

# PacketV™ Manager



Visionary Solutions, Inc.

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# Chapter 1 Getting Started

## 1.1 Introduction

PackeTV™ Manager is a multifunction application that securely manages all Visionary Solutions, Inc. (VSI)-designed IPTV products. It incorporates all of the functionality of PackeTV™ Viewer and PackeTV™ Configuration Utility, as well as many unique features, into a single application.

PackeTV™ Manager includes an MPEG-2 standards compliant decoder, which enables users to view an AVN2XX generated stream/channel from a Windows-based PC. Channels may also be recorded to a file (.mpg file) for later viewing. A full featured MPEG-2 player is included, which enables the playback of previously recorded channels/streams (.mpg files). Numerous viewing options, including auto launch last channel, configurable window size/placement per channel, command line start, Always On Top, MPEG-2 decoder property management (I Frames only), and volume control are supported.

PackeTV™ Manager configuration features allow Administrators to discover all the AVN products on the network, query them and configure their properties, including IP properties (IP address, Netmask, and Gateway), encoding properties (bitrate, resolution, video input, destination address/port, etc.), and firmware version, using the firmware update dialog. Support for miscellaneous AVN specific features, such as General Purpose Input Output (GPIO) control (AVN200), Pan, Tilt, and Zoom (PTZ) cameras (AVN200 and AVN220) and dynamic audio control (AVN210 and AVN220) are also included.

PackeTV™ Manager enables full control of AVN generated channels/streams including, starting and stopping, refreshing (quick stop/restart of stream with same settings), video input cycling, and Stop Lock (prevents streaming without the Administrative Username and Password).

Lastly, PackeTV™ Manger gives full control over the creation and editing of PackeTV™ channel list files (.ptv extensions), which are used in both the Manager and the Viewer to keep track of AVN generated channels. The PackeTV™ Viewer requires access to a .ptv file in order to operate as it is not able to discover AVNs on the network and create .ptv files on its own. In this way the PackeTV™ Manger is able to control what channels the PackeTV™ Viewer is able to see.

This chapter provides instructions on installing the software; Chapter 2 provides instructions on how to use the Manager; and Chapter 3 provides additional information on the Manager menus and dialogs.

## 1.2 Installing the Software

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**Note:** *All hardware connections should be in place before you start the PackeTV™ Manager.*

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To install the software:

1. Close all Windows programs prior to starting the setup program.
2. **Installing PackeTV™ Manager from the CD.** If autorun is enabled, the CD will automatically launch the installation. If autorun is not enabled, explore the contents of the CD and double click **VisionarySolutionsSoftwareAndDocumentationSetup.exe** to begin installation.
3. **Downloading PackeTV™ Manager.** If the CD is not available, you can download the install file **VisionarySolutionsSoftwareAndDocumentation Setup.msi** from the web. Go to [www.vsicam.com/index.php?p=iptv\\_updates](http://www.vsicam.com/index.php?p=iptv_updates).

If the target PC does not have internet access, go to the Backup Install folder on the CD and select the install file, **VisionarySolutionsSoftwareAndDocumentationSetup.msi**. Note that the CD install file is likely to be older than the version available from the web with the **VisionarySolutionsSoftwareAndDocumentationSetup.exe**. Internet access is required to get the most current version of the PackeTV™ Manager.

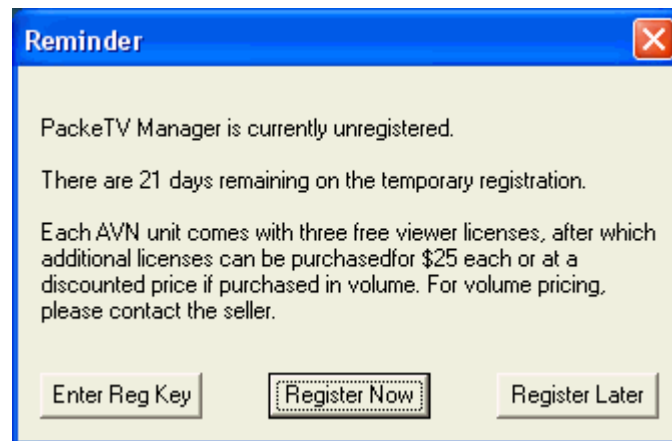
4. **The PackeTV™ Manager Installation Wizard.** Read the Welcome page and click **Next**.
5. **Select Features.** Select/check PackeTV™ Manager. The PackeTV™ Configuration Utility is required and will also be selected. Click **Next**.
6. **Software License Agreement.** Read the Software License Agreement. If you accept the terms of the license, select "I accept the license agreement" and click **Next** to proceed. If you do not accept the terms, click **Cancel** to exit the installation; no files will be copied.
7. **Destination Location.** Choose where you would like to install PackeTV™ Manager files. By default, the files will be installed in a directory named Visionary Solutions in the Program Files directory. Click **Next**.
8. **Start the Installation.** Click **Next** to begin installation.
9. **PackeTV™ Manager Successfully Installed.** Click **Finish** to exit the installation.

## 1.3 Registration

Each AVN200 unit comes with three free PackeTV™ Manager licenses. Additional licenses can be purchased for \$25 per license or at a discounted price if purchased in volume. For volume pricing of Manager licenses, please contact [avnsales@vsicam.com](mailto:avnsales@vsicam.com).

You may use PackeTV™ Manager for a 21 day trial period without registering. In order to use Manager after the trial period, you will need to register your manager with VSI. If the registration process is interrupted for any reason, you can click the Cancel button, when present, and return to complete the process at a later time.

1. Launch the PackeTV™ Manager application and select one of three options, each of which are explained in the following paragraphs: Enter Reg Key, Register Now, or Register Later.



2. **Enter Reg Key.** In order to register, click the **Enter Reg Key** button. You must have already received a PackeTV™ Manager registration key through the Visionary Solutions, Inc. website. For instructions on generating PackeTV™ Manager registration keys, refer to step 3.
  - a. **Enter Registration Key.** Enter your Username and Registration Key values. These values must match the information from vsicam.com's Registration page when you generated your registration key or your confirmation email.
  - b. **Valid Key.** A pop-up dialog box will appear to confirm registration. Click **OK** to launch PackeTV™ Manager.

If a data entry error is detected, a pop-up dialog box will appear prompting you to re-enter the data. Click **OK** to return to the Enter Registration Key pop-up dialog box. You can refer back to your confirmation email and copy and paste the Username and Registration Key values into the Enter Registration Key dialog box. Click **OK** to complete the registration and launch PackeTV™ Manager.

3. **Register Now.** If you have not registered your PackeTV™ Manager application and do not yet have your Username and Registration Key values, click the **Register Now** button.
  - a. **Hardware Fingerprint.** The Hardware Fingerprint value is shown in an edit box. To learn more about the Hardware Fingerprint value, click the **Info** button. This value will be automatically pasted into the correct edit field in the vsicam.com Register page once you are logged into your account. Click the **Continue** button. You will be directed to www.vsicam.com.
  - b. **Login** to your account or create one if you are a new user. After logging in, you will be directed to the PackeTV™ Viewer Registration system. The Fingerprint value should already be present in the edit field.

- c. **Enter a Username** for this registration key and determine the payment method. If you have free PackeTV™ Manager registration licenses associated with a specific product/serial number, leave the **Register Using Product/Serial #** checkbox selected and you will be asked for this information on the next page. Otherwise you can use any existing registration license purchased through the shopping cart by deselecting this box. Click the **Continue with Registration** button.
- d. **Registration page two.**
  - I. If the **Register Using Product/Serial #** checkbox from the first page is selected, enter the product information (Type, Serial Number, and Registration Number) associated with the product you are registering against and click the **Generate Registration Key** button. If the indicated product has an available license, then a registration key will be generated and displayed on the page along with the username. A Product Registration confirmation email containing all registration information and instructions will also be sent.
  - II. If the **Register Using Product/Serial #** checkbox from the first page was NOT selected and you have an existing registration license associated with your account (purchased through the shopping cart), a registration key with a Username will be generated and displayed near the top of the page. A Product Registration confirmation email containing all registration information and instructions will also be sent.

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**Note:** *All registration information associated with your account will be saved and available for viewing at a later date. When logged in to your vsicam.com account, click on the **Product Registration** option in the Login area or on your My Account page.*

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- e. **Copy the Registration Key value** from the Registration page or your confirmation email and remember your Username. These two pieces of information are used in step “g.” below. You can leave the vsicam.com Registration page open on your desktop (minimize the page if needed), for reference.
  - f. **Click the Enter Reg Key button.** If you wish to launch PackeTV™ Manager instead of registering now, click the **Start Manager** button. If you elect to finish your registration at a later time, do so by using the **Enter Reg Key** button on the Reminder dialog box, which will appear the next time you launch PackeTV™ Manager (see step 2).
  - g. **Enter Registration Key.** Enter your Username and Registration Key values. If needed, you can refer back to the Registration page or confirmation email to copy and paste your Username and Registration Key values.
  - h. **Valid Key.** A pop-up dialog box will appear to confirm registration. Click **OK** to launch PackeTV™ Manager. If a data entry error is detected, a pop-up dialog box will appear prompting you to re-enter the data. Click **OK** to return to the Enter Registration Key pop-up dialog box. You can refer back to the Registration Summary page and copy and paste the Username and Registration Key values into the Enter Registration Key dialog box. Click **OK** to complete the registration and launch PackeTV™ Manager.
4. **Register Later.** Click the **Register Later** button to bypass the registration and launch PackeTV™ Manager. You can register right away or opt to register up to 21 days after installing the manager. If you decide to register later, you will be prompted to register the Manager at startup until you have done so or until 21 days have expired.

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## Chapter 2 Using PackeTV™ Manager

The PackeTV™ Manager Network administrators can query and configure encoding properties, start, stop and view channel streams, and configure a predefined channel list file (.ptv) for the networks IPTV content customers who are using PackeTV™ Viewer. The Manager also plays and records video and audio files, full channel list control and auto discovery (of AVN encoders), and support for peripheral devices such as PTZ cameras and GPIO signals.

### 2.1 Running Multiple Instances of PackeTV™ Manager

There are no restrictions on the number of PackeTV™ Manager instances that can be run on a single client PC at any given time. Limiting factors, if any, would potentially be the system resources available on the client PC, i.e., memory, CPU, etc.

One way to dramatically reduce the demand for system resources, if desired, is to configure PackeTV™ Manager to decode only the I Frames of the video streams.

An MPEG-2 stream is made up of Intracoded Frames (I Frames), Predicted Frames (P Frames), and Bidirectional frames (B Frames). I Frames are pictures that are coded by using information present only in the picture itself and that do not depend on information from other pictures. P Frames and B Frames are coded with information that is dependent upon frames that come after and/or before the current frame. I Frames, then, are complete pictures while P and B Frames are not. P and B Frames help make the rendered MPEG-2 stream appear smoother to the human eye but also require more decoding, which increases the demand on the PC's CPU. So there is a trade off between picture/stream quality and CPU utilization. Decoding I Frames only is much easier for the PC but does not look as good to the manager.

To change the decoding properties of the video stream to I Frames:

1. Launch PackeTV™ Manager and click **Media> Video Properties**.
2. From the MPEG-2 Video Decoder Properties dialog box, select the **Settings** tab.
3. In the Performance Group, select **Decode I Frames only** then click **OK**.

