DDR v4

DDR Overview
MediaNXS Interface
QuickClipXO3 Interface
VTRIF Interface

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Introduction

Conventions

This document assumes the following:

That the user knows how to operate a mouse and keyboard and perform the basic functions of their operating system, including copy, paste, browser use etc.
That the user is familiar with video editing and how to use VTRs
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 a facility or video setup.

Furthermore:

The name of a control or display present on the interface will be displayed in **bold** text.
Where a portion of the manual is referred to the name of section mentioned will be displayed in *italics.*
Certain images in this document have been grayed out where it is useful or necessary to place indicator marks to show specific controls or displays above a darker background.
For the purposes of this document, the system which this software is installed on will be referred to as the DDR.

Important Instructions

GENERAL

Read this entire manual
Keep the manual available for quick reference
Pay attention to all the warnings
Follow any instructions carefully
Whereas the software must be installed in a computer device ("the DDR"), certain precautions must be taken to ensure continued operation and to obtain maximum performance.

MOISTURE and CLEANING

Keep the DDR a safe distance away from water or other liquids. In fact, declare the DDR to be within a "no beverage" area.
The outside of the DDR may occasionally be dusted with a dry cloth.
The inside of the DDR may occasionally be blown clean with compressed air during servicing.

HEAT and VENTILATION

Keep the DDR a safe distance away from heat sources such as radiators, amplifiers, and lighting fixtures. However do keep the DDR in a temperature controlled environment. The DDR operates best within a temperature range comparable to that of an indoor work environment. The DDR is not intended for use in extreme hot or cold conditions.
Do not block any of the DDR's ventilation openings.
Confirm that there is enough room around the DDR to provide an air source for ventilation.

POWER

Only use the AC cable provided with the DDR or recommended by the manufacturer.
Confirm that the DDR is provided with a properly grounded, dependable source of AC power of the correct voltage for your region. Do not be tempted to remove the grounding plug if you are confronted with an obsolete receptacle; instead obtain the services of an electrician to replace the offending socket with one that can be reliably grounded (and that complies with applicable safety codes).

Ensure the power is set up with a surge protection device or circuit. It may be prudent to turn the DDR off and remove the plug from the DDR during lightning storms.

Where uninterrupted operation is required, provide the DDR with a UPS (uninterruptable power source typically containing a backup battery) to complete or continue operations during power outages.

Take measures to ensure that the AC cable cannot be tripped over, yanked or pinched.

INSTALLATION and SERVICING

The DDR is intended for installation and use in a professional environment such as a TV studio. It is not intended for residential use.

Only use those attachments to the DDR that have been recommended by the manufacturer. These may include installation hardware such as rack mount slides and extenders. or other peripherals such as mouse and keyboards.

Where the DDR has been installed in a rack or cart, take care that the rack or cart has been properly installed, maintained and where applicable, operated so that there will be absolutely no risk of it tipping over or falling.

Confirm during installation that there is enough room around the DDR to provide access for servicing and peripherals maintenance.

Refer all servicing to qualified personnel. There are no user serviceable parts inside the DDR.

Servicing is required where physical factors (such as being dropped, exposed to liquids or excessive heat, impacted during shipping etc.) have altered the operation or functionality of the DDR.

DDR Overview

Features

DDR software can be used for digital video capture, conversion, control and playback.

DDR software provides various interfaces depending on the product level and the application. These interfaces include **MediaNXS**, **QuickClipXO** and **VTRIF**.

These interfaces allows the user to set up and operate a computer as a DDR to capture and play back video (and associated audio). The DDR digitizes an incoming video signal and creates a file. Many file formats are supported, in a range of video standards. There are also functions for file transcoding, system setup, meta data maintenance, signal analysis and review and licensing. Extensive serial control both in and out provides for control over VTRs for pull-ins and laybacks, and operation under serial control for integration into an automated environment.

Other utility applications included with **DDR** software include **Drastic Setup Wizard**, **DDR Config**, and **License DDR**.

The utilities allow the user to confirm or adjust a broad range of settings.

Hardware Requirements

Supported Operating Systems

The software runs on **Windows XP32/Vista 32**, **Mac OS-X 10.5+** and also on specific **Linux** and **Windows 64 Bit** operating systems.

Supported Video Hardware

There are versions for the following video boards:

AJA Video LS(e), LH(e), LHi, HD, Kona/Xena, OEM2K, Corvid capture/playback hardware

Bluefish444
- **Legacy SD boards**: Deepblue I|O, Iridium | SD, Iridium | AV, Deepblue | LT
- **End of life Bluefish boards**: Wildblue|AV, SD|Pride, SD|Envy
- **Current retail Bluefish boards**: SD|Greed, HD|Fury, 2K|Iridium XP and the 2K|Lust, but not as 2K boards, only as HD.
- ***OEM Bluefish boards***: HD|Vengeance, HD|Iridium and HD|Iridium XP
- *Note: we do not support RP-188 nor RP-215 or embedded audio on any Bluefish boards.*

Other video boards from Black Magic, Matrox and DVS are currently OEM only.

Other Supported Hardware

The following hardware has been tested for use with **DDR** software:

Motherboards Tyan Thunder i7505 (S2665) motherboard
Supermicro X5DPE-G2 motherboard
Supermicro x7DBi motherboard

	EVGA nForce 680I SLI LGA775 motherboard (Please see Video Hardware Manufacturer Sites)
RS-422 Adapters	RS-422 adapter B&B #422LP9R Drastic Quad PCIe RS-422 Board Colin Broad USB 422
SCSI Cards	Atto, Adaptec, LSI
RAID Cards	Adaptec 39320R SCSI RAID controller 3Ware Escalade IDE RAID controller
Fibre Cards	Atto Celerity 4GB 42es/44es Q-Logic LSI/Apple
VGA Cards	Recent Nvidia or ATI/AMD required

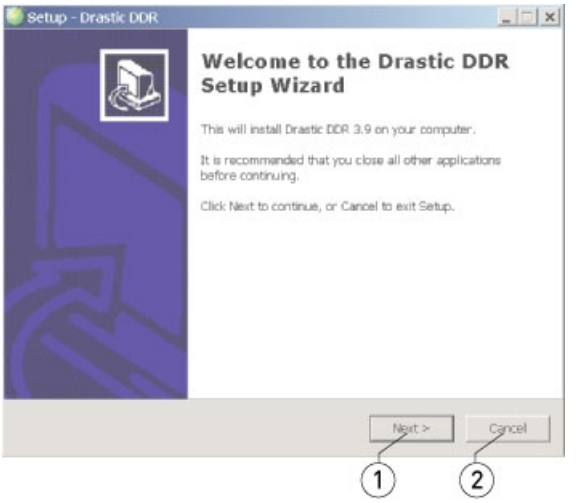
There may be other hardware which can be used with the software. The manufacturer continues to perform compatibility tests according to current development priorities and reserves the right to add new devices to this list from time to time.

Installation

Install the software: Regardless of the delivery method, the software will be available at some level as an (executable) installable file. The file may be supplied as a download or on a CD. Run the DDR and browse to the location of the install, double-click on the file, or right click and select **Open** from the context menu. The installation may be protected by password. If so, the password will be supplied as a component of delivery.

The Drastic DDR Setup Wizard - Welcome

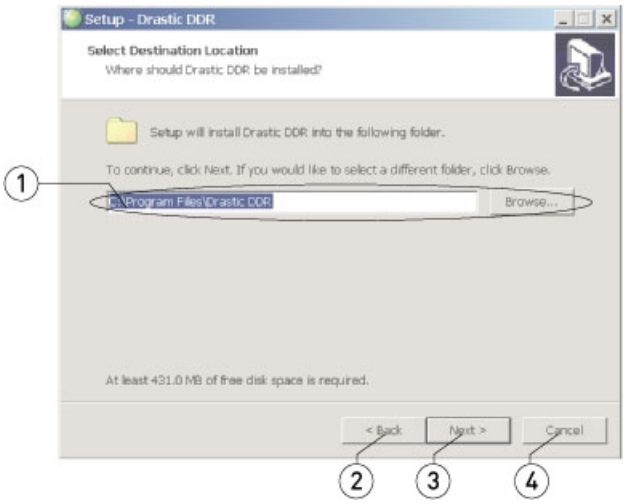
Running the install software opens the **Drastic DDR Setup Wizard**.



The first screen lets you know the software is being installed, and that you should close other applications before attempting the install. Pressing the **Next** button will proceed with the installation, or pressing the **Cancel** button will exit the **Drastic DDR Setup Wizard** without installing any software

The Drastic DDR Setup Wizard - Location

The next screen in the **Drastic DDR Setup Wizard** allows the user to set the location of the installation.

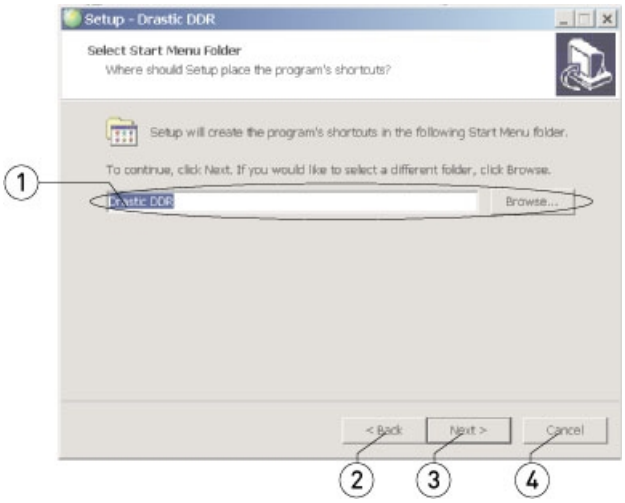


A default location is provided (C\Program Files\Drastic DDR). The default location is usually best, but if the user wants they can change this location by pressing the **Browse** button (1), which opens a browser for the purpose of navigating to the preferred location and selecting it.

To return to the former screen, press the **Back** button (2). To continue onto the next screen, press the **Next** button (3). To exit the **Drastic DDR Setup Wizard** without installing the software, press the **Cancel** button (4).

The Drastic DDR Setup Wizard - Shortcuts

The next screen in the **Drastic DDR Setup Wizard** allows the user to set the location of the shortcuts.

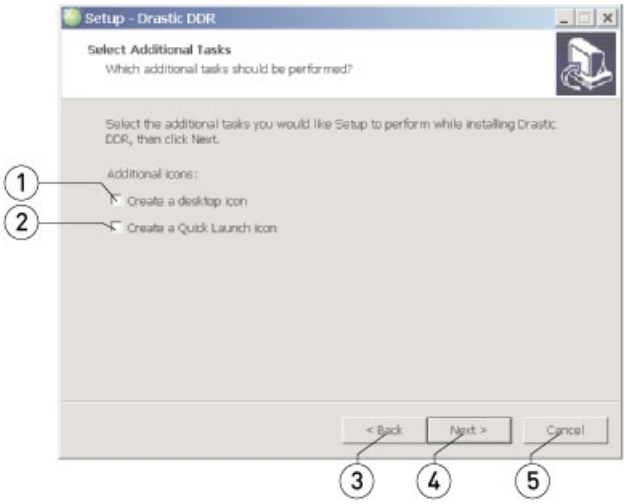


A default location is provided (Drastic DDR). The default location is usually best, but if the user wants they can change this location by pressing the **Browse** button (1), which opens a browser for the purpose of navigating to the preferred location and selecting it.

To return to the former screen, press the **Back** button (2). To continue onto the next screen, press the **Next** button (3). To exit the **Drastic DDR Setup Wizard** without installing the software, press the **Cancel** button (4).

The Drastic DDR Setup Wizard - Tasks

The next screen in the **Drastic DDR Setup Wizard** allows the user to specify other tasks to be performed during the install.



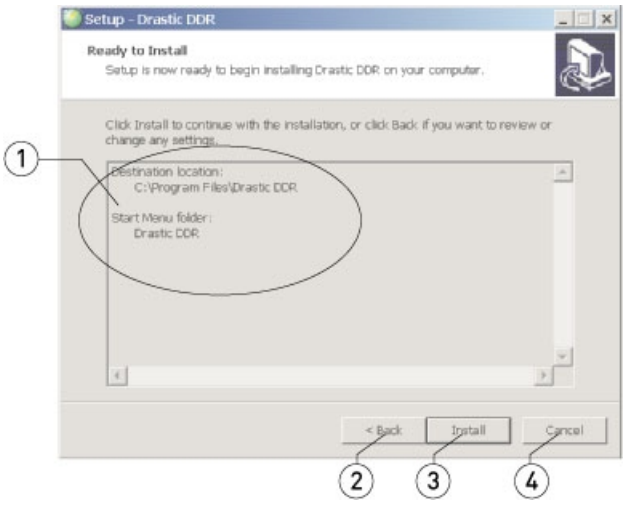
Select, or click in the **Create a Desktop Icon** checkbox (1) to specify that an a shortcut should be created on the DDR's desktop to run the software.

Select, or click in the **Create a Quick Launch Icon** checkbox (2) to specify that a shortcut should be created on the start menu, to allow the user to run the software by clicking the start menu and then selecting the icon.

To return to the former screen, press the **Back** button (3). To continue onto the next screen, press the **Next** button (4). To exit the **Drastic DDR Setup Wizard** without installing the software, press the **Cancel** button (5).

The Drastic DDR Setup Wizard - Confirm

The next screen in the **Drastic DDR Setup Wizard** allows the user to confirm that the selections they have made are correct before the installation process begins.

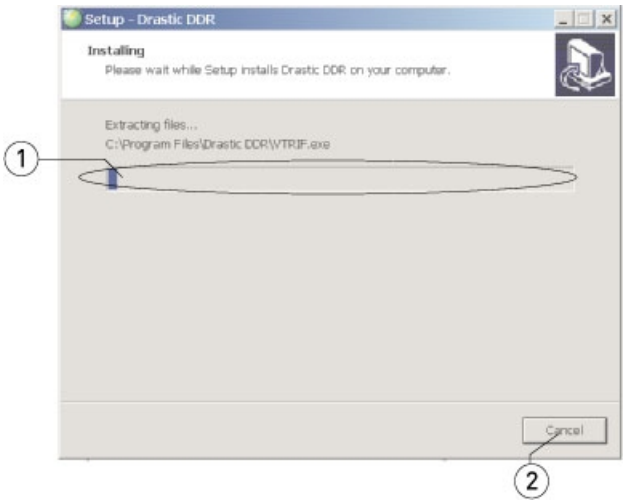


The user's choices will determine which tasks are to be performed during the installation. These choices are displayed within the settings field (1).

To return to the former screen, press the **Back** button (2). To install the software as specified, press the **Install** button (3). To exit the **Drastic DDR Setup Wizard** without installing the software, press the **Cancel** button (4).

The Drastic DDR Setup Wizard - Installation

The next screen in the **Drastic DDR Setup Wizard** shows the progress of the installation.

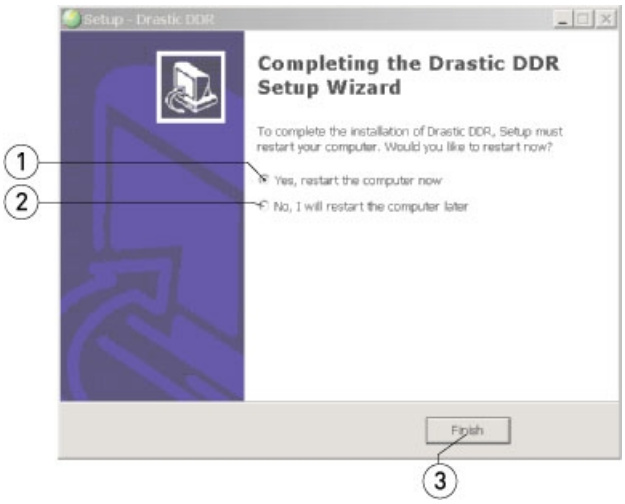


The ongoing progress of the entire installation is displayed as a left-to-right meter (1) which fills up as its tasks are completed.

To exit the **Drastic DDR Setup Wizard** without installing the software, press the **Cancel** button (2).

The Drastic DDR Setup Wizard - Completion

The last screen in the **Drastic DDR Setup Wizard** reminds the user to restart the DDR after installation.



By default the **Yes, restart the computer now** checkbox (1) is selected - this setting is preferred since there are elements integral to the operation of Drastic software which are initialized properly after a restart.

If the user selects the **No, I will restart the computer later** checkbox (2), the DDR will not be immediately restarted upon finishing the install. The user should keep in mind that for complete installation, a restart is necessary. Where additional tasks must be completed on the DDR before its restart, the user should efficiently dispose of these and proceed with a restart.

Pressing the **Finish** button (3) closes the **Drastic DDR Setup Wizard** whether a restart has been specified or not.

Restart the DDR after installation.

Licensing

This software uses a hardware locked copy protection system, and must be licensed to run without watermarking on video records and output.

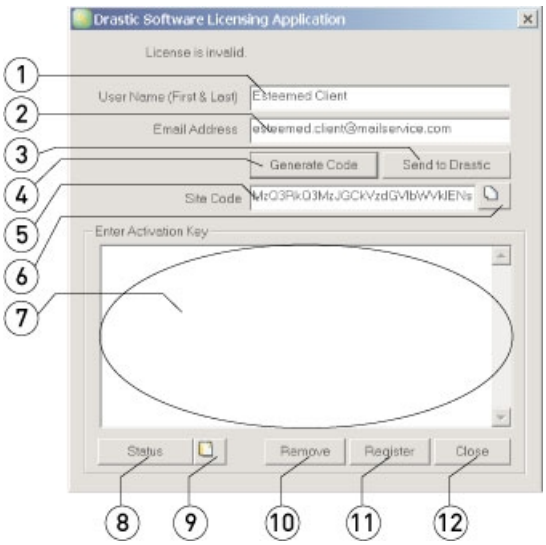
Matched Site Code and Site Key: The licensing software provides a **Site Code**. This **Site Code** is copied and sent via email, and the user receives a reply email with a matched **Site Key** specific to the installed machine.

Where the DDR is licensed by Drastic: Drastic Technologies' licensing offices are located in the Eastern Standard Time Zone of North America. Licensing requests will usually only be processed during regular business hours, 9am to 5pm Monday to Friday EST.

License DDR

This is a dedicated licensing application which can provide varying levels of functionality depending on the product. Here is how to license **DDR** software:

Run the licensing dialog: open the licensing dialog at: **Start Menu|<Install Directory>|Util|License DDR**.



Generate a Site Code: Enter a user name into the **User Name** field (1). Enter a valid email address into the **Email Address** field (2) - this is where we will send the license reply required to generate a license. Press the **Generate Code** button (4).

Send us the Site Code: If the DDR is set up with an email client, press the **Send to Drastic** button (3) - this should open up an email with the site code in the body of the email. If not, select and **Copy** the **Site Code** (4) (you can use the **Copy** button (5) to the right of the **Site Code** field). **Paste** the **Site Code** into the body of an email. Where the DDR is to be licensed by Drastic, send this email to the following address:

authorization@drastictech.com

You may be able to send the authorization code directly to your reseller for processing. Indicate whether the license is for a demo, or for an existing client.

