

# PlugLAN. 8350 Wireless SmarTAP Installation and User's Guide PL8350-WAP

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**Simple Installation** 



PL8350-WAP 66-0337-00 Rev.001

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Revision	Date	Description
PL8350-WAP 66-0337-00 Rev.001	March 2008	Preliminary Release

## **Changes in This Revision**

• Not applicable (preliminary release)

# **Contact Information**

For more information about the PlugLAN 8350 Wireless SmarTAP or any of Asoka's other leadingedge solutions, please contact us using any of the following methods:

- Voice calls: We welcome your calls Monday through Friday, from 9:00 am to 6:00 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 PlugLAN 8350 Wireless SmarTAP
- The circumstances surrounding the error or failure
- A detailed description of the problem and what has been done to try to solve it

# **Related Documentation**

The entire documentation set for Asoka's MDU solutions can be accessed at: http://www.asokausa.com.

The following documents compose the Asoka MDU documentation set.



**NOTE:** All documentation might be upgraded over time. All upgraded documentation will be available at the same URLs specified in this guide.

#### **General PlugLAN documentation**

- PlugLAN Site Survey Questionnaire http://www.asokausa.com/support/pluglan\_survey.pdf
- PlugLAN Family Overview http://www.asokausa.com/support/pluglan\_overview.pdf
- PlugLAN Troubleshooting Guide http://www.asokausa.com/support/pluglan\_troubleshooting.pdf

#### **Gateway documentation**

- PlugLAN 8950 Gateway Quick Start Guide http://www.asokausa.com/support/pluglan\_gateway\_qsg.pdf
- PlugLAN 8950 Gateway Installation and User's Guide http://www.asokausa.com/support/pluglan\_gateway\_guide.pdf

#### SmartClip Injection Kit documentation

- PlugLAN 1300 SmartClip Injection Kit Quick Start Guide http://www.asokausa.com/support/smartclip\_qsg.pdf
- PlugLAN 1300 SmartClip Injection Kit Installation and User's Guide http://www.asokausa.com/support/smartclip\_guide.pdf

#### **Gateway Expansion Adapter documentation**

- PlugLAN 1350 Gateway Expansion Adapter Quick Start Guide http://www.asokausa.com/support/pluglan\_1350\_qsg.pdf
- PlugLAN 1350 Gateway Expansion Adapter Installation and User's Guide http://www.asokausa.com/support/pluglan\_1350\_guide.pdf

#### **Customer Premises Equipment documentation**

- PlugLAN 8250 SmarTAP Quick Start Guide http://www.asokausa.com/support/pluglan\_8250\_qsg.pdf
- PlugLAN 8250 SmarTAP Installation and User's Guide http://www.asokausa.com/support/pluglan\_8250\_guide.pdf
- PlugLAN 8350 Wireless SmarTAP Quick Start Guide http://www.asokausa.com/support/pluglan\_8350\_qsg.pdf
- PlugLAN 8350 Wireless SmarTAP Installation and User's Guide http://www.asokausa.com/support/pluglan\_8350\_guide.pdf
- PlugLAN 8550 Wireless SmartPoint Quick Start Guide http://www.asokausa.com/support/pluglan\_8550\_qsg.pdf
- PlugLAN 8550 Wireless SmartPoint Installation and User's Guide http://www.asokausa.com/support/pluglan\_8550\_guide.pdf
- PlugLAN 8650 SmartBridge Quick Start Guide http://www.asokausa.com/support/pluglan\_8650\_qsg.pdf
- PlugLAN 8650 SmartBridge Installation and User's Guide http://www.asokausa.com/support/pluglan\_8650\_guide.pdf

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# 1

# **Simple Installation**

Congratulations on your purchase of the PlugLAN 8350 Wireless SmarTAP.

One of the major hassles in setting up a network is installing, pulling, or rerouting Ethernet cables. Your PlugLAN 8350 Wireless SmarTAP is a plug-and-play solution that uses HomePlug Powerline technology to create a wireless hotspot simply by plugging it into a PlugLAN-enabled power outlet. Data can be delivered quickly and securely at speeds up to 85 Mbps.

The PlugLAN 8350 Wireless SmarTAP combines robust performance with advanced security and network management functionalities. Built-in data encryption and VLAN capabilities ensure security and privacy to every client. Each device can be controlled either independently or by using Asoka's PowerView<sup>™</sup> management software.

These intelligent powerline bridging devices are fully plug-andplay, giving the PlugLAN 8350 Wireless SmarTAP the perfect combination of functionality and convenience

Your PlugLAN 8350 Wireless SmarTAP has four light-emitting diode (LED) indicators and one RJ-45 Ethernet port.

- The LEDs show the connection status as well as other information, allowing you to identify network problems.
- The RJ-45 Ethernet port can be used to connect your PlugLAN 8350 Wireless SmarTAP to a device in your network.

Please take a few minutes to read this chapter to install your PlugLAN 8350 Wireless SmarTAP.



Figure 1-1: PlugLAN 8350 Wireless SmarTAP

### Package Contents

After receiving your PlugLAN 8350 Wireless SmarTAP, perform the following steps to ensure that your contents arrived safely.

- 1. Inspect the outer shipping container for damage during shipping. Report any sign of damage to the appropriate shipping carrier.
- 2. Remove the contents from the shipping container and check for the following items:
  - One PlugLAN 8350 Wireless SmarTAP
  - One Ethernet cable
  - One CD containing user documentation (this User's Guide)
  - PlugLAN 8350 Wireless SmarTAP Quick Start Guide
  - Warranty and Support Information Card
- 3. Inspect your PlugLAN 8350 Wireless SmarTAP thoroughly. If you see any signs of damage, contact the shipping carrier.

# How the PlugLAN 8350 Wireless SmarTAP Fits into Your Network

The PlugLAN 8350 Wireless SmarTAP plugs into an ordinary power outlet to extend a cable or DSL broadband connection or existing Ethernet (LAN) network to any electrical outlet in any room. Your PlugLAN 8350 Wireless SmarTAP is compatible with all TCP/IP-based operating systems and requires no new cabling or drivers to be installed. All that is required is a compatible network-interface card (NIC) installed in your computers. This makes your PlugLAN 8350 Wireless SmarTAP compatible with any device including Microsoft Windows, Apple Macintosh, and Unix machines.

Devices can communicate with each other quickly and securely at high data transfer rates (additional Turbo Powerline devices such as the Asoka<sup>®</sup> PlugLAN 8950 Gateway may be necessary — please contact Asoka for more information).

For security, your PlugLAN 8350 Wireless SmarTAP is equipped with 56-bit Data Encryption Standard (DES) encryption. The combination of the privacy of the home power grid plus encryption makes your PlugLAN 8350 Wireless SmarTAP significantly more secure than wireless products.

