

User's Guide

VMG4005-B50B

VDSL2 17a Bonding and 35b Single Line Bridge

Default Login Details

LAN IP Address	http://192.168.1.1
Login	admin
Password	See the Zyxel Device label

Version 5.13 Ed 2, 8/2019



IMPORTANT!

READ CAREFULLY BEFORE USE.

KEEP THIS GUIDE FOR FUTURE REFERENCE.

Screenshots and graphics in this book may differ slightly from what you see due to differences in your product firmware or your computer operating system. Every effort has been made to ensure that the information in this manual is accurate.

Related Documentation

- Quick Start Guide

The Quick Start Guide shows how to connect the VMG.

- More Information

Go to **support.zyxel.com** to find other information on the VMG.



Document Conventions

Warnings and Notes

These are how warnings and notes are shown in this guide.

Warnings tell you about things that could harm you or your device.

Note: Notes tell you other important information (for example, other things you may need to configure or helpful tips) or recommendations.

Syntax Conventions

- The VMG4005-B50B may be referred to as the 'VMG' in this guide.
- Product labels, screen names, field labels and field choices are all in **bold** font.
- A right angle bracket (>) within a screen name denotes a mouse click. For example, **Network Setting > Home Networking > LAN Setup** means you first click **Network Setting** in the navigation panel, then the **Home Networking** sub menu and finally the **LAN Setup** tab to get to that screen.

Icons Used in Figures

Figures in this user guide may use the following generic icons. The VMG icon is not an exact representation of your device.







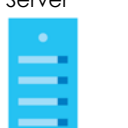



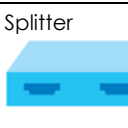
VMG 	Generic Router 	Wireless Router / Access Point 
Switch 	Telephone 	USB Storage Device 
Server 	Cell Tower 	Printer 
Telephone Jack 	Splitter 	

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PART I

User's Guide

CHAPTER 1

VMG Introduction

1.1 Overview

The VMG is a VDSL modem, which provides a fast Internet access over plain telephone wire. After you make the connections and turn it on, the VMG can automatically access the Internet. If the VMG fails to connect to the Internet, refer to [Section 14.3 on page 52](#).

It also supports Universal Plug and Play (UPnP) where UPnP devices can dynamically join the VMG network.

You can use the Web Configurator to view traffic statistics, upload firmware and allow external management of the VMG.

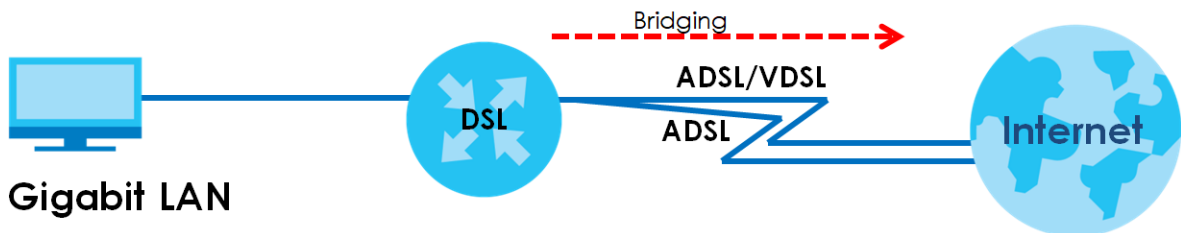
1.1.1 Internet Access

Use the gray phone cable to connect the DSL port to a DSL splitter or directly to the telephone wall outlet. You can have multiple WAN services over one ADSL or VDSL. The VMG cannot work in ADSL and VDSL mode at the same time.

Note: The ADSL and VDSL lines share the same DSL interface in the VMG.

A computer, gateway, or router can connect to the VMG's LAN port.

Figure 1 VMG's Internet Access Application



1.2 Ways to Manage the VMG

Use any of the following methods to manage the VMG.

- Web Configurator. This is recommended for management of the VMG using a (supported) web browser.

1.3 Good Habits for Managing the VMG

Do the following things regularly to make the VMG more secure and to manage the VMG more effectively.

- Change the Web Configurator password. Use a password that is not easy to guess and that consists of different types of characters, such as numbers and letters. Refer to [Section 10.2.1 on page 41](#) for details
- Write down the password and put it in a safe place.
- Back up the configuration (and make sure you know how to restore it). Restoring an earlier working configuration may be useful if the device becomes unstable or even crashes. If you forget your password, you will have to reset the VMG to its factory default settings. If you backed up an earlier configuration file, you would not have to totally re-configure the VMG. You could simply restore your last configuration. Refer to [Section 12.2 on page 45](#) for details.

1.4 Hardware

1.4.1 Front Panel

The LED indicators are located on the front panel. The following graphic displays the front panel of the VMG.

Figure 2 LEDs on the VMG






1.4.2 LEDs (Lights)

The following table describes the LEDs.

None of the LEDs are on if the VMG is not receiving power.

Table 1 LED Descriptions

LED	COLOR	STATUS	DESCRIPTION
 Power	Green	On	The VMG is receiving power and ready for use.
		Blinking	The VMG is in the booting state and getting ready for use.
	Red	On	The VMG detected an error while self-testing, or there is a device malfunction.
		Blinking	The VMG is uploading firmware.
		Off	The VMG is not receiving power.
 DSL1 DSL2	Green	On	The ADSL/VDSL line is up.
		Blinking	The VMG is initializing the ADSL/VDSL line.
		Off	The DSL line is down.
 Ethernet	Green	On	The VMG has a successful 10/100/1000 Mbps Ethernet connection with a device on the Local Area Network (LAN).
		Blinking	The VMG is sending or receiving data to/from the LAN at 10/100/1000 Mbps.
		Off	The VMG does not have an Ethernet connection with the LAN.

1.4.3 Bottom Panel

The connection ports are located on the bottom panel. The following graphic display the bottom panel.

Figure 3 Bottom Panel



The following table describes the items on the bottom panel.

Table 2 Bottom Panel Ports

LABEL	DESCRIPTION
DSL	Connect a RJ-11 cable to the DSL port for Internet access.
LAN	Connect a router/gateway to the Ethernet port for Internet access.
Reset	Press the button to return the VMG to the factory defaults.
Power	Connect the power adapter and then can press the power button to start the VMG.

1.4.4 RESET Button

If you forget your password or cannot access the Web Configurator, you will need to use the **RESET** button at the back of the device 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 the factory default (see the device label).

- 1 Make sure the **POWER** LED is on (not blinking).
- 2 To set the device back to the factory default settings, press the **RESET** button for more than five seconds or until the **POWER** LED begins to blink and then release it.

When the **POWER** LED begins to blink, the defaults have been restored and the device restarts.

1.4.5 Wall Mounting

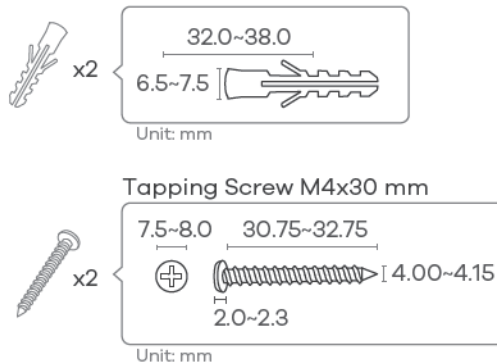
You may need screw anchors if mounting on a concrete or brick wall.

Table 3 Wall Mounting Information

Distance between holes	80 mm
Screws	Two
Screw anchors (optional)	Two

The following figure introduces the specifications of the screws and screws anchors for wall mounting.

Figure 4 Screws & Screw Anchors Specifications



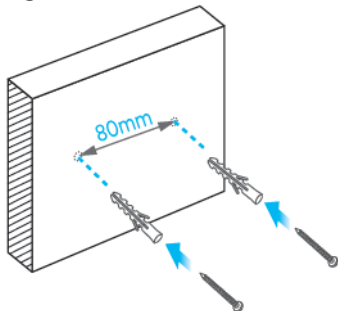
- 1 Select a position free of obstructions on a wall strong enough to hold the weight of the device.

Do NOT wall-mount the VMG over the height of 2 meters.

- 2 Mark two holes on the wall at the appropriate distance apart for the screws.

Be careful to avoid damaging pipes or cables located inside the wall when drilling holes for the screws.

Figure 5 Distance Between Holes



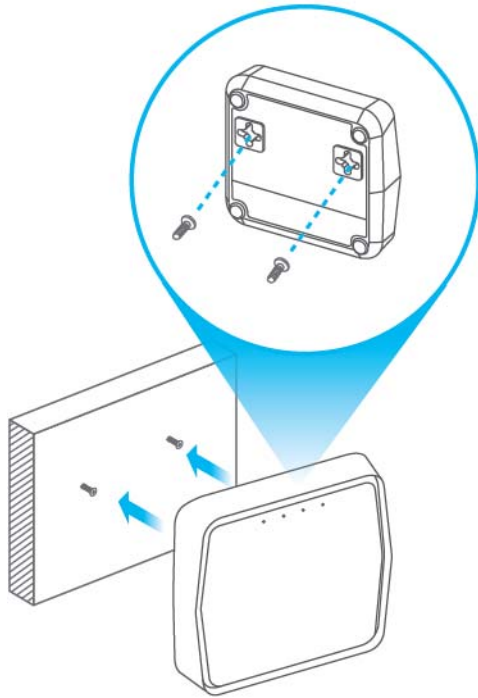
- 3 If using screw anchors, drill two holes for the screw anchors into the wall. Push the anchors into the full depth of the holes, then insert the screws into the anchors. Do not insert the screws all the way in - leave a small gap of about 0.5 cm.

If not using screw anchors, use a screwdriver to insert the screws into the wall. Do not insert the screws all the way in - leave a gap of about 0.5 cm.

- 4 Make sure the screws are fastened well enough to hold the weight of the VMG with the connection cables.

- 5 Align the holes on the back of the VMG with the screws on the wall. Hang the VMG on the screws.

Figure 6 Wall Mounting Example



CHAPTER 2

The Web Configurator

2.1 Overview

The Web Configurator is an HTML-based management interface that allows easy VMG setup and management via Internet browser. Use Internet Explorer 11 and later versions or Mozilla Firefox 67.0.2 and later versions or Safari 5.0 and later versions. The recommended screen resolution is 1024 by 768 pixels.

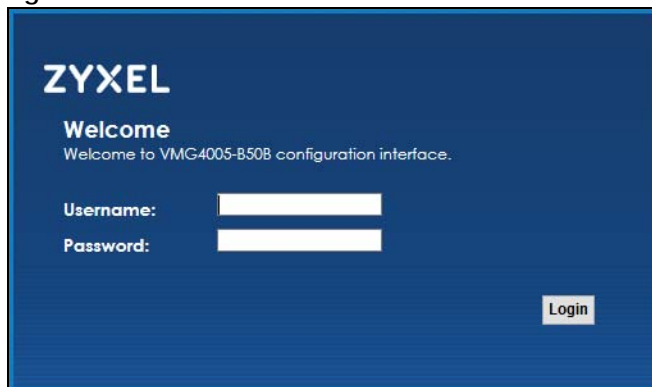
In order to use the Web Configurator you need to allow:

- Web browser pop-up windows from your VMG. Web pop-up blocking is enabled by default in Windows 10.
- JavaScript (enabled by default).
- Java permissions (enabled by default).

2.1.1 Access the Web Configurator

- 1 Make sure your VMG hardware is properly connected (refer to the Quick Start Guide).
- 2 Make sure your computer has an IP address in the same subnet as the VMG. Your computer should have an IP address from 192.168.1.2 to 192.168.1.254. See your computer help or refer to [Section 14.5 on page 53](#).
- 3 Launch your web browser. If the VMG does not automatically re-direct you to the login screen, go to <http://192.168.1.1>.
- 4 A password screen displays. To access the administrative Web Configurator and manage the VMG, type the default username **admin** and password (in the VMG's label) in the password screen and click **Login**. If you have changed the password, enter your password and click **Login**.

Figure 7 Password Screen



- 5 The following screen displays if you have not yet changed your password. Enter a new password, retype it to confirm and click **Apply**.

Figure 8 Change Password Screen

ZYXEL

Change Password
The password must contain 6 to 64 characters, include 0-9 and a-z.

New Password :

Verify New Password :

No need to change password. Do not show this page next time.

Apply

- 6 The **Status** screen appears, where you can view the VMG's interface and system information.

Note: You can only enter the wrong password up to three times. After that, you will be locked out of the Web Configurator for five minutes. You can change this setting in **Maintenance > User Account > Add New/Edit Account** (see [Section 10.2.1 on page 41](#)).

2.2 Web Configurator Layout

Figure 9 Screen Layout

The screenshot shows the ZyXEL VMG4005-B50B web configurator interface. The title bar (A) contains the ZyXEL logo, the device model number, a language dropdown set to English, and a Logout button. The main window (B) is divided into several sections: Device Information, System Status, WAN Information, LAN Information, and Interface Status. A notification box at the bottom of the main window indicates a problem with internet connectivity. The navigation panel (C) at the bottom contains icons for Connection Status, Network Setting, System Monitor, and Maintenance.

Device Information

Host Name:	VMG4005-B50B
Model Number:	VMG4005-B50B
Serial Number:	S190Y16073600
Firmware Version:	V5.13(ABRL0)b4

System Status

System Up Time:	0 days: 0 hours: 2 minutes
Current Date/Time:	1970-01-01/00:06:01
System Resource:	
- CPU Usage:	4%
- Memory Usage:	62%

LAN Information

- IP Address:	192.168.1.1
- IP Subnet Mask:	255.255.255.0
- IPv6 Link Local Address:	fe80::ca6c:b7ff:fe86:c810
- MAC Address:	C8:6C:87:86:C8:10

Interface Status

Interface	Status	Rate
LAN 1	Up	1000M / Full
DSL	No Link	N/A

Check the problems

A problem occurred:The VMG4005-B50B cannot connect to Internet. Please check WAN settings or contact your ISP.

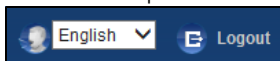
Navigation Panel: Connection Status, Network Setting, System Monitor, Maintenance

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

- A - title bar
- B - main window
- C - navigation panel



2.2.1 Title Bar

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



The icons provide the following functions.

