MAX-200M1 Series

IEEE 802.16e Simple Indoor CPE

User's Guide

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Edition 1

ZyXEL

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Certifications

Federal Communications Commission (FCC) Interference Statement

The device complies with Part 15 of FCC rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operations.

This device has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This device generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this device does cause harmful interference to radio/television reception, which can be determined by turning the device off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and the receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/TV technician for help.

FCC Radiation Exposure Statement

- The device complies with FCC RF radiation exposure limits set forth for an uncontrolled environment, under 47 CFR 2.1093 paragraph (d)(2). End users must follow the specific operating instructions for satisfying RF exposure compliance. To maintain compliance with FCC RF exposure compliance requirements, please follow operation instruction as documented in this manual.
- This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
- To comply with FCC RF exposure compliance requirements, a separation distance of at least 20 cm must be maintained between the antenna of this device and all persons.

注意！

依據 低功率電波輻射性電機管理辦法

第十二條 經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

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前項合法通信，指依電信規定作業之無線電信。低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

本機限在不干擾合法電臺與不受被干擾保障條件下於室內使用。
減少電磁波影響，請妥適使用。

Notices

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Viewing Certifications

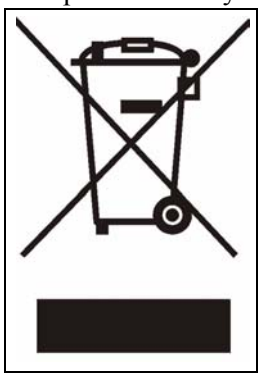
1. Go to http://www.zyxel.com.
2. Select your product from the drop-down list box on the ZyXEL home page to go to that product's page.
3. Select the certification you wish to view from this page.

Safety Warnings

For your safety, be sure to read and follow all warning notices and instructions.

- Do NOT use this product near water, for example, in a wet basement or near a swimming pool.
- Do NOT expose your device to dampness, dust or corrosive liquids.
- Do NOT store things on the device.
- Do NOT install, use, or service this device during a thunderstorm. There is a remote risk of electric shock from lightning.
- Connect ONLY suitable accessories to the device.
- ONLY qualified service personnel should service or disassemble this device.
- Make sure to connect the cables to the correct ports.
- Place connecting cables carefully so that no one will step on them or stumble over them.
- Always disconnect all cables from this device before servicing or disassembling.
- Use ONLY an appropriate power adaptor or cord for your device.
- Connect the power adaptor or cord to the right supply voltage (for example, 110V AC in North America or 230V AC in Europe).
- Do NOT allow anything to rest on the power adaptor or cord and do NOT place the product where anyone can walk on the power adaptor or cord.
- Do NOT use the device if the power adaptor or cord is damaged as it might cause electrocution.
- If the power adaptor or cord is damaged, remove it from the power outlet.
- Do NOT attempt to repair the power adaptor or cord. Contact your local vendor to order a new one.
- Do not use the device outside, and make sure all the connections are indoors. There is a remote risk of electric shock from lightning.
- Do NOT obstruct the device ventilation slots, as insufficient airflow may harm your device.
- Use only No. 26 AWG (American Wire Gauge) or larger telecommunication line cord.
- Antenna Warning! This device meets ETSI and FCC certification requirements when using the included antenna(s). Only use the included antenna(s).

This product is recyclable. Dispose of it properly.



ZyXEL Limited Warranty

ZyXEL warrants to the original end user (purchaser) that this product is free from any defects in materials or workmanship for a period of up to two years from the date of purchase. During the warranty period, and upon proof of purchase, should the product have indications of failure due to faulty workmanship and/or materials, ZyXEL will, at its discretion, repair or replace the defective products or components without charge for either parts or labor, and to whatever extent it shall deem necessary to restore the product or components to proper operating condition. Any replacement will consist of a new or re-manufactured functionally equivalent product of equal or higher value, and will be solely at the discretion of ZyXEL. This warranty shall not apply if the product has been modified, misused, tampered with, damaged by an act of God, or subjected to abnormal working conditions.

Note

Repair or replacement, as provided under this warranty, is the exclusive remedy of the purchaser. This warranty is in lieu of all other warranties, express or implied, including any implied warranty of merchantability or fitness for a particular use or purpose. ZyXEL shall in no event be held liable for indirect or consequential damages of any kind to the purchaser.

To obtain the services of this warranty, contact ZyXEL's Service Center for your Return Material Authorization number (RMA). Products must be returned Postage Prepaid. It is recommended that the unit be insured when shipped. Any returned products without proof of purchase or those with an out-dated warranty will be repaired or replaced (at the discretion of ZyXEL) and the customer will be billed for parts and labor. All repaired or replaced products will be shipped by ZyXEL to the corresponding return address, Postage Paid. This warranty gives you specific legal rights, and you may also have other rights that vary from country to country.

Registration

Register your product online to receive e-mail notices of firmware upgrades and information at www.zyxel.com for global products, or at www.us.zyxel.com for North American products.

Customer Support

Please have the following information ready when you contact customer support.

- Product model and serial number.
- Warranty Information.
- Date that you received your device.
- Brief description of the problem and the steps you took to solve it.

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+" is the (prefix) number you enter to make an international telephone call.

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Preface

Congratulations on your purchase of the ZyXEL MAX-200M1 Series IEEE 802.16e Simple Indoor CPE. Your ZyXEL Device allows you to access WiMAX wireless networks and make Voice over Internet (VoIP) phone calls.

Your ZyXEL Device is easy to install and configure.

About This User's Guide

This manual is designed to guide you through the configuration of your ZyXEL Device for its various applications.

Related Documentation

- Supporting Disk

  Refer to the included CD for support documents.

- Quick Start Guide

  The Quick Start Guide is designed to help you get up and running right away. It contains hardware installation/connection information.

- ZyXEL Web Site

  Please go to http://www.zyxel.com for product news, firmware, updated documents, and other support materials.

User Guide Feedback

Help us help you. E-mail all User's Guide-related comments, questions or suggestions for improvement to techwriters@zyxel.com.tw or send regular mail to The Technical Writing Team, ZyXEL Communications Corp., 6 Innovation Road II, Science-Based Industrial Park, Hsinchu, 300, Taiwan. Thank you.

Syntax Conventions

- "Enter" means for you to type one or more characters. "Select" or "Choose" means for you to use one predefined choice.
- Mouse action sequences are denoted by right angle brackets (>). For example, "**Start** > **Settings** > **Control Panel** > **System**" means click the **Start** button, move the mouse over **Settings**, move the mouse over or click on **Control Panel**, and then click on **System**.
- "e.g.," is a shorthand for "for instance", and "i.e.," means "that is" or "in other words".
- The ZyXEL MAX-200M1 Series IEEE 802.16e Simple Indoor CPE may be referred to as "the ZyXEL Device" or "the device" in this User's Guide.

Graphics Icons Key

ZyXEL Device	Computer	Notebook Computer
Wireless Signal	Wireless Base Station	Internet Cloud
Router	Server	

CHAPTER 1
Getting Started

This chapter introduces the main features and applications of the ZyXEL Device.

1.1 About Your ZyXEL Device

The ZyXEL Device is a WiMAX wireless network adapter. It allows you to access the Internet by connecting to a WiMAX wireless network.

You can use a traditional analog telephone to make Internet calls using the ZyXEL Device's Voice over IP (VoIP) communication capabilities.

You can configure firewall and content filtering for secure Internet access, as well as a host of other features.

The web browser-based Graphical User Interface (GUI), also known as the web configurator, provides easy management.

See Appendix A on page 215 for a complete list of features for your model.

At the time of writing, this User's Guide covers the following models:

Table 1 Models Covered

MAX-200M1
MAX-210M1
MAX-230M1

This User's Guide uses screens and example settings from the MAX-200M1 model.

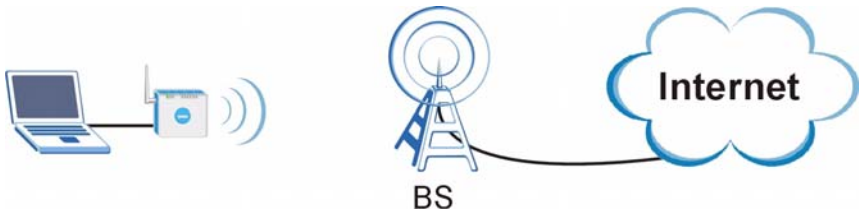
1.1.1 Wireless Internet Access

Connect your computer or network to the ZyXEL Device for wireless Internet access. See the Quick Start Guide for instructions on hardware connection.

In a wireless metropolitan area network (MAN), the ZyXEL Device connects to a base station (BS) for Internet access.

The following diagram shows a notebook computer equipped with the ZyXEL Device connecting to the Internet through a base station (marked **BS**).

Figure 1 Mobile Station and Base Station



You can also configure firewall and content filtering on the ZyXEL Device for secure Internet access. When the firewall is on, all incoming traffic from the Internet to your network is blocked unless it is initiated from your network. This means that probes from the outside to your network are not allowed, but you can safely browse the Internet and download files.

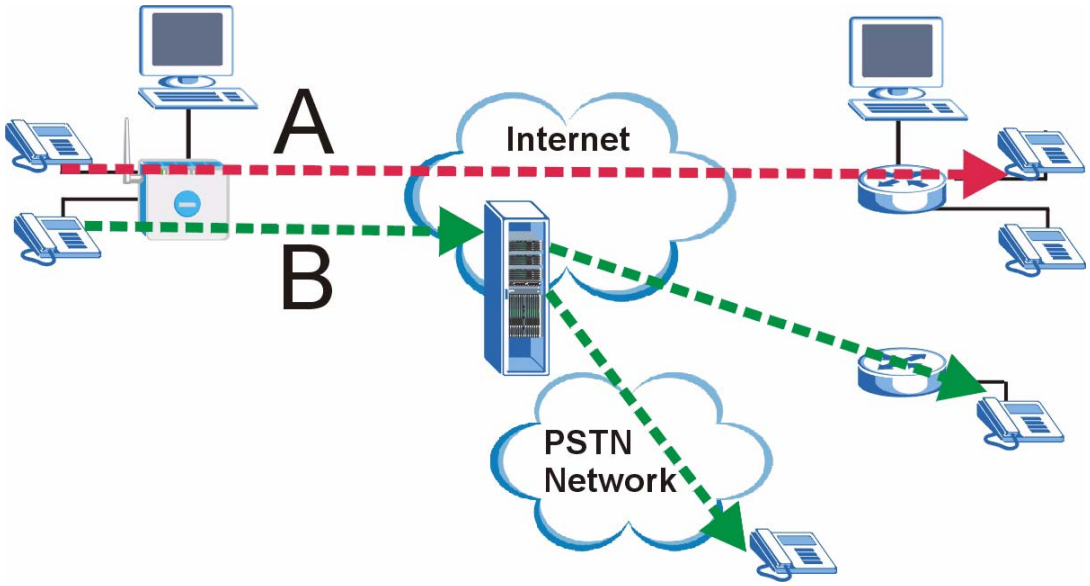
Use content filtering to block access to web sites with URLs containing keywords that you specify. You can define time periods and days during which content filtering is enabled and include or exclude particular computers on your network from content filtering. For example, you could block access to certain web sites for the kids.

1.1.2 Make Calls via Internet Telephony Service Provider

In a home or small office environment, you can use the ZyXEL Device to make and receive the following types of VoIP telephone calls:

- Peer-to-Peer calls (**A**) - Use the ZyXEL Device to make a call to the recipient's IP address without using a SIP proxy server.
- Calls via a VoIP service provider (**B**) - The ZyXEL Device sends your call to a VoIP service provider's SIP server which forwards your calls to either VoIP or PSTN phones.

