TW100-S4W1CA
Broad Band IP Gateway
+ 4-port Fast Ethernet Switch

User's Guide

F/W Version 5.0

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.

Specifications are subject to change without prior notification.

Table of Content

INTRODUCTION **1**

SAMPLE APPLICATION 2
FEATURES 2
PARTS NAMES AND FUNCTIONS 3
SYSTEM REQUIREMENTS 5

SET UP INTERFACE **5**

SYSTEM REQUIREMENTS **5**

FACTORY DEFAULT SETTINGS **6**

PASSWORD 6
LOCAL AND GLOBAL PORT ADDRESSES 6
INFORMATION FROM ISP 6

CONFIGURATION VIA WEB **8**

GLOBAL PORT 8
CATV dynamic Mode *9*
DSL dynamic Mode *10*
Static Mode *11*
LOCAL PORT 12
MANAGEMENT 13
VIRTUAL SERVER 15
PACKET FILTERS 16
STATIC ROUTER 18
WAN IP STATUS 18
CHECKING E-MAIL 20
FACTORY RESET 20

CONFIGURATION VIA GUI **21**

How to start *21*
Management *22*
Local Port *22*
Global Port *24*
Virtual Server *26*
Packet Filters *28*
Advance *30*

CONFIGURATION VIA TERMINAL COMMANDS **31**

How to start Telnet *31*
Starting the Configuration *31*

TERMINAL COMMAND **33**

SESSION 33
SHOW 34
USER 35
PASSWD 35
PING 36
TRACERT 36
SET 37
CONNECT 38
DISCONNECT 39
STATUS 39
UPGRADE 40

FIRMWARE UPGRADE **41**

ONE-STEP UPGRADE 41
MANUAL UPGRADE 41

CHANGING PASSWORD **43**

FROM GUI 43
FROM WEB 43
FROM TERMINAL 44
FORGOT YOUR PASSWORD? 44

FAQ **45**

WHAT IS DMZ? 45
WHAT IS PPPOE (PPP OVER ETHERNET)? 45
How can I know I am using PPPoE? *45*
Checking PPPoE Connections *45*
1.For GUI Setup program *45*
2. Checking PPPoE status through Terminal Mode *45*
FACTORY RESET 46
IP ADDRESS CONFLICT 47
CAN NOT ACCESS THE INTERNET 47
DIAGNOSIS 49
TCP/IP Network Diagnosis *49*
ISP Connectivity Checkup *51*
Internet Connectivity Checkup *52*
GETTING TECHNICAL SUPPORT 52

APPENDIX A SPECIFICATIONS **53**

APPENDIX B SUPPORTED INTERNET APPLICATIONS **54**

Introduction

The BroadBand IP Gateway + Fast EtherSwitch is an integrated Internet IP sharing device with a built-in 4-port 10/100Mbps N-Way Fast Ethernet switch. It is 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, protecting your network from being accessed by outside users. All incoming data packets are monitored and filtered. It can also be configured to block internal users from accessing to the Internet.

This device comes with an easy-to-setup program which ease you all the effort of setting up and upgrading.

Thanks to both DHCP client and DHCP server, which complete the network configuration automatically. The built-in 4-port Fast Ethernet Switch lets users plug the network cable into the device without buying additional Hub/Switch. With the functions of the IP Share, you can enjoy the true Plug & Play installation.

Auto-start PPPoE connection before it checks email when the PPPoE connection was not previously established.

In addition, the unit is equipped with an Incoming Mail Indicator, which will lit green when there is e-mail waiting to be retrieve at the mail server, indications vary as ready-for-retrieved mail(s) increase.

Sample Application

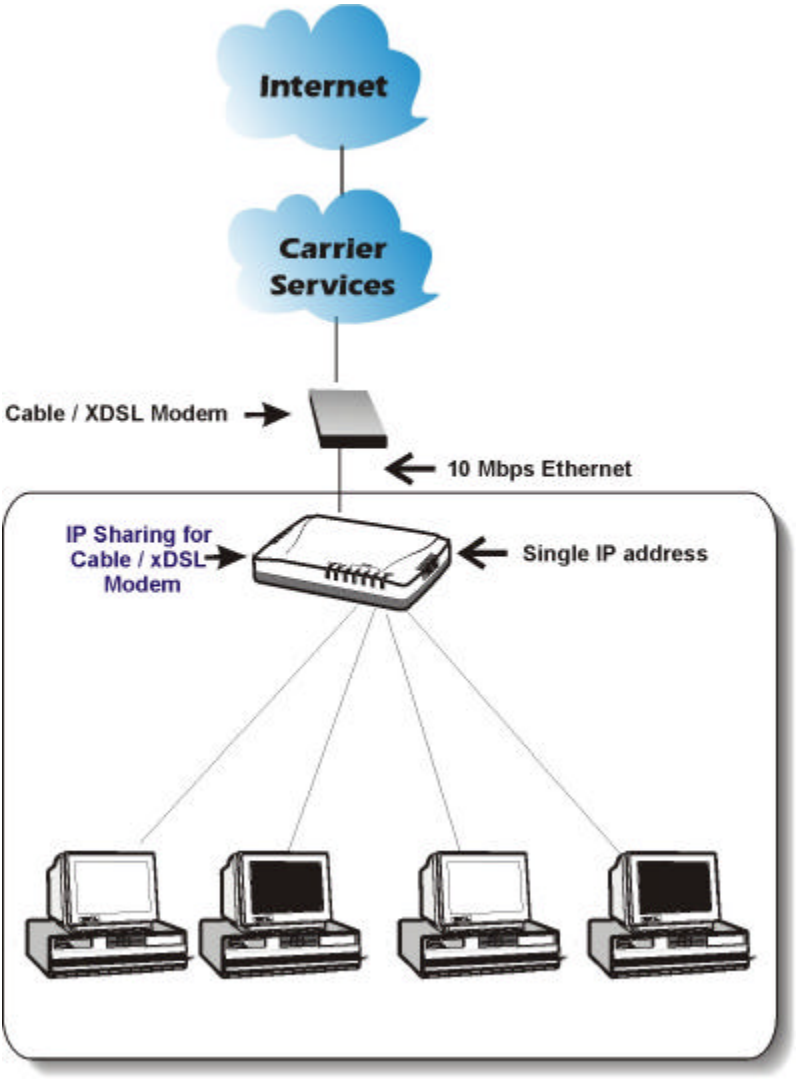


Figure 1: Small Office/ Home Office Setup

Features

?? For Internet connection.

?? Supports VPN (PPTP pass thru).

?? Supports PPPoE.

?? Supports Internet applications such as Web, ICQ, FTP, Telnet, E-Mail, News, NetMeeting, Net2Phone, PCAnyWhere, mIRC , CuSeeMe, AoE…etc.

?? Natural firewall keeps hackers out.

?? DHCP server allocates up to 253 client IP addresses.

?? DHCP client to get global IP address automatically.

?? 4 ports 10/100Mbps N-Way Fast Ethernet Switch

?? Virtual server.

?? Rich packet filters.

?? Static routing supported.

?? Support Proxy -DNS.

?? Easy setup by Web Browser, Windows GUI program and Telnet through network.

?? Flash memory for firmware upgrade.

?? Incoming email flashing indication.

?? Limit management through GUI or Web.

?? DMZ host supported.

?? Supports static IP and DNS for PPPoE.

?? Multiple PPPoE accounts.

?? Auto-reconnect for PPPoE.

?? WINS information distribution.

?? WAN IP status list.

?? Blocks WAN request.

?? One-step firmware upload utility.

Parts Names and Functions

LED Indicators on the Front Panel **Ports on the Rear Panel**

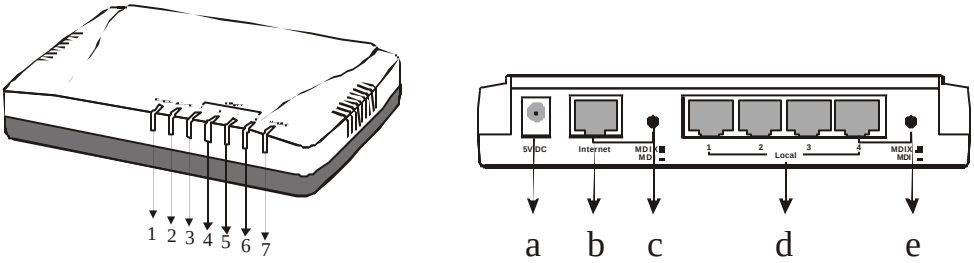


Figure 2: LED Indicators and Ports

	LED Indicator	Color	Status	
			Solid	**Flashing**
✍	**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.
✍	**Internet**	Orange (10M) Green (100M)	Connected and linked to a Cable/xDSL Modem. Glows orange with 10Mbps Internet connection; green with 100Mbps.[1]	Receiving/ Sending data
✍	**Local 1**	Green /Orange	Turns green when connecting to a 100Mbps Fast Ethernet connection.	Receiving/ Sending data
✍	**Local 2**			
✍	**Local 3**		Turns orange when connecting to a 10Mbps Ethernet connection.	
✍	**Local 4**			
✍	**Have Mail**	Green	Flashing frequency (F) vs. Email amount (N) F = 1 when N < 5 F = 2 when 5 ? N < 10 F = 3 when 10 ? N < 20 F = 4 for the rest of conditions.	

Table 1: LED Indicators

	Port/button	Functions

[1] The Internet LED indicator will glow only orange if the model you purchased is with 10M WAN port.

a	**5V DC**	Connects the power adapter plug.
b	**Internet**	Connects to a Cable/xDSL modem.
c	**MDIX\MDI**	Press this button to select Internet port wiring scheme (MDIX or MDI).
d	**Local (1-4)**	Four RJ-45 dual-speed (10/100Mbps) auto-sensing ports for connecting with either 10Mbps or 100Mbps Ethernet connections.
e	**MDIX\MDI**	Press this button to select Local 4th port wiring scheme (MDIX or MDI).

