User's Guide

506100-02-01-W-E-012506-01

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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.

FCC Caution: To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. (Example - use only shielded interface cables when connecting to computer or peripheral devices).

FCC Radiation Exposure Statement

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

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
The antennas used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.
U-NII device that operates in the band 5.15 - 5.25GHz band will be restricted to indoor operations to reduce any potential for harmful interference to co-channel MSS operation.

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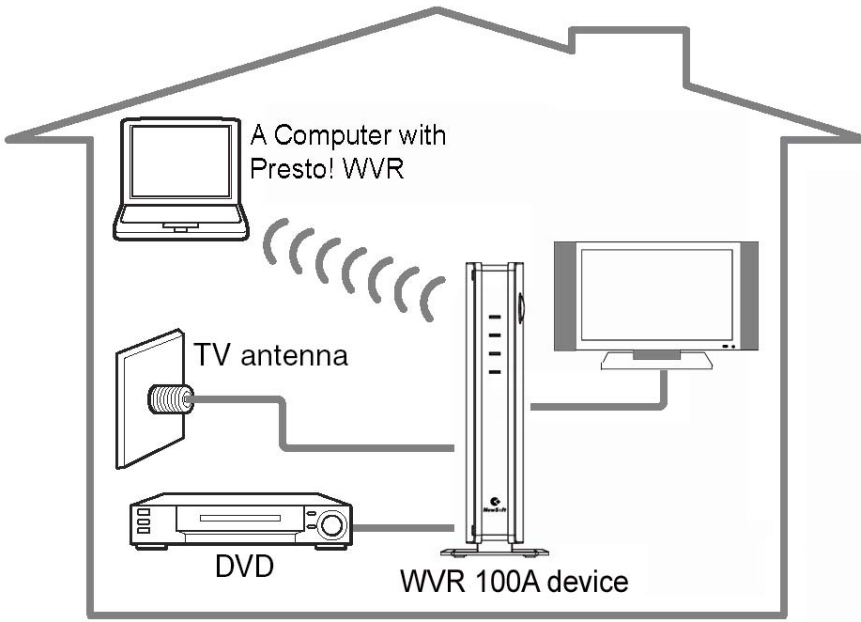
The screen shots used in this manual are only example images.

Chapter 1 Introducing WVR 100A

WVR 100A is a system that can enhance your multimedia experience by combining the WVR 100A device with the Presto! WVR program. The WVR 100A device transmits wireless television signals to a computer equipped with a wireless LAN card while Presto! WVR acts as a video recorder for the computer. Presto! WVR takes the television signals and records them onto the hard drive and lets you edit and burn them to a disc. You have all the convenience of a VCR (recording, playback, fast forwarding, and pausing) without having to rewind any tape. Here are the requirements and features of WVR 100A.



- Features
- System Requirements
- Important Safety Instructions
- Package Contents

➢ Front Panel

➢ Rear Panel

Features

- Receive analog TV programs.
- Record programs to your hard disk and watch them later.
- Easily play the shows that you have already recorded. Just look in the History section.
- Pause the program while watching (to do things like answering the door or making a sandwich) and then resume watching without missing any of the show.
- Watch video in a resizable window. Choose to freely resize or retain the original ratio. Adjust the brightness and color. The preview will reflect the adjustments as they are being made.
- Take snapshots of your favorite TV moments.
- Browse many programs in one window with Tile mode.
- Edit recorded programs with Edit Video.
- Burn the finished video onto disc with Create Video Disc.

System Requirements

- **Operating System:** Microsoft Windows 2000 or XP.

  You must have administrator privileges for the Windows operating system. Limited privileges aren't sufficient.

- **Processor:** A Pentium III, 800 MHz or higher processor is a minimum for capturing video. A Pentium 4, 2.0 GHz or higher processor is needed for Time Shifting, a Pentium 4, 2.4 GHz or higher processor is required for recording.
- **RAM:** At least 256 MB RAM is needed, but more is preferred.

- **Available hard disk space:** A least 200 MB of hard disk space is required for running the program. An additional 500 MB of space will be needed working with files, although it is better to have more than 6 GB available.
- **Display card:** True Color or HiColor display card supporting DirectX 9.0 or above.
- **Monitor resolution:** At least 16-bit high color mode and 800 x 600 pixel resolution. (1024 x 768 is recommended.) A Windows-compatible sound card and speakers will also be needed.
- **WVR 100A device:** This device transfers the wireless TV signals and is the hardware portion of WVR 100A.
- **Others:**

  A wireless LAN card that complies with the IEEE 802.11b, IEEE 802.11g, or IEEE 802.11a standards. The card must support WEP encryption. (For a wireless LAN connection.)

  When using Windows 2000, a WLAN card with NDIS 5.1 certification is recommended.

  A 10Base-T or 100Base-TX LAN connector. (For connecting to a wired LAN for firmware maintenance.)

Important Safety Instructions

- Do not use the WVR 100A device in extremely hot, cold, dusty, or wet environments.
- Dot not put anything on top of the WVR 100A device.
- Do not rub or impact the WVR 100A device with hard things. This can cause surface scratches or hardware damage.
- Do not disconnect the WVR 100A device when it is being used. It may lead to program errors.
- Unplug the WVR 100A device before cleaning it.
- Follow the directions on the power adaptor and use the WVR 100A device with the proper current and voltage range.

Package Contents

When you open your WVR 100A product package, you should find the following items.

- WVR 100A device

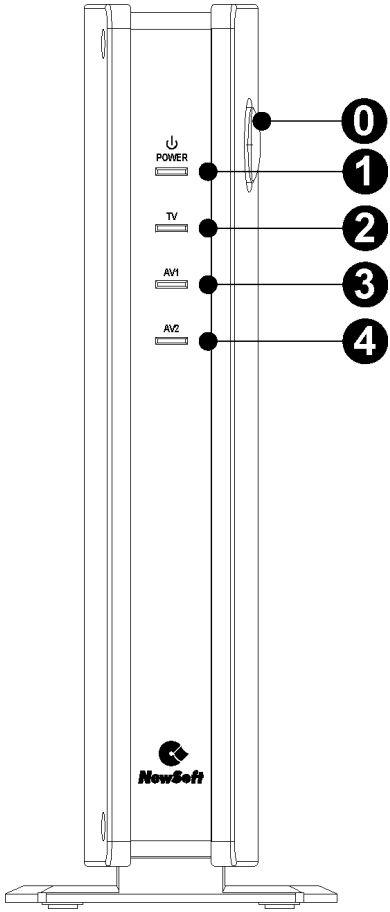
- AC Power Adaptor

- Audio/Video Cable

- Presto! WVR Software CD-ROM

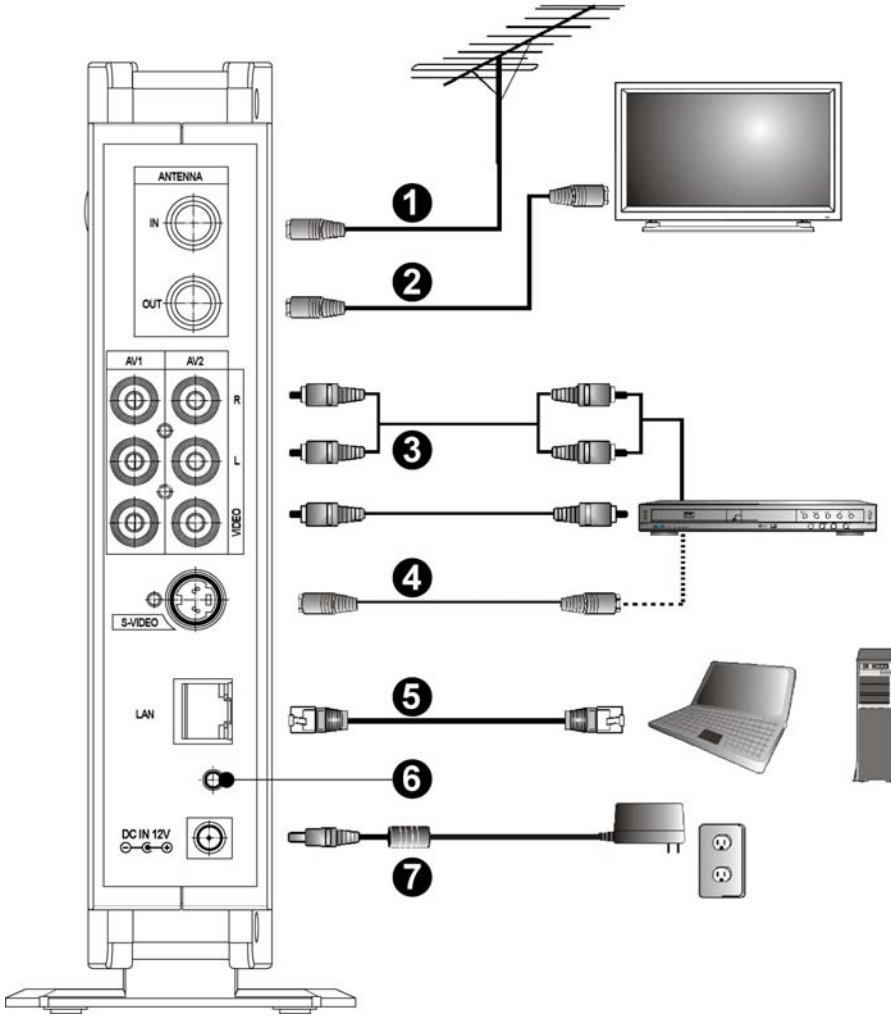
- Quick Guide
- Warranty Card

Front Panel



⓪	**Power Button** Push to turn the WVR 100A device on and off.
❶	**Power Indicator** Lights when the power is on.
❷	**TV Reception Indicator** Lights when the WVR 100A device is receiving TV signals.
❸	**AV1 Indicator** Lights when the WVR 100A device is receiving video and audio from an external device through the AV1 terminals.
❹	**AV2 Indicator** Lights when the WVR 100A device is receiving video and audio from an external device through the AV2 terminals.

