



802.11g Universal Wireless Repeater

Model # AP311W

User's Manual

Ver. 1C

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1. Introduction

Congratulations on your purchase of this 802.11g Universal Wireless Repeater. The Wireless Repeater extends the range of your access point/wireless router by repeating the signal to wireless clients that are beyond the broadcasting range of the access point/wireless router. This provides the wireless clients with greater flexibility and mobility. Best of all the Wireless Repeater is compatible with existing 802.11b and 802.11g network devices so it will work with most existing wireless devices.

This product is specifically designed for Small Office and Home Office needs. It provides a complete SOHO solution for Internet surfing and is easy to configure and operate even for non-technical users. Instructions for installing and configuring this product can be found in this manual. Before you install and use this product, please read this manual carefully for proper operation of this product.

Package Contents

Before you begin the installation, please check the items of your package:

- 802.11g Universal Wireless Repeater
- Power Adapter
- Quick Installation Guide
- Manual CD

If any item contained is damaged or missing, please contact your local dealer immediately. Also, keep the box and packaging materials in case you need to ship the unit in the future.

2. Using the Setup Wizard

Step 1 Verify the Repeater is powered on, insert the provided CD, and wait for the autorun screen to appear.

Step 2 Click on **Setup**.



Note: If the autorun screen does not appear automatically, go to **Start, Run**, type **D:\setup.exe** (where **D** is the letter of your CD drive) and click **OK**.

Step 3 Click **Next** and wait for the wizard to detect your access point / wireless router (this may take up to a minute).



Step 4 Select the **SSID (Network Name)** of your access point / wireless router from the **Selection** list.

Click **Yes** if you see your SSID in the list and you don't have encryption enabled for your wireless network. Skip to **Step 8**.

Click **Yes** if you see your SSID and you have encryption enabled. Skip to **Step 6**.

Click **Manual** if you don't see your SSID in the list. Continue to **Step 5**.

Search Wireless Access Point or Router!

Please select the Wireless Access Point or Router you want to connect to. Once you have connected to an Access Point or Router the Setup Wizard will search the Universal Wireless Repeater on your network.

Selection	Status
default	MAC Address: 00-C0-49-54-11-E4 SSID: default Channel: 6 Security: Disabled

Click **Yes** if you want to connect to the Access Point you have selected. If you do not want to connect to this Access Point click **No**.

Manual | **No** | **Yes**

AP311W UNIVERSAL WIRELESS REPEATER Setup Wizard

Step 5 Enter the **SSID (Network Name)** of your access point / wireless router in the **SSID** field and select the appropriate **Channel** and **Encryption** settings and click **Next**.

Configure Wireless Settings Manually

Connect Manually

To connect to your Wireless network manually please enter your network settings below.

Please enter the connect wireless network settings.

SSID	
Channel	11 - 2.462GHz
Encryption	Disabled

You can manually connect to your Access Point, or Wireless Router by specifying the correct settings on this screen. Enter your **SSID**, **Channel**, and **Encryption** in these fields. To continue click **Next**. If you do not know your current wireless settings please click **Back**.

Back | **Next**

AP311W UNIVERSAL WIRELESS REPEATER Setup Wizard

Note: You may gather these information from the web configuration utility of your wireless router.

WEP

Step 6a Select the same level of WEP encryption (**64-Bits** / **128-Bits**) of your wireless network from the drop-down menu.

The screenshot shows the 'WEP Security Settings' page for the 'AIRLINK 101' universal wireless repeater. The 'Security' section is highlighted with an orange oval. A red box highlights the 'Security' dropdown menu, which is currently set to 'WEP (64-Bits)'. The dropdown menu is open, showing three options: 'WEP (64-Bits)', 'WEP (128-Bits)', and 'WPA-PSK'. Below the dropdown, there is a 'Passphrase' field and a 'Key 1' field. The 'Next' button is visible at the bottom right.

Security

If you would like to use Wired Equivalent Privacy (WEP), enter the required information below. Please refer to the User Guide on how to setup WEP from the WEB browser interface.

Security: **WEP (64-Bits)** Please choose WEP (64 bits) or WEP (128 bits).

Passphrase: If you choose the Passphrase option for WEP, a WEP key will generate automatically.

or

Key 1: To manually enter a WEP key, select a WEP algorithm and leave the Passphrase option blank.

