but using different protocols.

For Internet users, all virtual Servers on your LAN have the same WAN IP Address. This WAN 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 the DDNS (Dynamic DNS) feature to allow users to connect to your Virtual Servers using a URL, instead of an IP Address.

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).

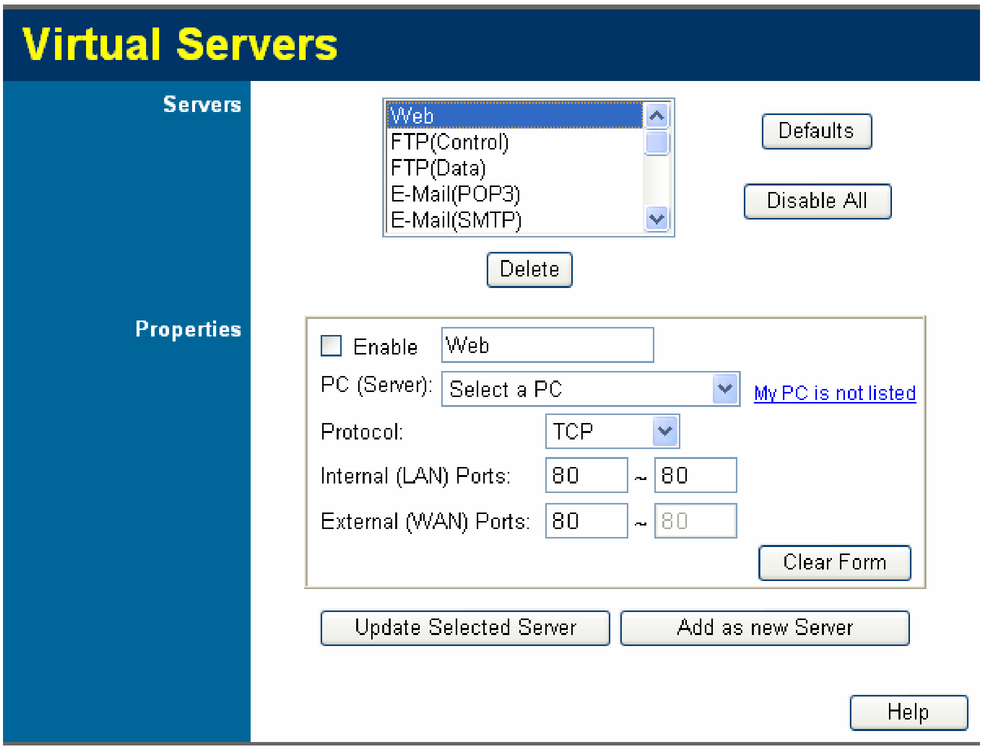
e.g.

http://61.62.236.12

ftp://61.62.236.12

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, described in the following section, to allow users to connect to your Virtual Servers using a URL, rather than an IP Address.

The *Virtual Servers* screen is reached by the *Virtual Servers* link on the *Advanced* screen. An example screen is shown below.



□ Enable: Web

PC (Server): Select a PC

Protocol: TCP

Internal (LAN) Ports: 80 ~ 80

External (WAN) Ports: 80 ~ 80

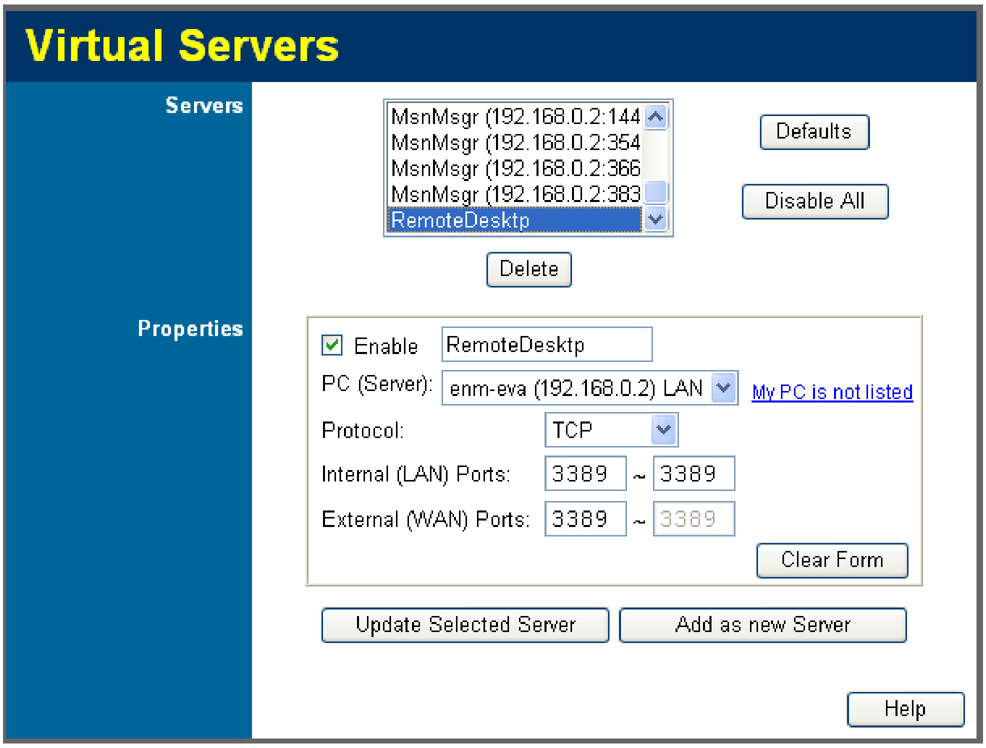
This screen lists a number of pre-defined Servers, and allows you to define your own Servers. Details of the selected Server are shown in the "Properties" area.

Parameter	Description
Servers	
Servers	This lists a number of pre-defined Servers, plus any Servers you have defined. Details of the selected Server are shown in the "Properties" area.
Properties	

Enable	Use this to Enable or Disable support for this Server, as required. ● If Enabled, any incoming connections will be forwarded to the selected PC. ● If Disabled, any incoming connection attempts will be blocked.
PC (Server)	Select the PC for this Server. The PC must be running the appropriate Server software.
Protocol	Select the protocol (TCP or UDP) used by the Server.
Internal Ports	Enter the range of port numbers which the Server software is configured to use. If only one port number is required, enter it in both the start and finish fields.
External Ports	The port numbers used by Internet users when connecting to the Server. These are normally the same as the Internal Port Numbers. If it is different, this device will perform a "mapping" or "translation" function, allowing the server to use one port address, while clients use a different port address.
Buttons	
Defaults	This will delete any Servers you have defined, and set the pre-defined Servers to use their default port numbers.
Disable All	This will cause the "Enable" setting of all Virtual Servers to be set OFF.
Update Selected Server	Update the current Virtual Server entry, using the data shown in the "Properties" area on screen.
Add as new Server	Add a new entry to the Virtual Server list, using the data shown in the "Properties" area on screen. The entry selected in the list is ignored, and has no effect.
Delete	Delete the current Virtual Server entry. Note that the pre-defined Servers can not be deleted. Only Servers you have defined yourself can be deleted.
Clear Form	Clear all data from the "Properties" area, ready for input of a new Virtual Server entry.

✍**Note** For each entry, the PC must be running the appropriate Server software

Defining your own Virtual Servers



Servers

MsnMsgr (192.168.0.2:144
MsnMsgr (192.168.0.2:354
MsnMsgr (192.168.0.2:366
MsnMsgr (192.168.0.2:383
RemoteDesktp

Properties

☑ Enable RemoteDesktp

PC (Server): enm-eva (192.168.0.2) LAN

Protocol: TCP

Internal (LAN) Ports: 3389 ~ 3389

External (WAN) Ports: 3389 ~ 3389

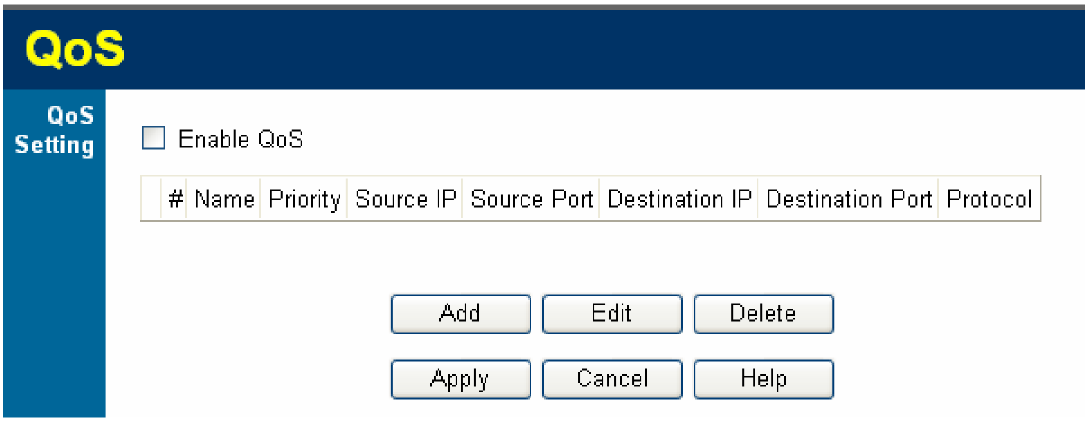
If the type of Server you wish to use is not listed on the *Virtual Servers* screen, you can define and manage your own Servers:

Parameter	Description
Create a new Server:	I. Click "Clear Form" II. Enter the required data, as described above. III. Click "Add". IV. The new Server will now appear in the list.
Modify (Edit) a Server:	I. Select the desired Server from the list II. Make any desired changes (for example, change the Enable/Disable setting). III. Click "Update" to save changes to the selected Server.
Delete a Server:	I. Select the entry from the list. II. Click "Delete". **Note:** You can only delete Servers you have defined. Pre-defined Server cannot be deleted.

✍**Note** From the Internet, ALL Virtual Servers have the IP Address allocated by your ISP.

3.8 QoS

The *QoS screen* is on the *Advanced* screen. An example screen shown below.



QoS

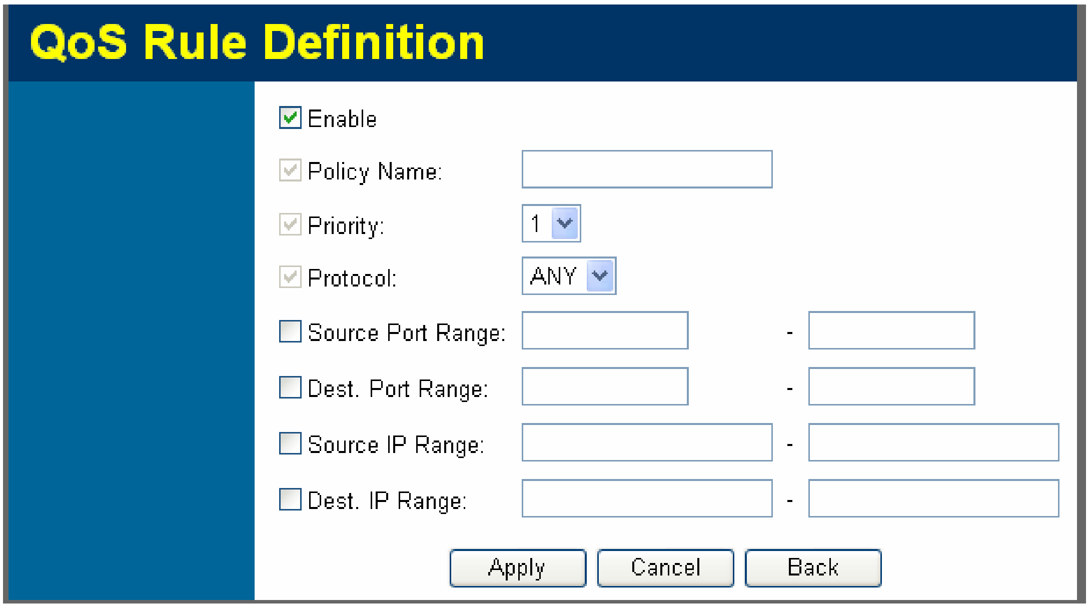
QoS Setting

□ Enable QoS

#	Name	Priority	Source IP	Source Port	Destination IP	Destination Port	Protocol

Parameter	Description
Enable QoS	Use this to Enable or Disable this QoS as required.
Buttons	
Add	Add the new enrty
Edit	Edit the entry you are selected
Delete	Delete the entry you are selected
Apply	Apply the data on screen.
Canel	Reverse any changes made since the last "Save".