Table 2: Connections Ports

System Requirements

See the following table of system requirements for setting up and managing this product.

System	Set Up Interface	System Requirements
PC	GUI	1. Windows 95, 98, ME, NT or 2000. 2. Netscape 4.0 or above; or IE 4.01 or above installed
PC, Unix, or Macintosh	Web (HTTP)	
	Telnet	

Factory Default Settings

Password

Default setting: left blank.

Setting up password: When using Telnet or Web (HTTP) to configure the device, press **Enter** to login the configuration for the first time. It is recommended that you set a password for security and management purpose.

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

Local and Global Port Addresses

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

Local Port		**Global Port**
IP address	192.168.1.254	DHCP client function is *enabled* to automatically get the Global port configuration from 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	

Table 3: Local and Global Port Addresses

Information from ISP

Before you start configuring this device, you should gather the information as illustrated in the following tables and keep it for reference.

For CATV dynamic mode:

Adapter Address	Some Internet Service Providers (ISP) requires 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: Under Windows 98: Click **Start**✍**Run**, type in "**winipcfg**". Under Windows ME or 2000, Click **Start**✍**Run**, type in "command", and press Enter. At the DOS prompt, type

	"**ipconfig/all**". The "Physical Address" with 12 digits is your adapter's MAC address.
Device/Computer Name (or Host Name by some ISP.)	Enter a descriptive name for identification purpose. You may have to check with your ISP to see if your Broad Band 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) requires this information and if that is the case, they will provide you with the name.
Domain Name	*ex.* ***yourcompany.com,*** Provided by your ISP.

Table 4 Device information

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 purpose. 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.

Table 5 PPPoE information

For Static Mode:

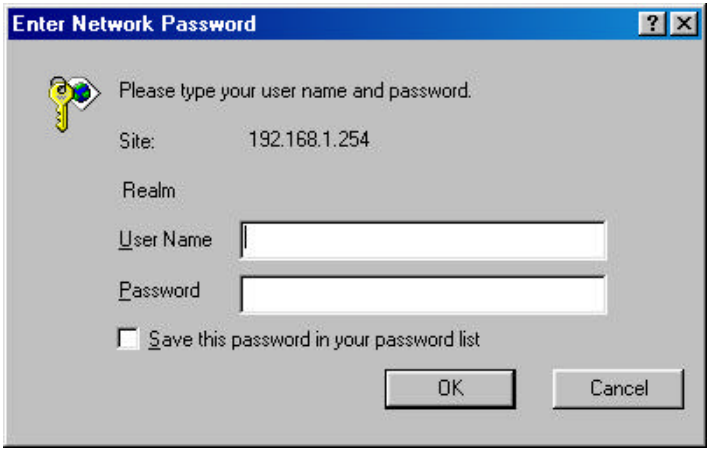
	IP address
ISP-assigned IP address	Ex. 203.66.81.201
Subnet mask	Ex. 255.255.255.0
Gateway	Ex. 203.66.81.254
DNS server #1	Ex. 203.66.81.251
DNS server #2	Ex. 203.66.81.252

Table 6: ISP Assigned Addresses

Configuration via Web

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. 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.

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



At the setup home page, the left navigation pane where bookmarks are provided links you directly to the desired setup page. You can select **Global Port, Local Port, Management, Virtual Server, Packet Filter, Static Router, WAN IP Status, Checking EMail, Factory Reset**.

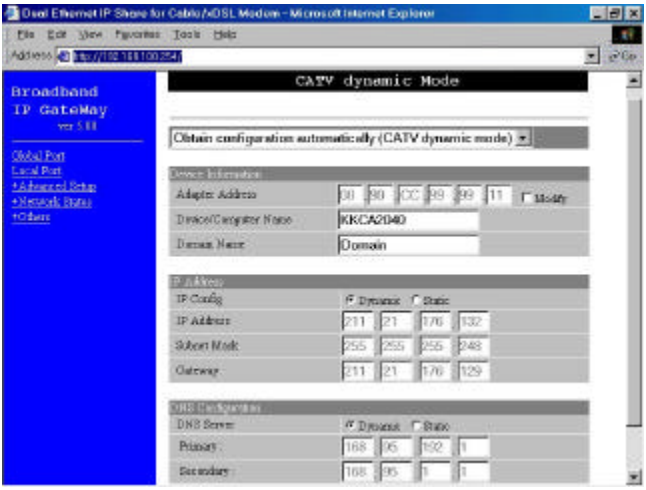
Click on the desired setup item to expand the page in the main navigation pane. The setup pages covered in this utility are described below.

Global 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, please remove any previously installed PPPoE software and then install the IP Sharing device.
Static configuration: Select this item when the ISP assigns static IP address for your account.

CATV dynamic Mode



Adapter Address: This field is grayed out. The Adapter Address is a specific set of numbers that identifies the network device; normally you don't need to change it. In case there is a need to modify your MAC address, check ? **Modify** and enter the new MAC address accordingly.

Device/Computer Name: Enter a descriptive name for identification purpose. Some Internet Service Providers (ISP) requires 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.

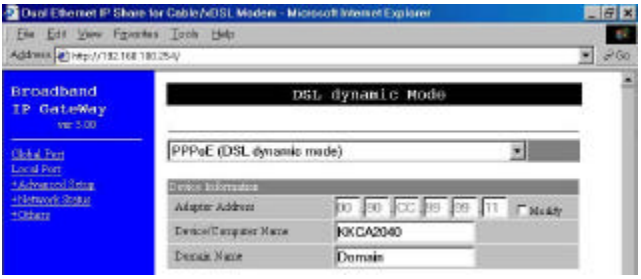
Note: Your ISP may ask you to input a certain domain name. Domain name is also required for internal network's email and news functions.

IP Config: Select Dynamic or Static. If Static configuration is selected, enter the information of IP Address and **Subnet Mask** provided by your ISP.

Gateway: Enter the information provided by your ISP.

DNS Server: Select Dynamic or Static. Enter the information of Primary and Secondary DNS Server provided by your ISP when Static configuration is selected.

DSL dynamic Mode



Device Information

Adapter Address: This field is grayed out. The Adapter Address is a specific set of numbers that identifies the network device; normally you don't need to change it. In case there is a need to modify your MAC address, check ? **Modify** and enter the new MAC address accordingly.

Device/Computer Name: Enter a descriptive name for identification purpose. Some Internet Service Providers (ISP) requires 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 three PPPoE accounts, while only one which you selected is active each time you enable PPPoE.

Username:

• Maximum input is 52 alphanumeric characters (case sensitive).

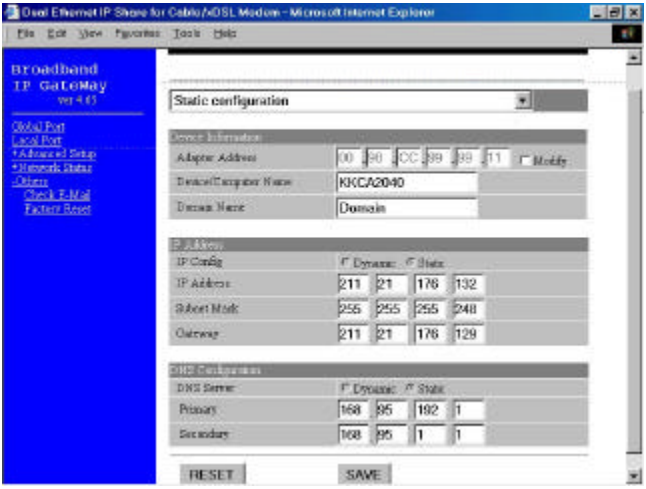
Password:

• Maximum input is 36 alphanumeric characters (case sensitive).

Service Name: For identification purpose. If it is required, your ISP will provide you with the information.
Static IP Address: Enter the information provided by your ISP.
Static DNS Server: Enter the information provided by your ISP.

Auto-disconnect if idle for ? minutes: Configure this device to auto-disconnect when there is no activity on the line for a predetermined period of time.
?? Default: 5 minutes. You can input any number from 0 to 65535.
?? To keep the line always connected, set the number to 0.
✍**Auto-reconnect :** Check to enable auto-reconnected. This function is helpful particularly when you are logged off for problems caused at your ISP side.

Static Mode



Adapter Address: This field is grayed out. The Adapter Address is a specific set of numbers that identifies the network device; normally you don't need to change it. In case there is a need to modify your MAC address, check ? **Modify** and enter the new MAC address accordingly.

Device/Computer Name: Enter a descriptive name for identification purpose. Some Internet Service Providers (ISP) requires 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 Config ✍**Dynamic** ✍**Static** This line was grayed out. For static configuration, it was preset, so no dynamic IP address is allowed.

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 was grayed out. For static configuration, the value was preset, so no dynamic DNS Server is allowed.

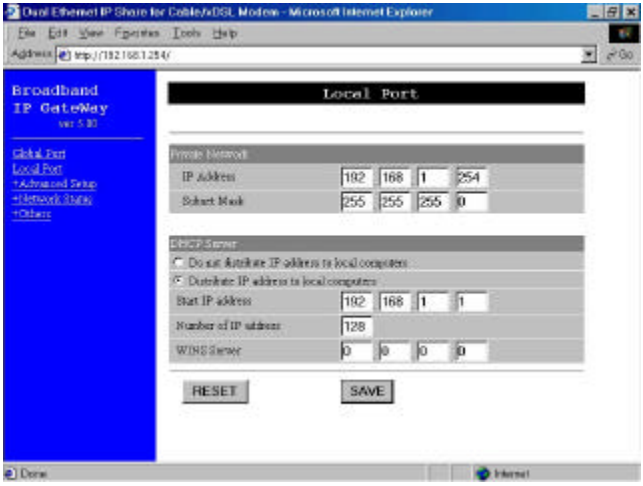
Primary/Secondary: Enter the information provided by your ISP.