Rear Panel



❶	**Antenna Cable** Connect the antenna to **IN** to receive analog TV signals.
❷	**TV Antenna Cable** The **OUT** jack is for sending antenna signals to the TV.
❸	**Audio/Video Cable** Connect devices, such as VCR, DVR, and DVD players that feature an A/V output terminal to the WVR 100A device. The two input terminals are labeled **AV1** and **AV2**.
❹	**S-Video Cable** Connect devices that feature S-video output jacks to the WVR 100A **S-video** input jack.
❺	**Ethernet Cable** Connect a laptop or desktop computer through the **LAN** port with an Ethernet cable for Firmware update.
❻	**Reset Button** Initializes all settings on the WVR 100A device and restore them to factory defaults.
❼	**AC Adapter** The **DC IN 12V** jack is used to connect the AC power adapter to the WVR 100A device.

Chapter 2 Setting Up and Connecting a WVR System

It's not so difficult. Here are some guides and examples to help you get set up to enjoy Presto! WVR 100A.

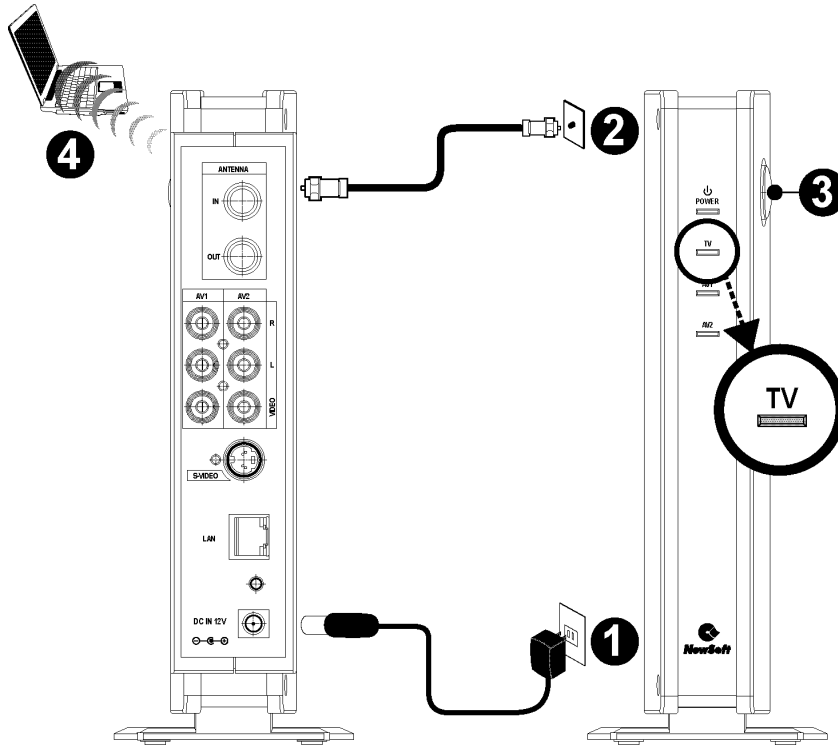
- Examples of Ways to Use Presto! WVR
- Troubleshooting a Wireless Connection
- Installing Presto! WVR
- Uninstalling Presto! WVR
- Programming the Firmware on the WVR 100A Device
- Initializing the WVR 100A Device
- Using the Settings Wizard
- Refreshing the Program List

Examples of Ways to Use Presto! WVR

There are several ways to hook up and use the WVR 100A program and hardware. Here are just two.

Setup to Watch TV

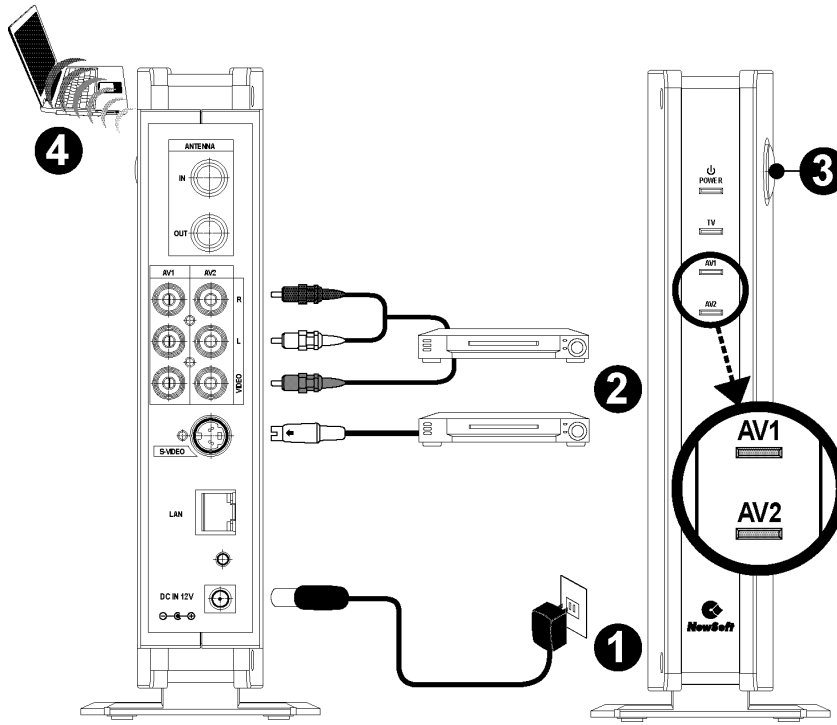
This is how you hook it up to watch TV from the antenna cable.



❶	Connect the AC power adapter to the **DC IN 12V** jack on the WVR 100A device, and then plug the power cord into an electrical outlet.
❷	Connect the antenna cable to the **IN** jack on the WVR 100A device.
❸	Turn on the WVR 100A device by pressing the power button. The power indicator will light.
❹	Connect a computer that has Presto! WVR installed on it to the WVR 100A device. See the Troubleshooting a Wireless Connection section for details.

Setup to Watch Video

This is how to hook it up to watch video from a DVD player.



❶	Connect the AC power adapter to the **DC IN 12V** jack on the WVR 100A device, and then plug the power cord into an electrical outlet.
❷	Connect the A/V or S-video cables to the **AV1**, **AV2**, or **S-video** input jacks on the WVR 100A device.
❸	Turn on the WVR 100A device by pressing the power button. The power indicator on the front panel will light. *The AV1 indicator will light when the input source is S-video.*

❹	Connect a computer with Presto! WVR installed to the WVR 100A device. See the Troubleshooting a Wireless Connection section for details.

*You can connect the antenna cable, A/V signal lines, and the S-video cable to the WVR 100A device, and then switch between these three input sources by clicking to open the **Settings** dialog box, clicking the **Device** tab, and then choosing an input source from the **Source** selection box.*

Troubleshooting a Wireless Connection

Presto! WVR automatically detects the wireless signal sent out by the WVR 100A device. All you need to do is to select the Wireless LAN card connected to your computer or laptop, and then scan for TV channels or select other input sources.

If you are having trouble creating a wireless connection, perform the following checks.

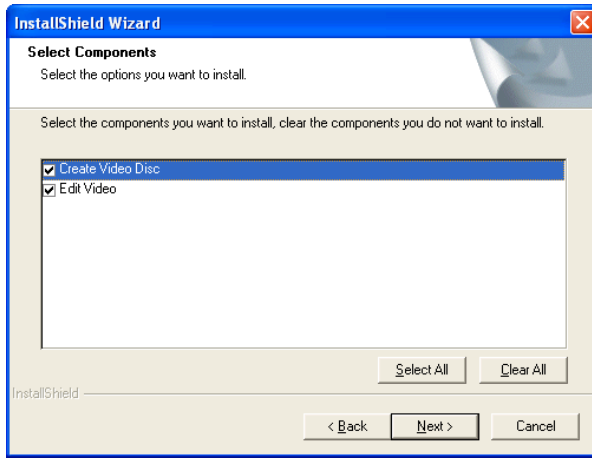
1. Make sure the driver for your Wireless LAN card has been correctly installed. For details, refer to the instruction manual for your Wireless LAN card.
2. Check your Wireless LAN card's utility and the transmitter's firmware settings to see which IEEE wireless connectivity standards (820.11a, b, and g) are supported. Make sure that both your Wireless LAN card and the transmitter support and employ the same wireless connectivity standards.

Installing Presto! WVR

Before you begin, make sure that the antenna has been connected to WVR 100A.

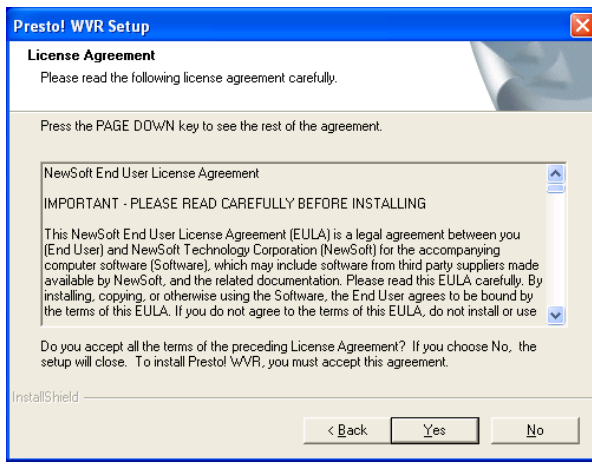
You must have administrator privileges to install this program on the Windows operating system.

1. Insert the Presto! WVR disc into your computer disc drive. If the installation wizard does not start, locate the "setup.exe" file on the installation CD and double-click it.
2. Select the components you want to install, and then click **Next**.

