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You can read the recommendations in the user guide, the technical guide or the installation guide for ZYXEL G-570U. You'll find the answers to all your questions on the ZYXEL G-570U in the user manual (information, specifications, safety advice, size, accessories, etc.). Detailed instructions for use are in the User's Guide.

User manual ZYXEL G-570U
User guide ZYXEL G-570U
Operating instructions ZYXEL G-570U
Instructions for use ZYXEL G-570U
Instruction manual ZYXEL G-570U

ZyXEL G-570U

IEEE 802.11a/b/g Wireless Access Point / Bridge

User's Guide

Version 1.00
Edition 1
07/2006

ZyXEL



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Manual abstract:

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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.

· For operation within 5.15 ~ 5.25GHz frequency range, it is restricted to indoor environment. · 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. ! 4 Certifications ZyXEL G-570U User's Guide 5250MHz~5350MHz Notices Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. This device has been designed for the WLAN 2.4 GHz and 5 GHz networks throughout the EC region and Switzerland, with restrictions in France. IEEE 802.11b or 802.11g operation of this product in the U.

S.A. is firmware-limited to channels 1 through 11. This Class B digital apparatus complies with Canadian ICES-003. Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada. 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.

Certifications 5 ZyXEL G-570U User's Guide 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. · 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. · 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. · Antenna Warning! This device meets ETSI and FCC certification requirements when using the included antenna(s). Only use the included antenna(s). · If you wall mount your device, make sure that no electrical lines, gas or water pipes will be damaged. 6 Safety Warnings ZyXEL G-570U User's Guide This product is recyclable. Dispose of it properly. Safety Warnings 7 ZyXEL G-570U User's Guide 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.

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.... 152 20 List of Tables ZyXEL G-570U User's Guide Preface Congratulations on your purchase of the ZyXEL G-570U IEEE 802.

11a/b/g Wireless Access Point / Bridge. Note: 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. An access point (AP) acts as a bridge between the wireless and wired networks, extending your existing wired network without any additional wiring. This User's Guide is designed to guide you through the configuration of your ZyXEL G-570U using the web configurator. 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 connection and installation 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 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 choices. · Mouse action sequences are denoted using a right arrow bracket key (>). For example, "In Windows, click Start > Settings > Control Panel" means first click the Start button, then point your mouse pointer to Settings and then click Control Panel.

· "e.g.," is a shorthand for "for instance", and "i.e.," means "that is" or "in other words".

· The ZyXEL G-570U 802.11g Wireless Access Point may be referred to simply as the G570U in the User's Guide. Preface 21 ZyXEL G-570U User's Guide Graphics Icons Key G-570U Computer Notebook computer Server Modem Wireless Signal Telephone Switch Router 22 Preface ZyXEL G-570U User's Guide CHAPTER 1 Getting to Know Your G-570U This chapter introduces the main features and applications of the G-570U. 1.1 Introducing the G-570U Wireless Access Point The ZyXEL G-570U is a 4-in-1 wireless Access Point. Access Point (AP), repeater, bridge and wireless client functions allow you to use the G-570U in various network deployments. The G-570U Access Point (AP) allows wireless stations to communicate and/or access a wired network. It can work as a bridge and repeater to extend your wireless network. You can also use it as a wireless client to access a wired network through another AP. The G-570U uses IEEE 802.

1x, WEP data encryption, WPA (Wi-Fi Protected Access), WPA2 and MAC address filtering to give mobile users highly secured wireless connectivity. IEEE 802.11a, IEEE 802.11b and IEEE 802.11g compliant wireless devices can associate with the G-570U. In addition to being highly flexible, the G-570U is easy to install and configure. 1.2 G-570U Features The following sections describe the features of the G-570U. Bridge/Repeater The G-570U can act as a bridge, establishing wireless links with other APs or as a repeater, establishing wireless links to APs. WDS Functionality A Distribution System (DS) is a wired connection between two or more APs, while a Wireless Distribution System (WDS) is a wireless connection.

Your G-570U supports WDS connections to other G-570U APs.1 This provides a cost-effective solution for wireless network expansion. 1. The G-570U only supports WDS connections to G-570U APs, not other devices. Chapter 1 Getting to Know Your G-570U 23 ZyXEL G-570U User's Guide Figure 1 WDS Functionality Example OTIST (One-Touch Intelligent Security Technology) OTIST allows your G-570U to assign its SSID and security settings (WEP or WPA-PSK) to the ZyXEL wireless adapters that support OTIST and are within transmission range.

