

# PlugLink™ Wireless Access Point User Guide



*Turning Every Outlet into Network Access Point*



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## **Introduction**

Congratulations! As the proud owner of the state-of-the-art Asoka™ PlugLink™ Wireless Access Point, connecting multiple computing devices together to establish a Local Area Network(LAN) is as simple as 1-2-3. The Asoka PlugLink Wireless Access point combines the intensity and reliability of a Powerline network with the flexibility and the mobility of a wireless network giving you the ultimate network solution.

This manual provides a step-by-step installation guide to quickly get your network running in a matter of minutes. We also suggest that you give yourself some time to play with your new powerline networking device.

All Asoka PlugLink networking devices are designed and manufactured to meet Asoka's and industry organizations' (HomePlug Powerline Alliance, IEEE, FCC, UL (US & Canada), and CE) rigorous specifications and world-class quality standards. During development, our laboratory testing team put the PlugLink networking device through strenuous evaluations and standards. We are confident that the one you purchase will meet your own exacting standards.

Thank you for choosing Asoka and, by all means, enjoy your PlugLink Wireless Access Point.

For the latest product information, please visit us on the web at <http://www.asokausa.com>.

## Important Safety Information

This product is intended for connection to the AC power. The following precautions should be taken when using this product.

- Read all instructions before installing and operating this product.
- Follow all warnings and instructions marked on the product.
- Do not operate this product near water.
- This product relies on a building's electrical installation for short-circuit (over current) protection. Ensure that a fuse or circuit breaker no larger than 15 Amp is used on the phase conductors (all current-carrying conductors).
- Do not allow anything to rest on the product.
- The PlugLink Wireless Access Point should be plugged directly into an AC wall outlet. *(Note: The appropriate voltage, 110/230V, will be clearly marked on the box).*
- Only a qualified technician should service this product. Opening or removing covers may result in exposure to dangerous voltage points or other risks. *(Note: Opening or removing the covers will void your product warranty).*
- Unplug the PlugLink Wireless Access Point from the AC wall outlet and refer the product to a qualified service representative for the following conditions:
  - If liquid has been spilled onto the product.
  - If the product has been exposed to rain or water.
  - If the product does not operate normally when the operating instructions have been followed.
  - If the product exhibits a distinct change in performance.

## Getting Intimate with your Powerline Device

Before installing your powerline networking device, please take a moment to examine and familiarize yourself with it. Below is a diagram of the PL9520-WAP along with a brief description of what each LED and slot represent.

The front panel of the PL9520-WAP has a number of LEDs indicating the status of the device. Their functions are:

Abbrev.	Description
WLAN-TX	Indicates wireless LAN transmission signal.
WLAN-RX	Indicates wireless LAN receive signal.
LNK	Lights up when the device detects another Homeplug compliant device on the powerline network.
ACT	Indicates powerline LAN transmission signal.
COL	If two powerline devices are trying to send data at the same time, one of them will delay the transmission and this LED light blinks.



## Getting Started

### What This Package Contains?

Upon receiving your wireless access point, please check to make sure the following contents are packaged:

- PlugLink Wireless Access Point (PL9520-WAP)
- Wireless Compact Flash Card
- User's manual

### Necessary Equipment?

- One or more computers using either an Ethernet, USB, or another PL9520-WAP
- Microsoft TCP/IP networking protocol installed on each PC
- A wireless PCMCIA card with it's software already installed
- Web browser installed on each PC

### Equipment that can be used with the PL9520-WAP?

- Broadband modem
- PL9920 Broadband router
- Additional PCs with a wireless PCMCIA card

