

# Drastic User Manual

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# Introduction

This manual explains how to use Drastic digital disk recorder (DDR), VTR Emulation and Device Control solution including:

- *VVW 17/1900 MJPG SERVERS*
- *VVW 2000/250X DV25/50/MPEG SERVERS*
- *VVW 500X UNCOMPRESSED Y'CR'CB 8/10 BIT STANDARD DEFINITION SERVERS*
- *VVW 7000 UNCOMPRESSED Y'CR'CB 8/10 BIT HIGH DEFINITION SERVERS*
- *QUICKCLIP PRO SOFTWARE (REDUCED FEATURE SET- SERVER/VTR)*
- *QUICKVTR SOFTWARE (REDUCED FEATURE SET- VTR ONLY)*
- *QUICKDIGI SOFTWARE (CAPTURE ONLY)*

This manual assumes the following:

That the user is familiar with video editing and how to use VTRs

That the user knows how to use a mouse and keyboard and perform the basic functions of Microsoft Windows operating system.

That the user has access to MIS technicians capable of placing the device on the network and setting up any SAN systems if necessary.

That the user has access to audio/video technicians capable of installing and timing the device into your system.

That all hardware and software is installed and authorized properly on the VVW server

Conventions:

<b>Bold</b>	<b>Bold</b> typeface indicates a label on the VVW interface or hardware.
<i>Italic</i>	<i>Italic</i> indicates a concept as used in the VVW software.

# Disclaimer

This manual has been written carefully and is believed to be correct as of the date of publication. However it is subject to change without notice and does not represent commitment on the part of Drastic Technologies Ltd.

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Parts of this manual that describe optional soft - or hardware modules do usually contain a corresponding note. A lack of this note does not mean any commitment from the point of Drastic Technologies Ltd.

# Setting Up the VVW

## Remove the packaging

The VVW will arrive in a triple-thick cardboard box with cut-in handles. Save this packaging! It may come in handy for transportation or storage, and if you need to upgrade or repair your hardware, it is an ideal shipping container.

Do not expose the machine to the interior foam packaging fill (if present).

VVW Series Shipping Contents:

- The VVW Series Digital Disk Recorder
- VVW Manual
- AC power cable.
- Any software which will ship with the unit (CDs or floppies)
- Back panel connections or Audio/Video Cables required for your unit
- The VVW Slide Rail Kit, that allows the user to install the DDR in a standard rack mount unit.

The Slide Rail Kit consists of two packages:

1. The large box containing:

- Two slide rails
- One paper insert
- Assembly instructions
- A small package of nuts, washers and bolts
- A larger package of nuts, bolts, washers and threaded plates, regular and end plates.

2. The smaller box containing:

- Two extender rails

Note that specifications, product information and other documentation are available on the Drastic website. The address is [www.drastictech.com](http://www.drastictech.com).

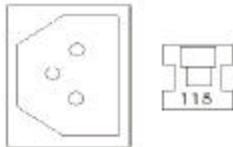
## Check/Select Voltage



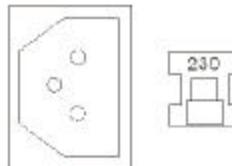
Make sure the voltage selector on the rear panel is set to the correct voltage for your area! This switch is on the rear of the power supply, to the right of the 3-pin AC power connector.

The switch will be factory set for your area's power requirements, but make sure the unit has not been jarred into the wrong position during shipping. This will help to confirm that you will not supply the VVW with the wrong voltage.

The up position will provide 110-volt power. The down position will provide 220-volt AC power. See the below diagram.



With switch in the up position, for 110 V AC



With switch in the down position, for 220 V AC

## Turn on the Power



This switch is located on the front of the VVW, and is identified by the label “**Power**”. It is the bottom switch directly to the left of the VVW front panel control.

Do not confuse it with the “**Reset**” button, which is the top switch directly to the left of the VVW front panel controller.

Turn on the **Power** switch, and you will see the “**ON**” LED light up directly below this switch.

**IMPORTANT!** Note that for power shutdown, all programs must be properly closed. It is particularly important that you shut down Windows. Hold the power switch down for 5 seconds. The power to the unit will cease, and all lights will turn off.

To turn on the power, simply turn the power switch on (there is no five second wait to turn the machine on).

## Log on as Administrator

The user will need to log on having Administrator privileges. If you are unsure what level of privileges your log-on password gives you, ask your System Administrator.

The staff at Drastic will supply your initial password. For some installations, the user will simply hit Enter.

Log on in Standard NT 4.0 mode, not NT VGA mode

**IMPORTANT!** If you log on and your user name and password do not extend Administrator privileges to you, VVW will not run. The password can be changed to whatever you like, as often as you like. For the VVW, the logon must have administrator rights on the local machine. VVW does NOT require domain administrator rights.

Defaults when shipped:

User Name: Administrator

Password: <press the enter key> or **password** (older installs)

Domain: <machine name>

## **Don'ts**

**Don't reboot without proper shutdown!** For proper operation of the VVW Series it is imperative that all restarts be cold boots. The unit must be shut down properly and then powered off before a restart is attempted.

**Don't allow debris to enter the machine!** Dust, moisture, metal shavings, foam fill or debris of any kind should be prevented from entering the VVW at all costs.

**Don't install any additional or unauthorized software in the VVW!** This may compromise the functionality of your unit, and will certainly void certain provisions of your warranty.

**DO NOT open the VVW!** This action not only voids your warranty, but someone may be seriously injured, as these components carry an electrical charge long after the box has been shut down. It is easier than you think to cause a second problem if you open the box hoping to fix the first one.

**Don't attempt repairs on your own!** Contact your Drastic representative if you believe the unit is malfunctioning.

**Don't attempt to upgrade your machine!** If you wish additional capabilities, contact your Drastic representative to request upgrade information.

**Don't make any unauthorized changes to the registry or configuration settings!** This may result in unusable software, and/or a non-functioning box.

**Don't accidentally touch the Reset switch!** The Reset switch is located above the "on" LED just to the left of the VVW front panel. It will instantly turn off and then restore (Reset) power to the Motherboard. If you are in the middle of recording, or building a clip list for example, the VVW will shut everything off, and any unsaved data will be lost.

## Setting Up Software Only Version

**Important:**

- You must be logged in as an administrator to install and run the software.
- The software requires a PII 350MHz or better, 128M Ram, Windows NT SP4/2K SP2
- No other software should be running while the installation occurs
- You must reboot before running the software

QuickClip Pro, QuickVTR and QuickDigi are packaged as a self-installing executable. Double click on the installation program and follow the instructions presented.

After installation the record drive must be setup before running QuickClip. Run the LocalConfig program from Start Menu|Programs|Drastic Technologies|LocalConfig and change the recording drive. Do not change anything else until you have tested the system and read this manual. It is possible to make your software inoperable through LocalConfig settings.

By default, these packages setup COM1 as a DEVICE. This is the comport to which a controller would be connected through an RS-422 to RS-232 converter. If editing to or from QuickClip with a RM-450, you would use this port. Please note that to operate properly, the converter must be externally powered and wired as a 422 device. Converters used to control VTRs are unacceptable as they are not generally fully wired and have an inverted pin out (controller pin out) from the required device pin out.

COM2 is setup as a CONTROLLER. This port should be connected to an external VTR through an RS-232 to RS-422 converter. This allows QuickClip to control a VTR from the graphical user interface, digitize clips and lay clips back out to tape. This connection may use the common 'port powered' converters. If the converter works here, it will not work to the other port and visa versa.

# Read This First

VVW and QuickClip have two distinct modes of operation. Choosing the correct mode is critical for proper operation. The two modes are 'VTR Mode' and 'Server Mode'. The VTR Mode and Server Mode radio buttons shown below are in the center of the 'Clip Control' windows also shown below.



*The Clip Control Window*



*VTR/Server Mode Selection*

## VTR Mode:

When this mode is selected, the VVW acts like a standard tape based video tape recorder. Each spot begins at a particular time code as indicated by the time code column. The spot's position on the tape is followed by the spot's name, duration and creation time. Each spot appears on the tape as if it was edited on to a pre-blacked tape at that position. This means that between each clip there is black and silence. The pre roll may begin before the spot and end after the spot, just as it would on a standard video tape recorder.

Serial Protocols Supported: Sony VTR, Sony Digital Extension, Panasonic /JVC Extensions

## Server Mode:

The Server Mode causes the VVW to act like a file server. In this mode the VVW may be controlled by a Louth or Odetics compatible serial control device as well as the internal clip lists and pull in windows. In Server Mode, each spot is a separate file, or clip, which is accessed using the eight character name in the clip name column. These names will appear on the controller and may be used individually or in groups to play or transfer the spots to other devices. In this mode, there is no pre or post roll with an individual clip, nor is there any particular time code associated with the clip.

Serial Protocols Supported:            Odetics, Louth, HP

## All Modes:

The VVW may have the same media available in both VTR and Server Mode. The VTR media is also available on some units as a clip called:: VTR\_TC in server mode. Here are some examples of the correct mode for various operations.

Front panel VTR editing	VTR Mode
RM-450 or equivalent	VTR Mode
Axial Editor	VTR Mode
DNF 2MCE	VTR Mode
DNF ST-300	Server Mode
DNF Button Box	Server Mode
Odetics Roswell (or equiv.)	Server Mode
Louth Automation	Server Mode

# The QuickClip Tutorial

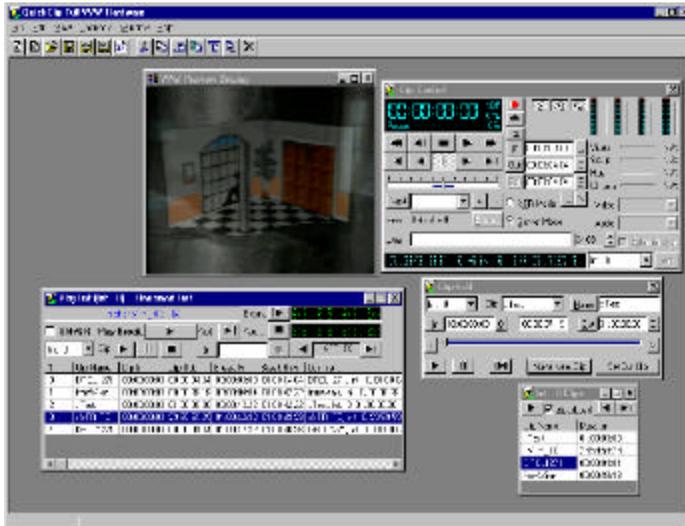
In this section, we take you through a tutorial of the QuickClip Software.

The QuickClip clip control software provides the main functionality of the VVW Server line. It should be examined in detail by the user. Following the detailed instructions, you will learn how to do the following:

- ◆ **Server Mode Operations**
  - ◆ **Record Clips**
  - ◆ **Add Clips**
  - ◆ **Edit Clips**
  - ◆ **Create and Use a PlayList**
  - ◆ **Control an External Deck**
  - ◆ **Control and Be Controlled**
  - ◆ **MediaReactor Core file conversion technology**
- ◆ **VTR Mode Operations**
  - ◆ **Record Clips**
  - ◆ **Add Clips**
  - ◆ **Remove Clips**
  - ◆ **Using VTR Media In Server Mode**
- ◆ **System Information And Status**
  - ◆ **The status bar**
  - ◆ **The Options dialog**

On the following page is the VVW QuickClip interface.

## The QuickClip Interface



In the above diagram, we see the QuickClip Interface. This interface is made up of a number of sections, which we will examine in detail. The following windows are opened: The **VGA Preview** window, the **PlayList**, the **Clip Control**, the **Clip Edit** and the **Clip Bin**.

QuickClip will enable one clip bin for every channel of output available. **Clip Bins** contain the captured video, and display the media, available for sequencing.

The sequencing is arranged through the **PlayList**. Different PlayLists can be generated using the same **Clips**, or altered versions of the same Clips without duplicating media.

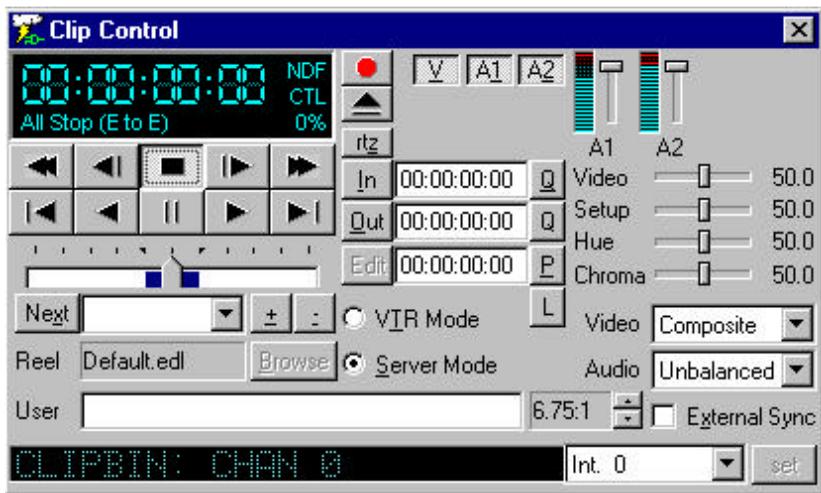
The **Clip Edit** window allows the user to trim clips, or log a large clip into a batch of smaller clips.

The **VGA Preview** screen allows the user to see the clips and preview the edits without a video monitor.

## Open QuickClip

Double-click on the QuickClip icon on your desktop. It will open the QuickClip GUI (graphical user interface) as shown at the beginning of our tutorial. Open QuickClip up and confirm that the **Server Mode** is checked on the **Clip Control** window.

This is where we will start our tutorial. In server mode, VW handles captured video as separate files, which it refers to as **Clips**.



The Clip Control window

For the purposes of this tutorial, you will record a clip, which you will then edit into a series of smaller clips.

Once you have edited the clip into smaller clips, you will then assemble these clips into a **PlayList**.

# Server Mode Operations

## Record a Clip

When you first start QuickClip, you will notice that at least two windows are open in the QuickClip workspace: a Clip Bin window for each internal channel and a Clip Control window. The Clip Control window contains the equivalent of the transport controls on a VTR but with some special features added. The Clip Bin window holds clips that you can easily drag and drop or copy and paste into your play lists.

### ◆ Confirm your Video Source

You should have video being sent to the input of channel 1 (Int0), either from a camera, or from a VTR or TV. Select the **Server Mode** button if it is not checked by default. You should have a video monitor connected to the output of channel 1 (**Ext0**). With the unit in stop, you should see passthrough video on this monitor. Passthrough audio should be present as well. Make sure all your video and audio monitors are adjusted properly.

### ◆ Select a Channel

At the bottom, right hand side of the Clip Control window is the video dropdown control to select the input source. Use this to select your current video input. Int. 0 will be the default for a one-channel model. Select Int. 0 for this exercise.

### ◆ Click on the Record button

At the top center of the Clip Control window, select the Record button. Pressing this brings up the New Clip Settings window.



The New Clip Settings window

### ◆ Assign a name

At this point, assign a name to the clip to be recorded as well as a checkbox to specify the length to record (**Max Length**). Please note that the length of the name is restricted to eight characters at this time to retain compatibility with certain automation controllers. For this exercise, enter the name TESTCOMP.

◆ **Max Length**

Then select the **Max** (maximum) Length box and enter a time of 00:02:00:00, or two minutes for the length. Pressing **Set Name** sets these details into a memory buffer, so that recording may begin immediately upon pressing the record button.

◆ **Press OK**

Press **OK**, and recording begins immediately and will record for the duration specified in the Max Length field.

◆ **Press Stop**

When the recording stops, pressing **Stop** will refresh the screen and your clip will appear in the clip bins. You can now play this clip out to any available channel featured on your VVW. Congratulations! You have just recorded a clip.



◆ **Load the Clip**

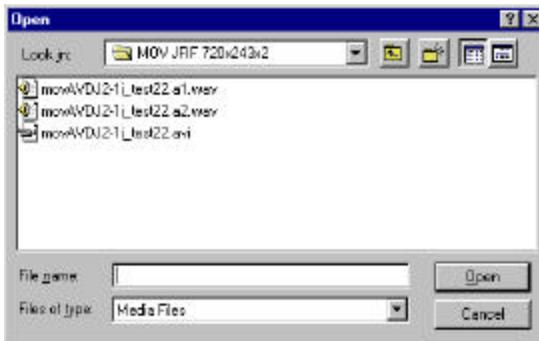
Confirm that the **AutoLoad** is checked in the Clip Bin.

Select the clip TESTCOMP from the Clip Bin by clicking the mouse on it. This clip should load up, and the first frame should appear on that channel's output. Pressing **Play** in the Clip Control window will play the Clip.

◆ **Use the Transport Controls**

Become familiar with the transport controls. Use the **Fast Forward, Reverse, 5 seconds ahead** and so on. Try out the shuttle bar on this Clip Control window. If your unit has a front panel controller, become familiar with the transport controls and jog/shuttle knob.

## Add a Clip



The open window

◆ **Open the location of the files**

To add a clip from any location, browse to that location and click on the clip name that you want to add to the clip bin. This can be done by pressing the +/- icon, which is a part of the clip management on the VVW clip control interface.

◆ **Selecting a new name**



New Clip Setting

After selecting your clip press open. This would bring the above icon. This “New Clip Setting’ icon would enable you to give a new name for the clip. After giving it a name, press ok and your clip will be added in your clip bin.

## Edit a Clip



The Clip Edit window

### ◆ Open the Clip Edit Window

To edit your clip, double-click the *TESTCOMP* Clip in the Clip Bin window. This will open the **Clip Edit** window. The Clip Edit window's purpose is to create modified versions of clips in the clip bin(s).

### ◆ Look at Your Clip

In the Clip Edit window, you will notice that the Clip dropdown box and **Name** edit box display the clip name *TESTCOMP* in them. The **In** time code edit box has the default time of 00:00:00:00 and the **Out** time code edit box has the time 00:01:59:29. The time code locate box in the center, between the In and Out displays your current time code location within the Clip.

We can cue to the In and the Out of the clip by pressing the buttons labeled **Q** beside them. We can play the entire unedited clip from here by pressing , the Play button. If we move from the first frame of the clip this changes to , the **Preview Edit** button. The diagram shows our present location as the first frame of the clip.

## Edit a Clip using the In and Out buttons

### ◆ Q back to the In Point

To create our new clip, press the Q beside the In time code edit box (this cues to the first frame of the clip if you have moved from the beginning) and then press Play to move through the video. Press Pause to stop playback at about 5 seconds in.

### ◆ Select an In Point

Press the In button and the time code of our present location will become the new In point.

### ◆ Shuttle Forward

Press Play again and let the video play for about 10 seconds, then press Pause.

### ◆ Select an Out Point

Press the Out button to select this as the Out Point of the edit.

### ◆ Preview the New Clip

Preview the edited version by pressing , the Preview Edit button.

### ◆ Rename the Clip

If you now try to press the **Make New Clip** button, you'll notice that the software indicates that the clip *TESTCOMP* already exists and that you need to give the clip a new name. Highlight the Clip Name *TESTCOMP* with your mouse and enter the name *TESTI* in this window using your keyboard.

### ◆ Make New Clip

Press the Make New Clip button. You'll notice two things happen. First, the clip *TESTI* has been added to top the Clip Bin. Second, the Clip Edit window has brought the clip *TESTCOMP* back and has defaulted the current location to our previous Out point. This timesaving feature allows you to log several minutes or even hours of clips easily and without altering the original files.

## Edit a Second Clip Using Time Code

### ◆ Enter an In and Out point

With your mouse, highlight the entire current time code in the edit box showing the In point and enter a time of 00:00:25:00. Note that you may simply enter the number without the colons. Press the Set In point button to set this as your new In point. Press Tab until your focus is on the Out edit box where you can enter a new time of 00:00:55:00. Select the Set Out point button.

### ◆ Name and Save the Clip

Now move to the Name edit box and call this new clip *TEST2*. We have just created a clip that is exactly 30 seconds long with just a couple of keystrokes and mouse maneuvers. Press the Make New Clip button to save this clip to the Clip Bin. Again, you'll notice that the original *TESTCOMP* clip is brought back into the window and the current location has been cued to the previous Out time code. You might now continue to create a series of 30-second clips using these few steps.

## Edit a Third Clip Using the Shuttle Bar

### ◆ Create another Clip and Trim it Using the Shuttle Bar

To create a third clip, keep the In point where it is. Now grab the pointer on the **Shuttle Bar** and drag it slowly towards the right hand side. You will notice that your video shuttles at a speed relative to how fast you move the pointer and that the duration display is automatically updated. Drag the pointer such that the duration shown is about 15 seconds. It doesn't matter if this cut is perfect, as we can trim the Out by pressing the arrows at each end of the Shuttle Bar to move to the desired frame. Give this new clip the name *TEST3* and press the Make New Clip button.

### ◆ Create a Clip using a Combination of these Methods

Try creating one more clip using any combination of these methods. Give the clip a length of 30 seconds and the name *TEST4*.

## Create and Use a PlayList

### New PlayList

There are a few ways to create a new playlist. You may click on the **Create New PlayList** button on the toolbar or select **New**, located under **File** on the main menu. Choose the option **New PlayList**. The following **PlayList** window will appear:



The PlayList window

#### ◆ Drag our Clips into the PlayList

From the Clip Bin window, click on the clip called *TEST1*, and drag it onto the list area of the blank PlayList and drop it. This clip should now appear in your PlayList, showing its Number, its Name, In and Out points, the Speed (100%), the Break In and Break Run time codes and the Comment. You could put the rest of the Clips into the PlayList using this method.

#### ◆ Copy and Paste using Right Click Menu Commands

Go back to the Clip Bin window and click on the *TEST2* clip. Right-click on it to bring up a Clip Editing options menu and select **Copy**. Click on the PlayList so that it is activated and then right-click on the *TEST1* clip in the PlayList, and select **Paste Below**. The same *TEST2* clip will be added to the bottom of the list. You can paste the same clip into a playlist as often as you like without duplicating media. The different paste options make it very easy to put your new clip where you want it. Now add the other two clips, *TEST3* and *TEST4*, to the bottom of the PlayList using these methods.

#### ◆ Save the PlayList

Press the button labeled **Save As** on the toolbar or select **File**, then **Save As** from the main menu to save the PlayList. Rename and save the PlayList. Note that the title bar of the PlayList window now shows the name of the PlayList. You could have several versions based on the same PlayList and call them up as needed.

◆ **Playing Clips from the PlayList**

The Play button to the right of the Channel drop-down menu will play any selected Clip from the PlayList.

Double-click on any one of the clips in the PlayList. This loads the Clip into the Clip Control window. You could then play the Clip from the Clip Control Window.

Click on the PlayList window. You will see that the Clip duration is shown in the **Break** time code display. The clip name is shown in the **Status Bar** at the top and in the **Previous/ Next** control under the time code display. This allows you to confirm which clip you have loaded. Clicking either the ◀, Previous or the ▶, Next button, allows you to navigate up and down the list very easily. You can press the Play button to preview a Clip.