Figure 1-2 shows an example of how your PlugLAN 8350 Wireless SmarTAP fits into your network.

Figure 1-2: Example of How Your PlugLAN 8350 Wireless SmarTAP Fits into Your Network <<need this figure??>>

Simple Installation

# **Connecting the PlugLAN 8350 Wireless SmarTAP**

To connect to your PlugLAN 8350 Wireless SmarTAP:

- 1. Remove the outlet cover plate for the outlet where you intend to install the PlugLAN 8350 Wireless SmarTAP.
- 2. Insert the PlugLAN 8350 Wireless SmarTAP prongs securely into the upper outlet. The LEDs on the top of your PlugLAN 8350 Wireless SmarTAP show status information (see Appendix B Components).
- 3. Install the tamper-proof screw(s) included with your PlugLAN 8350 Wireless SmarTAP.



**NOTE:** Do not connect the PlugLAN 8350 Wireless SmarTAP to a power strip, extension cord, uninterruptible power supply, or surge protector. This may prevent the unit from working property or degrade network performance.

4. Configure your computer's wireless card to use one of the four SSIDs used by your PlugLAN 8350 Wireless SmarTAP. By default, all fours SSIDs are active and have the settings Asoka1, Asoka2, Asoka3, and Asoka4. For more information, see Configuring Basic Settings on page 2-12.



**Congratulations!** You have now completed the hardware installation procedures for your PlugLAN 8350 Wireless SmarTAP. Your PlugLAN 8350 Wireless SmarTAP is now ready for use.



**NOTE:** In the unlikely event you encounter a problem, please refer to Chapter 3 for troubleshooting suggestions.

2

# Advanced Configuration (Expert Users Only)

After you install the PlugLAN 8350 Wireless SmarTAP, use the information in this chapter to configure the SmartBridge. Topics in this chapter are:

- **Launching the Web Management Utility on page 2-2**
- Understanding the Pages in the Web Management Utility on page 2-3
- Using the System Menu on page 2-4
- Using the Wireless Menu on page 2-12
- Using the IP Address Menu on page 2-17
- □ Using the Powerline Menu on page 2-18
- Using the Advanced Menu on page 2-19



#### WARNING! This chapter is for expert users who

**understand networking concepts and terminology.** You do not need to perform these activities to use your PlugLAN 8350 Wireless SmarTAP, nor should you undertake these procedures if you are a novice user. Performing the hardware installation described in Chapter 1, Simple Installation is all that is required to start using your PlugLAN 8350 Wireless SmarTAP.

# Launching the Web Management Utility

Your PlugLAN 8350 Wireless SmarTAP provides a Web-based Web Management utility for performing advanced configuration activities. After you install your PlugLAN 8350 Wireless SmarTAP, use the following procedure to launch the Web Management utility.



**NOTE:** Although the Web Management utility is Web based, you may want to connect your computer to the Ethernet port on your PlugLAN 8350 Wireless SmarTAP instead of performing advanced configuration activities through your wireless network. For information about making this connection, see Connecting the PlugLAN 8350 Wireless SmarTAP on page 1-4.

1. Start your Web browser and point it to the following default IP address: 192.168.1.253. The Welcome page in Figure 2-1 appears, with your cursor in the User ID field.



**NOTE:** To connect to the Web Management utility, your PC's IP address must be on the same subnet (192.168.1.xxx, where xxx is a number from 1 to 253) as the PlugLAN 8350 Wireless SmarTAP.



#### Figure 2-1: Welcome Page

2. Enter your user ID and password in the appropriate fields. The default user ID is admin and the default case-sensitive password is welcome.

NOTE: For security, every password character appears as a bullet (•). For additional security, you can change the password used to log in to the Web Management utility (see Changing the Login Password and Auto-Logout Time on page 2-5).

3. Click the Login button on the Welcome page. The System Details page appears. For more information about this page, see Viewing System Information on page 2-4.



**NOTE:** By default, a login session lasts 3 minutes, after which the session ends automatically. To change the auto-logout time, see Changing the Auto-Logout Time on page 2-6.

# **Understanding the Pages in the Web Management Utility**

The PlugLAN 8350 Wireless SmarTAP Web Management utility provides an intuitive user interface for viewing and changing configuration settings.

- The quick links panel appears at the top-right side on every page. It
  provides buttons for returning to the Home page (System Details page),
  viewing a glossary of terms that appear in the Web Management utility,
  viewing help about using the Web Management utility, and logging out of
  the Web Management utility.
- The menu bar appears below the Quick Links panel on every page. It provides links for accessing each of the five menus in the Web Management utility. When you go to a menu, the pages associated with that menu appear in the navigation panel.
- The navigation panel appears below the menu bar on the left side of the Web Management utility. The navigation panel shows the pages in each menu of the Web Management utility.
- The main panel is the viewing area on the page. This is where you view and change your PlugLAN 8350 Wireless SmarTAP's configuration settings.



Figure 2-2: Areas in the Web Management Utility Screen

# **Using the System Menu**

The System menu lets you perform the following system activities:

- View the status of your PlugLAN 8350 Wireless SmarTAP. See page 2-4.
- Change the login password and auto-logout time. See page 2-5.
- View the system log entries. See page 2-6.
- Reboot your PlugLAN 8350 Wireless SmarTAP. See page 2-7
- Remove any default configuration settings you changed and return to the original factory default settings. See page page 2-8.
- Backup the configuration settings for a future restore as a safety precaution. See page 2-9.
- Update the firmware or configure the PlugLAN 8350 Wireless SmarTAP to access an FTP server. See page 2-11.

#### **Viewing System Information**

The System Details page is a read-only screen that shows the status of your PlugLAN 8350 Wireless SmarTAP.

This page is the first one to appear when you log in to the PlugLAN 8350 Wireless SmarTAP Web Management utility. If you are already in the System menu, click **Details** in the navigation panel to display this page.

	SYSTEM   WIRELESS   IP ADDRESS   PO	SWERLINE   ADVANCED
IORE INFORMATION	PlugLAN 8350	
Details Password	System Details The System Details screen contains informat	ion about the status of the PL8350-WAP
Reboot System	Device Information	
Pactory Reset Backup Settings Restore Backup Update Firmware	Model Number	PL8350-WAP
	Serial Number	SAY080227020
	Wi-Fi Card Type	AR2413
	Hardware Version	1.01
	Firmware Version	1.20
	BootLoader Version	1.01
	Sim Firmware Version	INT5500CS MAC-1-6-1606-123-20060302
	System Uptime	0 days 1 hours 12 minutes 15 seconds
	Device MAC Address	00:13:c1:00:cf:1a
	PLC MAC Address	00:13:c1:00:cf:16
	IP Address	192.168.1.254
	Subnet Mask	255.255.255.0
	Downlink Bandwidth Control	Full Speed
	Uplink Bandwidth Control	Full Speed
	VLAN State	NO
	QoS Setting Type	Fixed QoS

Figure 2-3: System Details Page

#### **Changing the Login Password and Auto-Logout Time**

Using the System Password page, you can change the password used to log in to the Web Management utility. This page also lets you change the auto-logout time. To display this page, click **System** in the Web Management utility menu bar and then click **Password** in the navigation panel.