The ZyXEL wireless adapters must also have OTIST enabled. The G-570U also supports OTIST in Wireless Client mode. 10/100M Auto-negotiating Ethernet/Fast Ethernet Interface This auto-negotiating feature allows the G-570U to detect the speed of incoming transmissions and adjust appropriately without manual intervention. It allows data transfer of either 10 Mbps or 100 Mbps in either half-duplex or full-duplex mode depending on your Ethernet network. Ethernet port connections can be in half-duplex or full-duplex mode.

Full-duplex refers to a device's ability to send and receive simultaneously, while half-duplex indicates that traffic can flow in only one direction at a time. The Ethernet port must use the same speed or duplex mode setting as the peer Ethernet port in order to connect. 10/100M Auto-crossover Ethernet/Fast Ethernet Interface The LAN interface automatically adjusts to either a crossover or straight-through Ethernet cable. Reset Button The G-570U reset button is built into the rear panel. Use this button to restart the device or restore the factory default password. 802.11g Wireless LAN Standard The ZyXEL wireless products containing the letter "G" in the model name, such as G-570U and G-162, comply with the IEEE 802.11g wireless standard. 24 Chapter 1 Getting to Know

Your G-570U ZyXEL G-570U User's Guide IEEE 802.11g is fully compatible with the IEEE 802.

11b standard. This means an IEEE 802.11b radio card can interface directly with an IEEE 802.11g access point (and vice versa) at 11 Mbps or lower depending on range. **Wi-Fi Protected Access** Wi-Fi Protected Access (WPA) is a subset of the IEEE 802.11i standard. Key differences between WPA and WEP are user authentication and improved data encryption. WPA2 WPA 2 (IEEE 802.11i) is a wireless security standard that defines stronger encryption, authentication and key management than WPA. **SSL Passthrough** The G-570U allows SSL connections to go through the G-570U.

SSL (Secure Sockets Layer) uses a public key to encrypt data that's transmitted over an SSL connection. Both Netscape Navigator and Internet Explorer support SSL, and many Web sites use the protocol to obtain confidential user information, such as credit card numbers. By convention, URLs that require an SSL connection start with "https" instead of "http". **Wireless LAN MAC Address Filtering** Your G-570U checks the MAC address of the wireless station against a list of allowed or denied MAC addresses. **WEP Encryption** WEP (Wired Equivalent Privacy) encrypts data frames before transmitting over the wireless network to help keep network communications private.

IEEE 802.1x Network Security The G-570U supports the IEEE 802.1x standard to enhance user authentication. Use an EAPcompatible RADIUS (RFC2138, 2139 - Remote Authentication Dial In User Service) server to authenticate a limitless number of users using EAP (Extensible Authentication Protocol).



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EAP is an authentication protocol that supports multiple types of authentication.

Full Network Management The embedded web configurator is an all-platform web-based utility that allows you to easily access the G-570U's management settings. Logging and Tracing Built-in message logging and packet tracing. Chapter 1 Getting to Know Your G-570U 25 ZyXEL G-570U User's Guide
Wireless Association List With the wireless association list, you can see the list of the wireless stations that are currently using the G-570U to access your wired network. When the G-570U is in client mode, the wireless association list displays details of the access point to which the G-570U is connected. Limit the Number of Client Connections You may set a maximum number of wireless stations that may connect to the G-570U. This may be necessary if for example, there is interference or difficulty with channel assignment due to a high density of APs within a coverage area. 1.3 Applications for the G-570U Here are some application examples of how you can use your G-570U. 1.3.

1 Access Point for Internet Access The G-570U is an ideal access solution for wireless Internet connection. A typical Internet access application for your G-570U is shown as follows. Figure 2 Internet Access Application 1.3.2 Corporate Network Access Application In situations where users need to access corporate network resources and the Internet, the G570U is an ideal solution for wireless stations to connect to the corporate network without expensive network cabling. Stations A, B and C can access the wired network through the G570Us. The following figure depicts a typical application of the G-570U in an enterprise environment. The three computers with wireless adapters are allowed to access the network resource through the G-570U after account validation by the network authentication server. 26 Chapter 1 Getting to Know Your G-570U ZyXEL G-570U User's Guide Figure 3 Corporate Network Application 1.3.

3 Wireless Client Application The G-570U can function as a wireless client to connect to a network via an Access Point (AP). The AP provides access to the wired network and the Internet. Figure 4 Wireless Client Application 1.3.4 Bridge / Repeater The G-570U can act as a wireless network bridge and establish wireless links with other APs.

The G-570Us in the following example are using bridge mode with a star configuration. A, B, C and D are connected to independent wired networks and have bridge connections at the same time (B, C and D can communicate with A). Chapter 1 Getting to Know Your G-570U 27 ZyXEL G-570U User's Guide Figure 5 Bridge Application A G-570U in bridge mode without an Ethernet connection can function as a repeater. It transmits traffic from one AP to another AP without using a wired connection. C in the following graphic repeats wireless traffic between A and B.

