

## Site Survey

If you want to search for all available wireless networks, select **Site Survey**. A list of wireless networks will appear. To connect to a specific network, select it, and press the right arrow button. If the network uses WEP encryption, a new screen will appear and ask you to enter the WEP key.

## TCP/IP

To change the Media Link's TCP/IP settings, select **TCP/IP**. You will see up to six choices: DHCP, IP Address, Subnet Mask, Gateway, DNS Server 1, and DNS Server 2.

## DHCP

If the Media Link will be assigned an IP address automatically by a router or other DHCP server, then select **Enable**. You will not see the IP Address, Subnet Mask, Gateway, and DNS Server menus because these settings will be set automatically. If the Media Link needs a static IP address, then select **Disable**. You will need to configure the IP Address, Subnet Mask, Gateway, and at least one of the DNS Server settings.

Your selection will be denoted by a bracketed asterisk, [\*]. Press the right arrow button to save your new setting. Press the left arrow button to cancel your change.

## IP Address

To change the Media Link's static IP address, select **IP Address**. Use the arrow keys to scroll through the numbers 0-9 and punctuation (a period). To make a selection, press the **Select** button. Press the right arrow button to save your new setting. Press the left arrow button to cancel your change.

## Subnet Mask

To change the Media Link's subnet mask, select **Subnet Mask**. Use the arrow keys to scroll through the numbers 0-9 and punctuation (a period). To make a selection, press the **Select** button. Press the right arrow button to save your new setting. Press the left arrow button to cancel your change.

## Gateway

To change the Media Link's gateway, select **Gateway**. Use the arrow keys to scroll through the numbers 0-9 and punctuation (a period). To make a selection, press the **Select** button. Press the right arrow button to save your new setting. Press the left arrow button to cancel your change.



**NOTE:** Every time you want to save a new setting, you must press the right arrow button on the remote or front panel. Then the Media Link will save the setting and restart itself.

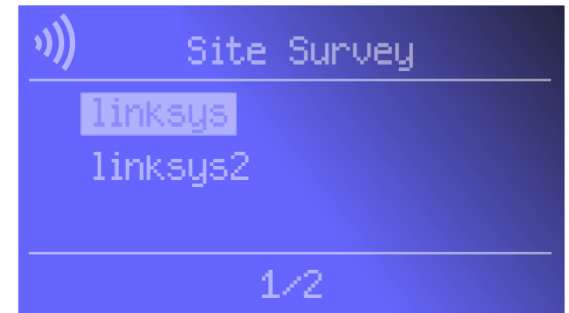


Figure 6-24: Site Survey Screen



Figure 6-25: TCP/IP Screen

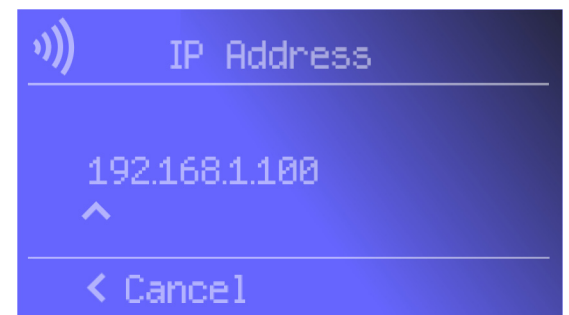


Figure 6-26: IP Address Screen

## DNS Server 1 and DNS Server 2

To change the Media Link's DNS server address, select **DNS Server 1** and/or **DNS Server 2**. (You must enter at least one DNS server address.) Use the arrow keys to scroll through the numbers 0-9 and punctuation (a period). To make a selection, press the **Select** button. Press the right arrow button to save your new setting. Press the left arrow button to cancel your change.

## Proxy

If you have a proxy server on your network, configure the Media Link's proxy settings using this menu. You will see three choices: Proxy Server, Hostname, and Port.

### Proxy Server

If you want to change the Media Link's Proxy Server setting, select **Proxy Server**. If you want to use the Proxy Server feature, select **Enable**. If you do not want to use this feature, select **Disable**. To make a selection, press the **Select** button. Your selection will be denoted by a bracketed asterisk, [\*]. Press the right arrow button to save your new setting. Press the left arrow button to cancel your change.

### Hostname

To change the Media Link's Hostname setting, select **Hostname**. Enter the URL or IP address of the host. Use the arrow keys to scroll through the uppercase alphabet, lowercase alphabet, numbers, and available punctuation (a period). To make a selection, press the **Select** button. Press the right arrow button to save your new setting. Press the left arrow button to cancel your change.

### Port

To change the port number that the proxy server is using, select **Port**. Use the arrow keys to scroll through the numbers 0-9. To make a selection, press the **Select** button. Press the right arrow button to save your new setting. Press the left arrow button to cancel your change.



Figure 6-27: Proxy Screen

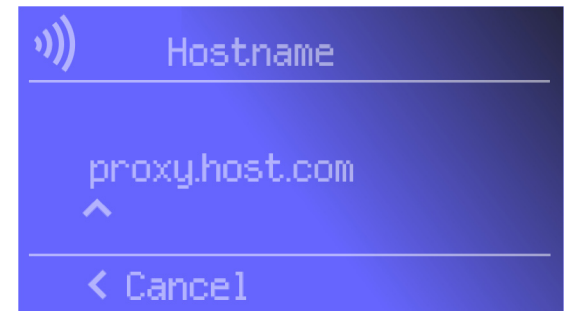


Figure 6-28: Hostname Screen



**NOTE:** Every time you want to save a new setting, you must press the right arrow button on the remote or front panel. Then the Media Link will save the setting and restart itself.

## Network Status Menu

If you want to see the Media Link's network status information, use the Network Status menu.