$\mathbf{\hat{\omega}}$	⊕   Home   Gloss ary   Help   Logout
	SYSTEM   WIRELESS   IP ADDRESS   POWERLINE   ADVANCED
MORE INFORMATION	é)- PlugLAN 8350
Details Password Logs Reboot System Pactory Reset	System Password To change your default login password, please enter the current password and then the new password in the provided fields. Click Apply to accept changes.
■ Backup Settings # Restore Backup ■ Update Firmware	Enter Current Password: (0-16 Characters) Enter New Password: (0-16 Characters) Confirm New Password: (0-16 Characters)
	Auto-Logout Time: 00 Seconds (60-3600 seconds)

Figure 2-4: System Password Page

#### Changing the Login Password

The default password is **welcome**. For security, we recommend that you change this passwords.

To change the login password, use the following procedure.



**NOTE:** For security, each password character you type in this procedure appears as a bullet (•).

- 1. From the System Password page, click in the Enter Current Password field and enter the current login password.
- 2. Click in the Enter New Password field and enter the new login password you want to use. The password can consist of alpha and/or numeric characters and can be from 0 to 16 characters long.
- 3. Click in the **Confirm New Password** field and enter the same login password you entered in step 4.



**NOTE:** Passwords are case sensitive. This means, for example, that the Web Management utility considers **zeus** and **Zeus** as different passwords. Be sure to type the correct upper- and lower-case characters when confirming your password here and when logging in to the Web Management utility.

4. Click the Apply button below the Confirm Your New Password field.

#### **Changing the Auto-Logout Time**

Auto-logout time is the number of minutes that elapse since logging in to the Web Management utility before a user session expires automatically. The auto-logout time is specified in seconds. The default setting is 180 seconds (3 minutes).

To change the auto-logout time, use the following procedure.

- 1. From the System Password page, click in Auto-Logout Time field.
- 2. Delete the current value shown and enter a new value from 60 (1 minute) to 3600 (60 minutes).
- 3. Click the Apply button below the Auto-Logout Time field.

#### **Viewing System Logs**

Your PlugLAN 8350 Wireless SmarTAP keeps a system log that records potential security threats and system information. Using the System Logs page, you can view the log. To display this page, click **System** in the Web Management utility menu bar and then click **Logs** in the navigation panel.

Each row in the log represents an event, and includes the date and time of the event and a brief description of the event. The most current entry in the log appears at the bottom of the log.

If desired, you can copy log entries by selecting the entries you want to copy, pressing Ctrl + C or right-clicking and selecting **Copy** from the pop-up menu, and then pasting them into another application using the Paste tools in the other program.

The following buttons appear at the bottom of the System Logs page:

- Save lets you save the log and email it if desired.
- Clear removes the current entries in the log.
- **Refresh** updates the information shown in the page.

	🚊   Home   Glossary   Help	Lo
E INFORMATION	OP-PlugLAN 8350	
Details Assword Goto System Factory Reset Dackup Settings Restore Backup Update Firmware	System Logs This page allows user to view or download activity logs for the PL9350-WAP.	
	Log File 3w 100 0000 (none) spikod zehod 3w 100 0000 (none) damos a fe spi 2 sehtog 81 44, consule (dev/onnole: "(bar)/ah 3m 100 000 (of none) user andre system 3m 100 000 23 (none) user indo system; Web server is opened 3m 101 1215 (none) user indo system; Web server is opened 3m 101 1215 (none) user indo system; Web server is opened	
	Save Claw Referch	



Advanced Configuration (Expert Users Only)

#### Rebooting Your PlugLAN 8350 Wireless SmarTAP

Using the Reset page, you can restart your PlugLAN 8350 Wireless SmarTAP. To display this page, click **System** in the Web Management utility menu bar and then click **Reboot System** in the navigation panel.



Figure 2-6: Reset Page

To reboot your PlugLAN 8350 Wireless SmarTAP, use the following procedure:



**NOTE:** Rebooting does not change or delete any configuration settings you changed. Therefore, if you changed any default configuration values, the changed values will be preserved when you reset your PlugLAN 8350 Wireless SmarTAP.

- 1. From the Reboot System page, click the Reboot button.
- 2. When the message in Figure 2-7 appears, click OK to reset your PlugLAN 8350 Wireless SmarTAP (or click Cancel to not reset it).



Figure 2-7: Reboot Message

Advanced Configuration (Expert Users Only)

#### **Returning to Factory Default Settings**

Using the Factory Default Setting page, you can return your PlugLAN 8350 Wireless SmarTAP to the factory default configuration that was in effect when you first unpacked the device. To display this page, click **System** in the Web Management utility menu bar and then click **Factory Reset** in the navigation panel

	SYSTEM   WIRELESS   IP ADDRESS   POWERLINE   ADVANCED
MORE INFORMATION	Ø- PlugLAN 8350
Details     Password     Logs     Reboot System     Factory Reset     Backup Settings     Restore Backup     Indate Eirmware	Factory Default Settings Using this option will reset all of your current settings in the PL0350-WAP back to the factory default settings. It is recommended that you backup your settings before you restore all of the defaults. To restore the factory default settings, click the Restore Default button below.
	(Factory Default

Figure 2-8: Factory Default Settings Page

To return your PlugLAN 8350 Wireless SmarTAP to factory default settings:

- 1. From the Factory Default Settings page, click the Factory Default button.
- When the message in Figure 2-9 appears, click OK to return your PlugLAN 8350 Wireless SmarTAP to its factory default configuration (or click Cancel to keep its current configuration). If you returned to the factory default settings, a message tells you that your PlugLAN 8350 Wireless SmarTAP is rebooting. After the reboot completes, the Welcome page appears.



**NOTE:** To log in to the Web Management utility after returning to the factory default settings, use the default user ID **admin** and the default case-sensitive password **welcome** to log in to the Web Management utility.



Figure 2-9: Factory Default Message

### Backing Up Configuration Settings

The configuration settings for your PlugLAN 8350 Wireless SmarTAP are recorded in a binary file called **config.bin**. Using the Backup Settings page, you can save this file to a location for future restore and then restore the settings when necessary. To display this page, click **System** in the Web Management utility menu bar and then click **Backup Settings** in the navigation panel.

