



PlugLink® AV 9560 Wireless Adapter User's Guide

PL9560-WAP

QUICKFIND LOCATOR

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Installation

PlugLink®
by Asoka®

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Revision	Date	Description
66-0327-00Rev.001	January 2008	Preliminary Release

Changes in This Revision

- Not applicable (preliminary release)

Contact Information

For more information about the PlugLink AV 9560 Wireless Adapter or any of Asoka's other leading-edge solutions, please contact us using any of the following methods:

- **Voice calls:** We welcome your calls Monday through Friday, from 9:00 am to 5:00 pm Pacific Time at (650) 286-1700. Voice mail is available during non-business hours.
- **Email:** If you prefer, you can send information requests to our e-mail address: sales@asokausa.com.
- **Fax calls:** You can also send your requests for information to our 24-hour fax number: (650) 286-1790.
- **Web site:** Our Web site contains valuable information about our products, solutions, and services. We encourage you to visit us at <http://www.asokausa.com>.

Getting Help

Asoka USA backs its products with unparalleled customer service and technical support for our valued customers.

Customer Service

Customer service, the customer-satisfaction arm of Asoka USA, is available Monday through Friday, from 9:00 am to 5:00 pm Pacific Time, by calling (650) 286-0300 or through email at custserv@asokausa.com.

Technical Support

Technical support is available Monday through Friday, from 6:00 am to 6:00 pm Pacific Time, by calling (888) 276-5287 or through email at support@asokausa.com.

Please provide the following information about the problem:

- Product name, model number, part number (if applicable) and serial number
- System configuration, including a description of the devices connected to your PlugLink AV 9560 Wireless Adapter
- The circumstances surrounding the error or failure
- A detailed description of the problem and what has been done to try to solve it

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Simple Installation

This chapter provides information on installing and setting up the PlugLink AV 9560 Wireless Adapter.



NOTE: Do not connect the PlugLink AV 9560 Wireless Adapter into a power strip, extension cord, un-interruptible power supply (UPS), or surge protector. Doing so may prevent the unit from working properly or degrade the network performance.

Package Contents

- PlugLink AV 9560 Wireless Adapter (PL9560-WAP)
- Quick Installation Guide
- Installation Resource CD
- Warranty and Support Information Card

If any of the parts are incorrect, missing, or damaged, contact the retailer where you made your purchase. Keep the carton, including the original packing materials, in case you need to return the unit for repair.

Planning the System

The PlugLink AV 9560 Wireless Adapter lets you set up an instant wireless hotspot using your existing electrical outlets. It can also easily compliment your existing network by connecting to any device with a 10BaseT/ 100BaseT Ethernet-capable device.

To connect the PlugLink AV 9560 Wireless Adapter with a PlugLink 9660 Ethernet Adapter, all you will need are:

- One (1) PL9560-WAP device
- One (1) PL9660-ETH device (sold separately)
- Standard Cable/ DSL gateway (provided by your ISP)

Simple Installation



CAUTION! Do not connect the PlugLink AV 9560 Wireless Adapter to a power strip, extension cord, uninterruptible power supply (UPS), or surge protector. This may prevent the unit from working properly or degrade the network performance.



1. Plug a PL9660 and PL9560 into electrical outlets. It takes one minute for the top three LEDs on the PlugLink AV 9560 Wireless Adapter to light up. When the LEDs are illuminated, your wireless computer can connect and communicate with the Router.
2. Connect a wireless laptop computer to the PL9560. The laptop computer will prompt you for a WEP key. Enter the WEP key at the prompt. The WEP key is the serial number of the PL9560. The WEP key is printed on the PL9560, which is also the last 10 digits of the serial number.

You can also connect a desktop PC to the PL9560 with an Ethernet cable.

Congratulations Installation is complete.



Advanced Configuration (For Advanced Users Only)

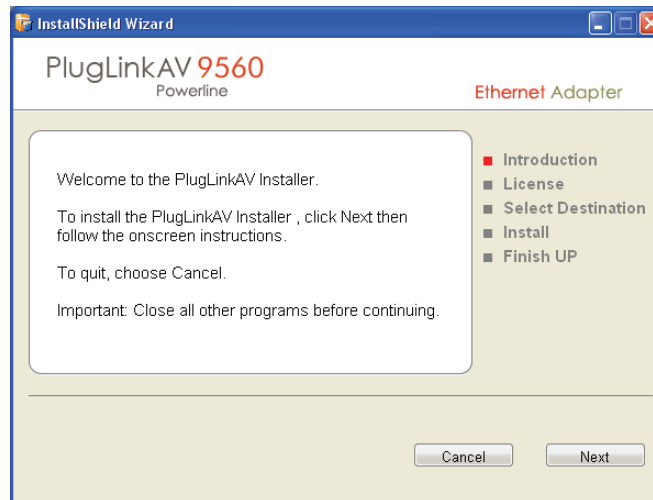
The Power Manager utility allows you to manually configure a PlugLink AV 9560 Wireless Adapter that is directly connected to your personal computer or to any PlugLink AV 9560 Wireless Adapters that are remotely residing on your PlugLink Powerline network.

Installing the Software

1. Connect an Ethernet Cable from your PC to the Ethernet port of the PlugLink AV 9560.
2. Insert the enclosed Installation Resource CD into your CD-ROM drive. If the The PlugLink AV 9560 Wireless Adapter Installation Utility does not appear within 30 seconds, select your CD-ROM drive and double-click on the icon named "Setup.exe" to initiate the Installation Utility. The Installation wizard appears.



