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User manual ZYXEL PLA4225
User guide ZYXEL PLA4225
Operating instructions ZYXEL PLA4225
Instructions for use ZYXEL PLA4225
Instruction manual ZYXEL PLA4225

PLA4225

500 Mbps Powerline 4-Port Gigabit Switch

User's Guide

Edition 1, 8/2011



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Manual abstract:

@@@ · The PLA42xx Series Configuration Utility version 5.2.0 (AG) may be referred to as the "configuration utility" or the "utility" in this User's Guide. · Product labels, screen names, field labels and field choices are all in bold font. · A key stroke is denoted by square brackets and uppercase text, for example, [ENTER] means the "enter" or "return" key on your keyboard. · "Enter" means for you to type one or more characters and then press the [ENTER] key.

@@@@@ For example, "k" for kilo may denote "1000" or "1024", "M" for mega may denote "1000000" or "1048576" and so on. · "e.g.," is a shorthand for "for instance", and "i.

e.," means "that is" or "in other words". 4 PLA4225 User's Guide Document Conventions Icons Used in Figures Figures in this User's Guide may use the following generic icons. The icons used may not be an exact representation of your device. PLA4225 Computer Internet Modem / Router Printer Notebook TV Media Adapter PLA4225 User's Guide 5 Safety Warnings 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 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 adapter or cord for your device. Connect the power adapter 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 adapter or cord and do NOT place the product where anyone can walk on the power adapter or cord.

Do NOT use the device if the power adapter or cord is damaged as it might cause electrocution. If the power adapter or cord is damaged, remove it from the power outlet. Do NOT attempt to repair the power adapter 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. If you wall mount your device, make sure that no electrical lines, gas or water pipes will be damaged. This power unit is intended to be correctly orientated in a vertical or floor mount position. ····· Your product is marked with this symbol, which is known as the WEEE mark.

WEEE stands for Waste Electronics and Electrical Equipment. It means that used electrical and electronic products should not be mixed with general waste. Used electrical and electronic equipment should be treated separately. 6 PLA4225 User's Guide Table of Contents Table of Contents About This User's Guide

..

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... 3 Document Conventions .

.....

.....

.....

.....

.....

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.....

.....

.....

.....

.....

.....

.....

. 4 Safety Warnings....

.....

.....
.....
.....
.....

.....
.....
.....
.....

.....
.....
.....
.....

. 6 Table of Contents

.....
.....
.....
.....

.....
.....
.....
.....

.....
.....
.....
.....

... 7 Part I: User's Guide ..

.....
.....
.....
.....

.....
.....
.....
.....

.....
.....
.....
.....

.....9 Chapter 1 Introducing the PLA4225

.....
.....
.....

.....
.....
.....
.....

.....
.....
.....
.....

.....
.....

... 11 1.1 Overview .

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... 11 1.2 Expand Your Network with the PLA4225

.....

.....

.....

.....

.....

.....

.....

.....

... 11 1.3 Ways to Manage the PLA4225 .

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.12 1.4 Security ...

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....
.....
.....
.....12 1.4.1 Passwords ...

.....
.....
.....

.....
.....
.....

.....
.....
.....

.....
.....
.....

.12 1.4.2 Setting Up Security

.....
.....
.....

.....
.....
.....

.....
.....
.....

....12 1.5 Multiple Networks

.....
.....
.....

.....
.....
.....

.....
.....
.....

.....
.....
.....

.....13 Chapter 2 Installing the Utility..

.....
.....
.....

.....
.....
.....

.....
.....
.....

.....
.....
.....
.....

.....
.....
.....

. 14 2.1 Overview of the Installation Process

.....
.....
.....

.....
.....
.....

.....
.....

.14 2.2 Installing the Utility ...

.....

.....
.....
.....

.....
.....
.....

.....
.....
.....

.....14 2.3 Low Power Mode .

.....
.....
.....

.....
.....
.....

.....
.....
.....

.....
.....
.....

..16 Part II: Technical Reference.....

.....
.....

.....
.....
.....
.....

.....19 Chapter 3 The ENCRYPT Button.

.....
.....

.....
.....
.....

.....
.....
.....

.....
.....
.....

..... 21 3.1 ENCRYPT Button Overview .

.....
.....
.....

.....
.....
.....

.....
.....
.....

.....21 3.2 Set Up a HomePlug AV Network with ENCRYPT ...

.....
.....

.....
.....
.....

.....21 3.3 Setting Up Multiple Networks ...

.....
.....

.....
.....
.....

.....
.....
.....

.....
.....
..23 3.4 ENCRYPT Button Behavior ..

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....25 Chapter 4 The Configuration Utility.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... 26 PLA4225 User's Guide 7 Table of Contents 4.
1 Overview

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....26 4.1.1 Powerline Network Security ..

.....

.....

.....

.....

.....

.....

.....
.....