◆ **Select the Break for Playback**

In order to play back our PlayList select the very first clip in the list. Now press the Break button at the top of the PlayList window. You will notice that all the items in the list are now highlighted and the Break Remaining window displays the total running time of all the clips in our list.

Press the Play Break button and our list will play. Press the Abort button to stop playback, if desired.

◆ **Create a version of a Clip for the PlayList**

Editing a Clip in the PlayList only affects this one instance of the Clip, so that each PlayList could have slightly different versions of the Clip in them without duplicating media.

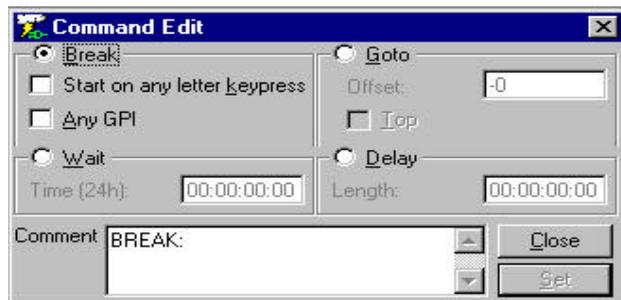
Confirm that the **On-Air** check box is unselected, or unchecked.

Double-click on any one of the clips in the PlayList. This sets the focus to the Clip Control window and loads the clip into it. Enter a new In point and press Set In point. Enter a new Out point and press Set Out point. Press the Set button. This instance of this Clip in the PlayList will now have a different duration. Other instances of this Clip will remain unaltered. To use this altered version elsewhere, simply copy the clip (using a right-click, Copy or simply **CTRL-C**) and paste it as needed into this or another PlayList.

## Commands in the PlayList

Open the Command Edit window

Right-click the last clip in the PlayList. Notice the option, **Insert Command**, on the menu. We have chosen the last clip because QuickClip will put the command after the selected Clip. Select this option and the Command Edit window will open. From this window we can select the kind of command we want in our PlayList.



*The Command Edit window*

### ◆ Looping PlayList

For this exercise, select the GOTO button. Press the TOP checkbox, which will mean you want the playlist to play to the end of the last clip, reach the GO TO TOP command, go back to the top and play the entire PlayList again (and again). Set this command into memory by pressing the SET button at the lower right corner. You'll see that our command has been inserted at the bottom of the PlayList and that the focus has now gone back to the PlayList window. We have now created a looping PlayList of various clips.

### ◆ Wait Command

There may be situations where your playback application requires that VWV either start playing at a certain time, or pause until a clock-defined time and resume playing a PlayList. You could choose a **Wait** command from the Insert Command option in the PlayList. Set the time of day you wish the list to start or resume playing.

Also, bear in mind that the last two digits indicate frames, so that for example, 9:54 a.m. would be indicated as 09:54:00:00. Set this command into memory by pressing the **SET** button at the lower right corner. You'll see that our command has been inserted at the bottom of the PlayList and that the focus has now gone back to the PlayList window.

◆ **Delay Command**

There may be situations where your playback application requires that VVW wait for a set period, and resume playback once that delay has elapsed. Select a clip in the middle of your PlayList.

Add a **Delay** command to the list by right-clicking the item above the correct location in the PlayList and selecting the Insert Command option from the menu. Select the Delay command. Specify a short but noticeable time for the delay (00:00:10:00 is convenient).

Set this command into memory by pressing the SET button at the lower right corner. You'll see that our command has been inserted at the bottom of the PlayList and that the focus has now gone back to the PlayList window.

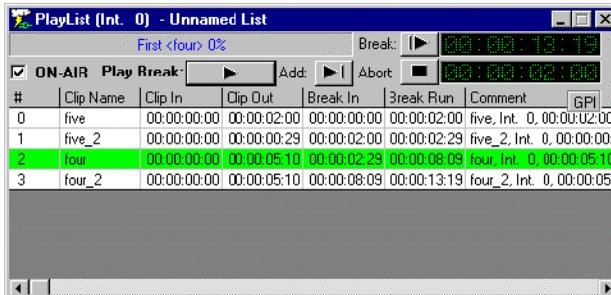
◆ **Break Command**

There may be situations where your playback application requires that VVW wait for the user to activate a trigger to resume list playback. This trigger will be either a GPI Trigger or a keyboard keypress. Insert this command by right clicking on the item in the PlayList after which you want the command to appear.

Confirm that the Break button is checked by default. Select the type of trigger you are using to start playback. Set this command into memory by pressing the SET button at the lower right corner. You'll see that our command has been inserted at the bottom of the PlayList and that the focus has now gone back to the PlayList window.

## On-Air Mode

During this entire exercise, we have been able to edit the parameters of playback at any point by pressing various buttons at the top of the window. If we were to go live, this could potentially be disastrous, as we could press the Pause or Previous/Next buttons by accident. Using the On-Air mode eliminates the potential for this kind of mishap.



The PlayList window in On-Air mode

### ◆ On-Air mode

Select the ON AIR Box. You'll notice immediately that all of the preview buttons disappear, in addition to the Output Channel selector. Selecting the *ON-AIR* checkbox sets the PlayList into its playout-only mode. This mode prevents the changing of the output channel as well as removing the capability to preview clips in the list, and jump to the next or previous clip. With the On-Air mode turned on, and the system in pause or stop, you will notice that the highlighted clips are now green. When the highlighted section is green, the PlayList has been activated but has not been started. This means the system is ready to go to air.

### ◆ Playing in On-Air Mode

If we hit the Break and then the Play Break button, you will see the highlight turn burgundy (a dark red colour), indicating we are now playing live. The burgundy stands out enough that you'll know when you are in On-Air mode, and can depend on your PlayList playing without unintentional interruption.

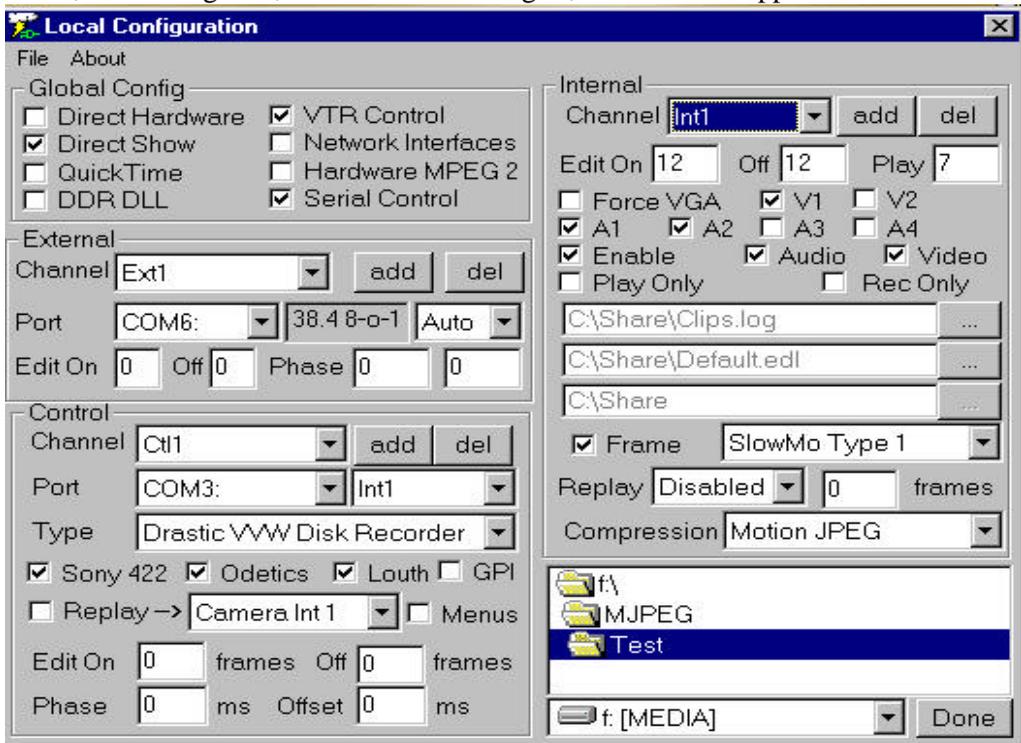
Pressing Play starts the PlayList running. The current clip that is playing will be the top of the highlighted area. All the clips below the current clip will also be highlighted in burgundy, and the clips above the currently playing clip will turn white as they finish playing.

# External Control

## Control External VTRs

With VVW Series DDRs, you can control the actions of a supported VTR. The following parameters must be set up:

Open the Local Config section of the VVW software. This may be found in the Start Menu, under Programs, in Drastic Technologies, in the VVW Apps folder.



Local Configuration Menu

Check the **VTR Control** in the Global Config section.

Set the **Edit On** to 0.

Set the **Edit Off** to 0.

The Pre-roll is set to 5 seconds and the Post-roll is set to 3 seconds. The user will not need to adjust this setting.

The user will need to ensure that the **Control** Ports are set properly. The settings will depend on the number of channels supported by the system in question. Note: the first two COM Ports are allocated to the Motherboard.

The **Control** section (for incoming control signals) will be assigned the next COM Ports. In a box with two channels for example, the settings will be as follows: The first channel of control (Ctl 0) will be set to COM3. Select Ctl 0 using the dropdown menu to the right of the word “**Channel**” in the Control section. Then select the proper COM port (in this case COM 3) using the dropdown menu to the right of the word “**Port**”. Ctl 1 will be set to COM 4 using the same method.

The **External** section (for controlling external decks) will be assigned the next available COM ports. Again, in a two-channel system, we will need to set them up in the following manner: Ext. 0 will be set to COM 5. Select Ext 0 from the dropdown menu to the right of the word “**Channel**” in the External section. Select COM 5 from the dropdown menu to the right of the word “**Port**”. Ext 1 will be set to COM 6 using the same method.

Connect the video output of a supported external deck to the video input of your system.

Connect an external reference source (Genlock or Blackburst) to the external reference input (**X-REF IN**) of your system.

Connect the external reference passthrough (**X-REF LOOP**) from your system to the external reference input of the external deck. Note: if this and the previously noted external references are not hooked up, your external pull-ins will not be frame-accurate. The duration will be the same, but the in and outs will differ from the time code locations you selected.

Connect the RS-422 control (OUT) port on your system to the RS-422 control (IN) port of the external deck.

Confirm that the deck has a dependable source tape loaded and that the deck is powered up and functioning properly.

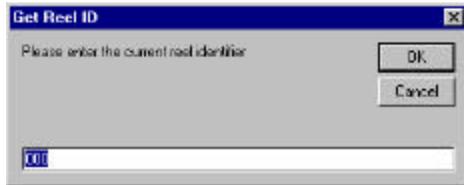
The transport controls on the VVW should now operate the external VTR.

Press Play. You should be able to control the tape transport of the external VTR. Press Stop. Test the Rewind, Fast Forward and so on. Pressing Record should put the VTR into Record Mode.

## External Pull-Ins

An external pull-in is basically taking source material from an external VTR according to the time code, allowing for more accurate capture of material. This avoids the recording of extraneous media, and saves space on your storage.

The VTR and your system will be set up as above in External Control. Select New External Pull-in from the File Menu, under New. The following menu will display:



You will be prompted to enter a Reel ID. VVW possesses the capability of setting up a number of external pull-ins, performing them one after another, and referencing them all to a Reel ID. The user might enter the reference information from the tape source they are pulling from. They might also enter a project name and date for the Reel ID. Pressing the OK button will reveal the External Pull-In Menu.



Confirm that the Time Code Type matches the Control Type found on the QuickClip Clip control Menu. This can be found to the right of the time code, in the Time Code window of the External Pull-In Menu. It is the top of the three fields here, represented in the above diagram by the DF (drop frame).

Select the control type **CTL**, just under the time code type.

Set the “**head**” (the amount of frames your system will record prior to the In point you have chosen) to 0. If you don’t need absolute frame accuracy and want to be sure you have a little extra recorded before the In point, you can enter a reasonable number of frames extra.

Set the “**tail**” (the amount of frames your system will record after the Out point you have chosen) to 0. Again, you may want to add frames after the Out point by entering a number of frames here. Note that you might just set the “head” and “tail” to 0 and set your In and Out points to reflect a safe buffer zone of extra recorded frames.

Enter a **Base** (the prefix attached to the clip name). This will be supplied automatically, but you may wish to see something other than the default clip names for your own reference.

Enter a **Clip Name** if your wish.

Enter a **Comment** for the clip. This does not affect anything else, but it may help you keep track of which shot is which and will appear on the clip field of the External Pull-in interface and in the clip field within the Clip Bin.

Shuttle through the VTR’s source material using the transport controls on the External Pull-In interface until you have a good idea what you would like to record by time code. Find a good In point and press **In**. Note that the In time code field immediately updates to display your present location.

Shuttle forward and find a good Out point. Set this point by pressing the **Out** button.

Press the **Set Clip** button. This will set the information you have entered memory.

Once you are satisfied with the material you have selected, simply press the **Single** button. (perform the first pull-in or the only one if you have entered only one pull-in into your list) Alternately, select **All** (perform all pull-ins in the list if you have entered more than one pull-in and wish them to begin recording at this time) to finish the pull-ins you have defined. Note that you may select certain pull-ins from the list with your mouse and

keyboard and press the “Selected” button to perform more than one pull-in, but not the whole list.

Your system will begin a record of the VTR’s source material. It will pre-roll, then advance in lock step with the VTR and begin its recording.

Upon completion of the media capture, the VTR will post-roll, then cue itself up to the last frame of the edit.

You should then see a new clip appear in the clip bin. You may rename or trim this clip as necessary using QuickClip’s clip edit functions.

## **Accept External Control**

You may control the VVW with an external controller or deck. You will need to have the following parameters set up:

Connect the RS-422 control (OUT) port on the external deck to the RS-422 control (IN) port of your system.

In QuickClip, select the External Control In channel from the channel selector box on the Clip Control interface.

You should now be able to control your system from the external control source.

Test the Play function. In the case of a VTR controlling the VVW, the Play button should allow QuickClip’s transport controls to direct the actions of loaded clips. Play, Fast Forward, Rewind, Stop should all perform their respective tasks for the VVW.

In the case of an external controller, the user should be able to seek and play media in time code space. If the controller supports Odetics protocol, the user may be able to load and play clips.

Press Record. The VVW should go into capture mode. When the record is finished, press stop. Your VVW should stop, and the recorded material should be available for playback.

## Multi Channel Sync Record



**Sync Record** This allows the user to synchronize the “Start Record” of more than one available channel. Selecting the Sync Record button opens the above window:

Depending on the hardware/software package you have assembled, you may have multi-channel capabilities. If it is necessary for you to record more than one channel at a time, the multi-channel sync record allows you to synchronize these incoming channels.

Note that in this instance there are four channels listed, and three are checked. In this application, the user has three cameras hooked up to the appropriate inputs on their system. Entering DCLIP0 into the first field copies this name to all three incoming signals and applies the channel assignments to the three separate clips.

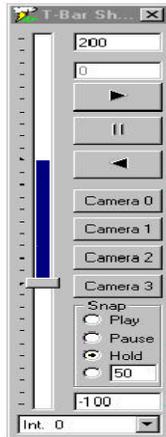
All three channels start recording at the same time. The "Lock Names" selector box attaches the same prefix to all three recorded clips, adding (in this case a 1, 2 and 3) to the end so as to identify the channel the clip was recorded on.

A Record Offset may be specified to allow the user to match the displayed time code of the clips during the record to for example, the house clock time, which might come in handy in an instant replay situation. The clips as saved by VVW, however, will not retain this time code, as all clips recorded by VVW start at 00:00:00:00.

# T-Bar Shuttle

## T-Bar Shuttle

The T-Bar Shuttle allows the user to view a user-selectable portion of a clip while it is being recorded.



The top number (in this case a 200) displays the maximum speed available for playback. This value is user-editable. The box just below that is the current playback speed.

Following those boxes are the play (forward), pause, and play reverse buttons, for shuttling through a clip to locate a specific action or event. The next four boxes, Cameras 1-4 represent the various inputs. If recording on cameras 1, 2 and 3 and using camera 0 as the output channel, selecting Camera 0 would not display a clip.

The Snap section defines the action upon pressing any one of the input cameras. With **Play** selected, the output of the selected channel (for Camera 1, channel Int. 1) is accessed and it begins to play (through the output channel from the offset. The offset is user-editable, in Local Config, and represents the number of frames VVW will back up and begin playback or pause. With **Pause** selected, the output will go back to the offset and pause, allowing the user to search for the beginning of the action or event they want to replay. With **Hold** selected, the output will go back to the offset and play at the speed entered in the box just below. This value is displayed as a percentage of play speed. In this case 50 equals half speed.

The second-to-last box displays the minimum play speed, which is user-editable. The box with the pull-down menu at the very bottom of the T-Bar Shuttle represents the output channel. If the user selects a different output channel during a synchronized recording, this will stop the recording and shift focus to the output of the selected channel.

# MediaReactor Core File Conversion Technology

MediaReactor Core is a file translation and file support technology that is installed on every VVW Series server, allowing the user to:

◆ **Convert from any supported format to the VVW board-native format.**

This capability allows the user to access a variety of industry-standard file types through their VVW. Simply by opening up MediaReactor Core and browsing, the user may select a file and convert it to the VVW-native CODEC. This file may then be handled as a clip within VVW's QuickClip software, and edited, sequenced with other clips, copied and placed within several PlayLists.

◆ **Convert from Drastic board-native format to any supported format.**

This capability allows the user to select any clip within its storage and convert it to a variety of industry-standard file types. This renders formerly incompatible media usable with any number of professional editing platforms, graphics programs and other high-quality professional workstations

Note that direct translations (from format directly to other format) cannot occur within MediaReactor Core. This is however, a capability of Drastic's MediaReactor NLE software. For more information about the MediaReactor product line, contact Drastic Technologies.

In the chart on the following page are the file types handled by MediaReactor:

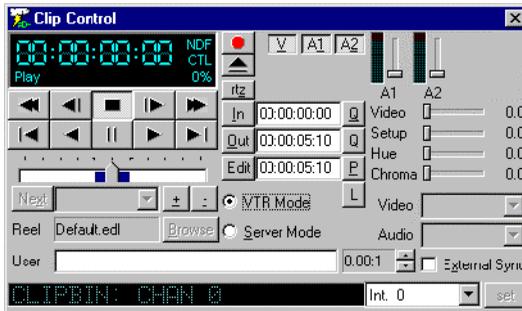
## MediaReactor Core handles the following formats:

Drastic High performance CODECs	Full support for these 3rd party CODECS for QuickTime and Video For Windows*
<p><i>OMFi:</i></p> <ul style="list-style-type: none"><li><b>Avid NuVista/ABVB and Meridien</b></li><li><b>Uncompressed RGB/4:2:2 YUV</b></li><li><b>Avid MCXpress NT</b></li></ul> <p><i>QuickTime/MOV:</i></p> <ul style="list-style-type: none"><li><b>Avid, Media 100 NT/Mac</b></li><li><b>Targa MJPEG</b></li><li><b>MJPEG A and B</b></li><li><b>8 bit/10 bit YUV</b></li></ul> <p>Video For Windows/AVI</p> <ul style="list-style-type: none"><li><b>Digisuite OpenDML MJPEG</b></li><li><b>Standard DV</b></li><li><b>Matrox Rainbow Runner MJPEG</b></li><li><b>Pinnacle DC 30 &amp; DC 50</b></li><li><b>ReelTime MJPEG</b></li><li><b>Targa MJPEG</b></li><li><b>Uncompressed RGB</b></li><li><b>Avid VFW</b></li></ul> <p>Drastic VVW Series</p> <ul style="list-style-type: none"><li><b>VVW 1000 Series</b></li><li><b>VVW 2000 Series</b></li><li><b>VVW 3000 Series</b></li><li><b>VVW 5000 Series</b></li><li><b>VVW 7000 Series</b></li></ul>	<ul style="list-style-type: none"><li><b>Cinepak</b></li><li><b>Component Video</b></li><li><b>DV NTSC/PAL</b></li><li><b>Intel Indeo</b></li><li><b>Sorenson</b></li></ul> <p><i>Audio files such as:</i></p> <ul style="list-style-type: none"><li><b>AIFF</b></li><li><b>AU</b></li><li><b>WAV</b></li></ul> <p><i>Still Image files such as:</i></p> <ul style="list-style-type: none"><li><b>BMP</b></li><li><b>JPEG</b></li><li><b>RLA</b></li><li><b>TGA</b></li><li><b>TIFF</b></li></ul> <p>* many more 3rd party files supported not listed</p> <p>Both NTSC and PAL supported</p>

## VTR Mode

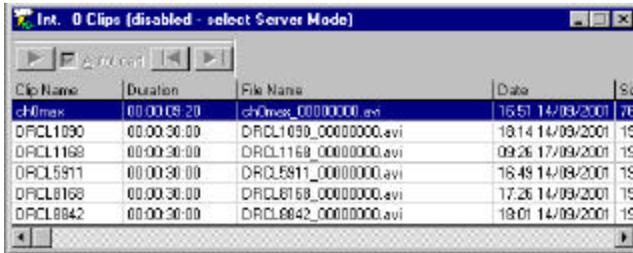
Up to this point we have utilized the VW in Server mode, handling all digital media as clips. We will now examine the **VTR Mode** capabilities of VW.

In VTR mode, VW utilizes time code space to handle media. The time code space is equivalent to standard VTR tape which has been pre blacked starting at 00:00:00:00 and ends at 23:59:59:29. Media may be inserted anywhere within this tape and intermediate frames will be displayed as black with silence.



Here is the Clip Control interface in VTR mode. Note that the clip dropdown list is now grayed out. The browse button is also not selectable.

In VTR mode the user may record video/audio to the hard drive just as in Server mode, but there will be no clip-based handling of media. The user will simply call up various time code locations to preview, play, edit or record video and audio.



Here is the QuickClip Clip Bin. Note that in VTR Mode the clip bin is disabled. The user will not be able to load, edit play or access their media in VTR Mode *as a clip*. The user may, however, add clip-based media to time code space as outlined later in this manual.

VTR Mode uses Time Code Space to define the virtual location of the media.



The VTR\_TC Edit List Window

In VTR mode, the user is not able to use the clip bins. There are no clips, therefore the media addressed by the clip bins is inaccessible. “Clips” may be added to time code space (more on this later). All of the digitized media resides as files on the hard drive. In VTR mode, the user needs to view their time code space to know what is recorded where.

Open the **VTR TC Space Window** in the main menu under **Windows** and the above window will appear. It is recommended the user keep this window open while using Time Code Space (VTR Mode). This lists all the recorded media in time code space.

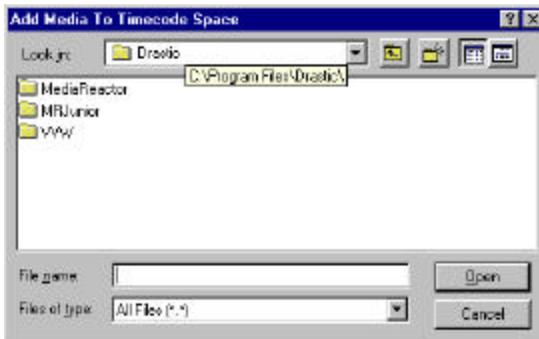
If you have recorded media in VTR Mode and do not see it, press the “Refresh” button to update the display. Pay attention to the channel assignment. Keep in mind that it is possible to have a two-channel system where one channel is playing in Server mode and one is playing in VTR Mode.

