FCC Compliance Statement

This 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 instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

• Reorient or relocate the receiving antenna.
• Increase the separation between the equipment and receiver.
• Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
• Consult the dealer or an experienced radio/TV technician for help.

Use of Trademarks, Registered Trademarks, and other Protected Names and Symbols

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1.0 Introduction
Thank you for purchasing a StarTech.com wireless access point. This product complies with the 802.11g standard and can transmit data at up to 54 Mbits/sec. Its versatile configuration options allow it to perform up to five different functions: a wireless access point that bridges your wired and wireless infrastructure; a wireless client that allows a computer to access your wireless network; a repeater that extends the range of your existing wireless network; a bridge that links two wireless networks; and a concentrator that allows you to bridge three or more access points into a single network. For added flexibility, this product is backwards-compatible with 802.11b devices.

1.1 Features

• Unique configuration options actually make the access point 5 products in one
• Easy-to-use, Web-based interface
• Supports 802.11g speeds up to 54 Mbits/sec.; backwards-compatible with the 802.11b standard
• Advanced security features such as customizable user authentication, 64/128-bit WEP encryption, WPA support, and access filtering

1.2 Before You Begin

1.2.1 System Requirements

• For configuration from a “wired” computer: a computer with an Ethernet network card, whose operating system supports the TCP/IP protocol, and has a Web browser installed
• For configuration from a wireless computer: a computer with a wireless network card installed that supports the 802.11b or 802.11g wireless standards, whose operating system supports the TCP/IP protocol, and has a Web browser installed

1.2.2 Contents

This package should contain:

• 1 x WAP1055BG
• 1 x Antenna
• 1 x Power Adapter
• 1 x Mounting Screws and Accessories
• 1 x Manual
1.2.3 Ports and Indicators

NOTE: The phrases “WAP” and “access point” are used interchangeably throughout the manual.

### Front Panel

<table>
<thead>
<tr>
<th>LED</th>
<th>Status</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PWR (Power)</td>
<td>Lit</td>
<td>The unit has power.</td>
</tr>
<tr>
<td></td>
<td>Off</td>
<td>The unit is not powered.</td>
</tr>
<tr>
<td>WLAN (Wireless)</td>
<td>Blinking</td>
<td>The wireless antenna is sending/receiving data.</td>
</tr>
<tr>
<td></td>
<td>Off</td>
<td>The wireless antenna is not sending/receiving data.</td>
</tr>
<tr>
<td>LAN (Wired)</td>
<td>On</td>
<td>A wired network connection is present.</td>
</tr>
<tr>
<td></td>
<td>Blinking</td>
<td>Information is being sent/received over the wired connection.</td>
</tr>
<tr>
<td></td>
<td>Off</td>
<td>No wireless link is established.</td>
</tr>
</tbody>
</table>

### Rear Panel

<table>
<thead>
<tr>
<th>Port</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>12VDC (Power)</td>
<td>Port for the power adapter (provided).</td>
</tr>
<tr>
<td>10/100M (Wired Network)</td>
<td>RJ-45 connector (Ethernet) to connect the WAP to the wired network.</td>
</tr>
<tr>
<td>Reset</td>
<td>Pressed and held for less than 5 seconds, resets the WAP but keeps settings.</td>
</tr>
<tr>
<td></td>
<td>Pressed and held for more than 5 seconds, resets the WAP to factory defaults.</td>
</tr>
<tr>
<td>Antenna</td>
<td>Connects the WAP to the provided antenna or a third-party antenna that uses a Reverse SMA connector.</td>
</tr>
</tbody>
</table>

**NOTE:** Resetting the WAP to factory defaults deletes any changes you have made to configuration and security settings. This should be used as a “last resort” troubleshooting method or when the access point is moved to a new network, as it will necessitate repeating the initial setup process.
2.0 Pre-Configuration Requirements

Before you connect the WAP to your network, you must configure it so it is secure and can be integrated with the rest of your equipment and setup. The easiest way to do this is by connecting the access point to a computer that is not connected to the rest of your network. If needed, you can temporarily disconnect a computer from the network and connect it directly to the WAP.