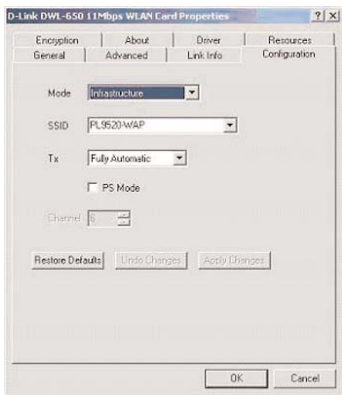
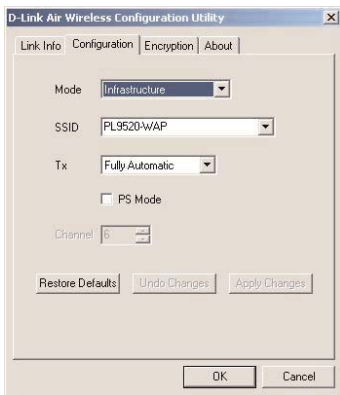
*Important: After receiving the wireless access point, please check for any shipping damages to the carton and camera before proceeding with any installations.*

## PC or Laptop Setup Guide

*Note: If you have not installed your PCMCIA wireless card to your laptop as of yet, please do so. For instructions on how to install your PCMCIA wireless card, please contact the manufacturer of that wireless card.*

To configure the PCMCIA wireless card to work with your PL9520-WAP, please follow the following steps:

1. Insert the compact flash card into the PL9520 and then plug it into an outlet.
2. Go to the wireless card's configuration screen or window. It should resemble figure 1 or figure 2 listed below.
3. In the Mode field, make sure Infrastructure is selected.





4. In the SSID field, type in the following: PL9520-WAP (This is case sensitive)
5. Click on the Apply Changes button.
6. In the Tx field make sure Fully Automatic is selected.
7. PS Mode should not be checked.
8. Click OK to exit the configuration window.

*Note: If you are using Win XP you will not need to configure the PCMCIA card as to XP has an auto sense function included in the operating system.*

## **PL9520-WAP Setup Guide**

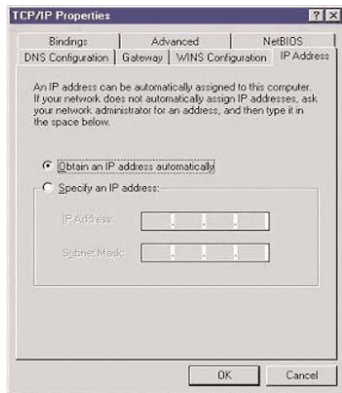
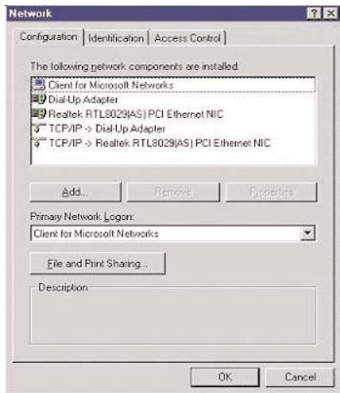
You will need to temporarily change the IP address of your PC/laptop so you can access and setup your PL9520-WAP. Follow these steps depending on your operating system.

*Note: If you have not changed the default powerline password (HomePlug) or default IP address (192.168.8.1) on your network then there is no need to continue this setup.*

### Windows 98 SE / ME

1. Click on Start, then Settings, and then Control Panel.
2. Double click on the Network icon.
3. Select the TCP/IP Protocol entry.
4. Click on the Properties button.
5. Select the IP Address tab.
6. Select Specify an IP address.
7. Type in the following address: 192.168.8.10.
8. For the Subnet Mask, type: 255.255.255.0.
9. Click OK to close the TCP/IP properties panel.