After you have selected this menu, you will see the *Device Name* screen. Scroll down to see additional status screens: Firmware Version, Hardware Version, SSID, Network Type, Encryption, Wireless Signal (strength), Wireless Channel, MAC Address, DHCP, IP Address, Subnet Mask, Gateway, DNS Server 1, DNS Server 2, Proxy Server, Proxy Name, and Proxy Port.

## Update Radio List Menu

The Media Link uses vTuner to find radio and TV broadcasts over the Internet. To update the Media Link's list of radio stations, use this menu. You will see three choices: Radio List Version, Automatic Update, and Manual Update.

### Radio List Version

To view the version number of your radio list, select **Radio List Version**.

### Automatic Update

If you want the Media Link to automatically update the radio list, select **Enable**. If you do not want automatic updates, select **Disable**. Your selection will be denoted by a bracketed asterisk, [\*]. Press the right arrow button to save your new setting. Press the left arrow button to cancel your change.

### Manual Update

To manually update the radio list, select **Start Update?** on this screen. Press the right arrow button to save your new setting. Press the left arrow button to cancel your change.

## EQ Menu

To set the Media Link's equalizer setting, use this menu. You will see six choices: Flat, Classical, Acoustic, Jazz, Rock, and Pop. Scroll down the menu to select the setting that best suits your musical sensibility. Your selection will be denoted by a bracketed asterisk, [\*]. Press the right arrow button to save your new setting. Press the left arrow button to cancel your change.

**You may also change the Media Link's settings using its Web-based Utility. If so, refer to "Chapter 7: Using the Web-based Utility of the Wireless-B Media Link for Music."**



Figure 6-29: Device Name Screen

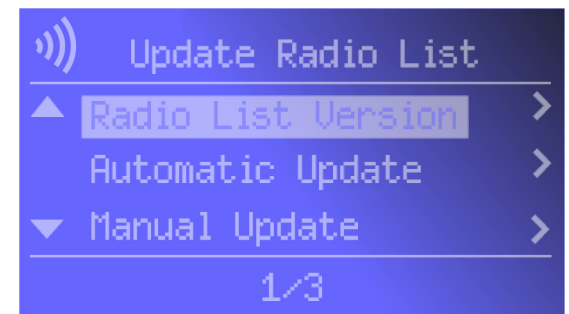


Figure 6-30: Update Radio List Screen

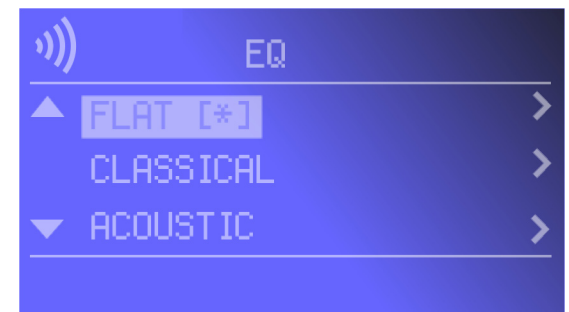


Figure 6-31: EQ Screen

# Chapter 7: Using the Web-based Utility of the Wireless-B Media Link for Music

## Overview

The Media Link is designed to function properly after you configure it using the Setup Wizard. However, if you would like to change these basic settings or designate favorite radio stations, use your web browser and the Wireless-B Media Link Web-based Utility. This chapter explains how to use the Utility.

## Login

1. Open your web browser, and enter the IP address of the Wireless-B Media Link. Press the **Enter** key, and the screen shown in Figure 7-1 will appear. In lowercase letters, enter the default password, **admin**, in the *Password* field. Click the **OK** button. You can set a new password on the *Password* screen later.



**NOTE:** If you do not know the Media Link's IP address, select **Network Status** on the LCD screen. Then scroll down the menu and select **IP Address**. The Media Link's IP address will be displayed on this screen.

2. The Utility's *Setup* screen, shown in Figure 7-2, will appear.

The Utility provides a convenient, web-browser-based way to alter the Media Link's settings and designate your favorite radio stations. It offers five main tabs:

- Setup - Enables you to configure the IP address and wireless settings.
- Favorites - Lets you add up to 20 Internet radio stations to the Media Link's Favorites menu.
- Password - Allows you to change the password or reset all settings to factory defaults.
- Status - Displays the Media Link's current settings.
- Help - Provides explanations of various configuration settings and links to online technical support resources.



Figure 7-1: Password Screen

## Setup

The *Setup* screen lets you configure the wired and wireless network settings for the Media Link.

- **Firmware** - The version number of the Media Link's firmware is displayed here. Firmware should be upgraded **ONLY** if you experience problems with the Media Link. Firmware updates are posted at [www.linksys.com](http://www.linksys.com).
- **MAC Address** - The MAC Address of the Media Link is displayed here.

### LAN

- **Device Name** - You may assign any name to the Media Link. Unique, memorable names are helpful, especially if you are using multiple Media Links on the same wireless network.
- **Configuration Type** - If the Media Link will obtain an IP address automatically from a DHCP server, such as a router, then select **Automatic Configuration-DHCP**.

If you are assigning the Media Link a static IP address, select **Static IP Address**. Then enter a unique IP Address in the *IP Address* field. Enter the Subnet Mask, Gateway address, and DNS address of your network in the *Subnet Mask*, *Gateway*, and *DNS* fields. (You must enter at least one DNS address.)

### Wireless

- **SSID** - The SSID is the network name shared among all devices in a wireless network. The SSID must be identical for all devices in the wireless network. It is case-sensitive and must not exceed 32 alphanumeric characters, which may be any keyboard character (do not use any spaces). Make sure this setting is the same for all devices in your wireless network. The current default SSID is **any**, so the Media Link will accept any SSID. For added security, Linksys recommends that you change the default SSID to a name of your choice.
- **Network Type** - Choose a wireless operating mode for the Media Link. Keep the default setting, **Infrastructure**, if you want your wireless-equipped device to communicate with computers and other devices on your wired network using a wireless access point or router. Select **Ad-Hoc** button if you want multiple wireless-equipped devices to communicate directly with each other.
- **Security** - If your network uses WEP encryption, select **Enable**, and click the **Apply** button. Then click **Edit Security Settings**. To disable WEP encryption, select **Disable**.