Because network configurations can vary significantly, you should manually change the network configuration on the computer you are using to configure the unit to work with the WAP’s default settings. Note that you may need administrator authority for the computer you are using in order to change the necessary settings, which may differ from the network settings you use to connect to a server, domain, or workgroup. If you need more information about your specific network configuration and security, contact your System Administrator for assistance.

These instructions assume some basic familiarity with basic networking terms and concepts. Consult your System Administrator or a computer networking professional for additional assistance and guidance, if necessary.

2.1.0 Settings on the Local Computer

The detailed instructions provided below assume that you are using a computer configured with Microsoft Windows 2000 or XP. For details that apply to the operating system you are using, consult your documentation or System Administrator for more information. These are the basic configuration requirements to connect to the WAP:

- **Protocol:** TCP/IP
- **DHCP (automatic IP address):** Disabled
- **Manual IP Address:** Any value between 192.168.2.2 and 192.168.2.254
- **Subnet Mask:** 255.255.255.0
- **Default Gateway/DNS/WINS/Routing:** Leave blank or 0.0.0.0

Additional settings if connecting from a wireless connection:
- **SSID:** Default
- **Channel:** 6
- **Encryption/WEP:** Disabled
- **Mode:** Infrastructure

2.1.1 Connecting the Local Computer to the WAP (Wired)

1. Log the computer off from the LAN or current session, or power it down.
2. Place the access point near the local computer. Connect the power adapter (included) to a wall outlet or other suitable power source. Connect the opposite end to the port marked 12VDC on the WAP.
3. Disconnect the computer from the network connection. Using a standard patch cable, connect the computer’s Ethernet port to the 10/100M port on the WAP.
4. Power on the computer (if necessary). Log into the local computer as an administrator or other user with sufficient authority to change configuration settings. If you are using Windows 2000 or XP, you can use the instructions below to configure the computer to access the WAP. If you are using another operating system, use the settings described above as a guide to configure the computer’s network connection.
2.1.2 Connecting the Local Computer to the WAP (Wireless)

1. Log the computer off from the LAN or current session, or power it down.

2. Place the access point near the local computer. Connect the power adapter (included) to a wall outlet or other suitable power source. Connect the opposite end to the port marked **12VDC** on the WAP.

3. Power on the computer (if necessary). Log into the local computer as an administrator or other user with sufficient authority to change configuration settings. Using your wireless network card’s configuration tool, select the WAP as the wireless network you wish to join. You may need to change the wireless profile settings to match those noted on page 3.

4. If you are using Windows 2000 or XP, you can use the instructions below to configure the computer to access the WAP. If you are using another operating system, use the settings described above as a guide to configure the computer’s network connection.

2.1.3 Network Configuration for Windows 2000 and XP

**NOTE:** You should write down your existing network configuration settings so that you can restore them later. You need to change your settings only to perform an initial configuration of the access point; once the configuration is complete you can restore your original settings to allow the local computer to rejoin the network.

1. Click the **Start** button. Click **Control Panel**. (For Windows 2000, click **Start > Settings > Control Panel**.)

2. Double click the **Network and Dial-up Connections** icon.

3. Your existing network connections will be displayed. Right click the connection you are using to configure the WAP and choose **Properties** from the menu. (The default name is **Local Area Connection** wired connections or **Wireless Connection** for wireless connections. However, these names may vary depending on your system configuration.)

4. Highlight **Internet Protocol (TCP/IP)** from the list and click the **Properties** button.

5. Ensure that the **Use the following IP address** option is selected and enter the following values:

   IP address: 192.168.2.3  
   Subnet mask: 255.255.255.0  
   Default gateway: [leave blank]

6. The option **Use the following DNS server addresses** will be enabled by default; leave both boxes blank. Click the **OK** button at the bottom of the window.

7. You will be returned to the **Local Area Connection Properties** window. Click the **OK** button at the bottom of the window. There will be a slight pause while Windows applies the new network settings.

Proceed with the configuration instructions for the WAP contained in the next section.
3.0 Configuring the Wireless Access Point

Once you have configured the local computer using the settings above, you will be able to access the WAP's Web configuration interface.

**NOTE:** If you normally connect to the Internet using a proxy server, you will need to disable that setting before configuring the access point. If necessary, consult your System Administrator or documentation for more information.