Defining your own QoS



QoS Rule Definition

☑ Enable

☑ Policy Name:

☑ Priority: 1

☑ Protocol: ANY

□ Source Port Range: -

□ Dest. Port Range: -

□ Source IP Range: -

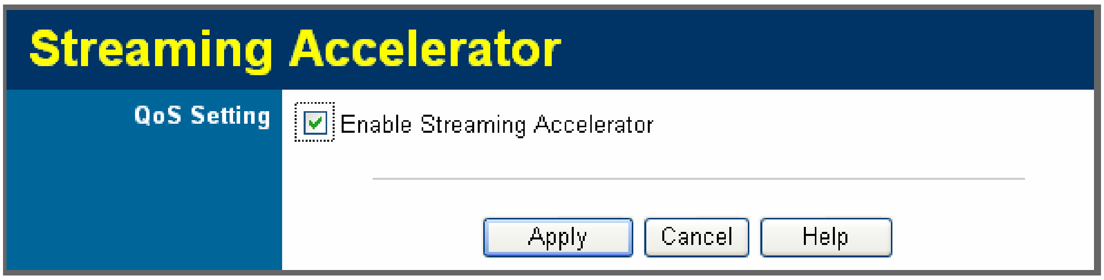
□ Dest. IP Range: -

Parameter	Description
Enable QoS	Use this to Enable or Disable this QoS as required.
Policy Name	The description of this policy.

Priority	You can configure the QoS control by four level.
Protocol	Select the protocol which sed by the QoS.
Source Port Range	Enter the range of port numbers for the Source Client which the QoS is configured to use.
Dest. Port Range	Enter the range of port numbers for the Destination Client which the QoS is configured to use.
Source IP Range	Enter the range of IP address for the Source Client which the QoS is configured to use.
Dest. IP Range	Enter the range of IP address for the Destination Client which the QoS is configured to use.
Buttons	
Apply	Apply the data on screen.
Canel	Reverse any changes made since the last "Save".
Back	Click on Back button to go back the presvious page.

3.9 Streaming Accelerator

This feature accelerate the performance of UDP packet (size lower than 1K), means, if Video is using UDP packet, that will get accelerate via enable this function.



Streaming Accelerator

QoS Setting

☑ Enable Streaming Accelerator

Click <Enalbe Streaming Accelerator> to make the Streaming Accelerator effect.

3.10 IGMP

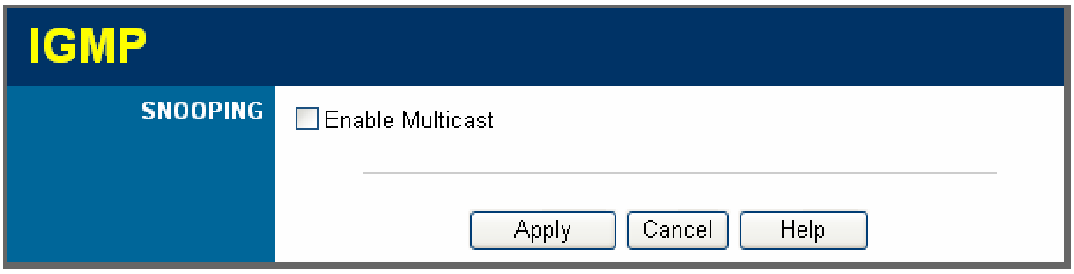
The Internet Group Management Protocol (IGMP) is a communications protocol used to manage the membership of Internet Protocol multicast groups. IGMP is used by IP hosts and adjacent multicast routers to establish multicast group memberships.

IGMP Snooping is the process of listening to IGMP traffic, its feature that allows the switch to "listen in" on the IGMP conversation between hosts and routers by processing the layer 3 packets IGMP packets sent in a multicast network.

When IGMP snooping is enabled in a switch it analyses all the IGMP packets between hosts connected to the switch and multicast routers in the network. When a switch hears an

IGMP report from a host for a given multicast group, the switch adds the host's port number to the multicast table list for that group. And, when the switch hears an IGMP leave, it removes the host's port from the multicast table list.

IGMP snooping can very effectively reduce multicast traffic from streaming and other bandwidth intensive IP applications. While a switch that does not understand multicast will broadcast the multicast traffic to all the ports in a collision domain (a LAN), a switch using IGMP snooping will only forward multicast traffic to the hosts interested in that traffic. This reduction of multicast traffic reduces the packet processing at the switch (at the cost of needing additional memory to handle the multicast tables) and also reduces the workload at the end hosts since their network cards (or operating system) will not have to receive and filter all the multicast traffic generated in the network.


IGMP

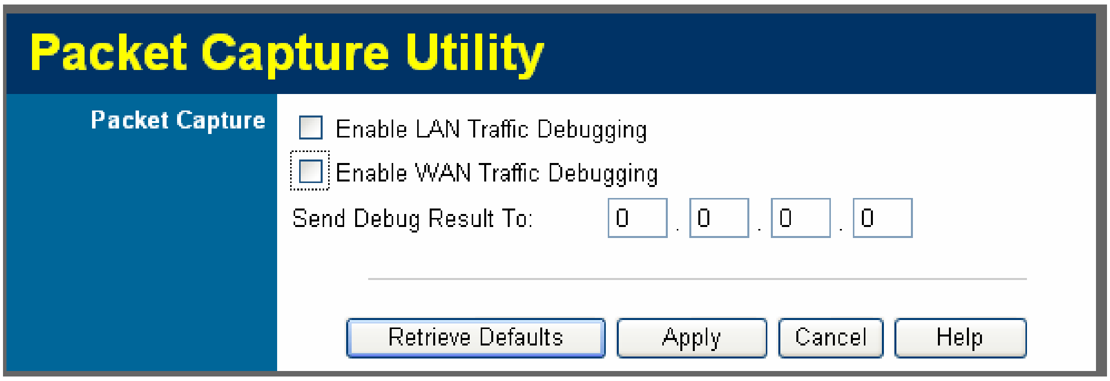
SNOOPING

□ Enable Multicast

Click <Enalbe Multicast> to make the IGMP Snooping effect.

3.11 Packet Captuer Utility

This feature need to work with Caputer Utility in the suppied CD-ROM, and it provides the feauture can monitor the LAN or WAN traffic if enable this function on the Web UI, and it can also send capture log to the specific client which installed capture tool.


Packet Capture Utility

Packet Capture

□ Enable LAN Traffic Debugging

□ Enable WAN Traffic Debugging

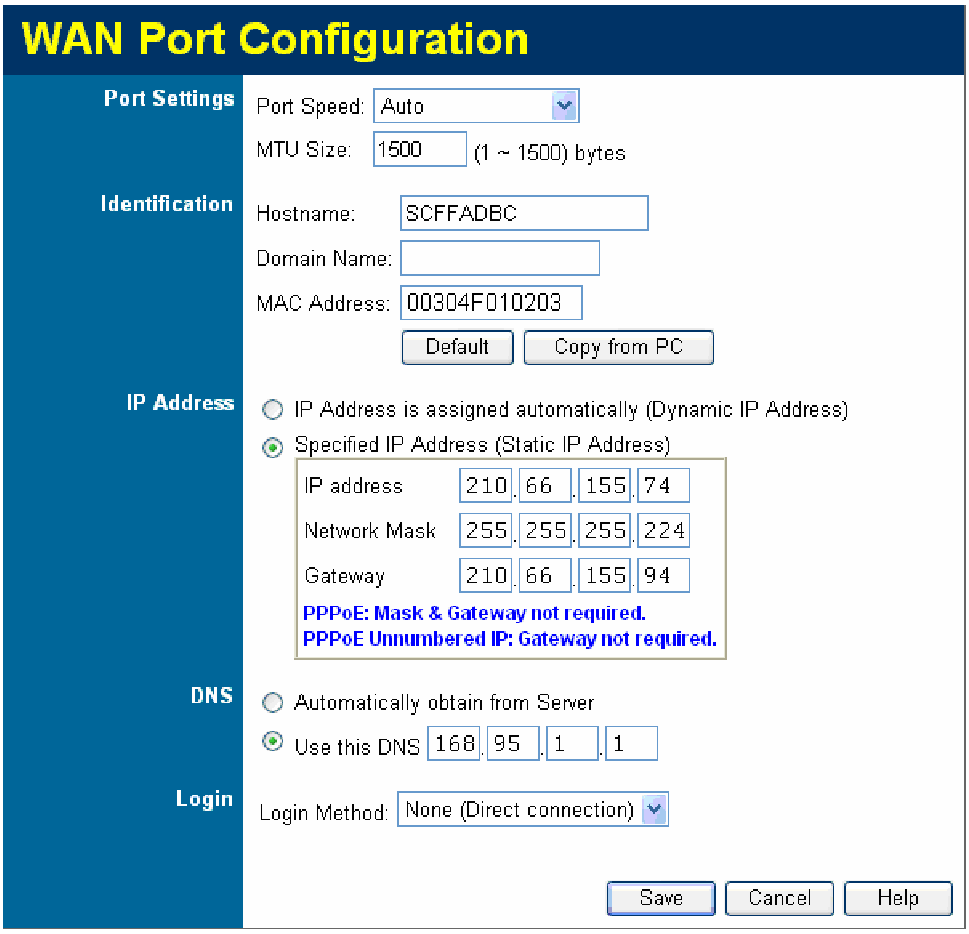
Send Debug Result To: 0 . 0 . 0 . 0

Parameter	Description
Enable LAN Traffic Debugging	Enable the packet capture for LAN traffic.
Enable WAN Traffic Debugging	Enable the packet capture for WAN traffic.
Send Debug Result To:	Send the traffic result to a fix IP address which inatlled caputer tool.

Buttons	
Retrieve Defauls	This will cause the "Enable" setting of all the settings of Packet Capurures to be set OFF.
Apply	Apply the data on screen.
Canel	Reverse any changes made since the last "Save".

3.12 WAN Port Configuation

The *WAN Port* option is on the *Advanced* menu.



WAN Port Configuration

Port Settings

Port Speed: Auto

MTU Size: 1500 (1 ~ 1500) bytes

Identification

Hostname: SCFFADBC

Domain Name:

MAC Address: 00304F010203

IP Address

○ IP Address is assigned automatically (Dynamic IP Address)

● Specified IP Address (Static IP Address)

IP address 210.66.155.74

Network Mask 255.255.255.224

Gateway 210.66.155.94

PPPoE: Mask & Gateway not required.
PPPoE Unnumbered IP: Gateway not required.

DNS

○ Automatically obtain from Server

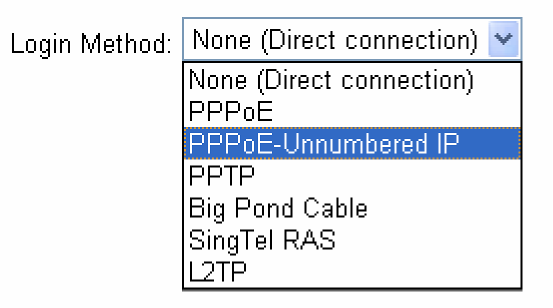
● Use this DNS 168.95.1.1

Login

Login Method: None (Direct connection)

Parameter	Description
Port Settings	
Port Speed	Normally, this can be left at "Automatic". If the device attached to the WAN Port has problems making a connection, you can select the setting required or preferred by the other device.
MTU Size	● MTU (Maximum Transmission Unit) value should only be changed if advised to do so by Technical Support.

