

D-Link

DI-704

User Manual

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Operational adjustments covered in the operating manual for the product, and normal maintenance;

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Wichtige Sicherheitshinweise

1. Bitte lesen Sie sich diese Hinweise sorgfältig durch.
2. Heben Sie diese Anleitung für den spätern Gebrauch auf.
3. Vor jedem Reinigen ist das Gerät vom Stromnetz zu trennen. Verwenden Sie keine Flüssig- oder Aerosolreiniger. Am besten dient ein angefeuchtetes Tuch zur Reinigung.
4. Um eine Beschädigung des Gerätes zu vermeiden sollten Sie nur Zubehörteile verwenden, die vom Hersteller zugelassen sind.
5. Das Gerät is vor Feuchtigkeit zu schützen.
6. Bei der Aufstellung des Gerätes ist auf sichern Stand zu achten. Ein Kippen oder Fallen könnte Verletzungen hervorrufen. Verwenden Sie nur sichere Standorte und beachten Sie die Aufstellhinweise des Herstellers.
7. Die Belüftungsöffnungen dienen zur Luftzirkulation die das Gerät vor Überhitzung schützt. Sorgen Sie dafür, daß diese Öffnungen nicht abgedeckt werden.
8. Beachten Sie beim Anschluß an das Stromnetz die Anschlußwerte.
9. Die Netzanschlußsteckdose muß aus Gründen der elektrischen Sicherheit einen Schutzleiterkontakt haben.
10. Verlegen Sie die Netzanschlußleitung so, daß niemand darüber fallen kann. Es sollete auch nichts auf der Leitung abgestellt werden.
11. Alle Hinweise und Warnungen die sich am Geräten befinden sind zu beachten.
12. Wird das Gerät über einen längeren Zeitraum nicht benutzt, sollten Sie es vom Stromnetz trennen. Somit wird im Falle einer Überspannung eine Beschädigung vermieden.
13. Durch die Lüftungsöffnungen dürfen niemals Gegenstände oder Flüssigkeiten in das Gerät gelangen. Dies könnte einen Brand bzw. Elektrischen Schlag auslösen.
14. Öffnen Sie niemals das Gerät. Das Gerät darf aus Gründen der elektrischen Sicherheit nur von autorisiertem Servicepersonal geöffnet werden.
15. Wenn folgende Situationen auftreten ist das Gerät vom Stromnetz zu trennen und von einer qualifizierten Servicestelle zu überprüfen:
 - a – Netzkabel oder Netzstecker sint beschädigt.
 - b – Flüssigkeit ist in das Gerät eingedrungen.
 - c – Das Gerät war Feuchtigkeit ausgesetzt.
 - d – Wenn das Gerät nicht der Bedienungsanleitung entsprechend funktioniert oder Sie mit Hilfe dieser Anleitung keine Verbesserung erzielen.
 - e – Das Gerät ist gefallen und/oder das Gehäuse ist beschädigt.
 - f – Wenn das Gerät deutliche Anzeichen eines Defektes aufweist.
16. Bei Reparaturen dürfen nur Orginalersatzteile bzw. den Orginalteilen entsprechende Teile verwendet werden. Der Einsatz von ungeeigneten Ersatzteilen kann eine weitere Beschädigung hervorrufen.
17. Wenden Sie sich mit allen Fragen die Service und Reparatur betreffen an Ihren Servicepartner. Somit stellen Sie die Betriebssicherheit des Gerätes sicher.
18. Zum Netzanschluß dieses Gerätes ist eine geprüfte Leitung zu verwenden, Für einen Nennstrom bis 6A und einem Gerätegewicht gr ßer 3kg ist eine Leitung nicht leichter als H05VV-F, 3G, 0.75mm² einzusetzen.

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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

Warnung!

Dies ist inProdukt der Klasse B. Im Wohnbereich kann diesesProdukt Funkstoerungen verursachen. In diesem Fall kann vom Benutzer verlangt werden, angemessene Massnahmen zu ergreifen.

Advertencia de Marca de la CE

Este es un producto de ClaseB. En un entorno doméstico, puede causar interferencias de radio, en cuyo case, puede requerirse al usuario para que adopte las medidas adecuadas.

Attention!

Ceci est un produit de classe B. Dans un environnement domestique, ce produit pourrait causer des interférences radio, auquel cas l'utilisateur devrait prendre les mesures adéquates.

Attenzione!

Il presente prodotto appartiene alla classe B. Se utilizzato in ambiente domestico il prodotto può causare interferenze radio, nel cui caso è possibile che l'utente debba assumere provvedimenti adeguati.

FCC Warning

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.