Back | Next

AP311W **UNIVERSAL WIRELESS REPEATER** Setup Wizard

Step 6b Enter the same **WEP key (password)** of your wireless network in the **Key 1** field and click **Next**. Skip to **Step 8**.

The screenshot shows the 'WEP Security Settings' page for the 'AIRLINK 101' universal wireless repeater. The 'Security' section is highlighted with an orange oval. The 'Security' dropdown menu is set to 'WEP (64-Bits)'. The 'Passphrase' field is empty. The 'Key 1' field is highlighted with a red box. The 'Next' button is highlighted with a red box at the bottom right.

Security

If you would like to use Wired Equivalent Privacy (WEP), enter the required information below. Please refer to the User Guide on how to setup WEP from the WEB browser interface.

Security: **WEP (64-Bits)** Please choose WEP (64 bits) or WEP (128 bits).

Passphrase: If you choose the Passphrase option for WEP, a WEP key will generate automatically.

or

Key 1: To manually enter a WEP key, select a WEP algorithm and leave the Passphrase option blank.

Back | **Next**

AP311W **UNIVERSAL WIRELESS REPEATER** Setup Wizard

WPA-PSK

Step 7a Enter the same **Pre-Shared Key (passphrase)** of your wireless network in the **Pre-Shared Key** field and click **Next**.

The screenshot shows the 'WPA Security Settings' page. At the top left is the 'AIRLINK 101 network solutions' logo. The title 'WPA Security Settings' is in blue. Below it, a grey box contains the text: 'If you would like to use Wi-Fi Protected Access (WPA), enter the required information below. Please refer to the User Guide on how to setup WPA from the WEB browser interface.' Below this, there is a 'Security' section with a dropdown menu set to 'WPA-PSK'. To the right of the dropdown is the text: 'Please choose WEP (64-Bit) or WEP (128-Bit) or WPA-Pre Shared Key.' Below the dropdown is a text input field labeled 'Pre-Shared Key' with a red border. To the right of the field is the text: 'The Pre-Shared Key is case sensitive and should be between 8 and 63 characters in length.' At the bottom right, there are 'Back' and 'Next' buttons, with 'Next' highlighted with a red border. The footer shows 'AP311W UNIVERSAL WIRELESS REPEATER' and 'Setup Wizard'.

Step 8 Select the Repeater from the list, verify the **Repeater Name** is **AP311W**, and click **Yes**.

The screenshot shows the 'Search Universal Wireless Repeater!' page. At the top left is the 'AIRLINK 101 network solutions' logo. The title 'Search Universal Wireless Repeater!' is in blue. Below it, a grey box contains the text: 'Please select the Universal Wireless Repeater you wish to configure. Click **Yes** to configure the Network Address Settings of Universal Wireless Repeater. If you do not want to continue please click **No**.' Below this, there is a 'Selection' section with a list box containing 'default', which is highlighted with a red border. To the right of the list box is a 'Status' section with a table of settings:

Status	
MAC Address	00-90-4B-3C-00-2B
SSID	default
Channel	6
Security	Disabled
Repeater Name	AP311W

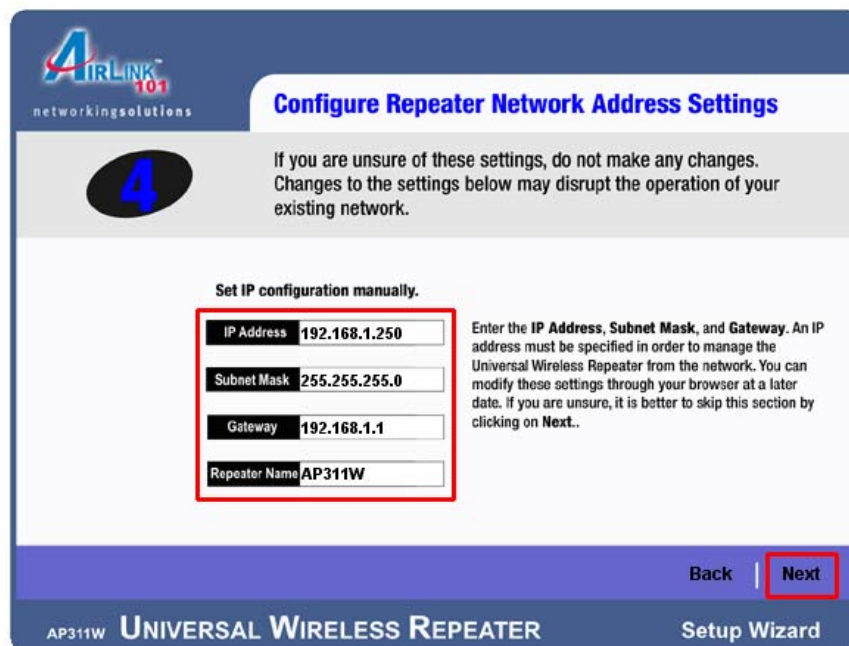
The 'Repeater Name' row is highlighted with a red border. At the bottom right, there are 'No' and 'Yes' buttons, with 'Yes' highlighted with a red border. The footer shows 'AP311W UNIVERSAL WIRELESS REPEATER' and 'Setup Wizard'.