	● Enter a value between 1 and 1500. ● This device will still auto-negotiate with the remote server, to set the MTU size. The smaller of the 2 values (auto-negotiated, or entered here) will be used. ● For direct connections (not PPPoE or PPTP), the MTU used is always 1500.
Identification	
Hostname	Normally, there is no need to change the default name, but if your ISP requests that you use a particular Hostname, enter it here.
Domain Name	If your ISP provided a domain name, enter it here. Otherwise, this may be left blank.
WAN Port MAC Address	Also called *Network Adapter Address* or *Physical Address*. This is a low-level identifier, as seen from the WAN port. Normally there is no need to change this, but some ISPs require a particular value, often that of the PC initially used for Internet access. You can use the *Copy from PC* button to copy your PC's address into this field, the *Default* button to insert the default value, or enter a value directly.
IP Address	
Automatic	Also called Dynamic IP Address. This is the default, and the most common. Leave this selected if your ISP allocates an IP Address to the Broadband Router upon connection.
Specified IP Address	Also called Static IP Address. Select this if your ISP has allocated you a fixed IP Address. If this option is selected, the following data must be entered. IP Address ● The IP Address allocated by the ISP. Network Mask (Not required for PPPoE).This is also supplied by your ISP. It must be compatible with the IP Address above. ● Gateway IP Address (Not required for PPPoE) The address of the router or gateway, as supplied by your ISP.
DNS	

Automatically obtain from Serve	The DNS (Domain Name Server) address will be obtained automatically from your ISP's server. **Note:** If using a fixed IP address, with no login (login is set to "None"), then no Server is used, so this option cannot be used.
Use this DNS	If this option is selected, you must enter the IP address of the DNS (Domain Name Server) you wish to use.
Login	
Login Method	 Login Method: None (Direct connection) None (Direct connection) PPPoE PPPoE-Unnumbered IP PPTP Big Pond Cable SingTel RAS L2TP If your ISP does not use a login method (username, password) for Internet access, leave this at the default value ● **None (Direct connection):** Otherwise, check the documentation from your ISP, select the login method used, and enter the required data. ● **PPPoE:** This is the most common login method, widely used with DSL modems. Normally, your ISP will have provided some software to connect and login. This software is no longer required, and should not be used. ● **PPPoE (Unnumbered IP):** This can only be used if your ISP supports this system, and has allocated you multiple IP addresses. If selected, you must also select "Specified IP Address" above and enter one of the IP addresses allocated to you by your ISP. The other IP addresses must be assigned to PCs on your LAN. ● **PPTP:** This is mainly used in Europe. You need to know the PPTP Server address as well as your name and password. ● **L2TP:** This is not widely used. You need to know the PPTP Server address as well as your name and password. ● **Big Pond Cable:** For Australia only.

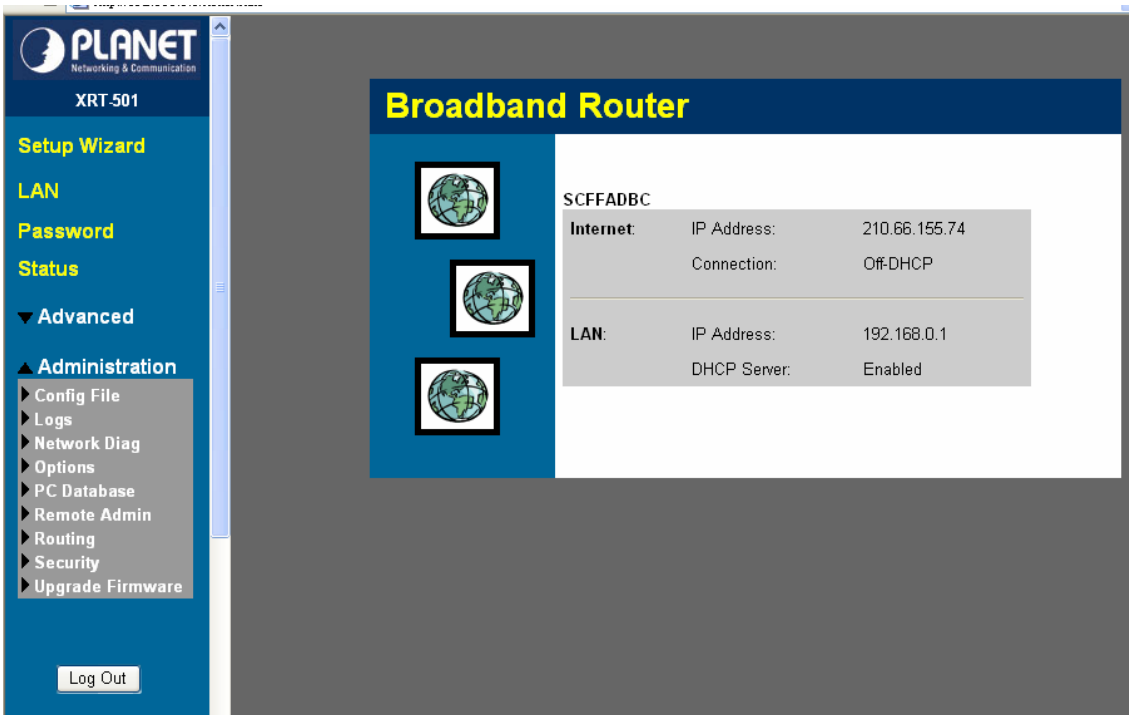
	● **SingTel RAS :** For Singapore only.
Login User Name	The User Name (or account name) provided by your ISP.
Login Password	Enter the password for the login name above.
RAS Plan	For SingTel customers only, select the RAS plan you are on.
Server Address	This is not required for PPPoE or SingTel RAS. For PPTP, L2TP and BPA, enter the Server address as provided by your ISP.
Connection Behavior	Select the desired option: ● **Automatic Connect/Disconnect** An Internet connection is automatically made when required, and disconnected when idle for the time period specified by the "Auto-disconnect Idle Time-out". ● **Manual Connect/Disconnect** You must manually establish and terminate the connection. ● **Keep alive (maintain connection)** The connection will never be disconnected by this device. If disconnected by your ISP, the connection will be re-established immediately. (However, this does not ensure that your Internet IP address will remain unchanged.)
Auto-disconnect Idle Time-out	This field has no effect unless using the **Automatic Connect/Disconnect** setting. If using this setting, enter the desired idle time-out period (in minutes). After the connection to your ISP has been idle for this time period, the connection will be terminated.
Buttons	
Default	Inserts the default MAC address into the MAC address field. You must click "Save" to actually change the address used.
Copy from PC	Inserts the MAC address from your PC into the MAC address field. You must click "Save" to actually change the address used.
Save	Save your changes to the XRT-501.

Cancel	Reverse any changes made since the last "Save".

Chapter 4 Administrator

This Chapter explains the settings available via the "Administration" section of the menu.

Normally, it is not necessary to use these screens, or change any settings. These screens and settings are provided to deal with non-standard situations, or to provide additional options for advanced users.



SCFFADBC

Internet:	IP Address:	210.66.155.74
	Connection:	Off-DHCP
LAN:	IP Address:	192.168.0.1
	DHCP Server:	Enabled

The available settings and features are:

Parameter	Description
4.1 Config File	Backup or restore the configuration file for the XRT-501.This file contains all the configuration data.
4.2 Logs	View or clear all logs, set E-Mailing of log files.
4.3 Network Diag	Ping, DNS Lookup.
4.4 Options	Various options, such as backup DNS, UPnP, and enable TFTP firmware upgrade option.
4.5 PC Databse	This is the list of PCs shown when you select the "DMZ PC" or a "Virtual Server". This database is maintained automatically, but you can add and delete entries for PCs which use a Fixed (Static) IP Address.
4.6 Remote Admin	Allow settings to be changed from the Internet..

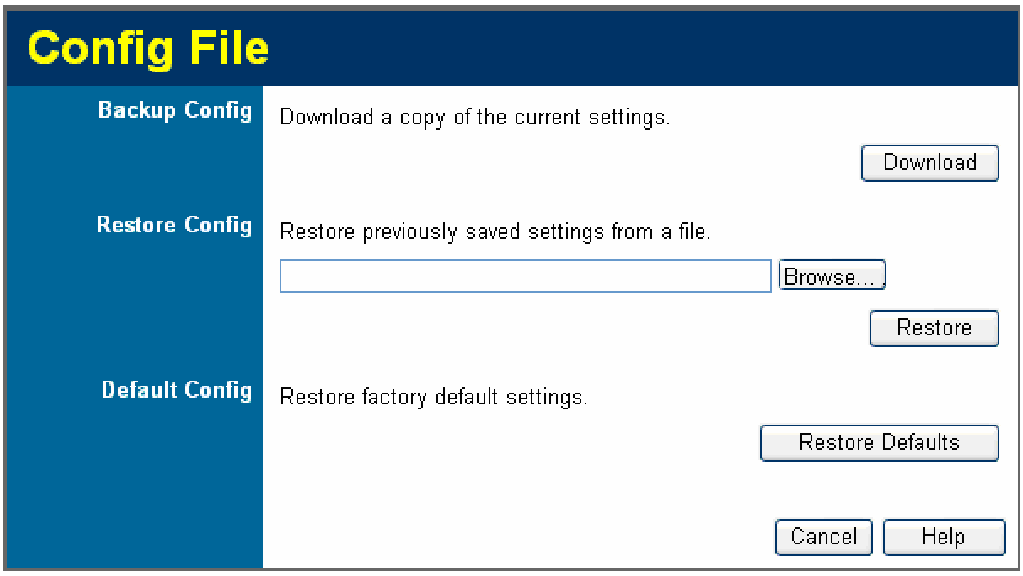
4.7 Routing	Only required if your LAN has other Routers or Gateways.
4.8 Security	Firewall and other security-related settings. Normally, the default settings do not need to be changed.
4.9 Upgrade Firmware	Upgrade the Firmware (software) installed in your XRT-501 Router.
4.10 Log Out	Logout XRT-501.

4.1 Config File

This feature allows you to download the current settings from the XRT-501, and save them to a file on your PC. You can restore a previously-downloaded configuration file to the XRT-501, by uploading it to the XRT-501.

This screen also allows you to set the XRT-501 back to its factory default configuration. Any existing settings will be deleted.

An example ***Config File*** screen is shown below.



Config File

Backup Config: Download a copy of the current settings.

Restore Config: Restore previously saved settings from a file.

Default Config: Restore factory default settings.

