

Internet BroadBand Router

1 WAN + 4 LAN

User Guide

FCC Warning

This equipment has been tested and found to comply with the regulations for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with this user's guide, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

CE Mark Warning

This is a Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

注意

この装置は、情報処理装置等電波障害自主規制協議会 (VCCI) の基準に基づく第一種情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

P/N: 1907SHIS1045000

Rev.A1-01

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ABOUT THIS GUIDE

Congratulations on your purchase of this 4-port Broadband Router. This device integrates 100Mbps Fast Ethernet and 10Mbps Ethernet network capabilities in a highly flexible desktop package. It provides a complete solution for Internet surfing and office resources sharing, and it is easy to configure and operate for even non-technical users.

Purpose

This manual discusses how to install the 4-port Broadband Router.

Overview of this User's Guide

Introduction. Describes the Broadband Router and its features.

Unpacking and Setup. Helps you get started with the basic installation of the Router.

Identifying External Components. Describes the front panel, rear panel and LED indicators of the Router.

Connecting the Router. Tells how you can connect the Router to your xDSL/Cable Modem.

Technical Specifications. Lists the technical (general, physical and environmental, performance and Routers settings) specifications of the Broadband Router.

INTRODUCTION

With the explosive growth of the Internet, accessing information and services at any time, day or night has become a standard requirement for most people. The era of the standalone PC is waning. Networking technology is moving out of the exclusive domain of corporations and into homes with at least two computers.

Broadband network access is also gaining ground. However, allowing more than two computers to access the Internet at the same time means less affordable, higher costs. Thus, there is a need to share one legal IP address over a single Internet connection to link the home with the Internet.

The scarcity of IP addresses and using a shared Internet connection through an Internet sharing device can solve high network access costs. All linked computers can make full use of broadband capabilities over such a device.

This device not only comes equipped with a wide range of features, but also can be installed and configured right out of the box. This device supports a simple local area network and Internet access share, offering great cost savings.

The local area network connects up home computers while also allowing any of the computers to access the Internet, share resources, or play online games—the basis of the family computing lifestyle.

Applications:

Broadband Internet access:

Several computers can share one high-speed broadband connection (LAN and WAN-Internet).

Resource sharing:

Share resources such as printers, scanners and other peripherals.

File sharing:

Exchange data, messages, and distribute files thus making good use of hard disk space.

Online gaming:

Through the local area network, online gaming and e-commerce services can be easily setup.

Firewall:

A built-in firewall function — for security and anti-hack system.

UNPACKING AND SETUP

This chapter provides unpacking and setup information for the Broadband Router.

Unpacking

Open the box of the Broadband Router and carefully unpack it. The box should contain the following items:

- ◆ One 4-port Broadband Router
- ◆ One external power adapter
- ◆ This User's Guide

If any item is found missing or damaged, please contact your local reseller for replacement.

Setup

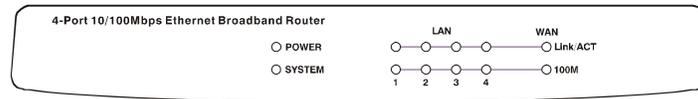
The setup of the Broadband Router can be performed using the following steps:

- ◆ The power outlet should be within 1.82 meters (6 feet) of the Broadband Router.
- ◆ Visually inspect the DC power jack and make sure that it is fully secured to the power adapter.
- ◆ Make sure that there is proper heat dissipation from and adequate ventilation around the Broadband Router. Do not place heavy objects on the Broadband Router.

HARDWARE INSTALATION

Front Panel

The figure below shows the front panel of the Broadband Router.



Front Panel

POWER

This indicator lights green when the hub is receives power, otherwise, it is off.

SYSTEM

This indicator blinks green means the Internet Broadband Router is working successful. Otherwise, this indicator always on or off means the function of the Internet Broadband Router is fail.

WAN (Link/ACT)

This indicator lights green when the WAN port is connected to an xDSL/Cable modem successfully.

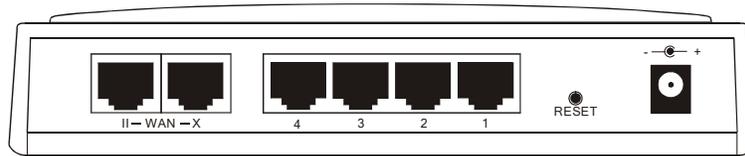
This indicator blinks green while the WAN port is transmitting or receiving data on the xDSL/Cable modem.

LAN (Link/ACT)

From port 1 to port 4 indicator lights green when the LAN port is connected to a 100Mbps Fast Ethernet station, if the indicator blinks green while transmitting or receiving data on the 100Mbps Fast Ethernet or 10Mbps Ethernet network.

