

InnoMedia MTA 3328-2R

Version 1.1

User's Guide



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InnoMedia MTA 3328-2R User's Guide
Version 1.1 October 2004

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1 Welcome

Overview

Congratulations on purchasing the InnoMedia MTA 3328-2R!

The MTA 3328-2R is a Voice over Internet Protocol (VoIP) broadband device that allows you to connect up to two analog telephones and make and receive calls over the Internet using a broadband connection. The MTA 3328-2R includes a built-in broadband router that shares the Internet connection with your PC.

The MTA 3328-2R converts the analog signal from your telephone(s) to Voice over Internet Protocol (VoIP). It then uses the LAN's broadband connection to send calls over the Internet via the service platform. Since Voiceline calls bypass most of the Public Switched Telephone Network (PSTN), the result is significant savings on long-distance communications services.

This chapter will introduce you to the InnoMedia MTA 3328-2R device, its features, and its requirements.



This chapter describes:

- ★ **Product Features**
- ★ **Package Contents**
- ★ **System and Service Requirements**
- ★ **About this Guide**



NOTE: If you need technical support for the MTA 3328-2R, contact your service provider. Please do not contact InnoMedia directly.

Product Features

Designed for versatility and performance, the MTA 3328-2R provides the following features.

- ★ **Auto-provisioning** – the device settings are automatically obtained from a central provisioning server, so the device is ready to use as soon as you set it up and connect it to the Internet.
- ★ **LEDs** – the device has light-emitting diodes (LEDs) that communicate the status of the device and each call.
- ★ **Built-in router** – provides an IP address to a connected PC.
- ★ **Port mapping** – supports port mapping for routing inbound data requests.
- ★ **Voice QoS (Quality of Service)** – offers uplink data bandwidth control to control the data throughput of the device.
- ★ **Voice prioritization** – prioritizes voice traffic over data traffic for QoS management.
- ★ **Access filtering** – provides Internet access control of the connected PC.
- ★ **PPPoE** – supports authentication via the PPPoE broadband authentication protocol.
- ★ **MAC cloning** – accommodates users whose service providers authenticate via MAC address.

Package Contents

You should find the following contents in your InnoMedia package:

- ★ InnoMedia MTA 3328-2R device
- ★ One 12-volt D/C power adapter
- ★ One standard telephone cable (RJ-11)
- ★ One standard Ethernet network cable (RJ-45)
- ★ User's Guide (if not available in your package, please contact your distributor)
- ★ Getting Started Guide

System and Service Requirements

You will need the following items/services to use the InnoMedia MTA 3328-2R:

- ★ A broadband Internet connection (such as DSL, cable, or T1)
- ★ A valid account from your distributor
- ★ A cordless or wired analog telephone
- ★ A PC with any recent Web browser (for managing your account details and calling features only)
- ★ Most broadband Internet connections use dynamic IP addressing (DHCP), but if your WAN uses static IP addresses, you will also need the following information for the MTA 3328-2R:
 - IP address
 - Netmask
 - Gateway address
 - DNS server address
 - PPPoE information, if applicable

This information is available from your broadband service provider or LAN administrator.

About this Guide





This User's Guide, as well as the other instructional literature that accompanies the InnoMedia, is intended for people who have a moderate degree of experience installing networking equipment such as routers, hubs, servers, and switches, and are familiar with basic wiring and cabling practices.

The table below provides a brief overview of the main topics covered in this Guide.

FOR INFORMATION ON...	GO TO...
Product features	Chapter 1, <i>Welcome</i>
System requirements	Chapter 1, <i>Welcome</i>
Hardware overview	Chapter 2, <i>Getting Started</i>
Connecting the device to a network	Chapter 2, <i>Getting Started</i>
Placing calls	Chapter 3, <i>Placing Calls</i>
Logging into the Web Management Tool	Chapter 4, <i>Using the Web Management Tool</i>
Configuring the device via the Web Management Tool	Chapter 4, <i>Using the Web Management Tool</i>
Upgrading the firmware	Chapter 4, <i>Using the Web Management Tool</i>
Enabling reverse polarity	Chapter 4, <i>Using the Web Management Tool</i>
Rebooting the device	Chapter 4, <i>Using the Web Management Tool</i>
Restoring the default values	Chapter 4, <i>Using the Web Management Tool</i>
Troubleshooting	Chapter 5, <i>Appendices</i>
Contacting Technical Support	Chapter 5, <i>Appendices</i>

Symbols

Throughout the user's guide, you will see information highlighted for you with the following fun symbol icons:

SYMBOL	REPRESENTS
	Chapter Description
	Note
	Tip
	Important

2 Getting Started

Overview

Before you can start using your InnoMedia MTA 3328-2R, it's a good idea to familiarize yourself with the hardware. Once you have done that, setting up the MTA 3328-2R should be very simple.



This chapter describes:

- ★ **The InnoMedia MTA 3328-2R hardware**
- ★ **How to set up the MTA 3328-2R**
- ★ **How to connect the MTA 3328-2R to the network**

InnoMedia MTA 3328-2R Hardware Overview

The following images show the top and back panel of the MTA 3328-2R.

LED Lights

On the top of the device, there are nine (9) light-emitting diode (LED) lights that communicate the device, call, and feature statuses.



InnoMedia MTA 3328-2R LEDs

The following table describes each LED and what the different behaviors (blinking light, steady light, etc.) mean:

LED STATES		
LED	Blinking State	MTA 3328-2R State
PWR	Steady	The device power is on.
	Off	The device power is off.
RUN	Blinking slow	The device failed to download a configuration file or to register with the SIP server. Refer to Appendix A on page 68 in this Guide for details on troubleshooting.

LED STATES		
LED	Blinking State	MTA 3328-2R State
RUN (cont'd.)	Blinking fast	The device is actively downloading a configuration file or a firmware update.
	Steady	The device has been configured successfully and is running normally.
	Off	The device is malfunctioning.
WAN	Blinking fast	Data is being transferred.
	Steady	The device is connected to a broadband network.
	Off	The device is not connected to a broadband network.
LAN	Blinking	Data is being transferred.
	Steady	The device is connected to an external PC.
	Off	The device is not connected to an external PC.
VOIP	Blinking	A call is in progress (data is being transferred).
	Steady	The VoIP module is internally initialized and the unit is ready to make calls.

LED STATES		
LED	Blinking State	MTA 3328-2R State
PHONE 1/ PHONE 2	Blinking	The connected telephone handset is on the hook (not in use) and there are new voice mail messages.
	Steady	The connected telephone handset is off the hook.
	Off	The connected telephone handset is on the hook (not in use) and there are no new voice mail messages.
VOICE ACTIVITY 1/ VOICE ACTIVITY 2	Blinking	A call is in progress.
	Off	There is no voice activity (i.e., no call in progress).



IMPORTANT: All of the LEDs will be on and/or blinking when the MTA 3328-2R is booting, which can take several minutes. The device is ready to use when the RUN light is steady.

Back Panel

The back panel of the MTA 3328-2R contains the input/output ports.

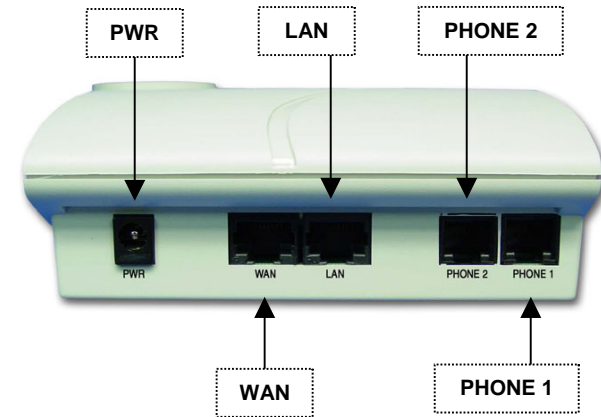


Figure 2 – InnoMedia MTA 3328-2R Back Panel

- ★ **PWR** – connects to a wall outlet with the supplied 12-Volt D/C power adapter.
- ★ **WAN port** – connects to your cable/DSL modem or router with the standard Ethernet network cable (RJ-45).
- ★ **LAN port** – connects to your PC's Ethernet port and provides an IP address from the device's built-in DHCP server.
- ★ **Phone 2 port** – connects to an analog telephone with a standard telephone cable (RJ-11).
- ★ **Phone 1 port** – connects to an analog telephone with a standard telephone cable (RJ-11).

Setting up the MTA 3328-2R

This section provides step-by-step instructions for installing the MTA 3328-2R and configuring your PC's IP settings.



NOTE: You will need to use a PC that has an Internet browser and a network interface card (NIC) installed.

Preparing for Installation

Before you begin the installation process, you will need to know the connection type used by your Internet Service Provider (ISP). The connection type determines how the device will communicate with your broadband service provider. The options are:

- ★ DHCP, or Dynamic Host Configuration Protocol, addressing (default setting on the MTA 3328-2R)
- ★ Static IP addressing
- ★ PPPoE, or Point-to-Point Protocol over Ethernet
- ★ MAC address cloning

These will be explained in more detail in the **Configuring the InnoMedia MTA 3328-2R WAN Interface** section on page 21. Contact your ISP to determine the connection type you should configure for the MTA 3328-2R.

Installing the MTA 3328-2R

If you have only one PC that will need to access the Internet, your broadband service provider uses DHCP, and you do not have a router, continue to the following section, **Installation without an External Router**. If you currently use a router to share your broadband connection with multiple PCs, skip to the **Installation with an External Router** section on page 15.

Installation without an External Router

These instructions explain how to set up the MTA 3328-2R with one PC. The diagram below displays an example of this configuration.



Recommended Configuration with a Single PC

To set up the MTA 3328-2R with one PC:

1. Turn off your PC and unplug the cable modem's power cord.



IMPORTANT: Do not plug in the MTA 3328-2R's power cord until instructed to do so.

2. Using the standard Ethernet network cable (RJ-45) included with the device, connect the **LAN** port on the back of the MTA 3328-2R to your PC's Ethernet port.
3. Using the standard telephone cable (RJ-11) included with the device, connect the **Phone 1** port on the back of the device to your telephone.
4. Using a standard Ethernet network cable (RJ-45), connect the **WAN** port on the back of the MTA 3328-2R to your cable/DSL modem or existing LAN broadband connection (i.e., office network).

5. Plug in the cable modem's power cord.
Wait about two minutes for the modem to initialize.
6. Connect the D/C power adapter (included with the device) to the **PWR** port on the back of the MTA 3328-2R, and then plug the power cord into a wall outlet.
7. Turn on the PC.
 - ♦ **DHCP users:** *If your broadband service provider uses DHCP, wait several minutes for the device to initialize. It may take up to fifteen (15) minutes for the device to download the configuration files.*

The MTA 3328-2R is ready when the RUN light is steady.

