HAWKING TECHNOLOGY
User's Manual

H-BR49

4-Port Broadband Router

[NETWORKING IN THE FAST LANE!]

FCC Certifications

This equipment has been tested and found to comply with the limits 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 in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Shielded interface cables must be used in order to comply with emission limits.

You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

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.

All trademarks and brand names are the property of their respective proprietors.

Specifications are subject to change without prior notification.

HAWKING LIMITED WARRANTY

Hawking Technology guarantees that every H-BR49 Broadband Router is free from physical defects in material and workmanship under normal use for two (2) years from the date of purchase. If the product proves defective during this two-year warranty period, call Hawking Customer Service in order to obtain a Return Authorization number. Warranty is for repair or replacement only. Hawking Technology does not issue any refunds. BE SURE TO HAVE YOUR PROOF OF PURCHASE. RETURN REQUESTS CAN NOT BE PROCESSED WITHOUT PROOF OF PURCHASE. When returning a product, mark the Return Authorization number clearly on the outside of the package and include your original proof of purchase.

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H-BR49 4-Port Broadband Router

The H-BR49 Broadband Router is an integrated Internet IP sharing device with a built-in 4-port 10/100Mbps N-Way Fast Ethernet switch. It has superb throughput of up to 35Mbps between Internet and LAN, making it the perfect solution to connect a small group of PCs to a high-speed broadband Internet connection. Multiple users can have high-speed Internet access simultaneously via one single IP address (Internet account) of the Cable/xDSL modem.

This product also serves as an Internet firewall, and thus protects your network from being accessed by outside users. All incoming data packets are monitored and filtered. The Router can also be configured to filter internal user access to the Internet.

The built-in 4-port Fast Ethernet Switch lets users plug the network cable into the device without buying an additional Hub/Switch.

In addition, the unit is equipped with an Incoming Mail Indicator, which will become lit when there is e-mail waiting to be retrieved at the mail server.
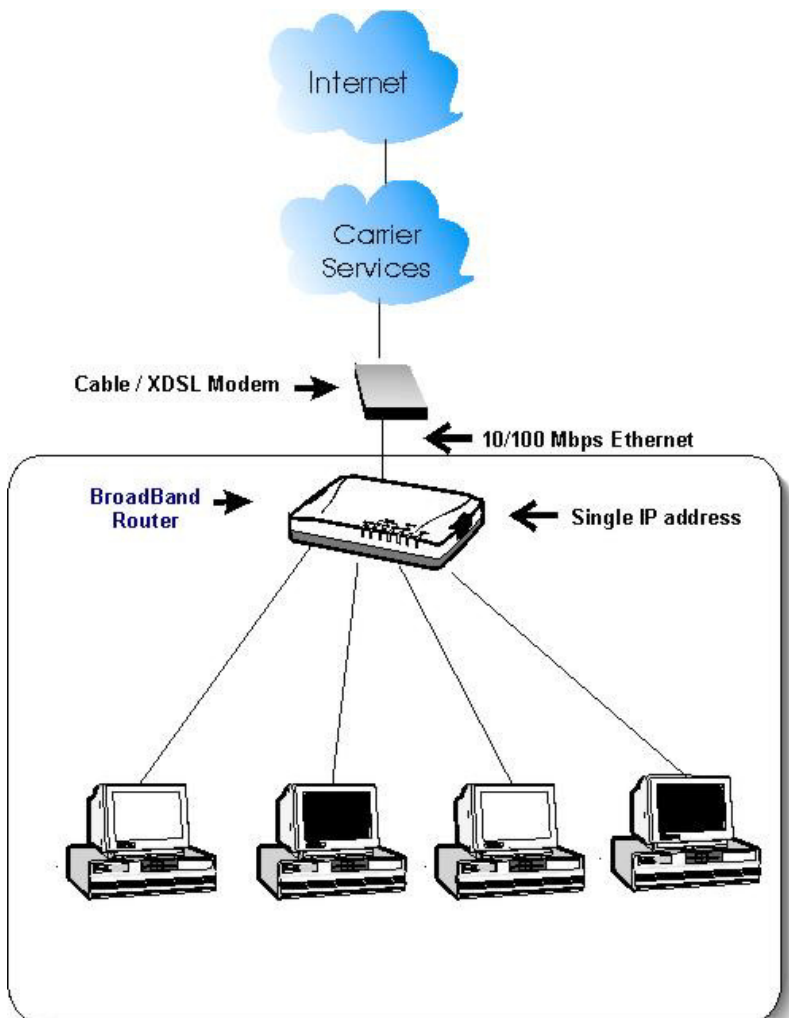
Figure 1: Sample Application

Features

- Superb performance with throughput of up to 35Mbps between Internet and LAN.
- Web and GUI management.
- Supports PPPoE.
- Supports VPN. (PPTP, IP- Sec pass thru)
- Supports Auto MDI/MDIX for the LAN and WAN ports.
- Supports rich Internet applications such as MSN, StarCraft, AOE, Battle.net multi-user, Crazy Arcade, NetMeeting, ICQ, mIRC, Web browser, FTP, Telnet, E-Mail, News, Ping, PCAnyWhere...
- DHCP server allocates up to 253 client IP addresses.
- Allows for the setting of 32 Static DHCPs.
- Proxy DNS.
- Dynamic DNS (DDNS)
- Allows for the setting of 24 Virtual Servers.
- DMZ host & Multi-DMZ.
- Allows for the setting of 24 Packet Filters.
- Static routing.
- Super manager.
- LED indicator for received E-Mail.
- Allows firmware upgrade through network.
- Supports Windows 95/98/ME/NT/2000/XP, Unix, and Mac.
- Natural firewall keeps hackers out.
- Load/Save device settings from/to a PC file

Part Names and Functions

LED Indicators on the Front Panel   *Ports on the Rear Panel*
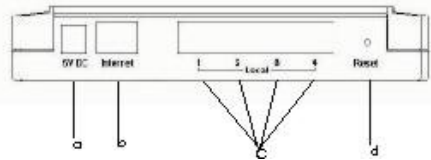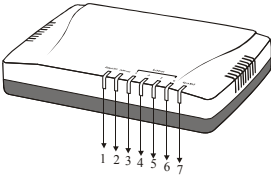
Figure 2: LED Indicators and Ports

	LED	Color	Status	
	Indicator	Color	Solid	Flashing
1	**Power /Error**	Green /Red	Turns solid green when power is applied to this device. Turns solid red when the device is not working properly.	N/A.
2	**WAN**	Green	Connected and linked to a Cable/xDSL Modem.	Receiving/ Sending data
3 to 6	**1 (LAN)** **2 (LAN)** **3 (LAN)** **4 (LAN)**	Green	Turns green when linked to a local network.	Receiving/ Sending data
7	**New E-Mail**	Green	Flashing frequency (F) vs. Email amount (N) F = 1 when N < 5 F = 2 when $5 \leq N < 10$ F = 3 when $10 \leq N < 20$ F = 4 when $N \geq 20$	

	Port/button	Functions
a	**5V DC**	Connects the power adapter plug.
b	**Internet**	Connects to a Cable/xDSL modem.
c	**Local (1-4)**	Four RJ-45 dual-speed (10/100Mbps) auto-sensing ports for connecting with either 10Mbps or 100Mbps Ethernet connections.
d	**(Factory) RESET**	Press for at least 5 seconds to restore to factory settings. Performing the Factory Reset will erase all previously entered device settings.

Password

Default setting: No password.

Setting up a password: When configuring the device, press **Enter** to login the configuration for the first time. It is recommended that you set a password for security and management purposes.

Password forgotten? If you forget the password, you can reset the device to the factory setting. Refer to the section titled "**Factory Reset**" for details.