Step 9 The default password for entering the Repeater's Web Configuration Utility is **admin**. To change the password, enter the new password in the **Password** field and click **Enter**.



A screenshot of a web configuration utility titled "PASSWORD" in a large blue header. Below the header, there is a "Password" label next to a text input field containing five asterisks. The input field is highlighted with a red rectangle. Below the input field, a message reads: "Please enter your password to continue. The default password is admin." At the bottom of the screen, there are two buttons: "Exit" and "Enter". The "Enter" button is highlighted with a red rectangle.

Step 10 If you know your Network IP Address settings, enter them in the applicable fields. If you are not sure, just click **Next**.



A screenshot of a web configuration utility titled "Configure Repeater Network Address Settings". The top left corner features the "AIRLINK 101" logo and "networkingsolutions". A large blue number "4" is displayed in a circle. A warning message states: "If you are unsure of these settings, do not make any changes. Changes to the settings below may disrupt the operation of your existing network." Below this, a section titled "Set IP configuration manually." contains four input fields: "IP Address" (192.168.1.250), "Subnet Mask" (255.255.255.0), "Gateway" (192.168.1.1), and "Repeater Name" (AP311W). These fields are grouped by a red rectangle. To the right of the fields, a note reads: "Enter the IP Address, Subnet Mask, and Gateway. An IP address must be specified in order to manage the Universal Wireless Repeater from the network. You can modify these settings through your browser at a later date. If you are unsure, it is better to skip this section by clicking on Next..". At the bottom right, there are "Back" and "Next" buttons. The "Next" button is highlighted with a red rectangle. The bottom of the screen shows "AP311W UNIVERSAL WIRELESS REPEATER" and "Setup Wizard".

Step 11 Review your new settings and click **Yes** continue.

AIRLINK 101
networkingsolutions

Confirmation

5

Confirm NEW Settings

Old Settings	
IP Address	192.168.1.250
SSID	default
Channel	6
Security	Disabled
Repeater Name	AP311W

New Settings	
IP Address	192.168.1.250
SSID	default
Channel	6
Security	Disabled
Repeater Name	AP311W

Would you like to save the **changes**? No **Yes**

AP311W **UNIVERSAL WIRELESS REPEATER** Setup Wizard

Step 12 Click **Exit** to exit the Setup Wizard.

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AP311W **UNIVERSAL WIRELESS REPEATER** 802.11G