SAVE: After completing the settings on this page, click "SAVE" to save the settings.

RESET: Click "**RESET**" to clear all the settings on this page.

Local Port

This screen contains settings for LAN interface attached to the local network.



Private Network

IP Address

?? Default: 192.168.1.254

SubNetmask

?? Default: 255.255.255.0

DHCP Server

✍ **Do not distribute IP address to local computers**[2]

[2] If you check this selection, remember you have to specify static IP address for all your local computers.

Checking this radio button to disable this IP Sharing device to distribute IP Addresses (DHCP Server disabled).

✍ **Distribute IP addresses to local computers**

Checking this radio button to enable this IP Sharing device to distribute IP Addresses (DHCP enabled). And the following field will be activated for you to enter the starting IP Address:

Starts IP address :

The starting address of this local IP network address pool. The pool is a piece of continous IP address segment. Keep the default value 192.168.1.1 should work for most cases.

Number of IP address:

?? Maximum: **253**. Default value 253 should work for most cases.

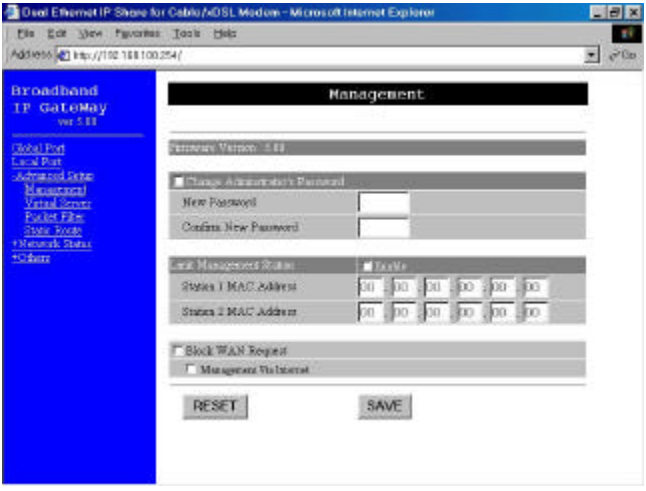
Note: If "Continuous IP address poll starts" is set at 192.168.1.1 and the "Number of IP address in pool" is 253, the device will distribute IP addresses from 192.168.1.1 to 192.168.1.253 to all the computers in the network that request IP addresses from DHCP server (IP Sharing Device).

WINS server: Enter the IP Address Windows domain name server.

SAVE: After completing the settings on this page, click "SAVE" to save the settings.

RESET: Click "RESET" to clear all the settings on this page.

Management



In this management page, you can

1. **Change Administrator's password**

2. **Limit Management**: Enables two stations to manage this IP Share through Web configuration. Enter the MAC addresses for the stations you select for management. After the setup is completed, only the assigned stations with password authentication can manage this device.

3. **Block WAN Request**: Blocks requests from Internet to the local network.

   If this item is checked, the function of management through Web configuration or Telnet will be automatically disabled, in other words, Internet requests and the Telnet/HTTP managements, namely ICMP, IDENT, Telnet, and HTTP will be rejected at the same time.

4. **Management Via Internet**: Allows management of this device via HTTP and Telnet from Internet.

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

V: Checked

X: Unchecked

Block WAN Request	Management Via Internet	Coordiante Result
V	X (automatically)	WAN requests over TCP 113 (IDENT) and ICMP are rejected. No Telnet, HTTP managements are allowed.
X	V	WAN requests over TCP 113 (IDENT) and ICMP are accepted. Telnet, HTTP managements are allowed.
X	X	WAN requests over TCP 113 (IDENT) and ICMP are accepted. No Telnet, HTTP managements are allowed.

SAVE: After completing the settings on this page, click "SAVE" to save the settings.

RESET: Click "RESET" to clear all the settings on this page.

Virtual Server

In this page, you can set up a local server with specific port number which 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 by either port numbers or by names.

Maximum 12 Server entries are allowed and each port number can only be assigned to one IP address.

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

Application (Port): Select from the most popular server applications for Virtual Server. Click ? to scroll down for more selections.

Port Type: please select the port type (TCP or UDP) for the port number that was entered above.

Single/Range: For selecting between a specific port and a range of ports which you want the Internet users to be able to access. The valid port number ranges from 0 to 65535.

Local Server IP Address: Enter the Local Server's IP address (for the specified port entered above).

ADD: Each time you finished setting, click the **Add** button and the added servers will appear on the **Server List**..

RESET: Click "RESET" to clear all the settings on this page.

Server List: Display all the virtual servers.

DELETE ALL: Click to delete all the servers on the list.

DELETE: Click to delete the selected server.

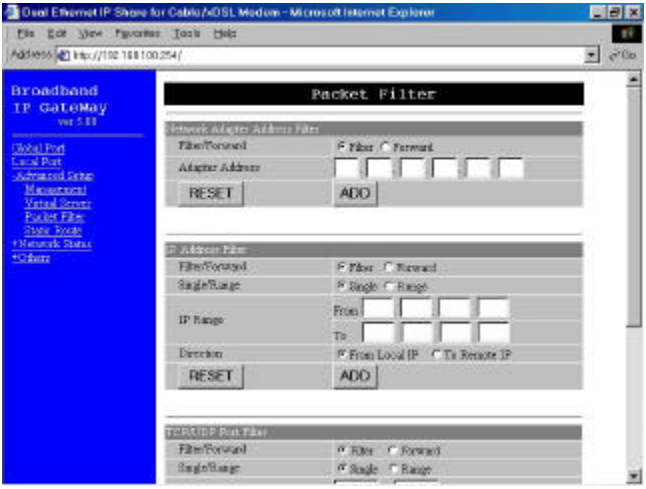
DMZ Host Function: If the DMZ Host Function is enabled, it means that you set up DMZ host at a particular computer to be exposed to the Internet so that some applications/software, especially Internet / online game can have two-way connections.

DMZ Host IP Address: Enter the computer's IP Address for DMZ Host.

RESET: Click "RESET" to clear all the settings on this page.

SAVE: After completing the settings on this page, click "SAVE" to save the settings.

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 through

the following three types of filter. Each filter can be set to **filter (drop)** or **forward (pass)** packets. You can input up to six filters in this device.

Network Adapter Address Filter: Filter according to **local** computer's network adapter MAC address (also known as the adapter card's Physical Address).

IP Address Filter: Filter with computer's IP address.

Single/Range: You can filter a single IP, or a range of the IP addresses.

IP Range: Enter the Start and End IP addresses for a range of IP addresses for filter/forward.

Direction ✍**From Local IP** ✍**To Remote IP**: filtering IP address of a **local** computer; or filtering 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 filter for a single port or a range of ports.

Filter/Forward: Select action (Filter/Forward) for the assigned port(s).

Single/Range: You can filter a single port (i.e. 80), or a range of ports (i.e. 80 to 125)

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.

ADD: Each time you finished setting the filters, click the **Add** button and the added filter will appear on the **Filter List**.

RESET: Click "RESET" to clear all the settings on this page.

Filter List: Display all the Packet Filters.

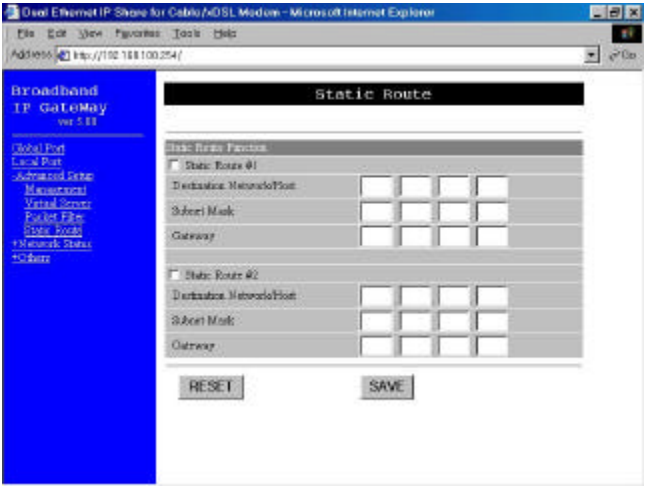
DELETE ALL: Click to delete all the filters on the list.

DELETE: Click to delete the selected filter.

Static Router

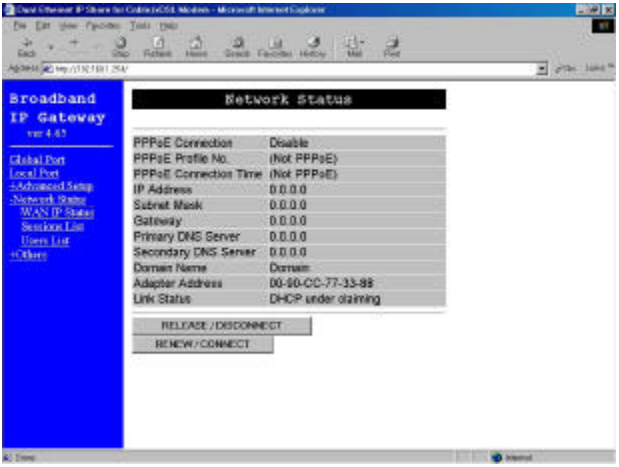
You can set static routes to manually administrate the network topology/traffic when the dynamic route is not effective enough.

Select "**Static Route #1**" or "**Static Route #2**", enter the settings, and click "**SAVE**" to save settings. Click "**RESET**" to clear all entries.