## Record Clips

To record a clip, seek or shuttle to the required starting time code. Press the red button that is located in the upper center of the clip control window. This will immediately start to record and will continue recording until another transport button is pressed. Once the record is complete, the new media will appear in the VTR TC Space window.

## Add Media (clips) to Time Code Space

To add media to time code space, seek or shuttle to the time code where the media should appear. Set the edit preset values (V A1/A2/Ax) in the clip control window for the channels to insert. Press the “Add” button. The screen below will appear. The user may then select any compatible existing file, whether recorded in VTR Mode or Server mode. In this way, material gathered as Clips may be inserted into Time Code Space as necessary.



Navigate through the internal drive, attached storage or storage on a network to find the media you need to add. Once you have found the material, either double click to add the media or select the **Open** button.

➤ **Remove Clips**

➤ **Clear Media from Time Code Space**



If you need to clear a section of media from Time Code Space, press the “Blank” button.

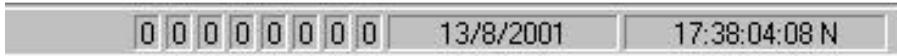
The above screen will appear and the user will be able to easily clear a section of Time Code Space for recording. If the user has a section of video where the audio needs to be replaced, they may use this screen to remove the audio tracks only.

Press the V1 or V2 buttons. These can be selected or deselected based on the needs of the user. Deselect the V1 button and enter the time code values for In and Out points of the section. Press the “Edit” button. This will perform the specified action.

The audio residing on this section of Time Code Space would then be “blanked”, leaving a video-only section of time code space into which could audio could be inserted as needed.

## System Information and Status

### ➤ The Status Bar



The status bar will show the current Synchronization timer and date, which will be used as the current internal timing source. To the left of the date is the GPI trigger status. This is available only if a GPI trigger is enabled. It will display the status of the GPI triggers and they may be set by pressing the button with the mouse on each trigger status. The status bar may be disabled via the View and Status bar option.

### ➤ The Options Dialog

Before recording any clips it is always better to check all the settings in the option. It can be seen under View. Most of these settings are automatically set when you select a specific model on the local configuration. But it is better to check everything over again. When going through all the sub sections, check all the settings for each channel because sometimes one channel could be set to one setting and other one to another. So change the channels and no settings should change.

We have following sub sections under the option:

- ◆ Local System
  - Check all boxes for system type
  - VVW Type - VVW XXXX
  - Channel Type - Current Channel (i.e. 1 of 2)
  - VVW Version - Latest Version
  - Media Reactor Version - Latest Version
  
- ◆ General
  - Check all boxes for correct system settings
  - Signal Format - NTSC OR PAL
  - Compression Type - Depends on model type
  - Status - Depends on the compression ratio
  - All channels must show the same Hard Drive times or set the compression ratio same for all the channels.
  
- ◆ Video In
  - All channels must have the same input

All Input TBCs are set but can be changed and saved.

- ◆ Video Out  
All channels must have the same output
- ◆ Audio In  
All channels must have the same input  
All audio sliders are set to high but can be set to users' needs.
- ◆ Audio Out  
All channels must have the same output  
All audio sliders are set to high but can be set to users' needs.
- ◆ Storage  
All channels must have the same storage drive. If not, use the browser icon to select the drive. You could put all the channels' recordings in the same directory but if that's too packed you could create folders for each channel and use a separate folder for each channel.

## Product Overview

The VVW product line is a series of hard drive-based, nonlinear, professional digital disk recorders (DDRs), and broadcast video servers. These products provide VTR functionality, with nonlinear access and expanded operational modes for the traditional video editing, animation, insertion and display environments.

The VVW Series is offered in the following models:

**VVW 1900** – single channel (MJPEG) analog I/O. Mobile truck, stadium or broadcast facility benefit from Drastic's VVW 1900. The VVW 1900 is ideal as a digitizer for a Storage Area Network or as a Play to Air video server. The VVW 1900 is also a rugged compact solution for any sports replay needs.

**VVW 2000** – 1 channel in or 2 channels out (DV25, DV50 and MPEG-2) analog I/O. Perfect for a networked environment, the VVW 2000 streamlines production with its native DV and MPEG-2 video formats. The VVW 2000 is ideal as a digitizer for a Storage Area Network or as a Play to Air video server. This unit supports instant access to media files through Fibre Channel. During recording, only one channel can be used at a given time.

**VVW 2502** – 1 channel in or 2 channels out (DV25, DV50, MPEG-2 IFrame and MPEG-2 IBP) SDI I/O plus one composite monitor output. Capture, manipulate and Output in native DV and MPEG-2 formats. This unit supports instant access to media files through Fibre Channel. AES/EBU or Embedded audio is supported. During recording, only one channel can be used at a given time.

**VVW 2504** – 2 channels in or 4 channels out (DV25, DV50, MPEG-2 IFrame and MPEG-2 IBP) plus two composite monitor outputs. Capture, manipulate and Output in native DV and MPEG-2 formats. This unit supports instant access to media files through Fibre Channel. AES/EBU or Embedded audio is supported. All four channels can be used for play back but for recording, it requires two channels. For example, you can record on channel one and play back on two and three. But to record on channels one and three, you will not have play back capability.

**VVW 3000** – 1 channel in, 2 channels out (MJPEG) analog I/O. The VVW 3000 video server offers simultaneous record and playback, ideal for sports playback in both stadium and mobile production. Unrivalled slow motion interpolation drives the feature set of this model, and compatibility with popular RS-422 controllers is standard in both Clip and VTR emulation modes.

**VVW 3500** – 2 channels in, 2 channels out (MJPEG) analog I/O. The VVW 3500 video server is ideal for multi-channel sports playback in both stadium and mobile production. The VVW 3500 is also well suited for multi-channel spot playback and program delay. This server provides VTR replacement with network connectivity and full Clip server protocol support. Compatibility with popular RS-422 controllers is standard in both Clip and VTR emulation modes.

**VVW 3700** – 3 channels I+n, 4 channels out (MJPEG) analog I/O. The VVW 3700 video server is ideal for multi-channel sports playback in both stadium and mobile production. Slow motion replay is featured on one channel. The VVW 3700 is also well suited for multi-channel spot playback and program delay. This server provides VTR replacement with network connectivity and full Clip server protocol support. Compatibility with popular RS-422 controllers is standard in both Clip and VTR emulation modes.

**VVW 5000** – single channel uncompressed 8 or 10 bit standard definition. The VVW 5000 is geared toward high-end editing, compositing and graphics storage and graphics applications. The unparalleled quality of the VVW 5000 is useful for facilities executing lossless production, acquisition and manipulation of video.

**VVW 7000** – single channel uncompressed 8 or 10 bit high definition. The VVW 7000 features ATSC and uncompressed HD standards, at 1080i/60, 1080i/59.94, 1080i/50, 1080p/30, 1080p/29.97, 1080p/25, 1080p/24, 1080p/23.98, 720p/60, 720p/59.94, 720p/50 and 720p/48. The VVW 7000, like the other VVW models, offers compatibility with popular RS-422 controllers in both clip and VTR emulation modes. Convenient access to long format media files on a Fibre Channel Network completes the feature set of this video powerhouse.

**QuickClip Pro** – A software-only VTR/DDR emulator and VTR controller. Supports a subset of the VVW functionality for single channel use. See Supported Hardware below.

**QuickVTR** – A software-only VTR emulator. Supports a subset of the VVW VTR Mode functionality for single channel use. See Supported Hardware below.

**QuickDigi** – A software-only VTR controller and Batch Digitizer. Supports a subset of the VVW VTR control functionality for single channel use. See Supported Hardware below.

**Hardware supported by software only versions** – The software only versions (QuickClip Pro, QuickVTR and QuickDigi) support the specific hardware listed below. Other hardware is currently in development. Check with Drastic for an updated list.

- Optibase/ViewGraphics VideoPump SD (401) with 2.0.8 driver
- Optibase/ViewGraphics SdxStream SD (401) with 2.0.8 driver
- Targa DDR SD (401) with 2.0.8 driver
- Optibase VideoPump SD (701) with 3.1.4 driver
- Optibase VideoPump HD (801) with 2.0.8 or 3.1.4 driver
- Matrox DigiSuite LE with 4.6 driver
- Matrox DigiSuite DTV with 4.6 driver
- Matrox DigiServer with 4.6 driver
- Vela CineView Pro with 2.0 driver
- Stradis MPEG Decoders
- Optibase VideoPlex

Please note that other hardware platforms are supported for OEM only. Please contact your OEM if you have one of these systems.

# Applications

**VTR Replacement**

**Alpha Recorder**

**Nonlinear and Hybrid Editing**

**Slow Motion and DMC Playback**

**Time Delay**

**Betacam Cart Replacement**

**News Production**

**Clip Store**

**Digital Picture for DAW**

**Remote Production**

**Graphics Production**

**Instant Replay**

**Time Lapse Recording**

**Commercial Insertion**

**Sports Playback**

**Still Store**

**On-Air Playback**

**Lossless Production**

The VVW uses industry standard video, audio and control connections to standard broadcast video and audio equipment to enhance and add to its operation. VVW combines the emulation of the best tape-based VTRs without being limited by their shortcomings.

The various VVW models offer from offline through several levels of compression to uncompressed throughput, allowing the user to choose the model that best suits their requirements for visual quality.

VVW's audio is always uncompressed CD or DAT quality.

## VTR Emulation and Control

One of VVW's main advantages is its complete emulation of traditional broadcast VTRs. Aside from playing back and recording frame accurate video and synchronized audio under serial control, VVW also supports all editing commands frame accurately as well as the 'bumping' used by edit controllers to synchronize multiple VTRs. VVW has the added advantage of nonlinear (instantaneous) access to any of the audio or video information recorded on it.

Unlike many digital disk recorders, VVW is designed to replace a VTR without requiring additional editing software, changes in editing workflow or limited functionality in editing, spot playback, slow motion control and nonlinear playback. Two of the major issues that VVW addresses to smoothly integrate into the production environments are the handling of audio and video, and RS-422 emulation. VVW responds to hardware and software controllers in exact emulation of a VTR, making it easy to integrate into any production environment.

## Time Code

The VVW Series allows the user to control their DDR through the use of a number of time code types and sources. These are selectable through the QuickClip interface.

If **DF** (Drop Frame) is selected, VVW will use SMPTE drop frame calculations of 29.97 frames per second when returning time-code.

If **NDF** (Non Drop Frame) is selected, time-code will be returned and handled as NDF where 60Hz calculations are used as opposed to 59.97 Hz (Applicable to NTSC only.)

If **VITC** (Vertical Interval Time Code) is selected, time code will use the VBI (Vertical Blanking Interval) to receive time code control.

If **LTC** (Longitudinal Time Code) is selected, time code will use a longitudinal time code reference to receive time code control. (This feature is an option)

If **CTL** is selected, the VVW will accept an external control source (supported deck or controller) for time code reference.

## Compression and Quality

The Drastic VVW Series records and plays back video and audio clips as files from a hard drive or drive set. VVW will handle files of the Drastic-native CODEC or convert them into Drastic-native format using on-board MediaReactor file conversion software. As described in the Introduction above, most of the VVW Series handles digital media (video, audio and stills/graphics) through compression technologies. Drastic offers models using MJPEG, DV25, DV50, MPEG-2 MP@ML, MPEG-2 4:2:2@ML, as well as uncompressed standard and high definition. Compression allows extremely efficient storage of digital media with a relatively high-quality image resolution. The more digital media is compressed however, the less of the original data will be present, and the lower the subjective visual quality.

The chart on the next page compares compression levels to the internal compression of the various models of VVW. The compression may be adjusted (in applicable models) through the QuickClip interface, by entering a number into the compression field on the interface. This number is expressed as a ratio of captured information to the original. In an uncompressed box, this choice will not be selectable. Also, entering a compression ratio tighter than the system's capabilities will not be selectable.

System throughput describes how much data can be moved from video to the hard drive per unit of time. The throughput is defined by system configuration and calculated in terms of Megabytes per second. The lower the overall throughput the greater the number of compression artifacts that will be visible.

## Compression Quality

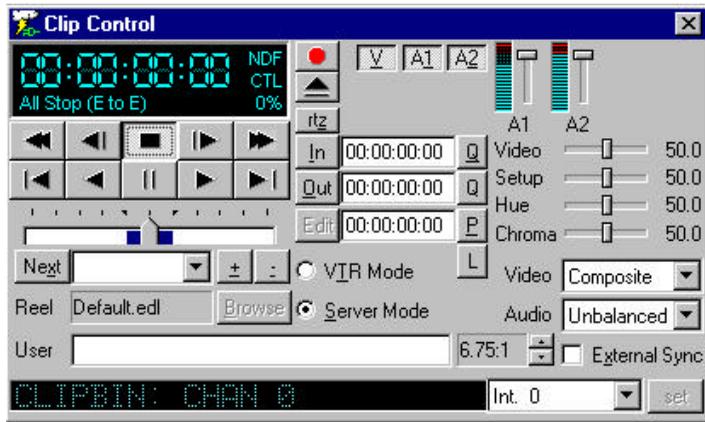
(Please note that the analog formats specified in the ‘Subjective Quality’ field cannot be considered absolute, because the nature of errors between the two domains is very different):

Megabyte per second	Megabits per second	Compression Ratio	Minutes/Gigabyte	Subjective Quality
25.0		1:1		10-bit Lossless (VVW 5000)
20.0	200.00	1:1	00:51	8-bit Lossless (VVW 5000)
13.3		1.3:1	01:17	VVW 3500 Mathematically Lossless upgrade
10.0		2:1	01:42	VVW 3000, VVW 1900
8.0	80.00	2.5:1	02:08	
6.6	64.00	3:1	02:33	
5.7	52.80	3.5:1	02:59	
5.0	45.60	4:1	03:24	Betacam SP
4.4	40.00	4.5:1	03:50	
4.0	32.00	5:1	04:15	Y/C, Hi-8
3.3	32.00	6:1	05:06	
2.9	26.40	7:1	05:57	
2.5	20.00	8:1	06:48	VHS
2.2	17.60	9:1	07:39	
2.0	16.00	10:1	08:30	
1.3	10.40	15:1	12:45	MPEG-1
1.0	8.00	20:1	17:00	
0.7	5.60	30:1	25:30	
0.5	4.00	40:1	34:00	Offline

The above table translates between various standards for describing system throughput. The table is based on 4:2:2 encoding of a 720x486 image at 30 frames (60 fields) per second. The ratio for PAL video (720 x 576 at 25 fps) is very close to the above table.

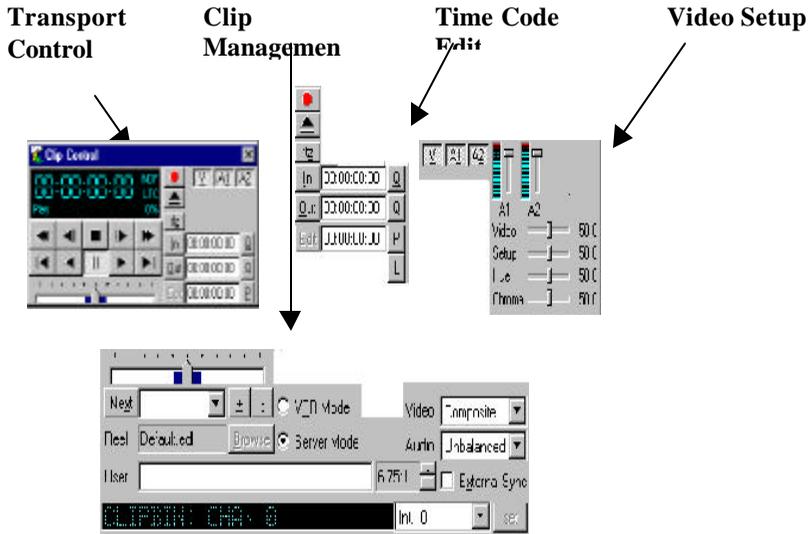
# VVW Menus

## The VVW Clip Control Interface

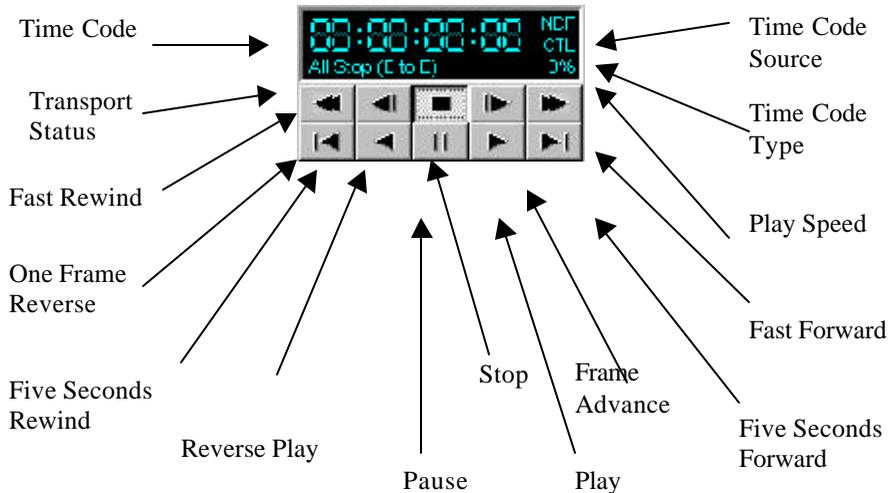


*VVW Clip Control Interface*

This tutorial will examine the following portions of the Clip Control window separately: The **Transport Control**, the **Clip Management**, the **Time Code Edit**, and the **Video Setup** sections.



## The Transport Control Section



**Time Code** window The Time Code is displayed in (00:00:00:00) format (HOURS:MINUTES:SECONDS:FRAMES), or (HH:MM:SS:FF).

**Transport Status** window This will display whatever action is taking place within the transport control section. In this case, we see the stop button pressed, and the Transport Status window shows “All Stop (E to E)”.

**Fast Rewind** button This will zoom backward while playing at the greatest speed (-1200%) until it reaches 00:00:00:00. It will then pause and display the first frame in the clip.

**One Frame Reverse** button This will move the time code one frame backward, pause and display the frame of video at this time code location. Note that each clip begins at 00:00:00:00 and that VVW does not support negative time code.

**Five Seconds Rewind** button This will move to a time code location five seconds before the present location, pause and display the frame of video located there. If located at a point less than 00:00:05:00 within a clip, it will go to zero and pause.

**Reverse Play** button This will “play” the video in reverse (-100%) until it reaches the first frame of the clip, or 00:00:00:00. It will then pause and display the first frame in the clip.

**Pause** button This will stop transport at the present location, and display the frame of video located at that point.

**Stop** button This will stop transport and go into full E to E mode, displaying passthrough video if the video source is active.

**Play** button This will show the selected clip at its normal speed (100%), from the present location within the clip if the clip has been moved from 00:00:00:00, or from 00:00:00:00 if this has not occurred, to the end.

**Frame Advance** button This will advance the clip one frame forward by time code, pause, and display the image at this frame.

**Five Seconds Forward** button This will move the time code five seconds forward, pause, and display the frame of video located there. If there is less than 5 seconds of video left from the present location within the clip to the end, this button will go directly to the end and display the frame of video located there.

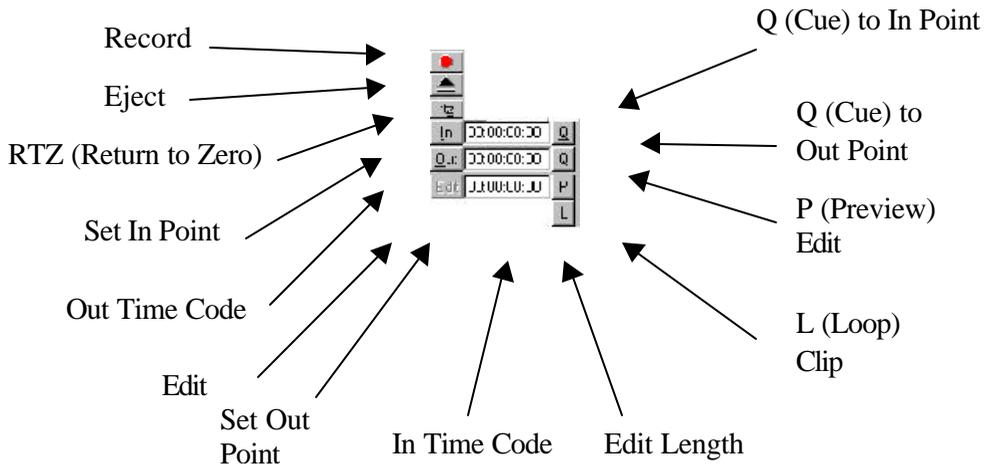
**Fast Forward** button This will fast forward at the greatest speed (1200%) while playing until it reaches the last frame of the clip. It will then pause and display the last frame of video in the clip

**Play Speed** window Play speed will be displayed in this field of the QuickClip interface as a percentage of normal play speed. Reverse play speed will be indicated by a minus or negative sign preceding the percentage.

**Time Code Type** window This field will indicate which of VITC, CLIP or CTL time code modes are in operation.

**Time Code Source** window This displays whether the user has selected either drop-frame or non-drop-frame rate (applicable to NTSC only), or PAL.

## The Time Code Edit Section



**Record** button Pressing this button will bring up the new clip settings window, and allow the user to set up the recording of a clip.

**Eject** button In an external control situation, this will cause the external VTR to eject its tape.

**RTZ (Return to Zero)** button This will transport the unit to the time code location (00:00:00:00) (the first frame of the clip) and put the unit in pause, displaying the frame of video found there.

**Set In Point** button This button sets the time code of your present location within the clip as the “In” point of the edit.

**Set Out Point** button This button sets the time code indicated within the time code window as the “Out” point of the edit.

**Edit** button In VTR mode, this button instructs VVW to perform the edit as set up. In Server mode, this button is inactive.

**In Time Code** window The time code for the first frame of video in the selected clip will be displayed here. By clicking within this window with the mouse, the time code found here can be edited by keyboard. Note that the In time code must be *Set* after being entered.

**Out Time Code** window The time code for the out point of the edit will be displayed here. By clicking within this window with the mouse, the time code found here can be edited by keyboard. Note that the Out time code must be set after being entered.

**Edit Length** window The time code for the duration, or length of the edit will be displayed here. Once time code locations have been entered in the IN and OUT windows, the length of the edit will automatically be calculated and displayed here.

**Q (Cue) to In Point** This will cause the unit to go to the “In” point, pause, and display the frame of video found there.