Congratulations

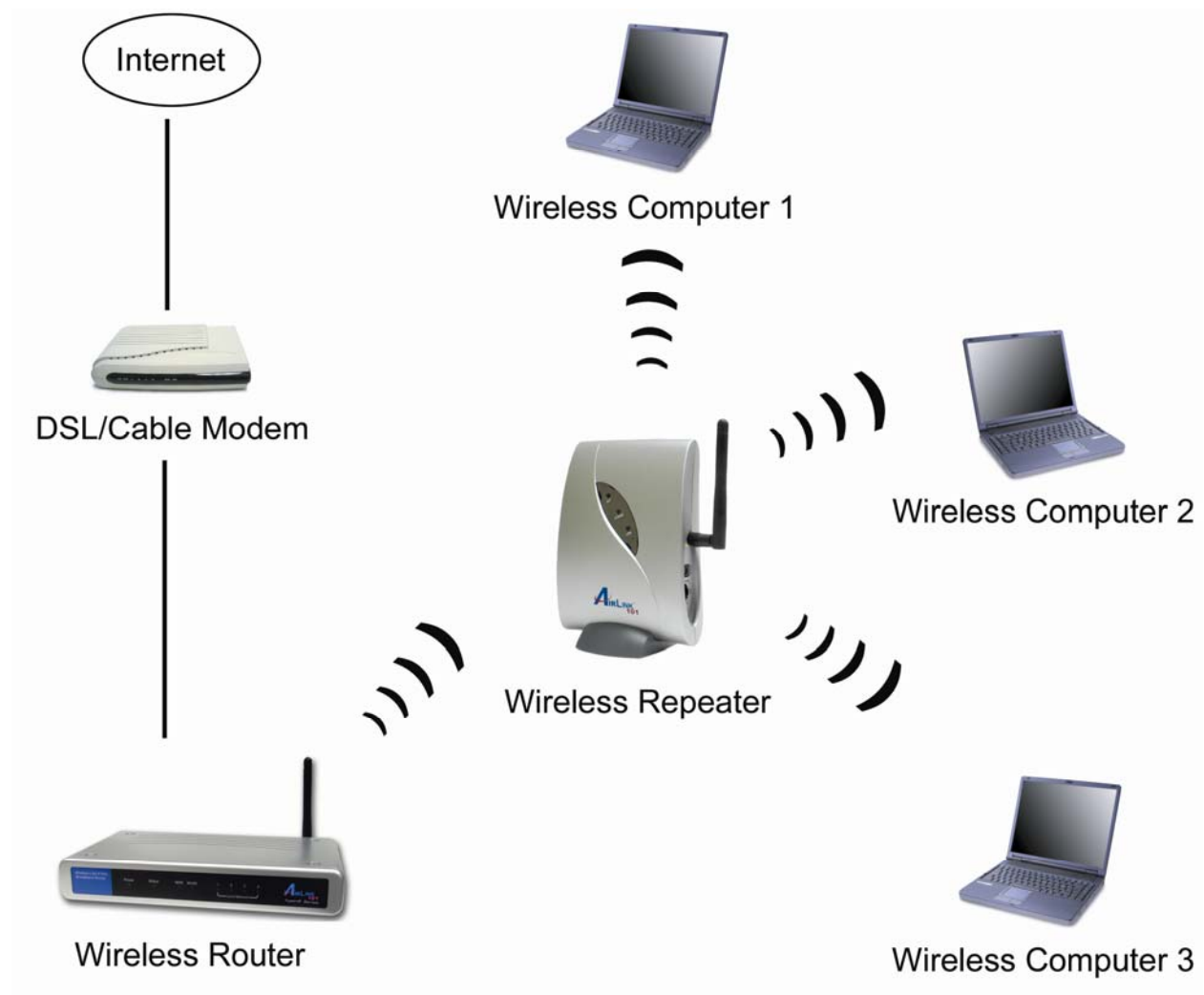
Your Universal Wireless Repeater
has successfully been configured!



Exit

Setup Wizard ver. 1.0

Step 13 For best result, place the Repeater at a central location between the wireless router and your wireless computers.



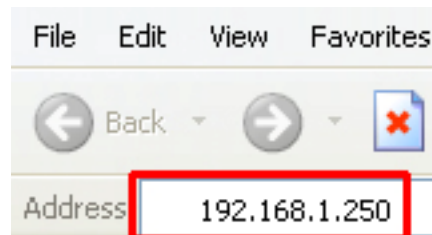
3. Connecting to the Wireless Repeater

Once you have properly configured the Repeater, your wireless computers should be able to detect its signal.

Use your wireless network adapter's utility to detect and connect to the Repeater. You can identify the Repeater by its **MAC Address**, which is displayed in the **BSSID** field of your wireless network adapter's utility.

You can check the Repeater's **MAC Address** on its Web Configuration screen.

Step 1 Open your Web Browser (Internet Explorer or Netscape), enter the default IP Address of the Repeater **192.168.1.250** in the Address Bar and press **Enter**.



