HUAWEI

SmartAX MT800 ADSL CPE

User Manual

V100R002

SmartAX MT800 ADSL CPE

User Munal

Manual Version V1.22

Product Version V100R002

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Huawei Technologies Co., Ltd.

Address: Administration Building, Huawei Technologies Co., Ltd.,

Bantian, Longgang District, Shenzhen, P. R. China

Postal Code: 518129

Website: http://www.huawei.com

Email: support@huawei.com

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About This Manual

Version

The product version corresponds to the manual is SmartAX MT800 ADSL CPE V100R002.

Organization of the Manual

- Chapter 1 introduces the basic information of SmartAX MT800 ADSL CPE.
- Chapter 2 provides a brief description of MT800, its associated technologies and a list of features.
- Chapter 3 introduces the preparation procedures before configuring the MT800.
- Chapter 4 describes how to use the embedded Web-based management software to configure the MT800.
- Chapter 5 describes the detailed configuration procedures for 6 applications.
- Chapter 6 lists several FAQs and trouble-locating methods.
- Chapter 7 gives the technical specifications of the MT800.
- Appendix gives the abbreviation list and default factory settings for MT800.

Intended Readers

The manual is intended for the following readers:

- Marketing staff
- Installation engineers & technicians
- Operation & maintenance personnel

Conventions

This manual uses the following conventions:

I. General conventions

Convention	Description
Arial	Normal paragraphs are in Arial.
Arial Narrow	Warnings, Cautions, Notes and Tips are in Arial Narrow.
Boldface	Headings are in **Boldface**.
`Courier New`	Terminal Display is in `Courier New`.

II. Symbols

Eye-catching symbols are also used in this manual to highlight the points worthy of special attention during the operation. They are defined as follows:

⚠ **Caution**, **Warning**, **Danger**: Means reader be extremely careful during the operation.

🕮 **Note**, **Comment**, **Tip**, **Knowhow**, **Thought**: Means a complementary description.

Environmental Protection

This product has been designed to comply with the requirements on environmental protection. For the proper storage, use and disposal of this product, national laws and regulations must be observed.

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Chapter 1 Basic Information

This user manual provides instructions on how to install the MT800 ADSL CPE and use it to connect a computer or Ethernet LAN to the Internet.

1.1 System Requirements

To install and manage the MT800 you need a computer equipped with an Ethernet network interface card (NIC) and a Web browser. You may also need to use information given to you by your ISP or ADSL service provider.

1.1.1 Operating System

The MT800 uses an HTML-based Web interface for setup and management. The computer for configuration requires an operating system capable of running Web browser software.

1.1.2 Web Browser

Any common Web browser can be used to configure the MT800. The program is designed to work best with more recently released browsers such as Microsoft Internet Explorer® version 5.0, Netscape Navigator® version 4.7, or later versions. The Web browser must have JavaScript enabled. Make sure JavaScript has not been disabled by other software (such as virus protection or Web user security packages) that may be running on your computer.

1.1.3 Ethernet Port (NIC Adapter)

Computer is connected to the MT800 through the Ethernet port on the MT800. Ensure your computer is configured with NIC adapter. Besides, be sure to enable the TCP/IP protocol for your operating system.

1.1.4 Account Information

For PPP connections you have to keep user name and password to connect to your ISP. This information is stored either in the MT800's memory or on your computer depending on the type of ADSL connection you have.

1.2 Packing List

Open the shipping carton and carefully remove all items. Ascertain that you have:

1) One SmartAX MT800 ADSL CPE
2) Two twisted-pair telephone cables used for connect to ADSL line and Phone.
3) One straight-through Ethernet cable
4) One AC power adapter
5) One Quick Installation Guide
6) One Warranty Card

Chapter 2 Introduction

This section provides a brief description of the MT800, its associated technologies and a list of features.

2.1 MT800 Overview

The SmartAX MT800 ADSL CPE is designed to provide a simple, cost-effective and secure ADSL Internet connection for your small to medium-sized private network. It enables many interactive multi-media applications such as video conferencing and collaborative computing.

2.1.1 Features

SmartAX MT800 utilizes the latest ADSL enhancements to provide a reliable Internet portal suitable for most small to medium sized offices. The advantages include:

- Data rates up to 8 Mbps for downstream and 896 Kbps for upstream
- Friendly Web-based graphical user interface for configuration and management
- Supports up to eight simultaneous virtual connections
- Built-in low pass filter for direct connection to telephone
- Supports T1.413 issue 2, G.dmt and G.lite standards
- Widest range of DSLAM interoperability
- Built-in MIBs for SNMP management
- Upgradeable firmware through TFTP

- Easy to install and use

Figure 2-1 MT800 Profile

2.1.2 Front Panel

Place the MT800 in a location where the LED indicators can be easily viewed.

The LEDs on the front panel of MT800 show as below:

Figure 2-2 Front Panel Display with LED Indicators

The LED Indicators read as follows:

Power Steady green light indicates the unit is powered on.

ADSL LINK Steady green light indicates a valid ADSL connection.
ADSL ACT Blinking green light indicates there is traffic over ADSL line.
LAN LINK Steady green light and orange light indicates a valid LAN connection. The green light indicates that the speed of data transfer is 10Mbps; the orange light indicates that the speed of data transfer is 100Mbps.
LAN ACT Blinking green light indicates there is traffic over Ethernet.

2.1.3 Rear Panel

All cable connections to the MT800 are made at the rear panel. A switch and reset button are located here as well. The device includes a built-in low pass filter so that you may attach a telephone directly to it.

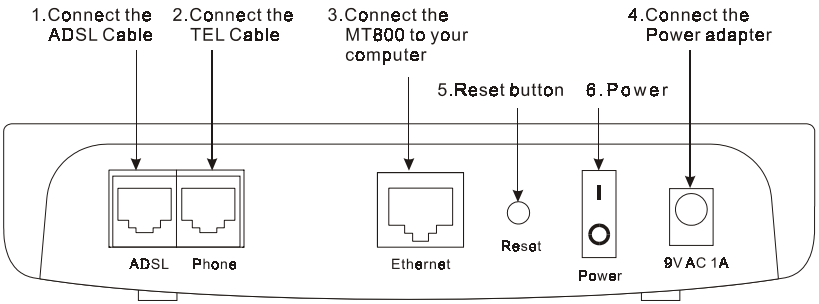


Figure 2-3 Rear Panel Cable and Power Connections

2.2 Hardware Installation

In this chapter you will learn about the various connections you will need to make in order to use MT800.

When selecting the location for MT800, allow ample room to access the connections on the rear panel. For convenience, try to place the MT800 near your computer so you can monitor the LED indicators. Allow some space above the MT800 for ventilation to avoid problems with overheating.

2.2.1 Connecting ADSL Line

Use the twisted-pair ADSL cable (standard telephone cable) packed with the MT800 to connect it to your telephone line. Simply plug one end of the cable into the ADSL port (RJ-11 receptacle) on the rear panel of the MT800 and insert the other end into the phone jack.

2.2.2 Connecting the computer to MT800

Use a straight-through cable to connect your computer and MT800. You can connect the MT800 directly to a 10/100Base-TX Ethernet adapter card (NIC) on your PC with the Ethernet cable provided as shown in this diagram.

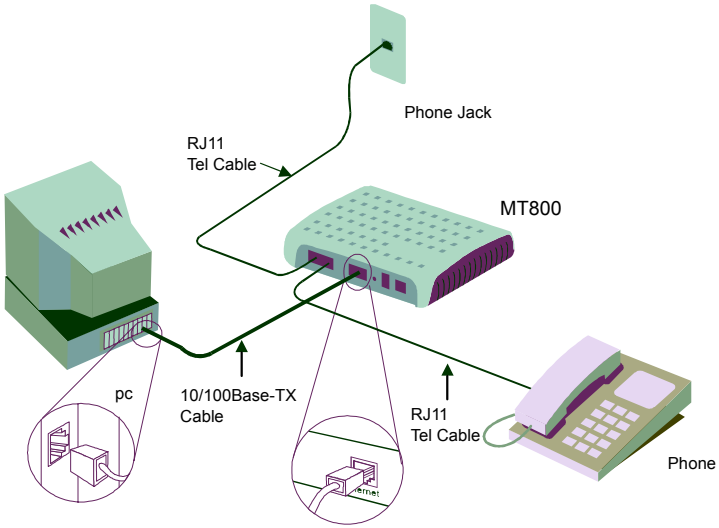


Figure 2-4 Computer to MT800 Connection

2.2.3 Connecting Ethernet LAN to MT800

MT800 may be connected to any 10/100Base-TX Ethernet port. When connecting MT800 to any Ethernet device that is capable of operating at speeds higher than 10Mbps, be sure that the device has auto-negotiation mode enabled for the connecting port.

Use cross-over cable to connect MT800 and the uplink port of a switch or hub. Be sure that the cable connecting the LAN to MT800 does not exceed 100 meters.

2.2.4 Powering On MT800

1) Use the provided power adapter and plugs it into a suitable power source nearby.

2) You should see the Power LED indicator light up that indicates the device is powered on.

After a few seconds, look at the LAN LINK indicator and make sure it with steady light, which indicates a valid connection between the CPE and your computer.

Chapter 3 Before Configuring MT800

To configure MT800, you have to connect MT800 to a computer as shown below. Use the provided straight-through cable.

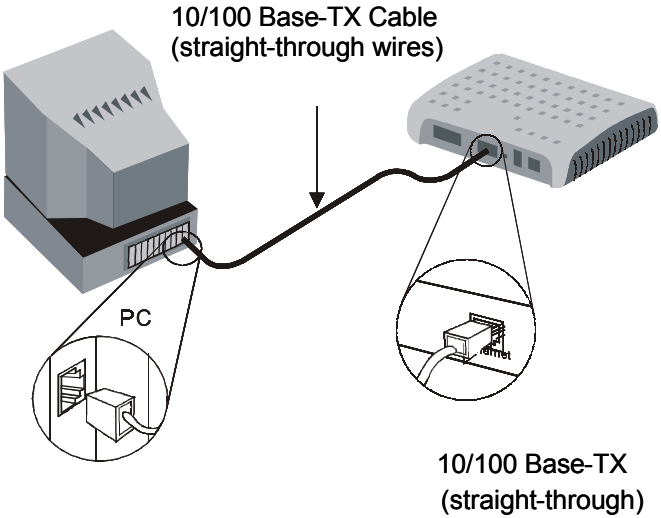


Figure 3-1 Computer to MT800 Connection

3.1 The Reason of Configuration

The factory default settings of MT800 had optimized all functions and make it can operate in most conditions of network. Usually, for the users with simple network topology, the default setting values can meet their basic requirements and need no change.

When the conditions of network has changed about security, scale, line of communication, protocol and topology, for example, a demand of particular VPI and VCI, you should adjust accordingly the default settings to be able to adapt to the changes.

3.2 Configuring IP Settings on Your Computer

The default IP settings for MT800 are as follows, IP address: 192.168.1.1, Subnet mask:255.255.255.0. Before configuring MT800, you shall first have the computer set in the same subnet with the MT800.

In order to configure your system as the same subnet with the MT800, it must first have the TCP/IP protocol installed and enabled.

- If you have an Ethernet port on your computer, it probably already has TCP/IP protocol installed.
- If you are using Windows XP, the TCP/IP is enabled by default for standard installations.