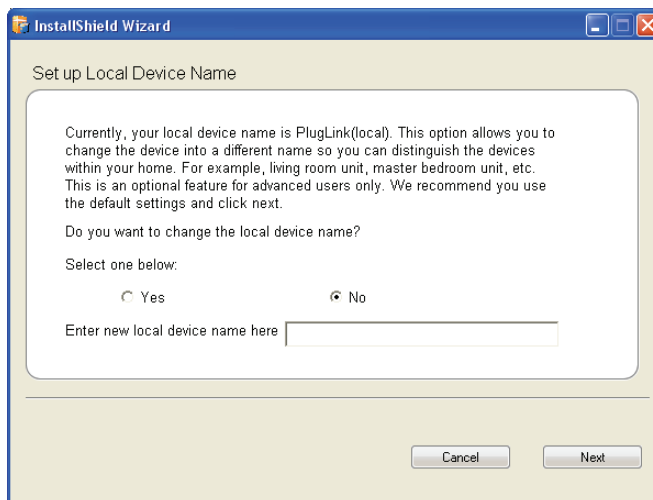
3. Click **Install Driver**. In the following screen, click **Next**, and follow the prompts to install the PlugLink AV 9560 drivers and utility software.



Basic Setup

After installing the drivers and utility software, the Setup Assistant loads automatically. The Setup Assistant allows you to do some basic configuration of the PlugLink AV 9560.

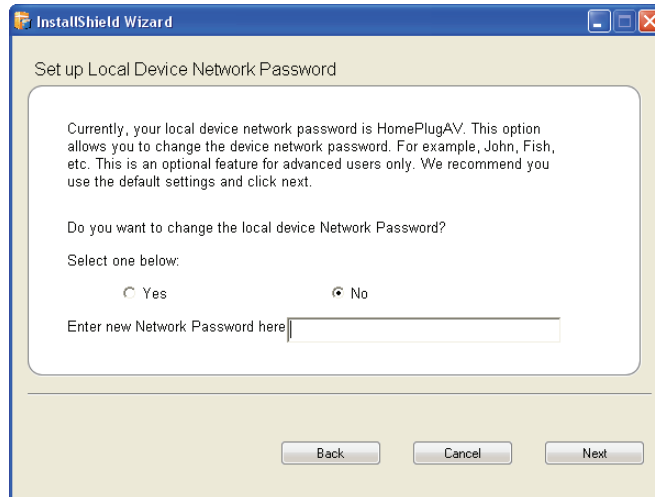
1. When the Setup Assistant is loaded, the software attempts to detect the PlugLink AV 9560 device. When the device is detected, the following screen appears. The software lists all of the devices on the network. Select the device you wish to configure and click the **Next** button.
2. The next screen allows you to change the device name. Select **Yes** to enter a device name. The device name is a unique identifier for the PlugLink AV 9560 when using the Admin Utility. This name can be Living Room, Bedroom, or some other name that reflects its location. Click the **Next** button to proceed to the next step.



3. Use the Setup Local Device Network Password screen to change the password. The default password of all Asoka devices is “HomePlugAV.”



NOTE: All devices within your power line network must share the same password. Any changes made to the password of one device should be made to others as well.



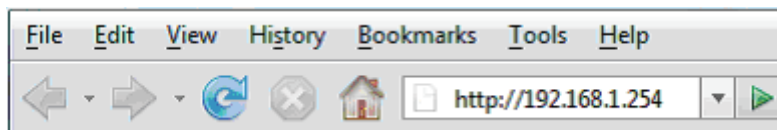
4. **CONGRATULATIONS!** You have successfully configured your PlugLink AV 9560. If you wish to make further changes, you may click the **Admin Utility** button. Otherwise, you may click **Finish** to close the utility.

To make more changes to your PlugLink AV 9560, login to the Web GUI.

Advanced Configuration (Advanced Users Only)

Using the Web-Based User Interface

1. Open a web browser application (Internet Explorer or Mozilla Firefox).
2. In the address or navigation field, type 192.168.1.254 and press **Enter**.

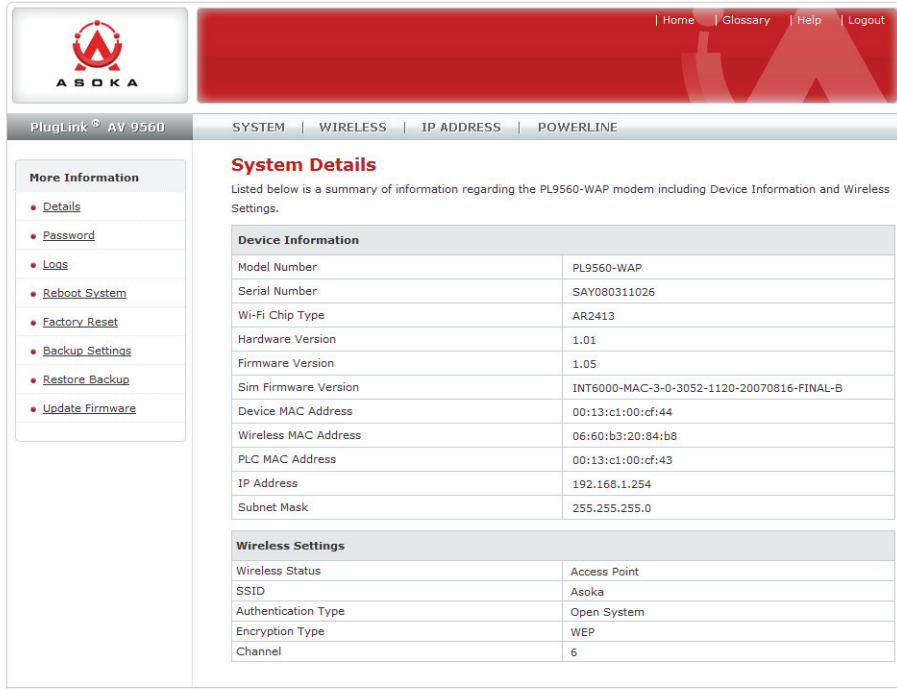


For security, the PL9560-WAP has its own user ID and password. When prompted, enter admin for the user ID, welcome for the PL9560-WAP password, both in lower case letters, and press **Login**.

