



PlugLAN 8660 SmartBridge AV Ethernet Adapter User's Guide

PL8660-ETH

PlugLANTM AV
by Asoka[®]

QUICKFIND LOCATOR

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66-0350-00 Rev.001	May 2010	Preliminary Release

Changes in This Revision

- Not applicable (preliminary release)

Contact Information

For more information about the PlugLAN 8660 SmartBridge AV Ethernet 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 6:00 pm Pacific Time at (408) 550-8167. 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: (408) 884-2390.
- **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 (408) 550-8167 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 (408) 550-8173 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 8660 SmartBridge
- 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 8960 Gateway Quick Start Guide
http://www.asokausa.com/support/pluglan_gateway_qsg.pdf
- PlugLAN 8960 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 8660 SmartBridge AV Ethernet Adapter Ethernet Adapter User's Guide
http://www.asokausa.com/support/pluglan_8660_guide.pdf
- PlugLAN 8660 SmartBridge AV Ethernet Adapter Ethernet Adapter Quick Start Guide
http://www.asokausa.com/support/pluglan_8660_qsg.pdf
- PlugLAN 8550 Wireless SmartPoint Access Point / Ethernet Adapter User's Guide
http://www.asokausa.com/support/pluglan_8550_guide.pdf
- PlugLAN 8550 Wireless SmartPoint Access Point / Ethernet Adapter Quick Start Guide
http://www.asokausa.com/support/pluglan_8550_qsg.pdf
- PlugLAN 8250 SmarTAP Ethernet Adapter User's Guide
http://www.asokausa.com/support/pluglan_8250_guide.pdf
- PlugLAN 8250 SmarTAP Ethernet Adapter Quick Start Guide
http://www.asokausa.com/support/pluglan_8250_qsg.pdf
- PlugLAN 8350 Wireless SmarTAP Access Point / Ethernet Adapter User's Guide
http://www.asokausa.com/support/pluglan_8350_guide.pdf
- PlugLAN 8350 Wireless SmarTAP Access Point / Ethernet Adapter Quick Start Guide
http://www.asokausa.com/support/pluglan_8350_qsg.pdf

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Simple Installation

Congratulations on your purchase of the PlugLAN 8660 SmartBridge AV Ethernet Adapter. This portable customer premises equipment (CPE) device provides instant network connectivity by simply plugging into any PlugLAN-enabled electrical outlet. A high speed Ethernet connection to the PlugLAN system is securely established over existing electrical lines, delivering up to 85Mbps throughput.

The PlugLAN 8660 SmartBridge AV Ethernet Adapter 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™ management software.

Fully plug-and-play, the PlugLAN 8660 SmartBridge AV Ethernet Adapter provides the perfect combination of functionality and convenience.

Your PlugLAN 8660 SmartBridge AV Ethernet Adapter has four light-emitting diode (LED) indicators and two RJ-45 Ethernet ports.

- The LEDs show the connection status as well as other information, allowing you to identify network problems.
- The RJ-45 Ethernet ports can be used to connect your PlugLAN 8660 SmartBridge to a device in your network.

Please take a few minutes to read this chapter to install your PlugLAN 8660 SmartBridge AV Ethernet Adapter.

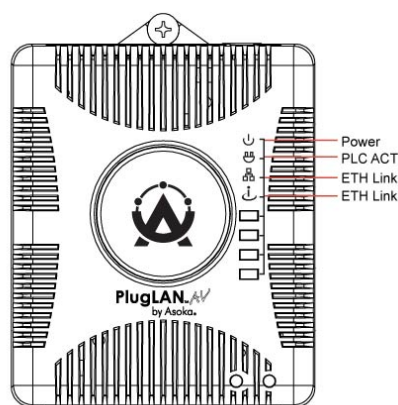


Figure 1-1: PlugLAN 8660 SmartBridge AV Ethernet Adapter

Package Contents

After receiving your PlugLAN 8660 SmartBridge AV Ethernet Adapter, 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 8660 SmartBridge AV Ethernet Adapter Adapter
 - One Ethernet cable
 - One CD containing user documentation (this User's Guide)
 - PlugLAN 8660 SmartBridge AV Ethernet Adapter Quick Start Guide
 - Warranty and Support Information Card
3. Inspect your PlugLAN 8660 SmartBridge AV Ethernet Adapter thoroughly. If you see any signs of damage, contact the shipping carrier.

How the PlugLAN 8660 SmartBridge AV Ethernet Adapter Fits into Your Network

The PlugLAN 8660 SmartBridge AV Ethernet Adapter plugs into a PlugLAN-enabled power outlet to extend network services to any electrical outlet in any room. Your PlugLAN 8660 SmartBridge 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 PLugLAN Gateway and/or Gateway Expansion Adapters injecting network services into the powerline, and a compatible network-interface card (NIC) installed in your computers or other devices. This makes your PlugLAN 8660 SmartBridge 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 (please contact your Asoka reseller for more information).

For security, your PlugLAN 8660 SmartBridge AV Ethernet Adapter 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 8660 SmartBridge AV Ethernet Adapter significantly more secure than wireless products.



Figure 1-2: Example of How Your PlugLAN 8660 SmartBridge AV Ethernet Adapter Fits into Your Network

Connecting the PlugLAN 8660 SmartBridge AV Ethernet Adapter

To connect devices to your PlugLAN 8660 SmartBridge AV Ethernet Adapter:

1. Plug your PlugLAN 8660 SmartBridge AV Ethernet Adapter into a wall outlet near the computer that you want to connect (see [Figure 1-2](#)). The LEDs on the top of your PlugLAN 8660 SmartBridge AV Ethernet Adapter show status information (see [Appendix A Components](#)).



NOTE: Do not connect the PlugLAN 8660 SmartBridge AV Ethernet Adapter to a power strip, extension cord, uninterruptible power supply, or surge protector. This may prevent the unit from working properly or degrade network performance.



NOTE: It is important that you plug the PlugLAN 8660 SmartBridge AV Ethernet Adapter into the wall outlet right-side up.