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## 2.2 Opening and Closing Video Streaming Channels

### 2.2.1 Starting a Video Stream

There are three ways to start video streaming channels on the AVN using PackeTV™ Manager.

1. **At startup.** When first launching PackeTV™ Manager, the Options menu appears. Select an item from the Active Channels & Lists or AVNs on Network drop-down lists and click **OK**. This requires that channel settings have already been defined and saved.
2. **Starting from the PackeTV™ Manager Channel / List Management dialog boxes.** After launching PackeTV™ Manager, the Options menu appears, select **Channel / List Management** to add, modify, or control a channel. Click either **Start** or **Join**.
3. **From the PackeTV™ Manager menu bar.** At the PackeTV™ Manager menu bar, click **Channels> Open Channel**. In the Channel Name drop-down list, select the channel name of the AVN to open a connection to, and click **OK**.

The following paragraphs describe how to configure and operate Multicast and Unicast channels.

### 2.2.2 Starting or Joining a Multicast Channel

Opening a Multicast channel from PackeTV™ Manager enables a user to either start a new AVN-generated Multicast stream or join an existing one. If the AVN is stopped (not streaming), opening a channel starts the AVN video stream. If the AVN is already streaming, then opening a channel allows PackeTV™ Manager to join the Multicast stream.

1. From the PackeTV™ Manager Channel / List Management menu, select the desired channel or create a new one with the IP address of the AVN to be started or joined.
2. If starting a Multicast channel:
  - a. Set the Stream Type to Multicast.
  - b. Configure the other channel settings as desired and click **Save Channel Settings**.
  - c. Click **Start** to begin the Multicast channel.
3. If joining a Multicast channel:
  - a. Click the **Match** button. All channel settings will be changed to match the Multicast channels.
  - b. Click **Join** to join the existing Multicast channel.
4. Clicking **Start** or **Join** will automatically save all current channel settings.

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### 2.2.3 Closing a Multicast Channel

Disconnecting from a Multicast channel will disconnect the manager from the Multicast stream, but will not stop the AVN video stream. Other managers/decoders on the network will continue to receive the Multicast stream without interruption.

Stopping a Multicast channel causes all encoding to end. Other managers/decoders on the network will no longer receive the Multicast stream.

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**Note:** *If an Administrative Username and Password were used to start a video stream, the Administrative Username and Password will be required to stop the video stream.*

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To disconnect from a Multicast channel, select one of the following methods:

1. From the PackeTV™ Manager menu, click **Channels> Disconnect from Multicast Channel**.
2. Change the channel.
3. Close PackeTV™ Manager. From the main menu click **Channels> Exit**.

To stop a Multicast channel, select one of the following methods:

1. If connected to the channel, go to the PackeTV™ Manager menu, click **Channels> Stop Encoding**.
2. If not connected to the channel:
  - a. From the PackeTV™ Manager menu, click **Channels> Channel / List Management**.
  - b. Select the channel name of the AVN that you wish to stop and click the **Stop** button. The **Stop** button will be disabled if there is no stream coming from the specified AVN.

### 2.2.4 Opening a Unicast Channel

PackeTV™ Manager allows a user to open and start a Unicast stream from the AVN. In order to open a Unicast channel, the AVN must be in a stopped state.

1. From the PackeTV™ Manager Channel / List Management menu, select the desired channel or create a new one with the IP address of the AVN to be started.
2. Set the Stream Type to Unicast.
3. Configure the other channel settings as desired and click **Save Channel Settings**. Starting a stream also causes all current channel settings to be saved.
4. Click **Start** to begin the Unicast stream.

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## 2.2.5 Closing a Unicast Channel

Closing a Unicast channel causes the AVN to terminate the Unicast stream and enter a stopped state. Closing a Unicast channel is the same as stopping a Multicast channel as described in [2.2.3 Closing a Multicast Channel](#). Closing the PackeTV™ Manager application by any means will close the current Unicast channel.

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**Note:** *If an Administrative Username and Password were used to start a video stream, the Administrative Username and Password will be required to stop the video stream.*

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1. To close a Unicast channel while connected to the stream, go to the PackeTV™ Manager menu bar, select **Channels> Stop Encoding**.
2. To close a Unicast channel while not connected to the stream, go to the PackeTV™ Manager menu bar, click **Channels> Channel / List Management**. Select the channel name of the AVN that you wish to stop and click the Stop button. This selection will terminate the Unicast stream generated by the AVN and return the unit to a stopped state. The **Stop** button will be disabled if there is no stream coming from the specified AVN.


## 2.3 Recording Streaming Video

The recording feature enables the easy capture of streaming video from an AVN to a predefined directory. The filename is generated automatically based upon a concatenation of the date, time, and channel name. Every time that a recording is started, a new file is created and placed in the predefined directory.

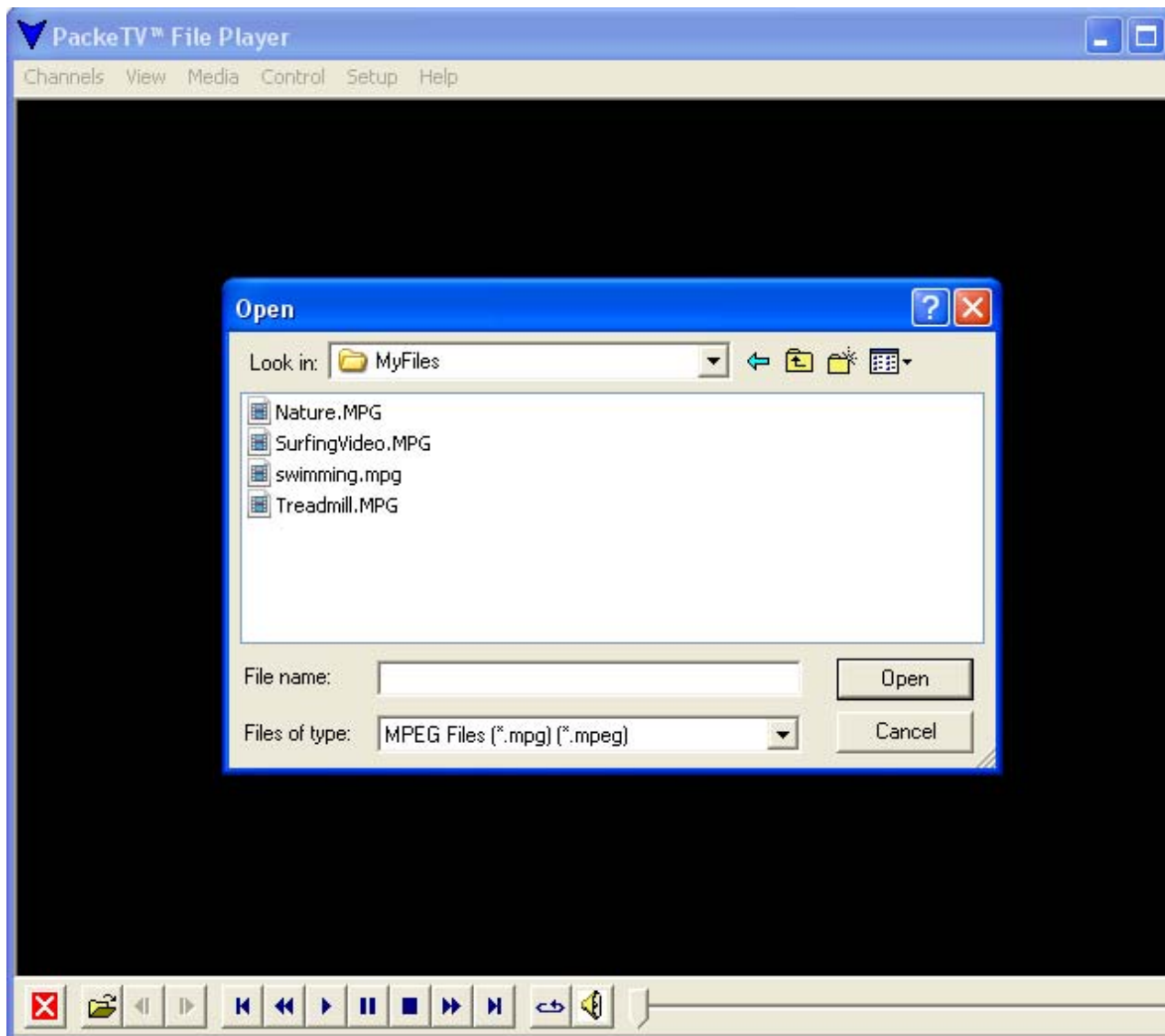
Before you can record a file, you must first define a record directory. Your options are to either define a default record directory or define a channel specific directory. Under [3.9 Setup Menu](#), see paragraphs *Edit Default Record Directory* and *Edit Channel Record Directory*.

To start recording an AVN stream, follow these steps:

1. Define a record directory. From the PackeTV™ Manager menu bar:
  - a. Click **Setup> Edit Default Record Directory** (to define a default record directory); or
  - b. Click **Setup> Edit Channel Record Directory** (to define a channel specific directory).
2. Start recording one of three ways:
  - a. Go to the PackeTV™ Manager menu bar, click **Control> Start/Stop Recording**;
  - b. Click on the  button (Record) on the toolbar; or
  - c. Double right-click on the viewing area. Double right-clicking starts AND stops the recording.
3. Stop recording one of three ways:

- a. Go to the PackeTV™ Manager menu bar, click **Control> Start/Stop Recording**;
  - b. Click on the  button (Stop) on the toolbar; or
  - c. Double right-click on the viewing area.
4. A new file will be created and placed in the designated directory each time a recording is started.

## 2.4 Playing Recorded Files



1. Launch the PackeTV™ File Player.
2. From the main menu, click **Control> Play Recorded File**, or from the Options dialog, select the **Play Recorded File** button and click **OK**.

3. By default, the PackeTV™ File Player starts with the Open File dialog displayed in the predefined default directory.
4. Select the recorded file that you want to play and click **Open**.
5. Once the file is loaded, click the **Play** button.

## Chapter 3 PackeTV™ Manager Menus

This chapter provides additional information on the PackeTV™ Manager menus. Features may vary according to the AVN.

### 3.1 PackeTV™ Manager Options Menu

The PackeTV™ Manager Options menu will display when the software is first launched or when the options menu is selected from the main Channel Menu. This dialog box allows you to initiate an existing channel, create or load a new channel list, modify an existing channel list, link to the Channel / List Management menus, or play an existing MPEG file.

The screenshot shows the 'PackeTV™ Manager Options' dialog box. It has a blue title bar with a close button (X) in the top right corner. The dialog is divided into several sections:

- Connect to:** This section is selected with a radio button. It contains two sub-sections:
  - Active Channels & Lists:** Contains a 'List Name' dropdown menu with 'New\_Channel\_List' selected and a 'Load Channel List' button.
  - Channel Name & IP Address:** Contains a dropdown menu with 'Channel 192.168.1.33' selected and a text field containing '192 . 168 . 1 . 33'.
- AVNs on Network:** This section is selected with a radio button. It contains:
  - Network Selection:** Two radio buttons, 'All Networks' (selected) and 'Single Network'. The 'Single Network' option has a dropdown menu with '192.168.1.0' selected.
  - AVNs on Selected Network(s):** A dropdown menu with 'IP Addresses ( Serial# ) 192.168.1.33 ( SN: 1064 )' selected.
  - Three buttons: 'Create New List...', 'Add to Existing List...', and 'More Info on Options'.
- Channel / List Management... ( add, remove, edit )**: A radio button option.
- Play File... ( Open the player to view a saved file )**: A radio button option.