.....
.....
26 4.1.2 Device Access Key (DAK) ..

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

...27 4.2 Starting the Configuration Utility .

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

27 4.3 Configuration Screen

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....27 4.4 Firmware Screen ..

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....
.....
.....
.....

.29 4.5 Network Info Screen

.....
.....
.....

.....
.....
.....
.....

.....
.....
.....
.....

.....
.....
.....

30 4.6 Advanced Screen

.....
.....
.....
.....

.....
.....
.....
.....

.....
.....
.....
.....

.....

31 4.7 About Screen

.....
.....

.....
.....
.....
.....

.....
.....
.....
.....

.....
.....
.....
.....

.....

34 Chapter 5 Powerline Network Setup Tutorial.....

.....
.....
.....
.....

.....
.....
.....

.....
.....
.....

..... 37 5.
0.1 Overview

.....
.....

.....
.....
.....

.....
.....
.....

.....
.....
.....

.....37 5.0.
2 Important Terms

.....
.....

.....
.....
.....

.....
.....
.....

.....
.....
.....

.....37 5.0.3 *Accessing Your Powerline Adapter ..*

.....
.....
.....

.....
.....
.....

.....
.....

38 5.0.4 Adding a Powerline Adapter ...

.....

.....
.....
.....

.....
.....
.....
.....

.....
.....39 5.

0.5 Setting Up a New Network with a New Adapter

.....
.....
.....
.....

.....
.....40 5.0.

6 Splitting a Network into Two Networks

.....
.....
.....
.....

.....
.....
.....

.....42 5.1 Troubleshooting ...

.....
.....
.....

.....
.....
.....

.....
.....
.....

.....
.....
.....

..44 Chapter 6 LEDs and Troubleshooting

.....
.....
.....

.....
.....
.....

.....
.....
.....

.. 47 6.1 LEDs

.....
.....
.....

.....
.....
.....
.....

.....
.....
.....
.....

.....
.....
.....
.....

.....
.....

47 6.2 Power and Light Problems

.....
.....
.....
.....

.....
.....
.....
.....

.....
.....
.....

.....48 6.3 Configuration Utility Problems

.....
.....
.....
.....

.....
.....
.....
.....

.....
.....
.....
.....

50 6.4 Powerline Problems

.....
.....
.....

.....
.....
.....
.....

.....
.....

multiple powerline networks. See the next section for more information on how to set up a multiple network. 1.

5 Multiple Networks Multiple powerline networks can coexist on a single powerline circuit. You might want to implement multiple powerline networks in a small office environment where you have two separate Ethernet networks. 1 Connect one powerline adapter to a router or switch on the first Ethernet network and assign a Network Name (for example "Password1") to this powerline adapter. Add additional powerline adapters to your network by plugging them into your powerline outlets and assigning them "Password1". This completes the configuration of your first powerline network. Connect another powerline adapter to a router or switch on the second Ethernet network and assign a different Network Name (for example "Password2") to this powerline adapter.



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Again, add additional powerline adapters and assign them "Password2". You now have two private networks on your powerline circuit. Information is not shared between the two networks as only powerline adapters with the same Network Name can communicate with each other. 2 PLA4225 User's Guide 13 CHAPTER 2 Installation.

Sixty (60) seconds after disconnecting the Ethernet cable, the PLA4225's Power LED blinks signalling that it is going into Low Power mode. The Ethernet and HomePlug LEDs are turned off in Low Power mode. While in Low Power mode, you cannot use the ENCRYPT button. To enable the ENCRYPT button again, you have to connect the PLA4225's Ethernet cable to a computer/notebook or modem/router first. The PLA4225 wakes up from Low Power mode and you can start using the ENCRYPT button.

Low Power mode is enabled by default. PLA4225 User's Guide 17 Chapter 2 Installing the Utility 18 PLA4225 User's Guide PART II Technical Reference 19 20 CHAPTER 3 The ENCRYPT Button Use the ENCRYPT button to automatically set up a secure powerline connection between your powerline devices. 3.1 ENCRYPT Button Overview The ENCRYPT button allows you to set up a secure powerline connection with other HomePlug AV compliant powerline devices which also support the ENCRYPT feature. No other powerline setting changes are required to connect.

You can use the ENCRYPT button to: · set up a new powerline network · separate an existing powerline network into multiple networks 3.2 Set Up a HomePlug AV Network with ENCRYPT You can connect a number of devices on a powerline network, but you can use the ENCRYPT button on only two devices at a time. Place a powerline device close to another powerline device so you have time to set up each one. After you set up the first powerline device, you have 120 seconds to set up the second powerline device. You can disconnect them from your computer or modem (or other networking equipment) if you need to move them close to each other, but the powerline devices need to be plugged into power outlets. Note: Because your PLA4225 goes into Low Power mode, it must be connected to a networking equipment for the ENCRYPT button to work. Refer to Section 2.3 on page 16 for more details. Follow the steps below to set up your HomePlug AV Network: 1 Press the ENCRYPT button at the rear of your powerline device for more than 10 seconds until the power () light flashes. This resets the network name to a random value and removes your device from any network it may belong to.