Table 4 Web Configurator Icons in the Title Bar

ICON	DESCRIPTION
	Language: Select the language you prefer.
	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 VMG features. The following tables describe each menu item.

Table 5 Navigation Panel Summary

LINK	TAB	FUNCTION
Connection Status		This screen shows the network status of the VMG and computers/devices connected to it.
Network Setting		
Home Networking	LAN Setup	Use this screen to configure the LAN IP address and subnet mask.
	UPnP	Use this screen to turn UPnP and UPnP NAT-T on or off.
System Monitor		
Log	System Log	Use this screen to view the status of events that occurred to the VMG. You can export or email the logs.
Traffic Status	WAN	Use this screen to view the status of all network traffic going through the DSL port of the VMG.
	LAN	Use this screen to view the status of all network traffic going through the LAN ports of the VMG.
ARP Table	ARP Table	Use this screen to see the IPv4 address and MAC address of each DHCP connection.
xDSL Statistics	xDSL Statistics	Use this screen to view the VMG's xDSL traffic statistics.
Maintenance		
System	System	Use this screen to set Device name and Domain name.
User Account	User Account	Use this screen to change user password on the VMG.
Firmware Upgrade	Firmware Upgrade	Use this screen to upload firmware to your VMG.
Backup/Restore	Backup/Restore	Use this screen to backup and restore your VMG's configuration (settings) or reset the factory default settings.
Reboot	Reboot	Use this screen to reboot the VMG without turning the power off.
Diagnostic	Ping&Traceroute &Nslookup	Use this screen to identify problems with the DSL connection. You can use Ping, TraceRoute, or Nslookup to help you identify problems.

PART II

Technical Reference

CHAPTER 3

Network Status

3.1 Overview

After you log into the Web Configurator, the **Status** screen appears. This shows the current status of the VMG, system resources, and interfaces (LAN and DSL).

3.2 Status

Use this screen to view the network connection status of the device and its clients. A warning message appears if there is a connection problem. You can configure how often you want the VMG to update this screen in **Refresh interval**.

Figure 10 Status Screen

The screenshot shows the ZYXEL VMG4005-B50B Status Screen. At the top, there is a header with the ZYXEL logo, the model number VMG4005-B50B, a language dropdown set to English, and a Logout button. Below the header, the word 'Status' is displayed, followed by a 'Refresh Interval' dropdown set to 'None'.

The main content area is divided into several sections:

- Device Information:** A table listing Host Name (VMG4005-B50B), Model Number (VMG4005-B50B), Serial Number (S190Y16073600), and Firmware Version (V5.13[ABRL0]b4).
- System Status:** A table showing System Up Time (0 days: 0 hours: 2 minutes), Current Date/Time (1970-01-01/00:06:01), and System Resource usage (CPU Usage: 4%, Memory Usage: 62%).
- WAN Information:** A section for WAN-related data.
- LAN Information:** A table listing IP Address (192.168.1.1), IP Subnet Mask (255.255.255.0), IPv6 Link Local Address (fe80::ca6c:87ff:fe86:c810), and MAC Address (C8:6C:87:86:C8:10).
- Interface Status:** A table with columns for Interface, Status, and Rate. It lists LAN 1 (Up, 1000M / Full) and DSL (No Link, N/A).

At the bottom of the screen, there is a notification box with the text: 'Check the problems. A problem occurred: The VMG4005-B50B cannot connect to Internet. Please check WAN settings or contact your ISP.' An 'OK' button is located in the bottom right corner of the notification box. Below the notification box is a taskbar with several icons.

Each field is described in the following table.

Table 6 Status Screen

LABEL	DESCRIPTION
Refresh Interval	Select how often you want the VMG to update this screen.
Device Information	
Host Name	This field displays the VMG system name. It is used for identification.
Model Number	This shows the model number of your VMG.
Serial Number	This field displays the serial number of the VMG.
Firmware Version	This is the current version of the firmware on the VMG.
WAN Information (These fields display when you have an Internet connection.)	
Encapsulation	This field displays the current encapsulation method.
IP Address	This field displays the current IP address of the VMG in the WAN.
IP Subnet Mask	This field displays the current subnet mask in the WAN.
MAC Address	This shows the WAN Ethernet adapter MAC (Media Access Control) address of your VMG.

Table 6 Status Screen (continued)

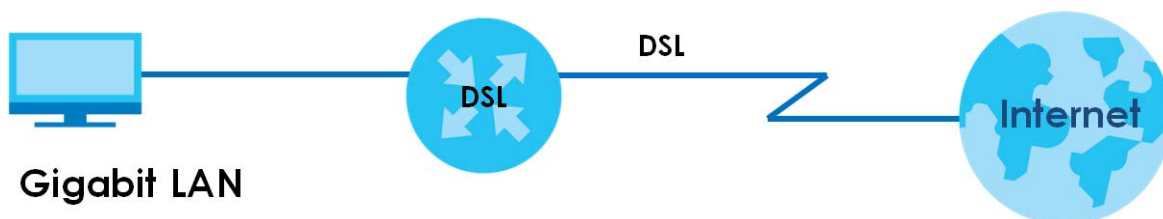
LABEL	DESCRIPTION
Primary DNS server	This field displays the first DNS server address assigned by the ISP.
Secondary DNS server	This field displays the second DNS server address assigned by the ISP.
DHCP	This field displays whether the WAN interface is using a dynamic IP address or a static IP address. Choices are: Client - The WAN interface can obtain an IP address from a DHCP server. None - The WAN interface is using a static IP address.
LAN Information (This is information about the LAN port.)	
IP Address	This is the current IP address of the VMG.
IP Subnet Mask	This is the current subnet mask.
IPv6 Link Local Address	This field displays the current link-local address of the VMG for the LAN interface.
MAC Address	This shows the LAN Ethernet adapter MAC (Media Access Control) address of your VMG.
System Status	
System Up Time	This field displays how long the VMG has been running since it last started up. The VMG starts up when you plug it in, when you restart it (Maintenance > Reboot), or when you reset it.
Current Date/Time	This field displays the current date and time in the VMG.
System Resource	
CPU Usage	This field displays what percentage of the VMG's processing ability is currently used. When this percentage is close to 100%, the VMG is running at full load, and the throughput is not going to improve anymore. If you want some applications to have more throughput, you should turn off other applications.
Memory Usage	This field displays what percentage of the VMG's memory is currently used. Usually, this percentage should not increase much. If memory usage does get close to 100%, the VMG is probably becoming unstable, and you should restart the device. See Section 12.2 on page 45 , or turn off the device (unplug the power) for a few seconds.
Interface Status	
Interface	This column displays each interface the VMG has.
Status	This field indicates the interface's use status. For the LAN interface, this field displays Up when using the interface and NoLink when not using the interface. For the DSL interface, this field displays Down (line down), Up (line up or connected), Drop (dropping a call) if you're using PPPoE encapsulation, and NoLink when not using the interface.
Rate	For the LAN interface, this displays the port speed and duplex setting. For the DSL interface, it displays the downstream and upstream transmission rate.

CHAPTER 4

Home Networking

4.1 Overview

A Local Area Network (LAN) is a shared communication system to which many networking devices are connected. It is usually located in one immediate area such as a building or floor of a building.



4.1.1 What You Can Do in this Chapter

- Use the **LAN Setup** screen to set the LAN IP address and subnet mask of your VMG ([Section 4.2 on page 22](#)).
- Use the **UPnP** screen to enable UPnP on the VMG ([Section 4.3 on page 23](#)).

4.1.2 What You Need To Know

4.1.2.1 About LAN

IP Address

IP addresses identify individual devices on a network. Every networking device (including computers, servers, routers, printers, and so forth) needs an IP address to communicate across the network. These networking devices are also known as hosts.

Subnet Mask

Subnet masks determine the maximum number of possible hosts on a network. You can also use subnet masks to divide one network into multiple sub-networks.

4.1.2.2 About UPnP

Identify UPnP Devices

UPnP hardware is identified as an icon in the Network Connections folder (Windows 10). Each UPnP compatible device installed on your network will appear as a separate icon. Selecting the icon of a UPnP device will allow you to access the information and properties of that device.

Cautions with UPnP

The automated nature of NAT traversal applications in establishing their own services and opening firewall ports may present network security issues. Network information and configuration may also be obtained and modified by users in some network environments.

When a UPnP device joins a network, it announces its presence with a multicast message. For security reasons, the VMG allows multicast messages on the LAN only.

All UPnP-enabled devices may communicate freely with each other without additional configuration. Disable UPnP if this is not your intention.

UPnP and Zyxel

Zyxel has achieved UPnP certification from the Universal Plug and Play Forum UPnP™ Implementers Corp. (UIC). Zyxel's UPnP implementation supports Internet Gateway Device (IGD) 1.0.

See [Section 4.3.1 on page 24](#) for examples of installing and using UPnP.

Find Out More

See [Section on page 28](#) for technical background information on LANs.

4.2 LAN Setup

Use this screen to set the IP address and subnet mask of your VMG that you use to log into the web configurator. Click **Network Setting > Home Networking** to open the **LAN Setup** screen.

Follow these steps to configure your LAN settings.

- 1** Enter an IP address into the **IP Address** field. The IP address must be in dotted decimal notation. This will become the IP address of your VMG.
- 2** Enter the IP subnet mask into the **Subnet Mask** field. Unless instructed, otherwise it is best to leave this alone. The configurator will automatically compute a subnet mask based upon the IP address you entered.

- 3 Click **Apply** to save your settings.

Figure 11 Network Setting > Home Networking > LAN Setup

The following table describes the fields in this screen.

Table 7 Network Setting > Home Networking > LAN Setup

LABEL	DESCRIPTION
Interface Group	
Group Name	Select the interface group name for which you want to configure LAN settings. See Chapter 15 on page 178 for how to create a new interface group.
LAN IP Setup	
IP Address	Enter the LAN IPv4 address you want to assign to your VMG in dotted decimal notation, for example, 192.168.1.1 (factory default).
Subnet Mask	Type the subnet mask of your network in dotted decimal notation, for example 255.255.255.0 (factory default). Your VMG automatically computes the subnet mask based on the IP address you enter, so do not change this field unless you are instructed to do so.
Apply	Click Apply to save your changes.
Cancel	Click Cancel to restore your previously saved settings.

4.3 UPnP

Universal Plug and Play (UPnP) is a networking standard for easy network connectivity among UPnP-enabled networking devices and software.

See [page 21](#) for more information on UPnP.

Use the following screen to configure the UPnP settings on your VMG. Click **Network Setting > Home Networking > UPnP** to display the screen shown next.

Figure 12 Network Setting > Home Networking > UPnP

Universal Plug and Play (UPnP) is a networking standard for easy network connectivity among networking devices and software that also have UPnP enabled.

UPnP State
UPnP Enable Disable

UPnP NAT-T State
UPnP NAT-T : Enable Disable

Note :
UPnP NAT-T only works when NAT is enable

#	Description	Destination IP Address	External Port	Internal Port	Protocol

The following table describes the labels in this screen.

Table 8 Network Setting > Home Networking > UPnP

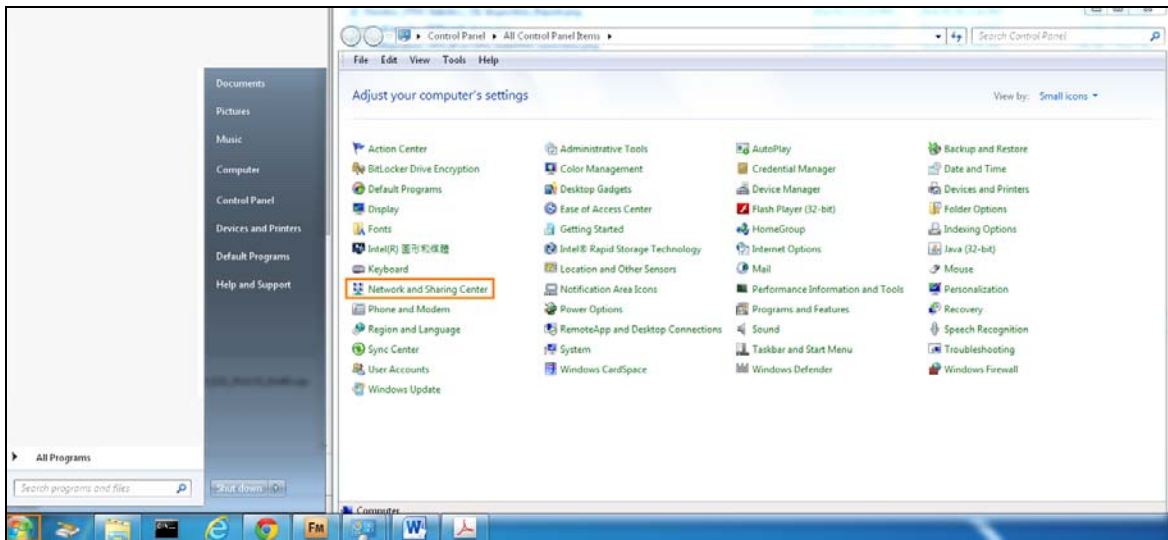
LABEL	DESCRIPTION
UPnP	Select Enable to activate UPnP. Be aware that anyone could use a UPnP application to open the Web Configurator's login screen without entering the VMG's IP address (although you must still enter the password to access the Web Configurator).
UPnP NAT-T	Select Enable to allow UPnP-enabled applications to automatically configure the VMG so that they can communicate through the VMG by using NAT traversal. UPnP applications automatically reserve a NAT forwarding port in order to communicate with another UPnP enabled device; this eliminates the need to manually configure port forwarding for the UPnP enabled application. The table below displays the NAT port forwarding rules added automatically by UPnP NAT-T.
#	This is the index number of the UPnP NAT-T connection.
Description	This is the description of the UPnP NAT-T connection.
Destination IP Address	This is the IP address of the other connected UPnP-enabled device.
External Port	This is the external port number that identifies the service.
Internal Port	This is the internal port number that identifies the service.
Protocol	This is the transport layer protocol used for the service.
Apply	Click Apply to save your changes.
Cancel	Click Cancel to exit this screen without saving.