	🔒   Home   Glossary   Help   Logout
$\mathbf{\hat{k}}$	
	SYSTEM   WIRELESS   IP ADDRESS   POWERLINE   ADVANCED
MORE INFORMATION	ۇ- PlugLAN 8350
Details Password Logs Reboot System Factory Reset	Backup Settings This feature will allow you to make a backup copy of your current configuration. This will allow you to restore it later if your settings are lost or changed. It is recommended that you backup your current configuration before updating your firmware or resetting your device to factory defaults.
<ul> <li>Backup Settings</li> <li>Restore Backup</li> <li>Update Firmware</li> </ul>	<u></u> Зауе
	Convrict @ 2001-2007 Asoka USA Corporation All Rights Reserved
	copyright & cour room conjunction for highly field four

Figure 2-10: Backup Settings Page

To save the file containing the configuration settings:

- 1. Click the Save button on the Backup Settings page.
- 2. When the dialog box in Figure 2-11 appears, be sure Save to Disk is selected and click Save to save the config.bin file. The Downloads box shows the location to where the file was downloaded. You can click the name of this folder in the Downloads box to open the folder.
- 3. To open the file, use the **Open** link in the Downloads box. To remove the file, click the **Clean Up** button or the **Remove** link in the Downloads box.



**NOTE:** If you save the configuration settings, you can use the procedure under Restoring Backup Settings below to restore them if necessary.

Opening config.bin	×
You have chosen to open	
ा <b>config.bin</b> which is a: Binary File from: http://192.168.1.254	
What should Firefox do with this file?	٦
O Open with Browse	
Save to Disk	
Do this automatically for files like this from now on.	
OK Cancel	

Figure 2-11: File Download Dialog Box

Advanced Configuration (Expert Users Only)

#### **Restoring Backup Settings**

If you used the procedure under Backing Up Configuration Settings on page 2-9 to back up the configuration settings for your PlugLAN 8350 Wireless SmarTAP, you can use the **Restore Backup** page to restore the backup settings if necessary (for example, if they become corrupt). To display this page, click **System** in the Web Management utility menu bar and then click **Restore Backup** in the navigation panel.

	🗟   Home   Glossary   Help   Log
$\mathbf{A}$	
	SYSTEM   WIRELESS   IP ADDRESS   POWERLINE   ADVANCED
MORE INFORMATION	- PlugLAN 8350
Details Dassword Logs Keboot System Factory Reset Restore Backup Update Firmware	Restore Backup This option will allow you to restore a previously saved configuration.
	Biowie
1	
	Copyright @ 2001~2007 Asoka USA Corporation. All Rights Reserved.

Figure 2-12: Restore Backup Page

To restore settings from a previous binary configuration file you backed up:

- 1. Click the Browse button on the Backup Settings page.
- 2. When the Choose file dialog box appears, locate the binary configuration file, select it, and click the **Open** button. The name of the file appears in the **Browse** field.
- 3. Click the **Restore** button. The precautionary message in Figure 2-13 appears, warning that any default settings you changed will be lost.

Windows Internet Explorer	X
WARNING: All Your Settings Will be Lost. Are You Sure you want to do	this?
OK Cancel	

Figure 2-13: Restore Warning Message

4. Click the OK button to restore the settings (or click Cancel to retain the current settings). If you restored the configuration settings, a message tells you that your PlugLAN 8350 Wireless SmarTAP is resetting. After the reset completes, the Welcome page appears.

 $\triangle$ 

**NOTE:** To log in to the Web Management utility after restoring settings, use the user ID and default case-sensitive password associated with the configuration settings you restored.

#### **Updating Firmware**

From time to time, firmware upgrades will be made available that contain feature improvements. Using the Update Firmware page, you can update the firmware of your PlugLAN 8350 Wireless SmarTAP and its MAC firmware. To display this page, click **System** in the Web Management utility menu bar and then click **Update Firmware** in the navigation panel.

	SYSTEM   WIRLESS   IP ADDRESS   POWERLINE   ADVANCED
ORE INFORMATION	©- PlugLAN 8350 □
Details Depasword Deps Robot System Factory Reset Dackup Settings Restore Backup Update Firmware	Update Firmware
	From time to time, Asoka may release new versions of the WAP-8350's firmware. Firmware updates contain feature improvements and fixes to problems that may have existed. You may <b>download</b> the firmware from the <b>Asoka web site</b> . You can update your WAP-0350's firmware to the latest version from this page.
	Current Firmware Version: 1.20 Firmware Date: 2008-3-4 Please select path of firmware to be updated: Bowne.
	Update MAC Firmware
	Please select a file MAC firmware to upgrade:
	Update

Figure 2-14: Upgrade Firmware Page

To update firmware:

- 1. Go to the Asoka Web site at www.asokausa.com and download the latest firmware file. Remember the location where you download the file, because you will select that file later in this procedure.
- 2. On the Update Firmware page, click the **Browse** button under either **Update Firmware** (to update the firmware for your PlugLAN 8350 Wireless SmarTAP) or under **Update MAC Firmware** (to update the MAC firmware for your PlugLAN 8350 Wireless SmarTAP).



CAUTION! If you are not sure which firmware file you downloaded, please contact Asoka Technical Support to verify before you upgrade the firmware.

- 3. When the Choose file dialog box appears, locate the firmware file you downloaded, select it, and click the **Open** button. The name of the file appears in the **Browse** field, and the current firmware version and date appear above the field.
- 4. Click the **Update** button. The precautionary message in Figure 2-15 appears.

2–11



Figure 2-15: Firmware Upgrade Warning Message

- 5. Click the OK button to proceed with the upgrade (or click Cancel to cancel the upgrade). If you clicked OK, one or more messages indicate that your PlugLAN 8350 Wireless SmarTAP may not respond for up to one minute as the firmware is upgraded and the device resets.
- 6. Click **OK** to continue. When the firmware upgrade and reset are complete, the System Details page appears automatically.



**NOTE:** If the System Details page does not appear, enter the PlugLAN 8350 Wireless SmarTAP IP address (default is 192.168.1.253) in your Web browser to access the Web Management utility.

## **Using the Wireless Menu**

The wireless menu in the Web Management utility lets you perform the

following activities:

- Configure basic wireless settings including channel ID and ESSID. See page 2-14.
- Configure advanced wireless settings. See page 2-15.
- Configure security settings. See page 2-17

#### **Configuring Basic Settings**

The Basic Settings page is the first one to appear when you access the **Wireless** menu. If you are in a different page in the Wireless menu already, click Basic Settings in the navigation panel to display this page. Table 2-1 describes the fields on this page.