PLA4225 User's Guide 21 Chapter 3 The ENCRYPT Button 2 Press the ENCRYPT button at the side of your powerline device for 1~2 seconds. The power () light will blink as the powerline device tries to set up a connection. Figure 7 ENCRYPT Connection Procedure) press 2 seconds press 2 seconds within 2 minutes Note: The ENCRYPT button's location varies for each Powerline model. 3 Repeat step 2 in this section for the other powerline device you wish to connect. This must be done within 120 seconds of pressing the ENCRYPT button on the PLA4225. Note: Check the lights on the two powerline devices. The power () and HomePlug () lights should be blinking while the devices are connecting. Several times all lights blink simultaneously and the HomePlug () light also shows red. Wait for about one minute while your powerline devices connect. If the power () light does not blink when you press ENCRYPT, you have probably pressed the ENCRYPT button for too long.

Try again, pressing the ENCRYPT button for 1~2 seconds. If the HomePlug () lights on both powerline devices do not light up, the powerline devices are not connected. Repeat steps 2 and 3 in this section. If that doesn't work, see the Troubleshooting in Section 6.5 on page 51 for suggestions.

4 To add more powerline devices to your network, press the ENCRYPT button on device C (shown below) for more than 10 seconds until the power () light flashes. 22 PLA4225 User's Guide Chapter 3 The ENCRYPT Button 5 Then repeat steps 2 and 3 in this section using any powerline device (A or B) you have connected using ENCRYPT and the powerline device you want to connect (C). You must use the ENCRYPT button on both devices. Figure 8 Adding More Powerline Adapters to Your Network A B A OR B C 6 If you disconnected your computer or modem (or any other networking product connected to your powerline device) in step of this section, you can now reconnect them. This sets up your powerline network between your powerline devices.

3.3 Setting Up Multiple Networks You can use the ENCRYPT button to set up multiple powerline networks using your existing powerline network. PLA4225 User's Guide 23 Chapter 3 The ENCRYPT Button For example, you have already set up a powerline network in your home (A) which accesses a printer (B).

Now you want a separate powerline network connection from your laptop to your printer (C). Figure 9 One Existing Powerline Network A C B 1 Click the ENCRYPT button on (A) for more than 10 seconds until the power () disconnects (A) from (B).) light flashes. This 2 3 4 Click the ENCRYPT button on (A) and (C) for 1~2 seconds and within two minutes of each other. Wait for about one minute while (A) and (C) connect. Check the LEDs on both (A) and (C). When the power () and HomePlug () light shines steadily, the devices are connected.

Figure 10 Two Separate Powerline Networks) lights stop blinking B A C Congratulations. You now have two separate powerline networks as shown above. 24 PLA4225 User's Guide Chapter 3 The ENCRYPT Button If the HomePlug () lights on both powerline devices do not light up, the powerline devices are not connected. Repeat the connection process, making certain you press the ENCRYPT buttons for the correct time and within two minutes of each other. If that does not work see Section 6.5 on page 51 for suggestions. 3.4 ENCRYPT Button Behavior The following table summarizes the actions that occur when the ENCRYPT button is pressed for specific lengths of time. Table 2 Time ENCRYPT Button is Pressed and Action TIME less than 3 seconds ACTION The device joins a network. It shares the same network name as other devices on the network.

The device leaves any network it is associated with and its network name assumes a random value. POWER LIGHT BEHAVIOR The power () light blinks until the device is connected. This may take a minute. The power () light blinks several times and then shines steadily. HOMEPLUG LIGHT BEHAVIOR The HomePlug () light turns on if your device is connected to another powerline device or a powerline network.

The HomePlug () light blinks red one time and then turns off when it disconnects from the powerline network. more than 10 seconds See Troubleshooting in Chapter 6 on page 51 for suggestions on problems with the ENCRYPT button and the lights.



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PLA4225 User's Guide 25 CHAPTER 4 The Configuration Utility 4.1 Overview This chapter shows you how to use the Configuration Utility (or Utility) to secure, manage and set up Quality of Service (QoS) on your powerline network. The PLA4225 is designed as a plug-and-play network expanding solution. This means that once you complete your hardware connections, the PLA4225s in your network (without additional configuration) are able to communicate with each other by sending and receiving information over your home's electrical wiring (A). Figure 11 Example Network Setup A All HomePlug AV compliant powerline adapters within range can join your network. The range varies depending on the quality of your home's wiring. Note: See Section 4.1.1 on page 26 for more information on enhancing your powerline network security. 4.1.1 Powerline Network Security When the PLA4225s communicate with each other, they use encryption to protect the information that is sent in the powerline network. Encryption is like a secret code.