Then you can set the IP address and Subnet mask, for example, 192.168.1.100 and 255.255.255.0.

For computers running non-Windows operating systems, follow the instructions for your OS that configure the IP setting to occupy the same subnet as MT800.

3.3 Accessing the Web-based Configuration Manager

Once the computer has IP settings that allow it to access the Web-based configuration manager, you can change the factory default settings to enable the MT800 to connect to the Internet.

3.3.1 Checking for Proxy Service

If the browser software on the computer you are using is configured to use a proxy server for Internet access, it is necessary to first disable the proxy connection.

In Windows Internet Explorer, you can check if a proxy server is enabled using the following procedures:

1) In the Explorer Window, select and click on **Tools→Internet Options**, and enter the **Internet Options** window.
2) In the **Internet Options** window, click the **Connections** tab and click on the **LAN Settings** button.
3) Verify that the "Use proxy server" option is NOT checked. If it is checked, click in the checked box to deselect the option and click **OK**.

3.3.2 Applying the LAN IP Address of MT800

To access the Web-based configuration manager, launch your Web browser and enter the LAN IP address of the MT800. For the first access, the default LAN IP address of the MT800 is used. Type in "**http://**" followed by the default IP address, "**192.168.1.1**" in the address bar of the browser. The URL in the address bar should read: **http://192.168.1.1.**

3.3.3 User Name and Password

A new window appears prompting you for a user name and password needed to access the Web-based configuration manager.

Figure 3-2 Enter user name and password

Use the default user name: **admin** and password: **admin** for first time setup. You can change the password once you have opened the Web-based configuration manager. The user name and password allows any computer on the same subnet as the MT800 to access the Web-based configuration manger. And this password can also be used to Telnet to the device through the Ethernet or Internet interfaces. To change this password, see the next chapter.

Note:

Do not confuse the user name and password used to access the Web-based manager with the ADSL account and password needed for PPP connections to access your ISP's network.

Chapter 4 Web-based Management

This chapter describes how to use the web-based management software to configure the MT800, which introduces the signification of parameters and method of setting in the configuration interface. The order of sectors is listed according to the functional configuration interfaces.

4.1 Manager Interface Layout

The MT800 initially presents the **System View** page pictured below when you first log in. The left part of page is wizard column, and you can enter the web page of configuration or management through the hyperlink in wizard column. The right part of page is the practical domain of configuration and management.

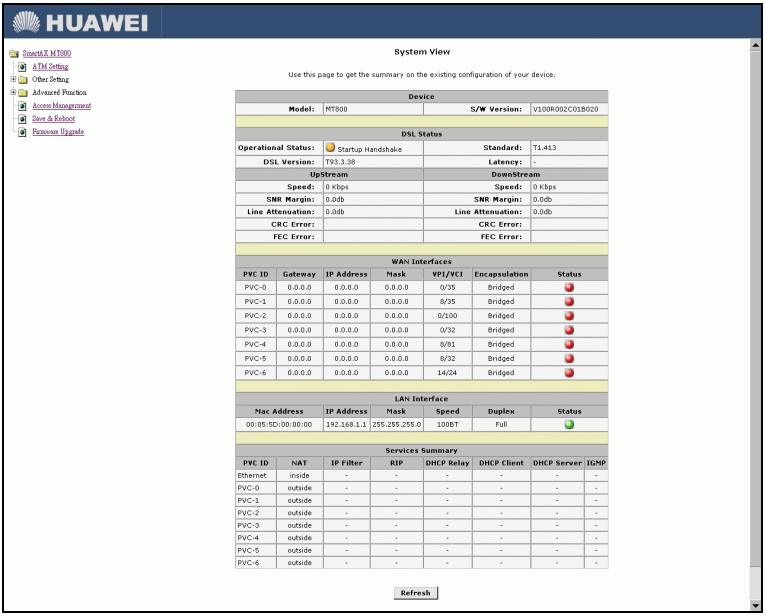


Figure 4-1 GUI of Web-based Configuration Manager

4.2 System View (Home Page)

System View

Use this page to get the summary on the existing configuration of your device.

Device			
Model:	MT800	**S/W Version:**	V100R002C01B020

DSL Status			
Operational Status:	Startup Handshake	**Standard:**	T1.413
DSL Version:	T93.3.38	**Latency:**	-
UpStream		**DownStream**	
Speed:	0 Kbps	**Speed:**	0 Kbps
SNR Margin:	0.0db	**SNR Margin:**	0.0db
Line Attenuation:	0.0db	**Line Attenuation:**	0.0db
CRC Error:		**CRC Error:**	
FEC Error:		**FEC Error:**	

WAN Interfaces

PVC ID	Gateway	IP Address	Mask	VPI/VCI	Encapsulation	Status
PVC-0	0.0.0.0	0.0.0.0	0.0.0.0	0/35	Bridged	
PVC-1	0.0.0.0	0.0.0.0	0.0.0.0	8/35	Bridged	
PVC-2	0.0.0.0	0.0.0.0	0.0.0.0	0/100	Bridged	
PVC-3	0.0.0.0	0.0.0.0	0.0.0.0	0/32	Bridged	
PVC-4	0.0.0.0	0.0.0.0	0.0.0.0	8/81	Bridged	
PVC-5	0.0.0.0	0.0.0.0	0.0.0.0	8/32	Bridged	
PVC-6	0.0.0.0	0.0.0.0	0.0.0.0	14/24	Bridged	

LAN Interface

Mac Address	IP Address	Mask	Speed	Duplex	Status
00:05:5D:00:00:00	192.168.1.1	255.255.255.0	100BT	Full	

Services Summary

PVC ID	NAT	IP Filter	RIP	DHCP Relay	DHCP Client	DHCP Server	IGMP
Ethernet	inside	-	-	-	-	-	-
PVC-0	outside	-	-	-	-	-	-
PVC-1	outside	-	-	-	-	-	-
PVC-2	outside	-	-	-	-	-	-
PVC-3	outside	-	-	-	-	-	-
PVC-4	outside	-	-	-	-	-	-
PVC-5	outside	-	-	-	-	-	-
PVC-6	outside	-	-	-	-	-	-

Refresh

Figure 4-2 Home Page – System View Display

The System View read-only table on the Home Page displays a summary of various system settings and functions as described in the table below.

Device	Displays the basic information about the device hardware and software versions, etc.
DSL Status	Displays the operational status, working mode, software version, and performance statistics for the DSL line.
WAN Interface	Displays the names and settings for the device WAN interfaces. Multiple software-defined interfaces may be configured to use the DSL connection. In the WAN interface will display the PVC number, gateway, IP address, mask, VPI/VCI, encapsulation and status.
LAN Interface	Displays the names and various settings of LAN interface, which include MAC address, IP address, speed, duplex and status.
Services Summary	Displays the following services that the ADSL terminal performs to help you manage your network: NAT IP Filter DHCP status including DHCP Relay, DHCP Server or DHSCP Client. RIP IGMP

4.3 ATM Setting

Click the hyperlink “ATM Setting” in wizard column to open the ATM setting page. There are three basic configuring modes for selection in this web page: RFC2684 Bridged, RFC2684 Routed (IPoA) and PPP.

4.3.1 RFC2684 Bridged Connection

Bridged connections include three modes: Pure Bridge, Static Bridge and DHCP.

- **PVC:** System provides 8 PVCs. Generally you can leave this set at the default value 0. This option is also used to create and configure new PVCs.
- **VPI:** If you need any modification, please enter the VPI value provided by ISP. See the attached table for all the VPI default value of PVC.
- **VCI:** If you need any modification, please enter the VCI value provided by ISP. See the attached table for all the VCI default value of PVC.
- **Operation Mode:** This also should be left at the default setting *Enabled*. This enables the PVC used for the initial connection.
- **Encapsulation:** You can select the mode LLC or VC MUX.
- **Application:** The bridged connection modes include Pure Bridge, Static Bridge and DHCP.

I. Pure Bridge

The setting page displayed as below will appear while you chose Pure Bridge mode. The gray item means it can be operated without any configuration.

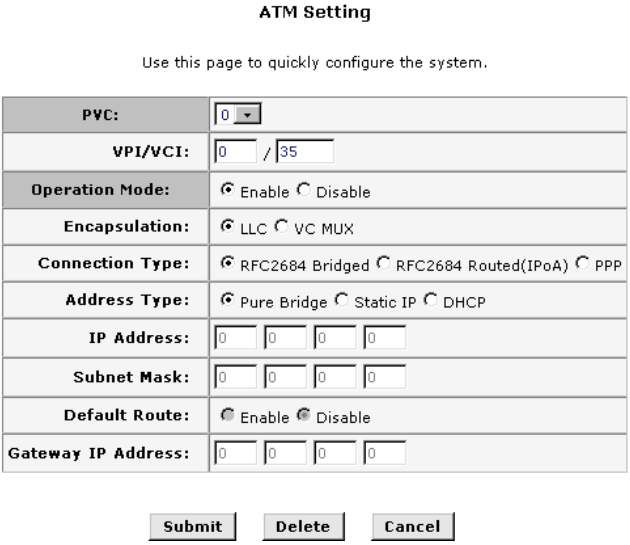


Figure 4-3 RFC2684 Bridged Connection-Application of Pure Bridge

II. Static IP

The setting page displayed as below will appear while you select Static IP setting mode. Please fill the corresponding field with the IP address and network mask provided by ISP. The default setting of route is Disable, and the Gateway IP address is 0.0.0.0. The recommended setting is to enable default route and enter the Gateway IP address provided by ISP.

IP Address and **Subnet Mask:** Entered IP address and subnet mask provided by ISP for the WAN interface of your MT800.

Default Route: This setting specified the IP address above is used for default route of LAN. The data will be sent through WAN interface whenever a client LAN computer accesses the Internet.

Gateway IP address: Enter the Gateway address provided by ISP.

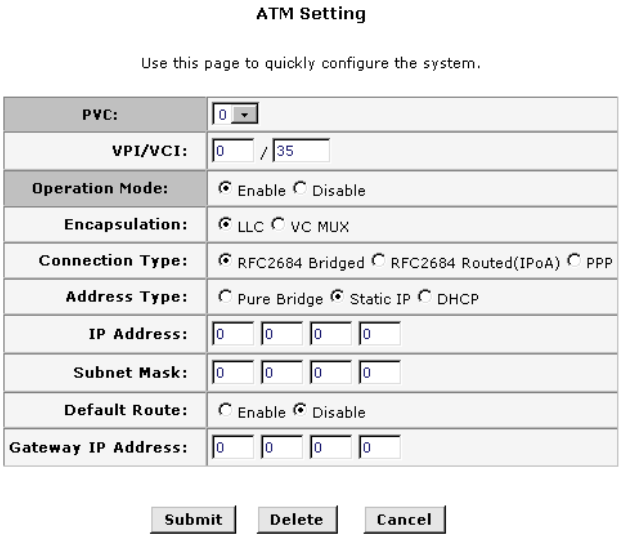


Figure 4-4 RFC2684 Bridged Connection-application of Static IP

III. DHCP

The setting page displayed as below will appear if you select DHCP mode, which means automatically acquire IP address from the DHCP sever of ISP. The default setting of default route is Disable, and the Gateway IP address is 0.0.0.0.