*Continue to the next section, **Verifying that You Have Internet Connectivity** to make sure that your PC can connect to the Internet.*

- ♦ **Static IP addressing, PPPoE, or MAC address cloning users:** *If your broadband service provider uses one of these connection types, continue with the **Configuring the InnoMedia MTA 3328-2R WAN Interface** section on page 21 in this Guide.*

VERIFYING THAT YOU HAVE INTERNET CONNECTIVITY

To verify that your PC can now access the Internet through the MTA 3328-2R and that your broadband connection is functioning properly, open a Web browser on the PC connected to the MTA 3328-2R, and attempt to connect to a Web site.

- ★ If you are **able** to connect to a Web site successfully, you are now ready to make phone calls with your MTA 3328-2R! For more details on placing and receiving calls, continue to Chapter 3, **Placing Calls**.
- ★ If you are **unable** to connect to a Web site from the PC connected to the MTA 3328-2R, check your cabling and repeat steps 1 through 7 on the previous page.

If you repeated the steps and are still unable to connect to a Web site, contact your service provider.

Installation with an External Router

If you already have a router that allows you to share your broadband connection with multiple PCs, the recommended configuration connects the broadband modem directly with the MTA 3328-2R, which connects to the external router, which connects to the PC. This configuration ensures that you will experience higher voice quality than you would if the router were directly connected to the broadband modem. This is because the Voice QoS functionality gives priority to voice transmissions over data transmissions. If you try to make a phone call while transferring data, the MTA 3328-2R gives priority to the voice traffic over the data traffic and maintains the high voice quality.

Because of the voice quality advantage, this configuration is highly recommended. To connect the device using this configuration, continue with the following section, **Recommended Configuration with an External Router**.

If you prefer to keep your current router configuration, you can connect the MTA 3328-2R to the router. To connect the device using this configuration, skip to the **Alternate Configuration with an External Router** section on page 18 in this Guide.



NOTE: If you decide to use this alternate configuration, you will not be able to take advantage of the MTA 3328-2R's Voice QoS functionality. This feature gives priority to voice transmissions over data transmissions and optimizes the voice quality of your calls.

To use the recommended configuration and utilize the device's Voice QoS functionality, refer to the Recommended Configuration with an External Router section on page 16 in this Guide.

RECOMMENDED CONFIGURATION WITH AN EXTERNAL ROUTER

This configuration is recommended if you have a router and would like to set up the MTA 3328-2R while allowing multiple PCs to access your broadband connection. The diagram below displays an example of this configuration.



Recommended Configuration with an External Router



IMPORTANT: If your router is configured to use static IP addressing, PPPoE, or MAC address cloning, you must re-set it to use DHCP before beginning the installation. Refer to the router's User's Guide for instructions.

To set up the MTA 3328-2R with more than one PC using the recommended configuration:

1. Turn off your PC, and unplug the cable modem and router.



IMPORTANT: Do not plug in the MTA 3328-2R's power cord until instructed to do so.

2. Using the standard Ethernet network cable (RJ-45) included with the device, connect the **LAN** port on the back of the MTA 3328-2R to the router.

3. Using a standard Ethernet network cable (RJ-45), connect the Ethernet port on your PC to the router.
4. Using the standard telephone cable (RJ-11) included with the device, connect the **Phone 1** port on the back of the device to your telephone.
5. Using a standard Ethernet network cable (RJ-45), connect the **WAN** port on the back of the MTA 3328-2R to your cable modem or existing LAN broadband connection (i.e., office network).
6. Plug in the cable modem's power cord.
Wait about two minutes for the modem to initialize.
7. Connect the D/C power adapter (included with the device) to the **PWR** port on the back of the MTA 3328-2R, and then plug the power cord into a wall outlet.
8. Plug in the router.
9. Turn on the PC.
 - ♦ **DHCP users:** *If your broadband service provider uses DHCP, wait several minutes for the device to initialize. It may take up to fifteen (15) minutes for the device to download the configuration files.*

The MTA 3328-2R is ready when the RUN light is steady.

*Continue to the next section, **Verifying that You Have Internet Connectivity** to make sure that your PC can connect to the Internet.*

- ♦ **Static IP addressing, PPPoE, or MAC address cloning users:** *If your broadband service provider uses one of these connection types, continue with the **Configuring the InnoMedia MTA 3328-2R WAN Interface** section on page 21 in this Guide.*

VERIFYING THAT YOU HAVE INTERNET CONNECTIVITY

To verify that your PC can now access the Internet through the MTA 3328-2R and that your broadband connection is functioning properly, open a Web browser on the PC connected to the MTA 3328-2R, and attempt to connect to a Web site.

- ★ If you are **able** to connect to a Web site successfully, you are now ready to make phone calls with your MTA 3328-2R! For more details on placing and receiving calls, continue to Chapter 3, **Placing Calls**.
- ★ If you are **unable** to connect to a Web site from the PC connected to the MTA 3328-2R, check your cabling and repeat steps 1 through 7 on the previous page.

If you repeated the steps and are still unable to connect to a Web site, contact your service provider.

ALTERNATE CONFIGURATION WITH AN EXTERNAL ROUTER

If you already have a router connected to your broadband connection and you do not want to change your configuration, you can connect the MTA 3328-2R to the router. The diagram on the next page displays an example of this configuration.



NOTE: If you decide to use this alternate configuration, you will not be able to take advantage of the MTA 3328-2R's Voice QoS functionality. This feature gives priority to voice transmissions over data transmissions and optimizes the voice quality of your calls.

To use the recommended configuration and utilize the device's Voice QoS functionality, refer to the Recommended Configuration with an External Router section on page 16 in this Guide.



Alternate Configuration with an External Router



NOTE: For the steps below, please make sure that the cable/DSL modem and the router are connected, turned on, and functioning properly.

To set up the MTA 3328-2R with more than one PC using the alternate configuration:



IMPORTANT: Do not plug in the MTA 3328-2R's power cord until instructed to do so.

1. Using a standard Ethernet network cable (RJ-45) included with the device, connect the **WAN** port on the back of the MTA 3328-2R to the router.
2. Using the standard telephone cable (RJ-11) included with the device, connect the **Phone 1** port on the back of the MTA 3328-2R to your telephone.
3. Connect the D/C power adapter (included with the device) to the **PWR** port on the back of the MTA 3328-2R, and then plug the power cord into a wall outlet.
 - ♦ **DHCP users:** If your broadband service provider uses DHCP, wait several minutes for the device to initialize. It may

take up to fifteen (15) minutes for the device to download the configuration files.

The MTA 3328-2R is ready when the RUN light is steady.

*Continue to the next section, **Verifying that You Have Internet Connectivity** to make sure that your PC can connect to the Internet.*

- ♦ **Static IP addressing, PPPoE, or MAC address cloning users:** *If your broadband service provider uses one of these connection types, continue with the **Configuring the InnoMedia MTA 3328-2R WAN Interface** section on the next page.*

VERIFYING THAT YOU HAVE INTERNET CONNECTIVITY

To verify that your PC can now access the Internet through the MTA 3328-2R and that your broadband connection is functioning properly, open a Web browser on the PC connected to the MTA 3328-2R, and attempt to connect to a Web site.

- ★ If you are **able** to connect to a Web site successfully, you are now ready to make phone calls with your MTA 3328-2R! For more details on placing and receiving calls, continue to Chapter 3, **Placing Calls**.
- ★ If you are **unable** to connect to a Web site from the PC connected to the MTA 3328-2R, check your cabling and repeat steps 1 through 7 on the previous page.

If you repeated the steps and are still unable to connect to a Web site, contact your service provider.



NOTE: If you are using the alternate configuration as described in this section and would like to connect to the device's Web Management Tool, you must first connect the PC to the MTA 3328-2R's LAN port.

Configuring the MTA 3328-2R WAN Interface

There are four (4) possible methods in which your ISP provides an IP address to the MTA 3328-2R:

- ★ **DHCP addressing** – With this method, the device's IP address parameters are configured automatically when you connect it to your broadband service connection. This is the default setting on the MTA 3328-2R.
- ★ **Static IP addressing** – Using this method, the MTA 3328-2R is assigned a constant IP address.
- ★ **PPPoE** – With PPPoE, a user name and password is configured on the MTA 3328-2R, which then authenticates the user name and password to the broadband service provider.
- ★ **MAC cloning** – Some service providers authenticate from the customer's location via the customer's MAC address (on the PC). MAC cloning allows the user to enter their PC's MAC address in the router (built into the MTA 3328-2R), to successfully authenticate into the service provider.

If you are not sure which connection type applies to your Internet connection, please contact your ISP to determine which type they use.

If your ISP uses DHCP, all you need to do is connect the device and wait for the initialization to complete. Refer to the **Using DHCP Addressing** section below for more details.

If your ISP uses static IP addressing, PPPoE, or MAC address cloning, you will need to configure the MTA 3328-2R according to the specific connection type being used. The steps required to do this are listed below and are explained in more detail in following sections:

1. **Set your PC to use DHCP addressing.**
(This will allow the PC to obtain an IP address from the MTA 3328-2R.)
2. **Log into the Web Management Tool.**

3. **Configure the settings according to the connection type your ISP uses.**
4. **Verify that your PC can access the Internet successfully.**

To begin the configuration process, skip to the **Using the Static IP Addressing, PPPoE, or MAC Address Cloning** section on the next page.

Using DHCP Addressing

DHCP enables individual computers on an IP network to obtain their configurations from a server (the DHCP server). If your ISP uses DHCP addressing and you have a valid Internet connection, the MTA 3328-2R will automatically connect to the provisioning server and download its configuration file as soon as it is connected to the network (steps described above, **Connecting the InnoMedia MTA 3328-2R to a Network**). If it finds a firmware upgrade, it will also automatically install the new version. The **Run** LED will blink quickly to signal that the device is actively provisioning.

If the provisioning process fails, refer to **Appendix A, Troubleshooting and Technical Support**, on page 68 in this Guide.



NOTE: The device will automatically re-connect to this server periodically to check for new configuration or firmware files.

The setup is complete when the **Run** LED is a steady green.

If you need to share the MTA 3328-2R's Internet connection with your PC (i.e., it is connected to the MTA 3328-2R's LAN port), you must configure the PC to access the Internet via the MTA 3328-2R's built-in router. Continue to the **Configuring Your PC for DHCP Addressing** section below.

If you have completed the set-up steps successfully, you are now ready to make phone calls with your MTA 3328-2R! For more details on placing and receiving

calls, continue to Chapter 3, **Placing Calls**, on page 33 in this Guide.

Using Static IP Addressing, PPPoE, or MAC Address Cloning

If your ISP does not use DHCP, you will need to configure the device via the Web Management tool to use another connection method.

Configuring Your PC for DHCP Addressing

In order to connect to the Internet, you must first configure the PC connected to the LAN port to use DHCP so that it can obtain an IP address from the MTA 3328-2R's built-in DHCP server. Once you have done that, you can begin configuring the MTA 3328-2R for your ISP's connection type.