Rear Panel

The figure below shows the rear panel of the Broadband Router.



Real Panel

WAN

There are two RJ-45 ports for the WAN, the port can be either connected to “II” which is for hub/switch and “X” port for crossover, and this will fit the xDSL/Cable modem’s specification need.

NOTE: Only *one port can be plug-in to the WAN port, either the “II” port or “X” port.*

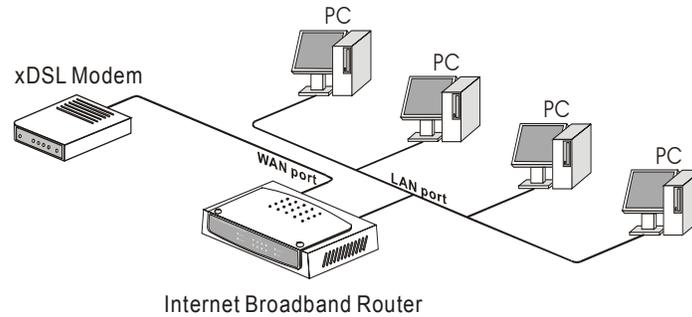
LAN (1-4)

Four RJ-45 10/100Mbps auto-sensing ports for connecting to either 10Mbps or 100Mbps Ethernet connections.

RESET

Use a pin-shape item to push to reset this device to factory default settings. It will be useful too when the manager forgot the password to login, but the setting will be back to default setting.

Hardware connections



Connect the Internet Broadband Router

1. Plug in one end of the network cable to the WAN port of the Internet Broadband Router, either the “X” or “II” port to be connected, depends of what the broadband modem specification is using.
2. Plug in the other end of the network cable to the Ethernet port of the xDSL or Cable modem.
3. Use another network cable to connect to the Ethernet card on the computer system, the other end of the cable connects to the LAN port of the Internet Broadband Router. Since the Internet Broadband Router has four ports, you can connect up to four computers directly to the unit. There you do not have to buy a switch to connect these computers since one Internet Broadband Router functions both as a connection-sharing unit and as a switch.

Check the installation

The control LEDs of the Internet Broadband Router are clearly visible and the status of the network link can be seen instantly:

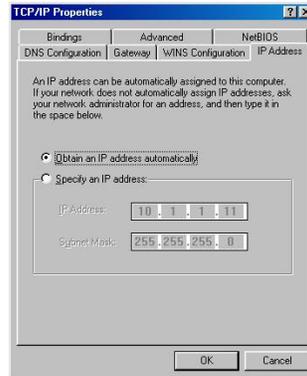
1. With the power source on, once the device is connected to the broadband modem, the Power, CPU, LAN and WAN port link LEDs of the Internet Broadband Router will light up indicating a normal status.
2. By using a Straight Through Cable, the WAN's "X" port must connect to MDI uplink port, and the WAN's "II" port must connect to MDII regular port.
3. If the WAN Port's Link indicator does not light up then replace the RJ-45 cable that plugged onto WAN's "X" port to the "II" port or from the "II" port to the "X" port at the rear to meet the specification need of the xDSL or Cable modem.
4. While the LAN is link up to the computer system, the LAN port's Link/ACT LED will light up.

PC NETWORK TCP/IP SETTING

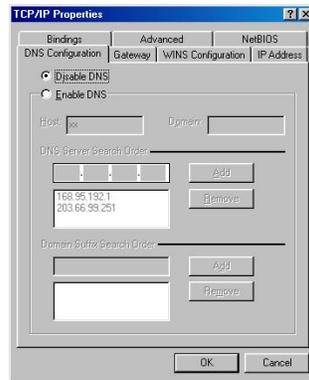
The network TCP/IP settings differ based on the computer's operating system (Win95/98/ME/NT/2000) and are as follows.

Windows 95/98/ME

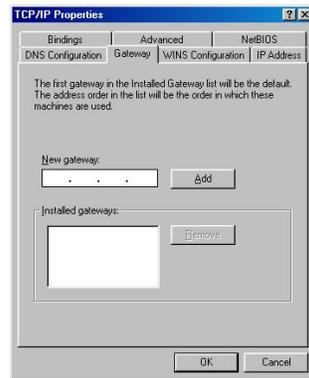
1. Click on the “**Network neighborhood**” icon found on the desktop.
2. Click the right mouse button and a context menu will be show.
3. Select “**Properties**” to enter the TCP/IP setting screen.
4. Select “**Obtain an IP address automatically**” on the “**IP address**” field.