Start the Web browser on the local computer. The configurator works with virtually any standard HTML browser, including Microsoft Internet Explorer, Netscape Navigator, Opera, Mozilla Firefox, and others. Since that computer is not likely to have an Internet connection, you may receive an error when the browser cannot load the home page; that is normal. In the address bar (see above) type the following address: 192.168.2.1 and press [Enter] on the keyboard. After a moment you will see a password prompt similar to the following:

![Password Prompt]

In the **User Name** field, enter **admin** as the login name. In the password field, enter **1234** and click OK. (These are the default passwords that the access point will use any time it is reset to its factory default configuration.) Once you have entered the user and password information successfully, the Web configurator will load.

**NOTE:** If you see a blank page on the welcome screen or when moving between tabs in the configurator, ensure you scroll down to the bottom of the Window. Some browsers leave a blank space at the top of the page.

3.1.0 Configuring Your Wireless Connection

The first step in configuring your wireless access point is determining what role you would like to play within your network. While most users will want it to function as an access point—a way of allowing wireless computers and devices to access your wired network—this product can be configured to one of five different settings. This section describes each mode and the options available to configure it.
3.2.1 The **Mode** Tab

The Mode tab allows you to select the wireless mode the WAP will use and configure the options for that setting. An explanation of each mode, along with detailed configuration instructions, is noted below.

**3.2.2 Mode Tab: Client Configuration**

This mode allows a computer without a wireless network card to join a wireless network. In this mode, the WAP essentially functions as a wireless network card.

- **Scan**: Re-scan to search for other wireless networks to join.
- **Join**: Attempt to join the selected network. (Security settings must match to be successful.)
- **Close**: Close the window.
Station Mode: Selectable between 802.11b mode and 802.11g mode (default). In 802.11g mode the WAP will use all common speeds up to 54 Mbits/sec., including those speeds supported by older 802.11b devices, to connect to a wireless network. If 802.11b mode is selected, the router will only attempt to use IEEE 802.11b compliant speeds to access the network, up to 11 Mbits/sec. In general, you should only select 802.11b mode to solve compatibility issues between the WAP and the wireless device to which you are connecting.

MAC Cloning Mode: When enabled, uses the MAC address of the computer to which it is connected to access a wireless network. A MAC address is a unique hardware identifier that is part of the hardware of every device on your network. You will not need to enable this option unless your network enables security that relies on MAC address as part of its authentication scheme.

SSID is short for Service Set Identifier, which is the name that the WAP will broadcast to other wireless devices. This allows multiple wireless devices to co-exist on the same network without confusion. The SSID can be up to 32 standard ASCII characters, and can be any combination of your choosing as long there is not another wireless device in the vicinity using that SSID.

Site Survey: When this button is pressed, the configurator will open the Site Survey window (see previous page). You can join a wireless network by selecting a SSID from the list and clicking Join. Note that the security settings (encryption type) on the WAP must match the network you wish to join. For more information on configuring your security settings, refer to section 4.0, “Configuring Security” on page 14.

Operation Mode: If Ad-Hoc is selected, the WAP will communicate directly with another wireless device (i.e. computer) without using an access point, wireless router, or similar device. If Infrastructure is selected, the WAP will join a wireless network using a router/access point (default). In both modes, the network or device to be connected to is selected from the Site Survey window.

Channel: Determines what channel the WAP will use to communicate with other devices. A channel is a discrete radio frequency pre-approved by regulators. Devices located within a single wireless network must all operate on the same channel. If you are in Infrastructure operation mode (see above), the channel will be set automatically by the WAP using the Site Survey tool. If you are operating in Ad-Hoc mode, you must manually select the correct channel to use.

Security: Sets the level and type of encryption used for the wireless connection. For more information on configuring your security settings, refer to section 4.0 “Configuring Security”.

Preamble Type: This setting determines what proportion of a wireless transmission segment (frame) will be used for non-data requirements such as error correction. The default setting, Auto, allows the WAP to automatically switch between settings based on the quality of the connection. You should only adjust this setting if specifically required to connect to another device.