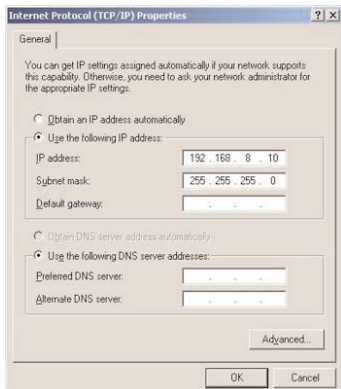
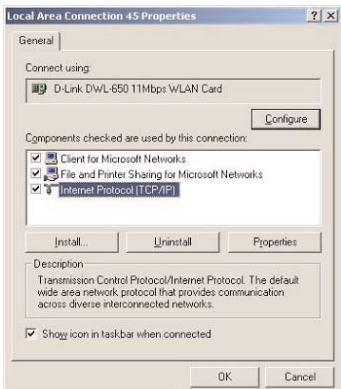
10. Click OK to close the Network panel.
11. You will need to restart the PC in order for the changes to take effect.



### Windows 2000 / XP

1. Open Network Connections.
  - Win 2000: Click on Start, Settings, then Network, and Dial-up Connections.
  - Win XP: Click on Start, Connect To, then Show All Connections.
2. Right click on Local Area Connection and then select Properties.
3. Select Internet Protocol (TCP/IP) and then click on Properties.
4. Click on Use the following IP address.
5. Type in the following IP address: 192.168.8.10.
6. For the Subnet Mask, type: 255.255.255.0.
7. Click OK to close the TCP/IP properties panel.

8. Click OK to close the Network panel and the changes will take effect when this panel is closed.



Log onto the PL9520 and change the powerline password as well as the IP address according to your existing network.

## Accessing the PL9520-WAP

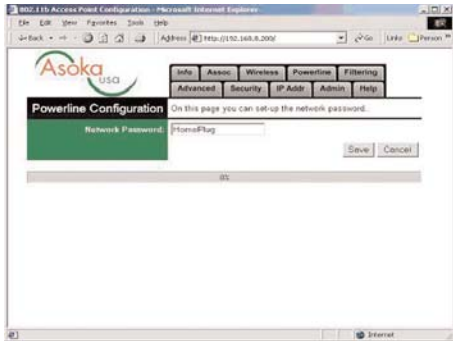
1. Open a web browser and type in the following address:  
192.168.8.200.
2. A login screen should appear. Skip the login name and type in the following for the password: admin.



3. The information screen should now appear in the browser window. Here is where the Firmware revision, MAC address of the WAP, and current IP address are displayed.



4. Click on the Powerline Tab.



5. The default powerline password is HomePlug. If your existing powerline password is different, change this password accordingly.
6. Click on the Save button.
7. Click on the Reboot button when it appears. A small window will then appear asking you to confirm your changes, click Yes.

## **Setting up the IP address on the PL9520-WAP**

1. Click on the IP Addr Tab.
2. The PL9520s IP address is listed under Default IP address. To change this, simply type in an IP address that matches your network configuration (Example: 10.1.1.10)
3. You can leave the Default Subnet mask and Default Gateway values the same.
4. Click on Save.
5. In the next screen, click on the Reboot button. A small window will then appear asking you to confirm your changes, click Yes.
6. After the browser stops working, close it.

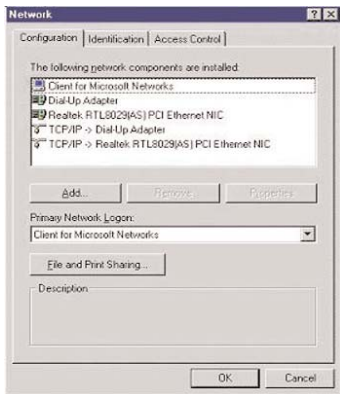
At this point, you will need to change the PCs IP address back to its original settings. Follow these steps depending on your operating system.

### Windows 98 SE / ME

1. Click on Start, then Settings, and then Control Panel.
2. Double click on the Network icon.
3. Select the TCP/IP Protocol entry.
4. Click on the Properties button.
5. Select the IP Address tab.
6. Select Obtain an IP Address Automatically.
7. Click OK to close the TCP/IP properties panel.

## 8. Click OK to close the Network panel.

You will need to restart the PC in order for the changes to take effect.