4.3.1 Turn on UPnP in Windows 7 Example

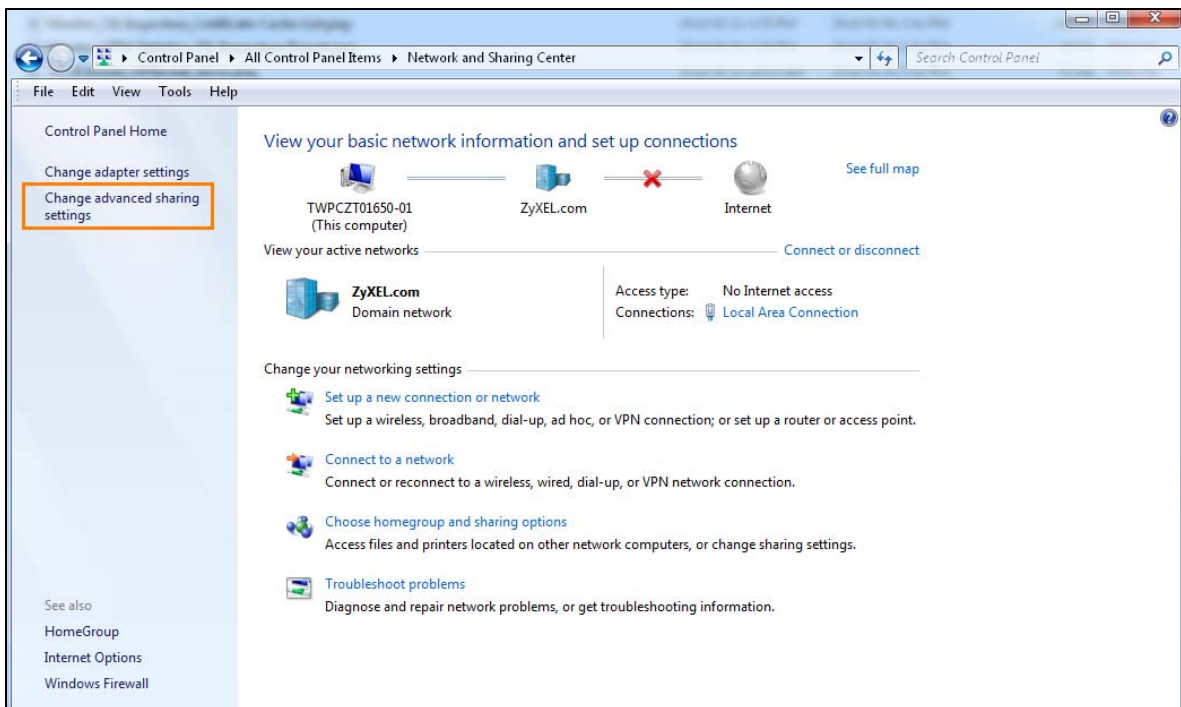
This section shows you how to use the UPnP feature in Windows 7. UPnP server is installed in Windows 7. Activate UPnP on the VMG.

Make sure the computer is connected to a LAN port of the VMG. Turn on your computer and the VMG.

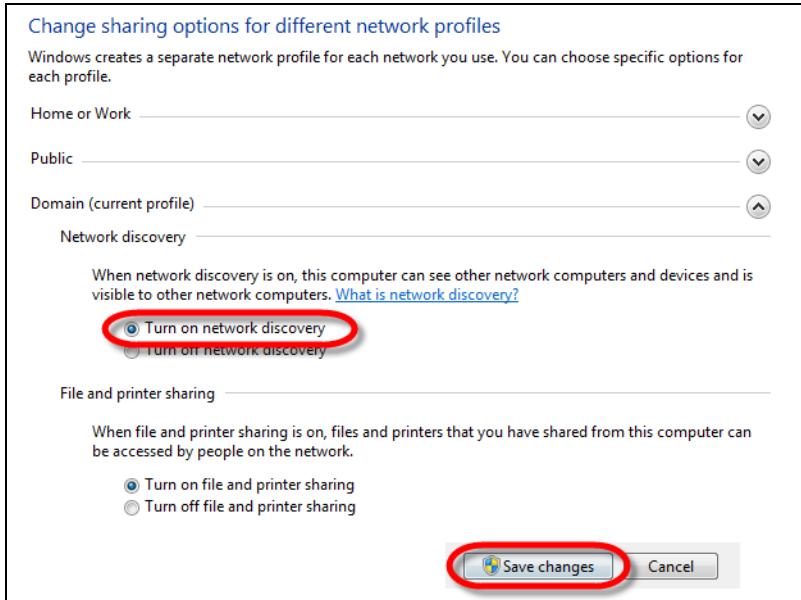
- 1 Click the start icon, **Control Panel** and then the **Network and Sharing Center**.



- 2 Click **Change Advanced Sharing Settings**.



- 3 Select **Turn on network discovery** and click **Save Changes**. Network discovery allows your computer to find other computers and devices on the network and other computers on the network to find your computer. This makes it easier to share files and printers.

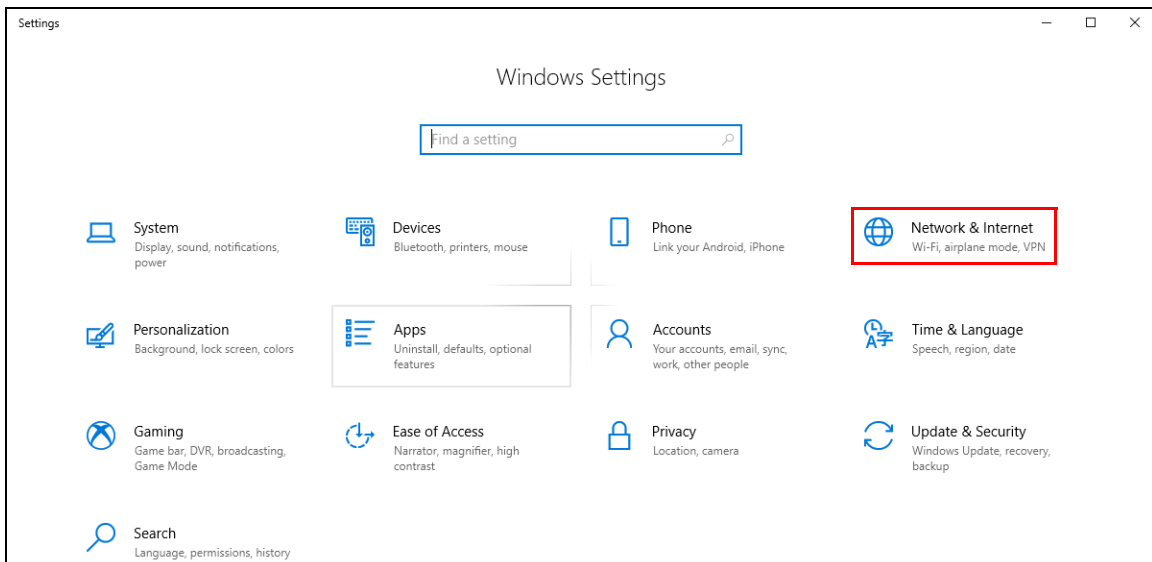


4.3.2 Turn on UPnP in Windows 10 Example

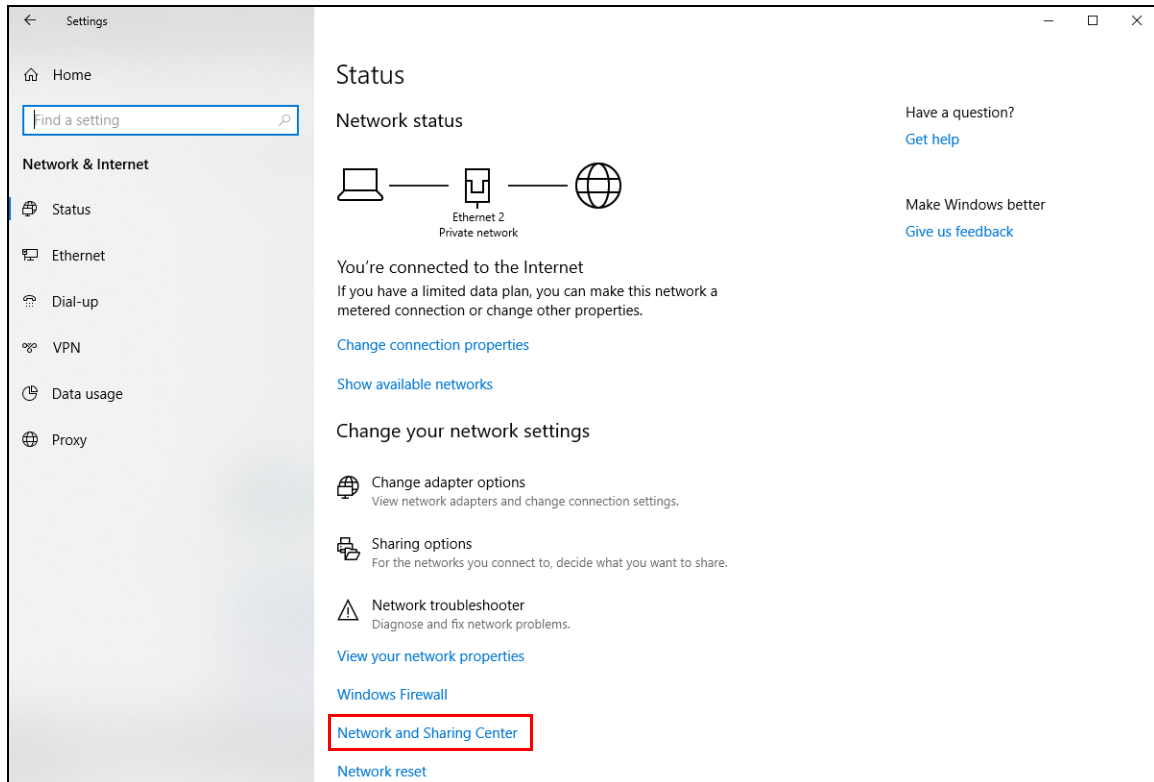
This section shows you how to use the UPnP feature in Windows 10. UPnP server is installed in Windows 10. Activate UPnP on the VMG by clicking **Network Setting > Home Networking > UPnP**.

Make sure the computer is connected to the LAN port of the VMG. Turn on your computer and the VMG.

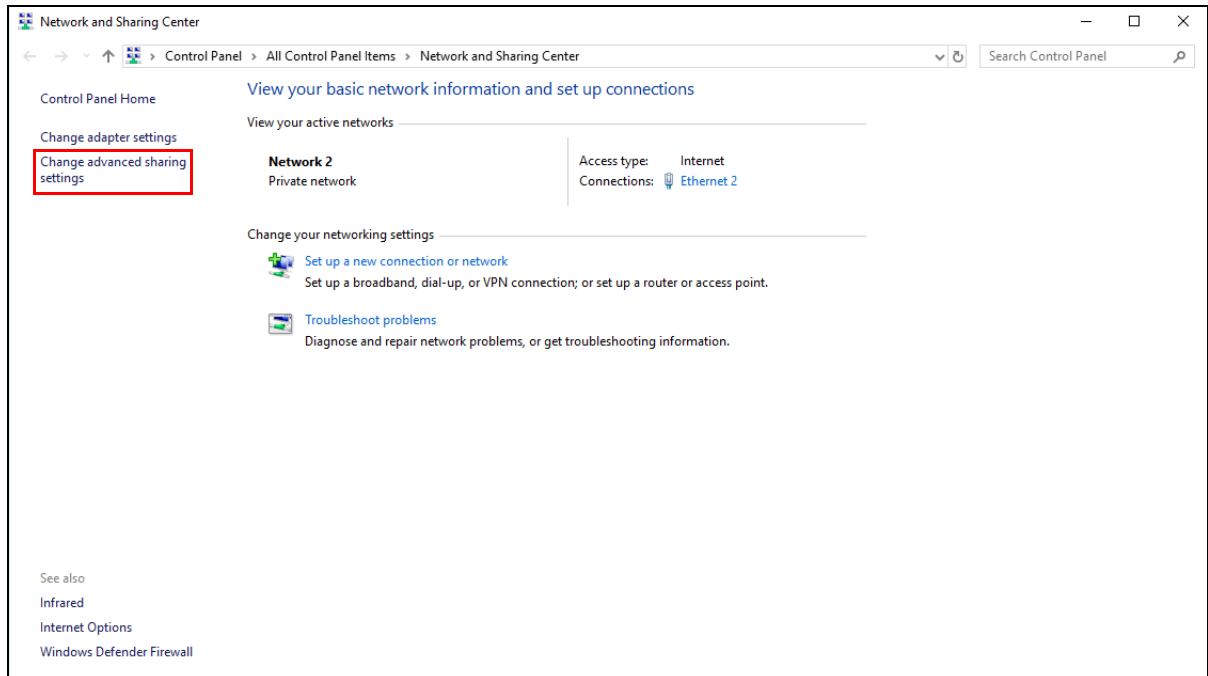
- 1 Click the start icon, **Settings** and then **Network & Internet**.