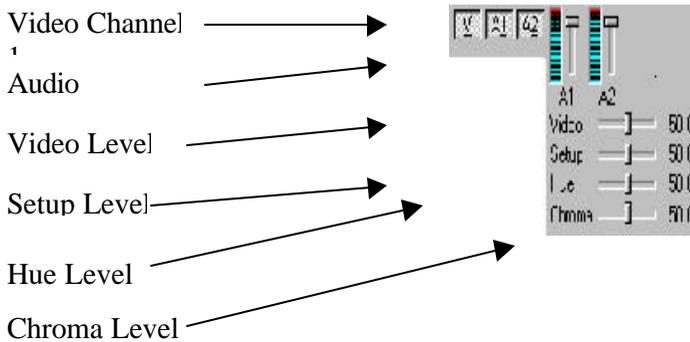
**Q (Cue) to Out Point** This will cause the unit to cue itself up to the “Out” point, pause, and display the frame of video found there.

**P (Preview) Edit** This will cause the VVW to preview the edit as it is set up.

**L (Loop) (Clip)** This button will enable the loop function for the selected clip. If the user loads a clip in the clip control and selects the loop button, they can then press play and the clip will play from beginning to end, return to the beginning and repeat until the user intervenes.

**N (Next) (Clip)** This button loads up and previews the next clip in the playlist, or the clip below your selected clip in the selected clip bin.

## The Video Setup Section



**Video Channel 1** In VTR mode the user may de-select the video channel if an audio-only recording is required. Note that in Server mode VVW will record one video file and two audio files for every clip. These buttons do not affect clip recording (Server Mode).

**Audio channels 1 – 2** (Or more, depending on the model) Select or de-select the audio channels using these buttons. Note that the audio channels are paired to the video channels, audio channels A1 and A2 being dedicated to video channel 1, and audio channels A3 and A4 dedicated to channel 2 and so on.

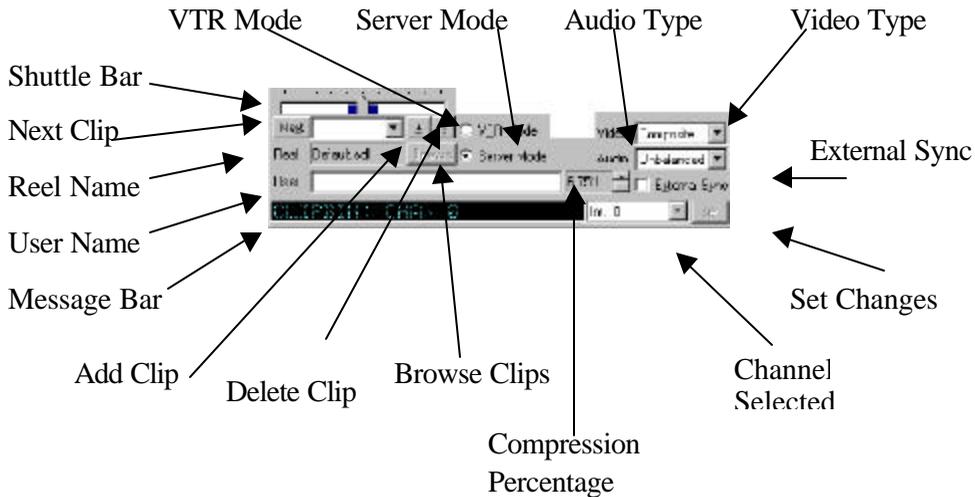
**Video Level** This slider adjusts the video (contrast) level for the selected channel. This setting adjusts the current input only. The Contrast settings for composite, Y/C and YUV are maintained separately.

**Setup Level** This slider adjusts the Setup (brightness) level for the selected channel. This setting adjusts the brightness of the current input only. The video input settings for Composite, Y/C and YUV are maintained separately.

**Hue Level** This slider adjusts the hue (wavelength) of the selected channel. This setting adjusts the hue of the current input channel. The settings for composite, Y/C and YUV are maintained separately. This setting may be accessed through the QuickClip Software, in the **Video In** tab of the Options Menus.

**Chroma Level** This slider adjusts the chroma (saturation) level for the selected channel. The Saturation setting acts like a TBC chroma setting for the composite and Y/C inputs only. This setting adjusts the current input only. The video input settings for Composite and Y/C are maintained separately. This setting may be accessed through the QuickClip Software, in the Video In tab of the Options Menus.

## The Clip Management Section



**Shuttle Bar** This bar will display your current location within the selected clip, the blue area being representative of the entire clip and the little gray bar, your location. Also, while the VVW is playing a clip, the location of the little gray bar will indicate play speed. You can shuttle through the clip by “grabbing” the bar with your mouse and moving it.

**Next Clip button** Go to the next clip in the Playlist. Pressing Next will load the clip after (or below) your currently selected clip, and display the first frame of video found there. Alternately, pressing the “down” arrow at the right of his window will reveal a pulldown menu within which the user can select and load clips.

**Reel Name window** Display the Reel Name (VTR Mode)

**User Name window** Display the User Name (VTR Mode)

**Message Bar window** Displays information relating to clip transport and editing actions. Mode-specific.

- Add Clip** button Browse your storage for a clip to load.
- Delete Clip** button Delete the selected clip from your storage. A confirmation message will be displayed. Pressing enter will cancel out of this action.
- Browse** button Look for a clip in your storage directory
- VTR Mode** checkbox Use transport controls in traditional VTR mode, time code space only, no clips in this mode.
- Server Mode** checkbox Use the transport controls in Server mode, clip-based media control only.
- Video Type** window Choose your video type in this box.
- Audio Type** window Select the audio type (between Balanced, AES/EBU and Unbalanced)
- Compression Ratio** window Adjust the compression ratio for recording. Note that selecting a compression rate greater than the capability of your storage bandwidth or VVW hardware will cause a record to be unsuccessful. In an uncompressed box, this ratio will remain as 1:1.
- External Sync** checkbox Where external sync is being employed, this box will be checked.
- Channel Selected** window Select between channels (model-specific)
- Set Changes** button Any changes that are made need to be “Set” after making them, before they will go into effect.

# Main Menus

The main menus allow for Windows-based control of the various parameters needed to operate the VVW series DDRs and Servers.



We will now examine these menus in detail.

## File



- New**                      Creates a new PlayList or External Pull In
- Open**                      Opens an existing PlayList or External Pull In
- Open Specific**      Opens a specific PlayList or External Pull In
- Modify**                      Will effect certain changes: Merge Clip Bin, Merge Time Code Space, Search/Add Clips
- Close**                      Closes the current list

**License** Obtain Authorization for this installation of QuickClip, or kill the current license.

**Save** Saves the currently active PlayList

**Save As** Saves a PlayList, External Pull In, Clip Bin, TC Space, EDL or Inverted EDL with a new name entered by the user

**Save All** Saves all windows on the workspace. User will be prompted to supply a name for any new PlayLists

**Exit** Exits QuickClip

## Edit

Note: You must have either the PlayList window or the Clip Bin window selected for this menu to be enabled. Also, choose Server mode, as VTR mode does not deal with its recorded media as clips.



When the PlayList window is selected

**Cut** Removes the selected clip and maintains it in the buffer until it is replaced by another cut or copy command.

**Copy** Places the selected clip into the buffer available for pasting

**Paste** Pastes the clip that is loaded in the buffer *above* the highlighted selection in the **PlayList**

**Paste Below** Pastes the clip that is loaded in the buffer *below* the highlighted selection in the **PlayList**

**Paste Over** Pastes the clip that is loaded in the buffer *over* the selected clip, removing the selected clip from the **PlayList**

**Paste At End** Pastes the clip that is loaded in the buffer at the end of the **PlayList**

**Remove** Removes the selected clip from the **PlayList** but maintains the original clip in the Clip Bin.

**Edit Clip** Opens the **Clip Edit** window and loads the selected clip into the buffer for editing



When the Clip Bin window is selected

**Copy** Places the selected clip into the buffer available for pasting

**Delete** Permanently deletes the selected clip from the hard drive

**Remove** Removes the selected clip from the **Clip Bin** only

**Edit Clip** Opens the **Clip Edit** window and loads the selected clip into the buffer for editing

**Preview Clip** Plays the selected clip on the selected output device

# View



*The View Menu*

**Toolbar** Toggle the display of the **QuickClip** toolbar on or off.

**Status Bar** Toggle the display of the **Status Bar** on and off.

**Clip Control** Resizes the **Clip Control** window to the selected sizes:



The Clip Control Window – Full Size



The Clip Control Window – Medium Size



The Clip Control Window – Edit Size



*The Clip Control Window – Small Size*

**Options**            The Options menus are opened through this item. See “Options Menus” in this tutorial.

**Refresh**            Refresh the information on the screen. If you have made a change and do not see it, press this button to update the image on your screen.

## Channels



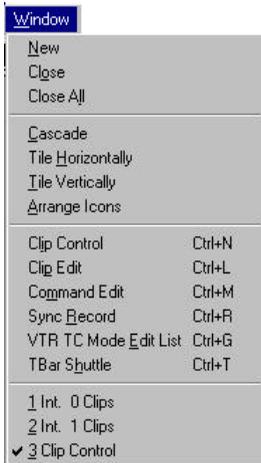
The Channels menu displays and selects VVW’s channels.

**Internal**            All internal channels will be listed here. If the Clip Bins you are working on are closed and need to be re-opened, you can re-open them by selecting them through this menu. You can also shift the focus or selection of a Clip Bin by choosing them through this menu.

**External**            Open an external channel or channels. Not supported in all models.

**Network**            Direct access to a network. Not supported in all models.

# Window



**New** This command opens up a new **Playlist**.

**Close** This command closes the currently selected window.

**Close All** This command closes all open windows. Note that this includes the Clip Control window and the clip bins. Check out the list at the bottom of the Windows menu, which shows all active windows in the VVW screen. The Clip Bins will not be on this list if they are closed. Active VVW windows may also be closed by pressing the X in their upper right corner.

**Cascade** Stack the open windows (**Playlists**) on top of each other so that a corner is showing of each, but only the top one is fully visible. This arrangement allows the current **Playlist** to display all of its important information, and relegates any other PlayLists to the background for your convenience.

**Tile Horizontally** Arrange all open windows so that they are edge-to-edge horizontally on the VVW screen. This allows the user to see more details regarding each **Playlist**, and to organize their working desktop in a top to bottom structure.

**Tile Vertically** Arrange all open windows so that they are edge-to-edge vertically on the VVW screen. This allows the user to see more details regarding each **Playlist**, and to organize their working desktop in a left to right structure.

**Arrange Icons** Direct the arrangement of your desktop icons. Not supported in all models.

**Clip Control** The **Clip Control** window may be opened here. If it is already opened, this command will select the **Clip Control** window. If the **Clip Control** window *is* opened, it will be displayed in the list at the bottom.

**Clip Edit** The **Clip Edit** window may be opened here. If it is already opened, this command will select the **Clip Edit** window. If the **Clip Edit** window *is* opened, it will be displayed in the list at the bottom.

**Command Edit** The **Command Edit** window may be opened here. If it is already opened, this command will select the **Command Edit** window. If the **Command Edit** window *is* opened, it will be displayed in the list at the bottom.

**Sync Record** This allows the user to synchronize the “Start Record” of more than one available channel. Selecting the **Sync Record** button opens the following window:

## Multi Channel Sync Record



Note that in this instance there are four channels listed, and three are enabled. This corresponds to an application wherein the VVW 3700, with three inputs, synchronizes all three inputs (cameras in this case) to start recording at the same time. The "Lock Names" selector box attaches the same prefix to all three recorded clips, adding (in this case a 1, 2 and 3) to the end so as to identify the channel the clip was recorded on.

A Record Offset may be specified to allow the user to match the displayed time code of the clips during the record to for example, the house clock time, which might come in handy in an instant replay situation. The clips as saved by QuickClip however, will not retain this time code, as all clips recorded by QuickClip start at 00:00:00:00.

## T-Bar Shuttle

**T-Bar Shuttle** The T-Bar Shuttle allows the user to view a clip while it is being recorded. Note that audio is not available until the user has stopped the recording of a clip.



The top number (in this case a 200) displays the maximum speed available for playback. This value is user-editable. The box just below that is the current playback speed.

Following those boxes are the play (forward), pause, and play reverse buttons, for shuttling through a clip to locate a specific action or event. The next four boxes, Cameras 1-4 represent the various inputs. If recording on cameras 1, 2 and 3 and using camera 0 as the output channel, selecting Camera 0 would not display a clip.

The **Snap** section defines the action upon pressing any one of the input cameras. With **Play** selected, the output of the selected channel (for Camera 1, channel Int. 1) is accessed and it begins to play (through the output channel from the offset). The offset is user-editable, in Local Config, and represents the number of frames QuickClip will back up and begin playback or pause. With **Pause** selected, the output will go back to the offset and pause, allowing the user to search for the beginning of the action or event they want to replay. With **Hold** selected, the output will go back to the offset and play at the speed entered in the box just below. This value is entered as a percentage of play speed, in this case 50 equals half speed.

The second-to-last box displays the minimum play speed, which is user-editable. The box with the pull-down menu at the very bottom of the **T-Bar Shuttle** represents the output channel. If the user selects a different output channel during a synchronized recording, this will stop the recording and shift focus to the output of the selected channel.

Following the T-Bar Shuttle on the **Window** menu is the list of open windows. Any windows that are currently open in QuickClip will be listed here. If a clip bin is closed, it will not display here, yet may be re-opened through the Channels menu. An item displayed on this list with a check mark before its name has been selected, or is active.

# Help



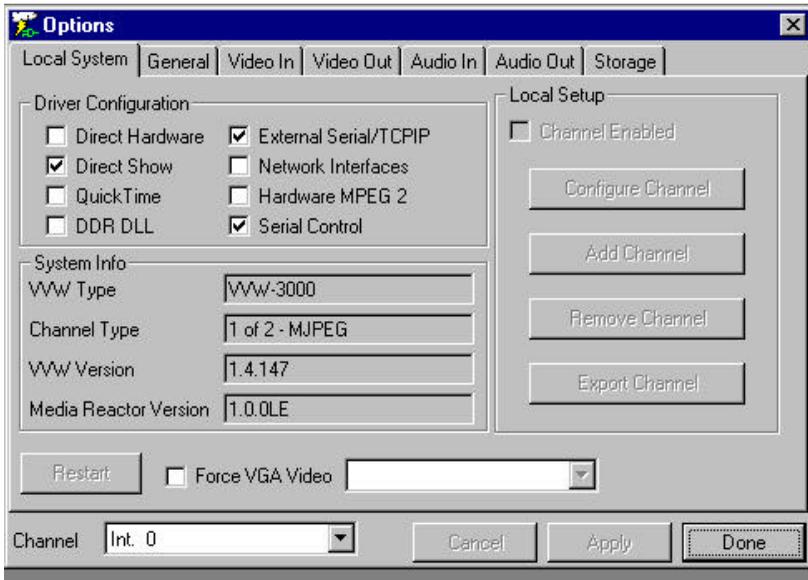
The Help menu produces the user the “About” screen, which calls up a screen offering the VVW QuickClip software version number and some contact information for Drastic Technologies Ltd. The Help Topics menu item (grayed out) is reserved for future development considerations. The Help files regarding the VVW Series QuickClip Software are limited to bubble help windows that open if you hover above an icon for long enough.



The “Splash” screen displays copyright, version and contact information for the VVW series QuickClip software product. Take note of the version of QuickClip you are working with. You may need to give this information to a Drastic Representative if you require information about the functionality of VVW or QuickClip.

# Options Menus

## Local System



The Options Window – Local System Menu

- **Driver Configuration**

**Direct Hardware** Enable VVW 5000 uncompressed standard definition and 7000 uncompressed high definition capabilities.

**Direct Show** Enables Direct Show protocol. This will be checked to enable appropriate hardware when it is applicable to your unit. Do not adjust this setting except where instructed to by a Drastic Technical Support Advisor.

**QuickTime** This will be checked to enable appropriate hardware when it is applicable to your unit. Do not adjust this setting except where instructed to by a Drastic Technical Support Advisor.

**DDR DLL** (Digital Disk Recorder Dynamically Linked Library) Used for external control. This will be checked to enable appropriate hardware when it is applicable to your unit. Do not adjust this setting except where instructed to by a Drastic Technical Support Advisor.

**External Serial/TCPIP** (Transmission Control Protocol/Internet Protocol) Used for network control. This will be checked to enable appropriate hardware when it is applicable to your unit. Do not adjust this setting except where instructed to by a Drastic Technical Support Advisor.

**Network Interfaces** Enable Network Interfaces to be accessed. This will be checked to enable appropriate hardware when it is applicable to your unit. Do not adjust this setting except where instructed to by a Drastic Technical Support Advisor.

**Hardware MPEG-2** This will be checked to enable appropriate hardware when it is applicable to your unit. Do not adjust this setting except where instructed to by a Drastic Technical Support Advisor.

**Serial Control** (Standard Sony, Louth, Odetics RS-422-type controllers). This will be checked to enable appropriate hardware when it is applicable to your unit. Do not adjust this setting except where instructed to by a Drastic Technical Support Advisor.

#### System Info

**VVW Type** Your model number will be displayed here

**Channel Type** (MJPEG, MPEG-2, DV, Uncompressed)

**VVW Version** VVW Software Rev will be displayed here

**MediaReactor Version** The MediaReactor Core Software Rev will be displayed here

#### Local Setup

**Configure Channel** This will be checked to enable appropriate hardware when it is applicable to your unit. Do not adjust this setting except where instructed to by a Drastic Technical Support Advisor.

**Add Channel** This will be checked to enable appropriate hardware when it is applicable to your unit. Do not adjust this setting except where instructed to by a Drastic Technical Support Advisor.

**Remove Channel** This will be checked to enable appropriate hardware when it is applicable to your unit. Do not adjust this setting except where instructed to by a Drastic Technical Support Advisor.

**Export Channel** This will be checked to enable appropriate hardware when it is applicable to your unit. Do not adjust this setting except where instructed to by a Drastic Technical Support Advisor.

**Restart** After having made all of your changes, use this to restart **QuickClip** and set and activate all of your alterations.

**Force VGA Video** Enables you to monitor your output on the VGA screen. (The following items appear on all of the Options screens, and perform the same function on each of them)

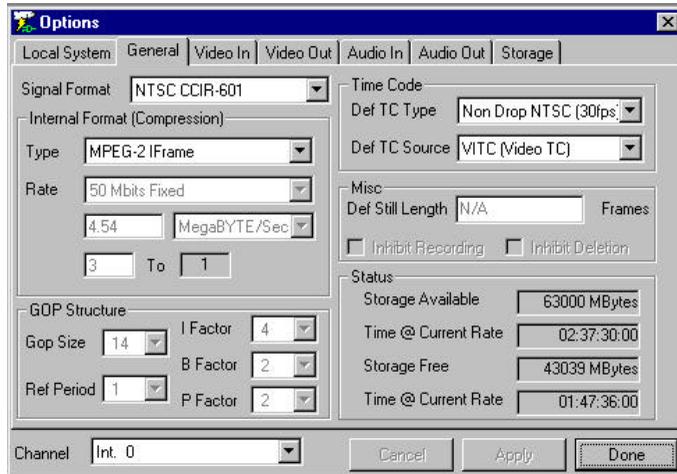
**Channel Selector** Select the channel to which your changes will apply.

**Cancel** Cancel the specified command or any changes you might have made.

**Apply** Fix the changes you've just made into the memory.

**Done** Use this command to exit the options menu.

## General



The Options Window – General

### ◆ Signal Format

Pulldown menu of applicable formats

Internal Format (Compression)

**Type** The type of compression can be selected here from the pull-down menu. (model-specific)

**Rate** The Compression Rate, Data Rate, and Compression Ratio will be displayed here, and can be chosen from the pull-down menu, or entered by keyboard.

### • Time Code

**Def TC Type** Choose between Film Rate (24fps), Non-Drop-Frame NTSC (30fps), Drop-Frame NTSC (29.97fps), and PAL (25fps).

**Def TC Source** Choose between VITC (Video Time Code), LTC (Audio Time Code), CTL (control), Absolute Position, and Clip Position.

- **Misc**

**(Def Still Length)** Define the length of time the still images will be displayed

- **Status**

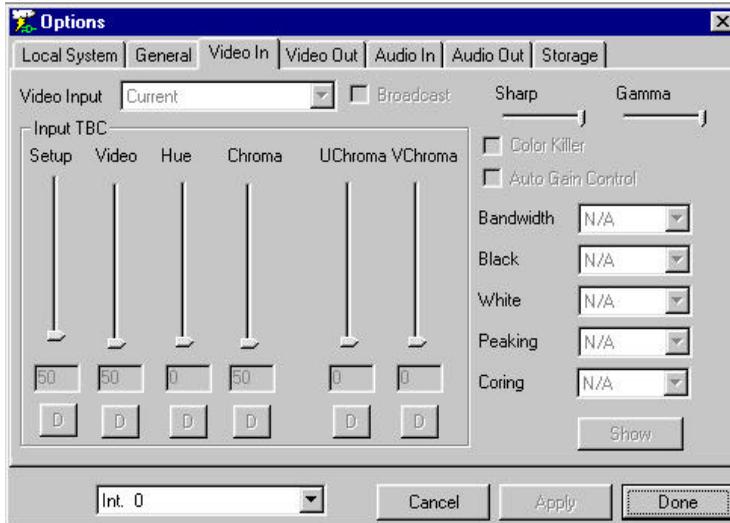
**Storage Available** Total storage available to the system expressed in MB

**Time @ Current Rate** Amount of video storage available at the current rate expressed in MB

**Storage Free** Amount of storage left unused, or available for use

**Time @ Current Rate** Amount of video storage left unused at current rate

## Video In



The Options Window – Video In

### ◆ Video Input

Pulldown menu of applicable formats for Video Input: e.g. Composite, S-Video (Y/C) or Component.

**Broadcast** (on/off) Checked to enable specific hardware when it is applicable to your VVW.

Input TBC (Time Base Corrector)

Note that there is a “D” below each slider, which stands for the word “default”. Pressing these buttons restores the default setting for each of these sliders.

**Setup** Setup (Brightness) adjusts the intensity of the video level for the current input only. It is disabled if the Automatic Gain Control is enabled. This setting is adjusted through the use of a slider, which displays the setting as a number from 0 to 100. The “D” at the bottom of the slider stands for default, which you can return to by pressing the “D”. The default level for Setup is 50. The video input settings for Composite, Y/C and YUV are maintained separately.

**Video** Video (Contrast) adjusts the luminance range for the current input only. It is disabled if the Automatic Gain Control is enabled. This setting is adjusted through the use of a slider, which displays the setting as a number from 0 to 100. The “D” at the

bottom of the slider stands for default, which you can return to by pressing the “D”. The default level for Video is 50. The Video settings for Composite, Y/C and YUV are maintained separately.

**Hue** This setting adjusts the Hue (the wavelength) of the current input channel. This setting is adjusted through the use of a slider, which displays the setting as a number from 0 to 100. The “D” at the bottom of the slider stands for default, which you can return to by pressing the “D”. The default level for Hue is 0. The settings for Composite, Y/C and YUV are maintained separately

**Chroma** The Chroma setting acts like a TBC (Time Base Corrector) color saturation setting for the Composite and Y/C inputs only. This setting adjusts the chrominance intensity for the current input only. This setting is adjusted through the use of a slider, which displays the setting as a number from 0 to 100. The “D” at the bottom of the slider stands for default, which you can return to by pressing the “D”. The default level for Chroma is 50. The video input settings for Composite, Y/C and YUV are maintained separately.