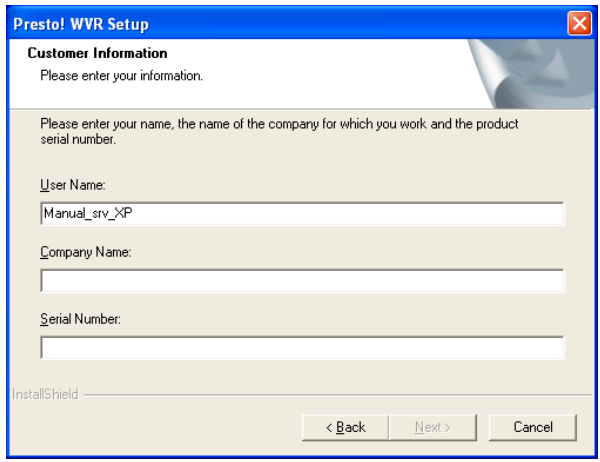


*It is recommended that you select both **Create Video Disc** and **Edit Video** during installation for authoring and editing purposes. Otherwise, the Presto! WVR features related to these two programs will be unavailable.*

3. A welcome screen will open, click **Next**, read the license agreement, and accept the terms by clicking **Yes**.

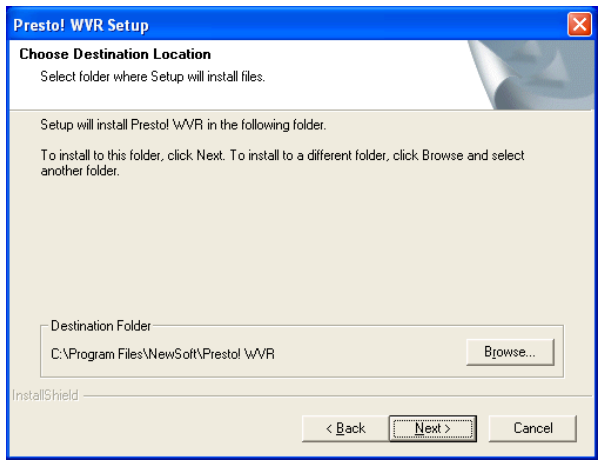


4. Type your name, company name, serial number, and then click **Next**.



You can find the serial number on the warranty card included in the product package, and you may also find the serial number sticker affixed to the back of the software CD case. If you can't locate it, contact our customer service personnel for assistance.

5. Confirm the installation folder and click **Next**. If you want to change the folder in which Presto! WVR will be installed, click **Browse**.



6. Click **Next** to start the installation, and when complete, click **Finish**.

Your Presto! WVR program is now ready to use. Double-click the program icon on the desktop to start using it.

Uninstalling Presto! WVR

There are two ways to remove Presto! WVR from a computer.

The following descriptions are based on Windows XP.

Using the Uninstall Presto! WVR Wizard

1. Click the **Start** button and point to **All Programs**. Point to **NewSoft**, and then click **Uninstall Presto! WVR**.
2. Click **Finish** when the wizard completes the uninstallation process.

Using the Windows to Uninstall Presto! WVR

1. Click the **Start** button and then **Control Panel**. Click **Add or Remove Programs**, and then select **Presto! WVR** under **Change or Remove Programs**.
2. The Windows uninstaller will remove all the features and objects associated with Presto! WVR.
3. Click **Finish** when the wizard completes the uninstallation process.

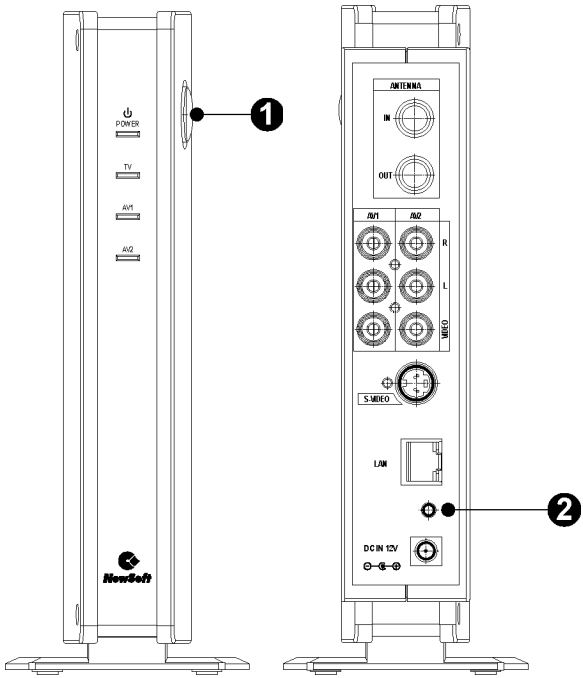
*It is recommended that you use the **Uninstall Presto! WVR** wizard for complete removal of the program.*

Programming the Firmware on the WVR 100A Device

You can achieve scalability or flexibility and optimize performance by programming the firmware. Please see the Chapter 5 Setting Up and Updating the Firmware section for more information.

Initializing the WVR 100A Device

If you initialize the WVR 100A device, all settings are reset to factory defaults.



1. Turn on the sender box by pressing the power button.
2. Hold down the reset button for until the source indicators (TV) blinks (5 seconds).

Using the Settings Wizard

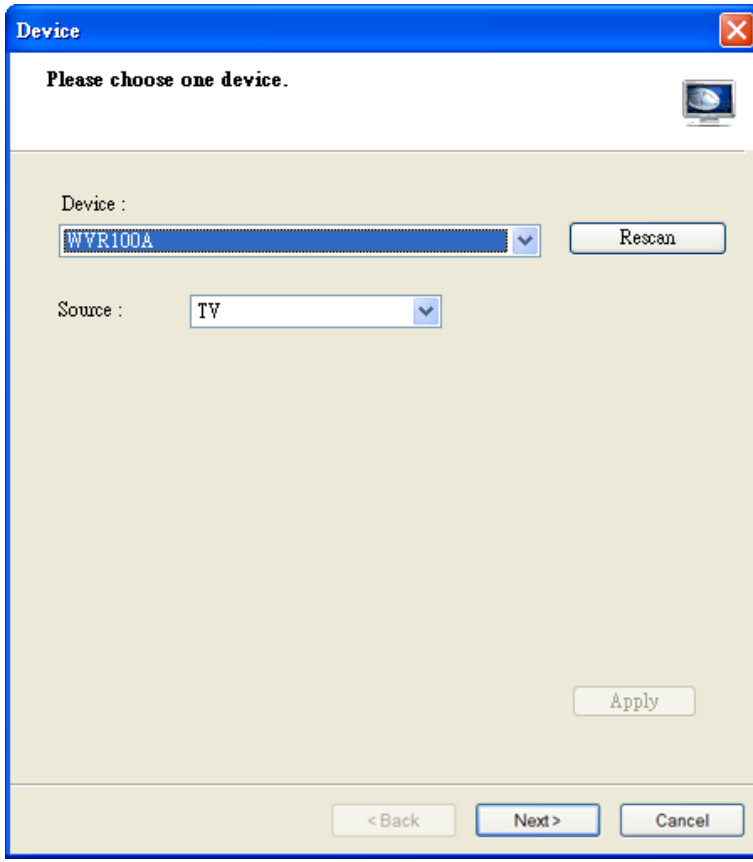
When running Presto! WVR for the first time, use the Settings Wizard to configure your devices.

1. Make a selection from the **Device** list.

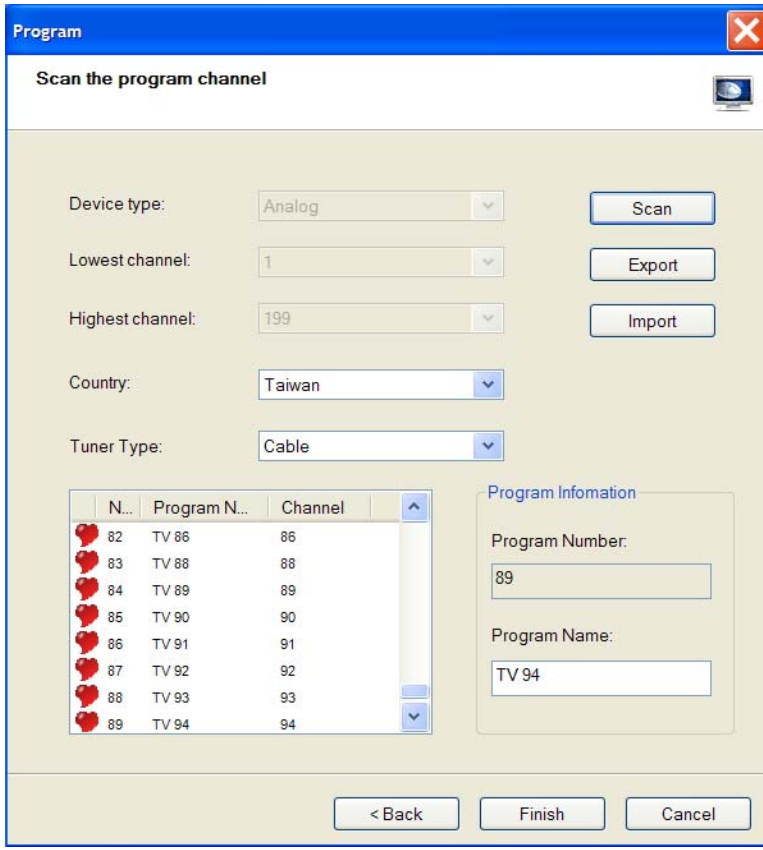
   *To change a device, select another one from the list, and then click **Apply**.*

2. Select **TV** from the source box.

3. Click **Next**, and then the **Scan** button. The program starts scanning channels.



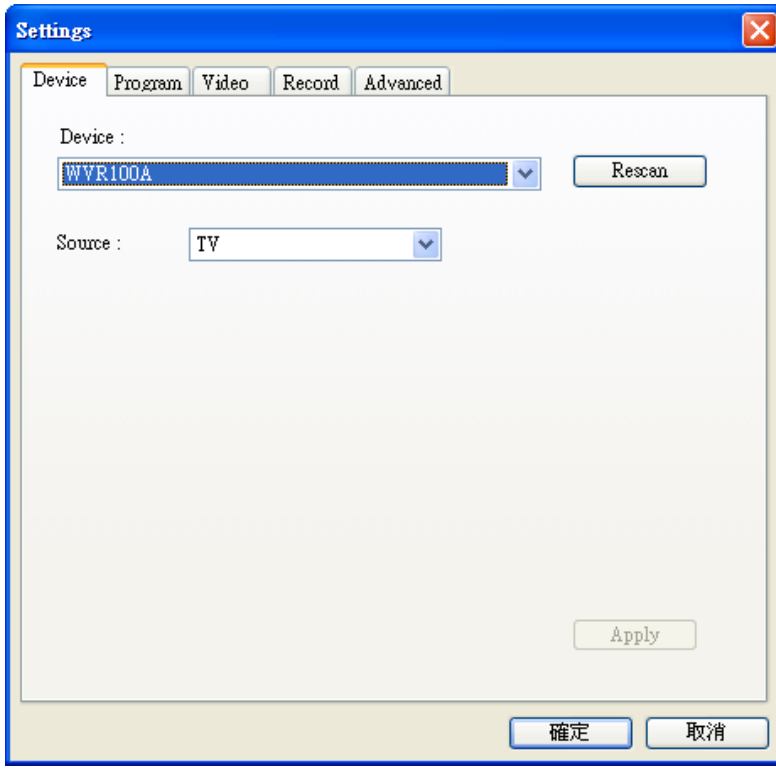
4. Click **Finish**.