Transmit Rate: Forces the WAP to use a particular connection speed for a wireless connection. The default (and recommended) setting, Auto, allows the unit to negotiate the fastest possible speed automatically. Selecting another value from the list will force the access point to use that speed only. Note that the wireless devices to which you are connecting must support the speed you select, and that varying levels of interference...
may result in failed connections since the access point will not be able to adjust its speed accordingly. If 802.11b is selected as the Station Mode, you will only be able to choose from 802.11b-compliant connection speeds (up to 11 Mbits/sec.) from the Transmit Rate menu.

Click the **Apply** button at the bottom of the screen to save your changes and make them active.

### 3.2.3 Mode Tab: Access Point Configuration

This option allows the WAP to function as a typical access point. In this mode, it is designed to provide wireless access to your wired network infrastructure.

**Mode** is selectable between **802.11b**, **802.11g**, and **Mixed** (default). In **Mixed** mode the WAP will support all common speeds up to 54 Mbits/sec., including those speeds supported by older 802.11b devices, for requests to connect to a wireless network. If **802.11b** is selected, the router will only attempt to use IEEE 802.11b compliant speeds to access the network, up to 11 Mbits/sec. If **802.11g** is selected, the router will only attempt to use IEEE 802.11g compliant speeds to access the network, up to 54 Mbits/sec. In general, you should only select a setting other than **Mixed** to solve compatibility issues between the WAP and wireless devices.

**SSID:** Short for Service Set Identifier, which is the name that the WAP will broadcast to other wireless devices. This allows multiple wireless devices to co-exist on the same network without confusion. The SSID can be up to 32 standard ASCII characters, and can be any combination of your choosing as long there is not another wireless device in the vicinity using that SSID.

**Broadcast SSID:** When set to **Enable**, wireless users will be able to scan available networks (usually called a “site survey”) and select the WAP from a list. If set to **Disable** users must know the SSID of the WAP to connect to the wireless network, and will not appear in a site survey list.

**Channel:** Determines what channel the WAP will use to communicate with other devices. A channel is a discrete radio frequency pre-approved by regulators. Devices located within a single wireless network must all operate on the same channel.
**Security:** Sets the level and type of encryption used for the wireless connection. For more information on configuring your security settings, refer to section 4.0 “Configuring Security”.

**Advanced Settings:** Detailed settings you can use to fine-tune your connection to the wireless network. See section 5.0 “Advanced Settings” for more information.

**Access Filter:** See section 4.0 “Configuring Security” for more information on using the access filter.

☛ Click the **Apply** button at the bottom of the screen to save your changes and make them active.

**3.2.4 Mode Tab: Repeater Mode Configuration**
This option allows the WAP to function as a repeater that extends the range of your existing wireless devices, such as another access point, router, etc.

**Parent MAC Address:** This is the unique hardware identifier of a wireless device you wish to extend. The MAC address is often printed on the device itself (often near the serial number or model information) or in the setup interface of the device. Consult your documentation for specific details on locating the MAC address for the device.

**Child MAC Address:** If you are using another device to extend the range of this access point, you must insert the MAC address of that access point, router, etc. here.

(Note: You will need to fill in both values only if the WAP will be in the middle of a “chain” of other wireless devices. If you are using this product only to extend the range of another device, you need only to fill in the “parent” MAC address.)

The following values are transferred automatically from the **Access Point Mode** configuration screen. Any changes you make will automatically update those values.

**Mode** is selectable between 802.11b, 802.11g, and Mixed (default). In Mixed mode the WAP will support all common speeds up to 54 Mbits/sec., including those speeds supported by older 802.11b devices, for requests to connect to a wireless network. If 802.11b is selected, the router will only attempt to use IEEE 802.11b compliant speeds to
access the network, up to 11 Mbits/sec. If 802.11g is selected, the router will only attempt to use IEEE 802.11g compliant speeds to access the network, up to 54 Mbits/sec. In general, you should only select a setting other than Mixed to solve compatibility issues between the WAP and wireless devices.

**Broadcast SSID:** When set to Enable, wireless users will be able to scan available networks (usually called a “site survey”) and select the WAP from a list. If set to Disable users must know the SSID of the WAP to connect to the wireless network, and will not appear in a site survey list.

**Channel:** Determines what channel the WAP will use to communicate with other devices. A channel is a discrete radio frequency pre-approved by regulators. Devices located within a single wireless network must all operate on the same channel.