If you do not know the secret code, you cannot understand the message. The HomePlug AV standard uses 128-bit AES (Advanced Encryption Standard) to safely transmit data between powerline adapters. For the powerline adapters to communicate with each other they all need to use the same network name. This network name allows the powerline adapters to understand the encrypted information sent in the powerline network. PLA4225 User's Guide 26 Chapter 4 The Configuration Utility By default the PLA4225s are all configured with the network name HomePlugAV, this allows you to simply plug the devices in and not worry about setting up security. If you want to enhance the security on your powerline network, you can change the network name on the powerline adapters you want to allow to communicate in your powerline network. 4.1.2 Device Access Key (DAK) In order to manage the powerline adapters on your powerline network you must enter the adapters' password in the PLA42xx Series Configuration Utility. This password is called the DAK (Device Access Key) password.

This password is printed on the powerline adapter itself. You don't need to enter the DAK password for the powerline adapter directly connected to the computer running the utility (local powerline adapter), you only have to add the remote powerline adapters' passwords (those in your powerline network, but not directly connected to your computer). 4.2 Starting the Configuration Utility To launch the PLA42xx Series Configuration Utility simply double click on the configuration icon on your desktop. Figure 12 PLA42xx Series Configuration Utility Icon Alternatively, start the utility by browsing to it from the start menu. Click Start > Programs > ZyXEL PLA42xx Series Configuration > PLA42xx Series Configuration Utility. 4.3 Configuration Screen Use the Configuration screen to see which devices are recognized by your powerline network, to configure your PLA4225 and to set up a secure powerline network by changing the powerline network name. This screen opens up when you launch the utility. PLA4225 User's Guide 27 Chapter 4 The Configuration Utility Note: Use the Figure 13 icon to view online help information in each screen of the utility.

Configuration Screen The following table describes the labels in this screen. Table 3 Configuration Screen LABEL Network Topology DESCRIPTION Use this to select which powerline network information is displayed. Different powerline networks are identified by the Ethernet interface (network card) connected directly to the PLA4225. Typically there is only one connection, however, if your computer has two network cards and both are connected to a powerline device then you have two powerline networks. The fields described below are used to identify the powerline adapters recognized on the powerline network. The configuration utility automatically updates this information every 10 seconds. Click Scan to refresh the information in these fields (immediately). Note: Only devices which share the same network name are displayed in this table. Site This field displays · · MAC Address Local: if it is identifying the powerline adapter directly connected to the computer running the configuration utility. Remote: if it is a powerline adapter in your powerline network but not directly connected to the computer running the configuration utility.

This is a read-only field which shows the MAC address of the powerline adapter you are configuring. @@DAK (Device Access Key) password is used to verify that you are authorized to perform changes on a remote device. You can find the DAK password printed on a sticker on the bottom of your PLA4225. Select the remote powerline adapter you want to manage by clicking the MAC address which corresponds to it in the MAC Address column. Enter the DAK Password value and click Save. DAK Password Note: You must enter the DAK Password value exactly as it is printed on the label (all caps and with dashes "-"). 28 PLA4225 User's Guide Chapter 4 The Configuration Utility Table 3 Configuration Screen (continued) LABEL Network Name (NMK) DESCRIPTION

The default network name (sometimes called a network password or network membership key (NMK)) of the PLA4225 is "HomePlugAV". HomePlug compatible devices use the same network name to recognize and communicate with each other over the powerline network. If you change the network name of one device on the network, it will no longer be recognized as part of that network. If you change the network name, make sure you change the network name for all of the powerline adapters that you want to be part of your powerline network.

The network name can be from 8 to 64 characters in length, using "A"~"Z", "a"~"z", "0"~"9"; spaces are not allowed. Set NMK to this device Set NMK to all devices Save Select this to apply the NMK (entered in the field above) as the network name for the powerline adapter directly connected to the computer running the configuration utility. Select this to apply the NMK (entered in the field above) as the network name for all powerline adapter detected by the utility. Click this to apply your changes. The new Network Name is applied to the selected powerline adapter.

Note: You must enter the correct DAK password for the selected powerline adapter before you can make changes to it. 4.4 Firmware Screen Use the Firmware screen to update the firmware on the PLA4225 directly connected to the computer running the configuration utility. Firmware is the software which is embedded in the PLA4225. This software contains processing instructions for how the PLA4225 sends and receives information in a secure way.

Parameter Information Block (PIB) is similar to firmware. It contains the most basic operating instructions for the PLA4225 such as how to power up and how to load the firmware.