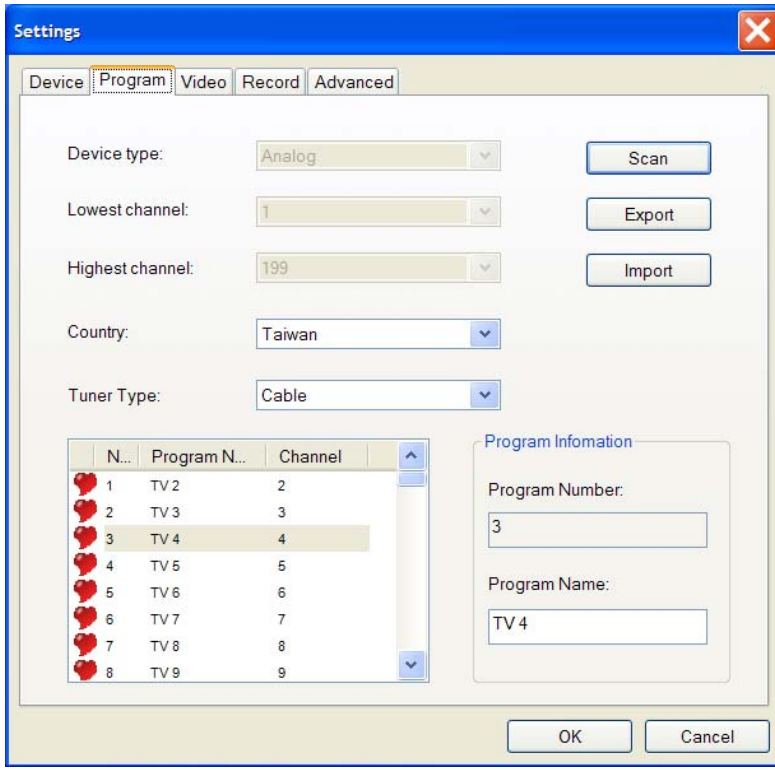
Refreshing the Program List

To update the scanned program list, connect the antenna to the Presto! WVR device and make the proper settings.

1. Click to open the **Settings** dialog box, and then click the **Device** tab.
2. Choose a device from the **Device** list, and then choose the source.



3. Click the **Program** tab on the **Settings** dialog box, and then click **Scan** to search for programs. If a program is found, it will be included in the program list. When finished, you can choose a program and change its name.



4. Close the **Settings** dialog box and watch the program.

Chapter 3 Using Presto! WVR

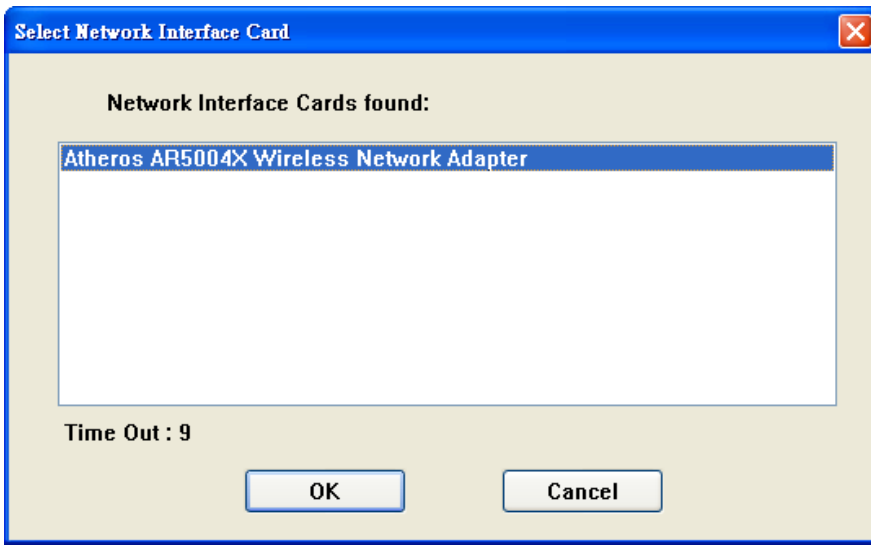
This program has everything a personal video recorder needs—preview, full screen view, snapshot, channel selection, channel surfing, recording, time shifting, settings, help, and a link to our website. Here are explanations of how to perform the most common tasks.

- Starting Presto! WVR
- Getting to Know the Screen
- Control Panel

- Choosing a Program to Watch
- Channel Surfing
- Recording a Program
- Time Shifting
- Adjusting the Volume
- Taking Snapshots
- Using MTS

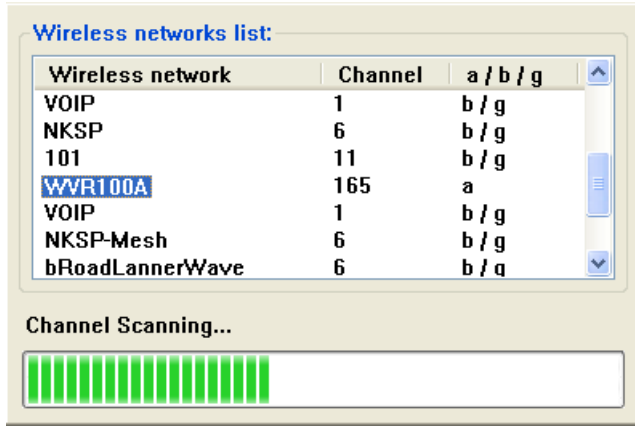
Starting Presto! WVR

After double-clicking the program icon , select the wireless LAN card from the **Select Network Interface Card** dialog box, and then click **OK**.



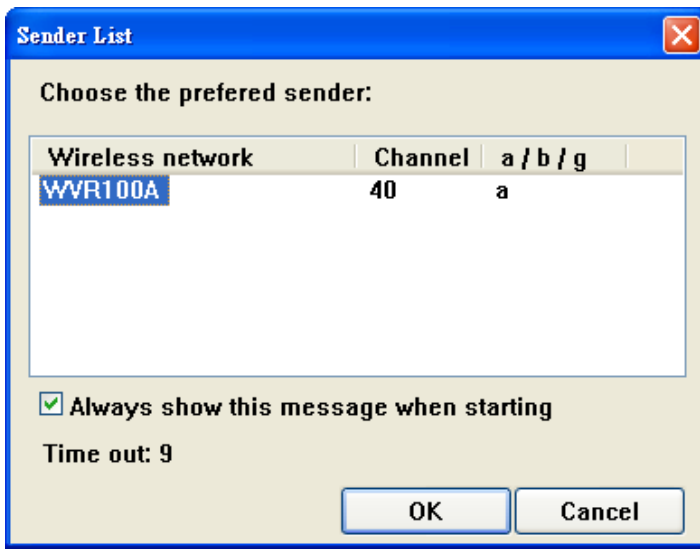
The program will scan for supported wireless networks in range and check for TV senders.

Presto! WVR will take a couple of second to search for wireless networks in range.



Select a TV sender from the **Sender List** dialog box, and then click **OK**.

The application will make a choice automatically if a preferred sender is not selected within 10 seconds.

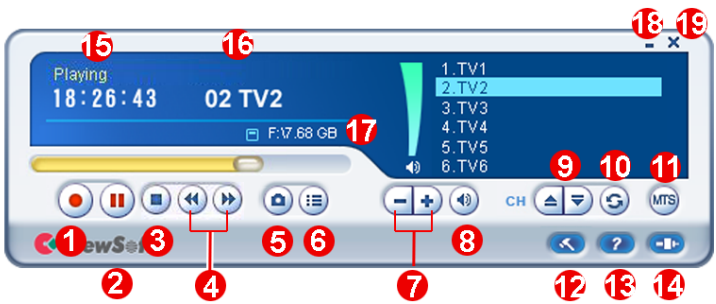


Getting to Know the Screen

❶ **Program Viewer**

❷ **Control Panel**

Control Panel



No.	Description	No.	Description
1	**Record**	11	**MTS** (**M**ultichannel **T**elevision **S**ound)
2	**Pause/Time Shifting**	12	**Settings**
3	**Stop**	13	**Help**
4	**Fast Forward /Backward**	14	**Source**
5	**Snapshot**	15	**Status**
6	**History**	16	**Sender**
7	**Volume**	17	**Free Space**
8	**Mute/Mute Off**	18	**Minimize**
9	**Channel Changer**	19	**Exit**
10	**Previous Channel**		