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取扱説明書に従って正しい取り扱いをして下さい。

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Chapter 1 Introduction

Congratulations on your purchase of the DI-704 Broadband Router. The DI-704 is specifically designed for Small Office and Home Office needs. It provides a complete solution for Internet surfing and office resource sharing, and is easy for non-technical users to configure and operate. Instructions for installing and configuring the DI-704 can be found in this manual. Before you install and use the DI-704, please read this manual carefully to fully understand the functions of the DI-704.

1.1 Functions and Features

- **Broadband modem and IP sharing**
Connects multiple computers to a broadband (cable or DSL) modem or an Ethernet router to surf the Internet.
- **Auto-sensing Ethernet Switch**
Equipped with a 4-port 10/100Mb auto-sensing Ethernet switch.
- **VPN supported**
Supports multiple PPTP sessions and allows setup of a VPN server and VPN clients.
- **Firewall**
All unwanted packets from outside intruders are blocked to protect your Intranet.
- **DHCP server supported**
All of the networked computers can retrieve TCP/IP settings automatically from the DI-704.
- **Web-based configuring**
Configurable through any networked computer's web browser using Netscape or

Internet Explorer.

- **Access Control supported**

Allows you to assign different access rights for different users.

- **Virtual Server supported**

Enables you to expose WWW, FTP and other services on your LAN to be accessible to Internet users outside of your LAN.

- **User-Definable Application Sensing Tunnel**

User can define the attributes to support the special applications requiring multiple connections, like Internet gaming, video conferencing, Internet telephony and so on, then the DI-704 can sense the application type and open a multi-port tunnel for it.

- **DMZ Host supported**

DMZ Host fully exposes a networked computer to the Internet. Use this feature when the special application sensing tunnel feature does not allow an application to function properly.

1.2 Packing List

- One DI-704 broadband router unit
- One power cord
- User Manual
- Quick Installation Guide
- Two CAT-5 UTP Fast Ethernet cables

Chapter 2 Hardware Installation

2.1. Panel Layout

2.1.1. Front Panel



Figure 2-1 Front Panel

- RESET** When RESET is pushed, system settings will be set to factory defaults.
- M1&M2** System status indicators, *Orange*. M1 is flashed once per second to indicate system is alive. When system is busy, M2 is lighted.
- WAN & LAN** Ethernet port indicators, *Green*. The LED flickers when LAN or WAN port is sending or receiving data.
- Link/Act.** Link status indicators, *Green*. The LED flickers when the corresponding port is sending or receiving data
- 10/100** 10/100 status indicators, *Green*. The LED flickers when the corresponding port is transmitting or receiving data in 10 or 100Mbps.
- Port 1 - 4** LAN port socket (RJ-45). These are where you will connect to device on your local area network, for example HUB and switch.

2.1.2. Rear Panel



Figure 2-2 Rear Panel

- WAN** WAN port socket (RJ-45). This is where you will connect to your cable (or DSL) modem or Ethernet router.
- COM** Serial port connector (9-pins D-type male). This is where you will connect your modem. This port is also a console port.

Power Power inlet. This is where you connect the included power adapter. *Note that, the included power adapter is DC 5V/1A. Using the wrong type of power adapter may cause damage to the DI-704.*

2.2. Installation Requirements

The DI-704 can be positioned at any convenient place in your office or house. No special wiring or cooling requirements is needed. However, you should comply with the following guidelines to install:

- Place the DI-704 on a flat horizontal surface.
- Keep the DI-704 away from excessive heat.
- Do not place the DI-704 in a dusty or wet environment.

The recommended operational specifications of DI-704 are:

Temperature	0 °C ~ 55 °C
Humidity	5 % ~ 90 %

In addition, remember to turn off the power, remove the power cord from the outlet, and keep your hands dry when you install the DI-704.

2.3. Procedure for Hardware Installation

- 1. Setup LAN connection:** connect an Ethernet cable from your computer's Ethernet port to one of the LAN ports of the DI-704.

