M505

ADSL/2/2+ Wireless Four Port Ethernet/USB Modem

User 指Manual

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1. Introduction

Congratulations on becoming the owner of the Master series of ADSL2+ modem routers. You will now be able to access the Internet using your high-speed ADSL/2+ connection. The Master series of ADSL2+ modems has the following major features.

Features

- ADSL/2/2+ modem for high speed Internet access
- Network Address Translation (NAT) and IP filtering functions to provide network sharing and firewall protection for your computers
- Easy configuration via a web browser
- SPI firewall to protect you from outside intruders and attacks
- TR-069 compliant for automatic modem update through your high speed Internet access

This User担Manual will guide you through the installation and configuration of your M505 modem.

System Requirements

Before installing your M505 modem, make sure that you have the following:

- ADSL service up and running on your telephone line, with at least one public Internet address for your LAN
- Computer containing an Ethernet 10Base-T/100Base-T network interface card (NIC)
- Computer containing a USB port (M505 modems)

For system configuration, use the web-based (HTTP) user interface.

Note: Make sure that your computer has a web browser such as Internet Explorer v5.0 or later, or Netscape v4.7 or later.

2. Installation

In addition to this document, your M505 should arrive with the following:

- One power adapter and power cord
- One Ethernet cable with RJ-45 connector
- One USB A-B cable
- One Telephone cable with RJ-11 connector
- 揖isionnet DSL? CD

Front Panel

The front panel LEDs indicates the status of the unit. *(Left to Right)*

M505

Label	Color	Function
Wireless	Green	Green ? Wireless is activated on modem Flashing Green ? Wireless activity is present Off - Modem off or no radio signal detected
USB	Green	Off - Power Off ? or ? No Device Detected Solid Green ? Device connected including wake on LAN Flashing Green ? LAN activity present for that port
Ethernet 1-4	Green	Off - Power Off ? or ? No Device Detected on any LAN port Solid Green ? Device connected including wake on LAN on any LAN port Flashing Green ? LAN activity present
Internet	Green	Solid Green ? IP connected ? no traffic passing Device has a public IP via either static/ DHCP/ or IPCP If PPP is used it has been authenticated If IP or PPPOE session is idle and dropped, light to remain green as long as ADSL is still present. Light to turn red if upon attempting new session it fails. Off ? Modem Power Off. LED Should remain off if modem is in bridged mode
DSL	Green	Green ? DSL Good Sync Off - Powered off Flashing Green - DSL Attempting sync
Power	Green	On ? Solid Green Off ? The Modem is Off Red ? Power on self test/ Device Malfunction (not bootable) and device malfunction

		Malfunction is any state which would prevent syncing or passing of data

Rear Panel

The connectors located at the rear panel have the following functions.

M505

Interface	Function
Switch(Push Button)	Power switch on/off
Power	Connects to the power adapter cable
Reset	Resets unit担configuration to factory default
USB	USB connection: Connects to your PC担USB 1.1/2.0 port
Ethernet 1-4	RJ-45 connector: Connects to your PC's Ethernet port, or to the uplink port on your LAN's hub/switch
Line	RJ-11 connector: Connects to your ADSL line

Connecting the Hardware

Connect the M505 to the phone jack, the power outlet, and your computer or network.

WARNING

Before you begin, turn the power off for all devices. *These include your computer(s), your LAN hub/switch (if applicable), and the M505.*

Step 1. Connect the ADSL cable and optional telephone

Connect one end of the phone cable to the RJ-11 connector on the rear panel of the M505. Connect the other end to the ADSL outlet provided by your service provider (normally MODEM port of the included splitter).

Step 2. Connect the Ethernet cable

Connect one end of the Ethernet cable to the RJ-45 connectors on the rear panel of the M505 and connect the other end to your PC担network adaptor (NIC). If you are connecting a LAN to the Master series, attach one end of the Ethernet cable to a regular hub port and the other end to the LAN port on the M505.

Step 3. Attach the power connector

Connect the AC power adapter to the power connector on the M505 and plug in the adapter to a wall outlet or power extension.

Step 4. Turn on the M505 and power up your systems

Press the Power switch on the back panel of the M505 to the ON position.
Boot up your computer(s) and any LAN devices such as hubs or switches.

Step 5. Configure the M505 through the WEB interface

Please refer to Chapter 3.

Step 6. Save the configurations and Reboot

Save the changes you made on the M505 and it will automatically reboot to make the settings permanent.

3. Configuration

3.1 - Setup

- Connect your M505 and PC with an RJ-45 Ethernet cable.
- Turn on the M505.
- The default IP address of M505 is 192.168.1.254.

3.2 - Establish the Connection

- Enter the IP address (default: 192.168.1.254) of M505 in the address line of your web browser.
- A Dialogue Box will pop up to request the user to login. (Figure 1)

Figure 1. Login dialogue box

- Please enter the management username/password into the fields then click on the **OK** button (default username/password is: **admin** / **0123456789**).
- If the authentication is valid, the main page will be displayed on the screen. (Figure 2)

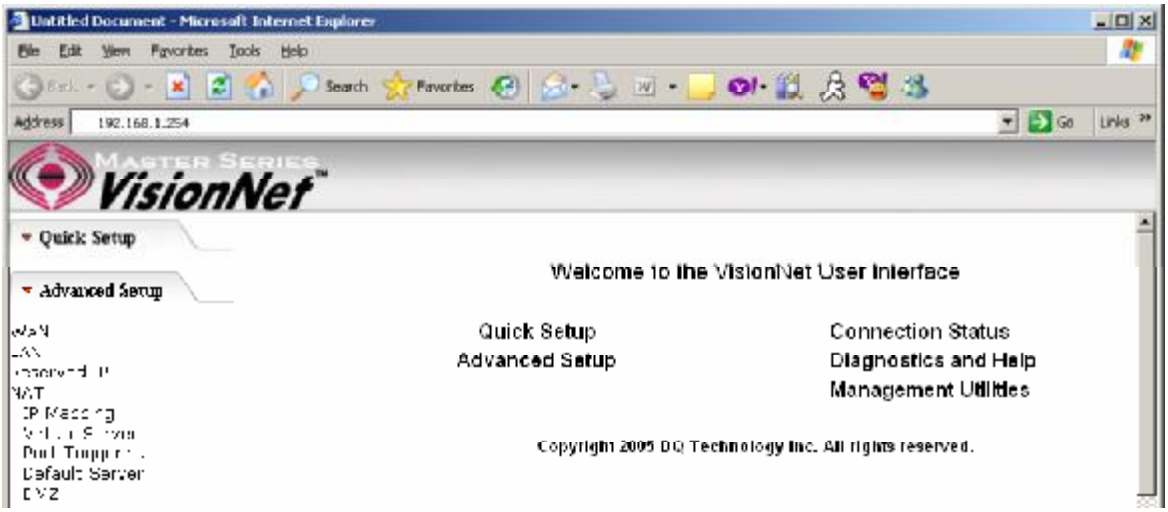

Figure 2. M505 Home Page

4. Quick Setup

The system administrator can configure the M505 remotely or locally via a Web Browser. Network configuration needs to be planned and decided before starting the configuration procedure.

Quick Setup allows system administrator to select the appropriate operation mode and configure the corresponding settings step by step to create a connection. The following operation modes are supported under Quick Setup:

- PPP over Ethernet (PPPoE)
- PPP over ATM (PPPoA)
- MER (MAC Encapsulation Routing)
- IPoA (IP over ATM)
- Bridging

4.1 - PPP over Ethernet (PPPoE) Configuration

Click on 換uick Setup? in the left frame and follow the steps below to create a PPP over Ethernet (PPPoE) connection.

Here you can either select DSL Autoconnect (Modem will attempt to find the correct VPI/VCI settings) or Uncheck the box to manually input the VPI/VCI settings.

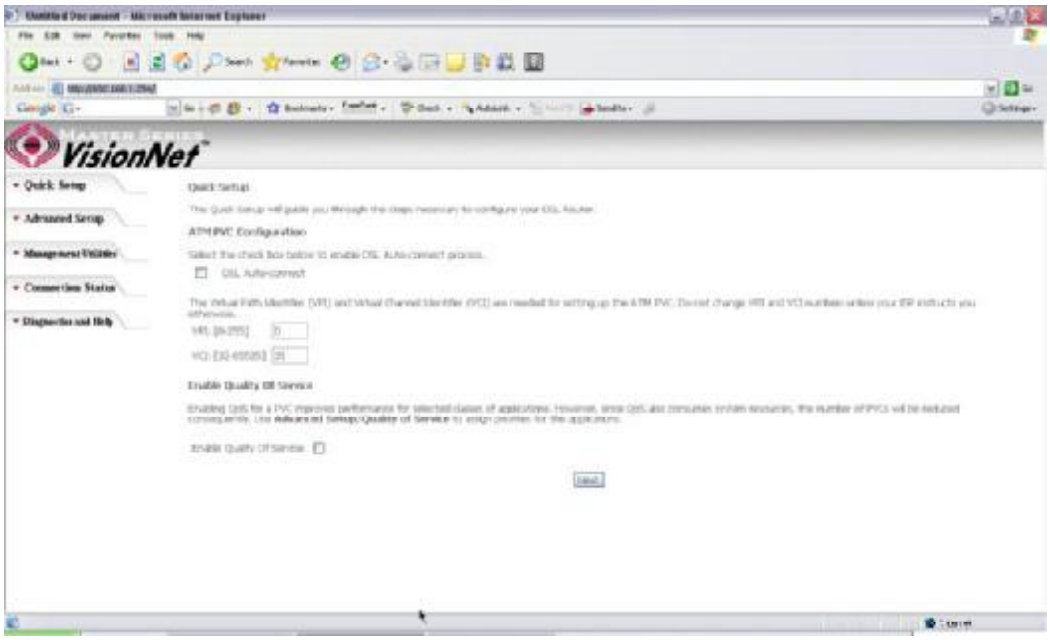

Figure 3. Quick Setup ? ATM PVC

PPP Username and Password

This page is where you will enter the 揚PP Username? and 揚PP Password? Please contact you ISP for this information.

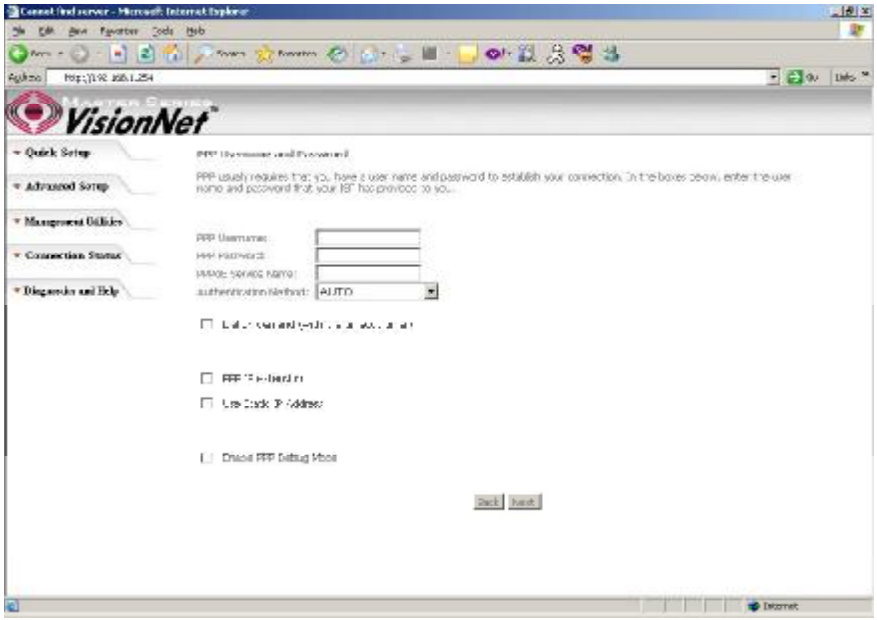

Figure 4. Quick Setup ? Username, Password and option forIP extension and Static IP

WAN Setup ? NAT and IGMP

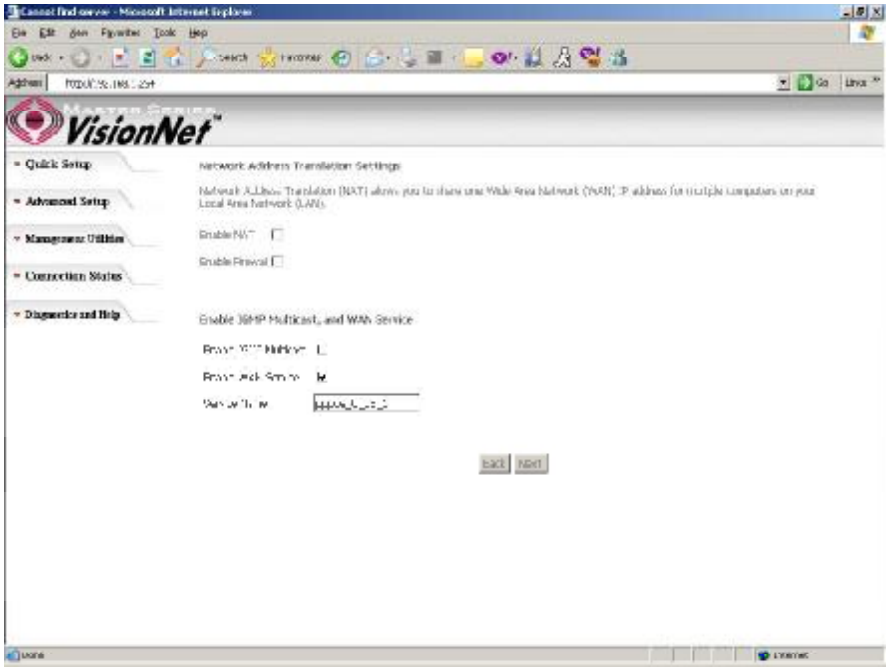

Figure 5. Quick Setup ? WAN Setup ? NAT, IGMP, and Firewall

Device Setup

This page is where you can configure the modem扭IP address and Default DHCP server range. Default is 192.168.1.254

