EzBridge 5800

User Manual

500mW

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 assumes 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 usage generates radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communication. However, there is no grantee 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.

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.

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Introduction

The 802.11b EzBridge 5800 aims to fill in the gap between regular 2.4 GHz and that of 5.8 GHz equipment. It combines the ease and reliable 802.11b equipment with that of the less crowded 5.8 GHz frequency band. It is the perfect solution to quickly add more equipment in saturated 2.4 GHz environment. The EzBridge 5800 is a cost effective solution that is easy to install and operate. To get the most out of this product, please read this manual carefully.

1.1 Features

- 802.11b Wi-Fi 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 EzBridge 5800 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

EzBridge and PCMCIA Card

Data Rates Supported	1, 2, 5.5, and 11 Mbps
Network Standard	IEEE 802.11b
Uplink	10BaseT Ethernet
Frequency Band	2.4 to 2.497 GHz (subject to local regulations)
Network Architecture Types	Infrastructure
Wireless Medium	Direct Sequence Spread Spectrum (DSSS)
Media Access Protocol	Carrier sense multiple access with collision avoidance (CSMA/CA)
Modulation	• DBPSK @1 Mbps • DQPSK @ 2 Mbps • CCK @ 5.5 and 11 Mbps
Operating Channels	• 11 channels (US, Canada)) • 13 channels (ETSI) • 4 channels (France) • 14 channels (Japan)

Receive Sensitivity	• 1 Mbps: –94 dBm • 2 Mbps: –91 dBm • 5.5 Mbps: –87 dBm • 11 Mbps: –84 dBm
Available Transmit Power Settings	100 mW / 200 mW
Range (typical @ 99-mW transmit power setting, including 1.95 dBi diversity dipole antenna)	Indoor: • 50 m (164 ft) @ 11 Mbps • 110 m (360 ft) @ 1 Mbps Outdoor: • 240 m (787 ft) @ 11 Mbps • 600 m (1968 ft) @ 1 Mbps
EMC Certification	FCC 47CFR15 subpart C (15.247) and Class B device ETSI 300-328/301-489-17 (General EMC requirement for RF equipment)
Antenna	Two soldered dipole antennas
Security	IEEE 802.11 WEP (Wired Equivalent Privacy)
Encryption Key Length	64-bit, 128-bit
Filter	MAC Address Filtering
Status Indicators	LED Light provide status of: Power, Wireless LAN, and Ethernet.
Automatic Configuration Support	DHCP client
Remote Configuration Support	HTTP for configuration TFTP for firmware upgrade
Dimensions WxHxD (mm/inch)	161mm x 30mm x 119mm (6.3 ‘’x1.2 ‘’x4.7’’)
Weight	195g (6.87oz)
Environmental	• Operating temperature: 0 ºC to 40 ºC (32 ºC to 104 ºC) • Storage temperature: -20 ºF to 70 ºF (-4 ºF to 158 ºF) • Humidity: 10 to 90% (non-condensing)
Input Power Requirements	DC 5V 2A
	One year

Warranty	

UDC 5800HM

Frequency Band to Ant	5725 - 5850 MHz
Frequency Band to Radio	2400 - 2500 MHz
Local Oscillator Frequency	3328 MHz
Frequency Stability	± 2.5 ppm
Output Power	500 mWatt (+ 27 dBm)
Input Power	0.5 mW ~ 25 mW (-3 dBm to 14 dBm)
RX Conversion Gain	10 dB
TX Conversion Gain	up to 14 dB
Noise Figure	4 dB
RF Connector	N-Type, female, 50 Ohm
Power Consumption	TX: 1.3A @ 9VDC RX: 0.72 A @ 9VDC
Operating Temperature	-40 °C to + 70 °C

2.4/5.8 GHz Channel Conversion Table

802.11 Channel	**2400 MHz**	**5800 MHz**
1	2412	5740
2	2417	5745
3	2422	5750
4	2427	5755
5	2432	5760
6	2437	5765
7	2442	5770
8	2447	5775
9	2452	5780
10	2457	5785
11	2462	5790

1.3 Product Kit

The EzBridge 5800 Kit contains the following items:

- One EzBridge 802.11b PCB
- One UDC 5800
- Two Power Extractor (One 7.5 VDC and One 9 VDC)
- One Power Adapter 48VDC
- Nema-4 Enclosure w/ Waterproof CAT5 Jack and Plug.
- One PoE w/ Ground
- Mounting Kit
- Two Ethernet Cable (One Straight and One Cross Over)
- One User Manual

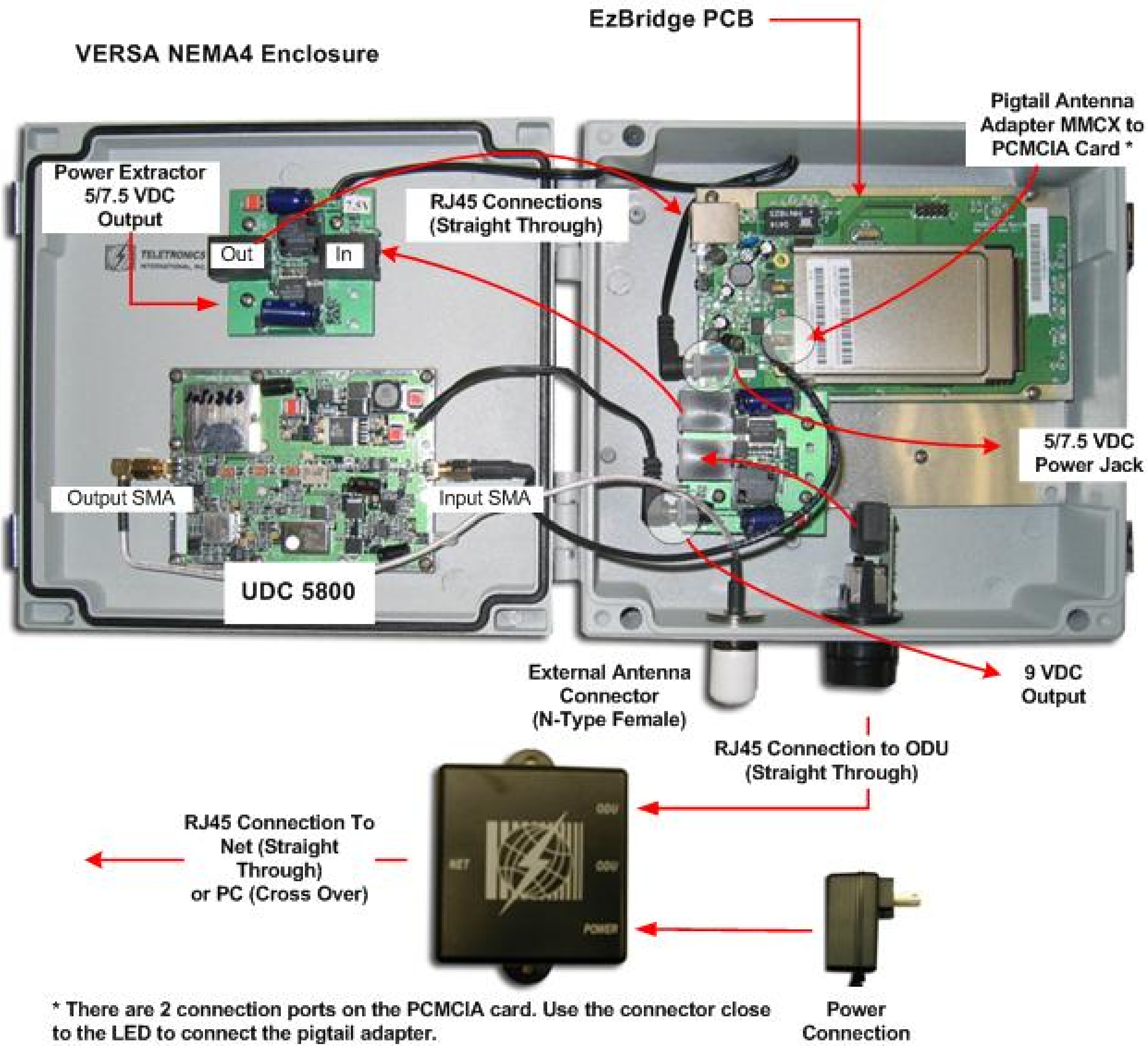
Note: *If any item listed above is damaged or missing, please contact your dealer immediately.*

1.4 System Requirements

- PC (desktop or notebook) with Ethernet interface.
- TCP/IP protocol must be installed on all PCs. (Refer to User Manual for additional information)
- Network cables. Use standard 10/100BaseT network (UTP) cables with RJ45 connectors.
- All wireless devices must be compliant with the IEEE 802.11B specifications.
- Microsoft Internet Explorer 5.0 or later or Netscape Navigator 4.7 or later.

1.5 Assembly Diagram

***Part pictures will vary, please use it only as a general guide line**.


EzBridge PCB
VERSA NEMA4 Enclosure
Pigtail Antenna Adapter MMCX to PCMCIA Card *
Power Extractor 5/7.5 VDC Output
RJ45 Connections (Straight Through)
Out
In
5/7.5 VDC Power Jack
Output SMA
Input SMA
UDC 5800
External Antenna Connector (N-Type Female)
9 VDC Output
RJ45 Connection to ODU (Straight Through)
RJ45 Connection To Net (Straight Through) or PC (Cross Over)
ODU
NET
ODU
POWER
Power Connection

* There are 2 connection ports on the PCMCIA card. Use the connector close to the LED to connect the pigtail adapter.