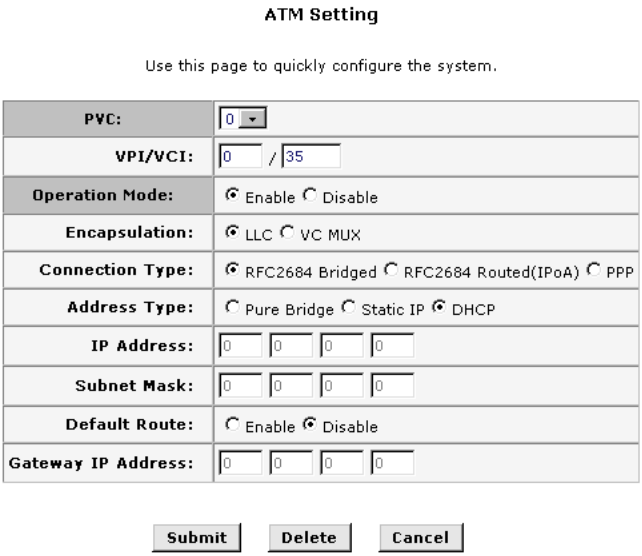


Figure 4-5 RFC2684 Bridged Connection-application of DHCP

Caution:

For any change of the settings, click the **Submit** button to save the settings in the flash. To save these configuration changes permanently, enter the **Save & Reboot** page, select **Save** and click **Submit** button to save new settings.

4.3.2 RFC2684 Route (IPoA) Configuration

- **PVC:** The system provides 8 PVCs. Generally you can leave this set at the default value 0. This option is also used to create and configure new PVCs.
- **VPI:** If you need any modification, please enter the VPI value provided by ISP. See the attached table for all the VPI default values of PVCs.
- **VCI:** If you need any modification, please enter the VCI value provided by ISP. See the attached table for all the VCI default values of PVCs.
- **Operation Mode:** This also should be left at the default setting *Enabled*. This enables the PVC used for the initial connection.
- **Encapsulation:** You can select the mode LLC or VC MUX.
- **IP Address** and **Subnet Mask:** Enter the IP address and subnet mask provided by ISP for the WAN interface of your MT800.
- **Default Route:** This setting specified the IP address above is using for default route of LAN. The data will be sent through WAN interface whenever a client LAN computer accesses the Internet.

You should enter the IP address provided by your ISP. The default setting of route is Disable, and the Gateway IP address is 0.0.0.0. The recommended setting is to enable default route and enter the Gateway IP address provided by your ISP.

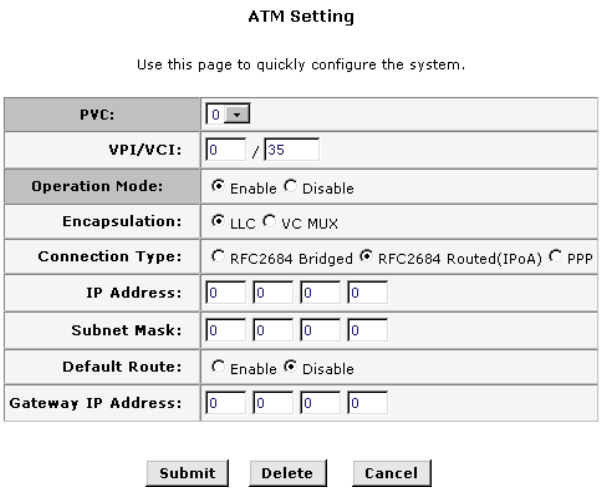


Figure 4-6 RFC2684 Route (IPoA) Configuration

4.3.3 PPP Configuration

There are two options for PPP configuration: PPPoA and PPPoE. The parameters that need to be configured are described as below:

- **PVC:** The system provides 8 PVCs. Generally you can leave this set at the default value 0. This option is also used to create and configure new PVCs.
- **VPI:** If you need any modification, please enter the VPI value provided by ISP. See the attached table for all the VPI default value of PVC.
- **VCI:** If you need any modification, please enter the VCI value provided by ISP. See the attached table for all the VCI default value of PVC.

- **Operation Mode:** This also should be left at the default setting *Enabled*. This enables the PVC used for the initial connection.
- **Encapsulation:** You can select the mode LLC or VC MUX.
- **Default Route:** This setting specified the IP address listed upon is using for default route of LAN. The data will be sent through WAN interface whenever a client LAN computer accesses the Internet.
- **Security Protocol:** PAP and CHAP.
- **Username** and **Password:** Enter the username and password provided by ISP.
- **Use DNS:** It is recommended to keep this option as *Enable.*

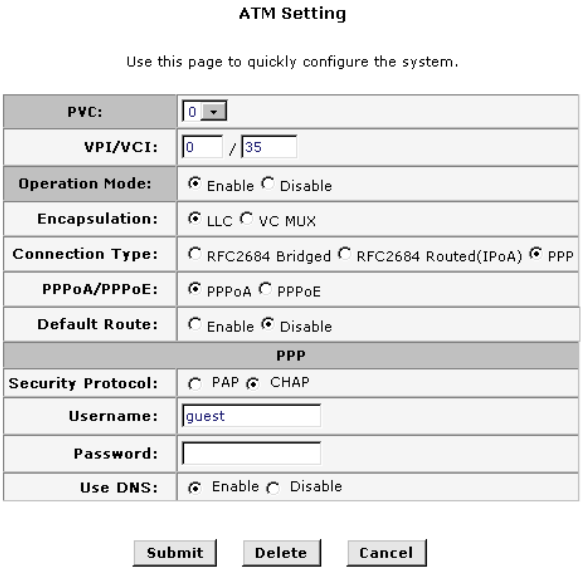


Figure 4-7 PPP configuration

4.4 ADSL Mode Configuration

Click the **ADSL Mode** of **Others Setting** in the Wizard column to set the ADSL mode. Usually the ADSL mode is set to the default value *Multimode*, and need not to be changed. If your ISP instructs you to change your ADSL settings, choose the appropriate ADSL mode in this web page.

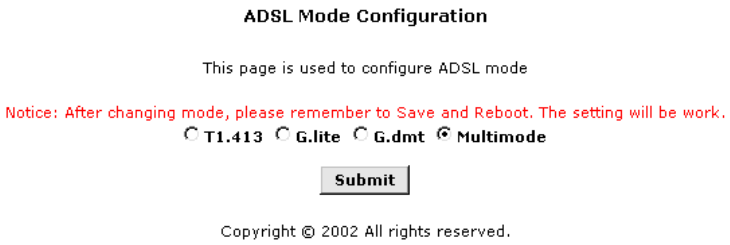


Figure 4-8 ADSL Mode Configuration

4.5 LAN Configuration

Click the **LAN Configuration** of **Other Setting** in the Wizard Column to set the LAN interface. The LAN IP address identifies the LAN port (eth-0) as a node on your network; that is, its LAN IP address must be in the same subnet as the computers on your LAN.

You can change the default LAN IP address and Net Mask to suit for your LAN.

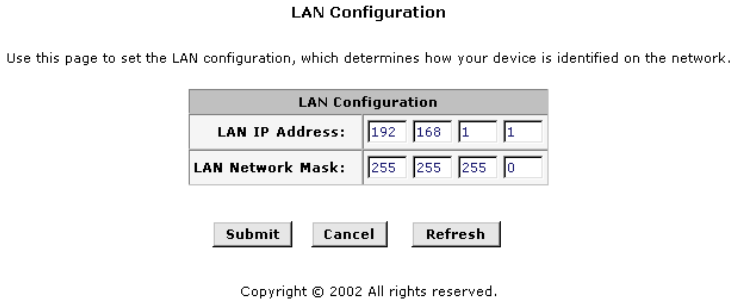


Figure 4-9 LAN Configuration

To change the LAN IP address, click the **Refresh** button and type in the new settings as described below.

LAN IP Address	Type in the IP address for the Ethernet LAN interface. Default = 192.168.1.1 Note: the public IP address that ISP assigned is not LAN IP address. The public IP address identifies the WAN interface that the ADSL terminal connects to Internet.
LAN Network Mask	Type in the Subnet Mask for the Ethernet LAN IP interface. Default = 255.255.255.0

Note:

If you are changing the IP address you will need to login again to access the web manager.

4.6 DHCP Mode Configuration

Click the **DHCP Mode** of **Other Setting** in the Wizard Column to set the DHCP mode. DHCP services that provided by MT800

include: directly provide DHCP service, receive and relay DHCP service.

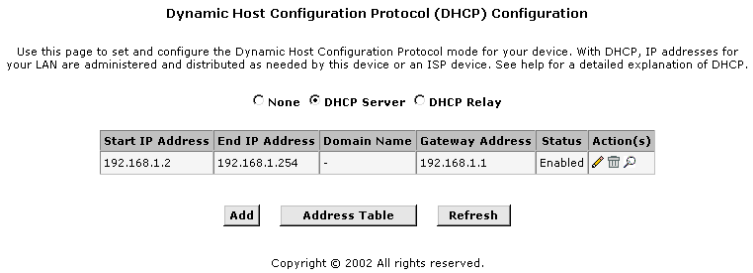


Figure 4-10 DHCP Mode Configuration

The illustration of this page as below:

DHCP Server	MT800 can be configured as DHCP server of LAN Then, the ADSL terminal shall provide IP settings for you PC.
DHCP Relay	MT800 can also to be configured to relay DHCP packets, and the you PC shall be assigned IP address automatically.
None	The default setting is None, which disable DHCP services. In this case, ADSL terminal device shall be assigned IP settings manually or receive from the DHCP server of LAN or ISP.

4.7 DNS Configuration

Click the **DNS** of **Advanced Functions** in the Wizard Column to set the DNS. Multiple DNS addresses are useful to provide alternatives when one of the servers is down or encountering heavy traffic. ISPs typically provide primary and secondary DNS addresses, and may provide additional addresses.

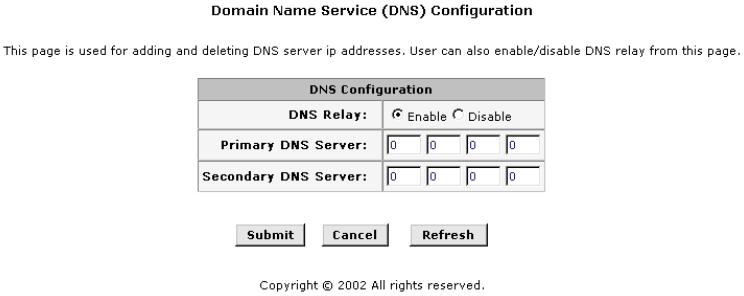
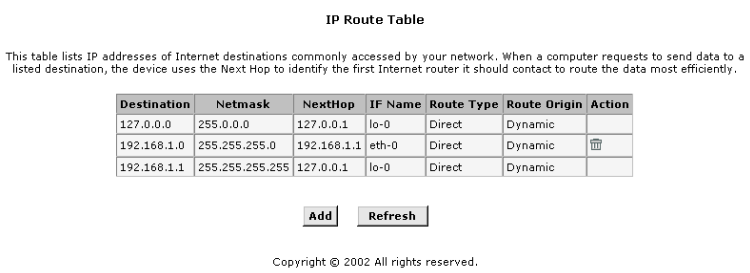


Figure 4-11 DNS Configuration

4.8 IP Route Table Configuration

Click the **IP Route** of **Other Setting** in the Wizard Column to set the IP Route Table. IP Routes are used to define gateways and hops used to route data traffic. Most users will not need to use this feature as the previously configured default gateway and LAN IP settings on your host computers should be sufficient.

