EZBridge 802.11g

USER MANUAL

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Introduction

The 802.11g WLAN Access Point card aims to assist you in easily building a communicable connection between your wired LAN and one or more Wireless Local Area Networks. It's easy to install and operate. To let you enjoy the most advantages of this product, please read this manual carefully.

1.1 Features

- 802.11b and 802.11g standards compliant
- Quick and easy to install
- Works with any device that has an Ethernet port
- LED indicators show unit operating status
- FCC Certified for use with YDI amplifiers and outdoor antennas with the Diamond WLAN Card
- Web-based configuration screen of Access Point enables fast and easy setup
- Supports RTS threshold control for better throughput
- Wireless data encryption with 64 and 128 bits encryption for security
- One-year warranty

1.2 Specifications

Network Standard: 802.11b or 802.11g

Operating Channels: 11 channels (US, Canada)

Data Rate: Up to 54Mbps

LEDs: LAN, WLAN, Power

Transmit Power: 17 +/- 1dBm (802.11b CCK); 14 +/- 1dBm (802.11g OFDM)

Receiver Sensitivity: 11 Mbps: -86dBm (802.11b); 54 Mpbs: -69dBm (802.11g)

Modulation: CCK, DQPSK, DBPSK (802.11b), BPSK, QPSK, 16QAM, 64QAM (802.11g)

Spreading: DSSS (802.11b), OFDM (802.11g)

Network Protocols: TCP/IP, NetBEUI

Mini PCI Card Antenna Connector: U.FL Connector
(Use connector near the center for external Antenna installation)

Ethernet Port: 100 BaseT Ethernet

Security Filter: MAC Address Filtering for 8 clients

Regulatory Approval: FCC 47CFR15 subpart C (15.247) and Class B device ETSI 300-3328/301-489-17 (General EMC requirement for RF equipment)

Weight PCB: 6.87 oz (195g)

Dimensions PCB: 6.3" x 1.2" x 4.7" (161mm x 30mm x 119mm)

Weight w/ NEMA4 Box: 2.5 lb (1.13 Kg)

Dimensions w/ NEMA4 Box: 7" L x 5.4" W x 2.8" H (18cm L x 13.8cm W x 7.3cm H)

Environmental:
Operating Temperature: -4°F to 158°F (-20°C to 70°C)
Humidity: 10 to 90% (non-condensing)

AC Adapter:
Input 120 VAC -- 60 Hz -- 10 W
Output 9 VDC -- 1.5 A

1.3 Product Kit

The EzBridge Kit contains the following items:

- ✓ EZBridge 802.11g Unit
- ✓ Power over Ethernet Injector
- ✓ AC/DC Power Adapter
- ✓ Ethernet Cable
- ✓ Ethernet Crossover Cable
- ✓ Waterproof RJ-45 Connector
- ✓ Mounting Hardware
- ✓ User Manual

Note: If any item listed above is damaged or missing, please contact your dealer immediately.

1.4 System Requirements

To accomplish a successful operation of your 802.11g WLAN Access Point, we suggest the following items are required:

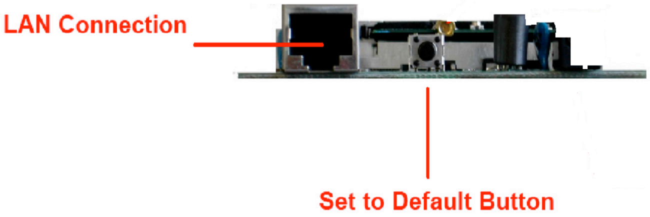
- ✓ One or more PCs (desktop or notebook) with Ethernet interface.
- ✓ TCP/IP protocol must be installed on all PCs.
- ✓ Network cables. Use standard 10/100BaseT network (UTP) cables with RJ45 connectors.
- ✓ To use the Wireless Access Point, all wireless devices must be compliant with the IEEE 802.11g specifications.
- ✓ Microsoft Internet Explorer 5.0 or later or Netscape Navigator 4.7 or later.

The 802.11g EzBridge

This section is consisted of three parts. You will learn the guise of the hardware, including the ports and LEDs, and the installation of Access Point.

2.1 Ports

The ports are on the rear panel of the device. Please see the following picture – the rear view of the Access Point to learn more details about your device.

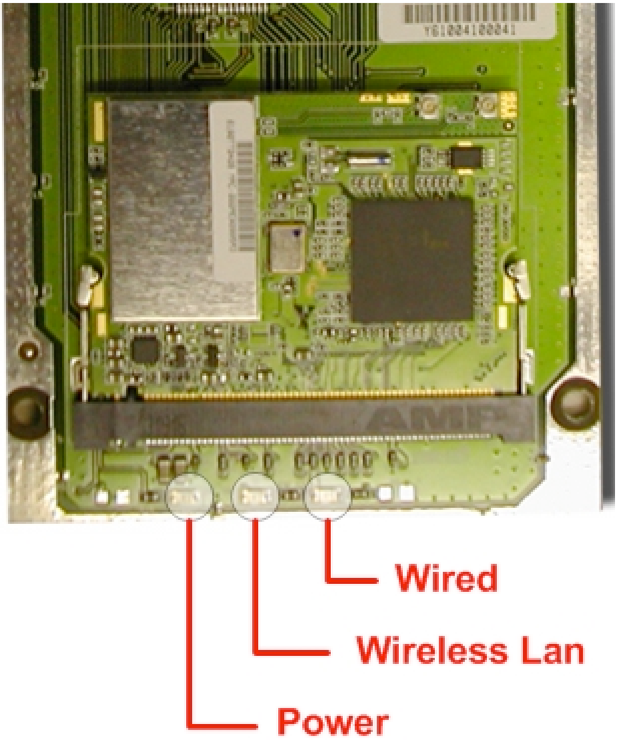


LAN Connection Use Ethernet straight LAN cable to connect your PC, hub/switch or broadband router/modem to this port.

Set to Default Button When you press this button, the Access Point will reboot and reset current settings to factory default settings.

2.2 LEDs

The 802.11g WLAN Access Point includes three types of LED indicators. Please check the following picture – the front view of the Access Point and table to obtain the information on the LED indicators on your Access Point.



LED	Status	Function
Power	On	Power on.
	Off	No power.
Wireless LAN	Blinking On Off	Blinking: Wireless LAN is transmitting. On: Wireless LAN connection is active. Off: Wireless LAN connection is not active.
Wired	Blinking On Off	Blinking: Wired LAN is transmitting. On: Wired LAN is active. Off: Wired LAN is not active.

2.3 Installation

Preparation for Installation

Before you actually install your 802.11g WLAN Access Point, please ensure that all the items listed in “1.4 System Requirements” are prepared, and then choose the place with the consideration of power outlet and network connection to install the Access Point.

To avoid causing any damage to the Access Point hardware device, please do not power up the device before you start to connect it to the port on your PC.

Also notice that a full installation of your Access Point includes not only the hardware installation but also the network configuration on your PC. Check the following section -“Hardware Installation” and the next chapter -“Configuring Windows for IP Networking” to obtain complete details.

Hardware Installation

Follow the procedures below to fully install your Access Point hardware device:

1. Select a suitable place on the network to install the Access Point. Ensure the Access Point and the DSL/cable modem are powered off. For best wireless reception and performance, the Access Point should be positioned in a central location with minimum obstructions between the Access Point and the PCs.

2. Connect one end of Ethernet cable to Access Point and the other to switch or hub, and then the Access Point will be connected to the 10/100 Network.

3. Connect the power adapter to the power socket on your Access Point.

4. Last but not the least, check the LEDs on the Access Point to confirm if the status is okay.

5. Now the hardware installation is complete, and you may proceed to the next chapter –“Configuring Windows for IP Networking” for instruction on setting up network configurations.

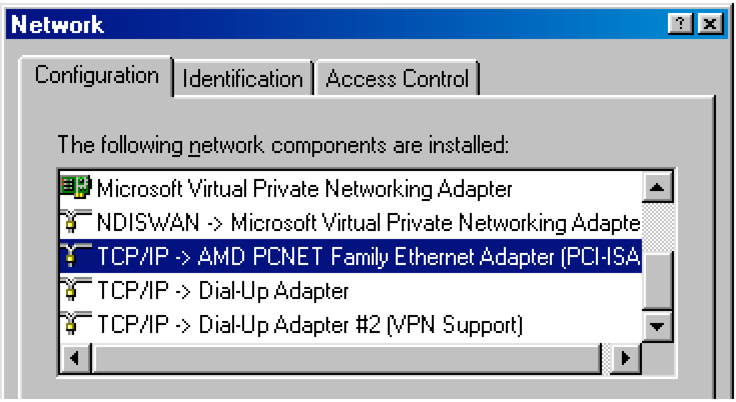
Configuring Windows for IP Networking

To establish a communication between your PCs and the 802.11g WLAN Access Point, you will need an IP address for your computer first. This section helps you configure the network settings for your operating system. Please follow the procedures below to complete the settings:

3.1 If you are using Windows 98/Me:

1. Click **Start** on the taskbar and choose **Control Panel** from the submenu of **Settings**.

2. Select **Network** to open the **Network** dialog box, and then under the **Configuration** tab, select the **TCP/IP** protocol for your network card.

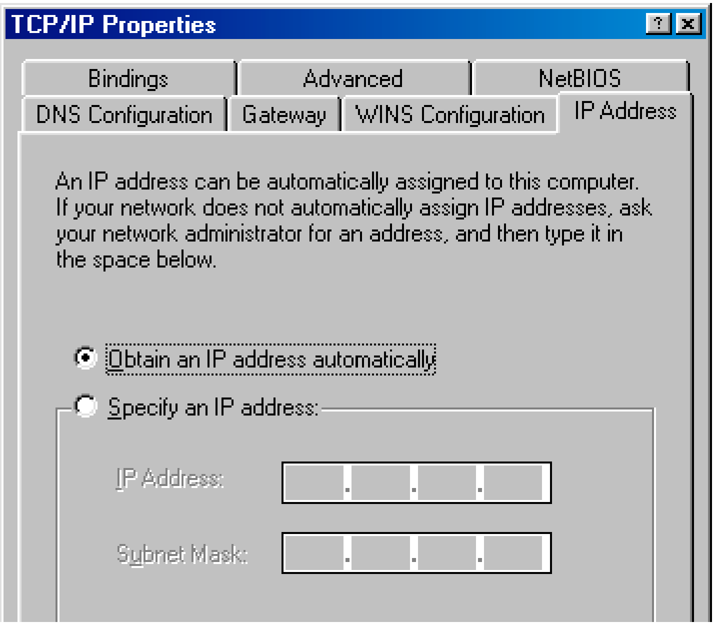


The following network components are installed:

- Microsoft Virtual Private Networking Adapter
- NDISWAN -> Microsoft Virtual Private Networking Adapte
- TCP/IP -> AMD PCNET Family Ethernet Adapter (PCI-ISA
- TCP/IP -> Dial-Up Adapter
- TCP/IP -> Dial-Up Adapter #2 (VPN Support)

3. Click **Properties** to open the **TCP/IP Properties** dialog box.

4. Click the **IP Address** tab and choose **Specify an IP address**. For example, type **192.168.1.200** in the **IP Address** area and **255.255.255.0** in the **Subnet Mask** area. To ensure the system is now using the IP address you specify, restart your computer to check later.



An IP address can be automatically assigned to this computer. If your network does not automatically assign IP addresses, ask your network administrator for an address, and then type it in the space below.

● Obtain an IP address automatically

○ Specify an IP address:

IP Address: . . .

Subnet Mask: . . .

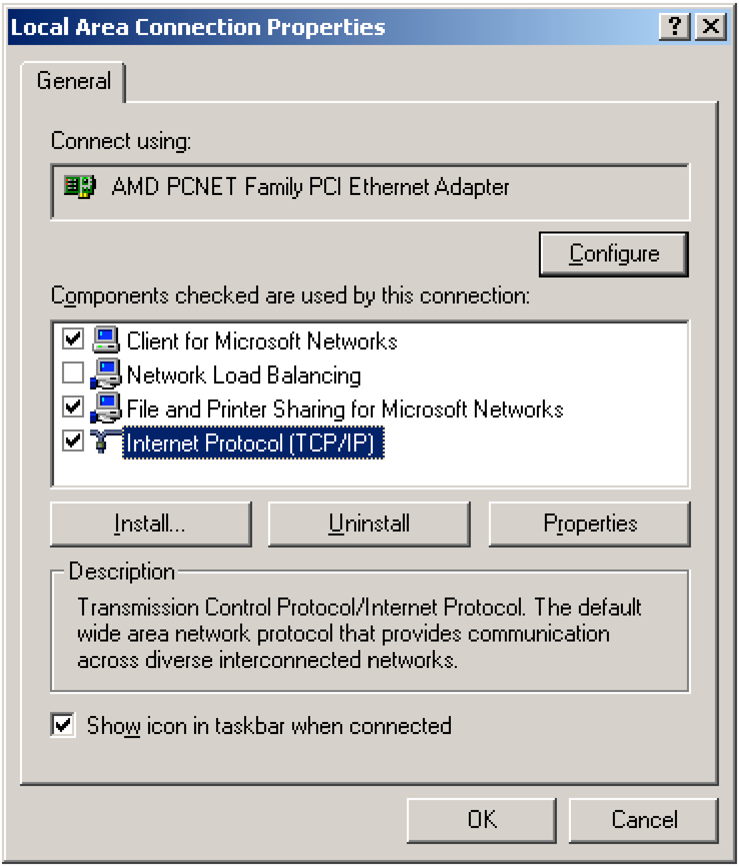
Note: The IP address must be 192.168.1.x. The value of X should be ranged from 1 to 254 and is never used by other PCs.