The steps below are an example of how to configure your PC to use DHCP with Windows 2000. The steps may vary for other operating systems.

To configure your PC to connect to the Internet via DHCP addressing:

1. Click the **Start** button on the taskbar in the lower left-hand corner of the screen, and then select **Settings: Control Panel**.
The Control Panel window displays.
2. Double-click the **Network** or **Network and Dial-Up Connections** icon.
The Network or Network and Dial-Up Connections window displays.
3. Right-click the **Local Area Connection** option and select **Properties** from the short-cut menu.
The Local Area Connection Properties window displays.
4. Double-click the **TCP/IP** (or **Internet Protocol TCP/IP**) option.
The TCP/IP Properties window displays.
5. Write down the current settings before making any changes (in case you need to restore your original settings).

6. Click the radio button next to the **Obtain an IP address automatically** option.
7. Click the radio button next to the **Obtain DNS Server address automatically** option.
8. Click the **OK** button to save your changes.
9. Restart the PC.
The PC will automatically obtain an IP address from the MTA 3328-2R's built-in DHCP server.

Once these steps have been completed, it is a good idea to make sure that the IP address has been assigned successfully.

VERIFYING THAT THE PC HAS OBTAINED AN IP ADDRESS

To verify that the PC obtained an IP address:

1. Click the **Start** button and select **Programs: Accessories: Command Prompt**.
A command prompt window displays.
2. At the command prompt, type `ipconfig` and then press the **Enter** key.
The PC's IP address should be within the default range of 192.168.99.100 to 192.168.99.199.
 - ♦ If it does not have an IP address within that range, repeat the steps for **Configuring Your PC for DHCP** above.
3. Close the command prompt window.

Continue with the next section, **Logging into the Web Management Tool**, to configure the MTA 3328-2R.

Logging into the Web Management Tool

Now that your PC has obtained an IP address from the MTA 3328-2R's DHCP server, the next step is to log into the Web Management tool to configure the WAN interface settings.

To log onto the Web Management tool:

1. From a PC connected to the MTA 3328-2R's LAN port, open a Web browser.

2. In the **Address** text box, enter the following IP address to connect to the MTA 3328-2R Web Management Tool:
192.168.99.1
The InnoMedia MTA 3328-2R Web Management login page displays.
3. Enter the user ID **admin** and the password **n2p**, and then click the **OK** button.
The Web Management tool home page (the Device Management: Device Information page) displays.



NOTE: User IDs and passwords are case sensitive.

You are now ready to configure the MTA 3328-2R to use your ISP's connection type. If your ISP uses static IP addressing, continue to the **Using Static IP Addressing** section below.

If your ISP uses PPPoE, refer to the **Using PPPoE** section on page 27 in this Guide. If you need to configure the MTA 3328-2R for MAC address cloning, refer to the **Using MAC Cloning** section on page 30 in this Guide.

Using Static IP Addressing

Now that you have configured your PC to access the Internet via the MTA 3328-2R's built-in router and logged into the Web Management tool site, you are ready to configure the device's WAN interface to use static IP addressing.

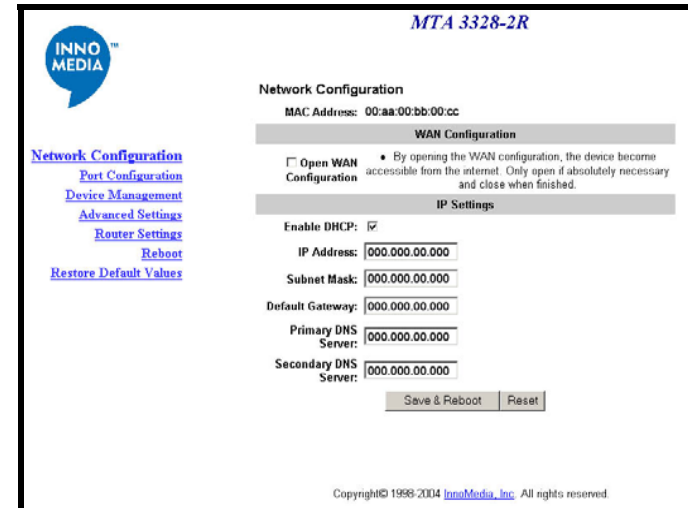
To assign a static IP address to the MTA 3328-2R, contact your broadband service provider and obtain the following information:

- ★ IP address
- ★ Subnet mask
- ★ Default gateway
- ★ Primary DNS server
- ★ Secondary DNS server (if necessary)

Once you have this information, follow the steps below.

To set a static IP address on the MTA 3328-2R:

1. If it is not already on your screen, access the Web Management tool via the Web. Refer to the **Logging into the Web Management Tool** section on page 24 for instructions.
2. Click the **Network Configuration** link on the sidebar menu.
The Network Configuration page displays.



Network Configuration Page

3. Disable DHCP by clicking the **Enable DHCP** checkbox to remove the “x.”
4. In the **IP Address** field, enter the static IP address.
5. In the **Subnet Mask** field, enter the subnet mask value.
6. In the **Default Gateway** field, enter the default gateway address.
7. In the **Primary DNS Server** field, enter the primary DNS server address.
8. In the **Secondary DNS Server** field, enter the secondary DNS server address, if applicable.

9. Click the **Save & Reboot** button.
The settings will be saved and the MTA 3328-2R will restart.



IMPORTANT: After you set up the InnoMedia for the first time, it may take up to fifteen (15) minutes to download the configuration files. During the download process, the device's RUN LED blinks quickly. When the RUN LED stops blinking and remains steady, the download process is complete -- you will now hear a dial tone.

The setup is complete when the **RUN** LED is a steady green.

Continue with the next section to make sure that your PC can connect to the Internet.

VERIFYING THAT YOU HAVE INTERNET CONNECTIVITY

To verify that your PC can now access the Internet through the MTA 3328-2R and that your broadband connection is functioning properly, open a Web browser on the PC connected to the MTA 3328-2R, and attempt to connect to a Web site.

- ★ If you are **able** to connect to a Web site successfully, you are now ready to make phone calls with your MTA 3328-2R! For more details on placing and receiving calls, continue to Chapter 3, **Placing Calls**.
- ★ If you are **unable** to connect to a Web site from the PC connected to the MTA 3328-2R, repeat steps 1 through 9 in the **Using Static IP Addressing** section, starting on page 25.

If you repeated the steps and are still unable to connect to a Web site, contact your service provider.

Using PPPoE

Now that you have configured your PC to access the Internet via the MTA 3328-2R's built-in router and

logged into the Web Management tool site, you are ready to configure the device's WAN interface to use PPPoE.

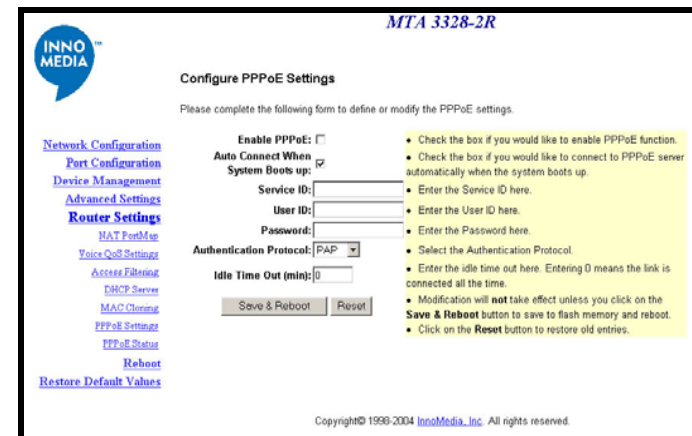
To complete the configuration, you will need to know your PPPoE authentication information (user name and password). If you are unsure about your PPPoE user name and password, contact your service provider to obtain this information.

For more information about the PPPoE Settings page, refer to the **PPPoE Setting** section on page 68 in this Guide.

To configure PPPoE settings:

1. If it is not already on your screen, access the Web Management tool via the Web. Refer to the **Logging into the Web Management Tool** section on page 24 for instructions.
2. In the sidebar menu, click the **Router Settings** link, and then click the **PPPoE Setting** link.

The Configure PPPoE Settings page displays.



Configure PPPoE Settings Page

3. Click the **Enable PPPoE** checkbox to place an "x" in the box and enable the feature.
4. The **Auto Connect When System Boots up** checkbox displays an "x" (enabled) by default. This tells the device to automatically connect

to PPPoE when the device boots. This checkbox must be enabled to ensure connectivity.

5. If your service provider requires a service ID, enter it in the **Service ID** field. If no ID is required (most service providers DO NOT require one), leave this field blank.
6. In the **User ID** field, enter your PPPoE user name.
7. In the **Password** field, enter your PPPoE password.
8. Select the PPPoE **Authentication Protocol** that your service provider uses. Most service providers use PAP. If you are unsure about the protocol to select, contact your service provider.
9. The default value for the **Idle Time Out** field is 0 (zero). This field represents the time limit (in minutes) after which the device will time out. A value of 0 means that the router will remain connected all the time, which is necessary to ensure that incoming calls will be received properly.
10. Click the **Save & Reboot** button to save the settings.
The settings will be saved and the MTA 3328-2R will reboot and automatically connect to PPPoE.



IMPORTANT: After you set up the InnoMedia for the first time, it may take up to fifteen (15) minutes to download the configuration files. During the download process, the device's RUN LED blinks quickly. When the RUN LED stops blinking and remains steady, the download process is complete -- you will now hear a dial tone.

The setup is complete when the **RUN** LED is a steady green.

Continue with the next section to make sure that your PC can connect to the Internet.

VERIFYING THAT YOU HAVE INTERNET CONNECTIVITY

To verify that your PC can now access the Internet through the MTA 3328-2R and that your broadband connection is functioning properly, open a Web browser on the PC connected to the MTA 3328-2R, and attempt to connect to a Web site.

- ★ If you are **able** to connect to a Web site successfully, you are now ready to make phone calls with your MTA 3328-2R! For more details on placing and receiving calls, continue to Chapter 3, **Placing Calls**.
- ★ If you are **unable** to connect to a Web site from the PC connected to the MTA 3328-2R, repeat steps 1 through 10 in the **Using PPPoE** section, starting on page 27.

If you repeated the steps and are still unable to connect to a Web site, contact your service provider.



TIP: If, for any reason, you need to disconnect or reconnect the PPPoE Internet connection, refer to the PPPoE Status section on page 59 in this Guide.