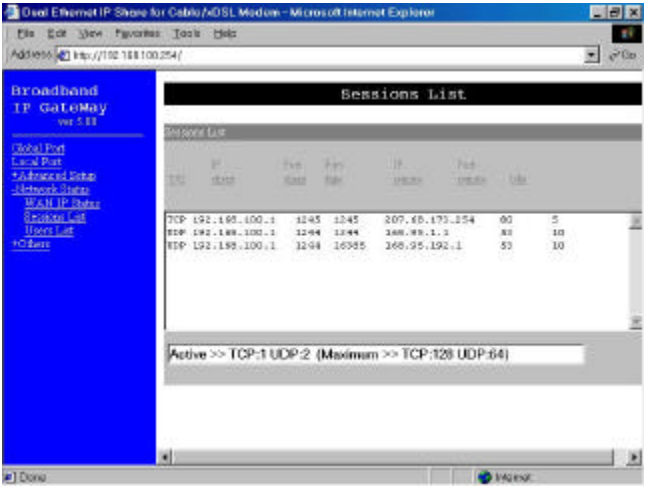


WAN IP Status

Network Status: Display the current Internet connection status.



Sessions List: Displays active Internet sessions through this device.

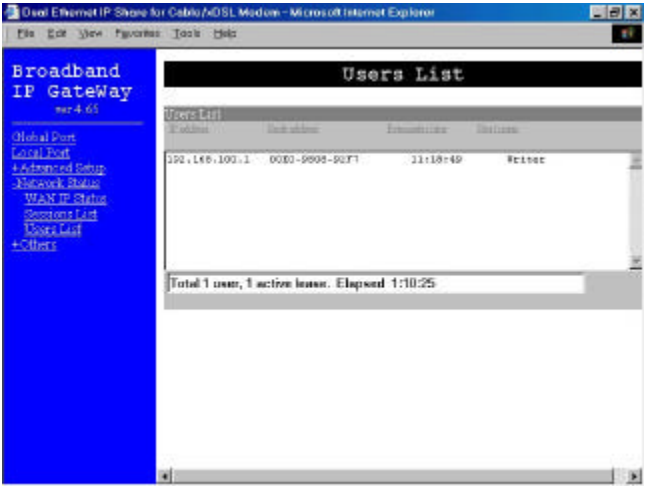


IP Client/ Port Client: The local network IP address/port number of one end point of a session.

Port Fake: Featuring NAT, 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 of the other end of a session.

Users List: Displays the current active users.

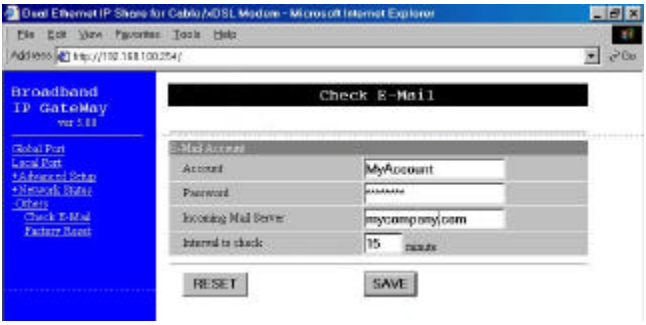


Checking E-Mail

You may set a mail account on this IP Share to periodically check up incoming emails. You'll need to enter the account name, password, the name of the incoming mail server and the interval to check mail. The “Have Mail” LED flashing frequency dependents on the number of e-mail that is waiting for you to retrieve. For details of the e-mail LED indication, refer to the section titled “Parts Names and Functions”.

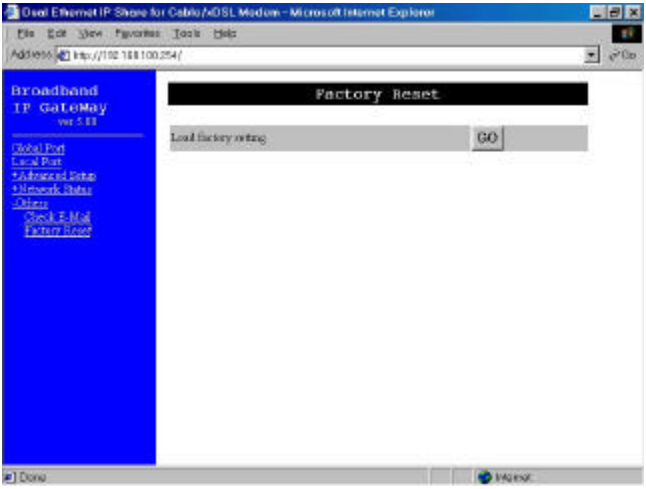
RESET: Click “**RESET**” to clear all the settings on this page.

SAVE: After completing the settings on this page, click “**SAVE**” to save the settings.



Factory Reset

To reset to factory default setting, click the GO button. **Note that performaing the Factory Reset will erase all previously entered settings.**



Configuration via GUI

How to start

1. For the first time installation, insert the setup diskette in the floppy drive, in Windows, run **setup.exe** at the diskette's root directory.

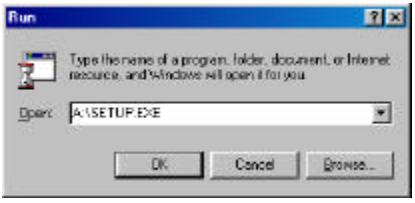


Figure 3

2. After installing the setup program, go to **Start**✍ **Programs** ✍ **Broadband IP Gateway.**

3. When the opening screen appears, you will be prompted a list of the current active devices. Click to select the device you want to configure.

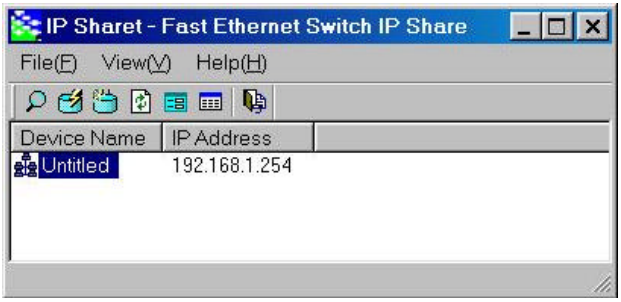


Figure 4

4. Click  on the tool bar to configure the selected device.

The **configure** dialog box is categorized into several tabs as shown in the following.

Management

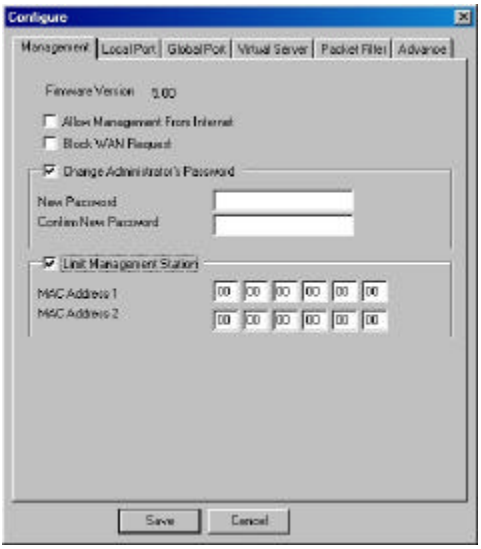


Figure 5

Firmware Version: the current firmware version (Read-only).

Allow Management From Internet: Check to allow Web and Telnet configuration.

Block WAN Request: Check to block requests from Internet to the local network.

Change Administrator Password: In this dialog box, you can set administrator's password.

?? **Maximum: 6** alphanumeric characters (case sensitive). Please record the password and keep it at a safe place.

Limit Management Station: Check to allow two stations to manage this IP Share without entering any passwords. Enter the network adapter MAC Address of the two management stations.

Local Port

This screen contains settings for LAN interface attached to the local network.

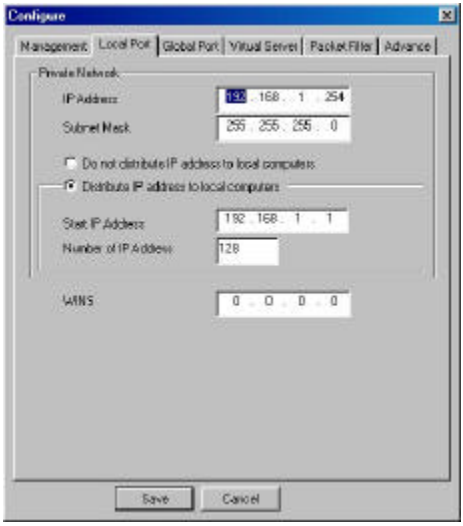


Figure 6

IP Address

?? Default: 192.168.1.254

SubNetmask

?? Default: 255.255.255.0

✍ **Do not distribute IP address to local computers**[3]

Checking this radio button to disable this IP Sharing device to distribute IP Addresses to the local network.

✍ **Distribute IP addresses to local computers**

Checking this radio button to enable this IP Sharing device to distribute IP Addresses. And the following field will be activated for you to enter the starting IP Address:

Start IP Address: Enter the starting address of this local IP network address pool. The pool is the number of continues IP addresses.

Number of IP address in pool

?? Maximum: **253**. Default: **253**

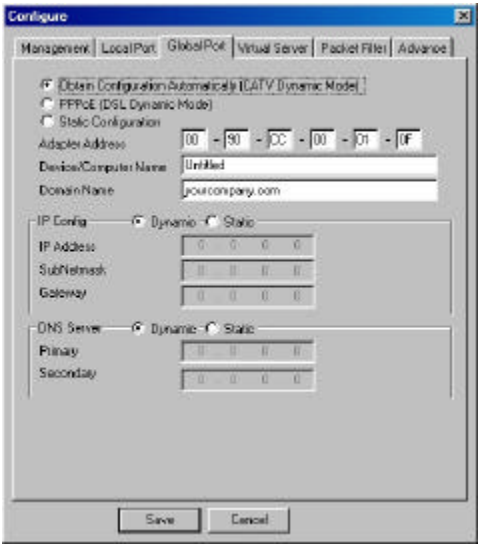
[3] If you check this selection, remember you have to specify static IP address for each of your local computers.

Global Port

This screen contains settings for the Global Port (WAN) interface. There are three WAN interfaces; "Cable modem", "ADSL with PPPoE enabled", and "Static Leased Line". Each interface's setup page is different; please click to select the appropriate WAN interface for your environment.

Adapter Address: It is necessary for some ISP to identify this device by its MAC address.