Figure 2 ZyXEL Device's VoIP Features



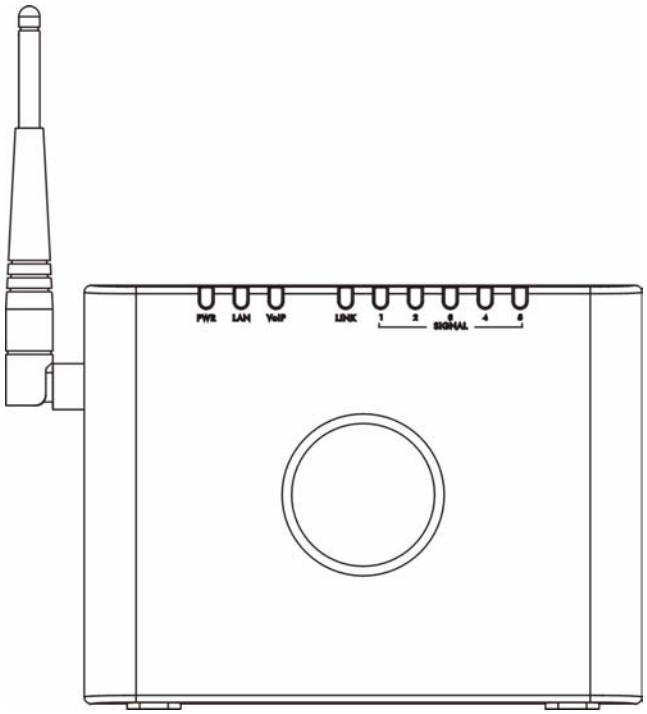
1.2 ZyXEL Device Hardware

Follow the instructions in the Quick Start Guide to make hardware connections.

1.2.1 LEDs

The following figure shows the LEDs (lights) on the ZyXEL Device.

Figure 3 The ZyXEL Device



The following table describes your ZyXEL Device's LEDs.

Table 2 The ZyXEL Device

LED	STATE	DESCRIPTION
PWR	OFF	The ZyXEL Device is not receiving power.
	RED	The ZyXEL Device is receiving power but has been unable to start up correctly. See the Troubleshooting section for more information.
	RED / ORANGE (BLINKING)	The ZyXEL Device is starting up.
	GREEN	The ZyXEL Device is receiving power and functioning correctly.
	GREEN (BLINKING)	The ZyXEL Device is performing a self-test.

Table 2 The ZyXEL Device

LED	STATE	DESCRIPTION
LAN	OFF	The LAN is not connected.
	GREEN	The ZyXEL Device has a successful Local Area Network (Ethernet) connection.
	GREEN (BLINKING)	Your device is sending/receiving data through the wireless LAN.
VoIP	OFF	No SIP account is registered, or the ZyXEL Device is not receiving power.
	GREEN	A SIP account is registered.
	GREEN (BLINKING)	A SIP account is registered, and the phone attached to the LINE port is in use (off the hook).
	ORANGE	A SIP account is registered and has a voice message.
	ORANGE (BLINKING)	A SIP account is registered and has a voice message, and the phone attached to the LINE port is in use (off the hook).
LINK	OFF	The ZyXEL Device is not connected to a wireless (WiMAX) network.
	GREEN	The ZyXEL Device is successfully connected to a wireless (WiMAX) network.
	GREEN (BLINKING SLOWLY)	The ZyXEL Device is searching for a wireless (WiMAX) network.
	GREEN (BLINKING QUICKLY)	The ZyXEL Device has found a wireless (WiMAX) network and is connecting.
SIGNAL 1 ~ 5	The SIGNAL LEDs display the Received Signal Strength Indication (RSSI) of the wireless (WiMAX) connection.	
	NO SIGNAL LEDS ON	There is no wireless connection.
	SIGNAL 1 ON	The signal strength is less than -80 dBm
	SIGNAL 2 ON	The signal strength is between -79 and -70 dBm
	SIGNAL 3 ON	The signal strength is between -69 and -60 dBm
	SIGNAL 4 ON	The signal strength is between -59 and -50 dBm
	SIGNAL 5 ON	The signal strength is between -49 and -30 dBm

1.2.2 Antenna

Connect the supplied 2dBi omni antenna to the SMA connector on the side of the ZyXEL Device. Alternatively, use a higher-powered antenna with a female SMA connector (not supplied) for improved signal reception.

The ZyXEL Device is equipped with an internal 6dBi directional patch antenna. If your signal strength is poor (use the **SIGNAL** LEDs to gauge received signal strength) orient the front of the ZyXEL Device (the side with the LEDs) towards the base station. If you do not know the location of the base station, experiment with moving the ZyXEL Device while observing the **SIGNAL** LEDs.

CHAPTER 2
Introducing the Web Configurator

This chapter describes how to access and navigate the web configurator.

2.1 Web Configurator Overview

The web configurator is an HTML-based management interface that allows easy device setup and management via Internet browser. Use Internet Explorer 6.0 and later or Netscape Navigator 7.0 and later versions. The recommended screen resolution is 1024 by 768 pixels.

In order to use the web configurator you need to allow:

- Web browser pop-up windows from your device. Web pop-up blocking is enabled by default in Windows XP SP (Service Pack) 2.
- JavaScripts (enabled by default).
- Java permissions (enabled by default).

See the Troubleshooting chapter if you need to make sure these functions are allowed in Internet Explorer.

2.1.1 Accessing the Web Configurator

1. Make sure your ZyXEL Device hardware is properly connected (refer to the Quick Start Guide).
2. Launch your web browser.
3. Type "192.168.1.1" as the URL.
4. A password screen displays. The default password ("1234") displays in non-readable characters. If you haven't changed the password yet, you can just click **Login**. Click **Cancel** to revert to the default password in the password field. If you have changed the password, enter your password and click **Login**.

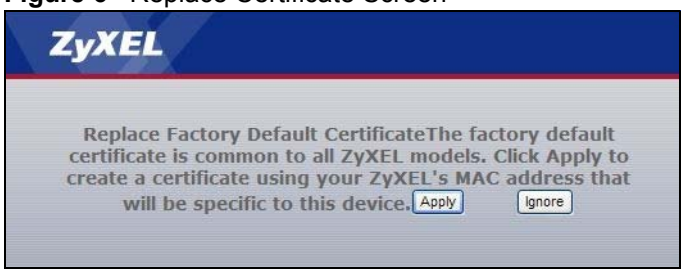
Figure 4 Password Screen

5 The following screen displays if you have not yet changed your password. It is highly recommended you change the default password. Enter a new password, retype it to confirm and click **Apply**; alternatively click **Ignore** to proceed to the main menu if you do not want to change the password now.

Figure 5 Change Password Screen

6 Click **Apply** in the next screen to create a certificate using your ZyXEL Device's MAC address that will be specific to this device. This certificate is used for authentication when using a secure HTTPS connection over the Internet.

Figure 6 Replace Certificate Screen



7 A screen displays to let you choose whether to go to the wizard or the advanced screens.

- Click **Go to Wizard setup** if you are logging in for the first time or if you want to make basic changes. The wizard selection screen appears after you click **Apply**. See Chapter 4 on page 49 for more information.
- Click **Go to Advanced setup** if you want to configure features that are not available in the wizards. The main screen appears after you click **Apply**. See Section 2.2 on page 36 for more information.
- Click **Exit** if you want to log out.

Note: For security reasons, by default the ZyXEL Device automatically logs you out if you do not use the web configurator for five minutes. If this happens, log in again.

Figure 7 Wizard or Advanced Screen

2.1.2 The RESET Button

If you forget your password or cannot access the web configurator, you will need to use the **RESET** button to reload the factory-default configuration file. This means that you will lose all configurations that you had previously and the password will be reset to "1234".

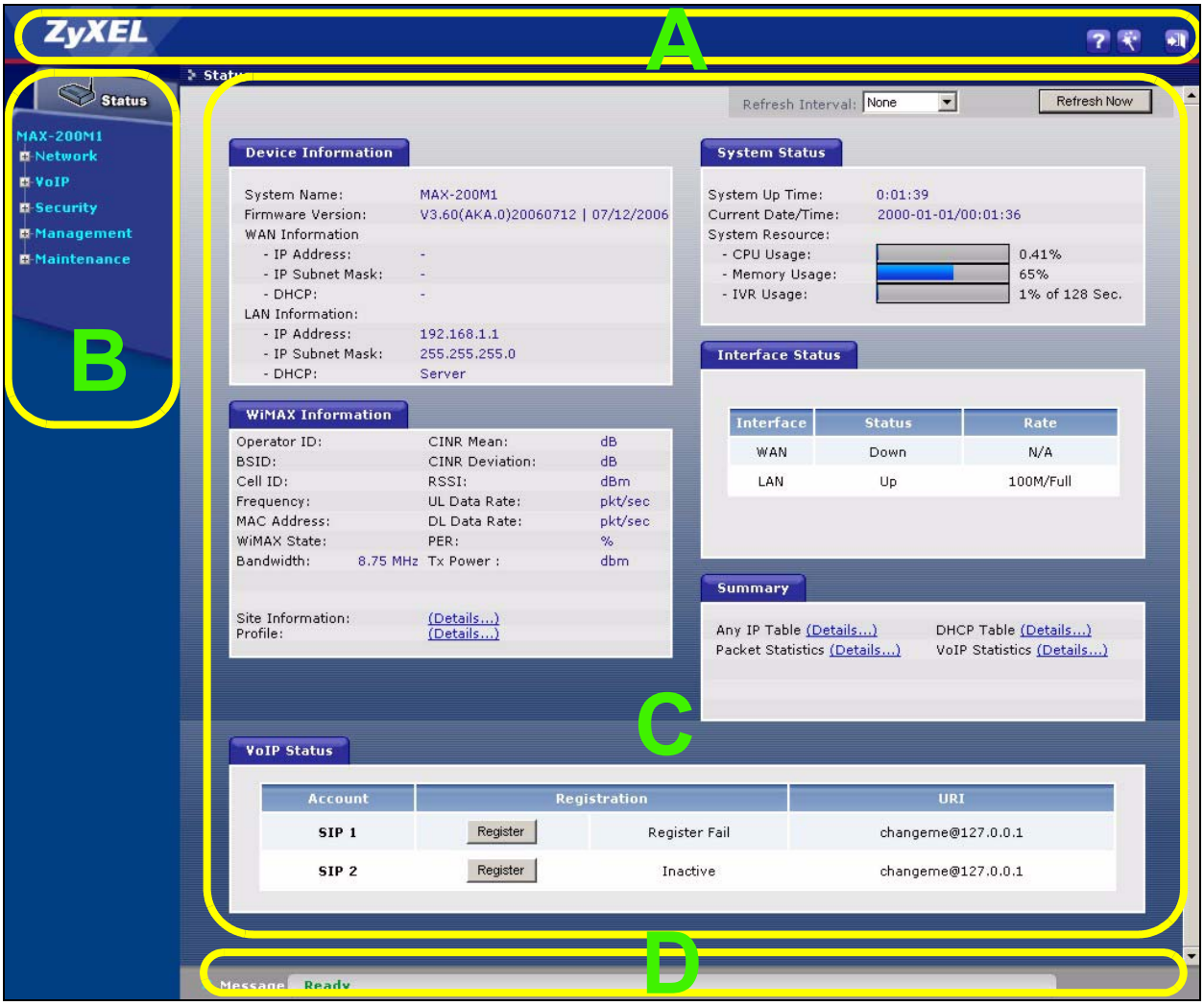
2.1.2.1 Using The Reset Button

1 Make sure the **POWER** light is on (not blinking).

2 To set the device back to the factory default settings, press the **RESET** button for ten seconds or until the **POWER** light begins to blink and then release it. When the **POWER** light begins to blink, the defaults have been restored and the device restarts.