Choosing a Program to Watch

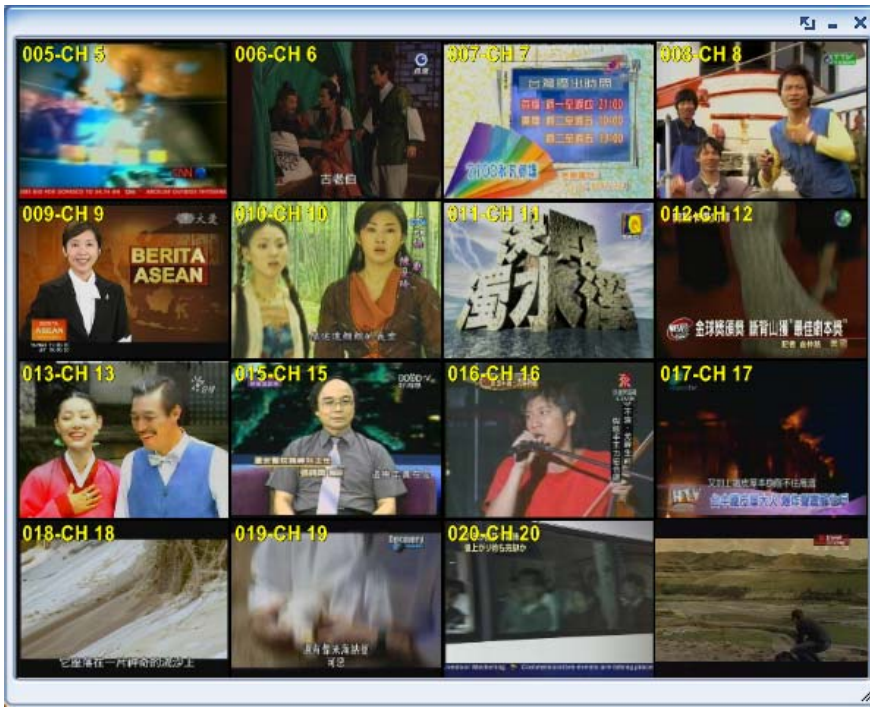
After you have installed Presto! WVR and scanned for programs, you can click a program to watch it and click or to switch between programs. Click to go to the last program on the list.

You can browse all the TV programs from the Channel Surfing window. Presto! WVR provides different options for tiling the programs in thumbnails. You can play a program by clicking the thumbnail.

*To change the Channel Surfing window settings, click and choose the **Advanced** tab.*

Channel Surfing

Right-click the program viewer and select **Channel Surfing** from the screen menu to tile the programs in thumbnails. You can play a program by double-clicking the thumbnail. To quit this function, click **Esc.** You will return to the live program.



Recording a Program

When you find a good show, click to start recording. The button will change to . The recorded program will be saved in the working folder.

You can click to pause recording. If you click while you are watching, recording will stop and the preview screen will return to the live program.

When recording, you can go to full screen, minimize, and restore, but you cannot change programs, or close the program.

Time Shifting

Time Shifting means that you can pause a program while watching the big game, click the pause button, and then go get another bag of chips without missing any of the action. When you come back and click the play button, you will resume watching from the point at which you paused.

1. Click to start time shifting. (The time shifting button will change to the play button.) The preview screen will freeze, but the recording will continue.
2. Wait for a couple of seconds and then click to watch the program from the point at which it was paused.
3. Click or to play the recorded program forward or backward.

   The and buttons will be available only for controlling recorded programs.

4. Click to stop time shifting and return to the live program.

   When you pause, you can change the screen size and adjust the volume, but you cannot change programs, take snapshots, change the configuration, or close the program.

Adjusting the Volume

Use the buttons to increase, decrease, and mute the volume. The indicator will reflect the changes. Clicking on the speaker button will turn the sound on and off.

Taking Snapshots

Click to capture the screen at that moment. The snapshots will be saved in the working folder.

Using MTS

MTS is the short for **M**ultichannel **T**elevision **S**ound. If the program provides the mutichannel feature, click to switch soundtracks.

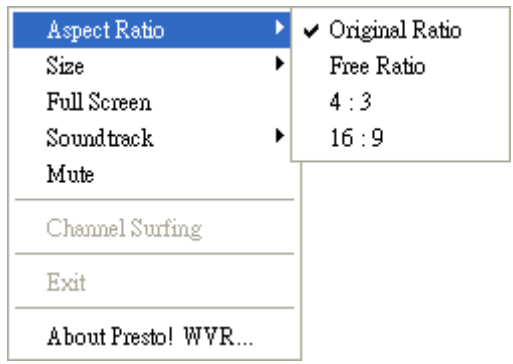
Chapter 4 Menus and Settings in Presto! WVR

For all that it does, Presto! WVR is very easy to use. There are only a few menus and settings that you need to worry about. Here they are in their entirety.

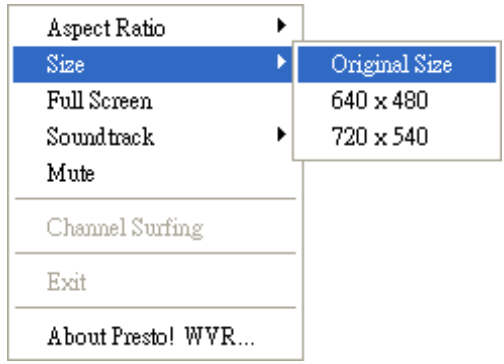
- Screen Menu
- Settings
- History

Screen Menu

When you right-click your Presto! WVR screen when a video is playing, you will see the following menu. This will give you quick control over how you watch the program.



Aspect Ratio: This selects the ratio of width and height for your Presto! WVR screen. You can choose **Original Ratio**, **Free Ratio**, **4:3** or **16:9**. Choosing **Free Ratio** will allow you to distort your TV picture by dragging the lower-right corner of the screen. If you have chosen **Original Ratio**, the ratio will not change as you resize the picture.



Size: Click to restore the display window to the original size.

Full Screen: Click to see the program in the entire video screen. Press the ESC key to restore the screen to the most recently selected size.

Soundtrack: If the program has multiple sound tracks, you can switch them here.

Mute: Click to turn the audio off and on.

Channel Surfing: Click to browse TV programs in a tiled window.

Exit: Click to close the program.

About Presto! WVR: Click to display the program version information.

Settings

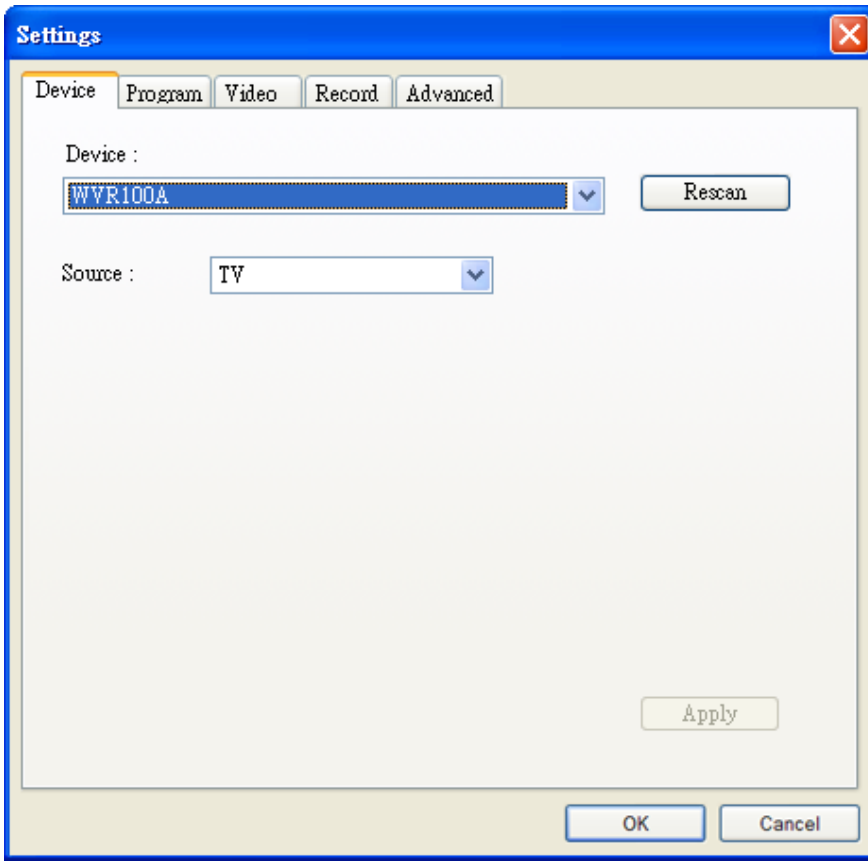
Click to see the **Settings** dialog box to help you personalize your Presto! WVR program.

- Device
- Program
- Video
- Record

- Advanced

Device

On the **Device** tab, you can select how to control the Presto! WVR device.



Device Available Presto! WVR devices are listed here. Other settings on this tab will be disabled unless you select a device. If you click **Rescan**, a message will warn that the current connection will be lost.

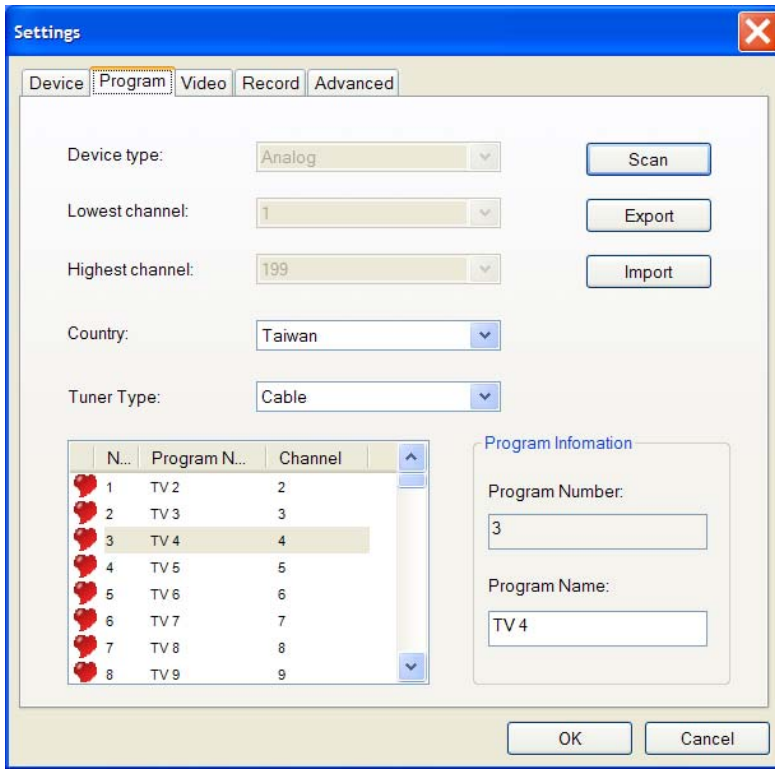
Source You can select TV, AV, or S-Video as the source type.