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You can check the ZyXEL website for firmware upgrades for your PLA4225. Note: If you have upgraded the firmware, make sure you also upgrade the PLA42xx Series Configuration Utility. Older version utilities are not compatible with PLA4225s using the latest firmware. PLA4225 User's Guide Chapter 4 The Configuration Utility Note: Be sure to upload the correct model firmware as uploading the wrong model firmware may damage your device. Figure 14 Firmware Screen 4.5 Network Info Screen Use the Network Info screen to see the rates at which a specific PLA4225 is communicating with other powerline adapters on your powerline network. Figure 15 Network Info Screen 30 PLA4225 User's Guide Chapter 4 The Configuration Utility The following table describes the labels in this screen. Table 4 Network Info Screen LABEL Adapter DESCRIPTION This field identifies which powerline network information is displayed.

Different powerline networks are identified by the Ethernet interface (network card) connected directly to the PLA4225. Typically there is only one connection, however, if your computer has two network cards and both are connected to a PLA4225, then you have two powerline networks. The Central Coordinator of the powerline network is the powerline adapter which keeps track of which devices are part of the network as well as synchronizes communication within the powerline network. If the Central Coordinator is removed from the powerline network then another powerline adapter takes its place. This field displays the MAC address of the PLA4225 which is the Central Coordinator of the powerline network.

@@@Transmissions TO your powerline adapter do not receive any priority.

@@If video traffic is delivered too slowly, quality problems may occur. @@@@Allocate priority settings based on application type as follows.

@@@@The powerline adapter attached to it should have a medium setting. @@@@Device D is a modem attached to the Internet.

@@@@Typically there is only one connection. @@@@@@Select a priority setting from the drop-down box for traffic FROM your selected device. The options, in order of importance, are High, Medium, Normal and Low. Click this to apply your changes. The new Priority setting is applied to the selected powerline adapter.

Priority Save 4.7 About Screen Use the About screen to view information regarding the configuration utility and firmware version of the PLA4225 you are connected to. Click the icon in the top right corner of the utility to view the About screen. Figure 18 About Screen Upgrade to latest version firmware and utility. 34 PLA4225 User's Guide Chapter 4 The Configuration Utility The following table describes the labels in this screen.

Table 7 About Screen LABEL Utility version: Firmware version DESCRIPTION This field displays the software version of the configuration utility. This field displays the firmware version of the device you selected in the Device Selection field of the Configuration screen. In the example firmware version given in the screen, 5-2-5203, the firmware version is shown by the numbers 520, meaning this is firmware version 5.2.0. Released Close This field displays the date when the firmware was released. Click the button in upper right corner to close the About window. PLA4225 User's Guide 35 Chapter 4 The Configuration Utility 36 PLA4225 User's Guide CHAPTER 5 Powerline Network Setup Tutorial 5.0.1 Overview Use this tutorial to expand your existing powerline network.

After setting up your first home powerline network (instructions for that are in the Quick Start Guide for your ZyXEL powerline adapter) you may want to extend the network or create a new one by adding additional powerline adapters. This tutorial shows you the following. · How to start up your new powerline adapter. You need to do this before you can begin the next sections. · How to make your existing powerline network bigger by adding new powerline adapters. · How to make a new network separate from your existing network with new powerline adapters. · How to make a new, separate powerline network with the powerline adapters you have. The tutorial uses the PLA42xx Series Configuration Utility to set up your powerline adapter. If you haven't already installed the utility, see Chapter 2 on page 14 for instructions. If you do not have the CD with the utility, the utility software is also available for download at www.zyxel.com. Navigate to the powerline products section of the ZyXEL website to find this software. Follow the instructions provided by the software to install it on your computer. See the product specifications in the User's Guide for a list of hardware and software compatible with the utility.

Note: The PLA4225 in this tutorial is an example only. Your powerline adapter may be different. 5.0.2 Important Terms Network Name The network name allows a powerline adapter to connect with other powerline adapters that have the same network name.

It provides security for your powerline network. The network name uses English letters or numbers, from 8 to 64 characters long, with no spaces allowed. DAK = Device Access Key. The DAK Password lets you access the powerline adapter. You can find the DAK Password on a label on your powerline device.

DAK Password PLA4225 User's Guide 37 Chapter 5 Powerline Network Setup Tutorial 5.0.3 Accessing Your Powerline Adapter 1 Plug the powerline adapter you want to add to your network into a power socket and, if needed, switch the power socket on.

@@@@@The utility should open to the configuration tab. On this screen in the Site column your new powerline adapter should appear as Local (A).

Check the Local adapter's MAC address (B). It should match the MAC address listed on the label on the back of your powerline adapter. Figure 23 Adding a New Adapter 2 A B PLA4225 User's Guide 39 Chapter 5 Powerline Network Setup Tutorial 3 Select your adapter by selecting Local and type the network name for your existing network in the Network Name field (C). Figure 24 Adding an Adapter to an Existing Network C 4 Click Write and click OK on the pop-up. Figure 25 Network Name Pop-up 5 Your new adapter will now have the same Network Name as your existing network and so has now joined your existing network. Connect the adapter to the device you want to add to the network, for example, your Internet refrigerator in the kitchen. Plug the adapter's power cord into a power outlet and, if required, switch the power outlet on. Repeat this procedure for all additional powerline adapters that you want to add to your existing or new powerline network. 6 7 8 5.0.