5. Click **OK**, and then restart the system.

3.2 If you are using Windows 2000:

1. Click **Start** on the taskbar and choose **Network and Dial-up Connection** from the submenu of **Settings**.

2. Double-click the **Local Area Connection** open the **Local Area Connection Properties** box.



Connect using:

AMD PCNET Family PCI Ethernet Adapter

Components checked are used by this connection:

☑ Client for Microsoft Networks
□ Network Load Balancing
☑ File and Printer Sharing for Microsoft Networks
☑ Internet Protocol (TCP/IP)

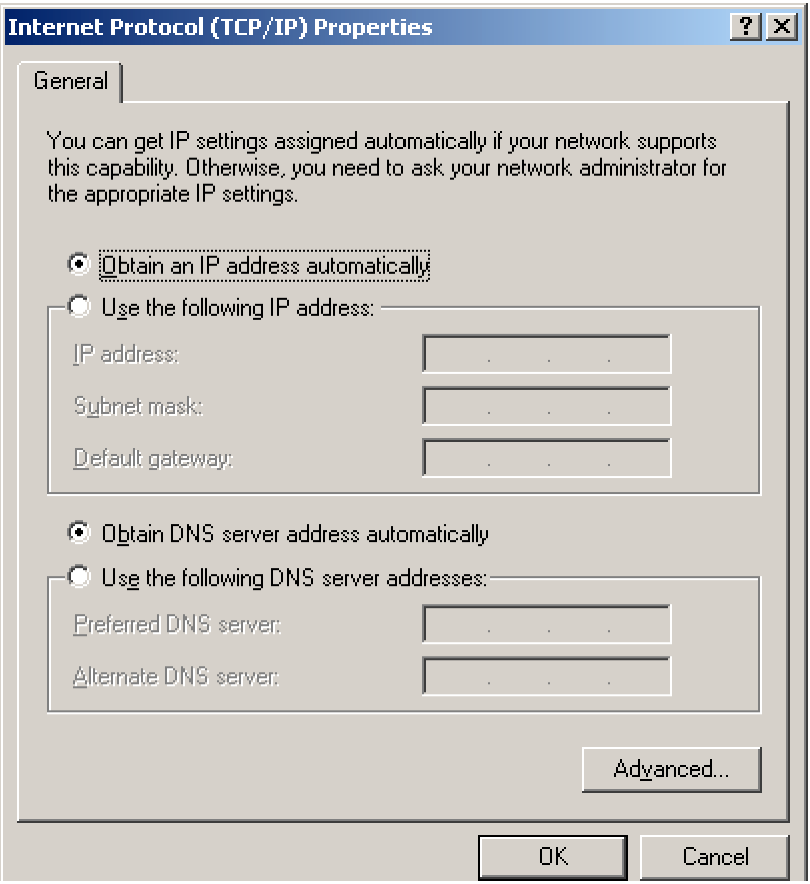
Description

Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.

☑ Show icon in taskbar when connected

3. Select the **Internet Protocol (TCP/IP)** for your network card, and then click **Properties** to open the **Internet Protocol (TCP/IP) Properties** dialog box.

4. Under the **General** tab, choose **Use the following IP address**, and then, for example, enter **192.168.1.200** in the **IP Address** area and **255.255.255.0** in the **Subnet Mask** area.



Internet Protocol (TCP/IP) Properties

General

You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

● Obtain an IP address automatically

○ Use the following IP address:

IP address: . . .

Subnet mask: . . .

Default gateway: . . .

● Obtain DNS server address automatically

○ Use the following DNS server addresses:

Preferred DNS server: . . .

Alternate DNS server: . . .

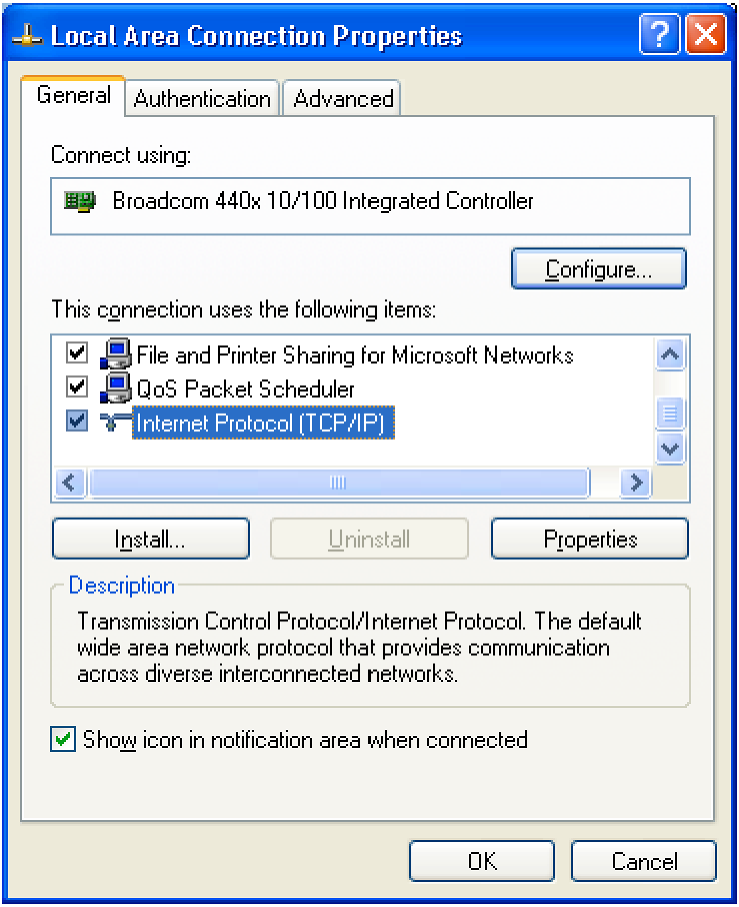
Note: The IP address must be 192.168.1.x. The value of X should be ranged from 1 to 254 and is never used by other PCs.

5. Click **OK**, and then restart the system.

3.3 If you are using Windows XP:

1. Click **Start** on the taskbar and choose **Network** from the submenu of **Control Panel**.

2. Right-click the **Local Area Connection** icon and then choose **Properties** from the menu. You should see the **Local Area Connection Properties** dialog box shown below.



Connect using:

Broadcom 440x 10/100 Integrated Controller

This connection uses the following items:

- ☑ File and Printer Sharing for Microsoft Networks
- ☑ QoS Packet Scheduler
- ☑ Internet Protocol (TCP/IP)

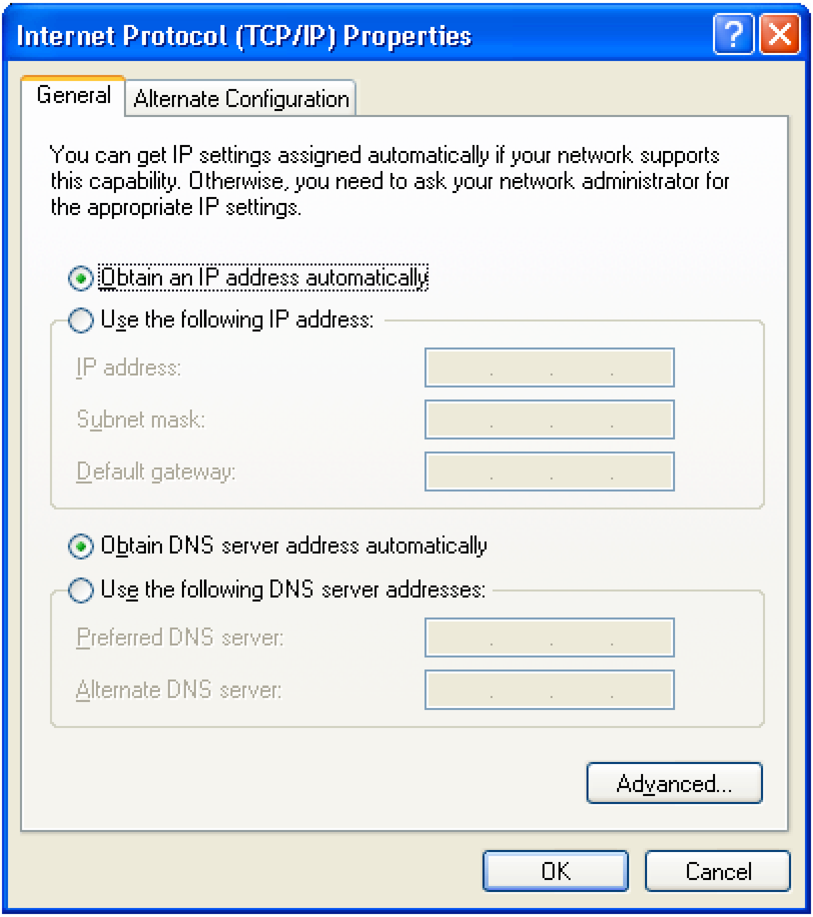
Description

Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.

☑ Show icon in notification area when connected

3. Select the **Internet Protocol (TCP/IP)** for your network card, and then click **Properties.**

4. In the opened dialog box, choose **Use the following IP address** under the **General** tab, enter, for example, **192.168.1.200** in the **IP Address** area and **255.255.255.0** in the **Subnet Mask** area.



Internet Protocol (TCP/IP) Properties

You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

● Obtain an IP address automatically

○ Use the following IP address:

IP address: . . .

Subnet mask: . . .

Default gateway: . . .

● Obtain DNS server address automatically

○ Use the following DNS server addresses:

Preferred DNS server: . . .

Alternate DNS server: . . .

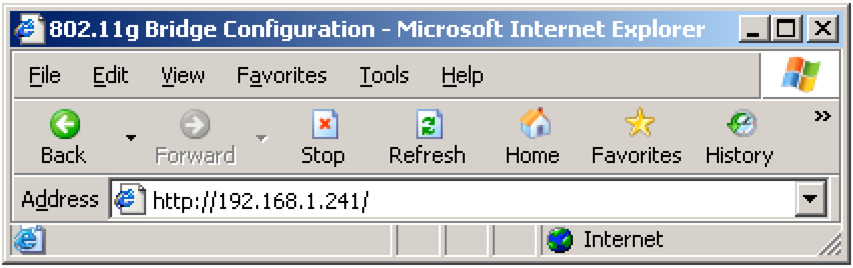
Note: The IP address must be 192.168.1.x. The value of X should be ranged from 1 to 254 and is never used by other PCs.

5. Click **OK**, and then restart the system.

Utilizing the Web Configuration Interface

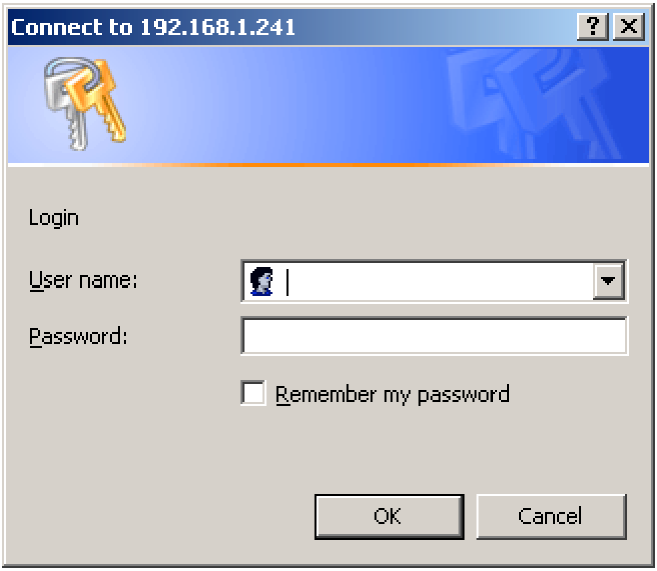
Station Bridge Mode

The Access Point's Web-based Configuration utility presents a user-friendly interface, so that you can easily execute the program by following the on-screen explanations. Type **HTTP://192.168.1.241** in the **Address** box after opening your Web browser.



http://192.168.1.241/

Then press **Enter** on your keyboard, you will see the **Enter Network Password** dialog box appear like the picture below shows.



The default **User Name** and **Password** is **nil**. Leave **User Name** and **Password** field blank and then click **OK.**

Note: You may set a new password by clicking the Admin tab after you enter the Web Configuration page

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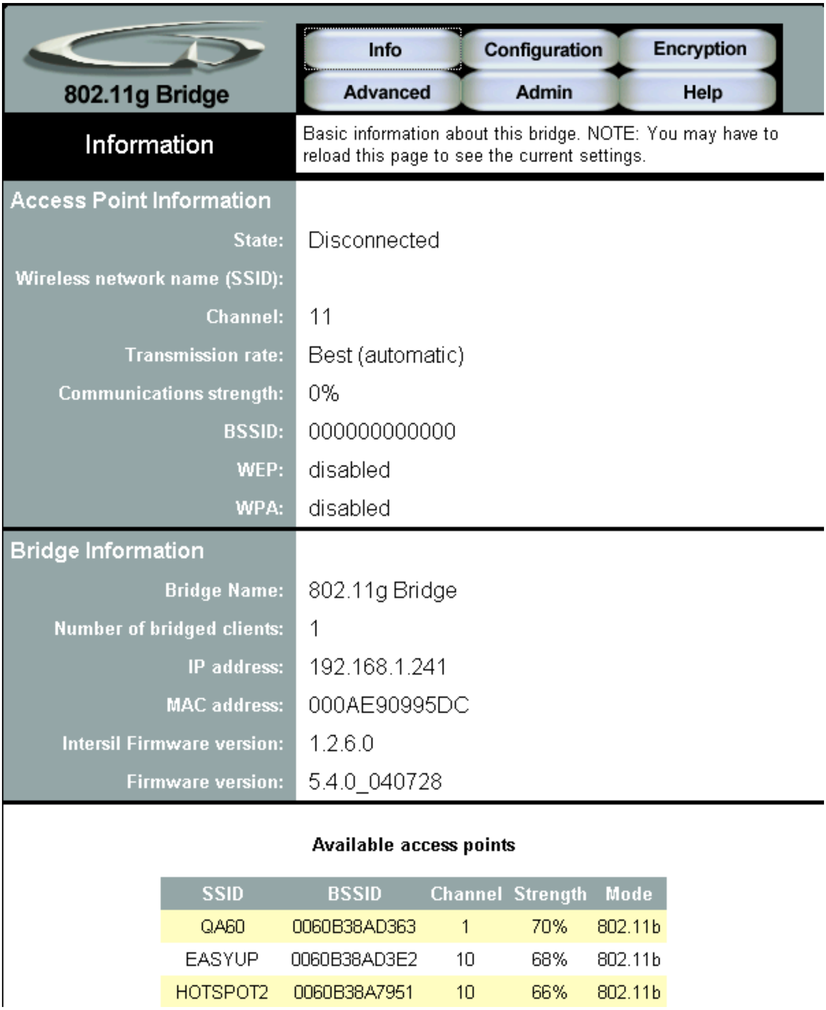
4.1 Web Configuration Interface

Under the main web interface page you will see the following configuration menu pages:

Info, **Configuration**, **Encryption**, **Advanced**, **Admin**, and **Help.** Check the sections below for detail information on the contents of each menu interface.