You can also click on the main panel to select the source type.

If the source type is AV or S-Video, the main control panel can be only used for the recording and time shifting features, but not for controlling the source playback.

Program

On the **Program** tab, you can set the scanning parameters and rename programs.



Device type, Lowest channel, Highest channel: These settings will show the range of the acceptable channels. The total number of channels will be adjusted according to the country option.

Country: Select the country you are in to have the television reception properly formatted.

Tuner Type: Choose the source of the television signals.

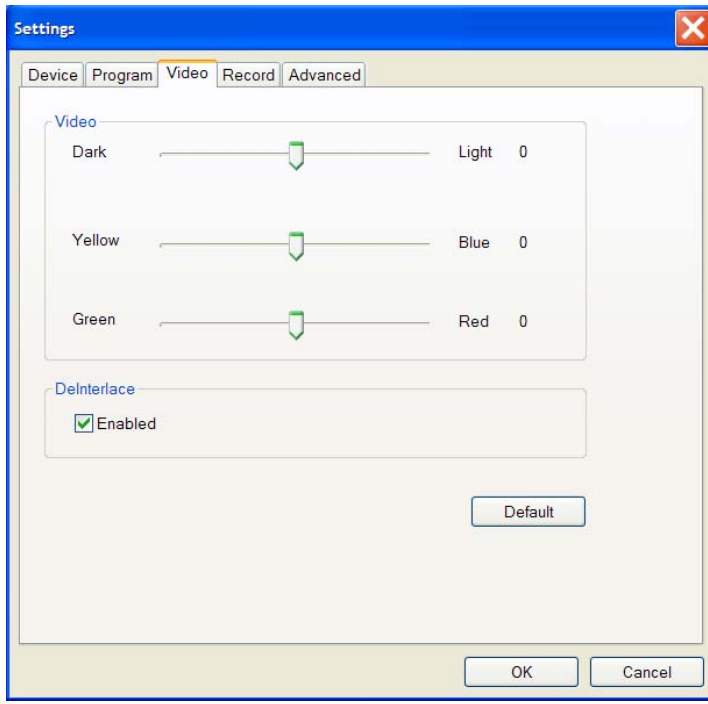
Scan: This will look for all available programs and list them.

Export, Import: You can use these two functions to export or import the program list file so that you don't need to rescan when using other computers.

Program Number, Program Name: You can edit the name for each program. Type a name that may help you identify what kind of program it is.

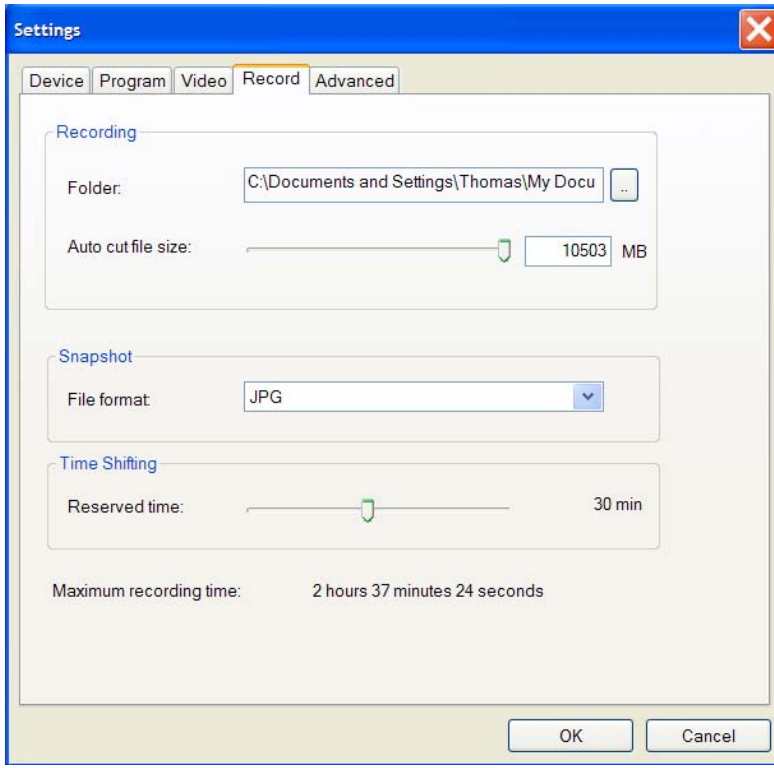
Video

On the **Video** tab, you can adjust the brightness and the color in the picture. The preview window changes while the adjustments are made so you can tell when the picture is as you like it.



Record

This tab will let you adjust your recording preferences.



Recording You can choose a different folder for saving your recorded files and snapshots, and adjust the **Auto cut file size**.

Auto cut file size: This will set a threshold file size for your recorded programs. Drag the slider to fix an upper limit for the size of the captured video file. The video will be automatically cut into separate files when the limit is reached. If your disk file system is FAT32, the maximum size of each file will be 4 GB. If your disk file system is NTFS, it will be equal to the space available on the specified disk.

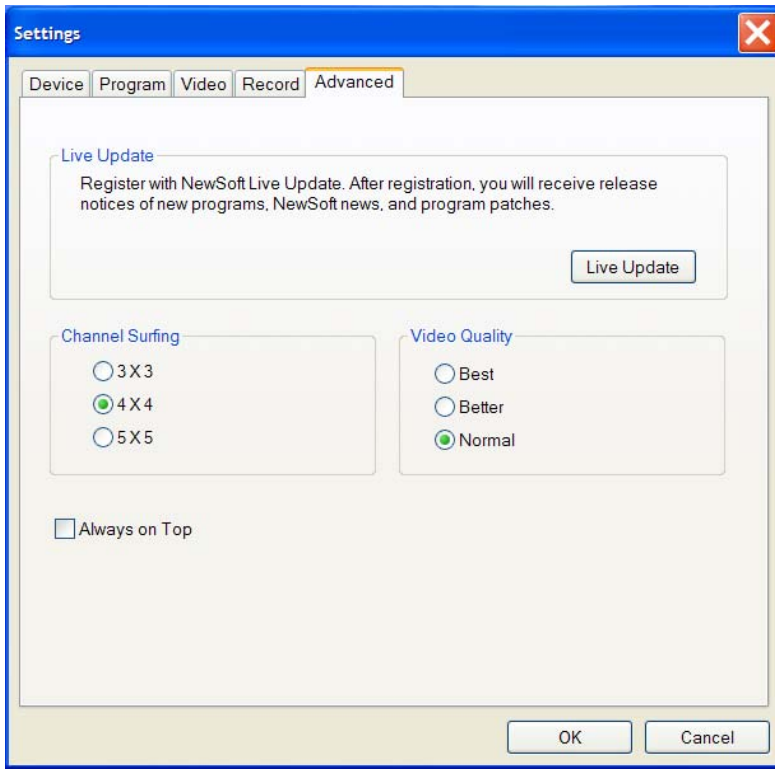
*The estimated recording time will be displayed at the bottom of this dialog box as **Maximum recording time**.*

Snapshot You can change the format for saving snapshot images. By default, the images will be saved in the JPEG format.

Time Shifting Use this control to set up the buffer for time shifting. This will determine how long you can pause a program and not miss any of it. The buffer can be set for up to 60 minutes. When the limit is reached, time shifting will continue, but the buffer will be overwritten and you may lose part of the program.

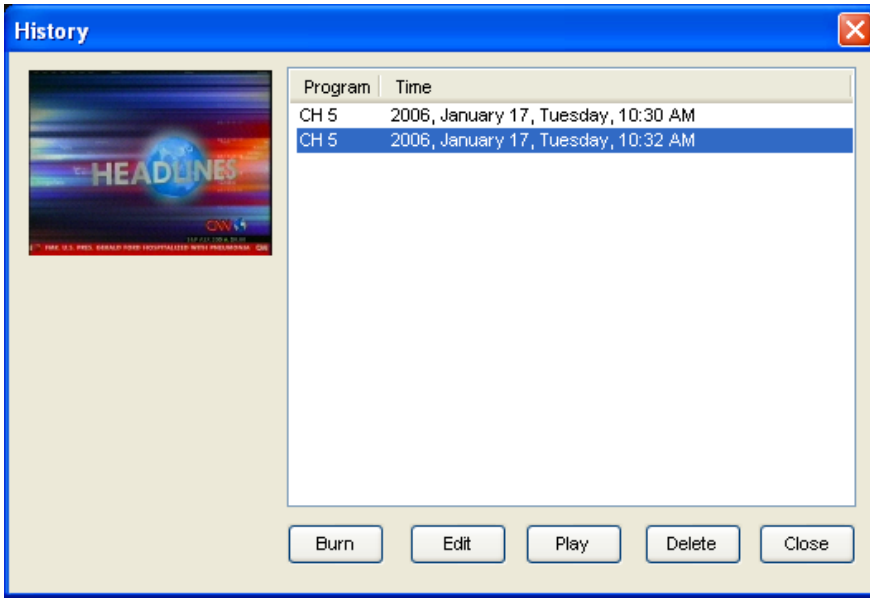
Advanced

In this tab, you can check for product updates and news. You can also select the video quality and the display mode for TV program channel surfing.



History

Click to see the programs you have recorded, with the most recent listed first. The first frame of the selected recording will be shown in the preview area.