Device/Computer Name: Enter a descriptive name for identification purpose. Some Internet Service Providers (ISP) requires this information and if that is the case, they will provide you with the name. The Maximum input for this field is **20** alphanumeric characters and it is case sensitive.



CATV Dynamic Mode

Figure 7

✍ ***Obtain configuration automatically (CATV dynamic mode):***

For users who are using Cable Modem Internet service.

Adapter Address: It is necessary for some ISP to identify this device by its MAC address.

Device/Computer Name: Enter a descriptive name for identification purpose. Some Internet Service Providers (ISP) requires this information and if that is the case, they will provide you with the name. The Maximum input for this field is **20** alphanumeric characters and it is case sensitive.

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** You may select Dynamic IP configuration to automatically assign IP address (most cases) or Static to have a fixed IP address.

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

WINS server: Enter the Windows domain name server.

✍ ***PPPoE (DSL dynamic mode):***

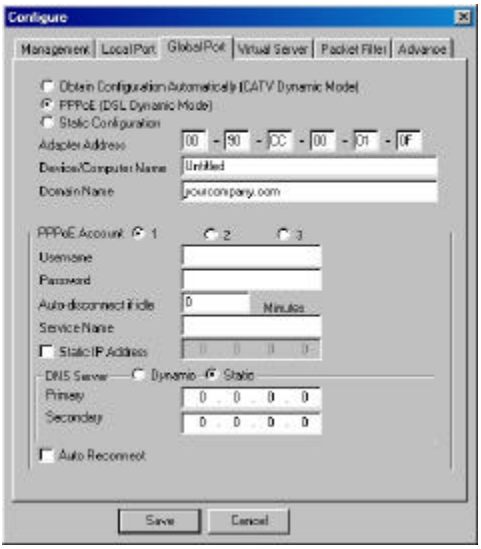


Figure 8

For users who are using xDSL Internet service that runs PPPoE, after installing the IP Sharing device, please remove the PPPoE software from your computers.

PPPoE Account ✍ **1** ✍ **2** ✍ **3**

You can set three PPPoE accounts, while you can only active one account at a time.

Username: Maximum input is 52 alphanumeric characters (case sensitive).

Password: Maximum input is 36 alphanumeric characters (case sensitive).

Auto-disconnect if idle for: This device can be configured to auto-disconnect when there is no activity on the line for a predetermined period of time.

• Default: **5** minutes. You can input any number from 0 to 65535.

• To keep the line always connected, please set the number to 0.

Service Name: For identification purpose. If it is required, your ISP will provide you with the information.

Static IP address: Click **Dynamic** to have an automatically assigned IP address; or click **Static** to enter the IP address provided by your ISP.

Auto Reconnect: Check to enable auto-reconnected. This function is helpful particularly when your ISP accidentally disconnect you from the service.

✍ ***Static Configuration:***

Check this button when the ISP assigns static IP address for your account and then enter the ISP provided IP address, subnet mask, Gateway and Primary and Secondary DNS.

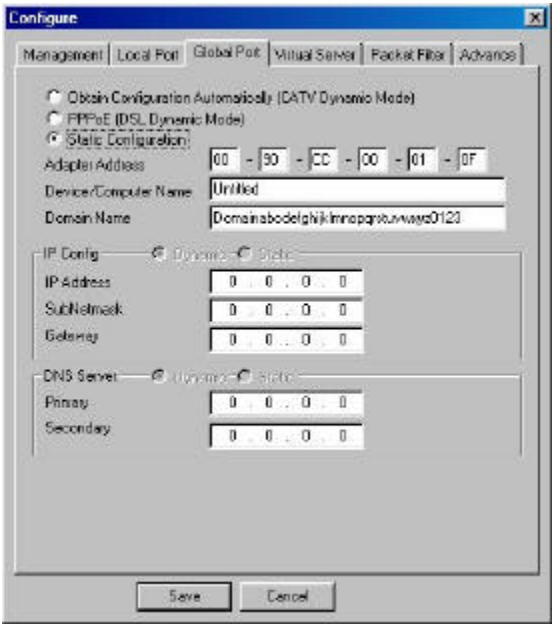


Figure 9

Virtual Server

Being a natural Internet firewall, this IP Sharing device protects your network from being accessed by outside users. When there are applications that require outside users to access internal servers (e.g. Web Server, FTP Server, e-mail Server or News Server), this device can act as a virtual server to serve Internet requests. You can set up a local server with specific port number which 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.

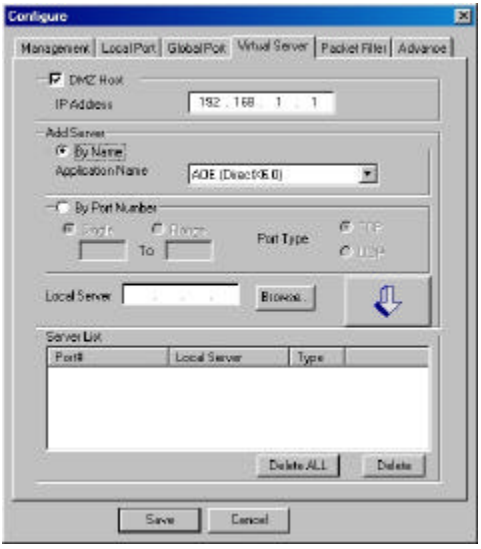


Figure 10

DMZ Host: Check to set up DMZ host at a particular computer to be exposed to the Internet.

IP Address: Enter a Local Server's IP address for the DMZ Host.

Add Server: Click By Name or By Port Number to add the local server on the Server List.

By Name: Click to select the server applications.

Application Name: Click the down arrow ? to scroll down and select from the most popular server applications for Virtual Server.

By Port Number:

Single Port/Port Range: For selecting between a specific port and a range of ports which you want the Internet users to be able to access. The valid port number ranges from 0 to 65535.

Port Type: please select the port type (TCP or UDP) for the port number that was entered above.

Local Server: Enter the Local Server's IP address (for the specified port entered above).

Browse: If DHCP function is enabled, click on "Browse", the distributed IP Addresses (with associated computer name) will appear on the screen. You can select the desired IP address (for the specified port entered above) and add it to the server list.

✍: After selecting the port number and the internal server, click this button to save the new virtual server, so that it can take effect after system reboots.

Note: Maximum 12 Server entries are allowed and each port number can only be assigned to one IP address.

Server List: The Local Server IP Addresses will appear on the screen.

Delete: click to select the **Port#** in the "Server List" and click "Delete" to delete the server from the list.

Delete All: Click to delete all the listed virtual servers.

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 through the following three types of filter. Each filter can be set to **filter (drop)** or **forward (pass)** packets. You can input up to six filters in this device.

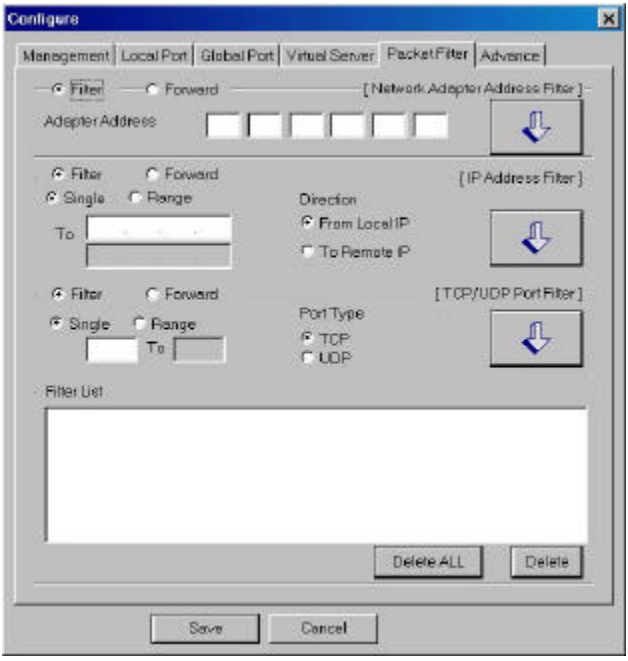


Figure 11

Network Adapter Address Filter: filter according to **local** computer's network adapter MAC address (also known as the adapter card's Physical Address).

IP Address Filter: Filter with computer's IP address. You can filter a single IP, or a range of the IP addresses.

- ?? **From Local IP**: filtering IP address of a **local** computer.
- ?? **To Remote IP**: filtering IP address of a **remote** server (this remote server connects to the device via Internet).

***Note**: Use "To Remote IP" function to prohibit all local stations from accessing certain web sites on the Internet (requires the web site's IP address).*

TCP/UDP Port Filter: Filter using the port number. You can set filter for a single port or a range of ports.

- **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.

***Note**: You can only set each filter type to either forward or filter. For example, you can't set one IP address to forward and set another IP address to filter. You must set them both to either forward or filter. However, you can set to forward an "Adapter Address" and set to filter an "IP address".*

Each time you finished setting the filters, click ✍and the added filter will appear on the **Filter List**.

Delete: To remove a filter, click to select the filter in the **Filter List** and click **Delete**

Delete All: Click to delete all the listed virtual servers.

After the configuration, click on **Save** to save the settings. Click **Cancel** to cancel the configuration process.

Advance

Static Route:

In the **Advance** setup screen, you can set static routes to manually administrate the network topology/traffic when the dynamic route is not effective enough.

Select "**Static Route #1**" or "**Static Route #2**", enter the settings.

E-Mail Account:

You may set a mail account on this IP Share to periodically check up incoming emails.

You'll need to enter the **account name**, **password**, **the name of the incoming mail server** and the **time interval** for checking mail.

The Have Mail LED will flash differently, dependents on the amount of e-mail need to be retrieved.