Figure 6 Bridge Repeater Application 1.3.5 Access Point and Repeater Set the G-570U to AP+Repeater mode to have it simultaneously provide access for wireless clients and use the repeater function. This allows you to extend the coverage of your wireless network without installing Ethernet cable to connect the G-570U. In the following figure, B is in AP+Repeater mode. B functions as an AP for wireless clients C and D. B also repeats traffic between the wireless clients and AP A which is connected to the wired network. You could also set AP A to AP+Repeater mode so that wireless clients could connect to A as well. 28 Chapter 1 Getting to Know Your G-570U ZyXEL G-570U User's Guide Figure 7 AP+Repeater Application 1.4 The LED Display Figure 8 Front Panel The following table describes the LEDs on the G-570U.

Table 1 Front Panel LED Description LED PWR/ SYS COLOR Green STATUS Blinking On Off ETHN Green Amber Blinking On Blinking On Off A Green On Off Blinking DESCRIPTION The G-570U is not ready or rebooting. The G-570U has a successful reboot and is receiving power. The G-570U is not receiving power. The G-570U is sending/receiving data. The G-570U has a successful 10Mbps Ethernet connection. The G-570U is sending/receiving data. The G-570U has a successful 100Mbps Ethernet connection. The G-570U does not have an Ethernet connection. The G-570U has an active IEEE 802.11a wireless connection, but is not transmitting or receiving data.

The G-570U does not have an active IEEE 802.11a wireless connection. The G-570U has an active IEEE 802.11a wireless connection and is transmitting or receiving data. Chapter 1 Getting to Know Your G-570U 29 ZyXEL G-570U User's Guide Table 1 Front Panel LED Description LED G COLOR Green STATUS On Off Blinking A and G Green Both LEDs blinking in series DESCRIPTION The G-570U has an active IEEE 802.

11b/g wireless connection, but is not transmitting or receiving data. The G-570U does not have an active IEEE 802.11b/g wireless connection. The G-570U has an active IEEE 802.11b/g wireless connection and is transmitting or receiving data.

OTIST (One-Touch Intelligent Security Technology) is in progress. OTIST (One-Touch Intelligent Security Technology) is Both LEDs complete and the G-570U is attempting to connect to an blinking simultaneously access point. 1.5 The Rear Panel Figure 9 G-570U: Rear Panel The following table describes the rear panel of the G-570U. Table 2 G-570U: Rear Panel LABEL A B DESCRIPTION POWER port RESET button Hold this button in for 1-2 seconds to restart the G-570U. Your settings will be saved. Hold this button in for 10 seconds or more to reset the device. All settings will be returned to factory defaults. When the G-570U is in AP mode, click this button once to activate OTIST. In any mode, double-click this button to enter Wireless Client mode and activate OTIST.

C OTIST button D E ETHERNET port Detachable 2dBi antenna 30 Chapter 1 Getting to Know Your G-570U ZyXEL G-570U User's Guide CHAPTER 2 Management Computer Setup This chapter describes how to prepare your computer to access the G-570U web configurator. 2.1 Introduction You can connect a computer to the G-570U for management purposes either using an Ethernet connection (recommended for a first time management session) or wirelessly. 2.2 Wired Connection You must prepare your computer/computer network to connect to the G-570U if you are using a wired connection. Your computer's IP address and subnet mask must be on the same subnet as the G-570U. This can be done by setting up your computer's IP address. The following figure shows you an example of accessing your G-570U via a wired connection with an Ethernet cable. Figure 10 Wired Connection Default IP Address: 192.168.

1.2 192.168.1.3 2.

2.1 Setting Up Your Computer's IP Address Note: Skip this section if your computer's IP address is already between 192.168.1.3 and 192.168.1.254 with subnet mask 255.255.255.0. Your computer must have a network card and TCP/IP installed. TCP/IP should already be installed on computers using Windows NT/2000/XP, Macintosh OS 7 and later operating systems.



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Refer to the appendix about setting up your computer's IP address for other operating systems. Chapter 2 Management Computer Setup 31 ZyXEL G-570U User's Guide 2.

2.1.1 Windows 2000/NT/XP The following example figures use the default Windows XP GUI theme. 1 Click start (Start in Windows 2000/NT) > Settings > Control Panel. 2 In the Control Panel, double-click Network Connections (Network and Dial-up Connections in Windows 2000/NT). Figure 11 Control Panel 3 Right-click Local Area Connection and then Properties. Figure 12 Network Connection 4 Select Internet Protocol (TCP/IP) and then click Properties. 32 Chapter 2 Management Computer Setup ZyXEL G-570U User's Guide Figure 13 Local Area Connection Properties 5 Select Use the following IP Address and fill in an IP address (between 192.168.1.3 and 192.168.1.254). · Type 255.