Please do not try to convey **Site Codes** verbally. The **Site Code i**s a long string of characters and it is easy to misinterpret characters, which results in the license not being validated properly.

You will receive an email reply containing a **Site Key**. **Copy** this **Site Key**. **Paste** it into the **Site Key** field (7) (or you can use the **Paste** button (9))..

Press the **Register** button (11).

> **Note:** If the **Site Key** fails to update the license, check that the **Site Code** in the licensing dialog matches the code in the email you sent. If the **Site Code** is different, it is possible it has been updated by specific computer activities. In this case you will need to resend the request for authorization with the new **Site Code**.

Restart the DDR to enable the new license status.

To confirm the status of an existing license, run the licensing dialog and press the **Status** button (8). The license status is displayed.

There may be cases where a license has to be removed. In this case the user will be directed to run the licensing dialog and press the **Remove** button (10). This opens a dialog in which the user would be able to remove the license and in the process to possibly back up the license.

To close **License DDR**, press the **Close** button (12).

Connections and DDR Setup

In order to take full advantage of all the features of the DDR, it must be set up.

The *DDR Connections* section details many of the important physical connections that will need to be addressed.

The *DDR Setup* section details the included setup utilities which are used to confirm or adjust various software settings for the DDR.

DDR Connections

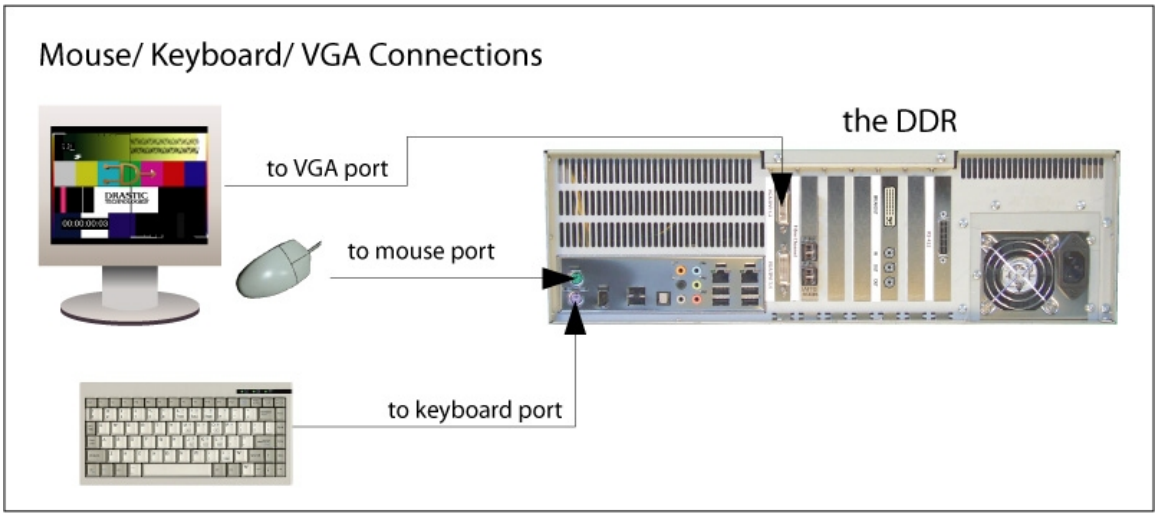
Confirm the specific connections necessary to use the DDR in its complete range of functionality.

VGA, Mouse, Keyboard

The DDR operations are mainly accessed via keyboard and mouse, using a VGA monitor attached to the DDR to access DDR functionality. The VGA, mouse and keyboard ports are usually located on the rear panel.

Use a standard VGA cable to attach a monitor to the VGA monitor output of the DDR. Some DDRs may offer this port as a connector in a card rail, others as one of the motherboard connections. The monitor should also be provided with a dependable source of power.
Attach a standard mouse to the DDR mouse port (green if PS/2).
Attach a standard keyboard to the DDR keyboard port (purple if PS/2).

Here is a diagram for connecting the VGA, mouse and keyboard:

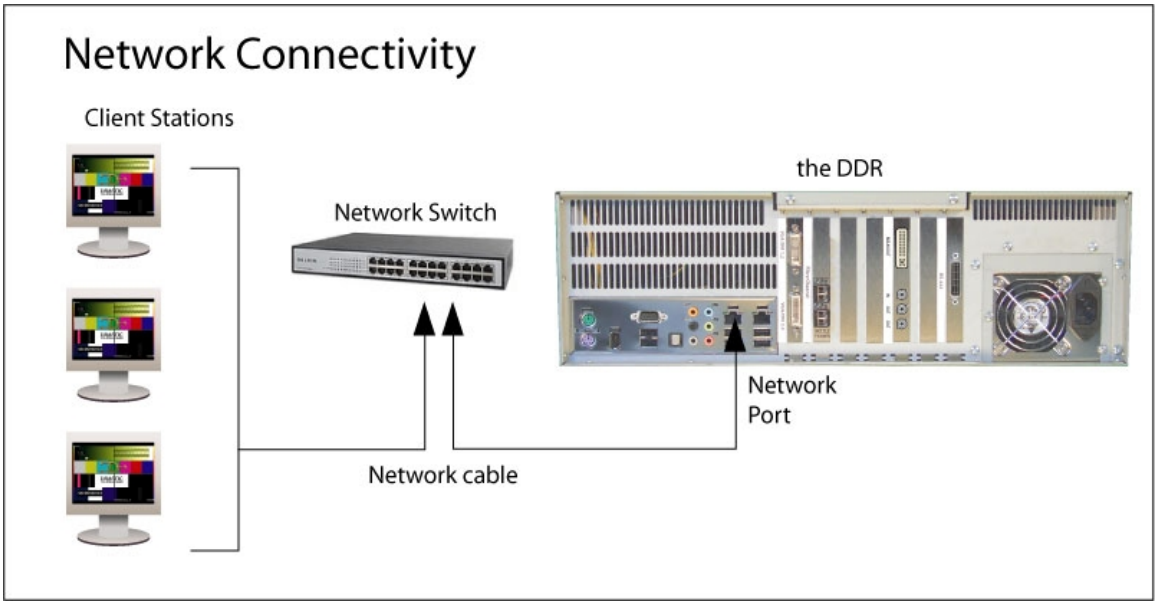


Network

Network connectivity provides file sharing and web update functionality as well as a layer of device control. It is also useful in the licensing procedure.

Insert a network cable into the network port on the DDR.
Connect the other end of this cable to the network at the preferred point of access, which will often be a network switch/router.

Here is a diagram for connecting the DDR to the network:



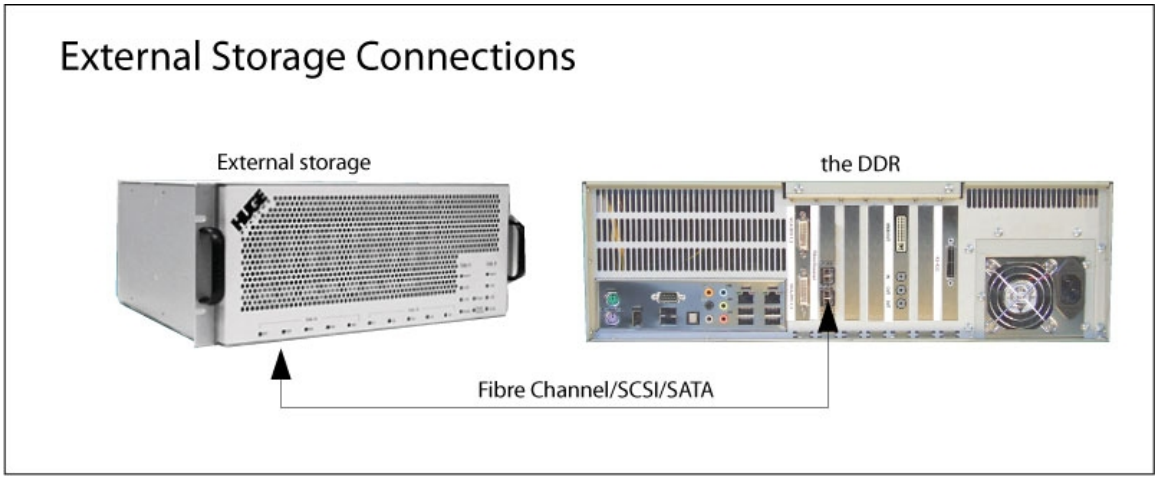
The network port will be situated either in the motherboard connections or as a riser card in the rear of the DDR.

External Storage

Storage for media may be internal and/or external to the DDR. Some applications may require the speed or capacity of external storage. In some cases external storage is connected via the rear panel of the DDR, via a SCSI, SATA or Fibre Channel board.

Connect the manufacturer's recommended cable to the storage interface port on the DDR (usually located on the rear panel).
Connect the other end of the cable to the storage.
Provide the storage with a dependable power source.
Turn the storage on before turning on the DDR. This helps to ensure the DDR sees the storage upon bootup of the DDR and does not reassign the record drive.

Here is a diagram for connecting external storage:



Genlock

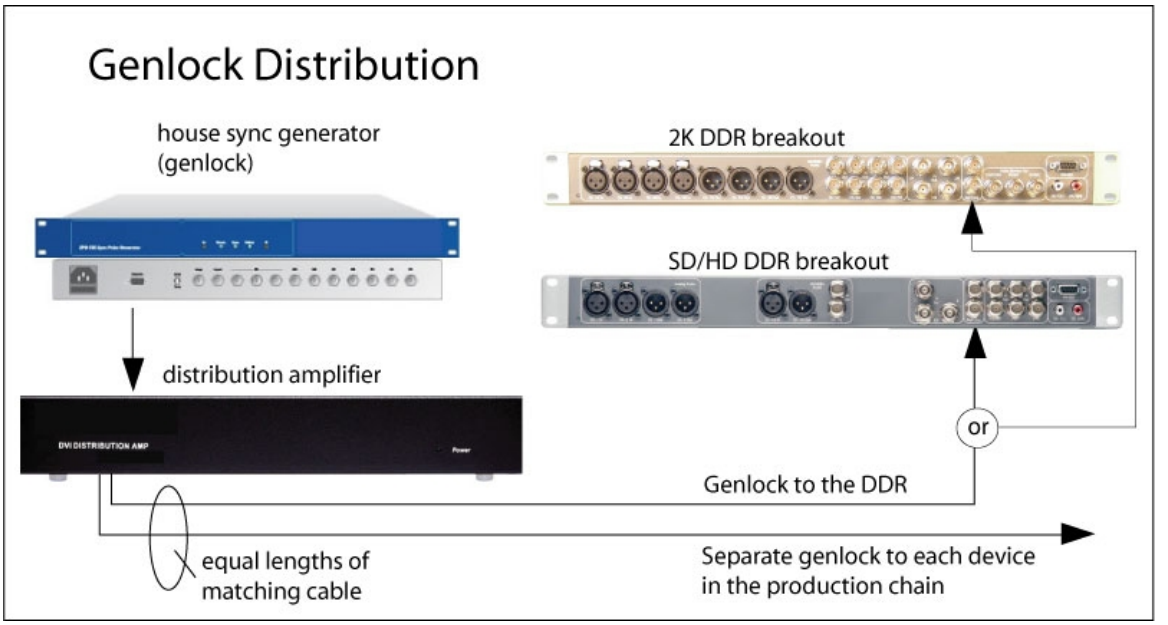
Genlock is a timing reference system used to synchronize multiple video signals. High Definition (720, 1080) or greater (2K, 4K) genlock signals are provided as a tri-level sync signal, and Standard Definition (NTSC, PAL) genlock is provided as a blackburst signal. Make sure to specify the correct genlock source and type for your video standard.

To use an external genlock source, connect the appropriate cable between the genlock input on the DDR and the genlock source. The DDR genlock connection may be offered via a multiple ended cable, or a connection on the rear of the DDR, or on a breakout box attached to the DDR. The DDR may be set to use this genlock source using the included applications.

The DDR may be set to lock to the video input if one is present. A valid video signal with its timing signal intact may be selected as the reference using the included applications.

The last option is to set the genlock to "Free Run" (or **None**), or to not synchronize the DDR's timing with any external source. If the DDR is not set to lock to a timing source, frame accurate edits may not be possible (and there may be other timing related issues). This is not recommended but may be selected using the included applications.

Here is a diagram for connecting house genlock via a breakout box:



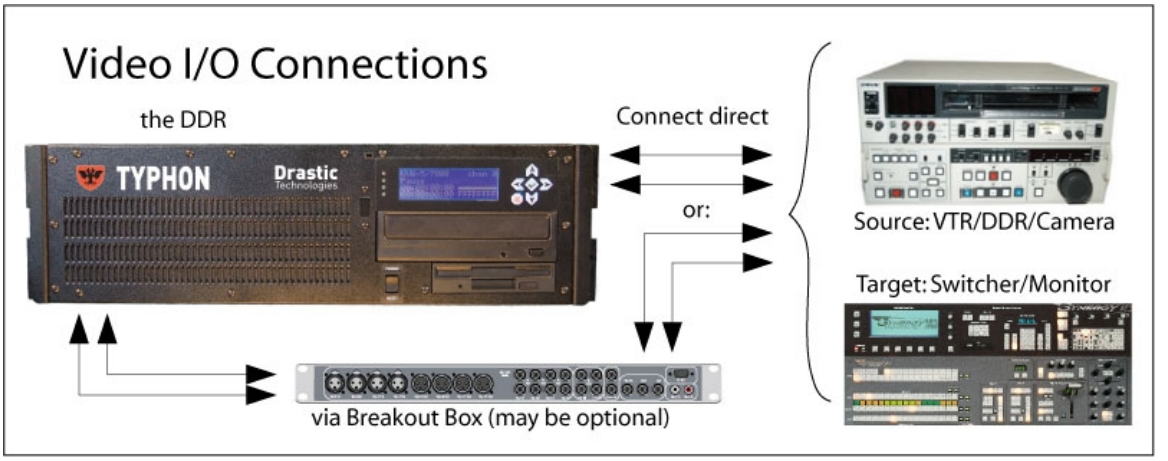
Video Input

To set up the video input, confirm that a cable is connected between the output of the video source (the signal you need to record, or the input) and the video input port of the DDR. The DDR point of connection may be on the rear panel or possibly within a dedicated breakout box. There may be multiple video inputs needed to accommodate different input signal types. Be sure to use the right cable and the right input port(s) for the video source.

Video Output

To set up the video output, confirm that the video output of the DDR is attached to the correct video input port of the target. The target might ideally be a switcher, to both route the output of the device to any receiving modules and also to route the video stream to a monitor to properly review output. The DDR point of connection may be on the rear panel or possibly within a dedicated breakout box. There may be multiple video outputs to accommodate different output signal types. Be sure to use the right cable and the right output port(s) for the type of signal required.

Here is a diagram for connecting video input and output:



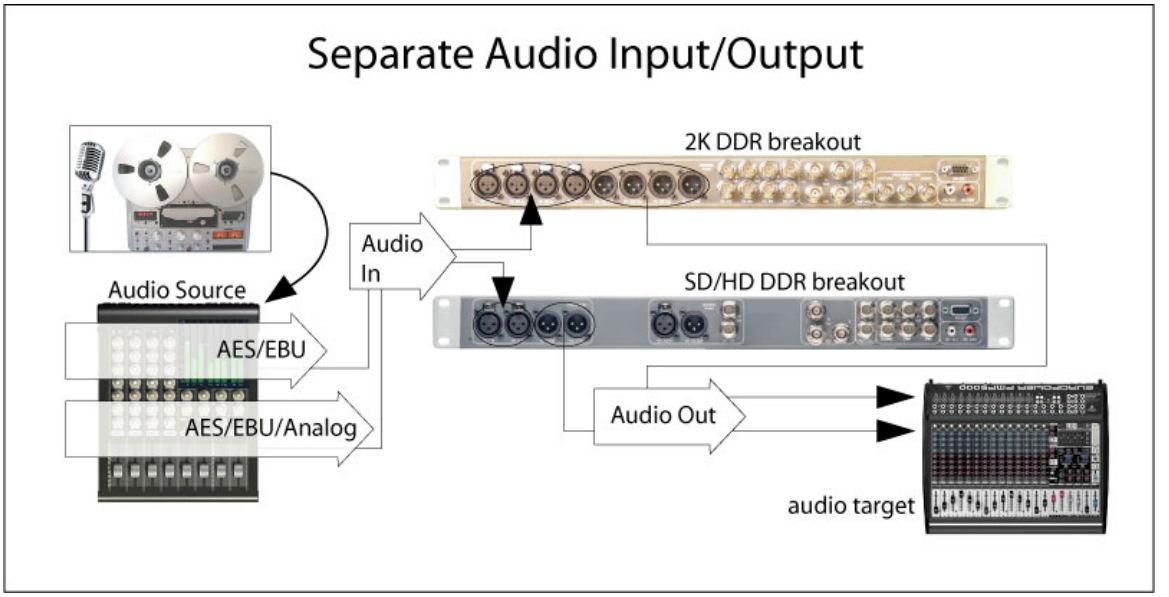
The video input may be confirmed via the video hardware diagnostic, and by viewing a passthrough signal via the onscreen VGA monitor found within each application.

The video connection may contain the audio as an embedded signal within one cable and separate audio connections may not be necessary. Specific DDRs may also support digital and analog audio sources which are not embedded in the video signal.

Separate Audio

The DDR may use separate audio inputs from the video depending on the hardware capabilities and the requirements of the application. The audio points of connection may be provided in a multiple ended breakout cable, or on the face of a rackmount breakout box.