**Security:** Sets the level and type of encryption used for the wireless connection. For more information on configuring your security settings, refer to section 4.0 “Configuring Security”.

**Advanced Settings:** Detailed settings you can use to fine-tune your connection to the wireless network. See section 5.0 “Advanced Settings” for more information.

**Access Filter:** See section 4.0 “Configuring Security” for more information on using the access filter.

 ☛ Click the Apply button at the bottom of the screen to save your changes and make them active.
3.2.5 Mode Tab: P2P Mode Configuration

This option allows the WAP to function as a bridge that links together two networks using wireless access points (called P2P, or point-to-point).

AP MAC Address: The MAC address (hardware identifier) of the wireless access point on the network you wish to bridge. The MAC address is often printed on the device itself (often near the serial number or model information) or in the setup interface of the device. Consult your documentation for specific details on locating the MAC address for the device.

The following values are transferred automatically from the Access Point Mode configuration screen. Any changes you make will automatically update those values.

Mode is selectable between 802.11b, 802.11g, and Mixed (default). In Mixed mode the WAP will support all common speeds up to 54 Mbits/sec., including those speeds supported by older 802.11b devices, for requests to connect to a wireless network. If 802.11b is selected, the router will only attempt to use IEEE 802.11b compliant speeds to access the network, up to 11 Mbits/sec. If 802.11g is selected, the router will only attempt to use IEEE 802.11g compliant speeds to access the network, up to 54 Mbits/sec. In general, you should only select a setting other than Mixed to solve compatibility issues between the WAP and wireless devices.

Channel: Determines what channel the WAP will use to communicate with other devices. A channel is a discrete radio frequency pre-approved by regulators. Devices located within a single wireless network must all operate on the same channel.

Security: Sets the level and type of encryption used for the wireless connection. For more information on configuring your security settings, refer to section 4.0 “Configuring Security”.

Advanced Settings: Detailed settings you can use to fine-tune your connection to the wireless network. See section 5.0 “Advanced Settings” for more information.

Click the Apply button at the bottom of the screen to save your changes and make them active.
3.2.6 Mode Tab: PMP Mode Configuration

This option allows the WAP to function as a bridge that links together three or more networks using wireless access points (called PMP, or point-to-multipoint).

APx MAC Address: The MAC address (hardware identifier) of a wireless access point on a network you wish to bridge. The MAC address is often printed on the device itself (often near the serial number or model information) or in the setup interface of the device. Consult your documentation for specific details on locating the MAC address for the devices you are bridging. You can bridge together up to 6 networks using the WAP.

The following values are transferred automatically from the Access Point Mode configuration screen. Any changes you make will automatically update those values.

Mode is selectable between 802.11b, 802.11g, and Mixed (default). In Mixed mode the WAP will support all common speeds up to 54 Mbits/sec., including those speeds supported by older 802.11b devices, for requests to connect to a wireless network. If 802.11b is selected, the router will only attempt to use IEEE 802.11b compliant speeds to access the network, up to 11 Mbits/sec. If 802.11g is selected, the router will only attempt to use IEEE 802.11g compliant speeds to access the network, up to 54 Mbits/sec. In general, you should only select a setting other than Mixed to solve compatibility issues between the WAP and wireless devices.

Channel: Determines what channel the WAP will use to communicate with other devices. A channel is a discrete radio frequency pre-approved by regulators. Devices located within a single wireless network must all operate on the same channel.

Security: Sets the level and type of encryption used for the wireless connection. For more information on configuring your security settings, refer to section 4.0 “Configuring Security”.

Advanced Settings: Detailed settings you can use to fine-tune your connection to the wireless network. See section 5.0 “Advanced Settings” for more information.

Click the Apply button at the bottom of the screen to save your changes and make them active.
3.3.1 The Status Tab

The Status tab offers a way to view the setting and activity of the WAP at a glance. You can’t edit any configuration settings from this menu, however you can view essential settings including the wired and wireless MAC addresses of the WAP, IP address settings, SSID, encryption settings, and more. For more information about any of the information presented on this screen, consult the section of the manual that relates to that item for a detailed description.