The screenshot displays the 'Setup' tab of the Linksys Wireless-B Music Link web configuration utility. The page is divided into two main sections: LAN and Wireless. The LAN section shows the current firmware version (1.0.0) and MAC address (00:0C:A1:34:60:59). Under 'Device Name', the default 'Linksys WML11B' is entered. The 'Configuration Type' is set to 'Static IP Address', with fields for IP Address (192.168.1.100), Subnet Mask (255.255.255.0), Gateway (192.168.1.1), and two DNS addresses (0.0.0.0). The Wireless section shows the SSID as 'any', Network Type as 'Infrastructure', and Security as 'Enable'. A note at the bottom states that all devices must use the same settings. The page footer identifies the device as a Wireless-B Music Link (Model No. WML11B) and the Cisco Systems logo.

Figure 7-2: Setup Tab

If you clicked the Edit Security Settings button, then the *Security Setting* screen will appear. From the *Wireless Encryption Level* drop-down menu, select a level of encryption, **64Bit** or **128Bit**.

Enter a Passphrase and click the **Generate** key to automatically generate WEP keys. If you prefer to manually enter WEP key(s), then complete the *WEP Key 1-4* fields. From the *Active Key* drop-down menu, make a selection that specifies which WEP key to use for encryption.

Click the **Apply** button to save your changes. Click the **Undo** button to cancel your changes and return to the *Setup* screen. Click the **Clear** button to clear all your changes.

- Wireless Encryption Level - In order to use WEP encryption, select **64Bit** or **128Bit**.
- Passphrase - Instead of manually entering WEP keys, you can enter a Passphrase. This Passphrase is used to generate one or more WEP keys. It is case-sensitive and should have no more than 16 alphanumeric characters. (The Passphrase function is compatible with Linksys wireless products only. If you want to communicate with non-Linksys wireless products, you will need to enter your WEP key manually on the non-Linksys wireless products.) After you enter the Passphrase, click the **Generate** button to create WEP key(s).
- Active Key - Select which WEP key (1-4) will be used when the Media Link sends data. Make sure the other wireless-equipped devices are using the same key.
- WEP Keys 1-4 - If you are not using a Passphrase, then you can enter one or more WEP keys manually. In each key field, manually enter a set of values. (Do not leave a key field blank, and do not enter all zeroes. These are not valid key values.) If you are using 64-bit WEP encryption, then each key must consist of exactly 10 hexadecimal characters in length. If you are using 128-bit WEP encryption, then each key must consist of exactly 26 hexadecimal characters in length. Valid hexadecimal characters are "0"- "9" and "A"- "F".

To save your changes, click the **Apply** button. Click the **Cancel** button to cancel your changes. Click the **Help** button for additional on-screen information.



**NOTE:** After you click the Apply button, the Media Link will restart itself to save the new settings.



Figure 7-3: Security Setting Screen



**NOTE:** Make sure that your encryption settings match the encryption settings of your wireless network. Otherwise, the connection will fail.

## Favorites

The *Favorites* screen lets you add up to 20 Internet radio stations to the Media Link's Favorites menu. Once added, you can easily select one of your favorite stations using the Media Link's remote control and LCD menus.

### Favorites

For each favorite radio station, enter its name and URL (or IP address).

- **Station Name** - You may assign any name to this radio station. A unique, memorable name is helpful, especially if you are specifying several favorites.
- **Station URL** - Enter the radio station's URL or IP address in this field.

To save your changes, click the **Apply** button. Click the **Cancel** button to cancel your changes. Click the **Help** button for additional on-screen information.



**NOTE:** After you click the Apply button, the Media Link will restart itself to save the new settings.

Favorite	Station Name	Station URL
Favorite 1	<input type="text"/>	<input type="text"/>
Favorite 2	<input type="text"/>	<input type="text"/>
Favorite 3	<input type="text"/>	<input type="text"/>
Favorite 4	<input type="text"/>	<input type="text"/>
Favorite 5	<input type="text"/>	<input type="text"/>
Favorite 6	<input type="text"/>	<input type="text"/>
Favorite 7	<input type="text"/>	<input type="text"/>
Favorite 8	<input type="text"/>	<input type="text"/>
Favorite 9	<input type="text"/>	<input type="text"/>
Favorite 10	<input type="text"/>	<input type="text"/>
Favorite 11	<input type="text"/>	<input type="text"/>
Favorite 12	<input type="text"/>	<input type="text"/>
Favorite 13	<input type="text"/>	<input type="text"/>
Favorite 14	<input type="text"/>	<input type="text"/>
Favorite 15	<input type="text"/>	<input type="text"/>
Favorite 16	<input type="text"/>	<input type="text"/>
Favorite 17	<input type="text"/>	<input type="text"/>
Favorite 18	<input type="text"/>	<input type="text"/>
Favorite 19	<input type="text"/>	<input type="text"/>
Favorite 20	<input type="text"/>	<input type="text"/>

Apply Cancel Help

Wireless-B Music Link WEB Configuration Utility Model No. WML11B

Figure 7-4: Favorites Tab



## Password

The *Password* screen lets you change the Media Link's Password or restore the factory default settings.

- **Administrative Password** - It is strongly recommended that you change the factory default password of the Media Link from **admin** to a new password that you create. All users who try to access the Media Link's Web-based Utility will be prompted for the Media Link's Password. The new Password must not exceed 12 characters in length and must not include any spaces. Enter the new Password a second time to confirm it.
- **Restore Factory Defaults** - Click the **Yes** radio button to reset all configuration settings to their default values (all custom settings will be lost). If you do not want to restore the factory defaults, then keep the default setting, **No**.