4.2 Info Page



Information

Basic information about this bridge. NOTE: You may have to reload this page to see the current settings.

Access Point Information

State:	Disconnected
Wireless network name (SSID):	
Channel:	11
Transmission rate:	Best (automatic)
Communications strength:	0%
BSSID:	000000000000
WEP:	disabled
WPA:	disabled

Bridge Information

Bridge Name:	802.11g Bridge
Number of bridged clients:	1
IP address:	192.168.1.241
MAC address:	000AE90995DC
Intersil Firmware version:	1.2.6.0
Firmware version:	5.4.0_040728

Available access points

SSID	BSSID	Channel	Strength	Mode
QA60	0060B38AD363	1	70%	802.11b
EASYUP	0060B38AD3E2	10	68%	802.11b
HOTSPOT2	0060B38A7951	10	66%	802.11b

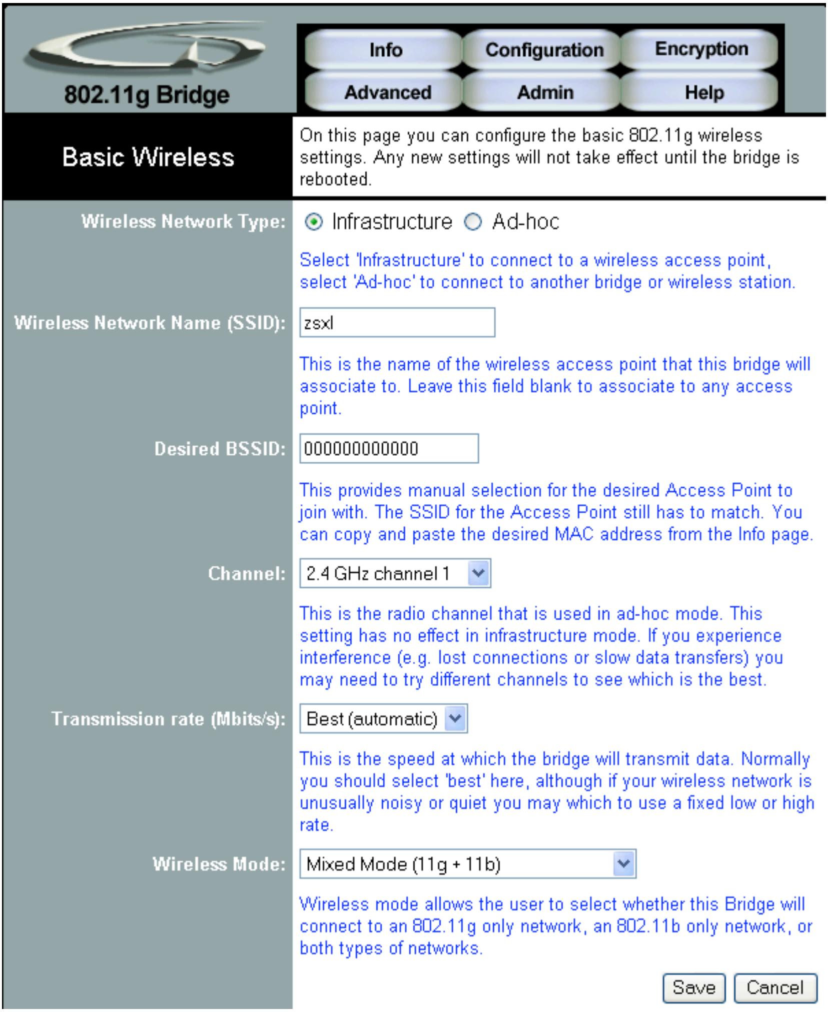
Access Point Information

This section provides the basic access point information in which this unit is associated with in bridge mode.

Bridge Information

This section provides the basic bridge setting information.

4.3 Configuration Page



Basic Wireless

On this page you can configure the basic 802.11g wireless settings. Any new settings will not take effect until the bridge is rebooted.

Wireless Network Type: ● Infrastructure ○ Ad-hoc

Select 'Infrastructure' to connect to a wireless access point, select 'Ad-hoc' to connect to another bridge or wireless station.

Wireless Network Name (SSID): zsxl

This is the name of the wireless access point that this bridge will associate to. Leave this field blank to associate to any access point.

Desired BSSID: 000000000000

This provides manual selection for the desired Access Point to join with. The SSID for the Access Point still has to match. You can copy and paste the desired MAC address from the Info page.

Channel: 2.4 GHz channel 1

This is the radio channel that is used in ad-hoc mode. This setting has no effect in infrastructure mode. If you experience interference (e.g. lost connections or slow data transfers) you may need to try different channels to see which is the best.

Transmission rate (Mbits/s): Best (automatic)

This is the speed at which the bridge will transmit data. Normally you should select 'best' here, although if your wireless network is unusually noisy or quiet you may which to use a fixed low or high rate.

Wireless Mode: Mixed Mode (11g + 11b)

Wireless mode allows the user to select whether this Bridge will connect to an 802.11g only network, an 802.11b only network, or both types of networks.

Wireless Network Type

Infrastructure: An 802.11 networking framework in which devices communicate with each other by first going through an Access Point (AP).

Ad-hoc: An 802.11 networking framework in which devices or stations communicate directly with each other, without the use of an access point (AP). Use this mode if there is no wireless infrastructure or where services are not required.

Wireless Network Name (SSID)

Network Name is also known as SSID, which stands for Service Set Identifier. Any client in Infrastructure mode has to indicate the SSID of the intended Access Point to start accessing the service from behind such as internet access. Type in the name of the Wireless Access Point to connect this Bridge to an AP.

Channel

Channels are important to understand because they affect the overall capacity of your Wireless LAN. A channel represents a narrow band of radio frequency. A radio frequency modulates within a band of frequencies; as a result, there is a limited amount of bandwidth within any given range to carry data. It is important that the frequencies do not overlap or else the throughput would be significantly lowered as the network sorts and reassembles the data packets sent over the air.

These are the only 3 channels out of the 11 available that do not overlap with one another. To avoid interference within the network with multiple APs, set each AP to use one of the 3 channels (e.g. Channel 1) and then the other AP to be one of the other 2 channels (i.e. Channel 6 or Channel 11) within the range of the wireless radio. This simple method will reduce interference and improve network reliability.

802.11b/g Wireless Channel Frequency Range: 2.4 GHz – 2.497 GHz

<u>Non-overlapping Channel Frequency Ranges</u>
Channel 1 = 2.401 GHz – 2.423 GHz
Channel 6 = 2.426 GHz – 2.448 GHz
Channel 11 = 2.451 GHz – 2.473 GHz

Americas: Wireless Channels 1-11
Asia: Wireless Channels 1 – 14

Europe: Wireless Channels 1-13

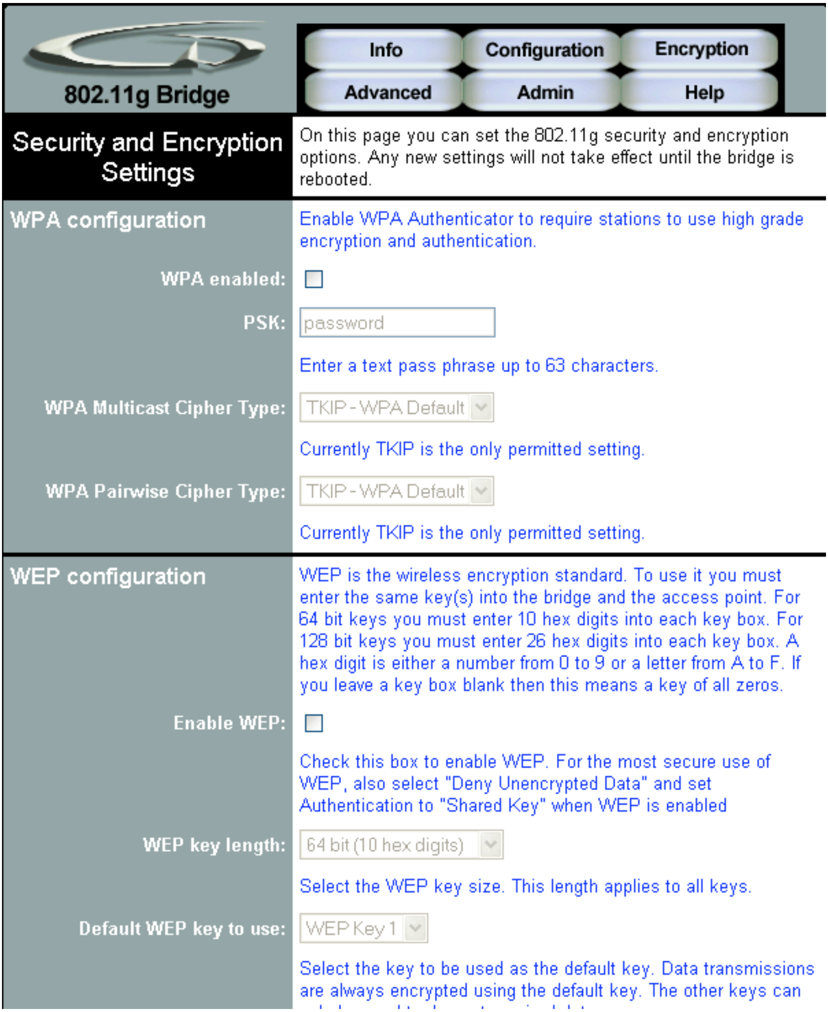
Transmission rate (Mbits/s)

This option indicates the transmission rate of the bridge. Specify the rate according to the speed of your wireless network from the list. Most of the time the default setting Best (automatic) should be selected for best performance. You may want to adjust the setting manually If your link quality and signal strength is usually low or high to get the best performance.

Wireless Mode

Wireless mode allows the user to select whether this Bridge will connect to an 802.11g only network, an 802.11b only network, or both types of networks. If you only have b or g wireless devices on the network selecting 802.11b or 802.11g only network will provide better performance then in mixed mode.

4.4 Encryption Page



Security and Encryption Settings

On this page you can set the 802.11g security and encryption options. Any new settings will not take effect until the bridge is rebooted.

WPA configuration

Enable WPA Authenticator to require stations to use high grade encryption and authentication.

WPA enabled: □

PSK: password

Enter a text pass phrase up to 63 characters.

WPA Multicast Cipher Type: TKIP - WPA Default

Currently TKIP is the only permitted setting.

WPA Pairwise Cipher Type: TKIP - WPA Default

Currently TKIP is the only permitted setting.

WEP configuration

WEP is the wireless encryption standard. To use it you must enter the same key(s) into the bridge and the access point. For 64 bit keys you must enter 10 hex digits into each key box. For 128 bit keys you must enter 26 hex digits into each key box. A hex digit is either a number from 0 to 9 or a letter from A to F. If you leave a key box blank then this means a key of all zeros.

Enable WEP: □

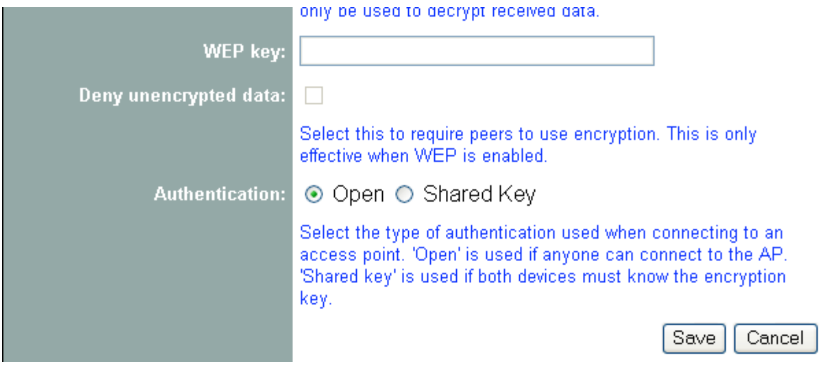
Check this box to enable WEP. For the most secure use of WEP, also select "Deny Unencrypted Data" and set Authentication to "Shared Key" when WEP is enabled

WEP key length: 64 bit (10 hex digits)

Select the WEP key size. This length applies to all keys.

Default WEP key to use: WEP Key 1

Select the key to be used as the default key. Data transmissions are always encrypted using the default key. The other keys can



only be used to decrypt received data.

WEP key:

Deny unencrypted data: □

Select this to require peers to use encryption. This is only effective when WEP is enabled.