1.6 Default Factory Software Settings

AP *(Unit on the side with the 2 Pigtail Antenna Adapter)*

IP Address: 192.168.1.90
SSID: snmp_11b_ap
Channel: 1

Client Bridge

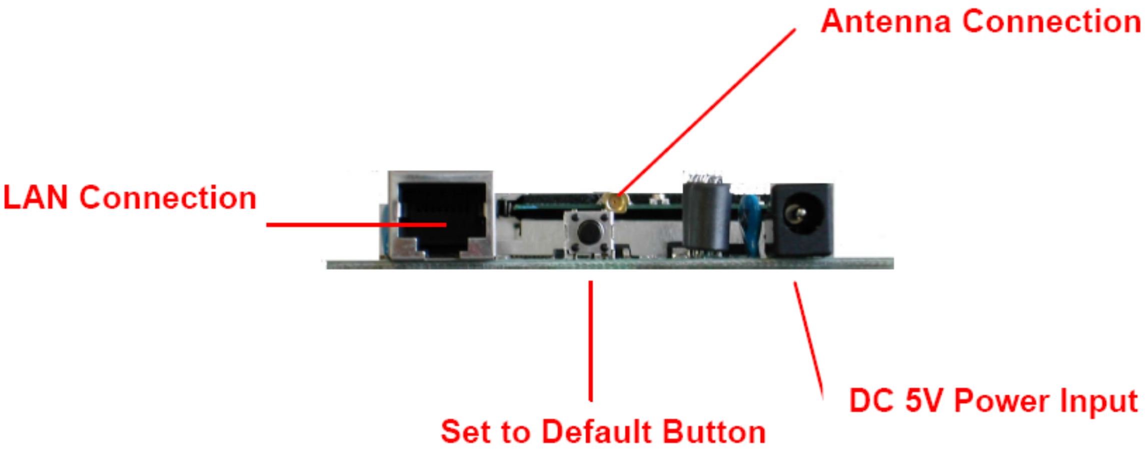
IP Address: 192.168.1.99
SSID: blank
Channel: 11

EzBridge 802.11B Basics

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.



Antenna Connection

When the Access Point begins to work, you may adjust the angle of the antenna or reposition your Access Point to obtain a better performance.

LAN Connection

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

DC 5V Power Input

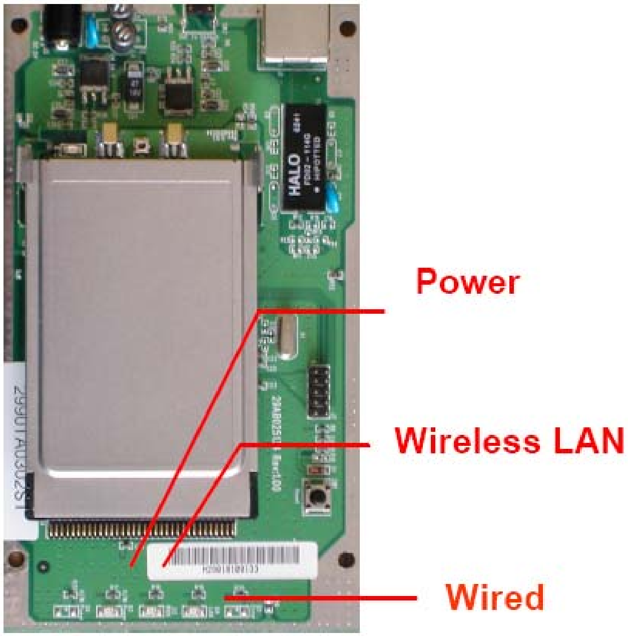
Use the power adapter which is only supplied with your Access Point.

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 802.11b EzBridge 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.
WLAN	Blinking	Blinking: Wireless LAN is transmitting.
	On	On: Wireless LAN connection is active.
	Off	Off: Wireless LAN connection is not active.
Ethernet	Blinking	Blinking: Wired LAN is transmitting.
	On	On: Wired LAN is active.
	Off	Off: Wired LAN is not active.

2.3 Installation

Preparation for Installation

Before the permanent install of the EzBridge 5800 the unit must be preconfigured within reach of a computer/laptop. The configuration of the EzBridge 5800 is no different than setting up a regular EzBridge. 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 do the permanent install.

Hardware Installation

Follow the procedures below to fully install your EzBridge 5800:

1. Select proper location.

2. Mount the EzBridge by following the mounting instruction included in the EzBridge Kit.

3. Connect the Ethernet port on the NEMA4 box to the ODU side of the PoE. Then connect the NET side to the internal Network. After both are connected connect the power adapter to the power jack on the PoE to power on the EzBridge 5800. You may want to do a quick on on the LEDs to ensure the unit is getting power.

4. 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.

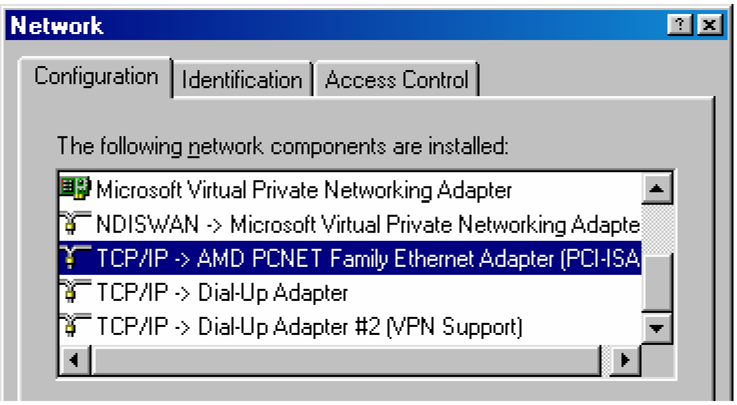
Configuring Windows for IP Networking

To establish a communication between your PCs and the EzBridge 5800, you will need to set up a static 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:

2.4 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.

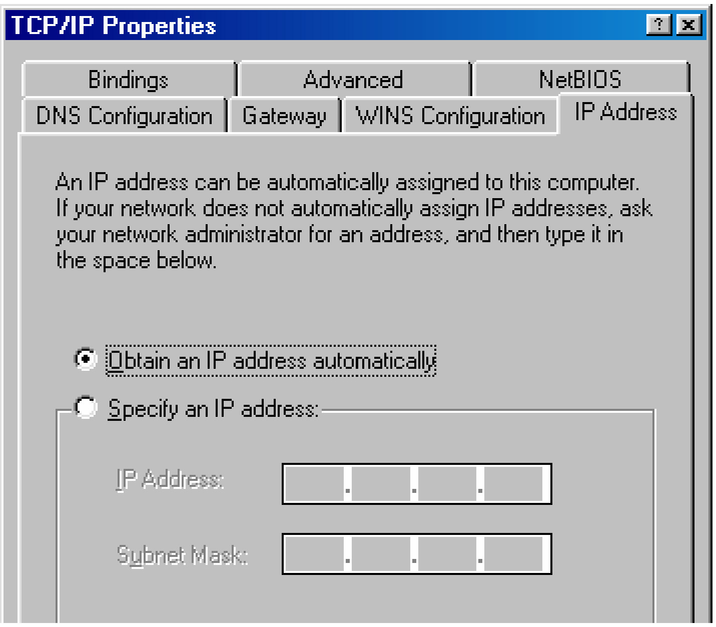


The following network components are installed:

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 in **192.168.1.X** in the **IP Address** (where X is any free IP number from 1-254, excluding 99) area and 255.255.255.0 in the Subnet Mask area. To ensure the system is now using the IP address you specify, restart the computer.



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: . . .

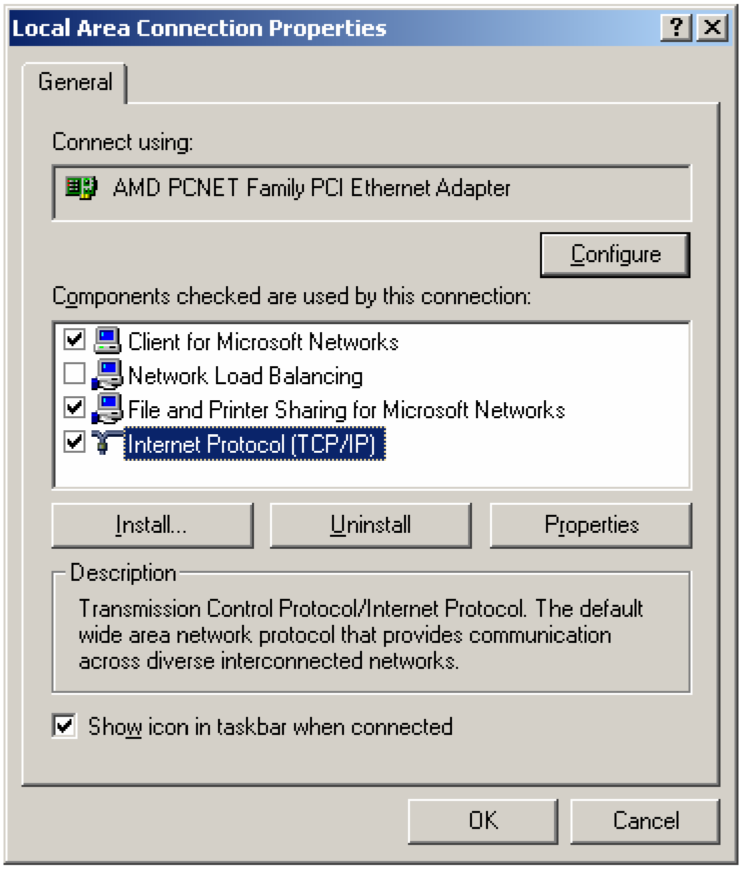
Note: Again the IP address must be in the format of 192.168.1.x. Where the value of X should be ranged from 1 to 254 excluding 99.

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

2.5 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.



Local Area Connection Properties

General

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)

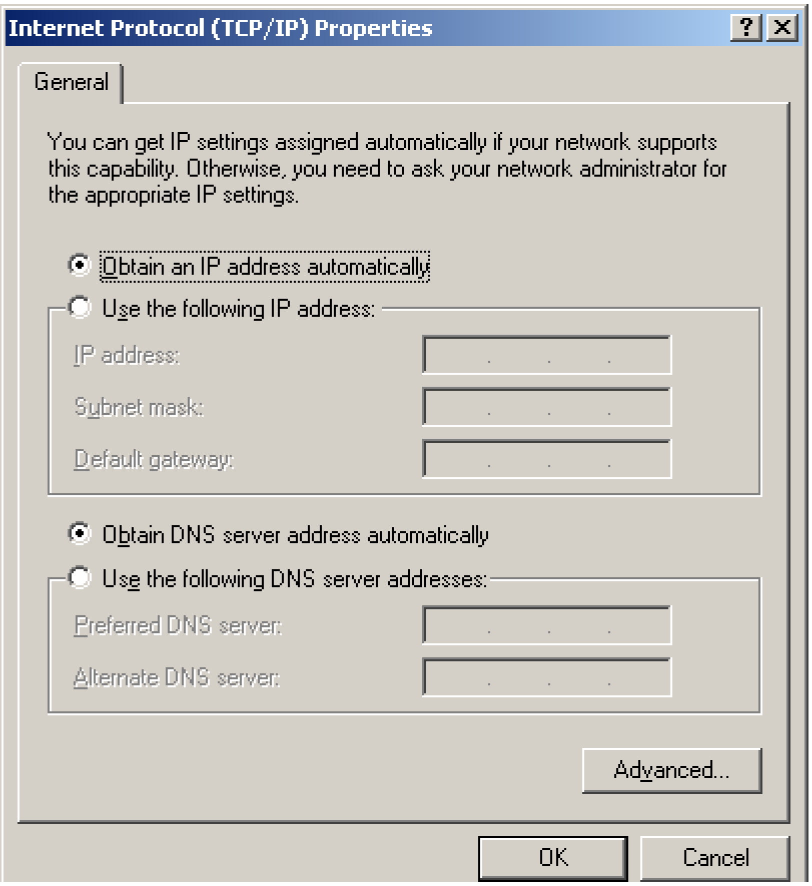
Description

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 specify an IP address. For example, type in **192.168.1.X** in the **IP Address** (where X is any free IP number from 1-254, excluding 99) 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:

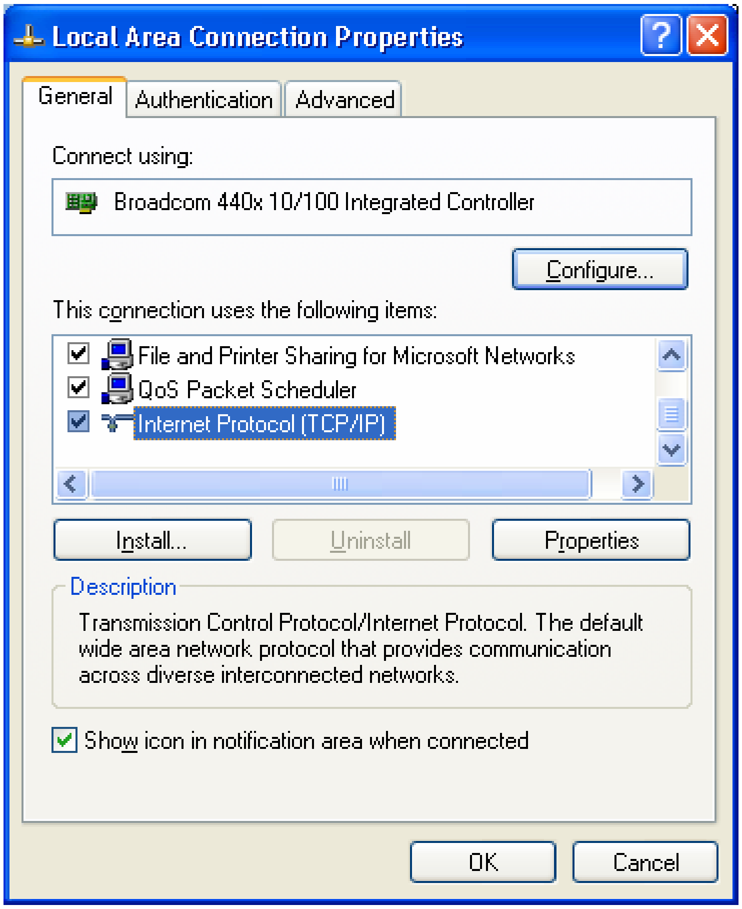
Note: Again the IP address must be in the format of 192.168.1.x. Where the value of X should be ranged from 1 to 254 excluding 99.

5. Click **OK**.

2.6 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

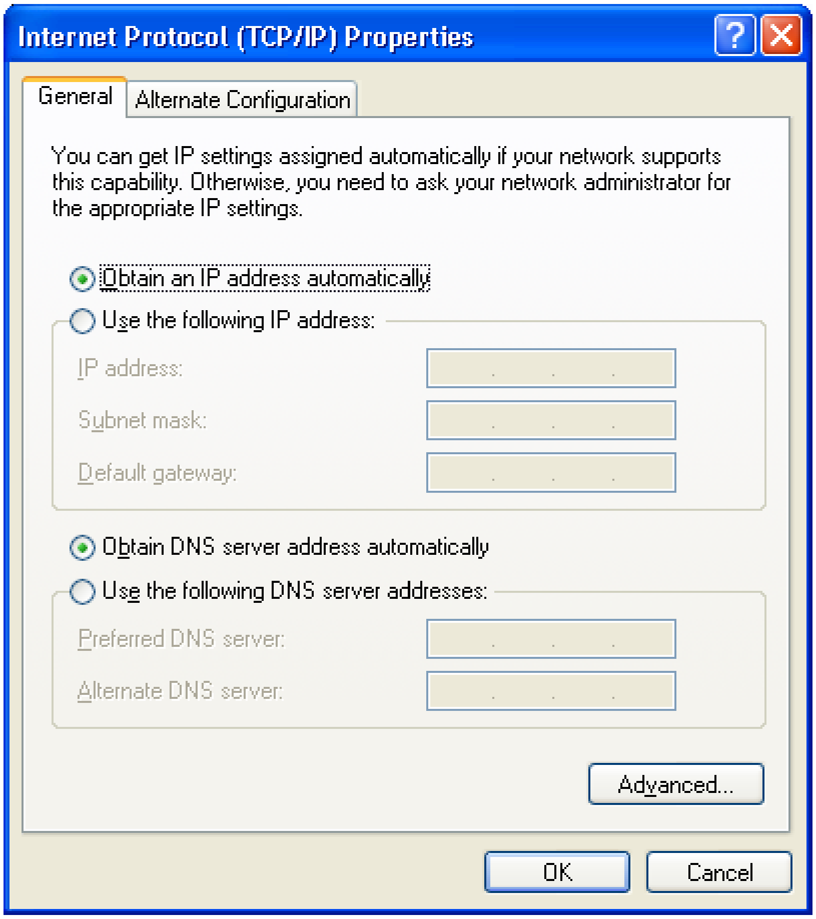
Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.

☑ 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**

5. Under the **General** tab, choose **Use the following IP address**, and then specify an IP address. For example, type in **192.168.1.X** in the **IP Address** (where X is any free IP number from 1-254, excluding 99) 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:

● Obtain DNS server address automatically

○ Use the following DNS server addresses:

Note: Again the IP address must be in the format of 192.168.1.x. Where the value of X should be ranged from 1 to 254, excluding 99.

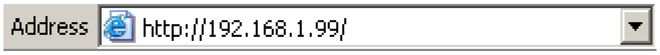
Click **OK**.

Web Configuration Interface

3.1 Client Bridge Mode

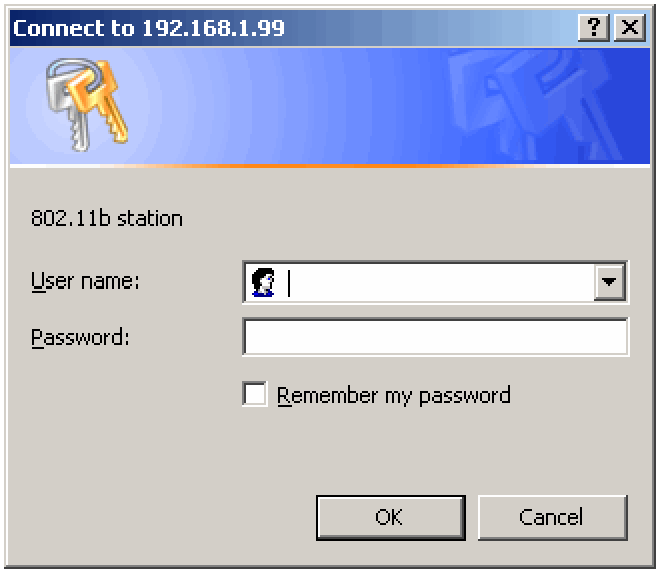
Default IP Address in Client Bridge Mode: **192.168.1.99**

To access the web control interface please open up a browser window and type in the factory default IP address in the URL.



Address http://192.168.1.99/

Then press Enter on your keyboard, you will see the login prompt window appear similar like the one shown below.



Connect to 192.168.1.99

802.11b station

User name:

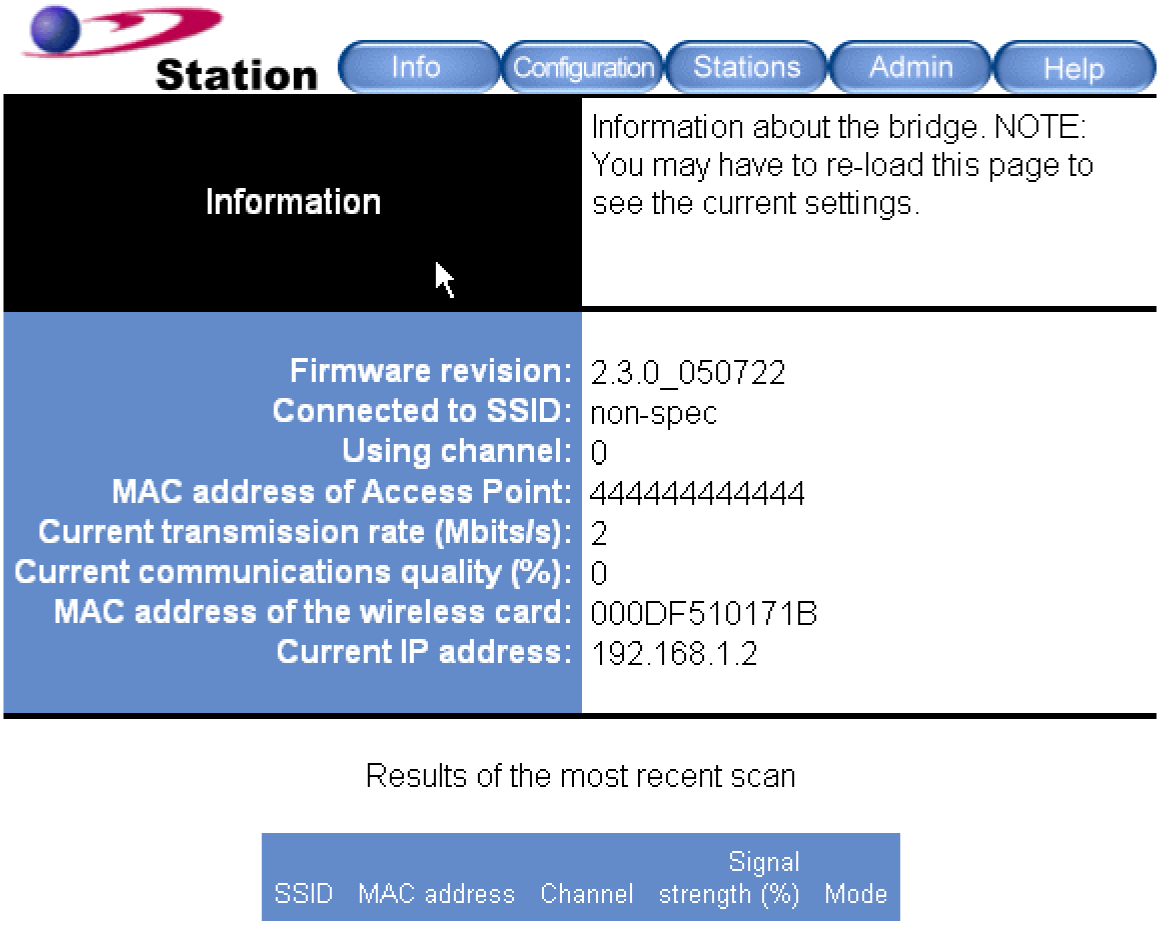
Password:

□ Remember my password

There is no default User name or Password. 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

Info



Information	Information about the bridge. NOTE: You may have to re-load this page to see the current settings.
Firmware revision:	2.3.0_050722
Connected to SSID:	non-spec
Using channel:	0
MAC address of Access Point:	444444444444
Current transmission rate (Mbits/s):	2
Current communications quality (%):	0
MAC address of the wireless card:	000DF510171B
Current IP address:	192.168.1.2

Results of the most recent scan

SSID	MAC address	Channel	Signal strength (%)	Mode

Firmware Revision

Current firmware revision loaded on the EzBridge.