Local and Global Port Addresses

The LAN parameters for the product are pre-set in the factory. The **default values** are shown below.

Local Port		Global Port
IP address	192.168.1.254	The DHCP client function is *enabled* to automatically get the Global port configuration from the ISP.
Subnet Mask	255.255.255.0	
DHCP server function	Enabled	
IP addresses for distribution to PCs	253 IP addresses continuing from 192.168.1.1 to 192.168.1.253	

Information from ISP

Before you start configuring this device, you should review the information given in the following tables and use it as a reference.

For CATV dynamic mode:

Adapter Address	Some Internet Service Providers (ISP) require that you register the MAC address of your network card/adapter, which was connected to your cable or DSL modem during installation. If your ISPs require MAC address registration, find your adapter's MAC address by doing the following: Using Windows 95 or 98: Click **Start→Run**; type in "**winipcfg**"; select the network adapter (*not* PPP adapter). Using Windows ME, 2000 or XP: Click **Start→Run**; type in "**command**"; press Enter. At the DOS prompt, type "**ipconfig/all**". Look for the Adapter's "Physical Address": a 12-digit HEX number (00-11-22-aa-bb-cc).
Device/Computer Name (or Host Name by some ISP.)	Enter a descriptive name for identification purposes. You may have to check with your ISP to see if your Broadband Internet service has been configured with a host and domain name. In most cases, these fields may be left blank. Some Internet Service Providers (ISP) require this information and if that is the case, they will provide you with the name.
Domain Name	*Ex. **yourcompany.com**,* Provided by your ISP.

For DSL dynamic mode:

PPPoE Account Info	Provided by your ISP
Username	Provided by your ISP.
Password	Provided by your ISP.
Service Name	For identification purposes. If it is required, your ISP will provide you with the information.
Static IP Address	Provided by your ISP.
Static DNS Server	Provided by your ISP.

For Static Mode:

	IP address
ISP-assigned IP address	Example: 203.66.81.201
Subnet mask	Example: 255.255.255.0
Gateway	Example: 203.66.81.254
DNS server #1	Example: 203.66.81.251
DNS server #2	Example: 203.66.81.252

Before you start setting up IP Sharing via browser-based web configuration, make sure that:

- Assuming the workstation's TCP/IP is set to obtain IP automatically and the IP Sharing Device's Local Port is set to "Distribute IP" (default), and all the cables are connected correctly, you are now ready to configure this device via Web Browser. Open the browser, enter the local port IP address (default at 192.168.1.254) of the IP Sharing Device, and click "**Go**" to get the login page.
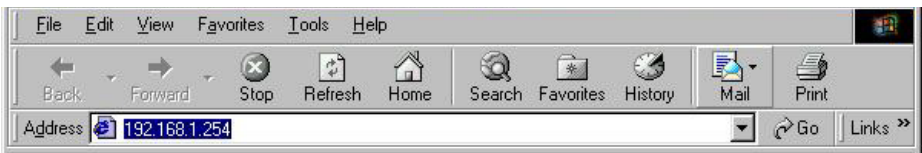

Figure 3

No user name is required. The default password is left blank. If you have set a password, enter that and click **OK** to continue.

Figure 4

At the setup home page, the left navigation pane for bookmarks links you directly to the desired setup page. You can select **Global Port, Local Port, Management, Virtual Server, Packet Filter, Static Router, Checking E-Mail, Dynamic DNS, Network Status (WAN IP Status, Session List, User**

List), Factory Reset, Save Configuration, or Firmware Upgrade. Click on the desired setup item to expand the page in the main navigation pane. The setup pages covered in this utility are described below.

WAN Port

The opening screen contains settings for the Global (Internet connection) interface. Click on the **down arrow** ▾ to select the desired Internet connection mode on the list.

Obtain configuration automatically (CATV dynamic mode)	For users who are using Cable Modem Internet service.
PPPoE (DSL dynamic mode)	For users who are using xDSL Internet service that runs PPPoE. If your xDSL service uses PPPoE, after installing the IP Sharing device, *do not* run PPPoE software on your computers.
Static configuration	Select this item when the ISP assigns a static IP address for your account.

CATV dynamic Mode

Selecting this mode enables you to obtain a dynamic IP address from your ISP via DHCP support. Once the IP address is obtained, you can access the Internet. For most cases, this page needs no input. However, some ISPs may require some information for identification purposes. For example: Device/Computer name and Domain Name - please enter the information required to complete the settings.

Configuration via the Web
H-BR49 4-Port Broadband Router

Check to modify
the MAC address
when necessary.

Figure 5

Device Information

Adapter Address	This field is grayed out because the Adapter Address is not supposed to be entered randomly. **Do Not** alter the content **unless** you are sure it is necessary to modify your MAC address. To modify the address, check **Modify** and enter the desired MAC address.
Device/Computer Name	Enter a descriptive name for identification purposes. Some Internet Service Providers (ISP) require this information and if that is the case, they will provide you with the name.
Domain Name	*For example: yourcompany.com. The maximum input for this field is 32 alphanumeric characters and it is case insensitive. Note: 1. Your ISP may ask you to input a certain domain name. 2. A Domain name is also required for the internal network's email and news functions.*
IP Config	This field is grayed out because the IP address is obtained dynamically.

PPPoE (DSL dynamic Mode)

If this mode is selected and settings are saved, this IP sharing device will be connected to the Internet over an always-on connection by a method provided by PPPoE. PPPoE offers simulated dial-up software like Microsoft Dial-Up Networking, which saves the time and effort required to run the program from a PC. And the auto-connect/disconnect feature lets the system stay idle when there is no activity, but pick up the connection in no time when there is network activity. This can significantly save users' costs on connection fees.

The TCP MSS function lets you choose the maximum packet size that fits your need for optimal throughput. Reducing the packet size can help enhance connection to certain web sites or speed up the packets to be received/sent.

Figure 6

Device Information

Adapter Address	This field is grayed out because the Adapter Address is not supposed to be entered randomly. **Do Not** alter the content **unless** you are sure it is necessary to modify your MAC address. To modify the address, check **Modify** and enter the desired MAC address.
Device/Computer Name	Enter a descriptive name for identification purposes. Some Internet Service Providers (ISP) require this information and if that is the case, they will provide you with the name.
Domain Name	*For example: yourcompany.com*. The maximum input for this field is 32 alphanumeric characters and it is case insensitive.
PPPoE Account	**Active Profile ⊙1 ⊙2 ⊙3**: You can set up to three PPPoE accounts, while only one account can be enabled at a time. To set the profile, select the profile number, enter all the information, and then click on **Save**. The device will save the information; restart and return to the previous menu page. If you don't see the saved information on the screen: from the menu on the left, click on the "**Global Port**" to refresh the screen.
Username	The max. input is 52 alphanumeric characters (case sensitive).
Password	The max. input is 36 alphanumeric characters (case sensitive).

Service Name	For identification purposes: if it is required, your ISP will provide you with the information. Max packet size (TCP MSS): Click the down arrow ▼ to select the most appropriate MSS (maximum segment size; the default value is 1452) for your application. Reducing the packet size can help enhance connection to certain web sites or speed up packet transfer rates. If the incorrect selection is selected, you may not be able to open certain web sites.

Configuration via the Web

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Note that there may be more than one IP address from your ISP; select one address and enter it in the corresponding field.

Figure 7

Device Configuration

Adapter Address	This field is grayed out because the Adapter Address is not supposed to be entered randomly. **Do Not** alter the content **unless** you are sure it is necessary to modify your MAC address. To modify the address, check **Modify** and enter the desired MAC address.