Authentication: ● Open ○ Shared Key

Select the type of authentication used when connecting to an access point. 'Open' is used if anyone can connect to the AP. 'Shared key' is used if both devices must know the encryption key.

WPA Configuration

Short for Wi-Fi Protected Access, a Wi-Fi standard that was designed to improve upon the security features of WEP. WPA has the following improvements over the WEP.

- Improved data encryption through the temporal key integrity protocol (TKIP). TKIP scrambles the keys using a hashing algorithm and, by adding an integrity-checking feature, ensures that the keys haven’t been tampered with.

- User authentication, which is generally missing in WEP, through the extensible authentication protocol (EAP). WEP regulates access to a wireless network based on a computer’s hardware-specific MAC address, which is relatively simple to be sniffed out and stolen. EAP is built on a more secure public-key encryption system to ensure that only authorized network users can access the network.

WPA enabled

To enable the WPA Authenticator

PSK

PSK stands for Pre-Shared-Key and serves as a password. User may key in a 8 to 63 characters string to set the password or leave it blank, in which the 802.1x Authentication will be activated. Note that if user key in own password, make sure to use the same password on client's end.

WPA Multicast Cipher Type

Select TKIP - WPA Default

WPA Pairwise Cipher Type

Select TKIP - WPA Default

WEP Configuration

Short for Wired Equivalent Privacy, a security protocol for wireless local area networks (WLANs) defined in the 802.11b standard. WEP is designed to provide the same level of security as that of a wired LAN.

Enable WEP

To enable the WEP Authenticator

WEP key length

Encryption strength of the web key. Defualt = 64bit (10 Hex digits)

Default WEP key to use

Select the key to be used as the default key. Data transmissions are always encrypted using the default key. The other keys can only be used to decrypt received data.

WEP key

Type in a 10 hex digit password if using 64 bit WEP key length.
Type in 26 hex digits password if using 128 bit WEP key length.

Hex Digits = 0-9 and A-F

Deny unencrypted data

Force the peer connection(s) to this bridge to use encryption to farther increase security.

Authentication

- Open - Open system authentication involves a two-step authentication transaction sequence. The first step in the sequence is the identity assertion and request for authentication. The second step in the sequence is the authentication result. If it is “successful”, The station shall be mutually authenticated.

Open system authentication does not provide authentication. It provides identification using the wireless adapter's MAC address. Open system authentication is used when no authentication is required. It is the default authentication algorithm.

Open system authentication uses the following process:

1. The authentication-initiating wireless client sends an IEEE 802.11 authentication management frame that contains its identity.

2. The receiving wireless AP checks the initiating station's identity and sends back an authentication verification frame.

With some wireless APs, you can configure the MAC addresses of allowed wireless clients. However, configuring the MAC address does not provide sufficient security because the MAC address of a wireless client can be spoofed.

- Shared Key - Shared key authentication supports authentication of stations as either a member of those who know a shared secret key or a member of those who do not.

Shared key authentication is not secure and is not recommended for use. It verifies that an authentication-initiating station has knowledge of a shared secret. This is similar to preshared key authentication for Internet Protocol security (IPSec). The 802.11 standard currently assumes that the shared secret is delivered to the participating wireless clients by means of a more secure channel that is independent of IEEE 802.11. In practice, a user manually types this secret for the wireless AP and the wireless client.

Shared key authentication uses the following process:

1. The authentication-initiating wireless client sends a frame consisting of an identity assertion and a request for authentication.

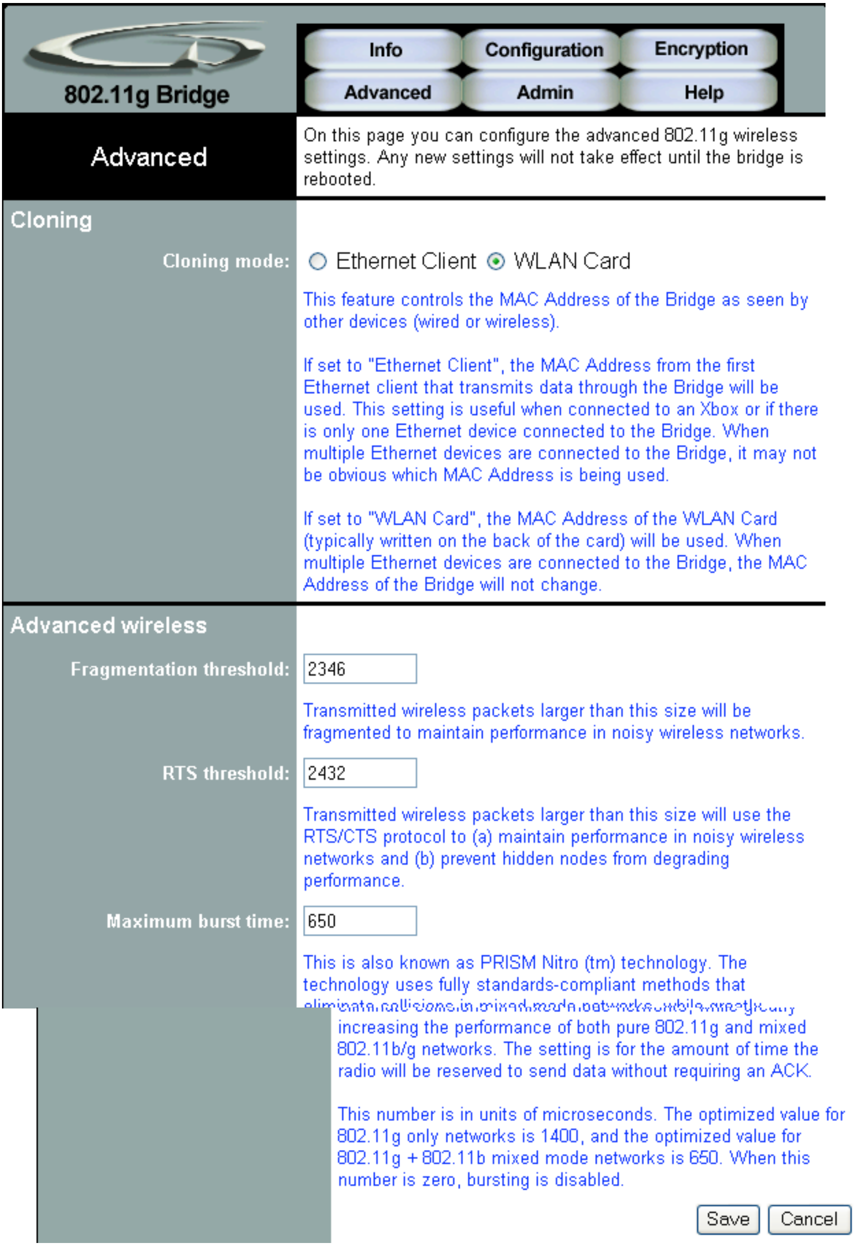
2. The authenticating wireless node responds to the authentication-initiating wireless node with challenge text.

3. The authentication-initiating wireless node replies to the authenticating wireless node with the challenge text that is encrypted using WEP and an encryption key that is derived from the shared key authentication secret.

4. The authentication result is positive if the authenticating wireless node determines that the decrypted challenge text matches the challenge text originally sent in the second frame. The authenticating wireless node sends the authentication result.

Because the shared key authentication secret must be manually distributed and typed, this method of authentication does not scale appropriately in large infrastructure network mode, such as corporate campuses.

4.5 Advanced Page



Advanced

On this page you can configure the advanced 802.11g wireless settings. Any new settings will not take effect until the bridge is rebooted.

Cloning

Cloning mode: ○ Ethernet Client ● WLAN Card

This feature controls the MAC Address of the Bridge as seen by other devices (wired or wireless).

If set to "Ethernet Client", the MAC Address from the first Ethernet client that transmits data through the Bridge will be used. This setting is useful when connected to an Xbox or if there is only one Ethernet device connected to the Bridge. When multiple Ethernet devices are connected to the Bridge, it may not be obvious which MAC Address is being used.

If set to "WLAN Card", the MAC Address of the WLAN Card (typically written on the back of the card) will be used. When multiple Ethernet devices are connected to the Bridge, the MAC Address of the Bridge will not change.

Advanced wireless

Fragmentation threshold: 2346

Transmitted wireless packets larger than this size will be fragmented to maintain performance in noisy wireless networks.

RTS threshold: 2432

Transmitted wireless packets larger than this size will use the RTS/CTS protocol to (a) maintain performance in noisy wireless networks and (b) prevent hidden nodes from degrading performance.

Maximum burst time: 650

This is also known as PRISM Nitro (tm) technology. The technology uses fully standards-compliant methods that eliminate collisions in mixed mode networks while greatly increasing the performance of both pure 802.11g and mixed 802.11b/g networks. The setting is for the amount of time the radio will be reserved to send data without requiring an ACK.

This number is in units of microseconds. The optimized value for 802.11g only networks is 1400, and the optimized value for 802.11g + 802.11b mixed mode networks is 650. When this number is zero, bursting is disabled.

Cloning

Cloning Mode

- **Ethernet Client**

If set to "Ethernet Client", the MAC Address from the first Ethernet client that transmits data through the Bridge will be used. Which means the client MAC address will become the alias address to the Bridge.

- **WLAN Card**

If set to "WLAN Card", the MAC Address of the WLAN Card will be used. When multiple Ethernet devices are connected to the Bridge, the MAC Address of the Bridge will not change.

Advanced Wireless

Fragmentation threshold

Fragmentation Threshold is the maximum length of the frame, beyond which payload must be broken up (fragmented) into two or more frames. Collisions occur more often for long frames because sending them occupies the channel for a longer period of time, increasing the chance that another station will transmit and cause collision. Reducing Fragmentation Threshold results in shorter frames that "busy" the channel for shorter periods, reducing packet error rate and resulting retransmissions. However, shorter frames also increase overhead, degrading maximum possible throughput, so adjusting this parameter means striking a good balance between error rate and throughput.

RTS threshold

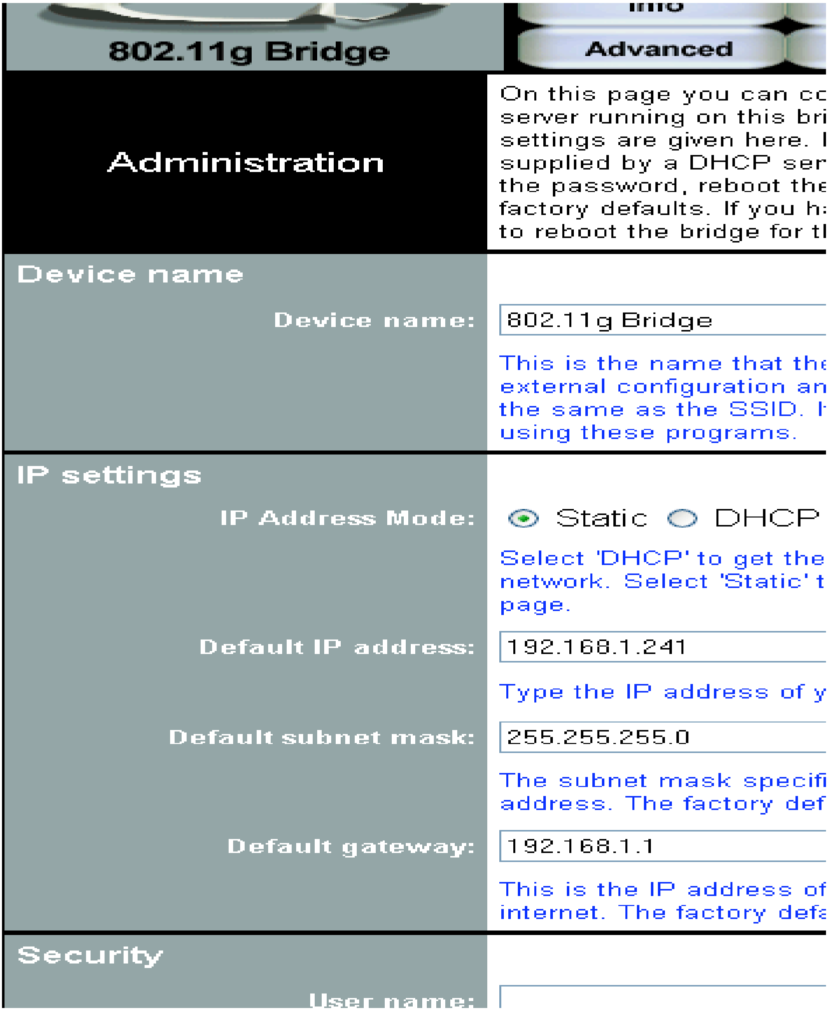
RTS Threshold is the frame size above which an RTS/CTS handshake will be performed before attempting to transmit. RTS/CTS asks for permission to transmit to reduce collisions, but adds considerable overhead. Disabling RTS/CTS can reduce overhead and latency in WLANs where all stations are close together, but can increase collisions and degrade performance in WLANs where stations are far apart and unable to sense each other to avoid collisions (aka Hidden Nodes). If you are experiencing excessive collisions, you can try turning RTS/CTS on or (if already on) reduce RTS/CTS Threshold on the affected stations.

Maximum burst time

Maximum burst time is a feature based on the PRISM Nitro; a new WLAN software solution that more than triples 802.11g throughput in a mixed-mode environment and offers up to 50 percent greater throughput performance in 802.11g-only networks. PRISM Nitro is fully IEEE 802.11 compliant and uses prioritization algorithms and enhanced protection mechanisms to significantly increase wireless networking performance.

The recommended value for the maximum burst time for 11b or the mixed 11b/g environment is 650. For the 11g only mode use the value 1400.

4.6 Admin Page



Administration

On this page you can co
server running on this bri
settings are given here. I
supplied by a DHCP ser
the password, reboot the
factory defaults. If you h
to reboot the bridge for tl

Device name

Device name: 802.11g Bridge

This is the name that the
external configuration an
the same as the SSID. I
using these programs.