5. Select “Disable DNS” in the “DNS” field.



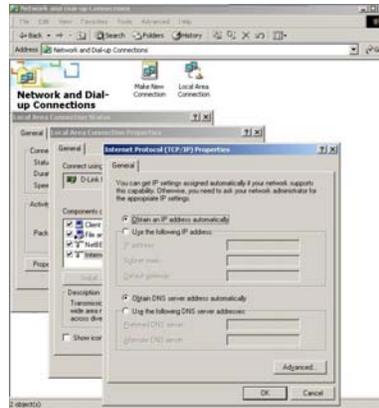
6. Select “None” for the “Gateway address” field.



Windows 2000

Double click on the “**My computer**” icon on the desktop. When “**My computer**” window opens, open the “**Control panel**” and then open the “**Network dialup connection**” applet. Double click on the “**Local area network connection**” icon. Select “**Properties**” to enter the TCP/IP setting window.

1. In the “**Local area network status**” window, click on “**Properties.**”
2. In the “**Local area network connection**” window, first select TCP/IP setting and then select “**Properties.**”
3. Set both “**IP address**” and “**DNS**” to **Automatic configuration.**



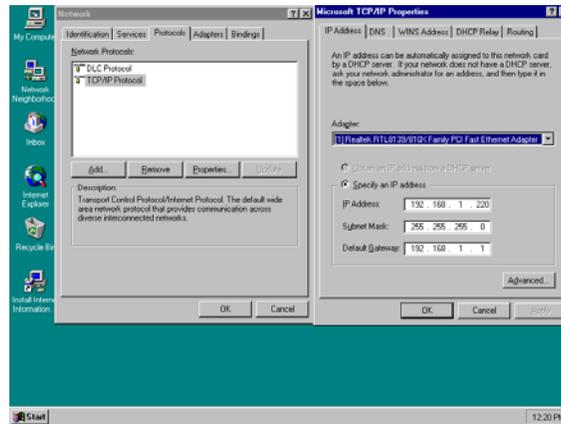
Windows NT4.0

Click on the “**Start**” button located on the lower left corner of the menu bar.

Select “**Settings**” and then “**Control panel.**”

In the “**Control panel**” window, select “**Network**” to enter the TCP/IP setting window.

1. Set “**IP address**” to “**Obtain an IP address automatically.**”
2. Set “**DNS**” to “**Disable DNS.**”



INTERNET BROADBAND ROUTER CONFIGURATION

First make sure that the network connections are functioning normally. This Internet Broadband Router can be configured using Internet Explorer 4.0 or newer web browser versions.

Login to the Internet Broadband Router

Before you configure this device, note that when the Broadband Router is configured through an Ethernet connection, make sure the host PC must be set on the **IP subnetwork** that can be accessed by the xDSL/Cable modem. For example, when the default network address of the xDSL/Cable modem Ethernet interface is 192.168.1.x, then the host PC should be set at 192.168.1.xxx (where xxx is a number between 2 and 254), and the default subnet mask is 255.255.255.0.

1. Open Internet Explorer 4.0 or above Internet browser.
2. Enter IP address ***http://192.168.1.1*** (the factory-default IP address setting) to the URL web address location.



3. When the following dialog box appears, remain blank (first login) or enter the password and press Login to enter the main configuration window.



Note: If needed to set a password, then refer to the **Administrator Setting**.

4. After entering the password, the main web page comes up, there are two choices for setting, Quick Setup or Advanced Setup, it is recommended that the beginner to use the Quick Setup, it will lead you step by step to configure the Broadband Router.



Quick Setup

In the main web page, select “Quick Setup” to specify the Time Zone and the WAN connection type: Cable modem (DHCP), Fixed IP, or Dial-up xDSL (PPPoE).

1-1 Time Zone

To set the time zone in order to synchronize the system clock in the global through the SNTP Server.

1. Time Zone

Set Time Zone

Set Daylight Saving (Optional)

Enable

Start from

End by

1-2 WAN Connection Type

To select which the WAN connection type will be connected to, point the cursor to the Cable modem (DHCP), Fixed IP, or Dial-up xDSL (PPPoE) to process.

2. WAN Type
Specify the WAN connection type required by your Internet Service Provider. Specify a Cable modem, Fixed-IP xDSL, or PPPoE xDSL.

Cable Modem
A Cable modem requires minimal configuration. When you have set up an account with your Cable provider, the Cable modem will automatically configure itself, so you probably do not need to enter anything more. However, if there is a Domain Name System (DNS) server that you would rather use, you need to specify the IP address.

Fixed-IP xDSL
Some xDSL Internet Service Providers may assign a fixed IP address for your Broadband Router. If you have been provided with this information, choose this option and enter the assigned IP address, subnet mask, gateway IP and DNS IP addresses for your Broadband Router.