After you enter the user ID and password, your web browser should find and display the PL9560-WAP.

System Details

When you access the web-based user interface, the System Details page is the first page you will see. The System Details page shows you a quick view of the PL9560-WAP's status and settings. All setup pages can be reached from this page by selecting the links in the left column of the page.



The following table describes the details of the Web-based user interface:

Item	Description
Quick Main Navigation Links	User Interface (UI) is divided into four main logical sections and you can navigate directly to any of the four sections by clicking on either of these links
Quick Sub Navigations links	When you enter into each of the four main logical sections, a sub navigation link that corresponds to the main logical section will appear
Page Name	Page you are on is identified by its Page Name
Detailed Information	Shows you detailed information about the PL9560-WAP that includes: model number, firmware version, hardware version, serial number, MAC address, IP address and subnet mask
Home Button	Home button is available on every page of the UI. Pressing this button will take you back to the home page, which is the System Details page
Glossary Button	Glossary button is available on every page of the UI. Pressing this button will take you to a glossary page that defines many of the technical terms used in this UI

Item	Description
Help Button	Help button is available on every page of the UI. Pressing this button will take you to a help page that provides detailed explanations and steps for configuring your PL9560-WAP
Logout Button	Logout button is available on every page of the UI. Pressing this button logs you out of the PL9560-WAP

Configuring the LAN IP

Use the **IP Address** link in the Main menu to set up the LAN IP. Select this option to configure the IP address of the PL9560-WAP.

By default, the PL9560-WAP is configured with the following addresses:

- **IP address:** 192.168.1.254
- **Subnet address:** 255.255.255.0.

The screenshot shows the 'IP Address' configuration page in the Asoka web interface. The page has a red header with the Asoka logo and navigation links (Home, Glossary, Help, Logout). Below the header is a sub-menu with 'SYSTEM', 'WIRELESS', 'IP ADDRESS', and 'POWERLINE'. The main content area is titled 'IP Address' and includes a description: 'This page allows you to set or change the IP address which is used to manage the device.' The form contains three rows of input fields: 'IP Address' with values 192, 168, 1, 254; 'Subnet Mask' with values 255, 255, 255, 0; and 'Gateway' with values 192, 168, 1, 1. An 'Apply' button is located below the form. A copyright notice 'Copyright © 2008, Asoka USA Corporation. All rights reserved.' is at the bottom.

Configuring Wireless Settings

To configure the wireless settings of the PL9560-WAP, click the **Wireless** link in the Main menu. The **Wireless Settings** link appears in the sub menu. The first page that appears is the **Wireless Status** page. To return to the status page, select **Status** in the left menu:

The screenshot shows the 'Wireless Status' page in the Asoka web interface. The page has a red header with the Asoka logo and navigation links (Home, Glossary, Help, Logout). Below the header is a sub-menu with 'SYSTEM', 'WIRELESS', 'IP ADDRESS', and 'POWERLINE'. The main content area is titled 'Wireless Status' and contains a table of wireless settings. The table has two columns: 'Wireless Status:' and 'Access Point'. The settings are: SSID: Asoka; Block SSID Broadcasting: No; Channel: 6; Authentication Type: Open System; Encryption Type: WEP; Key: A080311026. A left sidebar contains a 'More Information' section with links for 'Status', 'Basic Settings', 'Advanced Settings', 'Security', and 'Access Control List'. A copyright notice 'Copyright © 2008, Asoka USA Corporation. All rights reserved.' is at the bottom.

Basic Wireless Settings

To configure the basic wireless settings, follow these steps:

1. Select **Wireless** tab in the top menu.
2. Select **Basic Settings** in the left menu
3. Enter the appropriate information in the fields, described in the table below, and click **Apply**.

The screenshot shows the ASOKA PlugLink AV 9560 configuration page. The top navigation bar includes 'Home', 'Glossary', and 'Help'. The main menu has 'SYSTEM', 'WIRELESS', 'IP ADDRESS', and 'POWERLINE'. The left sidebar shows 'More Information' with links to 'Status', 'Basic Settings', 'Advanced Settings', 'Security', and 'Access Control List'. The main content area is titled 'Basic Settings' and contains the following fields:

- Channel ID: 6 (dropdown menu)
- Block SSID Broadcasting: Enable
- SSID: Asoka (text input)
- Operation Mode: 802.11b/g Mix (dropdown menu)

An 'Apply' button is located below these fields. Below the 'Basic Settings' section is the 'WPS' section, which includes a 'Progress' indicator and two buttons: 'WPS AP Push Button' and 'Reset WPS Network'.

The following table describes the basic wireless settings:

Item	Description
Wireless Status	The WLAN interface allows you to enable and disable the wireless part of the device
Channel ID	This field determines which operating frequency will be used. It should not be necessary to change the wireless channel unless you notice interference problems with another nearby access point. By default, the PL9560-WAP is set to channel 6
Block SSID Broadcasting	Blocking SSID Broadcasts prevents your PL9560-WAP from transmitting the SSID. The PL9560-WAP will still respond to clients that want to connect as long as they have the matching SSID
SSID	The SSID is also known as the Wireless Network Name. Enter a value of up to 32 alphanumeric characters. In a setting where there is more than one wireless network, different wireless network names provide a means for separating the traffic. Any device you want to participate in a particular wireless network will need to use this SSID for that network. The PL9560-WAP default SSID is Asoka

Item	Description
Operation Mode	This field determines which data communications protocol will be used. You can select 802.11g only, 802.11b only, or b/g mixed mode. 801.11g only dedicates the PL9560-WAP to communicating with the higher bandwidth 801.11g wireless devices exclusively. 802.11b only dedicates the PL9560-WAP to communicating with the lower bandwidth 802.11b wireless devices exclusively. The b/g mixed mode provides backward compatibility with the slower 802.11b wireless devices while still enabling 802.11g communications

WPS Buttons

In the web interface of the PL9560 (default IP address of 192.168.1.254), under Wireless > Basic Settings, there are two software push buttons. The software push buttons are equivalent to the WPS Wireless Security hardware push button. Below is a description of the software push buttons:

- **WPS AP Push Button** - Press this button to allow a client to join an existing WPS Network or have the PL9560 create a brand new WPS wireless network with a random SSID, random wireless password using the WPA2-Personal-AES security algorithm if the existing network was not created by WPS.
- **Reset WPS Network** - Press this software push button to make the PL9560 reset an existing WPS network and create a new network with a random SSID, random wireless password using the WPA2-Personal-AES security algorithm. The PL9560 will then wait for 2 minutes for a client to join and access the network.