2. Connect either end of the supplied Ethernet cable to your computer's network (RJ-45) port. Connect the other end of the cable to either of the two RJ-45 connectors labeled **LAN Port** on the bottom of your PlugLAN 8660 SmartBridge (see [Figure 1-3](#)).

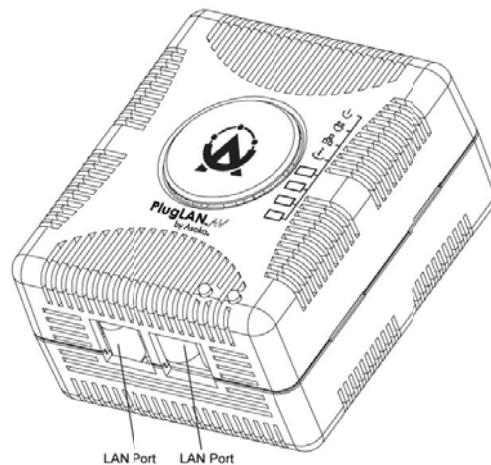


Figure 1-3: LAN Ports on the Bottom of the PlugLAN 8660 SmartBridge AV Ethernet Adapter

3. The default IP address for the PlugLAN 8660 SmartBridge AV Ethernet Adapter is 192.168.1.253. Either configure your computer and networking devices to use the same subnet (192.168.1.xxx where xxx is a number from 1 to 253) or change the IP address of your PlugLAN 8660 SmartBridge AV Ethernet Adapter to match your network's subnet. For more information, please refer to [Chapter 2](#).



Congratulations! You have now completed the hardware installation procedures for your PlugLAN 8660 SmartBridge AV Ethernet Adapter. Your PlugLAN 8660 SmartBridge is now ready for use.



NOTE: In the unlikely event you encounter a problem, please refer to [Chapter 3](#) for troubleshooting suggestions.



Advanced Configuration (Expert Users Only)

After you install the PlugLAN 8660 SmartBridge AV Ethernet Adapter, 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 Advanced Menu on page 2-15](#)
- ^ [Using the IP Address Menu on page 2-20](#)
- ^ [Using the Powerline Menu on page 2-21](#)



WARNING! This chapter is for expert users who understand networking concepts and terminology.

Launching the Web Management Utility

Your PlugLAN 8660 SmartBridge AV Ethernet Adapter provides a Web-based Web Management utility for performing advanced configuration activities. After you install your PlugLAN 8660 SmartBridge AV Ethernet Adapter, use the following procedure to launch the Web Management utility.

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 8660 SmartBridge AV Ethernet Adapter.



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 (•).

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 8660 SmartBridge AV Ethernet Adapter 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 8660 SmartBridge AV Ethernet Adapter's configuration settings.

Quick Links

Menu Bar

Navigation Panel

Main Panel

Device Information	
Model Number	PL8660-ETH
Serial Number	858076660026
Hardware Version	1.02
Firmware Version	1.02
BootLoader Version	1.02
Sim Firmware Version	INT6000-MAC-3-3-3348-00-2764-20080808-FINAL-8
RAM Capacity	32M Bytes/128M bits
Flash Capacity	8M Bytes/32M bits
Device MAC Address	00:13:c1:0a:ed:a6
PLC MAC Address	00:13:c1:0a:ed:5b
System Uptime	0 days 0 hours 7 minutes 58 seconds
Last Configuration	Fri Dec 31 20:04:31 UTC 1999
IP Address	192.168.1.252
Subnet Mask	255.255.255.0
Downlink Bandwidth Control	Full Speed
Uplink Bandwidth Control	Full Speed
QoS Setting Type	Fixed QoS

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

Using the System Menu

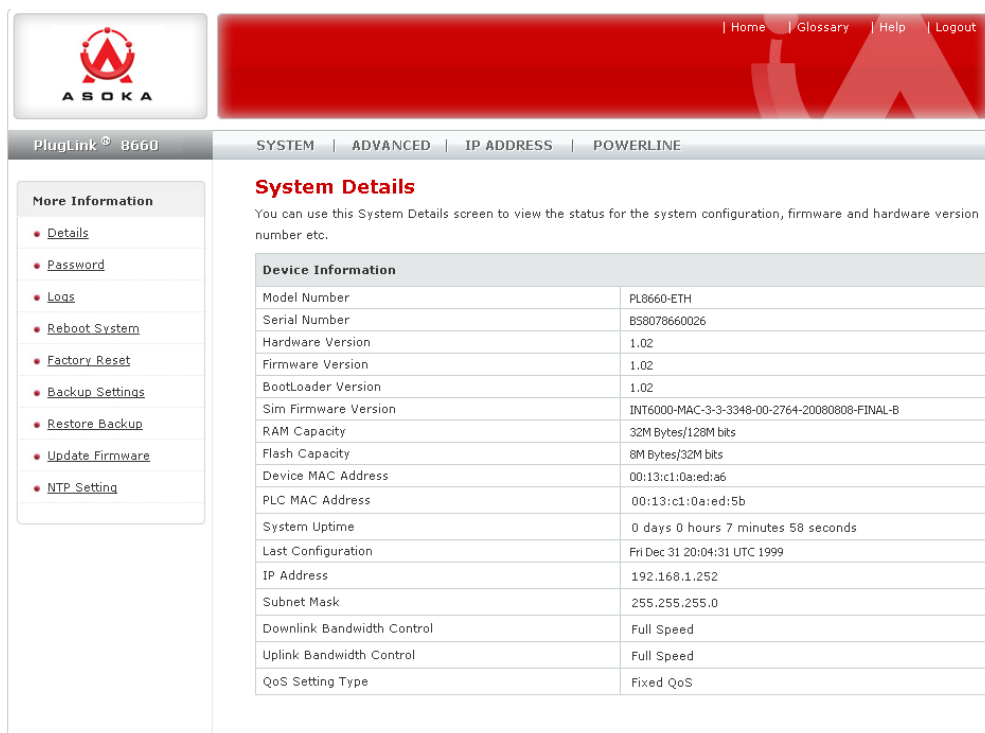
The System menu lets you perform the following system activities:

- View the status of your PlugLAN 8660 SmartBridge AV Ethernet Adapter. See [page 2-4](#).
- Change the login user ID, password, and auto-logout time. See [page 2-5](#).
- View the system log entries. See [page 2-6](#).
- Reset your PlugLAN 8660 SmartBridge AV Ethernet Adapter. See [page 2-7](#).
- Factory Default Settings. See [page 2-8](#)
- Backup and restore configuration settings. See [page 2-10](#).
- Backup and restore configuration settings. See [page 2-11](#).
- Update the firmware or configure the PlugLAN 8660 SmartBridge AV Ethernet Adapter to access an FTP server. See [page 2-13](#).