To save your changes, click the **Apply** button. Click the **Cancel** button to cancel your changes. Click the **Help** button for additional on-screen information.



**NOTE:** After you click the **Apply** button, the Media Link will restart itself to save the new settings.

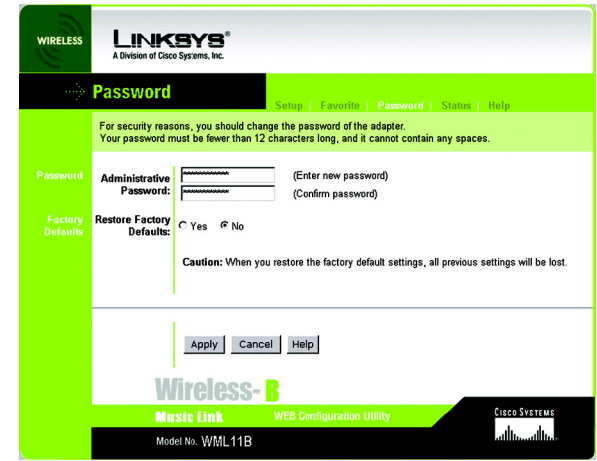


Figure 7-5: Password Tab



**IMPORTANT:** Any settings you have saved will be lost if the default settings are restored.



## Status

The *Status* screen displayed the Media Link's current status and settings. All information is read-only.

- Device Name - The name you have assigned to the Media Link is displayed here.
- Firmware Version - The version number of the Media Link's firmware is displayed here. Firmware updates are posted at [www.linksys.com](http://www.linksys.com). Firmware should be upgraded **ONLY** if you experience problems with the Media Link. To upgrade the Media Link's firmware, refer to "Appendix D: Upgrading Firmware."
- MAC Address - The MAC Address of the Media Link is displayed here.

## LAN Settings

- IP Address - The Media Link's IP Address is displayed here.
- Subnet Mask - The Media Link's Subnet Mask is displayed here.
- Gateway - The Gateway address for the Media Link is displayed here.
- DNS 1 - This is the first DNS address you entered for the Media Link.
- DNS 2 - This is the second DNS address you entered for the Media Link.

## Wireless

- SSID - The Media Link's SSID or network name is displayed here.
- Network Type - The Media Link's mode is displayed here.
- Channel - The Media Link's channel setting is displayed here.
- WEP Encryption Status - The status of the Media Link's encryption setting is displayed here.
- TX Rate - The Media Link's transmission rate is displayed here. If the TX Rate is shown as Auto, then the Media Link automatically seeks the highest transmission rate possible at any time.
- Link Quality - The quality of the Media Link's wireless connection is displayed here.

Click the **Refresh** button to obtain the most up-to-date information. Click the **Help** button for additional on-screen information.



Figure 7-6: Status Tab

## Help

The *Help* screen offers links to all of the help information for the Web-based Utility's screens and the Media Link's online technical support resources (all information is read-only). If you want to upgrade the Media Link's firmware, refer to "Appendix D: Upgrading Firmware."

- Linksys Website - Click the **Linksys Website** link to visit Linksys's website, *www.linksys.com*.
- Online manual in PDF format - Click the **Online manual in PDF format** to view this User Guide on-screen. It is in Adobe Acrobat Portable Document File (.pdf) format, so you will need the free Adobe Acrobat Reader to view the pdf. If you do not have the Reader, click the **Adobe Website** link to download it.
- Adobe Website (software for viewing PDF documents) - If you need to download the Adobe Acrobat Reader to view the User Guide pdf, then click the **Adobe Website** link.

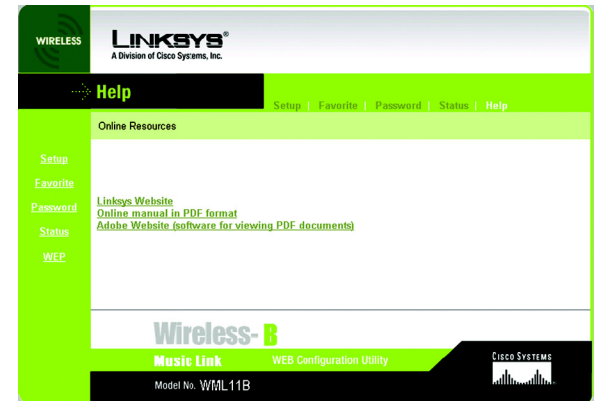


Figure 7-7: Help Tab

# Appendix A: Troubleshooting

This appendix provides solutions to problems that may occur during the installation and operation of the Wireless-B Media Link for Music. Read the description below to solve your problems. If you can't find an answer here, check the Linksys website at [www.linksys.com](http://www.linksys.com).

## Common Problems and Solutions

### 1. *The Media Link cannot find the Media Server on the network. What should I do?*

Follow these instructions until your problem is solved:

- Make sure the Media Link's network settings are correct. For instructions on how to view the Media Link's status information, refer to "Chapter 6: Using the LCD Menus of the Wireless-B Media Link for Music" or "Chapter 6: Using the Web-based Utility of the Wireless-B Media Link."
- In Musicmatch Jukebox, click the **Options** menu. Select **Settings**, and then select the **CD Lookup/Connectivity** tab. Make sure the checkboxes next to *Enable Music Server* and *Universal Plug and Play* are checked.
- Make sure your network is operating properly.

### 2. *I don't hear any music from my speakers (WMLS11B only).*

Follow these instructions until your problem is solved:

- Make sure the speaker power cord is securely connected to the Media Link's Speaker DC port and the right speaker's DC 12V port. For more information, refer to "Chapter 5: Connecting the Wireless-B Media Link for Music to Your Audio System."
- Make sure the colored-coded RCA audio cable is securely connected to the Media Link's 2CH Output ports and the right speaker's INPUT ports. Then make sure the RCA speaker cable linking the two speakers is secure.