	SYSTEM   WIRELESS   IP ADDRESS   POWERLINE   ADVANCED
Basic Settings     Advanced Settings     Security	Basic Settings This page allows user to configure wireless basic settings including Channel ID, ESSID etc.
	Current AP No: II AP W Wireless Status: Wireless M Block ESSID Broadcasting : Enable ESSID: Product III

Figure 2-16: Basic Settings Page

Field	Description
Current AP No	Determines which wireless network you are configuring. Choices are: • #1 AP ( <i>default</i> ) • #2 AP • #3 AP • #4 AP
Wireless Status	<ul> <li>Lets you enable or disable the PlugLAN 8350</li> <li>Wireless SmarTAP's wireless operation.</li> <li>Wireless AP = wireless operation enabled. (<i>default</i>)</li> <li>Closed = wireless operation disabled.</li> </ul>
Block ESSID Broadcasting	<ul> <li>Lets you hide the wireless ESSID sent in reply to a broadcasting request.</li> <li>Checked = blocks broadcasting.</li> <li>Unchecked = allows broadcasting. (<i>default</i>)</li> </ul>
ESSID	Enter a name for the wireless network (up to 32 alphanumeric characters). Any device you want to participate in a particular wireless network will need to use this SSID for that network. There are four default SSIDs: Asoka1, Asoka2, Asoka3, and Asoka4.
Apply Button	After you enter your configuration settings, click this button to apply the settings.

 Table 2-1: Basic Settings Page

#### **Configuring Advanced Settings**

The Advanced Settings page lets you configure advanced wireless settings such as Transmit Preamble Type, Beacon Interval, RTS Threshold and Fragmentation Threshold.

To display this page click **Wireless** in the Web Management utility menu bar and then click **Advanced Settings** in the navigation panel. Table 2-2 on page 2-14 describes the fields on this page.

	SYSTEM   WIRELESS   IP ADDRESS   POWERLINE   ADVANCED
MORE INFORMATION	©- PlugLAN 8350
Basic Settings	Advanced Settings
Advanced Settings Security	This page allow user to configure the advanced settings for the PL8350-WAP. This should only be done by advanced users.
	Region: ONorth American OEurope/China OJapan
	Channel ID: Channel 1 💌
	Operation Mode: b/g mixed mode
	Tx Preamble Type: Long preamable 🐱
	Beacon Interval: 100
	RTS: Threshold: 2312 (default:1-2246)
	Fragmentation Threshold: 2312 (def wir 255-2346)
	Acoly

Figure 2-17: Advanced Settings Page

Field	Description
Region	Determines the location where the PlugLAN 8350 Wireless SmarTAP is located. Choice are: • North American • Europe/China • Japan
Channel ID	Determines the operating frequency the PlugLAN 8350 Wireless SmarTAP uses. You should not need to change this setting, unless you notice interference from a nearby access point. The default is <b>Channel 1</b> .
Operation Mode	<ul> <li>Determines the data communications protocol that the PlugLAN 8350 Wireless SmarTAP uses. Choices are:</li> <li>802.11g only = PlugLAN 8350 Wireless SmarTAP communicates with 801.11g wireless devices only.</li> <li>802.11b only = PlugLAN 8350 Wireless SmarTAP communicates with 801.11b wireless devices only.</li> <li>b/g mixed mode = provides backward compatibility with 802.11b and 802.11g devices. (default)</li> </ul>
Tx Preamble Type	<ul> <li>Lets you limit the packet size during data transmission. Choices are:</li> <li>Short preamble</li> <li>Long preamble (<i>default</i>)</li> <li>Auto</li> </ul>

#### Table 2-2: Advanced Settings Page

Field	Description
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 selecting a value that is too low or too high value is not recommended. The default is <b>100</b> .
RTS Threshold	Minimizes collisions among hidden stations. You can set the RTS Threshold value from 1 to 2346 bytes. The default is <b>2312</b> .
Fragmentation Threshold	Determines the size of the packet transmitted in fragments. We recommend you fragment the packet for poor-quality links. You can set the Fragmentation Threshold value from 256 to 2346 bytes. The default is <b>2312</b> .
Apply Button	After you enter your configuration settings, click this button to apply the settings.

Table 2-2: Advanced Settings Page (Continued)

#### **Configuring Security Settings**

The Security page lets you configure security settings for the wireless network.

To display this page click **Wireless** in the Web Management utility menu bar and then click **Security** in the navigation panel. Table 2-3 on page 2-16 describes the fields on this page.

	SYSTEM   WIRELESS   IP ADDRESS   POWERLINE   ADVANCED	
ORE INFORMATION	ð)- PlugLAN 8350	
Basic Settings	Security	
dvanced Settings	This page allows the user to set wireless security settings for the PL83SD-WAP. This should only be done by advanced users.	
Joculity .	Current AP No: III AP	
	Encryption Type: ONONE OWER OWPA	
	4000	

Figure 2-18: Security Page

Field	Description
Current AP No	Select the access point with which the PlugLAN 8550 Wireless SmartPoint will communicate. Choices are: • #1 AP ( <i>default</i> ) • #2 AP • #3 AP • #4 AP
Encryption Type	<ul> <li>Select the type of encryption you want to use on the wireless network.</li> <li>Choices are: <ul> <li>None = no encryption is used. (<i>default</i>)</li> <li>WEP = use WEP encryption. Select one of four WEP keys from the subsequent screen that appears.</li> <li>WPA = use WPA encryption. Select a WPA key from the subsequent screen that appears.</li> <li>WPA2 = use WPA2 encryption. Select a WPA2 key from the subsequent screen that appears.</li> </ul> </li> </ul>
Apply Button	After you enter your configuration settings, click this button to apply the settings.

#### Table 2-3: Security Page

## Using the IP Address Menu

The IP Address menu lets you set or change the IP address for the device, User can use this IP address to manage your PlugLAN 8350 Wireless SmarTAP. To display this page, click **IP Address** in the Web Management utility menu bar. Table 2-4 describes the fields on this page.

	⊜   Heme   Glossary   Help   Logou
<u>v</u>	SYSTEM   WIRELESS   IP ADDRESS   POWERLINE   ADVANCED
MORE INFORMATION	PlugLAN 8350 IP Address This page allows user to change the management IP address of the PL0350-WAP. Please change this with caution.
	<ul> <li>○ Obtain an IP address automatically</li> <li>⊙ Use the following IP address:</li> <li>IP Address:</li> <li>IP Address:</li> <li>IP Subnet Mask:</li> <li>IP Gateway:</li> <li>IP IP I</li></ul>
	Copyright © 2001~2007 Asoka USA Corporation. All Rights Reserved.