Viewing System Information

The System Details page is a read-only screen that shows the status of your PlugLAN 8660 SmartBridge AV Ethernet Adapter.

This page is the first one to appear when you log in to the PlugLAN 8660 SmartBridge Web Management utility. If you are already in the System menu, click Details in the navigation panel to display this page.



The screenshot shows the 'System Details' page. At the top, there is a navigation bar with links for Home, Glossary, Help, and Logout. Below this is a secondary navigation bar with links for SYSTEM, ADVANCED, IP ADDRESS, and POWERLINE. The left sidebar contains a 'More Information' section with links for Details, Password, Logs, Reboot System, Factory Reset, Backup Settings, Restore Backup, Update Firmware, and NTP Setting. The main content area is titled 'System Details' and includes a brief description: 'You can use this System Details screen to view the status for the system configuration, firmware and hardware version number etc.' Below this is a table of device information.

Device Information	
Model Number	PL8660-ETH
Serial Number	B58078660026
Hardware Version	1.02
Firmware Version	1.02
BootLoader Version	1.02
Sim Firmware Version	INT6000-MAC-3-3-3348-00-2764-20080808-FINAL-B
RAM Capacity	32M Bytes/128M bits
Flash Capacity	8M Bytes/32M bits
Device MAC Address	00:13:c1:0a:ed:a6
PLC MAC Address	00:13:c1:0a:ed:5b
System Uptime	0 days 0 hours 7 minutes 58 seconds
Last Configuration	Fri Dec 31 20:04:31 UTC 1999
IP Address	192.168.1.252
Subnet Mask	255.255.255.0
Downlink Bandwidth Control	Full Speed
Uplink Bandwidth Control	Full Speed
QoS Setting Type	Fixed QoS

Figure 2-3: System Details Page

Changing the Login User ID and Password and Auto-Logout Time

Using the System Password page, you can change the user ID and 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.

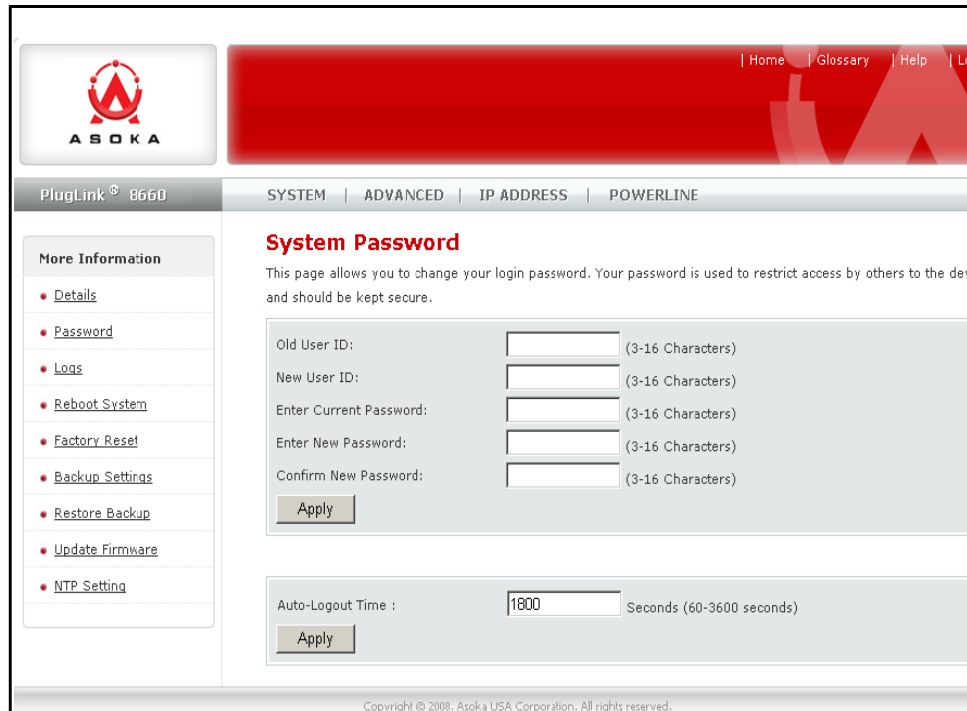


Figure 2-4: System Password Page

Changing the User ID and Login Password

The default user ID is **admin** and the default password is **welcome**. For security, we recommend that you change these settings.

To change the login user ID and 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 **Old User ID** field and enter the current user ID.
2. Click in the **New User ID** field and enter the new user ID.
3. Click in the **Enter Current Password** field and enter the current login password.
4. 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.

5. Click in the **Confirm Your New Password** field and enter the same login password you entered in step 2.



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.

6. 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 8660 SmartBridge AV Ethernet Adapter 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:

- **Download** — 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.