2.2 Web Configurator Main Screen

Figure 8 Main Screen



As illustrated above, the main screen is divided into these parts:

- **A** - title bar
- **B** - navigation panel
- **C** - main window
- **D** - status bar

2.2.1 Title Bar

The title bar provides some icons in the upper right corner.

The icons have the following functions.

Table 3 Web Configurator Icons in the Title Bar

ICON	DESCRIPTION
	Wizards: Click this icon to go to the configuration wizards. See Chapter 4 on page 49 for more information.
	Logout: Click this icon to log out of the web configurator.

2.2.2 Navigation Panel

Use the menu items on the navigation panel to open screens to configure ZyXEL Device features. The following table describes the menu items.

Table 4 Navigation Panel Summary

LINK	TAB	FUNCTION
Status		This screen contains administrative and system-related information.
Network		
WAN	Internet Connection	Use this screen to configure ISP parameters, WAN IP address assignment and other advanced properties.
	WiMAX Frequency	Use this screen to set the radio frequencies the ZyXEL Device searches for a WiMAX connection.
	Advanced	Use this screen to configure DNS servers, RIP & Multicast, and Windows networking settings.
	Traffic Redirect	Use this screen to configure your traffic redirect properties
LAN	IP	Use this screen to configure LAN TCP/IP settings.
	DHCP Setup	Use this screen to configure LAN DHCP and DNS settings.
	Static DHCP	Use this screen to always assign specific IP addresses to individual MAC addresses.
	Client List	Use this screen to view current DHCP client information.
	IP Alias	Use this screen to partition your LAN interface into subnets.
	Advanced	Use this screen to enable Any IP
NAT	General	Use this screen to enable NAT.
	Port Forwarding	Use this screen to make your local servers visible to the outside world.
	Trigger Port	Use this screen to set port triggering rules.
	ALG	Use this screen to configure Application Level Gateway settings.
VoIP		
SIP	SIP Settings	Use this screen to configure your ZyXEL Device's Voice over IP settings.
	QoS	Use this screen to configure your ZyXEL Device's Quality of Service settings for VoIP.
Phone	Analog Phone	Use this screen to set which SIP account to use for outgoing or incoming calls.
	Common	Use this screen to configure general phone settings.
	Region	Use this screen to select your location and call service mode.

Table 4 Navigation Panel Summary

LINK	TAB	FUNCTION
Phone Book	Incoming Call Policy	Use this screen to configure call-forwarding.
	Speed Dial	Use this screen to configure speed dial for SIP phone numbers that you call often.
Security		
Firewall	General	Use this screen to activate/deactivate the firewall and the default action to take on network traffic going in specific directions.
	Services	Use this screen to set the days and times for your device to perform service blocking.
Content Filter	Filter	Use this screen to block sites containing certain keywords in the URL, exclude a range of users on the LAN from content filtering on your ZyXEL Device and restrict certain web features.
	Schedule	Use this screen to set the days and times for your ZyXEL Device to perform content filtering.
Management		
Static Route	IP Static Route	Use this screen to configure IP static routes to tell your device about networks beyond the directly connected remote nodes.
Remote MGMT	WWW	Use this screen to configure through which interface(s) and from which IP address(es) users can use HTTP to manage the ZyXEL Device.
	Telnet	Use this screen to configure through which interface(s) and from which IP address(es) users can use Telnet to manage the ZyXEL Device.
	FTP	Use this screen to configure through which interface(s) and from which IP address(es) users can use FTP to access the ZyXEL Device.
	SNMP	Use this screen to configure your ZyXEL Device's settings for Simple Network Management Protocol management.
	DNS	Use this screen to configure through which interface(s) and from which IP address(es) users can send DNS queries to the ZyXEL Device.
	Security	Use this screen to set whether or not your device will respond to pings and probes for services that you have not made available.
UPnP	General	Use this screen to turn UPnP on or off.
Maintenance		
System	General	This screen contains administrative and system-related information and also allows you to change your password.
	Dynamic DNS	Use this screen to set up Dynamic DNS.
	Time Setting	Use this screen to change your ZyXEL Device's time and date.
Logs	View Log	Use this screen to display your device's logs.
	Log Settings	Use this screen to select which logs and/or immediate alerts your device is to record. You can also set it to e-mail the logs to you.
Tools	Firmware	Use this screen to upload firmware to your device.
	Configuration	Use this screen to backup and restore your device's configuration (settings) or reset the factory default settings.
	Restart	This screen allows you to reboot the ZyXEL Device without turning the power off.

2.2.3 Main Window

The main window displays information and configuration fields. It is discussed in the rest of this document.

Right after you log in, the **Status** screen is displayed. See Chapter 6 on page 59 for more information about the **Status** screen.

2.2.4 Status Bar

Check the status bar when you click **Apply** or **OK** to verify that the configuration has been updated.

CHAPTER 3
Tutorial

This chapter provides examples showing how to use the ZyXEL Device to access the Internet, set up VoIP and make a telephone call over the Internet using the ZyXEL Device's speed dial feature.

3.1 Connect to the Internet

This section shows how to set up your Internet access details on the ZyXEL Device and configure your WiMAX frequency settings. See Section 7.2 on page 71 for more information on how WiMAX works.

3.1.1 Configure Internet Access Settings

To access the Internet, you need information from your Internet Service Provider (ISP) about your account and the network. In this example, your user name is 'User1234' and your password is '4321'.

Your ISP has also told you that you will be assigned a dynamic IP address each time you connect to the Internet. See Section 7.3 on page 72 for more details about dynamic and static IP addresses.

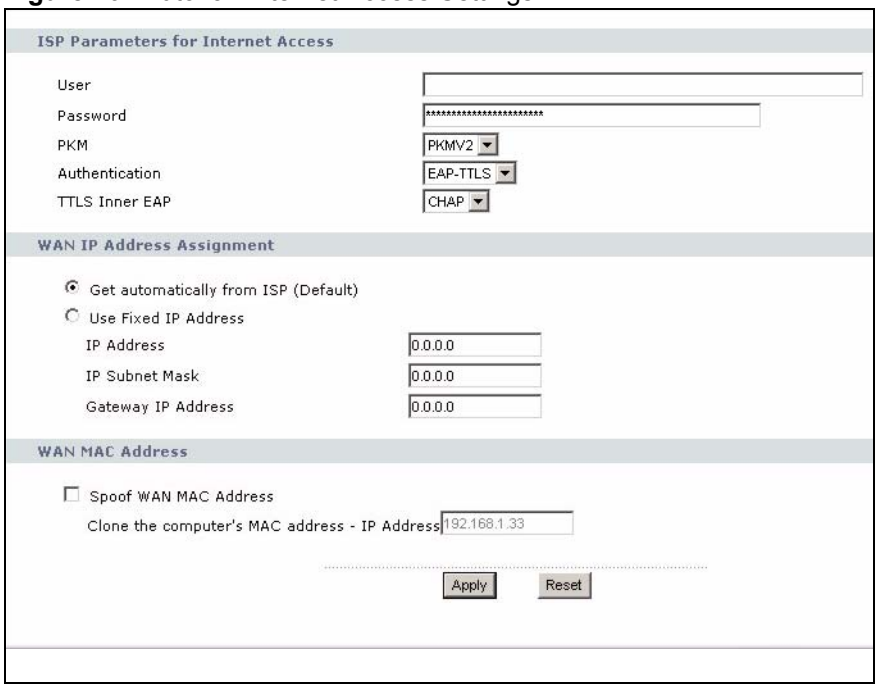
Once you have connected the ZyXEL Device to your computer and accessed the Web Configurator (see the Quick Start Guide for details) follow the steps below to connect to a network.

1 In the Web Configurator, click **Network > WAN** in the navigation panel.

Figure 9 Tutorial: Navigation Panel

2 The following screen displays. This screen is where you enter your Internet access details.

Figure 10 Tutorial: Internet Access Settings



In the **ISP Parameters for Internet Access** area, enter your username ('User1234') in the **User** field, and enter your password ('4321') in the **Password** field. Your ISP gave no information about the other fields in this section, so leave them at their defaults.

In the **WAN IP Address Assignment** area, make sure that **Get Automatically from ISP (Default)** is selected. Leave all other fields at their default values.

3 Click **Apply**. Your Internet access settings are saved to the ZyXEL Device, and are used automatically each time you connect to the Internet.

3.1.2 Configure WiMAX Settings

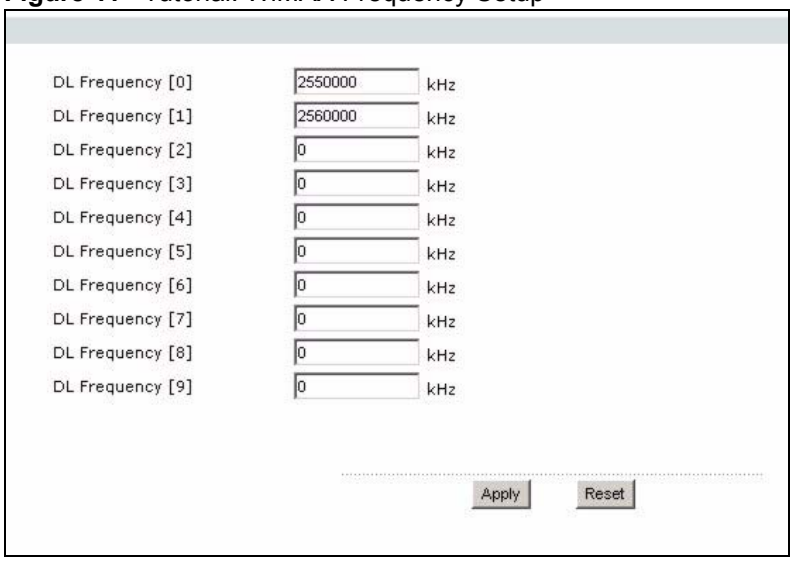
The **WiMAX Frequency** screen allows you to specify a set of frequencies to search for a connection to a base station. Before you start, you need information from your ISP about the supported frequencies.

In this example, your ISP has told you that the supported WiMAX frequencies are at 2.55 and 2.56 Gigahertz (GHz). See Section 7.4 on page 74 for more information on radio frequencies.

Follow the steps below to configure your frequency settings.

1 Click **Network > WAN > WiMAX Frequency** to open the screen shown next.

Figure 11 Tutorial: WiMAX Frequency Setup



2 Enter the frequency settings your ISP gave you in the **DL Frequency** fields. Note that these fields are in kilohertz (**kHz**).

2.55 GHz is equal to 2550000 kHz, so enter **2550000** in the DL Frequency [0] field.

2.56 GHz is equal to 2560000 kHZ, so enter **2560000** in the DL Frequency [1] field.

3 Click **Apply** to save your settings. The ZyXEL Device scans for an available wireless connection at the **DL Frequency [0]** setting (2.55 GHz) and, if it does not find an available connection, searches at the **DL Frequency [1]** setting (2.56 GHz). When it finds an available connection, the fields in this screen will be automatically set to use that frequency.

For an example of using the WiMAX Frequency screen to configure more frequencies, see Section 7.4.2.1 on page 77.

4 Look at the LEDs on your ZyXEL Device. When the ZyXEL Device successfully connects to a base station, the **LINK** LED shines green steadily. The **SIGNAL 1 ~ 5** LEDs indicate the signal strength, with **SIGNAL 5** showing a very strong signal and **SIGNAL 1** showing a very weak signal.

5 Open your Internet browser and enter http://www.zyxel.com or the URL of any other web site in the address bar. If you are able to access the web site, your wireless connection is successfully configured. If you cannot access the web site, check the Troubleshooting section of this User's Guide.