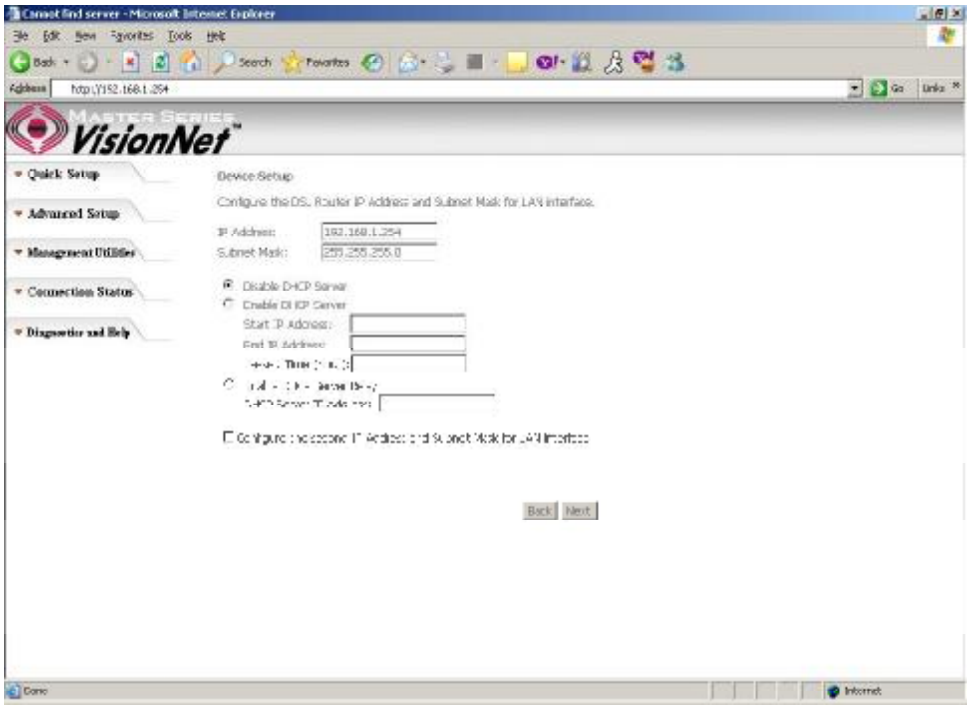

Figure 6. Quick Setup ? Device Setup ? LAN and DHCP Server

Summary

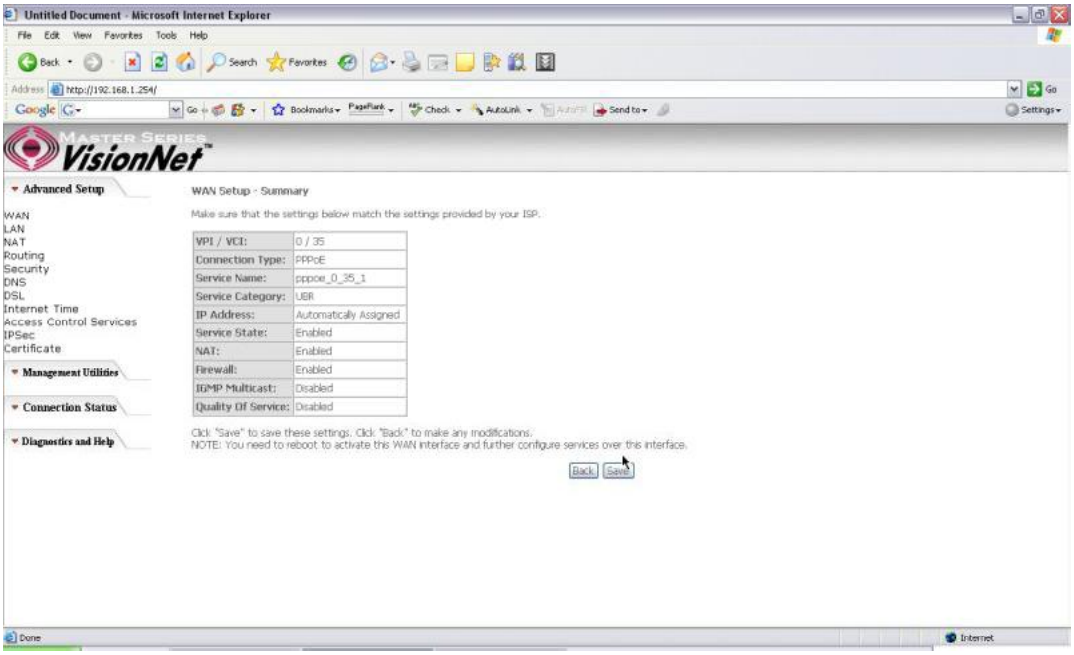

Figure 7. Quick Setup ? WAN Setup ? Summary

The last page displays a summary of your settings. Click on the 揝ave/Reboot? button to complete the configuration.

4.2 - PPP over ATM (PPPoA) Configuration

Configuration of PPPoA is similar to PPPoE. Select 揕PP over ATM (PPPoA)? in 揅onnection Type? Please refer to PPPoE settings (Section 4.1) for details.

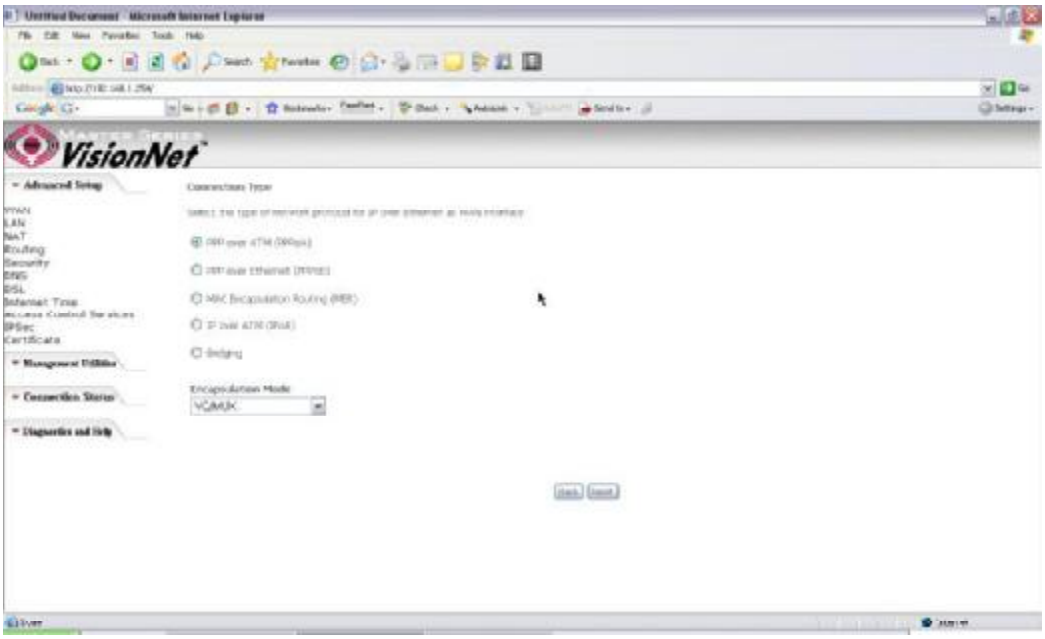

Figure 8. Quick Setup ? Connection Type (PPPoA)

4.3 - MER (MAC Encapsulation Routing) Configuration

Click on 揑uick Setup? in the left frame and follow the steps below to create a MER connection.

Here you can either select DSL Autoconnect (Modem will attempt to find the correct VPI/VCI settings) or Uncheck the box to manually input the VPI/VCI settings.

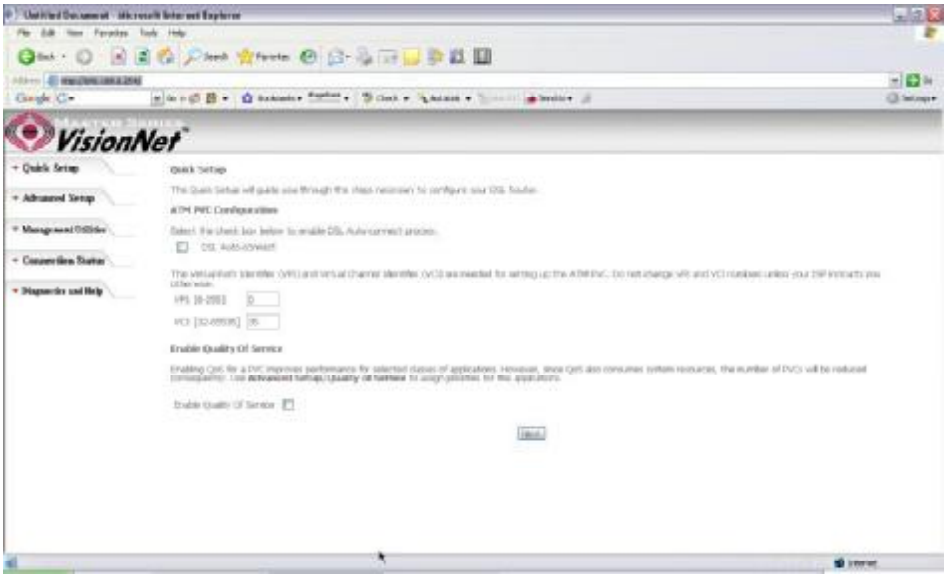

Figure 9. Quick Setup ? ATM PVC Configuration (MER)

Quick Setup ? Connection Type

This page is where you select MER (MAC Encapsulation Routing).

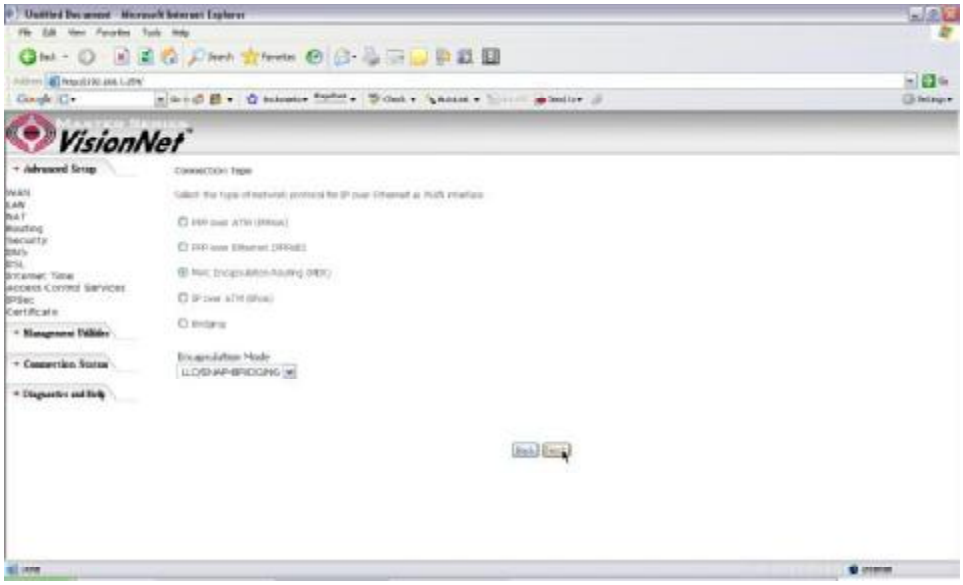

Figure 10. Quick Setup ? Connection Type

Quick Setup ? WAN IP Settings

This page is where you either select for the M505 to obtain the IP information automatically (sometime referred to as DHCP connection) or you can input the IP

address if Static IP扭were assigned by your Internet Service Provider.

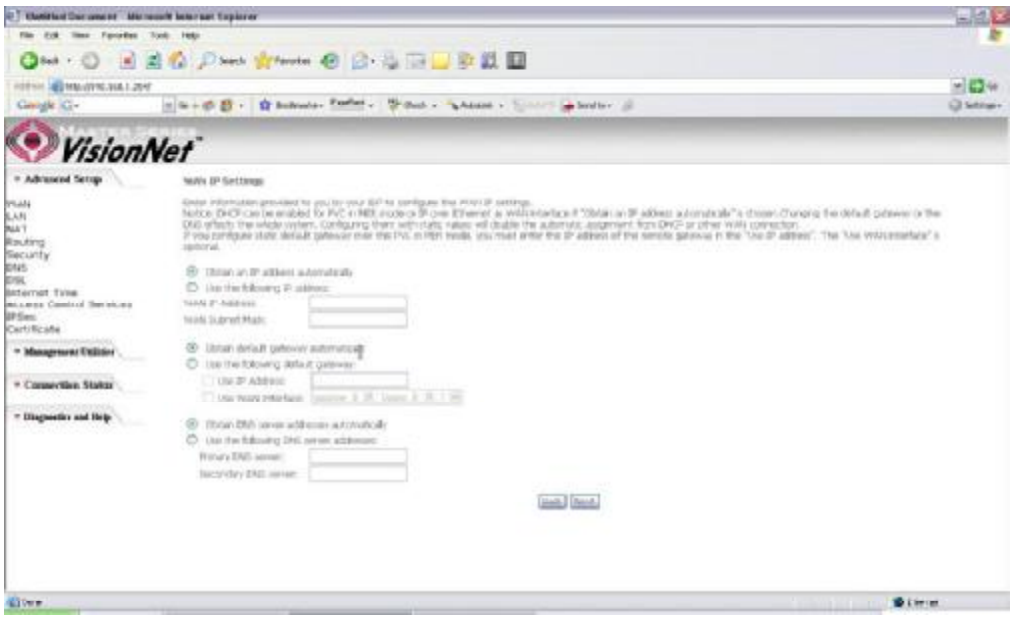

Figure 11. Quick Setup ? WAN IP Settings

Quick Setup ? Network Address Translation and IGMP

This page is where you either select to enable NAT (Please enable this option for the M511 to route private (Local) IP address to your LAN clients).