Connected to SSID

SSID in which the EzBridge is associated to.

Using Channel

If the EzBridge is associated with an AP or Bridge it will display the channel used.

MAC address of Access Point

The associated AP’s MAC address.

Current transmission rate (Mbits/s)

Displays the current maximum transmission rate established by the wireless link.

Current communications quality (%)

The communications quality is calculated in a ratio percentage based on the signal strength and noise.

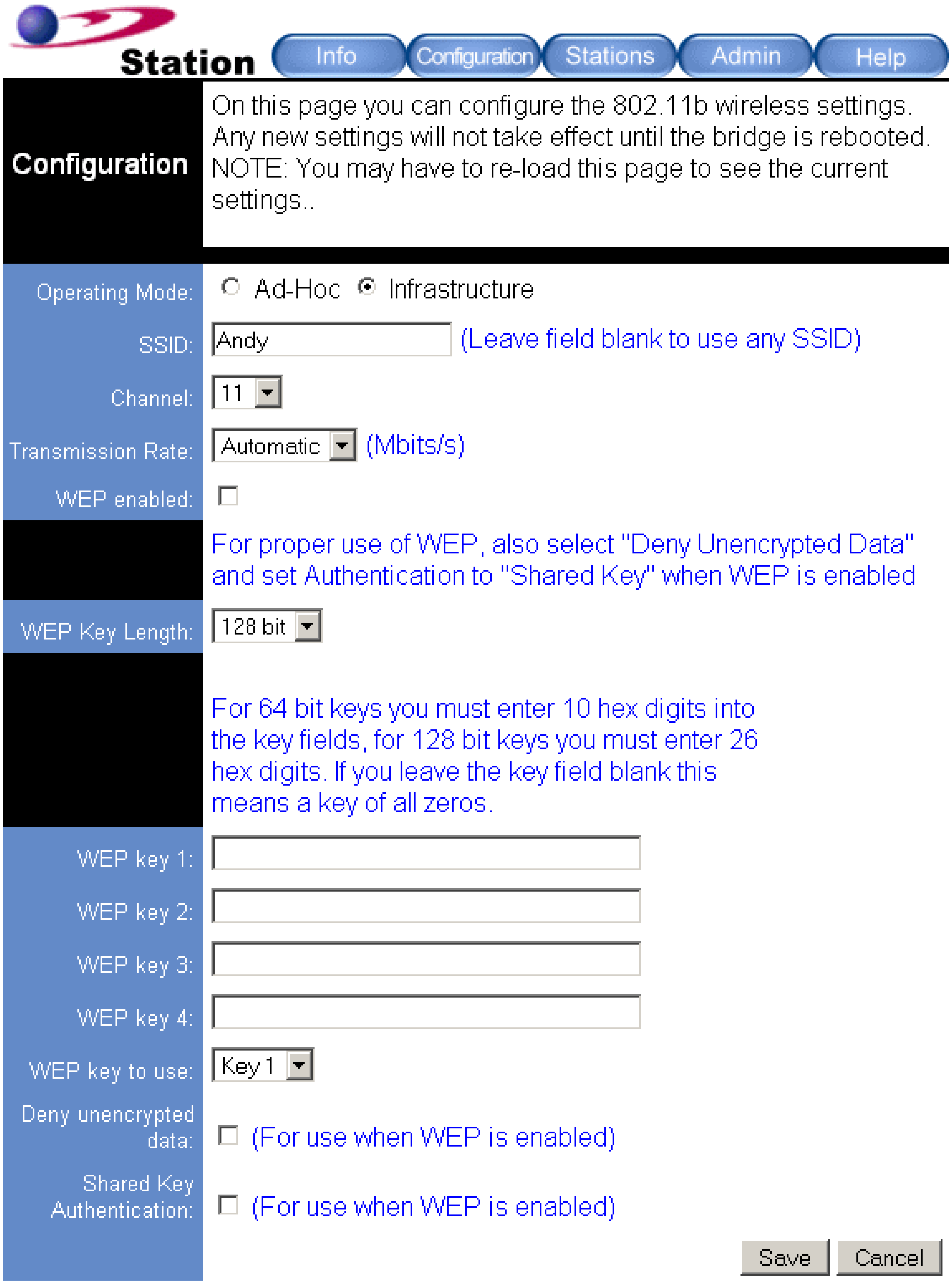
MAC address of the wireless card

The MAC address of the wireless card plugged inside the EzBridge.

Current IP address

IP address assign on the unit.

Configuration



Configuration

On this page you can configure the 802.11b wireless settings. Any new settings will not take effect until the bridge is rebooted. NOTE: You may have to re-load this page to see the current settings..

Operating Mode:	○ Ad-Hoc ● Infrastructure
SSID:	Andy (Leave field blank to use any SSID)
Channel:	11
Transmission Rate:	Automatic (Mbits/s)
WEP enabled:	□
	For proper use of WEP, also select "Deny Unencrypted Data" and set Authentication to "Shared Key" when WEP is enabled
WEP Key Length:	128 bit
	For 64 bit keys you must enter 10 hex digits into the key fields, for 128 bit keys you must enter 26 hex digits. If you leave the key field blank this means a key of all zeros.
WEP key 1:	
WEP key 2:	
WEP key 3:	
WEP key 4:	
WEP key to use:	Key 1
Deny unencrypted data:	□ (For use when WEP is enabled)
Shared Key Authentication:	□ (For use when WEP is enabled)

Operation Mode

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.

Infrastructure: An 802.11 networking framework in which devices communicate with each other by first going through an Access Point (AP). This mode is the default factory setting.

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 an Access Point to start accessing the service from behind such as internet access.

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
802.11b/g Non-overlapping Channel Frequency Ranges

- 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

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.

WEP enabled

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. This option will enable the WEP security authenticator.

WEP Key Length

64 bit (10 Hex Digit)

WEP Key type	Example

64-bit WEP with 5 characters	Key1= 2e3f4
	Key2= 5y7js
	Key3= 24fg7
	Key4= 98jui

64-bit WEP with 10 hexadecimal digits ('0-9', 'A-F')	Key1= **0x**123456789A
	Key2= **0x**23456789AB
	Key3= **0x**3456789ABC
	Key4= **0x**456789ABCD

128 bit (26 Hex Digit)

WEP Key type	Example

128-bit WEP with 13 characters	Key1= 2e3f4w345ytre
	Key2= 5y7jse8r4i038
	Key3= 24fg70okx3fr7
	Key4= 98jui2wss35u4

128-bit WEP with 26 hexadecimal digits ('0-9', 'A-F')	Key1= **0x**112233445566778899AABBCDEF
	Key2= **0x**2233445566778899AABBCCDDEE
	Key3= **0x**3344556677889900AABBCCDDFF
	Key4= **0x**44556677889900AABBCCDDEEFF

Hexadecimal digits have to preceded by '0x**'*

WEP Key 1 – 4

Follow the example above to setup either character or hexadecimal key according to the key length.

WEP key to use

Select one pre-defined WEP key to use for authentication.

Deny unencrypted data

When the WEP authentication is enabled any unencrypted data will be blocked from getting pass this unit from the receiving side.

Shared key Authentication

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 pre-shared 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.

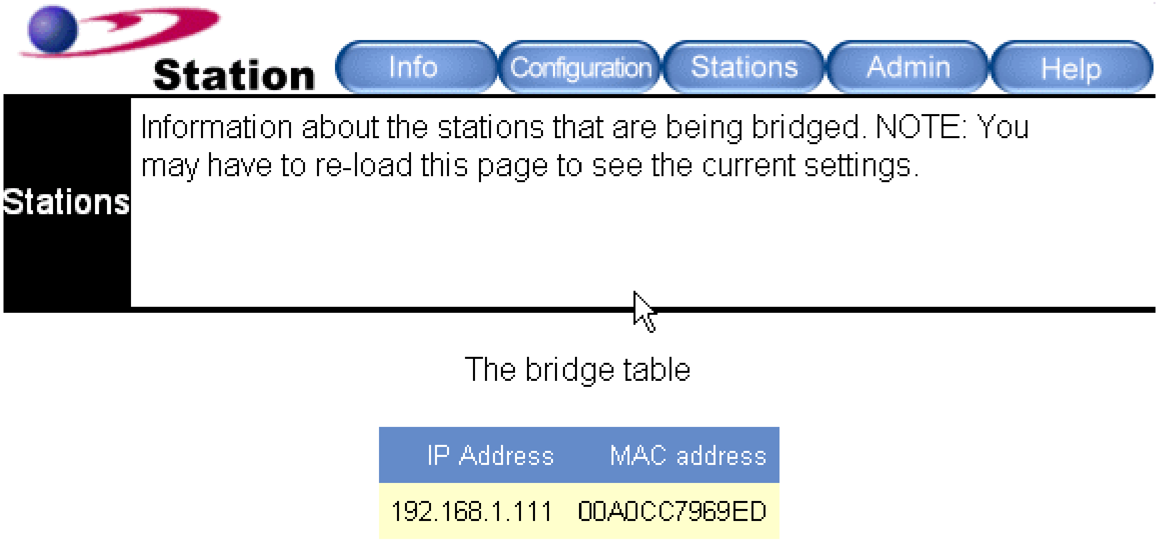
2. The authenticating wireless node responds to the authentication-initiating wireless node with challenge text.