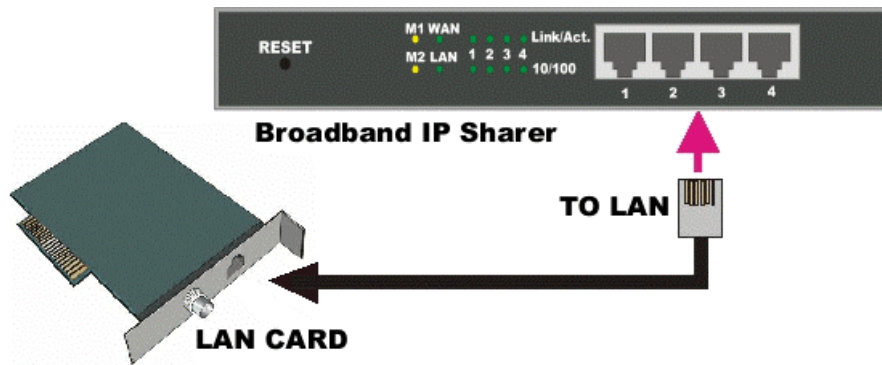
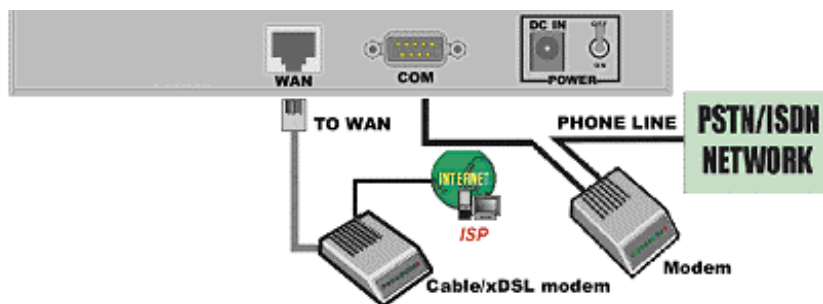


Figure 2-5 Setup of LAN connections for DI-704.

2. **Setup WAN connection:** prepare an Ethernet cable for connecting the DI-704 to your cable/xDSL modem or Ethernet backbone. Figure 2-5 illustrates the WAN connection.



3. **Power on:** Connect the power cord to power inlet and turn the power switch on. The DI-704 will automatically enter the self-test phase. When in the self-test phase, the indicators M1 and M2 will be lighted ON for about 5 seconds, and then M1 and M2 will flash three times to indicate that the self-test operation has finished. Finally, the M1 will flash continuously once per second to indicate that the DI-704 is in normal operation.

Chapter 3 Network Settings and Software Installation

To use the DI-704 correctly, you have to properly configure the network settings of your computers and install the attached setup program into your MS Windows platform (Windows 95/98/Me/NT/2000).

3.1 Make correct network settings to the computer

The default *IP address* of the DI-704 is 192.168.123.254, and the default *subnet mask* is 255.255.255.0. These addresses can be changed to meet your need, but the default values are used in this manual. If the TCP/IP environment of your computer has not yet been configured, you can refer to **Appendix B** to configure it. For example,

1. configure *IP* as 192.168.123.1, *subnet mask* as 255.255.255.0 and *gateway* as 192.168.123.254, or,
2. configure your computers to load TCP/IP settings automatically, via the DHCP server built into the DI-704.

After installing the TCP/IP communication protocol, you can use the **ping** command to check if your computer has successfully connected to the DI-704. The following example shows the ping procedure for Windows 95 platforms. First, execute the **ping** command

```
ping 192.168.123.254
```

If the following messages appear:

```
Pinging 192.168.123.254 with 32 bytes of data:
```

```
Reply from 192.168.123.254: bytes=32 time=2ms TTL=64
```

A communication link between your computer and the DI-704 has been successfully established. Otherwise, if you get the following messages,

```
Pinging 192.168.123.254 with 32 bytes of data:
```

```
Request timed out.
```

there must be something wrong with the installation. Follow the steps again to make sure the network settings are correct. You should check the following items in sequence:

1. *Is the Ethernet cable correctly connected between the DI-704 and your computer?*

Tip The LAN LED of the DI-704 and the link LED of network card on your computer must be lighted.

2. *Is the TCP/IP environment of your computers properly configured?*

Tip If the IP address of the DI-704 is 192.168.123.254, the IP address of your computer must be 192.168.123.X and default gateway must be 192.168.123.254.

Chapter 4 Configuring The DI-704

The DI-704 provides a Web based configuration scheme, that is, configuring by Netscape Communicator or Internet Explorer. This approach can be adopted in any MS Windows, Macintosh or UNIX based platform.