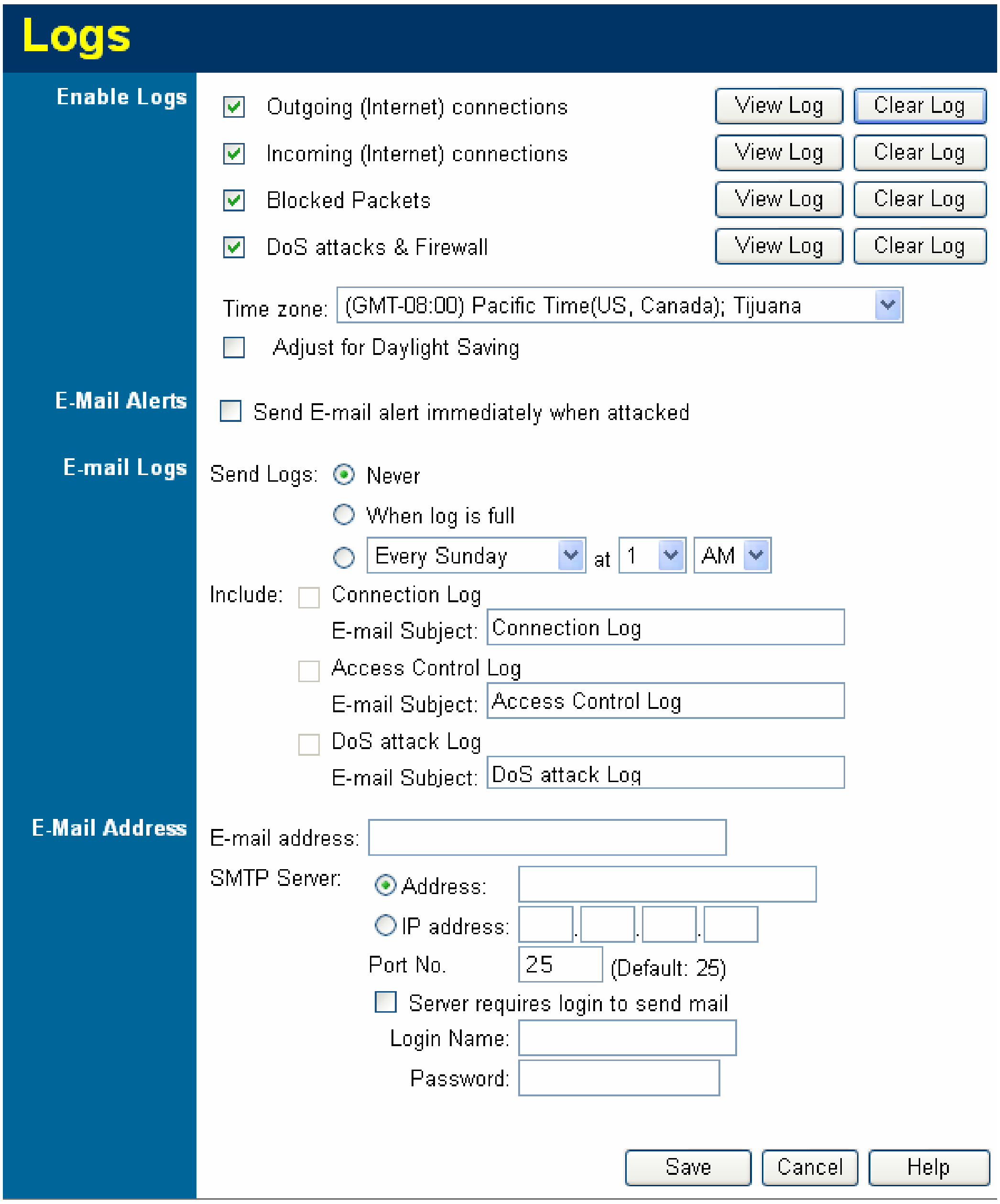
Parameter	Description
Backup Config	Use this to download a copy of the current configuration, and store the file on your PC. Click *Download* to start the download.
Restore Config	This allows you to restore a previously-saved configuration file back to the XRT-501. Click *Browse* to select the configuration file, then click

	Restore to upload the configuration file. **WARNING !** Uploading a configuration file will destroy (overwrite) ALL of the existing settings.
Default Config	Clicking the *Restore Defaults* button will reset the Broadband Router to its factory default settings. **WARNING !** This will delete ALL of the existing settings.

4.2 Logs

The Logs record various types of activity on the XRT-501. This data is useful for troubleshooting, but enabling all logs will generate a large amount of data and adversely affect performance.

Since only a limited amount of log data can be stored in the XRT-501, log data can also be E-mailed to your PC.



Logs

Enable Logs

☑ Outgoing (Internet) connections

☑ Incoming (Internet) connections

☑ Blocked Packets

☑ DoS attacks & Firewall

Time zone: (GMT-08:00) Pacific Time(US, Canada); Tijuana

□ Adjust for Daylight Saving

E-Mail Alerts

□ Send E-mail alert immediately when attacked

E-mail Logs

Send Logs: ● Never

○ When log is full

○ Every Sunday at 1 AM

Include: □ Connection Log

E-mail Subject: Connection Log

□ Access Control Log

E-mail Subject: Access Control Log

□ DoS attack Log

E-mail Subject: DoS attack Log

E-Mail Address

E-mail address:

SMTP Server: ● Address:

○ IP address: . . .

Port No. 25 (Default: 25)

□ Server requires login to send mail

Login Name:

Password:

Parameter	Description
Enable Logs	
Outgoing Connections	If selected, Outgoing Internet connections are logged. Normally, the (Internet) "Destination" will be shown as an IP address. But if the "URL Filter" is enabled, the "Destination" will be shown as a URL.
Access Control	If enabled, the log will include attempted outgoing connections which have been blocked by the "Access Control" feature.
DoS Attacks	If enabled, this log will show details of DoS (Denial of Service) attacks which have been blocked by the built-in Firewall.

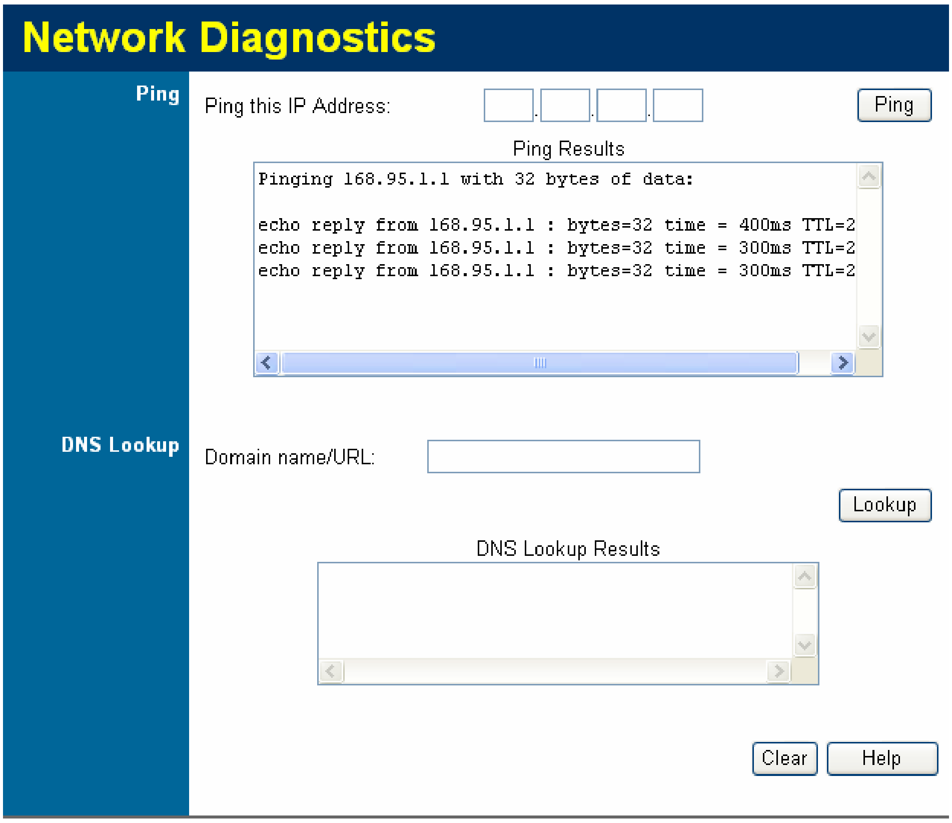
Timezone	Select the correct Timezone for your location. This is required for the date/time shown on the logs to be correct.
View Log Button	Use this to view each log, as required.
Clear Log Button	Use this to restart the required log. This makes it easier to read the latest entries.
E-Mail Alerts	
Send E-mail alert..	If enabled, an E-mail will be sent immediately if a DoS (Denial of Service) attack is detected. If enabled, the E-mail address information (below) must be provided.
E-Mail Logs	
Send Logs	Select the desired option for sending the log by E-mail. ● **Never:** E-mailing of Logs is disabled. ● **When log is full:**The time is not fixed. The log will be sent when the log is full, which will depend on the volume of traffic. ● **Every day, Every Monday:**The log is sent on the interval specified. ✓ If "Every day" is selected, the log is sent at the time specified. ✓ If the day is specified, the log is sent once per week, on the specified day. ✓Select the time of day you wish the E-mail to be sent. ✓If the log is full before the time specified to send it, it will be sent regardless.
Include	Enabled the logs you wish to send. If no checkboxes are enabled, no logs will be sent. For each type of log, you can set the "Subject" field which is displayed in your inbox when you receive the mail.
E-mail Subject	For each type of log, you can set the "Subject" field which is displayed in your inbox when you receive the mail.
E-Mail Address	
E-mail Address	Enter the E-mail address the Log is to be sent to. The E-mail will also show this address as the Sender's

	address.
SMTP Server Address	Enter the address (domain name) or IP address of the SMTP (Simple Mail Transport Protocol) Server you use for outgoing E-mail.
Port No.	Enter the port number used to connect to the SMTP Server. The default value is 25.
Server requires Login to send mail	If your SMTP Server requires you to login in order to send mail: Check the setting "Server requires login to send mail" Enter your **Login Name** and **Password** for the SMTP Server in the fields provided.

4.3 Network Diagnostics

This screen allows you to perform a "Ping" or a "DNS lookup". These activities can be useful in solving network problems.

An example ***Network Diagnostics*** screen is shown below.



```
Pinging 168.95.1.1 with 32 bytes of data:

echo reply from 168.95.1.1 : bytes=32 time = 400ms TTL=2
echo reply from 168.95.1.1 : bytes=32 time = 300ms TTL=2
echo reply from 168.95.1.1 : bytes=32 time = 300ms TTL=2
```

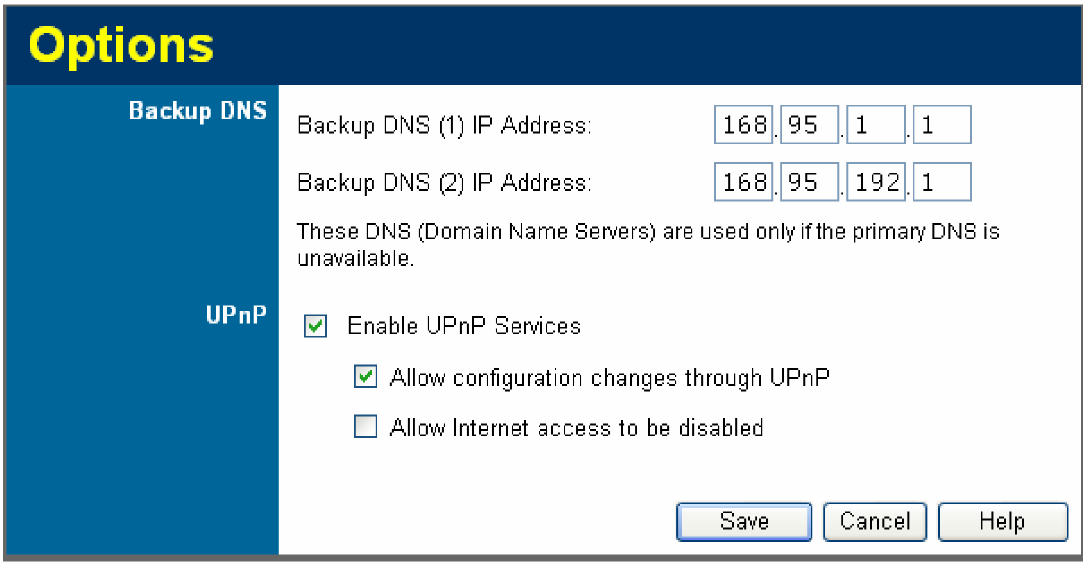
Parameter	Description
Ping	
Ping this	Enter the IP address you wish to ping. The IP address

IP Address	can be on your LAN, or on the Internet. Note that if the address is on the Internet, and no connection currently exists, you could get a "Timeout" error. In that case, wait a few seconds and try again.
Ping Button	After entering the IP address, click this button to start the "Ping" procedure. The results will be displayed in the *Ping Results* pane.
DNS Lookup	
Domain name/URL	Enter the Domain name or URL for which you want a DNS (Domain Name Server) lookup. Note that if the address in on the Internet, and no connection currently exists, you could get a "Timeout" error. In that case, wait a few seconds and try again.
Lookup Button	After entering the Domain name/URL, click this button to start the "DNS Lookup" procedure. The results will be displayed in the *DNS Lookup Results* pane.

4.4 Options

This screen allows advanced users to enter or change a number of settings. For normal operation, there is no need to use this screen or change any settings.

An example ***Options*** screen is shown below.