Note: If you have changed the IP Address of the Repeater, enter the Repeater's new IP Address instead of the default.

Step 2 Enter **admin** for both the User name and Password fields and click **OK**.



Step 3 The Repeater's MAC Address is displayed on the **Basic Setup** page.

The screenshot shows the 'Basic Setup' page of the AIRLINK 101 Wireless Repeater. The page has a blue header with the AIRLINK 101 logo and 'networkingsolutions' text. A navigation bar at the top includes 'Setup', 'Basic Setup', 'Password', and 'Firmware'. The 'Basic Setup' section is active, showing the 'Firmware Version' as v1.01, Jul 20, 2005, and the 'Name' as AP311W. The 'Wireless' section is expanded, displaying the 'MAC Address' as 00:90:4B:3C:00:2B, which is highlighted with a red box. Below this, there are fields for IP Address (192.168.1.250), Subnet Mask (255.255.255.0), Gateway (0.0.0.0), Mode (Mixed), SSID (default), SSID Broadcast (Enable), Channel (6), and Wireless Security (Disable). At the bottom, there are 'Save Settings' and 'Cancel Changes' buttons.

Field	Value
Firmware Version	v1.01, Jul 20, 2005
Name	AP311W
MAC Address	00:90:4B:3C:00:2B
IP Address	192.168.1.250
Subnet Mask	255.255.255.0
Gateway	0.0.0.0
Mode	Mixed
SSID	default
SSID Broadcast	Enable
Channel	6 (Regulatory Domain: USA)
Wireless Security	Disable

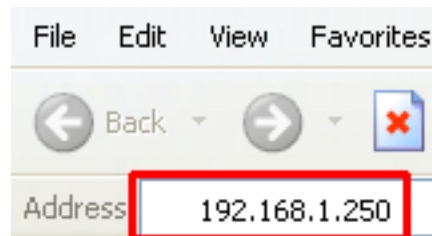
If the signal is weak, try reorienting the Repeater's antenna or relocate the Repeater to a different place.

4. Web Configuration Utility

The Wireless Repeater comes with a built-in Web Configuration Utility that allows you to easily setup the Repeater with your web browser. This section describes how to use the Web Configuration Utility.

4.1 Basic Setup

Step 1 Open your Web Browser (Internet Explorer or Netscape), enter the default IP Address of the Repeater **192.168.1.250** in the Address Bar and press **Enter**.



Note: If you have changed the IP Address of the Repeater, enter the Repeater's new IP Address instead of the default.

Step 2 Enter **admin** for both the User name and Password fields and click **OK**.



The screenshot shows the 'Basic Setup' configuration page for an AirLink 101 Wireless Repeater. The page is divided into a left sidebar with navigation tabs ('Basic Setup', 'Wireless') and a main content area. The 'Basic Setup' tab is active, showing fields for Firmware Version, Name, and Wireless settings. The 'Wireless' section includes IP Address, Subnet Mask, Gateway, Mode, SSID, SSID Broadcast, Channel, and Wireless Security options. At the bottom, there are 'Save Settings' and 'Cancel Changes' buttons.

The **Basic Setup** tab is the main screen for configuring the Wireless Repeater.

Firmware Version: Displays the current firmware version number.

Name: Displays the name of the Wireless Repeater.

IP Address: Assign an appropriate IP Address for the Repeater.

Subnet Mask: Assign an appropriate Subnet Mask for the Repeater.

Gateway: Assign an appropriate Default Gateway for the Repeater.

Mode: Choose to have the Repeater broadcast in **B-Only**, **G-Only**, or **Mixed** mode.

SSID Broadcast: Choose to **Enable** or **Disable** the broadcast of SSID.

Channel: Select the desired channel number.

Wireless Security: Select to **Enable** or **Disable** wireless security encryption. To edit the encryption setting, click on the **Edit Security Settings** button.

After you have completed the changes, click on **Save Settings** to apply the changes.

4.1.2 Configuring Wireless Security

To enable Wireless Security, select **Enable** and click on **Edit Security Settings**. This Repeater supports both WEP and WPA Pre-shared Key encryption. It is recommended that use WPA Pre-shared Key encryption if your wireless network supports it.