**UChroma** The U Saturation adjusts the Chroma of the U portion of the YUV input. Combined with the V Saturation setting it allows control over the Chroma setting of a TBC. This setting is adjusted through the use of a slider, which displays the setting as a number from 0 to 100. The “D” at the bottom of the slider stands for default, which you can return to by pressing the “D”. The default level for UChroma is 50. It is not available for Composite or Y/C.

**VChroma** The V Saturation adjusts the Chroma of the V portion of the YUV input only. Combined with the U Saturation setting it allows control over the Chroma setting of a TBC. This setting is adjusted through the use of a slider, which displays the setting as a number from 0 to 100. The “D” at the bottom of the slider stands for default, which you can return to by pressing the “D”. The default level for VChroma is 50. It is not available for Composite or Y/C.

**Sharpness** The Sharpness is normally set at 57%. This setting adjusts the sharpness of the current input only. This setting is adjusted through the use of a slider. The settings for Composite, Y/C and YUV are maintained separately.

**Gamma** The Gamma adjustment compensates for the difference between the measured and the perceived brightness level of a phosphorous display or camera. This setting is adjusted with a slider.

**ColorKiller** (off/on) The ColorKiller is used to shut off the color decoder if the incoming video does not contain color information.

**Automatic Gain Control** (off/on) This setting may be adjusted separately for each input, as opposed to the general TBC settings above. Automatic Gain Control attempts to compensate for video inputs using the Brightness (~Setup) and Contrast (~Video) settings below. If the AGC is enabled, then the settings below will not be active. For fine-tuning of the Y/C or YUV signals, this should be disabled, but should normally be enabled for Composite.

**Bandwidth** Defines the amount of data that can be passed in a given time. Settings here are: Notch, Standard, Medium or High.

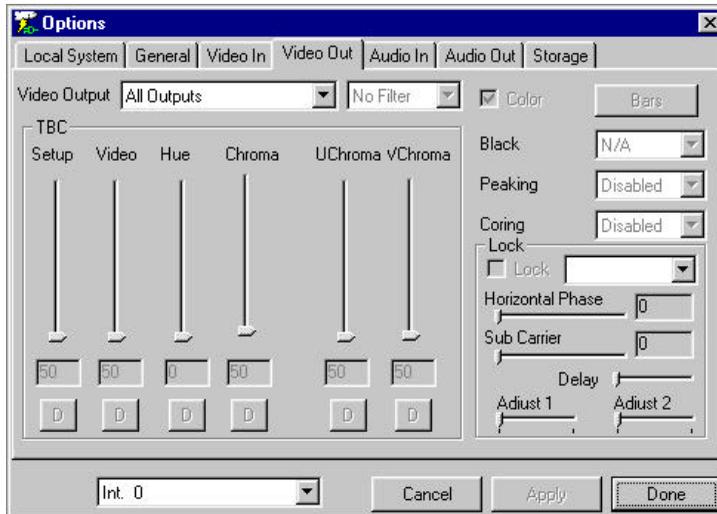
**Black** Adjusts the Black level for this channel. Settings here are Setup or Crystal.

**White** Adjusts the White level for this channel. Settings here are: Clamp or Free.

**Peaking** The YUV Peaking setting, when enabled, intensifies the effect of the YUV Coring filter, making it more severe. Settings here are “No Peak Limit”, “1 Bit Limit” or “2 bit Limit”.

**Coring** This setting may be adjusted separately for each input, as opposed to the general TBC settings above. Coring affects the luminance signal in a Y/C or YUV input.

# Video Out



The Options Window – Video Out

## ◆ Video Output

Select the Video Output to which the changes you have entered will apply.

**Filter** Select the filter through this pull-down menu

**TBC** (Output Time Base Corrector)

**Setup** Setup (Brightness) adjusts the intensity of the video level for the current input only. It is disabled if the Automatic Gain Control is enabled. This setting is adjusted through the use of a slider, which displays the setting as a number from 0 to 100. The “D” at the bottom of the slider stands for default, which you can return to by pressing the “D”. The default level for Setup is 50. The video input settings for Composite, Y/C and YUV are maintained separately.

**Video** Video (Contrast) adjusts the luminance range for the current input only. It is disabled if the Automatic Gain Control is enabled. This setting is adjusted through the use of a slider, which displays the setting as a number from 0 to 100. The “D” at the bottom of the slider stands for default, which you can return to by pressing the “D”. The default level for Video is 50. The Video settings for Composite, Y/C and YUV are maintained separately.

**Hue** This setting adjusts the Hue (the wavelength) of the current input channel. This setting is adjusted through the use of a slider, which displays the setting as

a number from 0 to 100. The “D” at the bottom of the slider stands for default, which you can return to by pressing the “D”. The default level for Hue is 0. The settings for Composite, Y/C and YUV are maintained separately

**Chroma** The Chroma setting acts like a TBC (Time Base Corrector) color saturation setting for the Composite and Y/C inputs only. This setting adjusts the chrominance intensity for the current input only. This setting is adjusted through the use of a slider, which displays the setting as a number from 0 to 100. The “D” at the bottom of the slider stands for default, which you can return to by pressing the “D”. The default level for Chroma is 50. The video output settings for Composite, Y/C and YUV are maintained separately.

**UChroma** The U Saturation adjusts the Chroma of the U portion of the YUV input. Combined with the V Saturation setting it allows control over the Chroma setting of a TBC. This setting is adjusted through the use of a slider, which displays the setting as a number from 0 to 100. The “D” at the bottom of the slider stands for default, which you can return to by pressing the “D”. The default level for UChroma is 50. It is not available for Composite or Y/C.

**VChroma** The V Saturation adjusts the Chroma of the V portion of the YUV input only. Combined with the U Saturation setting it allows control over the Chroma setting of a TBC. This setting is adjusted through the use of a slider, which displays the setting as a number from 0 to 100. The “D” at the bottom of the slider stands for default, which you can return to by pressing the “D”. The default level for VChroma is 50. It is not available for Composite or Y/C.

**Black** Adjusts the Black level for this channel. Settings here are Setup and Crystal.

**Peaking** The YUV Peaking setting, when enabled, intensifies the effect of the YUV Coring filter, making it more severe.

**Coring** Coring affects the luminance signal in a Y/C or YUV input. This setting may be different for each input, as opposed to the general TBC settings above.

**Lock** Genlock, or timing synchronization. The choices here are Ref In, and Composite.

**Horizontal Phase** Horizontal synchronization information. This setting is adjusted through the use of a slider, which displays the results of your manipulation as a number from 0 to 100.

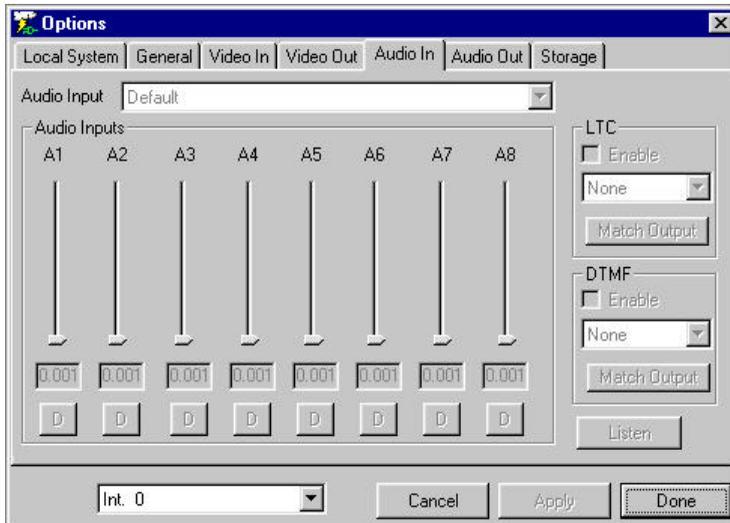
**Sub Carrier** Chrominance synchronization information. This setting is adjusted through the use of a slider, which displays the results of your manipulation as a number from 0 to 100.

**Delay** Timing delay of genlock

**Adjust 1** A genlock timing setup adjustment

**Adjust 2** A genlock timing setup adjustment

# Audio In



The Options Window – Audio In

**Audio Input**                      **Balanced +4dB.**

Audio Inputs

**Input Level for up to 8 channels**                      These settings are adjusted through the use of sliders, which display the results of your manipulation as a number from 0 to 100. The “D” at the bottom of the sliders stands for default, which you can return to by pressing the “D”.

**LTC**                                      (Longitudinal Time Code)

**Enable**                                  Enable the LTC. (This feature is an option)

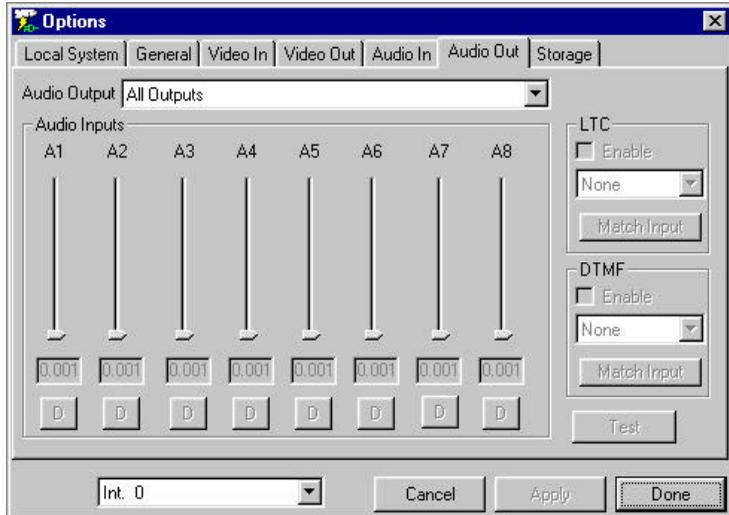
**Match Output**                      Used for synchronizing the LTC output

**DTMF**                                      Dual Tone Multi Frequency time code.

**Enable**                                  Enable the DTMF. (This feature is an option)

**Match Output**                      Used for synchronizing the DTMF output

# Audio Out



The Options Window – Audio Out

The following values may be adjusted within this menu for your audio output:

**Audio Output** Balanced +4dB, or Unbalanced –10dB.

## Audio Outputs

**Level for up to 8 channels** These settings are adjusted through the use of sliders, which display the results of your manipulation as a number from 0 to 100. The “D” at the bottom of the sliders stands for default, which you can return to by pressing the “D”.

**LTC** (Longitudinal Time Code) (This feature is an option)

**Enable** Turn the LTC on or off.

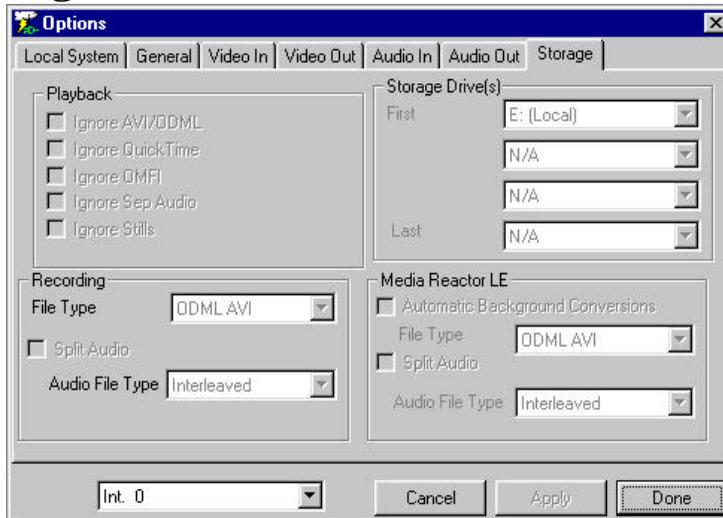
**Match Output** Used for synchronizing the LTC output

**DTMF** (Dual Tone Multi Frequency time code) (This feature is an option)

**Enable** Turn the DTMF on or off

**Match Input** Used for synchronizing the DTMF output

# Storage



The Options Window – Storage

## ◆ Playback

**Ignore AVI/DDML** This will be checked to enable appropriate hardware when it is applicable to your unit. Do not adjust this setting except where instructed to by a Drastic Technical Support Advisor. Not supported on all models.

**Ignore QuickTime** This will be checked to enable appropriate hardware when it is applicable to your unit. Do not adjust this setting except where instructed to by a Drastic Technical Support Advisor. Not supported on all models.

**Ignore OMFI** This will be checked to enable appropriate hardware when it is applicable to your unit. Do not adjust this setting except where instructed to by a Drastic Technical Support Advisor. Not supported on all models.

**Ignore Sep Audio** This will be checked to enable appropriate hardware when it is applicable to your unit. Do not adjust this setting except where instructed to by a Drastic Technical Support Advisor. Not supported on all models.

**Ignore Stills** This will be checked to enable appropriate hardware when it is applicable to your unit. Do not adjust this setting except where instructed to by a Drastic Technical Support Advisor. Not supported on all models.

**Storage Drive(s)** Specify the destination of your records

◆ **Recording**

**File Type** This will be checked to enable appropriate hardware when it is applicable to your unit. Do not adjust this setting except where instructed to by a Drastic Technical Support Advisor. Not supported on all models.

**Split Audio** This will be checked to enable appropriate hardware when it is applicable to your unit. Do not adjust this setting except where instructed to by a Drastic Technical Support Advisor. Not supported on all models.

**Audio File Type** This will be checked to enable appropriate hardware when it is applicable to your unit. Do not adjust this setting except where instructed to by a Drastic Technical Support Advisor. Not supported on all models.

MediaReactor LE

**Automatic Background Conversions** This will be checked to enable appropriate hardware when it is applicable to your unit. Do not adjust this setting except where instructed to by a Drastic Technical Support Advisor. Not supported on all models.

**File Type** This will be checked to enable appropriate hardware when it is applicable to your unit. Do not adjust this setting except where instructed to by a Drastic Technical Support Advisor. Not supported on all models.

**Audio File Type** This will be checked to enable appropriate hardware when it is applicable to your unit. Do not adjust this setting except where instructed to by a Drastic Technical Support Advisor. Not supported on all models.

## The QuickClip Toolbar



- |   |                    |  |
|---|--------------------|--|
|    | <b>New PL</b>      | Creates a new PlayList   |
|    | <b>New PI</b>      | Creates a new Pull In  |
|    | <b>Open</b>        | Opens a saved PlayList   |
|    | <b>Save</b>        | Saves the selected PlayList  |
|    | <b>Save As</b>     | Saves the selected PlayList with a new name  |
|    | <b>Save All</b>    | Saves all windows in the workspace, including any open PlayLists   |
|    | <b>Close List</b>  | Closes the selected list   |
|    | <b>Cut</b>         | Removes the current clip and maintains it in the buffer until it is replaced by another cut or copy command. |
|  | <b>Copy</b>        | Places a copy of the selected clip into the buffer available for pasting                                     |
|  | <b>Paste</b>       | Pastes the clip from the buffer above the highlighted selection in the PlayList                              |
|  | <b>Paste Over</b>  | Pastes the clip from the buffer over the previous clip, removing it from the PlayList                        |
|  | <b>Paste Below</b> | Pastes the clip from the buffer below the currently highlighted selection                                    |

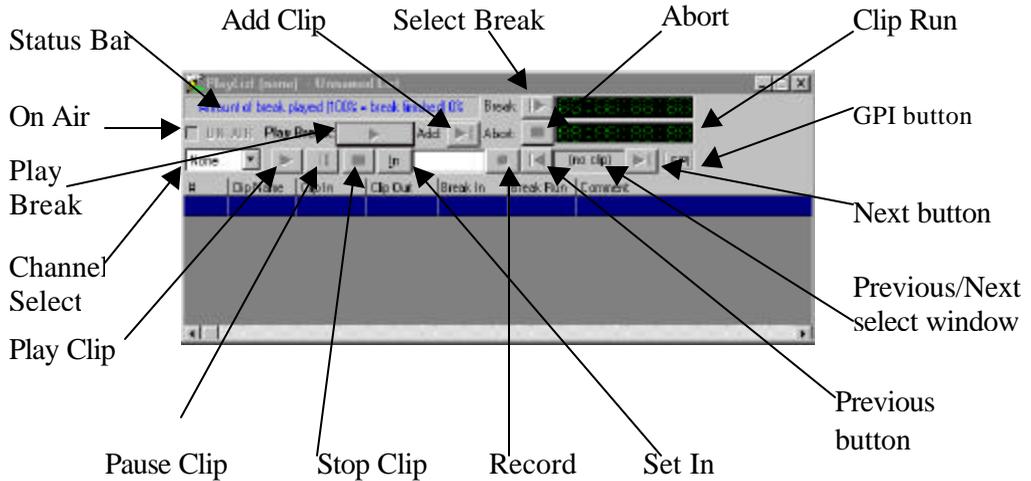


**Paste At End** Pastes the clip from the buffer at the end of the PlayList



**Delete** Deletes the selected clip

## The PlayList



**Stop Clip** Stops playback of the current clip

**Pause Clip** Pauses playback of current clip

**Play Clip** Plays the selected clip

**Channel Select** The Channel Select drop down box displays the available number of video inputs.

**ON-AIR** Toggle the ON-AIR button to lock out edit controls in the PlayList

**Status Bar** The Status Bar displays the status of clips within a Break and the percentage of the current Break played.

**Play Break** If the first clip in a Break or the whole break is selected, this will play the current Break. If a clip is selected partway down the playlist, the Play Break will select the break from that clip down to the location of the next command or the end of the PlayList, and play this selection of video.

**Add Clip** Add a clip from the storage. Pressing this button calls up the Open dialog box, allowing the user to search through the storage directory or directories.

**Select Break** Selects all the clips in the **Break**, starting from the first clip to the first **Command**. Upon pressing play, the **Playlist** will begin playing. Upon reaching the **Command**, it will pause at the last frame of the last clip before the command, and begin waiting. When the **Command** condition is satisfied, the next **Break** will be selected, and begin playing.

**Abort** Abort playback of the **Break**. Puts QuickClip into **Stop** mode.

**Break Display** Displays the time remaining in the current **Break** while playing, or the total time for the current Break when paused or stopped, not counting delays or waits

**Clip Run** window When a clip is selected, displays the length of your current clip, and in Play mode counts down from the time code length of the current clip to 00:00:00:00.

**Previous/Next select** window The name of the clip you have selected will be displayed in this window. If there is a clip you are looking for, pressing the left arrow (**Previous**) or the right arrow (**Next**) will allow you to search through the **Clip Bin** for it.

**Next** button Select the next clip in the Clip Bin and preview it.

**Previous** button Select the previous clip in the Clip bin and preview it.

**Record** Start Recording. Not supported on all models.

**Enter Out** Enter the time code location of the out point of a recording in VTR mode. Not supported on all models.

**Set In** Enter the time code location of the in point of a recording in VTR mode. Not supported on all models.

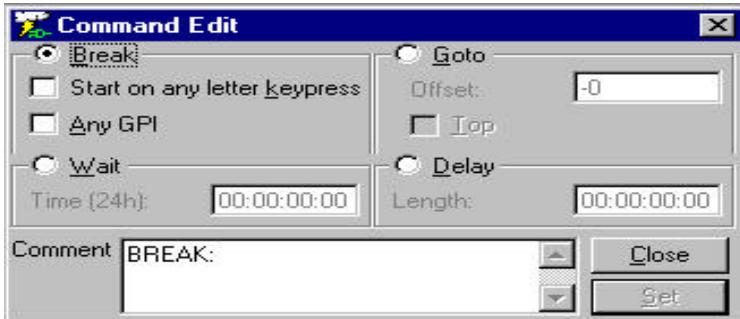
Headings above clips in Playlist

**# or X** Indicates the clip number in the break section. (X Indicates a Command entered, such as a GPI Trigger, or Go To Top, selectable using the Command Edit window).

**Clip Name** The clip name is indicated unless a Command has been entered.

<b>Clip In</b>	The clip In point is displayed or shows Command type.
<b>Clip Out</b>	The clip Out point is displayed or shows Command details.
<b>Speed</b>	Speed indicates the current playback speed
<b>Break In</b>	Time Code of In point of clip
<b>Break Run</b>	The Break Run displays a cumulative run time for the Break section
<b>Comment</b>	Clip comments or Command description.

## The Command Edit Window



The Command Edit window

### ◆ Available Commands:

**BREAK – Start on any keypress** Wait for an external controller command or keypress on the keyboard or front panel controller. Note that the Space bar, the Enter key and the Tab key (as well as other non-alphanumeric keys) are not considered a keypress for the purposes of the **Start on any keypress** command.

**BREAK – Any GPI** A **Break** which waits for **Any GPI** (Ground Pulse Interrupt), waits for a device-based electrical signal will activate the next clip or command.

**WAIT** Tell the **PlayList** to wait for a specific time of day before continuing. The internal system clock is the reference. Format is HH:MM:SS:FF. (hours:minutes:seconds:frames)

**GOTO Go To** specified locations in the **PlayList** or directly to the top of the list, for looping purposes. The offset specifies how many clips and in what direction to go to. A negative number will move up the list while a positive number will move down the list.

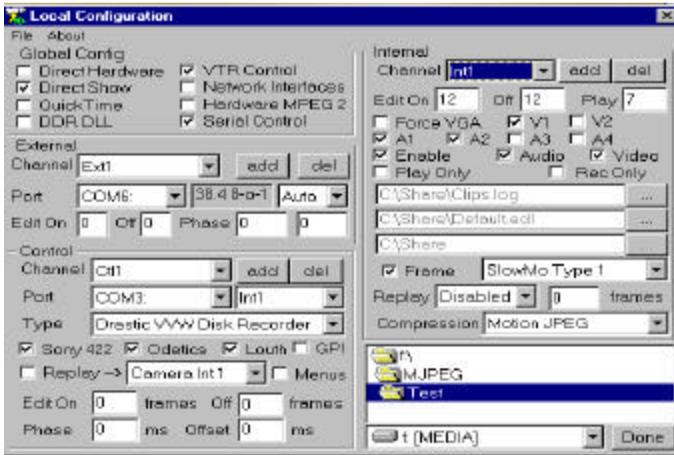
**DELAY** Set a **Delay** of a specific length into the **Playlist**. When the delay is completed, the next clip or command will resume. Again, the internal system clock is the reference. Format is HH:MM:SS:FF (hours:minutes:seconds:frames).

Add commands to the **Playlist** by right-clicking the item above the location in the **PlayList** in which you would like to place the command, and selecting the **Insert Command** option from the menu. Select the command that you require. **QuickClip** will insert the command below the item you have right-clicked on.