Advanced Wireless Settings

Advanced Wireless Settings allows you to configure Tx Preamble Type, Beacon Interval, RTS Threshold, and Fragmentation Threshold.



NOTE: This section is recommended for advanced users only

The following table describes the advanced wireless settings:

Item	Description
Tx Preamble Type	Limits the data packet size during transmission. The choices are Long Preamble, Short Preamble, and Auto. By default, the PL9560-WAP is set to long preamble.
Beacon Interval	Keeps 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 the Beacon Interval value from 25 to 500, but too low or too high value is not recommended. The default Beacon Interval is set to 100.
RTS Threshold	Minimizes collisions among hidden stations. The RTS Threshold range can be configured between 1 to 2312 bytes. By default, the PL9560-WAP is set to 2312.
Fragmentation Threshold	Determines the size of the packet that will be transmitted in fragments. It is recommended to fragment the packet when the link quality is bad. The Fragmentation Threshold can be configured between 256 to 2312 bytes. The default is 2312.

Wireless Security

To view or configure wireless security settings, click on the Security link under Wireless submenu.

The screenshot displays the Asoka web interface for configuring wireless security. The top navigation bar includes links for Home, Glossary, Help, and Logout. The main menu shows SYSTEM, WIRELESS, IP ADDRESS, and POWERLINE. The 'Security' section is active, providing instructions on enabling security encryption. The configuration form includes a dropdown for Security Type (set to WEP), a dropdown for Authentication Type (set to Open), and a dropdown for Active Key (set to Key1). Below these are four input fields for Key 1 through Key 4, each with a label indicating the encoding (HEX(10/26), ASCII(5/13)). An 'Apply' button is located at the bottom of the form. The footer contains the copyright notice: Copyright © 2008, Asoka USA Corporation. All rights reserved.

The PL9560-WAP provides the following levels of security:

- WEP
- WPA-Personal
- WPA-Enterprise
- WPA2-Personal
- WPA2-Enterprise

Field	Description
Disable	No wireless security
WEP	<p>WEP offers the following options:</p> <ul style="list-style-type: none"> • Open System With Open Network Authentication and 64- or 128-bit WEP data encryption, the PL9560-WAP does perform 64- or 128-bit data encryption but does not perform any authentication • Shared Key Shared Key authentication encrypts the SSID and data. Choose the encryption strength (64- or 128-bit data encryption). Manually enter the key values. Manually entered keys are case sensitive
WPA-PSK	<p>WPA-Pre-shared Key performs authentication, uses 128-bit data encryption, and dynamically changes the encryption keys, making it nearly impossible to circumvent.</p> <ul style="list-style-type: none"> • WPA/WPA2-Personal: Select security algorithms TKIP or AES • WPA/WPA2-Enterprise: Select the Radius Server IP, Port, and Secret (pass code) <p>Note: Not all wireless adapter configuration utilities support WPA. Furthermore, client software is required on the client. Windows XP, Windows 2000, and Windows Vista with Service Pack 3 include the client software that supports WPA. Nevertheless, the wireless adapter hardware and driver must also support WPA.</p>

Configuring Wireless Security

By default, the PL9560-WAP security options are enabled. The default is set to WEP and Open System. The other security options should be configured by advanced users. To change the security option, follow the steps below. The WEP Key is the last 10 digits of the serial number.

1. In the Advanced Settings dialog, select **Wireless**.
2. Click the **Security** link. The Security dialog appears.
3. Under Encryption Type, select **WEP**.
4. Under Authentication Type, select **Open System**.
5. Clear the Key 1 field and enter a 10 digit HEX number.

Note: Make note of this key information and store it in a safe and secure location.

6. Click **Apply**.
7. In the prompt, click **OK** to confirm. A confirmation message will appear.
8. Reboot your PL9560-WAP by selecting **System** at the top menu and clicking **Reboot System**. After clicking the Reboot button, click **OK** to confirm.

After you configure the wireless security, configure your computer's wireless adapter. The default SSID of the PL9560-WAP is "Asoka." Enter the key you configured in the PL9560-WAP when prompted

Setting Administrative Login Information

The PL9560-WAP ships with a default user ID (**admin**) and default password (**welcome**). If you wish to change the password, you can set a password here. Write down your password and keep it in a safe place, as you will need it to log into the PL9560-WAP in the future. You can also set your auto-logout time in the provided field.