3.2 Make a Telephone Call Over the Internet

To make a call over the Internet using the ZyXEL Device, first do the following things:

- Set up hardware connections from the ZyXEL Device to your computer, your telephone and the power supply (see the Quick Start Guide for more details on hardware connections).
- Set up your Internet access and WiMAX settings on the ZyXEL Device (see Section 3.1.1 on page 41 and Section 3.1.2 on page 42 for examples).
- Set up an account with a Voice over IP (VoIP) provider. This account (called a SIP account) allows you to make calls over the Internet. See Chapter 10 on page 105 for more information on SIP accounts.

Use the sections below to set up your SIP account and speed dialing, and place a VoIP call.

3.2.1 Configure Your SIP Account

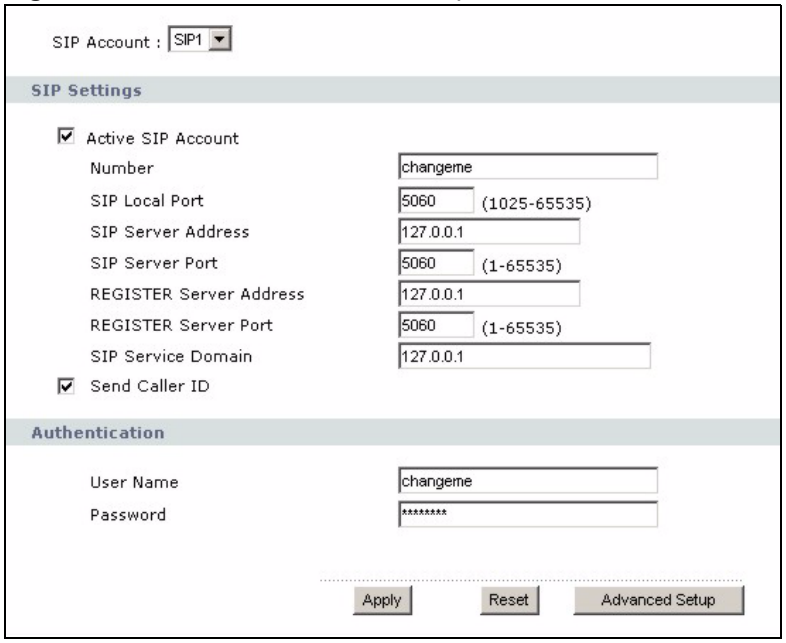
Your ZyXEL Device needs to be configured with the details of your SIP account before you can use it to make calls over the Internet. In this example, your SIP identity is "id123@abcvoip.com", your user name is "id123" and your password is "zyx987". Your VoIP provider has told you that the SIP server address is "sipserver-abcvoip.com". See Section 10.1.3 on page 105 for more information on SIP identities.

Once you have connected the ZyXEL Device to your computer and accessed the Web Configurator (see the Quick Start Guide for details) follow the steps below to configure your SIP settings.

1 In the Web Configurator, click **VoIP > SIP** in the navigation panel.

The following screen displays. This screen is where you enter your SIP account details.

Figure 12 Tutorial: SIP Account Setup



2 Select **SIP1** from the **SIP Account** list and make sure that the **Active SIP Account** box is selected.

3 Enter your SIP user name ('id123') in the **Number** field.

4 Enter your VoIP provider's SIP server name ('sipserver-abcvoip.com') in the **SIP Server Address** field. As your VoIP provider did not give you a different **REGISTER Server Address**, enter 'sipserver-abcvoip.com' again.

Enter your VoIP provider's domain name ('abcvoip.com') in the **SIP Service Domain** field.

5 In the Authentication area, enter 'id123' in the **User Name** field, and 'zyx987' in the **Password** field. Leave the **SIP Local Port**, **SIP Server Port** and **REGISTER Server Port** fields at their default values, as your VoIP provider did not supply port details.

Click **Apply**.

6 Click on the **Status** button in the navigation panel to check that your SIP account is correctly registered.

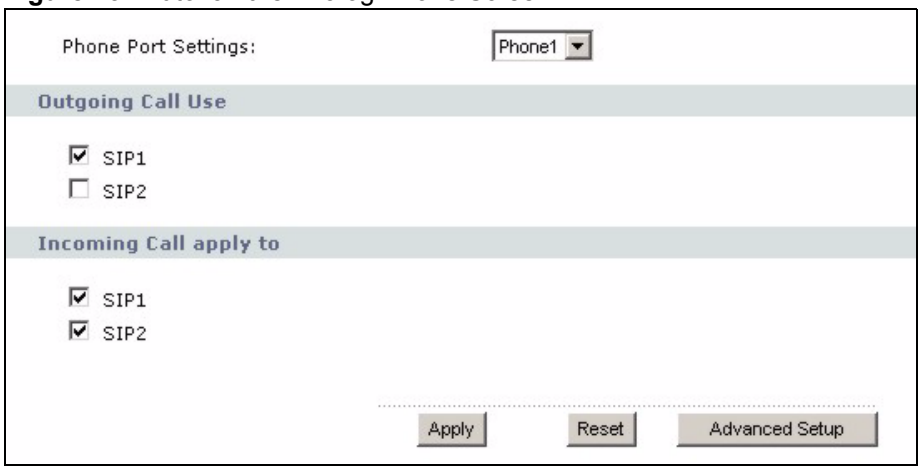
Look in the **VoIP Status** area towards the bottom of the **Status** screen. If the **SIP 1** account displays **Registered** in the **Registration** field, it is ready to use.

If the **Registration** field for the **SIP 1** account displays **Register Fail** or **Inactive**, click the **Register** button, check your settings in the **VoIP > SIP** screen or contact your VoIP provider to confirm that you have the correct settings and that your account is active.

3.2.2 Configure a Phone

Once you have set up your SIP account, click **VoIP > Phone > Analog Phone** in the navigation panel. The following screen displays.

Figure 13 Tutorial: the Analog Phone Screen



Use this screen to make sure that the phone connected to your ZyXEL Device uses the correct SIP account.

1 Select **Phone1** from the drop-down list box.

2 In the **Outgoing Call Use** area, select **SIP1**.

3 In the **Incoming Call apply to** area, select both **SIP1** and **SIP2**.

4 Click **Apply**. Your analog phone settings are saved.

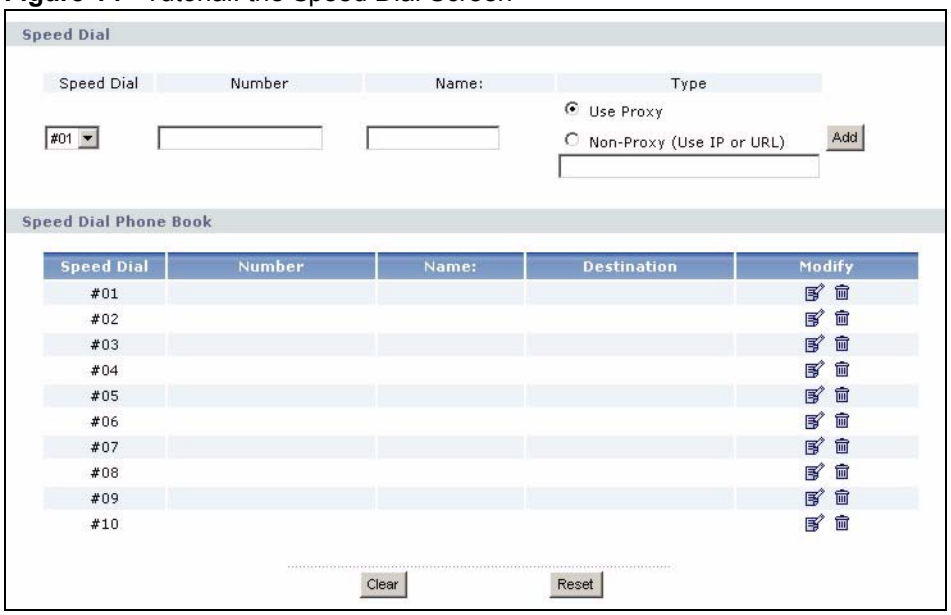
3.2.3 Set Up Speed Dialing and Make a Call

In this example you want to set up speed dialling to make calls to a friend, Bob, whose SIP account number is 2345@xyzvoip.com. Your voIP provider, abcvoip.com, has told you that to call an xyzvoip.com number you must add '555' at its start.

Note: Different VoIP providers implement calls to other networks in different ways. Check with your provider for details.

To configure speed dialling on the ZyXEL Device, click **VoIP > Phone Book > Speed Dial**. The following screen displays.

Figure 14 Tutorial: the Speed Dial Screen



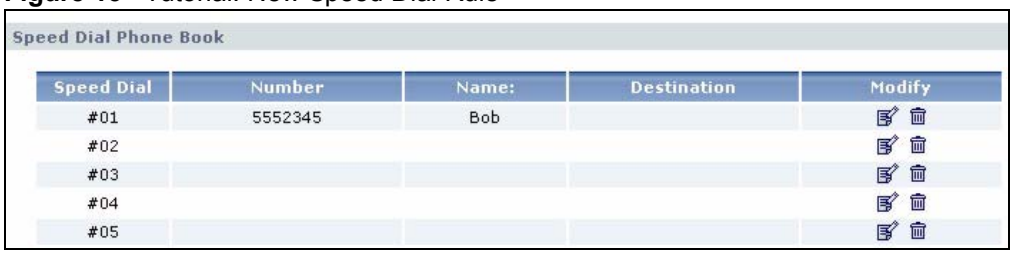
Use the following steps to set up a speed dial entry.

1 You can have up to ten speed dial rules. Select the rule number (**1**, in this example) from the **Speed Dial** drop-down list box.

2 In the **Number** field, enter "5552345" and in the **Name** field enter "Bob". Under **Type**, select **Use Proxy** and click **Add**.

The new speed dial rule is displayed in the **Speed Dial Phone book List**.

Figure 15 Tutorial: New Speed Dial Rule



Use the following steps to call a number from the speed dial list.

1. Ensure that your phone is correctly connected to the ZyXEL Device. See the Quick Start Guide for details of hardware connections.
2. Lift the phone's receiver and type the speed dial number exactly as it appears in the **Speed Dial Phone Book** list. In this case, Bob's phone number occupies rule #01, so dial "#01" on the phone's keypad to make the call.

CHAPTER 4
Internet Setup Wizard

This chapter provides information on the wizard setup screens for Internet access.

4.1 Wizard Setup Overview

The wizard will guide you through several steps. You will need to enter some information for identification purposes, then the wizard will guide you through configuring your Internet settings.

4.2 Internet Connection Wizard Setup

1 After you enter the password to access the web configurator, select **Go to Wizard setup**. Otherwise, click the wizard icon ( ) in the top right corner of the web configurator to go to the wizards.

Figure 16 Select a Mode

2 Click **CONNECTION WIZARD** to configure the system for Internet access.

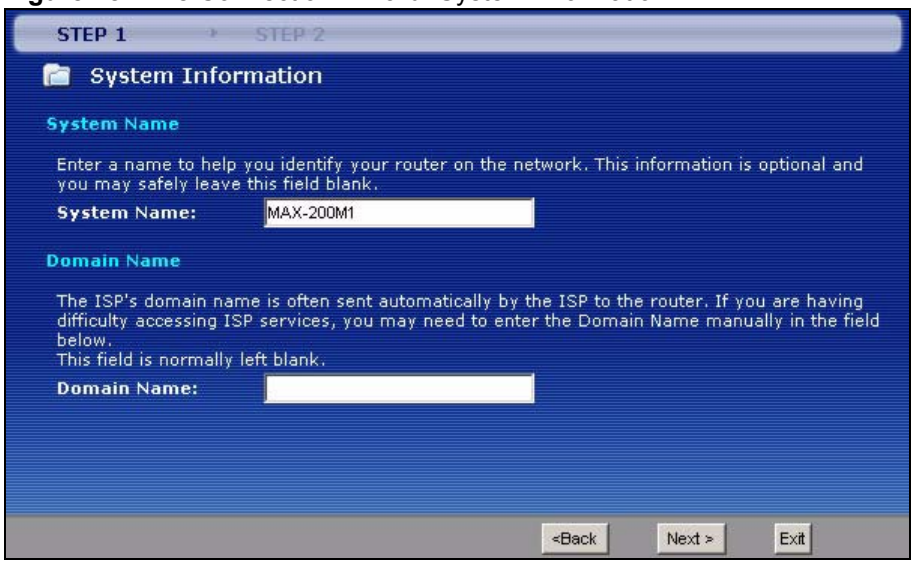
3 The following screen displays. Click **Next** to continue. Click **Back** at any time to return to the previous screen, or **Exit** to leave the wizard setup.

