

PlugLink™ by Asoka®

User's Guide

PlugLink 9550 Wireless Access Point

PL9550-WAP

Version: 1.01

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FCC Caution:

1. This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:
 - (1) This device may not cause harmful interference, and
 - (2) This device must accept any interference received, including interference that may cause undesired operation.
2. This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.
3. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user authority to operate the equipment.
4. This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment 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 equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
 - Reorient or relocate the receiving antenna.
 - Increase the separation between the equipment and 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.
5. This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

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Technical Support

You can download latest software from our website. If you have any question or difficulty during installation or using PlugLink™ PL9550-WAP, please contact our technical support engineer.

About User's Manual

User's Manual of PL9550-WAP is released in December, 2005, the version is 1.01. This manual illustrate how to installation and configure PL9550-WAP. Please spend some time to read this manual before using our PLC-based Wireless Access Point.

Introduction

Thanks for your selection of AsokaUSA PlugLink™ PL9550-WAP. We are devoting to provide powerful, high-performance and applied power line networking system. The product is designed for home, hotel, office, apartment . It provides a full local network solution with PLC technical.

1.1 Features

Complies IEEE 802.3, IEEE 802.3u, IEEE802.3x, IEEE 802.3z/ab standards

Support both 802.11b and 802.11g wireless standards

IEEE 802.11i Wireless Network Security

IEEE 802.1x client support

Complies with HomePlug 1.0

Supports QAM 256/64/16,DQPSK,DBPSK and ROBO modulation schemes

Supports OFDM with patented signal processing techniques

Supports up to 85Mbps with PLC

Supports Web-based GUI (CGI , SSL) with any web browser

Supports web-based firmware upgrade

Easily extend your local network, in the home, office, even at tradeshow

1.2 Package

Please make sure the package with contents as below:

1 PL9550-WAP

1 CAT-5 UTP Cable

User's Manual

1 CD with Product Document

If you find any item as upper lost or damaged, please contact the local sales.

2. Hardware Installation

2.1 The Front Panel



2.2 Connect Device and PC

- a. Plug the wireless AP into a electrical outlets.
- b. Connect the wireless AP to a PC or Laptop with CAT5 cable through RJ45 port.
- d. Set network configuration of PC to communicate with the wireless AP. The default IP address of the wireless AP is as below:

Default LAN IP address: 192.168.1.254

- e. Power on the wireless AP, Use command “ping” in PC side to test the connection between the wireless AP and PC. For example, you connect PC to LAN port, the IP address of PC should be set to “192.168.1.x” (1<x<255 and x!=254), the network mask is “255.255.255.0”.
- f. Use laptop or PC with wireless card to connect the wireless AP, the default ESSID is “Asoka” and is without encryption or authenticate key.

3. Wireless AP Configuration

The Wireless AP provides Web-based GUI for user to configure the device. It means user can use any web explorer (Internet Explorer ,Netscape Communicator etc.) to implement configuration of PL9550-WAP.

3.1 Logging in

Connect monitor PC to RJ45 port or through Wireless connection, Start web browser program, input corresponding IP address of the Wireless AP, then will display login page as Figure 1, input correct UserID & Password, then can enter management interfaces.

Welcome

Please enter **User ID** and **Password** and click **Login**.

User ID:

Password:

Figure 1. system login

The default User ID is “admin” and the default Password is “welcome”. Please remember to modify User ID and Password after you login successfully first time.

3.2 System

System configuration provides interface to view the general configuration and status and set general configuration of the device including Date & Time, Password & User ID etc. It also provides interface to backup configuration, reset system, update firmware etc.

3.2.1 Details

When you login the web-based GUI of PL9550-WAP, The pages as below will be shown as Figure 2 of the system details including status and basic configuration.

===== PL9550 WAP =====

Home | Glossary | Help | Logout

Asoka USA™

SYSTEM | WIRELESS | IP ADDRESS | POWER LINE

WAP 9550 MORE INFORMATION

System Status

You can use this System Details screen to see the status for the system configuration, firmware and hardware version numbers. ☺

Model Number:	PL9550-WAP
Serial Number:	003200505310001
Hardware Version:	V1.01
Firmware Version:	V1.02
Capacity of the RAM:	16M Bytes/128M bits
Capacity of the Flash:	4M Bytes/32M bits
Device MAC Address:	00:00:E8:69:69:69
PL Device Password:	ABCD-ABCD-DCBA-DCBA
Last Configuration:	Thu Jan 1 00:08:58 1970
IP Address:	192.168.0.86
Subnet Mask:	255.255.255.0

Refresh

MORE INFORMATION

- System Details
- System Time
- System Password
- System Logs
- System Reset
- System Backup
- Firmware Upgrade

Figure 2. system details

From the page, we can find that there is one main menu in the upper part for configuration.