Using MAC Cloning

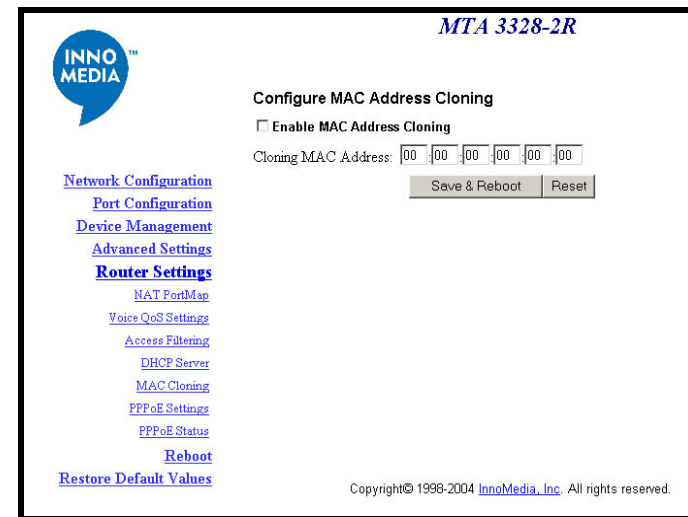
Now that you have configured your PC to access the Internet via the MTA 3328-2R's built-in router and logged into the Web Management tool site, you are ready to configure the device's WAN interface to use MAC address cloning.

Some service providers authenticate from the customer's location via the customer's MAC address (on the PC). MAC cloning allows the user to enter their PC's MAC address in the router (built into the MTA 3328-2R), to successfully authenticate into the service provider.

For more information about the Configure MAC Address Cloning page, refer to the **MAC Cloning** section on page 59 in this Guide.

To configure the MAC cloning feature:

1. If it is not already on your screen, access the Web Management tool via the Web. Refer to the **Logging into the Web Management Tool** section on page 24 for instructions.
2. In the sidebar menu, click the **Router Settings** link, and then click the **MAC Cloning** link.
The Configure MAC Address Cloning Information page displays.



Configure MAC Address Cloning Information Page

3. Click the **Enable MAC Address Cloning** checkbox to place an “x” in the box and enable the feature.
4. In the **Cloning MAC Address** field, enter the MAC address of the PC you want to clone.
5. Click the **Save & Reboot** button to save the settings.
The settings will be saved and the MTA 3328-2R will restart.

Continue with the next section to make sure that your PC can connect to the Internet.

VERIFYING THAT YOU HAVE INTERNET CONNECTIVITY

To verify that your PC can now access the Internet through the MTA 3328-2R and that your broadband connection is functioning properly, open a Web browser on the PC connected to the MTA 3328-2R, and attempt to connect to a Web site from the PC connected to the MTA 3328-2R.

- ★ If you are **able** to connect to a Web site successfully, you are now ready to make phone calls with your MTA 3328-2R! For more details on placing and receiving calls, continue to Chapter 3, **Placing Calls**.
- ★ If you are **unable** to connect to a Web site from the PC connected to the MTA 3328-2R, repeat steps 1 through 5 in the **Using MAC Cloning** section, starting on page 30.

If you repeated the steps and are still unable to connect to a Web site, contact your service provider.

3 Placing Calls

Overview

Placing calls using the InnoMedia MTA 3328-2R is almost as easy as placing a regular phone call – with added benefits. Not only can you place calls to and receive calls from any telephone in the world, you can also communicate with other MTA 3328-2R devices. This chapter offers instructions on placing and receiving different types of calls with the MTA 3328-2R.



This chapter describes how to:

- ★ Place calls using a North American dial plan
- ★ Place calls using all other dial plans

Understanding Dial Plans

Dial plans allow you to dial phone numbers as you normally would from the specified country instead of having to dial as if you are in the United States. When you purchased the VoiceLine service, a dial plan was assigned to your account. That dial plan allows you to dial as you normally do from your PSTN (Public Switched Telephone Network) telephone.

If you have a North America dial plan (US or Canada), refer to the **Calling With a North American Dial Plan** section on the following page.

If you have any other dial plan, refer to the **Calling With a Non-North American Dial Plan** section, on page 35 in this Guide.

Calling with a North American Dial Plan

Calling North American Destinations

To place a call to another North America phone number on your MTA 3328-2R using a North American dial plan:

1. Pick up the telephone handset and listen for a dial tone.



NOTE: If you do not hear a dial tone when you pick up the handset, reboot the device by unplugging it and then plugging it back in. Then check for a dial tone again. If this is unsuccessful, refer to Appendix A for details on troubleshooting.

2. Using your telephone keypad, dial **1 + the area code + the local telephone number**.

For example, if the area code is 212 and the local number is 555-6789, you would dial:
12125556789.

3. When you have finished your call, simply hang up the telephone handset.

Calling International Destinations

To place a call to an international phone number on your MTA 3328-2R using a North American dial plan:

1. Pick up the telephone handset and listen for a dial tone.
2. Using your telephone keypad, dial **011 + the country code + the city code + the local phone number**.

For example, if the country code is 44, the city code is 33 and the local phone number is 555-6789, you would dial:
01144335556789.

3. When you have finished your call, simply hang up the telephone handset.

Calling With a Non-North American Dial Plan

If you obtained your MTA 3328-2R from a distributor, it should already be set up with your local dialing plan.

If you need to change the local dialing plan configuration, contact your distributor or change the settings yourself on www.MyAccountCenter.net.

If you purchased the VoiceLine service with your credit card directly from the Web site, please return to the Web site, click the **Personal Profile** link on the sidebar menu, and then click the **Dial Plan Country & Time Zone** link.

To place a call to any destination on your MTA 3328-2R using a non-North American dial plan:

1. Pick up the telephone handset and listen for a dial tone.
2. Using your telephone keypad, dial the telephone number, as you would on a regular local PSTN telephone line, including all country and city codes.
3. When you have finished your call, simply hang up the telephone handset.

4

Using the Web Management Tool

Overview

The InnoMedia MTA 3328-2R Web Management tool can be used to review the device's settings and configure features.



This chapter describes how to:

- ★ **Log into the Web Management tool**
- ★ **View and/or edit IP settings**
- ★ **View the account number and PIN associated with the device**
- ★ **View and/or edit the forwarding settings**
- ★ **View the device's MAC address and firmware version**
- ★ **Change the user name and/or password**
- ★ **Upgrade the firmware**
- ★ **Enable/disable reverse polarity**
- ★ **Configure the router settings and functions**
- ★ **Reboot the device**
- ★ **Restore the factory defaults**

Logging into the Web Management Tool

By default, the MTA 3328-2R's Web interface and terminal are accessible only from the PC connected to the device's LAN port. Refer to the **Network Configuration** section on page 39 for instructions on opening the WAN interface via the Open WAN Configuration checkbox.



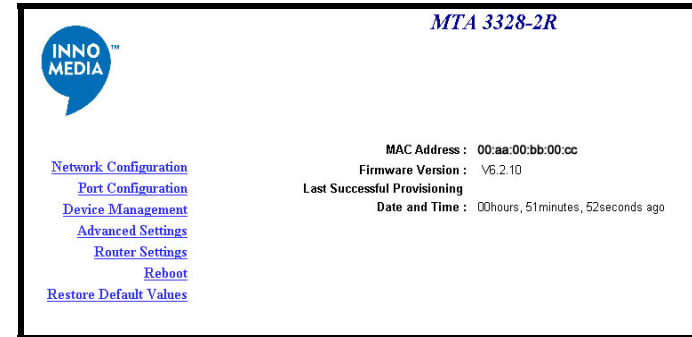
NOTE: If you are using the alternate configuration as described on page 18 in this Guide and would like to connect to the device's Web Management tool, you must first connect the PC to the MTA 3328-2R's LAN port.

To log onto the Web Management tool:

1. From a PC connected to the MTA 3328-2R's LAN port, open a Web browser.
2. In the **Address** text box, enter the following IP address to connect to the MTA 3328-2R Web Management tool:
192.168.99.1
The InnoMedia MTA 3328-2R Web Management login page displays.
3. Enter the user ID **admin** and the password **n2p**, and then click the **OK** button.
The Web Management tool home page (the Device Management: Device Information page) displays.



NOTE: User IDs and passwords are case sensitive.



Web Management Tool Home Page

Configuring the MTA 3328-2R via the Web Management Tool

On the left-hand side of the page, there are seven (7) sidebar menu items:

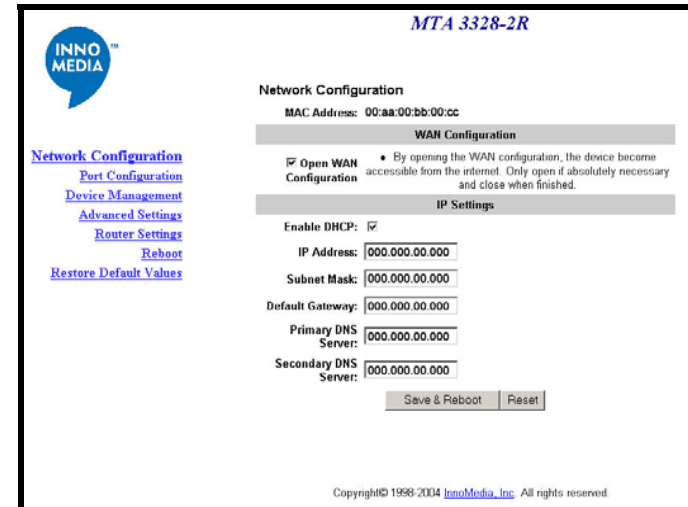
- ★ **Network Configuration**
- ★ **Port Configuration**
- ★ **Device Management**
- ★ **Advanced Settings**
- ★ **Router Settings**
- ★ **Reboot**
- ★ **Restore Default Values**

The sections below describe each menu item and the settings available on each page.

Network Configuration

In the Web Management tool, click the **Network Configuration** link on the sidebar menu on the left-hand side of the page.

The Network Configuration page displays the number that uniquely identifies the device (MAC Address), along with the IP settings that allow the device to connect to the Internet.



Network Configuration Page

This page displays the following information:

- ★ **MAC Address** – the unique ID assigned to your MTA 3328-2R device; you can find the MAC address on the bottom of the device.
- ★ **Open WAN Configuration** – when this checkbox has an “x,” the WAN port is opened, and the device can be accessed from the Internet (default is closed – no “x”).



IMPORTANT: If you open the WAN port, you can determine the IP address to connect to by picking up the telephone handset connected to the MTA 3328-2R and pressing ***1 on the telephone keypad. The system will announce the WAN IP address.



IMPORTANT: If you open the WAN configuration, which makes the device accessible from the Internet, it is recommended that you change the default user name and password.

- ★ **Enable DHCP** – when this checkbox has an “x,” DHCP is enabled (default setting); to disable DHCP (e.g., when using static IP addressing), click the check box to remove the “x.”
- ★ **IP Address** – displays the IP address obtained by the device (if DHCP is enabled) or the static IP address you assigned (if DHCP is disabled).
- ★ **Subnet Mask** – displays the current subnet mask value associated with the device's IP address.
- ★ **Default Gateway** – displays the default gateway obtained by the device (if DHCP is enabled) or assigned to the device (if using static IP addressing, PPPoE, or MAC cloning).
- ★ **Primary DNS Server** – allows you to enter a primary DNS address if you are specifying an IP address or displays what was obtained via DHCP.
- ★ **Secondary DNS Server** – allows you to enter a secondary DNS address if you are specifying an IP address or displays what was obtained via DHCP.