You may need to define routes if your LAN includes two or more networks or subnets, if you connect to two or more ISP services, or if you connect to a remote corporate LAN. Use the IP Route Table to Add new IP routes.



IP Route Table

This table lists IP addresses of Internet destinations commonly accessed by your network. When a computer requests to send data to a listed destination, the device uses the Next Hop to identify the first Internet router it should contact to route the data most efficiently.

Destination	Netmask	NextHop	IF Name	Route Type	Route Origin	Action
127.0.0.0	255.0.0.0	127.0.0.1	lo-0	Direct	Dynamic	
192.168.1.0	255.255.255.0	192.168.1.1	eth-0	Direct	Dynamic	
192.168.1.1	255.255.255.255	127.0.0.1	lo-0	Direct	Dynamic	

Add Refresh

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Figure 4-12 IP Route Table

Information displayed in the IP Route Table is summarized below:

Destination	Specifies the IP address of the destination computer. The destination can specify the IP address of a specific computer or an entire network. It can also be specified as all zeros to indicate that this route should be used for all destinations for which no other route is defined (this is the route that creates the default gateway).
Netmask	Indicates which parts of the destination address refer to the network and which parts refer to a computer on the network. The default gateway uses a netmask of 0.0.0.0.
Next Hop	Specifies the *next* IP address to send data to when its final destination is that shown in the destination column.
IF Name	Displays the name of the interface through which to data is forwarded to the specified next hop.
Route Type	Displays whether the route is direct or indirect. In a direct route, the source and destination computers are on the same network, and the MT800 attempts to directly deliver the data to the computer. In an indirect route, the source and destination computers are on different networks, and the MT800 forwards data to a device on another network for further handling.
Route Origin	Displays how the route was defined. *Dynamic* indicates that the route was predefined on the system by your ISP or the manufacturer. Routes you create are labeled *Local*. Other routes can be created automatically, or defined remotely through various network management protocols (LCL or ICMP).

4.9 NAT Configuration

Network Address Translation is a method for disguising the private IP addresses you use on your LAN as the public IP address you use on the Internet. You define NAT rules that specify exactly how and when to translate between public and private IP addresses.

Click the **NAT** of **Other Setting** in the Wizard Column to set the NAT. NAT is enabled by default. You can enable or disable NAT by selecting the **Enable** or **Disable** option in the configuration page and submitting the settings.

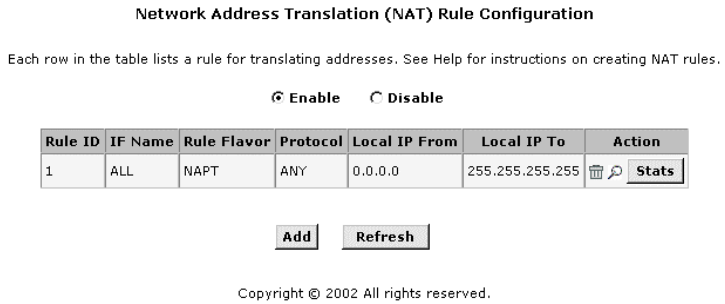


Figure 4-13 NAT Configuration

To configure NAT Rules, select the **NAT Rule Entry** option and click the **Add** button. A new window is displayed:

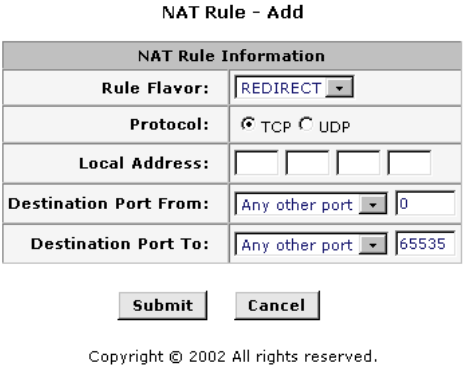


Figure 4-14 Add NAT Rule

From the **Rule Flavor** drop-down list, select **REDIRECT**, **DMZ**, and **NAPT**. The page redisplays with only the fields that are appropriate for the chosen NAT flavor.

The information in the various pages is summarized in the table below.

Rule ID	The Rule ID determines the order in which rules are invoked (the lowest numbered rule is invoked first, and so on). In some cases, two or more rules may be defined to act on the same set of IP addresses. Be sure to assign the Rule ID so that the higher priority rules are invoked before lower-priority rules. It is recommended that you select rule IDs as multiples of 5 or 10 so that, in the future, you can insert a rule between two existing rules.
IF Name	Displays the name of the interface.
Protocol	This selection specifies which type of Internet communication will be subject to this translation rule. You can select TCP or UDP.

Local Address From	Type the starting IP of the range of private address you want to be translated. You can specify that data from all LAN addresses should be translated by typing 0 (zero) in each From field and 255 in each To field. Or, type the same address in both fields if the rule only applies to one LAN computer.
Local Address To	Type the ending IP of the range of private address you want to be translated.
Local Address	Type the private IP address you want to be translated.
Destination Port From	Enter the starting port ID (or a range) that you expect to see on incoming packets destined for the LAN computer for which this rule is being created. With the ending port ID (or a range) specified in the next field, incoming traffic that meets these criteria will be redirected to the Local Port number you specified.
Destination Port To	Enter the ending port ID (or a range).

4.10 RIP Configuration

RIP is an Internet protocol. You can set up to share routing table information with other routing devices on your LAN, at your ISP's location, or on remote networks connected to your network via the ADSL line.

Click the **RIP** of **Advanced Functions** in the Wizard Column to set the RIP.

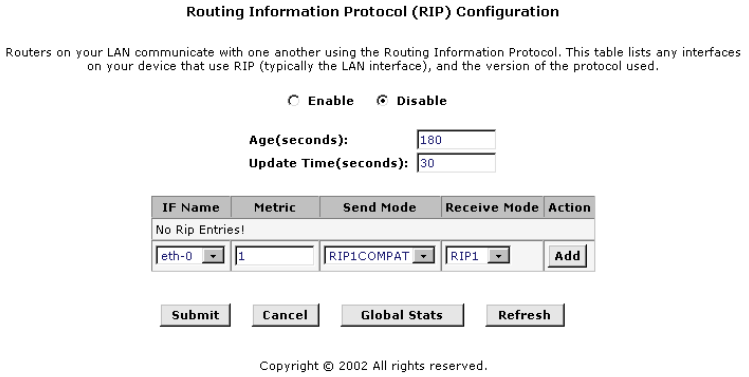


Figure 4-15 RIP Configuration

To change RIP configuration:

1) If necessary, change the **Age** and **Update Time**. These are global settings for all interfaces that use RIP.

- **Age** is the amount of time in seconds that the device's RIP table will retain each route that it learns from adjacent computers.
- **Update Time** specifies how frequently the MT800 will send out its routing table its neighbors.

2) In the **IF Name** column, select the name of the interface on which you want to enable RIP.

3) Select a metric value for the interface. RIP uses a "hop count" as a way to determine the best path to a given destination in the network. The hop count is the sum of the metric values assigned to each port through which data is passed before reaching the destination. Among several

alternative routes, the one with the lowest hop count is considered the fastest path.

4) Select **Send Mode** and **Receive Mode**.

- The **Send Mode** setting indicates the RIP version this interface will use when it sends its route information to other devices.
- The **Receive Mode** setting indicates the RIP version(s) in which information must be passed to the MT800 in order for it to be accepted into its routing table.

5) Click the **Add** button. The new RIP entry will display in the table.

6) Click the **Enable** radio button to enable the RIP feature.

Note:

RIP version 1 is the original RIP protocol. Select RIP1 if you have devices that communicate with this interface that understand RIP version 1 only.

RIP version 2 is the preferred selection because it supports "classless" IP addresses (which are used to create subnets) and other features. Select RIP2 if all other routing devices on your LAN support this version of the protocol.

4.11 Firewall Configuration

4.11.1 Configuration of Global Firewall

The Firewall enables you to protect the system against denial of service (DoS) attacks and other types of malicious accesses to your

LAN. You can also specify how to monitor attempted attacks, and who should be automatically notified.

Click the **Firewall** of **Advanced Functions** in the Wizard Column to set the RIP.

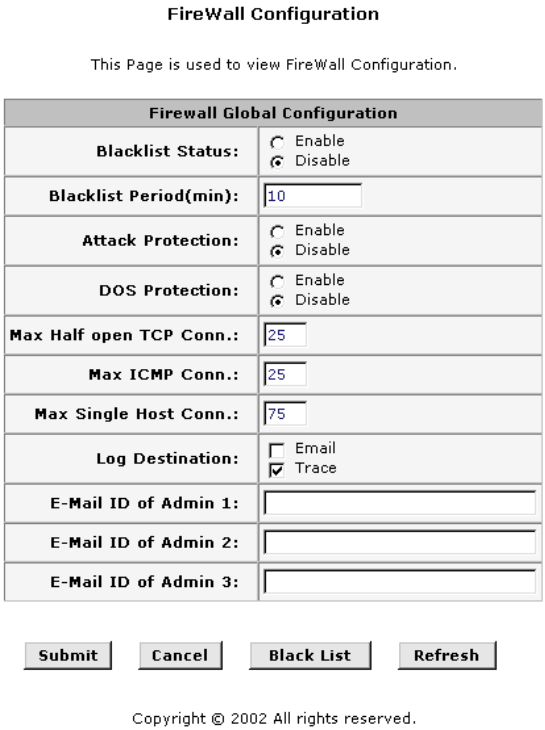


Figure 4-16 Firewall Configuration

Follow these instructions to configure global firewall settings.

Configure any of the following settings that display in the **Firewall Global Configuration** table:

- **Blacklist Status:** If you want the device to maintain and use a black list, click *Enable*. Click *Disable* if you do not want to maintain a list.
- **Blacklist Period (min):** Specifies the number of minutes that a computer's IP address will remain on the black list (i.e., all traffic originating from that computer will be blocked from passing through any interface on the MT800). For more information, see Managing the Black List below.
- **Attack Protection**: Click the **Enable** radio button to use the built-in firewall protections that prevent the following common types of attacks:
- IP Spoofing: Sending packets over the WAN interface using an internal LAN IP address as the source address.
- Tear Drop: Sending packets that contain overlapping fragments.
- Smurf and Fraggle: Sending packets that use the WAN or LAN IP broadcast address as the source address.
- Land Attack: Sending packets that use the same address as the source and destination address.
- Ping of Death: Illegal IP packet length.
- **DoS Protection**: Click the **Enable** radio button to use the following denial of service protections: SYN DoS , ICMP DoS, Per-host DoS protection
- **Max Half open TCP Connection**: Sets the percentage of concurrent IP sessions that can be in the half-open state. In ordinary TCP communication, packets are in the half-open state only briefly as a connection is being

initiated; the state changes to active when packets are being exchanged, or closed when the exchange is complete. TCP connections in the half-open state can use up the available IP sessions. If the percentage is exceeded, then the half-open sessions will be closed and replaced with new sessions as they are initiated.