The submenu in the left part of the page show all items for each menu selected.

There are four links in the left-top of the page including:

Home	Click this link will go back to the page of System Details
Help	If any assistance is required in using AP, click this link
Glossary	To lean some knowledge of PL9550-WAP, click this link
Logout	To logout the configuration GUI, click this link

3.2.2 Time

To change the time of the device, click submenu "SYSTEM->Time", a page as below appears.

The screenshot shows the 'System Time' configuration page. At the top, there is a navigation bar with tabs: SYSTEM, WIRELESS, IP ADDRESS, and POWER LINE. Below the navigation bar, the page title is 'System Time' with a subtitle 'This page allows user to get or set time of the device.' The main content area contains the following fields: 'Current Time: Thu Jan 1 01:04:44 1970', 'Time zone: (GMT-12:00) Eniwetok, Kwajalein', 'Year-Mon-Day: January 1 2005', and 'Hour-Minute: 00 0'. An 'Apply' button is located at the bottom right of the form. On the right side, there is a 'MORE INFORMATION' sidebar with a list of links: System Details, System Time, System Password, System Logs, System Reset, System Backup, and Firmware Upgrade.

Current Time Shows the current system time of the device

Time Zone Select the time zone of your local time

Year-Mon-Day Select year, month and day of the new time

Hour-Minute Select hour, minute of the new time

3.2.3 Password

To change User ID or Password of the WAP, click submenu "SYSTEM->Password", the page as Figure 3 will display.

The screenshot shows the 'System Password Settings' configuration page. At the top, there is a navigation bar with tabs: SYSTEM, WIRELESS, IP ADDRESS, and POWER LINE. Below the navigation bar, the page title is 'System Password Settings' with a subtitle 'Set or change password to restrict management access to the device.' The main content area contains the following fields: 'Old User ID:', 'New User ID: (3-16 Characters)', 'Enter Current Password:', 'Enter New Password:', and 'Confirm New Password: (3-12 Characters)'. An 'Apply' button is located at the bottom right of the form. On the right side, there is a 'MORE INFORMATION' sidebar with a list of links: System Details, System Time, System Password, System Logs, System Reset, System Backup, and Firmware Upgrade.

Figure 3. access configuration

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The upper form shows how to change system user ID and Password

Input old user id in the first text box

Input new user id in the second text box (input old user id means keep user id without change)

Input current password in the third text box

Input new password in the fourth text box

Reinput new password in the fifth text box

Click button 'Apply' begin set new user id or password, then a new page will show the result of the setting

3.2.4 System Logs

To view the system logs and set some parameters of logs, click submenu "SYSTEM->Logs", a page as Figure 4 will display.

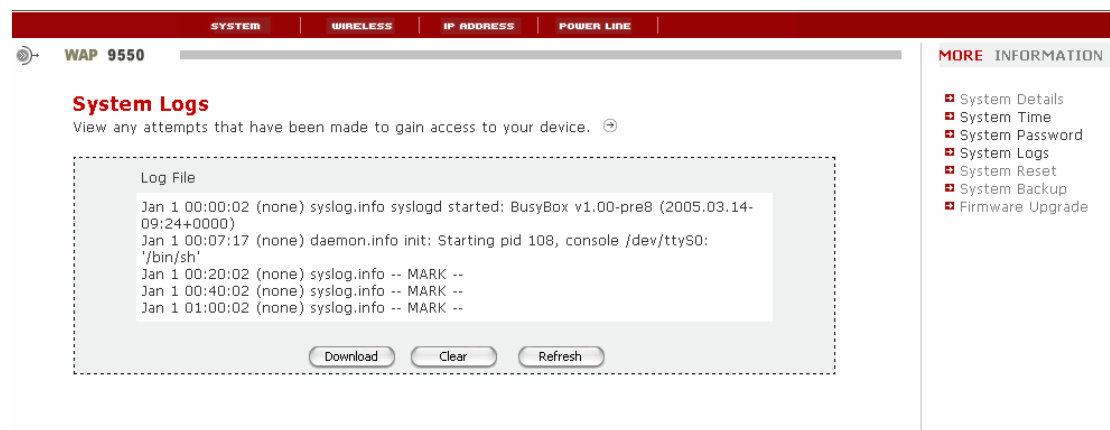


Figure 4. System Logs

The upper list box shows the current system logs

Click button "Download", a dialog will display to begin log file downloading

Click button "Clear" to delete all current logs

Click button "Refresh" to refresh this page to show latest logs

3.2.5 Reset

To reset the Wireless AP or set the configuration to factory default, click submenu "SYSTEM->Reset", a page as Figure 5 will be shown.