Dial-Up xDSL(PPPoE)
If you connect to the Internet using an xDSL Modem and your ISP has provided you with a password, and Service Name, then your ISP uses PPPoE. You must choose this option and enter the required information.

PPTP
If your ISP provided you the PPTP Account, PPTP Password, Host Name, Service IP Address, IP Address, Subnet Mask and the Connection ID, then your ISP uses PPTP. You have to choose this option and enter the required information.

1-2-1 Cable modem (DHCP)

To connect a cable modem with the Broadband Router, check the cable modem with the related user's guide, then the Cable modem will automatically configure itself, the Broadband Router is configured to automatically assign addresses to each PC.

Fill up the MAC Address of the network adapter when the DNS server need a certain address with the network adapter, or press the "Clone MAC Address" button to get the manager's PC MAC Address.

Host Name

MAC Address - - - - -

1-2-2 Fixed IP

If the Internet Service Providers assign a fixed IP address, choose this option and enter the assigned IP address, subnet mask, gateway IP and DNS IP addresses for your Broadband Router.

Fixed-IP xDSL

IP address assigned by your ISP	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Subnet Mask	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
ISP Gateway Address	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

1-2-3 Dial-up xDSL (PPPoE)

If connected to the Internet using a Dial-up xDSL (PPPoE) Modem, the ISP will provide a Password and User Name, then the ISP uses PPPoE. Choose this option and enter the required information, if the ISP provided a Service Name, enter it in the column of the Service Name field, otherwise, leave it blank.

The MTU feature specifies the largest packet size permitted for network transmission. Enter the value desired, for most DSL users, it is recommended to use 1492.

By default, MTU is set at 1492.

Dial-Up xDSL(PPPoE)

The Maximum Idle Time feature can control the connection time while user's need to save the cost of connection fee from ISP provider (default time=0, always connect). Click on the

User Name	<input type="text"/>
Password	<input type="text"/>
Please retype your password	<input type="text"/>
Service Name	<input type="text"/>
MTU (1400-1492)	<input type="text" value="1492"/>
Maximum Idle Time	<input type="text" value="0"/> (minutes) <input type="checkbox"/> Connect-on-demand

Connect-on-demand button to dial up to the ISP when only on demand, while there is a need of connecting to the ISP automatically.

1-2-4 PPTP

If connected to the Internet using a (PPTP) xDSL Modem, enter the PPTP Account Name, PPTP Password, Host Name, Service IP Address, Your IP Address, Your Subnet Mask required by your ISP in the appropriate fields. If your ISP has provided you with a Connection ID, enter it in the Connection ID field, otherwise, leave it zero.



The image shows a PPTP configuration form with the following fields and values:

Field	Value
PPTP Account	
PPTP Password	
Please retype your password	
Host Name	
Service IP Address	0.0.0.0
My IP Address	0.0.0.0
My Subnet Mask	0.0.0.0
Connection ID	0 (Optional)
MTU (1400-1460)	1460
Maximum Idle Time	0 minutes <input type="checkbox"/> Connect-on-demand

The MTU feature specifies the largest packet size permitted for network transmission. Enter the value desired, for most DSL users, it is recommended to use 1460. By default, MTU is set at 1460

The Maximum Idle Time feature can control the connection time while user's need to save the cost of connection fee from ISP provider (default time=0, always connect). Click on the Connect-on-demand button to dial up to the ISP when only on demand, while there is a need of connecting to the ISP automatically.

1-3 DNS

The Domain Name System (DNS) is the way that Internet domain names are located and translated into Internet Protocol (IP) addresses.



The image shows a DNS configuration form with the following fields and values:

Field	Value
Primary DNS address	
Secondary DNS address	

If your ISP provided at least one DNS Server IP Address, type that **IP Address** in the Primary DNS address fields. You can type up to another DNS Server IP Addresses. The Router will utilize these for quicker access to functioning DNS Servers.

1-4 Status

When finish configuring the Quick Setup, the Status screen will list up the connection status for the Broadband Routers' WAN/LAN interfaces, firmware and hardware version numbers, and the number of connected clients to the network.

WAN	
Connection Type	Dynamic IP
Cable/DSL	DISCONNECT
WAN IP	0.0.0.0
Subnet Mask	0.0.0.0
Gateway	0.0.0.0
DNS	0.0.0.0
Secondary DNS	0.0.0.0
<input type="button" value="Release"/>	<input type="button" value="Renew"/>

LAN	
IP Address	192.168.1.1
Subnet Mask	255.255.255.0
DHCP Server	Enabled
Firewall	Enabled

INFORMATION	
Connected Clients	1
Runtime Code Version	V1.00.0249
Boot Code Version	V1.00.70
LAN MAC Address	00-48-54-00-00-01
WAN MAC Address	00-48-54-00-00-02
Hardware Version	IS104-REV.A
Serial Number	IS104-100

Advance Setup

The Broadband Router supports advanced functions like System setting, WAN setting, LAN setting, NAT Setting and Firewall setting.