Figure 2-19: IP Address Page

Field	Description
Obtain an IP address automatically	Select this option if the PlugLAN 8350 Wireless SmarTAP will obtain its IP address automatically (for example, from a DHCP server).
Use the following IP address	Select this option if the PlugLAN 8350 Wireless SmarTAP will obtain its IP address manually from the settings you specify in the following three fields.
IP Address	Enter the IP address for the PlugLAN 8350 Wireless SmarTAP.
Subnet Mask	Enter the subnet mask for the PlugLAN 8350 Wireless SmarTAP.
Gateway IP Address	Enter the gateway IP address for the PlugLAN 8350 Wireless SmarTAP.
Apply Button	After you enter your configuration settings, click this button to apply the settings.

#### Table 2-4: IP Address Page

## **Using the Powerline Menu**

Using the Powerline Device Scan page of the Web Management utility, you can scan the devices on your Powerline network and view or change the Powerline network password.

- 1. Start the Web Management utility (see Launching the Web Management Utility on page 2-2).
- 2. Click **Powerline** in the Web Management utility menu bar. The PowerLine Device Scan page appears (see Figure 2-20).

	SYSTEM   WIRELESS   IP AD	DRESS   POWERLINE   ADVANC	ED	
AORE INFORMATION	0- PlugLAN 8350			
Devices Scan	PowerLine Device Sc	an		
NEK Configuration	This page shows all devices within the Powerline network sharing the same Network Encryption Key (NEK)			
		Scan Devices in Powerline	(Scan Now )	
		Scan Devices in Powerline Scanned Devices	Scan Now MAC Address	

Figure 2-20: Powerline Device Scan Page

#### **Scanning Powerline Devices**

The Powerline Device Scan page shows all Powerline devices on your Powerline network. It also includes a **Scan Now** button that you can click to scan the Powerline devices on your Powerline network. When you click this button, the page reflects any Powerline devices that have been added to or removed from the Powerline network.

# Changing the Powerline Network Password (Network Encryption Key – NEK)

Using the Powerline Network Password page, you can change the password for your Powerline network. The default password is **PlugLAN**.



**NOTE:** Your PlugLAN 8350 Wireless SmarTAP will only work correctly when its Network Password corresponds to the PlugLAN Gateway or Expansion Adapter on your network. Changing this setting could cause your PlugLAN 8350 Wireless SmarTAP to stop functioning.

To change the Powerline network password:

1. Using the Web Management utility, click **Powerline** in the Web Management utility menu bar. Then click **NEK Configuration** in the navigation panel. The Powerline Network Password appears (see Figure 2-21 on page 2-19).



Figure 2-21: Powerline Network Password

- 2. In the **Powerline Network Password** field, enter the case-sensitive Powerline network password. The password can be from 4 to 18 alphanumeric characters long.
- 3. Click the Apply button.

## Using the Advanced Menu

The Advanced menu lets you perform the following activities:

- Configure a virtual LAN. See page 2-19.
- Configure packet priority. See page 2-20.
- Configure bandwidth control. See page 2-21.
- Configure SNMP settings. See page 2-22.

#### **Configuring Virtual LAN Settings**

The Virtual LAN (VLAN) page is the first one to appear when you access the Advanced menu. If you are in a different page in the Advanced menu already, click VLAN Configuration in the navigation panel to display this page.

$\mathbf{\hat{\mathbf{A}}}$	∰   Home   Glossary   Help   Logout
	SYSTEM   WIRELESS   IP ADDRESS   POWERLINE   ADVANCED
MORE INFORMATION	O- PlugLAN 8350
VLAN Configuration     Packet priority     Bandwidth Control     SNMP Configuration	VLAN Configuration This page allow user Enable/Disable VLAN feature and set VLAN ID for the device.  Enable VLAN: Set VLAN Type BID: (1~4094)
	Copyright © 2001–2007 Asoka USA Corporation. All Rights Reserved.

Figure 2-22: VLAN Configuration Page

A VLAN is an administrative grouping of network devices that is logically segmented, by functions, project teams, or applications rather than a physical or geographical basis. VLANs provide the segmentation services traditionally provided by routers in LAN configurations. For example, all

workstations and servers used by a particular workgroup team can be connected to the same VLAN, regardless of their physical connections to the network. In this way, you can use VLANs to reconfigure the network through software rather than physically unplugging and moving devices or wires.

Table 2-5 describes the fields on this page.

Field	Description
Enable VLAN	Lets you enable (check) or disable (uncheck) a VLAN. By default, VLAN is disabled. If you enable VLAN, the SmartBridge reboots, but retains any custom settings you specified. Then make sure all other devices on the network have VLAN enabled using the configuration programs for those devices.
Set VLAN Type & ID	Enter a VLAN value from 1 to 4094. Default value is 1.
Apply Button	After you enter your configuration settings, click this button to apply the settings.

Table 2-5: VLAN Configuration Page

### **Configuring Packet Priority Settings (QoS)**

The Packet Priority page lets you control the priority of the packets and priority settings. To display the Packet Priority page, click **Advanced** in the Web Management utility menu bar and then click **Packet priority** in the navigation panel. Table 2-6 on page 2-21 describes the fields on this page.

4	⊕   Mome   Glossary   Help   Logout
	SYSTEM   WIRELESS   IP ADDRESS   POWERLINE   ADVANCED
MORE INFORMATION	٥- PlugLAN 8350
<ul> <li>VLAN Configuration</li> <li>Packet priority</li> <li>Bandwidth Control</li> <li>SNMP Configuration</li> </ul>	O ToS Based QoS O Fixed QoS 802.1p Priority Setting: Detault R Apply
	Copyright @ 2001-2007 Asoka USA Corporation. All Rights Reserved.

Figure 2-23: Packet Priority Page

Field	Description
ToS Based QoS / Fixed QoS	Configure packet priority based on Type of Service (ToS) or Quality of Service (QoS).
802.1p Priority Setting	<ul> <li>Select the 802.1p priority setting to be used. Choices are:</li> <li>Default = use this setting when none of the other settings is suitable. (<i>default</i>)</li> <li>Background</li> <li>Best Effort</li> <li>Excellent Effort</li> <li>Control Load</li> <li>Video or Audio</li> <li>Voice</li> <li>Network Control</li> </ul>
Apply Button	After you enter your configuration settings, click this button to apply the settings.

Table 2-6: Packet Priority Page

### Configuring Bandwidth Control Settings

The Bandwidth Control page lets you set the upload and download speeds to a fixed speed. To display this page, click Advanced in the Web Management utility menu bar and then click Bandwidth Control in the navigation panel. Table 2-7 on page 2-22 describes the fields on this page.

	👾   Mone   Glossary   Help   Logout
$\mathbf{Q}$	
	SYSTEM   WIRELESS   IP ADDRESS   POWERLINE   ADVANCED
MORE INFORMATION	ۇ- PlugLAN 8350
U VLAN Configuration Deaket priority B Bandwidth Control D SNMP Configuration	Bandwidth Control This page allow user limited the bandwidth of the device. Downlink Bandwidth Control: Full Speed  Uplink Bandwidth Control: Full Speed  Apply
	Copyright @ 2001~2007 Asoka USA Corporation. All Rights Reserved.