Device/Computer Name	Enter a descriptive name for identification purposes. Some Internet Service Providers (ISP) require this information and if that is the case, they will provide you with the name.
Domain Name	*For example: **yourcompany.com**.* The maximum input for this field is 32 alphanumeric characters and it is case insensitive
IP Address	Enter the information provided by your ISP.
Subnet Mask	Enter the information provided by your ISP.
Gateway	Enter the information provided by your ISP.
Primary/Secondary	Enter the information provided by your ISP.

SAVE	After completing the settings on this page, click **SAVE** to save the settings.
UNDO	Click **UNDO** to clear all the settings on this page.

LAN Port

This screen contains settings for the LAN interface corresponding to the local network. You can change the setting to distribute the IP address to local PCs, if desired. If "Distribute IP address to local computer" is selected, users can enter the IP addresses assigned for the computers on the LAN. The number of IP addresses decides the number of clients allowed for the assigned IP addresses. *Note that all the PCs on the same LAN should use the same subnet Mask.* Users can also set Static DHCPs on this page. Users are allowed to set 32 Static DHCPs. Using this feature, the device will assign the same IP address to a computer (according to the network adapter's MAC address) and this computer becomes the only one able to request that IP address. This is quite useful to set virtual servers which specifically require fixed IPs for outside Internet access.

Figure 8

Private Network

IP Address	Default: 192.168.1.254 (this is the local address of this IP Sharing device)
Subnet mask	Default: 255.255.255.0

DHCP Server

Do not distribute IP address to local computers	Check this radio button to disable this IP Sharing device from distributing IP Addresses (DHCP Server disabled)
Distribute IP addresses to local computers	Check this radio button to enable this IP Sharing device to distribute IP Addresses (DHCP enabled). The following field will be activated for you to enter the starting IP Address.

Start IP address	The starting address of this local IP network address pool. The pool is a piece of continuous IP address segment. Keep the default value at 192.168.1.1, which should work for most cases.
Number of IP addresses	Maximum: **253**. Default value of 253 should work for most cases. *Note: If "Continuous IP address poll starts" is set at 192.168.1.1 and the "Number of IP address in pool" is 253, the device will distribute IP addresses from 192.168.1.1 to 192.168.1.253 to all the computers in the network that request IP addresses from the DHCP server (IP Sharing Device).*
Static DHCP IP & MAC address	Click the **ADD** button to enter the Static DHCP page. Enter IP and Network adapter MAC addresses for Static DHCP and click the **ADD** button to save the settings. Click **DELETE ALL** to clear all entries. Click the **Index** drop-down menu to select the desired entry number and then click **DELETE** to delete only the selected server. You can add up to 32 static DHCP IPs. Click **BACK** to return to the Local Port page to continue.
WINS server	When necessary, enter the IP Address of the Windows domain name server.

SAVE	After completing the settings on this page, click **SAVE** to save the settings.
UNDO	Click **UNDO** to clear all the settings on this page.

Configuration via the Web

H-BR49 4-Port Broadband Router

Advanced Setup

Management

In this management page, you can:

1. **Change Administrator's password:** change the password for the device.
2. **Limit Management**: Enables two stations to manage this IP Share through Web configuration. Enter the MAC addresses of the stations you selected for management. After the setup is completed, only the assigned stations with correct password authentication can manage this IP Share device.
3. **Block LAN Request**: Blocks requests from the Internet to the local network. If this item is checked, the function of management through Web configuration will be **disabled**. In other words, Internet requests and the HTTP management, namely ICMP, IDENT, and HTTP will be rejected.
4. **Block WAN Request.**
   Management via Internet: Allows management of this device via HTTP from the Internet.
5. **Modify the Configuration Port**: Enables the user to modify the port number for web configuration.

Figure 9

Change Administrator's password:

1. Click the checkbox to enable this change.
2. Enter the new password.
3. Re-enter the new password for confirmation.

Limit Management:

1. Click the checkbox to enable this function.
2. Enter the network adapter MAC address for Station 1.
3. Enter the network adapter MAC address for Station 2. If you are only setting up one management station, leave the Station 2 MAC address with all F.

Below are coordinate results of the Block WAN Request and HTTP management for this device. Refer to this table for further Internet/system management.

V: Checked
O: Unchecked

Block WAN Request	Management Via Internet	Coordinate Result
V	O (automatically)	WAN requests over TCP 113 (IDENT) and ICMP are rejected. HTTP management is not allowed.
O	V	WAN requests over TCP 113 (IDENT) and ICMP are accepted. HTTP management is allowed.
O	O	WAN requests over TCP 113 (IDENT) and ICMP are accepted. HTTP managements is not allowed.

Figure 10

Modify the Configuration Port:

1. Click the checkbox to enable this function.
2. Input the port number for web configuration. The default web port for configuration is set to 80. If you want to change the default setting, input the appropriate port number. Once the web configuration has been modified, configuration over the web should be changed with the new setting (e.g., if the web configuration port is set to 8080, you will need to input the address as follows to login the web configuration: http://192.168.1.254:8080 (where 192.168.1.254 is your local port IP address).

After changing the settings, click **SAVE** to save them, or click **UNDO** to clear all the settings on this page.

Virtual Server

In this page, you can set up a local server with a specific port number that stands for the service (e.g. web(80), FTP(21), Telnet(23)). When this device receives an incoming access request for this specific port, it will be forwarded to the corresponding internal server. You can add virtual servers either by port number or by name.

A maximum 24 Server entries are allowed and each port number can only be assigned to one IP address.

NOTE: Setting up a Virtual Server is like opening the firewall, which exposes your network to users on the Internet. This means the IP Share's NAT will no longer be able to provide protection from hackers.

Configuration via the Web
H-BR49 4-Port Broadband Router

Figure 11

Add Server

Method:
   By Name
   By Port
	You can select to set up a virtual server either by name or by port number.

Application (Port)	Select and click ▼ to scroll down. Select from the most popular server applications for the Virtual Server.
Port Type	Please select the port type (TCP or UDP) for the port number that was entered earlier.
Single/Range, Port Number	For selecting a specific port or a range of ports that you want the Internet users to be able to access. The valid port numbers range from 0 to 65535.

UNDO	Click **UNDO** to clear all the settings on this page.
ADD	Each time you finished setting, click **ADD** and the added servers will appear on the **Server List**.

DELETE ALL	Click to delete all the servers on the list.
DELETE	Click the Index drop-down menu to select the desired server number and then click **DELETE** to delete only the selected server.

DMZ Host Function:	If the DMZ Host Function is enabled, it means that you can set up a DMZ host at a particular computer to be exposed to the Internet so that some applications/software, especially Internet/online games can have two-way connections. You can enter up to four DMZ Hosts in the device.
DMZ LAN IP Address	Enter the local IP address mapping to the client computer, which you will want to use as the DMZ Host computer.
DMZ WAN IP Address	Enter the WAN IP Address set for the DMZ Host.

UNDO	Click to clear all the settings on this page.
ADD	After completing the settings on this page, click "ADD" to save the settings.

DMZ List	Display all the DMZ hosts.

DELETE ALL	**Click to delete all the DMZ host(s) on the list.**
DELETE	Click on the **Index** drop-down menu to select the desired host number and then click **DELETE** to delete only the selected host.

Packet Filters

In the **Packet Filters** setup screen, you can block specific internal users from accessing the Internet and you can also disable specific Internet services. You can set up the filters described in the tables that follow. Each filter can be set to **filter (drop)** or **forward (pass)** packets**.** You can input up to 24 filters into this device.