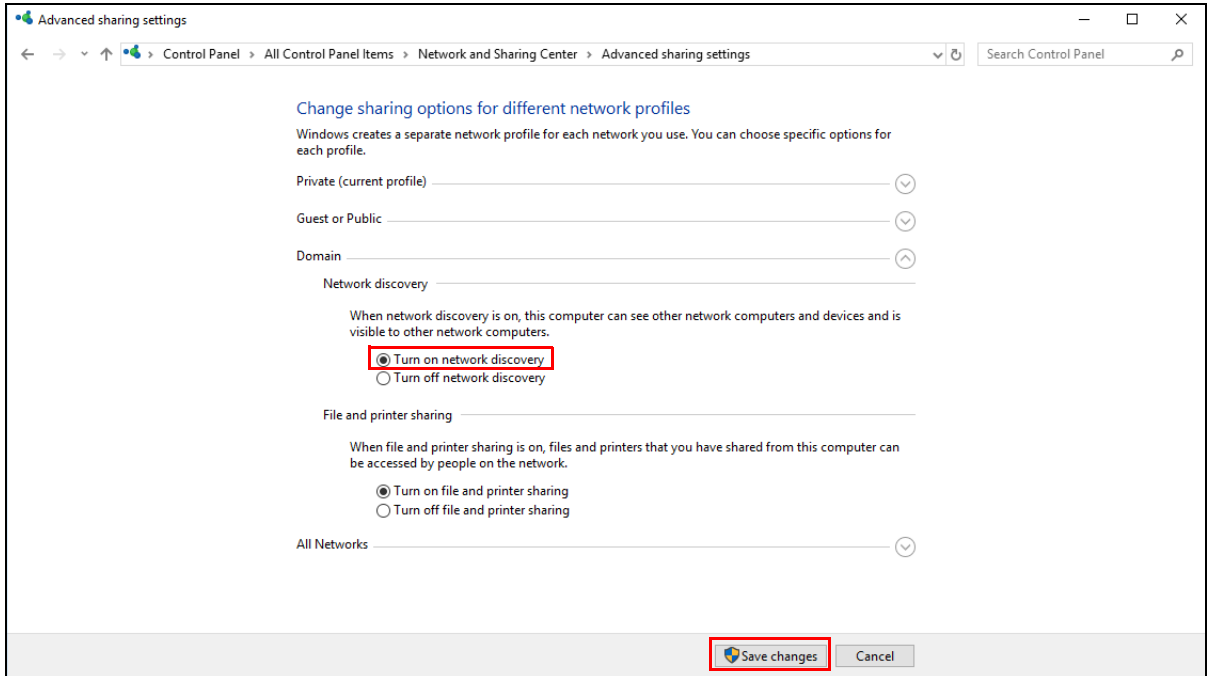
- 2 Click **Network and Sharing Center**.



- 3 Click **Change advanced sharing settings**.



- 4 Under **Domain**, select **Turn on network discovery** and click **Save Changes**. Network discovery allows your computer to find other computers and devices on the network and other computers on the network to find your computer. This makes it easier to share files and printers.



CHAPTER 5

Log

5.1 Overview

The Web Configurator allows you to choose which categories of events to have the VMG log and then display the logs or have the VMG send them to an administrator (as email) or to a syslog server.

5.1.1 What You Can Do in this Chapter

Use the **System Log** screen to see the system logs ([Section 5.2 on page 30](#)).

5.1.2 What You Need To Know

The following terms and concepts may help as you read this chapter.

Alerts and Logs

An alert is a type of log that warrants more serious attention. They include system errors, attacks (access control) and attempted access to blocked web sites. Some categories such as **System Errors** consist of both logs and alerts. You may differentiate them by their color in the **View Log** screen. Alerts display in red and logs display in black.

Syslog Overview

The syslog protocol allows devices to send event notification messages across an IP network to syslog servers that collect the event messages. A syslog-enabled device can generate a syslog message and send it to a syslog server.

Syslog is defined in RFC 3164. The RFC defines the packet format, content and system log related information of syslog messages. Each syslog message has a facility and severity level. The syslog facility identifies a file in the syslog server. Refer to the documentation of your syslog program for details. The following table describes the syslog severity levels.

Table 9 Syslog Severity Levels

CODE	SEVERITY
0	Emergency: The system is unusable.
1	Alert: Action must be taken immediately.
2	Critical: The system condition is critical.
3	Error: There is an error condition on the system.
4	Warning: There is a warning condition on the system.
5	Notice: There is a normal but significant condition on the system.

Table 9 Syslog Severity Levels

CODE	SEVERITY
6	Informational: The syslog contains an informational message.
7	Debug: The message is intended for debug-level purposes.

5.2 System Log

All system events are logged and displayed in the following table. Select a level from the pull-down menu to show filtered result. Click **System Monitor > Log** to open the **System Log** screen.

Figure 13 System Monitor > Log > System Log

All system events will be logged and displayed in the following table. Select a level from the pull-down menu to show filtered results.

Level: Category:

#	Time	Facility	Level	Category	Messages
1	Jan 1 00:00:37	user	notice	system	esmd: System: System init finished

The following table describes the fields in this screen.

Table 10 System Monitor > Log > System Log

LABEL	DESCRIPTION
Level	Select a severity level from the drop-down list box. This filters search results according to the severity level you have selected. When you select a severity, the VMG searches through all logs of that severity or higher.
Category	Select the type of logs to display.
Clear Log	Click this to delete all the logs.
Refresh	Click this to renew the log screen.
Export Log	Click this to export the selected log(s).
#	This field is a sequential value and is not associated with a specific entry.
Time	This field displays the time the log was recorded.
Facility	The log facility allows you to send logs to different files in the syslog server. Refer to the documentation of your syslog program for more details.
Level	This field displays the severity level of the log that the device is to send to this syslog server.
Category	This field displays the type of the log.
Messages	This field states the reason for the log.

CHAPTER 6

Traffic Status

6.1 Overview

Use the **Traffic Status** screens to look at network traffic status and statistics of the DSL and LAN interfaces.

6.1.1 What You Can Do in this Chapter

- Use the **WAN** screen to view the DSL traffic statistics ([Section 6.2 on page 31](#)).
- Use the **LAN** screen to view the LAN traffic statistics ([Section 6.3 on page 32](#)).

6.2 WAN Status

Click **System Monitor > Traffic Status** to open the **WAN** screen. Use this screen to look at network traffic status and statistics of the DSL interfaces.

Figures about data that have been sent out to and received from the Internet are displayed in the following table.

Status

Sent: 0 Bytes Received: 0 Bytes

Refresh Interval: None

Connected Interface	Packets Sent			Packets Received		
	Data	Error	Drop	Data	Error	Drop
ADSL	0	0	0	0	0	0
VDSL	0	0	0	0	0	0
ADSL_MGMT	0	0	0	0	0	0
VDSL_MGMT	0	0	0	0	0	0

The following table describes the fields in this screen.

Table 11 System Monitor > Traffic Status > WAN

LABEL	DESCRIPTION
Refresh Interval	Select how often you want the VMG to update this screen.
Connected Interface	This shows the name of the WAN interface that is currently connected.

Table 11 System Monitor > Traffic Status > WAN (continued)

LABEL	DESCRIPTION
Packets Sent	
Data	This indicates the number of transmitted packets on this interface.
Error	This indicates the number of frames with errors transmitted on this interface.
Drop	This indicates the number of outgoing packets dropped on this interface.
Packets Received	
Data	This indicates the number of received packets on this interface.
Error	This indicates the number of frames with errors received on this interface.
Drop	This indicates the number of received packets dropped on this interface.
Disabled Interface	This shows the name of the WAN interface that is currently disconnected.
Packets Sent	
Data	This indicates the number of transmitted packets on this interface.
Error	This indicates the number of frames with errors transmitted on this interface.
Drop	This indicates the number of outgoing packets dropped on this interface.
Packets Received	
Data	This indicates the number of received packets on this interface.
Error	This indicates the number of frames with errors received on this interface.
Drop	This indicates the number of received packets dropped on this interface.

6.3 LAN Status

Click **System Monitor > Traffic Status > LAN** to open the following screen. Use this screen to look at network traffic status and statistics of the LAN interface

Figure 14 System Monitor > Traffic Status > LAN

Figures about data that have been sent to and received from LAN port are displayed in the following table.

Refresh Interval:

Interface	LAN1
Bytes Sent	8353697
Bytes Received	1323746

Interface	LAN1	
Sent (Packet)	Data	7919
	Error	0
	Drop	0
Received (Packet)	Data	5481
	Error	0
	Drop	0

The following table describes the fields in this screen.

Table 12 System Monitor > Traffic Status > LAN

LABEL	DESCRIPTION
Refresh Interval	Select how often you want the VMG to update this screen.
Interface	This shows the LAN interface.
Bytes Sent	This indicates the number of bytes transmitted on this interface.
Bytes Received	This indicates the number of bytes received on this interface.
Interface	This shows the LAN or WLAN interfaces.
Sent (Packet)	
Data	This indicates the number of transmitted packets on this interface.
Error	This indicates the number of frames with errors transmitted on this interface.
Drop	This indicates the number of outgoing packets dropped on this interface.
Received (Packet)	
Data	This indicates the number of received packets on this interface.
Error	This indicates the number of frames with errors received on this interface.
Drop	This indicates the number of received packets dropped on this interface.

CHAPTER 7

ARP Table

7.1 Overview

Address Resolution Protocol (ARP) is a protocol for mapping an Internet Protocol address (IP address) to a physical machine address, also known as a Media Access Control or MAC address, on the local area network.

An IP (version 4) address is 32 bits long. In an Ethernet LAN, MAC addresses are 48 bits long. The ARP Table maintains an association between each MAC address and its corresponding IP address.

7.1.1 How ARP Works

When an incoming packet destined for a host device on a local area network arrives at the device, the device's ARP program looks in the ARP Table and, if it finds the address, sends it to the device.

If no entry is found for the IP address, ARP broadcasts the request to all the devices on the LAN. The device fills in its own MAC and IP address in the sender address fields, and puts the known IP address of the target in the target IP address field. In addition, the device puts all ones in the target MAC field (FF.FF.FF.FF.FF.FF is the Ethernet broadcast address). The replying device (which is either the IP address of the device being sought or the router that knows the way) replaces the broadcast address with the target's MAC address, swaps the sender and target pairs, and unicasts the answer directly back to the requesting machine. ARP updates the ARP Table for future reference and then sends the packet to the MAC address that replied.

7.2 ARP Table

The ARP Table displays the IPv4 address and MAC address of each DHCP connection. The Neighbour Table displays the IPv6 address and MAC address of a device in the same IP domain. To open this screen, click **System Monitor > ARP Table**.

Figure 15 System Monitor > ARP Table

ARP Table displays the IPv4 address and MAC address of each DHCP connection.
Neighbour Table displays the IPv6 address and MAC address of each Neighbour.

IPv4 ARP Table

#	IPv4 Address	MAC Address	Device
1	192.168.1.2	dc:4a:3e:40:ec:67	br0

IPv6 Neighbour Table

The following table describes the labels in this screen.

Table 13 System Monitor > ARP Table

LABEL	DESCRIPTION
#	This is the ARP table entry number.
IPv4 Address	This is the learned IPv4 address of a device connected to a port.
MAC Address	This is the MAC address of the device with the listed IP address.
Device	This is the type of interface used by the device.
IPv6 Neighbour Table	This is the IPv6 address and MAC address of a device in the same IP domain.

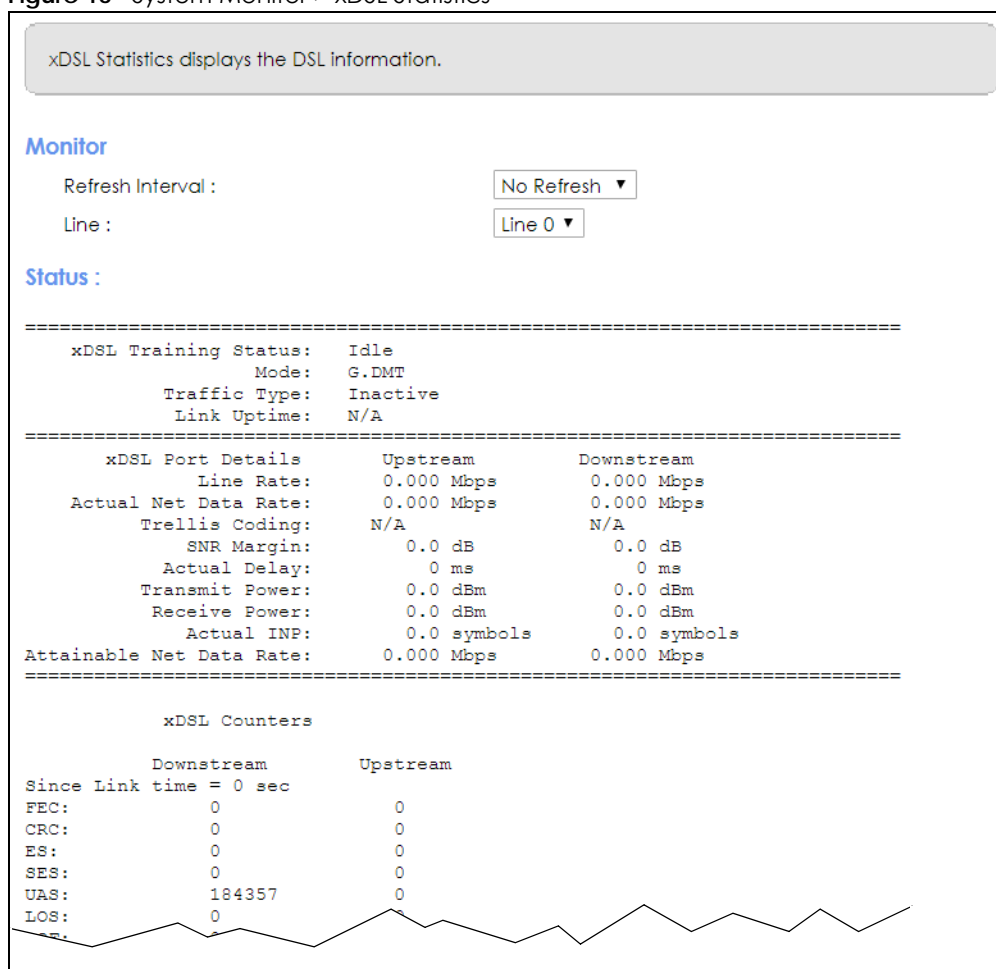
CHAPTER 8

xDSL Statistics

8.1 xDSL Statistics

Use this screen to view detailed DSL statistics. Click **System Monitor > xDSL Statistics** to open the following screen.

Figure 16 System Monitor > xDSL Statistics



The following table describes the labels in this screen.

Table 14 Status > xDSL Statistics

LABEL	DESCRIPTION
Refresh Interval	Select the time interval for refreshing statistics.
Line	Select which DSL line's statistics you want to display.