4.1 Start-up and Log in



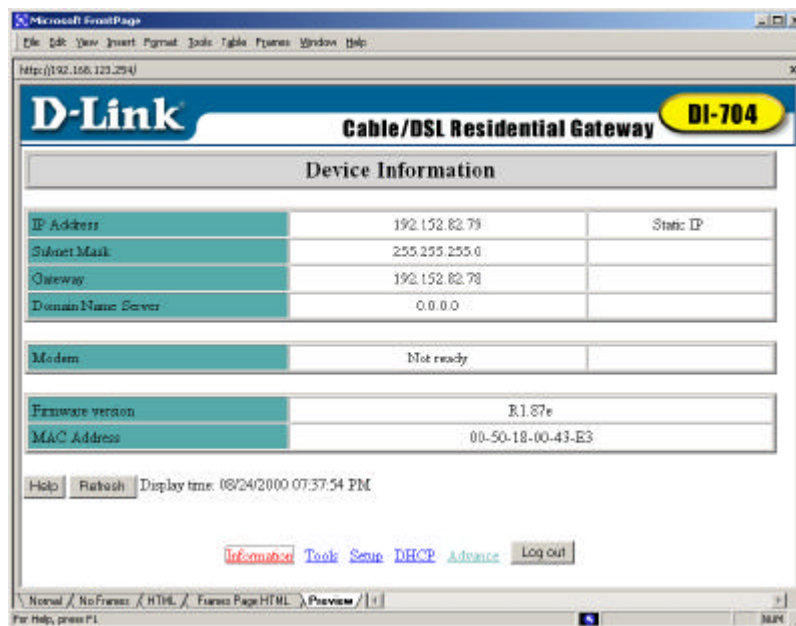
Activate your browser, open settings, and *disable the proxy* or *add the IP address of the DI-704 into the exceptions box*. Then, type the DI-704's IP address [for example (default setting): *http://192.168.123.254*] in the *Location* (for Netscape) or *Address* (for IE) field and press ENTER.

After the connection is established, you will see the web user interface of the DI-704. There are two appearances of web user interface: *for general users* and *for system administrator*.

To log in as an administrator, enter the system password (the factory setting is "*admin*") in

the *System Password* field and click on the *Log in* button. If the password is correct, the web appearance will be changed into administrator configure mode. As listed in its main menu, there are several options for system administration.

4.2 Status



This option provides the function for observing the DI-704's working status:

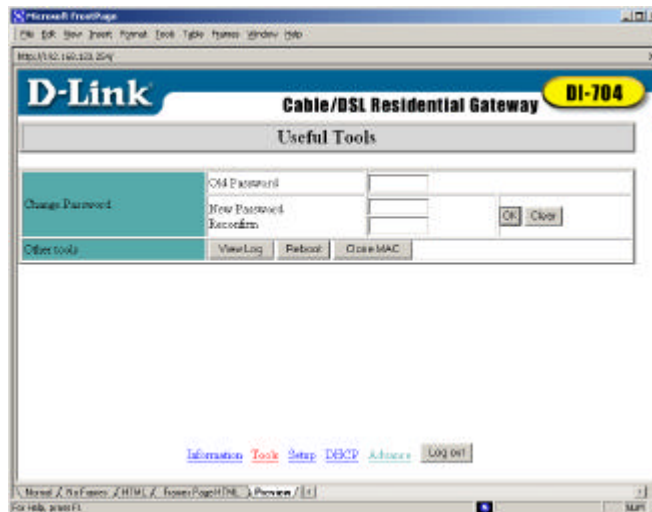
A. WAN Port Status.

If the WAN port is assigned a dynamic IP, there may appear a "**Renew**" or "**Release**" button on the *Sidenote* column. You can click this button to renew or release IP manually.

B. Modem Status.

C. Firmware version and WAN's MAC Address.

4.3 Tools

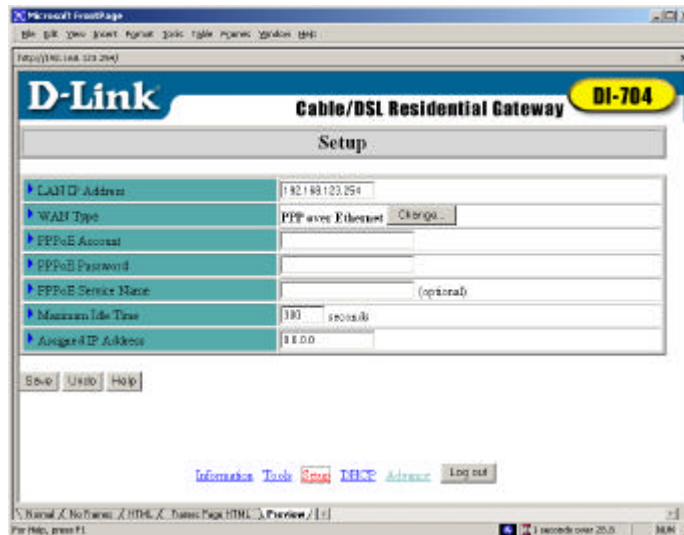


This option enables you to change the administrator password, view the log, and clone the MAC address.

You can also reboot the DI-704 by clicking the **Reboot** button.