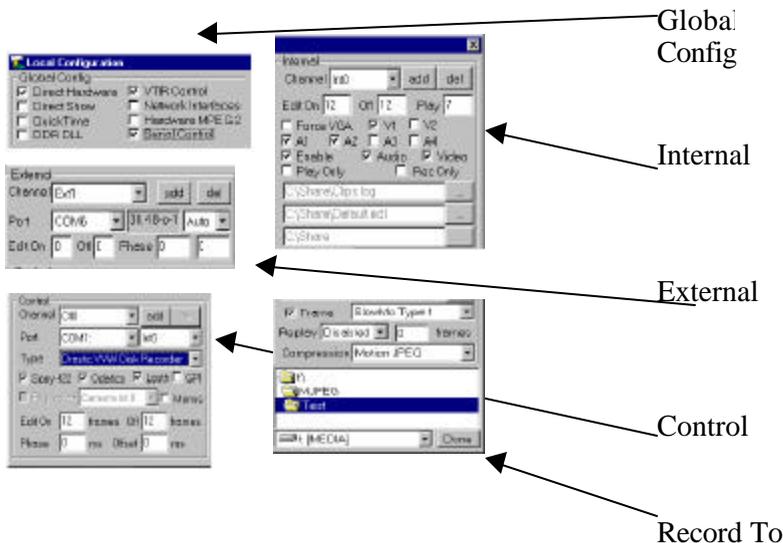
When you are done creating the command, press the **SET** button on the **Command Edit** window to put the changes into the list. Note: If you don't press the **SET** button, the **Command Edit** window will default the command you have just entered to the last type of command that was added to the list.

## VVW Local Config Menu

Below is the VVW Local Configuration menu. To better examine the features that can be adjusted within this menu, we will break the menu down into its constituent elements.



Below is the **Local Configuration** menu separated into the following subsections: **Global Config**, **External**, **Control**, **Internal** and **Record To**. We will further examine the properties represented in each of the sections of this diagram.



## Global Config



**Direct Hardware** Enables hardware for the VVW 5000 and 7000. Do not adjust this setting except where instructed to by a Drastic Technical Support Advisor. Note that although these settings will be checked or not checked, as your hardware requires, you should be aware that if Direct Hardware is checked, Direct Show should be unchecked.

**Direct Show** Enables Direct Show protocol for the VVW 3000-3XXX Series. This will be checked to enable appropriate hardware when it is applicable to your unit. Do not adjust this setting except where instructed to by a Drastic Technical Support Advisor. Note that although these settings will be checked or not checked, as your hardware requires, you should be aware that if Direct Show is checked, Direct Hardware should be unchecked.

**QuickTime** This will be checked to enable appropriate hardware when it is applicable to your unit. Do not adjust this setting except where instructed to by a Drastic Technical Support Advisor. Not supported on all models.

**DDR DLL** (Digital Disk Recorder Dynamically Linked Library) This will be checked to enable appropriate hardware when it is applicable to your unit. Do not adjust this setting except where instructed to by a Drastic Technical Support Advisor. Not supported on all models.

**VTR Control** Enable control of external VTRs. This will be checked as a default to enable control of external VTRs. Do not adjust this setting except where instructed to by a Drastic Technical Support Advisor.

**Network Interfaces** Control via TCP/IP protocol will be enabled in future versions of this product. This will be checked to enable appropriate hardware when it is applicable to your unit. Do not adjust this setting except where instructed to by a Drastic Technical Support Advisor. Not supported on all models.

**Hardware MPEG-2** This will be checked to enable appropriate hardware when it is applicable to your unit. Do not adjust this setting except where instructed to by a Drastic Technical Support Advisor. Not supported on all models.

**Serial Control** (Standard Sony, Louth, Odetics RS-422-type controllers)  
This will be checked to enable VVW to be controlled by an external controller. The default setting is for this box to be checked. Do not adjust this setting except where instructed to by a Drastic Technical Support Advisor.

## External

Control of an external VTR may be assigned a port through this portion of the VVW Config window. You may add or delete a channel of external control, and switch port assignments through this channel. If you need to change any of these settings, you must be instructed to do so by a Drastic Technical Support Advisor. Do not experiment with the default settings, as this may result in a loss of communications between the VVW and the attached device.

**Channel** In a dual-channel unit, there would be two channels of external control, one for channel 1 and one for channel 2. The standard arrangement has the first channel of external control identified as Ext0, and the second as Ext1. Upon receiving a new VVW, the external channel or channels available will already be assigned to the appropriate COM ports.

**Add** Add a channel of external control. The drop down menu shows the channel or channels you have enabled. The first available channel is Ext0, the second is Ext1, the third would be Ext2 in the case of a model with more than two channels of external control, etc. Once a channel of external control has been added, it must be assigned a port. The External, Control and Internal channels are all routed through the VVW hardware, and must be assigned logical pathways through it. Two external channels may not be assigned to the same port.

**Del** Delete a channel of external control. (Are you sure you want to do this?)

**Port** The port is the pathway the external control signals take to get through the VVW hardware. The default port for channel 1 (Ext0) is COM5 and the default for the second channel (Ext1) is COM6.

**(Baud Rate)** The Baud Rate will be displayed here. The default is 38.4k 8-0-1.

**Auto** Auto is the time code type.

**Edit On** Set the length of the pre-roll for an edit to be performed on. This setting may be adjusted as necessary for the particular device you are controlling.

**Off** Set the length of the post-roll after an edit. This setting may be adjusted as necessary for the particular device you are controlling.

**Phase** The Phase may be adjusted here. The default is 0. Do not adjust this setting unless instructed to do so by a Drastic Technical Support Advisor.

## Control

Determine where the channel or channels of **Control In** will be assigned. This is the control of VVW by an external control source such as an edit controller or a slow motion controller. If you need to change any of these settings, you must be instructed to do so by a Drastic Technical Support Advisor. Do not experiment with the default settings, as this may result in a loss of communications between the VVW and the attached device.



**Channel** The drop down menu for the channel shows all Control In channels that have been enabled. In a two channel box, there will be two channels of for control of the VVW by an external source. The standard arrangement for these has the first channel identified as Ctl0, and the second channel is Ctl1.

**Add** Add a channel of Control In. Once a channel of Control In has been added, it must be assigned a Port. The External, Control and Internal channels are all routed through the VVW hardware, and must be assigned logical pathways through it.

**Del** Delete a channel of Control In. (Are you sure you want to do this?)

**Port** Assign a port to each channel of control in supported by the box. The default setting for the first channel of control in (Ctl0) is COM3, and the default for the second channel of control in is COM4.

**Type** This drop down menu for industry standard supported control protocol types offers the user a quick method of confirming that their device can talk to the VVW. Consult Drastic if the controller you need to connect does not appear. The following control types are listed

**Sony 422, Odetics, Louth** Enable the use of Sony, Odetics and Louth protocols

**GPI** Enable the use of a GPI trigger. This box should remain unchecked unless you are using an external GPI trigger. It does not apply to a keyboard press activated trigger. Consult with Drastic before changing.

**Edit On** The Edit On pre-roll may be set here.

**Off** The Edit Off post-roll may be set here.

**Phase** The Phase may be adjusted by entering a number value in this field.

**Offset** The Offset default is 0 ms (microseconds). Do not adjust this setting unless directed to do so by a Drastic Technical Support Advisor.

## Internal

This section determines the presets for each channel supported by the model of VW to which this manual applies. If you need to change any of these settings, you will be instructed to do so by a Drastic Technical Support Advisor. Do not experiment with the default settings, as this may result in a loss of communications within the board set, undermining the functionality of the unit.



**Channel** In a single channel box, the default for this channel is Int0. For a two channel box, the default for channel 1 is Int0, and the default for channel 2 is Int1. A unit possessing more than two channels would also be numbered in sequence.

**Add** Add a channel of video. Note that this must be supported by the hardware. The External, Control and Internal channels are all routed through the same SCSI card, and must be assigned logical pathways through it.

**Del** Delete a channel of video. (Are you sure you want to do this?) Note that Ch0 may not be deleted.

**Edit On** The edit on may be adjusted within this field, but make sure that what you are adjusting has a logical basis or else you will end up undermining the effective operation of the unit.

**Off** The default for the post-roll of an edit may be adjusted here.

**Play** The default for the pre-roll of a play command may be adjusted here.

**Force VGA** This checkbox opens the VGA display, which will support a preview quality display window appearing on your VGA monitor in addition to the QuickClip interface, for use during clip manipulation and editing. In some models, checking this box diverts playback from the output connections to an on-screen VGA playback mode, effectively blocking video output. In the VW 5000 and 7000 Series, this allows the

user to operate without the use of a D1 monitor. For more information, consult Drastic Technologies.

**V1, V2** Checkboxes for the enabling of video channels one and two. Only select what is supported by the hardware in your unit.

**A1, A2, A3, A4** These are checkboxes for the enabling of audio channels one through four. Note that A1 and A2 are dedicated to video channel 1, and A3 and A4 are dedicated to video channel 2. Only select what is supported by the hardware in your unit.

**Enable** Enable the channel of video displayed in the Channel window. The default setting is for this box to be checked. Incidentally, you may open a second channel of video in a one channel box, and check enable, but there are no connections, and the second channel of video is still unusable. Confirm that what you select is supported by the hardware in your box.

**Audio** Enable the playback and recording of audio for the selected channel. You will likely desire to retain the default settings here and in the next few boxes.

**Video** Enable the playback and recording of video for the selected channel.

**Play Only** This will limit the functionality of the selected channel to play only, preventing this channel from recording or altering any material.

**Rec Only** This will limit the functionality of the selected channel to record only, dedicating the channel to a media capture role.

**New Clip Space** This brings up the Set New Clip Space Window, allowing you to determine the location in which you will save all your Clip lists.



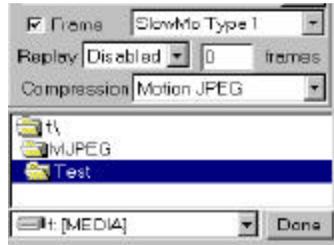
**New Time Code Space** This brings up the Set New Time Code Space Window, allowing you to determine the location in which you will save all your Time Code Space Files.



**Main Directory of Clip and Time Code Folders** This window displays the directory within which the New Clip and the New Time Code Space Files will be located. Note that they must share the same directory. Do not change this directory assignment. The program needs to see this directory in the place it expects to look for it. For more information, consult Drastic Technologies.

## Record To

This is the default directory wherein your recorded video and audio media files will be stored. Note that this location will already have been assigned when the box is set up. The default setting will assign all “records” to the main storage used by the unit. Use the drop down menu at the bottom of this window to browse for an appropriate location within your drive or storage system for the recorded media to be placed. Select the done button after all changes have been made.



The **Frame** checkbox applies to all of the VVW models.

The **Replay** checkbox applies only to certain VVW models. It lets the user to set the number of frames VVW would jump back to, in an instant replay application.

In the checkbox indicated by **Slow-Mo Type 0**, the user may select between Slow Motion types for certain VVW models. The box directly below the 3k Replay checkbox is the offset for the replay feature on the VVW 3000 Series. The user would check the 3k box, and then enter a value (the default is 250) which represents the number of frames QuickClip will back up and start replay or slow motion play at.

In the **Compression** pull-down menu, the type of compression (including uncompressed) will be selected for the hardware upon which it is installed. The compression may be changed for certain of the VVW Series which feature adjustable compression.

Note that many of the various features that can be changed or reassigned within this menu are accompanied by warnings telling the user **not** to adjust them. The majority of these settings are meant to be set correctly at the factory, and left to function in that configuration for the rest of their existence. Changing the settings herein may produce undesirable results. Consult with Drastic Technologies before experimenting.

# Environment

The cultivation of a work environment free of destructive agents and practices is of paramount importance to the longevity of one's equipment and personnel. However, certain seemingly obvious precautions should be mentioned concerning the care and ownership of a piece of professional equipment, such as the Drastic unit to which this manual refers.

The workspace should be treated with respect, and kept free of certain potential accident-enabling conditions. Care should be taken that the VVW never be exposed to hours of direct sunlight, liquids, excessive amounts of dust, debris or unnecessary rough handling. The VVW is a rugged and durable machine, and can be expected, if treated with respect and shielded from destructive environments, to provide years of service in whatever application it is suited for. Of course, common sense must be applied toward the handling of the unit, in order that its life expectancy may be maximized.

## Operating Temperature

The VVW series may be expected to perform as specified within a temperature range of 4C to 35C. After having been in a cold environment for more than 10 minutes, allow a period of 30 minutes to elapse upon entering a room temperature (20C or above) environment before the unit is restarted.

The VVW will give years of exemplary performance if you allow it to enjoy the natural conditions in which it is best suited to thrive. The ideal operating temperature is about room temperature. If you are too hot, the VVW probably is too. If humidity is a problem in your operating environment, do all of your equipment a favor and install a dehumidifier. The fan intake must have cool air in order to prevent the various heat-sensitive pieces of equipment inside your machine from overheating.

# The VVW Chassis

## PHYSICAL CHARACTERISTICS:

Chassis: Standard EIA Rack Mount

Height: 7" (17.8 cm.) (4RU)

Width: 19" (48.3 cm.)

Depth: 23 ½" (59.7 cm.)

(300w Power supply located within chassis, standard issue)

Power: 7 amps @ 110v, 3.5 amps @ 220v

## Maintenance

The VVW is designed to operate with little or no inconvenience to the user. It should work without coaxing, and be as plug and play as your application allows. However, it should be noted that there are maintenance duties inherent in the operation of any piece of broadcast video equipment.

### **Tighten exterior screws**

In a situation where the unit is pulled in and out of racks, and moved from site to site, possibly even in a mobile truck, the unit most likely would experience some loosening. Any screws on the exterior of the unit should be inspected and tightened.

### **Visual Inspection of Connections**

A visual inspection of all the video and audio connections on the rear of the VVW could flag intermittence problems before they start. Note any connections that seem loose, and tighten them if possible.

### **Check CD-ROM and Floppy**

Insert a readable CD into the CD-ROM.

Confirm that the CD can be opened and read by the VVW.

If the CD cannot be opened or read by the VVW, contact Drastic Technologies

Insert a readable floppy into the 3.5" floppy drive.

Confirm that the floppy can be opened and read by the VVW

If the floppy cannot be opened or read by the VVW, contact Drastic Technologies

## Clean the Filter

Behind the Drastic faceplate, there is an intake filter. This filter collects dust and other particles and needs to be periodically cleaned in order to maintain optimum thermal operating efficiency. Once a month should suffice.

- Close all programs and shut down. Turn off the power to the unit.
- Unscrew the two thumbscrews located just below the **Power** and above the **Reset** switches. Remove the faceplate.
- Remove the filter by unscrewing the thumbscrew just on the left side of the filter retention bracket.
- Clean this filter and the filter retention bracket thoroughly. Do not use water or any other liquid to clean the VVW intake filter. Ideally, a can of compressed air should be kept on hand to clean this and other moisture-sensitive equipment.
- Do a visual inspection of the filter. It will be somewhat cleaner in two stripes forming a plus sign through the middle of the filter. If you have cleaned the filter to the best of your ability and it still looks tired and nasty, it may be time to buy a new filter. These can be purchased at many computer supply stores, and even some music stores.
- Replace the filter and the filter retention bracket by screwing in the thumb screw just on the left side of this bracket with the filter held securely in place
- Spray the faceplate clean with the compressed air.
- Replace the faceplate in its original location.
- Replace the two thumbscrews located just below the **Power** and above the **Reset** switches. Screw them in hand tight.

## **Hold-Down Bars**

Inside the VVW case are a number of cards inserted into a motherboard. These cards are held down by one or more sturdy metal bars, with adjustable metal tabs, whose vinyl-tipped ends apply just the right amount of pressure to keep the cards properly seated in the Motherboard.

The adjustment of the hold-down bars is a standard factory procedure and will be completed correctly before your VVW is delivered. If there is a reason for the user or the Drastic field representative to open the box and check the card seating, contact your Drastic Technologies tech support staff for more advice on how and when to do this. Label all connectors as they are disconnected so that they may be quickly and properly replaced on assembly

The 'back' of a board is at the connectors, the rear of the machine: usually with a metal bracket for attachment.

The 'front' of a board is at the front of the machine

The 'top' of a board faces up when inserted and is away from the gold connector teeth

The 'bottom' of a board is at the edge connector (gold teeth that insert into the slot)

Make sure that the connection is clean and free of debris. Make sure that the card is firmly inserted into the proper slot. The hold-down bar will be installed directly above the cards. Allot one or more of the tabs on the hold-down bar for each card installed on the Motherboard. Attach these tabs in such a way that, when the hold-down bars are screwed down all the way, they exert a pressure on the cards that is firm but not brutish. The tabs on the hold-down bars are flexible and may be bent by hand or with pliers to ensure that your cards are not disturbed in their slots.

# Hardware

## The Motherboard

Following are the CMOS setup specifications for the VVW motherboard. These should be the default settings. To get into CMOS, press the **Delete** key during startup when prompted to do so

**Caution:** making any unauthorized changes in the setup may leave you with a non-functioning unit, no matter how simple and reasonable the adjustment might seem at the time. (see the **Don'ts** page at the beginning of this manual)

**IMPORTANT!** The technical support staff at Drastic Technologies will advise you as to when there is a need to change any of the CMOS settings.

### CMOS Setup for the VVW Motherboard:

#### MAIN:

System Time	(Set manually)
System Date	(Set manually)
Legacy Diskette A	1.44 MB/3.5 in.
Legacy Diskette B	None
Floppy 3 Mode Support	Disabled
Primary Master	Auto
Primary Slave	Auto
Secondary Master	Auto
Secondary Slave	Auto

#### KEYBOARD FEATURES

Language	English
Supervisor Password	Disabled
User Password	Disabled
Halt On	All Errors
Installed Memory	128 MB or 256 MB (depending on system)

#### ADVANCED

CPU Speed	400 MHz (or higher, depending on system)
CPU Core: Bus Freq. Multiple	(5.0x)
CPU Bus/PCI Freq. (MHz)	(66.8/33.40)
CPU Vcore	(2.00v)
CPU Level 1 Cache	<b>Enabled</b>
CPU Level 1 Cache	<b>Enabled</b>

CPU Level 1 Cache ECC Check	Disabled
BIOS Update	Disabled
PS/2 Mouse function Control	<b>Enabled</b>
USB Legacy Support	Disabled
OS/2 Onboard Memory > 64M	Disabled

**SUBSECTION 1 - Chip Configuration**

SDRAM Configuration	By SPD
SDRAM CAS Latency	(3T)
SDRAM RAS to CAS Delay	(3T)
SDRAM Precharge Time	(3T)
DRAM Idle Timer	(10T)
SDRAM MA Wait State	Normal
Snoop Ahead	<b>Enabled</b>
Host Bus Fast Data Ready	Disabled
16-Bit I/O Recovery Time	1 BusClk
8-Bit I/O Recovery Time	1 BusClk
Graphics Aperture Size	256 MB
Video Memory Cache Mode	UC
PCI 2.1 Support	<b>Enabled</b>
Memory Hole at 15M – 16M	Disabled
Onboard PCI IDE Enabled	Both

**SUBSECTION 2 - I/O Device Configuration**

Onboard FDC Swap A & B	No Swap
Floppy Disk Access Control	R/W
Onboard Serial Port 1	3FH/IRQ4
Onboard Serial Port 2	2F8H/IRQ3
UART2 Use Infrared	Disabled
Onboard Parallel Port	378H/IRQ7
Parallel Port Mode	ECP+EPP
ECP DMA Select	3

**SUBSECTION 3 - PCI Configuration**

Slot1 IRQ	Auto
Slot2 IRQ	Auto
Slot3/6	Auto
Slot4/5	Auto
PCI/VGA Palette Snoop	Disabled
PCI Latency Timer	32
SYBIOS SCSI BIOS	Disabled
USB IRQ	Disabled
VGA BIOS Sequence	AGP/PCI

**SUBSECTION 4 - PCI/PNP ISA IRQ Resource Exclusion**

IRQ 3 Used By ISA	No/ICU
IRQ 4 Used By ISA	No/ICU
IRQ 5 Used By ISA	No/ICU
IRQ 7 Used By ISA	No/ICU
IRQ 9 Used By ISA	No/ICU
IRQ 10 Used By ISA	No/ICU
IRQ 11 Used By ISA	No/ICU
IRQ 12 Used By ISA	No/ICU
IRQ 14 Used By ISA	No/ICU
IRQ 15 Used By ISA	No/ICU

**SUBSECTION 6 - PCI/PNP ISA UMB Resource Exclusion**

ISA Mem Block Base	No/ICU
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**SUBSECTION 7 - Shadow Configuration**

Video ROM BIOS Shadow	<b>Enabled</b>
C8000 – CBFFF	Disabled
CC000 – CFFFF	Disabled
D0000 – D3FFF	Disabled
D4000 – D7FFF	Disabled
D8000 – DBFFF	Disabled
DC000 – DFFFF	Disabled

**Power:**

Power management	Disabled
Video Off Option	Suspend -> Off
Video Off Method	DPMS Off
HDD Power Down	Disabled
Suspend-To-ROM Capability	Disabled
Suspend Mode	Disabled
Pwr Button < 4 Secs	Suspend

**SUBSECTION 1 – Power Up Control**

AC Power Loss Restart	<b>Enabled</b>
Power Up On Modem Act	Disabled
Wake Up On LAN or PCI Modem	Disabled
Power Up On PS2 KB/Mouse	Disabled
Wake Up By Keyboard	Space Bar
Automatic Power On	Disabled

**SUBSECTION 2 – Hardware Monitor**

MB Temperature	27*C/80*F
CPU Temperature	45*C/114*F
JTPWR Temperature	(Ignore)
CPU Fan Speed	5037 RPM
Power Fan Speed	(Ignore)
Chassis Fan Speed	N/A
Vcore Voltage	2.06 v
+3.3 v Voltage	3.50 v
+5 v Voltage	5.05 v
+12 v Voltage	11.82 v
-12 v Voltage	-11.43 v
-5 v Voltage	-5.03 v

**SUBSECTION 3 – Boot**

1. Removable Device	(Legacy Floppy)
2. IDE Hard Drive	(Brand Name)
3. ATAPI CD-ROM	(If Applicable, Generic CD-ROM ATAPI)
4. Other Boot Device	(INT18 Device {Network})
Plug & Play O/S	(No)
Reset Config Data	(Yes if changed, otherwise <u>No</u> )
Boot Virus Detection	Disabled
Quick Power On Self Test	<b>Enabled</b>
Boot Up Floppy Seek	<b>Enabled</b>
Full Screen Logo	Disabled

**EXIT**

Exit Saving Changes (Enter - Saves Any Changes)

# The Processor

## Intel Pentium II 500 MHz

The Pentium II processor family is one of Intel's 32-bit Intel Architecture processors for mainstream desktops, workstations and servers. Your VVW will come equipped with a Pentium II processor at a speed of 500-MHz or greater. Single Edge Contact Cartridges (S.E.C.C.).

### ◆ Voltage Requirements

Pentium II processors are specified to operate at the following voltages, depending on the processor core frequency:

### ◆ Pentium II Thermal Management Considerations

The table below shows the maximum operating temperature for all Pentium II processors, measured at the center of the processor's thermal plate beneath the fan heatsink.