Table 14 Status > xDSL Statistics (continued)

LABEL	DESCRIPTION
xDSL Training Status	This displays the current state of setting up the DSL connection.
Mode	This displays the ITU standard used for this connection.
Traffic Type	This displays the type of traffic the DSL port is sending and receiving. Inactive displays if the DSL port is not currently sending or receiving traffic.
Link Uptime	This displays how long the port has been running (or connected) since the last time it was started.
xDSL Port Details	
Upstream	These are the statistics for the traffic direction going out from the port to the service provider.
Downstream	These are the statistics for the traffic direction coming into the port from the service provider.
Line Rate	These are the data transfer rates at which the port is sending and receiving data.
Actual Net Data Rate	These are the rates at which the port is sending and receiving the payload data without transport layer protocol headers and traffic.
Trellis Coding	This displays whether or not the port is using Trellis coding for traffic it is sending and receiving. Trellis coding helps to reduce the noise in ADSL transmissions. Trellis may reduce throughput but it makes the connection more stable.
SNR Margin	This is the upstream and downstream Signal-to-Noise Ratio margin (in dB). A DMT sub-carrier's SNR is the ratio between the received signal power and the received noise power. The signal-to-noise ratio margin is the maximum that the received noise power could increase with the system still being able to meet its transmission targets.
Actual Delay	This is the upstream and downstream interleave delay. It is the wait (in milliseconds) that determines the size of a single block of data to be interleaved (assembled) and then transmitted. Interleave delay is used when transmission error correction (Reed- Solomon) is necessary due to a less than ideal telephone line. The bigger the delay, the bigger the data block size, allowing better error correction to be performed.
Transmit Power	This is the upstream and downstream far end actual aggregate transmit power (in dBm). Upstream is how much power the port is using to transmit to the service provider. Downstream is how much power the service provider is using to transmit to the port.
Receive Power	Upstream is how much power the service provider is receiving from the port. Downstream is how much power the port is receiving from the service provider.
Actual INP	Sudden spikes in the line's level of external noise (impulse noise) can cause errors and result in lost packets. This could especially impact the quality of multimedia traffic such as voice or video. Impulse noise protection (INP) provides a buffer to allow for correction of errors caused by error correction to deal with this. The number of DMT (Discrete Multi-Tone) symbols shows the level of impulse noise protection for the upstream and downstream traffic. A higher symbol value provides higher error correction capability, but it causes overhead and higher delay which may increase error rates in received multimedia data.
Attainable Net Data Rate	These are the highest theoretically possible transfer rates at which the port could send and receive payload data without transport layer protocol headers and traffic.
xDSL Counters	
Downstream	These are the statistics for the traffic direction coming into the port from the service provider.
Upstream	These are the statistics for the traffic direction going out from the port to the service provider.
FEC	This is the number of Far End Corrected blocks.
CRC	This is the number of Cyclic Redundancy Checks.
ES	This is the number of Errored Seconds meaning the number of seconds containing at least one errored block or at least one defect.
SES	This is the number of Severely Errored Seconds meaning the number of seconds containing 30% or more errored blocks or at least one defect. This is a subset of ES.
UAS	This is the number of UnAvailable Seconds.

Table 14 Status > xDSL Statistics (continued)

LABEL	DESCRIPTION
LOS	This is the number of Loss Of Signal seconds.
LOF	This is the number of Loss Of Frame seconds.
LOM	This is the number of Loss of Margin seconds.
Retr	This is the number of DSL retraining count in BCM DSL driver.
HostInitRetr	This is the number of the retraining counts the host initiated.
FailedRetr	This is the number of failed retraining counts.

CHAPTER 9

System

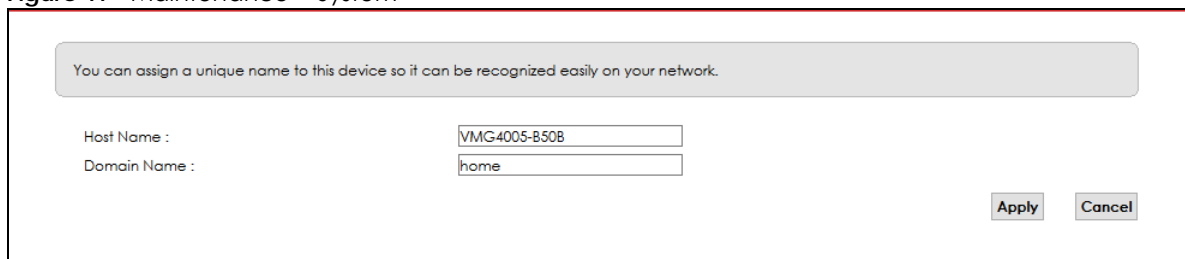
9.1 Overview

Use this screen to name your VMG (Host) and give it an associated domain name. Domain is the name given to the 'Network'. It will be required to reach the network from an external point (like the Internet). The domain part would reach you to the network, and the hostname would let you reach the exact machine. For this reason, while accessing the machine from another machine within the network may work with just the hostname (without the use of domain name).

9.2 System

Click **Maintenance > System** to open the following screen.

Figure 17 Maintenance > System



You can assign a unique name to this device so it can be recognized easily on your network.

Host Name :

Domain Name :

Apply **Cancel**

The following table describes the labels in this screen.

Table 15 Maintenance > System

LABEL	DESCRIPTION
Host Name	Type a host name for your VMG. Enter a descriptive name of up to 16 alphanumeric characters, not including spaces, underscores, and dashes.
Domain Name	Type a Domain name for your host VMG.
Apply	Click Apply to save your changes.
Cancel	Click Cancel to abandon this screen without saving.

CHAPTER 10

User Account

10.1 Overview

Use this screen to view, edit and manage the settings of the **admin** and other user accounts that you used to log into the VMG.

10.2 User Account

Click **Maintenance > User Account** to open the following screen.

Figure 18 Maintenance > User Account

#	Active	User Name	Retry Times	Idle Timeout	Lock Period	Group	Modify
1	<input checked="" type="checkbox"/>	admin	5	10	15	Administrator	

The following table describes the labels in this screen.

Table 16 Maintenance > User Account

LABEL	DESCRIPTION
Add New Account	Click this button to add a new user account. You can have up to four accounts in a device.
#	This is the index number
Active	This field indicates whether the user account is active or not. Clear the check box to disable the user account. Select the check box to enable it.
User Name	This field displays the name of the account used to log into the VMG Web Configurator.
Retry Times	This field displays the number of times consecutive wrong passwords can be entered for this account. 0 means there is no limit.
Idle Timeout	This field displays the length of inactive time before the VMG will automatically log the user out of the Web Configurator.
Lock Period	This field displays the length of time a user must wait before attempting to log in again after a number of consecutive wrong passwords have been entered as defined in Retry Times .
Group	This field displays whether this user has Administrator or User privileges.
Modify	Click the Edit icon to configure the entry. Click the Delete icon to remove the entry.

Table 16 Maintenance > User Account (continued)

LABEL	DESCRIPTION
Apply	Click Apply to save your changes back to the VMG.
Cancel	Click Cancel to restore your previously saved settings.

10.2.1 User Account Add/Edit

Click **Add New Account** or the **Edit** icon of an existing account in the **Maintenance > User Account** to open the following screen.

Figure 19 Maintenance > User Account > Add/Edit

The following table describes the labels in this screen.

Table 17 Maintenance > User Account > Add/Edit

LABEL	DESCRIPTION
Active	Select Enable or Disable to activate or deactivate the user account.
User Name	Enter a new name for the account. (The User Name must contain 1 to 15 characters, including 0 to 9, a to z, and !@#%*()-_+=~.,{}[]\ . Space are not allowed.
Password/New Password	Type your new system password. The Password must contain 6 to 64 characters, including 0 to 9 and a to z. Note that as you type a password, the screen displays a (*) for each character you type. After you change the password, use the new password to access the VMG.
Verify Password/Verify New Password	Type the new password again for confirmation.
Retry Times	Enter the number of times consecutive wrong passwords can be entered for this account. 0 means there is no limit.
Idle Timeout	Enter the length of inactive time before the VMG will automatically log the user out of the Web Configurator.
Lock Period	Enter the length of time a user must wait before attempting to log in again after a number if consecutive wrong passwords have been entered as defined in Retry Times .

Table 17 Maintenance > User Account > Add/Edit (continued)

LABEL	DESCRIPTION
Group	<p>Specify whether this user will have Administrator or User privileges.</p> <p>Administrator and User privileges are mostly the same, but System will only display when you log in as an Administrator.</p> <p>When adding accounts, an Administrator can create either User or Administrator accounts, while an User can only create User accounts</p> <p>The privileges an Administrator account has are:</p> <ul style="list-style-type: none"> • Connection Status, where it shows the current status of the VMG, system resources, and interfaces (LAN and DSL). • Home Networking, where you can set the IP address and subnet mask of your VMG. • Log, where you can choose which categories of events to have the VMG log and then display the logs or have the VMG send them to an administrator (as email) or to a syslog server. • Traffic Status, where you can look at network traffic status and statistics of the DSL and LAN interfaces. • ARP Table, where it can maintains an association between each MAC address and its corresponding IP address. • xDSL Statistics, where you can view detailed DSL statistics. • System, where you can name your VMG (Host) and give it an associated domain name for identification purposes. • User Account, where you can view the settings of the admin and other user accounts that you used to log into the VMG to manage it. • Firmware Upgrade, where you can upload new firmware to your VMG. • Backup/Restore, where you can backup and restore device configurations. You can also reset your device settings back to the factory default. • Diagnostic, where it displays information to help you identify problems with the VMG
OK	Click OK to save your changes.
Cancel	Click Cancel to exit this screen without saving.

CHAPTER 11

Firmware Upgrade

11.1 Overview

This chapter explains how to upload new firmware to your VMG. Download new firmware from www.zyxel.com to get the latest features.

Only use firmware for your device's specific model. Refer to the label on the bottom of your VMG.

11.2 Firmware Upgrade

Click **Maintenance > Firmware Upgrade** to open the following screen. The upload process uses HTTP (Hypertext Transfer Protocol) and may take up to two minutes. After a successful upload, the system will reboot.

Do NOT turn off the VMG while firmware upload is in progress!

Figure 20 Maintenance > Firmware Upgrade

Firmware Upgrade

Firmware Upgrade is where you can update the device with newly released features by upgrading the latest firmware. You can download the latest firmware file from the manufacturer website of this device.

Upgrade Firmware

Restore Default Settings After Firmware Upgrade:

Current Firmware Version: V5.13(ABRL.0)b4

File Path: No file chosen

The following table describes the labels in this screen. After you see the firmware updating screen, wait two minutes before logging into the VMG again.

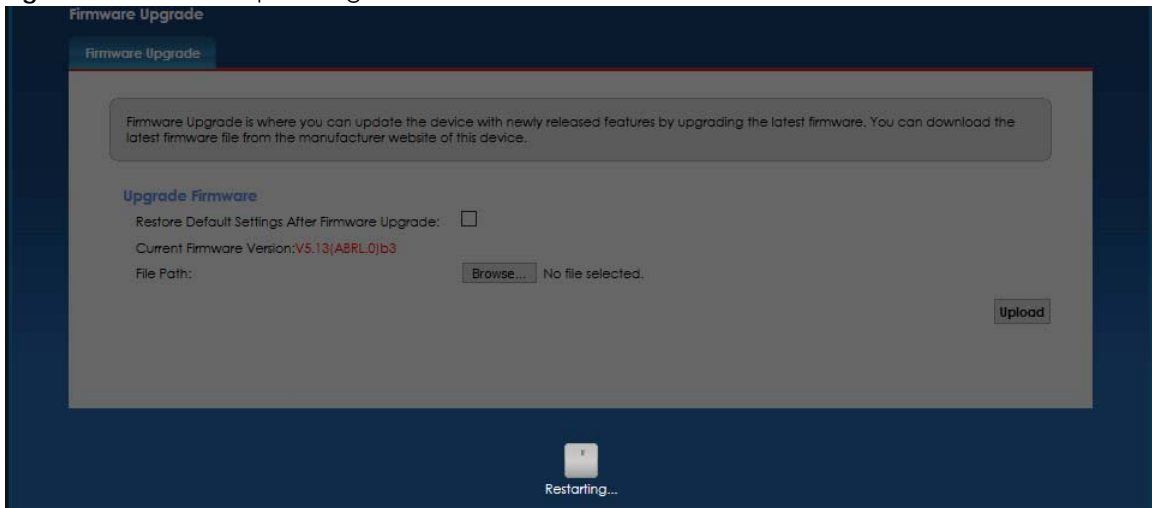
Table 18 Maintenance > Firmware Upgrade

LABEL	DESCRIPTION
Upgrade Firmware	
Restore Default Settings After Firmware Upgrade	Click the check box to have the VMG automatically reset itself after the new firmware is uploaded.

Table 18 Maintenance > Firmware Upgrade

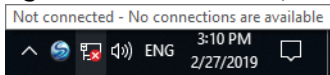
LABEL	DESCRIPTION
Current Firmware Version	This is the present Firmware version and the date created.
File Path	Type in the location of the file you wasn't to upload in this field or click Browse to find it.
Browse	Click this to find the .bin file you want to upload. Remember that you must decompress compressed (.zip) files before you can upload them.
Upload	Click this to begin the upload process. This process may take up to two minutes.

Figure 21 Firmware Uploading



The VMG automatically restarts in this time causing a temporary network disconnect. In some operating systems, you may see the following icon on your desktop.

Figure 22 Network Temporarily Disconnected



After two minutes, log in again and check your new firmware version in the **Status** screen.

CHAPTER 12

Backup/Restore

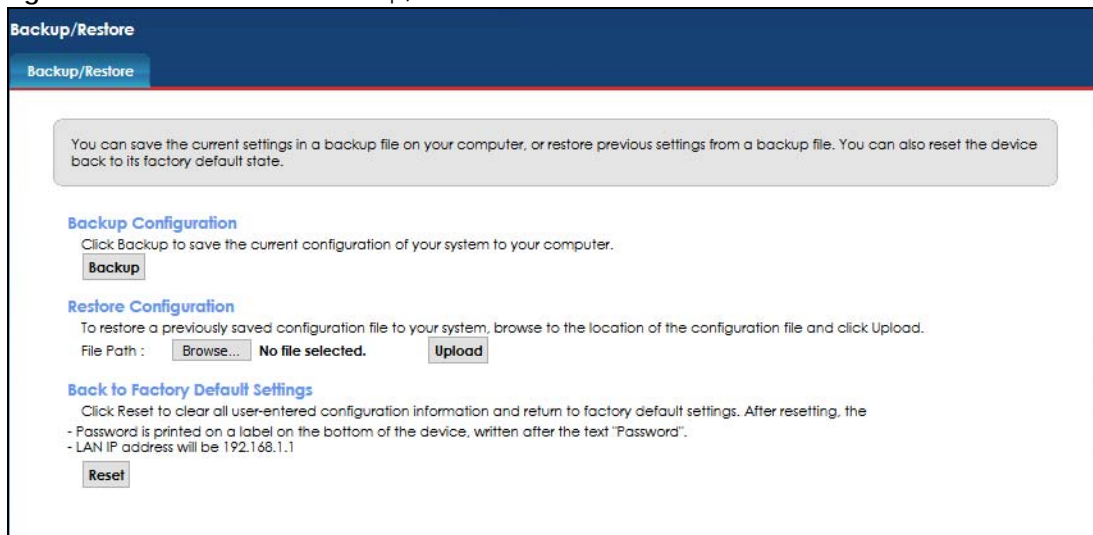
12.1 Overview

Use this screen to backup and restore VMG configurations. You can also reset your VMG settings back to the factory defaults

12.2 Backup/Restore

Click **Maintenance > Backup/Restore**. Information related to factory defaults, backup configuration, and restoring configuration appears in this screen, as shown next.