Note: We strongly recommend that the system password be changed for security reasons. If you forget the system password, please refer to Appendix A to reset a new one.

4.4 Setup



This option is crucial to enable the DI-704 to work properly. The setting items and the web appearance depend on the WAN type. Choose correct WAN type before you start.

1. **LAN IP Address:** the DI-704's IP address. The default address is 192.168.123.254. You can change it to your need.
2. **WAN Type:** WAN connection type of your ISP. You can click the **Change** button to choose a correct one from the following four options:
 - A. *Static IP Address:* ISP assigns you a static IP address.
 - B. *Dynamic IP Address:* Obtain an IP address from ISP automatically.
 - C. *PPP over Ethernet:* Some ISPs require the use of PPPoE to connect to their services.
 - D. *Dial-up Network:* To surf the Internet via PSTN/ISDN.

4.4.1 Static IP Address

WAN IP Address, Subnet Mask, Gateway, Primary and Secondary DNS: enter the proper setting value provided by your ISP.

4.4.2 Dynamic IP Address

1. *Host Name*: optional. Required by some ISPs, for example, @Home.
2. *Renew IP Forever*: this feature enables the DI-704 to renew its IP address automatically when the lease time is expired even if the system is idle.

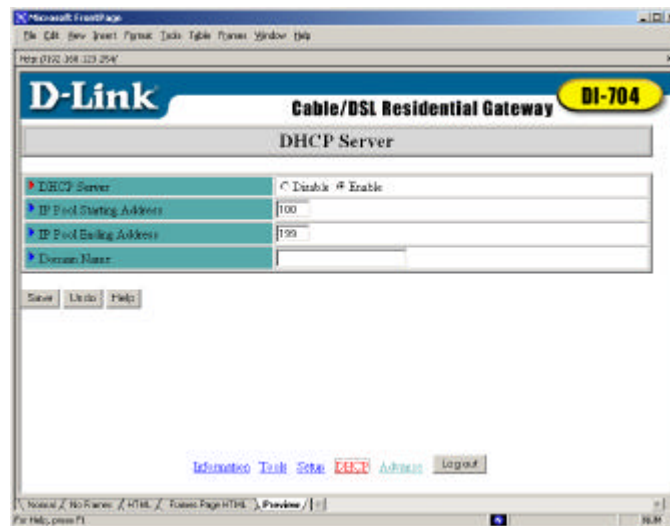
4.4.3 PPP over Ethernet

1. *PPPoE Account and Password*: the account and password your ISP assigned to you. If you don't want to change the password, keep it empty.
2. *PPPoE Service Name*: optional. Input the service name if your ISP requires it.
3. *Maximum Idle Time*: the maximum time the connection is idle before you are disconnected from your ISP and your PPPoE session is terminated.

4.4.4 Dial-up Network

1. *Dial-up Telephone, Account and Password*: assigned by your ISP. If you don't want to change the password, keep it empty.
2. *Primary and Secondary DNS*: automatically assigned if they are configured as "0.0.0.0."
3. *Maximum Idle Time*: the time of no activity before you are automatically disconnected from your dial-up session.
4. *Baud Rate*: the communication speed between the DI-704 and your MODEM or ISDN TA.
5. *Extra Setting*: optional settings to optimize the communication quality between the ISP and your MODEM or ISDN TA. Use if your ISP recommends and provides these settings.