At the bottom of the dialog are two buttons: 'OK' and 'Cancel'.

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**Connect to:****Active Channels & Lists**

- List Name** A drop-down box listing currently loaded channel lists.
- Load Channel List** This button allows the user to browse the PC for existing channel lists (.ptv) files.

**Channel Name & IP Address**

A drop-down box listing the channels in the currently selected list. The settings associated with the selected channel will be used to join or start a stream.

**AVNs on Network**

- Network Section** Allows a user to select which network(s) the PackeTV™ Manager uses when discovering, listing, and connecting to AVNs. Note that if you attempt to connect to an AVN which does not have a channel associated with it, you will be directed to the Channel List / Management menu to create a new channel and add it to an active channel list.

**All Networks** – Discovers and lists the AVNs on all network interfaces.

**Single Network** – Selects a single network interface from a drop-down list of all available networks. Once a network is selected, all AVNs on that network will be discovered and listed in the drop-down list displayed in the AVNs on Selected Network(s) drop-down list. Note that if a PC only has a single network interface, selecting the All Networks or the Single Networks options will have the same result.

**AVNs on Selected Network(s)**

**IP Addresses (Serial #)** – A drop-down list displaying all AVNs on the selected network(s) by IP address and serial number.

**Create New List** – This button prompts for a channel list name and path, and then automatically populates the list by creating a new channel for every IP address included in the AVNs on Selected Network(s) drop-down list. Duplicate IP addresses are allowed with this option. New channel names will display as “Channel: IP address.”

**Add to Existing List** – This button is only enabled when there are one or more active channel lists. It allows newly discovered AVNs on the network to be included in the selected channel list (see *List Name* above) without having to first find the unit and its IP address. All unique IP addresses from the AVNs on Selected Network(s) drop-down list will automatically be added to the selected list. A unique IP address is one that is not currently associated with any channel on the selected channel list. If the selected channel list has a channel with its "AVN\_IP\_Address=XXX" member equal to one of the IP addresses to be added, a new channel will not be added

for that IP address. New channel names will display as "Channel: IP Address."

**More Info on Options** – This button provides an explanation of the **Create New List** and **Add to Existing List** buttons.

### Channel / List Management

Add, remove, or modify channels and channel lists, refer to the *3.2.1 Basic Menu*, *3.2.2 Advanced Menu*, and *3.2.3 AVN210 and AVN220 Advanced Audio Menu* sections.

**Play File** Run a recorded stream or an existing MPEG file.

## 3.2 Channel / List Management Menus

The PackeTV™ Manager Channel / List Management menus allow the user to create, remove, edit, and save one or more connection profiles (channels) and or lists, as well as to start, stop or join an AVN-generated video stream. The Basic and Advanced menus provide Channel List management setup, access, and configuration settings. The Advanced Audio menu tab, not available on the AVN200, configures the audio settings for a new stream.

The Current AVN Channel Settings panel displays at the bottom of each menu, allowing the user to view the AVN's current settings and controls that can start or stop a video stream from each screen.

The sections that follow describe the Channel / List Management menus.

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**Note:** *Most of the channel settings on the Basic, Advanced and Advanced Audio dialogs encode parameters that cannot be changed dynamically. As a result, these settings are only valid when starting a stream and they have no impact when joining an existing stream.*

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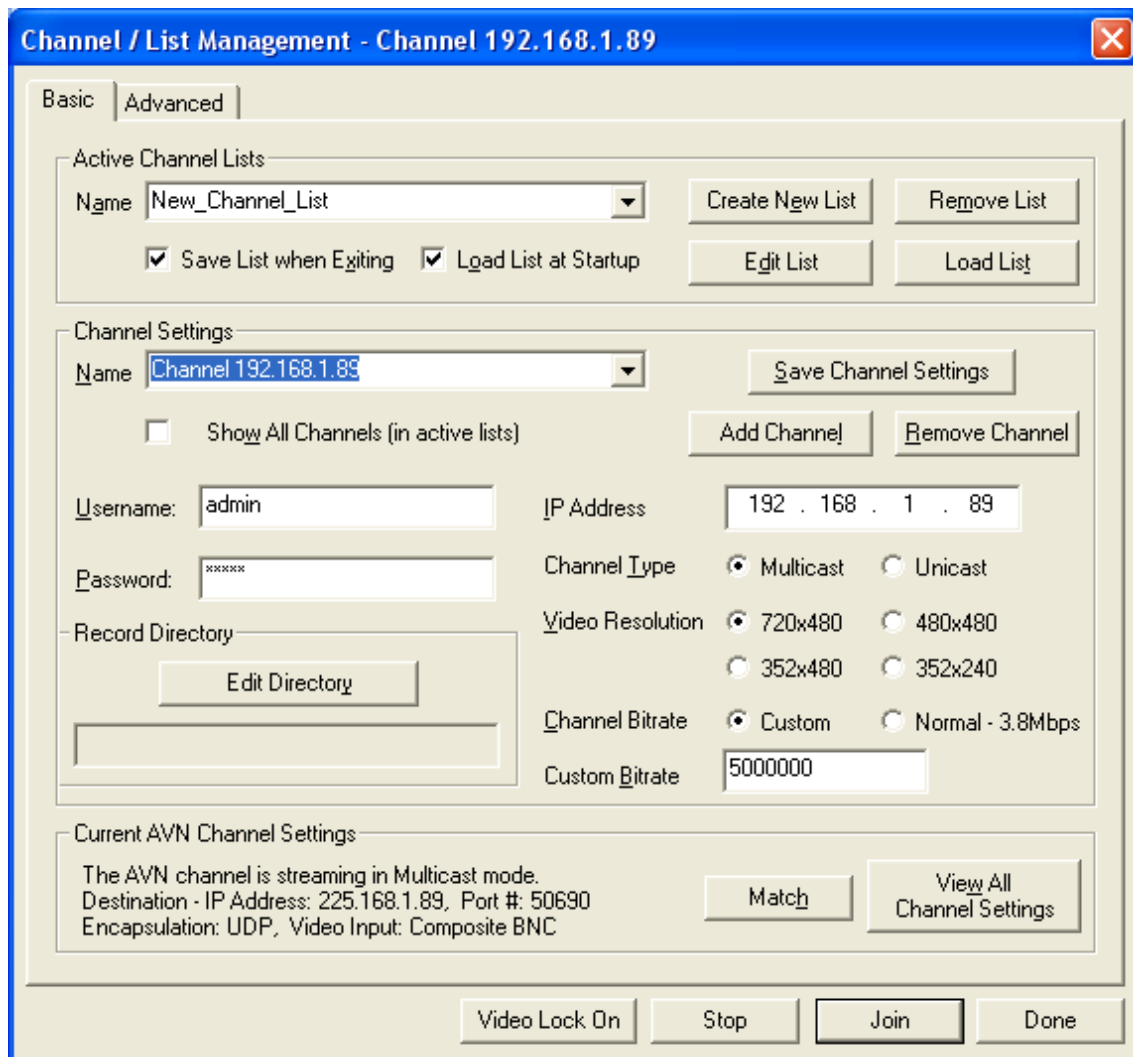
### 3.2.1 Basic Menu

#### Active Channel Lists

**(List) Name** A drop-down list containing all the currently active Channel Lists by name.

**Save List when Exiting** – When this box is checked, the Channel List will be saved (written to the .ptv file) when the PackeTV™ Manager application exits. All channel settings associated with this list will be saved. When not checked all list modifications (new channels and or channel settings) will not be saved.

**Load List at Startup** – When this box is checked, the channel list will be loaded automatically into the active lists when PackeTV™ Manager starts.



**Create New List** This button displays the new list dialog which prompts for the name and path of the new list along with the first channels name (all channel lists must have at least one channel). After creating the new list and channel, enter a valid AVN IP address and click the **Save Channel Settings** button. All new channels start with IP addresses of 0.0.0.0.

**Remove List** The **Remove List** button removes the selected channel list from the PackeTV™ Manager's active lists.

**Edit List** The **Edit List** button displays the edit list dialog which enables the name and path of the list to be changed.

**Load List** The **Load List** button opens a browser dialog which enables the user to select and load a channel list file. All channel list files have a “.ptv” extension.

### **Channel Settings**

**(Channel) Name** A drop-down list containing the channel names in either all active channel lists or only the currently selected channel list depending upon the **Show All Channels** checkbox. Each channel name in the list has its own set of saved values. As a channel name is selected, its associated values are displayed in the Channel List / Management menus.

**Show All Channels (in active lists)** – When this box is checked, the (Channel) Name drop-down list will display all channels on the active channel lists.

### Save Channel Settings

This button saves all the values as displayed in the Channel / List Management menus (Basic, Advanced, Advanced Audio) with the selected channel name.

**Add Channel** This button creates a new channel and adds it to the currently selected channel list. After naming the new channel, a valid IP address will need to be entered and the channel settings saved. All new channels start with an IP address of 0.0.0.0.

**Remove Channel** This button removes the currently selected channel from its channel list.

**Username** If required, enter the Username assigned to your AVN.

**Password** If required, enter the Password assigned to your Username.

**IP Address** Enter the IP address of the AVN that PackeTV™ Manager is to connect to.

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**Note:** *The Channel Type option is designed for click and go play action, and automatically sets the destination IP address to a valid value. Selecting Multicast simply sets the destination IP address to a valid Multicast IP address based upon the AVN's IP address. Selecting Unicast sets the destination IP address to the current PC. If the destination IP address is reset in the Advanced menu, the Channel Type will be changed accordingly.*

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**Channel Type** Selects the type of video channel connection. Multicast allows one or more users to view an AVN video channel. Unicast allows only a single user to view an AVN video channel.

**Video Resolution** If starting a channel (Unicast or Multicast), this value determines the video resolution of the AVN-generated channel. If joining a Multicast channel, the video resolution determines the size of the viewing window.

**Channel Bitrate** If starting a channel (Unicast or Multicast), sets the MPEG output bit rate of the AVN-generated channel to the default value of 3.8 Mbps. Choices are Normal at 3.8 Mbps or Custom. If joining a Multicast channel, this option has no effect and disables the Custom Bitrate edit box. Clicking the Custom radio button activates the Custom Bitrate edit box.

**Custom Bitrate** If starting a stream (Unicast or Multicast), sets the MPEG output bit rate of the AVN-generated stream. Possible values range from 1.5 Mbps to

7.5 Mbps for the AVN200 and 210, and 1.5 Mbps to 15 Mbps for the AVN220. If joining a Multicast stream, this option has no effect.

**Record Directory** This area displays the directory where recorded files will be stored for this channel. To change directories, click the **Edit Directory** button, which will launch the Channel Record Directory dialog. For more information on configuring a channel record directory, see *3.9 Setup Menu*.

The following display area and buttons are the same on all of the Channel List / Management menus.