### 3. *When I listen to music, I hear too much bass/midrange/treble. How can I make adjustments?*

Adjust the equalizer (EQ) settings. The Media Link offers six preset EQ settings. Select the one that best suits your musical sensibility.

### 4. *The Media Link's LCD screen is displaying the Wired Network icon, but I want to use the Media Link on my wireless network.*

Unplug the Ethernet network cable from the Media Link's Ethernet port. On the LCD screen, scroll down to Network Setup, and select it. Then select **Change to wireless** and press the right arrow button. The Media Link will restart itself and operate in its wireless mode.

## Frequently Asked Questions

### ***How do I set my favorite Internet radio stations?***

You have two ways to set your favorite radio stations.

- Using the Media Link's LCD screen, scroll down to Internet Radio. Select the radio station you would like to set as your favorite. Press the **Select** button on the remote, and select **Add to Favorites**. Then press the **Select** button again.
- If you already know the URL for the station you would like to play, access the Media Link's Web-based Utility. Click the **Favorites** tab. Enter the station's name and URL. Click the **Apply** button to save your changes. The Media Link will restart itself after you click the Apply button. If it does not restart automatically, power the Media Link off and back on again. Refer to "Chapter 7: Using the Web-based Utility of the Wireless-B Media Link for Music" for more information.

### ***What kind of Internet radio stations does the Media Link support?***

The Media Link currently supports only Internet radio stations that broadcast via MP3 streaming. The Media Link will not play stations that broadcast via Windows Media Audio or Real Audio.

### ***Can I have more than one Media Server on my network?***

Yes. You can install the Media Server software on multiple computers; however, the Media Link can only connect to one Media Server at a time. You can switch to a different Media Server using the LCD screen. Scroll down to Media Server, and press the right arrow button. Then select the Media Server you want to use.

### ***Can I use the digital output to play music streamed from the Rhapsody service?***

No. Music streamed from Rhapsody will not play from the digital output. In its music stream, Rhapsody embeds Digital Content Management information that the Media Link cannot interpret.

### ***I have my own speakers. Can I use them with the Media Link?***

Yes, if they are powered speakers. The Media Link's RCA outputs are pre-amp outputs, so they have to be connected to an amplified source. The Media Link will not work with non-powered speakers.

### ***What is the IEEE 802.11b standard?***

It is one of the IEEE standards for wireless networks. The 802.11b standard allows wireless networking hardware from different manufacturers to communicate, provided that the hardware complies with the 802.11b standard. The 802.11b standard states a maximum data transfer rate of 11Mbps and an operating frequency of 2.4GHz.

***What is ad-hoc mode?***

When a wireless network is set to ad-hoc mode, the wireless-equipped computers are configured to communicate directly with each other. The ad-hoc wireless network will not communicate with any wired network.

***What is infrastructure mode?***

When a wireless network is set to infrastructure mode, the wireless network is configured to communicate with a wired network through a wireless access point or router.

# Appendix B: Wireless Security

Linksys wants to make wireless networking as safe and easy for you as possible. The current generation of Linksys products provide several network security features, but they require specific action on your part for implementation. So, keep the following in mind whenever you are setting up or using your wireless network.

## Security Precautions

The following is a complete list of security precautions to take (at least steps 1 through 5 should be followed):

1. Change the default SSID.
2. Disable SSID Broadcast.
3. Change the default password for the Administrator account.
4. Enable MAC Address Filtering.
5. Change the SSID periodically.
6. Enable WEP 128-bit Encryption. Please note that this may reduce your network performance.
7. Change the WEP encryption keys periodically.

For information on implementing these security features, refer to "Chapter 4: Setting up the Wireless-B Media Link for Music."

## Security Threats Facing Wireless Networks

Wireless networks are easy to find. Hackers know that in order to join a wireless network, wireless networking products first listen for "beacon messages". These messages can be easily decrypted and contain much of the network's information, such as the network's SSID (Service Set Identifier). Here are the steps you can take:

**Change the administrator's password regularly.** With every wireless networking device you use, keep in mind that network settings (SSID, WEP keys, etc.) are stored in its firmware. Your network administrator is the only person who can change network settings. If a hacker gets a hold of the administrator's password, he, too, can change those settings. So, make it harder for a hacker to get that information. Change the administrator's password regularly.



**NOTE:** Some of these security features are available only through the network router or access point. Refer to the router or access point's documentation for more information.

**SSID.** There are several things to keep in mind about the SSID:

1. Disable Broadcast
2. Make it unique
3. Change it often

Most wireless networking devices will give you the option of broadcasting the SSID. While this option may be more convenient, it allows anyone to log into your wireless network. This includes hackers. So, don't broadcast the SSID.

Wireless networking products come with a default SSID set by the factory. (The Linksys default SSID is "linksys".) Hackers know these defaults and can check these against your network. Change your SSID to something unique and not something related to your company or the networking products you use.

Change your SSID regularly so that any hackers who have gained access to your wireless network will have start from the beginning in trying to break in.

**MAC Addresses.** Enable MAC Address filtering. MAC Address filtering will allow you to provide access to only those wireless nodes with certain MAC Addresses. This makes it harder for a hacker to access your network with a random MAC Address.

**WEP Encryption.** Wired Equivalent Privacy (WEP) is often looked upon as a panacea for wireless security concerns. This is overstating WEP's ability. Again, this can only provide enough security to make a hacker's job more difficult.

There are several ways that WEP can be maximized:

1. Use the highest level of encryption possible
2. Use "Shared" Key authentication
3. Use multiple WEP keys
4. Change your WEP key regularly

Implementing encryption may have a negative impact on your network's performance. If you are transmitting sensitive data over your network, encryption should be used.

These security recommendations should help keep your mind at ease while you are enjoying the most flexible and convenient technology Linksys has to offer.



**IMPORTANT:** Always remember that each device in your wireless network **MUST** use the same encryption method and encryption key or your wireless network will not function properly.