- **Max ICMP Connection**: Sets the percentage of concurrent IP sessions that can be used for ICMP messages. If the percentage is exceeded, then older ICMP IP sessions will be replaced by new sessions as they are initiated.
- **Max Single Host Connection**: Sets the percentage of concurrent IP session that can originate from a single computer. This percentage should take into account the number of hosts on the LAN.
- **Log Destination**: Specifies how attempted violations of the firewall settings will be tracked. Records of such events can be sent via Ethernet to be handled by a system utility Ethernet to (*Trace*) or can e-mailed to specified administrators.
- **E-mail ID of Admin 1/2/3**: Specifies the e-mail addresses of the administrators who should receive notices of any attempted firewall violations. Type the addresses in standard Internet e-mail address format. The e-mail message will contain the time of the violation, the source address of the computer responsible for the violation, the destination IP address, the protocol being used, the source and destination ports, and the number of violations occurring in the previous 30 minutes. If the ICMP protocol

were being used, then instead of the source and destination ports, the e-mail will report the ICMP code and type.

4.11.2 Managing the Blacklist

If data packets are received that violate the firewall settings or any of the IP Filter rules, then the source IP address of the offending packets can be blocked from such accesses for a specified period of time. The source computer remains on the black list for the period of time that you specify. You can enable or disable use of the black list using the settings described above.

To view the list of currently blacklisted computers, click the **Black List** button at the bottom of the Firewall Configuration page. The table displays the following information for each entry:

Figure 4-17 Inquire the Hosts in the Blacklist

- **Host IP Address**: The IP address of the computer that sent the packet(s) that caused the violation.
- **Reason**: A short description of the type of violation. If the packet violated an IP Filter rule, the custom text from the Log Tag field will display.

- **IPF Rule ID**: If the packet violated an IP Filter rule, this field will display the ID assigned to the rule.

4.12 IP Filter Configuration

The IP filter feature enables you to create rules that control the forwarding of incoming and outgoing data between your LAN and the Internet and within your LAN.

4.12.1 IP Filter Global Settings

The IP Filter Configuration page displays global settings that you can modify, and the IP Filter rule table, which shows all currently established rules.

Click the **IP Filter** of **Advanced Functions** in the Wizard Column to set the IP filter.

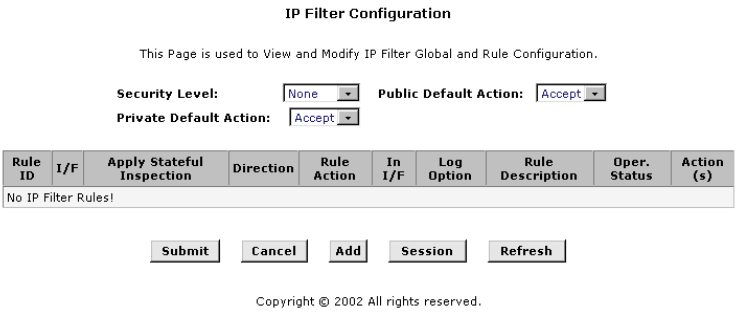


Figure 4-18 IP Filter Configuration

The IP Filter Configuration page enables you to configure the following IP filter global settings.

- **Security Level:** This setting determines which IP Filter rules take effect, based on the security level specified in each rule. For example, when *High* is selected, only those rules that are assigned a security value of *High* will be in effect. The same is true for the *Medium* and *Low* settings. When *None* is selected, IP Filtering is disabled.
- **Private/Public Default Action:** This setting specifies a default action to be taken (Accept or Deny) on private or public-type device interfaces when they receive packets that *do not* match any of the filtering rules. You can specify a different default action for each interface type. (You specify an interface's type when you create the interface; see the PPP configuration page, for example.)

A *public* interface typically connects to the Internet. PPP, EoA, and IPoA interfaces are typically public. Packets received on a public interface are subject to the most restrictive set of firewall protections defined in the software. Typically, the global setting for public interfaces is **Accept**, so that all accesses to your LAN initiated from external computers are denied (discarded at the public interface), except for those allowed by a specific IP Filter rule.

A private interface connects to your LAN, such as the Ethernet interface. Packets received on a private interface are subject to a less restrictive set of protections, because they originate within the network. Typically, the global setting for private interfaces is **Accept**, so that LAN computers have access to the Internet connection.

4.12.2 Adding an IP Filter Rule

To create the IP filter rule, and set the rule as it must suit for various standard while transfer the rule. To add new IP filter rule using these commands:

1) On the main IP Filter page, click the **Add** button to display the IP Filter Rule - Add page.
2) Enter or select data for each field that applies to your rule. The following table describes the fields:

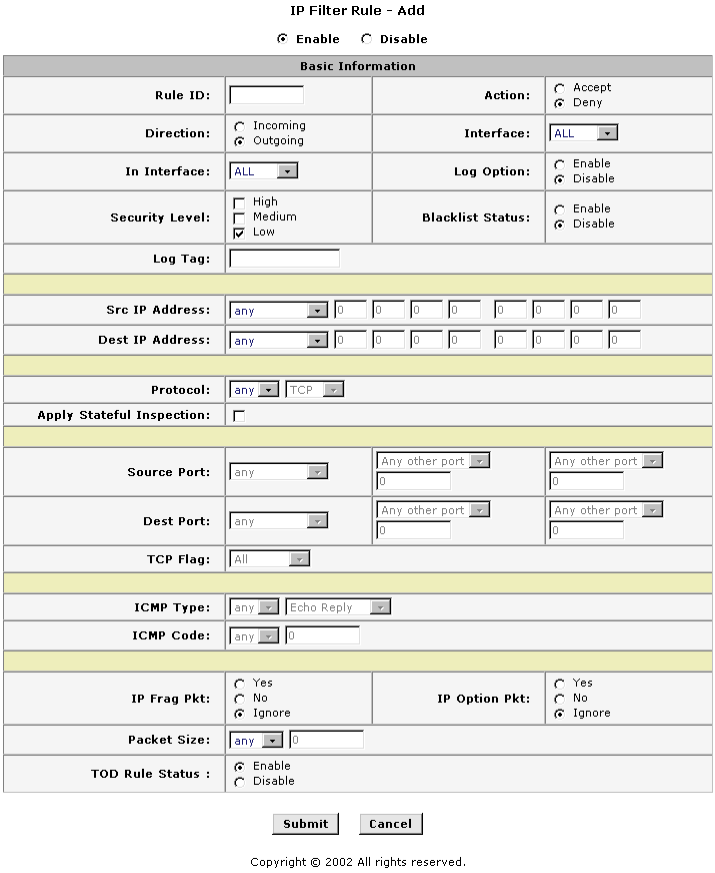


Figure 4-19 Add IP Filter Rule

- **Rule ID**: Each rule must be assigned a sequential ID number. Rules are processed from lowest to highest on each data packet, until a match is found. It is recommended that you assign rule IDs in multiples of 5 or

10 (e.g., 10, 20, 30) so that you leave enough room between them for inserting a new rule if necessary.

- **Action**: Specifies what the rule will do to a packet when the packet matches the rule criteria. The action can be *Accept* (forward to destination) or *Deny* (discard the packet).
- **Direction**: Specifies whether the rule should apply to data packets that are incoming or outgoing on the selected interface. **Incoming** refers to packets coming in to the LAN on the interface, and **Outgoing** refers to packets going out from the LAN. You can use rules that specify the incoming direction to restrict external computers from accessing your LAN.
- **Interface**: The interface on the device on which the rule will take effect.
- **In Interface**: The interface from which packets must have been forwarded to the interface specified in the previous selection. This option is valid only on rules defined for the outgoing direction.
- **Log Option**: When **Enabled** is selected, a log entry will be created on the system each time this rule is invoked. The log entry will include the time of the violation, the source address of the computer responsible for the violation, the destination IP address, the protocol being used, the source and destination ports, and the number of violations occurring in the previous **x** minutes. (Logging may be helpful when troubleshooting.) This information can also be e-mailed to administrators.
- **Security Level:** The security level that must be enabled globally for this rule to take affect. A rule will be active only

if its security level is the same as the globally configured setting (shown on the main IP Filter page). For example, if the rule is set to **Medium** and the global firewall level is set to **Medium**, then the rule will be active; but if the global firewall level is set to **High** or **Low**, then the rule will be inactive.

- **Black List Status**: Specifies whether or not a violation of this rule will result in the offending computer's IP address being added to the Black List, which blocks the MT800 from forwarding packets from that source for a specified period of time.
- **Log Tag:** A description of up to 16 characters to be recorded in the log in the event that a packet violates this rule. Be sure to set the Log Option to **Enable** if you configure a Log Tag.
- **Start/End Time:** The time range during which this rule is to be in effect, specified in military units.
- **Src IP Address**: IP address criteria for the source computer(s) from which the packet originates. In the drop-down list, you can configure the rule to be invoked on packets containing:

  any: any source IP address.

  lt: any source IP address that is numerically less than the specified address.

  lteq: any source IP address that is numerically less than or equal to the specified address.

  gt: any source IP address that is numerically greater than the specified address.

gteq: any source IP address that is numerically greater than or equal to the specified address.

eq: any source IP address that is numerically equal to the specified address.

neq: any source IP address that is not equal to the specified address.

range: any source IP address that is within the specified range, inclusive.

out of range: any source IP address that is outside the specified range.

self: the IP address of the MT800 interface on which this rule takes effect.

- **Dest IP Address**: IP address criteria for the destination computer(s) (i.e., the IP address of the computer to which the packet is being sent). In addition to the options described for the Src IP Address field, the following option is available:

  bcast: specifies that the rule will be invoked for any packets sent to the broadcast address for the receiving interface. When you select this option, you do not need to specify the address, so the address fields are dimmed.

- **Protocol**: IP protocol criteria that must be met for rule to be invoked. You can specify that packets must contain the selected protocol (*eq*), that they must not contain the specified protocol (*neq*), or that the rule can be invoked

regardless of the protocol (*any*). TCP, UDP, and ICMP are commonly used IP protocols; others can be identified by number, from 0-255, as defined by the Internet Assigned Numbers Authority (IANA).

- **Apply Stateful Inspection**: If this option is enabled, then **Stateful Filtering** is performed and the rule is also applied in the other direction on the given interface during an IP session.
- **Source Port**: Port number criterion for the computer(s) from which the packet originates. This field will be dimmed (unavailable for entry) unless you have selected TCP or UDP as the protocol. See the description of Src IP Address for the selection options.
- **Dest. Port**: Port number criterion for the destination computer(s) (i.e., the port number of the type of computer to which the packet is being sent). This field will be dimmed (unavailable for entry) unless you have selected TCP or UDP as the protocol. See the description of Src IP Address for the selection options.
- **TCP Flag**: Specifies whether the rule should apply only to TCP packets that contain the synchronous (*SYN*) flag, only to those that contain the non-synchronous (*NOT-SYN*) flag, or to all TCP packets. This field will be dimmed (unavailable for entry) unless you selected TCP as the protocol.
- **ICMP Type**: Specifies whether the value in the type field in ICMP packet headers will be used as a criterion. The value can be any decimal value from 0-255. You can specify that the value must equal (eq) or not equal (neq) to the

specified value, or you can select **any** to enable the rule to be invoked on all ICMP packets. This field will be dimmed (unavailable for entry) unless you specify ICMP as the protocol.

- **ICMP Code**: Specifies whether the value in the code field in ICMP packet headers will be used as a criterion. The code value can be any decimal value from 0-255. You can specify that the value must equal (**eq**) or not equal (***neq***) the specified value, or you can select **any** to enable the rule to be invoked on all ICMP packets. This field will be dimmed (unavailable for entry) unless you specify ICMP as the protocol.
- **IP Frag Pkt:** Determines how the rule applies to IP packets that contain fragments. You can choose from the following options:

  Yes: The rule will be applied only to packets that contain fragments.