2-1 System

This page includes all the basic configuration tools for the Broadband Router. Point the selections in the left side of the menu screen.



2-1-1 System Time

Connecting to a Simple Network Time Protocol (SNTP) server allows the Broadband Router to synchronize the system clock to the global Internet through the SNTP Server. The synchronized clock in the Broadband Router is used to record the system log and control client filtering.

Set Time Zone: (GMT-05:00) Central Time (US & Canada) ▼

Set Daylight Saving (Optional)

Enable

Start from: ▼ ▼

End by: ▼ ▼

2-1-2 Administrator Settings

- Password Settings

Set a password to restrict management access to the Broadband Router.

Current Password:

Password:

Re-type password: (3-12 Characters)

Idle Time Out: Min (0 = No Time Out)

- Remote Management from Internet

To manage the Broadband Router from a remote location (outside of the local network through WAN port), it must specify the IP address of the remote PC, otherwise, leave the IP address 0.0.0.0, means all legal IP address can access the device.

Remote Management

Enable

IP Address: . . .

2-1-3 Firmware Upgrade

By upgrading a new firmware for the Broadband Router to improve functionality and performance. Enter the path and name of the upgrade file then click the APPLY button below. You will be prompted to confirm the upgrade.

Current Firmware Version: V 1.00.0196
Firmware Date: 2002.06.25

 At the end of the upgrade, the Broadband Router may not respond to commands for as long as one minute. This is normal behavior and do not turn off Broadband Router during the time.

While updating the firmware, please wait after pressing the APPLY button, and follow the instruction on the screen, the System Light on the front panel will start blinking when the firmware upgraded successfully.

Upgrade Firmware Successfully

Your Broadband Router has successfully been upgraded.

Please wait until the system light starts blinking.

2-1-4 Configuration Tools

Use the "Backup Settings" tool to save the Broadband Router's current configuration to a file named "config.bin" on your PC. You can then use the "Restore Settings" tool to restore the saved configuration of the Broadband Router that you set before. Alternately, you can use the "Restore to Factory Defaults" tool to force the Broadband Router to perform reset and restore the original factory settings.

- Restore Factory Default Configuration
- Backup Settings / Restore settings

● Restore Factory Default

To restore the factory default settings of the Broadband Router, click on the "Restore" button.

- **Backup Settings**
Press the “Backup Settings” button to save the current setting in a file named “config.bin” or given filename.
- **Restore Settings**
To restore the backup file to the Broadband Router, enter the path and filename on the restore settings.

2-1-5 Status

Use the Status screen to see the connection status for the Broadband Routers' WAN/LAN interfaces, firmware and hardware version numbers, and the number of connected clients to the network.

WAN	
Connection Type	Dynamic IP
Cable/DSL	DISCONNECT
WAN IP	0.0.0.0
Subnet Mask	0.0.0.0
Gateway	0.0.0.0
DNS	0.0.0.0
Secondary DNS	0.0.0.0
<input type="button" value="Release"/>	<input type="button" value="Renew"/>
LAN	
IP Address	192.168.1.1
Subnet Mask	255.255.255.0
DHCP Server	Enabled
Firewall	Enabled
INFORMATION	
Connected Clients	1
Runtime Code Version	V1.00.0249
Boot Code Version	V1.00.70
LAN MAC Address	00-48-54-00-00-01
WAN MAC Address	00-48-54-00-00-02
Hardware Version	IS104-REV.A
Serial Number	IS104-100

2-1-6 System Log

View any attempts that have been made to gain access to the network.

```
Log File
19700101 00:06:12: Next state= 1
19700101 00:06:12: Retransmit last message
19700101 00:06:12: dhcp: timed out in WAIT_OFFER state.
19700101 00:06:12: dhcp: Entered WAIT_OFFER state.
19700101 00:05:09: Next state= 1
19700101 00:05:09: Retransmit last message
19700101 00:05:09: dhcp: timed out in WAIT_OFFER state.
19700101 00:05:09: dhcp: Entered WAIT_OFFER state.
19700101 00:04:06: Next state= 1
19700101 00:04:06: Retransmit last message
19700101 00:04:06: dhcp: timed out in WAIT_OFFER state.
```

2-1-7 Reset

In the event that the Broadband Router stops responding correctly or in some way stops functioning, perform the reset function. The settings will not be changed. To perform the reset, click on the "Reset" button. The reset will be complete when the system light starts blinking.