Here is a diagram for connecting separate (non-embedded) audio which features the breakout box for cable connections:



LTC Time Code

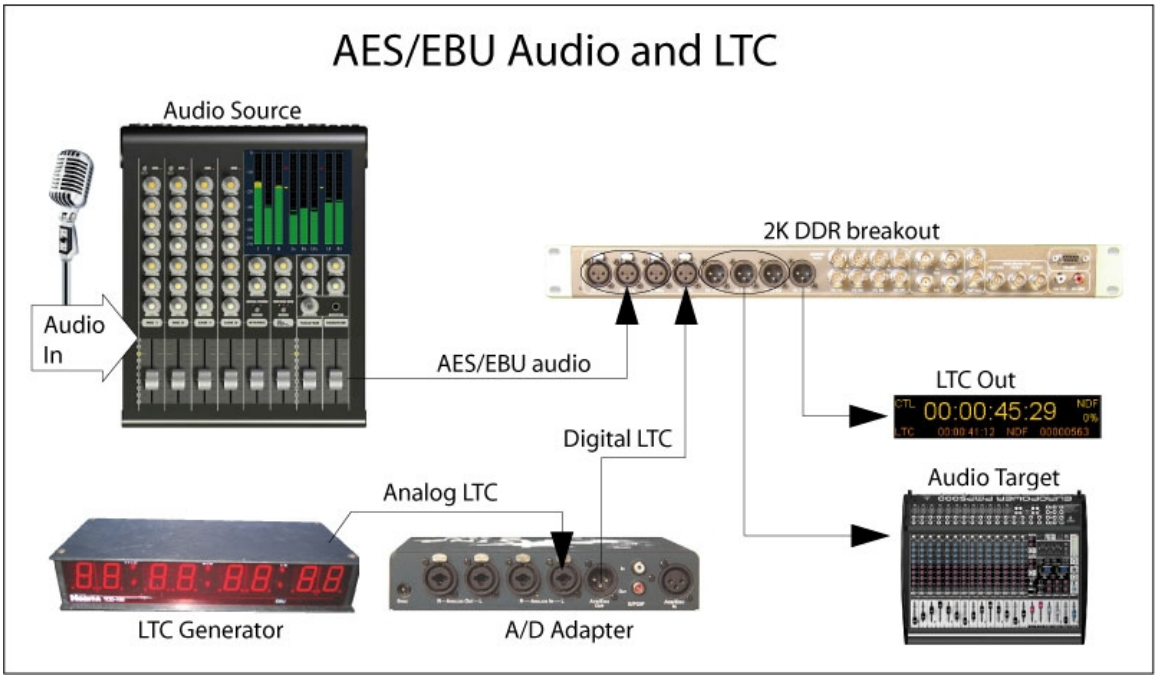
The DDR may use a channel of non-embedded audio to accept incoming LTC for the time code source. This audio channel must be dedicated to LTC and will not be available for audio capture or playback.

Specific DDRs may feature two channels of non-embedded analog (unbalanced) audio, but since stereo audio is typically required for most applications it would seem counterproductive to sacrifice one of the channels for LTC. However this may be set in applications where audio is not required.

Specific DDRs may feature up to 8 channels of AES/EBU audio, which allows for 7 remaining channels of audio even after one channel is dedicated to LTC.

It may be necessary to convert an analog LTC signal to digital before connecting it to an audio channel input.

Here is a diagram for connecting LTC using AES/EBU audio:



Once the correct connections have been made, each application allows the user to select LTC as the time code source.

VTR Emulation

Where the DDR will operate under control the user will need to confirm that a serial control cable of the appropriate rating and pin configuration is connected between the serial control input port of the DDR and the external serial controller or automation system's serial control output. The serial control input port on the DDR may either be a port offered via a riser card or a serial port on the rear panel near the motherboard connections.

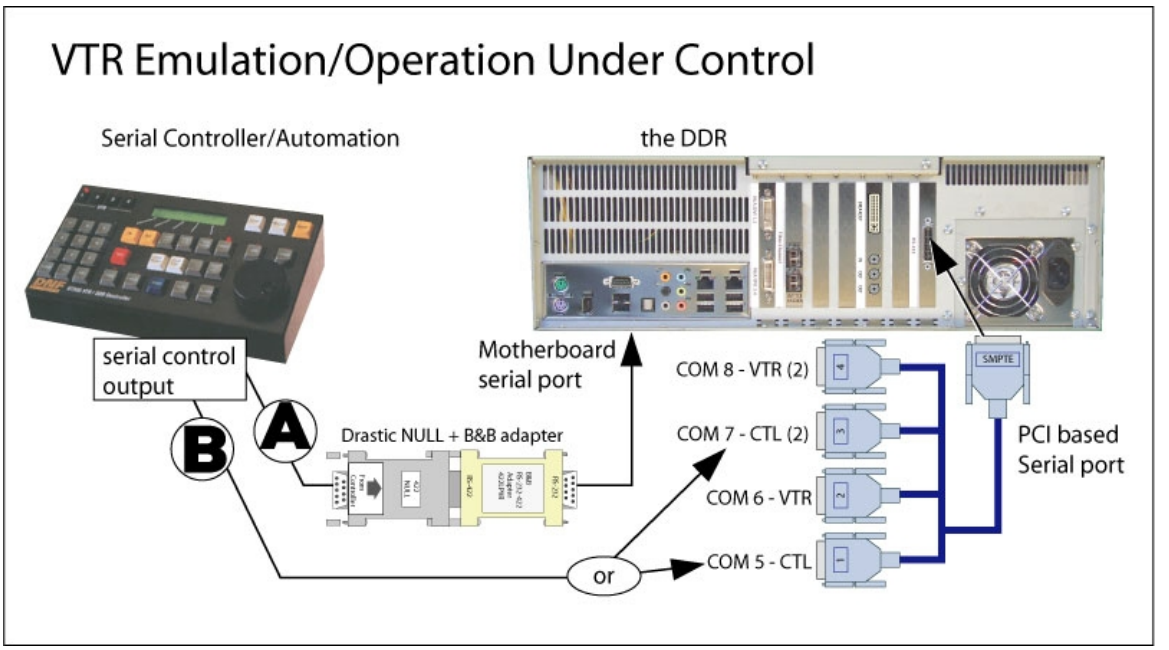
A. DDR can use a motherboard-anchored RS-232 serial port with a hardware adapter set to provide a channel of incoming RS-422 control.

Connect a B&B RS-232-422 Adapter #422LP9R + a Drastic NULL adapter to the serial port on the DDR.
Connect a serial cable between the adapter set and the controller device.

B. In a DDR equipped with Drastic's OEM serial adapter card, the card provides four RS-422 ports in the rear, two for incoming control, two for control output.

Connect a serial cable between one of the control input ports (labeled CTL) on the card and the control output port of the controller device.
Confirm that the controller device (such as a DNF controller or automation system) is powered up and running in the correct mode to control the DDR before running **DDR** software.

Here is a diagram for connecting to a controller or automation system:



The included utilities such as **DDR Config** allow the user to configure VTR emulation settings. VTR Emulation is not currently a feature of standalone **MediaNXS** installs.

Serial Control Output

Where the DDR will control an external VTR, the user will need to confirm that a serial control cable of the appropriate rating and pin configuration is connected between the DDR and the external VTR. Depending on the serial port offered, an adapter or adapter set may be required to convert RS-232 to RS-422.

Serial Port Connections

A. DDR can use a motherboard-anchored RS-232 serial port with a hardware adapter set to provide a channel of outgoing RS-422 serial control.

Connect a single B&B RS-232-422 Adapter #422LP9R to the serial port on the DDR.
Connect a serial cable between the adapter and the serial control port on the VTR.

B. In a DDR equipped with Drastic's OEM serial adapter card, the card provides four RS-422 ports in the rear, two for incoming control, two for control output.

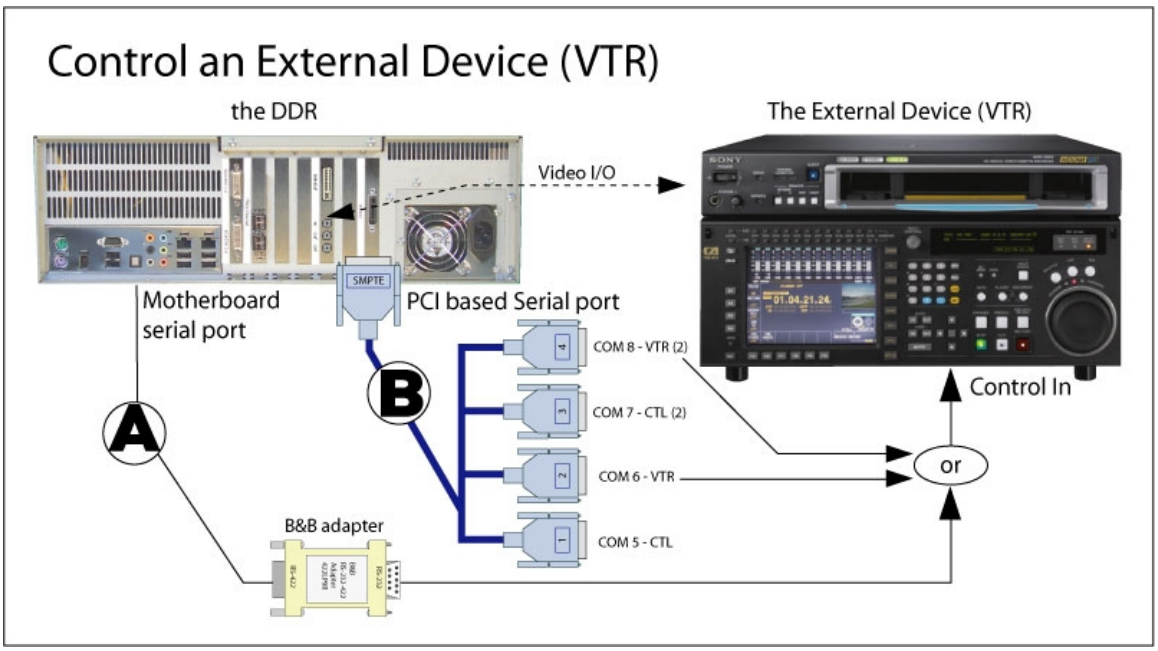
Connect a serial cable between one of the control outputs (labeled VTR) and the VTR serial control port.

Video and Audio Connections

For laybacks, connect the video and audio output of the DDR to the video and audio input of the VTR.

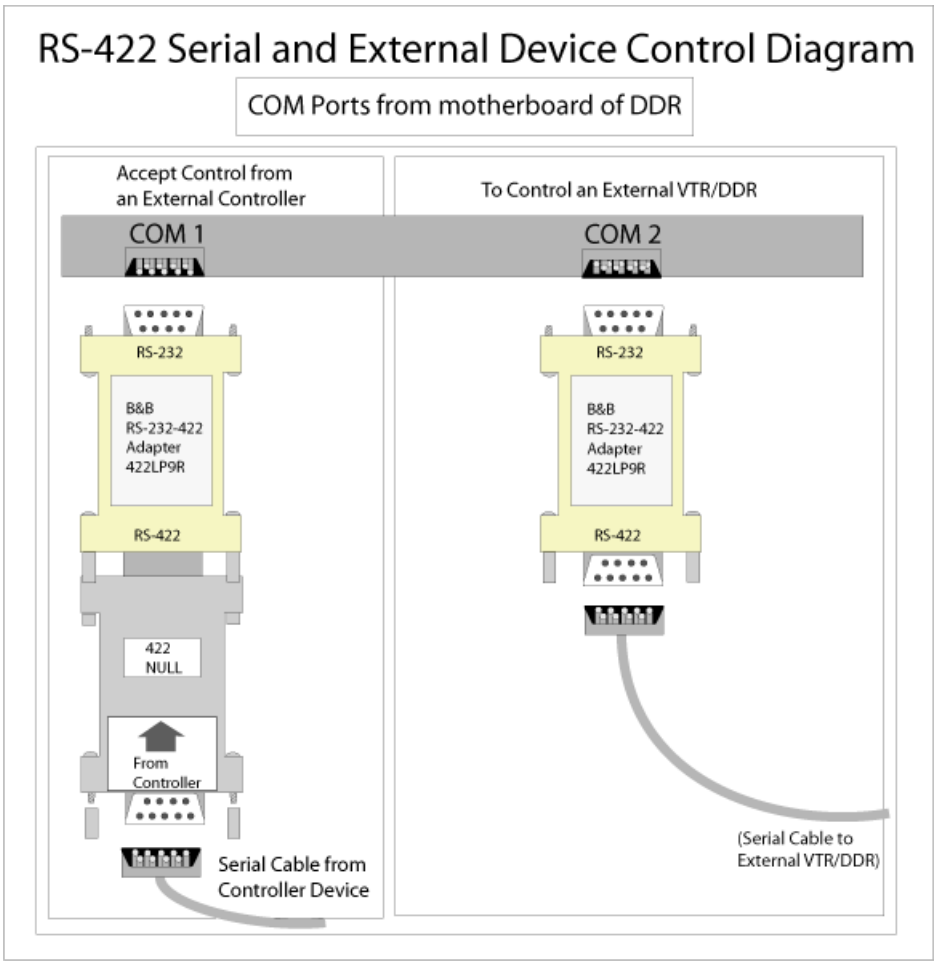
For pull-ins, connect the video and audio output of the VTR to the video and audio input of the DDR.

Here is a diagram for connecting an external VTR:



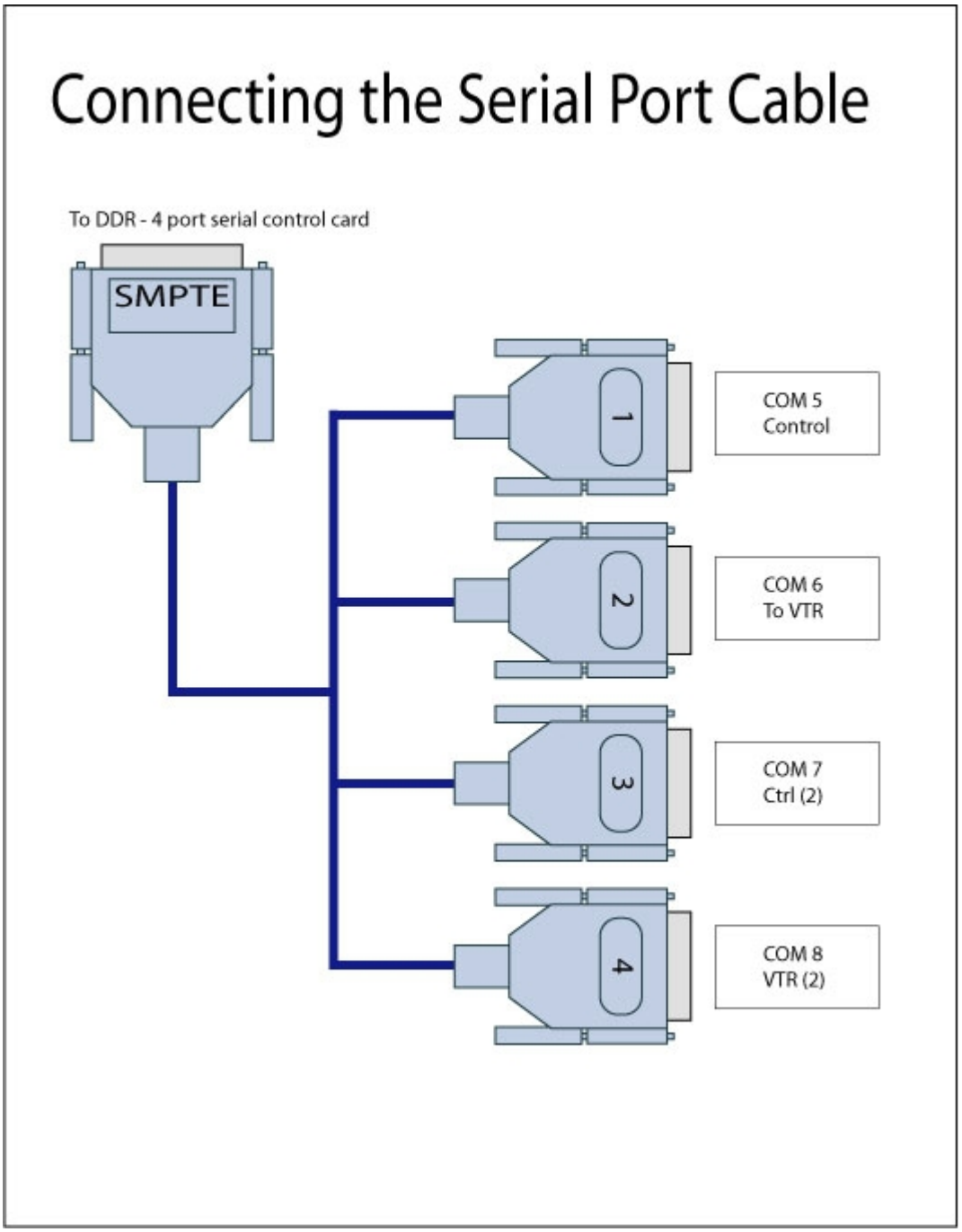
The utilities such as **DDR Config** and specific applications included in **DDR** software allow the user to configure serial control settings.

Here is a diagram which specifies the connection order of the adapters if they are needed.



4 Port Serial Control Card

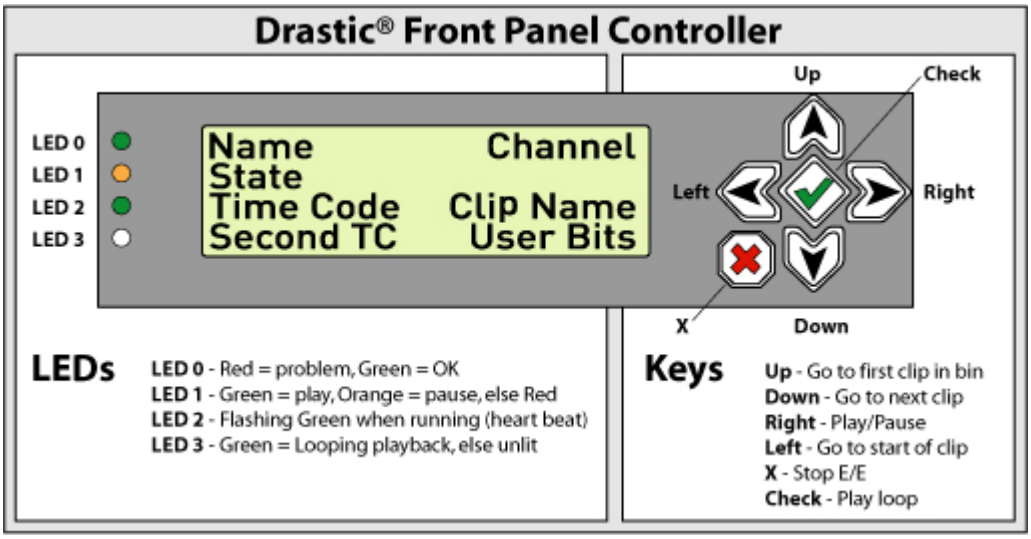
Where the DDR has been configured with a Drastic 4 port serial control card, the card features an included breakout cable which can be used to provide multiple ports of serial control. The standard cable connectivity provides the following:



The "To VTR" ports provide control over external VTRs. The "Control" ports provide operation under serial control, as from a controller device or automation system.

Front Panel Controller

Specific DDRs may be equipped with a Drastic front panel controller. The functionality of this controller allows the user to perform simple clip load and playback actions. As well, there are displays to indicate time code, clip and device information, and system status.



LEDs (light emitting diodes)
There are four LEDs on the left of the front panel controller. Where the DDR has been turned on but **DDR** software is not running, the top two LEDs will display red.

Once **DDR** software is running on the DDR, the LEDs should indicate the following (top to bottom order)

LED0: (the top LED): Red = problem, Green = OK
LED1: (2nd from the top): Green = Play, Orange = Pause, else Red
LED2: (3rd from the top) Flashing Green when running (heart beat)
LED3: (the bottom LED) Green = Looping Playback, else unlit

Keys
There are six keys on the right of the front panel controller. As in the diagram above, they are organized as left, right, up, down (arrow keys), check mark (middle) and X (lower left). These keys function as buttons when pressed, and light up when selected.