  No: The rule will be applied only to packets that do not contain fragments.

  Ignore: (Default) The rule will be applied to packets whether or not they contain fragments, assuming that they match the other criteria.

- **IP Option Pkt:** Determines whether the rule should apply to IP packets that have options specified in their packet headers.

  Yes: The rule will be applied only to packets that contain header options.

No: The rule will be applied only to packets that do not contain header options.

Ignore: (Default) The rule will be applied to packets whether or not they contain header options, assuming that they match the other criteria.

- **Packet Size:** Specifies that the IP Filter rule will take affect only on packets whose size in bytes matches this criterion. (*lt* = less than, *gt* = greater than, *lteq* = less than or equal to, etc.)
- **TOD Rule Status:** The Time of Day Rule Status determines how the **Start Time**/**End Time** settings are used.
- **Enable:** (Default) The rule is in effect for the specified time period.
- **Disable:** The rule is not in effect for the specified time period, but is effective at all other times.

When you are done selecting criteria, ensure that the **Enable radio** button is selected at the top of the page, and then click the **Submit** button at the bottom of the page. After a confirmation page displays, the IP Filter -Configuration page will redisplay with the new rule showing in the table.

Ensure that the Security Level and Private/Public Default Action settings on the IP Filter Configuration page are configured as needed, and then click the **Submit** button. A page displays to confirm your changes.

4.13 Blocked Protocols

Click the **Blocked Protocols** of **Advanced Functions** in the Wizard Column to set the Blocked Protocols. The MT800 is capable of sending and receiving information in a variety of protocol formats. The Blocked Protocols feature enables you to prevent the MT800 from passing any data that uses a particular protocol. Unlike the IP Filter feature, you cannot specify additional criteria for blocked protocols, such as particular users or destinations. However, when you are certain that a particular protocol is not needed or wanted on your network, this feature provides a convenient way to discard such data before it is passed.

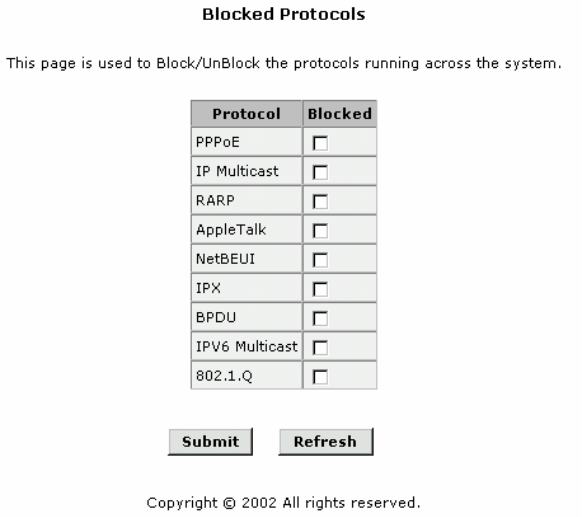


Figure 4-20 Blocked Protocols

To block a protocol, click the appropriate check box, and click the **Submit** button to save the settings in RAM. To save these configuration changes permanently, enter the **Save & Reboot** page, select **Save** and click **Submit** button to save the setting.

4.14 Diagnostics

The diagnostics feature executes a series of test of your system software and hardware connections. Use this feature when working with your ISP to troubleshoot problems. Click the **Diagnostics** of **Advance Functions** in the Wizard column to perform the basic diagnostics for system.

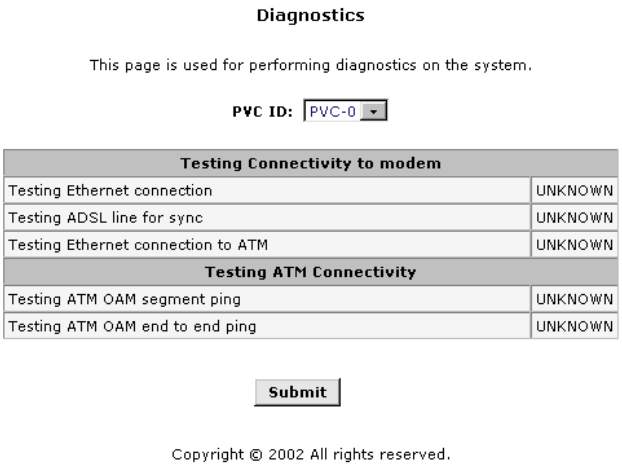


Figure 4-21 Diagnostics Window

Select the Virtual Circuit and click the **Submit** button. A message will appear, informing you whether the loop test succeeded or failed.

The diagnostics utility will run a series of test to check whether the device's connections are up and working. This takes only a few seconds. The program reports whether the test passed or failed. A test may be skipped if the program determines that no suitable interface is configured on which to run the test.

4.15 Access Management

The first time you log into the Web Configuration Manager, use the default user ID and password (admin and admin). For the default user ID, admin, only the password can be changed. The method to change the password of admin or users described as below:

Perform the following steps to change the password:

1) Open the Access Management page;
2) Enter the configuration page **User Config-Modify** by click the in the operation column;
3) Enter the new password, confirm the password and submit;
4) Save the setting in the **Save**&**Restart** page and then restart the system to take effect the setting.

Figure 4-22 Access Management

To add new user ID and password, click the **Add** Button in **Access Management** page, log into the **User Configuration-Add** page.

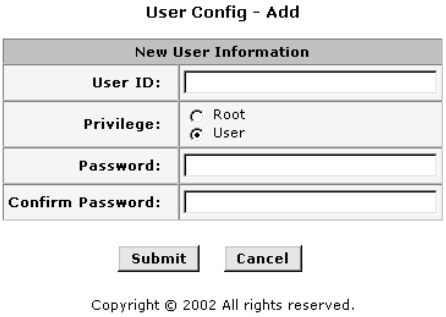


Figure 4-23 User Config - Add

User ID:	This lists the current User ID (user name).
Privilege:	Root – can access and modify system configurations User – can read limited configurations
Password:	Type in the new password.
Confirm Password:	Type in the new password a second time for confirmation.

If you need to delete a user, click the icon in the operation column that the user located to delete the user.

4.16 Save & Reboot

Click the **Save & Reboot** in Wizard column to specify the method of restart. Whenever you modifies the settings on MT800, the result of changes will be saved in the flash. And most of the changes (except the change of ADSL mode) will take effect immediately after it is submitted. However, with reset or turn off the device, the saved changes will be erased.

To save the changes to permanent storage, select **Save** and click **Submit** in the **Save & Reboot** page.

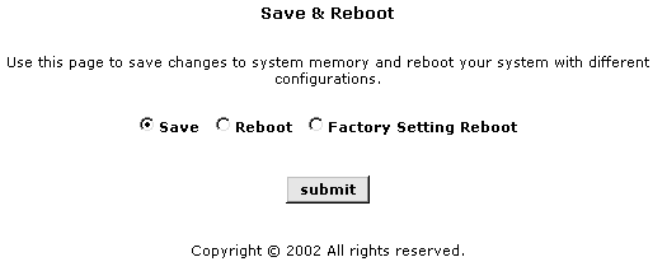


Figure 4-24 Save & Reboot

The options are described as below:

Save	Save the current setting into the permanent storage
Reboot	A simple reboot. This will put into effect any configuration changes that have been successfully saved to flash memory.
Factory Setting Reboot	This reboots the device to default settings provided by your ISP or the manufacturer. Choosing this option erases any custom settings.

You should select the proper method to restart the system.

Caution:

Do not reboot the device using the Reset button on the back panel of the MT800 to activate new changes. This button resets the device settings to the manufacturer's default values. Any custom settings will be lost.

4.17 Firmware Upgrade

Click the hyperlink **Firmware Upgrade** in the Wizard column to open the **Firmware Upgrade** page and update the system software.

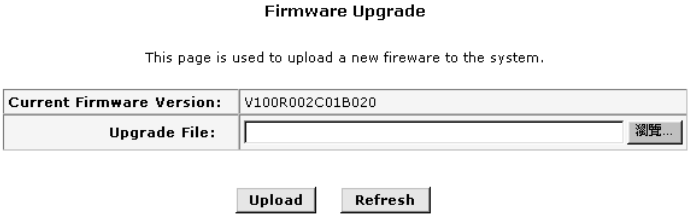


Figure 4-25 Firmware Upgrade

Upgrade File:	Type in the full path and file name of the firmware file to be uploaded. Alternatively you may click the **Browse** button to search for the file on your system.

When the filenames have been entered, click the **Upload** button to commence loading the firmware file. If the upload is successful, a message informs you that it was successfully loaded and asks you to reboot the device. Go to the **Save & Reboot** page and perform a simple reboot. If the firmware does not load, an error message informs you to try the upload again. Check the filenames and attempt to upload again. If the file still will not load, reboot the device and try again.

Caution:

Do not power off the MT800 during its rebooting. Otherwise, the configuration in the flash could be damaged.

Chapter 5 Service Configuration

Following are five modes of SmartAX MT800 ADSL terminal device for ADSL online service:

1) PPPoE
2) PPPoA
3) RFC 2684 Bridged (Pure Bridge)
4) RFC 2684 Bridged (Static IP)
5) RFC 2684 Bridged (DHCP)
6) RFC 2684 Route (IPoA)

5.1 Preparation for Service Configuration

Collect the following data firstly to perform the configuration:

	Virtual dialup mode		**DSL mode**			
Protocol types	PPPoE	PPPoA	RFC 2648 Bridged (Pure Bridge)	RFC 2684 Bridged (Static IP)	RFC 2684 Bridged (DHCP)	RFC 2684 Route (IPoA)
Preparing information	Connection Type	Connection Type	Connection Type	Connection Type	Connection Type	Connection Type
	PPPoE user name	PPPoA user name	VPI/VCI	VPI/VCI	VPI/VCI	VPI/VCI
	PPPoE password	PPPoA password		WAN IP		WAN IP
	VPI/VCI	VPI/VCI		Subnet mask		Subnet mask
	Security Protocol	Security Protocol		Default gateway		Default gateway
				DNS	DNS	DNS

5.2 Service Types and Configuring Illustration

5.2.1 PPPoE Configuration

Step 1. Open the web page **ATM Setting**.

Step 2. Select the option **PPP** in **Connection Type**.

Step 3. Select the option **PPPoE** in **PPPoA/PPPoE**.

Step 4. Select option **LLC** or **VC MUX** in **Encapsulation** according to the directions from your ISP or system provider.

Step 5. Select a PVC and fill the corresponding fields with the values that provided by ISP or system provider, which include the value of **VPI**, **VCI**, **PAP** or **CHAP**, **User name**, **Password**. Set **Operation Mode** and **Default Route** as **Enabled**.

Step 6. After enter the proper value, please click the **Submit** button under the field to submit the setting to ADSL terminal.

Step 7. Leave the **ADSL Mode** as default setting. If your ISP instructs you to change the ADSL settings, please follow the detailed setting procedures in Section 4.4 ADSL Mode Configuration.

Step 8. Leave the **LAN IP Address** as the default values 192.168.1.1, and **Subnet Mask** as 255.255.255.0. If you want to modify the configuration of LAN IP, please follow the detail setting procedure in Section 4.5 LAN Configuration.