Options

Backup DNS

Backup DNS (1) IP Address: 168 . 95 . 1 . 1

Backup DNS (2) IP Address: 168 . 95 . 192 . 1

These DNS (Domain Name Servers) are used only if the primary DNS is unavailable.

UPnP

☑ Enable UPnP Services

☑ Allow configuration changes through UPnP

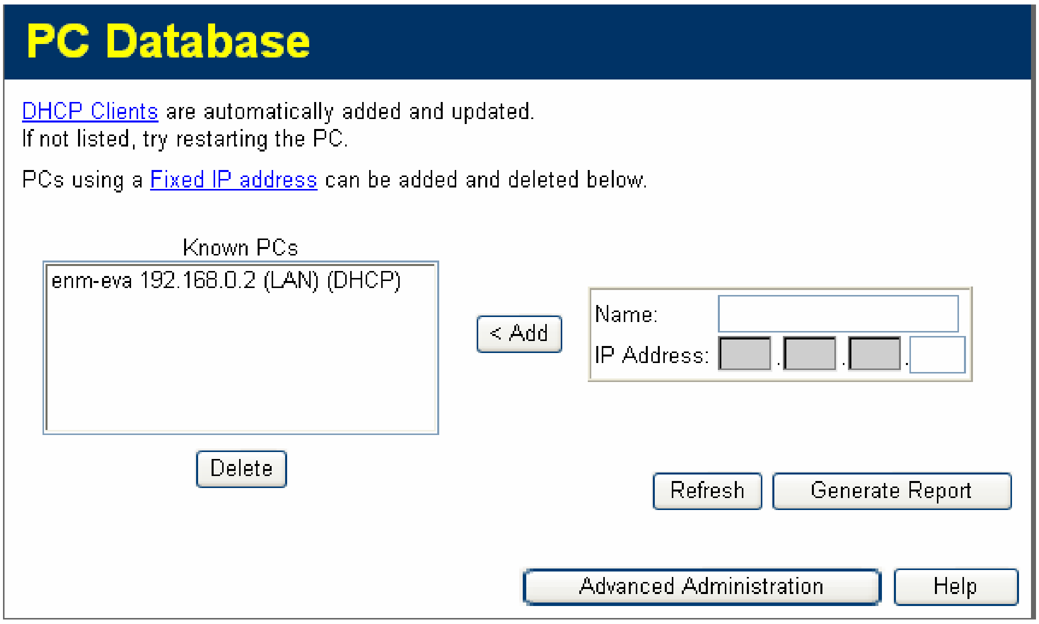
□ Allow Internet access to be disabled

Parameter	Description
Backup DNS	

IP Address	Enter the IP Address of the DNS (Domain Name Servers) here. These DNS will be used only if the primary DNS is unavailable.
UPnP	
Enable UPnP Services	UPnP (Universal Plug and Play) allows automatic discovery and configuration of equipment attached to your LAN. UPnP is by supported Windows ME, XP, or later. ● If Enabled, this device will be visible via UPnP. ● If Disabled, this device will not be visible via UPnP.
Allow Configuration...	● If checked, then UPnP users can change the configuration. ● If Disabled, UPnP users can only view the configuration.
Allow Internet access to be disabled	● If checked, then UPnP users can disable Internet access via this device. ● If Disabled, UPnP users can NOT disable Internet access via this device.

4.5 PC Database

The PC Database is used whenever you need to select a PC (e.g. for the "DMZ" PC). It eliminates the need to enter IP addresses. Also, you do not need to use fixed IP addresses on your LAN.



PC Database

DHCP Clients are automatically added and updated.
If not listed, try restarting the PC.

PCs using a Fixed IP address can be added and deleted below.

Known PCs

enm-eva 192.168.0.2 (LAN) (DHCP)

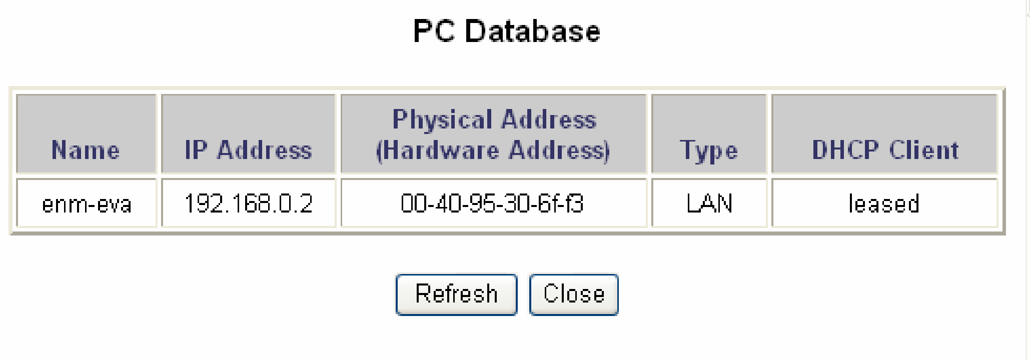
Name:

IP Address: . . .

- PCs which are "DHCP Clients" are automatically added to the database, and updated as required.
- By default, non-Server versions of Windows act as "DHCP Clients"; this setting is called "Obtain an IP Address automatically".
- The XRT-501 uses the "Hardware Address" to identify each PC, not the name or IP address. The "Hardware Address" can only change if you change the PC's network card or adapter.
- This system means you do NOT need to use Fixed (static) IP addresses on your LAN. However, you can add PCs using Fixed (static) IP Addresses to the PC database if required.

Parameter	Description
Known PCs	This lists all current entries (PCs or network devices).
Name	If adding a new PC to the list, enter its name here. It is best if this matches the PC's "hostname".
IP Address	If adding a new PC to the list, enter the IP Address of the PC here. The PC will be sent a "ping" to determine its hardware address. If the PC is not available (not connected, or not powered On) you will not be able to add it.
Buttons	
Add	This will add the new PC to the list. The PC will be sent a "ping" to determine its hardware address. If the PC is not available (not connected, or not powered On) you will not be able to add it.
Delete	Delete the selected PC from the list. This should be done in 2 situations: ● The PC has been removed from your LAN. ● The entry is incorrect.
Refresh	Update the data on screen.
Generate Report	Display a read-only list showing full details of all entries in the PC database.
Advanced Administration	Click this to view the advanced "PC Database" screen.

The below screen shown PC Databse List after click the Generate Report button,

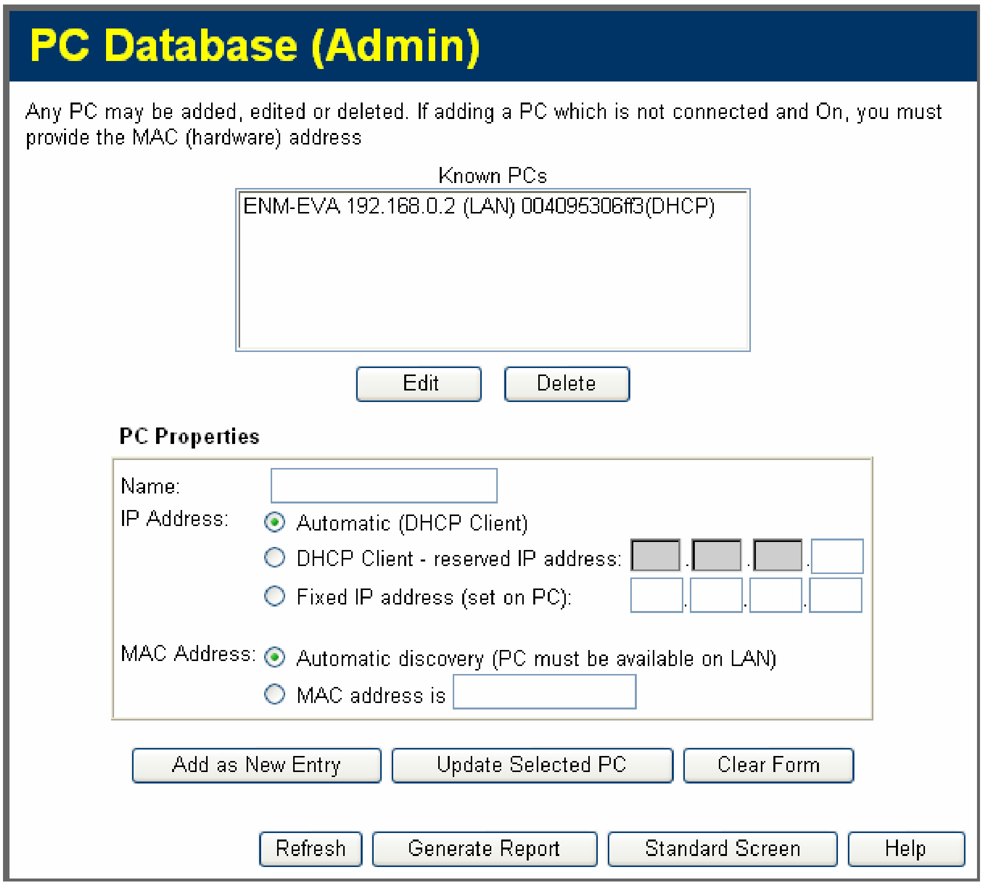


PC Database

Name	IP Address	Physical Address (Hardware Address)	Type	DHCP Client
enm-eva	192.168.0.2	00-40-95-30-6f-f3	LAN	leased

PC Database (Admin)

This screen is displayed if the "Advanced Administration" button on the ***PC Database*** is clicked. It provides more control than the standard ***PC Database*** screen.



PC Database (Admin)

Any PC may be added, edited or deleted. If adding a PC which is not connected and On, you must provide the MAC (hardware) address

Known PCs

ENM-EVA 192.168.0.2 (LAN) 004095306ff3(DHCP)

PC Properties

Name:

IP Address: ● Automatic (DHCP Client)
○ DHCP Client - reserved IP address:
○ Fixed IP address (set on PC):

MAC Address: ● Automatic discovery (PC must be available on LAN)
○ MAC address is

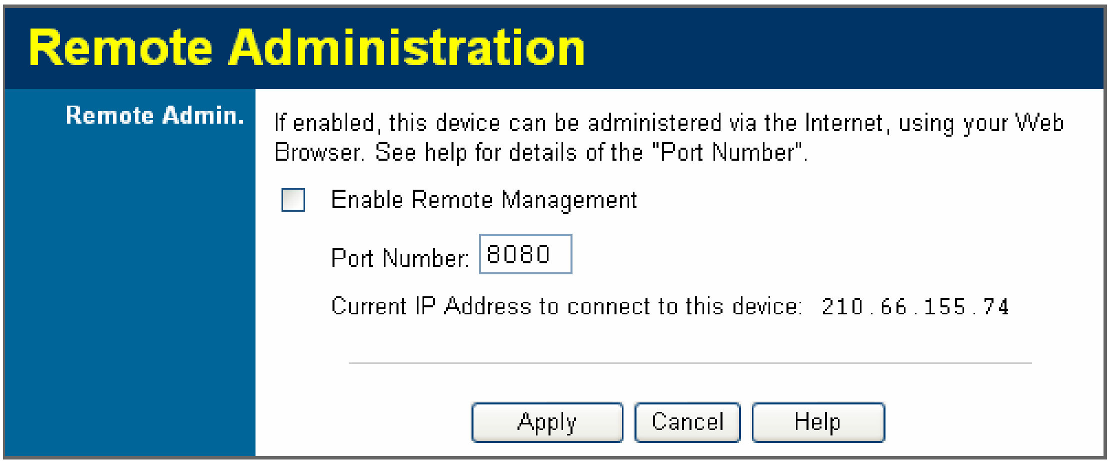
Parameter	Description
Known PCs	This lists all current entries. Data displayed is *name (IP Address) type*. The "type" indicates whether the PC is connected to the LAN.
Edit	Use this to change the data for the selected PC in the list. The data for the selected PC will then be shown in the "Properties" area, where it may be edited. (Click "Update" to save any changes.)