Network Adapter Address Filter	Filter according to the **local** computer's network adapter MAC address (also known as the adapter card's Physical Address).
IP Address Filter	Filter with the computer's IP address.
Single/Range	You can filter a single IP, or a range of IP addresses.
IP Range	Enter the Start and End IP addresses for a range of IP addresses for filter/forward.
Direction	⊙**From Local IP**: filtering of an IP address of a **local** computer; or ⊙**To Remote IP**: filtering of an IP address of a **remote** server (this remote server connects to the device via Internet).

TCP/UDP Port Filter	Filter using the port number. You can set the filter for a single port or a range of ports.
Filter/Forward *Please note that performing the Factory Reset will erase all previously entered device settings.*	Select to Filter or Forward for the following assigned port(s).
Single/Range	You can filter a single port, or a range of ports
Port Number	The port number(s) for the filters.
Port Type	▪ **TCP port**: filter according to the Connection-Based Application Service on the **remote** server using the port number. ▪ **UDP port**: filter according to the Connectionless Application Service on the **remote** server using the port number.

Figure 12

ADD	Every time you finish setting the filters, click the **ADD** button and the added filter will appear on the **Filter List**
UNDO	Click **UNDO** to clear all the settings in this category
Filter List	Displays all the Packet Filters.
DELETE ALL	Click to delete all the filters on the list.
DELETE	Click on the **Index** drop-down menu to select the desired filter number and then click **DELETE** to delete only the selected filter.

Static Router

You can set static routes to manually administrate the network topology/traffic when the dynamic route is not effective enough.

To set the static routers:
1. Select "**Static Route #1**" or "**Static Route #2**".
2. Enter the settings.
3. You can refer to the following two example applications for settings. When finished, click **SAVE** to save settings. Click **UNDO** to clear all entries.

Example Application 1:
Default Gateway: 192.168.4.2.
Destination Network/Host: 192.168.3.0

Figure 13

Figure 17

Figure 18

Check E-Mail

Check E-Mail: You may input your mail account on this IP Share and the device will check e-mails at the frequency that you previously set for the desired interval time.

1. Select the LED number and enter the account name, password, the name of the incoming mail server (POP3: i.e. mail.myaccount.com) and the interval to check mail.
2. Check **Enable** to enable this IP Share to indicate when there's email(s) detected.

Depending on the number of emails in the mailbox, the **MAIL ALERT** LED will flash in different frequencies. For details on the email LED indication, refer to the previous section, titled "Parts Names and Functions".

Check to enable the MAIL ALERT function.

Figure 19

Email Account

Account	Enter the email account name you want to check for email information.
Password	Enter the password for the above email account for authentication.
Incoming Mail Server	Enter the incoming mail server name (POP3) corresponding to the email account you want to check.
Interval to check	Enter the time interval that you would like the device to check the email.

UNDO	Click **UNDO** to clear all the settings on this page.
SAVE	After completing the settings on this page, click **SAVE** to save the settings.

Dynamic DNS

The Dynamic DNS (Domain Name Server) allows you to alias a dynamic IP address to a static hostname, enabling your device to be more easily accessed by specific name. When this function is enabled, the IP address in the Dynamic DNS Server will be automatically updated with the new IP address provided by the ISP.

Figure 20

Dynamic DNS Function	Click to enable this function and make the settings available. Click on the question mark to find out more about Dynamic DNS Service. *Note: If you don't already have the Dynamic DNS Service, please click on the "?" and then follow the instructions to sign up for the service.*
DNS Account	Enter your host domain name. Click the down arrow ▼ to select your Dynamic DNS client with which you registered for the service.
User Name	Enter your user name, which you registered with the Dynamic DNS client.
Password	Enter your password, which you registered with the Dynamic DNS client.

Enable Wildcard	Check to enable the Wildcard function. To learn more about Wildcard, please refer to the **FAQ** section.
Mail Exchanger	To learn more about MX (Mail Exchanger), please refer to the **FAQ** section.
Backup MX?	Check to have the Backup MX service enabled.
Status	Displays the results of the action. If the action fails, click **Force Update IP** to enable the function.

UNDO	Click to clear all the settings on this page.
SAVE	After completing the settings on this page, click **SAVE** to save the settings.

Network Status

WAN IP Status

Display the current Internet connection status. After the device is connected to the Internet Service, you will see IP, Subnet Mask, Gateway and DNS IP addresses on the table.

Figure 21

RELEASE/DISCONNECT	Click on this button to disconnect from the ISP and release all the IP information on the WAN port.
RENEW/CONNECT	Click on this button to reconnect to the ISP and renew all IP information on the WAN port.

<u>**Sessions List**</u>

Displays active Internet sessions through this device.
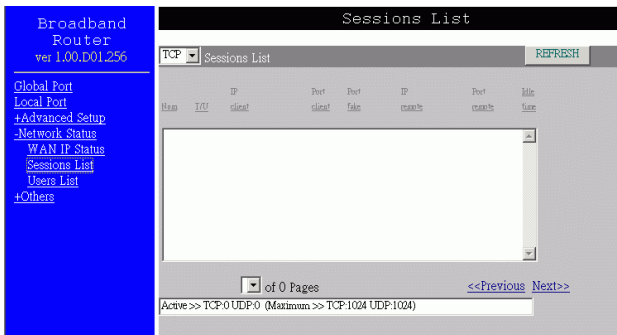
Figure 22

REFRESH	Click on this button to refresh the list and get the latest session list.
T/U	Displays TCP or UDP port type.
IP Client/ Port Client	The local network IP address/port number for one end point of the session.
Port Fake	Featuring NAT (Network Address Translation), the **Port Fake** is used to translate the local network IP addresses for connecting to the Internet.

IP Remote/Port Remote	The outside network IP address/port number for the other end of the session.
Idle	The idle time of the session. If the idle time is too long (more than 15 minutes), the device will disconnect the idled session.

Users List

Displays the current active users. Click the **REFRESH** button to refresh the list.

Figure 23

Configuration via the Web
H-BR49 4-Port Broadband Router

Others

Factory Reset
To reset to factory default setting, click the **GO** button. *Please note that performaing the Factory Reset will erase all previously entered device settings.*
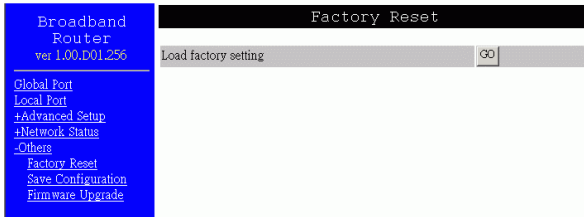
Figure 24

Save Configuration

This function enables users to always save the current configurations as a file (i.e. config.sav), so that no re-entry is required when users want to switch between various configurations. To load a configuration from file, enter the file name or click **Browse** to find the file from your computer. Click SAVE to save a current/new configuration to file.
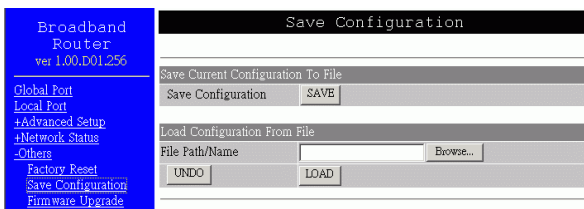
Figure 25
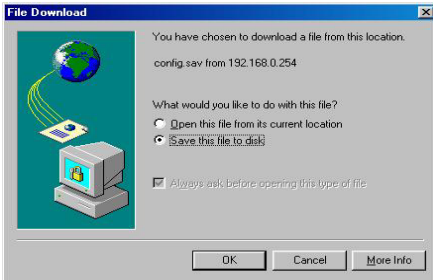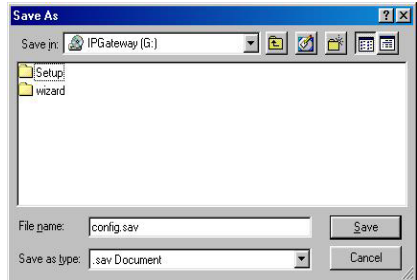
Figure 26   **Figure 27**

When prompted in the upper left screen, select "Save this file to disk", and the upper right screen will prompt you a dialog box to enter the file name and the file location. Please not that the configuration file is in .sav format.