Configuration via Terminal COMMANDS

You can use terminal emulation on your PC/workstation for the initial and future configuration of your product. If you prefer, a telnet session can be opened directly. Telnet provides the same type of terminal emulation. For security purposes, the product uses port **333** for telnet. All of the following Terminal Mode Configuration menus are identical in the telnet session, with the exception that any saved changes that result in the product rebooting, will require user to open a new telnet session to reestablish a connection with the product. For more information on telnet configuration, please see "How to Start Telnet" section below

How to start Telnet

1. The instructions below are for using this unit with its default settings (i.e. DHCP enabled, Local Port IP address: 192.168.1.254, SubnetMask: 255.255.255.0).
2. Go to **Start**✍**Run**.

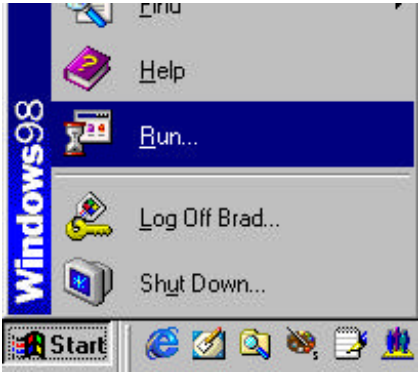


Figure 12

3. Type "**telnet 192.168.1.254 333**" and click on **OK**. If the local port's IP address was set to something other than the factory default ("192.168.1.254"), enter that IP address.

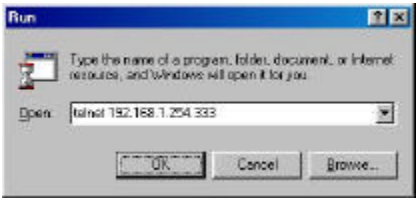


Figure 13

Starting the Configuration

1. Once the connection is made successfully via Telnet, the following information will appear,

```
Dual Ethernet IP Share for Cable/xDSL Modem, version X.XX

Administrator password:
```

2. No password is required the first time you log in. Press <**ENTER>** to enter Configure mode. The screen prompts you for the following command.

```
command>
```

3. Type **?** and hit "Enter" for a list of the commands.

Refer to the next section "**Terminal Commands**" for detail description of terminal commands.

Terminal Command

Type ***?*** or ***help*** and hit “Enter” to list the main menu commands as below.

```
command>help
```

```
Dual Ethernet IP Share for Cable/xDSL Modem, version X.XX

=====================================================

Command                   Description

-----------------------------------------------------

help              Show this message
session           List active internet sessions
show              Display active configuration
user              List active local IP address leases
passwd            Change administrator's password
ping <x.x.x.x>    Ping the specified host
tracert <x.x.x.x>       Trace the specified host
set               Configure device in batch
connect           Make PPPoE connection
disconnect        Break PPPoE connection
status            Show PPPoE connection status
upgrade           Upgrade firmware
quit              Exit to login prompt
reboot            Restart device

===========================================

command>
=====================================================
```

session

List active Internet sessions through this device.

Example:

```
command>session

          IP              Port   Port   IP              Port
T/U Flag  client          client fake   remote          remote idle AP Type
---+-----+---------------+------+------+---------------+------+----+------
tcp   37  192.168.10.27   1062   4133   210.66.41.132   110    0    GENERAL
tcp   7   192.168.10.31   1032   4136   211.75.84.154   80     0    GENERAL
tcp   7   192.168.10.31   1033   4138   211.75.84.154   80     0    GENERAL
tcp   7   192.168.10.32   1729   4139   140.113.39.195  110    0    GENERAL
tcp   7   192.168.10.27   1063   4140   210.66.41.132   110    0    GENERAL
udp   1   192.168.10.31   1028   16385  168.95.192.1    53     20   GENERAL
udp   1   192.168.10.32   1726   16386  168.95.1.1      53     5    GENERAL
udp   1   192.168.10.32   1728   16387  168.95.192.1    53     5    GENERAL
Active >> TCP:5,UDP:3  (Maximum >> TCP:128,UDP:64)
```

show

Displays the current configuration. For first-time login, the current configuration is the factory default settings. Refer to section titled "**Factory Default Setting**" for detail.

Example:

```
command>show

Wan Mac Address: AB CD 12 34 56 78

IP address of local port: [192.168.1.254]

Subnet Mask of local port: [255.255.255.0]

Distribute IP addresses to local computers: [Yes]

Continuous IP address pool starts at: [192.168.1.1]

Number of IP address in pool: [128]

Enable PPPoE: [No]
```

```
Obtain global port configuration from ISP : [Yes]  .. under claiming
IP address of global port : [0.0.0.0]
SubNetmask of global port : [0.0.0.0]
Device name : [Untitled]
Domain name : [Domain]
Gateway : [0.0.0.0]
Primary DNS server : [0.0.0.0]
Secondary DNS server : [0.0.0.0]
```

user

Displays the current active users (up to 253 users).

Example:

```
command>user
IP address       Node address    Remainder time  Host name
---------------+--------------+--------------+---------
192.168.10.1     0080-C8F8-8A64   5:47:17        Allen
192.168.10.2     0080-C8F8-8A64   expired        Calvin
192.168.10.3     0080-C8F8-8A64   0:12:25        Edward
192.168.10.4     0080-C8F8-8A64   2:55:48        Victoria
192.168.10.5     0080-C8F8-8A64   expired        SNL
Total 5 users, 3 active leases.
Elapsed  0:01:03
```

passwd

?? No password is required when logging in for the first time.

?? At command>, type in **passwd** and hit “Enter” to enter the password setup screen.

?? Password can be up to six characters long.

?? Password can contain letters, numbers, and spaces.

?? Password is case sensitive.

?? To set or change your password, key in up to six characters and hit “Enter”. You will be prompted to reenter your password again for verification. Return to the Start screen by typing quit.

Test your new password to verify it has taken effect.

Example:

```
command>passwd

Please type old password :

type new password (0 to 6 characters) : ****

re-type new password (0 to 6 characters) : ****
```

ping

Ping is a basic Internet program that lets you verify if a particular IP address exists and can accept requests. At **command>** type in **ping** and then the **IP address** that you wish to detect and hit “Enter”. If the screen shows “reply ok!” from that IP, the device can communicate with that IP address. If the screen shows “no response!” then that IP address is unreachable.

Example:

```
command>ping 192.168.1.1

Reply OK.

command>ping 192.168.1.5

No response!

command>
```

tracert

You can trace the routes via which packets arrive at specified network destinations.

Example:

```
command>tracert 210.59.144.191
```

```
Tracing route to 210.59.144.191 over a maximum of 30 hops

 1     0 ms    10 ms     0 ms       203.66.99.254
 2    30 ms    30 ms    30 ms       202.39.252.126
 3    30 ms    20 ms    20 ms       168.95.222.62
 4    30 ms    30 ms    30 ms       168.95.2.10
 5    30 ms    30 ms    30 ms       168.95.2.41
 6    20 ms    30 ms    30 ms       211.20.43.81
 7    30 ms    30 ms    40 ms       210.59.144.191

Trace complete!
```

set

After executing the **set** command, the current settings will appear on the screen one at a time. Press **Enter** to accept the current values in the brackets or input new values and then press **Enter** to change the value. Press <**Esc**> at any time to abort this command.

Example:

```
command>set

Press <ENTER> if you agree with the default value,

or <ESC> to escape.

IP address of local port [192.168.1.254]:

SubNetmask of local port [255.255.255.0]:

Distribute IP address to local computers? (Yes/No) [Yes]:

Continuous IP address pool start at [192.168.1.1]:

Number of IP address in pool [128]:

Enable PPPoE? (Yes/No) [No]:

Obtain global port configuration from ISP? (Yes/No) [Yes]:

IP address of global port [0.0.0.0]:

Subnet Mask of global port [0.0.0.0]:
```

Device name (0 to 20 characters) [Untitled]:

Domain name (0 to 36 characters) [Domain]:

Gateway [0.0.0.0]:

Primary DNS server [0.0.0.0]:

Secondary DNS server [0.0.0.0]:

New configuration will be:

IP address of local port: [192.168.1.254]

Subnet Mask of local port: [255.255.255.0]

Distribute IP addresses to local computers: [Yes]

Continuous IP address pool starts at: [192.168.1.1]

Number of IP address in pool: [128]

Enable PPPoE: [No]

Obtain global port configuration from ISP: [Yes]

IP address of global port: [0.0.0.0]

Subnet Mask of global port: [0.0.0.0]

Device name: [Untitled]

Domain name: [Domain]

Gateway: [0.0.0.0]

Primary DNS server: [0.0.0.0]

Secondary DNS server: [0.0.0.0]

Save and reboot? (Yes/No): [No] <type **yes** and hit “Enter” to save settings,

Or type **No** to cancel the settings.

connect

Make a PPPoE connection manually when PPPoE is already enabled.

Example 1: PPPoE connection was already made.

```
command>connect
Already connected.
```

Example 2: To manually make a PPPoE connection.

```
command>connect
```

Connecting…✍ *System is making a PPPoE connection*.

Example 3: When PPPoE was not enabled, no connection can be made. Refer to command "set" for setting up PPPoE.

```
command>connect
PPPoE is not enabled.
```

disconnect

Cut off a PPPoE connection manually when PPPoE is enabled.

Example 1: PPPoE connection was already disconnected.

```
command>disconnect
Already disconnected.
```

Example 2: To manually cut off a PPPoE connection.

```
command>disconnect
```

Disconnecting...✍ ***System is cutting off a PPPoE connection***.

Example 3: When PPPoE was not yet enabled, no disconnection can be made. Refer to command "set" for setting up PPPoE.

```
command>disconnect
PPPoE is not enabled.
```

status

Display the current PPPoE connection status.

Example 1: PPPoE is enabled and the connection is successful.

command>status

PPPoE connected.

Example 2: PPPoE is enabled but the connection is cut off.

command>status

PPPoE disconnected.

Example 3: PPPoE is not enabled

command>status

PPPoE is not enabled

upgrade

You can upgrade this IP Sharing device by activating the TFTP Server on the net to acquire the latest software.