### **Current AVN Channel Settings**

This area displays the current status of the AVN specified in the IP Address edit box. If the AVN unit is in Multicast mode, other data about the channel is also displayed, including the destination IP address and destination port, the encapsulation method, and the video input.

**Match** The **Match** button queries the current channel settings for the AVN Multicast channel specified in the IP Address field on the PackeTV™ Manager Channel / List Management menu and sets all of the currently displayed channel list values to "match" those settings. This is an easy way to ensure that all the channel settings needed for a successful Multicast Join are set properly. This button is only enabled when there is a stream coming from the specified AVN.

### **View All Channel Settings**

This button displays some of the encoder settings for the current AVN Multicast channel specified in the Destination IP Address field on the PackeTV™ Manager Channel / List Management menu. This button is only enabled when there is a Multicast channel coming from the specified AVN.

**Video Lock On/Off** This button enables the AVN specified in the IP Address edit box to be "locked" or "unlocked" in a stopped state. This feature requires using the Administrative Username and Password (refer to *Using the Administrative Privileges* in the appropriate AVN user manual). When selecting Video Lock On, the AVN will stop the current video channel and not allow a new channel or session to be started. The AVN will remain locked until either Video Lock Off is selected or the AVN is reset by a user with an Administrative Username and Password.

The lock state of the AVN can also be changed from the PackeTV™ Manager Setup menu (refer to *3.9 Setup Menu*).

**Stop** The **Stop** button ends the current video channel (Unicast or Multicast) on the AVN specified in the IP Address edit box.

If an Administrative Username and Password were used to start a video channel (Multicast or Unicast), the Administrative Username and Password will be required to stop the video stream.

**Start / Join**

Depending upon the state of the AVN specified in the IP Address edit box, this button will be labeled as either **Start** or **Join**. If a Multicast channel is already in progress from the AVN, the button will be labeled **Join** and clicking it will enable PackeTV™ Manager to join the Multicast stream. If there is no channel from the AVN, then the button will be labeled **Start**, and clicking it will start a video channel (either Unicast or Multicast) with the current channel settings specified on the Channel / List Management menus.

**3.2.2 Advanced Menu**

The screenshot shows the 'Channel / List Management - Channel 192.168.1.89' dialog box with the 'Advanced' tab selected. The settings are as follows:

- Video Input:** Composite (BNC) is selected.
- Video Format:** NTSC is selected.
- Channel Destination:** Destination IP Address is 225.168.1.89, Destination Port is 50690.
- Audio Bitrate ( kbps ):** 256 is selected.
- Quality Of Service:** Forward Error Correction is Off, Burst Size is 2, and Number of Bursts is 10.
- Encapsulation:** UDP is selected.
- Window Settings:** Hide Menu/Title bar when connected is No, Resizable Window is No, Make Channel's window always on top of other windows is unchecked, and Use Channel's last window position & size when connecting is unchecked.
- Current AVN Channel Settings:** The AVN channel is streaming in Multicast mode. Destination - IP Address: 225.168.1.89, Port #: 50690. Encapsulation: UDP, Video Input: Composite BNC. Buttons for Match and View All Channel Settings are present.

At the bottom of the dialog, there are buttons for Video Lock On, Stop, Join, and Done.

**Video****Input**

If starting a stream (Unicast or Multicast), this setting determines the video source type that the AVN is to encode and stream. Choices for the AVN200 and AVN220 are Composite (BNC) or S-Video. Choices for the AVN210 are S-Video, Composite BNC or Composite RCA. If joining a

Multicast stream, this option has no effect. The video input will remain as set when the stream was started.

**Format**

If starting a stream (Unicast or Multicast), this setting determines the video format that the AVN is to encode and stream. NTSC is the standard video format in the United States, while PAL is the European standard video format. If joining a Multicast stream, this option has no effect.

**Channel Destination****Destination IP Address**

Displays the destination IP address of the AVN stream. The destination IP address is automatically generated based on the IP address specified in the IP Address edit box on the PackeTV™ Manager Channel / List Management menu. For Multicast streams, the default value is 225.x.x.x, where x.x.x matches the last three fields of the IP address. Valid Multicast IP addresses range from 225.x.x.x to 239.x.x.x. All other addresses are considered Unicast, even if the stream type is set to Multicast on the PackeTV™ Manager Channel / List Management **Basic** menu. For Unicast streams, the Destination IP Address edit box is disabled as it is assumed that the PackeTV™ Manager's PC will be the stream's destination.

The destination IP address setting is used in both starting and joining a Multicast stream. If joining a Multicast stream, the destination IP address must match the destination IP address of the Multicast stream that has already been started. By clicking the **Match** button (see *Match* below), all of the local PackeTV™ Manager Channel / List Management values will be changed to "match" the current AVN stream settings that you will be joining.

**Destination Port**

Displays the destination port number used for the AVN stream. A default value is automatically generated by an algorithm based upon the IP address specified in the IP Address edit box on the PackeTV™ Manager Channel / List Management **Basic** menu.

The algorithm is as follows: IP Address A.B.C.D generates a UDP Port =  $50000 + ((C\%16)*512) + (D*2)$ , where A-D are the four octets of the IP address. This algorithm changes the destination port value each time the IP address specified in the IP Address edit box on the PackeTV™ Manager Channel / List Management **Basic** menu changes.

The AVN stream requires two UDP Ports: the specified port and the next higher port number. The next higher port number is reserved for RTP, even when the Encapsulation value is set to UDP. If the specified UDP Port is 50978, the AVN stream will use this port and port 50979.

A unique Destination Port number is required for each AVN unit streaming if multiple instances of PackeTV™ Manager are to be used simultaneously on a single client PC. For example, two AVN units, both streaming on UDP port 50010, could not be viewed at the same time on a single client PC.

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However, if one AVN started a stream on UDP port 50010 and another started a stream on 50012, accounting for the reserved RTP port on 50011 from the first AVN, both instances could be viewed simultaneously on a single client PC.

**Audio Bitrate (kbps)** If starting a stream (Unicast or Multicast), this setting determines the audio bitrate that the AVN is to encode and stream. Choices are 256 kbps, 384 kbps or Off (no audio encoding). If joining a stream, this option has no effect. The audio bitrate will remain as set when the stream was started.

### **Quality of Service**

#### **Forward Error Correction**

Forward Error Correction (FEC) embeds information in each packet that can be used to recover lost packets. It allows robust transmission over WAN networks. FEC adds approximately a 10% overhead in bit rate to accomplish this goal.

If starting a Unicast stream, the FEC On or Off option is enabled. If starting a Multicast stream with FEC set to On, the Encapsulation setting (see *Encapsulation* below) must be set to RTP.

If joining a Multicast stream, this setting must match the stream's current FEC settings (On or Off) in order to decode the stream properly. Using the Match button when joining a Multicast stream (see *Match* above) is an easy way to ensure that all of the local channel lists "match" the AVN stream settings that you will be joining.

**Burst Size** The Burst Size value entered determines the number of lost packets that can be recovered. Higher numbers increase the latency of the image, but output a more robust transmission. Possible values are 1 to 3.

**Number of Bursts** The Number of Bursts value entered determines how many packets are sent between FEC packets. Possible values are 5 to 10.

**Encapsulation** Displays the packet encapsulation method used during transport. Choices are UDP or RTP.

### **Window Settings**

#### **Hide Menu/Title bar when connected**

Designates whether to hide or display the menu and title bar when the channel is rendered. If the menu and title bar are hidden, show them again by pressing the **Esc** key. Selecting **Yes** enables the resizing option.

**Resizable Window** Indicates whether the window can be resized or remains a fixed size when the menu and title bar are hidden.

**Make Channel's window always on top of other windows**

When checked, keeps the PackeTV™ Manager window the top most window on the screen. This allows the Manager to remain visible while other programs are maximized.

**Use Channel's last window position & size when connecting**

When checked, the PackeTV™ Manager will use the channel's last saved window position and size information when reconnecting. If this is a new channel, the last channel's position and size information will be used.

**3.2.3 AVN210 and AVN220 Advanced Audio Menu**

The Advanced Audio menu enables you to configure the AVN210 and AVN220 audio settings for a new stream.

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**Note:** *To dynamically control the audio settings of an existing AVN210 or AVN220 stream, you can also open the Advanced Dynamic Audio Control menu by selecting **Control** > **AVN210 / AVN220 Features** > **Advanced Audio**.*

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**Note:** *The **Balance, Tone, Bass, and Treble** controls are not used on the AVN220.*

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<b>Audio Input</b>	If starting a stream (Unicast or Multicast), this setting determines the audio input source. Choices are Balanced or Unbalanced.
<b>Balance (AVN210 only)</b>	If starting a stream (Unicast or Multicast), this setting determines the initial balance. The valid range is from -10 (all left) to 10 (all right).
<b>Tone (AVN210 only)</b>	If starting a stream (Unicast or Multicast), this setting determines the scale of the Bass and Treble values with regards to boosting. If set to Flat, no boosting of Bass or Treble occurs regardless of the Bass and Treble values set. If set to Minimum, the Bass and Treble values have a boosting effect but the scale of the values is not set to its maximum. If set to Maximum, the Bass and Treble values are fully scaled allowing the maximum boost possible.
<b>Volume</b>	If starting a stream (Unicast or Multicast), this setting determines the pre-amp and master volume settings.

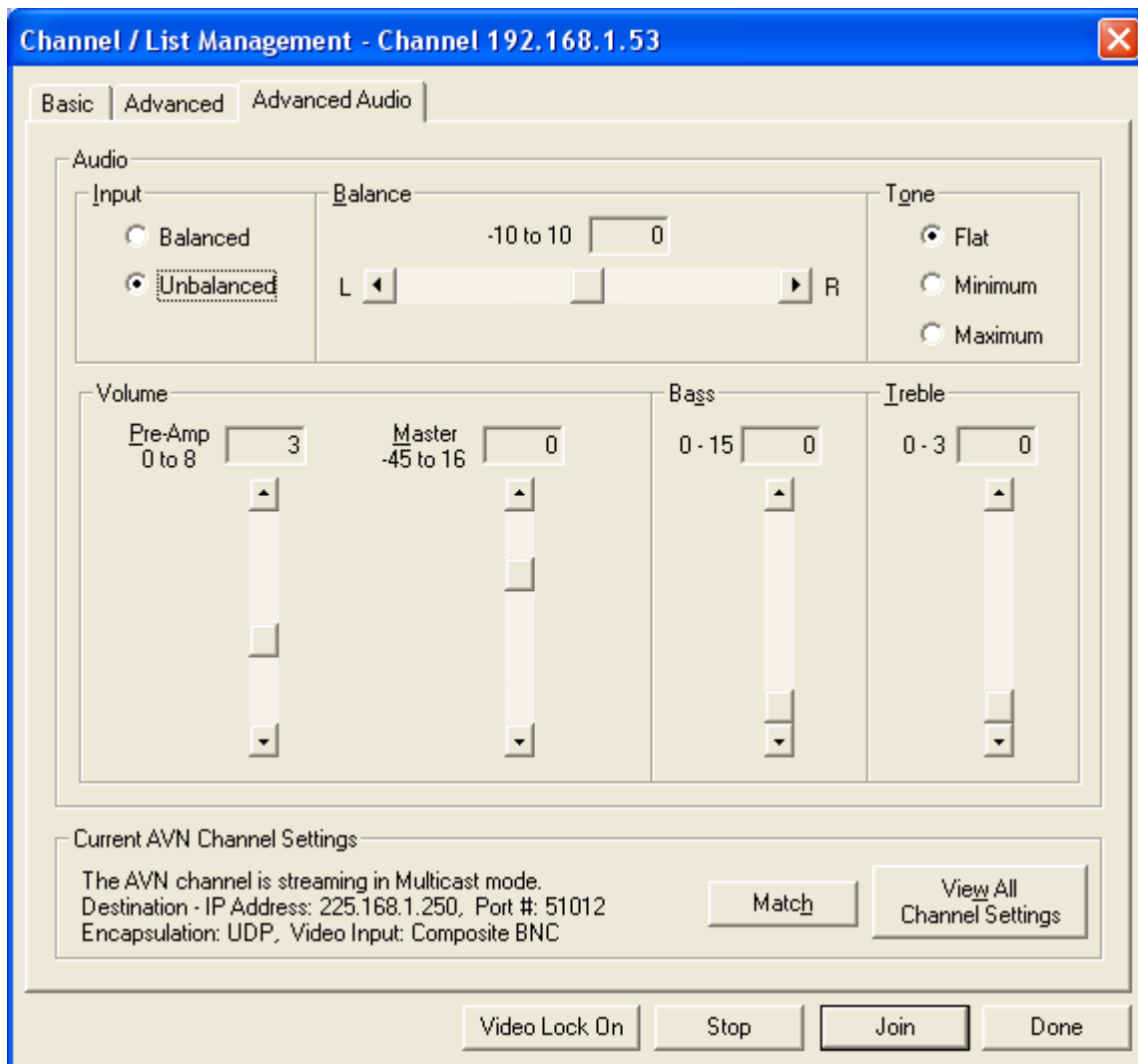
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**Warning:** **If the volume gains (Pre-Amp or Master) are set too high, audio clipping will occur.**