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.

Stations



Information about the stations that are being bridged. NOTE: You may have to re-load this page to see the current settings.

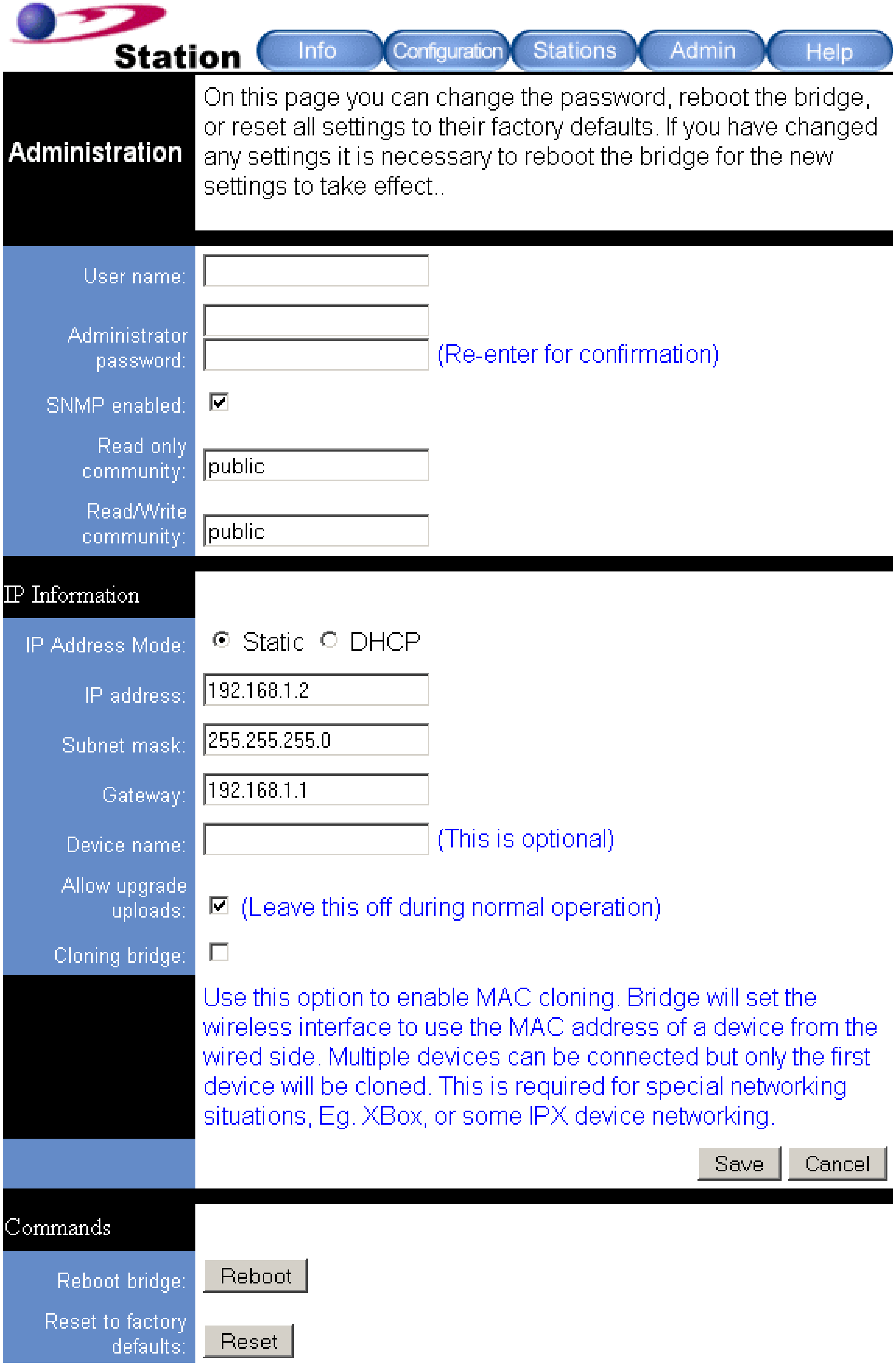
The bridge table

IP Address	MAC address
192.168.1.111	00A0CC7969ED

Bridge Table

The bridge table is a list of all devices connected to the EzBridge through the Ethernet side. Information such as IP and MAC address are displayed for each device. The table can hold as many bridged devices as the memory on the EzBridge is allowed.

Administration



Administration

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

User name:	
Administrator password:	(Re-enter for confirmation)
SNMP enabled:	☑
Read only community:	public
Read/Write community:	public

IP Information

IP Address Mode:	● Static ○ DHCP
IP address:	192.168.1.2
Subnet mask:	255.255.255.0
Gateway:	192.168.1.1
Device name:	(This is optional)
Allow upgrade uploads:	☑ (Leave this off during normal operation)
Cloning bridge:	□

Use this option to enable MAC cloning. Bridge will set the wireless interface to use the MAC address of a device from the wired side. Multiple devices can be connected but only the first device will be cloned. This is required for special networking situations, Eg. XBox, or some IPX device networking.

Commands

Reboot bridge:	Reboot
Reset to factory defaults:	Reset

User name

This is the name of the user account that will be used to configure the EzBridge. (Default User name: blank)

Administrator password

The password used by the user account. (Default password: blank)

SNMP enabled

Option to enable or disable SNMP support.

The components of SNMP network management fall into three categories:

1. Managed devices (such as a switch)
2. SNMP agents and MIBs, including Remote Monitoring (RMON) MIBs, which run on managed devices
3. SNMP management applications, such as CiscoWorks2000, which communicate with agents to get statistics and alerts from the managed devices

Note: An SNMP management application, together with the computer it runs on, is called a network management system (NMS).

Read only community

The SNMP Read-only Community string is like a user id or password that allows access to a router's or other device's statistics. InterMapper sends the community string along with all SNMP requests. If the community string is correct, the device responds with the requested information. If the community string is incorrect, the device simply discards the request and does not respond.

Factory default setting for the read-only community string is set to "public". It is standard practice to change all the community strings so that outsiders cannot see information about the internal network. (In addition, the administrator may also employ firewalls to block any SNMP traffic to ports 161 and 162 on the internal network.)

Change this value to have InterMapper use the new string when querying SNMP devices.

Read/Write community

Gives read and write access to all objects in the MIB, but does not allow access to the community strings

IP Information

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.

IP address

The default Client Bridge Mode IP address: 192.168.1.99

Subnet mask

The factory subnet default value is 255.255.255.0

Gateway

The factory gateway default address is 192.168.1.1

Device name

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

Allow upgrade uploads

This option determines if the EzBridge can be re-flashed with a firmware into the on board memory.

Cloning bridge

If enabled the MAC Address from the first Ethernet client that transmits data through the EzBridge will be used. This will mean that the client MAC address will become the alias address to the Bridge.

Commands

This section has functions that will allow the EzBridge to Reboot and Reset the system configuration to factory default.

Reboot bridge

This function will restart the EzBridge.

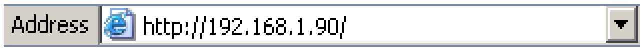
Reset to factory defaults

This function will reset all software setting back to factory default values.

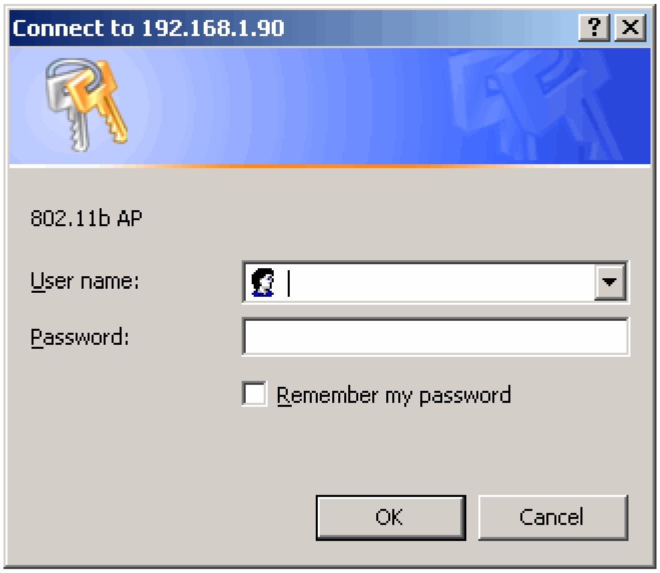
3.2 Access Point Mode

Default IP Address in Access Point Mode: **192.168.1.90**

To access the web control interface please open up a browser window and type in the factory default IP address in the URL.


Address http://192.168.1.90/

Then press Enter on your keyboard, you will see the login prompt window appear similar like the one shown below.


Connect to 192.168.1.90

802.11b AP

User name:

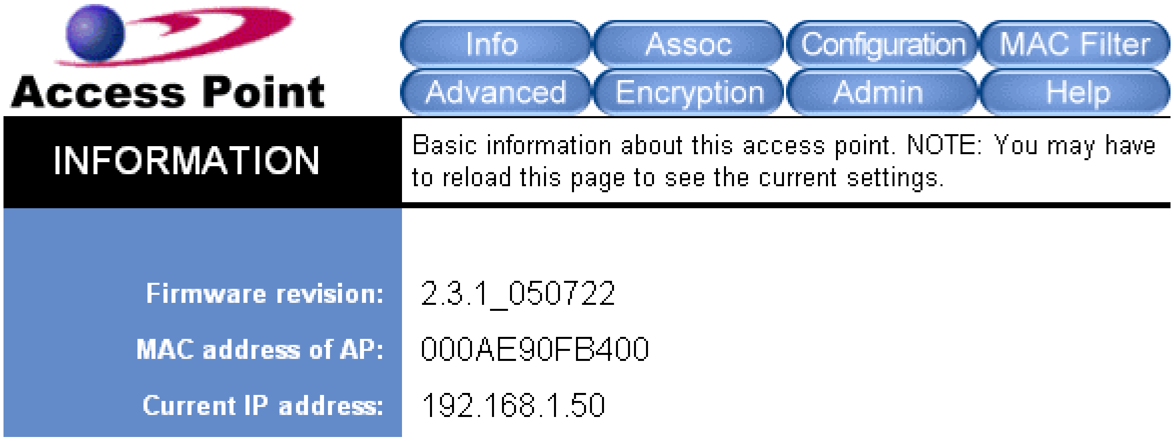
Password:

□ Remember my password

There is no default User name or Password. 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

Info



INFORMATION

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

Firmware revision:	2.3.1_050722
MAC address of AP:	000AE90FB400
Current IP address:	192.168.1.50

Firmware Revision

Current firmware revision loaded on the EzBridge.