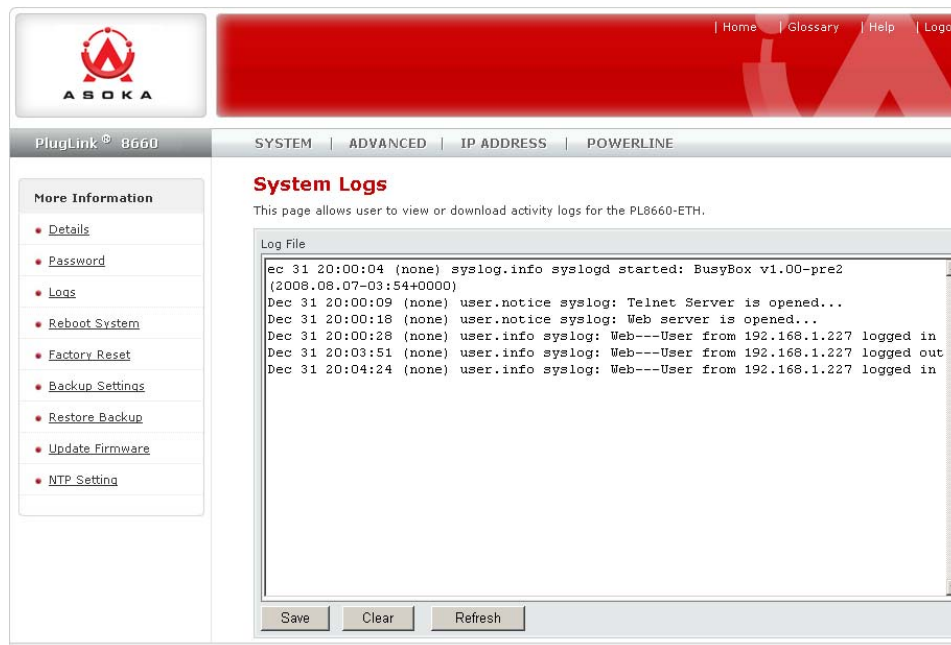


Figure 2-5: System Logs Page

Resetting Your PlugLAN 8660 SmartBridge AV Ethernet Adapter

Using the Reset page, you can reset your PlugLAN 8660 SmartBridge AV Ethernet Adapter. 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

Advanced Configuration (Expert Users Only)

To reset your PlugLAN 8660 SmartBridge AV Ethernet Adapter, use the following procedure:



NOTE: Resetting 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 8660 SmartBridge.

1. Click the **System Reset** button on the Reset page.
2. When the message in [Figure 2-7](#) appears, click **OK** to reset your PlugLAN 8660 SmartBridge (or click **Cancel** to not reset it).

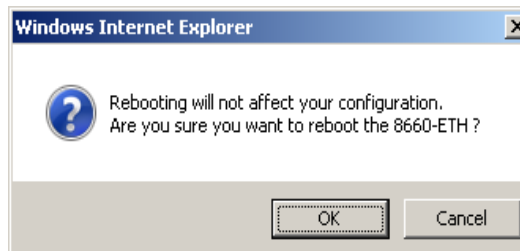


Figure 2-7: Reboot Message

Factory Default Settings

Using the Reset page, you can return the SmartBridge to its factory default settings. To display this page, click **System** in the Web Management utility menu bar and then click **Factory Reset** in the navigation panel.



To return your PlugLAN 8660 SmartBridge AV Ethernet Adapter to the factory default configuration that was in effect when you first unpacked the SmartBridge, use the following procedure:

1. Click the **Factory Default** button on the Reset page.
2. When the message in [Figure 2-8](#) appears, click **OK** to return your PlugLAN 8660 SmartBridge 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 8660 SmartBridge AV Ethernet Adapter 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.

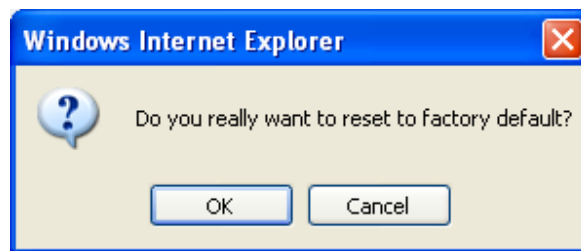


Figure 2-8: Factory Default Message

Backing Up Configuration Settings

The configuration settings for your PlugLAN 8660 SmartBridge AV Ethernet Adapter 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. To display this page, click **System** in the Web Management utility menu bar and then click **Backup Settings** in the navigation panel.



Figure 2-9: Backup Settings Page

To save the file containing the configuration settings, use the following procedure:

1. Click the **Save** button under **Backup Settings** on the Backup Settings page.
2. When the File Download dialog box in [Figure 2-10 on page 2-11](#) appears, click **Save**.
3. Use the Save As dialog box to select a location on your computer's hard drive for the file and click **Save** (or click **Cancel** to not save the file containing the configuration settings).



NOTE: If you save the configuration settings, you can use the procedure under [Restoring Backup Settings on page 2-10](#) to restore them if necessary.

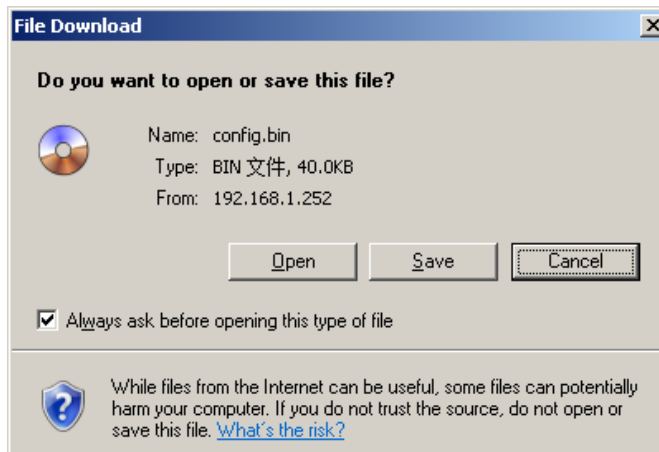
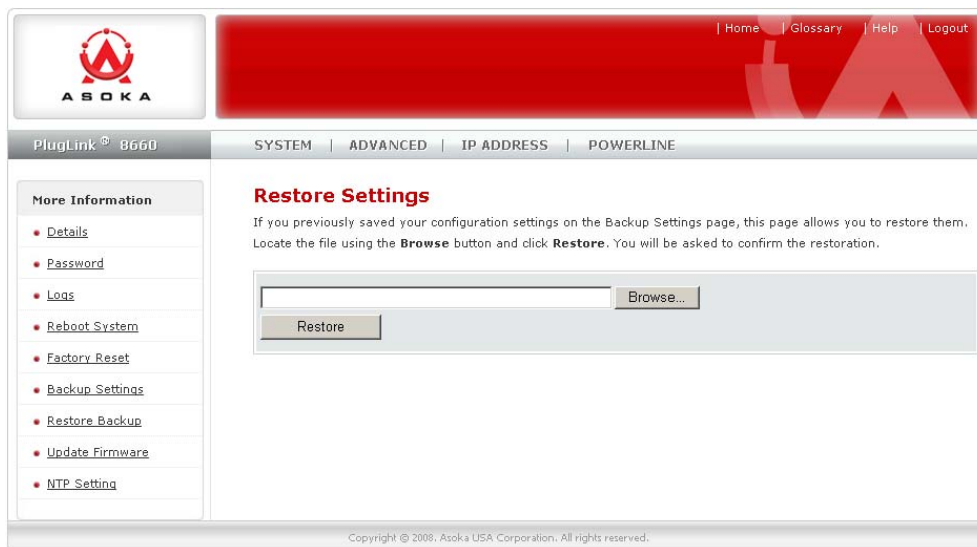