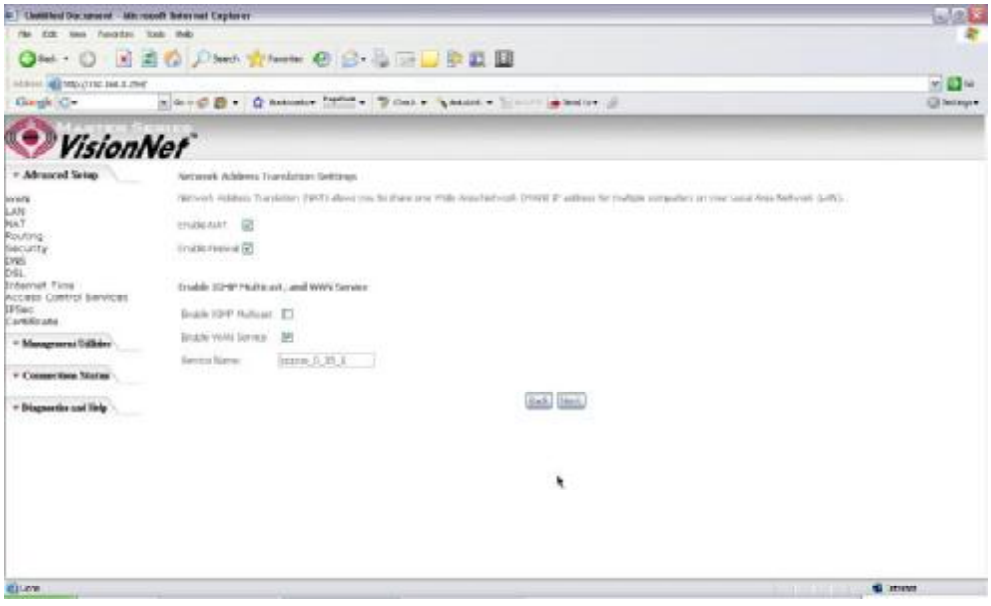

Figure 12. Quick Setup ? Network Address Translation and IGMP

Quick Setup - Device Setup

This page is where you can configure the modem扭IP address and Default DHCP server range. Default is 192.168.1.254

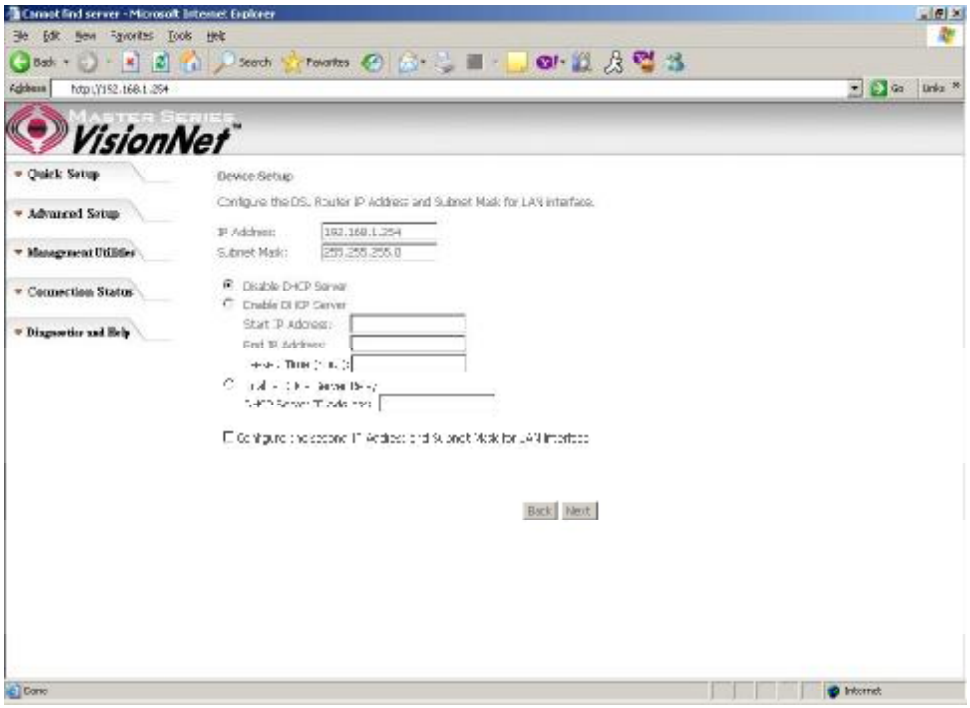

Figure 13. Quick Setup ? Device Setup ? LAN and DHCP Server

Quick Setup - Summary

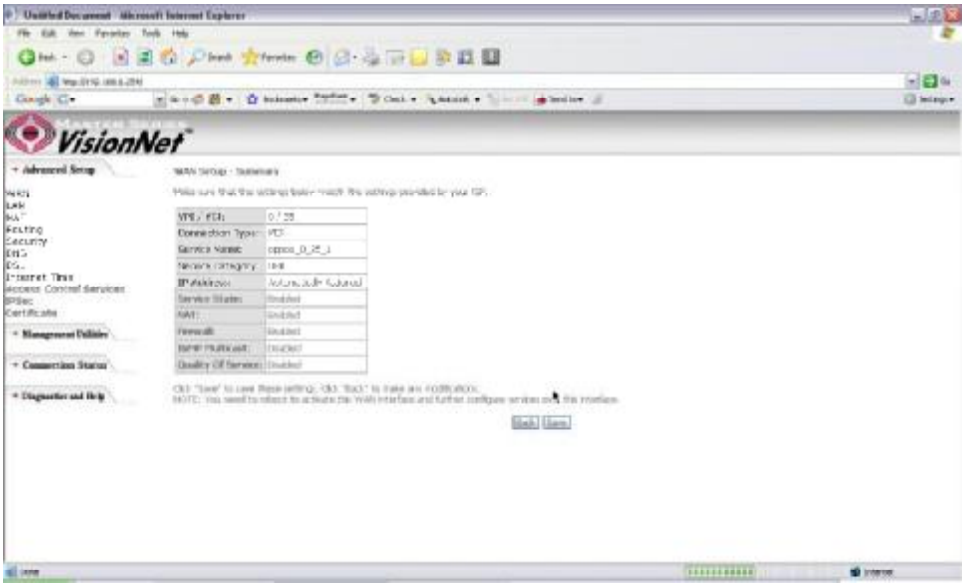

Figure 14. Quick Setup ? WAN Setup ? Summary

The last page displays a summary of your settings. You must click on the 揝ave? button to complete the configuration.

4.4 - IP over ATM (IPoA) Configuration

Click on 换uick Setup? in the left frame and follow the steps below to create an IPoA connection.

Here you can either select DSL Autoconnect (Modem will attempt to find the correct VPI/VCI settings) or Uncheck the box to manually input the VPI/VCI settings.

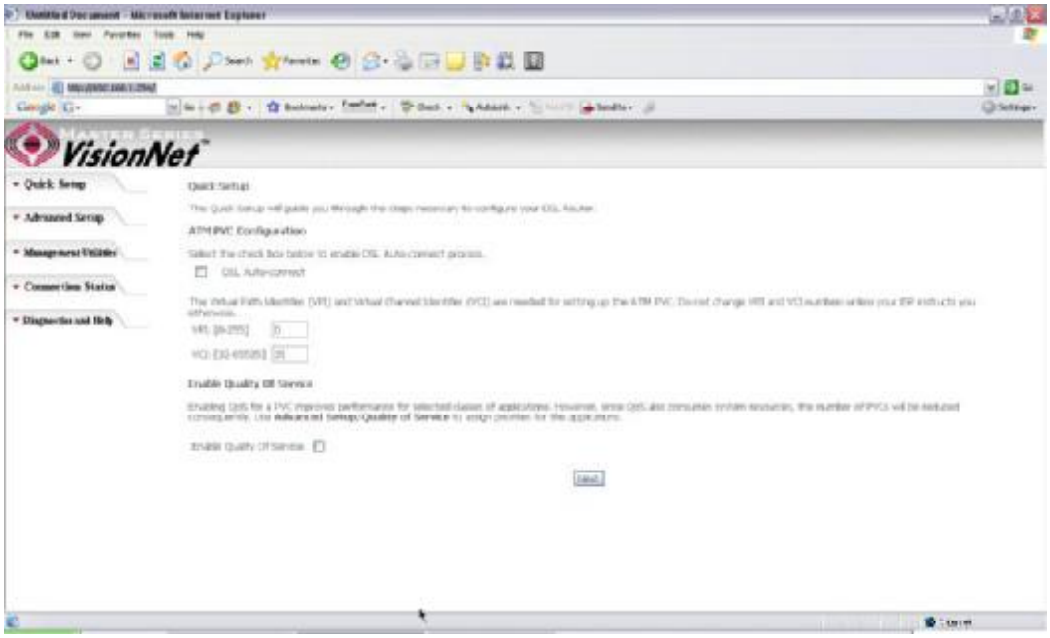

Figure 15. Quick Setup ? ATM PVC

Quick Setup ? Connection Type

This page is where you select IPoA (IP over ATM).

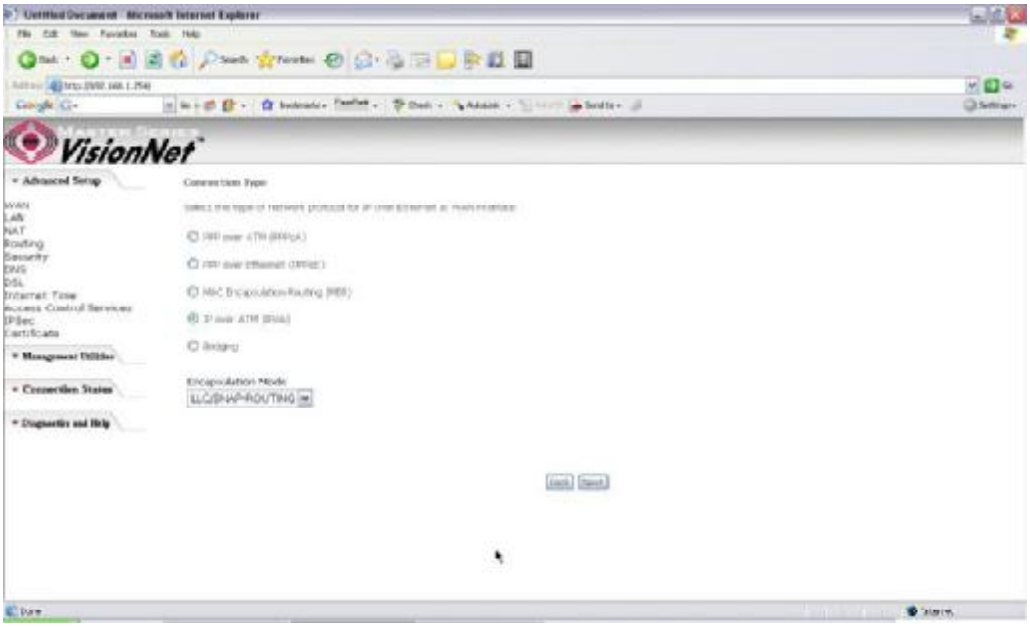

Figure 16. Quick Setup ? Connection Type

Quick Setup ? WAN IP Settings

This page is where you input the IP information provided by your ISP. This connection does not support DHCP (Where modem obtains IP information automatically)

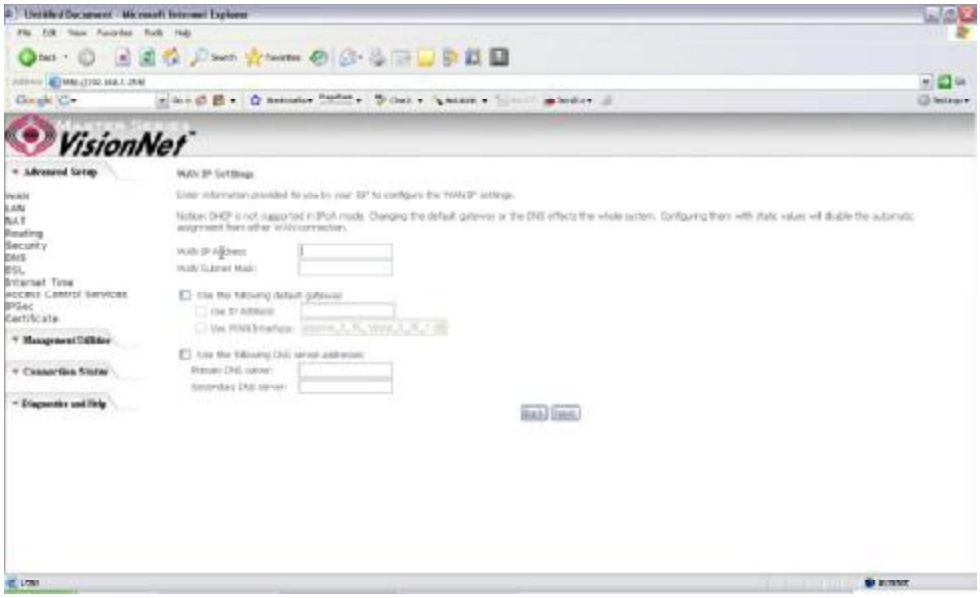

Figure 17. Quick Setup ? WAN IP Settings

Quick Setup ? Network Address Translation and IGMP

This page is where you either select to enable NAT (Please enable this option for the M505 to route private (Local) IP address to your LAN clients).

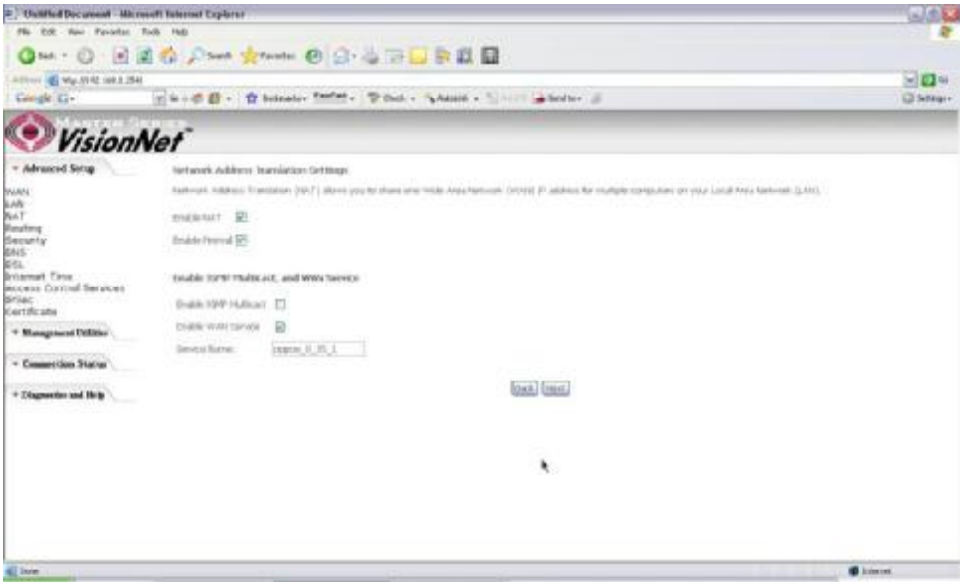

Figure 18. Quick Setup ? Network Address Translation and IGMP

Quick Setup - Device Setup

This page is where you can configure the modem拑IP address and Default DHCP server range. Default is 192.168.1.254