Load Configuration from File

File Path/Name: If you want to load a configuration file, enter the file name with the correct path and then click on LOAD. Or click Browse to select the file.

Firmware Upgrade

1. Download the latest firmware from your distributor and save the file on the hard drive.
2. Make sure all computers in the network are off, or connect the Broadband Router directly to the PC that has the new firmware.
3. Start the browser, open the configuration page, click on **Others,** and click **Firmware Upgrade** to enter the **Firmware Upgrade** window. Enter the new firmware's path and file name (i.e. C:\FIRMWARE\firmware.bin). Or, click the **Browse** button, find and open the firmware file (the browser will display the correct file path).
4. Click **UNDO** to clear all the settings on this page. Or click **UPGRADE NOW** to start the upgrade.
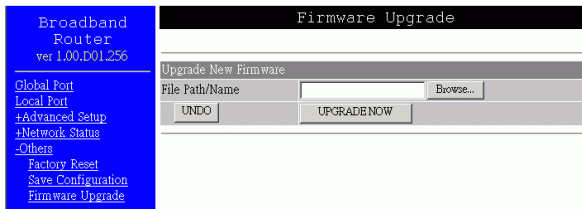
Figure 28

The device has no password by default. It is recommended that you set a password to ensure that no one can adjust the device's settings.
1. On the setup home page, select Detail Setup at the left panel.
2. Click on **Advanced Setup** and the click on **Management**.
3. Check the box for **Change Administrator's Password**.
4. Enter the new password.
5. Enter the password again to confirm.
6. Click **SAVE** at the bottom of the page to save the setting.

Figure 29

Getting Started

Note:

- *To use this GUI, you must have IE 4.01 or above preinstalled.*
- *Before using this GUI program, be sure y*ou *have properly configured your computer by following the instructions in the quick installation guide. (For the first installation, insert the provided setup CD-ROM in your CD drive; the auto-execution file will start automatically. Select* **Quick Setup Wizard**. *Choose the service that fits your case and follow the step-by-step instructions to finish.)*
- *For advanced setup, it is recommended that you configure over the web. See the section titled "Configuration via Web".*
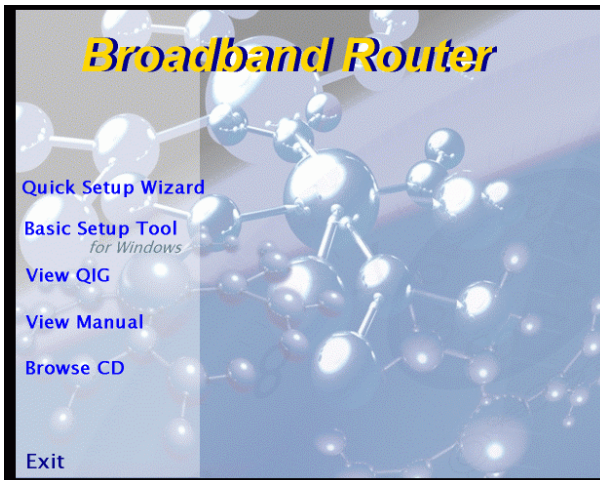
Figure 30

Configuration via GUI
H-BR49 4-Port Broadband Router

1. To configure this Broadband Router via the setup program, click
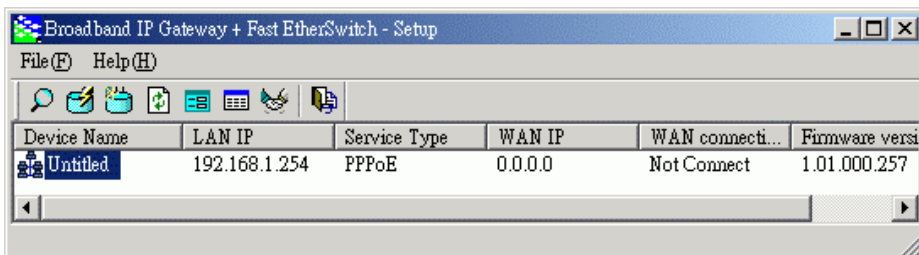   **Basic Setup Tool**. You will enter the setup screen.

Figure 31

2. When the opening screen appears, you will be prompted a list of the
    current active devices in the network.

The configure dialog box is categorized into several tabs that are detailed in the
following sections.

Icon	Function	Description
	Find	Find all devices
	Configure	Configure the specified device
	Upgrade	Upgrade the firmware
	Factory Reset	Reset to factory default settings
	WAN IP	WAN IP configuration
	User List	Displays the user list
	Session List	Displays session list
	Exit	Exit application

3. Click 🛠 on the tool bar to **configure** the selected device.

<u>**Management**</u>

Figure 32

Firmware Version	The current firmware version (Read-only)
Change Administrator Password	In this dialog box, you can set the administrator's password.
New Password	Enter the new password.
Confirm New Password	Enter the password again to confirm.

Modify the configuration port	Check to enable the modification for the web configuration port number setting. In the corresponding field, enter the port number for Web Configuration.

SAVE	Click to save the setting.
CANCEL	Click to cancel the setting.

LAN Port

Figure 33

IP Address

- Default: 192.168.1.254

SubNet mask

- Default: 255.255.255.0

Do not distribute IP address to local computers[1]

Checking this radio button to disable this Broadband Router from distributing IP addresses to the local network.

Distribute IP addresses to local computers

Click this radio button to enable this Broadband Router to distribute IP addresses. The following field will be activated for you to enter the starting IP address:

> **Start IP Address:** Enter the starting address for this local IP network address pool. The pool is a piece of continuous IP.

> **Number of IP addresses in pool**

- Maximum: **253**. Default: **253**

> Click to **SAVE** the settings.

WAN Port

This screen contains settings for the WAN interface. Different WAN interfaces will have different displays, including ones for:

- ADSL/Cable modem (**Obtain Configuration Automatically** [**CATV Dynamic Mode**])
- ADSL with PPPoE enabled (**PPPoE** [**DSL Dynamic Mode**])
- Static Leased Line (**Static Configuration**)

Click to select the appropriate WAN interface for your environment.

---

[1] If you check this selection, remember you have to specify a static IP address for each of your local computers.

CATV dynamic Mode

Figure 34: CATV Dynamic Mode

Adapter Address	It is necessary for some ISPs to identify the device by its IP.
Device/Computer Name	Enter a descriptive name for identification purpose.
Domain Name	*For example: **yourcompany.com***. The maximum input for this field is 32 alphanumeric characters and it is case insensitive.
IP Config	Since CATV dynamic mode was selected, this category is automatically fixed to dynamic, and all fields are grayed out.

DNS Server
  Dynamic
  Static
	You may select Dynamic DNS Server or Static DNS server.

PPPoE (DSL dynamic Mode)

Adapter Address	It is necessary for some ISPs to identify the device by its IP.
Device/Computer Name	Enter a descriptive name for identification purpose.
Domain Name	*For example: **yourcompany.com***. The maximum input for this field is 32 alphanumeric characters and it is case insensitive.

Figure 35

PPPoE Account Active Profile

You can set up to three PPPoE accounts (only one account can be enabled at a time). To set the profile, select the profile number, enter all the information,

and then click **SAVE**. The device will save the information, restart and return to the previous menu page. If you don't see the saved information on the screen from the menu on the left, click on the "**Global Port**" to refresh the screen.