Delete	Use this to Delete the selected PC from the list. This should be done in 2 situations: ● The PC has been removed from your LAN. ● The entry is incorrect.
PC Properties	
Name	If adding a new PC to the list, enter its name here. It is best if this matches the PC's "hostname".
IP Address	Select the appropriate option: ● **Automatic:**The PC is set to be a DHCP client (Windows: "Obtain an IP address automatically"). The XRT-501 will allocate an IP address to this PC when requested to do so. The IP address could change, but normally won't. ● **DCHP Client:Reserved IP Address:** Select this if the PC is set to be a DCHP client, and you wish to guarantee that the XRT-501 will always allocate the same IP Address to this PC. Enter the required IP address. Only the last field is required; the other fields must match theXRT-501's IP address. ● **Fixed IP Address:** Select this if the PC is using a Fixed (Static) IP address. Enter the IP address allocated to the PC. (The PC must be configured to use this IP address.)
MAC Address	Select the appropriate option ● **Automatic discovery:** Select this to have the XRT-501 contact the PC and find its MAC address. This is only possible if the PC is connected to the LAN and powered On. ● **MAC is** - Enter the MAC address on the PC. The MAC address is also called the "Hardware Address", "Physical Address", or "Network Adapter Address". The XRT-501 uses this to provide a unique identifier for each PC. Because of this, the MAC address can NOT be left blank.
Buttons	
Add as New Entry	Add a new PC to the list, using the data in the "Properties" box. If "Automatic discovery" (for MAC address) is selected, the PC will be sent a "ping" to determine its hardware address. This will fail unless the PC is connected to the LAN, and powered on.
Update Selected PC	Update (modify) the selected PC, using the data in the "Properties" box.

Clear Form	Clear the "Properties" box, ready for entering data for a new PC.
Refresh	Update the data on screen.
Generate Report	Display a read-only list showing full details of all entries in the PC database.
Standard Screen	Click this to view the standard ***PC Database*** screen.

4.6 Remote Administration

If enabled, this feature allows you to manage the XRT-501 via the Internet.



Remote Administration

Remote Admin.

If enabled, this device can be administered via the Internet, using your Web Browser. See help for details of the "Port Number".

□ Enable Remote Management

Port Number: 8080

Current IP Address to connect to this device: 210.66.155.74

Parameter	Description
Remote Administration	
Enable Remote Management	Enable to allow management via the Internet. If Disabled, this device will ignore management connection attempts from the Internet.
Port Number	Enter a port number between 1024 and 65535. The default for HTTP (Web) connections is port 80, but using port 80 will prevent the use of a Web "Virtual Server" on your LAN. So using a different port number is recommended. The default value is 8080. The port number must be specified in your Browser when you connect. To specify the port number : 1. From a remote location, start your Browser. 2. In the "Address" or "Location" field, enter the **Internet** IP address of this device (NOT the LAN IP address), followed by the port number, as follows: http://ip_address:port_numberm Where:

	ip_address is the Internet IP address of this device. **port_number** is the port number assigned on this screen. You should then be prompted for the password for this device. (You must assign a password!)
Current IP Address	To manage this device via the Internet, you need to know the IP Address of this device, as seen from the Internet. This IP Address is allocated by your ISP, and is shown here. But if using a Dynamic IP Address, this value can change each time you connect to your ISP. There are 2 solutions to this problem: ● Have your ISP allocate you a Fixed IP address. ● Use the DDNS feature (Advanced menu) so you can connect using a Domain Name, rather than an IP address.

To connect from a remote PC via the Internet

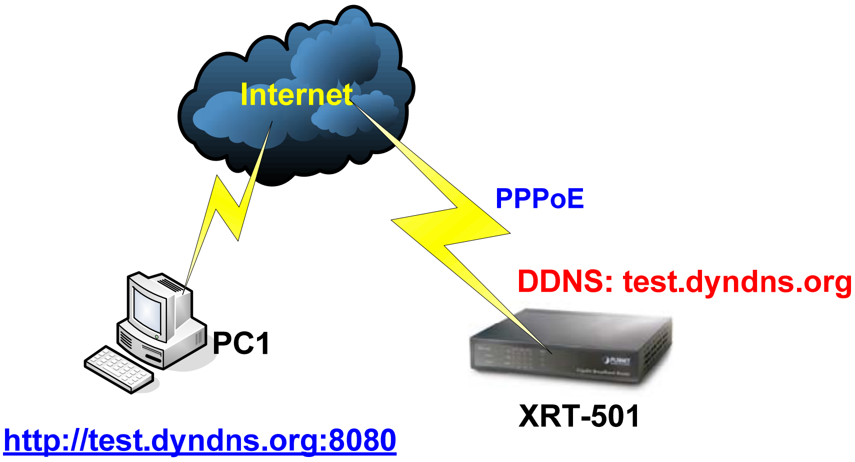
Ensure your Internet connection is established, and start your Web Browser.

In the "Address" bar, enter "HTTP://" followed by the Internet IP Address of the XRT-501. If the port number is not 80, the port number is also required. (After the IP Address, enter ":" followed by the port number.)

e.g.

http://test.dyndns.org:8080

This example assumes the WAN IP Address is PPPoE, and the port number is 8080.



4.7 Routing

Overview

- If you don't have other Routers or Gateways on your LAN, you can ignore the "Routing" page completely.

- If the XRT-501 is only acting as a Gateway for the local LAN segment, ignore the "Routing" page even if your LAN has other Routers.
- If your LAN has a standard Router (e.g. Cisco) on your LAN, and the XRT-501 is to act as a Gateway for all LAN segments, enable RIP (Routing Information Protocol) and ignore the Static Routing table.
- If your LAN has other Gateways and Routers, and you wish to control which LAN segments use each Gateway, do NOT enable RIP (Routing Information Protocol). Configure the Static Routing table instead. (You also need to configure the other Routers.)
- If using Windows 2000 Data center Server as a software Router, enable RIP on the XRT-501, and ensure the following Windows 2000 settings are correct:
  - ✓ Open *Routing and Remote Access*
  - ✓ In the console tree, select *Routing and Remote Access , [server name], IP Routing, RIP*
  - ✓ In the "Details" pane, right-click the interface you want to configure for RIP version 2, and then click "Properties".
  - ✓ On the "General" tab, set *Outgoing packet protocol* to "RIP version 2 broadcast", and *Incoming packet protocol* to "RIP version 1 and 2".

Routing Screen

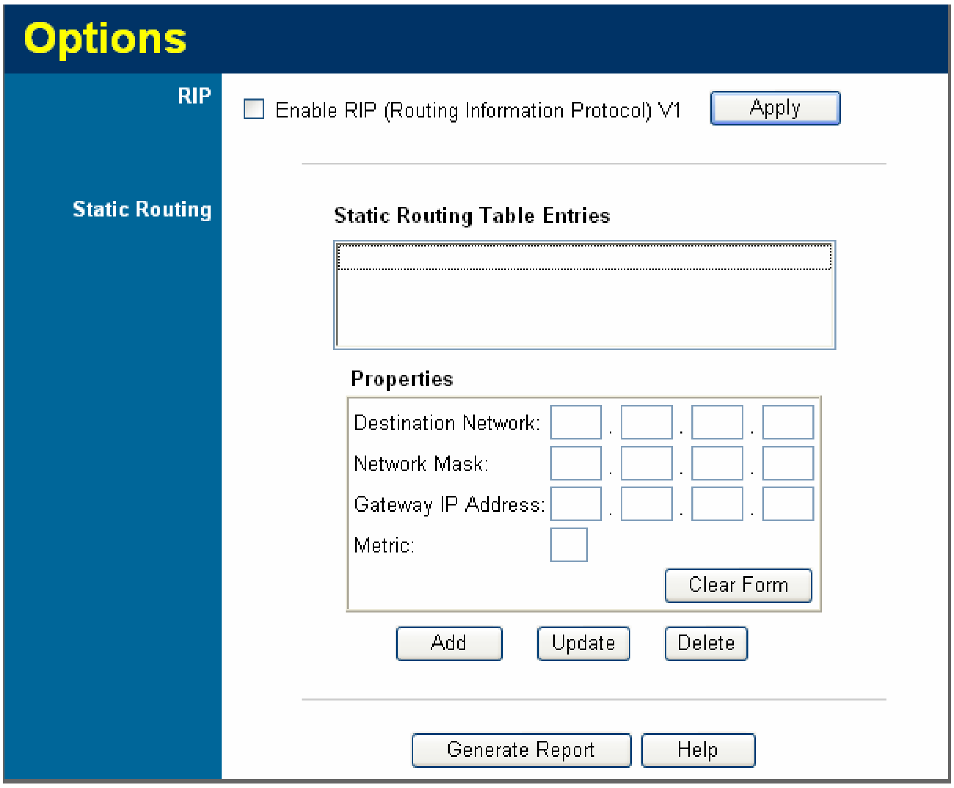
The routing table is accessed by the *Routing* link on the *Administration* menu.

Using this Screen

Generally, you will use either RIP (Routing Information Protocol) OR the Static Routing Table, as explained above, although is it possible to use both methods simultaneously.

Static Routing Table

- If RIP is not used, an entry in the routing table is required for each LAN segment on your Network, other than the segment to which this device is attached.
- The other Routers must also be configured. See *Configuring Other Routers on your LAN* later in this chapter for further details and an example.



Parameter	Description
RIP	
Enable RIP V1	Check this to enable the RIP (Routing Information Protocol) feature of the Broadband Router The XRT-501 supports RIP 1 only.
Static Routing	
Static Routing Table Entries	This list shows all entries in the Routing Table. ● The "Properties" area shows details of the selected item in the list. ● Change any the properties as required, then click the "Update" button to save the changes to the selected entry.

Properties	● **Destination Network:**The network address of the remote LAN segment. For standard class "C" LANs, the network address is the first 3 fields of the Destination IP Address. The 4th (last) field can be left at 0. ● **Network Mask:**The Network Mask for the remote LAN segment. For class "C" networks, the default mask is 255.255.255.0 ● **Gateway IP Address:**The IP Address of the Gateway or Router which the XRT-501 must use to communicate with the destination above. (NOT the router attached to the remote segment.) ● **Metric:** The number of "hops" (routers) to pass through to reach the remote LAN segment. The shortest path will be used. The default value is 2.
Buttons	
Save	Save the RIP setting. This has no effect on the Static Routing Table.
Add	Add a new entry to the Static Routing table, using the data shown in the "Properties" area on screen. The entry selected in the list is ignored, and has no effect.
Update	Update the current Static Routing Table entry, using the data shown in the "Properties" area on screen.
Delete	Delete the current Static Routing Table entry.
Clear Form	Clear all data from the "Properties" area, ready for input of a new entry for the Static Routing table.
Generate Report	Generate a read-only list of all entries in the Static Routing table.

Configuring Other Routers on your LAN

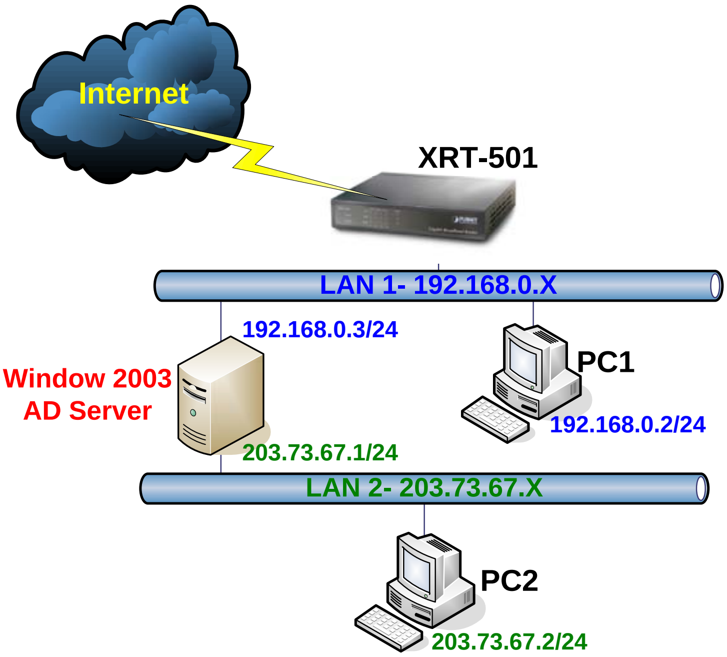
It is essential that all IP packets for devices not on the local LAN be passed to the XRT-501, so that they can be forwarded to the external LAN, WAN, or Internet. To achieve this, the local LAN must be configured to use the XRT-501 as the *Default Route* or *Default Gateway*.