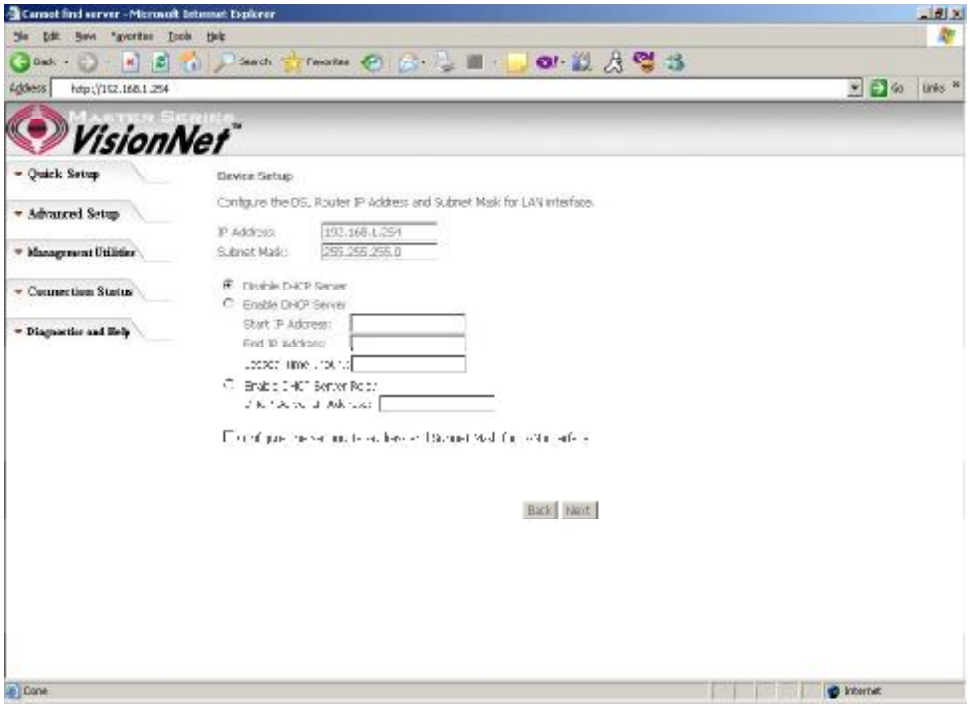

Figure 19. Quick Setup ? Device Setup ? LAN and DHCP Server

Quick Setup ? Summary

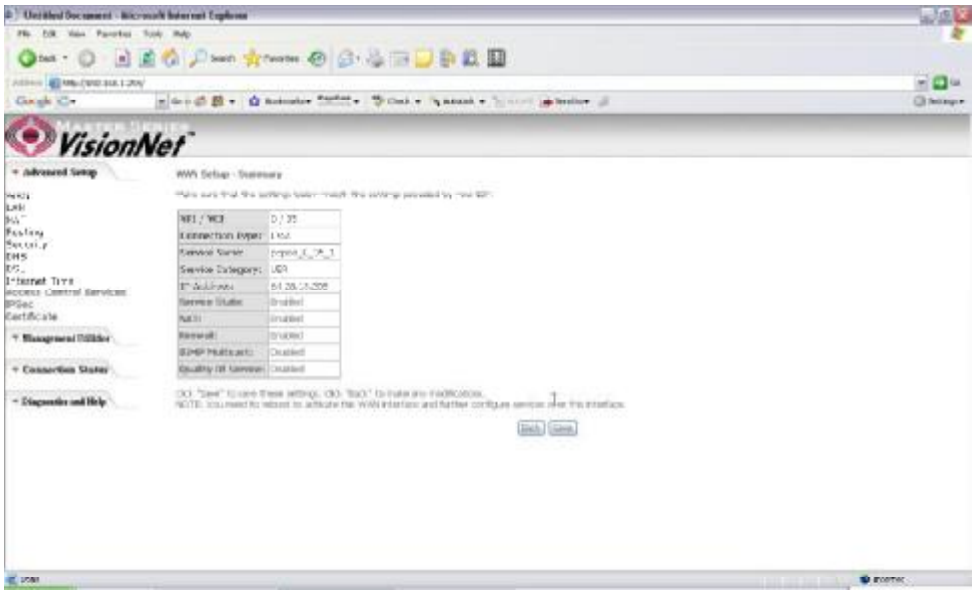

Figure 20. Quick Setup ? WAN Setup ? Summary

The last page displays a summary of your settings. Click on the 揝ave? button to complete the configuration.

4.5 - Bridging (Transparent/Pass-through) Configuration

Click on 換uick Setup? in the left frame and follow the steps below to create a Bridge connection.

Here you can either select DSL Autoconnect (Modem will attempt to find the correct VPI/VCI settings) or Uncheck the box to manually input the VPI/VCI settings.

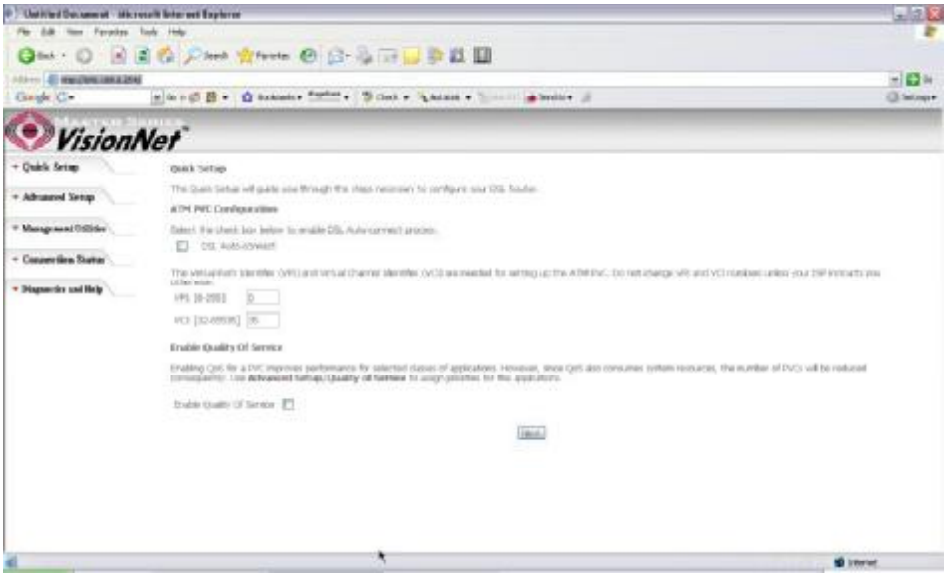

Figure 21. Quick Setup ? ATM PVC Configuration

Quick Setup ? Connection Type

This page is where you select Bridging (Last option).

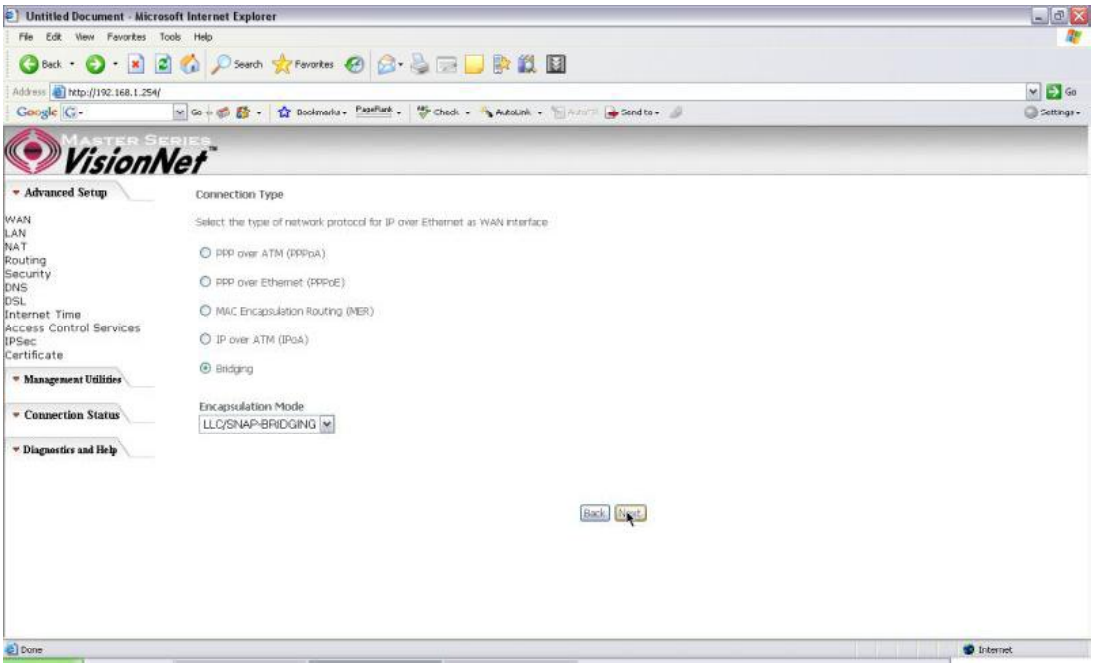

Figure 22. Quick Setup ? Connection Type

Quick Setup ? Enabling Bridge Mode

For this page, please check the box 揈nabled Bridge Service? and click 揘ext?

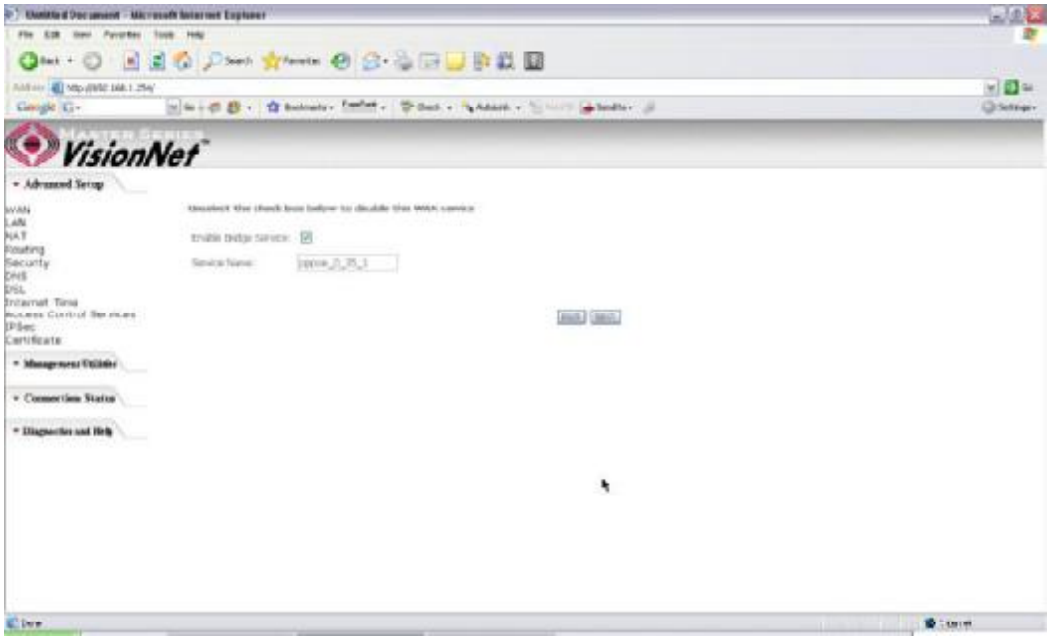

Figure 23. Quick Setup ? Enabling Bridge Mode

Quick Setup ? Summary

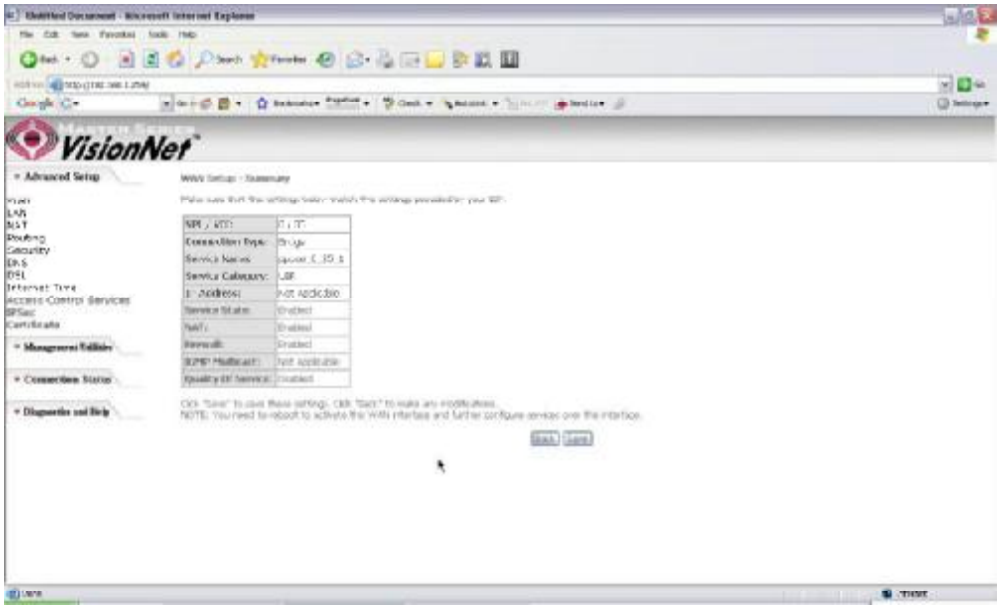

Figure 24. Quick Setup ? WAN Setup ? Summary

The last page displays a summary of your settings. Please click the 揝ave? button to complete the configuration process.

5. Advanced Setup

Advanced Setup allows system administrator to configure the following topics:

- WAN
- LAN
- NAT
- Routing
- Security
- DNS
- DSL
- Port Mapping
- Internet Time
- Access Control Services
- IPSec
- Certificates

5.1 - WAN

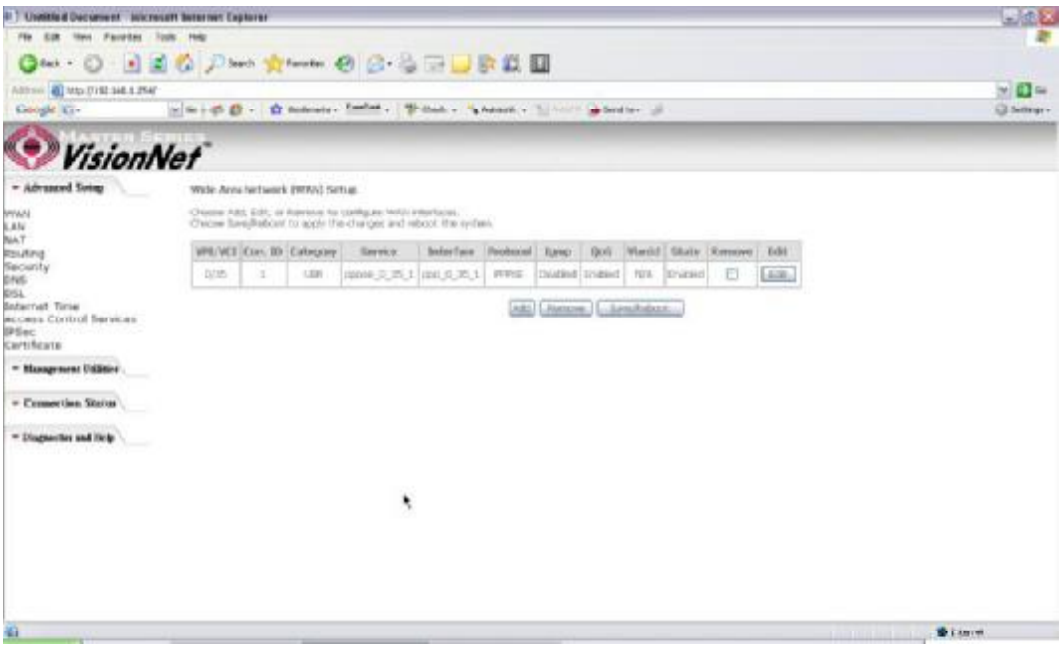

Figure 25. Advanced Setup ? WAN

This page shows the current existing WAN interfaces in the system. User can choose to *Add*, *Edit*, or *Remove* WAN interfaces. Clicking the 揂dd? button will take the user to a wizard similar to the Quick Setup (Chapter 4) wizard, where additional WAN protocols can be configured.

Protocols supported:

PPPoE, PPPoA, IP over ATM (IPoA), Bridging, MAC Encapsulation Routing (MER).

Please refer to **Section 4** for additional information regarding creating WAN Connections.