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**Pre-Amp** – If starting a stream (Unicast or Multicast), this setting amplifies the inbound analog input. This can be used to boost a weak audio signal, but should only be used by advanced users who know that their audio input levels are low. The valid range is from 0 (no Pre-Amp) to 8 (most Pre-Amp).

**Master** – If starting a stream (Unicast or Multicast), this setting determines the initial volume. The valid range is from -45 (quiet) to 16 (loudest).



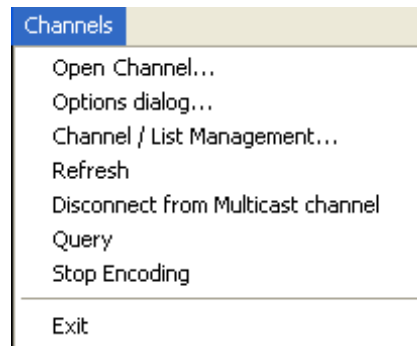
**Bass  
(AVN210 only)**

If starting a stream (Unicast or Multicast), this setting determines the initial bass level. The valid range is from 0 (no bass boost) to 15 (maximum bass boost). The bass level is affected by the tone setting (see Tone).

**Treble  
(AVN210 only)**

If starting a stream (Unicast or Multicast), this setting determines the initial treble levels. The valid range is from 0 (no treble boost) to 3 (most treble boost). The treble level is affected by the tone setting (see Tone).

## 3.3 Channels Menu



**Open Channel** Displays the Open Channels dialog box, which lists all the channels on the active channel lists and allows them to be started or joined.

**Options dialog** Displays the Options dialog box, refer to section 3.1.

### **Channel List / Management**

Displays the Channel List / Management menus, refer to section 3.2.

**Refresh** Stops and restarts the AVN stream at the channel IP address using the same settings.

### **Disconnect from Multicast channel**

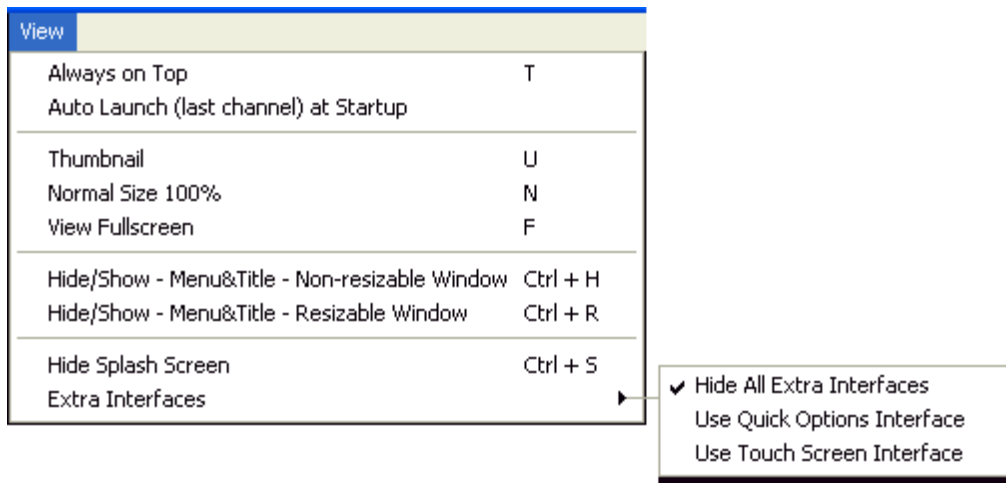
Disconnects the PackeTV™ Manager from the current Multicast channel without terminating the AVN-generated stream. Refer to *2.2.3 Closing a Multicast Channel*.

**Query** Displays the current AVN stream's settings.

**Stop Encoding** Terminates the AVN-generated stream (Multicast or Unicast). Refer to *2.2.3 Closing a Multicast Channel* and *2.2.5 Closing a Unicast Channel*.

**Exit** Closes the PackeTV™ Manager window and terminates any connection to the AVN. If the PackeTV™ Manager is connected to an AVN Multicast stream, the Multicast stream will not be stopped.

## 3.4 View Menu



**Always on Top** Designates the viewing area window to be the top most window.

### Auto Launch (last connection) at Startup

Allows the PackeTV™ Manager to skip the initial Options dialog during startup and immediately begin rendering the last viewed channel.

**Thumbnail** Resizes the viewing area to its minimum size.

**Normal Size 100%** Resizes the viewing area to its default size.

**View Full Screen** Resizes the viewing area to its maximum size. To get out of the full screen viewing mode, press the **Esc** or **F** keys.

### Hide/Show - Menu&Title - Non-resizable Window

Hides or displays the menu and title bars. When the menu and title bars are hidden, the window cannot be resized, effectively locking the window in place. To display menu and title bar again, press the **Esc** or the **Ctrl + H** keys.

### Hide/Show - Menu&Title - Resizable Window

Hides or displays the menu and title bars. When the menu and title bars are hidden, the window can be resized. To display menu and title bar again, press the **Esc** or the **Ctrl + R** keys.

**Hide Splash Screen** Hides or displays the application's initial splash screen.

**Extra Interfaces** **Hide All Extra Interfaces.** This option disables all extra interfaces.

**Use Quick Options Interface.** This option toggles (enables/disables) the Quick Options Interface. When enabled this interface is displayed when the user left clicks on the view window. Please refer to [3.13.1 Quick Options Dialog Box](#) for more on the Quick Options Interface.

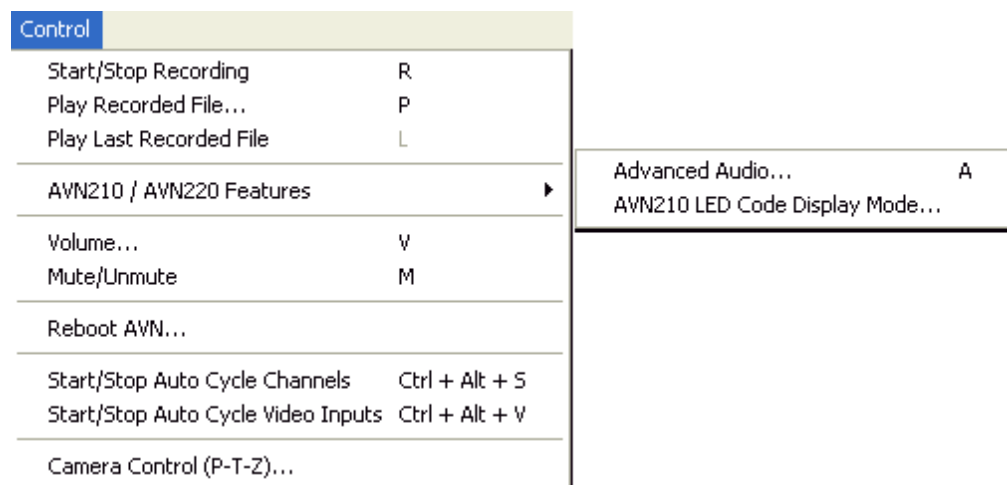
**Use Touch Screen Interface.** This option toggles (enables/disables) the Touch Screen Interface. When enabled this interface is displayed when the user left clicks on the view window.

## 3.5 Media Menu



- Audio Stats** Displays the current audio statistics.
- Video Stats** Displays the current video statistics.
- Network Stats** Displays the current network statistics.
- FEC Stats** Displays the current FEC statistics.
- Audio Properties** Displays the Audio Properties dialog box.
- Video Properties** Displays the Video Properties dialog box. This dialog box allows the adjustment of picture brightness and other decoder settings.

## 3.6 Control Menu



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### Start/Stop Recording

This is a toggle selection that either starts or stops recording (refer to 2.3 *Recording Streaming Video*). When using Record, a filename will automatically be generated based on a concatenation of the date, time, and current channel name. You can also double-right click on the viewing area to start or stop recording.

**Play Recorded File** Opens the PackeTV™ File Player and a file browser, enabling a recorded .mpg file to be loaded and played. Refer to section 2.4 *Playing Recorded Files*.

### Play Last Recorded File

Opens the PackeTV™ File Player and automatically loads the last recorded file. This option is disabled until a file has been recorded.

### AVN210/AVN220 Features

These options are not available for the AVN200. Opens the Advanced Dynamic Audio Control and LED Code Display Mode dialog boxes as described in sections 3.7 and 3.8.

**Volume** Displays a vertical slider for volume control and a checkbox at the bottom to mute the volume. The volume control adjusts the PackeTV™ Manager volume only and not the volume of your PC.

**Mute/Unmute** Turns Audio, if present in the stream, On and Off.

**Reboot AVN** Selecting this option will cause the AVN to perform a soft reboot. If the AVN is video streaming when a reboot is issued, the AVN will be reset to a stopped state.

When selected, a pop-up dialog box will appear. Even though the current or last connection's IP address, Username, and Password are automatically filled in, you can change these values to reboot any AVN connected to your network.

Note that if the Administrative Username and Password were used to start a video stream or to turn Video Lock on, the Administrative Username and Password will be required to reboot the video stream.

### Start/Stop Auto Cycle Channels

Selecting this option starts or stops the auto cycling of channels from the Currently Streaming list. When the Auto Cycle Channels option is started, each channel (in the Currently Streaming List) will be viewed for a specified time before "cycling" (changing) to the next channel. To configure the amount of time a channel is to be viewed before cycling, click **Setup> Config Auto Cycle Times**. Channel cycle times can range from 5 seconds to 10 minutes.