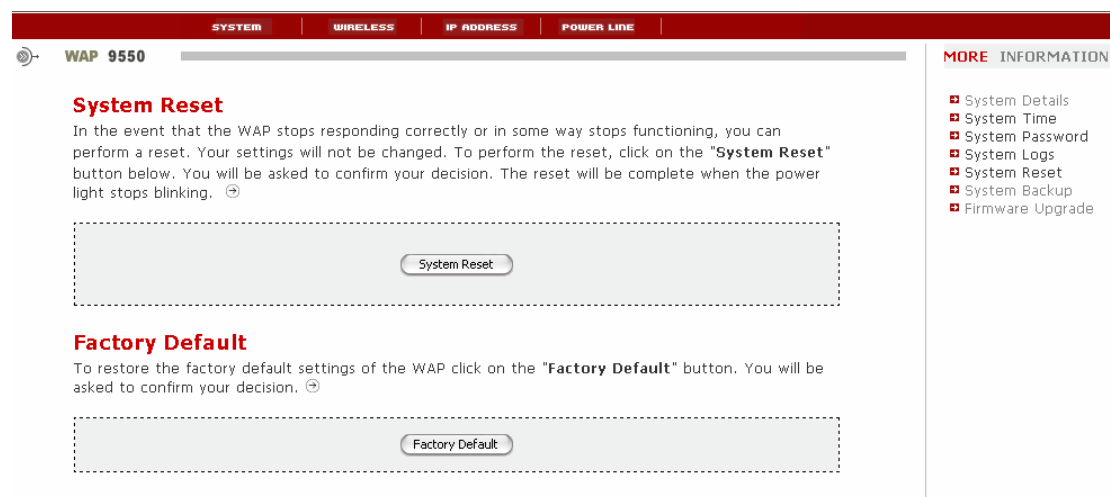


Figure 5. System Reset

To reset system, click button “System Reset”. If you confirm your decision, please wait a minute for the system reboot.

To restore the factory setting to the gateway, click button “Factory Default”. If you confirm your decision, please wait a minute because the system should be rebooted.

3.2.6 Backup

To save the system configuration or restore the system configuration with saved file, click submenu “SYSTEM-> Backup”, a page as Figure 6 will be shown.

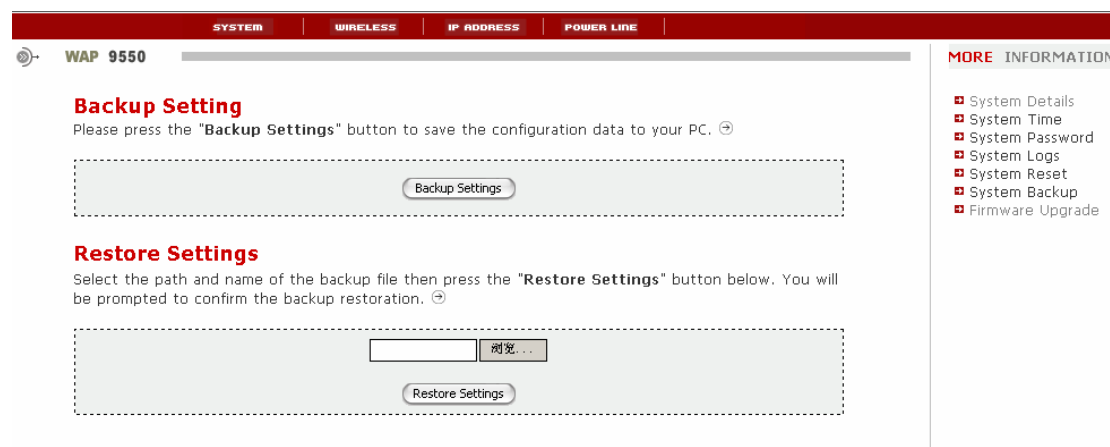


Figure 6. system Backup

To save the system configuration in local disk, click button “Back Settings”, then a windows dialog will be pop to guide you how to save the file to local disk.