Figure 2-10: File Download Dialog Box

Restoring Configuration Settings

Using the Backup Settings page, you restore the settings when necessary. To display this page, click **System** in the Web Management utility menu bar and then click **Restore Settings** in the navigation panel.



If you used the procedure under [Resetting Your PlugLAN 8660 SmartBridge AV Ethernet Adapter on page 2-10](#) to back up the configuration settings for your PlugLAN 8660

SmartBridge, you can use the **Restore Settings** area to restore the backup settings if necessary (for example, if they become corrupt).

To restore settings from a previous binary configuration file you backed up, use the following procedure:

1. Click the **Browse** button under **Restore Settings** 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 2-11](#) appears, warning that any default settings you changed will be lost.



Figure 2-11: Restore Warning Message

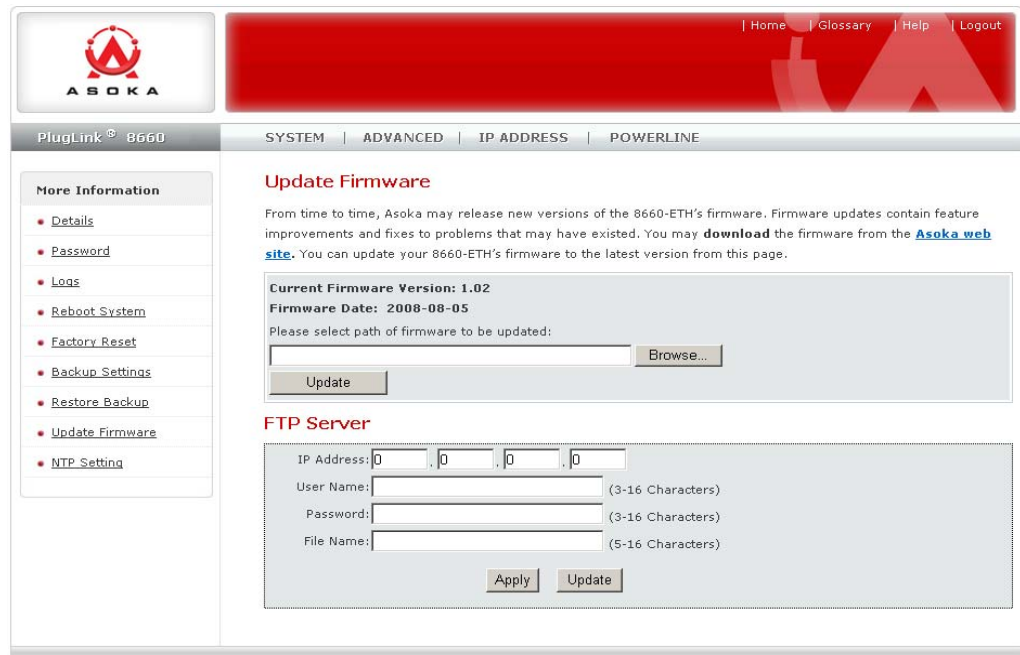
4. Click the **OK** button to restore the settings (or click **Cancel** to retain the current settings). If you restored the configuration settings, a message tells you that your PlugLAN 8660 SmartBridge AV Ethernet Adapter is resetting. After the reset completes, the Welcome page appears.



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 and FTP Settings

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 8660 SmartBridge AV Ethernet Adapter. To display this page, click **System** in the Web Management utility menu bar and then click **Firmware Upgrade** in the navigation panel.



The screenshot shows the Asoka web management interface. At the top left is the Asoka logo. The navigation bar includes 'Home', 'Glossary', 'Help', and 'Logout'. Below the navigation bar is a menu with 'SYSTEM', 'ADVANCED', 'IP ADDRESS', and 'POWERLINE'. The left sidebar contains a 'More Information' section with links to 'Details', 'Password', 'Logs', 'Reboot System', 'Factory Reset', 'Backup Settings', 'Restore Backup', 'Update Firmware', and 'NTP Setting'. The main content area is titled 'Update Firmware' and contains the following text: 'From time to time, Asoka may release new versions of the 8660-ETH's firmware. Firmware updates contain feature improvements and fixes to problems that may have existed. You may **download** the firmware from the [Asoka web site](#). You can update your 8660-ETH's firmware to the latest version from this page.' Below this text is a box with 'Current Firmware Version: 1.02' and 'Firmware Date: 2008-08-05'. It then asks 'Please select path of firmware to be updated:' and provides a text input field with a 'Browse...' button and an 'Update' button. Below this is the 'FTP Server' section with input fields for 'IP Address' (0 . 0 . 0 . 0), 'User Name' (3-16 Characters), 'Password' (3-16 Characters), and 'File Name' (5-16 Characters), each with an 'Apply' or 'Update' button.

Figure 2-12: Upgrade Firmware Page

Updating Firmware

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. Click the **Browse** button on the Update Firmware page.



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 2-13](#) appears.

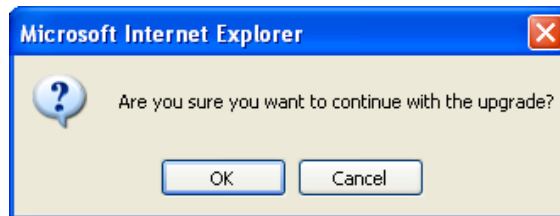


Figure 2-13: Firmware Upgrade Warning Message

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 8660 SmartBridge AV Ethernet Adapter 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 8660 SmartBridge IP address (default is 192.168.1.253) in your Web browser to access the Web Management utility.