### Start/Stop Auto Cycle Video Inputs

Selecting this option starts or stops the auto cycling of the video inputs (Composite (RCA and/or BNC), S-Video) from the AVN encoder associated with the currently viewed channel. This option is only available when viewing a single channel and is disabled when auto cycling channels. To configure the amount of time a video input is to be viewed before cycling, click **Setup> Config Auto Cycle Time**. Video input cycle times can range from 2 to 60 seconds.

### Camera Control (P-T-Z)

Displays the Camera Control dialog box and allows PackeTV™ Manager to control the camera that is connected to the AVN200 or AVN220 via a serial connection. The channel must be configured using the Camera Setup dialog. To open this dialog box, select **Setup> Camera Setup**.

Not available on the AVN210.

## 3.7 Advanced Dynamic Audio Control Menu

The Advanced Dynamic Audio Control menu (for the AVN210 and AVN220) enables the changing of stream encoding parameters without stopping the stream. Changes take effect immediately and since they affect the stream's encoding, they affect the entire stream and all decoders.

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**Note:** *If the AVN210 or AVN220 stream to be controlled was started with the Administrative Username/Password, then the same Username/Password will be required to access and use the Advanced Audio Control dialog box. If joining a stream, enter the correct Username/Password on the Channel / List Management Basic menu prior to Joining, or alternatively a dialog will prompt for the correct Username/Password.*

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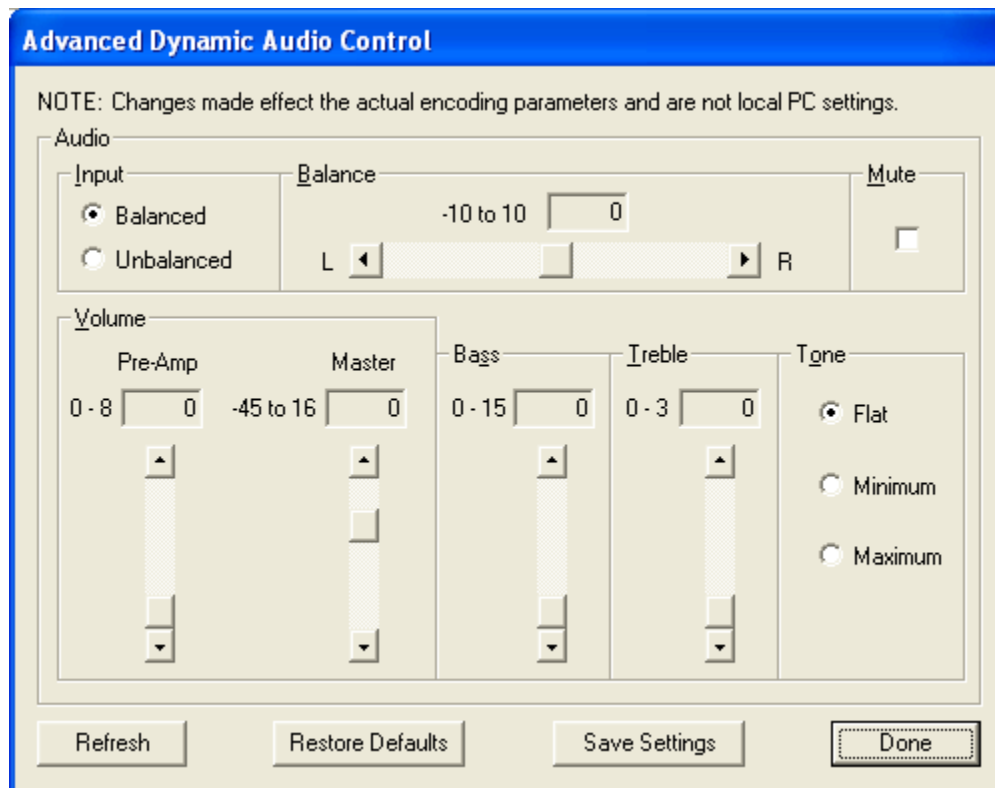
**Note:** *The Balance, Tone, Bass, and Treble controls are not used on the AVN220.*

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<b>Audio Input</b>	Sets the audio input source. Choices are Balanced or Unbalanced.
<b>Balance (AVN210 only)</b>	Sets the balance. The valid range is from -10 (all left) to 10 (all right).
<b>Mute</b>	If checked, the Mute checkbox prevents audio input from being sent to the encoder. This does not lower the overall stream bit rate, however, as the encoder simply encodes silence.

**Warning:** If the volume gains (Pre-Amp or Master) are set too high, audio clipping will occur.

- Pre-Amp** If starting a stream (Unicast or Multicast), this setting amplifies the inbound analog input. This can be used to boost a weak audio signal, but should only be used by advanced users who know that their audio input levels are low. The valid range is from 0 (no Pre-Amp) to 8 (most Pre-Amp).
- Master** If starting a stream (Unicast or Multicast), this setting determines the initial volume. The valid range is from -45 (quiet) to 16 (loudest).
- Bass (AVN210 only)** Sets the bass level. The valid range is from 0 (no bass boost) to 15 (max bass boost). The bass level is affected by the tone setting (see Tone).



**Treble (AVN210 only)** Sets the treble level. The valid range is from 0 (no treble boost) to 3 (most treble boost). The treble level is affected by the tone setting (see Tone).

**Tone (AVN210 only)** Sets the scale of the Bass and Treble values with regards to boosting. If set to Flat no boosting of Bass or Treble occurs, regardless of the Bass and Treble values set. If set to Minimum the Bass and Treble values have a boosting effect but the scale of the values is not set to its maximum. If set to Maximum, the Bass and Treble values are fully scaled allowing the maximum boost possible.

**Refresh** Updates the dialog's values to reflect the AVN's current audio settings.

<b>Restore Defaults</b>	Sets the AVN audio settings to the factory default settings.
<b>Save Settings</b>	Saves all of the AVN's current audio settings. Saved audio settings are retained if the unit is rebooted.
<b>Done</b>	Closes the dialog menu.

### 3.8 AVN210 LED Code Display Mode Dialog Box

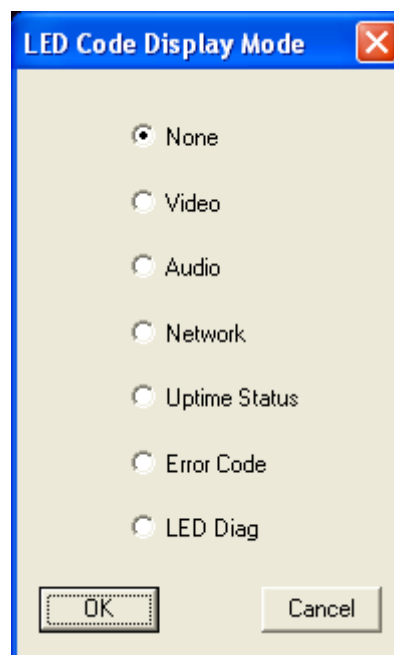
A set of four LED indicators are provided on the AVN210 as user configurable operational indicators. These LEDs are always green in color. They can be set by the user into different modes to provide a visual indication of a specific operation important to the user, or they can be used in resolving configuration/setup problems.

These LEDs are labeled CODE3, CODE2, CODE1, and CODE0. The mode settings for these LEDs can be controlled through any of the AVN210's user interfaces. Descriptions of what these LEDs indicate in the different mode settings are provided below.

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**Note:** *If the AVN210 stream to be controlled was started with the Administrative Username/Password, then the same Username/Password will be required to access and use the AVN210 LED Code Display Mode dialog box. If joining a stream, enter the correct Username/Password on the Channel Settings Basic dialog prior to Joining, or alternatively a dialog will prompt for the correct Username/Password.*

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**None** Indicates that no test signals are being generated.

**Video** This mode provides more detailed information on the video processing components of the system.

**CODE3:** Indicates the status of the analog video and the front end analog to digital converter. It illuminates when a valid video signal is detected on the selected interface, and indicates that the Analog to digital converter is working properly.

**CODE2:** Indicates the status of the MPEG2 encoder. It illuminates when error free video is being received and the encoder is operational.

**CODE1:** Indicates the streaming state of the AVN210. It illuminate when the AVN210 is currently set for streaming video.

**CODE0:** Indicates the encoding status and rate of the AVN210. It will blink to indicate that the unit is currently encoding video, and will blink at a speed relative to the encoding bit rate.

### Audio

This mode is used to provide more detailed information about the Audio status. It can indicate when audio clipping is detected, which in turn indicates that audio distortion has occurred due to excessive signal levels.

**CODE3:** Not used.

**CODE2:** Not used.

**CODE1:** Indicates if an audio clip was ever detected since streaming on the unit started. It will turn off when the stream is started and turn on if an audio clip is detected. Once it is on it will remain on until the stream is stopped and restarted.

**CODE0:** Indicates that an audio clip was detected during the last poll interval.

### Network

This mode provides more detailed information about the Network/Ethernet connection.

**CODE3:** Indicates Transmit activity. It will toggle when Ethernet transmit activity is detected.

**CODE2:** Indicates Receive activity. It will toggle when Ethernet receive activity is detected. This will blink for any receive activity, not just for traffic destined for the AVN210.

**CODE1:** Indicates the status of the Ethernet interface. It illuminates to indicate that the Ethernet MAC and PHY are operating error free.

**CODE0:** Indicates the link status (but not speed). It illuminates when an Ethernet link of any speed is detected.

### Uptime Status

This mode is used to indicate the proper operation of the video encoding since the start of stream. It can be used to determine that the unit has remained in error free operation since streaming began. All four LEDs should illuminate green once an error free encoding stream has started. When an error is detected, the LED associated with the failing function will turn off and remain off.

**CODE3:** Will turn off if an error is detected in the analog video, or if the Analog to Digital converted video receives an error.

**CODE2:** Will turn off if and error is detected in the encoder.

**CODE1:** Will turn off if a network error is detected on the Ethernet.

**CODE0:** Will turn off if the AVN210 ever restarts on its own due to a critical video or system error.

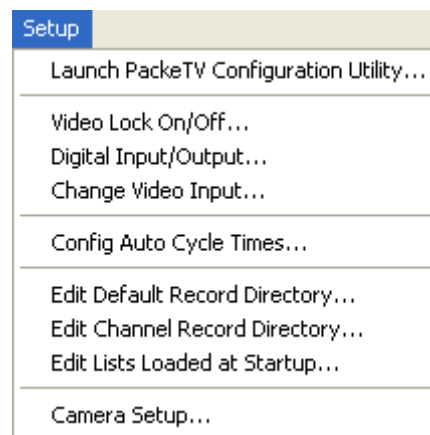
#### Error Code

This mode is used to debug specific problems or to provide an operational indication that may be encountered in the instance of user specific applications. System information will be presented as a 4 bit binary number. This mode is to be used only by advanced users working with our technical support staff.

#### LED Diag

This mode is not currently supported.

## 3.9 Setup Menu



#### Launch PackeTV Configuration Utility

This opens the PackeTV™ Configuration Utility. This application enables the user to discover all AVN units on the LAN and configure their IP properties (IP Address, Netmask, Gateway, and DHCP) as well as update their firmware. Refer to the *PackeTV™ Configuration Utility User's Manual* for more information.