Local Router

The local router is the Router installed on the same LAN segment as the XRT-501. This router requires that the *Default Route* is the XRT-501 itself. Typically, routers have a special entry for the *Default Route*. It should be configured as follows.

Destination IP Address	Normally 0.0.0.0, but check your router documentation.
Network Mask	Normally 0.0.0.0, but check your router documentation.
Gateway IP Address	The IP Address of the Broadband Router.
Metric	2

Static Routing - Example

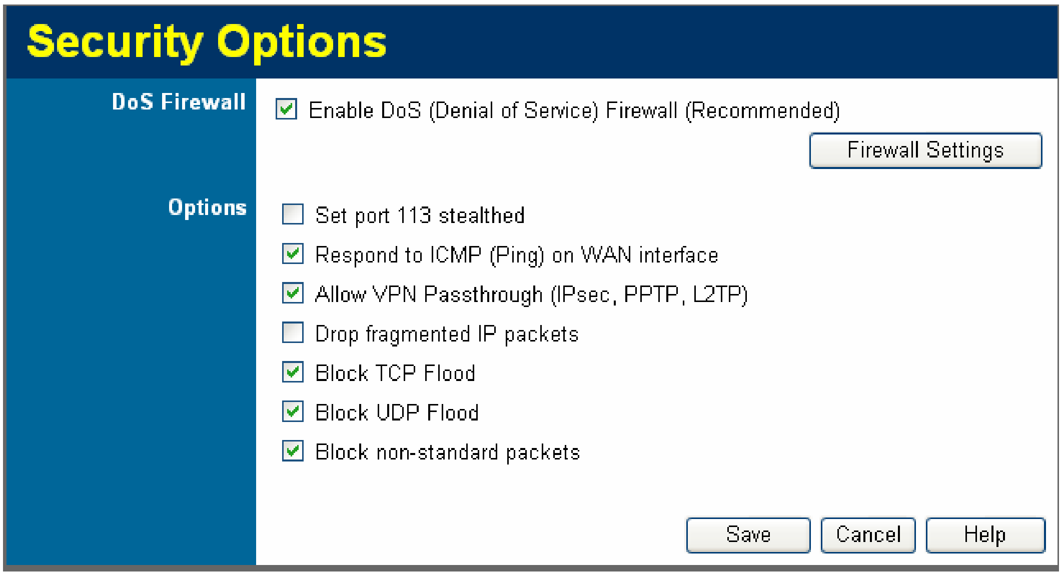


For the XRT-501's Routing Table

Entry 1	
Destination IP Address	203.73.67.0
Network Mask	255.255.255.0 (Standard Class C)
Gateway IP Address	192.168.0.3
Metric	2

4.8 Security

This screen allows you to set Firewall and other Security-Related options.

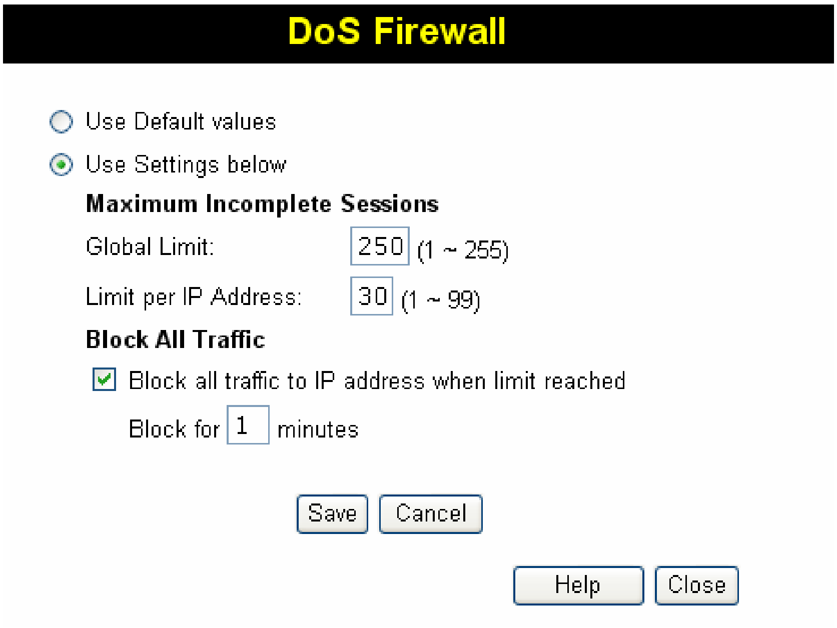


☑ Enable DoS (Denial of Service) Firewall (Recommended)

□ Set port 113 stealthed
☑ Respond to ICMP (Ping) on WAN interface
☑ Allow VPN Passthrough (IPsec, PPTP, L2TP)
□ Drop fragmented IP packets
☑ Block TCP Flood
☑ Block UDP Flood
☑ Block non-standard packets

Parameter	Description
DoS Firewall	
Enable DoS Firewall	If enabled, DoS (Denial of Service) attacks will be detected and blocked. The default is enabled. It is strongly recommended that this setting be left enabled. **Note:** ● A DoS attack does not attempt to steal data or damage your PCs, but overloads your Internet connection so you can not use it - the service is unavailable. ● This device uses "Stateful Inspection" technology. This system can detect situations where individual TCP/IP packets are valid, but collectively they become a DoS attack.
Firewall Settings Button	If you wish to adjust the settings used by the DoS firewall, click this button to open a sub-window.
Options	
Respond to ICMP	The ICMP protocol is used by the "ping" and "traceroute" programs, and by network monitoring and diagnostic programs. ● If checked, the XRT-501 will repond to ICMP packets received from the Internet. ● If not checked, ICMP packets from the Internet will be ignored. Disabling this option provides a slight increase in security.

Allow VPN Passthrough	The IPSec, PPTP, and L2TP protocols are used to establish a secure connection, and are widely used by VPN (Virtual Private Networking) programs. ● If checked, these VPN connections are allowed. ● If not checked, these VPN connections are blocked. **Note**: IPSec sessions must NOT use AH (Authentication Header). Packets using AH cannot be routed correctly.
Drop fragmented IP packets	If enabled, fragmented IP packets are discarded, forcing re-transmission of these packets. In some situations, this could prevent successful communication.
Block TCP Flood	A TCP flood is excessively large number of TCP connection requests. This is usually a DoS (Denial of Service) attack. This setting should be normally be enabled.
Block UDP Flood	A UDP flood is excessively large number of UDP packets. This is usually a DoS (Denial of Service) attack. This setting should be normally be enabled.
Block non-standard packets	Abnormal packets are often used by hackers and in DoS attacks, but may also be generated by mis-configured network devices. (PCs will normally not generate non-standard packets.) This setting should normally be enabled.



DoS Firewall

○ Use Default values

● Use Settings below

Maximum Incomplete Sessions

Global Limit: 250 (1 ~ 255)

Limit per IP Address: 30 (1 ~ 99)

Block All Traffic

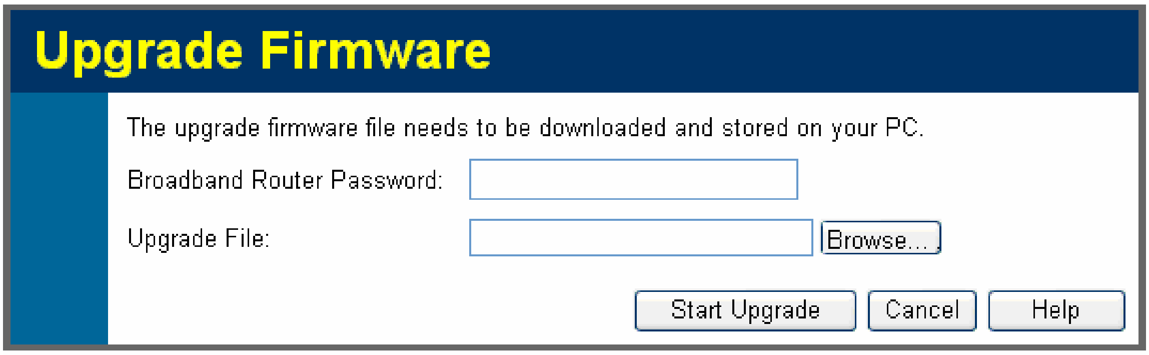
☑ Block all traffic to IP address when limit reached

Block for 1 minutes

4.9 Upgrade Firmware

The firmware (software) in the XRT-501 can be upgraded using your Web Browser.
You must first download the upgrade file, then select *Upgrade* on the *Administration* menu.

You will see a screen like the following.



Upgrade Firmware

The upgrade firmware file needs to be downloaded and stored on your PC.

Broadband Router Password:

Upgrade File:

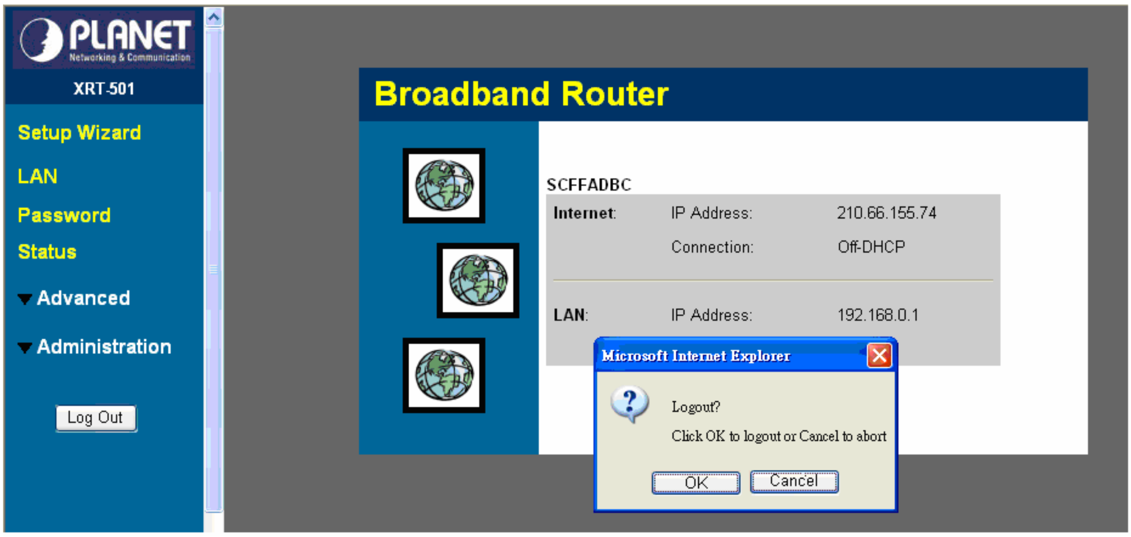
To perform the Firmware Upgrade:

1. Click the "Browse" button and navigate to the location of the upgrade file.
2. Select the upgrade file. Its name will appear in the *Upgrade File* field.
3. Click the "Start Upgrade" button to commence the firmware upgrade.

✍**Note** The XRT-501 is unavailable during the upgrade process, and must restart when the upgrade is completed. Any connections to or through the XRT-501 will be lost.

4.10 Logout

You must logout XRT-501 first, otherwise other clients wont be able to login XRT-501, it only allow one client to access to it at the same time.



SCFFADBC

Internet:	IP Address:	210.66.155.74
	Connection:	Off-DHCP
LAN:	IP Address:	192.168.0.1

Microsoft Internet Explorer

Logout?