2-2 WAN

The Broadband Router can be connected to the service provider in any of the following ways: Dynamic IP Address, Static IP Address, PPPoE and PPTP.

The Broadband Router can be connected to your service provider in any of the following ways:

- Dynamic IP Address Obtain an IP address automatically from your service provider.
- Static IP Address Uses a static IP address. Your service provider gives a static IP address to access Internet services.
- PPPoE PPP over Ethernet is a common connection method used for xDSL.
- PPTP PPP Tunneling Protocol can support multi-protocol Virtual Private Networks (VPN).

2-2-1 Dynamic IP

The Host Name is optional, but may be required by some Service Providers. The default MAC address is set to the WAN's physical interface on the Broadband Router. If the Service Provider requires the host name, using the "Clone MAC Address" button to copy the MAC address of the Network Interface Card installed in the selected PC and replaces the WAN MAC address with this MAC address.

The road runner management is optional. If the ISP needs to run the road runner management (sometimes called Big Pond), enable it.

Host Name

MAC Address

BigPond Enable

2-2-2 Static IP

If the Service Provider has assigned a fixed IP address, enter the assigned IP address subnet mask and gateway address provided. Click "yes" if using two or more IP addresses.

IP address assigned by your ISP

Subnet Mask

ISP Gateway Address

Does ISP provide more IP addresses Yes

2-2-3 Dial-up xDSL (PPPoE)

If connected to the Internet using a Dial-up xDSL (PPPoE) Modem, the ISP will provide a Password and User Name, then the ISP uses PPPoE. Choose this option and enter the required information, if the ISP provided a Service Name, enter it in the column of the Service Name field, otherwise, leave it blank.

The MTU feature specifies the largest packet size permitted for network transmission. Enter the value desired, for most DSL users, it is recommended to use 1492. By default, MTU is set at 1492.

The Maximum Idle Time feature can control the connection time while user's need to save the cost of connection fee from ISP provider (default time=0, always connect). Click on the Connect-on-demand button to dial up to the ISP when only on demand, while there is a need of connecting to the ISP automatically.

User Name	<input type="text"/>
Password	<input type="text"/>
Please retype your password	<input type="text"/>
Service Name	<input type="text"/>
MTU (1400-1492)	<input type="text" value="1492"/>
Maximum Idle Time	<input type="text" value="0"/> (minutes) <input type="checkbox"/> Connect-on-demand

2-2-4 PPTP

If connected to the Internet using a (PPTP) xDSL Modem, enter the PPTP Account Name, PPTP Password, Host Name, Service IP Address, Your IP Address, Your Subnet Mask required by your ISP in the appropriate fields. If your ISP has provided you with a Connection ID, enter it in the Connection ID field, otherwise, leave it zero.



The image shows a PPTP configuration form with the following fields: PPTP Account, PPTP Password, Please retype your password, Host Name, Service IP Address (0.0.0.0), My IP Address (0.0.0.0), My Subnet Mask (0.0.0.0), Connection ID (0) (Optional), MTU (1400-1460) (1460), and Maximum Idle Time (0) minutes with a Connect-on-demand checkbox.

 PPTP	
PPTP Account	<input type="text"/>
PPTP Password	<input type="text"/>
Please retype your password	<input type="text"/>
Host Name	<input type="text"/>
Service IP Address	<input type="text" value="0.0.0.0"/>
My IP Address	<input type="text" value="0.0.0.0"/>
My Subnet Mask	<input type="text" value="0.0.0.0"/>
Connection ID	<input type="text" value="0"/> (Optional)
MTU (1400-1460)	<input type="text" value="1460"/>
Maximum Idle Time	<input type="text" value="0"/> minutes <input type="checkbox"/> Connect-on-demand

The MTU feature specifies the largest packet size permitted for network transmission. Enter the value desired, for most DSL users, it is recommended to use 1460. By default, MTU is set at 1460

The Maximum Idle Time feature can control the connection time while user's need to save the cost of connection fee from ISP provider (default time=0, always connect). Click on the Connect-on-demand button to dial up to the ISP when only on demand, while there is a need of connecting to the ISP automatically.

2-2-5 DNS

The Domain Name System (DNS) is the way that Internet domain names are located and translated into Internet Protocol (IP) addresses. If your ISP provided at least one DNS Server IP Address, type that **IP Address** in the Primary DNS address fields. You can type up to another DNS Server IP Addresses. The Router will utilize these for quicker access to functioning DNS Servers.

Domain Name Server (DNS) Address	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Secondary DNS Address (optional)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

2-3 LAN

To set the LAN's IP Address and DHCP Service.

2-3-1 LAN Settings

The default value is 192.168.1.1 for the IP address and 255.255.255.0 for the Subnet Mask. And you can also change the value for your needs.