To restore settings of the Wireless AP, click button “Browser” to select the configuration file which saved in local host, then click button “Restore Settings” to begin restore process.

3.2.7 Firmware

To upgrade firmware, click submenu “System->Firmware”, then a page as Figure 7 will be displayed.

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Update Firmware

Firmware subsystem displays firmware version and provide an option to update firmware from file. Asokausa Inc. may create new firmware for your Renaissance to improve functionality and performance. Click here to check for an upgrade on Asoka's website. ⓘ

Enter the path and name of the upgrade file then click the APPLY button below. You will be prompted to confirm the upgrade. ⓘ

Current Firmware Version:
Firmware Date: 2005-5-21
Please select path of firmware to be updated:

MORE INFORMATION

- System Details
- System Time
- System Password
- System Logs
- System Reset
- System Backup
- Firmware Upgrade

Figure 7. Firmware upgrade

Click button “Browser” to select firmware file, then one windows dialog will be popped up for user to select local file

Check the ‘clear old configuration’ box to clear old configuration saved in the device and restore with factory default during upgrade.

Click button “Update” to begin update. If you confirm your decision, it will update the firmware and reboot the device, the process will cost about 2 minutes.

3.3 Wireless

Wireless Menu provides the interface for advanced administrator to set the Wireless AP including basic setting and security setting.

3.3.1 Wireless Setting

To view or set wireless basic parameters configuration, click on the link “Wireless Setting” of the left submenu, a screen is displayed as shown in Figure 8.

Wireless Settings

You can configuration wireless settings about Channel ID, ESSID,...etc. ⓘ

Regulation Domain : FCC

Wlan Interface: ☒ Enable

Channel ID:

ESSID:

Operation Mode:

Tx Preamble Type:

Beacon Interval:

RTS Threshold :

Fragmentation Threshold:

MORE INFORMATION

- Wireless Settings
- Wireless Security

Figure 8. Wireless Setting

The screen contains the following details.

Wlan Interface: To enable or disable wireless part of the device. Select the check box to enable wireless function.

Channel Id: Identifies the channel on which the AP communicates. Each wireless client must use the same channel to enable communication. This can only be altered from a PC that is wired directly to the AP, not wirelessly. The default is Channel 6

ESSID: Enter a ESSID (Network Name) of no more than 32 alphanumeric characters. This ESSID must be entered on each wireless device of your wireless network, The default ESSID is "Asoka".

Operation Mode Enable you select the type of transmission protocol for your wireless network, It can be one of three types: 802.11b only, 802.11g only and 802.11b/g mixed. The default type is 802.11b/g mixed.

Tx Preamble Type It can be long preamble or short preamble, the default option is long preamble

Beacon Interval It is used to keep power management in check. For example, if a client does not receive a beacon within a certain time period, it goes to sleep. You can set Beacon Interval value from 1 to 65536, but too low or too high value is not recommended, usually the default value 100 is fine.

RTS Threshold The packet size at which an AP issue a request to send (RTS). The range is 0 to 2312 bytes, the default value is 2312. If you encounter inconsistent data flow, only minor modifications are recommended. If need, enter a new value.

Fragmentatin Threshold The size at which packets are fragmented and transmitted a piece at a time instead of all at once. The setting must be the range of 256 to 2312 bytes. The default is 2312. If need, enter a new value.

Click button "Apply" to save the information had entered.

To make the new setting on effect, please reboot the AP.

3.3.2 Wireless Security

To view or set wireless security setting, click on the link Wireless Security of the left submenu, a screen is displayed as shown in Figure 9.

Figure 9. Wireless Security

The screen contains the following details.

Encryption Type Determines the type of security encryption algorithms for the key index. This security setting encrypts your wireless transmission. None, WEP are available only when Open System or Pre-shared KEY (PSK) is selected for authentication type. TKIP and AES are available only when WPA and WPA-PSK (PSK) are selected. The default type is None. (no security)

Authentication Type Authentication differs from Encryption in that you are establishing either an open secure verification of communication with an AP. This setting does not encryption transmission. The options are: Open System, Share key, WPA-PSK, 802.1x The default type is Open System, it means no authentication is used.

Active key There are up to different 4 keys (1, 2,3 or 4) that can be selected. The amount determined by what is selected in the Encryption Type and Authentication Type. The key selected here must match between the AP and the client. For example, if you select Key 1 here you have to select Key 1 for the client. The default is key 1.