The screenshot shows the 'Basic Setup' page of the AIRLINK 101 wireless repeater. The page has a blue header with the 'AIRLINK 101' logo and 'networkingsolutions' text. A navigation bar at the top includes 'Setup', 'Basic Setup', 'Password', and 'Firmware'. The 'Basic Setup' section is active, showing 'Firmware Version v1.01, Jul 20, 2005' and a device 'Name' of 'AP311W'. Below this is the 'Wireless' section, which includes fields for 'IP Address' (192.168.1.250), 'Subnet Mask' (255.255.255.0), 'Gateway' (0.0.0.0), 'Mode' (Mixed), 'SSID' (default), 'SSID Broadcast' (Enable), and 'Channel' (6). The 'Wireless Security' section is highlighted with a red box, showing 'Enable' selected and an 'Edit Security Settings' button. At the bottom are 'Save Settings' and 'Cancel Changes' buttons.

Basic Setup	
Firmware Version	v1.01, Jul 20, 2005
Name	AP311W
Wireless	
IP Address	192 . 168 . 1 . 250
Subnet Mask	255 . 255 . 255 . 0
Gateway	0 . 0 . 0 . 0
Mode	Mixed
SSID	default
SSID Broadcast	Enable
Channel	6 (Regulatory Domain: USA)
Wireless Security	☒ Enable ☐ Disable Edit Security Settings
Save Settings Cancel Changes	

WEP

The default security screen is the WEP screen. Here you can setup the WEP settings for your wireless network. Note that these settings must be exactly the same as your access point/wireless router.

WEP

The Repeater support WEP key and WPA-Preshared key of security setting.

Security Mode: WEP

Default Transmit Key: ☒ 1 ☐ 2 ☐ 3 ☐ 4

WEP Encryption: 64 bits 10 hex digits

Passphrase:

Key 1:

Key 2:

Key 3:

Key 4:

Security Mode: Choose between **WEP** and **WPA Pre-shared Key**.

Default Transmit Key: Select a key to be the active key.

WEP Encryption: Choose between **64-bit** and **128-bit** encryption.

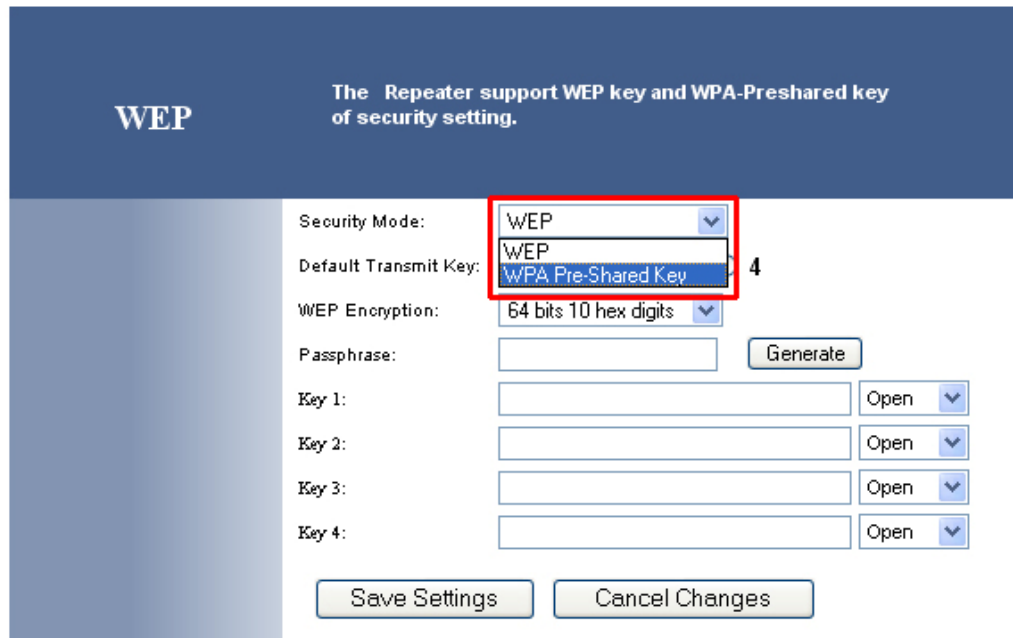
Passphrase: You can enter a passphrase and click on the **Generate** button and the Repeater will automatically generate four WEP keys for you.