Defining FTP Server Settings

You can configure your PlugLAN 8660 SmartBridge AV Ethernet Adapter to access an FTP server by completing the fields in the **FTP Server** area on the Update Firmware page. [Table 2-1](#) describes the fields in this area of the page.

Table 2-1: FTP Server Area on the Upgrade Firmware Page

Field	Description
IP Address	Enter the IP address of the FTP server that the PlugLAN 8660 SmartBridge will access.
User Name	Enter the user name, from 3 to 16 characters, required to access the FTP server.
Password	Enter the password, from 3 to 16 characters, required to access the FTP server.
File Name	Enter the name of the file, from 5 to 16 characters, to be downloaded from the FTP server.
Apply	After you enter your configuration settings, click this button to apply the settings.
Update	Click this button to connect to the FTP server.

Using the Advanced Menu

The Advanced menu lets you perform the following activities:

- Enable VLAN functionality. See [page 2-15](#).
- Set packet priority settings. See [page 2-16](#).
- Configure bandwidth control. See [page 2-17](#).
- Configure SNMP settings. See [page 2-18](#).

Enabling VLAN Functionality

The VLAN Configuration page lets you enable or disable VLAN settings. This page is the first one to appear when you log in to the Advanced menu. If you are already in the Advanced menu, click **VLAN Configuration** in the navigation panel to display this page.



The screenshot shows the Asoka web interface for VLAN Configuration. At the top left is the Asoka logo. The top right has navigation links: Home, Glossary, Help, and Logout. Below the logo is the device name 'PlugLink 8660'. The main navigation bar includes 'SYSTEM', 'ADVANCED', 'IP ADDRESS', and 'POWERLINE'. The 'ADVANCED' section is active, showing a sidebar with 'More Information' links: VLAN Configuration (selected), Packet priority, Bandwidth Control, and SNMP Configuration. The main content area is titled 'VLAN Configuration' and contains the text: 'This page allow user set VLAN ID for the device.' Below this is a form with the label 'Set VLAN Type & ID:' and a text input field containing the number '2'. To the right of the input field is the range '(2~4093)'. An 'Apply' button is located below the input field. At the bottom of the page, there is a copyright notice: 'Copyright © 2008, Asoka USA Corporation. All rights reserved.'

Figure 2-14: 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 2-2 on page 2-16](#) describes the fields on this page.

Table 2-2: VLAN Configuration Page

Field	Description
Set VLAN Type & ID	Enter a VLAN value from 1 to 4093. Default value is 2.
Apply Button	After you enter your configuration settings, click this button to apply the settings.

Configuring Packet Priority

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 2-3](#) describes the fields on this page.

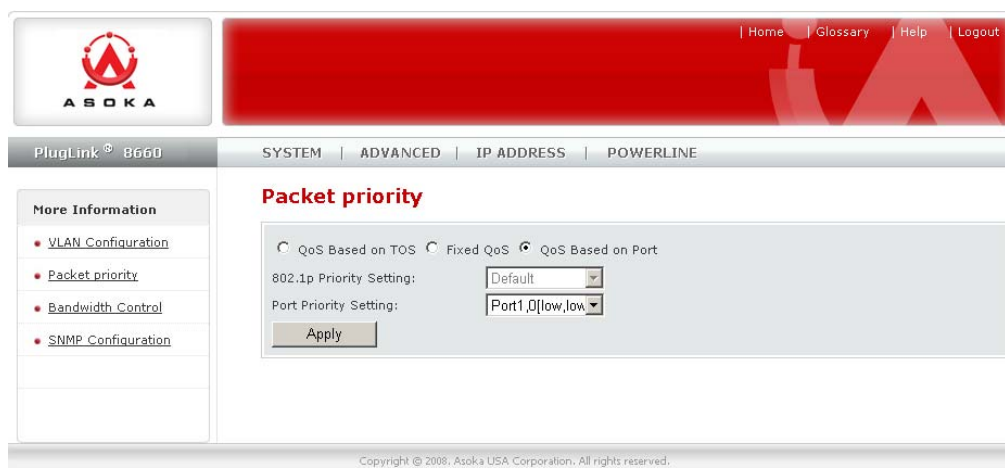


Figure 2-15: Packet Priority Page

Table 2-3: Packet Priority Page

Field	Description
QoS Based on ToS	Configure packet priority based on Type of Service.

Table 2-3: Packet Priority Page (Continued)

Field	Description
Fixed QoS	Select the 802.1p priority setting to be used. Choices are: <ul style="list-style-type: none"> • Default = use this setting when none of the other settings is suitable. (<i>default</i>) • Background • Best effort • Excellent effort • Control load • Video or Audio • Voice • Network Control
QoS Based on Port	Select the port priority setting to be used. Choices are: <ul style="list-style-type: none"> • Default = use this setting when none of the other settings is suitable. (<i>default</i>) • Port 1 priority • Port 2 priority
Apply Button	After you enter your configuration settings, click this button to apply the settings.

Configuring Bandwidth Control

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 2-4 on page 2-16](#) describes the fields on this page.



Figure 2-16: Bandwidth Control Page

Table 2-4: Bandwidth Control Page

Field	Description
Downlink Bandwidth Control	Select the download speed that the PlugLAN 8660 SmartBridge will use. Supported downlink speeds are: <ul style="list-style-type: none">• Full Speed (<i>default</i>)• 64k bps• 128k bps• 256k bps• 512k bps• 1M bps• 4M bps• 10M bps
Uplink Bandwidth Control	Select the upload speed that the PlugLAN 8660 SmartBridge will use. Supported uplink speeds are: <ul style="list-style-type: none">• Full Speed (<i>default</i>)• 64k bps• 128k bps• 256k bps• 512k bps• 1M bps• 4M bps• 10M bps
Apply Button	After you enter your configuration settings, click this button to apply the settings.

Configuring SNMP Settings

The SNMP Configuration page lets you set the configure the SNMP settings for your PlugLAN 8660 SmartBridge AV Ethernet Adapter. 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 2-5 on page 2-19](#) describes the fields on this page.