Once **DDR** software is running on the DDR, the following commands will be available:

Up: go to the first clip in the bin
Down: go to the next clip in the list
Right: toggle between Play and Pause states
Left: cue the first frame of the clip
X: Stop (E-E passthrough)
Check: Play the selected clip in Loop mode

LCD display
The front panel controller is equipped with a 4 line x 20 character LCD screen. This screen has been subdivided into seven fields to offer device, clip, transport and time code information display.

Once **DDR** software is running on the DDR, the LCD screen should display the following information:

Top line left: device name
Top line right: channel (i.e. Int0)
2nd line: transport state
3rd line left: time code location
3rd line right: clip name
4th line left: secondary time code
4th line right: user bits

The front panel controller is supported for use in qualified DDRs running **DDR4** software.

Keyboard Commands

The following keyboard commands are supported in **DDR** software. However, specific hardware configurations may be required in order to take advantage of all the features described in the table below. All keys are case sensitive.

	Plain keypress	Keypress + Shift	Keypress + Alt	Keypress + other
<**F1**>	Help			**<Ctrl+Shift>** switch to "Replay mode"
				<Ctrl+Alt> switch to "Replay mode" + select camera 1
<F2>				**<Ctrl+Shift>** switch to "replay mode + follow"
				<Ctrl+Alt> switch to "replay mode" + select camera 2
<F3>				**<Ctrl+Shift>** switch to "PlayList Mode"
				<Ctrl+Alt> switch to "replay mode" + select camera 3
<F4>				**<Ctrl+Shift>** switch to "Live Mode"
				<Ctrl+Alt> switch to "replay mode" + select camera 4
<F5>				**<Ctrl+Alt>** switch to "replay mode" + select camera 5
<F6>				**<Ctrl+Alt>** switch to "replay mode" + select camera 6
<F7>				**<Ctrl+Alt>** switch to "replay mode" + select camera 7
<F8>				**<Ctrl+Alt>** switch to "replay mode" + select camera 8
<F9>	Jump # seconds back from current point			
<F10>	Jump # seconds back from current record point and play			
~ `	RTZ			
Q		Record	Q (Cue) In	<**Ctrl**> Quit
W	Preview	Auto Edit	Main View	<**Ctrl+Shift**> record 1 frame, go to next frame
E	Preview In	Eject	File	
R	Preview Out		To VTR	
T		Loop	Status View	
Y	V1 toggle			
U	A1 toggle	A5 toggle	Advanced Setup View	
I	A2 toggle	A6 toggle	Set In Point	
O	A3 toggle	A7 toggle	Set Out Point	
P	A4 toggle	A8 toggle	Preview	
[{	-1 frame	-5 seconds	<**Alt**> -1%	<**Ctrl**> -5 frames <**Ctrl+Shift**> -5% <**Alt+Shift**> -10%

				<**Ctrl+Alt**> -10 frames <**Ctrl+Alt+Shift**> -25%
] }	+1 frame	+5 seconds	<**Alt**> +1%	<**Ctrl**> +5 frames <**Ctrl+Shift**> +5% <**Alt+Shift**> +10% <**Ctrl+Alt**> +10 frames <**Ctrl+Alt+Shift**> +25%
\ |	Loop			
A			Add Media	
S			Setup View	
D			Audio Levels	
G	Shuttle -	Shuttle Fine -	Go To	
H	Shuttle +	Shuttle Fine +	How Do I?	
J	Reverse Play	-1 Frame	Eject	<**Ctrl**> -1 Field
K	Pause		Make Sub Clip	
L	Play	+1 Frame	Clip Mode	<**Ctrl**> +1 Field
Z	Fast Reverse Play	-5 Seconds	RTZ	
X	Fast Forward Play	+5 Seconds		
C	Play	Play 200%	Clip View	<**Ctrl+Shift**> Play 50%
V	Pause	Stop	From VTR	
B	Reverse Play	Reverse Play -200%		<C**trl+Shift**> Reverse Play -50%
N	Cue to the In Point	Cue to the Out Point	Set Picon	
M	Mark In		Conform	<**Ctrl+Shift>** Delete In
, <	Mark Out Point			
. >	Stop			
Home	Cue Start	Cue In		
Delete	Remove	Delete		
End	Cue End	Cue Out		
Left Arrow	Shuttle -	Shuttle Fine -		
Up Arrow	+1 Frame			
Right Arrow	Shuttle +	Shuttle Fine +		
Down Arrow	-1 Frame			
Num Pad 1	Shuttle -	Fast Reverse		
Num Pad 2	Step Forward	Step Back		
Num Pad 3	Shuttle +	Fast Forward		
Num Pad 4	Mark In			
Num Pad 5	Cue In	Cue Out		
Num Pad 6	Mark Out			
Num Pad 7	Cue Start			
Num Pad 8	Preview			
Num Pad 9	Cue End			
Num Pad 0	Play/ Pause	Reverse Play		
Num Pad +	Stop			
Num Pad .	Pause/ Stop			

Num Pad Enter	Play			
Num Pad *	Mark Out			
Num Pad /	Mark In			

DDR Setup

Specific components of the DDR software configuration can be set up using built in utilities.

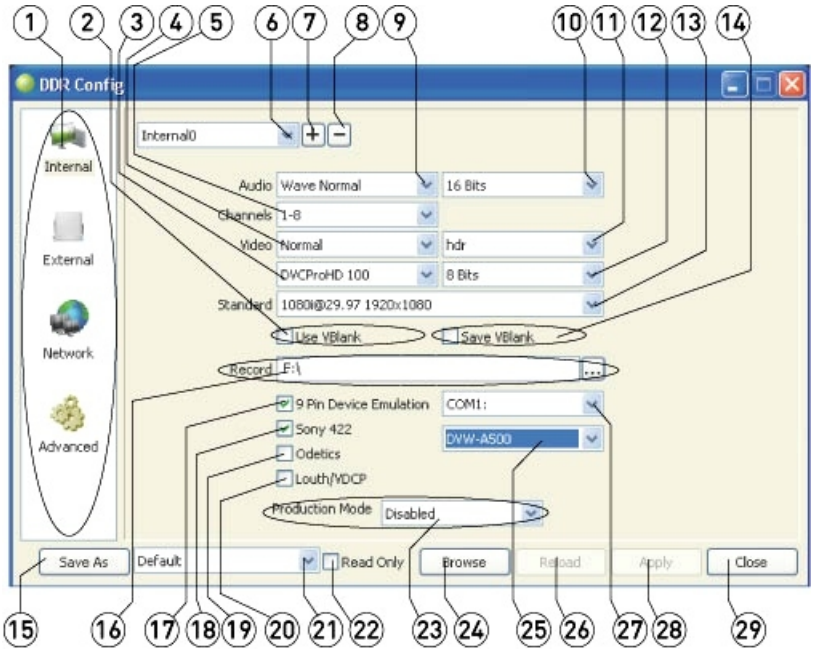
- The **DDR Config** utility provides a wide range of setup tools and is the main setup utility included in the **DDR** software.
- The **Drastic Setup Wizard** is run automatically upon restart after the first install, but may be run at any time to confirm or adjust various DDR settings.
- The **License DDR** utility provides licensing features, as the application must be licensed to run without watermarking on all video.

DDR Config

Open **DDR Config** software using the following path: **Start|Programs|<install directory>|Drastic DDR|Util|DDR Config**.

Locations and Controls

Internal Tab

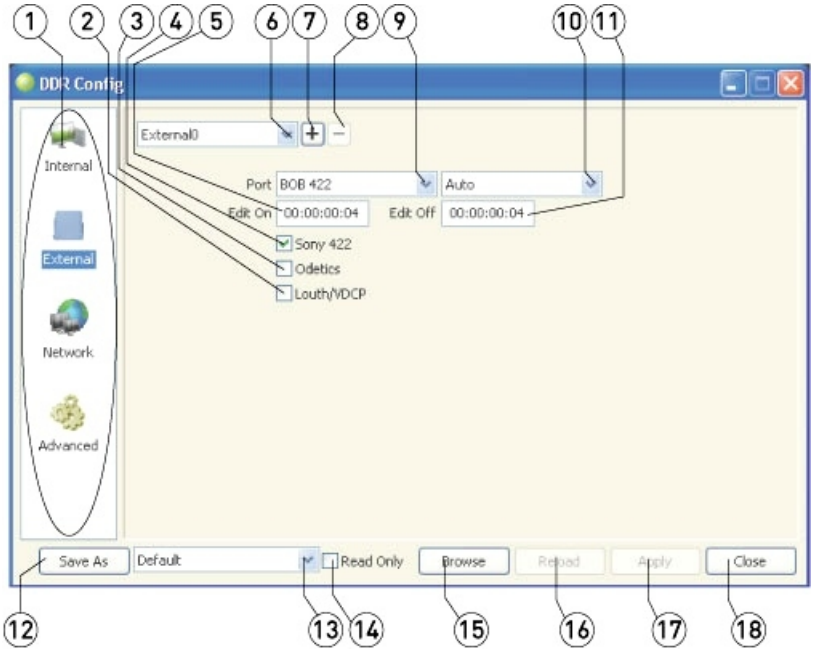


1	**Tab Selector** with **Internal Icon** selected	To select any of the tabs, press its icon. With the **Internal** icon selected, the controls for internal channel settings are loaded and can be confirmed or reset.
2	**Use VBlank** checkbox	Select, or check to display specific information contained in the vertical blanking interval.
3	**Codec** pulldown menu	Displays the codec selection for the file format chosen. Use the pulldown arrow to select between available codecs.
4	**Video** pulldown menu	Select between **single link**, **In2=Alpha**, or **Dual Link** modes. Be aware that some DDRs only support single link video.
5	**Number of Audio Channels** pulldown menu	Select between the available settings for the number of audio channels that will be created during video capture.
6	**Channel** pulldown menu	Displays the selected internal channel. Use the pulldown arrow to select between available channels.
7	**Add** button	Where both the license and the hardware support it, press the **Add** button to add an internal channel to the system. The first channel will be **Internal0**, the next will be **Internal1** and so on.
8	**Delete** button	Where a channel needs to be removed, use the **Channel** pulldown menu to select it, and then press the **Delete** button.

9	**Audio type** pulldown menu	Use the pulldown menu to select between available settings for what type of audio file or files will be created during capture.
10	**Audio Bit Depth** pulldown menu	Use the pulldown menu to select between available bit depth settings for the selected audio type.
11	**Video File Format** pulldown menu	Use the pulldown menu to select the video file format that will be created during capture.
12	**Video bit depth** pulldown menu	Select between available bit depths (8/10/32 etc.) for the selected video file format. Some formats may only have one available setting.
13	**Video Standard** pulldown menu	Use the pulldown menu to select between available video standards. Make sure the DDR is capable (storage speed, video hardware etc.) to support the setting.
14	**Save VBlank** checkbox	Select, or check to save specific information into the vertical blanking interval during capture.
15	**Save As** button	Press the **Save As** button to open a browser which allows the user to save the configuration within a Drastic Project File.
16	**Record Directory** field and **Browse** button	The **Record Directory** field displays the current record directory, or where media files will be recorded during capture activities. The **Browse** button opens a browser which allows the user to set a new record directory.
17	**9 Pin Device Emulation** checkbox	Select, or check to set the system to operate under RS-422 serial control, emulating a broadcast or production VTR.
18	**Sony 422** checkbox	Select, or check to specify Sony 422 protocol.
19	**Odetics** checkbox	Select, or check to specify Odetics protocol.
20	**Louth/VDCP** checkbox	Select, or check to specify Louth/VDCP protocol.
21	**Project File** pulldown menu	This pulldown displays the current project file name, and where multiple project files have been saved, allows the user to choose between available project files.
22	**Read Only** checkbox	Check, or select this checkbox to specify that the project file should be maintained as a read-only file.
23	**Production Mode** pulldown menu	Use the pulldown menu to select between available production modes. Choices here include **Playback Only**, **Record Only**, **Both**, or **Disabled**. In Production Mode, the DDR will stop when it encounters a dropped frame. This is in contrast to Broadcast Mode, where the DDR will ignore dropped frames where possible to maintain continuous playback.
24	**Browse** button	Opens a browse window, which allows the user to look for and load an XML DDR configuration file.
25	**Device Type** pulldown menu	Use the **Device Type** pulldown menu to select between various device types, used to fine tune the serial control to more specifically match the device or protocol being used.
26	**Reload** button	Where parameters have been changed, use the **Reload** button to load the default settings for the DDR.
27	**COM Port** pulldown menu	Use the pulldown menu to choose between available COM ports for the selected channel.

28	**Apply** button	Press the **Apply** button to set any changes you have made.
29	**Close** button	Press the **Close** button to close **DDR Config**.

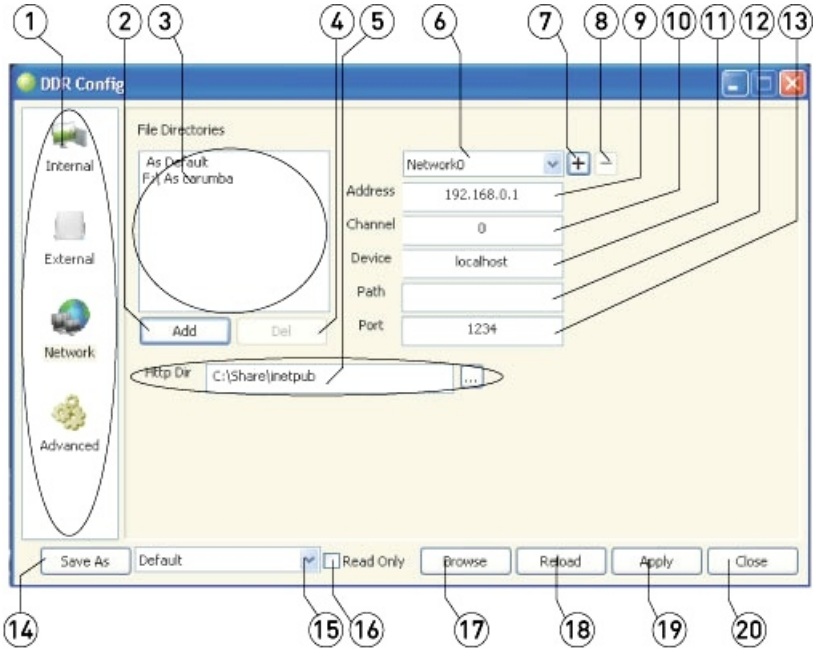
External Tab



1	**Tab Selector** with **External Icon** selected	To select any of the tabs, press its icon. With the **External** icon selected, the controls for external channel settings are loaded and can be confirmed or reset.
2	**Louth/VDCP** checkbox	Select, or check this checkbox to use Louth/VDCP protocol.
3	**Odetics** checkbox	Select, or check this checkbox to use Odetics protocol.
4	**Sony 422** checkbox	Select, or check this checkbox to use Sony 422 protocol.
5	**Edit On** field	Displays the current **Edit On** setting, or how many frames the DDR will wait to perform an edit after the command has been received. To edit this value, type in a new number of frames. **Note**: this setting is designed to promote greater interoperability between the DDR and industry standard serial control devices and protocols - an inaccurate setting may affect the frame accuracy of edits performed under command.
6	**External Channel** pulldown menu	This menu displays the current external channel selected. Use the pulldown menu to select between available external channels.
7	**Add** button	Press the **Add** button to add an external channel for a serial controlled device such as a VTR.
8	**Delete** button	Where an external channel needs to be deleted, (perhaps it has either been added in error or is no longer needed), select it using the **External Channel** pulldown menu and press the **Delete** button to delete it.
9	**COM Port** pulldown menu	Use the **COM Port** pulldown menu to select between available COM Ports for the selected external channel.
10	**Video Standard** pulldown menu	Use the **Video Standard** pulldown menu to select between available video standards for the selected external channel.

11	**Edit Off** field	Displays the current **Edit Off** setting, or how many frames the DDR will wait to end an edit after the command has been received. To edit this value, type in a new number of frames. **Note**: an inaccurate setting will affect the frame accuracy of edits performed under command.
12	**Save As** button	Press the **Save As** button to open a browser which allows the user to save the configuration within a Drastic Project File.
13	**Project File** pulldown menu	This pulldown displays the current project file name, and where multiple project files have been saved, allows the user to choose between available project files.
14	**Read Only** checkbox	Check, or select this checkbox to specify that the project file should be maintained as a read-only file.
15	**Browse** button	Opens a browse window, which allows the user to look for and load an XML external channel configuration file.
16	**Reload** button	Where parameters have been changed, use the **Reload** button to load the default settings for the DDR.
17	**Apply** button	Press the **Apply** button to set any changes.
18	**Close** button	Press the **Close** button to close **DDR Config**.

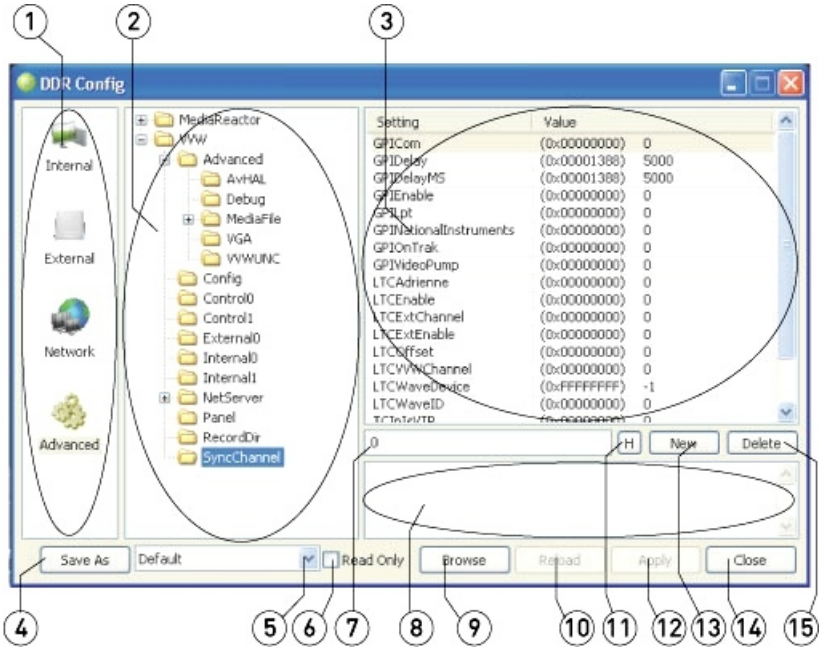
Network Tab



1	**Tab Selector** with **Network** icon selected	To select any of the tabs, press its icon. With the **Network** icon selected, the controls for network settings are loaded and can be confirmed or reset.
2	**Add** button	The **Add** button allows the user to browse for and select a record drive to share out to remote users for Network Control applications. Where a drive has been selected the user will be able to create an "alias" (the name remote users will see for the drive) and to set a password if necessary to provide access to users with credentials.
3	**File Directories** field	Displays each mapped directory and the alias it has been given.
4	**Delete** button	Sometimes a networked location needs to be removed from this list. Select it and press the **Del** button. The drive or folder will not be deleted. Deleting the drive only means remote users will not be able to see the drive for add files operations.
5	**HTTP Directory** field and **Browse** button	The field displays the file path information for the HTTP Directory, and the browse button allows the user to set a new HTTP Directory.
6	**Network Channel** pulldown menu	This pulldown menu displays any network channels that have been added, and allows the user to select between them.
7	**Network Channel Add** button	Pressing this button allows the user to enter the necessary information (address, channel, device, path, port) to set up a network channel.
8	**Network Channel Delete** button	Pressing this button deletes the currently selected network channel.
9	**Address** field	When setting up a network channel, the user will enter the IP Address of the networked device in this field.