The screenshot shows the Asoka web interface for the PL9560-WAP. The top navigation bar includes links for Home, Glossary, Help, and Logout. Below this is a menu with SYSTEM, WIRELESS, IP ADDRESS, and POWERLINE. The main content area is titled "System Password" and contains the following fields and buttons:

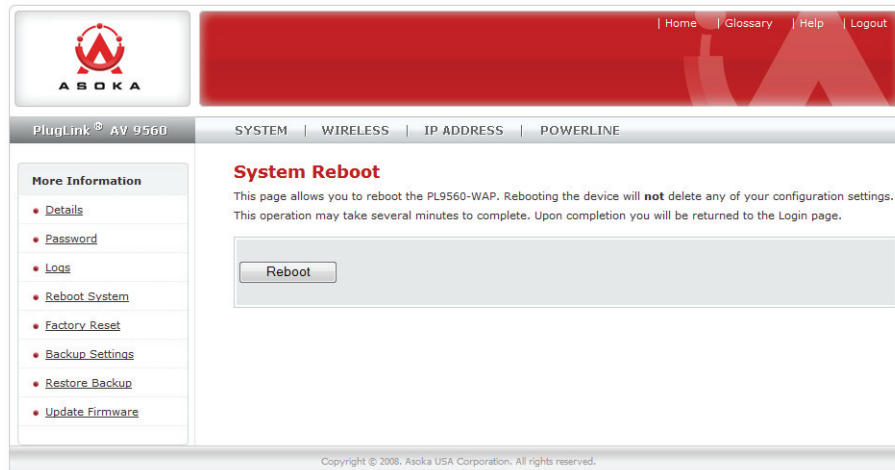
- System Password**: This page allows you to change your login password. Your password is used to restrict access by others to the device and should be kept secure.
- Enter Current Password:** [Text Input] (0-16 Characters)
- Enter New Password:** [Text Input] (0-16 Characters)
- Confirm New Password:** [Text Input] (0-16 Characters)
- Apply** button
- Auto-Logout Time:** [Text Input] 180 Seconds (60-3600 seconds)
- Apply** button

At the bottom of the page, there is a copyright notice: Copyright © 2008, Asoka USA Corporation. All rights reserved.

Rebooting the PL9560-WAP

Sometimes it may be necessary to reboot the PL9560-WAP if it begins working improperly. Rebooting the PL9560-WAP will NOT delete any of your configurations. To reboot, follow these instructions:

1. Select **System** in the top menu.
2. In the left menu, click **Reboot System**.
3. Click the **Reboot** button.



4. In the confirmation pop-up, click **OK**. A message appears indicating the device is rebooting:

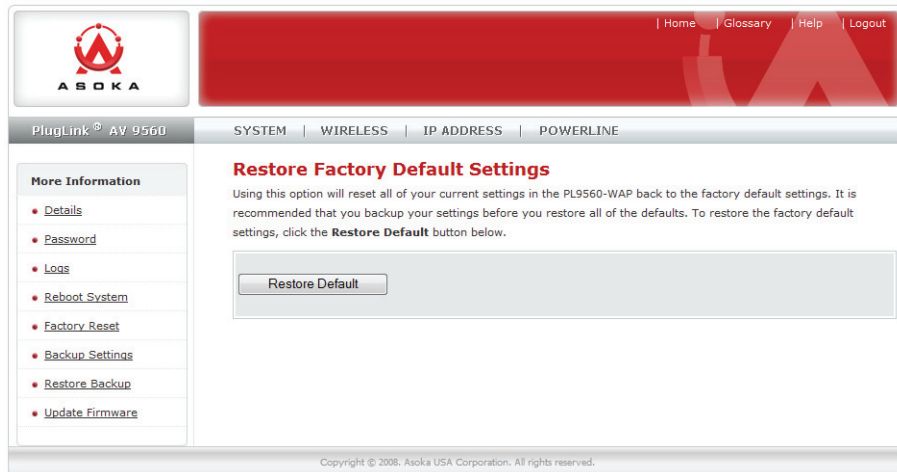
The device is rebooting, please wait, then refresh your browser.

When the PL9560-WAP reboots, the login page appears automatically. If it does not appear, type in the PL9560-WAP's address (default = 192.168.1.254) into the address or navigation bar of your web browser.

Restoring Factory Default Settings

Use this option to restore all of the settings in the PL9560-WAP to the factory default settings. It is recommended that you back up your settings prior to restoring to factory default settings. To restore factory default settings, follow these instructions:

1. Select **System** in the top menu.
2. In the left menu, click **Factory Rest**.
3. Click the **Restore Default** button.



4. In the confirmation pop-up, click **OK**.

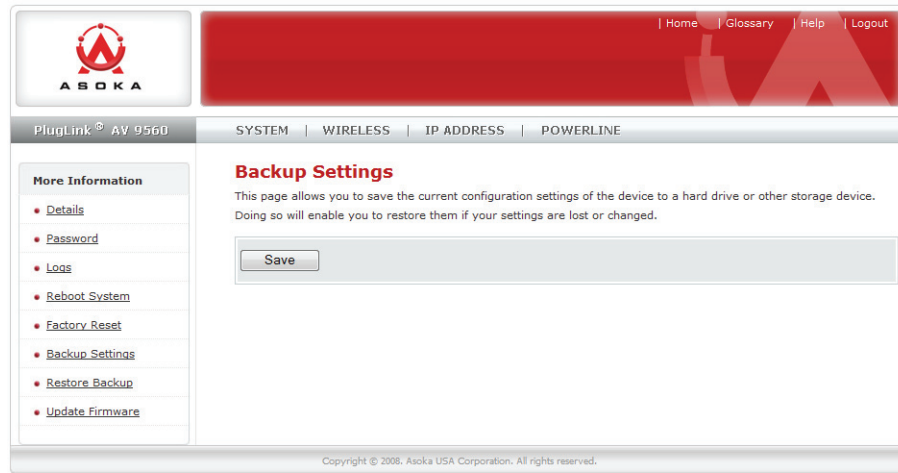
Backing Up and Restoring Configuration Files

The configuration settings of the PL9560-WAP are stored within the wireless device in a configuration file. This file can be saved (backed up) to a user's PC or retrieved (restored) from the User's PC.