Processor Frequency (MHz)	Processor Stepping	S.E.C.C. Max. Operating Temp. <sup>1</sup>	S.E.C.C.2 Max. Operating Temp.	Max. Fan Inlet Temp. <sup>4</sup>	Total Max. Processor Power
450 MHz	dE0	70° C	50° C <sub>2</sub>	45° C	27.1 W
400 MHz	cA1, dE0, dB1	75° C	80° C <sub>2</sub> , 80° C <sub>3</sub>	45° C	24.3 W
350 MHz	cA1, dE0, dB1	75° C	50° C <sub>2</sub>	45° C	21.5 W
333 MHz	dAU, dBU, dA'	75° C	N/A	45° C	21.5 W
300 MHz	dE0, dA1	65° C	N/A	45° C	15.7 W
300 MHz	C0, C1	72° C	N/A	45° C	43.0 W
266 MHz	dB0, dAU	65° C	N/A	45° C	13.8 W
266 MHz	C0, C1	75° C	N/A	45° C	35.2 W
233 MHz	C0, C1	75° C	N/A	45° C	34.6 W

Maximum Operating Temperature on a processor in the S.E.C.C. package is measured at the center of the thermal plate underneath the attached fan heatsink.

Maximum Operating Temperature on a boxed Pentium II processor at 400 MHz or 450 MHz in the S.E.C.C.2 package is measured in the processor core using the processor thermal diode. These processors use the OLGA core packaging technology.

Maximum Operating Temperature on a boxed Pentium II processor at 350 MHz or 400 MHz in the S.E.C.C.2 package is measured at the center of the processor core which is underneath the attached fan heatsink. These processors use the PLGA core packaging technology.

Maximum fan inlet temperature is measured at 0.3 inches above the center of the fan inlet area (the fan has a circular hologram). This is an ambient air specification (TA).

The VVW uses a hardware set that provides sufficient airflow to ensure that the processor operates below the maximum operating temperature in the warmest user environment. Running the processor above its maximum temperature specification will void the warranty and can lead to functional and performance degradation.

## 256 MB SDRAM

256 MB SDRAM or higher is standard on the VVW server line.

The amount of RAM installed on your system will be sufficient for your model and the application as determined by the specification. If you should need more RAM, this will be factory installed. Do not try to install extra RAM (or indeed any other software or hardware) in the VVW without first consulting Drastic Technologies Ltd.

## The VGA Card

The VGA card for the VVW Series allows a monitor output. If you suspect a problem with the VGA, there are a couple of items that should be looked at:

- Are all the cables functioning properly? A poorly shielded cable can add static or other artifacts, and a frayed connection can completely eliminate the video signal to the monitor.
- Is the monitor itself supplied with power?
- Is the monitor functioning properly? Check that the monitor works with another video source which can be trusted.

Run the VVW in VGA mode.

See if the driver or the card is a problem.

Check the settings. The proper parameters that you should be looking at are as follows:

- 16 colors
- 860 x 480

If these settings are correct, and there still seems to be a problem, contact Drastic Technologies.

## 422 Connection

The VVW Series RS-422 serial card uses a 36 MHz processor specifically designed to process asynchronous serial communications, thereby maximizing performance and eliminating bottlenecks.

<b>Environmental Condition</b>		<b>Value</b>
<b>Air Temperature:</b>		
System On		0 to 40°C
System Off		-20 to 85°C
<b>Humidity (non-condensing):</b>		
System On		8% to 80%
System Off		20% to 80%
Altitude		0 to 10,000 feet
<b>Electromagnetic Compliance</b>		<b>Status</b>
<b>Emission:</b>		
Canadian EMC Requirements		Yes
CISPR-22/EN55022 Class B		
FCC PART 15: Class B		
<b>Immunity:</b>		
EN50082: 801-2 ESD, 801-3 RF, 801-4 FT		Yes
<b>UL Recognized</b>		Yes
<b>Interface Box Type</b>	<b>Mounting Dimensions</b>	<b>Overall Dimensions</b>
RS-422, 8-Port	3.37" x 2.69"	3.68" x 3.6" x 1.6"

## SCSI Card

SCSI (“pronounced “scuzzy”) stands for Small Computer Systems Interface. SCSI is an industry standard computer interface for connecting SCSI peripherals (such as a hard disk drive, CD-ROM drive or scanner) to a common SCSI bus. A SCSI bus is an electrical pathway that consists of a SCSI adapter card installed in a computer and one or more SCSI peripherals. SCSI cables are used to connect the peripherals to the SCSI adapter card.

### Termination

To ensure reliable communication on the SCSI bus, the ends of the SCSI bus must be properly terminated. This is accomplished when the peripheral at the end of each cable, or the end of the cable itself, has a terminator installed (or enabled). The peripherals between the ends of the cable must have their terminators removed (or disabled). The VW unit will already be properly terminated, either through jumper settings, software settings, the use of terminated cables or the installation of a terminator.

## VW SCSI Card Setting

SCSI Card Adaptec 2940U2W	PCI-to-Ultra2 SCSI Host Adapter
Computer bus:	32-bit PCI local bus
Interface Protocol:	Bus master DMA:
Host Bus Burst Data Rate:	133 MByte/sec
Maximum Data Transfer Rate:	80 MByte/sec
Peripheral Bus: SCSI	8-bit & 16-bit Ultra SCSI, 16-bit Ultra2
SCSI Synchronous Maximum Burst Rates:	Ultra2 SCSI - up to 80 MByte/sec in 16-bit mode
	Ultra SCSI - up to 40 MByte/sec in 16-bit mode and 20 MByte/sec in 8-bit mode
Device Protocol: Ultra2 SCSI	SCSI-1, SCSI-2, SCSI-3, Ultra SCSI,

Advanced SCSI Features: simultaneously) Scatter/gather Tagged command queuing Disconnect/Reconnect	Multithreaded I/O (up to 255 tasks
External Connector:	68-pin High-Density Ultra2 SCSI
Internal Connectors: 68-pin High-Density Wide Ultra SCSI 50-pin High-Density Ultra SCSI	68-pin High-Density Ultra2
Device Support: external)	Up to 15 SCSI peripherals (internal or

## IDE Program Drive

The 10GB IDE program drive is standard on all VVW models. Its function is solely as a program drive.

Do not attempt to install any unauthorized software on this drive.  
Do not attempt to save any files on this hard drive.

Ambient temperature

<b>Operating</b>	5°C to 55°C (41°F to 131°F)
<b>Non-operating</b>	-40°C to 60°C (-40°F to 140°F)

Relative humidity

<b>Gradient</b>	20°C (68°F)/H (max.)
<b>Operating</b>	8% to 80% RH (non-condensing)
<b>Non-operating</b>	5% to 85% RH (non-condensing)

Vibration/Shock

<b>Max.wet bulb</b>	29°C (84°F) (non-condensing)
<b>Operating</b>	0.5Go-p (5-300Hz)
<b>Non-Operating</b>	4.0Go-p (5-400Hz)

Altitude

<b>Operating</b>	10Go-p, 11ms
<b>Non-operating</b>	75Go-p, 11ms
<b>Operating</b>	-60m to 3,000m (-200 to 10,000 ft.)
<b>Non-operating</b>	-60m to 12,000m (-200 to 40,000 ft.)

Acoustic noise

(Idle sound power) (Typ.)	3.5 bels
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### RELIABILITY SPECIFICATIONS

<b>MTBF</b> (mean time between failures)	More than 500,000 POH
<b>MTTR</b> (mean time to repair)	Less than 30 minutes
<b>Component life</b>	5 years or 20,000 POH

Error rates

<b>Unrecoverable errors</b>	1 per 10 <sup>14</sup> bits read
<b>Seek errors</b>	1 per 10 <sup>6</sup> seeks
<b>Start/stop cycles</b>	40,000 cycles

# Software

## Operating Software

### **OS Windows NT 4.0**

Every VVW server comes with Windows NT Workstation 4.0 operating system software installed.

### **DOS Software**

Every VVW server comes with DOS 6.2 (Disk Operating System) Software installed.

## Application Software

### QuickClip

Every VVW server comes with QuickClip software installed. This is a clip control and VTR control software, offering a Graphic User Interface to control the processes.

### MediaReactor Core

Every VVW server comes with MediaReactor Core file compatibility as a part of the VVW software. MediaReactor Core allows conversion of many industry standard file format types to the hardware-native Drastic CODEC, and also allows conversion from the hardware-native Drastic CODEC to the same set of file format types.

### MediaPlay

Every VVW server comes with MediaPlay as a part of the VVW software. MediaPlay allows the user to browse their connected storage (internal or external) for clips and preview them in an on-screen window.

### MediaPreview

Every VVW server comes with MediaPreview as a part of the VVW software. MediaPreview allows the user to browse their connected storage (internal or external) for clips and preview them in an on-screen window.

### VVW Config

The **VVW config** menu, or the **local config** menu, allows the user to set various operating parameters of the VVW, such as RS-422 device management, COM Port assignation, Record Directory assignation, etc.

# Options

## D1 Serial Digital I/O Upgrade Option

The VVW D1 option provides standard D1 Serial Digital input and output for the VVW. The D1 input must be timed with the house black burst. The following digital upgrades or capabilities apply to the following VVW models:

### Serial Digital I/O

**ADD 1 SDI I/O-SMPTE 259M:** Optional on the VVW 1900 and 3000.

This feature is included on the VVW 2502, 2504, 5000 and 7000.

**ADD 2 SDI I/O – SMPTE 259M:** This feature is included on the VVW 2504.

The VVW 3500 is either SDI or Analog, not both.

### Serial Digital Transport Interface

**ADD 1 SDTI I/O – SMPTE 305M:** Optional on the VVW 2502.

**ADD 2 SDTI I/O SMPTE 305M:** Optional on the VVW 2504.

## AES/EBU Audio Option

The VVW ships standard with two channels of analog audio per video channel (except where embedded audio is standard). The AES/EBU option replaces the analog audio with direct digital audio. This option supports two channels of AES/EBU or SPDIF digital audio and provides two monitor outputs for local monitoring. This option is applicable to the VVW 1900, 3000 and 3500. It is an included feature of the VVW 2502, 2504 and 7000. The VVW 5000 has D1 embedded audio. For more information, contact your local Drastic representative.

## **Storage Area Network Option**

Drastic's innovative media management provides the backbone for interchangeable, networkable devices. This truly open architecture allows the sharing of media, seamless random access control and monitoring throughout the network.

The VVW may be used with a variety of internal or external drives, including Seagate and IBM storage. External storage is scalable to hundreds of hours and may include multiple layers of redundancy as the application warrants.

Benefit from unrestricted shared simultaneous access to media with a Storage Area Network and MediaReactor file translation technologies. Contact Drastic to find out more about our supported Storage Area Network solutions.

## **Fibre Channel Option**

Fibre Channel is a serial communications interface designed for the transfer of large amounts of data between a variety of hardware systems, over large distances. It is becoming a key technology for applications that require shared, high-bandwidth access to storage.

Fibre Channel provides a logical point-to-point serial channel for the transfer of data between a buffer at a source device and a buffer at a destination device. It moves buffer contents from one port to another, without regard to the format or meaning of the data. In this way, Fibre Channel allows different upper level protocols such as SCSI-3 to run over Fibre Channel hardware.

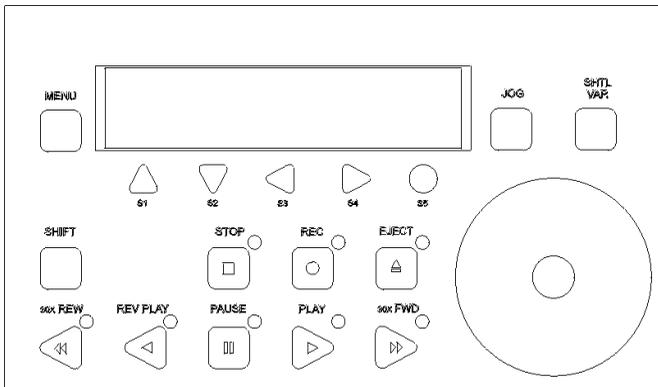
# Controlling the VVW

The VVW may be controlled through a variety of methods, depending on application. A brief explanation of each control type is supplied in the following paragraphs.

## Front Panel Control

Front Panel Control is included with every VVW. This allows basic transport and setup control, basic menu functions, and provides time code and status indicators.

**FRONT PANEL CONTROL** is included with every VVW. The Front Panel Controller allows basic transport and setup control, basic menu functions, as well as displaying time code location and status indicators.



The green LCD screen in the front panel control is a 2 x 20 character LCD screen. Upon start up, the screen will display a general “Drastic Technologies” greeting. When VVW is active in clip mode, time code location will be displayed in an “Hours: Minutes: Seconds: Frames” (00:00:00:00) display. Also displayed are the clip names, time code mode (DF, NDF), and time code type (LTC, VITC).

**Play Mode** is the default. To enter **Jog/Shuttle Mode**, press the Jog button. If you are in **Jog/Shuttle Mode** and you want to enter **Play Mode**, press the Jog button.

## Play Mode:

Button Press	Command	Result
MENU	Menu On/Off	Will turn menu mode on. (See below)
IOG	IOG On/Off	Will turn IOG mode on.
SHTL VAR	Shuttle On/Off	Will turn shuttle mode on.
S1	2 <sup>nd</sup> channel	Instructs the LCD screen to display 2 <sup>nd</sup> channel information
S2	Load Next	Loads the next clip from the clip list. Will default to
S3	Cue to start	Cues to the start point of the current clip.
S4	Cue to end	Cues to the last frame of the current clip.
S5	Preview current clip.	Plays the current clip from the current position to the ending time-code.
SHIFT	Uses second function for buttons.	As modifier.
STOP	Stop.	Stops all commands at the current time-code. Puts the device in E/E mode.
REC	Record	Starts crash record
EJECT	N/A	N/A
REW	Rewind.	Will play (preview) the media from current location towards time-code 00:00:00:00 at maximum reverse speed.
REV PLAY	Reverse play.	Plays the current clip from the current time-code towards the first frame at reverse play speed.
PAUSE	Pause.	Pauses the current clip at the current frame and displays the frame until other action is taken.
PLAY	Play.	Plays the current clip from the current time-code towards the end of the clip at normal play speed.
FWD	Fast Forward.	Will play the current clip from the current time-code towards the last frame at maximum forward speed.
WHEEL	Jog/shuttle	Used for the Jog/shuttle transport control

To enter **Menu Mode** , press the Menu button. To exit the **Menu Mode** , press the Menu button again, and you will default to **Play Mode** .

## Menu Mode:

Button Press	Command	Result
MENU	Menu On/Off	Will turn menu mode on. (See below)
JOG	N/A	
SHTL VAR	N/A	
S1	Previous Menu	Will scroll up through available menus.
S2	Next Menu.	Will scroll down through available menus.
S3	Exit Sub Menu	If not in base menus will exit the current sub menu.
S4	Enter Sub menu	If available will go into the current sub Menu.
S5	N/A	N/A
SHIFT	Uses second	As modifier.

To enter **Jog/Shuttle Mode** , press the Jog button. If you are in **Jog/Shuttle Mode** and you want to enter **Play Mode** , press the Jog button.

## Jog/Shuttle Mode:

Button Press	Command	Result
MENU	N/A	N/A
JOG	Jog On/Off	Will turn jog mode on if in shuttle mode or enter play mode if in jog mode. Will also send a pause to the device.
SHTL VAR	Shuttle On/Off	Will turn shuttle mode on if in jog mode or enter play mode if in shuttle mode. Will also send a pause to the device.
S1	N/A	N/A
S2	Load Next Clip.	Loads the next clip from the clip list. Will default to time-code 00:00:00:00.
S3	Cue to start.	Cues to the start point of the current clip.
S4	Cue to end.	Cues to the last frame of the current clip.
S5	Play current clip.	Plays the current clip from the current position to the ending time-code at normal play speed. The last frame will remain displayed until other action is taken.
SHIFT	Uses second	As modifier.
STOP	Stop.	Stops all commands at the current time-code. Puts the device in E/E mode.
REC	N/A	N/A
EJECT	N/A	N/A
REW	Rewind.	Will play the media from current location towards time-code 00:00:00:00 at maximum reverse speed.
REV PLAY	Reverse play.	Plays the current clip from the current time-code towards the first frame at reverse play speed.
PAUSE	Pause.	Pauses the current clip at the current frame and displays the frame until other action is taken.
PLAY	Play.	Plays the current clip from the current time-code towards the end of the clip at normal play speed.
FWD	Fast Forward.	Will play the current clip from the current time-code towards the last frame at maximum forward speed.

If **shift** is pressed

REC	Crash Record.	Will start recording the pass through video over the current clip.
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## GPI Control

The **GPI Control** allows a command to be inserted into the QuickClip Playlist, which instructs the VVW to wait until it senses a GPI pulse, and then perform the “wait until it receives this pulse, then resume playing the list command”.

**GPI Control** can be set up through the QuickClip software in the “local config” section. This allows the VVW to be triggered by an electrical GPI pulse or mechanical contact closure. The trigger source can be a switch, keyboard keypress or a simple relay.

## QuickClip Software Control

QuickClip Software Control is the editing software included in every VVW, offering clip-based and time-code-based control over video and audio data. With QuickClip, you can do the following:

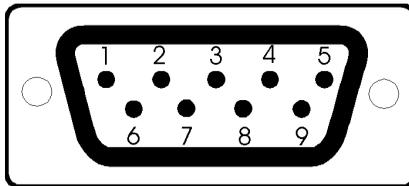
1. Record and Playback various types of video and audio files at various rates of compression (the compression rates are a function of the models) as well as uncompressed SD and HD (VVW 5000 and 7000 respectively).
2. Sequence video and audio files as clips in a playlist that you can play back and record from/to tape or hard disk. You can have multiple playlists without duplicating media.
3. For Broadcast applications, construct a playlist and accept break commands within the playlist, such as wait for triggers, wait for time code, go to top, etc.
4. QuickClip includes a common set of transport controls for navigating through clips on disk, and if you have device control, material on your VTR.

## RS-422 Serial Control

There will be one channel of RS-422 control OUT, and one RS-422 IN for each channel in the VVW. Through the Serial Control, you may do the following:

1. Control an external VTR using your VVW (CONTROLLER wiring).
2. Be controlled by an external VTR, slow motion controller or edit controller (DEVICE Wiring).

## RS-422

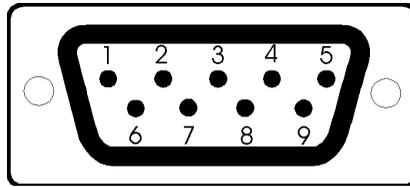


Pin	CONTROLLER	DEVICE
1	Frame Ground	Frame Ground
2	Receive A	Transmit A
3	Transmit B	Receive B
4	Transmit Common	Receive Common
5	Spare	Spare
6	Receive Common	Transmit Common
7	Receive B	Transmit B
8	Transmit A	Receive A
9	Frame Ground	Frame Ground

CONTROLLER connects to an external VTR (UVW1800,BVW75, AJ150,etc)

DEVICE connects to an external controller (RM-450, DNF, Buf)

# RS-232

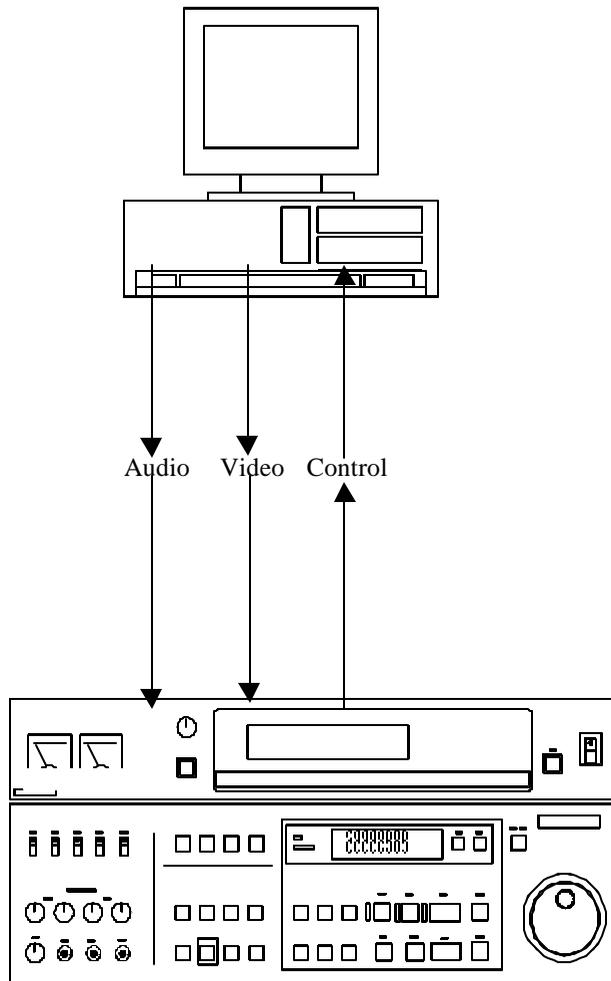


Pin	VVW	COMPUTER
1	Carrier Detect	N.C.
2	Receive Data	3
3	Transmit Data	2
4	Data Terminal Ready	N.C.
5	Signal Ground	5
6	Data Set Ready	N.C.
7	Request To Send	N.C.
8	Clear To Send	N.C.
9	Ring Indicator	N.C.