Figure 23 Maintenance > Backup/Restore



Backup Configuration

Backup Configuration allows you to back up (save) the VMG's current configuration to a file on your computer. Once your VMG is configured and functioning properly, it is highly recommended that you back up your configuration file before making configuration changes. The backup configuration file will be useful in case you need to return to your previous settings.

Click **Backup** to save the VMG's current configuration to your computer.

Restore Configuration

Restore Configuration allows you to upload a new or previously saved configuration file from your computer to your VMG.

Table 19 Restore Configuration

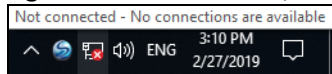
LABEL	DESCRIPTION
File Path	Type in the location of the file you want to upload in this field or click Browse to find it.
Browse	Click this to find the file you want to upload. Remember that you must decompress compressed (.ZIP) files before you can upload them.
Upload	Click this to begin the upload process.

Do NOT turn off the VMG while configuration file upload is in progress.

After the VMG configuration has been restored successfully, the login screen appears. Login again to restart the VMG.

The VMG automatically restarts in this time causing a temporary network disconnect. In some operating systems, you may see the following icon on your desktop.

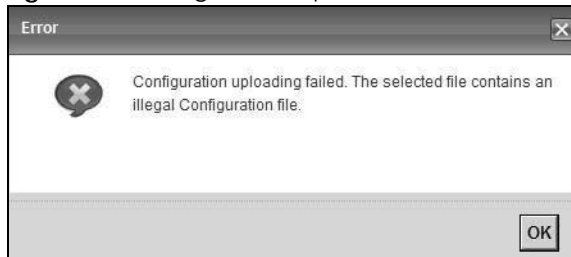
Figure 24 Network Temporarily Disconnected



If you uploaded the default configuration file you may need to change the IP address of your computer to be in the same subnet as that of the default device IP address (192.168.1.1).

If the upload was not successful, the following screen will appear. Click **OK** to go back to the **Configuration** screen.

Figure 25 Configuration Upload Error



Reset to Factory Defaults

Click the **Reset** button to clear all user-entered configuration information and return the VMG to its factory defaults. The following warning screen appears.

Figure 26 Reset Warning Message

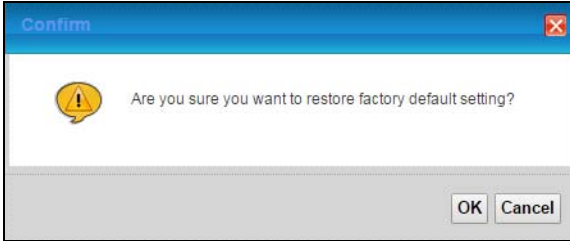
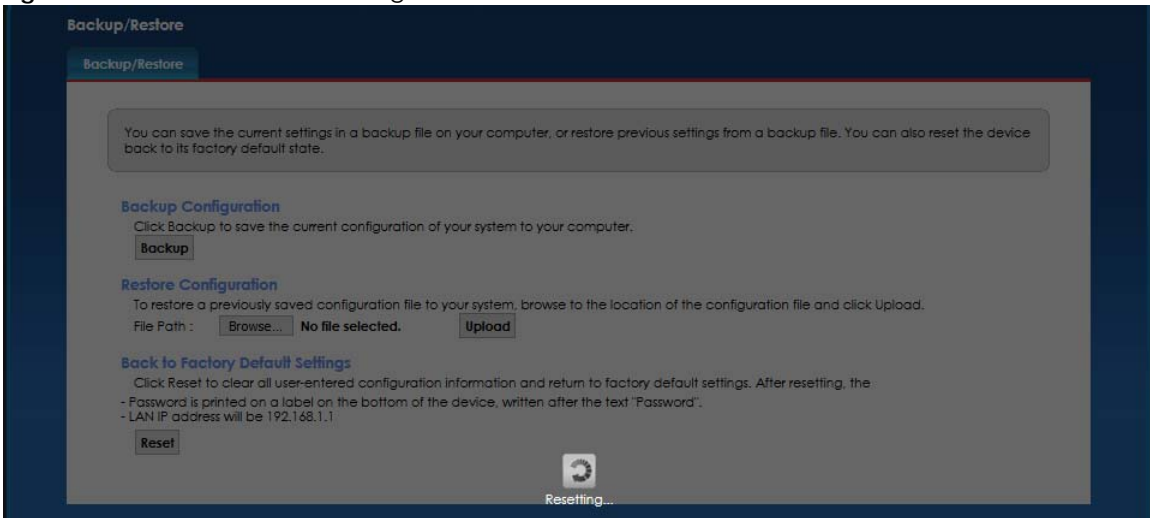


Figure 27 Reset In Process Message



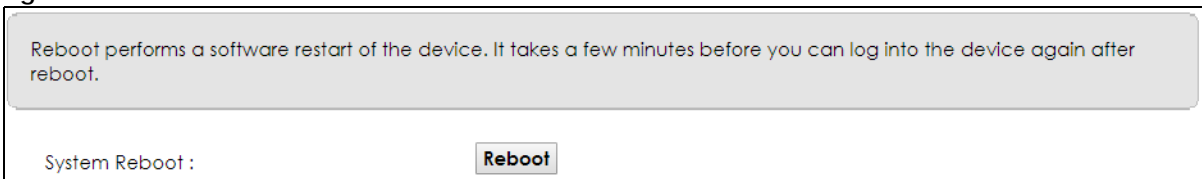
You can also press the **RESET** button on the rear panel to reset the factory defaults of your VMG. Refer to [Section 1.4.4 on page 10](#) for more information on the **RESET** button.

12.3 Reboot

Use this screen to reboot the VMG remotely without turning the power off. You may need to do this if the VMG has performance issues, for example.

Click **Maintenance > Reboot**. Click **Reboot** to have the VMG reboot. This does not affect the VMG's configuration.

Figure 28 Maintenance > Reboot



CHAPTER 13

Diagnostic

13.1 Overview

The **Diagnostic** screen display information to help you identify problems with the VMG.

The route between a Central Office Very-high-bit-rate Digital Subscriber Line (CO VDSL) switch and one of its Customer Premises Equipment (CPE) may go through switches owned by independent organizations. A connectivity fault point generally takes time to discover and impacts subscriber's network access. In order to eliminate the management and maintenance efforts, IEEE 802.1ag is a Connectivity Fault Management (CFM) specification which allows network administrators to identify and manage connection faults. Through discovery and verification of the path, CFM can detect, analyze and isolate connectivity faults in bridged LANs.

13.1.1 What You Can Do in this Chapter

The **Ping & TraceRoute & NsLookup** screen lets you ping an IP address or trace the route packets take to a host ([Section 13.3 on page 49](#)).

13.2 What You Need to Know

The following terms and concepts may help as you read through this chapter.

How CFM Works

A Maintenance Association (MA) defines a VLAN and associated Maintenance End Point (MEP) ports on the device under a Maintenance Domain (MD) level. An MEP port has the ability to send Connectivity Check Messages (CCMs) and get other MEP ports information from neighbor devices' CCMs within an MA.

CFM provides two tests to discover connectivity faults.

- Loopback test - checks if the MEP port receives its Loop Back Response (LBR) from its target after it sends the Loop Back Message (LBM). If no response is received, there might be a connectivity fault between them.
- Link trace test - provides additional connectivity fault analysis to get more information on where the fault is. If an MEP port does not respond to the source MEP, this may indicate a fault. Administrators can take further action to check and resume services from the fault according to the line connectivity status report.

13.3 Ping & TraceRoute & Nslookup

Use this screen to ping, traceroute, or nslookup an IP address. Click **Maintenance > Diagnostic > Ping&TraceRoute&Nslookup** to open the screen shown next.

Figure 29 Maintenance > Diagnostic > Ping & TraceRoute & Nslookup

Ping and TraceRoute are network utilities used to test whether a particular host is reachable. Enter either an IP address or a host name and click one of the buttons to start a Ping or TraceRoute test. The test result will be shown in the Info area.

Ping/TraceRoute Test

-Info-

TCP/IP

Address **Ping** **Ping 6** **Trace Route** **Trace Route 6** **Nslookup**

The following table describes the fields in this screen.

Table 20 Maintenance > Diagnostic > Ping & TraceRoute & Nslookup

LABEL	DESCRIPTION
URL or IP Address	Type the IP address of a computer that you want to perform ping, traceroute, or nslookup in order to test a connection.
Ping	Click this to ping the IPv4 address that you entered.
Ping 6	Click this to ping the IPv6 address that you entered.
Trace Route	Click this to display the route path and transmission delays between the VMG to the IPv4 address that you entered.
Trace Route 6	Click this to display the route path and transmission delays between the VMG to the IPv6 address that you entered.
Nslookup	Click this button to perform a DNS lookup on the IP address of a computer you enter.

CHAPTER 14

Troubleshooting

This chapter offers some suggestions to solve problems you might encounter. The potential problems are divided into the following categories.

- [Power, Hardware Connections, and LEDs](#)
- [VMG Access and Login](#)
- [Internet Access](#)
- [UPnP](#)
- [IP Address Setting](#)

14.1 Power, Hardware Connections, and LEDs

[The VMG does not turn on. None of the LEDs turn on.](#)

- 1 Make sure the VMG is turned on.
- 2 Make sure you are using the power adapter or cord included with the VMG.
- 3 Make sure the power adapter or cord is connected to the VMG and plugged in to an appropriate power source. Make sure the power source is turned on.
- 4 Turn the VMG off and on.
- 5 If the problem continues, contact the vendor.

[One of the LEDs does not behave as expected.](#)

- 1 Make sure you understand the normal behavior of the LED. See [Section 1.4.2 on page 9](#).
- 2 Check the hardware connections.
- 3 Inspect your cables for damage. Contact the vendor to replace any damaged cables.
- 4 Turn the VMG off and on.
- 5 If the problem continues, contact the vendor.

14.2 VMG Access and Login

I forgot the IP address for the VMG.

- 1 The default LAN IP address is 192.168.1.1.
- 2 If you changed the IP address and have forgotten it, you might get the IP address of the VMG by looking up the IP address of the default gateway for your computer. To do this in most Windows computers, click **Start > Run**, enter **cmd**, and then enter **ipconfig**. The IP address of the **Default Gateway** might be the IP address of the VMG (it depends on the network), so enter this IP address in your Internet browser.
- 3 If this does not work, you have to reset the device to its factory defaults. See [Section 1.4.4 on page 10](#).

I forgot the password.

- 1 See the cover page for the default login names and associated passwords.
- 2 If those do not work, you have to reset the device to its factory defaults. See [Section 1.4.4 on page 10](#).

I cannot see or access the **Login** screen in the Web Configurator.

- 1 Make sure you are using the correct IP address.
 - The default IP address is [192.168.1.1](#).
 - If you changed the IP address ([Section 4.2 on page 22](#)), use the new IP address.
 - If you changed the IP address and have forgotten it, see the troubleshooting suggestions for [I forgot the IP address for the VMG](#).
- 2 Check the hardware connections, and make sure the LEDs are behaving as expected. See [Section 1.4.2 on page 9](#).
- 3 Make sure your Internet browser does not block pop-up windows and has JavaScripts and Java enabled.
- 4 Reset the device to its factory defaults, and try to access the VMG with the default IP address. See [Section 1.4.4 on page 10](#).
- 5 If the problem continues, contact the network administrator or vendor, or try one of the advanced suggestions.

Advanced Suggestions

- Make sure you have logged out of any earlier management sessions using the same user account even if they were through a different interface or using a different browser.
- Try to access the VMG using another service, such as Telnet. If you can access the VMG, check the remote management settings to find out why the VMG does not respond to HTTP.

I can see the [Login](#) screen, but I cannot log in to the VMG.

- 1 Make sure you have entered the password correctly. See the cover page for the default login names and associated passwords. The field is case-sensitive, so make sure [Caps Lock] is not on.
- 2 You cannot log in to the Web Configurator while someone is using Telnet to access the VMG. Log out of the VMG in the other session, or ask the person who is logged in to log out.
- 3 Turn the VMG off and on.
- 4 If this does not work, you have to reset the device to its factory defaults. See [Section 14.1 on page 50](#).

14.3 Internet Access

I cannot access the Internet.

- 1 Make sure to use the included power adapter to connect the VMG to an appropriate power source and turn on the VMG. Then check if the power LED is behaving as expected, see [Section 1.4.2 on page 9](#).
- 2 Make sure you have the **DSL** port connected to a telephone jack (or the DSL or modem jack on a splitter if you have one). Then check if the DSL1 and DSL2 LEDs are behaving as expected, see [Section 1.4.2 on page 9](#).
- 3 If the above steps don't work, turn the VMG off and wait for 1-2 minutes, then turn it on again.
- 4 If the problem continues, contact your ISP.

I cannot access the VMG anymore. I had access to the VMG, but my connection is not available anymore.

- 1 Your session with the VMG may have expired. Try logging into the VMG again.
- 2 Check the hardware connections, and make sure the LEDs are behaving as expected. See the **Quick Start Guide** and [Section 1.4.2 on page 9](#).
- 3 If the above steps don't work, turn the VMG off and wait for 1-2 minutes, then turn it on again.

- 4 If the problem continues, contact your vendor.

14.4 UPnP

When using UPnP and the VMG reboots, my computer cannot detect UPnP.