Figure 17 Connection Wizard: Introduction

4 In the next screen you can give your ZyXEL Device a name (optional) in the **System Name** field. Enter up to thirty letters (this field is case-sensitive) or numbers. The 'at' symbol (@), dash (-), underscore (_) and period (.) are also permitted.

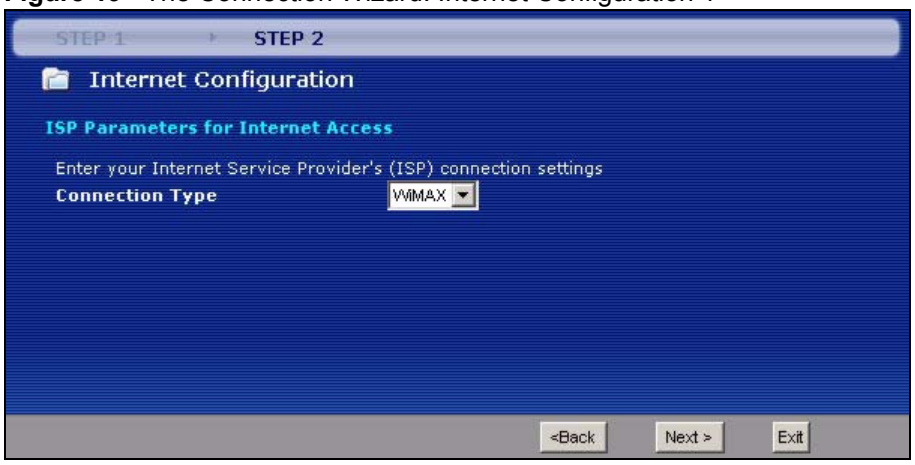
Enter your ISP's IP address in the **Domain Name** field if your ISP has instructed you to do so, or if you are having trouble accessing the Internet. Otherwise, leave this field blank.

Figure 18 The Connection Wizard: System Information



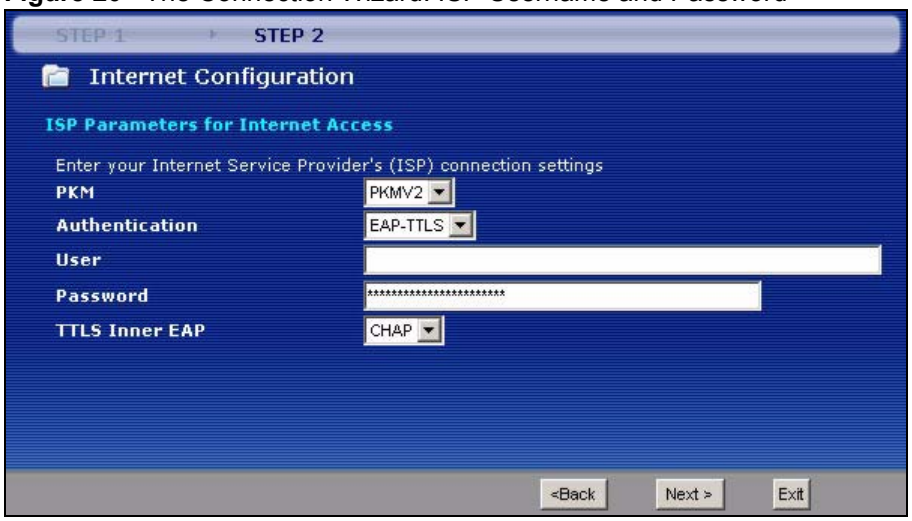
5 The following screen appears. Leave the **Connection Type** at the default setting and click **Next**.

Figure 19 The Connection Wizard: Internet Configuration 1



6 Enter your Internet account information (username and password) exactly as provided by your ISP. Leave the **PKM**, **Authentication** and **TTLS Inner EAP** fields at their default settings. Click **Next** to continue.

Figure 20 The Connection Wizard: ISP Username and Password



7 A fixed IP address is a static IP that your ISP gives you. An automatic (dynamic) IP address is not fixed; the ISP assigns you a different one each time you connect to the Internet.

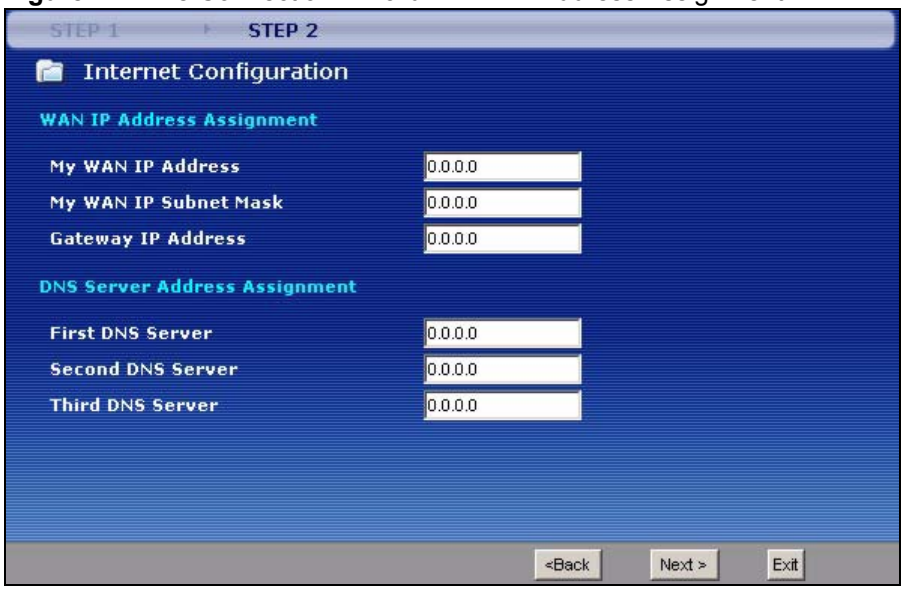
In the following screen, select **Use fixed IP address provided by your ISP** if your ISP gave you an IP address to use. Otherwise, select **Get automatically from your ISP**.

Figure 21 The Connection Wizard: Your IP Address

8 If you selected **Get automatically from your ISP** in the previous screen, skip this step. If you selected **Use fixed IP address provided by your ISP**, the following screen appears.

Enter your IP address, subnet mask, gateway address and DNS details exactly as they were given to you by your ISP.

Figure 22 The Connection Wizard: WAN IP Address Assignment

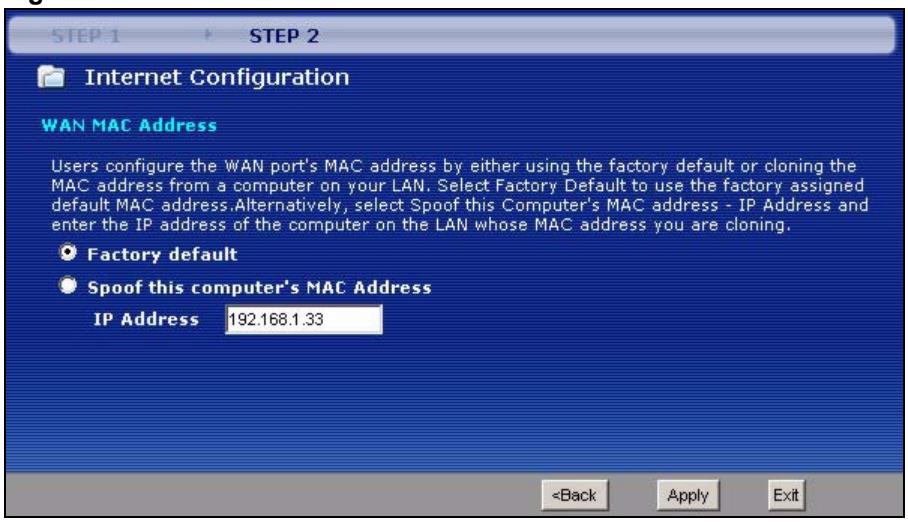


9 Every network device has a unique, factory-assigned Media Access Control (MAC) address. A device's MAC address can be used to identify it over the network. In the following screen, you can set the ZyXEL Device to transmit its own MAC address over the Internet, or to use the MAC address of another device connected to the ZyXEL Device ("spoofing").

Leave **Factory Default** selected to have the ZyXEL Device use its own MAC address, or select **Spoof this computer's MAC address** to use another.

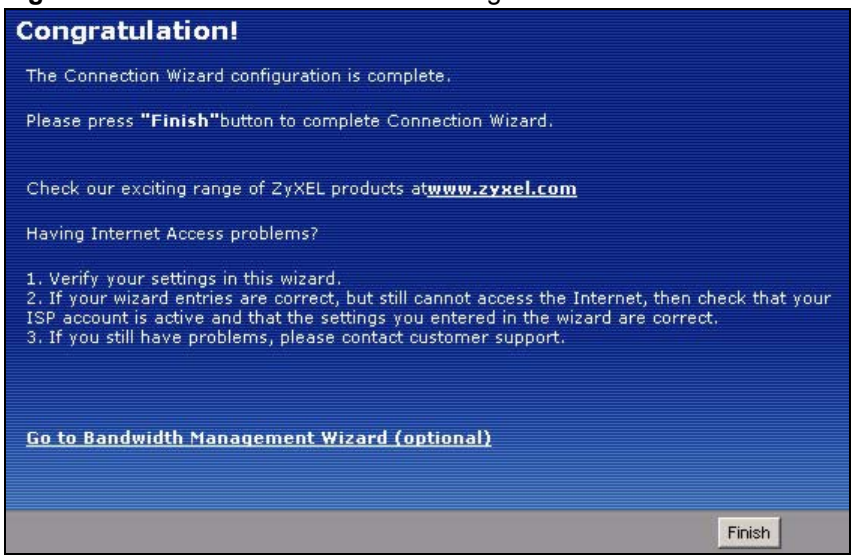
The **IP Address** field contains the IP address of the computer you are using to configure the ZyXEL Device by default. If you have multiple devices connected to the ZyXEL Device, you can enter the IP address of another device on the LAN to have the ZyXEL Device use its MAC address instead. Click **Apply** to move on to the final screen.

Figure 23 The Connection Wizard: WAN MAC Address



10 Click **Finish** to complete and save the Connection Wizard settings.

Figure 24 The Connection Wizard: Congratulations



11 Launch your web browser and navigate to www.zyxel.com. Internet access is just the beginning. Refer to the rest of this guide for more detailed information on the complete range of ZyXEL Device features. If you cannot access the Internet, open the web configurator again to confirm that the Internet settings you configured in the wizard setup are correct.

CHAPTER 5
VoIP Wizard

This chapter shows you how to use the wizard to set up your SIP account(s).

5.1 Introduction

The ZyXEL Device has Voice over IP (VoIP) communication capabilities that allow you to use a traditional analog telephone to make Internet calls. You can configure the ZyXEL Device to use up to two SIP based VoIP accounts.