255.255.0 as the Subnet mask. · Click Advanced. Figure 14 Internet Protocol Properties 6 Remove any previously installed gateways in the IP Settings tab and click OK to go back to the Internet Protocol TCP/IP Properties screen.

1. See the appendices for information on configuring DNS server addresses. Chapter 2 Management Computer Setup 33 ZyXEL G-570U User's Guide Figure 15 Advanced TCP/IP Settings No gateways configured. 7 Click OK to close the Internet Protocol (TCP/IP) Properties window. 8 Click Close (OK in Windows 2000/NT) to close the Local Area Connection Properties window. 9 Close the Network Connections window (Network and Dial-up Connections in Windows 2000/NT).

2.3 Wireless Connection Ensure that the wireless stations have a compatible wireless card/adaptor with the same wireless settings as the G-570U. The following figure shows how you can access your G-570U wirelessly. Figure 16 Wireless Connection SSID: ZyXEL G570U Channel: 6 34 Chapter 2 Management Computer Setup ZyXEL G-570U User's Guide Note: The wireless stations and G-570U must use the same SSID, channel and wireless security settings for wireless communication.

If you do not enable any wireless security on your G-570U, your network traffic is visible to any wireless networking device that is within range. 2.4 Restarting the G-570U Press and immediately release the RESET button to restart the G-570U. Note: Holding the RESET button in for ten seconds or longer resets the device to the factory-default settings. 2.5 Resetting the G-570U If you forget the G-570U's IP address or your password, to access the G-570U you will need to reload the factory-default using the RESET button. Resetting the G-570U replaces the current configuration file with the factory-default configuration file. This means that you will lose all configurations that you had previously. The following parameters will be reset to the default values. Table 3 Factory Defaults PARAMETER IP Address Password Wireless Security SSID DEFAULT VALUE 192.

168.1.2 1234 Disabled ZyXEL G-570U 2.5.1 Methods of Restoring Factory-Defaults You can erase the current configuration and restore factory defaults in two ways: 1 Use the RESET button on the G-570U to upload the default configuration file (hold this button in for at least ten seconds). 2 Use the web configurator to restore defaults. Click Management > Configuration File. From here you can restore the G-570U to factory defaults. Chapter 2 Management Computer Setup 35 ZyXEL G-570U User's Guide 36 Chapter 2 Management Computer Setup ZyXEL G-570U User's Guide CHAPTER 3 Introducing the Web Configurator This chapter describes how to configure the G-570U using the Wizard. 3.

1 Web Configurator Overview The web configurator is an HTML-based management interface that allows easy G-570U 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 want to make sure these functions are allowed in Internet Explorer or Netscape Navigator.

3.2 Accessing the G-570U Web Configurator Follow the steps below to access the web configurator, select a language, change your login password and choose a configuration method from the status screen. 1 Make sure your G-570U hardware is properly connected (refer to the Quick Start Guide). 2 Prepare your computer/computer network to connect to the G-570U (refer to Section 2.2.1 on page 31 for instructions on how to do this). 3 Launch your web browser. 4 Type the device name of your G-570U as the URL. ZyXELXXXX is the default where "XXXX" is the last four digits of the MAC address. The MAC address is on the bottom of the device).

You could also use the IP address of the G-570U (192.168.1.2 is the default). Press Enter.

Chapter 3 Introducing the Web Configurator 37 ZyXEL G-570U User's Guide Figure 17 Web Configurator Address or 5 Type "1234" (default) as the password and click Login. Figure 18 Login Screen The default password is 1234. 6 Select your language and click Apply. Figure 19 Language Screen 7 The following screen displays. Select Go Wizard Setup and click Apply to use the wizard setup screens for initial configuration (see Section 3.

3 on page 39). Select Go Advanced Setup and click Apply to go directly to the advanced screens (see Section 3.4 on page 45). 38 Chapter 3 Introducing the Web Configurator ZyXEL G-570U User's Guide Figure 20 Select Wizard or Advanced Setup Screen 3.3 Configuring the G-570U Using the Wizard The wizard consists of a series of screens to help you configure your G-570U for wireless stations to access your wired LAN. Use the following buttons to navigate the Wizard: Back Next Click Back to return to the previous screen. Click Next to continue to the next screen. No configuration changes will be saved to the G-570U until you click Finish. 3.3.