# Appendix C: Planning Your Use of the Wireless-B Media Link for Music

## Overview

Before you set up the Media Link, you need to decide how the computer running the Media Server software (called Musicmatch Jukebox) will send digital music to the Media Link; you have a choice of a wireless or wired connection. This information is necessary for the proper setup and configuration of the Media Link.

## Using the Media Link as Part of Your Wireless Network

If the Media Link connects directly to a wireless-equipped computer, or the Media Link connects via an access point or wireless router (see Figure C-1), then the Media Link is part of your wireless network. If any part of the connection to the Media Link is wireless, then the overall connection will be considered wireless.

## Using the Media Link as Part of Your Wired Network

If the Media Link connects directly to your wired computer, or the Media Link connects via a wired router or switch (see Figure C-2), then the Media Link is part of your wired network. Within a wired network, the devices are connected with Ethernet network cables.

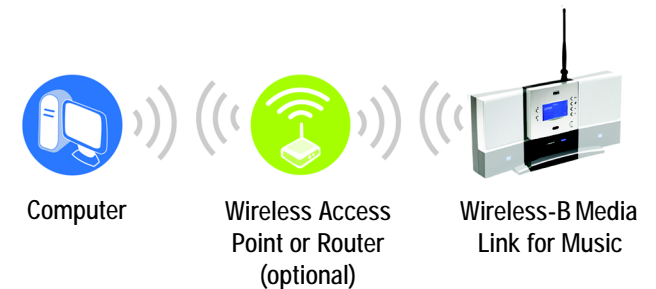


Figure C-1: Example of a Wireless Network

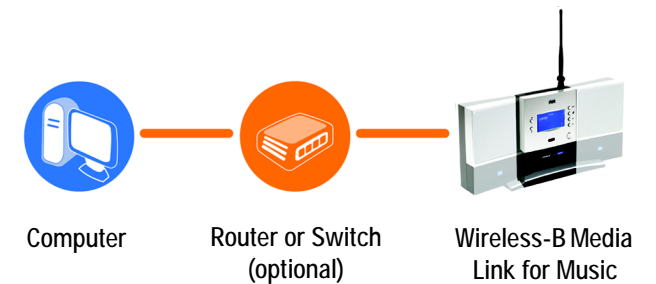


Figure C-2: Example of a Wired Network

# Appendix D: Upgrading Firmware

You can use the Wireless-B Media Link Firmware Upgrade Utility to upgrade the firmware; however, firmware should be upgraded **ONLY** if you experience problems with the Media Link.

To upgrade the Bridge's firmware, follow these instructions:

1. Open Linksys's website at [www.linksys.com](http://www.linksys.com).
2. Click the **Products** tab and select the appropriate product category.
3. Select the Wireless-B Media Link.
4. Download its firmware upgrade file, and extract it on your PC.
5. Connect an Ethernet network cable to the Media Link's Ethernet port, and connect the other end to your PC.



**NOTE:** You must use an Ethernet network connection when you upgrade the Media Link's firmware.

6. Click **Start** and then **Programs**.
7. Select **Linksys Media Link**, and click **Firmware Upgrade Utility**.
8. The screen shown in Figure D-1 will appear and display a list of the Wireless-B Media Links found on your network, as well as their MAC addresses. Select the appropriate Media Link, and then click the **Upgrade** button.



**NOTE:** If the Utility does not find the appropriate Media Link, click the **Search for Adapters Again** button.

9. In the *Firmware* field, enter the name of the extracted firmware upgrade file, or click the **Browse** button to find this file.
10. After you have selected the appropriate file, click the **Upgrade** button.
11. When the firmware has been upgraded, the *Congratulations* screen will appear. Click the **Exit** button.

**Congratulations! The Media Link's firmware has been upgraded successfully.**



**NOTE:** If you upgrade the Media Link's firmware, you may lose its configuration settings.



Figure D-1: Firmware Upgrade Screen



Figure D-2: Congratulations Screen

# Appendix E: Windows Help

Almost all wireless products require Microsoft Windows. Windows is the most used operating system in the world and comes with many features that help make networking easier. These features can be accessed through Windows Help and are described in this appendix.

## TCP/IP

Before a computer can communicate with an access point or router, TCP/IP must be enabled. TCP/IP is a set of instructions, or protocol, all PCs follow to communicate over a network. This is true for wireless networks as well. Your PCs will not be able to utilize wireless networking without having TCP/IP enabled. Windows Help provides complete instructions on enabling TCP/IP.

## Shared Resources

If you wish to share printers, folders, or files over your network, Windows Help provides complete instructions on using shared resources.

## Network Neighborhood/My Network Places

Other PCs on your network will appear under Network Neighborhood or My Network Places (depending upon the version of Windows you're running). Windows Help provides complete instructions on adding PCs to your network.

# Appendix F: Glossary

**802.11b** - An IEEE wireless networking standard that specifies a maximum data transfer rate of 11Mbps and an operating frequency of 2.4GHz.

**Access Point** - A device that allows wireless-equipped computers and other devices to communicate with a wired network. Also used to expand the range of a wireless network.

**Adapter** - A device that adds network functionality to your PC.

**Ad-hoc** - A group of wireless devices communicating directly with each other (peer-to-peer) without the use of an access point.

**Backbone** - The part of a network that connects most of the systems and networks together, and handles the most data.

**Bandwidth** - The transmission capacity of a given device or network.

**Bit** - A binary digit.

**Boot** - To start a device and cause it to start executing instructions.

**Bridge** - A device that connects different networks.

**Broadband** - An always-on, fast Internet connection.

**Browser** - An application program that provides a way to look at and interact with all the information on the World Wide Web.

**Buffer** - A shared or assigned memory area that is used to support and coordinate different computing and networking activities so one isn't held up by the other.