## Windows 2000 / XP

- Open Network Connections.
  - Win 2000: Click on Start, Settings, then Network and Dial-up Connections.
  - Win XP: Click on Start, Connect To, then Show All Connections.
- Right click on Local Area Connection and then select Properties.
- Select Internet Protocol (TCP/IP) and then click on Properties.
- Select Obtain an IP Address Automatically and Obtain a DNS server automatically.
- Click OK to close the TCP/IP properties panel.
- Click OK to close the Network panel.

The changes will take effect when this panel is closed.

Open a new web browser and type in the new PL9520s IP address to ensure the changes have taken affect.

## Other Features

### Associations Tab

- This screen lists all stations that are associated with this unit. The amount of time since packets were transferred to or from each station. If a station is idle for too long, it is removed from this list.

### Wireless Tab

- Here you can change the name of the access point
- Change the value for the SSID (*Note: If you change the value here, you will also need to change the value on each PC.*)
- Change the Basic Mb rates
- Change the Supported Mb rates
- Change the Transmission Mb rates

### Filtering Tab

- Here you can either limit or block AP units associating with this unit by MAC address

### Advanced Tab

- Here you can adjust the following:
- Maximum associated stations
- Fragmentation threshold
- RTS threshold
- Beacon period
- DTIM interval
- Multicast PM buffering

### Security Tab

- Here is where you can adjust security and encryption settings. The following can be set:
- AP visibility
- Enable WEP
- Set WEP key lengths
- Set WEP Keys 1 - 4
- Set the WEP key to use
- Deny unencrypted data
- Set authentication (Open, Shared Key, Both)

### IP Addr Tab

- Here you can setup the following server configurations:
- Static or DHCP mode
- Default IP address
- Default subnet mask
- Default gateway
- Allow upgrade uploads

### Admin Tab

- Here you can change the Administrator user name and password

### Help Tab

- There is where some helpful information will be



## Notes

## Appendix A: Specifications

### Standard Compliance

- HomePlug® v1.01
- Windows® 98SE, 2000, ME & XP Compatible
- IEEE 802.11b

**Protocol** TCP/IP

**Channels** 11 Channels

**Speed** Up to 11 Mbps

### Safety & EMI

FCC Class B  
UL(US and Canada)  
CE

### LED Status Lights

WLAN-TX, WLAN-RX  
LNK, ACT, COL

### Power Input

US: 120VAC, 60Hz, 5W  
EU: 230VAC, 50Hz, 5W

### Security

- 128-bit WEP Encryption
- 56-bit DES Encryption

### Environmental

Dimensions:  
3.75"Lx2.63"Wx2"H  
Weight: 0.75 lbs

### Operating Temperature

32°F to 131°F  
(0°C to 55°C)

### Storage Temperature

-4°F to 131°F  
(-20°C to 70°C)

### Operating Humidity

10% to 85% Non-condensing

### Storage Humidity

5% to 90% Non-condensing

## Appendix B: Limited Warranty

Asoka warrants that (a) the hardware components of the Asoka product will be free from defects in materials and workmanship under normal use for one (1) year from the date of purchase, 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. If a defect or nonconformance exists during the applicable warranty period, at its option Asoka will repair or replace the defective parts or nonconforming software using new or refurbished replacement parts or media at no additional charge to you. This warranty extends only to you, the original purchaser and is not transferable to any subsequent purchasers.

*Obtaining Warranty Service - This warranty only applies to customers within the United States and Canada.*

Should a product fail to perform as described above within the warranty period, it will be repaired or replaced with the same or functionally equivalent product by Asoka, at its discretion, free of charge provided you:

- have, within 30 days of the original date of purchase, completed and returned the Owner Registration Cards which accompanied the products when shipped,
- have, prior to returning any defective product, obtained a Return Materials Authorization (RMA) number from Asoka,
- return the failed product to Asoka designated repair facility with shipping charge prepaid,
- provide Asoka with your original invoice as proof of place and date of purchase.