To enable the DHCP server for dynamic IP address allocation to the clients PCs, click the "Enable". The client can get the IP Addresses

IP Address	<input type="text" value="192"/>	<input type="text" value="168"/>	<input type="text" value="1"/>	<input type="text" value="1"/>
Subnet Mask	<input type="text" value="255.255.255.0"/>			
The Gateway acts as DHCP Server	<input checked="" type="checkbox"/> Enable			
IP Pool Starting Address	<input type="text" value="192.168.1.2"/>			
IP Pool Ending Address	<input type="text" value="192.168.1.254"/>			
Lease Time	<input type="text" value="One day"/>			
Local Domain Name	<input type="text"/> (optional)			

from a range from IP Pool Starting Address to IP Pool Ending Address, also, you can change the IP Pool range value.

The Lease Time is the amount of time a network user will be allowed connection to the Router with their current dynamic IP address. Enter the amount of time, in hours, days or weeks, which the user will be “leased” this dynamic IP address.

You can enter your local domain name in the Local Domain Name fields.

2-3-2 DHCP Client List

The DHCP client list allows you to see which clients are connected to the Barricade via IP address, host name, and MAC address.

IP Address	Host Name	MAC Address	Refresh
192.168.1.2	PM-NB	00-00-59-08-0D-B8	

2-4 NAT

Network Address Translation (NAT) allows multiple users at the local site to access the Internet through a single public IP address. NAT can also prevent hacker attacks by mapping local addresses to public addresses for key services such as the Web or FTP.

2-4-1 Special Application

Some applications require multiple connections, such as Internet gaming, video conferencing, Internet telephony and others. These applications cannot work when Network Address Translation (NAT) is enabled. When users send this type of request to your network via the Internet, the Router will forward those requests to the appropriate PC. If you need to run applications that require multiple connections, specify the port normally associated with an application in the "Trigger Port" field, select the protocol type as TCP or UDP, then

enter the public ports associated with the trigger port to open them for inbound traffic.

- **TCP** (Transmission Control Protocol) - A method (protocol) used along with the Internet Protocol (Internet Protocol) to send data in the form of message units between computers over the Internet. While IP takes care of handling the actual delivery of the data, TCP takes care of keeping track of the individual units of data (called packets) that a message is divided into for efficient routing through the Internet.
- **UDP** (User Datagram Protocol) - A communications method (protocol) that offers a limited amount of service when messages are exchanged between computers in a network that uses the Internet Protocol (IP). UDP is an alternative to the TCP and, together with IP, is sometimes referred to as UDP/IP. Like the Transmission Control Protocol, UDP uses the Internet Protocol to actually get a data unit (called a datagram) from one computer to another. Unlike TCP, however, UDP does not provide the service of dividing a message into packets (datagrams) and reassembling it at the other end. Specifically, UDP doesn't provide sequencing of the packets that the data arrives in. This means that the application program that uses UDP must be able to make sure that the entire message has arrived and is in the right order. Network applications that want to save processing time because they have very small data units to exchange (and therefore very little message reassembling to do) may prefer UDP to TCP.

Example:

ID	Trigger Port	Trigger Type	Public Port	Public Type	Comment
1	28800	UDP	2300-2400, 47624	UDP	MSN Game Zone
2	28800	UDP	2300-2400, 47624	TCP	MSN Game Zone
3	6112	UDP	6112	UDP	Battle.net

	Trigger Port	Trigger Type	Public Port	Public Type	Enabled
1.	<input type="text" value="28800"/>	<input type="radio"/> TCP <input checked="" type="radio"/> UDP	<input type="text" value="2300-2400, 47624"/>	<input type="radio"/> TCP <input checked="" type="radio"/> UDP	<input checked="" type="checkbox"/>
2.	<input type="text" value="28800"/>	<input type="radio"/> TCP <input checked="" type="radio"/> UDP	<input type="text" value="2300-2400, 47624"/>	<input checked="" type="radio"/> TCP <input type="radio"/> UDP	<input checked="" type="checkbox"/>
3.	<input type="text" value="6112"/>	<input type="radio"/> TCP <input checked="" type="radio"/> UDP	<input type="text" value="6112"/>	<input type="radio"/> TCP <input checked="" type="radio"/> UDP	<input checked="" type="checkbox"/>
4.	<input type="text"/>	<input checked="" type="radio"/> TCP <input type="radio"/> UDP	<input type="text"/>	<input checked="" type="radio"/> TCP <input type="radio"/> UDP	<input type="checkbox"/>

2-4-2 Virtual Server

Configure the Broadband Router as a virtual server to allow the Router to watch outgoing data for specific port numbers. The IP address of the computer that sends the matching data is remembered by the Router, so that when the requested data returns through the Router, the data is pulled back to the proper computer by way of IP address and port mapping rules such as the Web or FTP at the local site via public IP addresses can be automatically redirected to local servers configured with private IP addresses. In other words, depending on the requested service (TCP/UDP port number), the Broadband Router redirects the external service request to the appropriate server.