1 Wizard: Basic Settings Click SETUP WIZARD to display the first wizard screen shown next. Refer to the System Screens chapter for more background information. 1 Enter a descriptive name to identify the device in the Ethernet network. 2 Select Obtain IP Address Automatically if you want to put the device behind a router that assigns an IP address. If you select this by mistake, use the RESET button to restore the factory default IP address. 3 Select Use fixed IP Address to give the device a static IP address. The IP address you configure here is used for management of the device (accessing the web configurator). 4 Enter a Subnet Mask appropriate to your network and the Gateway IP Address of the neighboring device, if you know it. If you do not, leave the Gateway IP Address field as 0.0.

0.0. Chapter 3 Introducing the Web Configurator 39 ZyXEL G-570U User's Guide Figure 21 Wizard: Basic Settings Do not select this unless you have a router that can assign the G-570U an IP address.



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3.3.

2 Wizard: Wireless Settings Use this wizard screen to set up the wireless LAN. See the chapter on the wireless screens for background information. 1 The SSID is a unique name to identify the device in a wireless network. Enter up to 32 printable characters. Spaces are allowed. If you change this field on the device, make sure all wireless stations use the same SSID in order to access the network. 2 IEEE 802.11a, 802.11b and 802.11g wireless modes are different wireless communications standards. If you choose 802.11a only, 802.11b only or 802.11g only in the Wireless Mode field you will be able to communicate with other wireless devices using that mode only, and if you select Auto (11b/11g) you can communicate with wireless devices using either 802.11b mode or 802.

11g mode. 3 A wireless device uses a channel to communicate in a wireless network. Select a channel that is not already in use by a neighboring wireless device. Note: The wireless stations and this device must use the same SSID, wireless mode, channel and wireless security settings for wireless communication. 40 Chapter 3 Introducing the Web Configurator ZyXEL G-570U User's Guide Figure 22 Wizard: Wireless Settings 3.3.3 Wizard: Security Settings Use this screen to configure security for your wireless LAN. The screen varies depending on what you select in the Encryption Method field. Select Disable to have no wireless security configured, select WEP, or select WPA-PSK if your wireless clients support WPA-PSK. Select WPA2-PSK if your wireless clients support WPA2-PSK Go to Wireless > Security if you want to use WPA2, WPA or 802.

1x. See Chapter 6 on page 57 for background information. 3.3.3.

1 Disable Select Disable to have no wireless LAN security configured. If you do not enable any wireless security on your device, your network is accessible to any wireless networking device within range. Note: With no wireless security a neighbor can access and see traffic in your network. Chapter 3 Introducing the Web Configurator 41 ZyXEL G-570U User's Guide Figure 23 Setup Wizard 3: Disable 3.3.

3.2 WEP 1 WEP (Wired Equivalent Privacy) encrypts data frames before transmitting over the wireless network. Select 64-bit, or 128-bit from the WEP Encryption drop-down list box. The higher the WEP encryption, the higher the security but the slower the throughput. 2 You can generate or manually enter a WEP key. - Enter a Passphrase (up to 32 printable characters) and click Generate. The device automatically generates WEP keys. One key displays in the Key 1 field. Go to Wireless > Security if you want to see the other WEP keys. or - Enter a manual key in the Key 1 field.

42 Chapter 3 Introducing the Web Configurator ZyXEL G-570U User's Guide Figure 24 Wizard 3: WEP Use Passphrase to automatically generate keys or manually enter a key in the Key 1 field. 3.3.3.3 WPA(2)-PSK Select WPA-PSK or WPA2-PSK only if your wireless clients support it. Type a pre-shared key from 8 to 63 ASCII characters (including spaces and symbols). This field is case-sensitive. Chapter 3 Introducing the Web Configurator 43 ZyXEL G-570U User's Guide Figure 25 Wizard 3: WPA(2)-PSK 3.3.4 Wizard: Confirm Your Settings This read-only screen shows the status of the current settings. Use the summary table to check whether what you have configured is correct. Click Finish to complete the wizard configuration and save your settings. 44 Chapter 3 Introducing the Web Configurator ZyXEL G-570U User's Guide Figure 26 Wizard: Confirm Your Settings For more detailed background information, see the rest of this User's Guide. 3.4 Navigating the Advanced Screens The STATUS screen is the first advanced screen that displays.

This section explains how to navigate the advanced configuration screens. See the chapter on the Status screen for details about the individual screen. Chapter 3 Introducing the Web Configurator 45 ZyXEL G-570U User's Guide Figure 27 Status Screen The following table describes the global web configurator icons (in the upper right corner of most screens). Table 4 Global Icon Key ICON DESCRIPTION Click the Wizard icon to open the setup wizard. Click the About icon to view copyright information.