Username	The maximum input is 52 alphanumeric characters (case sensitive).
Password	The maximum input is 36 alphanumeric characters (case sensitive).
Auto-disconnect if idle for *x* **minutes**	Configure this device to disconnect the PPPoE connection when there is no activity for a predetermined period of time. • Default: 5 minutes. You can input any number from 0 to 65535 • To ensure that the line is always connected, set the number to 0.
Service Name	For identification purposes. If required, your ISP will provide you with the information. Max packet size (TCP MSS): Click the down arrow ▼ to select the most appropriate MSS (maximum segment size; default value is 1452) for your application. Reducing the packet size can enhance connection to certain web sites or speed up packet transfer rate. NOTE: If the incorrect selection is chosen, you may not be able to open certain web sites.
Static IP Address	Enter the IP address provided by your ISP.
Auto-reconnect	Check to enable auto-reconnect with the PPPoE line. This function allows the device to automatically reconnect when the line is disconnected due to an ISP problem.
Static DNS Server	Enter the primary and secondary DNS addresses provided by your ISP.

Static Mode

Figure 36

Adapter Address	It is necessary for some ISPs to identify the device by its IP.
Device/Computer Name	Enter a descriptive name for identification purposes.

Domain Name	*For example: **yourcompany.com**. The maximum input for this field is 32 alphanumeric characters and it is case insensitive.

IP Config.
  Dynamic
  Static
	This line is grayed out for static configuration.

IP Address	Enter the information provided by your ISP.
Subnet Mask	Enter the information provided by your ISP.
Gateway	Enter the information provided by your ISP.

DNS Server
  Dynamic
  Static
	This line is grayed out for static configuration.

Primary/Secondary	Enter the information provided by your ISP.

Upgrade

1. Ask your local distributor to get the latest firmware's updated version.
2. Download and store the updated program into the server's hard disk.
3. Click **Default File→ Start** to start upgrading. If you copy the firmware file to a desired location, in the **Upgrade Firmware** window, select **"Specify File"**, then enter the firmware file's path (e.g., C:\WINDOWS\Desktop\firmware.bin), and then click **"Start"** to upgrade the firmware.
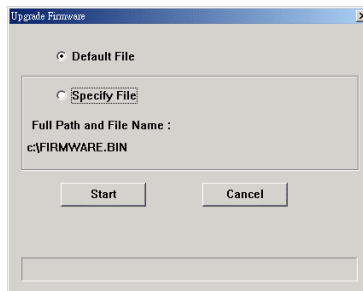

Figure 37

Factory Reset

To reset to factory default setting, click the reset button on the tool bar.
A warning message appears to advise you that you will lose your settings for the device. Click **OK** to continue or **Cancel** to exit.
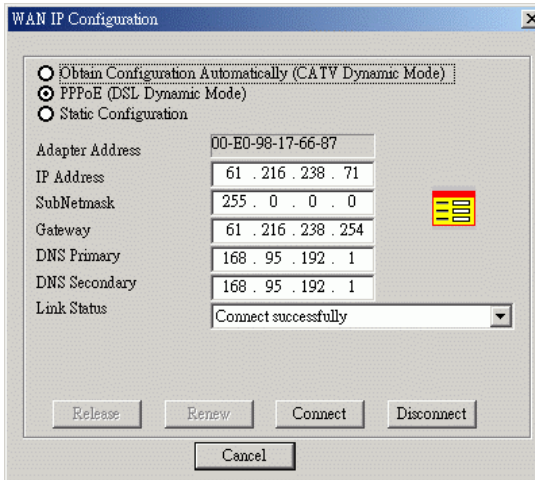
WAN IP

Displays the current Internet connection status. After the device is connected to the Internet Service, you will see the IP, Subnet Mask, Gateway, DNS IP addresses and Link Status on the table.
Connect: Click on this button to reconnect to the ISP and renew all IP information on the WAN port.
Disconnect: Click on this button to disconnect from the ISP and release all the IP information on the WAN port.

Figure 38

User List

Displays the current active users.
Refresh: Click this button to refresh the list.

USER LIST

───── User List ─────

Host Name	IP Address	Node Address	Remainder Time
abc	192.168.1.1	00-50-BA-00-E7-96	11:59:37

Total 1 users, 1 active leases, Elapsed 0:01:31

Refresh   Cancel
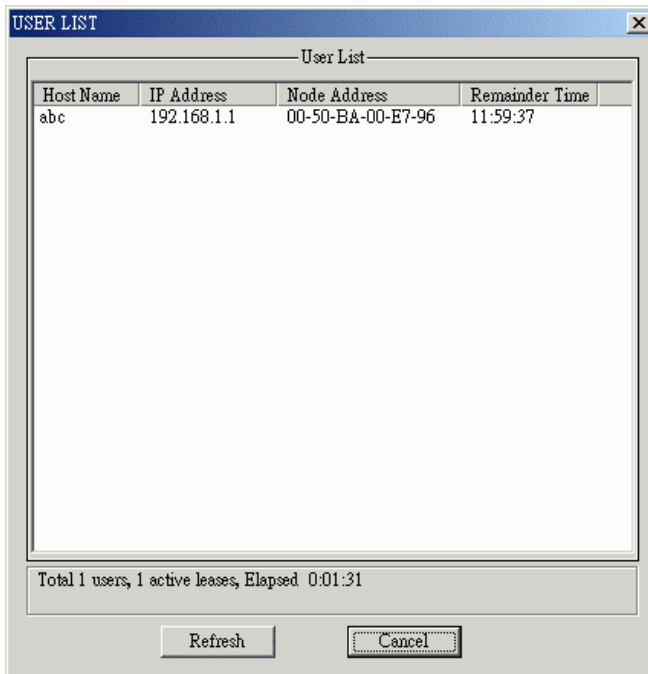
Figure 39

Session List

Displays active Internet sessions through this device.
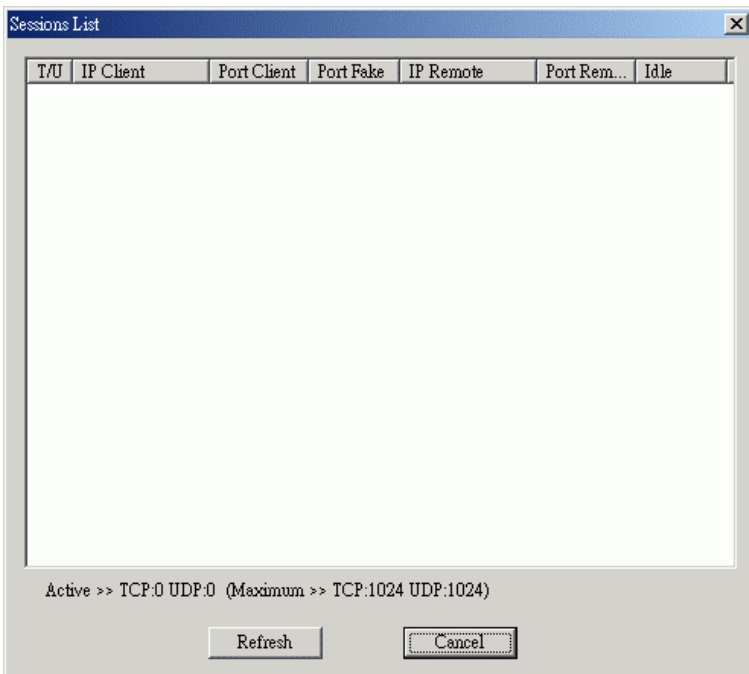**Refresh**: Click on this button to refresh the list and get the latest session list.