Figure 2-24: Bandwidth Control Page

Advanced Configuration (Expert Users Only)

Field	Description
Downlink Bandwidth Control	Select the download speed that the PlugLAN 8350 Wireless SmarTAP will use. Supported downlink speeds are: • Full Speed ( <i>default</i> ) • 64k bps • 128k bps • 128k bps • 512k bps • 512k bps • 1M bps • 4M bps • 10M bps
Uplink Bandwidth Control	Select the upload speed that the PlugLAN 8350 Wireless SmarTAP will use. Supported uplink speeds are: • Full Speed ( <i>default</i> ) • 64k bps • 128k bps • 128k bps • 512k bps • 1M bps • 4M bps • 10M bps
Apply Button	After you enter your configuration settings, click this button to apply the settings.

#### Table 2-7: Bandwidth Control Page

#### **Configuring SNMP Settings**

The SNMP Configuration page lets you set the configure the SNMP settings for your PlugLAN 8350 Wireless SmarTAP. SNMP is an application-layer protocol that provides a message format for communication between SNMP managers and agents. SNMP provides a standardized framework and a common language used for the monitoring and management of devices in a network. For more information, refer to the documentation that came with your SNMP application.

You specify SNMP settings from the SNMP Configuration page. To display this page, click **Advanced** in the Web Management utility menu bar and then click **SNMP Configuration** in the navigation panel. Table 2-8 on page 2-23 describes the fields on this page.

	😡 Home Glossary Help Logout
3	
	SYSTEM WIRELESS   IP-ADDRESS   POWERLINE   ADVANCED
MORE INFORMATION	PlugLAN 8350
VLAN Configuration Packet priority	SNMP Configuration This page allow user configure the SNMP agent of the device.
SNMP Configuration	SNMP Get Community: pole SNMP Set Community: pole SNMP Admin Community: PagAN Trap 1 D Address: D D D D Trap 2 (D Address: D D D D Trap 2 Community String: pole Trap 3 ID Address: D D D Trap 3 Community String: pole
6	Copyright © 2001∼2007 Asoka USA Corporation. All Rights Reserved.

Figure 2-25: SNMP Configuration Page

Field	Description
SNMP Get Community	Enter the correct Get Community.
SNMP Set Community	Enter the correct Set Community.
SNMP Admin Community	Enter the name of the admin community.
Trap 1 IP Address	Enter the IP address of the trap 1 destination device.
Trap 1 Community String	Enter the community string for trap 1.
Trap 2 IP Address	Enter the IP address of the trap 2 destination device.
Trap 2 Community String	Enter the community string for trap 2.
Trap 3 IP Address	Enter the IP address of the trap 3 destination device.
Trap 3 Community String	Enter the community string for trap 3.
Apply Button	After you enter your configuration settings, click this button to apply the settings.

Table	2-8:	SNMP	Configuration	Page
labio	- 0.	0.111	ooningen ation	· age

Advanced Configuration (Expert Users Only)

2–24

# 3

# Troubleshooting

This chapter contains troubleshooting suggestions you will find helpful in the unlikely event you encounter a problem with your PlugLAN 8350 Wireless SmarTAP.

Troubleshooting

# PlugLAN 8350 Wireless SmarTAP is Not Working

- 1. Confirm that the PlugLAN 8350 Wireless SmarTAP is plugged into a working AC outlet.
- 2. Plug a device that is known to work (such as a lamp) into the outlet to confirm that the outlet is working.
- 3. Verify that the AC outlet is not controlled by a wall switch, which can inadvertently remove power from the outlet.
- Verify that your PlugLAN 8350 Wireless SmarTAP has a properly configured password (NEK) that corresponds to the NEK of a PlugLAN Gateway or Expansion Adapter on your Powerline network (see Changing the Powerline Network Password (Network Encryption Key – NEK) on page 2-18).

## Wireless Connections are Not Working

- 1. Use the Web Management utility to confirm that the PlugLAN 8350 Wireless SmarTAP's wireless operation is enabled (see Configuring Basic Settings on page 2-12).
- 2. Verify that the ESSID configured for the PlugLAN 8350 Wireless SmarTAP is correct (see Configuring Basic Settings on page 2-12).
- 3. See whether an event was generated in the system log (see Viewing System Logs on page 2-6).

## You Cannot Access the Web Management Utility

- 1. If you changed the default IP address of the Web Management utility, enter the new IP address in your Web browser to access the Web Management utility and make sure your PC is on the same subnet as your PlugLAN 8350 Wireless SmarTAP.
- 2. If you restored your configuration from a binary configuration file (see Restoring Backup Settings on page 2-10), enter the IP address associated with the configuration file.

# Web Management Utility Times Out Too Quickly

By default, the Web Management utility remains open for 3 minutes. If you want to change this time interval, change the auto-logout time on the System Password page (see Changing the Auto-Logout Time on page 2-6).

# One of the LEDs Does Not Behave as Expected

- 1. Be sure you understand the normal behavior of the LED (see Appendix B).
- 2. Disconnect and reconnect the PlugLAN 8350 Wireless SmarTAP to the AC outlet.
- 3. If the problem continues, please contact Asoka Technical Support (see Technical Support on page iii).

## You Forgot the Login Password

- 1. The default case-sensitive password is **welcome**. You can change this password to one that is more meaningful using the Web Management utility. For more information, see Changing the Login Password on page 2-5.
- 2. If you forget the password, return the PlugLAN 8350 Wireless SmarTAP to its factory default settings (see Returning to Factory Default Settings on page 2-8).
- 3. Alternatively, you can use a thin object (such as a paper clip) to press the recessed Reset button on the bottom of the PlugLAN 8350 Wireless SmarTAP for at least 10 seconds. This switch is located to the left of the RJ-45 jack, as shown in Figure 3-1.

CAUTION! If you return the PlugLAN 8350 Wireless SmarTAP to

factory default settings, the Adapter discards all custom settings you set and returns to the settings that were in effect when you removed the bridge from the box.

NOTE: All Powerline devices on your Powerline network must use the same

password (NEK). If you encounter a problem, please contact Asoka Technical Support (see Technical Support on page iii).



**Reset Switch** 

Figure 3-1: Location of Reset Switch <<placeholder??>>

Troubleshooting

Troubleshooting

# A

# **Specifications**

This appendix lists the specifications for your PlugLAN 8350 Wireless SmarTAP.