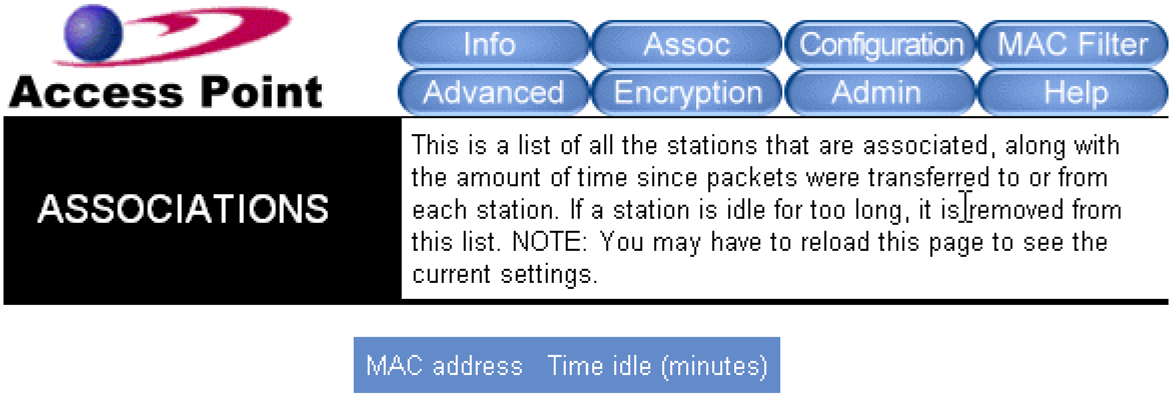
MAC address of Access Point

The MAC address of the wireless card plugged inside the EzBridge.

Current IP address

IP address assign on the unit.

Associations



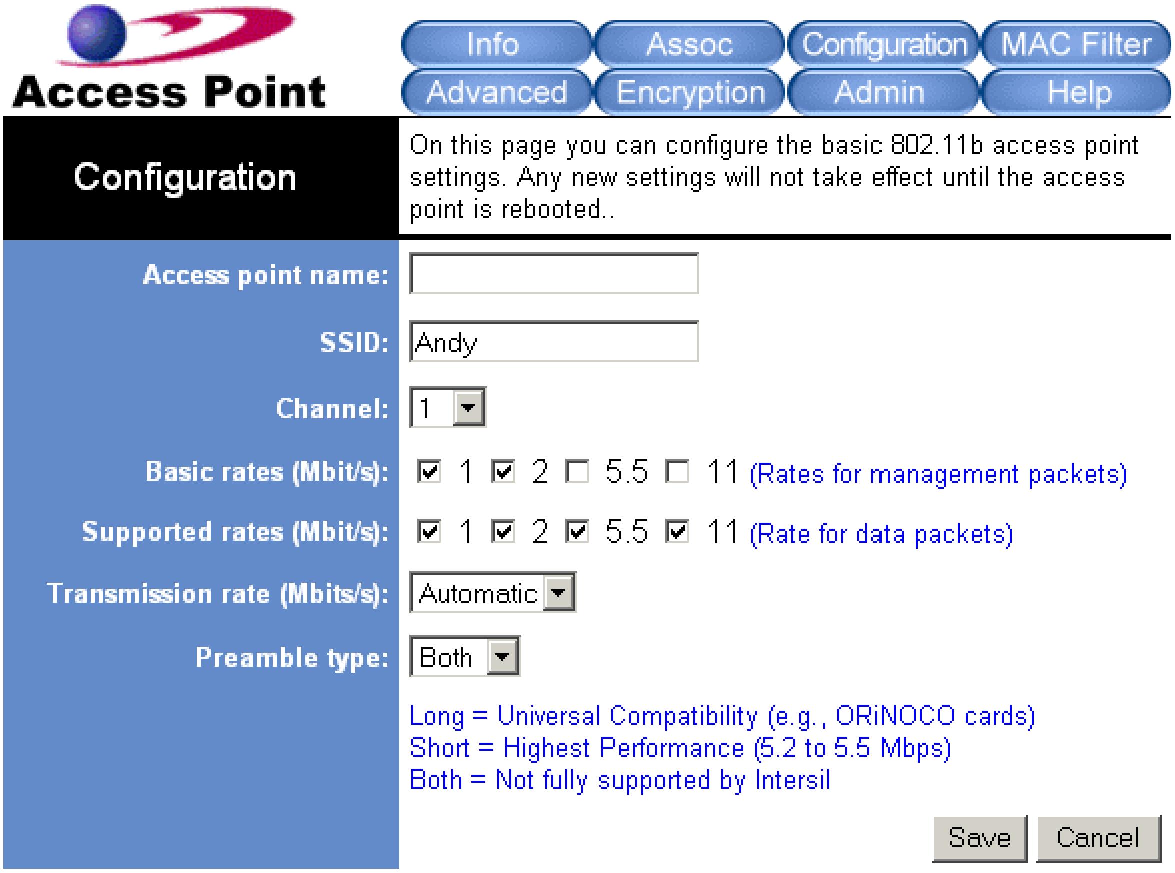
ASSOCIATIONS

This is a list of all the stations that are associated, along with the amount of time since packets were transferred to or from each station. If a station is idle for too long, it is removed from this list. NOTE: You may have to reload this page to see the current settings.

MAC address	Time idle (minutes)

This section will show a list of all the wireless clients currently associating with the EzBridge AP. Each associated clients's MAC address and idel time in minutes will also be listed.

Configuration



Configuration

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

Access point name:

SSID: Andy

Channel: 1

Basic rates (Mbit/s): ☑ 1 ☑ 2 □ 5.5 □ 11 (Rates for management packets)

Supported rates (Mbit/s): ☑ 1 ☑ 2 ☑ 5.5 ☑ 11 (Rate for data packets)

Transmission rate (Mbits/s): Automatic

Preamble type: Both

Long = Universal Compatibility (e.g., ORiNOCO cards)
Short = Highest Performance (5.2 to 5.5 Mbps)
Both = Not fully supported by Intersil

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.

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 an Access Point to start accessing the service from behind such as internet access.

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

Basic rates (Mbit/s)

This option controls the speed limit for management packets such as association, authentication etc.

Supported rates (Mbit/s)

This option controls the speed limit for all data packets.

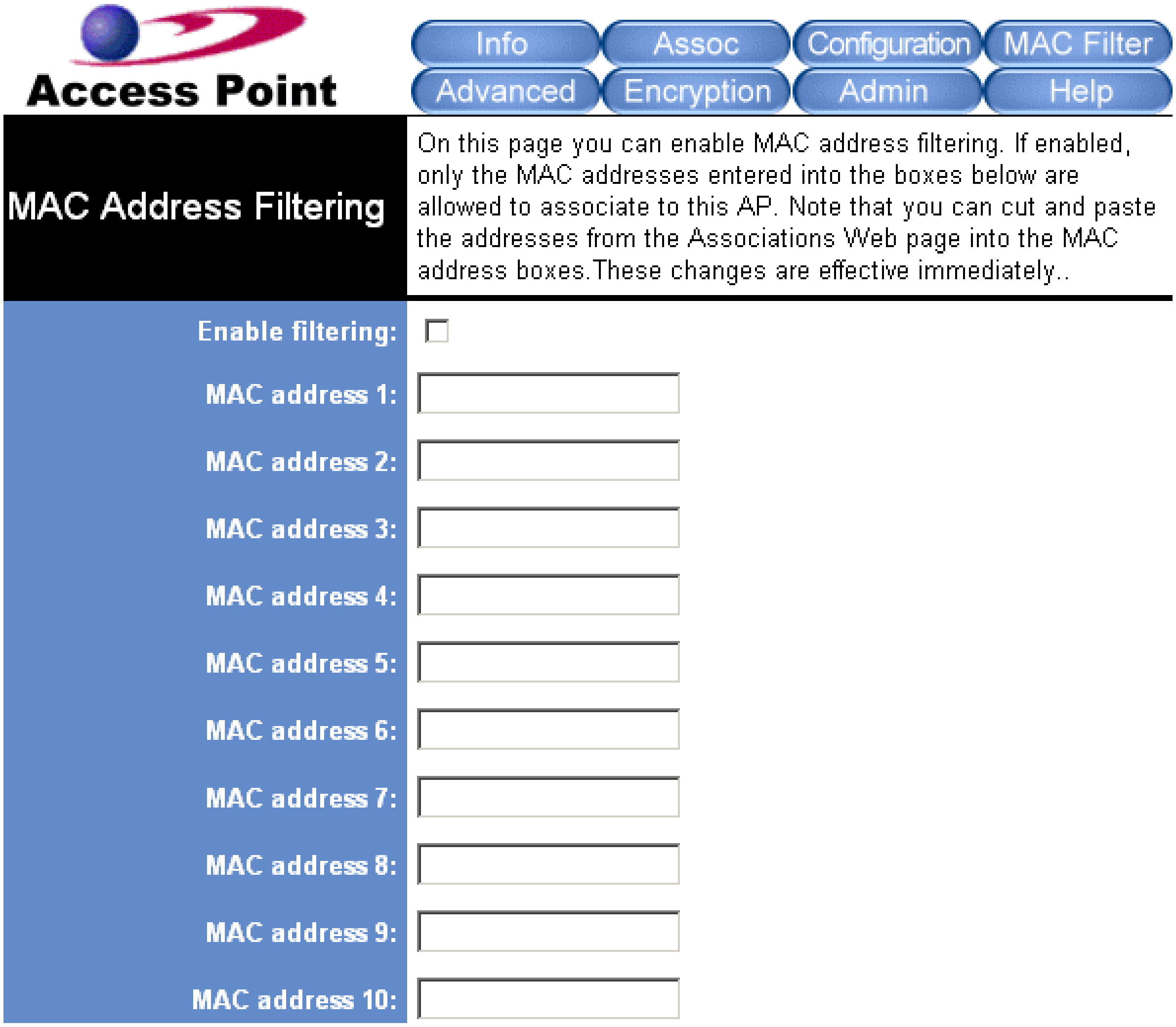
Transmission rate (Mbits/s)

This option indicates the transmission rate of the AP. 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.

Preamble type

Define the Preamble type as Long, Short or Both. The Short preamble option presents a better throughput performance; however, this depends upon the supportiveness of your wireless LAN card. It is recommended to use the Short preamble type if similar equipment and firmware are used. For universal compatibility, use the Long preamble type.