10	**Channel** field	When setting up a network channel, the user will enter the channel number of the networked device in this field.
11	**Device** field	When setting up a network channel, the user will enter a name for the networked device in this field.
12	**Path** field	When setting up a network channel, the user will enter the network path of the networked device in this field.
13	**Port** field	When setting up a network channel, the user will enter the port through which the networked device will be controlled in this field.
14	**Save As** button	Press the **Save As** button to open a browser which allows the user to save the configuration within a Drastic Project File.
15	**Project File** pulldown menu	This pulldown displays the current project file name, and where multiple project files have been saved, allows the user to choose between available project files.
16	**Read Only** checkbox	Check, or select this checkbox to specify that the project file should be maintained as a read-only file.
17	**Browse** button	Opens a browse window, which allows the user to look for and load an XML external channel configuration file.
18	**Reload** button	Where parameters have been changed, use the **Reload** button to load the default settings for the DDR.
19	**Apply** button	Press the **Apply** button to set any changes.
20	**Close** button	Press the **Close** button to close **DDR Config**.

Advanced Tab



1	**Tab Selector** with **Advanced** icon selected	To select any of the tabs, press its icon. With the **Advanced** icon selected, many default settings for the DDR can be confirmed or reset.
2	**Explore** menu for folders	Use the Explore-type menu to browse through the directories associated with various settings that affect the operation of the software.
3	**Settings** field	Clicking through the **Explore** menu displays the available settings contained in each selected folder/subfolder. Clicking on a setting loads the information into the lower section of this tab for reference and so the user can reset a value if required.
4	**Save As** button	Press the **Save As** button to open a browser which allows the user to save the configuration within a Drastic Project File.
5	**Project File** pulldown menu	This pulldown displays the current project file name, and where multiple project files have been saved, allows the user to choose between available project files.
6	**Read Only** checkbox	Check, or select this checkbox to specify that the project file should be maintained as a read-only file.
7	**Value** field	Displays the current value for the selected setting
8	**Description** field	Displays the description of the selected setting.
9	**Browse** button	Opens a browse window, which allows the user to look for and load an XML network Config file.
10	**Reload** button	Where parameters have been changed, use the **Reload** button to load the defaults for the selected Config file.
11	**Hexadecimal/ Decimal** toggle button	Toggles the **Value** field between displaying the value in decimal form or in hexadecimal form.

12	**Apply** button	Press the **Apply** button to set any changes.
13	**New Value** button	Press the **New** button to create a new string, numeric or sub key value for the selected item.
14	**Close** button	Press the **Close** button to close **DDR Config**.
15	**Delete** button	Press the **Delete** button to delete any changes to the default value.

Actions

DDR Config offers setup tools and controls organized around the four main areas of **DDR4** functionality:

Internal Section – set up the internal channel format, including the default video, audio, record directory, VITC, protocol, etc.
External Section – set up external channel serial control including COM port, edit on/off, protocols etc.
Network Section – define network locations for specific activities
Advanced Section – set up default parameters for a wide range of modes, formats and activities.

The following sections provide information on which controls are available, how (or in some cases whether or not) to set them, and provide numbered diagrams to specify the controls and fields used in these operations.

Internal Tab

Press the **Internal** icon on the left of the window to display the **Internal** settings.

The **Internal** section allows the user to set up general parameters for each internal channel, including format, VITC, and VTR emulation. The **Internal** settings apply per channel and are maintained separately. There is typically one channel associated with each video board in a DDR (if the DDR supports multiple channels). Keep in mind that some of the settings offered may exceed the capabilities of the hardware and you should take care to make thoughtful choices when changing settings.

Internal Channel

Channel: use the **Channel** pulldown menu to confirm that any changes made are set up for the correct channel. In a single channel DDR, the channel is called **Int0**, or internal channel zero. In multiple channel DDRs, this would be the first channel and the second channel would be **Int1**, the third, **Int2** etc.
Add: to add a channel, simply press the **Add** button. If multiple channels are not supported by the hardware and the license level, changing settings for channels other than **Int0** will be ignored, and the additional channels will not appear in the **Channel** pulldown menus within the applications.
Delete: to delete a channel, use the **Channel** pulldown menu to select it, then press the **Delete** button.

Format Settings

Audio format: use the **Audio type** pulldown menu to set the audio file type and container. Use the **Audio Bit Depth** pulldown menu to select the bit depth. Use the **Channels** pulldown menu to select between available number of audio channels.
Video format: use the **Video** pulldown menu to select between single link, In2=Alpha, or Dual Link. Use the **File format** pulldown menu to select the file format. Use the **Codec** pulldown menu to select the codec used for the selected file format. Use the **Video Bit Depth** pulldown menu to set the bit depth for the selected file format and codec. Use the **Video Standard** pulldown menu to set the video standard the DDR will capture.

VITC Settings

Use VBlank: select, or check the **Use VBlank** checkbox to read and display the information written into the vertical blanking interval of specific files.
Save VBlank: select, or check the Save **VBlank** checkbox to write information into the vertical blanking interval of captured files.

Record Directory

Record Directory field: this field displays the current directory to which files will be recorded. The user can type in a mapped drive, or use the **Browse** button to the right of this field to select another location. Make sure to select a drive other than the program drive (typically "C") as the record drive.

Device Emulation

9 Pin Device Emulation: select, or check the **9 Pin Device Emulation** checkbox to operate under control, as a broadcast or production VTR.

COM Port: use the pulldown menu to select between available COM ports in the DDR for the incoming control signal under which the system will operate.

Sony 422: select, or check the **Sony 422** checkbox to specify Sony 422 protocol for operation under control.

Odetics: select, or check the **Odetics** checkbox to specify **Odetics** protocol for operation under control.

Louth/VDCP: select, or check the **Louth/VDCP** checkbox to specify **Louth/VDCP** protocol for operation under control.

Device: use the pulldown menu to select a device which most closely matches the controller or automation system being used, so as to fine tune the behavior of the DDR's control responses.

Production Mode

Production Mode: use the pulldown menu to select between **Play Only** (do not interrupt playback for a dropped frame), **Record Only** (do not interrupt recording for a dropped frame), **Both** (do not interrupt a record or playback action upon encountering a dropped frame), or **Disabled** (stop playback or record upon encountering a dropped frame) settings for production mode.

Config Files

Save As: press the **Save As** button to open a browser which allows you to save the current configuration into a project file possibly with a new name and in the location of your choice.

Config: press the **Config** pulldown menu to select between configuration files that have been created with this install.

Read Only: select the **Read Only** checkbox to specify that the selected configuration file should not be overwritten or deleted.

Browse: press the **Browse** button to search for existing project files to select and load.

Reload: press the **Reload** button to browse to reload the default configuration settings.

Apply: press the **Apply** button to set any changes to the current configuration file.

Close: press the **Close** button to exit the application.

External Tab

Press the **External** icon on the left of the window to display the **External** settings. The **External** section allows the user to set up the parameters for control over external VTRs.

External Channel

Channel: use the **Channel** pulldown menu to select between available external channels (if there is more than one device being controlled).

Add: to add a channel, press the **Add** button. Each channel represents a channel of control over an external device, such as a VTR.

Delete: to delete a channel, use the **Channel** pulldown menu to select it, then press the **Delete** button.

Port

Port: use the **Port** pulldown menu to select the COM Port that will be used to control the external VTR.

Standard

Standard: use the **Standard** pulldown menu to select the default video standard for the external VTR.

Edit On/Off

Edit On: the **Edit On** field specifies the number of frames the DDR waits upon sending an edit command, to provide for greater synchronization between the DDR and the VTR. To edit this value, click in the field and enter a new number of frames.

Edit Off: the **Edit Off** field specifies the number of frames the DDR continues to "roll" after an edit has completed, to provide for greater synchronization between the VTR and the DDR. To edit this value, click in the field and enter a new number of frames.

Serial Protocol

Sony 422: select, or check the **Sony 422** checkbox to specify Sony 422 protocol for external control.

Odetics: select, or check the **Odetics** checkbox to specify Odetics protocol for external control.

Louth/VDCP: select, or check the **Louth/VDCP** checkbox to specify Louth/VDCP protocol for external control.

Config Files

Save As: press the **Save As** button to open a browser which allows you to save the current configuration into a project file possibly with a new name and in the location of your choice.

Config: press the **Config** pulldown menu to select between configuration files that have been created with this install.

Read Only: select the **Read Only** checkbox to specify that the selected configuration file should not be overwritten or deleted.

Browse: press the **Browse** button to search for existing project files to select and load.

Reload: press the **Reload** button to browse to reload the default configuration settings.

Apply: press the **Apply** button to set any changes to the current configuration file.

Close: press the **Close** button to exit the application.

Network Tab

Press the **Network** icon on the left of the window to display the **Network** settings. The **Network** section allows the user to map directories on the network to allow remote users to access them in network control applications.

File Directories

Add: use the **Add** button to browse for and select a folder on the network. The user will be prompted to enter an alias, or name for the folder. The name is the label which a remote user would "see" when browsing for the mapped folder.

Delete: to delete a mapped drive, select it and press the **Del** button. This action does not delete the folder itself, just removes it from the list of folders which can be accessed by a remote user.

Network pulldown menu - once an alias for a folder on the DDR has been established, the user may add network channels corresponding to remote Drastic DDR stations that can then be made available for network control applications.

Add button - to add a network channel, press the **Add** button.

Delete button - to delete a network channel, select it and press the **Delete** button.

Address field - enter the IP address of the remote Drastic DDR in this field

Channel field - enter the network channel number of the remote Drastic DDR in this field.

Device field - enter a name for the remote Drastic DDR in this field.

Path field - enter the network path information for the remote Drastic DDR in this field.

Port field - enter the port number through which this remote Drastic DDR will be accessed.

HTTP Directory field and **Browse** button - displays the current directory being used to store HTTP information, and allows the user to press a **Browse** button and select a different directory.

Config Files

Save As: press the **Save As** button to open a browser which allows you to save the current configuration into a project file possibly with a new name and in the location of your choice.

Config: press the **Config** pulldown menu to select between configuration files that have been created with this install.

Read Only: select the **Read Only** checkbox to specify that the selected configuration file should not be overwritten or deleted.

Browse: press the **Browse** button to search for existing project files to select and load.

Reload: press the **Reload** button to browse to reload the default configuration settings.

Apply: press the **Apply** button to set any changes to the current configuration file.

Close: press the **Close** button to exit the application.

Advanced Tab

Press the **Advanced** icon on the left of the window to display the **Advanced** settings.

The **Advanced** section allows the user to set many parameters for the operation of specific software components within the DDR.

Settings Folders

MediaReactor: navigate through the folders and subfolders for various settings used in the operation of MediaReactor transcoding solution.

VVW: navigate through the folders and subfolders for various settings used in the operation of VVW, Drastic's digital disk recorder components.

Settings Field

Dynamic Keys: click on the row of each setting to load its parameters. With the parameters loaded, its values are displayed in the fields below to confirm the current setting and to offer options to change the setting.

Value

Value: once a setting has been loaded the value of a selected setting will be displayed in the **Value** field. This value can be directly edited by entering a new value by keyboard into this field.

Value Display: once a setting has been loaded the value of a selected setting will be displayed in the **Value** field. This button switches the display of this value between decimal and hexadecimal.

New Value: once a setting has been loaded the value of a selected setting will be displayed in the **Value** field. Press the **New Value** button to create a new default value for this setting.

Delete Value: once a setting has been loaded the value of a selected setting will be displayed in the **Value** field. Press the **Delete** button to remove the default value for this setting.

Description

Description: once a setting has been loaded the value of a selected setting will be displayed in the **Value** field. A description or short explanation of the setting will appear in this field.

Config Files

Save As: press the **Save As** button to open a browser which allows you to save the current configuration into a project file possibly with a new name and in the location of your choice.

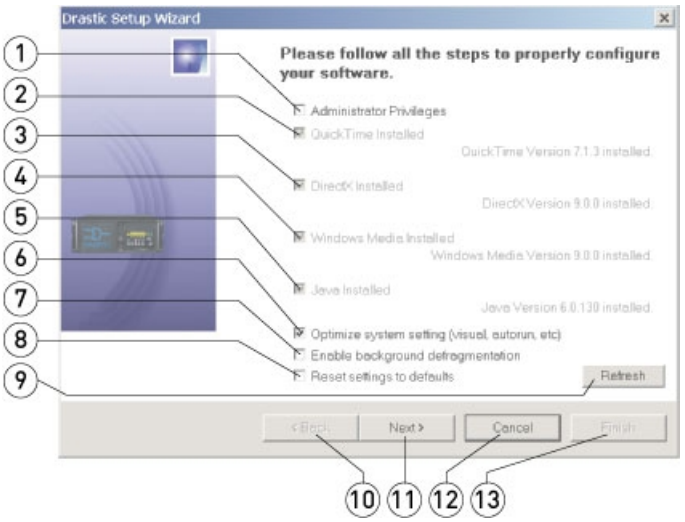
Config: press the **Config** pulldown menu to select between configuration files that have been created with this install.
Read Only: select the **Read Only** checkbox to specify that the selected configuration file should not be overwritten or deleted.
Browse: press the **Browse** button to search for existing project files to select and load.
Reload: press the **Reload** button to browse to reload the default configuration settings.
Apply: press the **Apply** button to set any changes to the current configuration file.
Close: press the **Close** button to exit the application.

Drastic Setup Wizard

The **Drastic Setup Wizard** is run upon first installing **DDR** software. Alternately the user may run the **Drastic Setup Wizard** from **Programs|<install directory>|Drastic DDR|Util| Setup Wizard**.

Locations and Controls

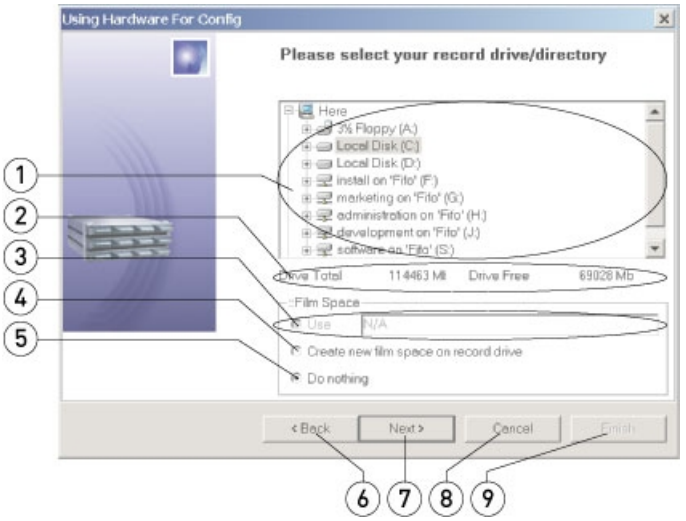
System Check Tab



1	**Administrative privileges** checkbox	The first checkbox if checked indicates the user has Administrative privileges and may proceed to set up the software. If unchecked, the user does not have Administrative privileges and should cancel and Log In again as an Administrator.
2	**QuickTime Installed** checkbox	The **QuickTime Installed** checkbox if checked indicates the user has QuickTime installed - version information would be displayed. If unchecked, a link to a download of QuickTime is offered here so that the user may upgrade via the web.
3	**DirectX Installed** checkbox	The **DirectX Installed** checkbox if checked indicates the user has DirectX installed - version information would be displayed. If unchecked, a link to a download of DirectX is offered here so that the user may upgrade via the web.
4	**Windows Media Installed** checkbox	The **Windows Media Installed** checkbox if checked indicates the user has Windows Media installed - version information would be displayed. If unchecked, a link to a download of Windows Media is offered here so that the user may upgrade via the web.
5	**Java Installed** checkbox	The **Java Installed** checkbox if checked indicates the user has Java installed - version information would be displayed. If unchecked, a link to a download of Java is offered here so that the user may upgrade via the web.
6	**Optimize System Setting** checkbox	The **Optimize System Setting** checkbox if checked resets specific settings to optimize VGA display and performance. If unchecked the system settings are not optimized.

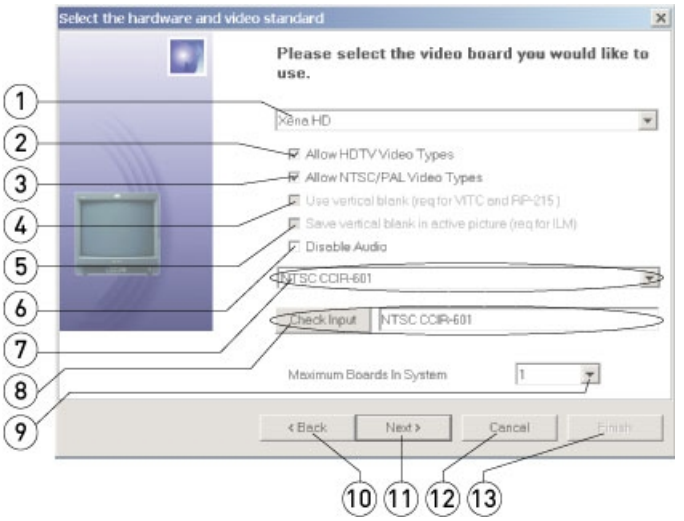
7	**Enable Background Defragmentation** checkbox	The **Enable Background Defragmentation** checkbox if checked allows the user to set disk defragmentation tasks to run automatically. If unchecked, the software will have to be closed before any defragmentation tasks may be started.
8	**Reset settings to defaults** checkbox	The **Reset settings to defaults** checkbox if checked will provide default selections in the rest of the **Drastic Setup Wizard**, allowing the user to confirm or edit that configuration. If unchecked, the **Drastic Setup Wizard** uses any current settings and allows the user to confirm or edit that configuration.
9	**Refresh** button	Press the **Refresh** button to confirm any changes that have been made to this screen.
10	**Back** button	"Go back" to the previous screen. Not active in this view.
11	**Next** button	Proceed to the next screen.
12	**Cancel** button	Exit without changing any settings.
13	**Finish** button	Enable any settings changes made and exit. Becomes active in the last view.