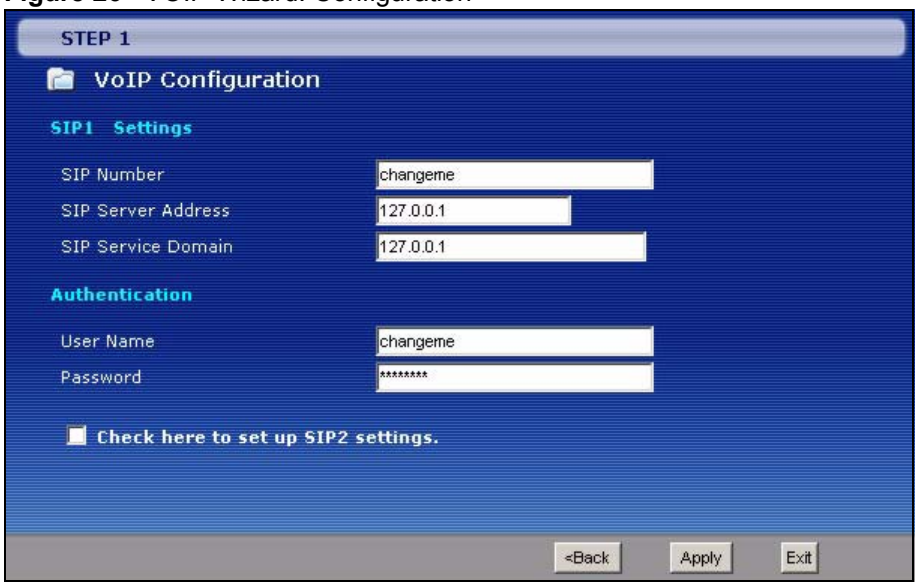
5.2 VOIP Wizard Setup

1 After you enter the password to access the web configurator, select **Go to Wizard setup**. Otherwise, click the wizard icon ( ) in the top right corner of the web configurator to display the wizard main screen. Click **VOIP SETUP** to configure the system for Voice Over Internet connection.

Figure 25 Select a Mode

2 The following screen displays. This wizard screen allows you to configure your voice settings for SIP account 1. Fill in the fields with information from your VoIP service provider. Leave the default settings in fields for which no information was provided (except if otherwise specified). See Chapter 10 on page 105 for background information on these fields.

Figure 26 VOIP Wizard: Configuration



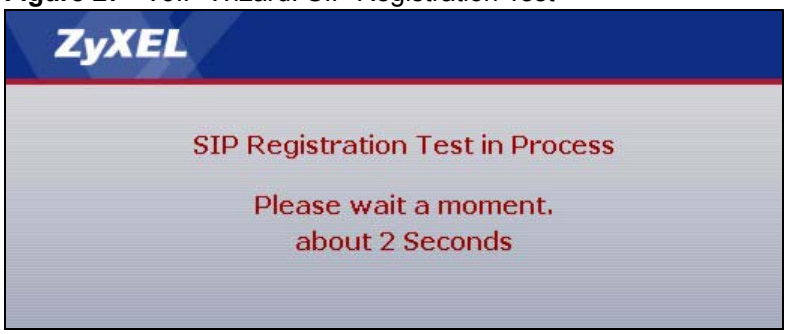
The following table describes the labels in this screen

Table 5 VOIP Wizard Configuration

LABEL	DESCRIPTION
SIP Number	Enter your SIP number in this field (use the number or text that comes before the @ symbol in a SIP account like 1234@VoIP-provider.com). You can use up to 127 ASCII characters.
SIP Server Address	Type the IP address or domain name of the SIP server in this field. It doesn't matter whether the SIP server is a proxy, redirect or register server. You can use up to 95 ASCII characters.
SIP Service Domain	Enter the SIP service domain name in this field (the domain name that comes after the @ symbol in a SIP account like 1234@VoIP-provider.com). You can use up to 127 ASCII Extended set characters.
User Name	This is the user name for registering this SIP account with the SIP register server. Type the user name exactly as it was given to you. You can use up to 95 ASCII characters.
Password	Type the password associated with the user name above. You can use up to 95 ASCII Extended set characters.
Check here to set up SIP2 settings.	This screen configures SIP account 1. Select the check box if you have a second SIP account that you want to use. You will need to configure the same fields for the second SIP account.
Back	Click **Back** to return to the previous screen.
Apply	Click **Apply** to complete the wizard setup and save your configuration.
Exit	Click **Exit** to close the wizard without saving your settings.

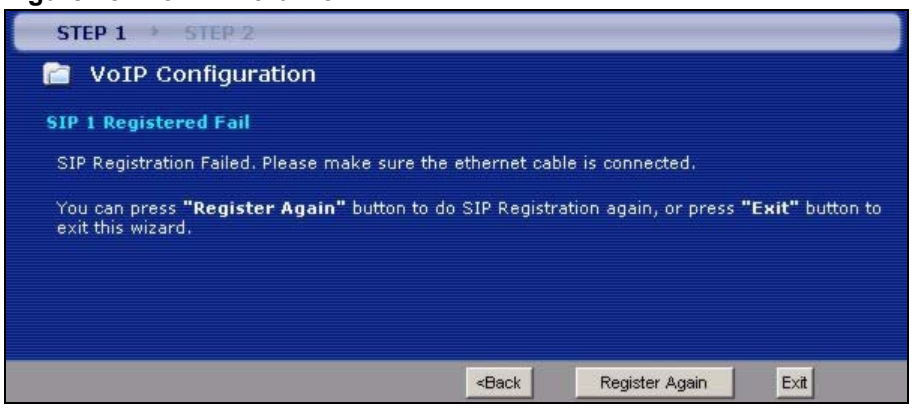
3 The ZyXEL Device attempts to register your SIP account with the SIP server.

Figure 27 VoIP Wizard: SIP Registration Test



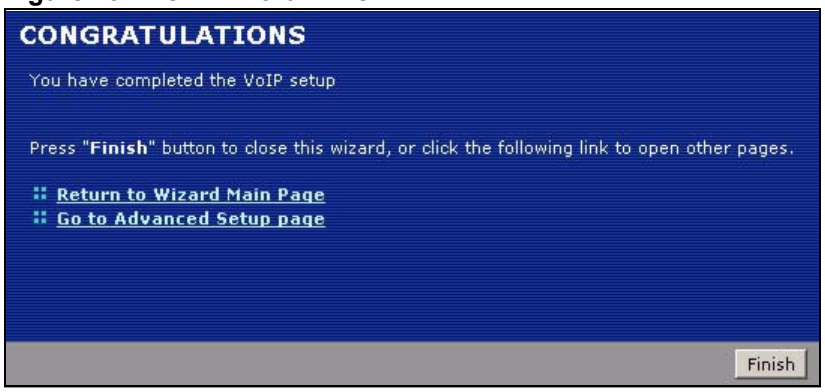
4 This screen displays if SIP account registration fails. Check your WiMAX connection using the **LINK** and **SIGNAL** LEDs on the front of the ZyXEL Device. Then wait a few seconds and click **Register Again**. If your Internet connection was already working, you can click **Back** and try re-entering your SIP account settings.

Figure 28 VoIP Wizard: Fail



5 This screen displays if your SIP account registration was successful. Click **Return to Wizard Main Page** if you want to use another configuration wizard. Click **Go to Advanced Setup page** or **Finish** to close the wizard and go to the main web configurator screens.

Figure 29 VOIP Wizard: Finish



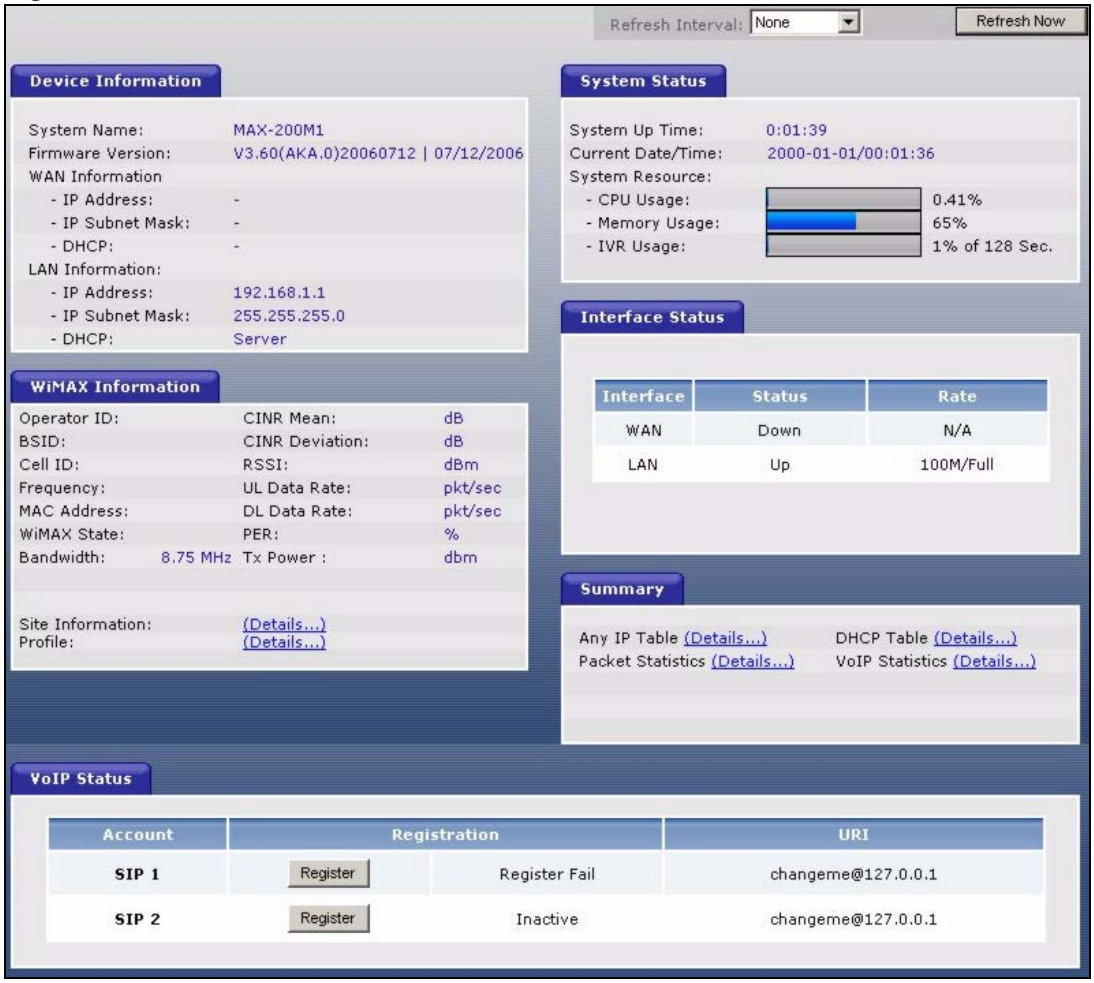
CHAPTER 6
Status Screens

Use the **Status** screens to look at the current status of the device, system resources, interfaces (LAN and WAN), and SIP accounts. You can also register and unregister SIP accounts. The **Status** screen also provides detailed information from Any IP and DHCP and statistics from WiMAX, VoIP, bandwidth management, and traffic.

6.1 Status Screen

Click **Status** to open this screen.

Figure 30 Status Screen



Each field is described in the following table.