5.2 - LAN

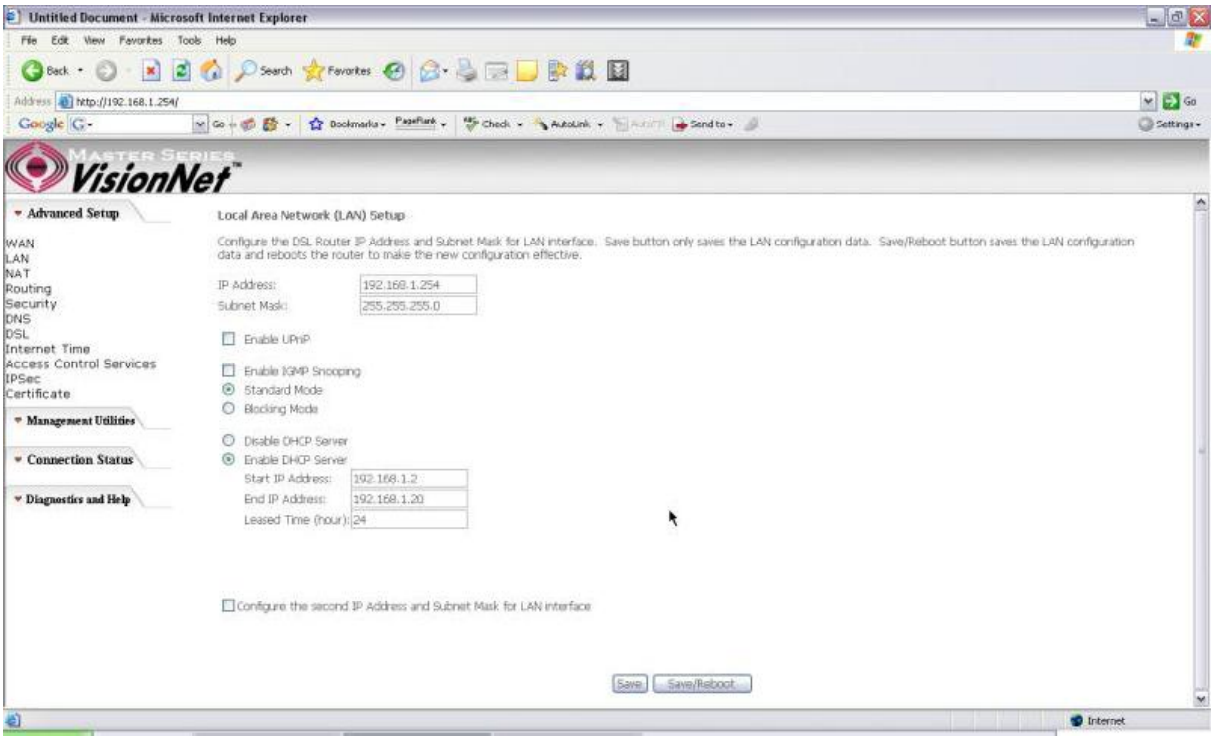

Figure 26. LAN Setup page

Input the IP Address and Subnet Mask of your M505. *(Default: 192.168.1.254)*

Check the box if you want to enable UPnP and/or IGMP Snooping.
Disable/Enable DHCP Server, and change the starting and ending IP address of your server pool if needed.

Check the 擜onfigure the second IP Address and Subnet Mask for LAN interface? if a

second IP address is used.

5.3 - NAT

Three functions are supported in NAT: Virtual Servers, Port Triggering, and DMZ Host.

Virtual Servers

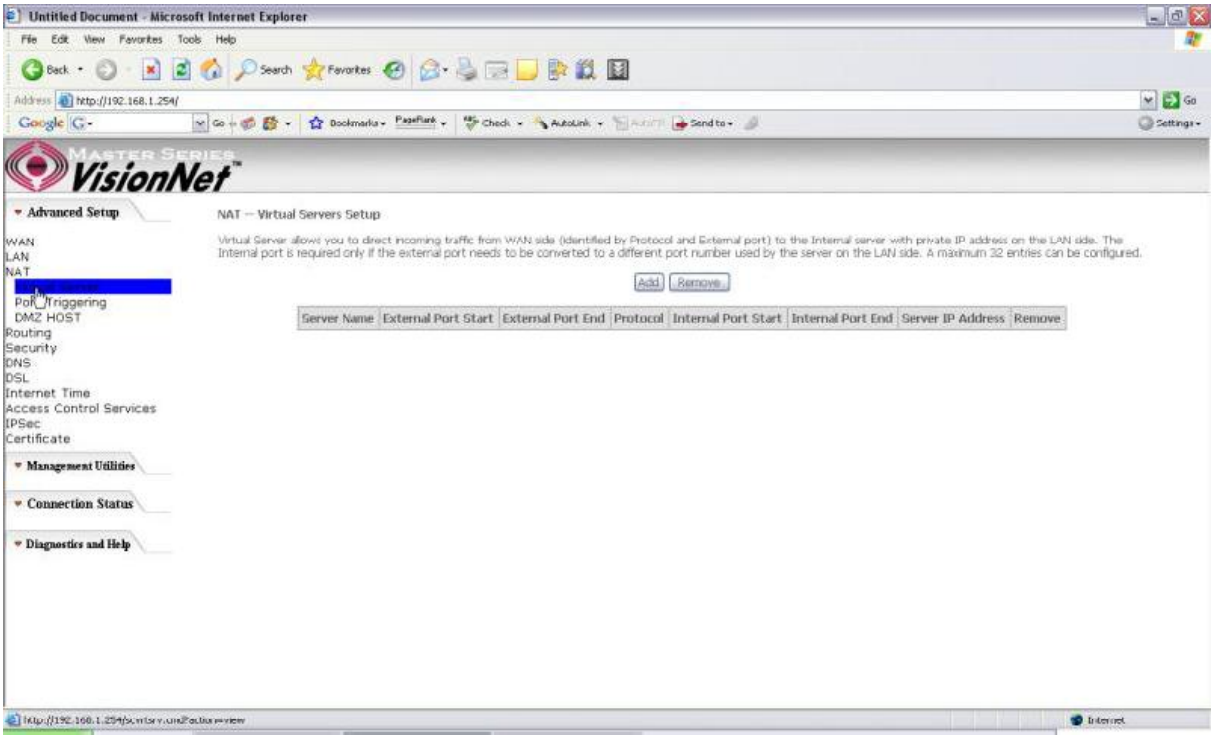

Figure 27. Advanced Setup ? NAT

Virtual Server allows you to direct incoming traffic from WAN side (identified by Protocol and External port) to the Internal server with private IP address on the LAN side. The Internal port is required only if the external port needs to be converted to a different port number used by the server on the LAN side. A maximum of 32 entries can be configured.

Click on 揂dd? to enter configuration page to add your own rule(s). Some common used servers (Web, FTP, Mail, 屯 tc.) are already pre-defined for the M505. User can simply select the desired server from the pull-down menu and assign the IP address of the local PC.

To delete the configured rule(s), check the 揜emove? box of the specific rule(s) and click on 揜emove?

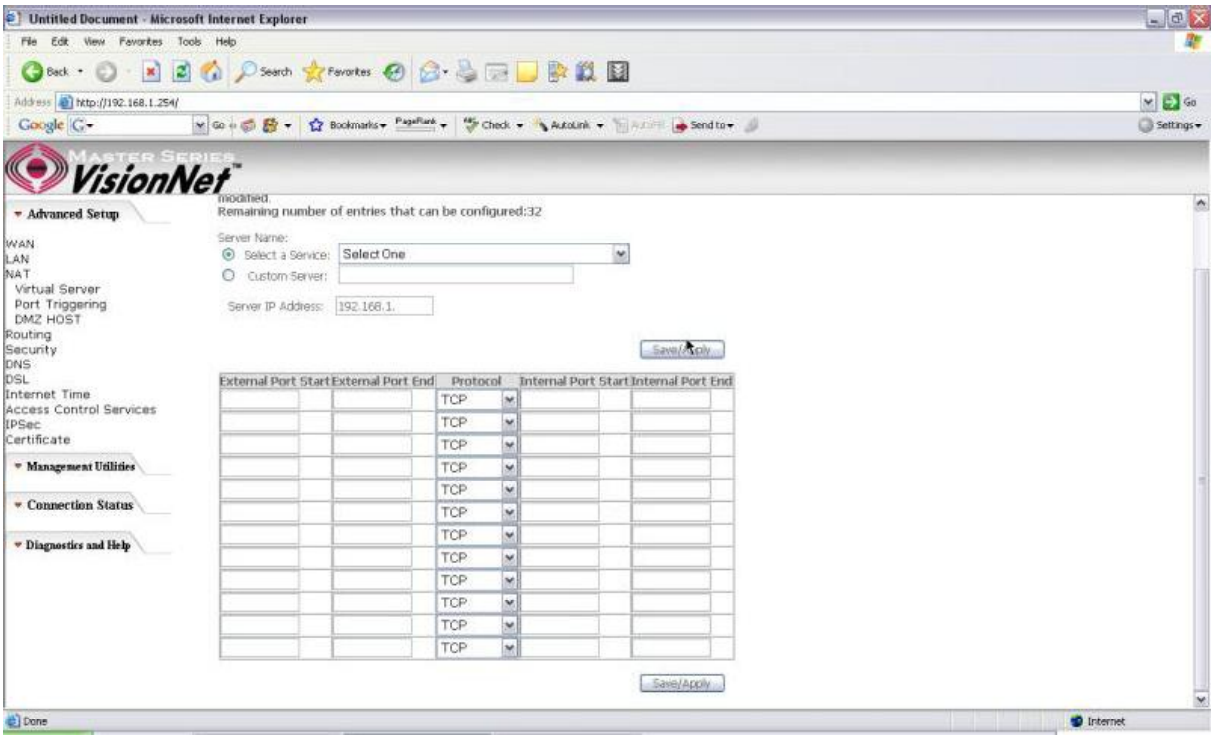

Figure 28. Advanced Setup ? NAT ? Virtual Servers

Port Triggering

Some applications require that specific ports in the Router's firewall be opened for access by the remote parties. Port Trigger dynamically opens up the 揙pen Ports? in the firewall when an application on the LAN initiates a TCP/UDP connection to a remote party using the 揟riggering Ports? The Router allows the remote party from the WAN side to establish new connections back to the application on the LAN side using the 揙pen Ports? A maximum of 32 entries can be configured.

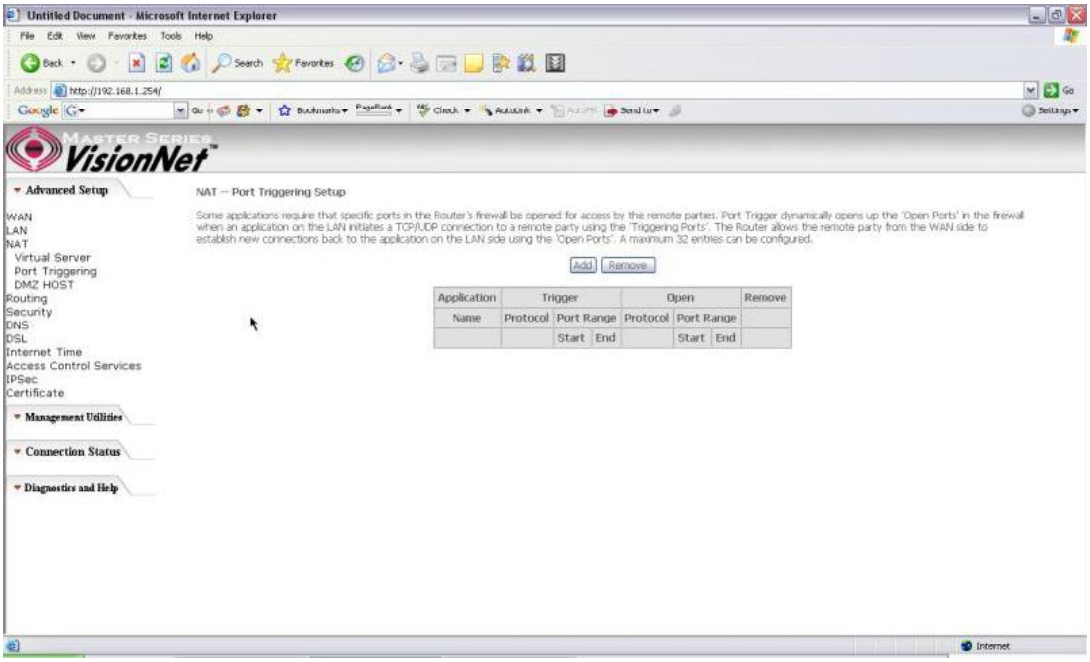

Figure 29. Advanced Setup ? NAT ? Port Triggering

Click on 揂dd? to enter the configuration page to add your own rule(s). Some games, video conferencing, remote access applications and other software might require that specific ports in the Router's firewall be opened for access. You can configure the port settings from this screen by selecting an existing application or creating your own (Custom application) and click 揝ave/Apply? to add it.

To delete the configured rule(s), check the 揜emove? box of the specific rule(s) and click on 揜emove?

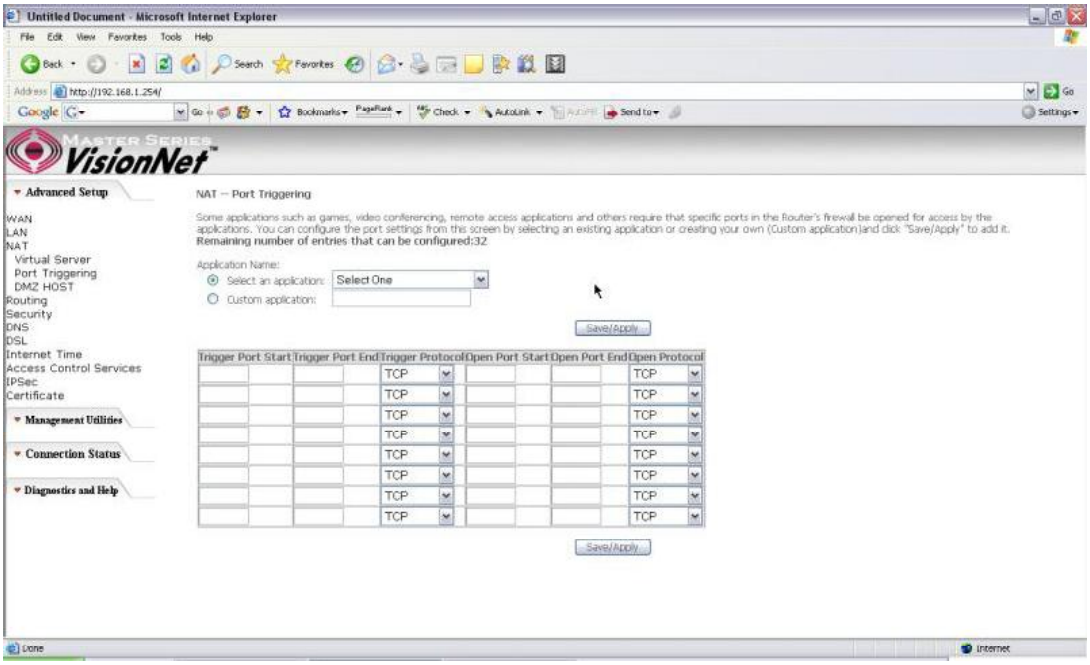

Figure 30. Advanced Setup ? NAT ? Add Port Triggering

DMZ Host

The DSL router will forward IP packets from the WAN that do not belong to any of the applications configured in the Virtual Servers table to the DMZ host computer.