#### Video Lock On/Off

This button enables the AVN to be "locked" or "unlocked" in a stopped state. This feature requires using the Administrative Username and Password (refer to *Using the Administrative Privileges* in the appropriate AVN user manual). When selecting Video Lock On, the AVN will stop the current video stream and not allow a new stream or session to be started. The AVN will remain locked until either Video Lock Off is selected or the AVN is reset by a user with an Administrative Username and Password.

When selected, a pop-up dialog box will appear. The current or last connection's IP Address, Username, and Password are automatically filled in, you can change these values to turn the Video Lock On or Off for any AVN connected to your network.

The lock state of the AVN can also be changed from the Channel / List Management menus. Refer to *3.2.1 Basic Menu*.

**Digital Input/Output (AVN200 only)** Displays the Digital Inputs and Outputs dialog box on the AVN200. Not available on the AVN210 or AVN220. Refer to the *AVN200 User's Manual Unit Connections* for Digital Inputs and Outputs connection information. This dialog box shows the current status of the digital inputs and outputs (switch closers) of the specified AVN200, and allows the Outputs to be turned On or Off. When selected, a pop-up dialog box will appear. Even though the current or last connection's IP Address, Username, and Password will be automatically filled in, you can change these values to display the Digital Inputs and Outputs dialog box for any AVN200 on your network.

**Digital Inputs and Outputs**

Input Polling  
 Off  On Rate (seconds)

**D1 I/O**  
 Mode:  Input  Output  
 State:  Off  On  
 Action on Input:  Begin Recording  Display Message  
 Input Record Directory:

**D2 I/O**  
 Mode:  Input  Output  
 State:  Off  On  
 Action on Input:  Begin Recording  Display Message  
 Input Record Directory:

**D3 Output only**  
 Mode:  Input  Output  
 State:  Off  On

Switch closers D1, D2, and D3 can all be set to Outputs, and each output can be set to On or Off. Switch closers D1 and D2 can also be set to Inputs. As Inputs, the switch closers have no Off/On option.

A valid Username and Password are required to change the Digital Input/Output for the AVN200.

**Input Polling** – Determines whether or not the PackeTV™ Manager polls the inputs of the AVN200 at the specified rate (in seconds). When set to On, and an input trigger is detected, the PackeTV™ Manager takes action based upon the **Action on Input** selection, as explained below. When set to Off, no polling occurs and no action takes place upon an AVN200 input triggering event.

**Mode** – Shows/sets the associated digital I/O (switch closer) to be an input or output. When set to Input, the **Action on Input** and **Input Record Directory** options are enabled, and the State (On/Off) option becomes disabled since state information is supplied by external input. When set to Output, the **Action on Input** and **Input Record Directory** options are disabled and the State (On/Off) option becomes enabled.

**State** – Shows/sets the associated digital Output state. When set to On, the output functionality of the digital switch closer becomes enabled. When set to Off, the output functionality becomes disabled.

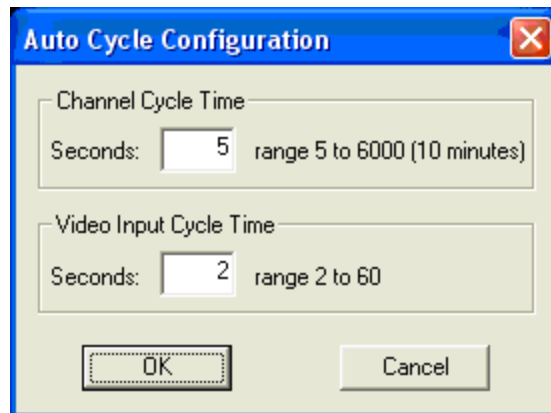
**Action on Input** – Shows/sets the action to be taken upon an input triggering event (when polling is turned on). The **Begin Recording** option causes the PackeTV™ Manager to start recording the AVN200 stream to the directory specified in the Input Record Directory group. The **Display Message** option causes a pop-up message to be displayed indicating the input was triggered.

**Input Record Directory** – Shows/sets the directory to record to in the event the **Begin Recording** option is selected and an input trigger is detected when polling. The **Browse for Directory** button launches a directory browser. The **Remove Directory** button removes the input record directory from the edit box.

**Change Video Input** Displays the Video Inputs dialog box for the specified AVN, allowing the video input to be changed without stopping and restarting the AVN stream. When selected, a pop-up dialog box will appear. Even though the current or last connection's IP address, Username, and Password will be automatically filled in, you can change these values to display the Video Inputs dialog box for any AVN on your network.

### Config Auto Cycle Times

Selecting this option opens the Auto Cycle Configuration dialog, which allows the channel and video input cycle times to be set within their respective ranges.



### Edit Default Record Directory

Launches a dialog box that allows you to view or modify the default directory where all .mpg files are stored once recorded if not using a saved channel or the saved channel has not been configured with its own directory, see 3.2.1 *Basic Menu*. A record directory, whether default or channel specific, must be set before starting a recording.



**Browse for Directory** – opens a directory browser.

**Remove Directory** – deletes the directory displayed in the dialog box.

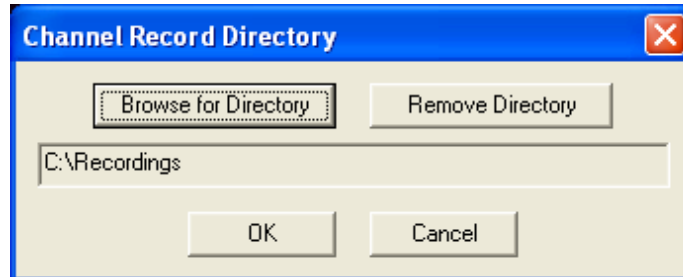
**Use Default Record Directory without Prompting** – If recording a channel without a specified record directory, use the default directory without prompting.

Click OK to save changes, Cancel for the changes to not take effect.

### Edit Channel Record Directory

Launches a dialog box that allows you to view or modify the record directory associated with this channel. Each saved channel has an

associated channel record directory. This directory can be unique or the same for each saved channel. To have a channel record directory match or use the default record directory, check the box in that dialog, refer to the previous paragraph.



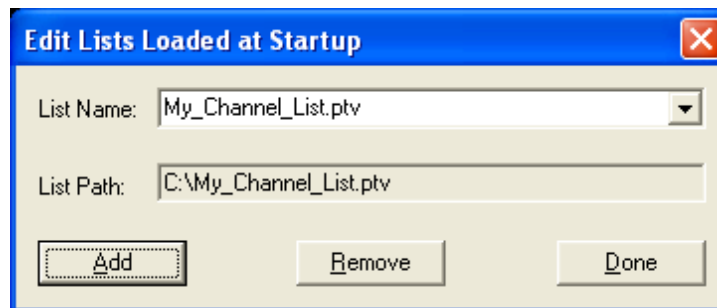
**Browse for Directory** – opens a directory browser.

**Remove Directory** – deletes the directory displayed in the dialog box.

Click **OK** to save changes, **Cancel** for the changes to not take effect.

### Edit Lists Loaded at Startup

Launches a dialog box that allows you to view or modify the lists that PackeTV™ Manager automatically loads upon startup.



**List Name** – A drop-down box that displays all of the channel lists that will be loaded by PackeTV™ Manager at startup.

**List Path** – Displays the path to the channel list specified in the List Name drop-down box.

**Add, Remove, Done** buttons – Use to add or delete lists and to exit the dialog.

### Camera Setup

Displays the Camera Selection dialog box, which allows the user to select the type of camera to be connected to the AVN200 or AVN220. Not available on the AVN210.

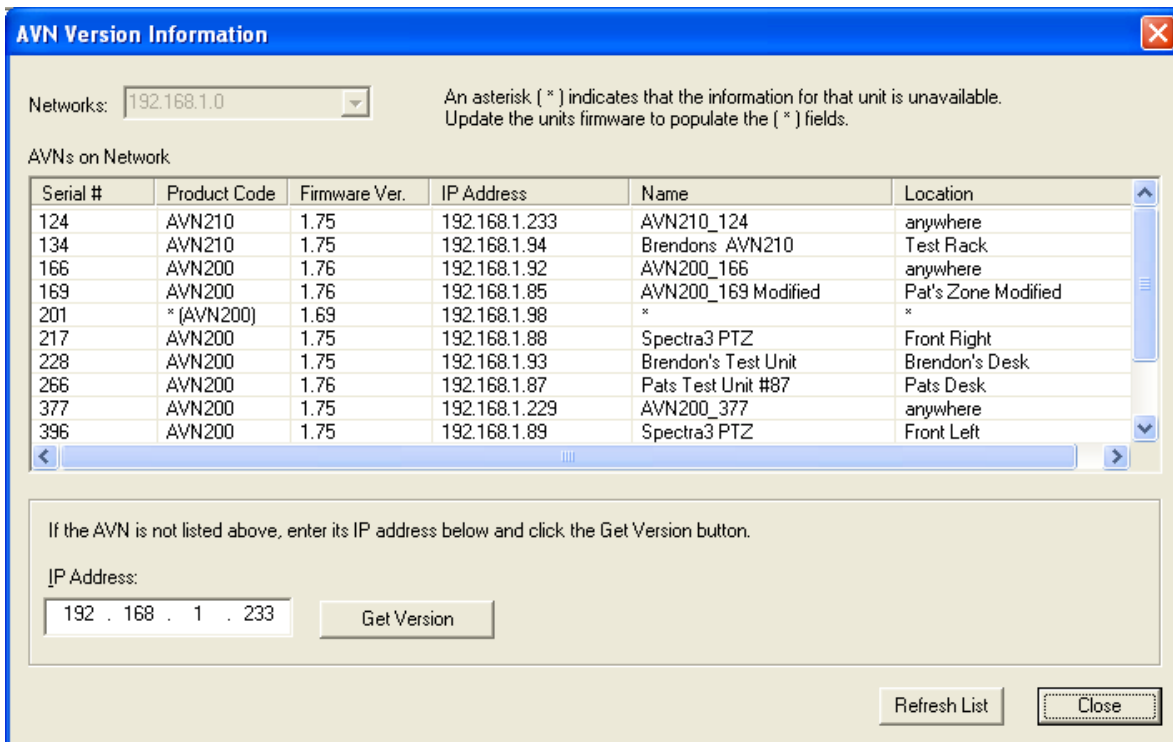
## 3.10 Help Menu



**Get AVN Version** Displays the AVN Version Information dialog.

### AVN Version Information Dialog

**Networks** – This field displays the IP address of the network connected to the PC running the AVN Version Information dialog. If there is more than one network connected to the PC, the network IP addresses will display in a drop-down list. When a different network is selected, a multicast message will be sent to discover all of the AVN units on that network and the results will display in the AVNs on Network list.



**AVNs on Network** – This list displays all of the AVN units on the selected network(s), including their Serial Number, Product Code, Firmware Version, IP Address, Name and Location values.

**IP Address** – Enter the AVN's IP Address in the edit box and click the **Get AVN Version** button. This allows the discovery of an AVN unit's firmware that is not listed in the AVNs on Network list.