Standards	<ul> <li>HomePlug<sup>®</sup> 1.0 with Turbo</li> </ul>
Compliance:	IEEE 802.3 10BASE-T Ethernet
	IEEE 802.3x Flow Control
	IEEE 802.1D Spanning Tree Protocol
	IEEE 802.1p Priority
	• IEEE 802.q VLAN
	IEFT RFC1332 IP Control Protocol
	IEFT RFC 2684 Bridged Ethernet
	• IEFT RFC 1157 SNMP v2 & v3
	IEFT RFC 1213 MIB II
	• IEFT RFC 826 ARP
Network Protocol:	TCP/IP
Network Interfaces:	One 10/100 Base-T Ethernet (RJ-45)
	HomePlug <sup>®</sup> Power Line 1.01
	• IEEE 802.11 b/g AP mode
Modulation:	IEEE 802.11 b/g AP mode     OFDM
Modulation:	IEEE 802.11 b/g AP mode     OFDM     QAM 256/64/16
Modulation:	<ul> <li>IEEE 802.11 b/g AP mode</li> <li>OFDM</li> <li>QAM 256/64/16</li> <li>DQPSK</li> </ul>
Modulation:	<ul> <li>IEEE 802.11 b/g AP mode</li> <li>OFDM</li> <li>QAM 256/64/16</li> <li>DQPSK</li> <li>DBPSK</li> </ul>
Modulation:	<ul> <li>IEEE 802.11 b/g AP mode</li> <li>OFDM</li> <li>QAM 256/64/16</li> <li>DQPSK</li> <li>DBPSK</li> <li>ROBO</li> </ul>
Modulation:	<ul> <li>IEEE 802.11 b/g AP mode</li> <li>OFDM</li> <li>QAM 256/64/16</li> <li>DQPSK</li> <li>DBPSK</li> <li>ROBO</li> <li>Power</li> </ul>
Modulation:	<ul> <li>IEEE 802.11 b/g AP mode</li> <li>OFDM</li> <li>QAM 256/64/16</li> <li>DQPSK</li> <li>DBPSK</li> <li>ROBO</li> <li>Power</li> <li>PLC Activity</li> </ul>
Modulation:	<ul> <li>IEEE 802.11 b/g AP mode</li> <li>OFDM</li> <li>QAM 256/64/16</li> <li>DQPSK</li> <li>DBPSK</li> <li>ROBO</li> <li>Power</li> <li>PLC Activity</li> <li>Ethernet Link</li> </ul>
Modulation:	<ul> <li>IEEE 802.11 b/g AP mode</li> <li>OFDM</li> <li>QAM 256/64/16</li> <li>DQPSK</li> <li>DBPSK</li> <li>ROBO</li> <li>Power</li> <li>PLC Activity</li> <li>Ethernet Link</li> <li>Wireless Activity</li> </ul>
Modulation: LEDs: Memory:	<ul> <li>IEEE 802.11 b/g AP mode</li> <li>OFDM</li> <li>QAM 256/64/16</li> <li>DQPSK</li> <li>DBPSK</li> <li>ROBO</li> <li>Power</li> <li>PLC Activity</li> <li>Ethernet Link</li> <li>Wireless Activity</li> <li>4 MBytes NOR Flash</li> </ul>

Specifications

Processor:	• MIPS 4Kc CPU
	• Embedded cache, 8K-byte I-cache, 8K-cache
	• Embedded memory management unit (MMU) 32-entry TLB
	• 175MHz/227 MIPS
	Address Assignment: Static IP
	Powerline Security: 56-bit DES encryption
Bandwidth:	• Up to 85 Mbps PHY rate or 25 Mbps TCP rate over the powerline
Distance:	• 200 meters
Operating Frequency:	• 4 to 21 mHz
Modulation Schemes:	Orthogonal Frequency Division Multiplexing (OFDM)
	Symbol Modulation DQPSK
	• DBPSK
	ROBO Carrier Modulation
Management Features:	<ul> <li>Administration Interface: Web graphical user interface with protected user name and password, remotely accessible from designated IP address</li> </ul>
Maintenance:	Save/restore configuration
	Diagnostics
	Upgrades via Web browser
	• Logging
Power Supply:	• 100-240V 50-60Hz Internal Universal Power
Maximum Power:	• 7W
Dimensions:	<ul> <li>Size</li> <li>9.5 x 6.5 x 4 cm (L x W x H)</li> <li>Weight</li> </ul>
	150g(.33lbs)
	• Cable length 6'
Environmental Specifications:	<ul> <li>Operating temperature: 32°F to 122°F (0°C to 50°C)</li> </ul>
	<ul> <li>Operating humidity: 10% to 90% Non-condensing</li> </ul>
	<ul> <li>Storage temperature: -40°F to 158°F (-40°C to 70°C)</li> </ul>
	Storage humidity:     10% to 90% Non-condensing
Electromagnetic	FCC Part 15 Class B
Emissions	• UL (US and Canada)
	• CE
Warranty:	1-year limited

# B

# Components

This appendix describes the LEDs and rear label on your PlugLAN 8350 Wireless SmarTAP.

# **LEDs**

The top panel of your PlugLAN 8350 Wireless SmarTAP has several light-emitting diodes (LEDs) that show status information (see Figure B-1). Table B-1 describes the meanings of the LEDs.



Figure B-1: Front Panel LEDs <<placeholder??>>

Table B-1: Top Panel LEE	Ds
--------------------------	----

LED	Status	Description
Power	ON	PlugLAN 8350 Wireless SmarTAP is receiving power.
	OFF	PlugLAN 8350 Wireless SmarTAP is not receiving power.
PLC Activity	OFF	There is no activity on the Powerline network (should blink intermittently).
	Blinking	There is activity on the Powerline network.
Wireless	OFF	There is no wireless activity.
Activity	Blink	There is wireless traffic.
Ethernet	OFF	There is a no Ethernet activity.
Link	Blink	There is a Ethernet traffic.
	ON	There is Ethernet connectivity.

Components

## **Rear Label**

The rear label on your PlugLAN 8350 Wireless SmarTAP shows the following information:

- Model number
- Unique device password
- IP Address
- WAN MAC Address
- Powerline MAC Address
- Ethernet MAC Address
- Serial number

Figure B-2 shows an example of the information shown on the rear label.

**NOTE:** Please write this information in your Warranty Support Information card for future reference.



Figure B-2: Example of Rear Label on PlugLAN 8350 Wireless SmarTAP <<p>c>placeholder??>>



# **Declarations of Conformity**

This appendix lists the declarations of conformity for your PlugLAN 8350 Wireless SmarTAP.

Declarations of Conformity

# **Department of Canada**



# D

# **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<sub>i</sub>-s authority to operate the equipment.

FCC Notice

#### 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.

# E

# 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's 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's 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 90 days or 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.

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