IP settings

IP Address Mode: ● Static ○ DHCP

Select 'DHCP' to get the
network. Select 'Static' t
page.

Default IP address: 192.168.1.241

Type the IP address of y

Default subnet mask: 255.255.255.0

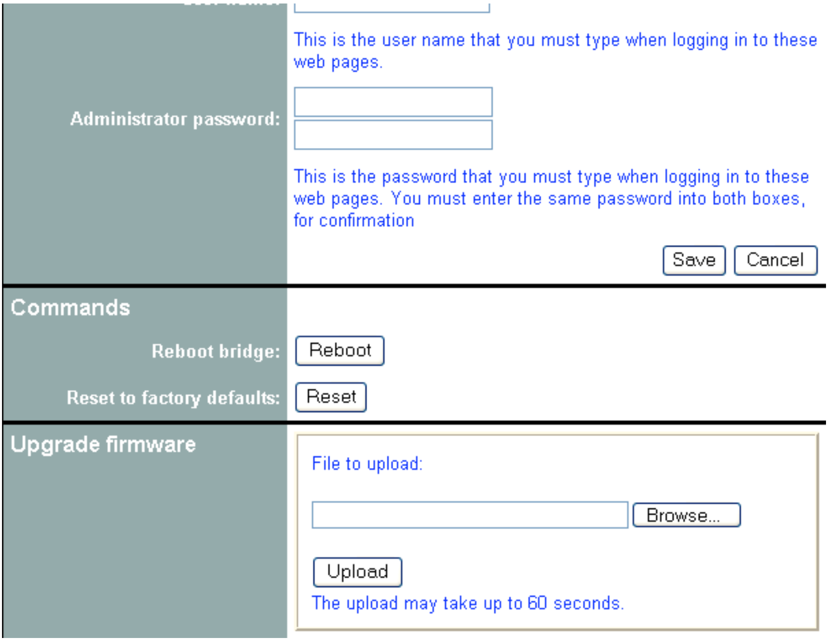
The subnet mask specifi
address. The factory def

Default gateway: 192.168.1.1

This is the IP address of
internet. The factory defa

Security

User name:



This is the user name that you must type when logging in to these web pages.

Administrator password:

This is the password that you must type when logging in to these web pages. You must enter the same password into both boxes, for confirmation

Commands

Reboot bridge:

Reset to factory defaults:

Upgrade firmware

File to upload:

The upload may take up to 60 seconds.

Device name

You can name this bridge for identification. You can leave it blank without entering anything. However, the name for the bridge will be useful for identification especially when there are more than one bridge in your wireless network.

IP settings

IP Address Mode

- **Static**

Manually setup an ip for this device.

- **DHCP**

Set up the bridge as a DHCP client which will pick up an IP from a DHCP server.

Default IP address

The default IP address is 192.168.1.240

Default subnet mask

The factory subnet default value is 255.255.255.0

Default gateway

The factory gateway default address is 192.168.1.1

Security

Set up the administrative login name and password for the bridge.

User name

This is the user name that you must type when logging into the web interface.

Administrator password

This is the password that you must type when logging into the web interface. You must enter the same password into both boxes, for confirmation.

Commands

Reboot bridge

All changes from the web interface will not take effect until the Reboot.

Reset to factory defaults

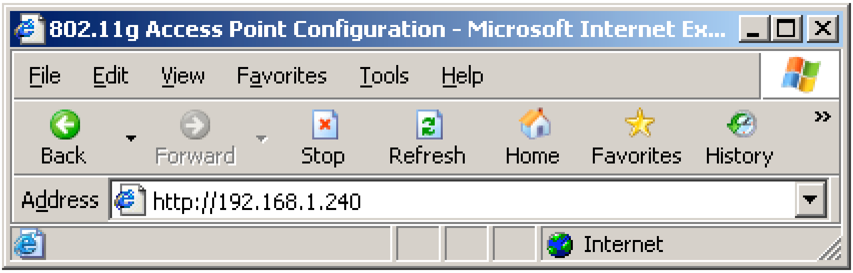
Reset all changes made to the bridge back to factory defualt

Upgrade firmware

Upload firmware from a selected source path.

Access Point Mode

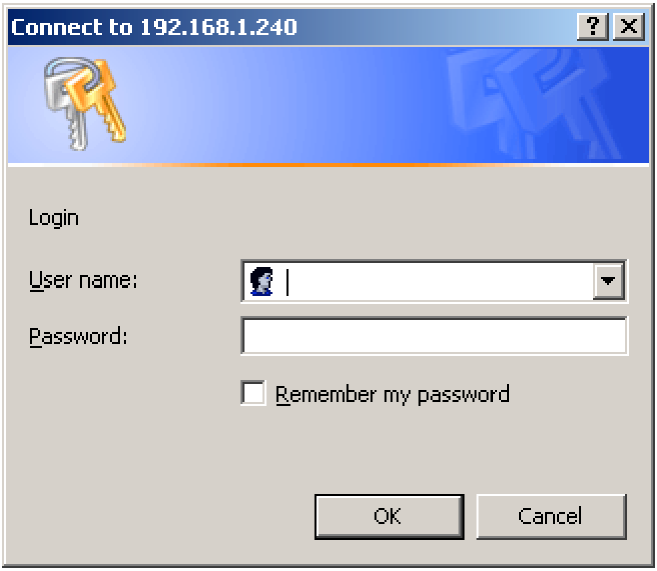
The Access Point's Web-based Configuration utility presents a user-friendly interface, so that you can easily execute the program by following the on-screen explanations. Type HTTP://192.168.1.240 in the **Address** box after opening your Web browser.



802.11g Access Point Configuration - Microsoft Internet Ex...

http://192.168.1.240

Then press **Enter** on your keyboard, you will see the **Enter Network Password** dialog box appear like the picture below shows.



Connect to 192.168.1.240

Login

User name:

Password:

□ Remember my password

The default **User Name** and **Password** is **nil**. Leave **User Name** and **Password** field blank and then click **OK.**

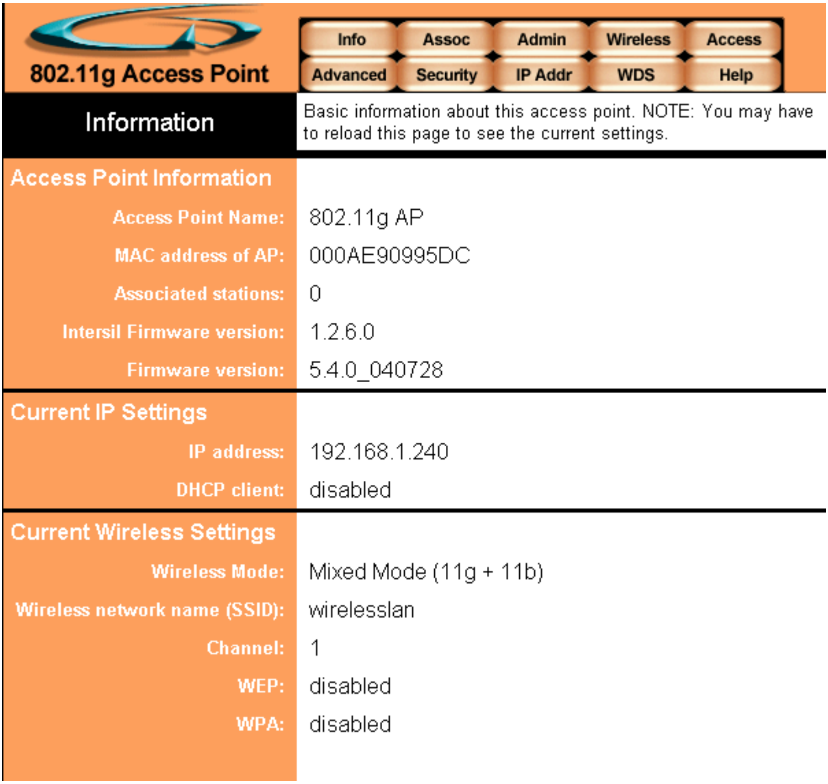
Note: You may set a new password by clicking the Admin tab after you enter the Access Point Configuration Web page.

5.1 Web Configuration Interface

Under the main web interface page you will see the following configuration menu pages:

Info, Assoc, Admin, Wireless, Access, Advanced, Secruity, IP Addr, WDS and **Help.** Check the sections below for detail information on the contents of each menu interface.

5.2 Info Page



Information

Basic information about this access point. NOTE: You may have to reload this page to see the current settings.

Access Point Information

Access Point Name:	802.11g AP
MAC address of AP:	000AE90995DC
Associated stations:	0
Intersil Firmware version:	1.2.6.0
Firmware version:	5.4.0_040728

Current IP Settings

IP address:	192.168.1.240
DHCP client:	disabled

Current Wireless Settings

Wireless Mode:	Mixed Mode (11g + 11b)
Wireless network name (SSID):	wirelesslan
Channel:	1
WEP:	disabled
WPA:	disabled

Access Point Information

Shows the following basic information of the unit:

- Name and MAC address of the AP.
- Number of wireless stations associated with this unit.

- Firmware version of the wireless component.

- Firmware version of the complete system.

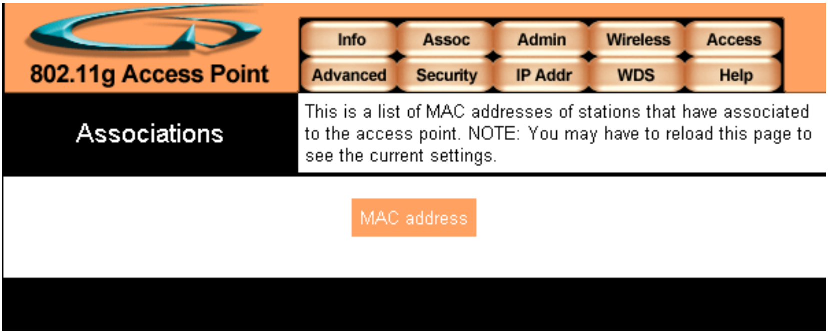
Current IP Settings

Shows the current ip address of the unit and the DHCP client status.

Current Wireless Settings

Shows the unit wireless broadcast mode, the name of the wireless network setup on the unit, the channel of the wireless network and the type of encryption that unit is currently using.

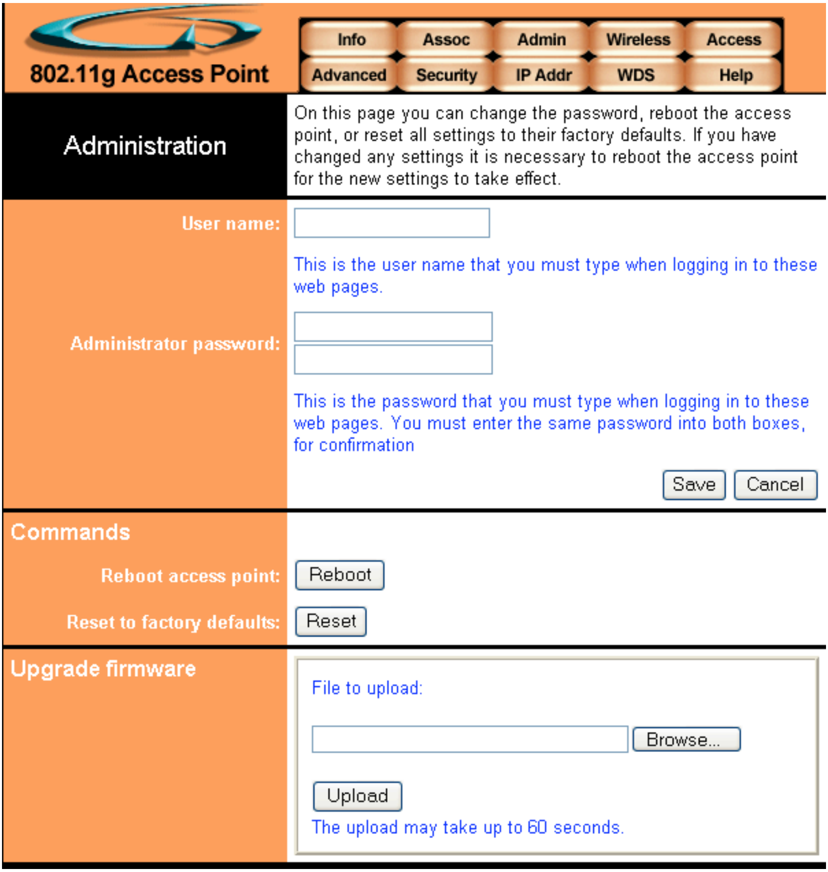
5.3 Assoc Tab



This is a list of MAC addresses of stations that have associated to the access point. NOTE: You may have to reload this page to see the current settings.

A list of MAC addresses of other wireless stations that are associated with this unit. (Bridges, Routers, Clients?)

5.4 Admin Page



Administration

On this page you can change the password, reboot the access point, or reset all settings to their factory defaults. If you have changed any settings it is necessary to reboot the access point for the new settings to take effect.

User name:

This is the user name that you must type when logging in to these web pages.

Administrator password:

This is the password that you must type when logging in to these web pages. You must enter the same password into both boxes, for confirmation

Commands

Upgrade firmware

File to upload:

The upload may take up to 60 seconds.

User Name

This is the user name that you must type when logging into the web interface.

Administrator Password

This is the password that you must type when logging into the web interface. You must enter the same password into both boxes, for confirmation.

Commands

Reboot access point

All changes from the web interface will not take effect until the Reboot.