Enter the computer's IP address and click 揝ave/Apply? to activate the DMZ host.

Clear the IP address field and click 揝ave/Apply? to deactivate the DMZ host.

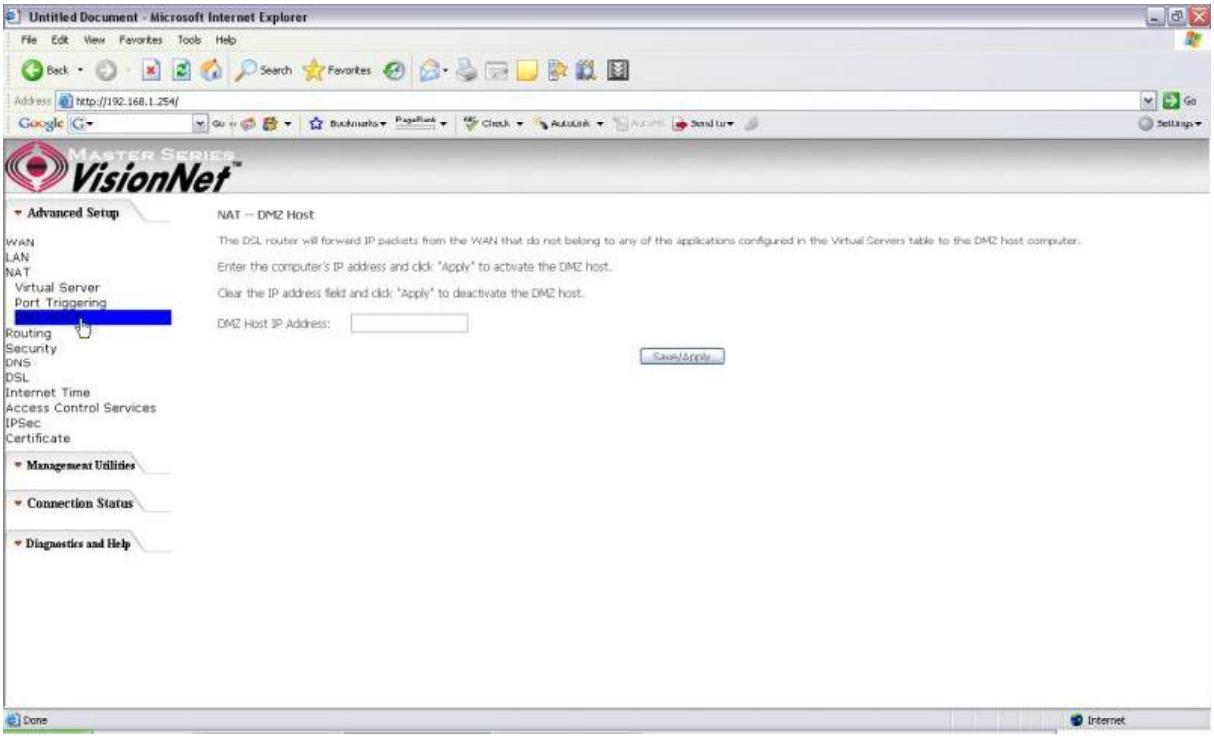

Figure 31. Advanced Setup ? NAT ? DMZ Host

5.4 - Routing

There are three routing related settings:

Routing ? Default Gateway

If the 揈nable Automatic Assigned Default Gateway? checkbox is selected, the M505 will accept the first received default gateway assignment from one of the PPPoA, PPPoE or MER/DHCP enabled PVC(s). If the checkbox is not selected, enter the static default gateway AND/OR a WAN interface. Click the 揝ave/Apply? button to save it.

> **NOTE:** If changing the 揈nable Automatic Assigned Default Gateway? from unselected to selected, you must reboot your M505 to activate the automatically assigned default gateway.

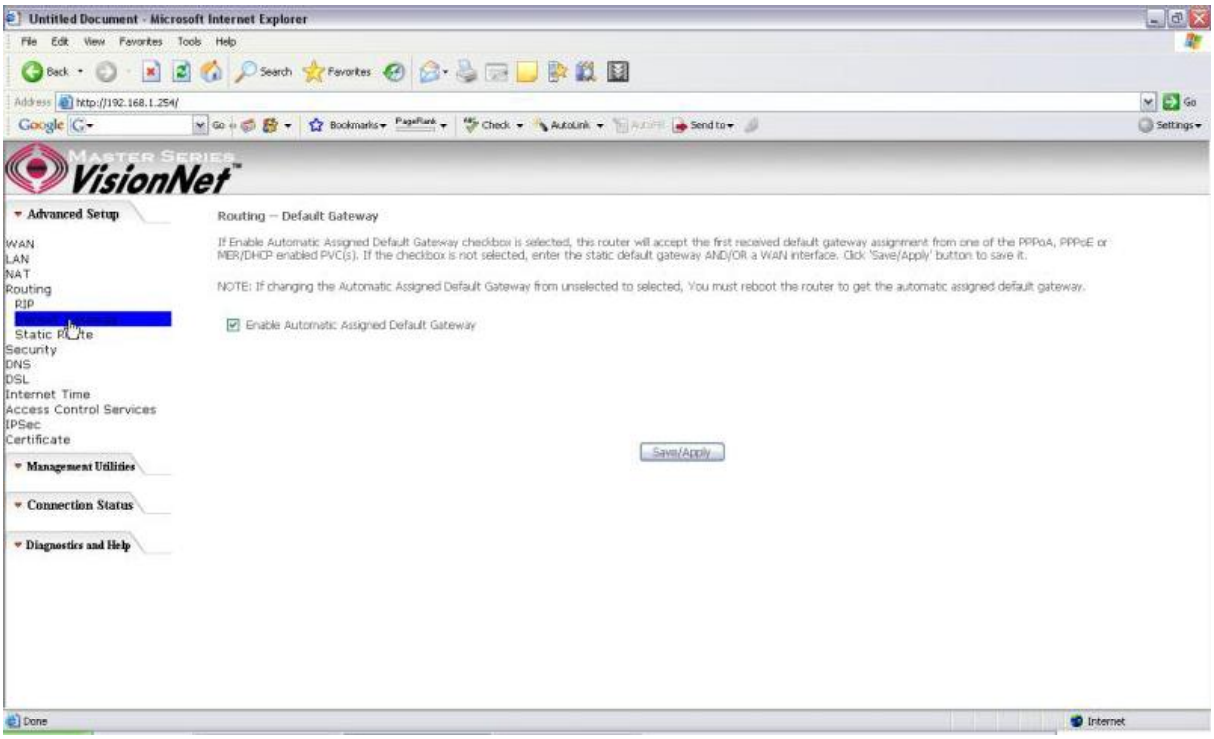

Figure 32. Advanced Setup ? Routing ? Default Gateway

Routing ? Static Route

Click on 揂dd? to create a new Static Route. Up to 32 entries can be configured.

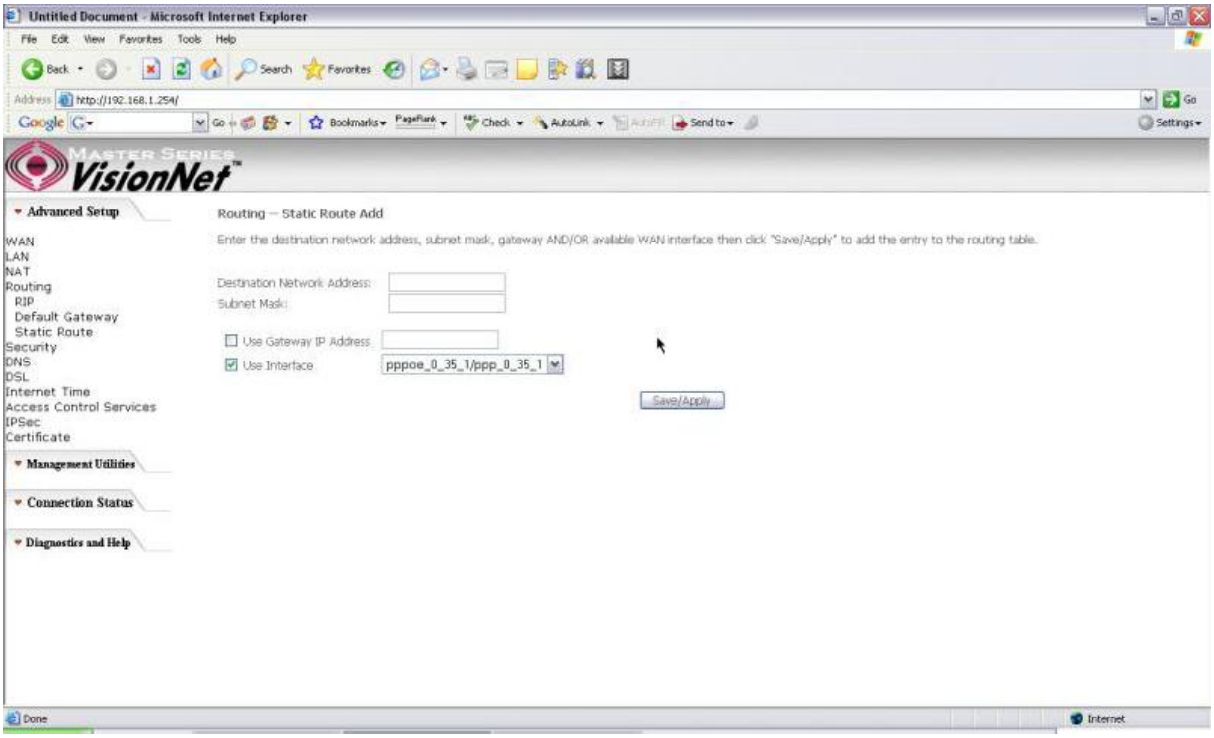

Figure 33. Advanced Setup ? Routing ? Add New Static Route

Enter the destination network address, subnet mask, gateway AND/OR available WAN interface, then click 揝ave/Apply? to add the entry to the routing table.

Routing ? RIP

The Routing Information Protocol (RIP) is designed for exchanging routing information within a small to medium-size network.

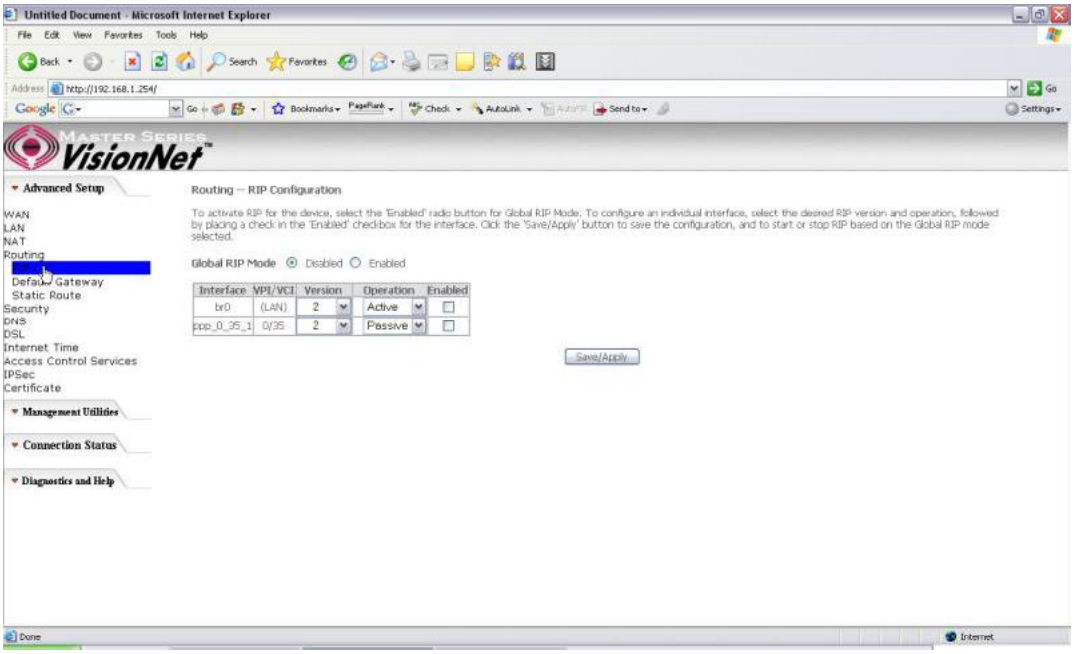

Figure 34. Advanced Setup ? Routing ? RIP

To configure an individual interface, select the desired RIP version and operation:

RIP Version 1: Class-based IP network.

RIP Version 2: Classless IP network.

Operation Active: Broadcast and listen to other RIP enabled devices.

Operation Passive: Listen only.

Place a check in the 揈nabled? checkbox next to the interface to complete the configuration. Click the 揝ave/Apply? button to save the configuration. To start/stop RIP for the M505, select the 揈nabled/Disabled? radio button for *Global RIP Mode?*

5.5 - Security

Two functions are supported in Firewall: Outgoing IP Filtering and MAC Filtering.

Firewall ? Outgoing IP Filtering

By default, all outgoing IP traffic from LAN is allowed, but some IP traffic can be BLOCKED by setting up filters. Choose 揂dd? to configure outgoing IP filters. To remove, check the item and click 揜emove?