Example:

ID	Server IP	Mapping Port	Type	Comment
1	192.168.2.20	80	TCP	Web Server
2	192.168.2.12	20	TCP	FTP Server
3	192.168.2.12	21	TCP	FTP Server
4	192.168.2.28	23	TCP	Telnet Server

	Mapping Ports	Server IP	Enabled
1.	80	192.168.1.20	<input checked="" type="checkbox"/>
2.	20	192.168.1.12	<input checked="" type="checkbox"/>
3.	21	192.168.1.12	<input checked="" type="checkbox"/>
4.	23	192.168.1.28	<input checked="" type="checkbox"/>
5.		192.168.1.	<input type="checkbox"/>

2-5 Firewall

The Broadband Router provides extensive firewall protection by restricting connection parameters to limit the risk of hacker attack, and defending against a wide array of common hacker attacks.

The Broadband Router provides packet filtering rules by restricting service ports, IP address or MAC address. However, for applications that require unrestricted access to the Internet, configure a specific client/server as a demilitarized zone (DMZ).

2-5-1 Block WAN Ping

When the "Block WAN Ping" activated, it is causing the public WAN IP address on the Broadband Router not to respond to ping commands. Pinging public WAN IP addresses is a common method used by

hackers to test whether the WAN IP address is valid and supports a network.

Discard PING from WAN side

2-5-2 Client Filtering

To block a certain client PCs accessing the Internet based on time.

You can filter Internet access for local clients based on IP addresses, application types, (i.e., HTTP port), and time of day.

For example, this screen shows that clients in the address range 192.168.2.50-99 are permanently restricted from using FTP (Port 21), while clients in the address range 192.168.2.110-119 are blocked from browsing the Internet (port 80) from Monday's 6:00 PM through Friday's 11:00 PM.

Example:

	IP	Port	Type	Block Time	Day	Time	Enable
1	192.168.1.50 - 99	21	<input type="radio"/> TCP <input type="radio"/> UDP	<input type="radio"/> Always <input type="radio"/> Block			<input checked="" type="checkbox"/>
2	192.168.1.110 - 119	80	<input type="radio"/> TCP <input type="radio"/> UDP	<input type="radio"/> Always <input type="radio"/> Block	SUN SAT	0:00am 11:00pm	<input checked="" type="checkbox"/>
3	192.168.1.		<input type="radio"/> TCP <input type="radio"/> UDP	<input type="radio"/> Always <input type="radio"/> Block			<input type="checkbox"/>

2-5-3 MAC Control

You can block certain client PCs accessing the Internet based on MAC addresses.

- Enable MAC Address Control
- Allow all to pass except those match the following MACs.
- Deny all to pass except those match the following MACs.

MAC Address Control List

MAC Address
<input type="text"/>

2-5-4 DMZ (Demilitarized Zone)

If a local client PC cannot run an Internet application properly from behind the NAT firewall, open the client up to unrestricted two-way Internet access by defining a virtual DMZ Host.

Enable

IP Address of Virtual DMZ Host 192.168.1.

TECHNICAL SPECIFICATIONS

General	
Standards	IEEE 802.3 10BASE-T Ethernet IEEE 802.3u 100BASE-TX Fast Ethernet ANSI/IEEE 802.3 Auto-negotiation
Protocol	CSMA/CD
Data Transfer Rate	Ethernet: 10Mbps (half duplex), 20Mbps (full-duplex) Fast Ethernet: 100Mbps (half duplex), 200Mbps (full- duplex)
Topology	Star
Network Cables	10BASE-T: 2-pair UTP Cat. 3,4,5 (100 m), EIA/TIA- 568 100-ohm STP (100 m) 100BASE-TX: 2-pair UTP Cat. 5 (100 m), EIA/TIA-568 100-ohm STP (100 m)
Number of Ports	4 x 10/100Mbps auto-negotiation 1 x 10/100Mbps "IP" port connect to the hub or switch or 1 x 10/100Mbps "X" port connect to the LAN Card
Physical and Environmental	
DC inputs	DC 7.5V 1A
Power Consumption	3W (Max.)
Temperature	Operating: 0° ~ 40° C, Storage: -10° ~ 70° C
Humidity	Operating: 10% ~ 90%, Storage: 5% ~ 90%
Dimensions	171 x 98 x 29 mm (W x H x D)
EMI:	FCC Class B, CE Mark B, VCCI-II