Key 1 – 4: Manually assign a passphrase for each key. If you selected **64 bits** encryption, enter **10** HEX characters (0-F) for each key. If you selected **128 bits** encryption, enter **26** HEX characters (0-F) for each key. For each key select either Open System or Shared Key as your authentication.

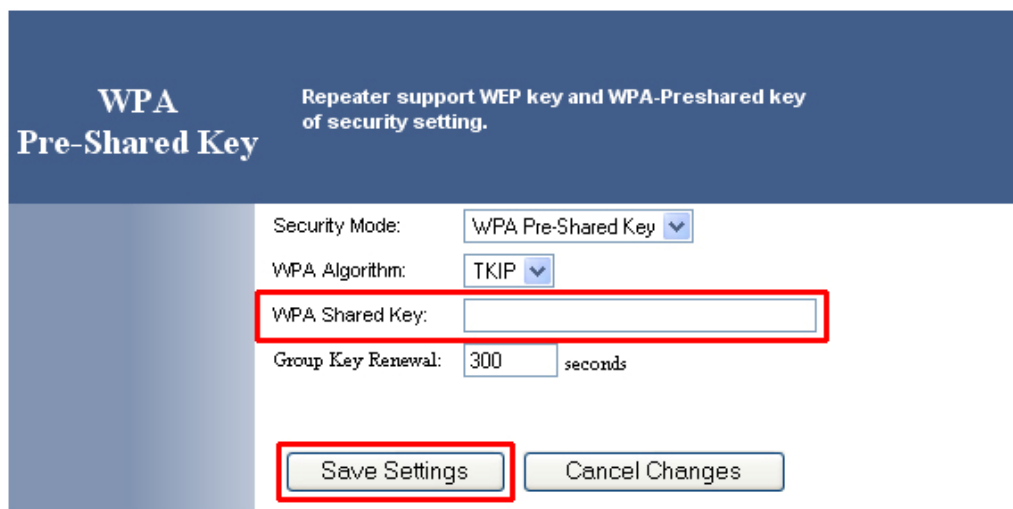
Click on **Save Settings** to apply the changes.

WPA Pre-shared Key

To use WPA Pre-shared key, choose **WPA Pre-shared key** from the **Security Mode** drop-down menu.



The WEP configuration interface has a dark blue header with the text "WEP" on the left and "The Repeater support WEP key and WPA-Preshared key of security setting." on the right. The main area is white with a light blue sidebar on the left. The "Security Mode:" dropdown is set to "WEP" and is highlighted with a red box. Below it, the "Default Transmit Key:" dropdown is set to "WPA Pre-Shared Key" and is also highlighted with a red box. The "WEP Encryption:" dropdown is set to "64 bits 10 hex digits". There is a "Passphrase:" input field and a "Generate" button. Below these are four "Key" input fields (Key 1 to Key 4), each with an "Open" button. At the bottom are "Save Settings" and "Cancel Changes" buttons.



The WPA Pre-Shared Key configuration interface has a dark blue header with the text "WPA Pre-Shared Key" on the left and "Repeater support WEP key and WPA-Preshared key of security setting." on the right. The main area is white with a light blue sidebar on the left. The "Security Mode:" dropdown is set to "WPA Pre-Shared Key". Below it, the "WPA Algorithm:" dropdown is set to "TKIP". The "WPA Shared Key:" input field is highlighted with a red box. Below it, the "Group Key Renewal:" is set to "300" seconds. At the bottom are "Save Settings" and "Cancel Changes" buttons, with the "Save Settings" button highlighted by a red box.

WPA Shared Key: Enter a passphrase for your wireless network.

Group Key Renewal: Enter the desired key renewal time in seconds.

Note that these settings must be exactly the same as your access point/wireless router.

Click on **Save Settings** to apply the changes.

4.2 Password

The **Password** tab allows you to change the Repeater's login password as well as other administrative functions.