- 1 Disconnect the Ethernet cable from the VMG's LAN port or from your computer.
- 2 Re-connect the Ethernet cable.

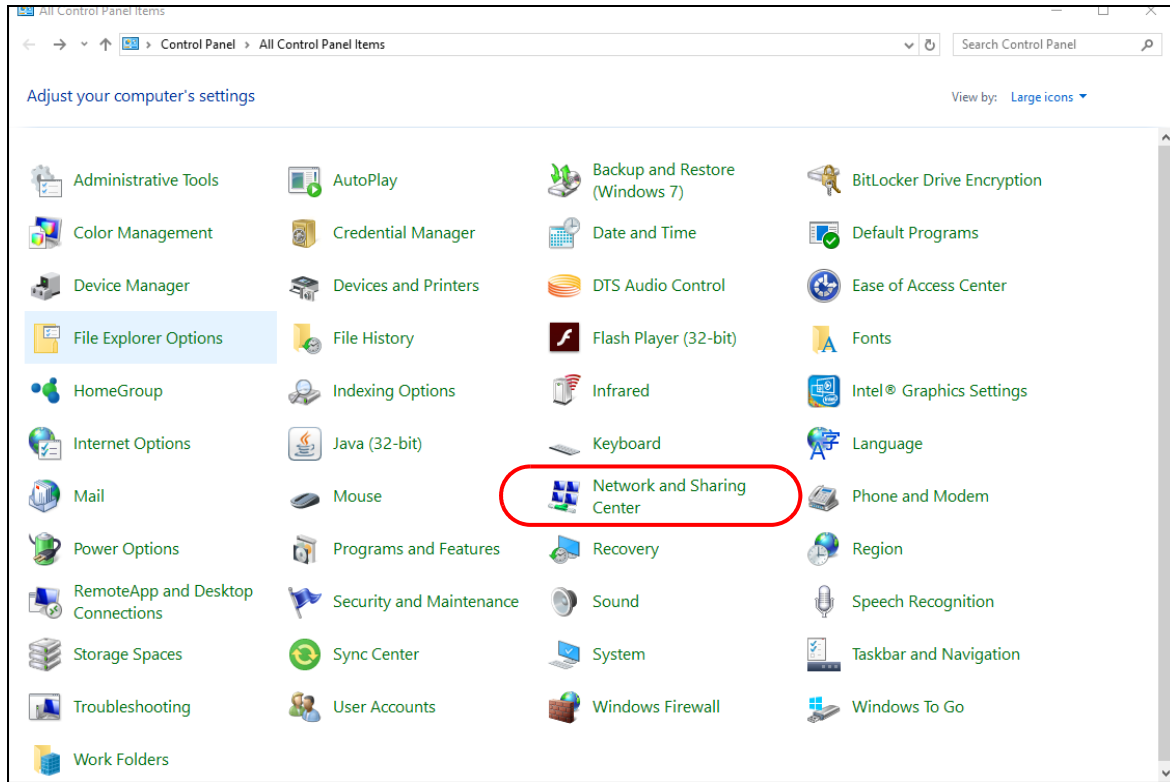
The **Local Area Connection** icon for UPnP disappears in the screen.

Restart your computer.

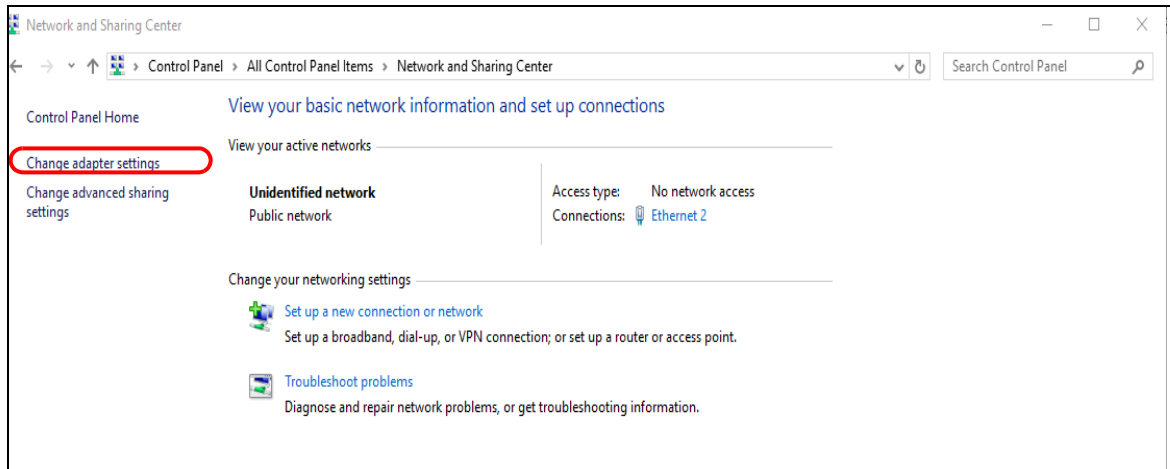
14.5 IP Address Setting

I don't know how to set my IP address (with Windows 10 as example).

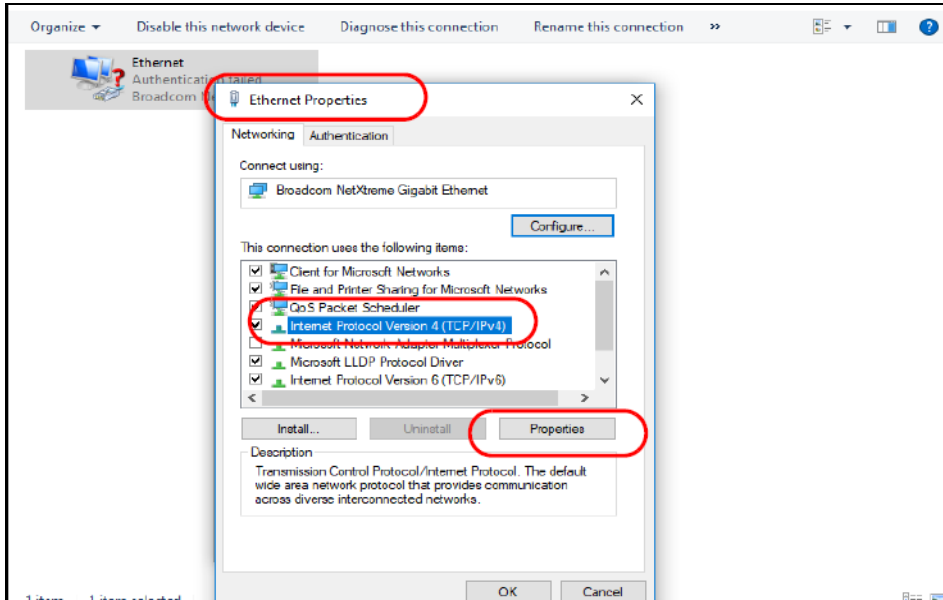
- 1 Open the **Control Panel Window**.
- 2 Click on **Network and Sharing Center**.



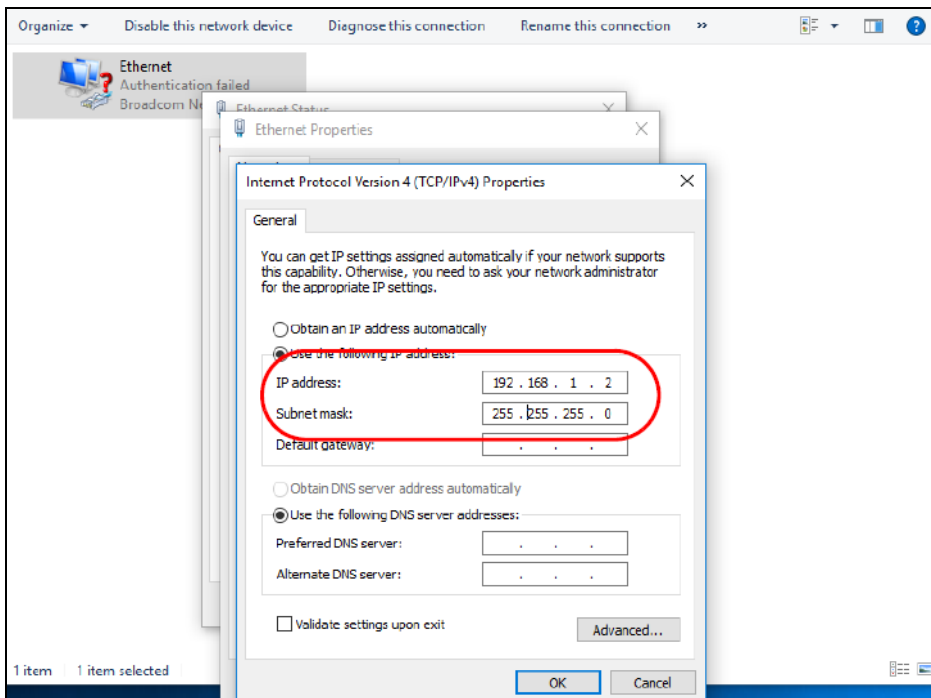
- 3 Click on the **Change adapter settings** on the left side of the window.



- 4 Right click on **Ethernet**, and then select **Properties**.



- 5 Click **Internet Protocol Version 4** and click the **Properties** button.
- 6 Select **Use the Following IP Address**
- 7 Type in an **IP address** from 192.168.1.2 to 192.168.1.254 (the **Subnet mask** will fill in automatically)



- 8 Click **OK** when you're done and close all windows.

PART III

Appendices

Appendices contain general information. Some information may not apply to your device.

APPENDIX A

Customer Support

In the event of problems that cannot be solved by using this manual, you should contact your vendor. If you cannot contact your vendor, then contact a Zyxel office for the region in which you bought the device.

See <https://www.zyxel.com/homepage.shtml> and also https://www.zyxel.com/about_zyxel/zyxel_worldwide.shtml for the latest information.

Please have the following information ready when you contact an office.

Required Information

- 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.

Corporate Headquarters (Worldwide)

Taiwan

- Zyxel Communications Corporation
- <http://www.zyxel.com>

Asia

China

- Zyxel Communications (Shanghai) Corp.
- Zyxel Communications (Beijing) Corp.
- Zyxel Communications (Tianjin) Corp.
- <https://www.zyxel.com/cn/zh/>

India

- Zyxel Technology India Pvt Ltd
- <https://www.zyxel.com/in/en/>

Kazakhstan

- Zyxel Kazakhstan
- <https://www.zyxel.kz>

Korea

- Zyxel Korea Corp.
- <http://www.zyxel.kr>

Malaysia

- Zyxel Malaysia Sdn Bhd.
- <http://www.zyxel.com.my>

Pakistan

- Zyxel Pakistan (Pvt.) Ltd.
- <http://www.zyxel.com.pk>

Philippines

- Zyxel Philippines
- <http://www.zyxel.com.ph>

Singapore

- Zyxel Singapore Pte Ltd.
- <http://www.zyxel.com.sg>

Taiwan

- Zyxel Communications Corporation
- <https://www.zyxel.com/tw/zh/>

Thailand

- Zyxel Thailand Co., Ltd
- <https://www.zyxel.com/th/th/>

Vietnam

- Zyxel Communications Corporation-Vietnam Office
- <https://www.zyxel.com/vn/vi>

Europe

Belarus

- Zyxel BY
- <https://www.zyxel.by>

Belgium

- Zyxel Communications B.V.
- <https://www.zyxel.com/be/nl/>

- <https://www.zyxel.com/be/fr/>

Bulgaria

- Zyxel България
- <https://www.zyxel.com/bg/bg/>

Czech Republic

- Zyxel Communications Czech s.r.o
- <https://www.zyxel.com/cz/cs/>

Denmark

- Zyxel Communications A/S
- <https://www.zyxel.com/dk/da/>

Estonia

- Zyxel Estonia
- <https://www.zyxel.com/ee/et/>

Finland

- Zyxel Communications
- <https://www.zyxel.com/fi/fi/>

France

- Zyxel France
- <https://www.zyxel.fr>

Germany

- Zyxel Deutschland GmbH
- <https://www.zyxel.com/de/de/>

Hungary

- Zyxel Hungary & SEE
- <https://www.zyxel.com/hu/hu/>

Italy

- Zyxel Communications Italy
- <https://www.zyxel.com/it/it/>

Latvia

- Zyxel Latvia
- <https://www.zyxel.com/lv/lv/>

Lithuania

- Zyxel Lithuania
- <https://www.zyxel.com/lt/lt/>

Netherlands

- Zyxel Benelux
- <https://www.zyxel.com/nl/nl/>

Norway

- Zyxel Communications
- <https://www.zyxel.com/no/no/>

Poland

- Zyxel Communications Poland
- <https://www.zyxel.com/pl/pl/>

Romania

- Zyxel Romania
- <https://www.zyxel.com/ro/ro/>

Russia

- Zyxel Russia
- <https://www.zyxel.com/ru/ru/>

Slovakia

- Zyxel Communications Czech s.r.o. organizacna zlozka
- <https://www.zyxel.com/sk/sk/>

Spain

- Zyxel Communications ES Ltd
- <https://www.zyxel.com/es/es/>

Sweden

- Zyxel Communications
- <https://www.zyxel.com/se/sv/>

Switzerland

- Studerus AG
- <https://www.zyxel.ch/de>
- <https://www.zyxel.ch/fr>

Turkey

- Zyxel Turkey A.S.
- <https://www.zyxel.com/tr/tr/>

UK

- Zyxel Communications UK Ltd.
- <https://www.zyxel.com/uk/en/>

Ukraine

- Zyxel Ukraine
- <http://www.ua.zyxel.com>

South America

Argentina

- Zyxel Communications Corporation
- <https://www.zyxel.com/co/es/>

Brazil

- Zyxel Communications Brasil Ltda.
- <https://www.zyxel.com/br/pt/>

Colombia

- Zyxel Communications Corporation
- <https://www.zyxel.com/co/es/>

Ecuador

- Zyxel Communications Corporation
- <https://www.zyxel.com/co/es/>

South America

- Zyxel Communications Corporation
- <https://www.zyxel.com/co/es/>

Middle East

Israel

- Zyxel Communications Corporation
- <http://il.zyxel.com/>

Middle East

- Zyxel Communications Corporation
- <https://www.zyxel.com/me/en/>

North America

USA

- Zyxel Communications, Inc. - North America Headquarters
- <https://www.zyxel.com/us/en/>

Oceania

Australia

- Zyxel Communications Corporation
- <https://www.zyxel.com/au/en/>

Africa

South Africa

- Nology (Pty) Ltd.
- <https://www.zyxel.com/za/en/>

APPENDIX B

Legal Information

Copyright

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Regulatory Notice and Statement

UNITED STATES of AMERICA



The following information applies if you use the product within USA area.