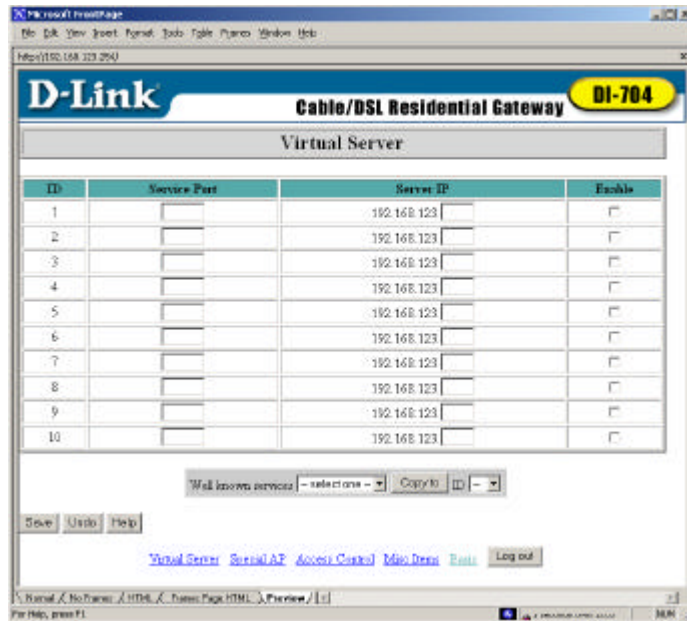
4.5 DHCP Server



The settings of TCP/IP environment include Host IP, Subnet Mask, Gateway, and DNS configurations. It is not a simple task to correctly configure all the computers in your LAN environment. Fortunately, DHCP provides a rather simple approach to handle all these settings. The DI-704 supports the function of DHCP server. If you enable the DI-704's DHCP server and configure your computers as "automatic IP allocation" mode, then when your computer is powered on, it will automatically load the proper TCP/IP settings from the DI-704. The settings of DHCP server include the following items:

1. **DHCP Server:** Choose "Disable" or "Enable."
2. **Range of IP Address Pool:** Whenever there is a request, the DHCP server will automatically allocate an unused IP address from the *IP address pool* to the requesting computer. You must specify the starting and ending address of the IP address pool.
3. **Domain Name:** Optional, this information will be passed to the client.

4.6 Virtual Server



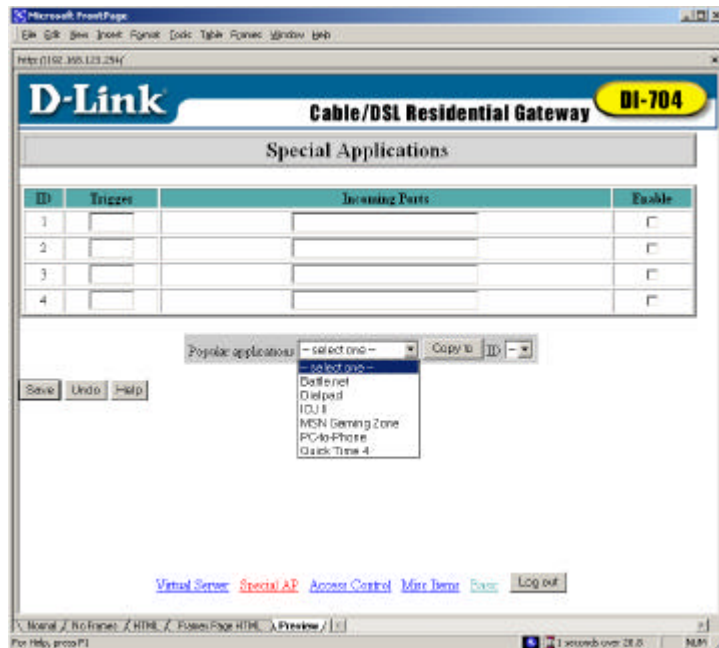
The DI-704's NAT firewall filters out unrecognized packets to protect your Intranet, so all hosts behind the DI-704 are invisible to the outside world. If you wish, you can make some of them accessible by enabling the *Virtual Server Mapping*.

A virtual server is defined as a **Service Port**, and all requests to this port will be redirected to the computer specified by the **Server IP**.

For example, if you have an FTP server (port 21) at 192.168.123.1, a Web server (port 80) at 192.168.123.2, and a VPN server at 192.168.123.6, then you need to specify the following virtual server mapping table:

Service Port	Server IP	Enable
21	192.168.123.1	V
80	192.168.123.2	V
1723	192.168.123.6	V

4.7 Special AP



Some applications require multiple connections, like Internet games, Video conferencing, Internet telephony and so on. Due to the firewall function, these applications can not work with a pure NAT router. Special Applications enables some of these applications to work with a NAT router. If Special Applications is still insufficient to allow an application to function correctly, try DMZ host in the *Misc Items* options.

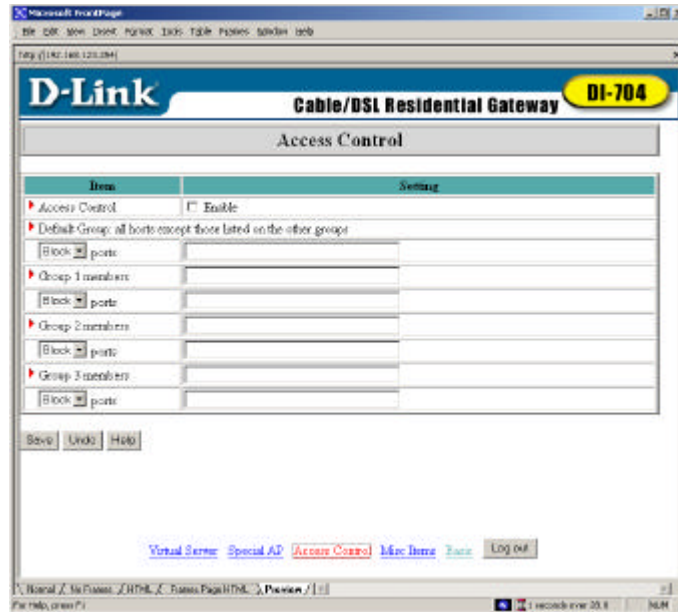
1. **Trigger**: the outbound port number the application issued first.
2. **Incoming Ports**: when the trigger packet is detected, the inbound packets to the specified port numbers are allowed to pass the firewall.