Table 6 Status Screen

LABEL	DESCRIPTION
Refresh Interval	Enter how often you want the ZyXEL Device to update this screen.
Refresh Now	Click this to update this screen immediately.
Device Information	
System Name	This field displays the ZyXEL Device system name. It is used for identification. You can change this in the **Maintenance > System > General** screen's **System Name** field.
Firmware Version	This field displays the current version of the firmware inside the device. It also shows the date the firmware version was created. You can change the firmware version by uploading new firmware in **Maintenance > Tools > Firmware**.
WAN Information	
IP Address	This field displays the current IP address of the ZyXEL Device in the WAN.
IP Subnet Mask	This field displays the current subnet mask on the WAN.
DHCP	This field displays what DHCP services the ZyXEL Device is using in the WAN. Choices are: **Client** - The ZyXEL Device is a DHCP client in the WAN. Its IP address comes from a DHCP server on the WAN. **None** - The ZyXEL Device is not using any DHCP services in the WAN. It has a static IP address. If you are not using Roadrunner on Ethernet, you can change this in **Network > WAN**. If you are using Roadrunner on Ethernet, this is controlled by Roadrunner.
LAN Information	
IP Address	This field displays the current IP address of the ZyXEL Device in the LAN.
IP Subnet Mask	This field displays the current subnet mask in the LAN.
DHCP	This field displays what DHCP services the ZyXEL Device is providing to the LAN. Choices are: **Server** - The ZyXEL Device is a DHCP server in the LAN. It assigns IP addresses to other computers in the LAN. **Relay** - The ZyXEL Device is routing DHCP requests to one or more DHCP servers. The DHCP server(s) may be on another network. **None** - The ZyXEL Device is not providing any DHCP services to the LAN. You can change this in **Network > LAN > DHCP Setup**.
WiMAX Information	
Operator ID	Every WiMAX service provider has a unique Operator ID number, which is broadcast by each base station it owns. You can only connect to the Internet through base stations belonging to your service provider's network.
BSID	This field displays the identification number of the wireless base station to which the ZyXEL Device is connected. Every base station transmits a unique BSID, which identifies it across the network.
Cell ID	A base station's coverage area can be divided into multiple cells. This field shows the identification number of the cell in which the ZyXEL Device is connected.
Frequency	This field displays the radio frequency of the ZyXEL Device's wireless connection to a base station.

Table 6 Status Screen

LABEL	DESCRIPTION
MAC address	This field displays the Media Access Control address of the ZyXEL Device. Every network device has a unique MAC address which identifies it across the network.
WiMAX State	This field displays the status of the ZyXEL Device's current connection. • **NA**: the ZyXEL Device is starting up. • **Fail**: The ZyXEL Device is unable to connect to a base station. • **Initial Synchronization**: the ZyXEL Device is attempting to locate a base station. • **Initial DCD** (Downlink Channel Descriptor): the ZyXEL Device has located a base station and is receiving information about a possible downlink connection. • **Initial UCD** (Uplink Channel Descriptor): the ZyXEL Device is receiving information from the base station about a possible uplink connection. • **Initial Ranging and Calibration**: the ZyXEL Device and the base station are transmitting and receiving information about the distance between them. Ranging allows the ZyXEL Device to use a lower transmission power level when communicating with a nearby base station, and a higher transmission power level when communicating with a distant base station. • **Initial Negotiation**: the ZyXEL Device and the base station are exchanging information about their capabilities. • **Initial PKM** (Privacy Key Management): the ZyXEL Device and the base station are exchanging security information. • **Initial Registration**: the ZyXEL Device is registering with a RADIUS server. • **Running**: the ZyXEL Device has successfully registered with the base station. Traffic can now flow between the ZyXEL Device and the base station. • **Sleep**: the ZyXEL Device is in power saving mode, but periodically checks whether a base station has traffic waiting. • **Idle**: the ZyXEL Device is in power saving mode, but can connect when a base station alerts it that there is traffic waiting. • **Handover**: the ZyXEL Device is moving from one coverage area to another, and is connecting to the new base station.
Bandwidth	This field shows the size of the bandwidth step the ZyXEL Device uses to connect to a base station in megahertz (MHz).
CINR mean	This field shows the average Carrier to Interference plus Noise Ratio of the current connection. This value is an indication of overall radio signal quality. A higher value indicates a higher signal quality, and a lower value indicates a lower signal quality.
CINR deviation	This field shows the amount of change in the CINR level. This value is an indication of radio signal stability. A lower number indicates a more stable signal, and a higher number indicates a less stable signal.
RSSI	This field shows the Received Signal Strength Indication. This value is a measurement of overall radio signal strength. A higher RSSI level indicates a stronger signal, and a lower RSSI level indicates a weaker signal.
UL Data Rate	This field shows the number of data packets uploaded from the ZyXEL Device to the base station each second.
DL Data Rate	This field shows the number of data packets downloaded to the ZyXEL Device from the base station each second.
PER	This field shows the Packet Error Rate. The PER is the percentage of data packets transmitted across the network but not successfully received.
Tx Power	This field shows the output transmission (Tx) level of the ZyXEL Device.
Site Information	Click this link to view details of the radio frequencies used by the ZyXEL Device to connect to a base station.
Profile	Click this link to view details of the current wireless security settings.

Table 6 Status Screen

LABEL	DESCRIPTION
System Status	
System Up Time	This field displays how long the ZyXEL Device has been running since it last started up. The ZyXEL Device starts up when you plug it in, when you restart it (**Maintenance > Tools > Restart**), or when you reset it (see Section 2.1.2 on page 35).
Current Date/ Time	This field displays the current date and time in the ZyXEL Device. You can change this in **Maintenance > System > Time Setting**.
CPU Usage	This field displays what percentage of the ZyXEL Device's processing ability is currently being used. The higher the CPU usage, the more likely the ZyXEL Device is to slow down. You can reduce this by disabling some services, such as DHCP, NAT, or content filtering.
Memory Usage	This field displays what percentage of the ZyXEL Device's memory is currently used. The higher the memory usage, the more likely the ZyXEL Device is to slow down. Some memory is required just to start the ZyXEL Device and to run the web configurator. You can reduce the memory usage by disabling some services (see **CPU Usage**); by reducing the amount of memory allocated to NAT and firewall rules (you may have to reduce the number of NAT rules or firewall rules to do so); or by deleting rules in functions such as incoming call policies, speed dial entries, and static routes.
IVR Usage	This field displays what percentage of the ZyXEL Device's IVR memory is currently used. IVR (Interactive Voice Response) refers to the customizable ring tone and on-hold music you set. See Section 10.1.11 on page 111 for more information.
Interface Status	
Interface	This column displays each interface of the ZyXEL Device.
Status	This field indicates whether or not the ZyXEL Device is using the interface. For the WAN interface, this field displays **Up** when the ZyXEL Device is connected to a WiMAX network, and **Down** when the ZyXEL Device is not connected to a WiMAX network. For the LAN interface, this field displays **Up** when the ZyXEL Device is using the interface and **Down** when the ZyXEL Device is not using the interface.
Rate	For the LAN ports this displays the port speed and duplex setting. For the WAN interface, it displays the downstream and upstream transmission rate or **N/A** if the ZyXEL Device is not connected to a base station.
Summary	
Any IP Table	Click this link to view a list of IP addresses and MAC addresses of computers connected to the ZyXEL Device but not in the same subnet.
Packet Statistics	Click this link to view port status and packet specific statistics.
DHCP Table	Click this link to see details of computers to which the ZyXEL Device has given an IP address.
VoIP Statistics	Click this link to view statistics about your VoIP usage.
VoIP Status	
Account	This column displays each SIP account in the ZyXEL Device.

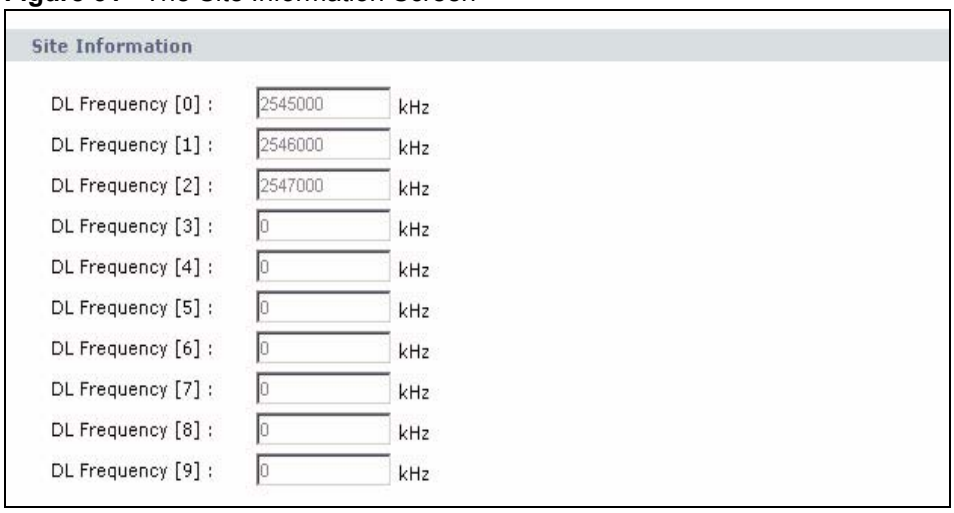
Table 6 Status Screen

LABEL	DESCRIPTION
Registration	This field displays the current registration status of the SIP account. You have to register SIP accounts with a SIP server to use VoIP. If the SIP account is already registered with the SIP server, Click **Unregister** to delete the SIP account's registration in the SIP server. This does not cancel your SIP account, but it deletes the mapping between your SIP identity and your IP address or domain name. The second field displays **Registered**. If the SIP account is not registered with the SIP server, Click **Register** to have the ZyXEL Device attempt to register the SIP account with the SIP server. The second field displays the reason the account is not registered. **Inactive** - The SIP account is not active. You can activate it in **VoIP > SIP > SIP Settings**. **Register Fail** - The last time the ZyXEL Device tried to register the SIP account with the SIP server, the attempt failed. The ZyXEL Device automatically tries to register the SIP account when you turn on the ZyXEL Device or when you activate it.
URI	This field displays the account number and service domain of the SIP account. You can change these in **VoIP > SIP > SIP Settings**.

6.2 Site Information

Click **Status > Site Information** to view this screen. This read-only screen shows information about the ZyXEL Device's connection with a WiMAX base station. To configure these settings, go to the **Network > WAN > WiMAX Frequency** screen.

Figure 31 The Site Information Screen



The following table describes the labels in this screen.

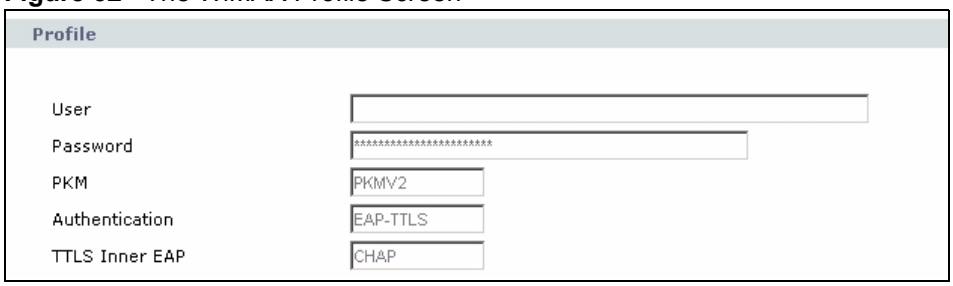
Table 7 The Site Information Screen

LABEL	DESCRIPTION
Site Information	
DL Frequency [0] ~ [9]	These fields show the downlink frequency settings in kilohertz (kHz). These settings determine how the ZyXEL Device searches for an available wireless connection. See Section 7.4 on page 74 for more information.

6.3 Profile

Click **Status > Profile** to view this screen. This read-only screen displays information about the security settings you are using. To configure these settings, go to the **Network > WAN > Internet Connection** screen.

Figure 32 The WiMAX Profile Screen



The following table describes the labels in this screen.