Using Hardware for Config Tab



1	**Record Drive/ Directory** Explorer	Provides an explorer-type browser which allows the user to set the location into which media files will be saved during capture. Select a safe capture target drive as the default (NOT THE PROGRAM DRIVE).
2	**Drive specs** display	Displays the capacity of a selected drive and how much of that drive is available to record onto without deleting files.
3	**Use** selector and display field	Click in the **Use** selector to use an existing **Film Space**. The most recent **Film Space** will be loaded in this field by default.
4	**Create New Film Space on Record Drive** selector	Select this setting to create a new **Film Space** on the record drive. Essentially this setting creates a series of folders whose purpose is to hold a set number of frames of video corresponding to 24 hours duration at the set frame rate.
5	**Do Nothing** selector	Where **Do Nothing** has been selected, no **Film Space** will be created, selected or removed from selection.
6	**Back** button	Return to the previous screen
7	**Next** button	Proceed to the next screen.
8	**Cancel** button	Exit without changing any settings.
9	**Finish** button	Enable any settings changes made and exit. Becomes active in the last view.

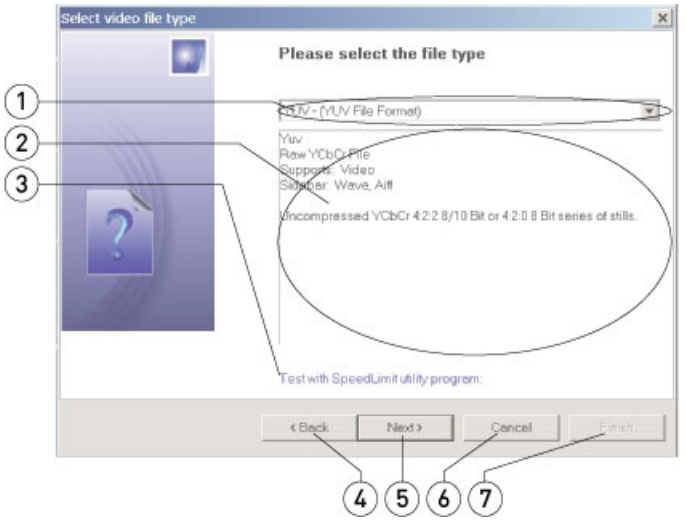
Select the Hardware and Video Standard Tab



1	**Video Hardware** pulldown menu	Use the pulldown menu to select the correct type of video board for the DDR.
2	**Allow HDTV Video Types** checkbox	Select this checkbox to allow HDTV Video types. Some DDRs require this to be checked even if HDTV video types are not being used. Provides support for high definition (720, 1080) and greater (2K, 4K) playback and/or capture, on capable hardware and where supported by license level.
3	**Allow NTSC/ PAL Video Types** checkbox	Select this checkbox to allow NTSC/ PAL Video Types. Should probably be checked in all DDRs - provides support for standard definition (NTSC/PAL) capture and playback, on capable hardware and where supported by license level.
4	**Use vertical blank (req for VITC and RP-215)** checkbox	Select this checkbox to set the DDR to use incoming VITC signal as the time code source.
5	**Save Vertical Blank in Active Picture (req for ILM)** checkbox	Select this checkbox to set the DDR to save VITC time code information with the file.
6	**Disable Audio** checkbox	Select this checkbox to avoid creating any audio files during capture.
7	**Video Standard** pulldown menu	Use the pulldown menu to select the video standard being used.
8	**Check Input** button and display	Press the **Check Input** button to test the input against the selected video standard.
9	**Maximum Boards in System** pulldown menu	Most installs can only have one board per system. Certain DDR models will support more than one board per system depending on (among other factors) the speed and capacity of the storage. The user may be directed to change this setting by a support technician if it is supported.
10	**Back** button	Return to the previous screen
11	**Next** button	Proceed to the next screen.

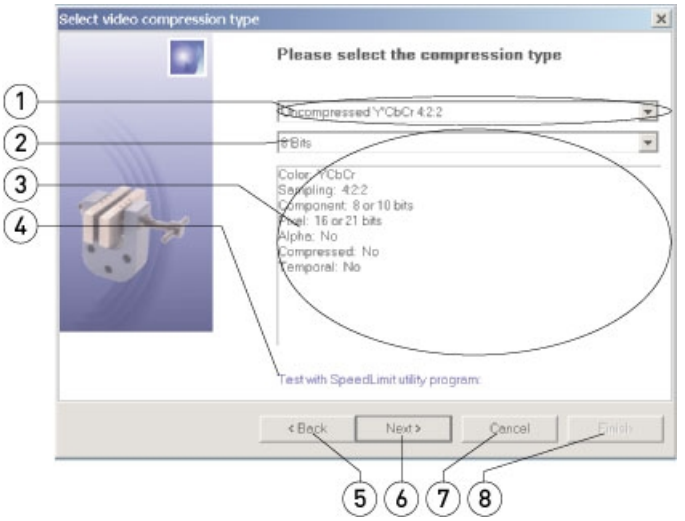
12	**Cancel** button	Exit without changing any settings.
13	**Finish** button	Enable any settings changes made and exit. Becomes active in the last view.

Select the Video File Type Tab



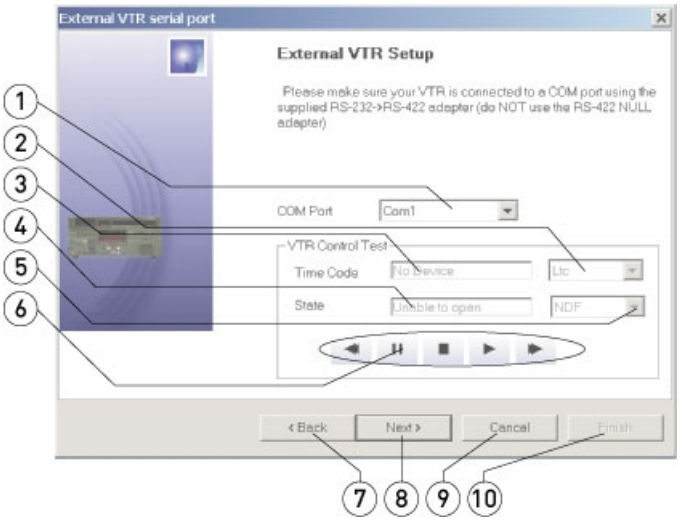
1	**File Type** pulldown menu	Use the pulldown menu to select between available file types. When selected, file type attributes will be displayed in the field below.
2	**File Attributes** display	Displays the attributes of the selected file type.
3	**SpeedLimit** link	Clicking this link opens **SpeedLimit**, an application that allows the user to test the speed of the storage to confirm whether it is capable of performing a capture of the selected format.
4	**Back** button	Return to the previous screen
5	**Next** button	Proceed to the next screen.
6	**Cancel** button	Exit without changing any settings.
7	**Finish** button	Enable any settings changes made and exit. Becomes active in the last view.

Select the Video Compression Type Tab



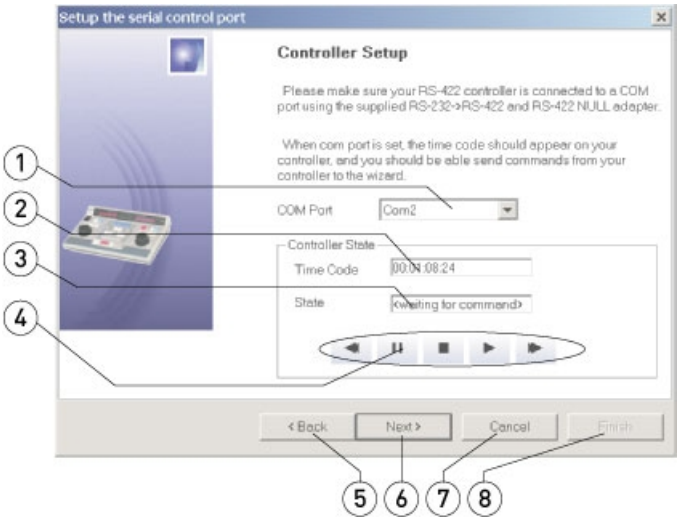
1	**Compression Type** pulldown menu	Use the pulldown menu to select between available formats. When selected, format attributes will be displayed in the field below.
2	**Bit Depth** pulldown menu	Use the pulldown menu to select between available bit depth settings for the selected file format.
3	**File Attributes** display	Displays the attributes of the selected format.
4	**SpeedLimit** link	Clicking this link opens **SpeedLimit**, an application that allows the user to test the speed of the storage to confirm whether it is capable of performing a capture of the selected format.
5	**Back** button	Return to the previous screen
6	**Next** button	Proceed to the next screen.
7	**Cancel** button	Exit without changing any settings.
8	**Finish** button	Enable any settings changes made and exit. Becomes active in the last view.

External VTR Serial Port Tab



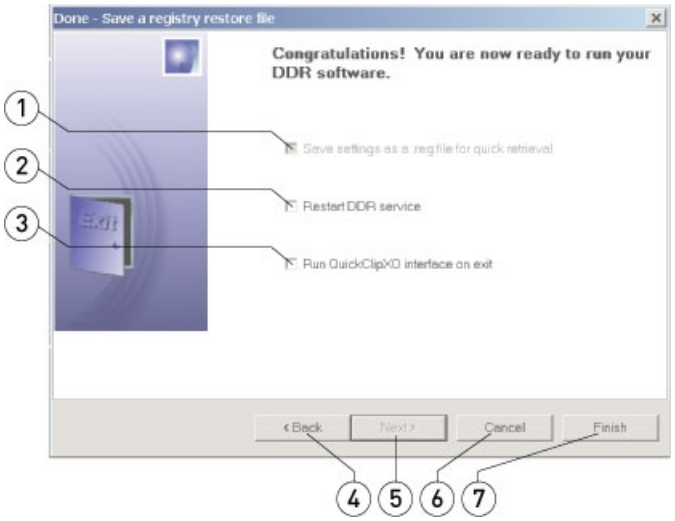
1	**COM Port** pulldown menu	Select the COM Port through which the external VTR will be controlled using the pulldown menu.
2	**Time Code Source** pulldown menu	Select the time code source using the pulldown menu.
3	**Time Code** display	Once connected, this field displays the time code from the external VTR.
4	**Device State** display	Once connected, displays the transport state of the external VTR.
5	**Video Standard** pulldown menu	Set the video standard using the pulldown menu. Make sure that it is a format the external VTR supports.
6	**Transport Control** buttons	Once connected, these buttons will control the external VTR.
7	**Back** button	Return to the previous screen
8	**Next** button	Proceed to the next screen.
9	**Cancel** button	Exit without changing any settings.
10	**Finish** button	Enable any settings changes made and exit. Becomes active in the last view.

Setup the Serial Control Port Tab



1	**COM Port** pulldown menu	Select the COM Port through which the controller will control the DDR using the pulldown menu.
2	**Time Code** display	Displays the time code being sent by the controller
3	**State** display	Displays the transport state of the controller.
4	**Transport Control** buttons	The transport controls respond to the actions of the controller, for example the **Stop** button will show a keypress where the controller has sent a Stop command.
5	**Back** button	Return to the previous screen
6	**Next** button	Proceed to the next screen.
7	**Cancel** button	Exit without changing any settings.
8	**Finish** button	Enable any settings changes made and exit.

Done - Save A Registry Restore File



1	**Save Settings** checkbox	Where the **Save settings as a .reg file for quick retrieval** checkbox is selected the user will be able to save the current settings as a registry file.
2	**Restart DDR Service** checkbox	Where the **Restart DDR Service** checkbox is selected the DDR Service will run upon closing the Setup Wizard.
3	**Run QuickClipXO** checkbox	Where the **Run QuickClipXO interface on exit** checkbox is selected, closing the **Setup Wizard** will automatically start **QuickClipXO**.
4	**Back** button	Return to the previous screen
5	**Next** button	Proceed to the next screen.
6	**Cancel** button	Exit without changing any settings.
7	**Finish** button	Enable any settings changes made and exit.

Actions

Directly after a new install, the **Drastic Setup Wizard** is run upon restart, allowing the user to specify various default settings. The **Drastic Setup Wizard** may be run at any time to reset specific global parameters, to update third part software versions etc. Run the **Drastic Setup Wizard** at: **Start Menu|Programs|<Install Directory>|Drastic DDR|Util|Setup Wizard.**

System Check Tab

The first **Drastic Setup Wizard** tab allows the user to confirm privilege level, third party software versions, to optimize DDR settings and to return to default settings. Here are the settings that must be addressed:

Administrator Privileges - if checked indicates the user has Administrator privileges and may proceed to set up default settings for the system. If unchecked, the user does not have Administrator privileges and should cancel the **Drastic Setup Wizard** and Log In again as an Administrator.

QuickTime Installed – if checked indicates the user has QuickTime installed and version information would be displayed. If unchecked, a link to a download of QuickTime is offered here so that the user may upgrade via the web.

DirectX Installed - if checked indicates the user has DirectX installed and version information would be displayed. If unchecked, a link to a download of DirectX is offered here so that the user may upgrade via the web.

Windows Media Installed - if checked indicates the user has Windows Media installed and version information would be displayed. If unchecked, a link to a download of Windows Media is offered here so that the user may upgrade via the web.

Java Installed - if checked indicates the user has Java installed and version information would be displayed. If unchecked, a link to a download of Java is offered here so that the user may upgrade via the web.

Optimize system setting – if checked resets specific settings to optimize VGA display and performance. If unchecked the system settings are not changed by this operation.

Enable Background Defragmentation - if checked, allows the DDR to perform defragmentation activities while Drastic DDR software is running. Otherwise, these tasks will be disallowed until Drastic DDR software is closed.

Reset settings to defaults – if checked will provide default selections in the rest of the **Drastic Setup Wizard**, allowing the user to confirm or edit that configuration. If unchecked, the **Drastic Setup Wizard** uses any current settings and allows the user to confirm or edit that configuration.

The user may press **Cancel** to exit at any time. Otherwise, press the **Next** button to move to the next screen.

Using Hardware For Config Tab

The **Using Hardware For Config** window allows the user to set their record directory, and to set the parameters for the creation of a film space directory.

Please select your record drive/directory: Use the Explore-type field to set the default drive for media capture. Select a safe capture target drive as the record drive (DO NOT SELECT THE PROGRAM DRIVE). Once a location has been selected the **Drive Total** describes the total capacity of the selected location, and the **Drive Free** describes how much space is available to be written on without deleting existing files.

Film Space: Film Space is a time code space-type 24 hour directory, used especially for capturing still image sequences with time code. The following choices are offered to create a Film Space (or not):

Use - There may be a default location supplied next to the **Use** checkbox. Selecting this checkbox creates a **Film Space** set of folders and subfolders in the specified location.

Create New Film Space on Record Drive – Select this checkbox to create a **Film Space** set of folders and subfolders in the location specified as the **Record Drive/Directory**.

Do Nothing – Select this checkbox if a **Film Space** is not used. This option does not create a **Film Space** set of folders and subfolders.

Press the **Next** button to move to the next screen, the **Back** button to return to the last screen or **Cancel** to exit.

Select the Hardware and Video Standard Tab

The **Select the Hardware and Video Standard** window allows the user to set parameters for the video hardware and video standard, to check their input and to set the maximum number of boards in the system.

Video Hardware - Select the correct video hardware from the pulldown menu. Checkboxes allow the user to select **HDTV** and/or **NTSC/PAL** video types, use **VITC**, **Save VITC** or **Disable Audio** (create only video files).

Default Video Standard: The next pulldown menu allows the user to set the video standard.

Check Input button – with a video input being sent to the DDR press this button to test the input.

Maximum Boards in the System - Use the pulldown menu to set the maximum number of video boards in the DDR (this parameter may be limited by license or product level).

Press the **Next** button to move to the next screen, the **Back** button to return to the last screen or **Cancel** to exit.

Select Video File Type Tab

The **Select Video File Type** screen allows the user to set the default file type for captures.

Use the pulldown menu to select between available file types. When selected, file type attributes will be displayed in the field below along with a brief note about the format.

A link to **SpeedLimit** is offered here to allow the user to test the speed of their drives and confirm that they are capable of capturing this type of file.

Press the **Next** button to move to the next screen, the **Back** button to return to the last screen or **Cancel** to exit.

Select Video Compression Type Tab

The **Select Video Compression Type** screen allows the user to set the compression type.

Use the pulldown menu to select between available compression types. When selected, compression attributes will be displayed in the field below.

A link to **SpeedLimit** is offered here to allow the user to test the speed of their drives and confirm that they are capable of capturing files using this type of compression.

Press the **Next** button to move to the next screen, the **Back** button to return to the last screen or **Cancel** to exit.

External VTR Serial Port Tab

The **External VTR serial port** window allows the user to set up control over an external VTR.

Use the pulldown menu to select between available COM ports for this channel of external control.

When a VTR is attached using the proper hardware, its values (time code, state etc.) will be supplied in the **VTR Control Test** section. Once control has been established the transport controls will operate the VTR.

Press the **Next** button to move to the next screen, the **Back** button to return to the last screen or **Cancel** to exit.

Setup the Serial Control Port Tab

The **Controller Setup** window allows the user to set up the DDR to accept serial control, as from a serial controller device.

Use the pulldown menu to select between available COM ports for this channel of serial control. Serial control is set up by default to use COM 2, unless there is only one COM port, in which case use COM 1.

When a supported controller is attached using the proper hardware, its device value and status will be supplied in the **Controller State** section. Once control has been established the Controller will be able to control the DDR.

Press the **Next** button to move to the next screen, the **Back** button to return to the last screen or **Cancel** to exit.

Done - Save a Registry Restore File Tab

The last screen in the **Drastic Setup Wizard** informs the user that they are done, and offers options to create a registry (.reg) file, to restart the service and/or to run the **QuickClipXO** interface upon closing. Any changes made may be enabled by pressing the newly activated **Finish** button.

Selecting the **Save Settings as a .reg file for quick retrieval** checkbox creates a registry file which will allow the user to restore all of these settings if they are lost or corrupted.

Selecting the **Restart DDR Service** checkbox runs the software as a service upon boot-up with no intervention from the user.

Selecting the **Run QuickClipXO interface on exit** checkbox runs **QuickClipXO** once the user selects the **Finish** button to close the **Drastic Setup Wizard**.

Press the **Finish** button to enable all of the settings changes, the **Back** button to return to the last screen or **Cancel** to exit. Once the user presses the **Finish** button all of the changes will be set into memory and the system will run as specified.