The DI-704 provides some predefined settings in the gray pad on the bottom of the web page.

Choose the **Popular application** and click **Copy** to copy the predefined setting.

Note! At any time, only one PC can use each Special Application tunnel.

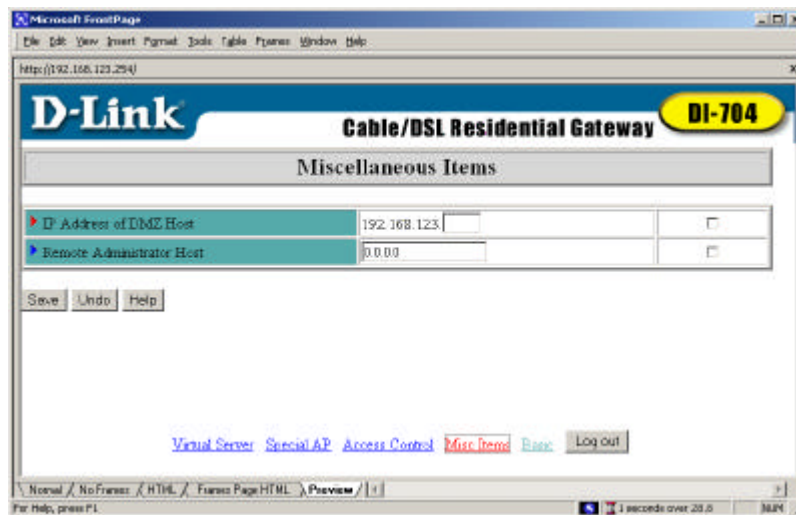
4.8 Access Control



Access Control allows you to assign different access rights for different users. First, you have to divide users into different groups. Users are identified by their IP addresses. You can assign the members of Group 1, 2 and 3. The others are all members of the Default Group. Second, you have to assign the access rights of each group. Access rights can allow or block users to access specified TCP and UDP ports. For example:

Group	Members	Access Right	Comments
Default	-	Allow ()	No access right (allow nothing)
Group 1	100-199	Allow (25,53,80,110)	Can browse(80), receive(110) and send(25) email only
Group 2	50-99	Block (21,119)	Cannot read net news(119) and FTP(21) only
Group 3	1-9,20	Block ()	Fully access (block nothing)

4.9 Misc Items



1. **IP Address of DMZ Host:** DMZ (DeMilitarized Zone) Host is a host without the protection of firewall. It allows a computer to be exposed to unrestricted 2-way communication. Note that, this feature should be used only when needed.
2. **Remote Administrator Host:** In general, only Intranet users can browse the built-in web pages to perform administrative tasks. This feature enables you to perform administrative tasks from a remote host. If this feature is enabled, only the specified IP address can perform remote administration. If the specified IP address is 0.0.0.0, any host can connect to the DI-704 to perform administrative tasks. When this feature is enabled, the web port will be shifted to 88.

Appendix A Console Mode

When you forget the system password or the IP address of the DI-704, you need to enter console mode to reset them.

Before invoking the console program, be sure to find a null modem cable and use it to connect from the DI-704's COM port to your computer's COM port. Then, execute a terminal program, such as the *Hyper Terminal* of MS Windows 95. The connection parameters should be set to **19200 8-N-1**. And, reboot the DI-704. When the M1 indicator starts flashing regularly, you can press the "**Enter**" key of the keyboard several times, there should be some messages and console prompt ">" appears in the terminal.