5 Setting Up a New Network with a New Adapter This section shows you how to use your new powerline adapters to set up a new powerline network separate to your existing network.



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The figure below shows two powerline networks in a house. The first network (1) shows the home computer connected to a printer and access to the Internet. The second network (2) has no 40 PLA4225 User's Guide Chapter 5 Powerline Network Setup Tutorial Internet access but with a media adapter such as the ZyXEL DMA-1100P you can use your TV to watch movies and play games which are stored on a computer. Figure 26 Add New Adapters to Make a Second Network 1 2 1 Connect your new powerline adapter and open the configuration utility as shown in Section 5.

0.5 on page 40. The screen shown below appears. Type a Network Name that is different from the Network Name for your existing network. Make sure you use the same new Network Name for all new adapters you want to add to your new network.

Figure 27 Making a New Network with the New Adapter 2 3 After you have set up a new network, you are ready to connect each powerline adapter on your new network to devices, for example, a computer or a games console. PLA4225 User's Guide 41 Chapter 5 Powerline Network Setup Tutorial 5.0.6 Splitting a Network into Two Networks This section shows you how to split your existing network into two networks. This is useful if you want to set up a second powerline network in your home, for example, in your study connecting a laptop and printer. See Figure 26 on page 41 for an example. To set up your existing powerline network you had to set each powerline adapter with the same network name. To move some of these adapters to a new network, you need to give them a new network name. 1 Connect a powerline adapter to your computer and open the PLA42xx Series Configuration Utility (see Section 5.0.

3 on page 38). The utility should open to the configuration tab as shown below. A list of powerline adapters on your network displays. These adapters all have the same network name as the adapter you are connected to. The adapter you are connected to will appear as Local in this table. All others are listed as Remote. Figure 28 Local/Remote Adapters on a Powerline Network 2 3 To set up a new powerline network, type the DAK Password and change the Network Name on all powerline adapters you wish to add to your network. · Look for the DAK Password on a label on your powerline adapter. The DAK Password lets you access the adapter. · Select the Remote adapter you want to add (A) and type the DAK Password in the DAK Password field (B).

42 PLA4225 User's Guide Chapter 5 Powerline Network Setup Tutorial · Then type the new network name in the Network Name field. Figure 29 Adding an Adapter to Your New Network A B 4 Click Save. · If you do not type the DAK password or type it incorrectly either of the following pop-ups appear. Click OK and type the DAK Password correctly in the DAK Password field. Figure 30 Incorrect DAK or No DAK · If you have correctly entered the DAK Password, click OK on the pop-up.

Figure 31 Correct DAK PLA4225 User's Guide 43 Chapter 5 Powerline Network Setup Tutorial 5 The settings for the adapter will now grey out and the adapter will disappear from the table after a few minutes. Figure 32 An Adapter on Your New Network 6 Go back to step 3 in this section to set the same, new Network Name for all remote adapters you want to add to your new network. Check you have added the adapters correctly by changing the network name for the local adapter. All adapters with the new Network Name now appear in the list of adapters on your network. These adapters are now part of your new network.

Figure 33 Adapters on a New Powerline Network 7 · If you want to access any of your new powerline networks using the PLA42xx Series Configuration Utility, change the Network Name on your local adapter to the network name for the network you want to access. The adapters on that network will then display in the adapter table, allowing you to select and configure each one. 5.1 Troubleshooting The HomePlug () LED (light) should light up on your adapter when it successfully connects to other adapters on your network. If it does not, try the following measures. · Make sure the adapter is plugged in to a power socket and the power socket is turned on. 44 PLA4225 User's Guide Chapter 5 Powerline Network Setup Tutorial · Check you have entered the correct network name for your network. · Check your powerline adapter is connected to the same electrical circuit as other powerline adapters on your network. PLA4225 User's Guide 45 Chapter 5 Powerline Network Setup Tutorial 46 PLA4225 User's Guide CHAPTER 6 LEDs and Troubleshooting This chapter describes the behavior of the LEDs (lights) and offers some suggestions to solve problems you might encounter. 6.

1 LEDs The following sections describes the lights on the PLA4225. The following figure is the front panel of the PLA4225. Use the lights to determine if the PLA4225 is behaving normally or if there are some problems on your powerline network. Figure 34 PLA4225 Lights PLA4225 User's Guide 47 Chapter 6 LEDs and Troubleshooting The following table describes the behavior of the lights on the PLA4225. Table 8 PLA4225 LIGHTS POWER ICON COLOR Green STATUS On DESCRIPTION The PLA4225 is on and receiving power. It also indicates a successful connection using the ENCRYPT button. Blinking The PLA4225 is starting up. It also indicates the PLA4225 is trying to connect with another device using the ENCRYPT function. Blinking at the same time as the HomePlug light indicates an unsuccessful connection if you have used the ENCRYPT button. The Power LED blinks when it is in Low Power mode. Refer to Section 2.3 on page 16 for details on this feature. Off HomePlug Green Amber Red Green/ Amber/ Red Blinking On The PLA4225 is not receiving power. The PLA4225 detects another powerline adapter. The data transfer rate is greater than 80 Mbps.