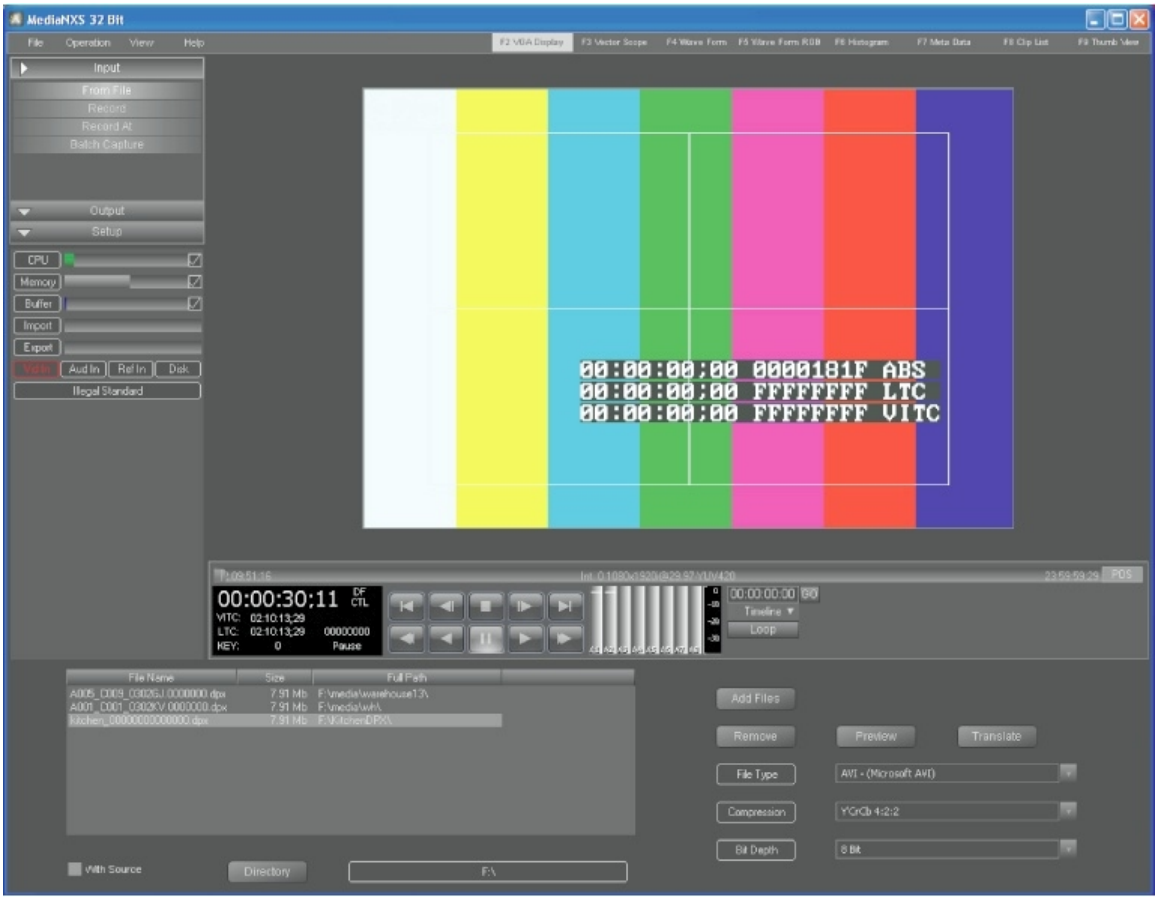
MediaNXS

User Guide

Introduction

The **MediaNXS** interface can be used for digital video capture, conversion, control and playback. It allows a user to operate a capable computer as a video capture and playback device, and to control external VTRs as would a production VTR.

MediaNXS is designed to operate either standalone as a capture/playback workstation software, or in conjunction with a DDR solution as a streamlined interface for digital intermediate work flows.



To run this application click on the following: **Start|Programs|<install directory>|MediaNXS**.

Features

Media Clips and Timeline

Each file captured exists as a standalone clip. Each clip has an **In Point** of 00:00:00:00 and its duration (less one frame) for an **Out Point**. These clips may be added to one or more timelines once or many times without altering the original media. Within a timeline the clip may be associated with a specific **In Point** other than zero, and **Out Point** greater than its duration but these edit points are virtual. The user may trim clip durations or create multiple sub-clips.

The **Timeline** exists to provide sequential output of media files. Clips may be captured into the timeline, or placed there either through **Import** or **Drag** and **Drop** actions. A timeline may be saved to run at any time. The timeline, and the standalone clips accessed via the Clip Bin, are fully non-destructive. Clips may be added to and removed from the timeline, trimmed to create subclips with no alteration to the original media. A file captured over a pre-existing file in the timeline will not delete the pre-existing file, though where the two files overlap, the new file will replace the old one for output.

Film Mode provides a completely destructive mode of operation. Each frame of video within a 24 hour time code space is pre-allocated. So, recording into a specific time code location within the time code space would delete any existing frames allocated to the same locations. **Film Mode** structure allows for an exclusive number of sequentially numbered files, each being a single frame of video. Multiple **Film Mode** lists may be used to access the same, overlapping or completely different pools of media based on workflow requirements.

The user can set up a **Film Space** using the **DDRConfig** application included in the install. Once it has been set up, **Film Mode** may be accessed by selecting the **::Film** clip in the Clip list.

Video Capture

Capture from an incoming (audio/video) signal directly to a file. A video signal is connected to the video hardware on the DDR, and the software is placed in record mode. The media is captured to a file on a specified hard drive. Once the recording has taken place, a new clip will show up in the DDR's clip list. If specified, an instance of the clip will also show up on the timeline/EDL available for playback.

Video Playback

Once clips have been captured, they can be selected for playback. Within the clip list the user can select a clip and press the **Play** button. There are controls available to place the clip or a portion of the clip on the timeline/EDL. Multiple timelines may be created to access differing pools of media.

Transport Controls are available for playback and cueing within a range of speeds, including a Jog/Shuttle type control for convenient yet frame accurate cueing, Preview for playing a section of media, and VTR-type Play/Stop controls.

VTR Control

The DDR may be set to control an external VTR to frame accurately capture media from a tape in the VTR. This control is based on RS-422 serial protocol.

Using the transport controls the user finds and sets In and Out points for the media on the tape, and an In Point for the DDR timeline if needed, then performs the capture. The VTR pre-rolls, plays and goes into record for the specified duration, post-rolls then stops. A new

clip is added to the **Clip View** (clip list in **Clip Mode** or the **Conform Mode EDL** in **Conform Mode**).

In **Clip Mode** the clips are discrete and unconnected. In **Conform Mode** the clips are placed onto a virtual 24 hour timeline, providing for sequential playback.

List Management

The list of clips displayed in the **Clip View** are maintained as simple files called **Projects**. Multiple lists may be created to define custom pools of media. The files may be copied and renamed, and when opened may be further edited to offer custom pools of media based on but not limited to a master pool.

Upon capture a clip is added to the clip list, which is automatically updated (saved) whenever the list is changed. Upon opening a new **Project**, a blank list is created.

Clips can be added to or removed from the lists as needed, and altered lists saved with the name and location of the user's choice.

Media Import

Media existing on networked drives accessible to the DDR may be imported into the clip list. Where the media is of a different (supported) file type, it will be converted during the import process into the format the DDR has been set to.

Media Export

Media existing on the timeline may be exported as a single file and saved in a networked location of the user's choice. Export operations support a range of file formats for conversion.

Signal Analysis

Media may be viewed using a number of signal analysis tools provided within the application. Clips (or the timeline) can be played through the vector scope, wave form monitors, or histogram to confirm and compare signal levels. Relative signal levels and chromatic orientation are displayed over standard grids for ease of interpretation.

These tools each have a scaled down video window for playback which can be dynamically used to drag and scroll through clips.

Meta Data Display

Meta data associated with clips is maintained and can be viewed using the **Meta Data View**. Most standard media related meta data elements are supported. Meta data values may be set, changed, or returned to default as selected by the user.

Clip List Display

Media added to the **Clip Bin** will be displayed in **Clip View** or **Thumb View** as a selectable picon with associated clip information. The user can select a clip within these views for editing, with optional insertion into the timeline. Clip meta data can be displayed within these views.

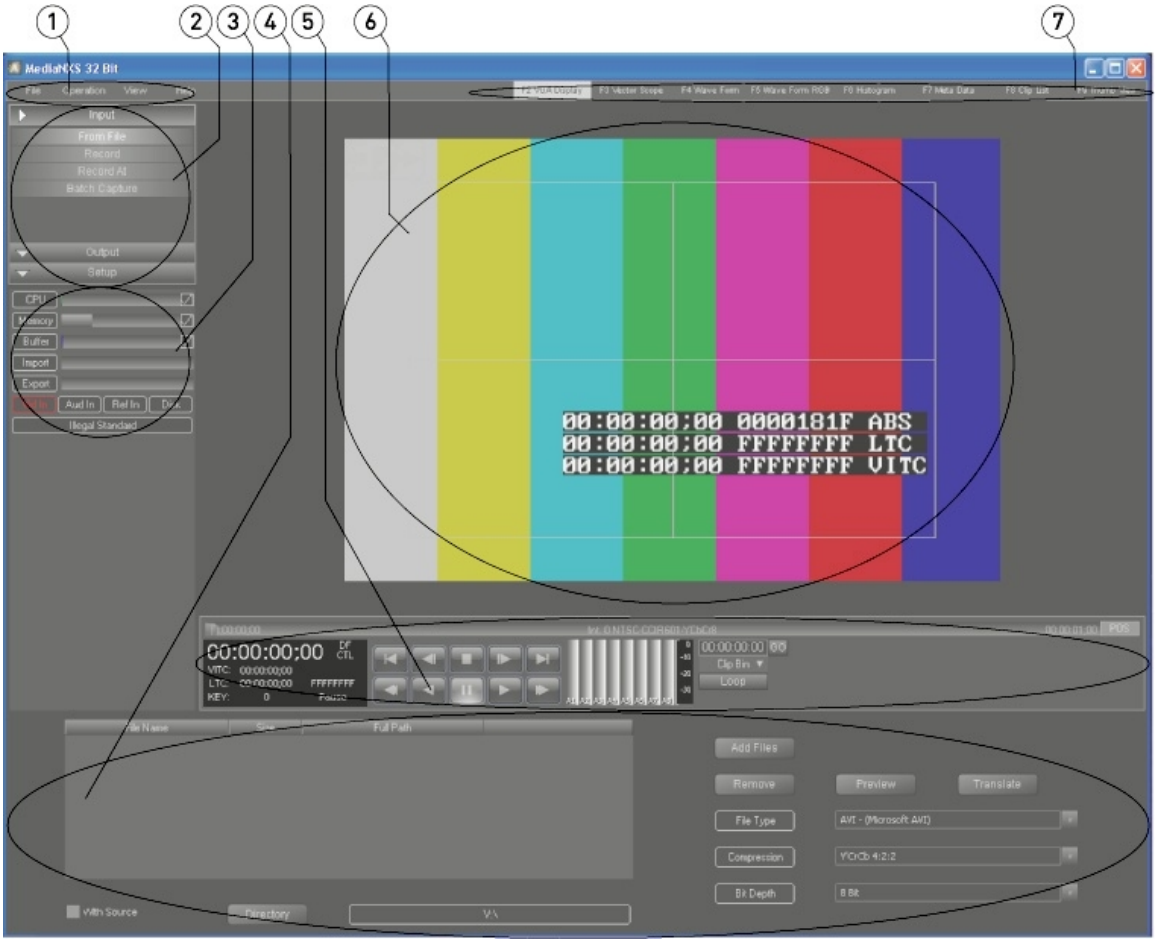
Output Display

Activity taking place within the application is automatically recorded and maintained as a list of events. The **Output** list maintains any errors, attempted actions, and successful actions so the user can confirm the DDR's condition when troubleshooting performance issues. This list can be viewed, saved, and sent for review as a simple text file.

Controls and Displays

The functions and locations of the controls and displays of the interface are detailed in this section.

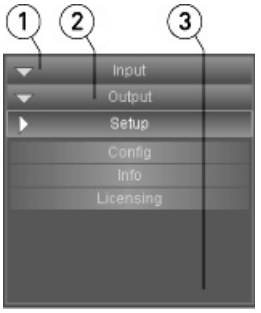
Main Interface Overview



1	**Main Menu**	Main menu controls for **File**, **Operation**, **View** and **Help** functions.
2	**Operations Selector**	Allows the user to select **Input**, **Output** and **Setup** operations, and indicates which operation the system is currently set to. These dialogs can also be accessed through the main menus, under **Operations**.
3	**System Display**	Shows the CPU performance, the Memory performance and the Buffer level, with checkboxes to activate or deactivate these controls. Progress bars for **Import** and **Export** operations are displayed as percentage bars. The **Video**, **Audio**, **Reference** and **Disk** are displayed in yellow if working fine, in red if there appears to be an issue. The **Video Standard** the DDR is set to is displayed below these indicators.
4	**Operations** section	This section of the interface contains controls and displays specific to the operation being performed.
5	**Transport Controls**	Provides real time display of time code location, standard, time code type, transport state, secondary time code information, as well as transport

	and **Display**	controls for playback and cueing and audio meters.
6	**View** section	This section is used to display the **VGA Monitor**, **Vector Scope**, **Wave Form Monitor**, **RGB Wave Form Monitor**, **Histogram**, **Clip List**, **Thumb View** and **Log/Output Window**, depending on what is selected in the **View Selector** or in the main menus, under **View**.
7	**View Selector** controls	Allows the user to select what will be displayed in the **View** section.

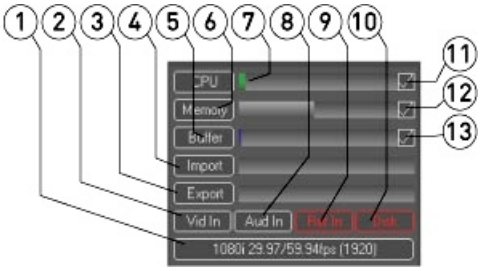
Operations Selector



The **Operations Selector** provides access to the various operations that may be performed within the application. Clicking on either the **Input**, **Output** or **Setup** tabs reveals the choices for each operation. These controls are also duplicated in the **Main Menus**, under the **Operations** heading.

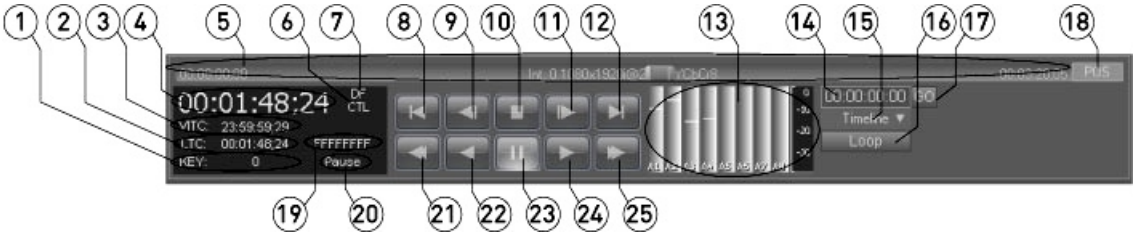
1	**Input** tab	Pressing the **Input** tab expands it so the input options are revealed. Choices include **From File**, **Record**, **Record At**, and **Batch Capture**. These controls are duplicated in the main menu, under **Operations|Input**.
2	**Output** tab	Pressing the **Output** tab expands it so the output options are revealed. Choices include **Time Line**, **Edit Decision List**, **VTR Out**, and **To File**. These controls are duplicated in the main menu, under **Operations|Output**.
3	**Setup** tab	Pressing the **Setup** tab expands it so the setup options are revealed. Choices include **Config**, **Info**, and **Licensing**. These controls are duplicated in the main menu, under **Operations|Setup**.

System Display



1	**Video Standard** status display	Displays the video standard the DDR is currently set to. Where a signal is not present or detected, or sensed to be correct, **Illegal Standard** is displayed.
2	**Vid In** status display	Indicates the status of the video input based on the color the label **Vid In** is displayed in - light (depends on the theme settings) if working fine, red if there appears to be a problem
3	**Export** progress meter	Progress display for export operations
4	**Import** progress meter	Progress display for import operations
5	**Buffer** usage meter	Usage level meter for the buffer
6	**Memory** usage meter	Usage level meter for the memory
7	**CPU** usage meter	Usage level meter for the CPU
8	**Aud In** status display	Indicates the status of the audio input based on the color the label **Aud In** is displayed in - light if working fine, red if there appears to be a problem
9	**Ref In** status display	Indicates the status of the timing reference input based on the color the label **Ref In** is displayed in - light if working fine, red if there appears to be a problem
10	**Disk** status display	Indicates the status of the disk throughput based on the color the label **Disk** is displayed in - light if working fine, red if there appears to be a problem
11	**CPU** checkbox	To activate the **CPU** display, confirm that this checkbox is selected. Otherwise, make sure it is unchecked to turn it off.
12	**Memory** checkbox	To activate the **Memory** display, confirm that this checkbox is selected. Otherwise, make sure it is unchecked to turn it off.
13	**Buffer** checkbox	To activate the **Buffer** display, confirm that this checkbox is selected. Otherwise, make sure it is unchecked to turn it off.

Transport Controls

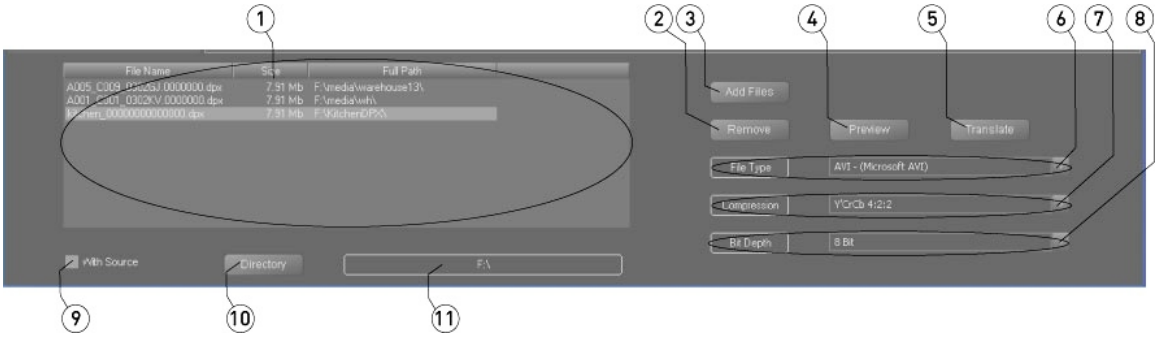


1	**Key Code** display	Displays any key code information associated with the loaded clip
2	**LTC** display	Displays any LTC information associated with the loaded clip
3	**VITC** display	Displays any VITC information associated with the loaded clip
4	**Main Time Code** display	Displays the current timecode location
5	**Jog/Shuttle Controller** slider	Depending on the mode selected, this slider shows the position within a clip, the time line, the relative percentage of play speed, or provides a jog button to assist cueing media. The In and Out points of the selected media (whether clip or time line) are displayed at the left (In Point) and right (Out point) of the slider.
6	**Control Type** display	Displays the control type being used
7	**Video Standard** display	Displays the video standard the system is set to, whether NTSC (DF, NDF), PAL, etc.
8	**5 Seconds Reverse** button	Move to a position 5 seconds before the present location and display the frame of video found there.
9	**1 Frame Reverse** button	Move to a position 1 frame before the present location and display the frame of video found there.
10	**Stop** button	Halt any playback and go to E/E, or passthrough display
11	**1 Frame Forward** button	Move to a position 1 frame after the present location and display the frame of video found there.
12	**5 Seconds Forward** button	Move to a position 5 seconds after the present location and display the frame of video found there.
13	**Audio** meters	The meters display relative audio levels during capture or playback. Provides a virtual decibel meter to the right of the meters.
14	**Timeline Position** field	To cue to a position in the timeline, enter a location into the **Timeline Position** field and press the **GO** button.
15	**Channel** mode	Displays whether an internal channel is in **Clip Bin** or **Time Line** view, or if an External channel (VTR) is being addressed. Press the arrow to reveal a pulldown menu which allows the user to switch between available channels.