Key 1~4 You must input hexadecimal value with 10, 26 or 32 length

PSK Key for WPA-PSK

Radius Server IP If you select 802.1x as authentication type, please input the ip address of the radius server which used for authentication.

Secret The access password for communication between AP and radius server.

Click button “Apply” to save the information had entered.

To make the new setting on effect, please reboot the AP.

3.4 IP ADDRESS

IP ADDRESS menu provides interface to set IP address of the Wireless AP, user can access Wireless AP by this IP address.

3.4.1 IP Address

To configure the IP Address of the Wireless AP, click on the link IP Address in the left submenu, a screen is displayed as shown in Figure 11.

The screenshot shows the 'IP Address' configuration page for the WAP 9550. The page has a red header with navigation tabs: SYSTEM, WIRELESS, IP ADDRESS (selected), and POWER LINE. Below the header, the page title is 'WAP 9550'. The main content area is titled 'IP Address' and contains a description: 'This page allow user to set or change the IP address for the device, User can use this IP address to manage the device.' Below this, there is a form with two rows of input fields. The first row is for the IP Address, with four fields containing the values 192, 168, 0, and 86. The second row is for the Subnet Mask, with a single field containing the value 255.255.255.0. Below the form is an 'Apply' button. On the right side of the page, there is a sidebar with the title 'MORE INFORMATION' and a link 'IP Address'.

Figure 11. IP Address Configuration

The screen contains the following details:

IP Address: To enter the IP address of the Wireless AP
Subnet mask: the subnet mask

Click button “Apply” to save the configuration and renew system IP address.

3.5 POWER LINE

PowerLine menu provides interface to set NEK or scan devices of the Power line network.

3.5.1 Password Setting

To set NEK of the Wireless AP, click on the link Password Setting of the left submenu, you will enter pages showed in figure 12.

The screenshot shows the 'Power Line Network Password' page for the WAP 9550. The page has a red header with navigation tabs: SYSTEM, WIRELESS, IP ADDRESS, and POWER LINE (selected). Below the header, the page title is 'WAP 9550'. The main content area is titled 'Power Line Network Password' and contains a description: 'On this page you can set-up the PLC network password.' Below this, there is a form with a single row of input fields. The first field is for the Network Password, with the value 'HomePlug' entered. Below the form is an 'Apply' button. On the right side of the page, there is a sidebar with the title 'MORE INFORMATION' and two links: 'Password Setting' and 'Device Scan'.

Figure 12. NEK setting

Input new NEK of the power line network

Click button “Apply” to save and set the configuration

3.5.2 Device Scan

To view and scan devices in the same power line network with Wireless AP, click on the

link Device Scan in the left submenu, a screen is displayed as shown in Figure 13.

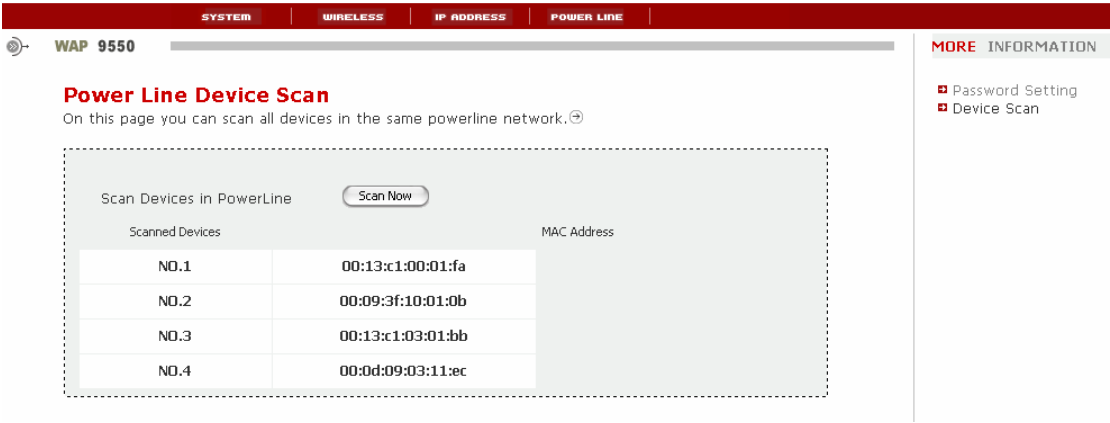


Figure 13. Scan devices

The screen contains the following details.

- Scanned Devices: The No. of the device have been scanned
- MAC Address: The MAC address of the device in the same power line network

Click button “Scan Now” to refresh the device list.