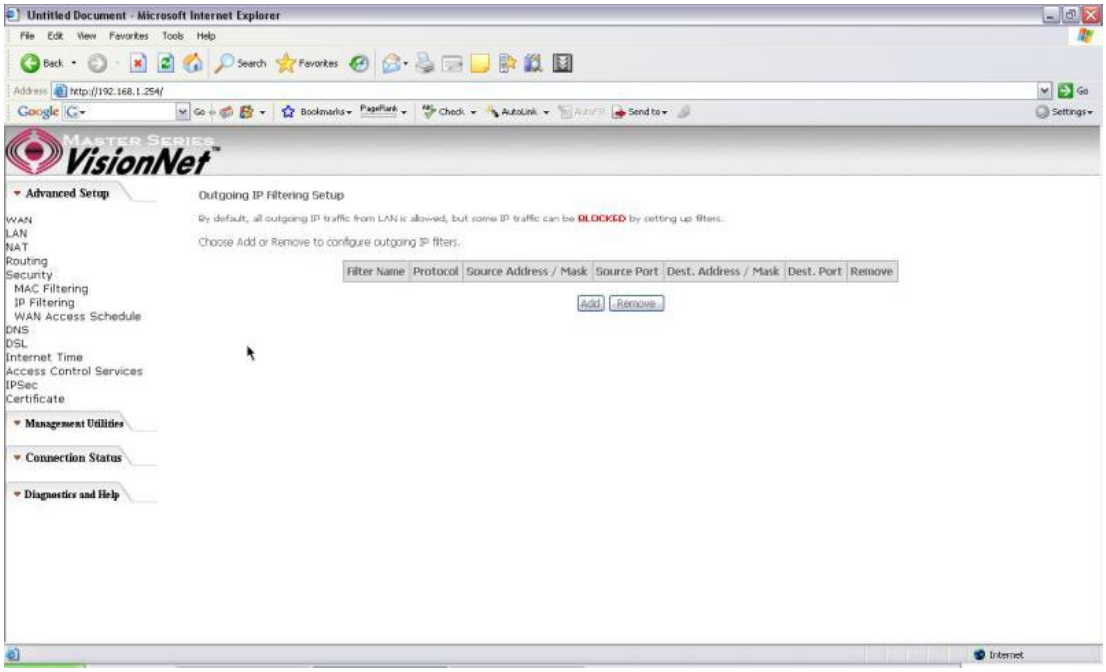

Figure 35. Advanced Setup ? Security ? Outgoing IP Filtering Setup

The screen allows you to create a filter rule to identify outgoing IP traffic by specifying a filter name and at least one of the conditions below. All of the specified conditions in this filter rule must be satisfied for the rule to take effect. Click 揝ave/Apply? to save and activate the filter.

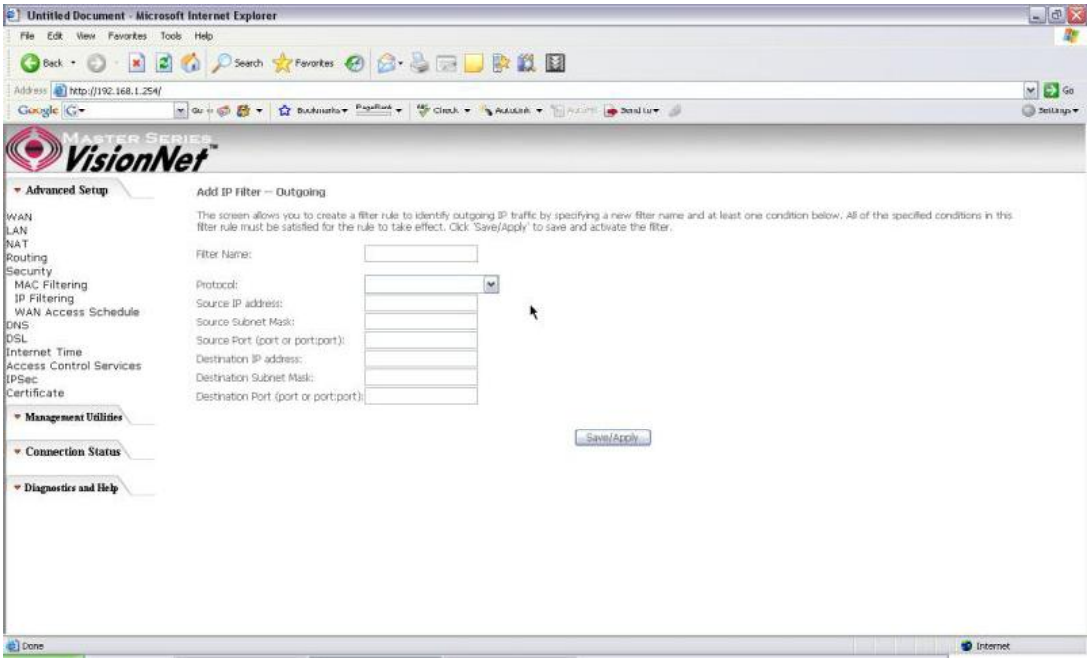

Figure 36. Advanced Setup ? Security ? Add new Outgoing IP Filter

Security ? WAN Access Control

WAN Access Control allows users to create time of day restrictions to a specific LAN device connected to the Router. Click 揂dd? to configure restriction rules. To remove, check the item and click 揜emove? Up to 16 entries can be configured and used.

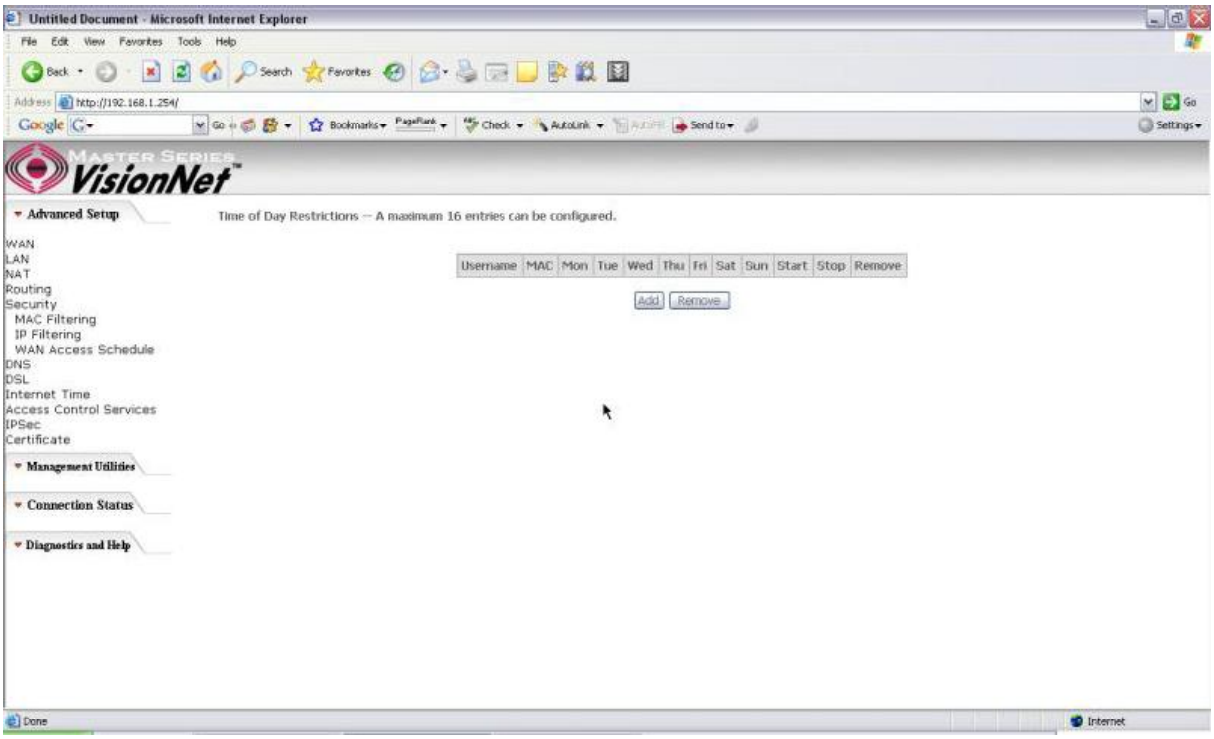

Figure 37. Advanced Setup ? Security ? WAN Access Control

The MAC Address of the current 捷rowser? will automatically display on the 揾rowser扭 MAC Address? box. To restrict another LAN device, click the 揾ther MAC Address? button and enter the MAC address of that LAN device.

To find out the MAC address of a Windows-based PC, go to the command prompt window and type 揑pconfig /all? Click 揝ave/Apply to save and activate the restriction rule.

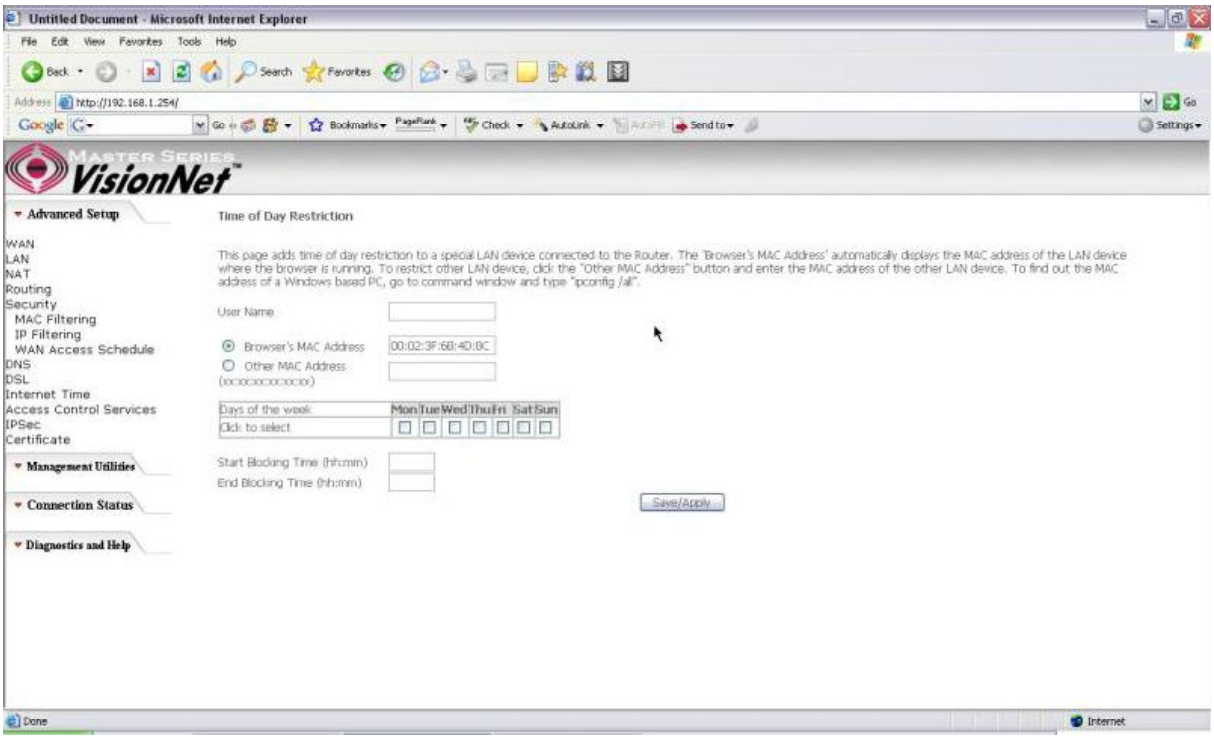

Figure 38. Advanced Setup ? Security ? Add new Parental Control restriction

5.6 - DNS

DNS Server

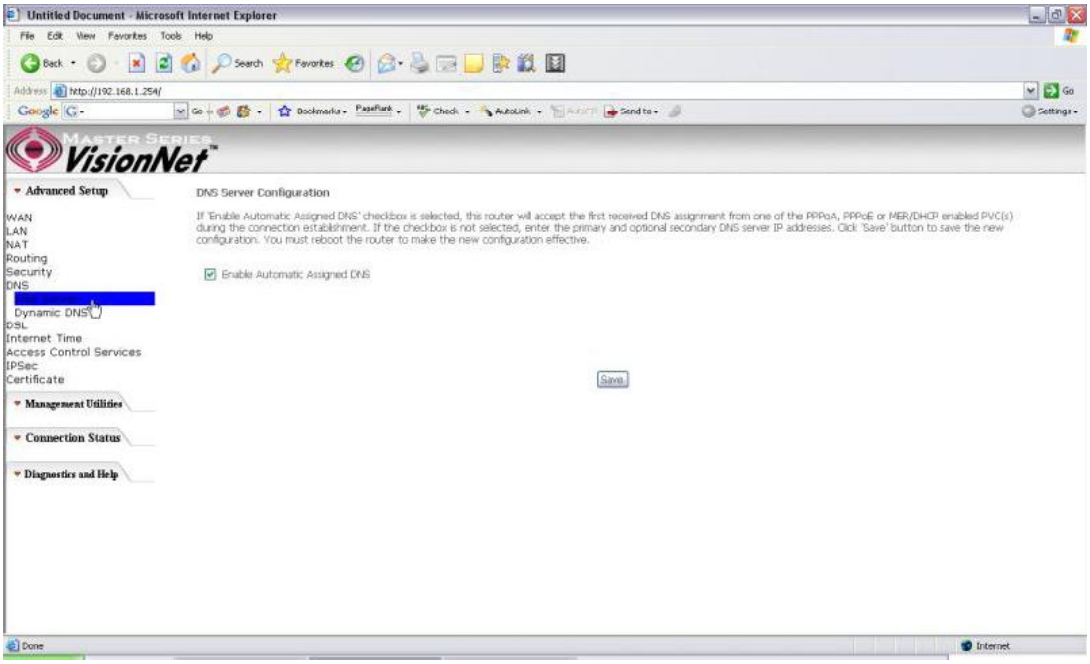

Figure 39. Advanced Setup ? DNS Server

If 揈nable Automatic Assigned DNS? checkbox is selected, the M505 will accept the first received DNS assignment from one of the PPPoA, PPPoE or MER/DHCP enabled PVC(s) during the connection establishment. If the checkbox is not selected, enter the primary and optional secondary DNS server IP addresses. Click the 揝ave? button to save it.

NOTE: If changing from unselected 揈nable Automatic Assigned DNS? to selected, you must reboot the M505 to get the automatic assigned DNS addresses.

Dynamic DNS

The Dynamic DNS service allows you to give a dynamic IP address a static hostname in any of the domains. This function allows your M505 to be more easily accessible from various locations of the Internet.

Choose 揂dd? to configure Dynamic DNS.

Before you proceed, please visit one of these two websites to receive your own Dynamic DNS service: www.dyndns.org or www.tzo.com.

To remove, check the item and click 揜emove?