There are two buttons at the bottom of the page:

- ★ **Save & Reboot** – saves any changes you made to the values on the Network Configuration page and reboots the device.
- ★ **Reset** – resets the values on the Network Configuration page to the previously saved settings; if you edit one or more fields without saving your changes and then click the **Reset** button, the edits will disappear and the previously saved settings will return.

Port Configuration

In the Web Management tool, click the **Port Configuration** link on the sidebar menu on the left-hand side of the page.

When the Port Configuration page opens, the sidebar menu displays two sub-menu items:

- Port 1
- Port 2

This page displays basic information about your ports and allows you to set up the forwarding feature. With this feature, you can set that port to automatically dial a defined phone number when the handset is picked up (i.e., taken off the hook).

The page displays Port 1 settings by default. To view settings for Port 2, click the **Port 2** link in the Port Configuration sub-menu on the sidebar menu on the left-hand side of the page.

MTA 3328-2R

Port Configuration

Port Number: 1

Account Number: 9876543210

PIN:

Confirm PIN:

Use Forwarding Number: No

Forwarding Number:

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Port Configuration Page



NOTE: When you enable the forwarding feature and enter a phone number in the Forwarding Number field, that number will be dialed each time you pick up the VoiceLine-connected phone from the hook.

This page displays the following information:

- ★ **Line Number** – indicates which port settings are displayed on the page: 1 or 2.
- ★ **Account Number** – displays the account number associated with the port.
- ★ **PIN** – hidden for security purposes.

- ★ **Use Forwarding Number** – forwards all calls to the designated phone number when you pick up the phone from the hook.
 - if the value is **No**, the feature is disabled
 - if the value is **Yes**, the feature is enabled.
- ★ **Forwarding Number** – allows you to enter the telephone number to which all calls should be forwarded when you pick up the phone from the hook (when **Use Forwarding Number = Yes**)

For example, if you enable the forwarding feature and then enter your friend's phone number as the **Forwarding Number**, each time you pick up the phone, the phone will automatically dial your friend's number.

There are two buttons on this page:

- ★ **Save** – saves any changes you made to the values on the Port Configuration page.
- ★ **Reset** – resets the values on the Port Configuration page to the previously saved settings; if you edit one or more fields without saving your changes and then click the **Reset** button, the edits will disappear and the previously saved settings will return.

Device Management

In the Web Management tool, click the **Device Management** link on the sidebar menu on the left-hand side of the page.

When the Device Management page opens, the sidebar menu displays three (3) sub-menu items:

- ★ Device Information
- ★ Username and Password
- ★ Firmware Version

The page displays the first sub-menu item page, Device Information, by default. To switch to one of the other sub-menu items, just click the desired item in the Device Management sub-menu on the sidebar menu.



NOTE: The Device Information page is the same page that displays upon logging into the Web Management tool.

Device Information

This page displays basic information about the device, its firmware, and the most recent provisioning attempt.

MTA 3328-2R

INNO MEDIA

[Network Configuration](#)
[Port Configuration](#)
[Device Management](#)
[Advanced Settings](#)
[Router Settings](#)
[Reboot](#)
[Restore Default Values](#)

MAC Address : 00:aa:00:bb:00:cc
Firmware Version : V6.2.10
Last Successful Provisioning Date and Time : 00hours, 51minutes, 52seconds ago

Device Management: Device Information Page

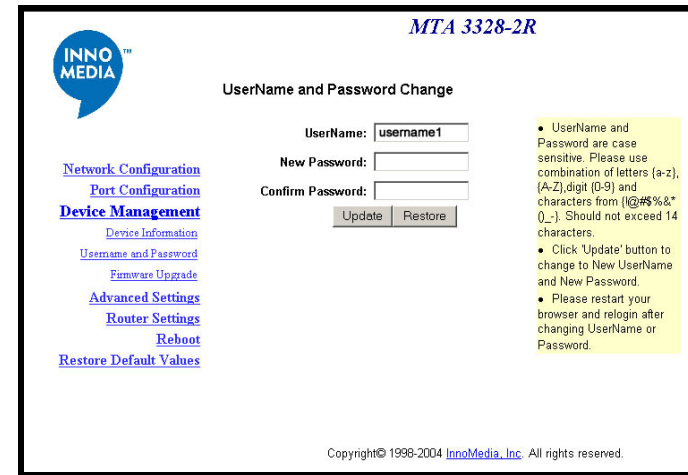
This page displays the following information:

- ★ **MAC Address** – the unique ID assigned to your MTA 3328-2R device; you can find the MAC address on the bottom of the device.
- ★ **Image Version** – the version of the firmware on the device.
- ★ **Last Successful Provisioning Date and Time** – indicates the date and time of the device's most recent successful attempt to download configuration files; if the most recent attempt failed, the field will display, "Last provisioning failed."

Username and Password

This page allows you to change the user name and/or password associated with the device.

The pale yellow box on the right-hand side of the page contains guidelines for changing your user name and password.



Device Information: Username and Password Page

This page displays the following information:

- ★ **UserName** – allows you to change the user name assigned to the device.
- ★ **New Password** – allows you to assign a new password to the user name in the field above.
- ★ **Confirm Password** – confirms the new password by having you enter it a second time.

There are two buttons on this page:

- ★ **Update** – saves the new user name and/or password in the fields above.
- ★ **Restore** – resets the values on the Username and Password page to the previously saved settings.

To change the user name:

1. On the Username and Password page, click in the **UserName** field.
2. Enter the new user name you would like to assign to the device.
3. Click the **Update** button.
The new user name is saved. Remember to use the new user name the next time you log into the Web Management tool.



NOTE: After you change the user name and click the **Update** button, you may need to close your Web browser window, re-open it, and log in again to the Web Management tool. Refer to the **Logging into the Web Management Tool** section on page 24 in this Guide.

To change the password:

1. On the Username and Password page, click in the **New Password** field.
2. Enter the new password you would like to assign to the user name.
3. Confirm the new password by re-typing it in the **Confirm Password** field.
4. Click the **Update** button.
The new password is saved. Remember to use the new password the next time you log into the Web Management tool.



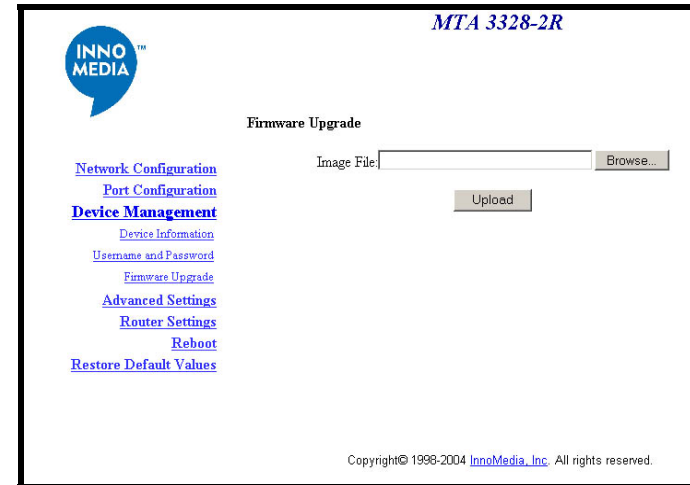
NOTE: After you change the password and click the **Update** button, you may need to close your Web browser window, re-open it, and log in again to the Web Management tool. Refer to the **Logging into the Web Management Tool** section on page 24 in this Guide.

Firmware Upgrade

The InnoMedia MTA 3328-2R performs firmware upgrades automatically. The device compares the firmware version on the device against the one on the provisioning servers. If it finds a more recent version on the servers, the device will wait until active calls are cleared from the device and will download and install the upgrade.



IMPORTANT: ONLY use the **Firmware Upgrade** link on the Web management tool (in the **Device Management** sub-menu) if directed to by technical support.



Device Management: Firmware Upgrade Page

To upgrade the firmware:

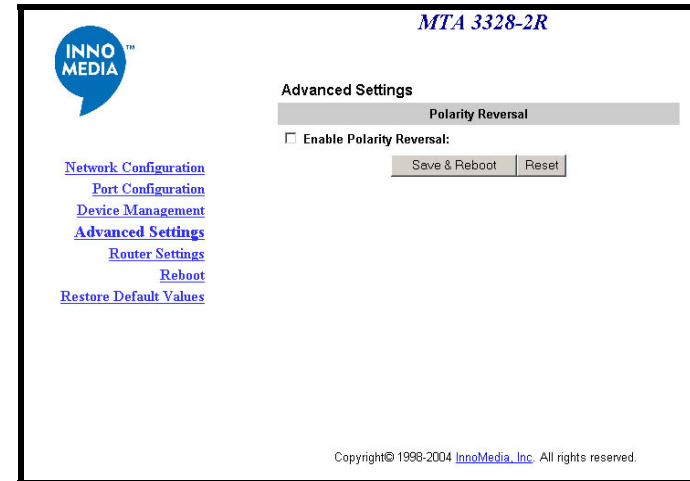
1. Obtain the upgrade file from technical support or your service provider.
2. On the Firmware Upgrade page, click the **Browse** button.
A Choose file dialog box displays.
3. Navigate to the upgrade file on your PC and click on it to select it.
4. Click the **Open** button.
The file name appears in the Image File box.
5. Click the **Upload** button.
The upgrade file is installed.

Advanced Settings

In the Web Management tool, click the **Advanced Settings** link on the sidebar menu on the left-hand side of the page.

This page allows you to control the device's reverse polarity feature, which connects the MTA 3328-2R to a billing machine that uses reverse polarity to determine

the start and end of a call. The billing machine receives a "reverse polarity signal" from the MTA 3328-2R that indicates when the call has started (and will start billing) and when it ends (and will stop billing).



Advanced Settings Page

This page displays the following information:

- ★ **Enable Polarity Reversal** – when this checkbox has an "x," the polarity reversal feature is enabled (default is disabled); to enable polarity reversal, click the check box so an "x" appears.

There are two buttons on this page:

- ★ **Save & Reboot** – saves any changes you made to the values on the Advanced Settings page and reboots the device.
- ★ **Reset** – resets the values on the Advanced Settings page to the previously saved settings; if you edit one or more fields without saving your changes and then click the **Reset** button, the edits will disappear and the previously saved settings will return.

Router Settings

In the Web Management tool, click the **Router Settings** link on the sidebar menu on the left-hand side of the page.