3.4.1 The Admin Tab

The Admin menu allows you to change the WAP’s login password (recommended) and update the firmware (built-in software) as needed.
**FW Version:** The current firmware version of the WAP.

**FW Upgrade:** Allows you to upload a new firmware image to the WAP. You can use the **Browse** feature to locate the file once you have saved it to a drive accessible to the computer you are using. Once the filename appears in the box, click **Apply** to get the WAP to upload the firmware change.

**New Password:** Replaces the default login password on the access point. You must also type the new password into the **Reconfirm Password** box. Once you have completed both steps, click **Apply** to activate the new password. The password can be a maximum of 32 characters in length, and is case-sensitive.

### 3.5.1 The **LAN** Tab

The **LAN** menu allows you to configure how the WAP will connect to your wired network. Depending on other options you may wish to configure (i.e. security), you may wish to use this menu as the last step of the configuration process. **Changing these settings may cause the WAP Web configurator to be inaccessible to the computer you are using, depending on your network configuration.** Once you have changed these settings, and they are appropriate for your network, you can access the Web configurator over the network using the settings you input here.

**Device Name:** This is a plain-text name that you can use to identify the WAP on your network for easy identification. It does not affect the operation of the access point, as long as the following two conditions are met: a) the name you assign is unique on the network; b) your administrator has not implemented a security scheme that relies on a device (also called computer or machine) name for authentication.

**Automatic IP:** When enabled, configures the WAP to request (or “lease”) an IP address from a DHCP (Dynamic Host Connection Protocol) server, if present. While this makes the configuration of the access point’s LAN settings automatic, it can make administration more difficult since the WAP’s IP address is not fixed. It is highly recommended that you
enable this setting only if you have easy access to your network’s DHCP log. See your system administrator for more details if needed. (Clicking the Important button next to this option displays this warning.)

**Fixed IP:** When enabled (default), the WAP will use IP address, subnet, and gateway information that you enter into this menu. The WAP will then have a constant IP address that you can use to enter the Web configurator. The **Subnet Mask** information must be valid for the IP address you enter and be consistent with the rest of the network. (Note: Only certain subnet mask values are applicable for a particular IP address. Contact your network administrator for more information on these settings, if needed.) The Gateway is the IP address of the device (i.e. computer, router) that provides Internet access to your network.

> Click the **Apply** button at the bottom of the screen to save your changes and make them active.

(Note: If you have changed the IP address of the WAP, you may need to manually re-enter that address in your Web browser once the new settings have been applied to access the configurator.)

### 4.0 Configuring Security

While you could use the WAP after completing the steps in the previous section, it is highly recommended that you change the encryption settings from “open” (the default setting, where no encryption is used) to active encryption using the WEP or WPA protocols. That way, wireless clients must know the encryption “key” to access the wireless network, preventing unauthorized users from compromising your systems. The security configuration method is common to all modes (access point, P2P, etc.) but keep in mind that all modes (with the exception of Access Point mode) will require you to know the existing encryption settings for the other wireless devices on your network so that they will be able to communicate. Consult your documentation or network administrator if you need assistance in configuring your security settings to work with other devices.

If you are configuring the WAP as an access point, be sure to record your encryption settings so that you can provide the key wireless clients will need to join the network. You may also choose to limit wireless access to the WAP using the MAC address Access Filter feature.

#### 4.1.1 WEP (Wired Equivalent Privacy)
WEP Length:

WEP-64: Uses a 64-bit encryption key for good security and minimal speed penalties.

WEP-128: Uses a 128-bit encryption key for bank-grade security with a slight reduction in overall performance.

(Note: 64 and 128-bit keys are not interchangeable. If needed, ensure you select the key strength that matches your existing network settings.)

Mode:

- HEX: Allows you to enter an encryption key using a hexadecimal value. See the information on the Keys setting below for more details.
- ASCII: Allows you to create a more intuitive key using a plain-English phrase. See the information on the Keys setting below for more details.

Passphrase: This makes creating a key easier. By entering a plain-English text phrase that is easy to remember and clicking the Generate button, the WAP will automatically create 4 WEP keys and populate the Key 1~4 fields. This allows you to easily configure wireless devices that support passphrases, so that you do not have to remember or transcribe unintuitive hex numbers when configuring clients for your network. (If other wireless devices on the network use passphrases, you can enter the existing passphrase to automatically match the encryption settings of other devices.) If you prefer, you can manually create your own keys by following the instructions below.