The PLA4225 detects another powerline adapter. The data transfer rate is between 40~80 Mbps. The PLA4225 detects another powerline adapter. The data transfer rate is between 0~40 Mbps. The PLA4225 is communicating with another powerline adapter. Data is being transmitted and/or received. Blinking at the same time as the POWER light indicates an unsuccessful connection if you have used the ENCRYPT button. Off ETHERNET 1~4 Green On Blinking Off The HomePlug port does not detect another powerline adapter. The ETHERNET port is on and ready and the PLA4225 detects a device connected to it. The PLA4225 is communicating with a networking device connected to it. The PLA4225 does not detect any devices connected to its ETHERNET port. 6.2 Power and Light Problems The PLA4225 does not turn on. None of the lights turn on. 1 2 Make sure you are using the power cord included with the PLA4225.

Make sure the power cord is connected to the PLA4225 and plugged in to an appropriate power source.



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Make sure the power source is turned on. 48 PLA4225 User's Guide Chapter 6 LEDs and Troubleshooting 3 4 Disconnect and re-connect the power cord to the PLA4225. Remove the powerline adapter from the outlet. Then connect an electrical device that you know works into the same power outlet. This checks the status of the power outlet. If the problem continues, contact the vendor. 5 None of the ETHERNET lights turn on. 1 2 3 4 Check the hardware connections. See the Quick Start Guide.

Inspect your cables for damage. Contact the vendor to replace any damaged cables. Check the Ethernet adapter on your computer and make sure it's enabled and working properly. If the PLA4225 is connected to an Ethernet switch or router, make sure the device is working correctly, and that the LAN network is working and configured correctly as well. The HomePlug light does not turn on.

1 Check all PLA4225s on your network have the latest firmware installed. PLA4225s with the latest firmware cannot communicate with PLA4225s using earlier versions of the firmware. Go to Section 4.4 on page 29 for instructions on installing the latest firmware. Use the PLA42xx Series Configuration Utility to detect all other HomePlug devices on your powerline network.

Make sure that the network name (sometimes called the network password) is the same on all of your powerline adapters. See Section 4.3 on page 27 for instructions on checking the network name. Check the DAK password and MAC address for all powerline adapters are typed correctly in the utility. See Section 4.3 on page 27 for instructions on checking the DAK and MAC address. Make sure that all your powerline adapters are HomePlug AV compliant. Check the package it came in or ask your vendor. This PLA4225 can not detect earlier versions of HomePlug powerline adapters such as HomePlug 1.0 or 1.

0.1. (Although they can coexist on the same electrical wiring without interfering with each other.) Make sure that the powerline adapters on your network are all on the same electrical wiring. Connect another powerline adapter into an outlet close to your PLA4225's power outlet. They are probably now on the same electrical wiring. Check the HomePlug light. If it now lights up your powerline adapter was probably previously on separate electrical wiring. Ask an electrician for more information on the electrical wiring in your building. If your powerline network is using coaxial cable, check all powerline adapters are on the same coaxial cable.

If your powerline network is using electrical wiring (not coaxial cable), check you do not have a power meter between powerline adapters. Powerline signals cannot pass this. 2 3 4 5 6 7 PLA4225 User's Guide 49 Chapter 6 LEDs and Troubleshooting The POWER and HomePlug light blink at the same time. · You have pressed the ENCRYPT button for more than three seconds. Try setting up a connection again, this time pressing the ENCRYPT buttons on both devices for less than three seconds.

6.3 Configuration Utility Problems The PLA42xx Series Configuration Utility displays an error during installation. · Make sure your computer is using Windows XP or Windows Vista (32-bit) operating system. At the time of writing, this is the only compatible operating system for the configuration utility. The PLA42xx Series Configuration Utility does not display all or any of my devices.

· Inspect the LEDs on your PLA4225 and make sure that the ETHERNET and HomePlug LEDs are on or blinking. See Section 6.1 on page 47 for troubleshooting LED related problems. · Check all ZyXEL HomePlug AV devices on your network have the latest firmware installed. The latest utility cannot communicate with PLA4225s using earlier versions of the firmware. Go to Section 4.4 on page 29 for instructions on installing the latest firmware. · Check you are using the latest version utility. Earlier version utilities cannot communicate with PLA4225s using the latest firmware. If you do not have the latest utility, download it from the ZyXEL website.