To Back Up Settings

1. Select **System** on the top menu.
2. Click **Backup Settings**.

3. Click Save.



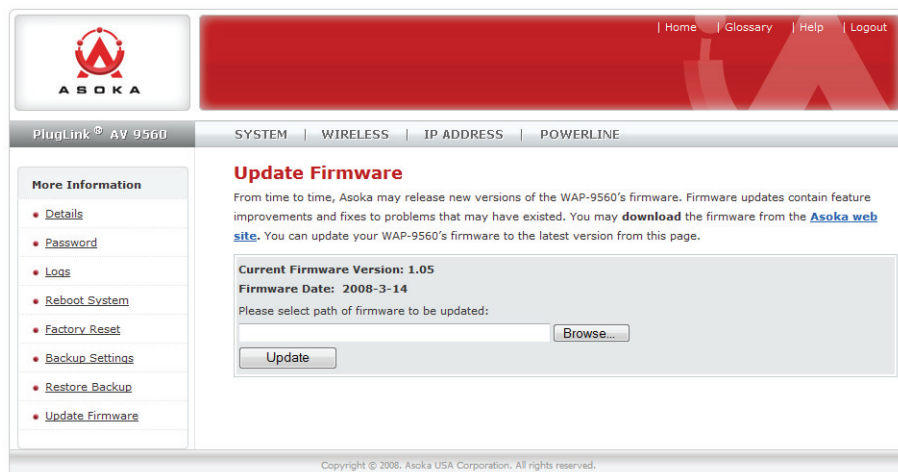
To Restore Settings

To retrieve (restore) an old PL9560-WAP configuration file from a previous backup, follow these instructions:

1. Select **System** in the top menu.
2. Select **Restore Backup**.
3. Click **Browse**.
4. Locate and double-click the old wireless configuration file.
5. Click **Restore**.

Updating Firmware

Periodically, firmware updates will become available. Firmware updates contain feature improvements and fixes to problems that may have existed. When Asoka releases new firmware, you can download from <http://www.asokausa.com> and update your PL9560-WAP's firmware to the latest version.



To Upload a New Firmware Upgrade

1. Select **System** in the Main menu.
2. In the Sub menu, select **Update Firmware**.
3. Click **Browse** to locate the new firmware upgrade file downloaded from the web site. The box next to the **Browse** button will display the location and name of the firmware file you selected.
4. Click **Update**.
5. In the confirmation pop-up, click **OK**. A message appears indicating that WAP may not respond while the firmware is loaded into the wap and the WAP is rebooted
6. Click **OK**.

When the firmware upgrade is complete, the PL9560-WAP home page appears automatically. If it does not, type in the WAP's address (default - 192.168.1.254) into the address or navigation bar of your web browser.

Note: After an erase, the WAP's username will be admin, the password will be welcome and the wireless security is disabled.

Viewing System Logs

The PlugLink AV 9560 Wireless Adapter maintains a System Log that displays potential security threats and system information. This log can be viewed with a browser using the WAP's web management interface, or it can be automatically sent to an email address for convenience and archiving. Each log entry contains the date and time of the event and a brief message describing the event. It is possible to copy the log entries from the web management interface and paste into a report.

To View a System Log

1. Select **System** in the top menu.

2. In the left menu, select **Logs**.

The screenshot shows the Asoka web interface for a PlugLink AV 9560 device. The top navigation bar includes links for Home, Glossary, Help, and Logout. The main menu has options for SYSTEM, WIRELESS, IP ADDRESS, and POWERLINE. On the left, a 'More Information' sidebar lists various system functions, with 'Logs' selected. The main content area is titled 'System Logs' and contains a 'Log File' section with a text area displaying system logs. Below the log file are 'Save', 'Clear', and 'Refresh' buttons. The footer contains the copyright notice: 'Copyright © 2008, Asoka USA Corporation. All rights reserved.'

Powerline Device Scan

Rescanning refreshes the information on all devices using the same password.

1. Select Powerline in the top menu.
2. In the left menu, select Scan.

The screenshot shows the Asoka web interface for a PlugLink AV 9560 device. The top navigation bar includes links for Home, Glossary, Help, and Logout. The main menu has options for SYSTEM, WIRELESS, IP ADDRESS, and POWERLINE. On the left, a 'More Information' sidebar lists various system functions, with 'Devices Scan' selected. The main content area is titled 'Power Line Device Scan' and contains a 'Scan Devices in Powerline' section with a 'Scan Now' button. Below this is a table showing scanned devices and their MAC addresses. The footer contains the copyright notice: 'Copyright © 2008, Asoka USA Corporation. All rights reserved.'

Scanned Devices	MAC Address
NO.1	00:13:c1:00:cf:43



Specifications

This appendix lists the specifications for your PlugLink AV 9560 Wireless Adapter.

Standards Compliance:	<ul style="list-style-type: none">• HomePlug® AV• IEEE 802.3, IEEE 802.3x, IEEE 802.3u
Software Utility System Requirements:	Microsoft Windows® 98 SE, 2000, ME, XP, and Vista operating systems
Distance (Range):	Up to 328 feet (100 meters)
Modulation Schemes:	<ul style="list-style-type: none">• Orthogonal Frequency Division Multiplexing (OFDM)• QAM10214/256/64/16• QPSK• BPSK
EMI and Safety:	<ul style="list-style-type: none">• FCC Part 15 Class B• UL (US and Canada)• CE
Frequency:	<ul style="list-style-type: none">• 4 to 21 MHz over Powerline• 2.4GHz over wireless
Bandwidth:	PLC 200 Mbps
Network Protocol:	HomePlug AV <ul style="list-style-type: none">• IEEE 802.3 Ethernet• IEEE 802.3x Flow Control• IEEE 802.11b/g Wireless Network Standard• IEEE 802.11i Wireless Network Security• IEEE 802.1x client support• IEEE 802.3u• TCP/IP
Network Interface	<ul style="list-style-type: none">• One 10/100 Base-T Ethernet (RJ45)• HomePlug® Power Line 1.01 802.11 b/g AP mode
Electromagnetic Emissions:	<ul style="list-style-type: none">• FCC Part 15 Class B• UL (US and Canada)