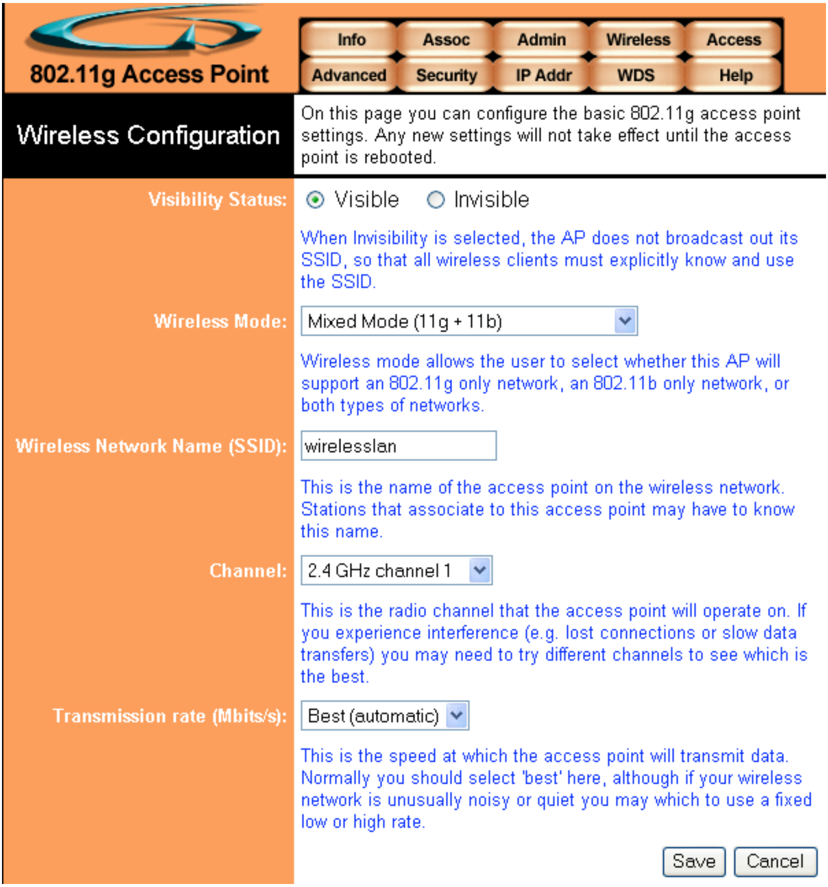
Reset to factory defaults

Reset all changes made to the bridge back to factory default

Upgrade firmware

Upload firmware from a selected source path.

5.5 Wireless Page



Wireless Configuration

On this page you can configure the basic 802.11g access point settings. Any new settings will not take effect until the access point is rebooted.

Visibility Status: ● Visible ○ Invisible

When Invisibility is selected, the AP does not broadcast out its SSID, so that all wireless clients must explicitly know and use the SSID.

Wireless Mode: Mixed Mode (11g + 11b)

Wireless mode allows the user to select whether this AP will support an 802.11g only network, an 802.11b only network, or both types of networks.

Wireless Network Name (SSID): wirelesslan

This is the name of the access point on the wireless network. Stations that associate to this access point may have to know this name.

Channel: 2.4 GHz channel 1

This is the radio channel that the access point will operate on. If you experience interference (e.g. lost connections or slow data transfers) you may need to try different channels to see which is the best.

Transmission rate (Mbits/s): Best (automatic)

This is the speed at which the access point will transmit data. Normally you should select 'best' here, although if your wireless network is unusually noisy or quiet you may which to use a fixed low or high rate.

Visibility Status

This controls the SSID broadcasting function. If enabled the SSID will be broadcasted out to all the wireless clients in the area. If disabled the wireless clients will not be able to pickup the SSID but must explicitly know the SSID of the unit in order to associate. The recommended practice is to set the visibility to invisible after setting up the wireless network.

Wireless Mode

The recommended practice is to set up the wireless mode to support one standard for best performance and stability.

Wireless Network Name (SSID)

Service Set Identifier (SSID) is the name in which other wireless clients will see this unit as when searching on the wireless network.

Channel

Channels are important to understand because they affect the overall capacity of your Wireless LAN. A channel represents a narrow band of radio frequency. A radio frequency modulates within a band of frequencies; as a result, there is a limited amount of bandwidth within any given range to carry data. It is important that the frequencies do not overlap or else the throughput would be significantly lowered as the network sorts and reassembles the data packets sent over the air.

These are the only 3 channels out of the 11 available that do not overlap with one another. To avoid interference within the network with multiple APs, set each AP to use one of the 3 channels (e.g. Channel 1) and then the other AP to be one of the other 2 channels (i.e. Channel 6 or Channel 11) within the range of the wireless radio. This simple method will reduce interference and improve network reliability.

Wireless Channel Frequency Range: 2.4 GHz – 2.497 GHz

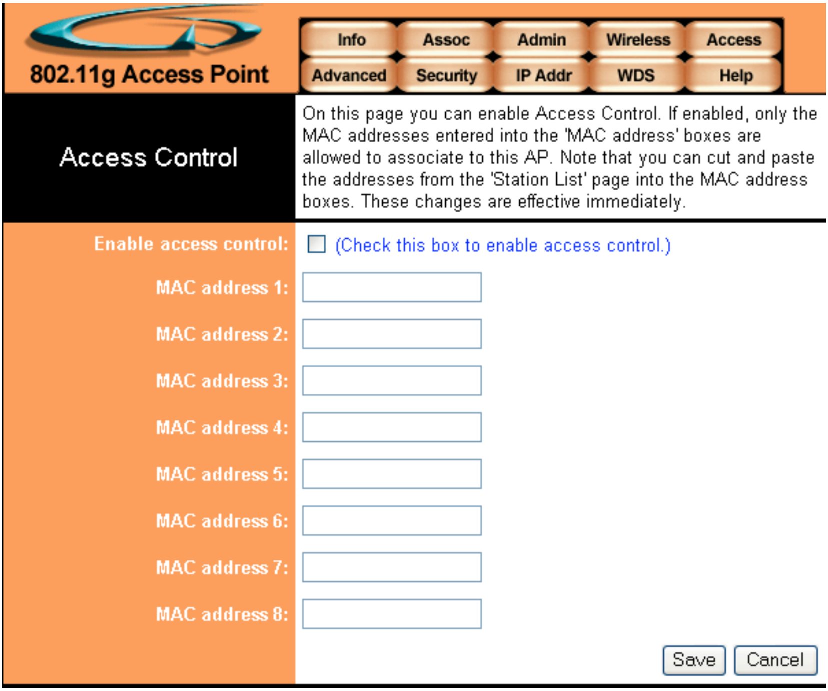
Channel 1 = 2401 Hz – 2423 Hz
Channel 6 = 2426 Hz – 2448 Hz
Channel 11 = 2451 Hz – 2473 Hz

Americas: Wireless Channels 1-11
Asia: Wireless Channels 1 – 14
Europe: Wireless Channels 1-13

Transmission rate (Mbits/s)

This option indicates the transmission rate of the bridge. Specify the rate according to the speed of your wireless network from the list. Most of the time the default setting Best (automatic) should be selected for best performance. You may want to adjust the setting manually If your link quality and signal strength is usually low or high to get the best performance.

5.7 Access Page



Access Control

On this page you can enable Access Control. If enabled, only the MAC addresses entered into the 'MAC address' boxes are allowed to associate to this AP. Note that you can cut and paste the addresses from the 'Station List' page into the MAC address boxes. These changes are effective immediately.

Enable access control: □ (Check this box to enable access control.)

MAC address 1:

MAC address 2:

MAC address 3:

MAC address 4:

MAC address 5:

MAC address 6:

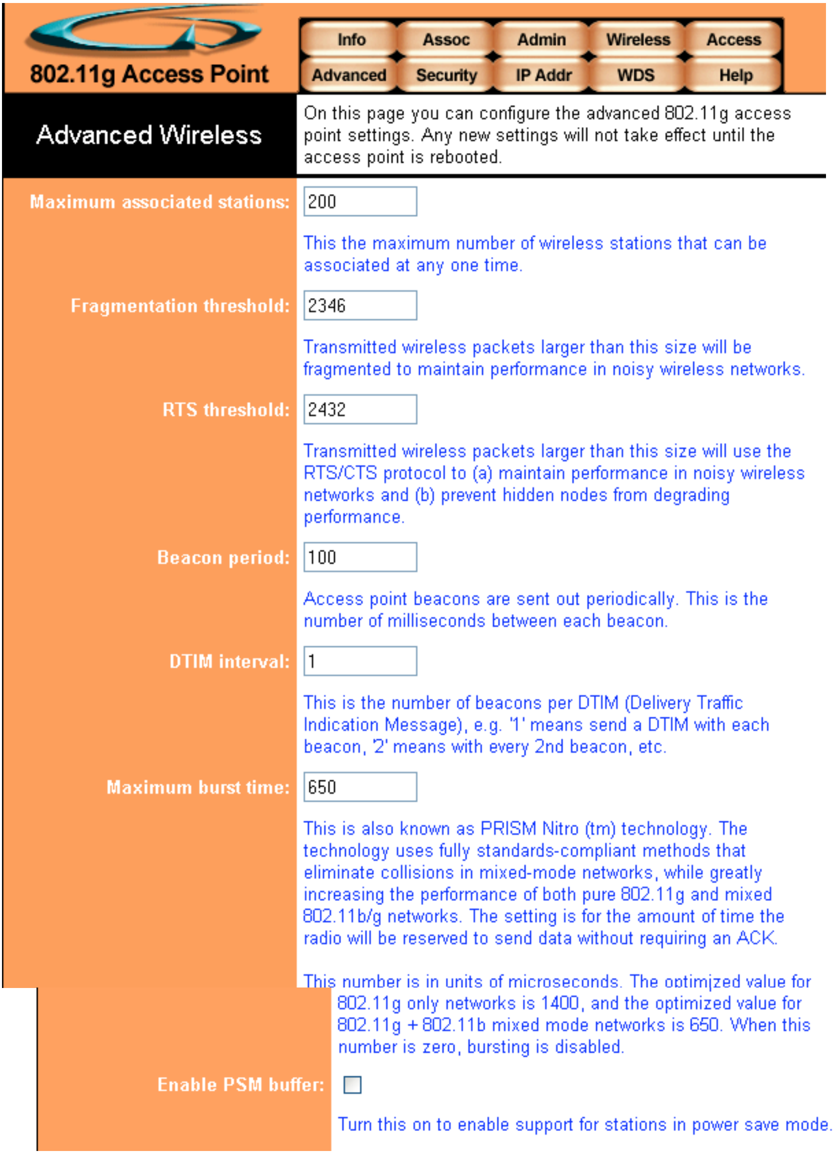
MAC address 7:

MAC address 8:

Enable access control

If enabled, this feature will allow you to associate devices by MAC addresses up to 8 different units. Anything that are not programmed into the list will be blocked out from associating with the unit.

5.7 Advanced Page



Advanced Wireless

On this page you can configure the advanced 802.11g access point settings. Any new settings will not take effect until the access point is rebooted.

Maximum associated stations: 200

This the maximum number of wireless stations that can be associated at any one time.

Fragmentation threshold: 2346

Transmitted wireless packets larger than this size will be fragmented to maintain performance in noisy wireless networks.

RTS threshold: 2432

Transmitted wireless packets larger than this size will use the RTS/CTS protocol to (a) maintain performance in noisy wireless networks and (b) prevent hidden nodes from degrading performance.

Beacon period: 100

Access point beacons are sent out periodically. This is the number of milliseconds between each beacon.

DTIM interval: 1

This is the number of beacons per DTIM (Delivery Traffic Indication Message), e.g. '1' means send a DTIM with each beacon, '2' means with every 2nd beacon, etc.

Maximum burst time: 650

This is also known as PRISM Nitro (tm) technology. The technology uses fully standards-compliant methods that eliminate collisions in mixed-mode networks, while greatly increasing the performance of both pure 802.11g and mixed 802.11b/g networks. The setting is for the amount of time the radio will be reserved to send data without requiring an ACK.

This number is in units of microseconds. The optimized value for 802.11g only networks is 1400, and the optimized value for 802.11g + 802.11b mixed mode networks is 650. When this number is zero, bursting is disabled.

Enable PSM buffer: □

Turn this on to enable support for stations in power save mode.

Maximum associated stations

This the maximum number of wireless clients that can be associated at any one time.

Fragmentation threshold

Fragmentation Threshold is the maximum length of the frame, beyond which payload must be broken up (fragmented) into two or more frames. Collisions occur more often for long frames because sending them occupies the channel for a longer period of time, increasing the chance that another station will transmit and cause collision. Reducing Fragmentation Threshold results in shorter frames that "busy" the channel for shorter periods, reducing packet error rate and resulting retransmissions. However, shorter frames also increase overhead, degrading maximum possible throughput, so adjusting this parameter means striking a good balance between error rate and throughput.

RTS threshold

RTS Threshold is the frame size above which an RTS/CTS handshake will be performed before attempting to transmit. RTS/CTS asks for permission to transmit to reduce collisions, but adds considerable overhead. Disabling RTS/CTS can reduce overhead and latency in WLANs where all stations are close together, but can increase collisions and degrade performance in WLANs where stations are far apart and unable to sense each other to avoid collisions (aka Hidden Nodes). If you are experiencing excessive collisions, you can try turning RTS/CTS on or (if already on) reduce RTS/CTS Threshold on the affected stations.

Beacon period

In wireless networking, a beacon is a packet sent by a connected device to inform other devices of its presence and readiness.
When a wirelessly networked device sends a beacon, it includes with it a beacon interval, which specifies the period of time before it will send the beacon again. The interval tells receiving devices on the network how long they can wait in low-power mode before waking up to handle the beacon. Network managers can adjust the beacon interval, usually measured in milliseconds (ms) or its equivalent, kilo microseconds (Kmsec).