· If the device is not a ZyXEL device, then the DAK and Network Name will be greyed out. · If you are running another tool such as the Firmware Detection Tool, the Utility will not detect your local device. 6.4 Powerline Problems The signal on my powerline network is weak. 1 Your powerline adapters may be connected to electrical surge protectors. Connect them to standard power outlets. Your powerline adapters may be located close to large appliances such as refrigerators or airconditioners that cause interference with the powerline signal. Move the adapters further away from such appliances to reduce interference. 2 50 PLA4225 User's Guide Chapter 6 LEDs and Troubleshooting 3 Your powerline adapters may be placed close to electrical devices such as electrical insect-killers which produce radio waves. These may interfere with the powerline signals.

Move the adapters further away from such electrical devices. Your wiring may be old and/or low quality or with a long wiring path. 4 6.5 ENCRYPT Button Problems This section applies only to PLA4225s with the ENCRYPT button. The HomePlug light is already on, but I haven't pressed the ENCRYPT button yet. Your device has already connected to another powerline device. Press the ENCRYPT button for more than 10 seconds to release the connection. The POWER light does not blink when I press the ENCRYPT button. · Check the device is on. · Press the ENCRYPT button again, making certain you have pressed the button for more than one second and less than three seconds.

· The POWER light on some powerline devices do not blink as part of the ENCRYPT process. Check your powerline device is a PLA4225. · For PLA4225, you cannot use the ENCRYPT button when it is in Low Power mode. Connect the PLA4225 to a computer/router then try again. The POWER light blinks two times quickly then pauses, before repeating. The ENCRYPT process has failed. Press the ENCRYPT button on both devices for more than 10 seconds, then try to reconnect. The POWER lights on both devices blink when I press the ENCRYPT buttons, but the HomePlug light does not turn on. · Ensure you have pressed the ENCRYPT button on both devices. · Wait for about a minute while the devices set up a connection.

· If that does not work, try again with both devices connected to a power strip next to each other. If they now connect, then the devices were not on the same electrical circuit before. PLA4225 User's Guide 51 Chapter 6 LEDs and Troubleshooting The POWER lights on both devices blink, then many lights blink and the HomePlug light blinks red. Do not worry, the connection process is proceeding normally. The POWER lights on both devices finished blinking, but only one device's HomePlug light is on. One device may have connected to a third powerline device.



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To check device A is connected to device B and not another device, disconnect device B from its power source. Device A's HomePlug () light will turn off if the connection is with Device B. Press the ENCRYPT button on both devices for more than 10 seconds, then try to reconnect, pressing the ENCRYPT button for less than 3 seconds on both devices. I pressed the ENCRYPT button for more than 10 seconds, but the HomePlug light is still on.

The HomePlug light is on, indicating it is still connected to another powerline device. Try again, pressing the ENCRYPT button for more than 10 seconds. 52

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@@@@@This device generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this device does cause harmful interference to radio/television reception, which can be determined by turning the device off and on, the user is encouraged to try to correct the interference by one or more of the following measures: 1 2 3 Reorient or relocate the receiving antenna. Increase the separation between the equipment and the receiver. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected. Consult the dealer or an experienced radio/TV technician for help.

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[zyxel.com](http://www.zyxel.com). PLA4225 User's Guide 55 Appendix A Legal Information 56 PLA4225 User's Guide Index Index Symbols .NET Framework 14 F FCC interference statement 53 firmware 29 A H about screen 34 Advanced Encryption Standard, see AES 11 AES 12, 26 AES (Advanced Encryption Standard) 11 applications 11 HomePlug AV standard 11 I installation overview 14 procedure 14 requirements 14 InstallShield wizard 15 introduction 11 C certifications 53 notices 54 viewing 55 configuration screen 27 connections overview 11 copyright 53 L LED 47 ETHN 47 LINK 47 PWR 47 LINK LED 47 local vs. remote adapter 28 D DAK 26, 28 DAK (Data Access Password) 12 Data Access Password, see DAK 12 disclaimer 53 M E electrical and cable wiring 26 electrical circuit boundaries 26 encryption 11, 26 ETHN LED 47 MAC address 28 management multiple networks 13 overview 26 managing the device using the web configurator.



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See web configurator. PLA4225 User's Guide 57 Index multiple networks 13 T trademarks 53 transfer rates 11 transmit rate 30 troubleshooting 47 N network example 26 network information 30 U P Parameter Information Block, see PIB 29 passwords 26, 28, 29 types of 12 PIB (Parameter Information Block) 29 plug-and-play 26 priority settings 31 application type 32 priority levels 34 private network 12 problems and solutions 47 product registration 55 PWR LED 47 utility launching 27 W warranty 55 note 55 web configurator 12 R receive rate 30 registration product 55 related documentation 3 S safety warnings 6 security 12, 13, 26 passwords 12 starting the utility 27 syntax conventions 4 58 PLA4225 User's Guide Index PLA4225 User's Guide 59 Index 60 PLA4225 User's Guide .



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