In the console mode, you may reset the IP address and the system password of the DI-704. Please remember to execute the **SR** command to save the changes you have made. For example,

```
IP 192.168.123.254
```

```
PW admin
```

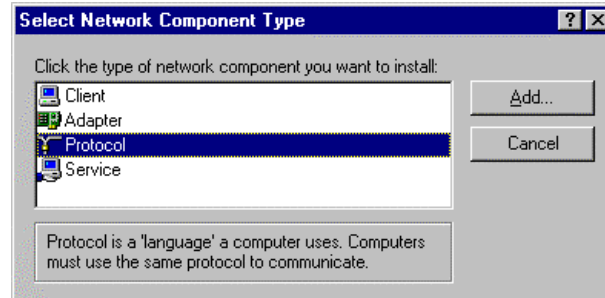
```
SR
```

Appendix B TCP/IP Configuration for Windows 95/98

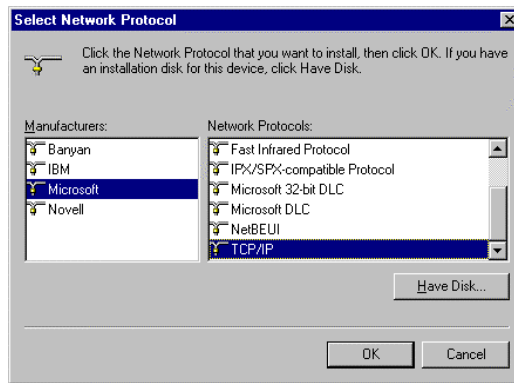
This section describes installing the TCP/IP protocol into your personal computer. Supposing you have successfully installed one network card on your personal computer. If not, please refer to your network card manual. Moreover, the Section B.2 tells you how to set TCP/IP values for working with the DI-704 correctly.

B.1 Install TCP/IP protocol into your PC

1. Click **Start** button and choose **Settings**, then click **Control Panel**.
2. Double click **Network** icon and select **Configuration** tab in the Network window.
3. Click **Add** button to add network component into your PC.
4. Double click **Protocol** to add TCP/IP protocol.



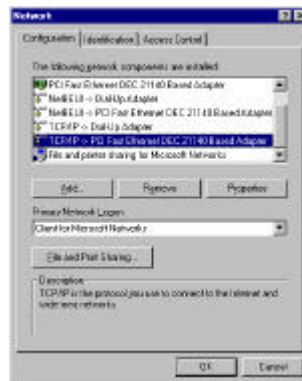
5. Select **Microsoft** item in the *manufactures* list. Choose **TCP/IP** in the *Network Protocols*. Click **OK** button to return to Network window.



6. The TCP/IP protocol shall be listed in the Network window. Click **OK** to complete the install procedure and restart your PC to enable the TCP/IP protocol.

B.2 Set TCP/IP protocol for working with the DI-704

1. Click **Start** button and choose **Settings**, then click **Control Panel**.
2. Double click **Network** icon. Select the TCP/IP line that has been associated to your network card in the **Configuration** tab of the Network window.



3. Click **Properties** button to set the TCP/IP protocol for the DI-704.
4. Now, you have two setting methods:

A. Get IP via DHCP server

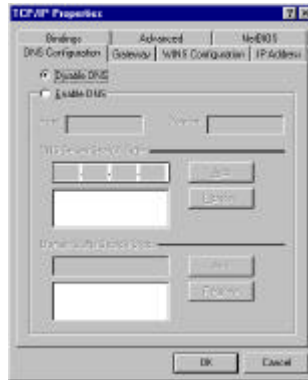
- a. Select **Obtain an IP address automatically** in the *IP Address* tab.



- b. Don't input any value in the *Gateway* tab.



- c. Choose **Disable DNS** in the *DNS Configuration* tab.



B. Configure IP manually

- a. Select *Specify an IP address* in the *IP Address* tab. The default IP address of the DI-704 is 192.168.123.254. So please use 192.168.123.xxx (xxx is between 1 and 253) for *IP Address* field and 255.255.255.0 for *Subnet Mask* field.



- b. In the *Gateway* tab, add the IP address of the DI-704 (default IP is

192.168.123.254) in the *New gateway* field and click **Add** button.



- c. In the *DNS Configuration* tab, add the DNS values which are provided by the ISP into *DNS Server Search Order* field and click **Add** button.



Appendix C Technical Specifications

Standards:

- IEEE 802.3 10BASE-T Ethernet
- IEEE 802.3u 100BASE-TX Fast Ethernet
- IEEE 802.3x Flow Control
- IEEE 802.1p Priority Queue
- ANSI/IEEE 802.3 NWay auto-negotiation

Management:

- Web-Based

Ports:

- 4 x NWay 10BASE-T/100BASE-TX Fast Ethernet LAN
- 1 x 10BASE-T WAN
- 1 x RS-232 (DB-9)

LED's:

- Power
- WAN Activity
- LAN Activity
- M1
- M2

Power:

- DC 5V 2A

Operating Temperature:

- 5 C ~ 55 C

Humidity:

- 10% ~ 90%

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(* Applies to adapters only)
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 Banyan Vines DECnet Pathwork Windows NT Windows NTAS Windows '95
 Others _____
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