When the Router Settings page opens, the sidebar menu displays seven (7) sub-menu items:

- ★ **NAT PortMap**
- ★ **Voice QoS Settings**
- ★ **Access Filtering**
- ★ **DHCP Server**
- ★ **MAC Cloning**
- ★ **PPPoE Setting**
- ★ **PPPoE Status**

When you click on **Router Settings**, the Device Information page displays by default. To switch to one of the other sub-menu items, just click the desired item in the Router Settings sub-menu on the sidebar menu.

NAT PortMap

Port mapping is an advanced configuration in which the router forwards incoming requests to its WAN port to the PC connected to its LAN port. You will need to determine which type of service or application you will provide and the IP address of the PC that will provide each service. This feature only works with a static IP assigned to the PC connected to the LAN port.


MTA 3328-2R

Configure NAT Port Map Database

Please complete the following form to add, update, and delete entries in the NAT Port Map database.

Delete	External Source Port	Protocol	Internal Source IP	Internal Source Port	Application
<input type="checkbox"/>	<input type="text"/>	UDP	<input type="text"/>	<input type="text"/>	[User Defined]
<input type="checkbox"/>	<input type="text"/>	UDP	<input type="text"/>	<input type="text"/>	[User Defined]
<input type="checkbox"/>	<input type="text"/>	UDP	<input type="text"/>	<input type="text"/>	[User Defined]
<input type="checkbox"/>	<input type="text"/>	UDP	<input type="text"/>	<input type="text"/>	[User Defined]
<input type="checkbox"/>	<input type="text"/>	UDP	<input type="text"/>	<input type="text"/>	[User Defined]

- Enter a new entry in any empty entry.
- Select an Application to set the default Port and Protocol.
- Check the box to the left of an entry and click **Save** to delete the entry.
- An example of Internal source IP address is 90.0.0.20.
- Modification will **not** take effect unless you click on the **Save** button to save to flash memory.
- Click on the **Reset** button to restore old entries.

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Network Configuration

- [Port Configuration](#)
- [Device Management](#)
- [Advanced Settings](#)
- [Router Settings](#)**
- [NAT PortMap](#)
- [Voice QoS Settings](#)
- [Access Filtering](#)
- [DHCP Server](#)
- [MAC Cloning](#)
- [PPPoE Settings](#)
- [PPPoE Status](#)
- [Reboot](#)
- [Restore Default Values](#)

Router Settings NAT Port Map Page

This page displays a form that asks for the following information:

- ★ **External Source Port** – the port (on the WAN side) on which the request will come in.
- ★ **Protocol** – the protocol type (TCP or UDP) of the request.
- ★ **Internal Source IP** – the internal IP address to which the MTA 3328-2R should forward the request.
- ★ **Internal Source Port** – the internal port to which the MTA 3328-2R should forward the request.
- ★ **Application** – the application type of the incoming request; if unknown, it can remain user-defined.

CONFIGURING NAT PORT MAPPING

To configure NAT port mapping:

1. If it is not already on your screen, access the Web Management tool via the Web. Refer to the **Logging into the Web Management Tool** section on page 24 for instructions.
2. In the sidebar menu, click the **IP Network** link, and then click the **NAT PortMap** link.
The Configure NAT Port Map Database page displays.
3. In the **External Source Port** field, enter the port number that you would like to redirect to another unit.
4. Click the **Protocol** drop-down menu and select either **TCP** or **UDP**.
5. In the **Internal Source IP** field, enter the IP address of the PC that is running the application that uses this source port and protocol.
6. In the **Internal Source Port** field, enter the port to which you would like to send the request. If the application or service only uses

one port, the **Internal Source Port** will be the same as the **External Source Port**.

7. Click the **Save** button to save the settings.

For example, if you have a Web server that is listening on port 80 with an IP address of 192.168.99.5 and is connected to the MTA 3328-2R's LAN port, you would enter the following values:

- ★ **External Source Port:** 80
- ★ **Protocol** (drop-down menu): TCP
- ★ **Internal Source IP:** 192.168.99.5
- ★ **Internal Source Port:** 80
- ★ **Application** (drop-down menu): HTTP

In this scenario, when any Web requests arrive at the WAN IP address, the MTA 3328-2R will automatically forward them to the Web server at 192.168.99.5.

DELETING A PORT MAPPING ENTRY

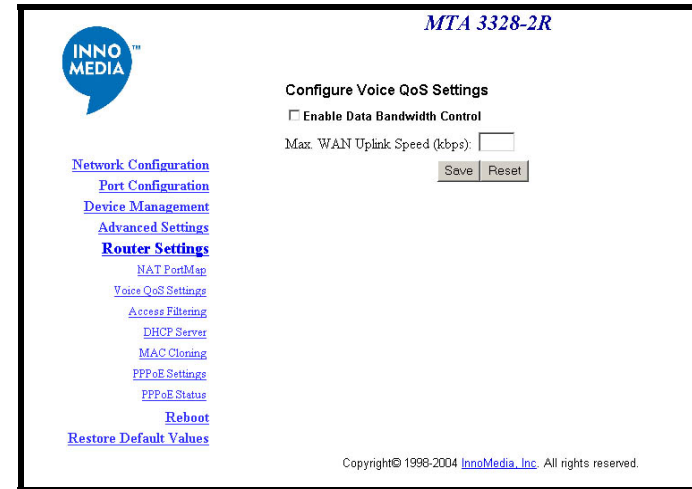
To delete a mapping entry, click the checkbox in the corresponding **Delete** column (so that an "x" appears), and then press the **Save** button.

Voice QoS Settings

Voice QoS (Quality of Service) settings allow you to designate the amount of bandwidth available on the InnoMedia's uplink ports. This can be helpful to control the bandwidth to prevent data clogging, thus preserving voice quality. This feature is only effective if the MTA 3328-2R detects the presence of voice calls.

For example, if you have a 1.5Mbps connection for downloads and 340K for uploads, and you enter 200 in the **Max. WAN Uplink Speed** field, the MTA 3328-2R will maximize the uploaded data transfer rate at 200K. If you are using the highest bandwidth setting available for voice calls and then make a phone call, you use 90K, leaving 110K of upload bandwidth available for data.

This feature is useful for heavy data or limited bandwidth users. These users can set the QoS value so that if there is heavy data traffic, the router (or ADSL modem) will not get clogged by the data, which would compromise the voice quality.



Router Settings Voice QoS Settings Page

This page displays the following information:

- ★ **Enable Data Bandwidth Control** – enables the uplink data bandwidth control feature, which limits the amount of bandwidth available on the MTA 3328-2R's uplink ports.
- ★ **Max. WAN Uplink Speed (kbps)** – the maximum speed that uploaded data can be transferred; this prevents data transmissions from clogging the device and thereby compromising the voice quality.

There are two buttons on this page:

- ★ **Save** – saves any changes you made to the values on the Voice QoS Settings page.
- ★ **Reset** – resets the values on the Voice QoS Settings page to the previously saved settings; if you edit one or more fields without saving your changes and then click the **Reset** button, the edits will disappear and the previously saved settings will return.

CONFIGURING THE VOICE QoS SETTINGS

To configure the Voice QoS settings:

1. If it is not already on your screen, access the Web Management tool via the Web. Refer to

the **Logging into the Web Management Tool** section on page 24 for instructions.

2. In the sidebar menu, click the **IP Network** link, and then click the **Voice QoS Settings** link. *The Configure Voice QoS Settings page displays.*
3. Click the **Enable Data Bandwidth Control** checkbox to place an “x” in the box and enable the feature.
4. In the **Max. WAN Uplink Speed (kbps)** field, enter the maximum speed for uploaded data.
5. Click the **Save** button to save the settings.

Access Filtering

Access filtering is a feature designed to help you regulate the access of internal PCs to the outside Internet. It is useful when you want to block access to certain Web sites or addresses or limit access to specific Web sites for individual PCs that are connected to the MTA 3328-2R.

The MTA 3328-2R offers two ways to control the access available to your internal PCs:

- ★ **IP Filtering** – Allows you to block access to specific ports and protocols from the PCs connected to the MTA 3328-2R's LAN port. This is useful if you want to prevent access to certain services, such as Web browsing or FTP. This filtering can be assigned per PC or to a range of PCs.
- ★ **Domain Filtering** – Allows you to block or allow access to specific domains and Web sites. This is useful for controlling access to certain Web addresses. This is a global setting that applies to all PCs connected to the MTA 3328-2R's LAN port.

There are two buttons on this page:

- ★ **Save** – saves any changes you made to the values on the IP Filtering page.
- ★ **Reset** – resets the values on the IP Filtering page to the previously saved settings; if you edit one or more fields without saving your

changes and then click the **Reset** button, the edits will disappear and the previously saved settings will return.

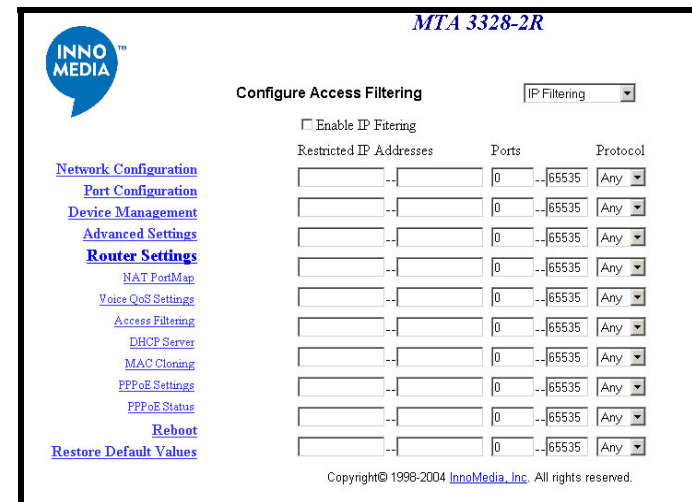
CONFIGURING IP FILTERING

This feature allows you to block access to specific ports and protocols.

To configure IP filtering:

1. From a PC connected to the MTA 3328-2R's LAN port, open a Web browser and connect to the MTA 3328-2R Web Management tool.
2. In the sidebar menu, click the **Router Settings** link, and then click the **Access Filtering** link.

The Configure Access Filtering page displays, with IP Filtering in the drop-down menu at the top of the page.



Configure Access Filtering Page

3. Click the **Enable IP Filtering** checkbox to place an “x” in the box and enable the feature.
4. In the first available field under the **Restricted IP Addresses** column, enter the IP address or range of IP addresses of the PC(s) that you would like to block from accessing the port(s).

5. In the **Port** column of the same row as the IP address you entered, specify the port or range of ports that you would like to block.
6. In the **Protocol** column, select the protocol that is used on the ports you would like to block.
7. Repeat steps 3 through 5 for all additional PCs you would like to block from a particular port.
8. Click the **Save** button to save the settings.