Figure 40

When Should I modify the MAC address for WAN/global port settings?

Some ISPs identify their clients by accessing the MAC address and the host names. Therefore, this information is required for identification purposes. The MAC address required for WAN/global port settings is the adapter address for the IP Sharing you are now configuring. Generally, it should be the one you already registered in your ISP, and thus, there should be no need to modify it. However, there is an exception when the IP sharing device you are now using is not the one with the MAC address that you registered in your ISP. If this is the case, it then becomes necessary to modify the MAC address.

What is DMZ?

DMZ is an abbreviation for "demilitarized zone". A DMZ is a sort of middle region between an external network, such as the Internet, and a company's Intranet or internal network. It is a subnet that contains a firewall and proxy server, which exist either in separate servers or in a single server. The firewall connects to an external firewall on the Internet side, which may be at the ISP's location and is often called a "boundary router." The double firewall architecture adds an extra measure of security for the Intranet.

What is Dynamic DNS (DDNS)?

Through the Dynamic DNS service, an IP Registry provides a public central database where information such as email addresses, hostnames, IPs etc. can be stored and retrieved. If your DNS server uses an IP associated with dynamic IP, DDNS will resolve this issue. The Dynamic DNS service acts much the same way as old-time phone operators: users call the operator and ask to speak to you; the operator, who knows your extension, will make the connection. Every time your computer comes online, it will inform the Dynamic DNS server what the current IP address is. Users who need to connect to your server will be sent to the right place. You can visit HTTP://WWW.DYNDNS.ORG for more information about DDNS.

Why "Dynamic DNS?"

With Dynamic DNS support, you can alias a dynamic IP address to a static hostname, allowing the host to be more easily accessible from various locations

on the Internet. You must register with a Dynamic DNS Client to use this service. Please go to HTTP://WWW.DYNDNS.ORG for more information.

What is a Wild card ?

A wildcard alias is a method that is used to give your hostname multiple identities. If you were to register yourhost.com, everything under (*).yourhost.com would be aliased to yourhost.com. This includes host names such as www.yourhost.com or ftp.yourhost.com. Once the wild card feature has been enabled, your host can be reached at *.yourhost.dyndns.org. First , you need to register a dyanmic DNS account with www.dyndns.org. To use this service, you must register with the Dynamic DNS client. The Dynamic DNS Client service provider will give you a password or key. Refer to the "**What is Dynamic DNS (DDNS)?**" question above for more information.

What is MX (Mail Exchanger)? And why MX?

The Internet email system for both machines and network connections are prone to error. Because of this, a chain of email hubs is built into the email architecture. If the "primary" mail host goes down, instead of queuing up the mails in the unreliable host on the Internet, they get sent to the "secondary" or "backup" mail exchanger for delivery, until the primary mail server becomes functional again. In technical terms, this service is known as a Backup Mail Exchanger.

What is PPPoE (Point-to-Point Protocol Over Ethernet)?

The popular PPP Protocol is used primarily for dial-up Internet connections. PPPoE is designed to integrate broadband services into this current, widely deployed, easy-to-use, and low-cost dial-up-access networking infrastructure. Thus, customers can get greater access speed without changing the operation concept.

How do I know if I am using PPPoE?

If you are using a broadband connection and you are asked to login a user name and password in order to connect, you are using PPPoE. Or, if you are still unsure, please contact your ISP or call Hawking Tech Support.

IP address conflict

If a message appears indicating an IP address conflict on any of the workstations in the network, it means that two or more workstations are operating under the same IP address. If you have setup the device as a DHCP server:

1. Please run the "**winipcfg**" (see previous question) utility on the problem workstation
2. Select the correct Network Adapter
3. Click "release all" to release all current configuration first
4. Then click "renew all" to renew the IP information again (for Windows 2000/NT40/XP, run **IPCONFIG /release** and then run **IPCONFIG /renew**).

If the DHCP function is disabled and static IP addresses are assigned to each workstation, please double-check each workstation's IP address for any duplicate IP.

Cannot access the Internet

Check the physical connectivity of the local network.

Check to see that the LAN and WAN LEDs on the product's front panel are lit. If they are lit, please proceed to the next step. If not, make sure you are using the correct cables and the cables are connected to the network devices properly.

Check the physical connectivity of the broadband device.

Examine the LED of the LAN port and the LED of the broadband signal input on the Cable Modem/xDSL Modem. If the LAN LED is not lit, make sure you are using the correct cables and that the cables are connected to the devices properly. If the LED indicator for the broadband signal is not lit, please contact your ISP.

Check the status of your H-BR49.

After checking the cabling, you should also check to see if you have entered the correct user name and password provided by your ISP. Please note that the user name and password are case sensitive.

To check the Internet connection status, open the browser to start the web configuration, and then select **Network Status →WAN IP Status**. Check to see that the Link Status displays "**Connect successfully**". If not, you may have to contact your ISP to see if their Internet service is available.

Figure 41

Check the logical connectivity from your computer to the Internet.

Refer to the section "**PING.EXE**" in the "TCP/IP Network diagnosis" chapter.
Follow the steps described in that chapter to determine the source of the problem.

Diagnosis

TCP/IP Network Diagnosis

Execute *WINIPCFG.EXE* or *PING.EXE* for TCP/IP network diagnosis.

WINIPCFG

The WINIPCFG program (for Win95, 98, and ME) is used to gather information
about the TCP/IP connections that are active on your system. It cannot be used to
dynamically adjust TCP/IP connections. You can also renew leases (if allowed
by the network), and get the current IP address assignments through this program.

From Windows, go to **Start**, click **Run**, enter **WINIPCFG,** and click **OK**.
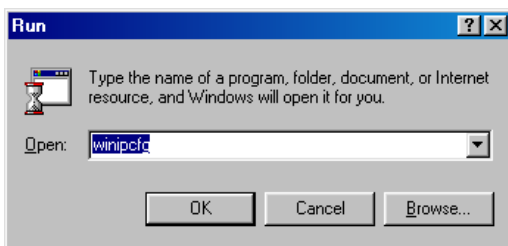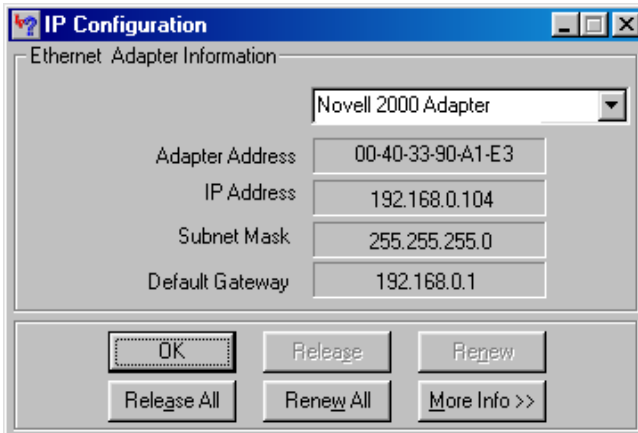

Figure 42: Run

The following figure displays the adapter address and current TCP/IP address.
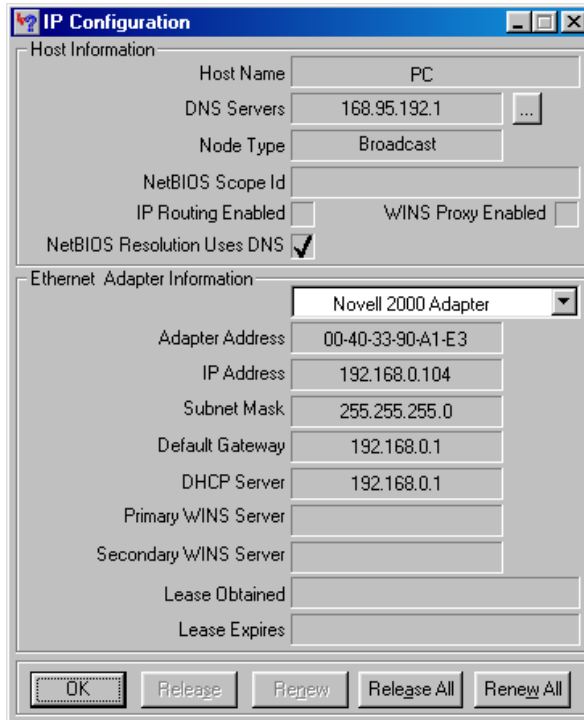
Note: Under "Ethernet Adapter Information", select the correct Ethernet adapter that is installed on your computer.