**Byte** - A unit of data that is usually eight bits long

**Cable Modem** - A device that connects a computer to the cable television network, which in turn connects to the Internet.

**CSMA/CA (Carrier Sense Multiple Access/Collision Avoidance)** - A method of data transfer that is used to prevent data collisions.

**CTS (Clear To Send)** - A signal sent by a wireless device, signifying that it is ready to receive data.

**Daisy Chain** - A method used to connect devices in a series, one after the other.

**Database** - A collection of data that is organized so that its contents can easily be accessed, managed, and updated.

**Default Gateway** - A device that forwards Internet traffic from your local area network.

**DHCP (Dynamic Host Configuration Protocol)** - A networking protocol that allows administrators to assign temporary IP addresses to network computers by “leasing” an IP address to a user for a limited amount of time, instead of assigning permanent IP addresses.

**DNS (Domain Name Server)** - The IP address of your ISP's server, which translates the names of websites into IP addresses.

**Domain** - A specific name for a network of computers.

**Download** - To receive a file transmitted over a network.

**DSL (Digital Subscriber Line)** - An always-on broadband connection over traditional phone lines.

**DSSS (Direct-Sequence Spread-Spectrum)** - Frequency transmission with a redundant bit pattern resulting in a lower probability of information being lost in transit.

**DTIM (Delivery Traffic Indication Message)** - A message included in data packets that can increase wireless efficiency.

**Dynamic IP Address** - A temporary IP address assigned by a DHCP server.

**Encryption** - Encoding data transmitted in a network.

**Ethernet** - IEEE standard network protocol that specifies how data is placed on and retrieved from a common transmission medium.

**Finger** - A program that tells you the name associated with an e-mail address.

**Firewall** - A set of related programs located at a network gateway server that protects the resources of a network from users from other networks.

**Firmware** - The programming code that runs a networking device.

**Full Duplex** - The ability of a networking device to receive and transmit data simultaneously.

**Gateway** - A device that interconnects networks with different, incompatible communications protocols.

**Half Duplex** - Data transmission that can occur in two directions over a single line, but only one direction at a time.

**Hardware** - The physical aspect of computers, telecommunications, and other information technology devices.

**HTTP (HyperText Transport Protocol)** - The communications protocol used to connect to servers on the World Wide Web.

**IEEE (The Institute of Electrical and Electronics Engineers)** - An independent institute that develops networking standards.

**Infrastructure** - A wireless network that is bridged to a wired network via an access point.

**IP (Internet Protocol)** - A protocol used to send data over a network.

**IP Address** - The address used to identify a computer or device on a network.

**IPCONFIG** - A Windows 2000 and XP utility that displays the IP address for a particular networking device.

**ISM band** - Radio bandwidth utilized in wireless transmissions.

**ISP (Internet Service Provider)** - A company that provides access to the Internet.

**LAN** - The computers and networking products that make up your local network.

**MAC (Media Access Control) Address** - The unique address that a manufacturer assigns to each networking device.

**Mbps (MegaBits Per Second)** - One million bits per second; a unit of measurement for data transmission.

**Network** - A series of computers or devices connected for the purpose of data sharing, storage, and/or transmission between users.

**Node** - A network junction or connection point, typically a computer or work station.

**OFDM (Orthogonal Frequency Division Multiplexing)** - Frequency transmission that separates the data stream into a number of lower-speed data streams, which are then transmitted in parallel to prevent information from being lost in transit.

**Packet** - A unit of data sent over a network.

**Passphrase** - Used much like a password, a passphrase simplifies the WEP encryption process by automatically generating the WEP encryption keys for Linksys products.

**Ping (Packet INternet Groper)** - An Internet utility used to determine whether a particular IP address is online.

**POP3 (Post Office Protocol 3)** - A standard mail server commonly used on the Internet.

**Port** - The connection point on a computer or networking device used for plugging in cables or adapters.

**Preamble** - Part of the wireless signal that synchronizes network traffic.

**RJ-45 (Registered Jack-45)** - An Ethernet connector that holds up to eight wires.

**Roaming** - The ability to take a wireless device from one access point's range to another without losing the connection.

**Router** - A networking device that connects multiple networks together.

**RTS (Request To Send)** - A networking method of coordinating large packets through the RTS Threshold setting.

**Server** - Any computer whose function in a network is to provide user access to files, printing, communications, and other services.

**Software** - Instructions for the computer. A series of instructions that performs a particular task is called a "program".

**SOHO (Small Office/Home Office)** - Market segment of professionals who work at home or in small offices.

**Spread Spectrum** - Wideband radio frequency technique used for more reliable and secure data transmission.

**SSID (Service Set Identifier)** - Your wireless network's name.

**Static IP Address** - A fixed address assigned to a computer or device that is connected to a network.

**Static Routing** - Forwarding data in a network via a fixed path.

**Subnet Mask** - An address code that determines the size of the network.

**Switch** - 1. A data switch that connects computing devices to host computers, allowing a large number of devices to share a limited number of ports. 2. A device for making, breaking, or changing the connections in an electrical circuit.



## Wireless-B Media Link for Music

**TCP (Transmission Control Protocol)** - A network protocol for transmitting data that requires acknowledgement from the recipient of data sent.

**TCP/IP (Transmission Control Protocol/Internet Protocol)** - A set of instructions PCs use to communicate over a network.

**Telnet** - A user command and TCP/IP protocol used for accessing remote PCs.

**TFTP (Trivial File Transfer Protocol)** - A version of the TCP/IP FTP protocol that has no directory or password capability.

**Throughput** - The amount of data moved successfully from one node to another in a given time period.

**Topology** - The physical layout of a network.

**TX Rate** - Transmission Rate.

**UDP (User Datagram Protocol)** - A network protocol for transmitting data that does not require acknowledgement from the recipient of the data that is sent.