The repaired or replaced product will be returned to you with shipping charges pre-paid for shipments. Replacement products may be refurbished or contain refurbished materials. If Asoka, by its sole determination, is unable to repair or replace the defective product, it will refund the depreciated purchase price of the product.

### Exclusions and Limitations

This Limited Warranty does not extend to any product not purchased or licensed from Asoka or its authorized resellers or retailers. This Limited Warranty does not apply: (a) to damage caused by accident, abuse, misuse, misapplication, unusual electrical fluctuation, or improper transportation upon return to Asoka; (b) if you use parts not manufactured or sold by Asoka; or (c) to damage caused by modification of the product or as a result of service by anyone other than Asoka or an Asoka-authorized service provider. EXCEPT AS PROVIDED IN THIS LIMITED WARRANTY STATEMENT, NEITHER ASOKA NOR ITS THIRD PARTY SUPPLIERS MAKE ANY OTHER WARRANTIES AS TO THE PRODUCTS AND SERVICES AND THE PRODUCTS AND SERVICES ARE PROVIDED "AS IS" AND WITH ALL FAULTS. ASOKA AND ITS THIRD PARTY SUPPLIERS DISCLAIM ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, STATUTORY OR OTHERWISE, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS OF A PARTICULAR PURPOSE, TITLE, NON-INFRINGEMENT AND ACCURACY. ASOKA'S ENTIRE LIABILITY, AND YOUR EXCLUSIVE REMEDY HEREUNDER, IS LIMITED TO, AT ASOKA'S OPTION AND SOLE DISCRETION, REPAIR OR REPLACEMENT OF THE PRODUCT AS SET FORTH HEREIN OR A REFUND OF THE PURCHASE PRICE.

Some states do not allow warranty limitations. In such states, the exclusion or limitations of this Limited Warranty may not apply to you and, in such cases, Asoka asserts the minimum warranty permitted by law.

TO THE MAXIMUM EXTENT PERMITTED BY LAW, NEITHER ASOKA NOR ITS THIRD PARTY SUPPLIERS SHALL BE LIABLE FOR ANY SPECIAL, INCIDENTAL, INDIRECT, OR CONSEQUENTIAL DAMAGES OF ANY KIND WHATSOEVER, NO MATTER HOW DENOMINATED (INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFITS OR CONFIDENTIAL OR OTHER INFORMATION, FOR BUSINESS INTERRUPTION, FOR PERSONAL INJURY, FOR LOSS OF PRIVACY, FOR FAILURE TO MEET ANY DUTY INCLUDING OF GOOD FAITH OR OF REASONABLE CARE, FOR NEGLIGENCE, AND FOR ANY OTHER PECUNIARY OR OTHER LOSS WHATSOEVER) ARISING OUT OF OR IN ANY WAY RELATED TO THE USE OF OR INABILITY TO USE THE PRODUCT, THE PROVISION OR FAILURE TO PROVIDE SUPPORT SERVICES, OR OTHERWISE IN CONNECTION WITH ANY PROVISION OF THE ASOKA TERMS AND CONDITIONS OF SALE OR AN END USER LICENSE AGREEMENT, EVEN IN THE EVENT OF THE FAULT, TORT (INCLUDING NEGLIGENCE) STRICT LIABILITY, BREACH OF CONTRACT, OR BREACH OF WARRANTY OF ASOKA OR ANY SUPPLIER, AND REGARDLESS OF WHETHER OR NOT ASOKA HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## Appendix C: 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, 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.

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.

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.

## Appendix D: Technical Support

Please contact the Asoka Service and Support Center at:

Asoka USA Corporation

820 American Street

San Carlos CA 94070

Technical Support

Tel: (650) 591-3189

Fax: (650) 591-3782

E-mail: [support@asokausa.com](mailto:support@asokausa.com)

url: <http://www.asokausa.com>

Monday - Friday 9:00 AM - 5:00 PM PST



**Asoka USA Corporation**  
*Making Connectivity a Reality*