The screenshot displays the 'Password' configuration page for the AIRLINK 101 network solutions. The top navigation bar includes 'Setup', 'Basic Setup', 'Password' (highlighted with a red box), and 'Firmware'. The left sidebar shows 'Password', 'Restore Factory Defaults', and 'Backup/Restore Setting'. The main content area contains two password input fields with prompts '(Enter New Password)' and '(Re-enter to Confirm)'. Below these is a 'Restore Factory Defaults' section with radio buttons for 'Yes' and 'No', and a caution note: 'CAUTION: Any settings you have saved will be lost when the default settings are restored.' The 'Backup/Restore Setting' section includes 'Backup' and 'Restore' buttons, with a note: 'Note: Click "Backup" to store Access Point configuration on your local PC. Click "Restore" to restore Access Point configuration from your local PC.' At the bottom are 'Save Settings' and 'Cancel Changes' buttons.

Password: Enter the new login password and re-enter to confirm the new password. Click **Save Settings** to apply the changes.

Restore Factory Defaults: Select **Yes** and click on **Save Settings** to reset all of the Repeater's settings to factory default.

Backup/Restore Setting: You can backup the Repeater's settings as a file in your computer by clicking on the **Backup** button. Later, when you want to restore your saved settings, just click on the **Restore** button and browse to the location of the saved file.

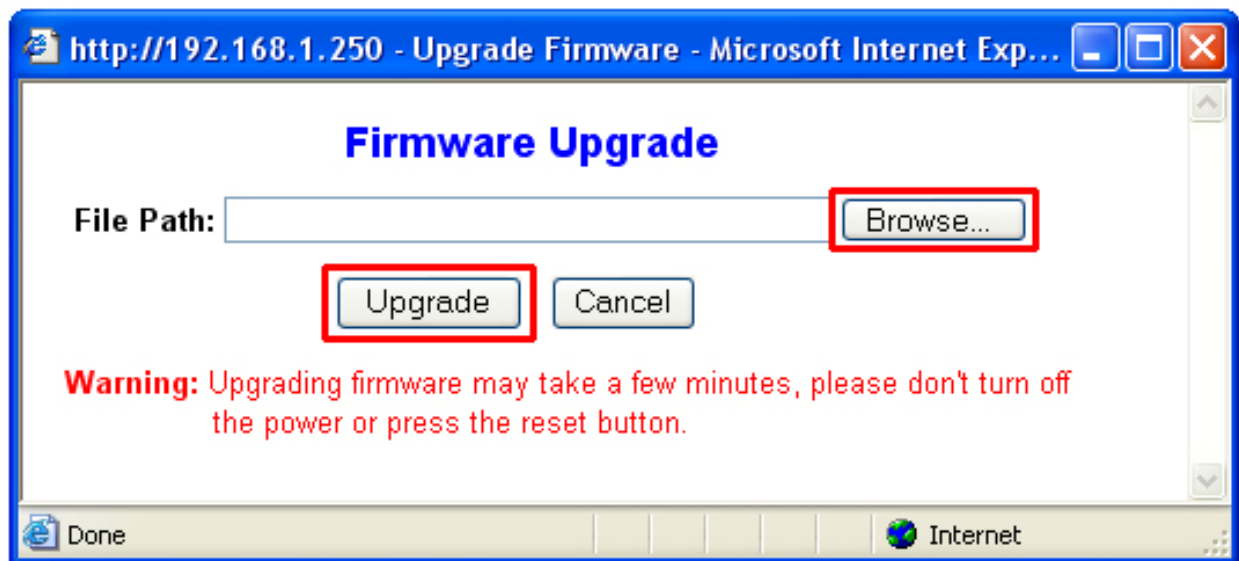
4.3 Firmware

The **Firmware** tab allows you to upgrade the Repeater's firmware. You can download the updated firmware from our web site at www.airlink101.com

Step 1 Unzip the new firmware and then click on the **Firmware Upgrade** button.



Step 2 Click on **Browse** to locate the new firmware and click on **Upgrade** to update the firmware.



Federal Communication Commission Interference 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 of the following measures:

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

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

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

IMPORTANT NOTE:

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

AirLink declares that AP311W (FCC ID: MXF-A940727G) is limited in CH1~CH11 for 2.4GHz by specified firmware controlled in U.S.A.

Technical Support

E-mail: support@airlink101.com

Toll Free: 1-888-746-3238

Web Site: www.airlink101.com

*Theoretical maximum wireless signal rate based on IEEE standard 802.11g specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, mix of wireless products used, radio frequency interference (e.g., cordless telephones and microwaves) as well as network overhead lower actual data throughput rate.

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