DTIM interval

Delivery Traffic Indication Message. A DTIM is a signal sent as part of a beacon by an access point to a client device in sleep mode, alerting the device to a packet awaiting delivery. A DTIM interval, also known as a Data Beacon Rate, is the frequency at which an access point's beacon will include a DTIM. This frequency is usually measured in milliseconds (ms) or its equivalent, kilo microseconds (Kmsec).

Maximum burst time

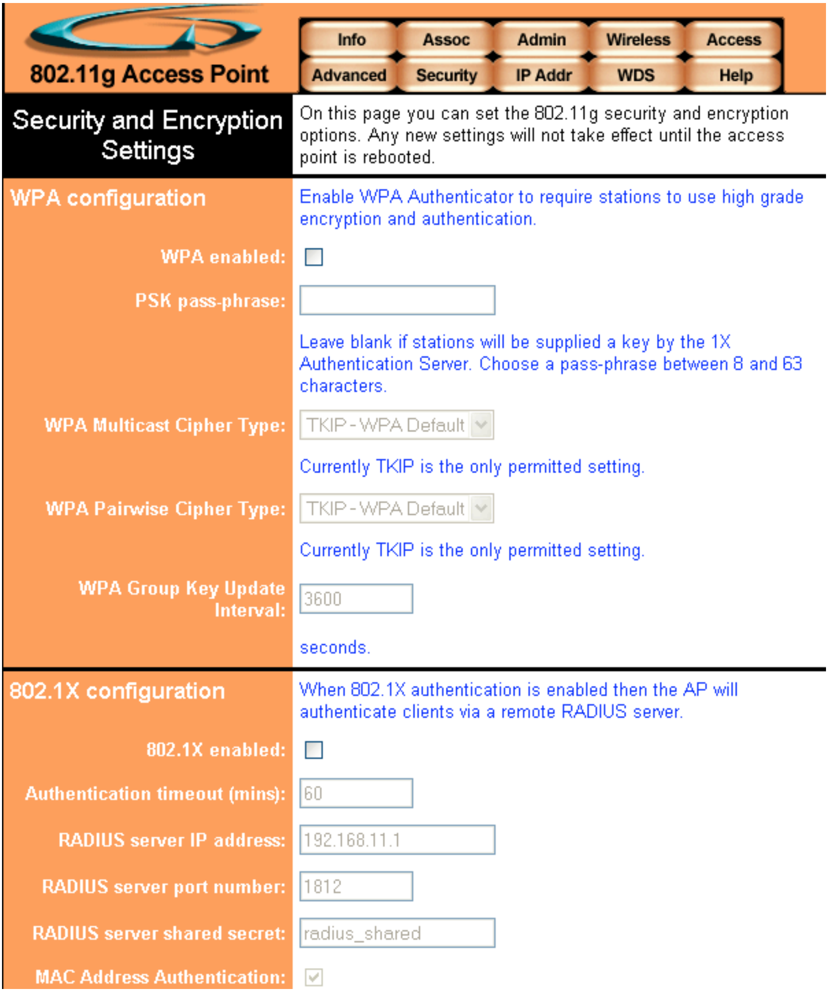
Maximum burst time is a feature based on the PRISM Nitro; a new WLAN software solution that more than triples 802.11g throughput in a mixed-mode environment and offers up to 50 percent greater throughput performance in 802.11g-only networks. PRISM Nitro is fully IEEE 802.11 compliant and uses prioritization algorithms and enhanced protection mechanisms to significantly increase wireless networking performance.

The recommended value for the maximum burst time for 11b or the mixed 11b/g environment is 650. For the 11g only mode use the value 1400.

Enable PSM buffer

PSM stands for Power Save Mechanisms. Turn this on to enable support for stations in power save mode.

5.8 Security Page



Security and Encryption Settings

On this page you can set the 802.11g security and encryption options. Any new settings will not take effect until the access point is rebooted.

WPA configuration

Enable WPA Authenticator to require stations to use high grade encryption and authentication.

WPA enabled:	□
PSK pass-phrase:	
	Leave blank if stations will be supplied a key by the 1X Authentication Server. Choose a pass-phrase between 8 and 63 characters.
WPA Multicast Cipher Type:	TKIP - WPA Default
	Currently TKIP is the only permitted setting.
WPA Pairwise Cipher Type:	TKIP - WPA Default
	Currently TKIP is the only permitted setting.
WPA Group Key Update Interval:	3600
	seconds.

802.1X configuration

When 802.1X authentication is enabled then the AP will authenticate clients via a remote RADIUS server.

802.1X enabled:	□
Authentication timeout (mins):	60
RADIUS server IP address:	192.168.11.1
RADIUS server port number:	1812
RADIUS server shared secret:	radius_shared
MAC Address Authentication:	☑

WPA configuration

Short for Wi-Fi Protected Access, a Wi-Fi standard that was designed to improve upon the security features of WEP. WPA has the following improvements over the WEP.

- Improved data encryption through the temporal key integrity protocol (TKIP). TKIP scrambles the keys using a hashing algorithm and, by adding an integrity-checking feature, ensures that the keys haven't been tampered with.

- User authentication, which is generally missing in WEP, through the extensible authentication protocol (EAP). WEP regulates access to a wireless network based on a computer's hardware-specific MAC address, which is relatively simple to be sniffed out and stolen. EAP is built on a more secure public-key encryption system to ensure that only authorized network users can access the network.

WPA enabled

To enable the WPA Authenticator

PSK pass-phrase

PSK stands for Pre-Shared-Key and serves as a password. User may key in a 8 to 63 characters string to set the password or leave it blank, in which the 802.1x Authentication will be activated. Note that if user key in own password, make sure to use the same password on client's end.

WPA Multicast Cipher Type

Select TKIP - WPA Default

WPA Pairwise Cipher Type

Select TKIP - WPA Default

WPA Group Key Update Interval

This shows the time period for the next key change. The default value is 3600 (seconds). Users may set the values of their preference.

802.1X configuration

Remote RADIUS server configuration settings

Authentication timeout (mins)

The default value is 60(minutes). When the time expires, the device will re-authenticate with RADIUS server.

RADIUS server IP address

Enter the RADIUS server IP.

RADIUS server port number

Port used for RADIUS, the number of ports must be the same as the RADIUS server , normally the port is 1812

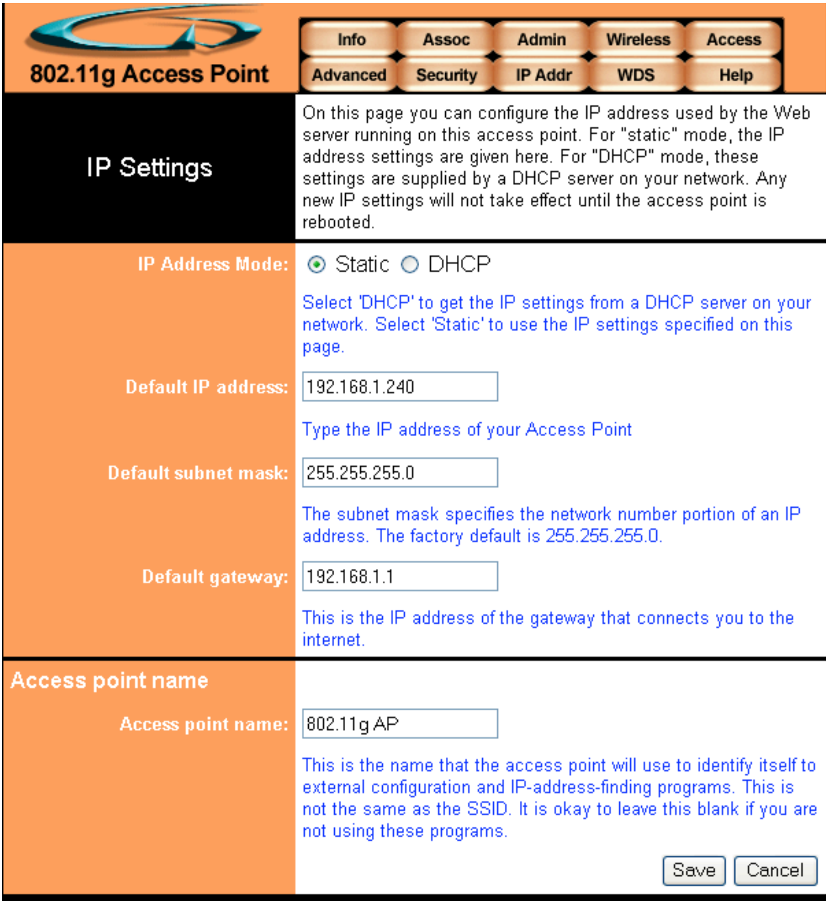
RADIUS server shared secret

When registered with a RADIUS server, a pass word will be assigned. This would be the RADIUS server shared secret.

MAC Address Authentication

Use client MAC address for authentication with RAIDUS server

5.9 IP Addr Page



IP Settings

On this page you can configure the IP address used by the Web server running on this access point. For "static" mode, the IP address settings are given here. For "DHCP" mode, these settings are supplied by a DHCP server on your network. Any new IP settings will not take effect until the access point is rebooted.

IP Address Mode: ● Static ○ DHCP

Select 'DHCP' to get the IP settings from a DHCP server on your network. Select 'Static' to use the IP settings specified on this page.

Default IP address: 192.168.1.240

Type the IP address of your Access Point

Default subnet mask: 255.255.255.0

The subnet mask specifies the network number portion of an IP address. The factory default is 255.255.255.0.

Default gateway: 192.168.1.1

This is the IP address of the gateway that connects you to the internet.

Access point name

Access point name: 802.11g AP

This is the name that the access point will use to identify itself to external configuration and IP-address-finding programs. This is not the same as the SSID. It is okay to leave this blank if you are not using these programs.

IP Address Mode

- **Static**

Manually setup an ip for this device.

- **DHCP**

Set up the bridge as a DHCP client which will pick up a free IP from a

DHCP server.

Default IP address

The default IP address is 192.168.1.240

Default subnet mask

The factory subnet default value is 255.255.255.0

Default gateway

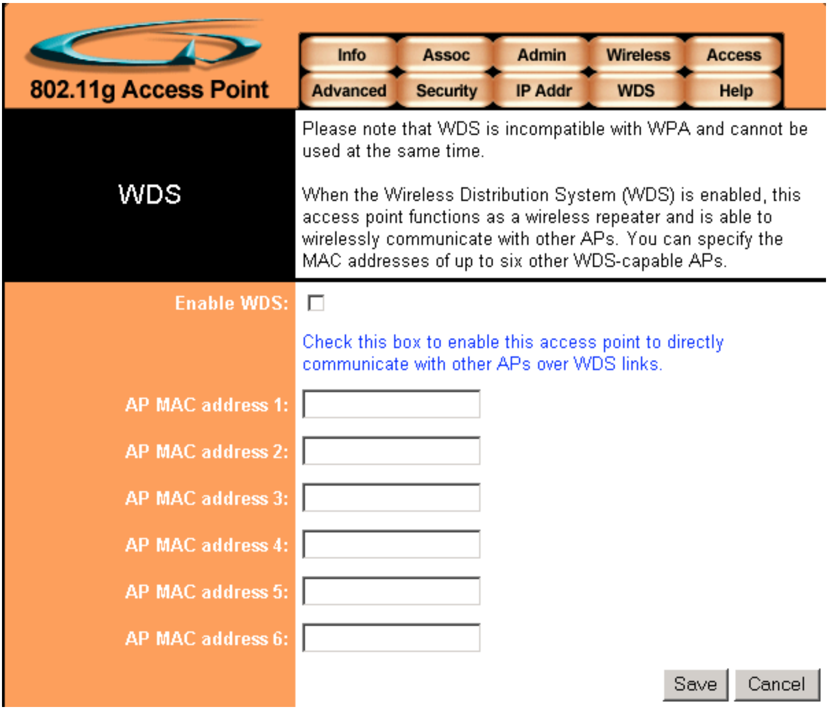
The factory gateway default address is 192.168.1.1

Access point name

Access point name

You can name this access point for identification. You can leave it blank without entering anything. However, the name for the access point will be useful for identification especially when there are more than one access points in your wireless network.

5.10 WDS Page



Please note that WDS is incompatible with WPA and cannot be used at the same time.

When the Wireless Distribution System (WDS) is enabled, this access point functions as a wireless repeater and is able to wirelessly communicate with other APs. You can specify the MAC addresses of up to six other WDS-capable APs.

Enable WDS: □

Check this box to enable this access point to directly communicate with other APs over WDS links.

AP MAC address 1:

AP MAC address 2:

AP MAC address 3:

AP MAC address 4:

AP MAC address 5:

AP MAC address 6:

Enable WDS

The Repeater (WDS) functionality enables this AP to support wireless traffic to other WDS relay Access Points. The distance of wireless networking is thus extended for authenticated client devices that can roam from this Access Point to another. This Access Point can support up to 6 other Access Points for WDS communication.

Enter the MAC Address for the new Access Point to participate the WDS with this Access Point. The MAC Address of this Access Point should be also added in other Access Points so that they can communicate. You can add up to 6 WDS Access points.

Appendix A: Warranty Policy

Limited Warranty

All Teletronics' products warranted to the original purchaser to be free from defects in materials and workmanship under normal installation, use, and service for a period of one (1) year from the date of purchase.

Under this warranty, Teletronics International, Inc. shall repair or replace (at its option), during the warranty period, any part that proves to be defective in material of workmanship under normal installation, use and service, provided the product is returned to Teletronics International, Inc., or to one of its distributors with transportation charges prepaid. Returned products must include a copy of the purchase receipt. In the absence of a purchase receipt, the warranty period shall be one (1) year from the date of manufacture.