Key 1 ~ Key 4: Most wireless devices support 4 encryption keys at any one time. While only one can be active at a given moment, maintaining four keys allows you to rotate keys more easily for greater security. If you are not using the passphrase feature to create your keys, you must follow specific rules when manually entering values into these fields based on the encryption strength and mode you have selected.

64-bit: If you have selected WEP-64 as your WEP key length, use the following guidelines for the mode you have selected:

- Hex: 10 digits using the values “A-F”, “a-f”, and “0-9” in any combination. (i.e.: AF27b726gT)
- ASCII: 5 digits in any combination. (i.e. test1)

128-bit: If you have selected WEP-128 as your WEP key strength, use the following guidelines for the mode you have selected:

- Hex: 26 digits using the values “A-F”, “a-f”, and “0-9” in any combination. (i.e.: AF27b726gT8765T5AF27b626jv)
- ASCII: 13 digits in any combination. (i.e. protection123)
4.2.1 WPA (Wi-Fi Protected Access)

**Authentication:** This feature uses a method called Pre-Shared Keys (PSK) to authenticate wireless clients and encrypt data. These keys are rotated automatically between wireless clients for greater security. PSK is the only method you can choose using WPA.

**Passphrase:** The passphrase is shared by all clients on the wireless network. It must be at least 8 characters in length.

**Group Re-Key Time:** Enter the amount of time (in seconds) that WPA devices will wait before generating a new common data encryption key. This setting should match other WPA-enabled wireless devices on the network.

Click the **Apply** button at the bottom of the screen to save your changes and make them active.

4.3.1 Access Filter
MAC Filtering: When enabled, allows you to allow or deny certain computers access to the wireless network based on the MAC address the computer reports.

Filter Mode

Only deny PCs with MAC listed below to access this device: When selected, excludes computers with a MAC addresses included in the list from joining the wireless network. All other computers are permitted access.

Only allow PCs with MAC listed below to access this device: When selected, allows only those computers whose MAC address appears in the list to join the wireless network. All other computers are denied access.

(Note: When using this feature, be sure that you are adding MAC address for the wireless card in the computer or device you are adding. Wireless computers that have both wired and wireless networking capabilities will have a separate MAC address for each.)

Click the Apply button at the bottom of the screen to save your changes and make them active.

5.0 Advanced Settings

(Note: The default values are generally adequate for most wireless networks. While changing these settings may improve the performance or reliability of wireless connections in some cases, they could also cause a connection to fail if improperly adjusted. Only experienced users and administrators should modify these values.)

Beacon Interval: The time that elapses between beacon (synchronization) broadcasts by the WAP, measured in milliseconds. Default is 100 msec.

RTS Threshold: Determines the minimum packet size for the router to use the Ready to Send (RTS) and Clear to Send (CTS) transmission mechanism. Default is 2347.
**DTIM Interval**: The time that elapses between Delivery Traffic Indication Message (DTIM) broadcasts by the access point. Default value is 2.

**Protection Mode**: When enabled, improves performance if the access point will only be connected to 802.11g devices. This may impede the performance of 802.11b devices. Default setting is **Disabled**.

**Transmit Rate**: (This setting is replicated as the MODE setting on configuration screens.) Sets a mandatory transmission speed for wireless connections. If the access point is configured to use 802.11b speeds only, 1~11 Mbits/sec. speeds are selectable. If 802.11g is selected as the station mode, this value is selectable between 1~54 Mbits/sec. The default is **Auto** (recommended).

**Preamble Type**: The preamble block length determines how much of a transmission frame will be devoted to non-data information such as connection settings. Default setting is recommended.

### 6.0 Troubleshooting

This section addresses common problems with wireless connections. Please examine this section and attempt the solutions offered before contacting technical support. Given the complexity of some wireless networks, you may want to get assistance from your System Administrator or other professional if you encounter difficulties achieving a stable, secure wireless connection.