Additional Protocols:	<ul style="list-style-type: none"> • Forward Error Correction (FEC) • Automatic Channel Adaptation
Surge Protection:	4KV
Power Supply:	<ul style="list-style-type: none"> • US Version: 100-120VAC • UK/EU Version: 220-240VAC
Environmental Specifications:	<ul style="list-style-type: none"> • Operating temperature: 32°F to 131°F (0°C to 55°C) • Operating humidity: 10% to 85% Non-condensing • Storage temperature: -4°F to 158°F (-20°C to 70°C) • Storage humidity: 5% to 90% Non-condensing
Power Rating:	<ul style="list-style-type: none"> • US Version: 100-120VAC 15A max, 60Hz • UK/EU Version: 220-240VAC 10A max, 50H
Powerline Security:	128-bit AES Encryption
Wireless Security:	64b/128b WEP, WPA, & WPA2
Quality of Service (QoS):	<ul style="list-style-type: none"> • TOS • 802.1q • TDMA (supported in the future)
Warranty:	1-year limited



Components

Front Panel

Use the status lights on the front panel to verify connections.



The following table describes the status light functions in the front panel:

Status Light	State	Indication
Power	Illuminated Off	Device is powered on Devices has no power
PLC Activity	Blinking Off	Activity on powerline No activity on powerline (should blink intermittently)
Wireless	Blinking Off	Broadcasting signal Not broadcasting
Eth Link	Illuminated Blinking Off	Ethernet connectivity Ethernet traffic No ethernet connectivity

Bottom Panel

The bottom panel of the PL9560-WAP contains one RJ-45 Ethernet port.



Buttons

The PlugLink AV 9560 device has two push buttons:

- **SW1 (Left) Button / Powerline Security** - The **NID** button allows you to set a randomized Network Encryption Key (NEK) by pressing on it. You can then have additional units use the same randomized NEK by using their respective **NID** buttons.
- **SW2 (Right) Button / WPS Wireless Security** - This button allows you to do wireless security by simply pushing a button. This requires software and a network card that supports this feature.

Following is an example of how the **NID** button can be used:

1. Select a PlugLinkAV 9560 device in your network. Press and hold the **NID** button for 10 seconds. After about 10 seconds, the lights on your device will blink off briefly and come back on immediately. This will change the existing Network Encryption Key (NEK) to a randomized NEK.
2. On the PlugLinkAV 9560 (#1) device from Step #1, press and hold the **NID** button for about 3 seconds. The power light on the device will begin flashing. This unit has now been set to allow other units to join the network and be assigned the same password. This unit will remain in "adder" mode for about 3 minutes.
3. Before the three minutes are up from Step #2, select another PlugLink AV device from your network. Press and hold the **NID** button for about 3 seconds. The power light on the device will blink as well. The two devices will communicate and the second device will have its NEK set to the NEK of the first device. This should happen in about 15 to 20 seconds. Once the process has been completed, you can then test if the two devices are communicating.

4. If you add units at a later time, you only need to perform Step #2 (using any device in the network) and Step #3 (any new devices). Step #1 is not necessary unless you wish to change your NEK.

Following is a basic description of how the WPS-Push Button can be used:

1. Press **WPS/sw2** for more than 10 seconds. (or click Reset WPS network button on the web interface's wireless-basic-settings tab). This will create a new wireless network with random SSID, random wireless password and WPA2-Personal-AES security algorithm. The PL9560 will wait 2 minutes for a client to join the wireless network by pushing the client's **WPS** button.
2. Press **WPS/sw2** for less than 3 seconds (or click **WPS AP Push Button** button on the web interface's wireless-basic-settings tab).

a) If the current wireless network was not created by WPS:

Pressing the WPS/sw2 button will create a new wireless network with a random SSID, random wireless password using the WPA2-Personal-AES security algorithm. After the new wireless network is created, the PL9560 will wait 2 minutes for a client to join the wireless network by pushing the client's WPS button.

b) If the current wireless network was created by WPS:

The PL9560 will use the current SSID/wireless password and retain the current clients' connections in the wireless network. The PL9560 will wait 2 minutes for any new clients to join the wireless network by pushing the client's WPS button.



The SSID and wireless password can be checked from web interface's wireless-status tab. Users can also use this information and manually connect to the wireless network.

3. If you have multiple clients that wish to join the wireless network, you will have to press the WPS/sw2 button for 3 seconds (or less) for every client. The user will then have to press the WPS button to join the network.

Following is an example to make your network:

1. Press and hold the **SW2 (Right)** button for more than 10 seconds. This will reset the current wireless network and create a new wireless network with random SSID, random wireless password and WPA2-Personal-AES security algorithm. The PL9560 will wait 2 minutes for a client to join the wireless network by pushing the client's **WPS** button.
2. Before the 2 minutes have elapsed, push a client's **WPS** button. The client will join the network created at Step 1.

3. If there are additional clients that wish to join the WPS network, push the **SW2** (Right) button for less than 3 seconds and push a client's **WPS** button, this will add one connection. Repeat for every client that needs to join the WPS network.
4. For clients without **WPS** push button capabilities, you can make a manual connection using the WPA2-Personal-AES security algorithm and inputting the SSID and wireless password information which is available from the web-interface's wireless-status tab.

Web Interface/Software Push Buttons

In the web interface of the PL9560 (default IP address of 192.168.1.254), under Wireless > Basic Settings, there are two software push buttons. The software push buttons are equivalent to the WPS Wireless Security hardware push button. Below is a description of the software push buttons:

- **WPS AP Push Button** - Pressing this software push button will allow a client to join an existing WPS Network or have the PL9560 create a brand new WPS wireless network with a random SSID, random wireless password using the WPA2-Personal-AES security algorithm if the existing network was not created by WPS.
- **Reset WPS Network** - Pressing this software push button will have the PL9560 reset an existing WPS network and create a new network with a random SSID, random wireless password using the WPA2-Personal-AES security algorithm. The PL9560 will then wait for 2 minutes for a client to join and access the network.