# Connection Setup

## ➤ Machine to Machine Edit – Input Sync

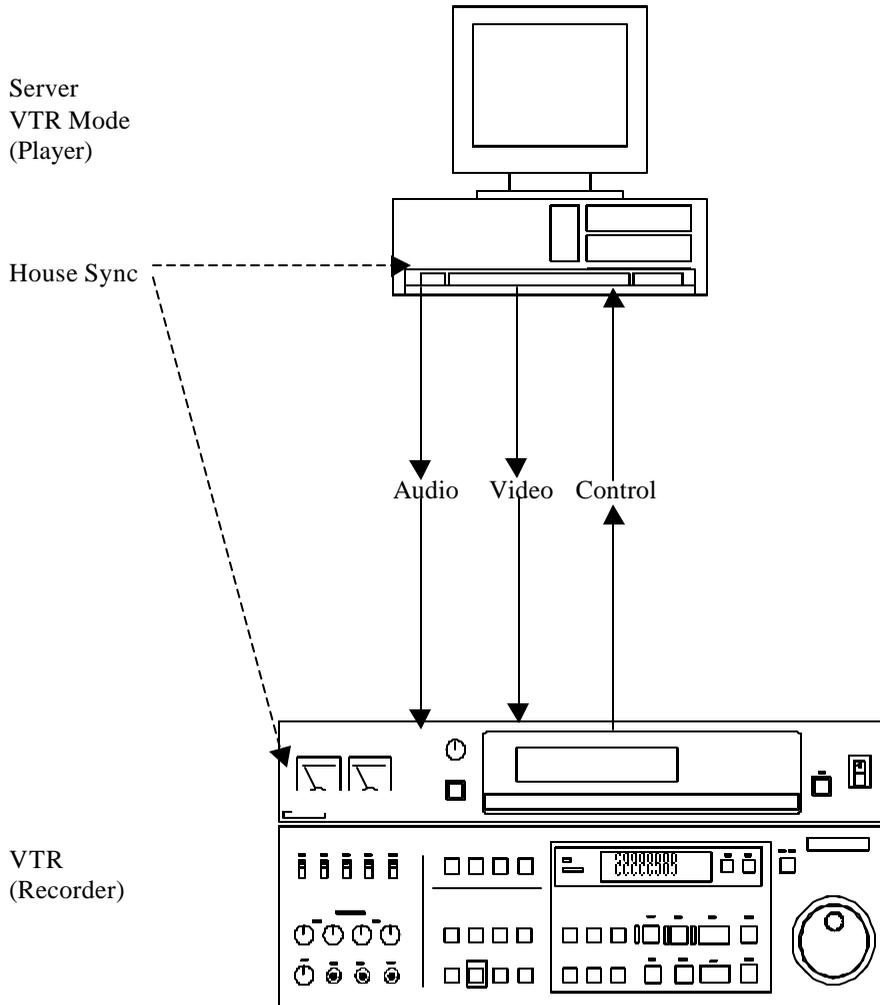
Server  
VTR Mode  
(Player)



VTR  
(Recorder)

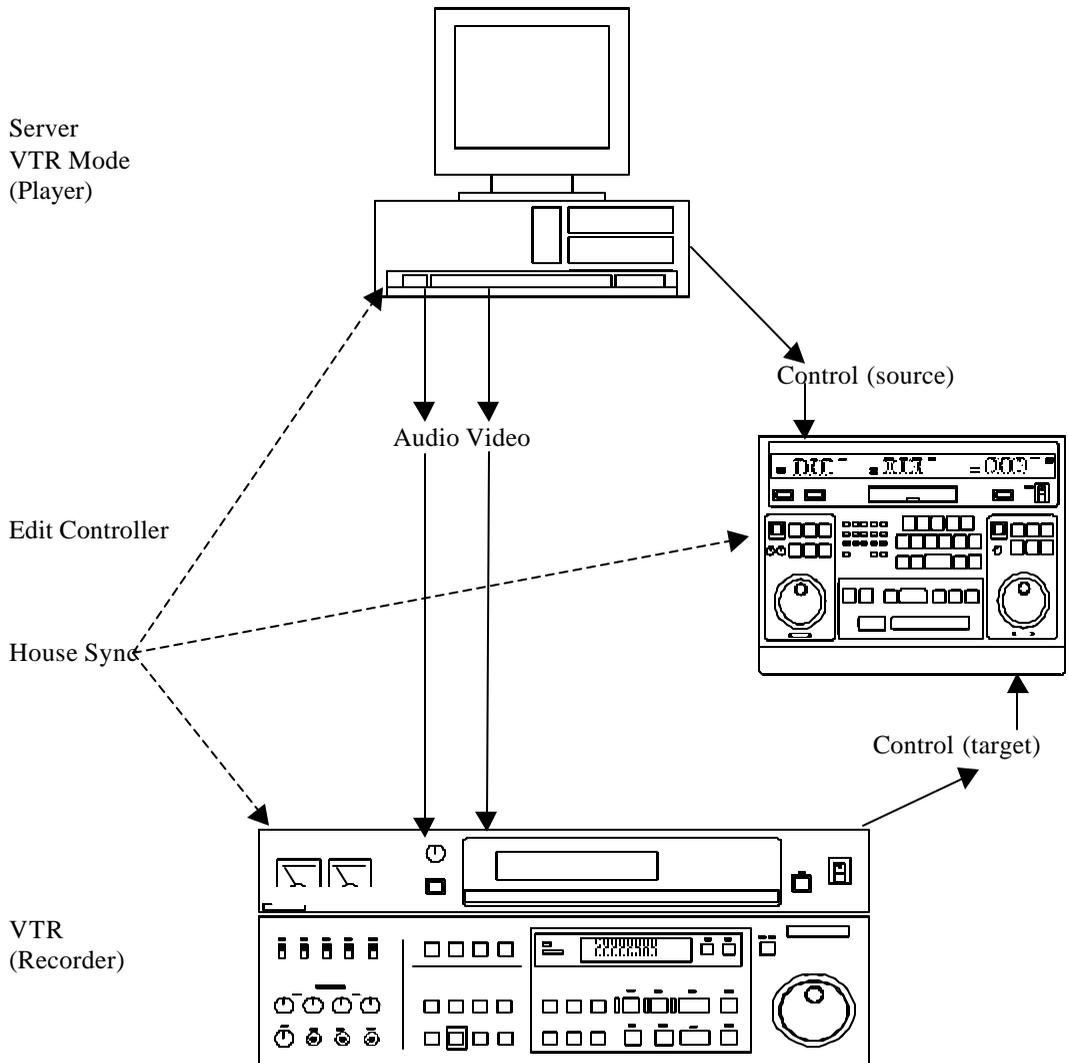
In this scenario, the recorder VTR should be set to sync to input. When the player button is pressed, the current time code and state of the Server should appear on the VTR display. If the VTR includes a 'Out' and an 'In/Out' RS-422 serial connection, use the 'Out' connector unless otherwise specified by the VTR manufacturer. For more information on setting up and triggering the edit, please consult your VTR user's manual.

## ➤ Machine to Machine Edit – House/External Sync



In this scenario, the recorder VTR should be set to sync to external reference. The 'External Sync' on the remote interface should also be checked. A vector scope should be used to check the phase of the outputs against the incoming house sync. The house sync should be black, not bars or live video. When the player button is pressed, the current time code and state of the Server should appear on the VTR display. If the VTR includes a 'Out' and an 'In/Out' RS-422 serial connection, use the 'Out' connector unless otherwise specified by the VTR manufacturer. For more information on setting up a triggered edit, please consult your VTR user's manual.

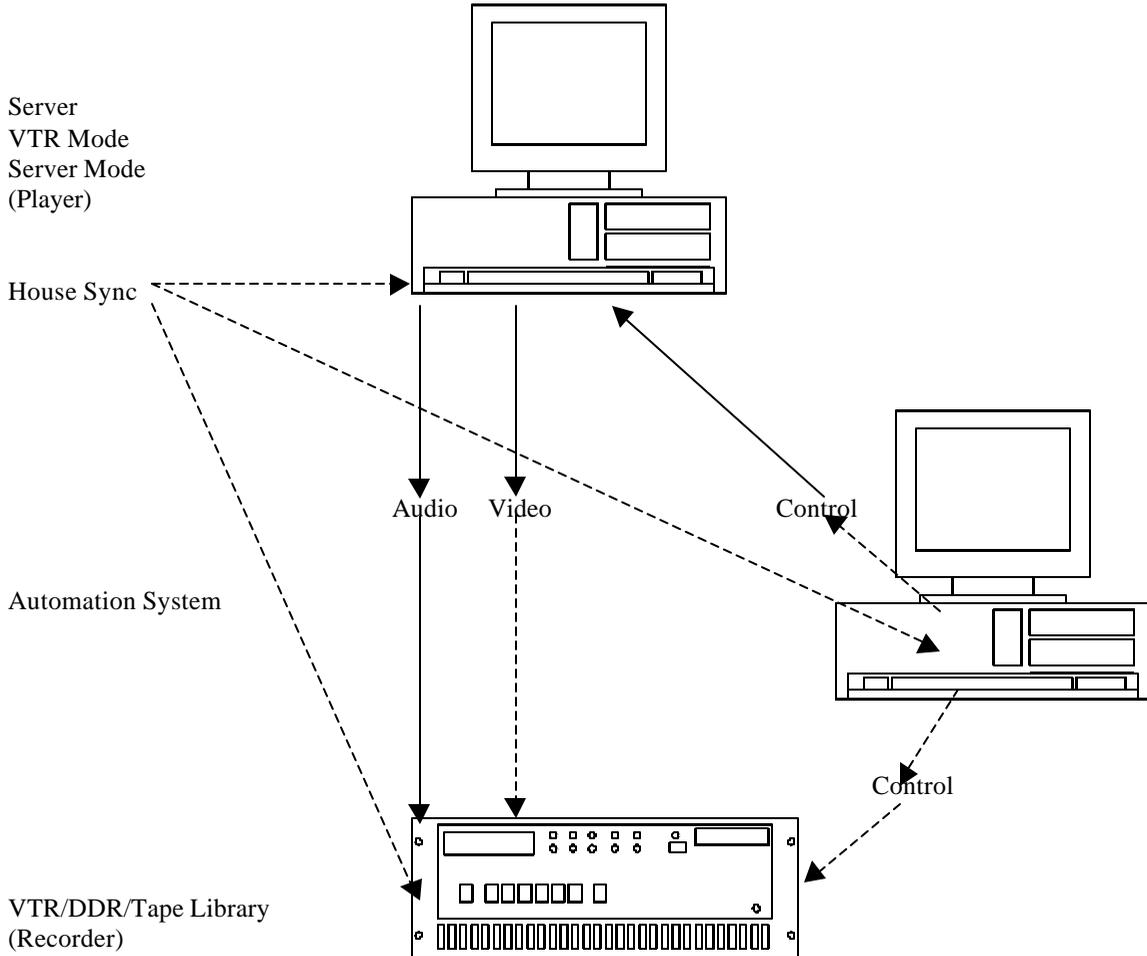
## ➤ External Edit Controller



When using an external edit control all devices must be synchronized to a single video time base. This is achieved by using a single black video source connected to the external or reference in of each device. This source may be 'looped through' devices that provide a loop through connection, but only the last device should be terminated. Please note that the Server does not have a loop through connection and is terminated. Once connected and set up, all timing should be checked for phase with a vectorscope to ensure clean edit points.

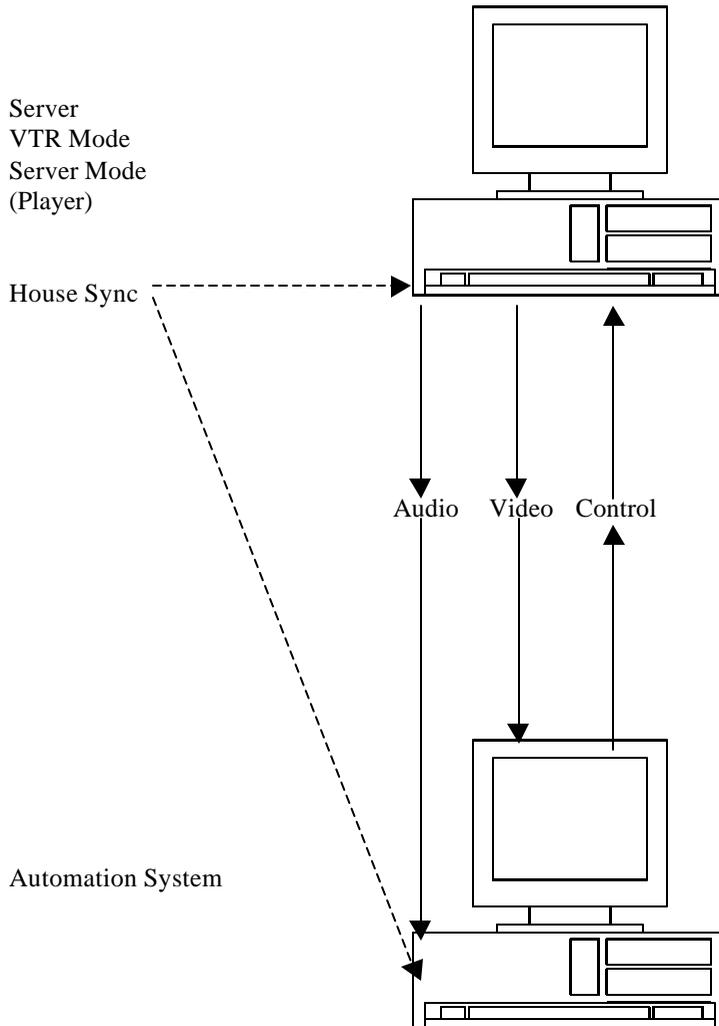
The Server should always appear on the left or source side of the controller and the VTR on the right or recorder/target side of the controller. If a switcher is added to this configuration, it too must be synchronized to the same house sync signal as the other equipment.

## ➤ Automation System Edit – External VTR/DDR/Tape



For automation systems that use external VTR, DDR or Tape Libraries for playback, the Server's audio and video connections should be connected directly to the recording device, or through a router with the shortest possible path selected (e.g. no intermediate TBC or Frame Synchronizers). The control should be directly connected to the automation system. Depending on the configuration of the automation system, house or input sync may be recommended. Depending on the automation system in use, it may be faster to ingest using VTR Mode or Server Mode (some automation systems only support VTRs for ingest. In this case the Server should not be placed in 'Server Mode').

## ➤ Automation System Edit – Internal Channels



For automation systems that include encoder/decoder channels within the controller, the Server should be connected directly to the automation system. Depending on the configuration of the automation system, house or input sync may be recommended. Depending on the automation system in use, it may be faster to ingest using VTR Mode or Server Mode (some automation systems only support VTRs for ingest. In this case the Server should not be placed in ‘Server Mode’).

# Troubleshooting

## ➤ No Video Output

Connect a monitor directly to the composite out of the Server. Try loading and playing a number of different clips. Use the monitor to trace the video connection through the setup.

## ➤ No Audio Output

Connect an audio monitor directly to the audio outputs of the Server. Make sure the audio levels are all the way up (100%). Try a number of different clips. Use the monitor to trace the audio connections through the setup.

## ➤ No Control

Check the RS-422 cable connections to the server and the control. If it is a machine-to-machine edit, check for secondary (and even tertiary) serial ports and try them. If this fails, see 'Enabling/Disabling Serial Protocols' below.

## ➤ Some Clips Are Playing Back As Black

Click the done button on the remote interface. Click the VTR icon on the main interface to restart the remote. See if the clips are still playing black, and if they still exist. It is possible that some clips may be removed from the system (killed) and the remote may not be immediately aware that they are no longer available. Closing and opening the remote will force a clip refresh.

## ➤ I Can Only Use the First X Seconds from My Controller

If you are using an edit controller or machine-to-machine setup, make sure the remote is in VTR Mode. If an automation controller tries to seek beyond the clip length, it may only support VTRs as ingest sources. In this case, switch to VTR Mode and use the time codes to define the clip ins and outs on your automation system. If the automation system is trying to seek to a point before the clip start, shorten the pre roll or use the VTR Mode as described above.

## ➤ I See the Clips but I Can Not Load Them

Make sure that the remote interface is in 'Server Mode'. While the remote is running, all protocols are available simultaneously so the automation system will see a VTR, and Odetics Device or a Louth device as is required. If the remote is not in 'Server Mode', the clip list will be returned to the automation controller, but the Server will not be able to load or play the clips.

## ➤ Seeks Are Not Instantaneous

## ➤ My Controller Does Not Recognize the Device

## ➤ My Controller Is Sluggish

Some controllers work more efficiently if they recognize the device they are connected to. Changing the type drop down box will set the type of VTR to be emulated. As a rule of thumb select a VTR from the same manufacturer as the controlling device. Older models will be more generally recognized than newer ones. Make sure the model name is NOT followed by a 'P', when running in NTSC. This indicates the PAL version of a VTR. If problems persist, try using a model that the controller is unlikely to recognize. Some controllers' default behavior is much better than their 'tuned' behavior.

## **Enabling/Disabling Serial Protocols**

### **➤ Sony 422 – Tape Emulation (VTR Mode)**

This is the protocol in use by standard videotape recorders (e.g. Sony BVW-75, BVU-900, EVO-9800, UVW-1800, HDW-500/2000, Panasonic AG-7750, AU-65, AJ-D850, AJ-3700, AJ-HD150, JVC-BS822U, BR-D750, BR-DV600UA). This is the protocol used by machine to machine edits, traditional edit controllers and often for automation system ingest/pull in.

Aside from basic transport/response control, which is used by every compatible device, the Server Remote also supports many extensions defined by particular VTRs since the protocol inception. The remote will attempt to respond correctly to all commands, included Dynamic Motion Control, off-speed play commands, bumping, extended presets, dual head playback, as well as audio and video remote setup extensions. Due to the MPEG media being used, these commands may not respond exactly as expected, but should reproduce a reasonable facsimile for each operation.

Disabling this protocol has no effect if the Odetics protocol is enabled. The Odetics protocol is based on the Sony 422 protocol, so it will effectively remain enabled. If both the Sony 422 and Odetics protocols are disabled, then only Louth server protocol will be available.

### **➤ Odetics – Tape Emulation/Server (Server Mode)**

The Odetics protocol is an extension of the Sony 422 protocol. It uses Sony 422 protocol for basic transport/response communication and adds protocol compatible extensions to add clip server functionality. When the controller is using Odetics protocol, the extended commands can retrieve the clip/spot list, load spots and play spots in a list.

Disabling this protocol will cause the extended commands to fail. This means that the controller, (assuming Sony 422 is enabled), will see the Server as a VTR device. If both Odetics and Sony 422 are disabled, then the Server will only respond to Louth commands.

### **➤ Louth – Server (Server Mode)**

The Louth protocol uses the eight-character clip/spot names to load, play and play lists of clips. This protocol is entirely based on clip names and has no concept of tape based operations. Louth compatible controllers, however, may use Sony 422 protocol to ingest clips into the automation system, or even play long format material to air. Depending on the automation controller, the Server may appear as a VTR or as Louth DDR.

Disabling this protocol will cause the Server to respond negatively to any Louth commands.

### ➤ **My Automation System Will Not Capture Spots**

Typically, the automation system is using the Server in the wrong mode or using the wrong protocol. First, the Server should be set up as VTR, and the automation system should be told it is a VTR. This should allow the ingesting of clips from their time codes. Once that is working, you may want to try and set up the Server as a Clip/Spot based server. It should be noted that the Server is not intended as an 'on-air' device. Many automation system designed with servers are 'on-air' only. Normally, the automation system also expects to be able to record or transfer spots on to the device, which is not possible locally with the server. To set up as a server, determine what protocol the automation system prefers (Louth or Odetics) and set up the control channel on the automation system for that protocol. By default, the Server will respond to either. If problems persist, try disabling the protocol that is not in use.

### ➤ **My Automation System Plays Extra Frames To Air When Playing Clips/Spot Lists**

First, the Server is not intended as an on air device. The clip list capability exists to support possible future applications and bulk clip transfer. Secondly, the Server will play extra frames if they are required to create a clean first frame at the 'in point' of the clip as set by the user. This means that clips with the slate removed may require the black frame to properly display the actual start of the clip. When playing in an Odetics or Louth controlled clip list, the clips may be slightly longer than the in and out points would suggest.

### ➤ **My Automation System Sees A VTR, Not A Server with Clips**

This normally occurs with Louth protocol based controllers that check the Sony 422 protocol before trying Louth. Because both protocols are active, the automation controller may not try the Louth protocol, assuming the device is a VTR. To fix this, disable the Sony 422 and Odetics protocols. This means the Server cannot be used as a VTR, but the automation system should find the Louth protocol. To use as VTR, be sure and re-enable the Sony 422 protocol.

## VW Warranty

**LIMITED WARRANTY (5-a) Terms and Coverage:** Drastic warrants the product hardware to the original purchaser for a period of two (2) years for parts excluding disk drives and one (1) year labor. The warranty period commences on the date of shipment of product by Drastic to the purchaser however the warranty period set forth in the warranty may be extended at the discretion of Drastic by up to 60 days to cover shelf life and transportation to the purchaser's end-user customer.

(b) Seller's sole and exclusive liability, and Buyer's exclusive remedies, for breach of this warranty are as follows:

(I) Seller, at its sole option, will repair or replace any Good or replacement part found to be defective, except as otherwise provided in (B) and (C) below;

(II) If Seller elects to repair a defective Good or replacement part but is unable to do so within forty-five (45) days after receiving such Good or replacement part, then Buyer may elect to obtain a refund of the price paid to Seller for such Good, provided that Buyer first must so notify Seller in writing, and return the defective Good or replacement part to Seller, all freight and insurance prepaid; and

(III) In all cases, Seller's liability under this warranty is subject to the following additional conditions:

(A) Goods and replacement parts that Buyer considers to be defective shall be returned to Seller's designated facility for examination and testing; transportation costs and insurance to be prepaid by Buyer. Seller will reimburse Buyer for shipping and Buyer complies with all terms of this warranty and that Seller's testing and examination disclose a defect.

(B) Seller shall not be liable under this warranty if testing and examination by Seller disclose that the Goods or replacement parts have been modified or altered in any material manner after shipment by Seller;

(C) Seller shall not be liable under this warranty if its testing and examination disclose that the alleged defect in the Goods or replacement parts does not exist or was caused by Buyer's or any third parties misuse, neglect, improper installation or testing, unauthorized attempts to repair, or any other cause beyond the range of their intended use, or by accident, fire, or other hazard.

(D) Seller shall not be liable under any warranty under this Agreement with respect to any Goods or replacement parts that are not returned in their original shipping container or a functionally equivalent container.

(E) If Seller's testing and examination do not disclose a defect warranted under this Agreement:

(1) Seller shall so advise Buyer and dispose of such Goods or replacement parts in accordance with Buyer's instructions and at Buyer's cost; and,

(2) Buyer shall reimburse Seller for its expense in testing and examining the Goods or replacement parts calculated at Seller's then current rates.

(c) Seller's liability under this warranty is expressly conditioned upon Buyer's notification of Seller on any claim by Buyer under this warranty within thirty (30) days following Buyer's discovery of facts indicating to Buyer that Goods or replacement parts shipped hereunder constitute a breach of this warranty.

(d) Buyer and Seller agree that the price offered to Buyer by Seller for the Goods or replacement parts is a consideration in limiting Seller's liability as provided in this Section 5 and in Sections 6 and 7 hereof. Accordingly, Buyer agrees that the remedy provided by Seller for any breach of this warranty adequately protects Buyer's interests and expectations in the event it received defective Goods or replacement parts from Seller, regardless of circumstances that may arise after the date of this Agreement and when the Goods or replacement parts are used by Buyer or its Customers.

(e) SELLER DOES NOT WARRANT DISK DRIVES IN ANY RESPECT. The only warranties on disk drives and remedies for breach of warranties on disk drives are those provided by or otherwise available against the disk drive manufacturer, Seller passes through to Buyer all warranties by the disk drive manufacturer as set forth in the disk drive manufacturers warranty statement that accompanies each disk warranty with such manufacturer and to communicate all warranty claims to such manufacturer.

6) LIMITATIONS ON WARRANTIES, LIABILITY, AND BRINGING ACTIONS. (a) Buyer agrees that all claims against Seller, other than for breach of warranty, arising under this Agreement shall expire and be barred forever unless an action thereon is commenced in a court of competent jurisdiction situated in the City of Toronto, in the Province of Ontario, Canada within one (1) year following Buyer's discovery of facts indicating to Buyer that a cause of action on such claims may exist against Seller. NO LAWSUIT PERTAINING TO ANY MATTER ARISING UNDER OR GROWING OUT OF THIS AGREEMENT SHALL BE COMMENCED AND PROSECUTED IN ANY COURT OTHER THAN A COURT SITUATED IN THE CITY OF TORONTO, IN THE PROVINCE OF ONTARIO, CANADA.

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