FCC EMC Statement

- The device complies with Part 15 of 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.
- Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the device.
- This product has been tested and complies with the specifications 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 according to 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 or television reception, which is found 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:
 - Reorient or relocate the receiving antenna
 - Increase the separation between the devices
 - Connect the equipment to an outlet other than the receiver's
 - Consult a dealer or an experienced radio/TV technician for assistance

FCC Part 68 Statement

- This equipment complies with Part 68 of the FCC rules and the requirements adopted by the ACTA. On the back of this equipment is a label that contains, among other information, a product identifier in the format US: 1RODL01AV4005B50B (part 68 ID). If requested, this number must be provided to the telephone company.
- List all applicable certification jack Universal Service Order Codes ("USOC") for the equipment. USOC JACK: RJ14CW (Depend on EUT interface)
- A plug and jack used to connect this equipment to the premises wiring and telephone network must comply with the applicable FCC Part 68 rules and requirements adopted by the ACTA. A compliant telephone cord and modular plug is provided with this product. It is designed to be connected to a compatible modular jack that is also compliant. See installation instructions for details.
- The REN is used to determine the number of devices that may be connected to a telephone line. Excessive RENs on a telephone line may result in the devices not ringing in response to an incoming call. In most but not all areas, the sum of RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to a line, as determined by the total RENs, contact the local telephone company. For products approved after July 23, 2001, the REN for this product is part of the product identifier that has the format US:AAAEQ##TXXXX. The digits represented by ## are the REN without a decimal point (e.g., 03 is a REN of 0.3). For earlier products, the REN is separately shown on the label.
- If this equipment US: 1RODL01AV4005B50B (part 68 ID) causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notice isn't practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.
- The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the operation of the equipment. If this happens the telephone company will provide advance notice in order for you to make necessary modifications to maintain uninterrupted service.

- If trouble is experienced with this equipment US: 1RODL01AV4005B50B (part 68 ID), for repair or warranty information, please contact Zyxel Communication Inc.: 1130 N Miller street Anaheim, CA 92806-2001, USA ;TEL: 002 +1 714-6320882. If the equipment is causing harm to the telephone network, the telephone company may request that you disconnect the equipment until the problem is resolved.
- Connection to party line service is subject to state tariffs. Contact the state public utility commission, public service commission or corporation commission for information.
- If your home has specially wired alarm equipment connected to the telephone line, ensure the installation of this US: 1RODL01AV4005B50B (part 68 ID) does not disable your alarm equipment. If you have questions about what will disable alarm equipment, consult your telephone company or a qualified installer.
- The Ringer Equivalence Number (REN) is 0.1A.

CANADA

The following information applies if you use the product within Canada area

Innovation, Science and Economic Development Canada ICES Statement

CAN ICES-3 (B)/NMB-3(B)

Industry Canada CS-03 Statement

- This product meets the applicable Innovation, Science and Economic Development Canada technical specifications.
- The Ringer Equivalence Number (REN) indicates the maximum number of devices allowed to be connected to a telephone interface. The termination of an interface may consist of any combination of devices subject only to the requirement that the sum of the RENs of all the devices not exceed five.
- The Ringer Equivalence Number (REN) is 0.1.

Déclaration de conformité

- Le présent produit est conforme aux spécifications techniques applicables d'Innovation, Sciences et Développement économique Canada.
- L'indice d'équivalence de la sonnerie (IES) sert à indiquer le nombre maximal de dispositifs qui peuvent être raccordés à une interface téléphonique. La terminaison d'une interface peut consister en une combinaison quelconque de dispositifs, à la seule condition que la somme des IES de tous les dispositifs n'excède pas cinq.
- Le nombre d'équivalences de sonnerie (REN) est 0,1.

EUROPEAN UNION



The following information applies if you use the product within the European Union.

List of national codes

COUNTRY	ISO 3166 2 LETTER CODE	COUNTRY	ISO 3166 2 LETTER CODE
Austria	AT	Liechtenstein	LI
Belgium	BE	Lithuania	LT
Bulgaria	BG	Luxembourg	LU
Croatia	HR	Malta	MT
Cyprus	CY	Netherlands	NL
Czech Republic	CZ	Norway	NO
Denmark	DK	Poland	PL
Estonia	EE	Portugal	PT
Finland	FI	Romania	RO
France	FR	Serbia	RS
Germany	DE	Slovakia	SK
Greece	GR	Slovenia	SI
Hungary	HU	Spain	ES
Iceland	IS	Switzerland	CH
Ireland	IE	Sweden	SE
Italy	IT	Turkey	TR
Latvia	LV	United Kingdom	GB

Safety Warnings

- 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 obstruct the device ventilation slots as insufficient airflow may harm your device. For example, do not place the device in an enclosed space such as a box or on a very soft surface such as a bed or sofa.
- 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.
- Do not open the device or unit. Opening or removing covers can expose you to dangerous high voltage points or other risks.
- Only qualified service personnel should service or disassemble this device. Please contact your vendor for further information.
- 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.
- Do not remove the plug and connect it to a power outlet by itself; always attach the plug to the power adaptor first before connecting it to a power outlet.
- 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.
- Please use the provided or designated connection cables/power cables/ adaptors. Connect it to the right supply voltage (for example, 110V AC in North America or 230V AC in Europe). If the power adaptor or cord is damaged, it might cause electrocution. Remove it from the device and the power source, repairing the power adaptor or cord is prohibited. 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.
- CAUTION: Risk of explosion if battery is replaced by an incorrect type, dispose of used batteries according to the instruction. Dispose them at the applicable collection point for the recycling of electrical and electronic devices. For detailed information about recycling of this product, please contact your local city office, your household waste disposal service or the store where you purchased the product.
- The following warning statements apply, where the disconnect device is not incorporated in the device or where the plug on the power supply cord is intended to serve as the disconnect device,
 - For permanently connected devices, a readily accessible disconnect device shall be incorporated external to the device;
 - For pluggable devices, the socket-outlet shall be installed near the device and shall be easily accessible.
- CLASS 1 LASER PRODUCT
- APPAREIL À LASER DE CLASS 1
- PRODUCT COMPLIES WITH 21 CFR 1040.10 AND 1040.11.
- PRODUIT CONFORME SELON 21 CFR 1040.10 ET 1040.11.

Important Safety Instructions

- Caution! The RJ-45 jacks are not used for telephone line connection.
- Caution! To reduce the risk of fire, use only No. 26 AWG or larger (e.g., 24 AWG) UL Listed or CSA Certified Telecommunication Line Cord.
- Caution! Do not use this product near water, for example a wet basement or near a swimming pool.
- Caution! Avoid using this product (other than a cordless wet) during an electrical storm. There may be a remote risk of electric shock from lightning.
- Caution! Always disconnect all telephone lines from the wall outlet before servicing or disassembling this product.
- Attention: Les prises RJ-45 ne sont pas utilisés pour la connexion de la ligne téléphonique.
- Attention: Pour réduire les risques d'incendie n'utiliser que des câbles de type 26 AWG ou des câbles de connexion plus épais
- Attention: Ne pas utiliser ce produit près de l'eau, par exemple un sous-sol humide ou près d'une piscine.
- Attention: Évitez d'utiliser ce produit (autre qu'un type sans fil) pendant un orage. Il peut y avoir un risque de choc électrique de la foudre.
- Attention: Toujours débrancher toutes les lignes téléphoniques de la prise murale avant de réparer ou de démonter ce produit.

Environment Statement

ErP (Energy-related Products)

Zyxel products put on the EU market in compliance with the requirement of the European Parliament and the Council published Directive 2009/125/EC establishing a framework for the setting of ecodesign requirements for energy-related products (recast), so called as "ErP Directive (Energy-related Products directive) as well as ecodesign requirement laid down in applicable implementing measures, power consumption has satisfied regulation requirements which are:

- Network standby power consumption < 8W, and/or
- Off mode power consumption < 0.5W, and/or
- Standby mode power consumption < 0.5W.

European Union - Disposal and Recycling Information

The symbol below means that according to local regulations your product and/or its battery shall be disposed of separately from domestic waste. If this product is end of life, take it to a recycling station designated by local authorities. At the time of disposal, the separate collection of your product and/or its battery will help save natural resources and ensure that the environment is sustainable development.

Die folgende Symbol bedeutet, dass Ihr Produkt und/oder seine Batterie gemäß den örtlichen Bestimmungen getrennt vom Hausmüll entsorgt werden muss. Wenden Sie sich an eine Recyclingstation, wenn dieses Produkt das Ende seiner Lebensdauer erreicht hat. Zum Zeitpunkt der Entsorgung wird die getrennte Sammlung von Produkt und/oder seiner Batterie dazu beitragen, natürliche Ressourcen zu sparen und die Umwelt und die menschliche Gesundheit zu schützen.

El símbolo de abajo indica que según las regulaciones locales, su producto y/o su batería deberán depositarse como basura separada de la doméstica. Cuando este producto alcance el final de su vida útil, llévelo a un punto limpio. Cuando llegue el momento de desechar el producto, la recogida por separado éste y/o su batería ayudará a salvar los recursos naturales y a proteger la salud humana y medioambiental.

Le symbole ci-dessous signifie que selon les réglementations locales votre produit et/ou sa batterie doivent être éliminés séparément des ordures ménagères. Lorsque ce produit atteint sa fin de vie, amenez-le à un centre de recyclage. Au moment de la mise au rebut, la collecte séparée de votre produit et/ou de sa batterie aidera à économiser les ressources naturelles et protéger l'environnement et la santé humaine.

Il simbolo sotto significa che secondo i regolamenti locali il vostro prodotto e/o batteria deve essere smaltito separatamente dai rifiuti domestici. Quando questo prodotto raggiunge la fine della vita di servizio portarlo a una stazione di riciclaggio. Al momento dello smaltimento, la raccolta separata del vostro prodotto e/o della sua batteria aiuta a risparmiare risorse naturali e a proteggere l'ambiente e la salute umana.

Symbolen innebär att enligt lokal lagstiftning ska produkten och/eller dess batteri kastas separat från hushållsavfallet. När den här produkten når slutet av sin livslängd ska du ta den till en återvinningsstation. Vid tiden för kasseringen bidrar du till en bättre miljö och mänsklig hälsa genom att göra dig av med den på ett återvinningsställe.



台灣





安全警告 - 為了您的安全，請先閱讀以下警告及指示：

- 請勿將此產品接近水、火焰或放置在高溫的環境。
- 避免設備接觸
 - 任何液體 - 切勿讓設備接觸水、雨水、高濕度、污水腐蝕性的液體或其他水份。
 - 灰塵及污物 - 切勿接觸灰塵、污物、沙土、食物或其他不合適的材料。
- 雷雨天氣時，不要安裝、使用或維修此設備。有遭受電擊的風險。
- 切勿重摔或撞擊設備，並勿使用不正確的電源變壓器。
- 若接上不正確的電源變壓器會有爆炸的風險。
- 請勿隨意更換產品內的電池。
- 如果更換不正確之電池型式，會有爆炸的風險，請依製造商說明書處理使用過之電池。
- 請將廢電池丟棄在適當的電器或電子設備回收處。
- 請勿將設備解體。
- 請勿阻礙設備的散熱孔，空氣對流不足將會造成設備損害。
- 請插在正確的電壓供給插座（如：北美 / 台灣電壓 110V AC，歐洲是 230V AC）。
- 假若電源變壓器或電源變壓器的纜線損壞，請從插座拔除，若您還繼續插電使用，會有觸電死亡的風險。
- 請勿試圖修理電源變壓器或電源變壓器的纜線，若有毀損，請直接聯絡您購買的店家，購買一個新的電源變壓器。
- 請勿將此設備安裝於室外，此設備僅適合放置於室內。
- 請勿隨一般垃圾丟棄。
- 請參閱產品背貼上的設備額定功率。
- 請參考產品型錄或是彩盒上的作業溫度。
- 產品沒有斷電裝置或者採用電源線的插頭視為斷電裝置的一部分，以下警語將適用：
 - 對永久連接之設備，在設備外部須安裝可觸及之斷電裝置；
 - 對插接式之設備，插座必須接近安裝之地點而且是易於觸及的。

About the Symbols

Various symbols are used in this product to ensure correct usage, to prevent danger to the user and others, and to prevent property damage. The meaning of these symbols are described below. It is important that you read these descriptions thoroughly and fully understand the contents.

Explanation of the Symbols

SYMBOL	EXPLANATION
	Alternating current (AC): AC is an electric current in which the flow of electric charge periodically reverses direction.
	Direct current (DC): DC is the unidirectional flow or movement of electric charge carriers.
	Earth; ground: A wiring terminal intended for connection of a Protective Earthing Conductor.
	Class II equipment: The method of protection against electric shock in the case of class II equipment is either double insulation or reinforced insulation.

Viewing Certifications

Go to <http://www.zyxel.com> to view this product's documentation and certifications.

Zyxel Limited Warranty

Zyxel warrants to the original end user (purchaser) that this product is free from any defects in material or workmanship for a specific period (the Warranty Period) from the date of purchase. The Warranty Period varies by region. Check with your vendor and/or the authorized Zyxel local distributor for details about the Warranty Period of this product. 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 your vendor. You may also refer to the warranty policy for the region in which you bought the device at http://www.zyxel.com/web/support_warranty_info.php.

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.

Trademarks

ZyNOS (Zyxel Network Operating System) and ZON (Zyxel One Network) are registered trademarks of Zyxel Communications, Inc. Other trademarks mentioned in this publication are used for identification purposes only and may be properties of their respective owners.

Open Source Licenses

This product contains in part some free software distributed under GPL license terms and/or GPL like licenses. Open source licenses are provided with the firmware package. You can download the latest firmware at www.zyxel.com. To obtain the source code covered under those Licenses, please contact support@zyxel.com.tw to get it.

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