**Problem**: I cannot connect to my wireless network or the connection is slow.

**Cause**: Your security and/or encryption settings may not match those of the wireless device to which you are trying to connect, or there may be an environmental issue (distance, interference) that is compromising the connection.

**Solution**: 1) If a signal is present but extremely low, try reorienting the antenna of the WAP or decrease the distance between the antenna and the device to improve the signal strength.
2) If there is a great deal of potential interference-causing material between the antenna and device (electrical cables, heavy machinery, solid walls) you may wish to relocate the computer or the WAP.
3) Ensure that the MODE value is set to **Mixed** so that the WAP will negotiate the best possible connection given your environment.
4) If no signal is present, adjust your encryption, authentication and other settings to match your network.

**Problem**: The card connects to my wireless access device and network, but I cannot see or browse other computers on my network or access the Internet.

**Cause**: There may be software (i.e. firewall) that is interfering with the operation of the your wireless connection.

**Solution**: 1) Disable the Windows XP firewall (if applicable). Double-click the icon for your wireless network connection in the System Tray (next to the clock). Click the **Advanced** tab. If the checkbox next to **Protect my computer and network**... under the **Internet Connection Firewall** menu is enabled, uncheck it.
2) Disable or uninstall any third-party firewall software.
3) Verify that the properties (protocols, etc.) for the wireless network connection are configured properly.
## 7.0 Specifications

| Protocols/Speeds Supported | IEEE 802.11g and 802.11b  
|                           | 54/48/36/24/18/12/11/5.5/2/1 Mbits/sec. supported  
<table>
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<th>(Both modes support auto-fallback when enabled)</th>
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| Encryption/Security Features | 64 or 128-bit WEP encryption  
|                           | WPA-PSK authentication and encryption  
|                           | Access filtering by MAC address  |
| Operating Modes           | Access Point  
|                           | Wireless Client  
|                           | Repeater  
|                           | PTP Network Bridge  
|                           | PMP Network Bridge  |
| Frequency Use             | 2.4000-2.4835 GHz  
|                           | (Industrial/Scientific/Medical band)  |
| Antenna                   | External, detachable dipole, RP-SMA connector  
|                           | Typical Transmit Power: 16 dBM  |
| Wired Network Connectivity | RJ-45 Ethernet Connector (1)  
|                           | 10/100 Mbits/sec. with auto-negotiation  |
| Operating Temperature     | 32 ~ 131°F (0 ~ 55°C)  
|                           | 10 ~ 90% rel. humidity (non-condensing)  |
| Physical Characteristics  | Dimensions (H x W x D): 1.18" x 5.0" x 3.43" (30 x 127 x 87 mm)  
|                           | Housing: Plastic  |
| Power Adapter             | Input: 120V AC (60 Hz)  
|                           | Output: 12V DC 500 mA (center positive)  |
| Regulatory Certifications | FCC Class B, CE  |

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8.0 Accessory Products from StarTech.com
Contact your local StarTech.com dealer or visit www.startech.com for cables or other accessories that will help you get the best performance out of your new product.

CEILING24
6dBi Ceiling mounted 2.4 GHz WLAN indoor antenna

DIPOLE24
8.5dBi Omni-directional 2.4 GHz WLAN indoor antenna

PANEL24
9.5 dBi Uni-directional 2.4 GHz WLAN indoor antenna

WLANREF
2.4 GHz WLAN reflector signal booster

CB555WG
802.11g Wireless Cardbus NIC Adapter

PCI555WG
802.11g Wireless PCI NIC Adapter

USB555WG
54 Mbps USB 802.11g Wireless Mini NIC Adapter
9.0 Support and Warranty

9.1 Technical Support
StarTech.com's lifetime technical support is an integral part of our commitment to provide industry-leading solutions. If you ever need help with your product, visit www.startech.com/support and access our comprehensive selection of online tools, documentation, and downloads.

9.2 Warranty Information
This product is backed by a one-year warranty. In addition, StarTech.com warrants its products against defects in materials and workmanship for the periods noted, following the initial date of purchase. During this period, the products may be returned for repair, or replacement with equivalent products at our discretion. The warranty covers parts and labor costs only. StarTech.com does not warrant its products from defects or damages arising from misuse, abuse, alteration, or normal wear and tear.

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