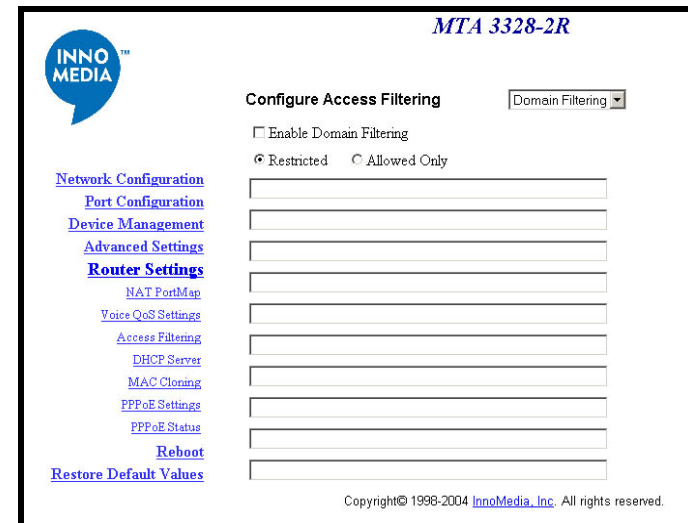
CONFIGURING DOMAIN FILTERING

This feature allows you to block or allow access to certain domains for the PC connected to the MTA 3328-2R's LAN port.

To configure domain filtering:

1. From a PC connected to the MTA 3328-2R's LAN port, open a Web browser and connect to the MTA 3328-2R Web Management tool.
2. In the sidebar menu, click the **Router Settings** link, and then click the **Access Filtering** link.

The Configure Access Filtering page displays.



Configure IP Filtering Page

3. In the drop-down field at the top of the page, change the value from **IP Filtering** to **Domain Filtering**.
4. Click the **Enable Domain Filtering** checkbox to place an "x" in the box and enable the feature.
5. Select the radio button for the function you would like to enable.

- **Restricted** – allows you to specify the domain or domains to which you would like to block access for PCs connected to the MTA 3328-2R's LAN port; ALL domains listed will be inaccessible.

Click this radio button to enable this feature and block certain domains.

- **Allowed Only** – allows you to designate the specific domain or domains to which you are granting access for PCs connected to the MTA 3328-2R's LAN port; ONLY those domains on the list are accessible.

Click this radio button to enable this feature and allow only specific domains.



NOTE: These options are mutually exclusive. You cannot enable both at the same time.

6. Enter the specific domains you are blocking or allowing.
 - If you selected the **Restricted** radio button, enter a single domain name in each text box for all of the domains you would like to block.

For example, to block the PCs connected to the MTA 3328-2R's LAN port from connecting to www.yahoo.com, select the **Restricted** radio button, and enter www.yahoo.com in the text box.

- If you selected the **Allowed Only** radio button, enter a single domain name in each text box for the only domains you would like to allow.

For example, to grant users access to www.yahoo.com ONLY (no other Web sites), select the **Allowed Only** radio button, and enter www.yahoo.com in the text box.

7. Click the **Save** button to save the settings.



NOTE: All settings changes made on the Domain Filtering page will apply globally to all PCs connected to the MTA 3328-2R's LAN port.

DHCP Server

The MTA 3328-2R has a DHCP Server function that assigns IP addresses to a PC or PCs connected to the MTA 3328-2R's LAN port. It is recommended that you retain the default settings for the DHCP server.

By default, the MTA 3328-2R assigns IP addresses in the range of 192.168.99.100 to 192.168.99.199. To change the range of IP addresses assigned, enter the lowest and highest IP addresses in the appropriate fields. See the instructions below.

To configure the DHCP Server function:

1. From a PC connected to the MTA 3328-2R's LAN port, open a Web browser and connect to the MTA 3328-2R Web Management tool.
2. In the sidebar menu, click the **Router Settings** link, and then click the **DHCP Server** link.
The Configure DHCP Server Information page displays.

MTA 3328-2R

Configure DHCP Server Information

Please complete the following form to define or modify the DHCP server configuration.

Enable the DHCP Server:

The lowest IP address: 192.168.99.100

The highest IP address: 192.168.99.199

Subnet Mask: 000.000.00.000

Default Router address: 000.000.00.000

Primary DNS Server: 000.000.00.000

Secondary DNS Server: 000.000.00.000

Default Lease Time: 1 Week

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- Check the box if you need to enable DHCP server.
- The lowest IP address of a range of IP address (es) that will be associated with a particular configuration.
- The highest IP address of a range of IP address (es) that will be associated with a particular configuration.
- Subnet mask to be present to the client.
- Default Router IP address that the client should add to its routing table. This is also the address of the device's web configuration page.
- Primary DNS IP address that the client should add to its routing table.
- Secondary DNS IP address that the client should add to its routing table.
- Default lease time for the binding that client will use.
- Modification will **not** take effect unless you click on the **Save & Reboot** button to save to flash memory and reboot.
- Click on the **Reset** button to restore old entries.

Configure DHCP Server Information Page

3. The **Enable DHCP Server** feature is enabled (an “x” appears in the checkbox) by default. If you want to disable the feature, remove the “x” by clicking the box. When disabled, the server will not assign IP addresses to PCs connected to the MTA 3328-2R’s LAN port.
4. In **The lowest IP address** and **The highest IP address** fields, enter the lowest and highest addresses that define the range that will be assigned. The default values are 192.168.99.100 for the lowest and 192.168.99.199 for the highest.
5. Enter the **Subnet Mask** for the device.
6. The **Default Router address** is the IP address you can use to connect to the device from the Web browser (via the Web Management tool) and the default gateway for PCs connected to the MTA 3328-2R’s LAN port. The default value for the field is 192.168.99.1.



NOTE: If you change the device’s IP address in the Default Router address field, you must:

- ♦ **restart the PC connected to the LAN port so it obtains new IP settings with the new gateway, and**
- ♦ **use the new IP address when connecting to the device via the Web browser.**

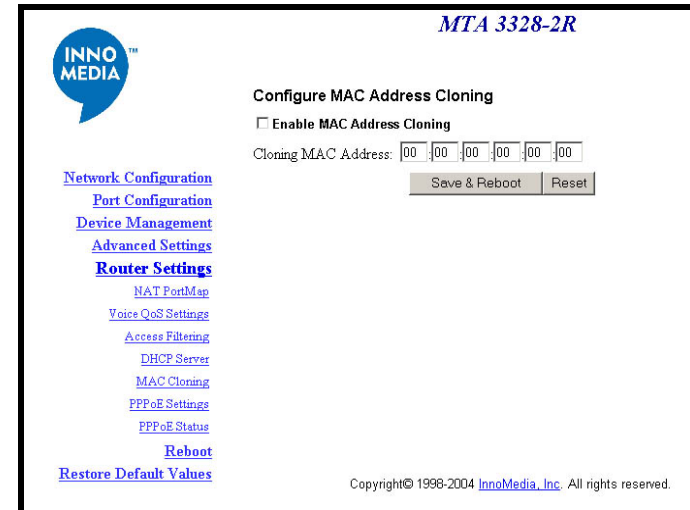
7. Enter the **Primary** and **Secondary DNS address** information. The primary and secondary servers are obtained from the WAN configuration of the device.
8. The **Default Lease Time** is the length of time a PC is allowed to keep its IP address before it must request a new one from the MTA 3328-2R.

Click the drop-down menu and select the desired time. The default value is **1 Week**. The options are:

- 1 Week
 - 3 Days
 - 2 Days
 - 1 Day
 - 8 Hours
 - 3 Hours
 - 2 Hours
 - 1 Hour
9. Click the **Update and Reboot** button to save the settings.
The settings will be saved and the MTA 3328-2R will restart.

MAC Cloning

Some service providers authenticate from the customer's location via the customer's MAC address (on the PC). The Configure MAC Address Cloning page allows the user to enter their PC's MAC address in the router (built into the MTA 3328-2R), to successfully authenticate into the service provider.



Configure MAC Address Cloning Information Page

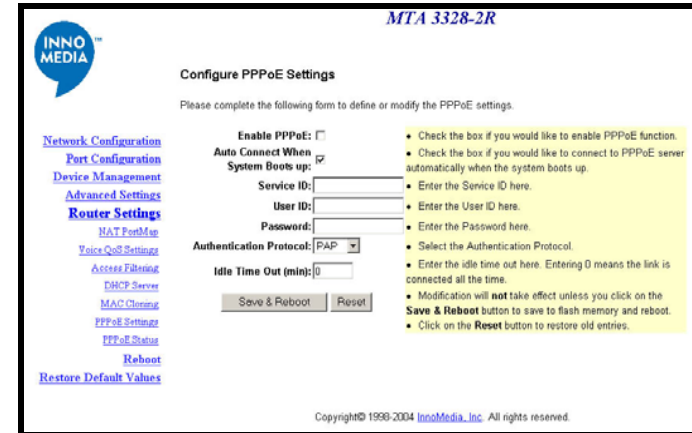
This page displays the following information:

- ★ **Enable MAC Address Cloning** – when this checkbox has an “x,” the MAC address cloning feature is enabled (the default is disabled); to enable, click the checkbox so an “x” appears.
- ★ **Cloning MAC Address** – when MAC address cloning is enabled, this field contains the PC’s MAC address to allow successful authentication into the service provider.

To configure MAC Cloning settings, refer to the **Using MAC Cloning** section on page 30 in this Guide.

PPPoE Setting

This page allows you to define PPPoE settings, based on your service provider’s information.



Configure PPPoE Settings Page

This page displays the following information:

- ★ **Enable PPPoE** – when this checkbox has an “x,” the PPPoE feature is enabled (the default is disabled); to enable, click the checkbox so an “x” appears.
- ★ **Auto Connect When System Boots up** – when this checkbox has an “x,” the auto connect feature is enabled (the default is enabled) and the device automatically connects to PPPoE when the device boots; to disable, click the checkbox so the “x” disappears.
- ★ **Service ID** – some service providers require a service ID to connect; if no ID is required (most service providers DO NOT require one), the field can remain blank.
- ★ **User ID** – allows you to enter your PPPoE user name.
- ★ **Password** – allows you to enter your PPPoE password.
- ★ **Authentication Protocol** – allows you to select the protocol your service provider uses; most ISPs use PAP, but you can contact your service provider to find out what they use.
- ★ **Idle Time Out (min)** – represents the time limit (in minutes) after which the device will

time out; the default value is 0 (zero), which means that the router will remain connected all the time, which is necessary to ensure that incoming calls will be received properly.

To configure PPPoE settings, refer to the **Using PPPoE** section on page 27 in this Guide.