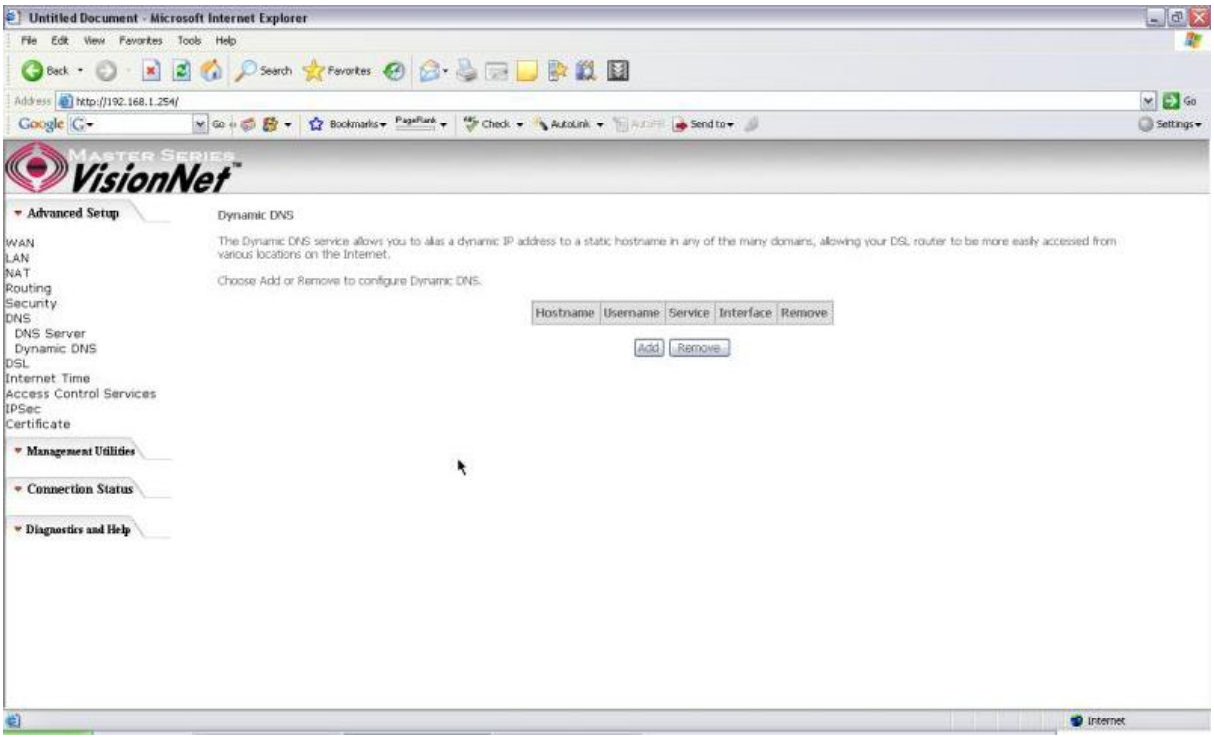

Figure 40. Advanced Setup ? DNS ? Dynamic DNS

Select your Dynamic DNS service provider from 慔-DNS provider? and enter your registration information. Click 揝ave/Apply? to save the configuration.

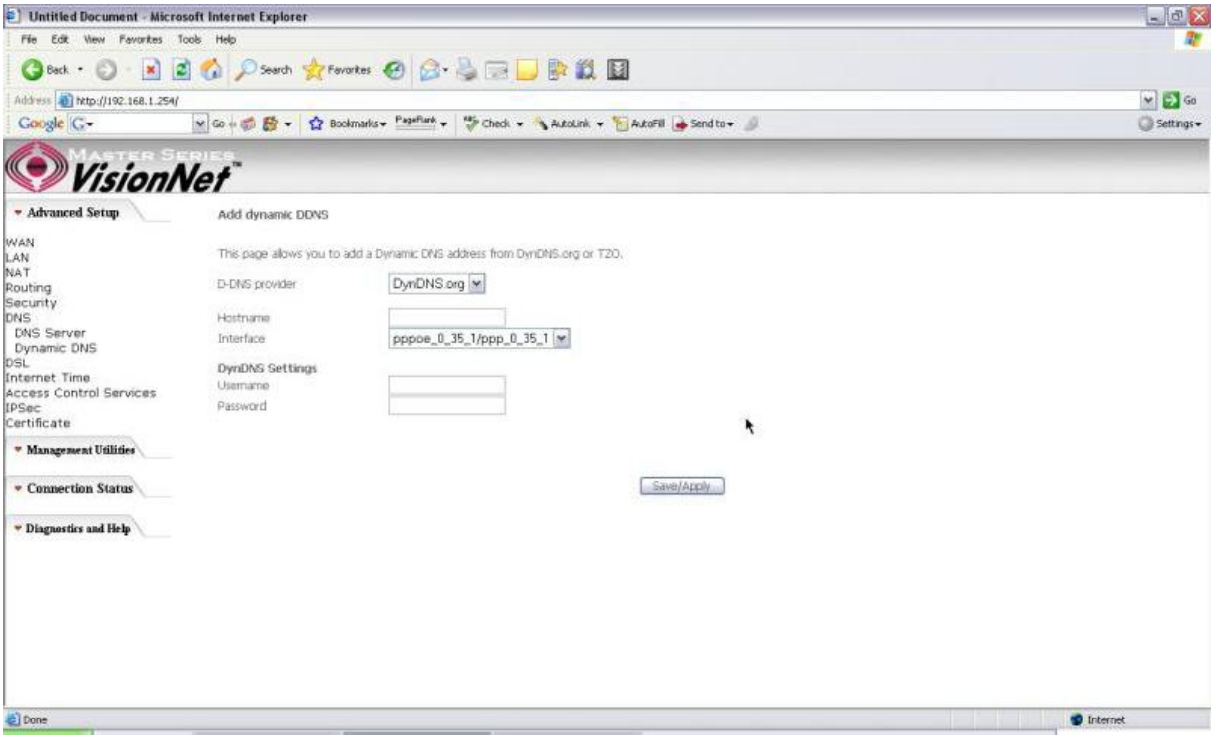

Figure 41. Advanced Setup ? DNS ? Add Dynamic DNS

5.7 - DSL

This page allows you to choose which handshake protocols you want your M505 to look through when training. Uncheck any of the listed protocols that have 揹nabled? at the end of it to have the modem skip that protocol when synchronizing with your ADSL line. Leave it checked if you would like the modem to cycle through those settings.

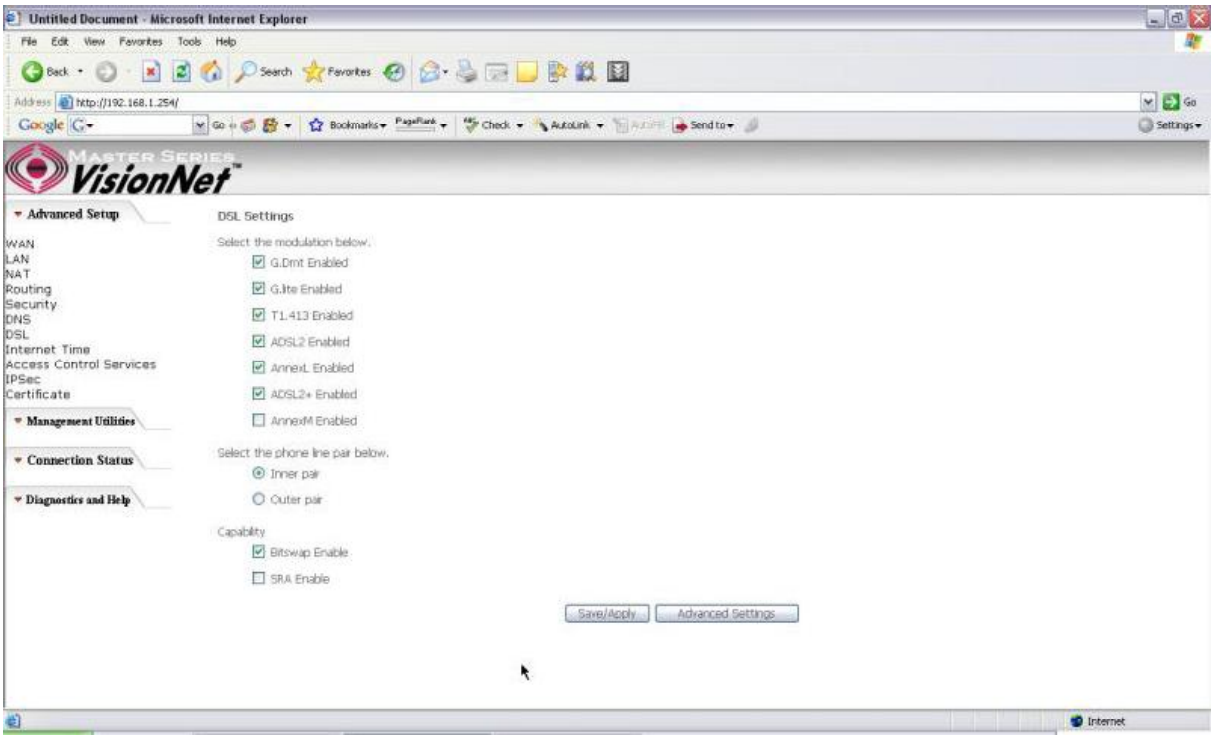

Figure 42. Advanced Setup ? DSL Settings

5.8 ? Port Mapping

Use this page to set up Port Mapping and Virtual Port groups. These are used when ISPs or Telcos are running different PVCs (or connection profiles) on the same DSL line. This is commonly used when receiving MPEG1/2 video steams and Internet at the same time. VLAN groups allow you to hook up a PC on one or more Ethernet ports of the router for broadband Internet and connect an IP set top box to the other ports to watch TV on the same line simultaneously.

By default all LAN ports and wireless will be grouped and mapped to one WAN interface.

To enable virtual ports on the physical LAN ports, check the 掏nable virtual ports on:? checkbox and click on the Add button to create a new mapping group.

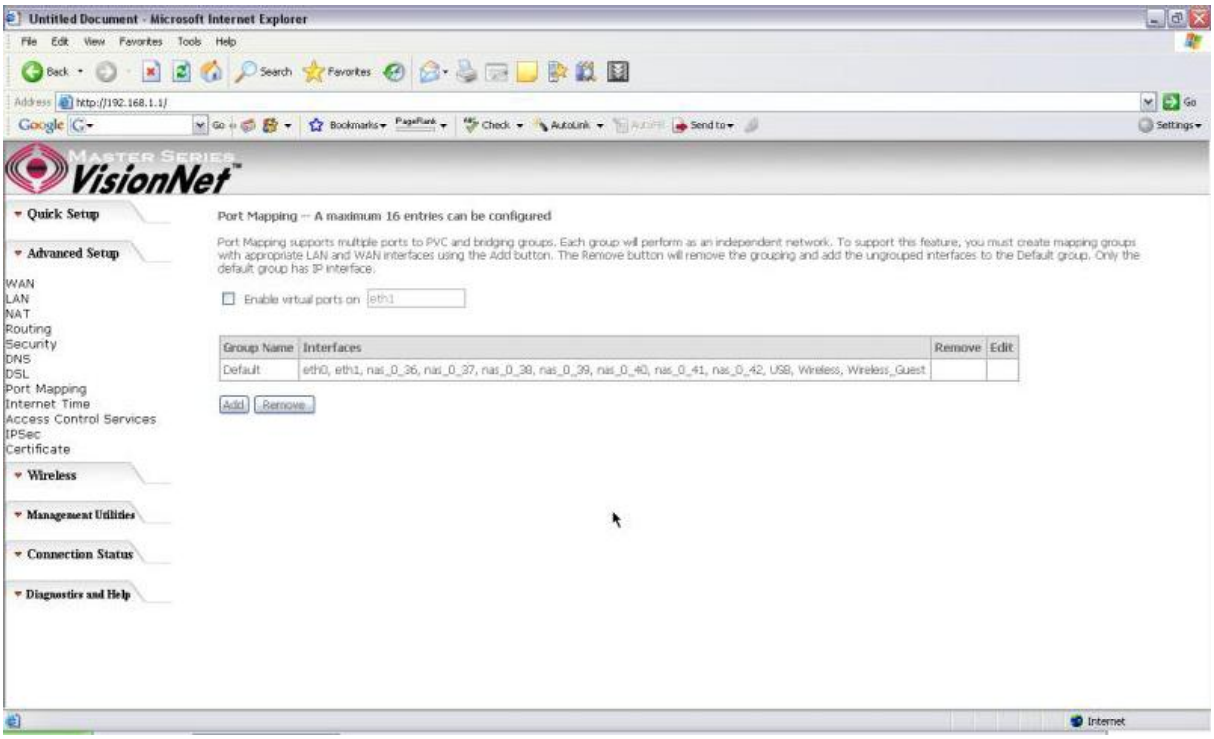

Figure 43. Advanced Setup ? Port Mapping

To properly configure a new port mapping, follow the instructions provided on screen.

It is recommended that an experienced telephone company technician configure these settings for you. In most cases, this will already be configured for you, so no change or modification is necessary.

Once you have mapped your ports to the desired interfaces, click on the 撎ave/Apply? button to save these settings.

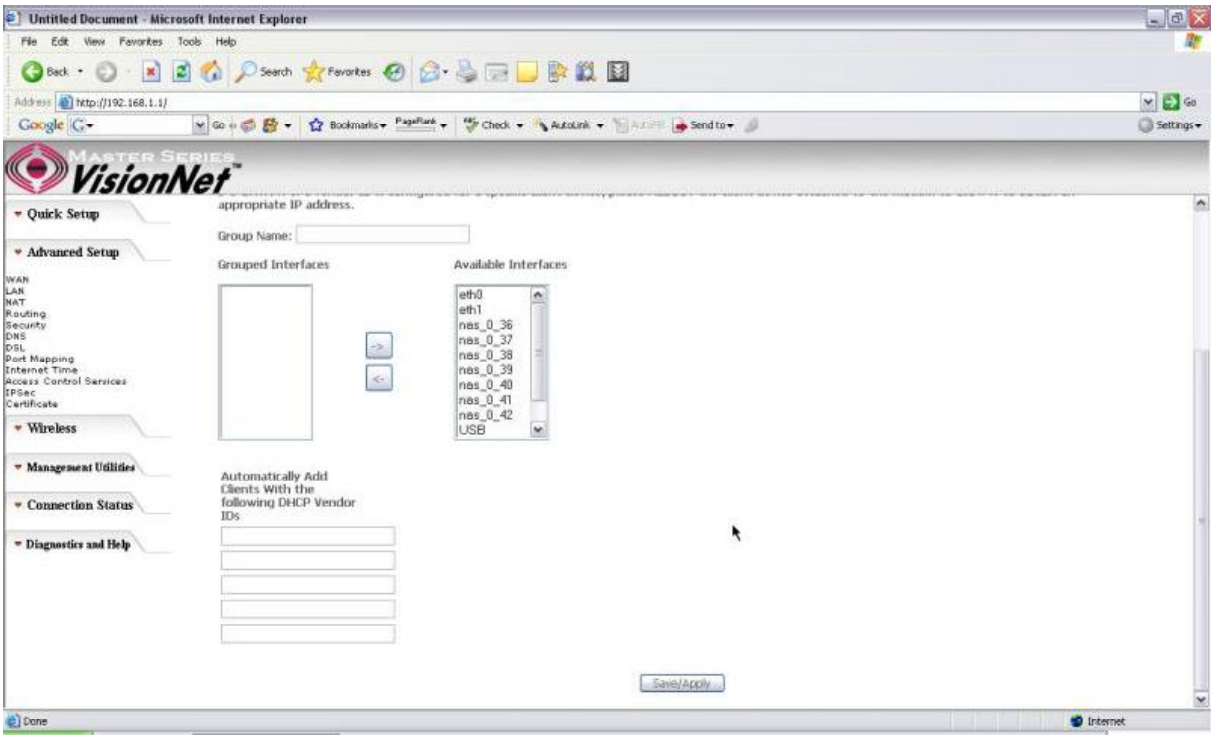

Figure 44. Advanced Setup ? Port Mapping ? Add new port map

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