NOTE: The laptop computer must have WPS software installed and be configured to wireless WPS.



CAUTION! Do not attempt to manually change this password on the laptop computer.

Label

Asoka USA Corporation FCC ID: T37PL9560-WAP


PlugLink AV 9560 Wireless Adapter

Model: PL9560-WAP

Password: XXXX-XXXX-XXXX-XXXX

PLC MAC Address: XXXXXXXXXXXXXXX

Device MAC Address: XXXXXXXXXXXXXXX






SN: XXXXXXXXXXXXXXX

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.

MADE IN CHINA Input: 100-240VAC 0.1A 50/60Hz

XX-XXXX-XXX





Declarations of Conformity

This appendix lists the declarations of conformity for your PlugLink AV 9560 Wireless Adapter

Declaration of Conformity




Company Name and Address:	Asoka USA Corporation 2344-A Walsh Ave Santa Clara, CA 95051
Declares that the Product:	PL9560-WAP
Intended purpose:	PlugLink AV 9560 Wireless Adapter

Complies with the following the provisions of Council Directives:

1999/5/EC	approximation of the laws of the Member States relating to electromagnetic compatibility and Radio spectrum Matters(as amended)
2006/95/EC	Harmonization of the laws of Member States relating to electrical equipment designed for use within certain voltage limits (as amended)

to which this declaration relates, is in conformity with the following standards and /or normative:

EMC	EN 55022:	Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement.
	EN 55024:	Information technology equipment - Immunity characteristics - Limits and methods of measurement.
	EN 61000-3-2:	Limits for harmonic current emissions (equipment input current to 16A per phase)
	EN 61000-3-3:	Limitation of voltage fluctuation and flicker in low-voltage supply systems for equipment with rated current to 16A.
	EN 301 489-1/-17:	Electromagnetic compatibility and radio spectrum matters (ERM); Electromagnetic compatibility (EMC) standard for radio equipment and services
Radio	EN300 328 :	Information technology equipment - Electromagnetic compatibility and Radio spectrum Matters (ERM); Short rang device; Wideband Transmission systems; data transmission equipment operating in the 2.4 GHz ISM band and using spread spectrum modulation techniques
LVD	EN 60950:	Safety for information technology equipment including electrical business equipment

	CTO
TK Chan	6/2/2008
Signature	Title
Name	Date



Warranty

Asoka warrants that (a) the hardware components of the product will be free from defects in materials and workmanship under normal use for one (1) year from the date of purchase when used within the limits set forth in the Specifications section of the User Guide, and (b) the software components will perform substantially in accordance with Asoka's published specifications for ninety (90) days from the date of purchase, but does not warrant that the software will be error-free or free of all defects.

Should a product fail to perform as described in the User Guide within the warranted period, it will be repaired or replaced with the same or functionally equivalent product by Asoka, at its discretion, free of charge provided that you: (a) return the failed product to an Asoka designated repair facility with shipping charge prepaid, and (b) provide Asoka with proof of the original date of purchase. Repaired or replacement products will be returned to you with shipping charges prepaid. Asoka warrants any replaced or repaired product or component for the remainder of the initial warranty period whichever is longer. Replacement products may be refurbished or contain refurbished materials or components. If Asoka, by its sole determination, is unable to restore the product to proper operating condition, it will refund the depreciated purchase price of the product.

This warranty extends only to you, the original purchaser and is not transferable to any subsequent purchasers.

This warranty does not apply if, in the judgment of Asoka, the product fails due to damage from shipment, handling, storage, accident, abuse, misapplication or misuse, or if it has been used or maintained in a manner not conforming to product manual instructions, has been modified in any way, or has had any serial number removed or defaced. Repair by anyone other than Asoka or an approved agent will void this warranty. The maximum liability of Asoka under this warranty is limited to the purchase price of the

product covered by the warranty. Prior to returning any defective product, the purchaser or the authorized merchant from whom the purchaser originally bought the product must obtain a Return Material Authorization (RMA) number from Asoka. All defective products should be returned to Asoka with shipping charges prepaid. Asoka will not accept collect shipments.

WHILE ASOKA HAS MADE EVERY EFFORT TO PROVIDE CLEAR AND ACCURATE TECHNICAL INFORMATION ABOUT ITS PRODUCTS, ASOKA ASSUMES NO LIABILITY FOR ANY EVENTS ARISING OUT OF THE USE OF THE TECHNICAL INFORMATION OR THE PRODUCT, EXCEPT AS SPECIFICALLY PROVIDED IN THIS AGREEMENT OR AS REQUIRED BY LAW. THE WARRANTIES AND REMEDIES STATED ABOVE ARE EXCLUSIVE AND IN LIEU OF ALL OTHERS, ORAL OR WRITTEN, EXPRESS OR IMPLIED. ANY AND ALL OTHER WARRANTIES, INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT OF THIRD PARTY RIGHTS ARE EXPRESSLY EXCLUDED. ASOKA SHALL NOT BE LIABLE, UNDER ANY CIRCUMSTANCES, TO ANY PERSON OR ENTITY FOR ANY SPECIAL, INCIDENTAL, INDIRECT OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION, DAMAGES RESULTING FROM THE USE OR MALFUNCTION OF THE PRODUCTS, LOSS OF PROFITS OR REVENUES, BUSINESS INTERRUPTION, OR COSTS OF REPLACEMENT GOODS, EVEN IF ASOKA IS INFORMED IN ADVANCE OF THE POSSIBILITY OF SUCH DAMAGES.



FCC Notice

FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates 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.

This device complies with Part 15 of FCC Rules.

Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

Caution:

The manufacturer is not responsible for any radio or tv interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

FCC RF Radiation Exposure Statement

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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