	<b>Refresh List</b> – Resends the Multicast message across the selected network and repopulates the list with all AVNs responding.
<b>User Manuals</b>	<p><b>AVN200 User's Manual</b> – Select this option to open a PDF version of the AVN200 MPEG-2 IP Audio Video Node User's Manual if installed.</p> <p><b>AVN210 User's Manual</b> – Select this option open a PDF version of the AVN210 MPEG-2 IP Audio Video Node User's Manual if installed.</p> <p><b>AVN220 User's Manual</b> – Select this option open a PDF version of the AVN220 MPEG-2 IP Audio Video Node User's Manual if installed.</p>
<b>Registry Settings</b>	<b>Reset Manager Registry Settings to Default Values</b> – Sets all PackeTV™ Manager registry settings to factory default values.

---

**Warning:** The following will cause portions of the Manager to become non-operational and require a re-install to repair. This option is only recommended prior to permanently uninstalling the PackeTV™ Manager.

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**Remove All Manager Registry Settings** – Deletes all of the PackeTV™ Manager's registry keys.

### About PackeTV Manager

Displays information about the PackeTV™ Manager software.

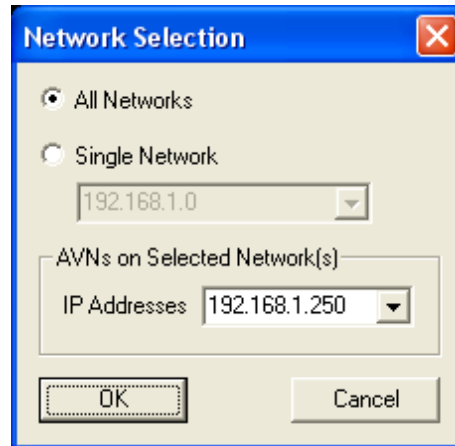
## 3.11 Channel Toolbar

The channel toolbar consists of a channel drop-down list and controls as follows:



1. The **Up** and **Down** arrows change the "channel" to the next item in the list (up or down).
2. The **Auto Cycle** button cycles channels that are in the currently streaming list (Item 3).
3. The drop-down list displays all the currently streaming channels from all the active channel lists on the selected network. This list does not include streaming AVNs that are not part of an active channel list, that are not on the currently selected network, or any AVNs that are stopped. AVNs that are stopped cannot be started from the list or the up down arrow buttons (see 2.2 *Opening and Closing Video Streaming Channels*). AVNs are listed by Channel Name.
4. The **Refresh** button causes the PackeTV™ Manager to discover all streaming units on the network and refreshes the list.

5. The **Network Selection** button opens a Network Selection dialog box. This box allows a user to select which network(s) the PackeTV™ Manager uses when discovering, listing, and connecting to AVNs.



**All Networks** – Discovers and lists the AVNs on all network interfaces.

**Single Network** – Allows a user to select a network interface from a drop-down list. Once a network is selected, all AVNs on that network will be discovered and listed below in the AVNs on Selected Network(s) drop-down list.

6. The **Record** button starts a recording session (refer to section 2.3 *Recording Streaming Video*).
7. The **Stop** button stops a recording session (refer to section 2.3 *Recording Streaming Video*).
8. The **Volume** button displays a vertical slider for volume control and a checkbox at the bottom to mute the volume. The volume control adjusts the PackeTV™ Manager volume only and not the volume of your PC.

## 3.12 PackeTV™ File Player Controls

Click on the following buttons to control the PackeTV™ File Player.



– Open file



– Skip Back











– Skip Forward



– Jump to Beginning



– Rewind

-  – Play
-  – Pause
-  – Stop
-  – Fast Forward
-  – Jump to End
-  – Repeat, continually plays the file until stopped.
-  – The Volume button displays a vertical slider for volume control and a checkbox at the bottom to mute the volume. The volume control adjusts the PackeTV™ Manager volume only and not the volume of your PC.
-  – Positional Slider Bar

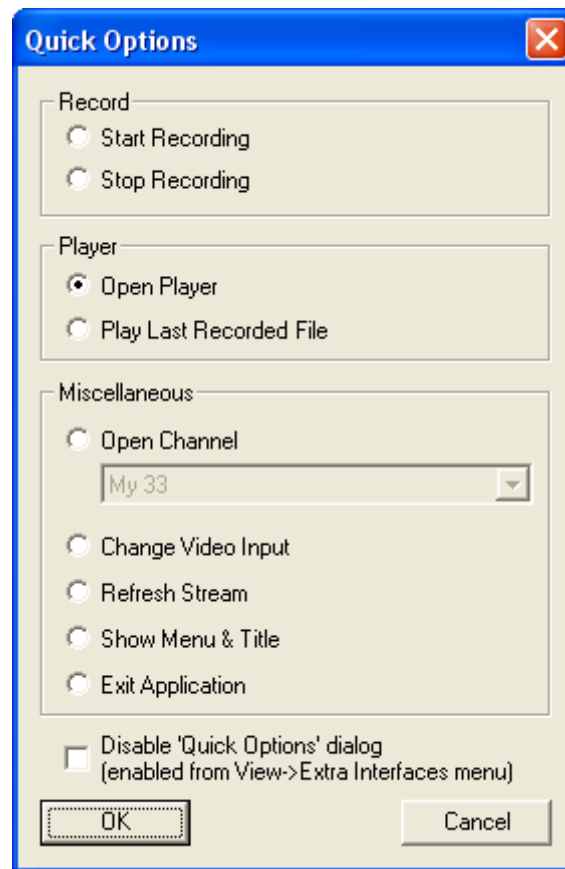
## 3.13 Miscellaneous Controls

### 3.13.1 Quick Options Dialog Box

The Quick Options dialog can be opened at any time by a single left click anywhere in the main viewing area. After selecting an option, click the **OK** button or **Cancel** to exit the dialog box.

- |                      |   |
|----------------------|---|
| <b>Record</b>        | The <b>Start Recording/Stop Recording</b> option buttons provide a short cut that starts or stops a recording. Refer to section 2.3 <i>Recording Streaming Video</i> .  |
| <b>Player</b>        | The <b>Open Player/Play Last Recorded File</b> option buttons provide a short cut that opens the PackeTV™ File Player or plays the last recorded file. Refer to 2.4 <i>Playing Recorded Files</i> for more details on the PackeTV™ File Player.   |
| <b>Miscellaneous</b> | <p>The <b>Open Channel</b> option button, when selected, provides a drop-down list of active channels. After making a selection, click the <b>OK</b> button.</p> <p>The <b>Change Video Input</b> option opens the Video Inputs dialog box. Refer to section 3.9 <i>Setup Menu, Change Video Input</i>.</p> <p>The <b>Refresh Stream</b> option stops and restarts the AVN stream, specified by the current channel, using the same settings.</p> <p>The <b>Show Menu &amp; Title</b> option displays the Menu and Title bar if they are hidden.</p> <p>The <b>Exit Application</b> option closes the PackeTV™ Manager application.</p> |

The **Disable 'Quick Options'** checkbox enables or disables the dialog box.



### 3.13.2 Command Line Options

You can start the PackeTV™ Manager from the DOS command line prompt.

To use the command line option, you must type in the commands in the same folder that contains the **PackeTVManager.exe** file. By default, this folder is **C:\Program Files\Visionary Solutions\PackeTV Manager**.

There are two commands that you can enter:

1. To start the Manager with a previously saved channel, type the following at the command prompt:

---

**Note:** If the **saved\_channel\_name** parameter contains spaces, it will need to be entered in quotes (`name:"saved_channel_name"`).

---

```
PackeTVManager.exe name:saved_channel_name
```

---

---

The ***saved\_channel\_name*** parameter must match a previously saved channel from a channel list that is loaded at startup (refer to the *Edit Lists Loaded at Startup* paragraph in 3.9 *Setup Menu*). All channel settings will be used, including the “Hide Menu & Title” and previous window positioning/size.

2. To start the Manager in player mode (PackeTV™ File Player), type the following at the command prompt:

---

**Note:** *If the **full\_path\_of\_mpg\_file\_to\_play**, parameter contains spaces it will need to be in quotes (player:"full\_path\_of\_mpg\_file\_to\_play").*

---

```
PackeTVManager.exe player:full_path_of_mpg_file_to_play
```

The ***full\_path\_of\_mpg\_file\_to\_play*** parameter must be a valid path to an .mpg file.

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# Glossary of Terms

<b>AAC</b>	Advanced Audio Coding
<b>AC</b>	Alternating Current
<b>AFF</b>	Adaptive Frame/Field per Picture
<b>AT</b>	Active Tunnel
<b>AUX</b>	Auxiliary
<b>AV</b>	Audio Video
<b>B Frames</b>	Bidirectional Frames (pictures)
<b>BNC</b>	Bayonet Neill-Concelman (connector)
<b>CCTV</b>	Closed Circuit Television
<b>CD</b>	Compact Disc
<b>cm</b>	centimeter
<b>CPU</b>	Central Processing Unit
<b>CVBS</b>	Composite Video Broadcast Signal
<b>DHCP</b>	Dynamic Host Configuration Protocol
<b>ESD</b>	Electrostatic Discharge
<b>FEC</b>	Forward Error Correction
<b>fps</b>	frames per second
<b>FTP</b>	File Transfer Protocol
<b>GND</b>	Ground
<b>h.264</b>	video compression standard, also known as MPEG-4 AVC (Advanced Video Coding) or MPEG-4 Part 10
<b>GPIO</b>	General Purpose Input/Output
<b>HTTP</b>	Hyper Text Terminal Protocol
<b>Hz</b>	Hertz
<b>I Frame</b>	Intracoded Frames (pictures)
<b>I/O</b>	Input/Output
<b>IGMP</b>	Internet Group Messaging Protocol

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<b>IPTV</b>	Internet Protocol Television
<b>in.</b>	inch
<b>IP</b>	Internet Protocol
<b>kbps</b>	kilobits per second (1 kbps =1,000 bits per second)
<b>kg</b>	kilogram
<b>kHz</b>	kilohertz
<b>LAN</b>	Local Area Network
<b>MAC</b>	Media Access Control
<b>MB</b>	Mega byte
<b>Mbps</b>	Megabits per second
<b>MHz</b>	Megahertz
<b>MPEG</b>	Motion Picture Experts Group
<b>ms</b>	millisecond
<b>NTSC</b>	National Television Standards Committee (USA)
<b>P Frames</b>	Predicted Frames (pictures)
<b>PAL</b>	Phase Alternating Line (Europe)
<b>PHY</b>	Phase Alternating Line (Europe)
<b>PID</b>	Packet Identifier
<b>PT</b>	Passive Tunnel
<b>PTZ</b>	Pan Tilt Zoom (device)
<b>TCP/IP</b>	Transmission Control Protocol/Internet Protocol
<b>RAM</b>	Random Access Memory
<b>RCA</b>	Radio Corporation of America
<b>RFC</b>	Request for Comments
<b>RFC 1112</b>	Host Extensions for IP Multicasting
<b>RFC 2236</b>	Internet Group Management Protocol, Version 2
<b>RTSP</b>	Real Time Streaming Protocol, based on Live555
<b>SAP</b>	Session Announcement Protocol
<b>SMTP</b>	Simple Mail Transfer Protocol

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<b>TTL</b>	Time to Live (IP)
<b>UDP</b>	User Data Protocol
<b>VDC</b>	Volts Direct Current
<b>Vrms</b>	Volts Root Mean Square

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