Step 9. Usually to leave the **NAT Mode** as default setting **Enable**. For more detailed settings, please refer to the Section 4.8 NAT Configuration.

Step 10. The default setting of DHCP is **None**. You should configure the PC's IP address as the same subnet with the LAN IP of MT800. If you need to configure the MT800 as DHCP Server mode, please select **DHCP Server** option. You should configure the IP setting of computer in the LAN as to obtain an IP address automatically. If you need to configure the mode as DHCP Relay, please select **DHCP Relay** option, and enter the DHCP Server address that provided by ISP. At the same time, you should configure the IP setting of computer in the LAN as to obtain an IP address automatically.

Step 11. Click and select the **Save & Reboot** page, select the option **Save** and then click **submit** to finish the setting of ADSL and save it permanently.

5.2.2 PPPoA Configuration

Step 1. Open the web page **ATM Setting**.

Step 2. Select the option **PPP** in **Connection Type**.

Step 3. Select the option **PPPoA** in **PPPoA/PPPoE**.

Step 4. Select option **LLC** or **VC MUX** in **Encapsulation** according to the directions from your ISP or system provider.

Step 5. Select a PVC and fill the corresponding fields with the values that provided by ISP or system provider, which include the value of **VPI**, **VCI**, **PAP** or **CHAP**, **User name**, **Password**. Set **Operation Mode** and **Default Route** as **Enabled**.

Step 6. After enter the proper value, please click the Submit button under the field to submit the setting to ADSL terminal.

Step 7. Leave the ADSL Mode as default setting. If your ISP instructs you to change the ADSL settings, please follow the detailed setting procedures in Section 4.4 ADSL Mode Configuration.

Step 8. Leave the **LAN IP Address** as the default value 192.168.1.1, and the **Subnet Mask** as 255.255.255.0. If you want to modify the configuration of LAN IP, please follow the detail setting procedure in Section 4.5 LAN Configuration.

Step 9. Usually to leave the **NAT Mode** as default setting **Enable**. For more detailed settings, please refer to the Section 4.9 NAT Configuration.

Step 10. The default setting of DHCP is **None**. You should configure the PC's IP address as the same subnet with the LAN IP of MT800. If you need to configure the MT800 as DHCP Server mode, please select **DHCP Server** option. You should configure the IP setting of computer in the LAN as to obtain an IP address automatically. If you need to configure the mode as DHCP Relay, please select **DHCP Relay** option, and enter the DHCP Server address that provided by ISP. At the same time, you should configure the IP setting of computer in the LAN as to obtain an IP address automatically.

Step 11. Click and select the **Save & Reboot** page, select the option **Save** and then click **submit** to finish the setting of ADSL and save it permanently.

5.2.3 RFC 2684 Bridged (Pure Bridge) Configuration

Step 1. Open the web page **ATM Setting**.

Step 2. Select the option RFC 2684 Bridged in Connection Type.

Step 3. Select option **LLC** or **VC MUX** in **Encapsulation** according to the directions from your ISP or system provider.

Step 4. Select option **Pure Bridge** in **Application**.

Step 5. Select a PVC and fill the corresponding fields with the values that provided by ISP or system provider, which include the value of **VPI** and **VCI**.

Step 6. After enter the proper value, please click the **Submit** button under the field to submit the setting to ADSL terminal.

Step 7. Leave the **ADSL Mode** as default value. If your ISP instructs you to change the ADSL settings, please follow the detailed setting procedures in Section 4.4 ADSL Mode Configuration.

Step 8. Leave the **LAN IP Address** as the default value 192.168.1.1, and the **Subnet Mask** as 255.255.255.0. If you want to modify the configuration of LAN IP, please follow the detailed setting procedures in Section 4.5 LAN Configuration.

Step 9. The default setting of DHCP is None. You needs to install a PPPoE dial-up software and configure the IP setting of computer in the LAN as to obtain an IP address automatically.

Step 10. Click and select the **Save & Reboot** page, select the option **Save** and then click **submit** to finish the setting of ADSL and save it permanently.

5.2.4 RFC 2684 Bridged (Static IP) Configuration

Step 1. Open the web page **ATM Setting**

Step 2. Select the option **RFC2684 Bridged** in **Connection Type**.

Step 3. Select option **LLC** or **VC MUX** in **Encapsulation** according to the directions from your ISP or system provider.

Step 4. Select option **Static IP** in **Application**.

Step 5. Select a PVC and fill the corresponding fields with the values that provided by ISP or system provider, which include the value of **PVC**, **VPI**, **VCI**, **IP Address**, **Subnet Mask**, **Gateway IP Address** and **DNS**. Set **Operation Mode** and **Default Route** as **Enabled**.

Step 6. After enter the proper value, please click the **Submit** button under the field to submit the setting into ADSL terminal.

Step 7. Leave the **ADSL Mode** as default value. If your ISP instructs you to change the ADSL settings, please follow the detailed setting procedures in Section 4.4 ADSL Mode Configuration.

Step 8. Leave the **LAN IP Address** as the default value 192.168.1.1, and the **Subnet Mask** as 255.255.255.0. If you want to modify the configuration of LAN IP, please follow the detail setting procedure in Section 4.5 LAN Configuration.

Step 9. Usually to leave the **NAT Mode** as default setting **Enable**. For more detailed settings, please refer to the Section 4.9 NAT Configuration.

Step 10. The default setting of DHCP is **None**. You should configure the PC's IP address as the same subnet with the LAN IP of MT800. If you need to configure the MT800 as DHCP Server mode, please select **DHCP Server** option. You should configure the IP setting of computer in the LAN as to obtain an IP address automatically. If you need to configure the mode as DHCP Relay, please select **DHCP Relay** option, and enter the DHCP Server address that provided by ISP. At the same time, you should configure the IP setting of computer in the LAN as to obtain an IP address automatically. In the case of **DHCP Relay**, you should disable NAT function.

Step 11. Set **DNS Relay** as **disable** at DNS page and click **submit** button under the field to submit the setting to the ADSL CPE. Besides, you should set DNS server information provided by ISP at his computer.

Step 12. Click and select the **Save & Reboot** page, select the option **Save** and then click **submit** to finish the setting of ADSL and save it permanently.

5.2.5 RFC 2684 Bridged (DHCP) Configuration

Step 1. Open the web page **ATM Setting**.

Step 2. Select the option **RFC2684 Bridged** in **Connection Type**.

Step 3. Select option **LLC** or **VC MUX** in **Encapsulation** according to the directions from your ISP or system provider.

Step 4. Select option **DHCP** in **Application**.

Step 5. Select a PVC and fill the corresponding fields with the values that provided by ISP or system provider, which include the value of **VPI** and **VCI**.

Step 6. After enter the proper value, please click the **Submit** button under the field to submit the setting to ADSL terminal.

Step 7. Leave the **ADSL Mode** as default value. If your ISP instructs you to change the ADSL settings, please follow the detailed setting procedures in Section 4.4 ADSL Mode Configuration.

Step 8. Leave the **LAN IP Address** as the default value 192.168.1.1, and **Subnet Mask** as 255.255.255.0. If you want to modify the LAN IP configuration, please follow the detailed setting procedures in Section 4.5 LAN Configuration.

Step 9. Usually to leave the **NAT Mode** as default setting **Enable**. For more detailed settings, please refer to the Section 4.9 NAT Configuration.

Step 10. The default setting of DHCP is **None**. You should configure the PC's IP address as the same subnet with the LAN IP of MT800. If you need to configure the MT800 as DHCP Server mode, please select **DHCP Server** option. You should configure the IP setting of computer in the LAN as to obtain an IP address automatically. If you need to configure the mode as DHCP Relay, please select **DHCP Relay** option, and enter the DHCP Server address that provided by ISP. At the same time, you should configure the IP setting of computer in the LAN as to obtain an IP address automatically. In the case of **DHCP Relay**, you should disable NAT function.

Step 11. Set **DNS Relay** as **disable** at DNS page and click **submit** button under the field to submit the setting to the ADSL CPE. Besides, you should set DNS server information provided by ISP at his computer.

Step 12. Click and select the **Save & Reboot** page, select the option **Save** and then click **submit** to finish the setting of ADSL and save it permanently.

5.2.6 RFC 24684 Route (IPoA) Configuration

Step 1. Open the web page **ATM Setting**.

Step 2. Select the option **RFC2684 Route (IPoA)** in **Connection Type**.

Step 3. Select option **LLC** or **VC MUX** in **Encapsulation** according to the directions from your ISP or system provider.

Step 4. Select option **IPoA** in **Application**.

Step 5. Select a PVC and fill the corresponding fields with the values that provided by ISP or system provider, which include the value of **VPI**, **VCI**, **IP Address**, **Subnet Mask**, and **Gateway IP address**; Set **Operation Mode** and **Default Route** as **Enabled**.

Step 6. After enter the proper value, please click the **Submit** button under the field to submit the setting to ADSL terminal.

Step 7. Leave the **ADSL Mode** as default value. If your ISP instructs you to change the ADSL settings, please follow the detailed setting procedures in Section 4.4 ADSL Mode Configuration.

Step 8. Leave the **LAN IP Address** as the default value 192.168.1.1, and **Subnet Mask** as 255.255.255.0. If you want to modify the LAN IP configuration, please follow the detailed setting procedures in Section 4.5 LAN Configuration.

Step 9. Usually to leave the **NAT Mode** as default setting **Enable**. For more detailed settings, please refer to the Section 4.9 NAT Configuration.

Step 10 The default setting of DHCP is **None**. You should configure the PC's IP address as the same subnet with the LAN IP of MT800. If you need to configure the MT800 as DHCP Server mode, please select **DHCP Server** option. You should configure the IP setting of computer in the LAN as to obtain an IP address automatically. If you need to configure the mode as DHCP Relay, please select **DHCP Relay** option, and enter the DHCP Server address that provided by ISP. At the same time, you should configure the IP setting of computer in the LAN as to obtain an IP address automatically.

Step 11. Set **DNS Relay** as **disable** at DNS page and click **submit** button under the field to submit the setting to the ADSL CPE. Besides, you should set DNS server information provided by ISP at his computer.

Step 12. Click and select the **Save & Reboot** page, select the option **Save** and then click **submit** to finish the setting of ADSL and save it permanently.

5.3 Reference Table of Service Configuration

Configuration page	Object	RFC 2684 Bridged (Pure Bridge)	RFC 2684 Bridged (Static IP)	RFC 2684 Bridged (DHCP)	PPPoE	PPPoA	RFC 2684 Route (IPoA)
ATM Setting	Connection Type	√	√	√	√	√	√
ATM Setting	Operate mode	Enable	Enable	Enable	Enable	Enable	Enable
	PVC	X	X	X	X	X	X
ATM Setting	VPI	√	√	√	√	√	√
	VCI	√	√	√	√	√	√
	WAN IP address	X	√	X	X	X	√
	Subnet mask	X	√	X	X	X	√
	Default route	X	Enable	Disable	Enable	Enable	Enable
	Gateway IP address	X	√	√	X	X	√
	DNS Relay	X	Enable	Enable	X	X	Enable
	Primary DNS	X	√	√	X	X	√
	Secondary DNS	X	√	√	X	X	√
	Security Protocol	X	X	X	√	√	X
	User name	X	X	X	√	√	X
	Password	X	X	X	√	√	X
Other setting	ADSL mode	X	X	X	X	X	X
	LAN IP address	●	●	●	●	●	●
	Subnet mask	●	●	●	●	●	●
	NAT	X	X(Enable)	X(Enable)	X(Enable)	X(Enable)	X(Enable)

Configuration page	Object	RFC 2684 Bridged (Pure Bridge)	RFC 2684 Bridged (Static IP)	RFC 2684 Bridged (DHCP)	PPPoE	PPPoA	RFC 2684 Route (IPoA)
Other setting	DHCP mode	X	●	●	●	●	●

All the route modes that adopted internal PPPoE, PPPoA, 2684, 2684R(IPoA) must enable the NAT function (default start).