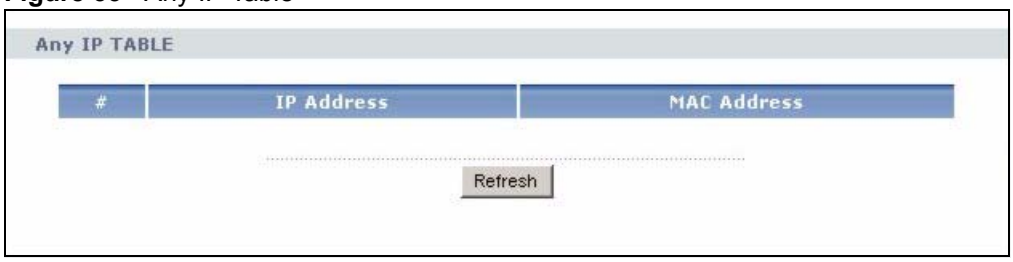
Table 8 The WiMAX Profile Screen

LABEL	DESCRIPTION
Profile	
User	This is the username for your Internet access account.
Password	This is the password for your Internet access account. The password displays as a row of asterisks.
PKM	This field displays the Privacy Key Management version number. PKM provides security between the ZyXEL Device and the base station. See the WiMAX security appendix for more information.
Authentication	This field displays the user authentication method. Authentication is the process of confirming the identity of a user (by means of a username and password, for example). EAP-TTLS allows an MS/SS and a base station to establish a secure link (or 'tunnel') with an AAA (Authentication, Authorization and Accounting) server in order to exchange authentication information. See the WiMAX security appendix for more details.
TTLS Inner EAP	This field displays the type of secondary authentication method. Once a secure EAP-TTLS connection is established, the inner EAP is the protocol used to exchange security information between the mobile station, the base station and the AAA server to authenticate the mobile station. At the time of writing, the ZyXEL Device supports only CHAP (Challenge Handshake Authentication Protocol). See the WiMAX security appendix for more details.

6.4 Any IP Table Window

This screen displays the IP address of each computer that is using the ZyXEL Device via the any IP feature. Any IP allows computers to access the Internet through the ZyXEL Device without changing their network settings when NAT is enabled. To access this screen, open the **Status** screen (see Section 6.1 on page 59), and click **(Details...)** next to **Any IP Table**.

Figure 33 Any IP Table



Each field is described in the following table.

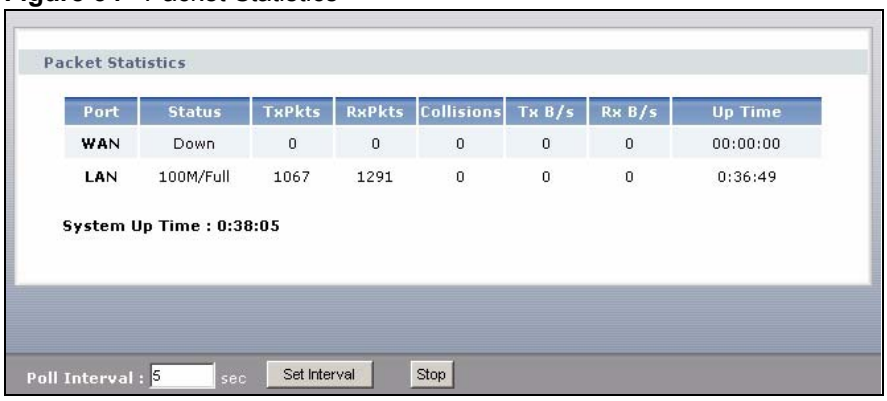
Table 9 Any IP Table

LABEL	DESCRIPTION
#	This field is a sequential value. It is not associated with a specific entry.
IP Address	This field displays the IP address of each computer that is using the ZyXEL Device but is in a different subnet than the ZyXEL Device.
MAC Address	This field displays the MAC address of the computer that is using the ZyXEL Device but is in a different subnet than the ZyXEL Device.
Refresh	Click this to update this screen.

6.5 Packet Statistics

To access this screen, open the **Status** screen (see Section 6.1 on page 59), and click **(Details...)** next to **Packet Statistics**. Read-only information here includes port status and packet specific statistics. Also provided are "system up time" and "poll interval(s)". The **Poll Interval(s)** field is configurable.

Figure 34 Packet Statistics



The following table describes the fields in this screen.

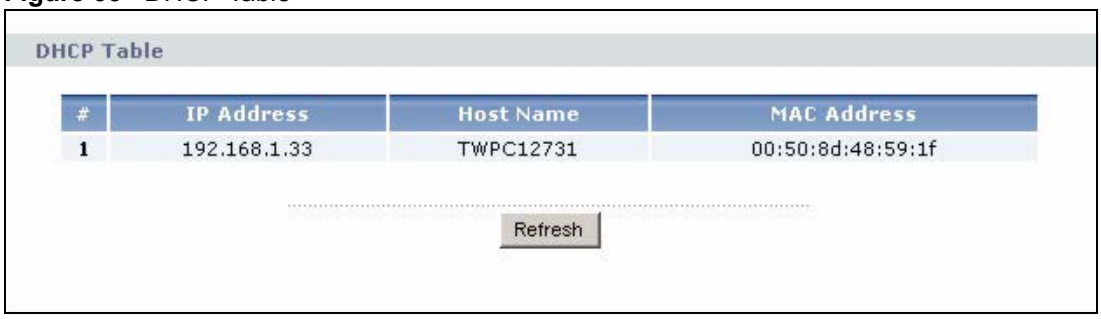
Table 10 Packet Statistics

LABEL	DESCRIPTION
Packet Statistics	
Port	This column displays each interface of the ZyXEL Device.
Status	This field indicates whether or not the ZyXEL Device is using the interface. For the WAN interface, this field displays **Up** when the ZyXEL Device is connected to a WiMAX network, and **Down** when the ZyXEL Device is not connected to a WiMAX network. For the LAN interface, this field displays **Up** when the ZyXEL Device is using the interface and **Down** when the ZyXEL Device is not using the interface.
TxPkts	This field displays the number of packets transmitted on this interface.
RxPkts	This field displays the number of packets received on this interface.
Collisions	This field displays the number of collisions on this port.
Tx B/s	This field displays the number of bytes transmitted in the last second.
Rx B/s	This field displays the number of bytes received in the last second.
Up Time	This field displays the elapsed time this interface has been connected.
System up Time	This is the elapsed time the system has been on.
Poll Interval(s)	Type the time interval for the browser to refresh system statistics.
Set Interval	Click this button to apply the new poll interval you entered in the **Poll Interval** field above.
Stop	Click this button to halt the refreshing of the system statistics.

6.6 DHCP Table Screen

This screen displays information about computers that received an IP address from the ZyXEL Device. To access this screen, open the **Status** screen (see Section 6.1 on page 59), and click **(Details...)** next to **DHCP Table**.

Figure 35 DHCP Table



Each field is described in the following table.

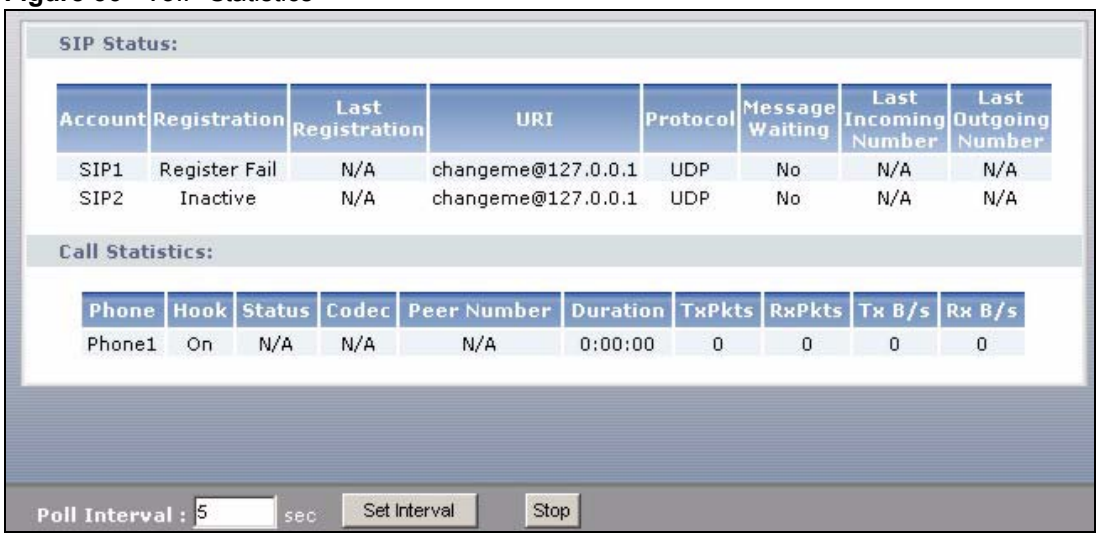
Table 11 DHCP Table

LABEL	DESCRIPTION
DHCP Table	
#	This field is a sequential value. It is not associated with a specific entry.
IP Address	This field displays the IP address the ZyXEL Device assigned to a computer in the network.
Host Name	This field displays the system name of the computer to which the ZyXEL Device assigned the IP address.
MAC Address	This field displays the MAC address of the computer to which the ZyXEL Device assigned the IP address.
Refresh	Click this to update this screen.

6.7 VoIP Statistics Window

This screen displays SIP registration information, status of calls and VoIP traffic statistics. To access this screen, open the **Status** screen (see Section 6.1 on page 59), and click **(Details...)** next to **VoIP Statistics**.

Figure 36 VoIP Statistics



Each field is described in the following table.

Table 12 VoIP Statistics

LABEL	DESCRIPTION
SIP Status	
Account	This column displays each SIP account in the ZyXEL Device.
Registration	This field displays the current registration status of the SIP account. You can change this in the **Status** screen. **Registered** - The SIP account is registered with a SIP server. **Register Fail** - The last time the ZyXEL Device tried to register the SIP account with the SIP server, the attempt failed. The ZyXEL Device automatically tries to register the SIP account when you turn on the ZyXEL Device or when you activate it. **Inactive** - The SIP account is not active. You can activate it in **VoIP > SIP > SIP Settings**.
Last Registration	This field displays the last time you successfully registered the SIP account. It displays **N/A** if you never successfully registered this account.
URI	This field displays the account number and service domain of the SIP account. You can change these in **VoIP > SIP > SIP Settings**.
Protocol	This field displays the transport protocol the SIP account uses. SIP accounts always use UDP.
Message Waiting	This field indicates whether or not there are any messages waiting for the SIP account.
Last Incoming Number	This field displays the last number that called the SIP account. It displays **N/A** if no number has ever dialed the SIP account.
Last Outgoing Number	This field displays the last number the SIP account called. It displays **N/A** if the SIP account has never dialed a number.
Call Statistics	
Phone	This field displays the ZyXEL Device's phone port number.

Table 12 VoIP Statistics

LABEL	DESCRIPTION
Hook	This field indicates whether the phone is on the hook or off the hook. **On** - The phone is hanging up or already hung up. **Off** - The phone is dialing, calling, or connected.
Status	This field displays the current state of the phone call. **N/A** - There are no current VoIP calls, incoming calls or outgoing calls being made. **DIAL** - The callee's phone is ringing. **RING** - The phone is ringing for an incoming VoIP call. **Process** - There is a VoIP call in progress. **DISC** - The callee's line is busy, the callee hung up or your phone was left off the hook.
Codec	This field displays what voice codec is being used for a current VoIP call through a phone port.
Peer Number	This field displays the SIP number of the party that is currently engaged in a VoIP call through a phone port.
Duration	This field displays how long the current call has lasted.
Tx Pkts	This field displays the number of packets the ZyXEL Device has transmitted in the current call.
Rx Pkts	This field displays the number of packets the ZyXEL Device has received in the current call.
Tx B/s	This field displays how quickly the ZyXEL Device has transmitted packets in the current call. The rate is the average number of bytes transmitted per second.
Rx B/s	This field displays how quickly the ZyXEL Device has received packets in the current call. The rate is the average number of bytes transmitted per second.
Poll Interval(s)	Enter how often you want the ZyXEL Device to update this screen, and click **Set Interval**.
Set Interval	Click this to make the ZyXEL Device update the screen based on the amount of time you specified in **Poll Interval**.
Stop	Click this to make the ZyXEL Device stop updating the screen.