**Upgrade** - To replace existing software or firmware with a newer version.

**Upload** - To transmit a file over a network.

**URL (Uniform Resource Locator)** - The address of a file located on the Internet.

**WAN (Wide Area Network)**- The Internet.

**WEP (Wired Equivalent Privacy)** - A method of encrypting network data transmitted on a wireless network for greater security.

**WINIPCFG** - A Windows 98 and Me utility that displays the IP address for a particular networking device.

**WLAN (Wireless Local Area Network)** - A group of computers and associated devices that communicate with each other wirelessly.

# Appendix G: Specifications

Model	WML11B, WMLS11B
Standards	IEEE 802.11b, 802.3, 802.3u
Ports	LAN, Audio Out (L, R, Digital), Power, Speaker DC
Buttons	Play/Pause, Stop, Up, Down, Left, Right, Power, Parallel/Crossover, Reset
Cabling Type	CAT 5 Ethernet, SPDIF Optical, RCA
LEDs	Power, Link
Transmit Power	18dBm
UPnP able/cert	able
Security Features	WEP
WEP Key Bits	64-Bit, 128-Bit
Dimensions (W x H x D)	WML11B: 6.06" x 3.39" x 8.5" (154 mm x 86 mm x 216 mm) WMLS11B: 16.02" x 3.39" x 8.5" (407 mm x 86 mm x 216 mm)
Unit Weight	WML11B: 1 lb. and 6.5 oz. (0.64 kg) WMLS11B: 3 lbs. and 2.7 oz. (1.44 kg)
Power	12 V, 1.5 A
Certifications	FCC, IC-03
Operating Temp.	0°C to 40°C (32°F to 104°F)

Wireless-B Media Link for Music

Storage Temp. -20°C to 70°C (-4°F to 158°F)

Operating Humidity 10% to 85%, Non-Condensing

Storage Humidity 5% to 90%, Non-Condensing

# Appendix H: Warranty Information

## LIMITED WARRANTY

Linksys warrants to You that, for a period of one year (the "Warranty Period"), your Linksys Product will be substantially free of defects in materials and workmanship under normal use. Your exclusive remedy and Linksys' entire liability under this warranty will be for Linksys at its option to repair or replace the Product or refund Your purchase price less any rebates. This limited warranty extends only to the original purchaser.

If the Product proves defective during the Warranty Period call Linksys Technical Support in order to obtain a Return Authorization Number, if applicable. BE SURE TO HAVE YOUR PROOF OF PURCHASE ON HAND WHEN CALLING. If You are requested to return the Product, mark the Return Authorization Number clearly on the outside of the package and include a copy of your original proof of purchase. RETURN REQUESTS CANNOT BE PROCESSED WITHOUT PROOF OF PURCHASE. You are responsible for shipping defective Products to Linksys. Linksys pays for UPS Ground shipping from Linksys back to You only. Customers located outside of the United States of America and Canada are responsible for all shipping and handling charges.

ALL IMPLIED WARRANTIES AND CONDITIONS OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE LIMITED TO THE DURATION OF THE WARRANTY PERIOD. ALL OTHER EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS AND WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF NON-INFRINGEMENT, ARE DISCLAIMED. Some jurisdictions do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to You. This warranty gives You specific legal rights, and You may also have other rights which vary by jurisdiction.

This warranty does not apply if the Product (a) has been altered, except by Linksys, (b) has not been installed, operated, repaired, or maintained in accordance with instructions supplied by Linksys, or (c) has been subjected to abnormal physical or electrical stress, misuse, negligence, or accident. In addition, due to the continual development of new techniques for intruding upon and attacking networks, Linksys does not warrant that the Product will be free of vulnerability to intrusion or attack.

TO THE EXTENT NOT PROHIBITED BY LAW, IN NO EVENT WILL LINKSYS BE LIABLE FOR ANY LOST DATA, REVENUE OR PROFIT, OR FOR SPECIAL, INDIRECT, CONSEQUENTIAL, INCIDENTAL OR PUNITIVE DAMAGES, REGARDLESS OF THE THEORY OF LIABILITY (INCLUDING NEGLIGENCE), ARISING OUT OF OR RELATED TO THE USE OF OR INABILITY TO USE THE PRODUCT (INCLUDING ANY SOFTWARE), EVEN IF LINKSYS HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. IN NO EVENT WILL LINKSYS' LIABILITY EXCEED THE AMOUNT PAID BY YOU FOR THE PRODUCT. The foregoing limitations will apply even if any warranty or remedy provided under this Agreement fails of its essential purpose. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to You.

Please direct all inquiries to: Linksys, P.O. Box 18558, Irvine, CA 92623.

# Appendix I: Regulatory Information

## FCC STATEMENT

This product has been tested and complies with the specifications 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 according to 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 is found 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 or devices

Connect the equipment to an outlet other than the receiver's

Consult a dealer or an experienced radio/TV technician for assistance

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.

### CANADA (INDUSTRY )

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

The use of this device in a system operating either partially or completely outdoors may require the user to obtain a license for the system according to the Canadian regulations.

The equipment version marketed in US is restricted to usage of the channels 1-11 only

# Chapter J: Contact Information

Need to contact Linksys?

Visit us online for information on the latest products and updates to your existing products at:

<http://www.linksys.com> or  
[ftp.linksys.com](ftp://ftp.linksys.com)

Can't find information about a product you want to buy on the web? Do you want to know more about networking with Linksys products? Give our advice line a call at:  
Or fax your request in to:

800-546-5797 (LINKSYS)  
949-823-3002

If you experience problems with any Linksys product, you can call us at:  
Don't wish to call? You can e-mail us at:

800-326-7114  
[support@linksys.com](mailto:support@linksys.com)

If any Linksys product proves defective during its warranty period, you can call the Linksys Return Merchandise Authorization department for obtaining a Return Authorization Number at:  
(Details on Warranty and RMA issues can be found in the Warranty Information section in this Guide.)

949-823-3000