√ indicates that perform the setting according to the value that assigned by ADSL provider.

● indicates that customize setting according to user's requirement.

× indicates that have no use for setting.

Chapter 6 Troubleshooting Guide

6.1 Quick Troubleshooting

Failures	Instructions
Power light is out.	1. ensure power adapter is well connected; 2. ensure the right power adapter is used;
ADSL LINK light is out.	1. ensure the ADSL line is well connected; 2. ensure the telephone line before entering the house is valid, try to test with a telephone; 3. ensure the MT800 and telephones are connected in the right way;
LAN LINK light is out.	1. ensure you use the right cables from the MT800 to your PC; 2. ensure the connection is secured; 3. check if the NIC LED lights up; 4. ensure your NIC works normally, refer to the following instructions: Select “My Computer” on the desktop, right-click your mouse, and select “Properties”. In the “System Properties” window, select “Device Manager” and examine whether the item of “Networking Device” is labeled with “?”or“!”. If it is, you may delete it and then click “Refresh” to reinstall. Otherwise you may try the NIC in another slot. As a last resort, you have to replace the NIC;
Can’t access the Internet.	1. ensure any of the problems above is not the reason; 2. decide whether your IP address is in the range as your ISP has assigned. Refer to the following instructions: click “Start” and select “Run”, then enter “winipcfg” (for WIN98 user) or “ipconfig” (for WIN2000 user) in the command field; 3. ensure your PC can reach the default gateway; 4. ensure the DNS server is correctly set on your PC; 5. ensure you have set “Use Proxy Server” in the right way;

6.2 FAQs

Q: Why can't my computer access the Internet, even when the physical links are well connected?

Check first whether the LEDs are in normal status. If they do, you have to find help to adjust the settings on the MT800.

Q: I forget the username and password when I am to log into the Web-based Configuration Manager. Or I just can't access the Web-based Configuration Manager.

1) Please press reset button at the rear panel three times to factory reset MT800.
2) Indicate your NIC IP address to 192.168.1.3
3) Disable Proxy service.
4) Launch your Web browser and type in http://192.168.1.1
5) Use the default user name: admin and password: admin

Q: My configuration is gone after rebooting MT800.

If you want to keep your settings after reboot MT800. Please go to Web-based Configuration Manager → "Save & Reboot" → "Save" to save your configurations.

Figure 6-1 Save the changed setting

Q: I can't upgrade with the new firmware.

Please make sure the file that you have downloaded is valid.

Q:Why can't I access the Internet by using virtual dialing through Microsoft's Internet Gateway?

Internet Gateway supports PPPoE itself. No other PPPoE terminal software shall be installed again.

Q: Why does my PC fall off line sometimes even with all LEDs are in normal status?

There are several scenarios might cause this problem.

1) Be disconnected by the ISP.
2) Some ISPs will have idle timeout setting to avoid wasting IP. When the end user connects to the Internet too long without any packet, the ISP will drop the connection. Please contact with your ISP about this problem.
3) Some ISPs don't provide a good quality ADSL signal line. Therefore, when the ADSL line is unstable, your

connection will be dropped. Try with a telephone and find the status of your ADSL signal line.

4) If you have contacted the ISP and they promised the quality of ADSL line, it may be the hardware issue and please contact your vendor.

Q: When can I use the "Restore Factory Default Setting" button?

If you changed some setting unconsciously in the Web Management Interface and you forgot the detailed values that you modified, please use the "Restore Factory Default Setting" button to recover the factory default settings.

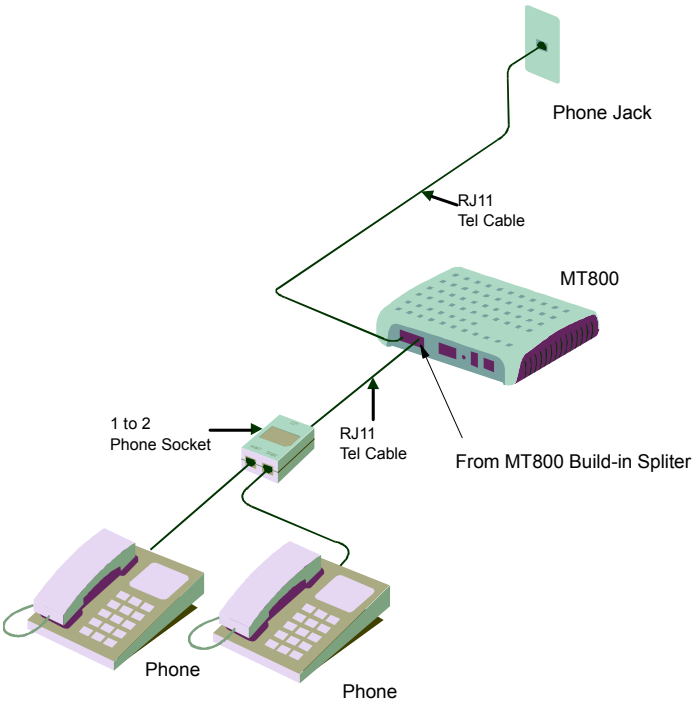
Q: How many methods can be used to restore the factory default setting?

Totally two methods: 1) by the restore button on the rear panel of the device. Push it three times continuously to take the factory default setting into effect; 2) Select the option **Factory Setting Reboot** in the page of **Save & Reboot** and then click **Submit** button.

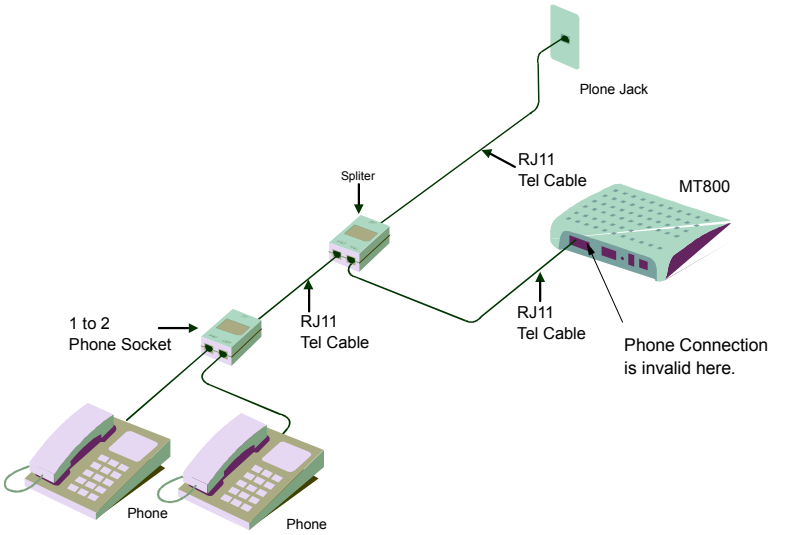
Q: How to connect multiple phones?

Follow the figures below to complete the installation.

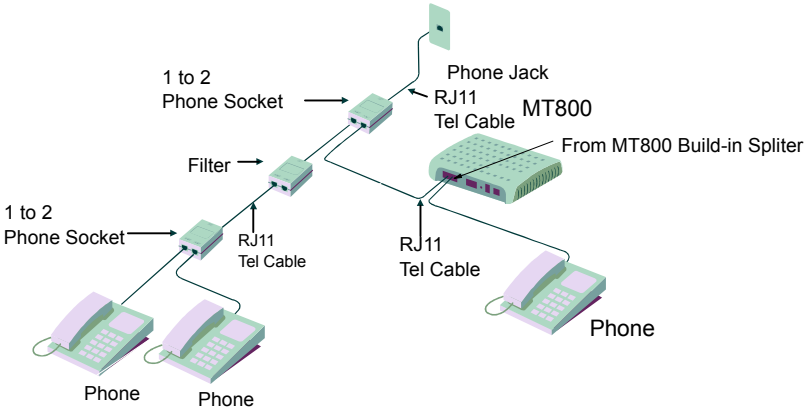
Application 1:



Application 2:



Application 3:



Chapter 7 Technical Specifications

General Specifications		
Standards:	ITU G.992.1 (G.dmt) ITU G.992.2 (G.lite)	ITU G.994.1 (G.hs) ANSI T1.413 Issue # 2
Data Transfer Rate:	G.dmt full rate: Downstream up to 8 Mbps Upstream up to 896 Kbps G.lite: Downstream up to 1.5 Mbps Upstream up to 512 Kbps T1.413: Downstream up to 8 Mbps Upstream up to 896 Kbps	
External Interface:	Two RJ-11 ports; one for ADSL line connection; the other for telephone connection One RJ-45 port for 10/100 Base-T Ethernet connection	

Physical and Environmental Specifications	
Power Adapter:	9 V AC 1A
Operating Temperature:	0° to 40° C (32° to 104° F)
Humidity:	5 to 95% (non-condensing)
Dimensions:	135mm x 110mmx 28mm
Weight:	180g

Chapter 8 Appendix

8.1 Appendix A Factory Default Settings

User name		admin	
Password		admin	
IP address		192.168.1.1	
Subnet mask		255.255.255.0	
DSL Mode		Multimode	
PVC0	RFC 2684 Bridged Mode	VPI =0	VCI=35
PVC1	RFC 2684 Bridged Mode	VPI =8	VCI=35
PVC2	RFC 2684 Bridged Mode	VPI= 0	VCI= 100
PVC3	RFC 2684 Bridged Mode	VPI =0	VCI=32
PVC4	RFC 2684 Bridged Mode	VPI =8	VCI=81
PVC5	RFC 2684 Bridged Mode	VPI= 8	VCI=32
PVC6	RFC 2684 Bridged Mode	VPI= 14	VCI=24
DHCP Mode		Disable	
NAT		Enable (NAT session up to 1009)	

8.2 Appendix B Abbreviations

ADSL	Asymmetric Digital Subscriber Line
ATM	Asynchronous Transfer Mode
CPE	Customer Premises Equipment
DHCP	Dynamic Host Configuration Protocol
DNS	Domain Name Server
DSLAM	Digital Subscriber Line Access Multiplex
HTML	Hypertext Markup Language
IP	Internet Protocols
ICMP	Internet Control Message Protocol
IPoA	Internet Protocols Over ATM
ISP	Internet Service Provider
LAN	Local Area Network
MA	Media Access Module
MAC	Media Access Control
MIB	Management Information Base

NIC	Network Interface Card
NMS	Network Management Station
PPP	Point to Point Protocol
PPPoA	PPP over ATM
PPPoE	PPP over Ethernet
PVC	Permanent Virtual Connection
RAM	Random Access Memory
RIP	Routing Information Protocol
SNMP	Simple Network Management Protocol
TCP	Transfer Control Protocol
TFTP	Trivial File Transfer Protocol
UDP	User Datagram Protocol
VCI	Virtual Channel Identifier
VPI	Virtual Path Identifier
WAN	Wide Area Network