Click the Logout icon at any time to exit the web configurator. Make sure you save any changes before you log out. 3.4.1 Navigation Panel After you enter the password, use the links on the navigation panel to go to the various advanced screens. 46 Chapter 3 Introducing the Web Configurator ZyXEL G-570U User's Guide The following table describes the sub-menus. Table 5 Screens Summary LINK Status TAB FUNCTION This screen shows the G-570U's general device, system and interface status information. Use this screen to access the wizard, and summary statistics tables. Use this screen to configure the device name and IP address assignment settings. Wireless Settings Use this screen to configure the wireless LAN.

Security MAC Filter OTIST Management Password Logs Use this screen to configure wireless LAN security settings. Use the MAC filter screen to configure the G-570U to allow access to devices or block the devices from accessing the G-570U. This screen allows you to assign the G-570U's wireless security settings to the wireless clients. Use this screen to configure the administrator password. Use this screen to view logs and alert messages. System Wireless Configuration File Use this screen to backup and restore the configuration or reset the factory defaults to your G-570U. F/W Upload Use this screen to upload firmware to your G-570U. Note: See the rest of this User's Guide for configuration details and background information on all G-570U features using the web configurator. Chapter 3 Introducing the Web Configurator 47 ZyXEL G-570U User's Guide 48 Chapter 3 Introducing the Web Configurator ZyXEL G-570U User's Guide CHAPTER 4 Status Screens This chapter describes the Status screens. 4.

1 System Status Click Status to open the following screen. The Status screen display a snapshot of your device's settings. You can also view network statistics and a list of wireless stations currently associated with your device. Note that these labels are READ-ONLY and are meant to be used for diagnostic purposes. Figure 28 Status The following table describes the labels in this screen.

Table 6 Status LABEL Refresh Interval Refresh Now Device Information Device Name Operation Mode This is the same as the device name you entered in the first wizard screen, if you entered one there. It is for identification purposes. This field shows whether the device is functioning as an access point, a wireless client, a bridge or an access point and repeater. DESCRIPTION Use the drop-down list box to select how often you want the device to renew the information on this screen. Click this button to have the device renew the information on this screen.

Chapter 4 Status Screens 49 ZyXEL G-570U User's Guide Table 6 Status LABEL MAC Address DESCRIPTION This field displays the MAC address of the device.



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The MAC (Media Access Control) or Ethernet address on a LAN (Local Area Network) is unique to your computer. A network interface card such as an Ethernet adapter has a hardwired address that is assigned at the factory. This address follows an industry standard that ensures no other adapter has a similar address. This is the firmware version and the date the firmware was created. This is the Ethernet port IP address. This is the Ethernet port subnet mask. This is the IP address of a gateway. Leave this field as 0.0.

0.0 if you do not know it. Firmware Version IP Settings IP Address Subnet Mask Gateway IP Address Wireless Settings SSID Channel This is the descriptive name used to identify the device in a wireless network. This field displays the radio channel the device is currently using. Encryption Method This field shows whether data encryption is activated (WEP (WEP or 802.1x with WEP), TKIP (WPA, WPA-PSK), AES (WPA2, WPA2-PSK), AES+TKIP (WPA & WPA2, WPA-PSK & WPA2-PSK)) or inactive (Disable). MAC Filter This field shows whether MAC filter is enabled or not. With MAC filtering, you can allow or deny access to the device based on the MAC addresses of the wireless stations. Click View Statistics to see performance statistics such as number of packets sent and number of packets received. Click View Association List to show the wireless stations that are currently associated to the device.

Summary View Statistics View Association List 4.1.1 Statistics Click View Statistics in the Status screen. This screen displays read-only information including port status and packet-specific statistics. Also provided are "system up time" and "poll interval(s)".

The Poll Interval(s) field is configurable. 50 Chapter 4 Status Screens ZyXEL G-570U User's Guide Figure 29 Status: View Statistics The following table describes the labels in this screen. Table 7 Status: View Statistics LABEL Ethernet Packets Bytes Wireless Unicast Packets Broadcast Packets Multicast Packets Total Packets Total Bytes System Up Time Poll Interval(s) Set Interval Stop This row displays the numbers of unicast packets received and transmitted by the wireless adapter. This row displays the numbers of broadcast packets received and transmitted by the wireless adapter. This row displays the numbers of multicast packets received and transmitted by the wireless adapter.

This row displays the numbers of all types of packets received and transmitted by the wireless adapter. This row displays the numbers of bytes received and transmitted by the wireless adapter. This is the total time the device has been on. Enter the time interval for refreshing statistics. Click this button to apply the new poll interval you entered above. Click this button to stop refreshing statistics. This row displays the numbers of packets received and transmitted by the Ethernet port. This row displays the numbers of bytes received and transmitted by the Ethernet port. DESCRIPTION Chapter 4 Status Screens 51 ZyXEL G-570U User's Guide 4.1.