- Click **Burn** to put the selected programs on a disc. You can select several files. The **Create Video Disc** burning program will start automatically.

- Click **Edit** to modify the selected programs. (You can select several files.) **Edit Video** will start for editing the programs.

  *The **Burn** and **Edit** buttons will be only available when **Create Video Disc** and **Edit Video** are installed.*

- Click **Play** to watch the selected program.

- Click **Delete** to erase a selected program from the hard disk.

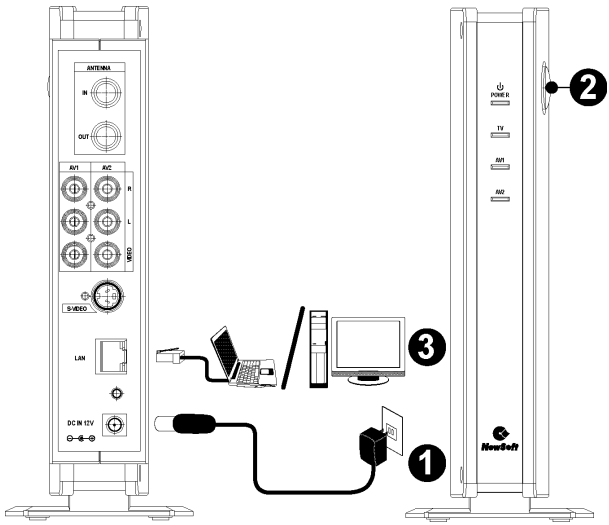
- Click **Cancel** to close the **History** dialog box.

Chapter 5 Setting Up and Updating the Firmware

The firmware is the programming that is built into the hardware. Here is a description of how to program the firmware.

- Connecting to the Firmware
- Viewing the Status
- Adjusting the Setup
- Using Maintenance

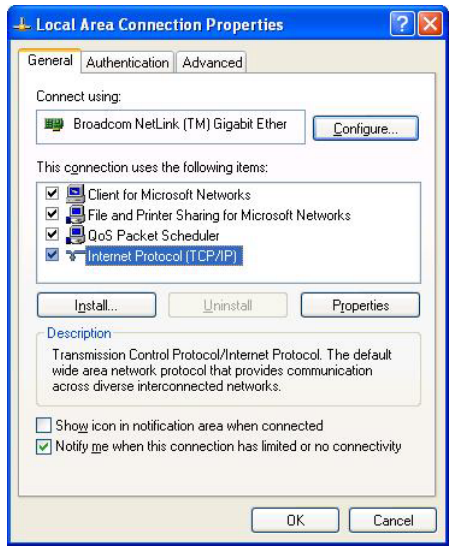
Connecting to the Firmware



1. Connect the AC power adapter to the **DC IN 12V** jack on the WVR 100A device, and then plug the power cord into an electrical outlet.
2. Turn the power on and wait for 10 seconds.
3. Connect the **LAN** port to a laptop or desktop computer with an Ethernet cable.

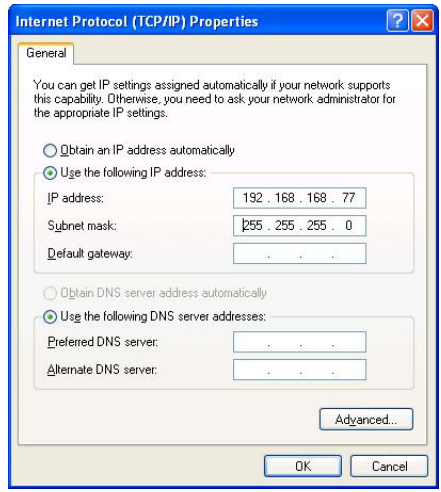
You must set the network adapter to the same network segment before connecting to the WVR 100A device. The adapter cannot use a DHCP client since the WVR 100A device supports DHCP clients but not DHCP servers.

❹ From the Windows Control Panel, open **Network Connections**, click **Local Area Connection**, and then click **Properties**. You will see the following dialog box.



Click **Internet Protocol (TCP/IP)** and change the **IP address** to a number between 192.168.168.1 and 192.168.168.253. (Don't use 192.168.168.21 or 192.168.1.22).

Type 255.255.255.0 for the **Subnet mask**.



Example of an IP Address

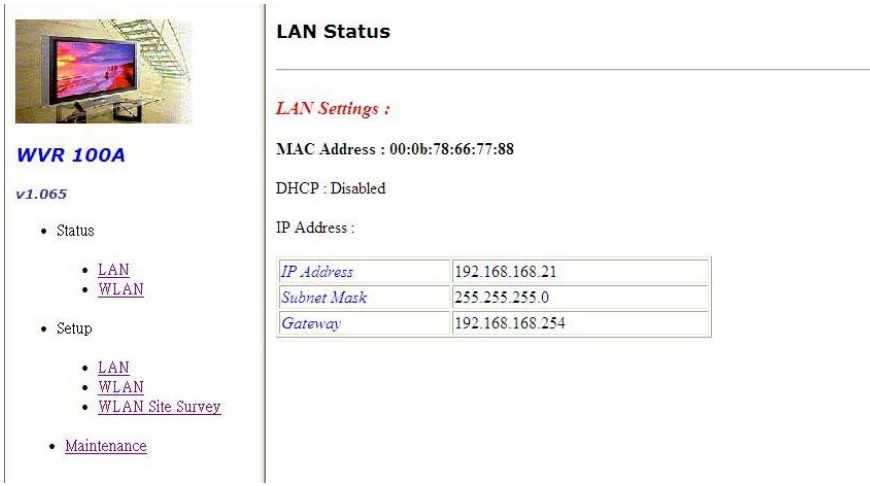
❺ Use your Internet browser to open http://192.168.168.21/ to see the configuration page for the WVR 100A device. (This is the designated IP address for the WVR 100A device.) Type "admin" as User name, and "1234" for Password.

You must disable your firewall and proxy settings. If the configuration page doesn't open, turn the device off and on to reset it.

Viewing the Status

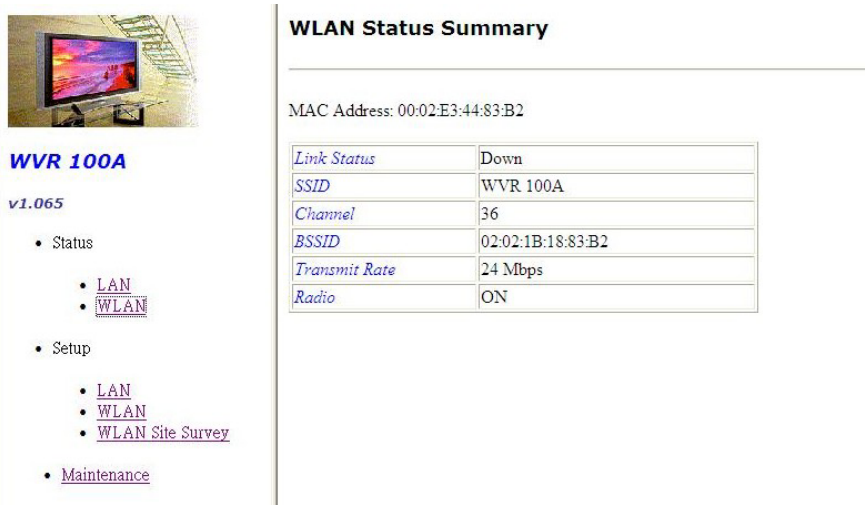
Under **Status**, you can view the current settings of the Ethernet LAN or WLAN.

Click **LAN** to see the Device Information and LAN Settings, including MAC and IP addresses.



WLAN settings can be seen by clicking **WLAN**.

- The **Link Status** may be **Up**, indicating that it is connected to a Presto! WVR, or **Down**, indicating that it is available for connecting.
- **SSID** is the acronym for Service Set Identification, which is sometimes referred to as the name of a wireless network.
- **Channel** and **Transmit Rate** represent the transmission speed. Channels higher than 36 are for 802.11a (5 GHz). Transmission rates faster than 24 Mbps indicate that you can use 802.11a and 802.11g modes.
- **BSSID** is one type of SSID. It is a six-byte address that is used to identify the name of an ad hoc wireless network.
- If **Radio** is **On**, it means wireless signals are being sent by the transmitter.

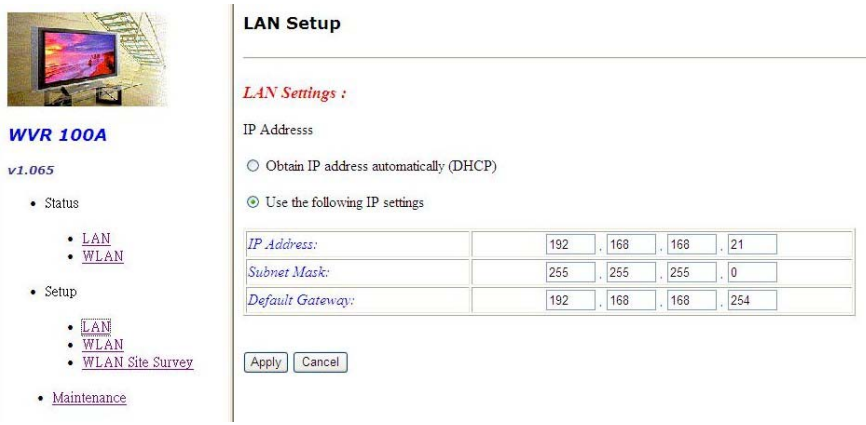


Adjusting the Setup

Under **Setup**, you can choose **LAN** or **WLAN**.

LAN is used to choose DHCP or static IP address.

- If you select DHCP, you have to find the IP address by using another tool or by asking your MIS department if you ever need to reconfigure. An alternative would be to push and hold the **Reset** button on the WVR 100A device for more than 5 seconds to revert to the factory default IP address (**192.168.168.21**).
- If you change to another network segment, remember to configure the computer to the same network segment.