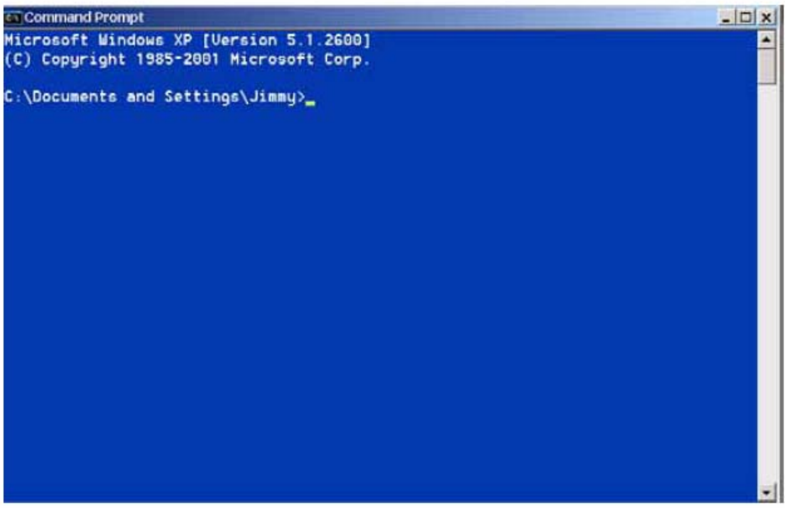
Click OK to logout or Cancel to abort

Click <Log Out> to Logout XRT-501.

Appendix A

How to Manually find your PC's IP and MAC address

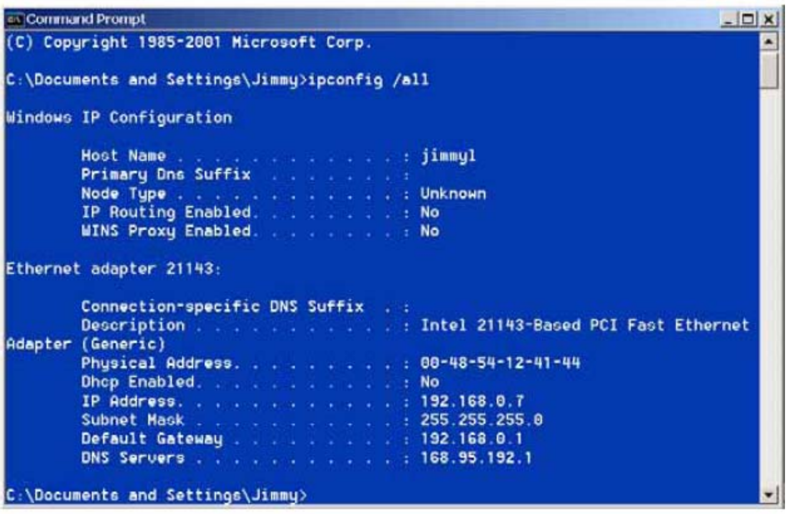
1) In Window's open the Command Prompt program



```
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\Jimmy>_
```

2) Type **ipconfig /all** and <enter>



```
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\Jimmy>ipconfig /all

Windows IP Configuration

        Host Name . . . . . . . . . . . . : jimmyl
        Primary Dns Suffix  . . . . . . . :
        Node Type . . . . . . . . . . . . : Unknown
        IP Routing Enabled. . . . . . . . : No
        WINS Proxy Enabled. . . . . . . . : No

Ethernet adapter 21143:

        Connection-specific DNS Suffix  . :
        Description . . . . . . . . . . . : Intel 21143-Based PCI Fast Ethernet
Adapter (Generic)
        Physical Address. . . . . . . . . : 00-48-54-12-41-44
        Dhcp Enabled. . . . . . . . . . . : No
        IP Address. . . . . . . . . . . . : 192.168.0.7
        Subnet Mask . . . . . . . . . . . : 255.255.255.0
        Default Gateway . . . . . . . . . : 192.168.0.1
        DNS Servers . . . . . . . . . . . : 168.95.192.1

C:\Documents and Settings\Jimmy>
```

- Your PC's IP address is the one entitled **IP address** (192.168.0.7)
- The router's IP address is the one entitled **Default Gateway** (192.168.0.1)
- Your PC's MAC Address is the one entitled **Physical Address** (00-48-54-12-41-44)

Glossary

Default Gateway (Router): Every non-router IP device needs to configure a default gateway's IP address. When the device sends out an IP packet, if the destination is not on the same network, the device has to send the packet to its default gateway, which will then send it out towards the destination.

DHCP: Dynamic Host Configuration Protocol. This protocol automatically gives every computer on your home network an IP address.

DNS Server IP Address: DNS stands for Domain Name System, which allows Internet servers to have a domain name (such as www.Broadbandrouter.com) and one or more IP addresses (such as 192.34.45.8). A DNS server keeps a database of Internet servers and their respective domain names and IP addresses, so that when a domain name is requested (as in typing "www.planet.com.tw" into your Internet browser), the user is sent to the proper IP address. The DNS server IP address used by the computers on your home network is the location of the DNS server your ISP has assigned to you.

DSL Modem: DSL stands for Digital Subscriber Line. A DSL modem uses your existing phone lines to transmit data at high speeds.

Ethernet: A standard for computer networks. Ethernet networks are connected by special cables and hubs, and move data around at up to 10/100 million bits per second (Mbps).

Idle Timeout: Idle Timeout is designed so that after there is no traffic to the Internet for a preconfigured amount of time, the connection will automatically be disconnected.

IP Address and Network (Subnet) Mask: IP stands for Internet Protocol. An IP address consists of a series of four numbers separated by periods, that identifies a single, unique Internet computer host in an IP network. Example: 192.168.0.1. It consists of 2 portions: the IP network address, and the host identifier.
The IP address is a 32-bit binary pattern, which can be represented as four cascaded decimal numbers separated by " aaa.aaa.aaa.aaa", where each "aaa" can be anything from 000 to 255, or as four cascaded binary numbers separated by "bbbbbbbb.bbbbbbbb.bbbbbbbb.bbbbbbbb", where each "b" can either be 0 or 1.
A network mask is also a 32-bit binary pattern, and consists of consecutive leading 1's followed by consecutive trailing 0's, such as 11111111.11111111.11111111.00000000. Therefore sometimes a network mask can also be described simply as "x" number of leading 1's.
When both are represented side by side in their binary forms, all bits in the IP address that correspond to 1's in the network mask become part of the IP network address, and the remaining bits correspond to the host ID.

For example, if the IP address for a device is, in its binary form,11011001.10110000. 10010000.00000111, and if its network mask is, 11111111.11111111.11110000.00000000

It means the device’s network address is 11011001.10110000.10010000.00000000, and its host ID is, 00000000.00000000.00000000.00000111. This is a convenient and efficient method for routers to route IP packets to their destination.

ISP Gateway Address: (see ISP for definition). The ISP Gateway Address is an IP address forthe Internet router located at the ISP's office.

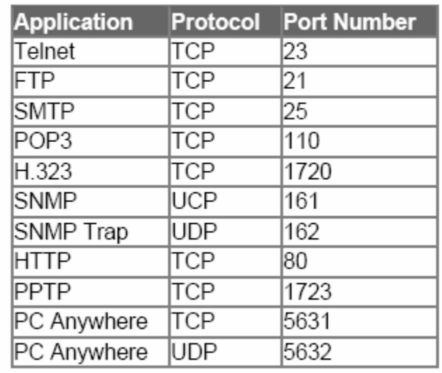
ISP: Internet Service Provider. An ISP is a business that provides connectivity to the Internet for individuals and other businesses or organizations.

LAN: Local Area Network. A LAN is a group of computers and devices connected together in a relatively small area (such as a house or an office). Your home network is considered a LAN.

MAC Address: MAC stands for Media Access Control. A MAC address is the hardware address of a device connected to a network. The MAC address is a unique identifier for a device with an Ethernet interface. It is comprised of two parts: 3 bytes of data that corresponds to the Manufacturer ID (unique for each manufacturer), plus 3 bytes that are often used as the product’s serial number.

NAT: Network Address Translation. This process allows all of the computers on your home network to use one IP address. Using XRT-401E’s NAT capability, you can access the Internet from any computer on your home network without having to purchase more IP addresses from your ISP.

Port: Network Clients (LAN PC) uses port numbers to distinguish one network application/protocol over another. Below is a list of common applications and protocol/port numbers:



Application	Protocol	Port Number
Telnet	TCP	23
FTP	TCP	21
SMTP	TCP	25
POP3	TCP	110
H.323	TCP	1720
SNMP	UCP	161
SNMP Trap	UDP	162
HTTP	TCP	80
PPTP	TCP	1723
PC Anywhere	TCP	5631
PC Anywhere	UDP	5632

PPPoE: Point-to-Point Protocol over Ethernet. Point-to-Point Protocol is a secure data transmission method originally created for dial-up connections; PPPoE is for Ethernet connections. PPPoE relies on two widely accepted standards, Ethernet and the

Point-to-Point Protocol. It is a communications protocol for transmitting information over Ethernet between different manufacturers

Protocol: A protocol is a set of rules for interaction agreed upon between multiple parties so that when they interface with each other based on such a protocol, the interpretation of their behavior is well defined and can be made objectively, without confusion or misunderstanding.

Router: A router is an intelligent network device that forwards packets between different networks based on network layer address information such as IP addresses.

Subnet Mask: A subnet mask, which may be a part of the TCP/IP information provided by your ISP, is a set of four numbers (e.g. 255.255.255.0) configured like an IP address. It is used to create IP address numbers used only within a particular network (as opposed to valid IP address numbers recognized by the Internet, which must be assigned by InterNIC).

TCP/IP, UDP: Transmission Control Protocol/Internet Protocol (TCP/IP) and Unreliable Datagram Protocol (UDP). TCP/IP is the standard protocol for data transmission over the Internet. Both TCP and UDP are transport layer protocol. TCP performs proper error detection and error recovery, and thus is reliable. UDP on the other hand is not reliable. They both run on top of the IP (Internet Protocol), a network layer protocol.

WAN: Wide Area Network. A network that connects computers located in geographically separate areas (e.g. different buildings, cities, countries). The Internet is a wide area network.

Web-based management Graphical User Interface (GUI): Many devices support a graphicaluser interface that is based on the web browser. This means the user can use the familiar Netscape or Microsoft Internet Explorer to Control/configure or monitor the device being managed.

PLANET
Networking & Communication

EC Declaration of Conformity

For the following equipment:

*Type of Product : Gigabit Broadband Router
*Model Number : XRT-501

* Produced by:
Manufacturer‘s Name: **Planet Technology Corp.**
Manufacturer‘s Address: 11F, No. 96, Min Chuan. Road, Hsin Tien
Taipei, Taiwan, R.O.C.

is herewith confirmed to comply with the requirements set out in the Council Directive on the Approximation of the Laws of the Member States relating to Electromagnetic Compatibility (89/336/EEC, Amended by 92/31/EEC, 93/68/EEC & 98/12/EC).
For the evaluation regarding the Electromagnetic Compatibility, the following standards were applied:

Emission	EN 55022	(2006, Class B)
Harmonic	EN 61000-3-2	(2000 + A2: 2005)
Flicker	EN 61000-3-3	(1995 + A1:2001)
Immunity	EN 55024	(1998 + A1:2001 + A2:2003)
ESD	IEC 61000-4-2	(1995 + A1: 1998 + A2: 2000)
RS	IEC 61000-4-3	(2002 + A1: 2002)
EFT/ Burst	IEC 61000-4-4	(2004)
Surge	IEC 61000-4-5	(1995 + A1: 2000)
CS	IEC 61000-4-6	(1996 + A1: 2001)
Magnetic Field	IEC 61000-4-8	(1993 + A1: 2000)
Voltage Disp	IEC 61000-4-11	(2004)

Responsible for marking this declaration if the:

☒ **Manufacturer** □ **Authorized representative established within the EU**

Authorized representative established within the EU (if applicable):

Company Name: Planet Technology Corp.

Company Address: 11F, No.96, Min Chuan Road, Hsin Tien, Taipei, Taiwan, R.O.C

Person responsible for making this declaration

Name, Surname Allen Huang

Position / Title : Product Manager

Taiwan **4th Feb., 2008** Allen
Place *Date* *Legal Signature*

PLANET TECHNOLOGY CORPORATION