2 Association List Click Status and then the View Association List button to display the Association List screen. When the device is not in wireless client mode, this screen displays which wireless stations are currently associated to the device in the Association List screen. When the device is in Wireless Client mode, it displays details of the access point to which the device is associated. Figure 30 Status: View Association List The following table describes the labels in this screen. Table 8 Status: View Association List LABEL No. MAC Address IP Address Signal Strength Rescan DESCRIPTION This is the index number of an associated device. This field displays the MAC address of an associated device. This field displays the IP address of an associated device. This field displays the signal strength of each associated device. This field displays Associated for associated devices.

Click Rescan to check for associated devices. 52 Chapter 4 Status Screens ZyXEL G-570U User's Guide CHAPTER 5 System Screen This chapter provides information on the System screen. 5.1 TCP/IP Parameters 5.1.

1 IP Address Assignment Every computer on the Internet must have a unique IP address. If your networks are isolated from the Internet, for instance, only between your two branch offices, you can assign any IP addresses to the hosts without problems. However, the Internet Assigned Numbers Authority (IANA) has reserved the following three blocks of IP addresses specifically for private networks. Table 9 Private IP Address Ranges 10.0.0.0 172.16.0.0 192.168.0.0 10.255.255.

255 172.31.255.255 192.168.255.255 You can obtain your IP address from the IANA, from an ISP or have it assigned by a private network. If you belong to a small organization and your Internet access is through an ISP, the ISP can provide you with the Internet addresses for your local networks. On the other hand, if you are part of a much larger organization, you should consult your network administrator for the appropriate IP addresses. Note: Regardless of your particular situation, do not create an arbitrary IP address; always follow the guidelines above.

For more information on address assignment, please refer to RFC 1597, Address Allocation for Private Internets and RFC 1466, Guidelines for Management of IP Address Space. 5.1.2 IP Address and Subnet Mask Similar to the way houses on a street share a common street name, so too do computers on a LAN share one common network number. Where you obtain your network number depends on your particular situation.

If the ISP or your network administrator assigns you a block of registered IP addresses, follow their instructions in selecting the IP addresses and the subnet mask. Chapter 5 System Screen 53 ZyXEL G-570U User's Guide If the ISP did not explicitly give you an IP network number, then most likely you have a single user account and the ISP will assign you a dynamic IP address when the connection is established. The Internet Assigned Number Authority (IANA) reserved this block of addresses specifically for private use; please do not use any other number unless you are told otherwise. Let's say you select 192.168.1.0 as the network number; which covers 254 individual addresses, from 192.168.1.1 to 192.168.1.254 (zero and 255 are reserved). In other words, the first three numbers specify the network number while the last number identifies an individual computer on that network. Once you have decided on the network number, pick an IP address that is easy to remember, for instance, 192.

168.1.2, for your device, but make sure that no other device on your network is using that IP address. The subnet mask specifies the network number portion of an IP address. Your device will compute the subnet mask automatically based on the IP address that you entered. You don't need to change the subnet mask computed by the device unless you are instructed to do otherwise. 5.2 System Settings Click System to open the System Settings screen.



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Figure 31 System Settings The following table describes the labels in this screen. Table 10 System Settings LABEL Device Settings Device Name IP Address Assignment This name can be up to 15 printable characters long.

Spaces are not allowed. DESCRIPTION 54 Chapter 5 System Screen ZyXEL G-570U User's Guide Table 10 System Settings LABEL DESCRIPTION Obtain IP Address Select this option to have your device use a dynamically assigned IP address from Automatically a router each time. Use fixed IP address IP Address Subnet Mask Gateway IP Address Apply Reset Select this option to have your device use a static IP address. When you select this option, fill in the fields below. Enter the IP address of your device in dotted decimal notation.

Enter the subnet mask. Type the IP address of the gateway. The gateway is a router or switch on the same network segment as the device. The gateway helps forward packets to their destinations. Leave this field as 0.

0.0.0 if you do not know it. Click Apply to save your changes back to the device. Click Reset to reload the previous configuration for this screen. Chapter 5 System Screen 55 ZyXEL G-570U User's Guide 56 Chapter 5 System Screen ZyXEL G-570U User's Guide CHAPTER 6 Wireless Screens This chapter discusses how to configure wireless settings and wireless security on your G570U. 6.1 Wireless LAN Overview This section introduces the wireless LAN (WLAN) and some basic scenarios. 6.1.