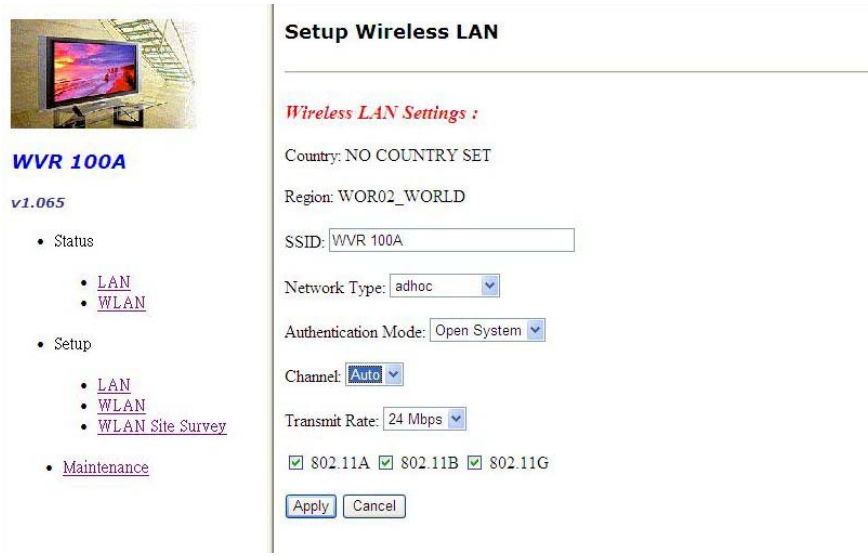


*Use **WLAN** to change these settings.*

- **SSID** is defaulted to use **WVR 100A**.
- **Channel & Transmission rate** is used to identify the transmission speed. Channels higher than 36 are for 802.11a (5 GHz). Transmission rates faster than 24 Mbps indicate that you can use 802.11a and 802.11g modes.

  Some WLAN cards don't support the 802.11g Ad hoc mode and will use the IEEE standard 802.11b instead, which results in lower performance.

- If the channel is changed, a new Web page will open for the settings. When finished, click **Apply**.
- The default settings are ad hoc mode, channel 165, 802.11a, and Ad-hoc mode.



Using Maintenance

Click to change username and password for security control, upgrade firmware, or restore to factory default settings.

Appendix

Here you can find some useful information for Presto! WVR. Click an item below to jump to a topic.

- Keyboard Shortcuts
- Wireless Channels Specifications
- Glossary

Keyboard Shortcuts

While you are enjoying your programs, you can use the following shortcut keys to manipulate the program.

Keyboard Shortcuts	Description
0 ~ 9	TV channel number from 0 to 9
CTRL+SHIFT+T	Use the time shifting function
CTRL+L	Go back to the last TV channel you watched
CTRL+P	Pause the playback
CTRL+SHIFT+S	Use the snapshot function
CTRL+R	Start recording
<	Rewind the time shifting function
CTRL+SHIFT+P	Start playing program
>	Fast forward the time shifting function
CTRL+S	Stop the playback
CTRL+F	Switch between normal and full screen mode

F8	Turn off the sound
F10 (+)	Increase the volume
F9 (-)	Decrease the volume
PAGE DOWN	View the previous TV channel
PAGE UP	View the next TV channel

Wireless Channels Specifications

The Wireless LAN specifications follow the 802.11 related standards. For 802.11a, it uses 5 GHz, and for 802.11 b and g, it is 2.4 GHz. This is the channel list for 802.11 b and g:

Channel No.	Frequency	USA-Canada	Europe	Japan
1	2412 MHz	X	X	X
2	2417 MHz	X	X	X
3	2422 MHz	X	X	X
4	2427 MHz	X	X	X
5	2432 MHz	X	X	X
6	2437 MHz	X	X	X
7	2442 MHz	X	X	X
8	2447 MHz	X	X	X
9	2452 MHz	X	X	X
10	2457 MHz	X	X	X
11	2462 MHz	X	X	X

12	2467 MHz		X	X
13	2472 MHz		X	X
14	2484 MHz			X

For 802.11a, there are 3 segments of channel allocation. The list is shown below:

Channel No.	Frequency	USA-Canada	Europe	Japan
34	5170 MHz			X
36	5180 MHz	X	X	X
38	5190 MHz			X
40	5200 MHz	X	X	X
42	5210 MHz			X
44	5220 MHz	X	X	X
46	5230 MHz			X
48	5240 MHz	X	X	X
52	5260 MHz	X	X	X
56	5280 MHz	X	X	X
60	5300 MHz	X	X	X
64	5320 MHz	X	X	X
100	5500 MHz		X	
104	5520 MHz		X	
108	5540 MHz		X	

112	5560 MHz		X	
116	5580 MHz		X	
120	5600 MHz		X	
124	5620 MHz		X	
128	5640 MHz		X	
132	5660 MHz		X	
136	5680 MHz		X	
140	5700 MHz		X	
149	5745 MHz	X		
153	5765 MHz	X		
157	5785 MHz	X		
161	5805 MHz	X		

A 20 MHz bandwidth is required for each WLAN medium. Thus there can be only 3 non-overlapping channels in 802.11 b and g. (4 in Japan because of channel 14). For 802.11a in the USA area, there can be 12 clean non-overlapping channels. The frequencies from the 802.11a standards are defined to be 5.15~5.25 Hz and 5.725~5.825 Hz. That translates to supported channels 36~48 and 149~161.

Glossary

2.4 GHz frequency band: The range of frequencies recognized by international regulatory agencies for unlicensed radio operations. Products that use these frequencies do not require user licensing.

Ad hoc mode: A wireless network framework in which wireless devices communicate directly with one another. This arrangement contrasts with an infrastructure network, in which all devices communicate through an access point.

Aspect Ratio: The aspect ratio is the relationship of the width of an image to its height. Normal TV's aspect ratio is 4:3, HDTV's aspect ratio is 16:9, and Cinemascope movies' aspect ratio is 2.35:1.

Bits per second (bps): An unit that is used to measure the data transmission speed over a communication line based on the number of bits sent or received per second.

BSSID: An acronym for Basic Service Set Identifier, which is the identifying name of an ad hoc wireless network. BSSID is one type of SSID, with the other being ESSID.

Channel: A portion of the available radio spectrum that devices on a wireless network use to communicate.

Ethernet: The most popular industry standard network hardware specification (802.3) developed by IEEE for wired LANs. It provides a variety of transmission speeds ranging from 10 Mbps to 10,000 Mbps.

Firewall: A system of software and/or hardware that resides between two networks to prevent access by unauthorized users. The most common use of a firewall is to provide security between a local network and the Internet. Firewalls monitor and control the flow of data in and out of computers on both wired and wireless networks.

Firmware: programming that is inserted into programmable read-only memory (programmable ROM), thus becoming a permanent part of a computing device. Unlike random access memory (RAM), read-only memory stays intact in the absence of electrical power. Startup routines and low-level input and output instructions are stored in firmware.

GHz: Gigahertz, a unit of frequency.

IEEE: Institute of Electrical and Electronics Engineers. A global technical professional society and standards-setting organization serving the public interest and its members in electrical, electronics, computer, information and other technologies.

IEEE 802.11: One family of specifications for wireless networking, first published by IEEE in 1997. The original specification allows for speeds up to 2 Mbps and operates in the 2.4-GHz frequency range using both frequency hopping and direct sequence spread spectrum technologies.

IEEE 802.11a: An IEEE specification for wireless networking that operates in the 5 GHz frequency range and uses orthogonal frequency division multiplexing (OFDM) technology. The 802.11a specification allows for speeds up to 54 Mbps. The 5 GHz frequency band allows for more radio channels, which helps to avoid radio and microwave interference.

IEEE 802.11b: The most commonly used standard for wireless networking. Ratified in 1999 by IEEE and also known as Wi-Fi, the 802.11b specification operates in the 2.4 GHz frequency range with a maximum 11 Mbps data transfer rate. Microwave ovens, cordless phones, and Bluetooth devices all work within the 2.4 GHz frequency band.

IEEE 802.11g: The latest specification for wireless networking from IEEE. It operates in the 2.5-GHz frequency range and uses orthogonal frequency division multiplexing technology. Like 801.11a, 802.11g allows for speeds up to 54 Mbps.

Local Area Network (LAN): A group of computers typically networked in the same office, building, or campus. Computers on a LAN are connected together through cables or access points in order to share applications, data, peripherals, or other resources.

MAC Address: A unique 12-digital hexadecimal number applied to a network adapter at the factory. A MAC address, also known as hardware address or physical address, uniquely identifies an adapter on a LAN.

DHCP: An acronym for Dynamic Host Configuration Protocol, which is a protocol that enables an individual device on an IP network to retrieve its IP address and other settings from a server on demand. This dynamically assigned IP address is granted on a lease basis. Once a lease expires on a device, a new IP address may or may not be assigned the next time that device attempts to connect to the network.

Gateway: A hardware or software device that provides access to the Internet for multiple computers or networks. In the wireless world, a gateway is an access point providing additional features, such as NAT, DHCP, roaming, firewalls, and various levels of security.

Internet Protocol (IP): The established standard protocol for transmitting and receiving packets over the Internet. IP is a fundamental part of the TCP/IP protocol suite.

Network Segment: A group of hosts and nodes forming a network that is also part of a larger network. A local area network may be split into several network segments (subnets) in order to reduce traffic.

Proxy: A technique used to improve network operations and security. The proxy server receives requests intended for another server to prevent direct communication between two or more networks. The proxy server forwards allowable data requests to remote servers and/or responds to data requests directly from stored remote server data.

SSID: An acronym for Service Set Identification, sometimes referred to as the name of a wireless network.

Time Shifting: The recording of TV programs to some storage medium or buffer to be viewed at a time more convenient to the consumer. The buffer in WVR can be set up to a maximum of 60 minutes.

WLAN: Wireless Local Area Network. A type of local area network in which data is sent and received through high-frequency radio waves rather than cables or wires.