Figure 2-17: SNMP Configuration Page

Table 2-5: 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.

Using the IP Address Menu

Configuring IP Address

The IP Address menu lets you set or change the IP address for the device. You can use this IP address to manage your PlugLAN 8660 SmartBridge AV Ethernet Adapter. To display this page, click **IP Address** in the Web Management utility menu bar. [Table 2-6](#) describes the fields on this page.

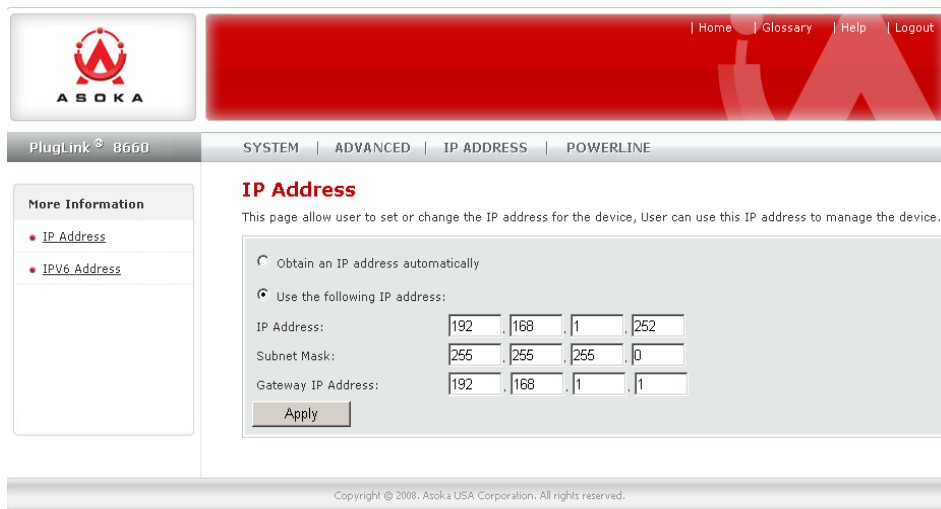


Figure 2-18: IP Address Page

Table 2-6: IP Address Page

Field	Description
Obtain an IP address automatically	Select this option if the PlugLAN 8660 SmartBridge will obtain its IP address automatically (for example, from a DHCP server).
Use the following IP address	Select this option if the PlugLAN 8660 SmartBridge 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 8660 SmartBridge.
Subnet Mask	Enter the subnet mask for the PlugLAN 8660 SmartBridge.
GAteway IP Address	Enter the gateway IP address for the PlugLAN 8660 SmartBridge AV Ethernet

Configuring IPV6 Address

This page allow user to set or change the IPV6 address for the device,

User can use this IPV6 address to manage the device, Don't support in this firmware now.

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 2-19](#)).

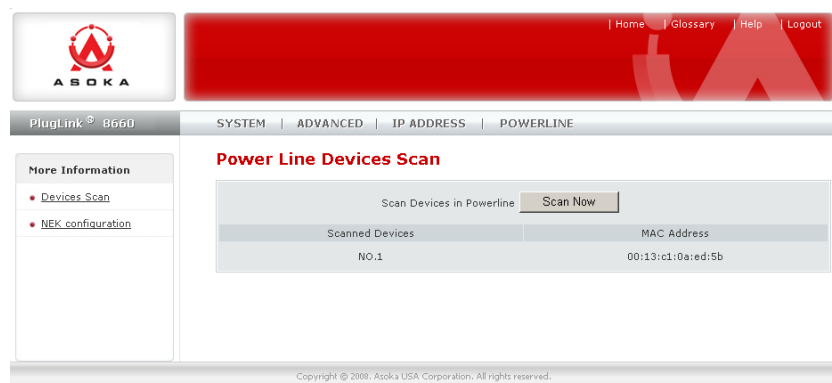


Figure 2-19: Powerline Device Scan Page

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

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



NOTE: We recommend that you change the default network password on all your PlugLAN 8660 devices. Changing the network password prevents neighbors or outsiders from accessing your network. However, it also requires you to configure your other Powerline devices to use the same password.

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 2-20](#) on page 2-20).

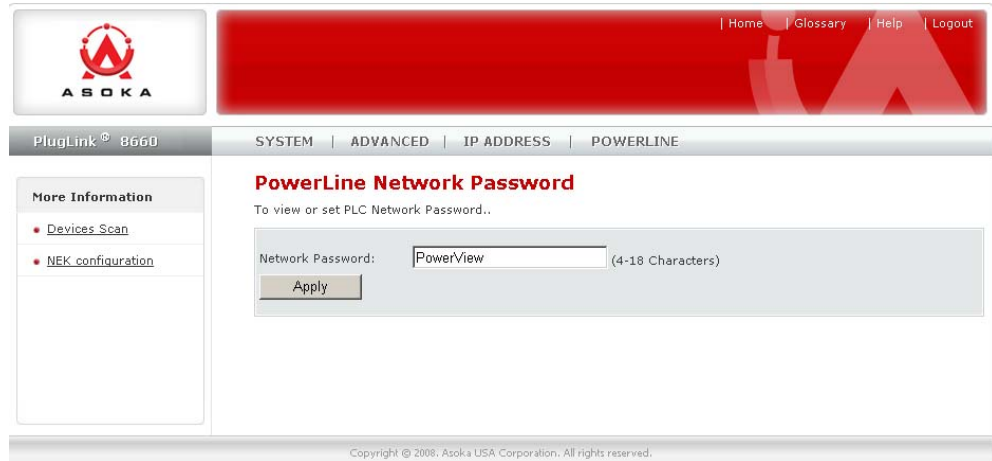


Figure 2-20: Powerline Network Password

2. In the **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.

Troubleshooting

This chapter contains troubleshooting suggestions you will find helpful in the unlikely event you encounter a problem with your PlugLAN 8660 SmartBridge AV Ethernet Adapter.