Before you start the upgrade, make sure you have a **TFTP Server** installed on any kind of operating system and the new firmware image (i.e.**FIRMWARE.BIN)** copied on the TFTP Server. Make sure all other workstations on the network are off and close all applications on the TFTP Server.

Example:

With TFTP server IP address at **192.168.1.200**, and new firmware image named is **FIRMWARE.BIN** and located at the TFTP server's C drive.

At the Telnet program, enter the following command and then press *Enter*:

```
command>upgrade 192.168.1.200 C:\FIRMWARE.BIN
```

*(Note: it is recommended that you enter the **drive:\path** before the file name.)*

The upgrade takes about 70 seconds to complete. When finished, wait another 20 seconds for the device to restart.

Firmware Upgrade

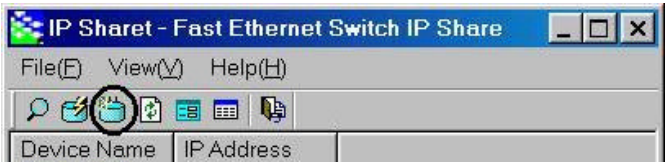
One-Step Upgrade (available soon!)

1. Acquire the one-step auto-execution file “upgrade.exe” from your distributor.
2. Download the file and run it.
3. You are done with the one-step upgrade.

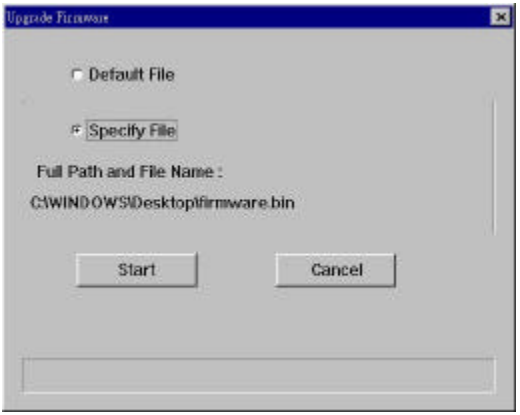
Manual Upgrade

You may also manually upgrade your IP Share by performing the following steps:

1. Connect the device to a computer that can configure the device using the GUI. Copy the latest firmware to the directory where the ***setup.exe*** is located or to any desired location on the hard driver (e.g. C:\IPS).
2. Back to the **management utility** window, click on “File” from the Menu Bar, select “Find Device” from the drop down menu. You will see a list of the IP Sharing Devices on the screen. Select the one that you are going to update the firmware and click  on the Tool Bar. The Upgrade Firmware window will appear.



3. If you have copy the latest firmware to the directory where ***setup.exe*** is, click on **“Default File”** and click **“Start”,** the program will upgrade the firmware with the latest version of firmware, **(i.e. firmware.bin)**. If you copy the firmware file to a desired location, in the **Upgrade Firmware** window, select **“Specify File”,** enter the firmware file’s path (e.g. C:\WINDOWS\Desktop\firmware.bin), and then click **“Start”** to upgrade the firmware.



4. The upgrade will take a couple of minutes to complete, do not interrupt the process. After the upgrade process completes, you will see a "**Finish**" button, click on it to finish the procedure.

Changing Password

The device has no password at default. It is recommended that you change the default passwords to ensure that someone cannot adjust the device's settings.

From GUI

1. Start this device by running the setup utility as described in the chapter titled "**Configuration via GUI**".

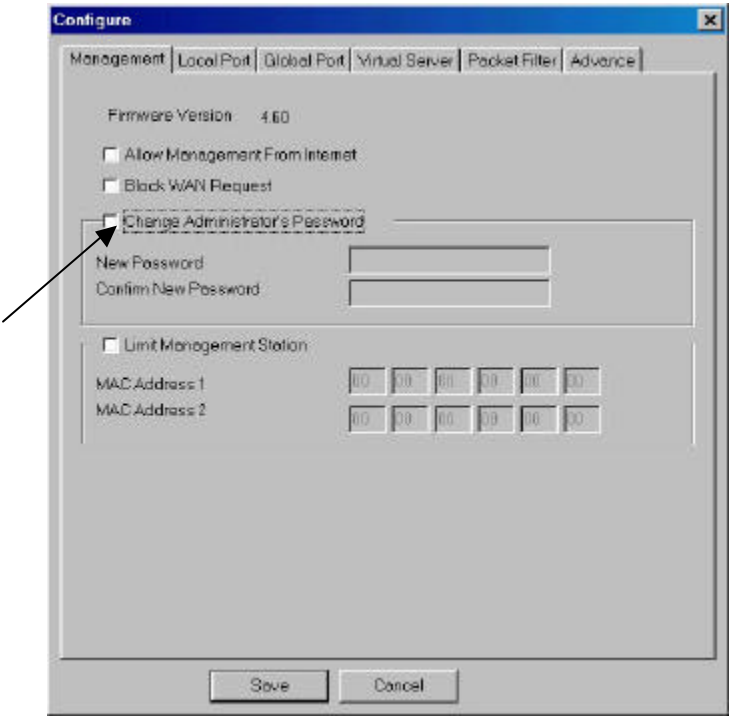


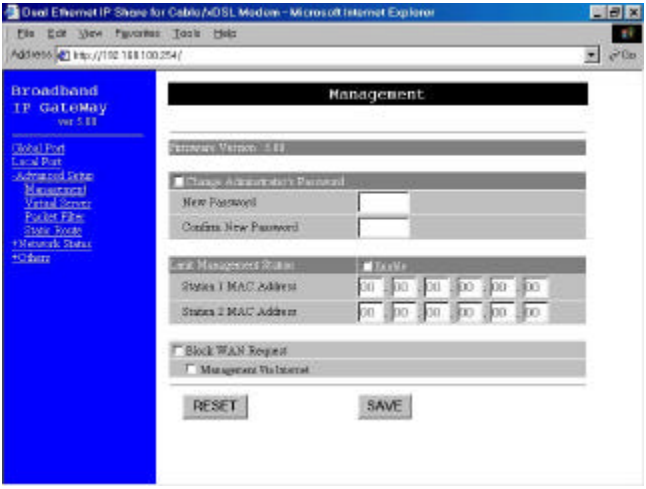
Figure 14

2. Check "**Change Administrator's Password**.
3. Enter the desired new password in "New Password" and enter the new password again in the "Confirm New Password" field and then click "**Save**" at the bottom.

From Web

1. At the setup home page, select Detail Setup at the right panel.
2. Point Management to expand.

3. Check Change Administrator's Password.
4. Enter the new password.
5. Enter to confirm.



From Terminal

Refer to the previous section titled "**Configuration in Terminal Program**" for terminal emulation. After seeing the following command prompt, follow the instructions in italic fonts to setup the new password. Please note that passwords are case sensitive.

command>passwd

Please type old password: **** ***Type in old password and press <Enter>***

Note: In default, there is no password in the device, so just leave this entry blank and hit "Enter" to enter the configuration mode.

type new password (0 to 6 characters) : ****** ***Type the new password and press <Enter>***

re-type new password (0 to 6 characters) : ****** ***Re-type the new password and press <Enter>***

Forgot your password?

Refer to **FAQ** section for "Factory Reset" procedures.

FAQ

What is DMZ?

DMZ (Demilitarized Zone), a barrier between the Internet and a company's Intranet. It is a subnet that contains a firewall and proxy server (which can be in separate servers or in one 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 PPPoE (PPP Over Ethernet)?

PPPoE is known as a dial-up DSL service. It is designed to integrate the broadband services into the current widely deployed, easy-to-use, and low-cost dial-up-access networking infrastructure. Thus, customer can get greater access speed without changing the operation concept.

How can I know I am using PPPoE or not?

PPPoE client software is provided by our ISP and should be installed onto your computer first. You run the program to connect/disconnect to the Internet. User Account information (User Name and Password) is also required each time you connect to the Internet access.

***Note**: After you have entered the PPPoE information during the device setup, the device will provide your Internet Service the PPPoE information and login automatically. It is not necessary to install and run the PPPoE software on the computers and you can just uninstall the PPPoE software from your computers.*

Checking PPPoE Connections

1.For GUI Setup program

1. Go to **Start**✍ **Programs** ✍ **IP Share Setup**.
2. When the **configure** screen appears, select the Global Port tab. Refer to the previous section titled "**Configuration in GUI**".
3. Check if the value of Global port IP address is **0.0.0.0**, if it is, that means that the PPPoE connection failed. If the value is **non-zero**, then the PPPoE connection is good.

2. Checking PPPoE status through Terminal Mode

1. Start Telnet as described in the previous section titled "**Configuration in Terminal Program**" for terminal emulation.

2. At the command prompt, type **show** command.

   command>show

3. If the string of IP address of global port is 0.0.0.0, this means you are not connected. If it is anything other than 0.0.0.0 (non-zero), it means the connection is good.

***Note**: Once the PPPoE setup is completed on this device, do not run any PPPoE client software on the local workstations.*

Factory Reset

If you have lost the device's password or you would like to set the device back to its default state, you can do the Factory Reset. **Performaing the Factory Reset will erase all previously entered device settings.**

To reset to factory default setting, go to the **Management Utility** window and click  on the tool bar and then clikc "OK" to confirm the reset.

Figure 15

The factory default values are detailed in the section **Factory Default Settings**.

"I can't find the product using the GUI Setup Software"

For the GUI Setup Software to find the device, it has to be accessed from a client. This means that the computer you are trying to use to run the software must be setup as described in the section **Configuration in GUI**. Also, the computer should be restarted to ensure that it is receiving IP address from the device.