Figure 43: IP Configuration

Click the **More Info** button to get detailed configuration information.

Figure 44: IP Configuration

On the top, the computer's "Host Name" and "DNS server" are configured to call when it is looking for a named resource. The default gateway is the server through which the client connects to the Internet. The DHCP Server identifies the network server that assigns IP addresses to computers on the network.

If the product is working properly, the following should be apparent from this screen:

1. The Client should have an IP address within the prescribed range (default 192.168.1. #; where # is from 1 ~ 253).
2. The "DHCP" and "Default Gateway" should list the product's local port address (the device's IP address; the default is 192.168.1.254).
3. The DNS server IP addresses should match the DNS server IP addresses set in the device.

IPCONFIG

For Win NT and Win2000:

Go to "Start" → "Programs" → "Accessories" → "Command Prompt" to open the Command Prompt. Type in **IPCONFIG /ALL** and hit "Enter" to see the adapter's information. Type in **IPCONFIG /RELEASE** to release the IP addresses of all adapters and **IPCONFIG /RENEW** to renew the IP addresses. For a list of the **IPCONFIG** commands, type in **IPCONFIG /? .**

PING.EXE

Ping is used to verify that a computer is active and available. Users can "ping" a specific destination domain name or just the IP address.

Example**:**
To find the server 168.95.192.1, type the following command at the MS-DOS prompt and then press "Enter":

C:\>ping 168.95.192.1

PING can be executed in Windows as shown below:
1. Go to the **Start** menu.
2. Click **Run**.
3. Type **ping 168.95.192.1** and click **OK**.

4. The server (IP address) is online if the following message appears:
   Reply from 192.168.0.1: bytes=32 time=3ms TTL=100
5. The destination device is not reachable if the following message appears:
   Reply from 192.168.0.1: Destination host unreachable
   or **Request timed out.**

ISP Connectivity Checkup

Issue a PING command to the IP address of your ISP's gateway or DNS server.

For Example:
If the DNS server address is 203.66.81.254, enter **Ping 203.66.81.254** at the C:\>
prompt. If successful, you will be able to reach your ISP server. If unsuccessful
(Request timeout), you may have trouble connecting to your ISP. Please verify
that the product is properly configured to connect to your ISP. Also verify that
both your Cable/DSL modem and the line are functioning.

Internet Connectivity Checkup

PING to an IP address or domain name on the Internet.

For Example:
C:\> P ING 168.95.192.1 –w 5000
C:\> PING www.yahoo.com –w 5000
If successful, you will be connected to the Internet.
If you can ping the ISP's gateway, but cannot ping a specific site (e.g.,
www.yahoo.com) on the Internet, it is possible that your ISP has an internal
problem (the DNS server is not available).

Getting Technical Support

For further problems, please contact the distributor.

Appendix A: Specifications

Standards	IEEE 802.3 10Base-T Ethernet IEEE 802.3u 100Base-TX Fast Ethernet IEEE 802.3x Flow Control
Ports	WAN: One 10/100Mbps RJ-45 port for Cable/DSL Modem LAN: Four 10/100Mbps switched ports
Cabling type	UTP Category 3 or better (10Base-T) UTP Category 5 or better (100Base-TX)
Protocols Supported	IP, NAT, ARP, ICMP, DHCP client/server, PPPoE, PPP, PAP, CHAP, NTP, HTTP, TFTP, POP3
Management	Web-Based configuration and management, GUI program for Windows 98/ME/NT/2000/XP
LED indicators	Power/Error - Green for ok / Red for error Internet - Green for 10M/100M (flashing for activity) Local (1 – 4) - Green for 10M/100M (flashing for activity) New Email - Green (flashing for received e-mail)
Input power specifications	DC 5V
Physical Dimension	158 x 103 x 27 mm^3 (W x D x H)
Weight	220 g
Agency and Regulatory	FCC part 15 Class B, CE, VCCI, C-tick, BSMI
Operating Temperature	0°C to 50°C
Operating Humidity	0-90% non-condensing

Appendix B: Supported Internet Applications

Application	Settings for Outgoing Connection	Settings for Incoming connection
ICQ98a, 99b	None	None
ICQ2000b, ICQ2001b	DMZ function enabled	DMZ function enabled
NetMeeting 2.1 & 3.0	None	1503 (tcp) 1720 (tcp)
AOE	2300-2400 (tcp) 2300-2400 (udp) 47624 (tcp)	2300-2400 (tcp) 2300-2400 (udp) 47624 (tcp)
VDO Live	None	None
MIRC	None	None
Cu-Seeme	7648 (tcp) 7648 (udp) 24032 (udp)	7648 (tcp) 7648 (udp) 24032 (udp)
PCAnywhere	5632 (udp), 22 (udp), 5631(tcp), 65301(tcp)	5632 (udp), 22 (udp), 5631(tcp), 65301 (tcp)
Iphone 5.0	22555 (tcp)	22555 (tcp)
MSN 4.5	None	None
IP sec	500 (udp)	500 (udp)

Appendix C: WAN PORT LINK STATUS

PPPoE link status

"PPPoE offline. Ready to connect."	The device's wan port is not connected to the ISP's dial-up server. The dial-up connection to the Internet is now available.
"Connecting to server."	The device's WAN port is now dialing the dial-up server.
"Server found."	The device dialed the dial-up server, and is negotiating with the dial-up server.
"Start PPP negotiation."	Negotiation is ongoing.
"Authentication (PAP)."	The server is verifying the dial-up account using the PAP method.
"Authentication (CHAP)."	The server is verifying the dial-up account using the CHAP method.
"Obtaining WAN IP address."	Authentication is successful. The device is now obtaining the IP address from the dial-up server.
"Connect successfully."	The device dialed the server successfully. The user can now connect to the internet.
"Can not find server."	The device cannot dial the dial-up server. Dial-up to the server failed.
"Fail on LCP stage."	Configuration for the network link failed.
"Authentication (PAP) failure."	Failed in authentication; failure was caused by an incorrect password.
"Authentication (CHAP) failure."	Identification verification of the device dial-up account failed.
"Fail to Obtain WAN IP address."	The device cannot obtain the IP address from the dial-up server. Dial-up to the server failed.
"Server dropped the connection."	The server cut the device's internet connection. The device is disconnected from the Internet.
"Disconnect on idle."	The device has been idle longer than the idle interval and was cut off from the connection. The idle interval value was set in the field "Auto-disconnect if idle xxx Minutes".
"Connection establishment timeout."	The device was re-trying dial-up to the server and failed. The device finally gave up dialing the server.

DHCP link status

"DHCP already claimed"	The device obtained the IP address from the DHCP server.
"DHCP under claiming"	The device is trying to obtain the IP address from the DHCP server.

Static IP assignment link status

"Static assigned"	The IP address succeeds in setting up manually.