MAC Filter



MAC Address Filtering

On this page you can enable MAC address filtering. If enabled, only the MAC addresses entered into the boxes below are allowed to associate to this AP. Note that you can cut and paste the addresses from the Associations Web page into the MAC address boxes.These changes are effective immediately..

Enable filtering: □

MAC address 1:

MAC address 2:

MAC address 3:

MAC address 4:

MAC address 5:

MAC address 6:

MAC address 7:

MAC address 8:

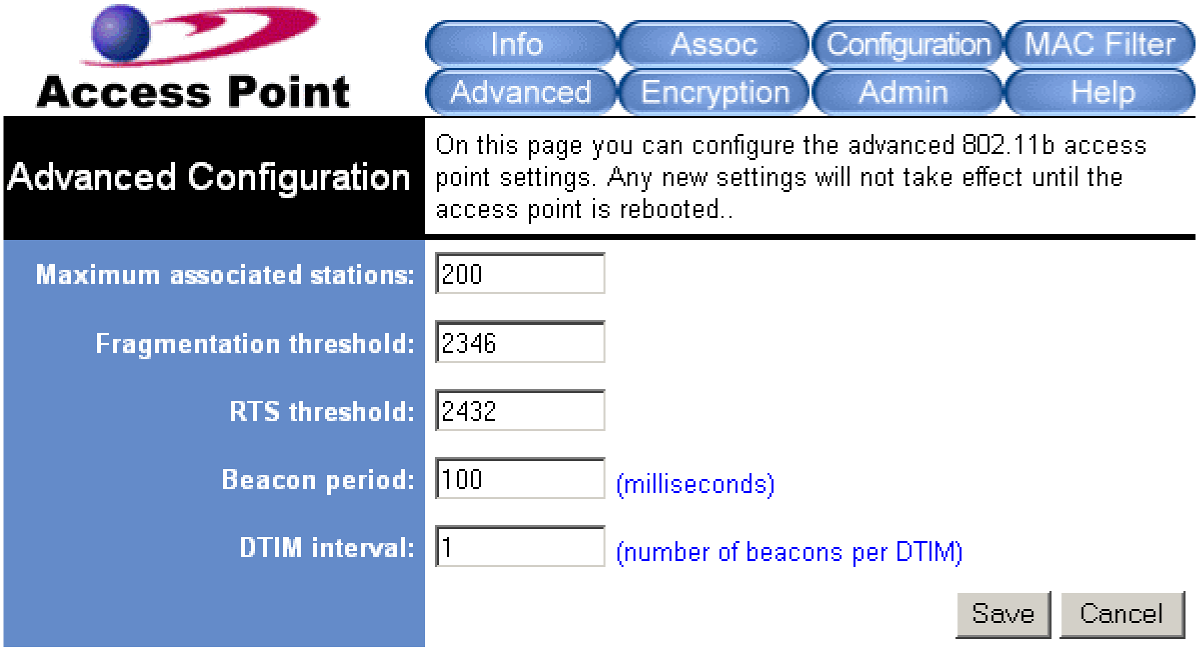
MAC address 9:

MAC address 10:

Enable access control

If enabled, this feature will allow you to associate devices by MAC addresses from up to 16 different units. Any MAC addresses that are not programmed into the list will be blocked out from associating with the unit.

Advanced



Advanced Configuration

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

Maximum associated stations:	200
Fragmentation threshold:	2346
RTS threshold:	2432
Beacon period:	100 (milliseconds)
DTIM interval:	1 (number of beacons per DTIM)

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.

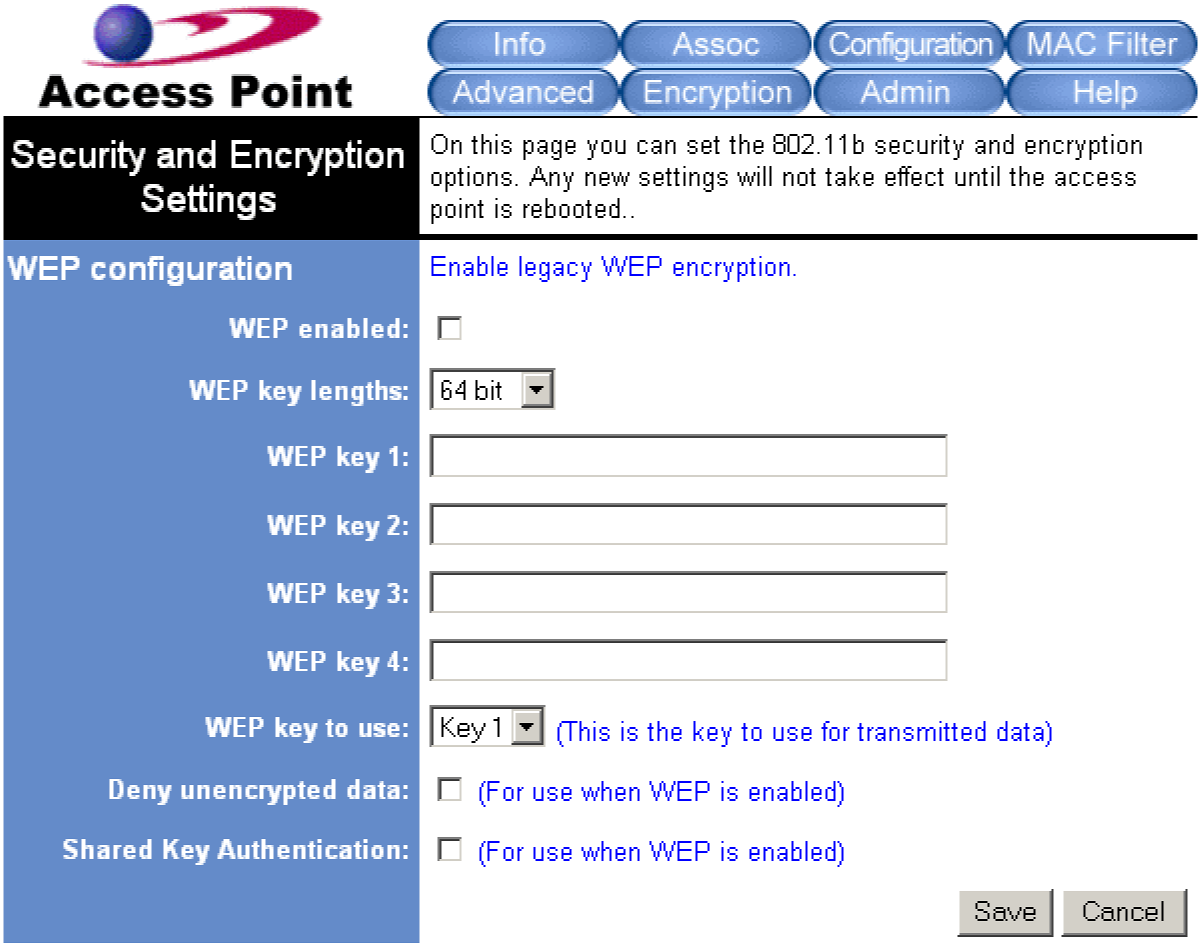
Beacon period

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).

Encryption



Security and Encryption Settings

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

WEP configuration

Enable legacy WEP encryption.

WEP enabled: □

WEP key lengths: 64 bit

WEP key 1:

WEP key 2:

WEP key 3:

WEP key 4:

WEP key to use: Key 1 (This is the key to use for transmitted data)

Deny unencrypted data: □ (For use when WEP is enabled)

Shared Key Authentication: □ (For use when WEP is enabled)

WEP enabled

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. This option will enable the WEP security authenticator.

WEP Key Length

64 bit (10 Hex Digit)

WEP Key type	Example

64-bit WEP with 5 characters	Key1= 2e3f4
	Key2= 5y7js
	Key3= 24fg7
	Key4= 98jui

64-bit WEP with 10 hexadecimal digits ('0-9', 'A-F')	Key1= **0x**123456789A
	Key2= **0x**23456789AB
	Key3= **0x**3456789ABC
	Key4= **0x**456789ABCD

128 bit (26 Hex Digit)

WEP Key type	Example

128-bit WEP with 13 characters	Key1= 2e3f4w345ytre
	Key2= 5y7jse8r4i038
	Key3= 24fg70okx3fr7
	Key4= 98jui2wss35u4

128-bit WEP with 26 hexadecimal digits ('0-9', 'A-F')	Key1= **0x**112233445566778899AABBCDEF
	Key2= **0x**2233445566778899AABBCCDDEE
	Key3= **0x**3344556677889900AABBCCDDFF
	Key4= **0x**44556677889900AABBCCDDEEFF

Hexadecimal digits have to preceded by '0x**'*

WEP Key 1 – 4

Follow the example above to setup either character or hexadecimal key according to the key length.

WEP key to use

Select one pre-defined WEP key to use for authentication.

Deny unencrypted data

When the WEP authentication is enabled any unencrypted data will be blocked from getting pass this unit from the receiving side.

Shared key Authentication

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 pre-shared 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:

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

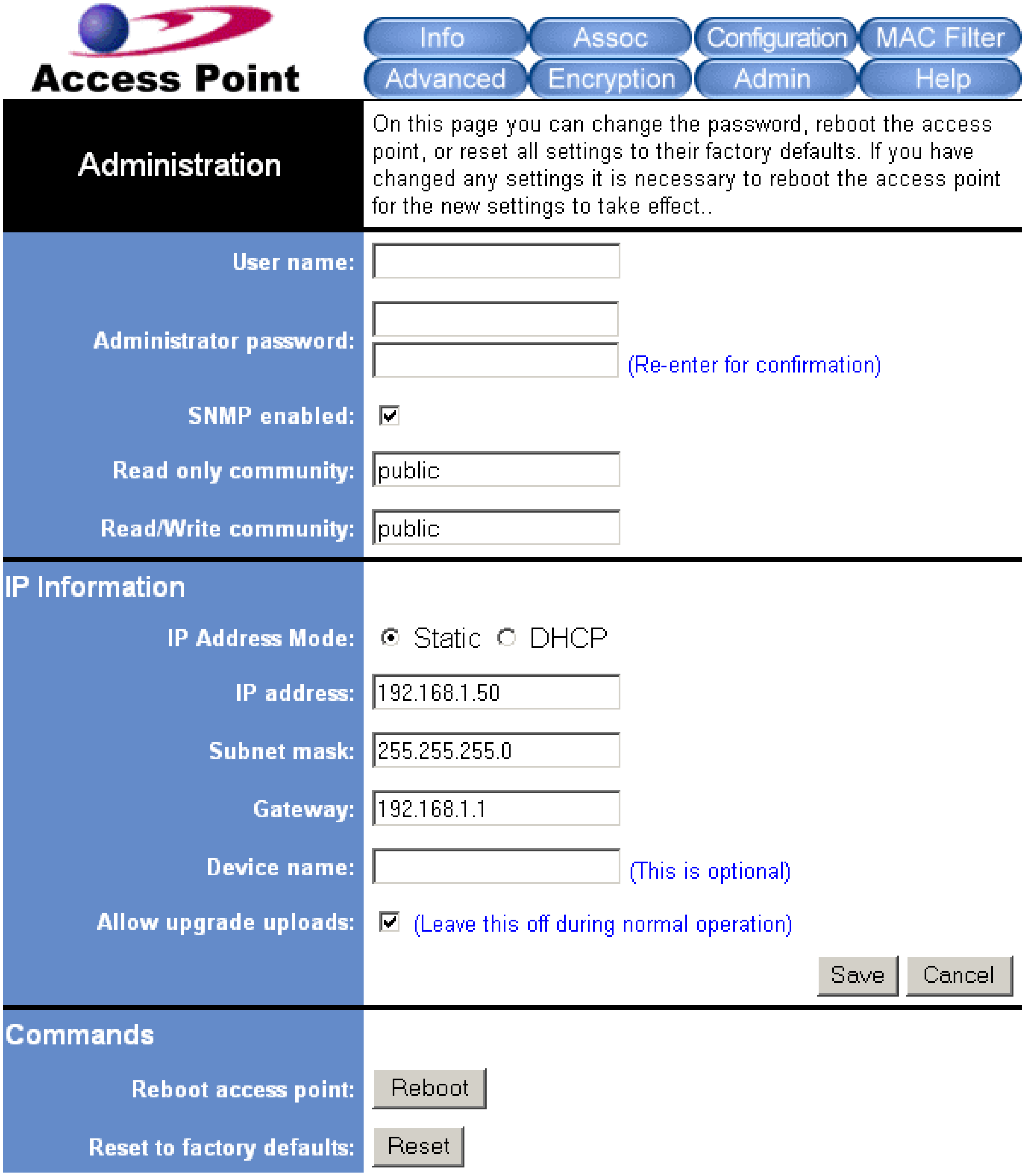
6. The authenticating wireless node responds to the authentication-initiating wireless node with challenge text.

7. 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.

8. 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.

Admin



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:

Administrator password: (Re-enter for confirmation)

SNMP enabled: ☑

Read only community: public

Read/Write community: public

IP Information

IP Address Mode: ● Static ○ DHCP

IP address: 192.168.1.50

Subnet mask: 255.255.255.0

Gateway: 192.168.1.1

Device name: (This is optional)

Allow upgrade uploads: ☑ (Leave this off during normal operation)

Commands

Reboot access point:

Reset to factory defaults:

User name

This is the name of the user account that will be used to configure the EzBridge. (Default User name: blank)

Administrator password

The password used by the user account. (Default password: blank)

SNMP enabled

Option to enable or disable SNMP support.

The components of SNMP network management fall into three categories:

1. Managed devices (such as a switch)
2. SNMP agents and MIBs, including Remote Monitoring (RMON) MIBs, which run on managed devices
3. SNMP management applications, such as CiscoWorks2000, which communicate with agents to get statistics and alerts from the managed devices.

Note: An SNMP management application, together with the computer it runs on, is called a network management system (NMS).

Read only community

The SNMP Read-only Community string is like a user id or password that allows access to a router's or other device's statistics. InterMapper sends the community string along with all SNMP requests. If the community string is correct, the device responds with the requested information. If the community string is incorrect, the device simply discards the request and does not respond.

Factory default setting for the read-only community string is set to "public". It is standard practice to change all the community strings so that outsiders cannot see information about the internal network. (In addition, the administrator may also employ firewalls to block any SNMP traffic to ports 161 and 162 on the internal network.)

Change this value to have InterMapper use the new string when querying SNMP devices.

Read/Write community

Gives read and write access to all objects in the MIB, but does not allow access to the community strings

IP Information

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.

IP address

The default Client Bridge Mode IP address: 192.168.1.99

Subnet mask

The factory subnet default value is 255.255.255.0

Gateway

The factory gateway default address is 192.168.1.1

Device name

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

Allow upgrade uploads

This option determines if the EzBridge can be re-flashed with a firmware into the on board memory.

Cloning bridge

If enabled the MAC Address from the first Ethernet client that transmits data through the EzBridge will be used. This will mean that the client MAC address will become the alias address to the Bridge.

Commands

This section has functions that will allow the EzBridge to Reboot and Reset the system configuration to factory default.

Reboot bridge

This function will restart the EzBridge.

Reset to factory defaults

This function will reset all software setting back to factory default values.

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 to obtain a Return Authorization Number at: rma@teletronics.com

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

Appendix E: Important Outdoor Install Guide

This EZBridge unit requires additional grounding and protection prior to installation to ensure trouble free operation and warranty compliance. Please follow the process below to ensure you are protected against flash memory corruption, premature hardware failure, and/or earth-ground potential issues.

Cause and Effect

It has been recently discovered that by simply grounding the NEMA4 enclosure containing the EZBridge PCB, operation with unstable power and un-filtered AC lines can be made more reliable and not cause damage to the circuit. (Most customers have circuits shared with electric motors, solenoids, fluorescent lighting, and/or dimmers, transformers, etc. These devices compromise the neutral when there is no earth-ground available.) Many field-tested units have been damaged by inadequate grounding at the installation site as well as voltage spikes on the neutral side of the AC line, resulting in corrupted flash memory and ultimately an un-recoverable error condition. To prevent this from impacting your EZBridge and to maintain your Teletronics' warranty, you must follow the simple process set forth below prior to initial power-up.

Tools and Materials Required:

1. #2 Philips Screwdriver
2. Teletronics' supplied grounding wire, screw, washer, and lockwasher.

**Customer can use their own cable if desired; however the potential must not be more than 2-Ohms of resistance from enclosure to ground-point.*

Procedure:

1. Carefully place the EZBridge face down on a solid work surface, with mounting holes pointing up.

2. Insert self-threading screw into the detent 1.65" (42mm) from top of bridge and 1.00" (25.5mm)

3. from the side. (Please use picture as reference.) The diameter of the screw hole should be 0.15"

4. and the depth of the hole should be 0.35". Tighten screw to a snug but do not tight fit, then remove.

5. Clean debris from screw-hole, place lock washer first then electrical ring on top thread, screw until tight.

6. Install EZBridge per mounting instructions and continue to next step.

7. Connect opposite end of the grounding wire with ring to earth-ground or mounting pole.

8. If using the optional Teletronics surge protected PoE Inserter, connect grounding lug from PoE Inserter to earth-ground and EZBridge ground wire to the same earth-ground point.

9. Continue normal installation process.

Appendix F: EzBridge Model Information and Compatible Teletronics Wireless Cards

EzBridge has two PCB versions

PCB labeled with 29AB025XXX – Older EzBridge PCBs

- Uses Firmware 1.7.0 and below (Do not load firmware revision above 1.7.0) Power input is 7.5 DCV through the PoE connection.

PCB labeled with 29AB234XXX – Newer EzBridge PCBs

- Uses Firmware 2.0.0 and above (Do not load firmware revision below 2.0.0). Power input is 9 DCV through the PoE connection.

Note: Power input will vary depending on the length of the PoE run and the quality of the Ethernet cable (24 AWG) and connectors.

Compatible Teletronics Wireless Cards

Teletronics 30mW PCMCIA card Model XI-300*, XI-325*, XI-330

Teletronics 100mW PCMCIA card Model XI-325H

Teletronics 200mW PCMCIA card Model XI-325HP
(Compatiable only with PCB 29AB234XXX, requires 9 VDC)

Teletronics 100mW PCMCIA card Standard Card

** Discontinued*

Appendix G: Troubleshooting

Please check the following If you no longer can access the EzBridge through the web interface:

1. Clear out the arp (type arp -d under the command prompt) and internet cache.

2. Try to access the unit with a different browser such as the firefox.

3. Try manually setting your ethernet adapter to 10Mbits half duplex speed.

4. Try it from another computer with a different brand of network card. If the EzBridge is hooked up to a Hub/Switch try and change to another brand of Hub/Switch as there are sometimes compatibility issues between the EzBridge Ethernet port and some brand of NICs and Hubs/Switches. (Please report all incompatibility issues to support@teletronics.com).

5. Make sure your IP address is setup correctly on the same network as that of the EzBridge.

6. Re-seat the PCMCIA card

7. Do a hard reset on the unit by pressing down the reset bottom. Continue to hold the reset bottom down while powering down the unit. Continue to hold the reset bottom down while turning the power back on. Hold down the reset bottom for another 10 seconds at this point, then release. This would ensure a proper hard reset on the EzBridge.

8. Make sure that you're using the proper cabling to connect to the EzBridge. You'll need to use a cross over cable between the Net side of the PoE and the computer. ODU side should be used to plug into the EzBridge with a straight through cable.

9. Please try the above solutions and let us know if this unit is still giving you a problem.

10. Open up the NEMA4 box, bypass the waterproof Ethernet adapter and connect a computer directly into the PCB with a crossover cable. If this revives the unit it means that either the water proof Ethernet adapter is bad or the Ethernet cable between the adapter and the PCB is bad.

11. Double check all cabling to make sure that nothing is loose or any cables are in non-working condition with a cable tester.

12. If the unit is revived and there is a weak or no signal strength you may have a bad RF pigtail or Radio card.

13. Make sure that the pigtail is attached to the right port of the radio card. Please consult to the user manual for farther detail.

14. Try another PoE

Make sure that you are using the proper power adapter and double check the adapter with an ohmmeter to see if the unit is providing the proper voltage output. Consult the user manual to find out the proper voltage input is needed. (Warning: Some EzBridges comes with a power input plug on the PCBs. Please do not plug the power adapter directly onto the PCB of the EzBridges, as all power input plugs build into the PCBs are rated at 5V)

Appendix H: 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 – Is the place where two or more networks connect

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 - A router is a device that forwards data packets along networks. The device is connected to at least two networks, commonly two LANs or WANs or a LAN and an ISP. Routers are located at gateways, the places where two or more networks connect and use headers and forwarding tables to determine the best path for forwarding the packets. And they use protocols such as ICMP to communicate with each other and configure the best route between any two hosts. Very little filtering of data is done through routers.

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.