This warranty shall be voided if the product is damaged as a result of defacement, misuse, abuse, neglect, accident, destruction or alteration of the serial number, improper electrical voltages or currents, repair, alteration or maintenance by any person or party other than a Teletronics International, Inc. employee or authorized service facility, or any use in violation of instructions furnished by Teletronics International, Inc.

This warranty is also rendered invalid if this product is removed from the country in which it was purchased, if it is used in a country in which it is not registered for use, or if it is used in a country for which it was not designed. Due to variations in communications laws, this product may be illegal for use in some countries. Teletronics International, Inc. assumes no responsibility for damages or penalties incurred resulting from the use of this product in a manner or location other than that for which it is intended.

IN NO EVENT SHALL TELETRONICS INTERNATIONAL, INC. BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR BREACH OF THIS OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, WHATSOEVER.

Some states do not allow the exclusion or limitation of special, incidental or consequential damages, so the above exclusion or limitation may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights that vary from state to state.

Appendix B: RMA Policy

Product Return Policy

It is important to us that all Teletronics' products are bought with full confidence. If you are not 100% satisfied with any product purchased from Teletronics you may receive a prompt replacement or refund, subject to the terms and conditions outlined below.

IMPORTANT: Before returning any item for credit or under warranty repair, you must obtain a Return Merchandise Authorization (RMA) number by filling out the RMA form. Products will not be accepted without an RMA number. All products being shipped to Teletronics for repair / refund / exchange must be freight prepaid (customer pays for shipping). For all under warranty repair/replacement, Teletronics standard warranty applies.

30-Day full refund or credit policy:

1. Product was purchased from Teletronics no more than 30 day prior to the return request.
2. All shipping charges associated with returned items are non-refundable.
3. Products are returned in their original condition along with any associated packaging, accessories, mounting hardware and manuals. Any discrepancy could result in a delay or partial forfeiture of your credit.

Unfortunately Teletronics cannot issue credits for:

1. Products not purchased from Teletronics directly. If you purchased from a reseller or distributor you must contact them directly for return instructions.
2. Damaged items as a result of misuse, neglect, or improper environmental conditions.
3. Products purchased direct from Teletronics more than 30 days prior to a product return request.

To return any product under 1 year warranty for repair/replacement, follow the RMA procedure.

Appendix C: Regulatory Information

Statement of Conditions

We may make improvements or changes in the product described in this documentation at any time. The information regarding to the product in this manual are subject to change without notice.
We assume no responsibility for errors contained herein or for direct, indirect, special, incidental, or consequential damages with the furnishing, performance, or use of this manual or equipment supplied with it, even if the suppliers have been advised of the possibility of such damages.

Electronic Emission Notices

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference.
(2) This device must accept any interference received, including interference that may cause undesired operation.

FCC Information

The Federal Communication Commission Radio Frequency Interference Statement includes the following paragraph:
The equipment has been tested and found to comply with the limits for a Class B Digital Device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction, may cause harmful interference to radio communication. 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 overcome 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.
- The equipment is for home or office use.

Important Note

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 20cm between the antenna and your body and must not be co-located or operating in conjunction with any other antenna or transmitter.
Caution: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

R&TTE Compliance Statement

This equipment complies with all the requirements of the Directive 1999/5/EC of the European Parliament and the Council of 9 March 1999 on radio equipment and telecommunication terminal equipment (R&TTE)and the mutual recognition of their conformity. The R&TTE Directive repeals and replaces in the directive 98/13/EEC. As of April 8, 2000.

European Union CE Marking and Compliance Notices

Products intended for sale within the European Union are marked, which indicates compliance with the applicable directives identified below. This equipment also carries the Class 2 identifier.

With the Conformité Européene (CE) and European standards and amendments, we declare that the equipment described in this document is in conformance with the essential requirements of the European Council Directives, standards, and other normative documents listed below:

73/23/EEC Safety of the User (article 3.1.a)
89/336/EEC Electromagnetic Compatibility (article 3.1.b)

1999/5/EC (R&TTE) Radio and Telecommunications Terminal Equipment Directive.

EN 60950 2000 Safety of Information Technology Equipment, Including Electrical Business Equipment.

EN 300 328 V1.4.1(2003) Electromagnetic compatibility and Radio spectrum Matters (ERM); Wideband Transmission systems;Data transmission equipment operating in the 2,4 GHz ISM band and using spread spectrum modulation techniques;Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive.

EN 301 489-1, V1.4.1(2002); EN 301 489-17, V1.2.1(2002) – Electromagnetic compatibility and radio spectrum matters (ERM); electromagnetic compatibility (EMC) standard for radio equipment and services: Part 1: Common technical requirements; Part 17: Part 17: Specific conditions for 2,4 GHz wideband transmission systems and5 GHz high performance RLAN equipment

Warning: According to ERC/REC 70-30 appendix 3 National Restrictions, annex 3 Band A “RLANs and HIPERLANs.” See list of 802.11b/g restrictions for specific countries under the heading “European Economic Area Restrictions” as below.

English
This product follows the provisions of the European Directive 1999/5/EC.

Danish
Dette produkt er i overensstemmelse med det europæiske direktiv 1999/5/EF

Dutch
Dit product is in navolging van de bepalingen van Europees Directief 1999/5/EC.

Finnish
Tämä tuote noudattaa EU-direktiivin 1999/5/EY määräyksiä.

French
Ce produit est conforme aux exigences de la Directive Européenne 1999/5/CE.

Appendix D: Contact Information

Need to contact Teletronics?

Visit us online for information on the latest products and updates to your existing products at: http://www.teletronics.com

Can't find information about a product you want to buy on the web? Do you want to know more about networking with Teletronics products?

Give us a call at: 301-309-8500 Or fax your request in to: 301-309-8551

Don't wish to call? You can e-mail us at: support@teletronics.com
If any Teletronics product proves defective during its warranty period, you can email the Teletronics Return Merchandise Authorization department for obtaining a Return Authorization Number at: rma@teletronics.com

(Details on Warranty and RMA issues can be found in Appendix A and B)

Appendix E: TROUBLESHOOTING

Symptom: Power LED off

Resolution:
Connect the power adapter to your G Series Wireless AP and plug it into the power outlet.
Note: Only use the power adapter provided with your AP. Using any other adapter might damage your G Series Wireless AP.

Symptom: Can not setting G Series Wireless AP through web browser

Resolution:
The Ethernet cable (RJ45-crossover) must plug to LAN port of G Series Wireless AP.
Check that the IP address in the URL field is correct.
Check your host PC IP address. If the IP address of G Series Wireless AP is 192.168.1.240 then your IP of host PC must set 192.168.1.1~239.

Symptom: Forgot IP address

Resolution:
If you forgot the IP address of G Series Wireless AP you can press reset button to restore the default factory settings by pressing this button for five seconds. The default IP is 192.168.1.240.

Symptom: Can not setting G Series Wireless AP from a Wireless LAN card

Resolution:
Make sure that the Mode, SSID, Channel and encryption settings are set the same on each Wireless LAN card.
Make sure that your computer is within range and free from any strong electrical devices that may cause interference.
Check your IP Address to make sure that it is compatible with the G Series Wireless AP.

Appendix F: Glossary

802.1x - The standard for wireless LAN authentication used between an AP and a client. 802.1x with EAP will initiate key handling.

Ad-Hoc Network - The wireless network based on a peer-to-peer communications session. Also referred to as AdHoc.

Access Point - Access points are stations in a wireless LAN that are connected to an Ethernet hub or server. Users can roam within the range of access points and their wireless device connections are passed from one access point to the next.

Authentication - Authentication refers to the verification of a transmitted message's integrity.

Beacon - In wireless networking, a beacon is a packet sent by a connected device to inform other devices of its presence and readiness.

Beacon interval - When a wirelessly networked device sends a beacon, it includes with it a beacon interval, which specifies the period of time before it will send the beacon again. The interval tells receiving devices on the network how long they can wait in low-power mode before waking up to handle the beacon. Network managers can adjust the beacon interval, usually measured in milliseconds (ms) or its equivalent, kilo microseconds (Kmsec).

BSS - Basic Service Set. When a WLAN is operating in infrastructure mode, each access point and its connected devices are called the Basic Service Set.

BSSID - The unique identifier for an access point in a BSS network. See SSID for more details.

DHCP - DHCP (Dynamic Host Configuration Protocol) software automatically assigns IP addresses to client stations logging onto a TCP/IP network, which eliminates the need to manually assign permanent IP addresses.

DSSS (Direct Sequence Spread Spectrum) - Method of spreading a wireless signal into wide frequency bandwidth.

Dynamic IP Address - An IP address that is automatically assigned to a client station in a TCP/IP network, typically by a DHCP server.
DNS (Domain Name System): System used to map readable machine names into IP addresses

DTIM - DTIM (Delivery Traffic Indication Message) provides client stations with information on the next opportunity to monitor for broadcast or multicast messages.

DTIM interval - A DTIM interval, also known as a Data Beacon Rate, is the frequency at which an access point's beacon will include a DTIM. This frequency is usually measured in milliseconds (ms) or its equivalent, kilo microseconds (Kmsec).

ESS - Extended Service Set. ESS is the collective term for two or more BSSs that use the same switch in a LAN.

ESSID - Extended Service Set Identifier. An ESSID is the unique identifier for an ESS. See SSID for more details.

Filter - Filters are schemes, which only allow specified data to be transmitted. For example, the router can filter specific IP addresses so that users cannot connect to those addresses.
Firmware: Programming inserted into programmable read-only memory, thus becoming a permanent part of a computing device.

Fragmentation - Refers to the breaking up of data packets during transmission.

Gateway - Gateways are computers that convert protocols enabling different networks, applications, and operating systems to exchange information.

IBSS - Independent Basic Service Set. See ad-hoc network

Infrastructure Mode - When a wireless network functions in infrastructure mode, every user communicates with the network and other users through an access point; this is the typical way corporate WLANs work. An alternative is ad-hoc mode, but users would have to switch to infrastructure mode to access a network's printers and servers.

ISP - An ISP is an organization providing Internet access service via modems, ISDN (Integrated Services Digital Network), and private lines.

LAN(Local Area Network): A group of computers and peripheral devices connected to share resources.
MAC (Medium Access Control) Address: A unique number that distinguishes network cards.

MTU - MTU (Maximum Transmission/Transfer Unit) is the largest packet size that can be sent over a network. Messages larger than the MTU are divided into smaller packets.

NAT - NAT (Network Address Translation - also known as IP masquerading) enables an organization to present itself to the Internet with one address. NAT converts the address of each LAN node into one IP address for the Internet (and vice versa). NAT also provides a certain amount of security by acting as a firewall by keeping individual IP addresses hidden from the WAN.

Preamble - Preamble refers to the length of a CRC (Cyclic Redundancy Check) block that monitors' communications between roaming wireless enabled devices and access points.

Protocol - A standard way of exchanging information between computers.
RADIUS (Remote Authentication Dial In User Service): A server that issues authentication key to clients.
RAM (Random Access Memory): Non-permanent memory.

RIP - RIP (Routing Information Protocol) is a routing protocol that is integrated in the TCP/IP protocol. RIP finds a route
that is based on the smallest number of hops between the source of a packet and its destination.

Router - Device that can connect individual LANs and remote sites to a server.
Roaming - The ability to use a wireless device while moving from one access point to another without losing the connection.

RTS - RTS (Request To Send) is a signal sent from the transmitting station to the receiving station requesting permission to transmit data.

Server - Servers are typically powerful and fast machines that store programs and data. The programs and data are shared by client machines (workstations) on the network.

Static IP Address - A permanent IP address is assigned to a node in a

TCP/IP network. Also known as global IP.

Subnet Mask - Subnet Masks (SUBNET work masks) are used by IP protocol to direct messages into a specified network segment (i.e., subnet). A subnet mask is stored in the client machine, server or router and is compared with an incoming IP ad-dress to determine whether to accept or reject the packet.

SSID - SSID (Service Set Identifier) is a security measure used in WLANs. The SSID is a unique identifier attached to packets sent over WLANs. This identifier emulates a password when a wireless device attempts communication on the WLAN. Because an SSID distinguishes WLANS from each other, access points and wireless devices trying to connect to a WLAN must use the same SSID.

TCP/IP - TCP/IP (Transmission Control Protocol/Internet Protocol) is the main Internet communications protocol. The TCP part ensures that data is completely sent and received at the other end. Another part of the TCP/IP protocol set is UDP, which is used to send data when accuracy and guaranteed packet delivery are not as important (for example, in real-time video and audio transmission).

TFTP (Trivial File Transfer Protocol) - Simple form of FTP (File Transfer Protocol), which Uses UDP (User Datagram Protocol), rather than TCP/IP for data transport and provides no security features.
TKIP (Temporal Key Integrity Protocol): An encryption method replacing WEP.TKIP uses random IV and frequent key exchanges.

UDP (User Datagram Protocol) - A communication method (protocol) that offers a limited amount of service when messages are exchanged between computers in a network. UDP is used as an alternative
to TCP/IP.

Uplink: Link to the next level up in a communication hierarchy.

UTP (Unshielded Twisted Pair) cable - Two or more unshielded wires twisted together to form a cable.

Virtual Servers - Virtual servers are client servers (such as Web servers) that share resources with other virtual servers (i.e., it is not a dedicated server).

WEP (Wired Equivalent Privacy) - An encryption method based on 64 or

128bit algorithm.

WLAN - WLANs (Wireless LANs) are local area networks that use wireless communications for transmitting data. Transmissions are usually in the 2.4 GHz band. WLAN devices do not need to be lined up for communications like infrared devices. WLAN devices use access points, which are connected to the wired LAN and provide connectivity to the LAN. The radio frequency of WLAN devices is strong enough to be transmitted through non-metal walls and objects, and can cover an area up to a thousand feet. Laptops and notebooks use wireless LAN PCMCIA cards while PCs use plug-in cards to access the WLAN.