To verify that your computer's TCP/IP protocol is setup properly, use the "winipcfg" utility in Windows (95, 98, and ME). To run this, go to Start-->Run, type "winipcfg" in the Run box, and then click "OK". Make sure the Network Adapter Card is selected and then press the "More Info" button on the bottom right hand corner. **For Win2000 and NT stations, open the "Command Prompt" (DOS window) and type in ipconfig /all and hit "Enter" to obtain the adapter's IP information.**

Look at the box labeled DHCP Server; this should be the product's IP address (192.168.1.254 at default). If it is not, or it is blank or reads 255.255.255.255 then you may have a cabling problem, or you may have another DHCP server on your network. In either case, please follow

the installation guide again, and ONLY connect the device, the client, and your modem together. If you are on a network, it is recommended that you contact your IS or IT Manager for further assistance with DHCP settings. Placing an IP Sharing Device that passes out IP addresses on a LAN with an existing DHCP server may cause problems throughout a network. It is recommended you disable other DHCP serves on the network if you plan on using this product on the network.

IP address conflict

When you see the message box prompted for IP address conflict, this means two or more workstations have the same IP address. If you have setup the device as a DHCP server, on the problem workstation, for Win 98/ME, please run the "**winipcfg**" utility, select the correct Network Adapter, click "release all" to release all current configuration first, then click "renew all" to renew the IP information again. For Win 2000, open a DOS prompt window, at the command prompt, type in **ipconfig/release** and hit **Enter** to release the IP information, and then type in **ipconfig/renew** and hit **Enter** to renew the IP information. If the device's DHCP function is disabled and static IP addresses are assigned to each workstation, please double check each workstation's IP address for duplicate IP.

Can not access the Internet

Find the workstation's "Computer" name and then input this name in the device's "Device/Computer Name" field in Local Port field. If you are a Cable Modem user, do this only when your cable Modem Internet Service Provider provides you with a specific "Computer Name".

1. On the Workstation (95, 98, and ME), go to **Start** ✍ **Control Panel** ✍ **Network**, and select ***Identification*** tab. Copy the Computer name as shown in the left figure below. For Win2000, right click on "my computer", select "properties", click on "network identifications", click on "properties", and then copy the computer name.
2. Run the GUI setup program, select the device, and click on "Configure" to go to the ***Local Port*** tab.
3. Paste the name on to the field "**Device/Computer Name**" as shown in the right figure below.

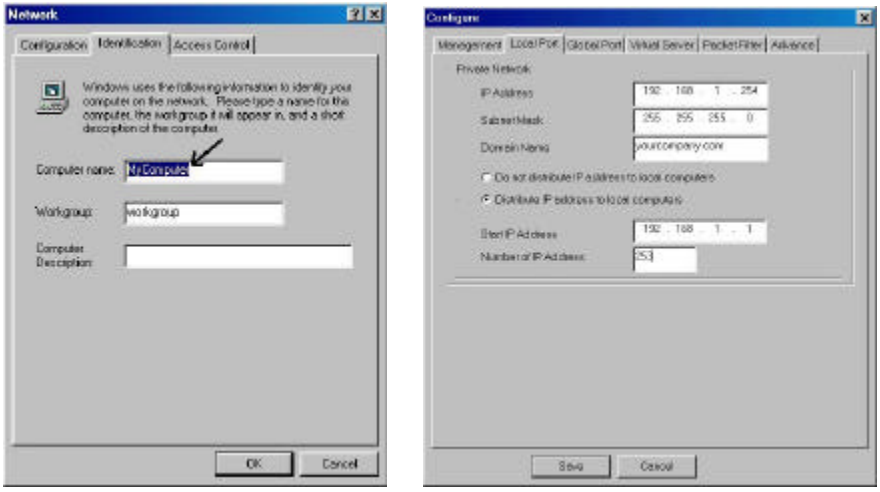


Figure 16

Check the physical connectivity of local network.

Check if both the LEDs of Local and Global on the product's front panel are lit correctly. If yes, go to next step. Otherwise, make sure you are using the correct cables and the cables are connected to the network devices properly. Push the MDI-II/MDI-X button once and see if the LED lit up.

Check the physical connectivity of broadband device.

Examine the LED of LAN port and the LED of the broadband signal input on the Cable Modem/xDSL Modem. If the LAN LED is off, make sure you are using the correct cables and the cables are connected to the devices properly. If the LED of the broadband signal is off, please contact your ISP.

Note: You can also call your ISP and make sure the Internet service is still online.

Check the status of this product.

If your ISP assigned you an IP address, please skip this step. Otherwise, use the telnet program to "release" and "renew" the current IP address of the Global port. After that, type "Show" command to see if "obtain global port configuration from ISP" shows the address is "claiming" or "under claiming". If the IP address is "claiming", go to next step. If the result is "under claiming", reboot the product and check it again. If the result still is "under claiming", please contact your ISP and find out if the service is still available.

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 described steps to find out where the problem is.

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`**.

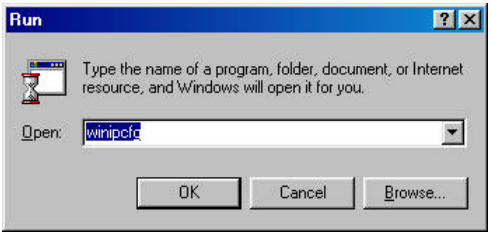


Figure 17: Run

The following figure displays the adapter address and current TCP/IP address.

Note: At the "Ethernet Adapter Information", select the correct Ethernet adapter that is installed in this computer.

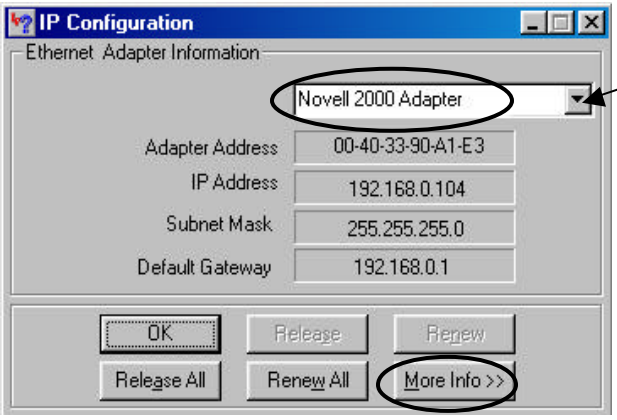


Figure 18: IP Configuration

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

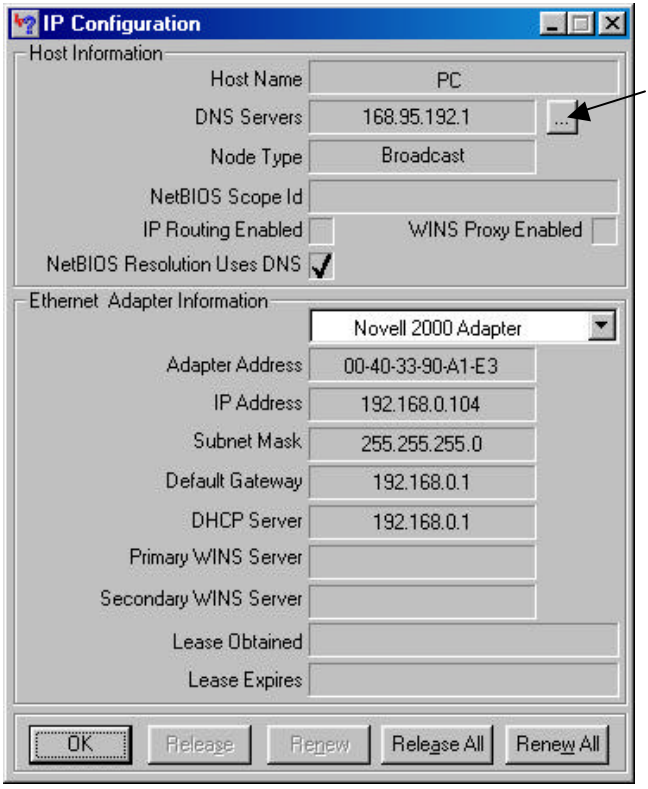


Figure 19: IP Configuration

On the top, the "Host Name" and "DNS server" of the computer 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.

2) The "DHCP" and "Default Gateway" should list the product's local port address (the device's IP address).

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 all adapters' IP address and **IPCONFIG**

/RENEW to renew 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:

For 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.

Note: *If the global port was set to obtain configuration automatically, you need to check Gateway and DNS server information under "Global Port" via the Windows GUI setup program.*

For Example:

From the GUI setup program, if the DNS server address is 203.66.81.254, at C:\> prompt, enter **Ping 203.66.81.254.** If successful, you can reach your ISP server.

If unsuccessful, you may have trouble connecting to your ISP, please verify that the product is properly configured to connect to your ISP. Also verify that your Cable/DSL modem and the line are functioning properly.

Internet Connectivity Checkup

PING to an IP address or domain name on Internet.

For Example:

C:\> PING 168.95.192.1 –w 5000

C:\> PING www.yahoo.com –w 5000

If successful, you are 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, chances are, your ISP has an internal problem. Please call them for support.

Getting Technical Support

For further problems, please contact the distributor.

Appendix A Specifications

Protocols

IP, NAT, ARP, ICMP, DHCP client/server, PPPoE, PPP, PAP, CHAP

Management/Setup

Using Telnet through network.

Using GUI program in Windows 95/98/NT/2000 via network.

Local

4 x RJ-45, 10/100Mbps NWay Switching ports.

Internet

10Base-T Ethernet port or 10/100Base-T NWay Fast Ethernet port (depens on the version number).

MDIX/MDI Buttons

One for local port uplink

One for Cable/DSL modem connection.

LED Indicators

Power/Error	Green/Red
Local x 4 10/100	Orange/Green
Internet 10 or 10/100	Orange only or Orange/Green
Have Mail	Green

Electronic Specifications

Input Power DC 5V, @2.4A

Agency and Regulatory: FCC part 15 Class B, VCCI, CE

Physical specification

Dimension: 160 x 105.4 x 27 mm^3 (L x W x H)

Weight: 218g

Operating Temperature: 0? to 50?

Operating Humidity: 0-90% non-condensing

Appendix B Supported Internet Applications

Application	Settings for Outgoing Connection	Setting for Incoming connection
ICQ98a,99b	None	None
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)