PlugLAN 8660 SmartBridge AV Ethernet Adapter is Not Working

1. Confirm that the PlugLAN 8660 SmartBridge AV Ethernet Adapter 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.

Wired Connections are Not Working

1. Verify that the Ethernet LAN cable is connected securely to your PlugLAN 8660 SmartBridge AV Ethernet Adapter and the attached device.
2. 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 8660 SmartBridge AV Ethernet Adapter.
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 A](#)).
2. Disconnect and reconnect the PlugLAN 8660 SmartBridge AV Ethernet Adapter 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 User ID and Login Password on page 2-5](#).
2. If you forget the password, return the PlugLAN 8660 SmartBridge AV Ethernet Adapter to its factory default settings (see [Returning to Factory Default Settings on page 2-8](#)).



CAUTION! If you return the PlugLAN 8660 SmartBridge AV Ethernet Adapter 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 Powerline password (NEK). If you encounter a problem, please contact Asoka Technical Support (see [Technical Support on page iii](#)).

Components

This appendix describes the LEDs and rear label on your PlugLAN 8660 SmartBridge.

LEDs

The top panel of your PlugLAN 8660 SmartBridge AV Ethernet Adapter has several light-emitting diodes (LEDs) that show status information (see [Figure A-1](#)). [Table A-1](#) describes the meanings of the LEDs.

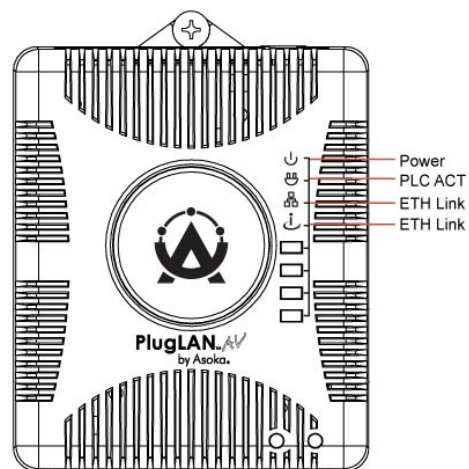


Figure A-1: Front Panel LEDs

Table A-1: Top Panel LEDs

LED	Status	Description
Power	ON	PlugLAN 8660 SmartBridge AV Ethernet Adapter is
	OFF	PlugLAN 8660 SmartBridge AV Ethernet Adapter is
PLC ACT	OFF	There is no activity on the Powerline network.
	Blinking	There is activity on the Powerline network.
ETH 1	OFF	There is a no Ethernet activity.
	Blink	There is a Ethernet traffic.
	ON	There is Ethernet connectivity.
ETH 2	OFF	There is a no Ethernet activity.
	Blink	There is a Ethernet traffic.
	ON	There is Ethernet connectivity.

Rear Label

The rear label on your PlugLAN 8660 SmartBridge AV Ethernet Adapter shows the following information:

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

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



NOTE: Please write this information in your Warranty Sup mation
card for future reference.

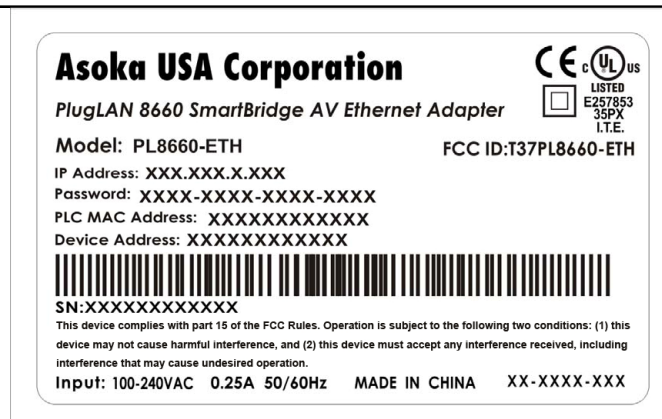


Figure A-2: Example of Rear Label on PlugLAN 8660 SmartBridge AV Ethernet Adapter



Specifications

This appendix lists the specifications for your PlugLAN 8660 SmartBridge.

Standards Compliance:	<ul style="list-style-type: none">• HomePlug® 1.0• 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:	<ul style="list-style-type: none">• Two RJ-45 10/100 Base-TX auto-negotiation LAN ports
Modulation:	<ul style="list-style-type: none">• OFDM• QAM 256/64/16• DQPSK• DBPSK• ROBO
LEDs:	<ul style="list-style-type: none">• Power• PLC Activity• ETH Link• ETH Link
Memory:	<ul style="list-style-type: none">• 4 MBytes NOR Flash• 16 MBytes SDRAM

Processor:	<ul style="list-style-type: none"> • 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:	<ul style="list-style-type: none"> • Up to 85 Mbps PHY rate or 25 Mbps TCP rate over the powerline
Distance:	<ul style="list-style-type: none"> • 300 meters (1000 feet)
Operating Frequency:	<ul style="list-style-type: none"> • 4 to 21 mHz
Modulation Schemes:	<ul style="list-style-type: none"> • Orthogonal Frequency Division Multiplexing (OFDM) • Symbol Modulation DQPSK • DBPSK • ROBO Carrier Modulation
Management Features:	<ul style="list-style-type: none"> • Administration Interface: Web graphical user interface with protected user name and password, remotely accessible from designated IP address
Maintenance:	<ul style="list-style-type: none"> • Save/restore configuration • Diagnostics • Upgrades via Web browser • Logging
Power Supply:	<ul style="list-style-type: none"> • 100-240V 50-60Hz Internal Universal Power
Maximum Power:	<ul style="list-style-type: none"> • 7W
Dimensions:	<ul style="list-style-type: none"> • Size 9.5 x 6.5 x 4 cm (L x W x H) • Weight 150g(.33lbs) • Cable length 6'
Environmental Specifications:	<ul style="list-style-type: none"> • Operating temperature: 32°F to 122°F (0°C to 50°C) • Operating humidity: 10% to 90% Non-condensing • Storage temperature: -40°F to 158°F (-40°C to 70°C) • Storage humidity: 10% to 90% Non-condensing
Electromagnetic Emissions	<ul style="list-style-type: none"> • FCC Part 15 Class B • UL (US and Canada) • CE
Warranty:	lifetime



Warranty

Asoka warrants that (a) the hardware components of the product will be free from defects in materials and workmanship under normal use 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, 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 life 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.

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.

Note: 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.

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