PPPoE Status

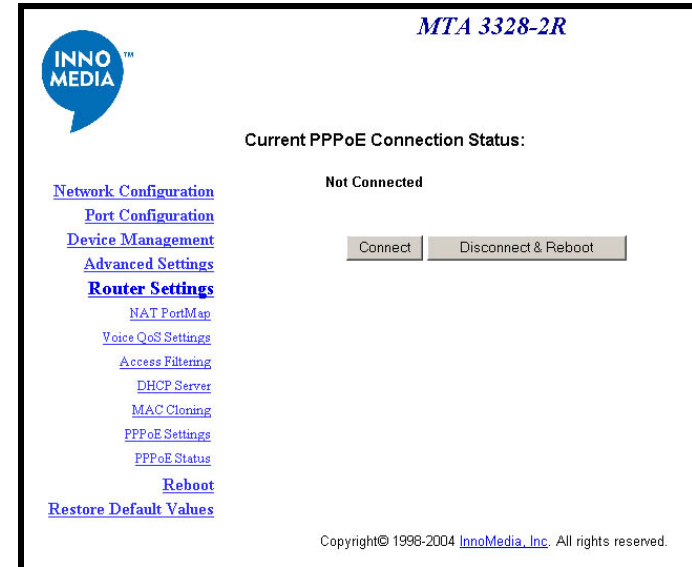
When you turn on the MTA 3328-2R and you configure the device to use PPPoE, it will normally connect to the broadband connection automatically using PPPoE. This page allows you to manually disconnect and/or reconnect to PPPoE. It also displays your PPPoE connection status, which may be useful for Troubleshooting.

DISCONNECTING AND/OR RECONNECTING TO PPPoE

To manually disconnect and/or reconnect to the PPPoE connection:

1. If it is not already on your screen, access the Web Management tool via the Web. Refer to the **Logging into the Web Management Tool** section on page 24 for instructions.
2. In the sidebar menu, click the **Router Settings** link, and then click the **PPPoE Status** link.

The Configure PPPoE Connection Status page displays the current connection status.



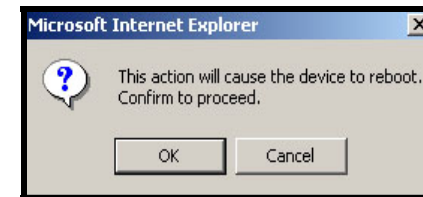
Configure PPPoE Connection Status Page

3. You may now disconnect or connect your PPPoE connection.
 - ◆ To disconnect the PPPoE connection, click the **Disconnect & Reboot** button.
 - ◆ To connect via PPPoE, click the **Connect** button.

Reboot

In the Web Management tool, click the **Reboot** link on the left-hand side of the page.

When you click the **Reboot** link, a dialog box will appear to confirm that you would like to reboot the device. If you would like to reboot, click the **OK** button; if you do not want to reboot, click the **Cancel** button.

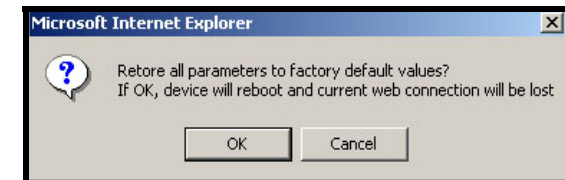


Reboot Dialog Box

Restore Default Values

In the Web Management tool, click the **Restore Default Values** link on the sidebar menu on the left-hand side of the page.

When you click the **Restore Default Values** link, a dialog box will appear to confirm that you would like to reset all parameters to the factory default values. If you would like to restore the default values, click the **OK** button; if you do not want to restore the default values, click the **Cancel** button.



Restore Default Values Dialog Box



IMPORTANT: You should not restore default values unless instructed to do so by technical support personnel.

5

VoiceLine Features

Overview

If you subscribe to the VoiceLine service, you may have access to some or all of the following features:

- ★ 3-Way Calling
- ★ Account Balance Announcement
- ★ Call Blocking
- ★ Call Forwarding
- ★ Call Hold
- ★ Call Return
- ★ Call Waiting
- ★ Caller ID
- ★ Redial
- ★ VoiceMail

To find out which features are available to you and how to use them, please contact your service provider for the **VoiceLine User's Guide**.

6

Appendices

The Appendices include the following sections:

- ★ Appendix A – Troubleshooting and Technical Support
- ★ Appendix B – Approvals and Listings
- ★ Appendix C – End User Warranty

Appendix A – Troubleshooting & Technical Support

If there appears to be a malfunction, first check all cables and connections. If these appear to be in order, see the following table for specific troubles and solutions.

SYMPTOM: The Run LED is blinking slowly.

The device is unable to provision or register with the call servers.

CORRECTIVE ACTION

- ♦ Reboot the device by unplugging the power cord and then plugging it back in.
- ♦ Verify that the device obtained an IP address by picking up the connected telephone's handset and pressing ***1 on the keypad.
If it announces "0.0.0.0" as the IP address, the device did not get an IP address. Contact your ISP.
- ♦ Verify also that your ISP uses DHCP and that there is no network service outage.

SYMPTOM: There is no dial tone.

The device is not logging into the call servers.

CORRECTIVE ACTION

After you set up the InnoMedia MTA 3328-2R for the first time, it may take up to 15 minutes to download the configuration files onto the device. During this download process, the MTA 3328-2R's RUN LED blinks quickly. When the RUN LED stops blinking and remains steady, the download process is complete – you will now hear a dial tone.

If it has been over 15 minutes since you set up the InnoMedia MTA 3328-2R and you still do not hear a dial tone:

- ♦ Verify that your phone is connected to the correct port on the MTA 3328-2R.

- ♦ Verify that the device obtained an IP address by picking up the connected telephone's handset and pressing *****1** on the keypad. If it announces "0.0.0.0" as the IP address, the device did not get an IP address. Contact your ISP.
- ♦ Verify that your broadband connection is functioning properly by attempting to connect to a Web site from a PC on the same network.
- ♦ Verify that there are sufficient funds in the account.
- ♦ Try connecting another phone (one that you are certain works properly) to see if the phone you are using is faulty.

SYMPTOM: I hear a fast busy signal when I try to make a call.

CORRECTIVE ACTION

- ♦ Make sure you are dialing according to the Dial Plan Country assigned to your account. (The Dial Plan Country was assigned when the account was created.) For example, if your Dial Plan Country is the U.S., you should dial in the U.S. format: **1 + area code + telephone number**. If the "1" prefix is omitted, the call will not go through.
- ♦ Verify that there are funds in the account.
- ♦ Verify that your broadband connection is functioning properly by attempting to connect to a Web site from a PC on the same network.
- ♦ Verify that the device obtained an IP address by picking up the connected telephone's handset and pressing *****1** on the keypad. If it announces "0.0.0.0" as the IP address, the device did not get an IP address. Contact your broadband service provider.

SYMPTOM: The Call Waiting Caller ID feature is not working.

CORRECTIVE ACTION

Please note that you must have a telephone or Caller ID display box that supports the Call Waiting Caller ID feature.

SYMPTOM: I hear a fast busy signal when I try to make a call.

CORRECTIVE ACTION

- ♦ Make sure you are dialing according to the Dial Plan Country assigned to your account. (The Dial Plan Country was assigned when the account was created.) For example, if your Dial Plan Country is the U.S., you should dial in the U.S. format:

1 + area code + phone number

If the "1" prefix is omitted, the call will not go through.

To change the Dial Plan Country assigned to your account, log onto

www.myaccountcenter.net. If you purchased VoiceLine with your credit card directly from the Web site, please return to the Web site and edit your dial plan there.

- ♦ Verify that there are sufficient funds in the account.
- ♦ Verify that your broadband connection is functioning properly by attempting to connect to a Web site from a PC on the same network.
- ♦ Verify that the device obtained an IP address by picking up the connected telephone's handset and pressing *****1** on the keypad. If it announces "0.0.0.0" as the IP address, the device did not get an IP address. Contact your ISP.

If the problem you are experiencing remains unresolved, please contact your distributor for assistance.

Appendix B – Approvals and Listings

FCC Declaration of Conformity

- ★ Product name: **InnoMedia MTA 3328-2R**
- ★ FCC Rules: Tested to comply with FCC part 15, Class B
- ★ Operating environment: for office use

FCC Compliance Statement:

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



NOTE: Important! Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment. Use with an approved telephone set.

Appendix C – End User Warranty

This product is warranted to be free from manufacturing defects including original parts and workmanship for a period of one year from the date of original purchase. Should you find your unit is not operating properly during the one-year term of this warranty, you should contact your original place of purchase. Please do not contact InnoMedia directly.

Providing the manufacturing defect is verified along with the date of purchase, and at the manufacturer's discretion, the defective unit will be repaired or replaced with either a new, refurbished, or equivalent model at no charge for up to one year from the date of original purchase.

The end-user should delete all personal account information from the product, as provided in the owner's manual, before returning the product to the distributor for repair or replacement.

This warranty is void if the product is:

- A) Damaged through negligence, abuse, misuse, accident, or acts of God.
- B) Modified or repaired by anyone other than an expressly authorized representative.
- C) Damaged resulting from the improper connection to equipment of other manufacturers.

This warranty does not cover:

- A) Costs incurred in the shipping of the product to and from the original place of purchase.
- B) Damage or improper operation caused by the failure to follow the operating instructions provided with this product.
- C) Routine adjustments to the product, which can be performed by the end-user as outlined in the owner's manual.
- D) Communication problems caused by external factors such as insufficient bandwidth or arising from the Internet service used by the end-user.

THIS WARRANTY IS NON-TRANSFERRABLE AND APPLIES SOLELY TO THE ORIGINAL END-USER AND DOES NOT EXTEND TO SUBSEQUENT END-USERS OF THE PRODUCT. ANY APPLICABLE IMPLIED WARRANTIES, INCLUDING THE WARRANTY OF MERCHANTABILITY, ARE LIMITED IN DURATION TO A PERIOD OF THE EXPRESSED WARRANTY AS PROVIDED HEREIN BEGINNING WITH THE DATE OF THE ORIGINAL PURCHASE, AND NO WARRANTIES, WHETHER EXPRESSED OR IMPLIED SHALL APPLY TO THE PRODUCT THEREAFTER. THERE IS NO WARRANTY AS TO THE FITNESS OF THE PRODUCT FOR ANY PARTICULAR PURPOSE OR USE. ALL SERVICES PROVIDED WITH THE PRODUCT ARE PROVIDED "AS IS."

THE EXTENT OF LIABILITY UNDER THIS LIMITED WARRANTY IS THE REPAIR OR REPLACEMENT PROVIDED ABOVE AT THE SOLE DISCRETION OF THE MANUFACTURER. IN NO EVENT SHALL ANY LIABILITY EXCEED THE PURCHASE PRICE PAID BY THE PURCHASER. UNDER NO CIRCUMSTANCES SHALL THERE BE LIABILITY FOR ANY LOSS, DIRECT, INDIRECT, INCIDENTAL, FORESEEN, UNFORESEEN, SPECIAL, OR CONSEQUENTIAL DAMAGE ARISING OUT OF OR IN CONNECTION WITH THE USE OF THIS PRODUCT.

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