1 IBSS An Independent Basic Service Set (IBSS), also called an Ad-hoc network, is the simplest WLAN configuration. An IBSS is defined as two or more computers with wireless adapters within range of each other that form an independent (wireless) network without the need of an access point (AP). Figure 32 IBSS (Ad-hoc) Wireless LAN 6.1.2 BSS A Basic Service Set (BSS) exists when all communications between wireless stations or between a wireless station and a wired network client go through one access point (AP). Intra-BSS traffic is traffic between wireless stations in the BSS. When Intra-BSS is enabled, wireless stations A and B can access the wired network and communicate with each other. When Intra-BSS is disabled, wireless station A and B can still access the wired network but cannot communicate with each other. Chapter 6 Wireless Screens 57 ZyXEL G-570U User's Guide Figure 33 Basic Service set 6.1.

3 ESS An Extended Service Set (ESS) consists of a series of overlapping BSSs, each containing an access point, with each access point connected together by a wired network. This wired connection between APs is called a Distribution System (DS). An ESSID (ESS Identification) uniquely identifies each ESS. All access points and their associated wireless stations within the same ESS must have the same ESSID in order to communicate. 58 Chapter 6 Wireless Screens ZyXEL G-570U User's Guide Figure 34 Extended Service Set 6.

2 Wireless LAN Basics This section describes the wireless LAN network terms. 6.2.1 Channel A channel is the radio frequency(ies) used by IEEE 802.11b wireless devices.

Channels available depend on your geographical area. You may have a choice of channels (for your region) so you should use a different channel than an adjacent AP (access point) to reduce interference. Interference occurs when radio signals from different access points overlap causing interference and degrading performance. Adjacent channels partially overlap however. To avoid interference due to overlap, your AP should be on a channel at least five channels away from a channel that an adjacent AP is using. For example, if your region has 11 channels and an adjacent AP is using channel 1, then you need to select a channel between 6 or 11. 6.2.2 SSID The SSID (Service Set Identity) is a unique name shared among all wireless devices in a wireless network. Wireless devices must have the same SSID to communicate with each other.

Chapter 6 Wireless Screens 59 ZyXEL G-570U User's Guide 6.2.3 RTS/CTS A hidden node occurs when two stations are within range of the same access point, but are not within range of each other. The following figure illustrates a hidden node. Both stations (STA) are within range of the access point (AP) or wireless gateway, but out-of-range of each other, so they cannot "hear" each other, that is they do not know if the channel is currently being used. Therefore, they are considered hidden from each other. Figure 35 RTS/CTS When station A sends data to the G-570U, it might not know that the station B is already using the channel. If these two stations send data at the same time, collisions may occur when both sets of data arrive at the AP at the same time, resulting in a loss of messages for both stations. RTS/CTS is designed to prevent collisions due to hidden nodes. An RTS/CTS defines the biggest size data frame you can send before an RTS (Request To Send)/CTS (Clear to Send) handshake is invoked.

When a data frame exceeds the RTS/CTS value you set (between 0 to 2432 bytes), the station that wants to transmit this frame must first send an RTS (Request To Send) message to the AP for permission to send it. The AP then responds with a CTS (Clear to Send) message to all other stations within its range to notify them to defer their transmission. It also reserves and confirms with the requesting station the time frame for the requested transmission. Stations can send frames smaller than the specified RTS/CTS directly to the AP without the RTS (Request To Send)/CTS (Clear to Send) handshake. You should only configure RTS/CTS if the possibility of hidden nodes exists on your network and the "cost" of resending large frames is more than the extra network overhead involved in the RTS (Request To Send)/CTS (Clear to Send) handshake.

If the RTS/CTS value is greater than the Fragmentation Threshold value (see next), then the RTS (Request To Send)/CTS (Clear to Send) handshake will never occur as data frames will be fragmented before they reach RTS/CTS size. Note: Enabling the RTS Threshold causes redundant network overhead that could negatively affect the throughput performance instead of providing a remedy. 60 Chapter 6 Wireless Screens ZyXEL G-570U User's Guide 6.2.4

Fragmentation Threshold A Fragmentation Threshold is the maximum data fragment size (between 256 and 2432 bytes) that can be sent in the wireless network before the G-570U will fragment the packet into smaller data frames.

A large Fragmentation Threshold is recommended for networks not prone to interference while you should set a smaller threshold for busy networks or networks that are prone to interference. If the Fragmentation Threshold value is smaller than the RTS/CTS value (see previously) you set then the RTS (Request To Send)/CTS (Clear to Send) handshake will never occur as data frames will be fragmented before they reach RTS/CTS size. 6.3 Configuring Wireless Click Wireless to display the Wireless Settings screen.



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