16	**Loop** button	Press the **Loop** button to open the **Loop Settings** window, which allows the user to set In and Out points, and start looping playback.
17	**GO** button	Press the **GO** button to cue to the location in the **Timeline Position** field.
18	**Jog/Shuttle Controller** button	The button offers a pulldown menu when pressed, which lets you choose between position controller modes. **POS** (Position) - this setting places a marker in the current position to which you are cued, and allows the user to pull it along to cue up other portions of the clip. **JOG -** this setting provides a slider which when moved plays the display along slowly, for fine cuing of clips. **SHTL** (Shuttle) - this setting provides a slider which when moved plays the clips somewhat more quickly for scene viewing. **VAR** (Variable) - this setting places a slider which moves transport along correspondent to the position of the slider, i.e. further to the right playback moves faster in a forward direction.
19	**User Bits** display	Displays any user bits information associated with the file.
20	**Transport State** display	Displays the current transport state (whether in Play, Stop, Pause etc.)
21	**Fast Reverse Play** button	Play the cued clip in reverse at the fastest speed possible.
22	**Reverse Play** button	Play the cued clip in reverse at -100% of play speed.
23	**Pause** button	Stop any playback and display the current frame.
24	**Play** button	Play the cued clip at 100% of play speed.
25	**Fast Forward** button	Play the clip at the fastest speed possible.

Input - From File

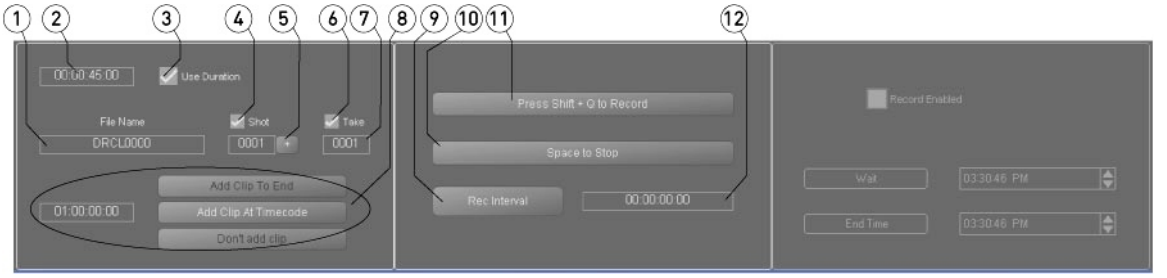
From the main menus, select **Operation|Input|From File**. Alternately use the **Operations Selector** to select **Input|From File**.



1	**File List** field	Contains a list of all the files selected, and displays the file name, size and full path. The user may click on a file to select it.
2	**Remove** button	To remove a file from the **File List** field, select the file in the list and press the **Remove** button.
3	**Add Files** button	Press the **Add Files** button to browse for media to add to the **File List** field.
4	**Preview** button	Press to play the selected clip.
5	**Translate** button	Press to begin the translation of the clips in the **File List** field to the selected file type, compression and bit depth.
6	**File Type** pulldown menu	Use the pulldown menu to select the file type to which the files will be converted.
7	**Compression** pulldown menu	Use the pulldown menu to select between available compression setting for the selected file type.
8	**Bit Depth** pulldown menu	Use the pulldown menu to select between available bit depth settings for the selected file type.
9	**With Source** checkbox	Click this checkbox to specify that the translated files should be saved in the same directory as their source files.
10	**Directory** button	Press to browse for a location in which the translated files will be saved. Confirm that the **With Source** checkbox is not checked if you want the converted files to be saved into a location other than where the source files are located.
11	**File Path** display	Displays the current location into which translated files will be saved.

Input - Record

From the main menus, select **Operation|Input|Record**. Alternately use the **Operations Selector** to select **Input|Record**.

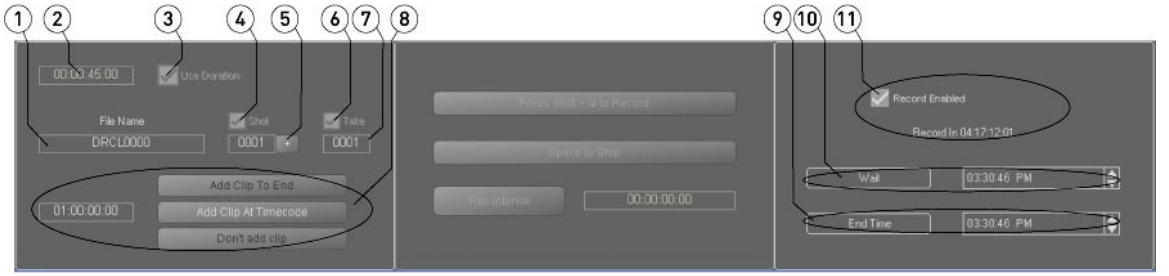


1	**File Name** field	File names are designed to increment upwards numerically by single integers. The **File Name** field displays the current file name prefix, to which the shot and take number are appended. By default the DRCL0000 file name is loaded, but the user can edit the file name by selecting it and typing in a new name.
2	**Duration** field	The time code field displays the current edit duration. This field may be edited via keyboard. When the **Use Duration** checkbox is checked, all records will stop at the specified duration. For stop motion applications this may be set to 00:00:00:01.
3	**Use Duration** checkbox	Clicking to select the **Use Duration** checkbox specifies that records will stop at the duration specified in the **Duration** field.
4	**Shot** checkbox	Clicking to select the **Shot** checkbox specifies that the **Shot** information will be used to create the clip name.
5	**Shot** controls	To use **Shot** and **Take** information to create clip names, confirm that both the **Shot** and **Take** checkboxes are selected. The **Shot** number starts at 001, and can be incremented upward by pressing the + button. Each time the **Shot** number is changed the **Take** counter will be reset to 001. The **Shot** number resets to 001 each time the file name is changed. All records which use the same **File Name** and **Shot** number will cause the associated **Take** number to increment upward by single integers. Using these controls the clip names generated can provide useful information about the clip's creation.
6	**Take** checkbox	Clicking to select the **Take** checkbox specifies that the **Take** information will be used to create the clip name.
7	**Take** controls	To use **Shot** and **Take** information to create clip names, confirm that both the **Shot** and **Take** checkboxes are selected. The **Take** number starts at 001 for each shot. Where the **Take** and **Shot** checkboxes are selected, each clip captured using the same **File Name** and **Shot** number will cause the **Take** number to increment upward by single integers. Each time the **Shot** number is changed the **Take** counter will be reset to 001.
8	**Add Clip** controls	Select **At Clip At End** to specify that a captured clip will be added to the timeline after the last clip. Select **Add Clip At Timecode** and edit the time code field to specify where a clip will be added in the timeline. Select **Don't Add Clip** to specify that the captured clip will not be added

		to the timeline.
9	**Rec Interval** button	This is used for stop motion applications, to specify that a record should begin each time the time code field counts down to 00:00:00:00. If the user were to set a duration of 00:00:00:01 in the **Duration** field and check the **Use Duration** checkbox, and if an interval of 00:00:20:00 were input into the **Interval** field, then every twenty seconds the DDR would record a frame of video. Once the **Rec Interval** button is pressed, it will count down the set amount of time and begin a record, using the duration amount to stop the record, then it will begin the count again, putting the system into record each time the countdown reaches 00:00:00:00. Press the **Space to Stop** button to stop the recording.
10	**Space To Stop** button	Press the **Space To Stop** button to stop a recording.
11	**Press Shift+Q To Record** button	Press the **Press Shift+Q To Record** button to start a recording.
12	**Interval** field	This field defines the period of time between each start of record. The user can edit this field by clicking in it and typing in a new number using the keyboard. Try to make sure this interval is greater than the duration, and that the **Use Duration** checkbox is selected.

Input - Record At

From the main menus, select **Operation|Input|Record At**. Alternately use the **Operations Selector** to select **Input|Record At**.

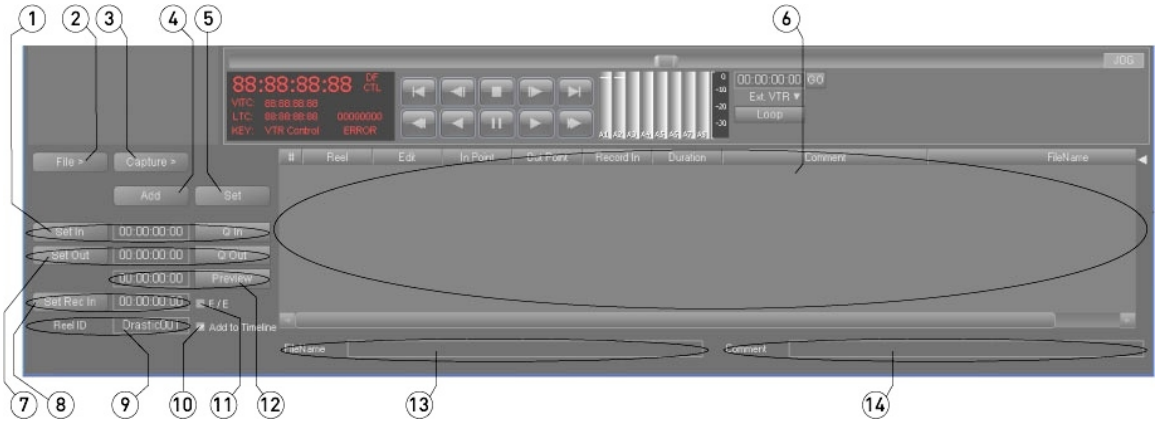


1	**File Name** field	File names are designed to increment upwards numerically by single integers. The **File Name** field displays the current file name prefix, to which the shot and take number are appended. By default the DRCL0000 file name is loaded, but the user can edit the file name by selecting it and typing in a new name.
2	**Duration** field	The time code field displays the current edit duration. This field may be edited via keyboard. When the **Use Duration** checkbox is checked, all records will stop at the specified duration. For stop motion applications this may be set to 00:00:00:01.
3	**Use Duration** checkbox	Clicking to select the **Use Duration** checkbox specifies that records will stop at the duration specified in the **Duration** field.
4	**Shot** checkbox	Clicking to select the **Shot** checkbox specifies that the **Shot** information will be used to create the clip name.
5	**Shot** controls	To use **Shot** and **Take** information to create clip names, confirm that both the **Shot** and **Take** checkboxes are selected. The **Shot** number starts at 001, and can be incremented upward by pressing the + button. Each time the **Shot** number is changed the **Take** counter will be reset to 001. The **Shot** number resets to 001 each time the file name is changed. All records which use the same **File Name** and **Shot** number will cause the associated **Take** number to increment upward by single integers. Using these controls the clip names generated can provide useful information about the clip's creation.
6	**Take** checkbox	Clicking to select the **Take** checkbox specifies that the **Take** information will be used to create the clip name.
7	**Take** controls	To use **Shot** and **Take** information to create clip names, confirm that both the **Shot** and **Take** checkboxes are selected. The **Take** number starts at 001 for each shot. Where the **Take** and **Shot** checkboxes are selected, each clip captured using the same **File Name** and **Shot** number will cause the **Take** number to increment upward by single integers. Each time the **Shot** number is changed the **Take** counter will be reset to 001.
8	**Add Clip** controls	Select **At Clip At End** to specify that a captured clip will be added to the timeline after the last clip. Select **Add Clip At Timecode** and edit the time code field to specify where a clip will be added in the timeline.

		Select **Don't Add Clip** to specify that the captured clip will not be added to the timeline.
9	**End Time** selector	Use the time of day field and arrows to specify the **End Time**, which is the time of day the DDR will end the recording.
10	**Wait** selector	Use the time of day field and arrows to specify the **Wait** time, which is the time of day at which the DDR will begin recording.
11	**Record Enabled** checkbox	With this checkbox selected, the system will immediately begin to display a count down to record time just below the checkbox (or it will go into record if it is already within the Record parameters) then it will go into record mode at the time of day specified in the **Wait** field, and stop at the time of day specified in the **End Time** field. At that point it will begin to count down to the next day's record. To stop time of day-based recording, uncheck the **Record Enabled** checkbox.

Input - Batch Capture

From the main menus, select **Operation|Input|Batch Capture**. Alternately use the **Operations Selector** to select **Input|Batch Capture**.

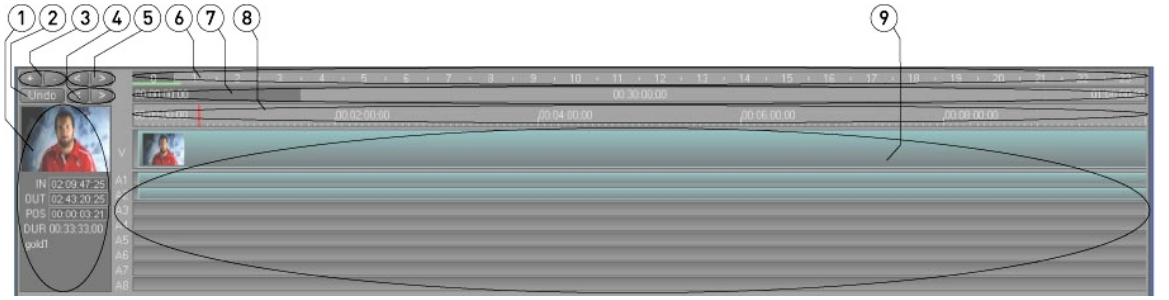


1	**Set In** controls	The time code field displays the current In point for the edit. The user may enter a time code location into the timecode field and press the **Q In** button to cue to this location. Pressing the **Set In** button sets the current cued location as the In point for the edit.
2	**File** button	Use the pulldown menu to select from the following options: **New** - opens a new, empty batch capture EDL **Open** - opens a browser which allows the user to browse to and select an existing batch capture EDL to use for the batch capture. **Save** - opens a standard Save As dialog box, which allows the user to save the current batch capture EDL as one of several types of supported EDLs. The user will be able to specify a name and location for the EDL file.
3	**Capture Options** button	Start the batch capture by selecting one of the following options offered in the popup menu: **Single** to capture a single selected edit. Click on an edit to select it. **Selected** to capture the edits in an EDL which have been selected. To select multiple edits, hold down the **Control** key while clicking on the edits to select (or deselect) them. **All** to capture all of the edits in the EDL.
4	**Add** button	Press this button to add the current edit to the EDL field.
5	**Set** button	Press the **Set** button to enter any changes which have been made to the current edit into the EDL.
6	**EDL** field	This field displays the current EDL being set up for batch capture.
7	**Set Out** controls	To set the current timecode location as the Out point for the edit, press the **Set Out** button. To specify a location by timecode, enter the location into the timecode field and press the **Q Out** button to cue to this location. Press the **Set Out** button to set the current cued location as the Out point for the edit.
8	**Set Rec In** controls	The time code location field displays the current **Record In** point for the edit, and allows the user to edit the existing or enter a new **Record In** for the edit. Pressing the **Set Rec In** button sets the time code location in the time code field as the new **Record In** point for the edit.

9	**Reel ID** field	Displays the **Reel ID**, or the identifier for the tape that this edit describes, and allows the user to enter a new or edit the existing **Reel ID** for each item being created.
10	**Add to Timeline** checkbox	Select this checkbox to specify that recorded clips should be added to the timeline.
11	**E/E** checkbox	Click in the **E/E** checkbox to view pass-through video of the source tape. This provides display of In and Out points as each edit is being created.
12	**Preview Edit** controls	The timecode field displays the length of the current edit. Press the **Preview** button to play the edit without capture.
13	**File** field	Displays the current file name. To edit the file name for this edit to a name of your choice, select it and type in a new name.
14	**Comment** field	Displays existing comments and allows the user to enter a comment for each particular edit in the EDL, or to edit an existing comment where an edit has been reloaded for revision.

Output - Time Line

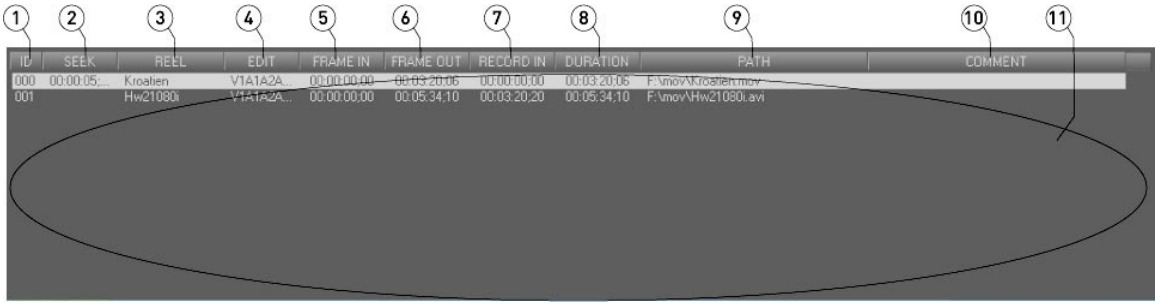
From the main menus, select **Operation|Output|Time Line**. Alternately use the **Operations Selector** to select **Output|Time Line**.



1	**Clip Details** display	Displays the details of the last selected (or hovered over) clip including a picon (thumbnail, or picture icon), In/Out points, Position on the timeline, duration and clip name.
2	**Undo** button	Press the **Undo** button to revoke the most recent action on the timeline, such as a clip add or remove.
3	**Magnify** and **Reduce** controls	Press the + button to zoom in, or magnify the view of the time line. Press the - button to zoom out, or reduce the view of the time line.
4	**Move Clip Timeline** controls	Use the right and left arrows to move the **Clip Timeline** along.
5	**Move TC Timeline View** controls	Use the right and left arrows to select the next adjacent area of the **TC Timeline** and move the view along, including the clips list.
6	**TC Timeline** control	Displays the entire 24 hour timeline and offers a slider to move the **Time Line View** row around within the timeline.
7	**Display Timeline** row	Displays the section of the timeline the user has zoomed in on, and offers a slider to move within this area.
8	**Clip Timeline** row	Displays the time code location associated with the clip locations, and if the user double clicks on a location within the **Clip Timeline**, it will cue to that location, and any media at that location will be loaded for playback or signal analysis.
9	**Timeline Display** field	The audio and video tracks of the clips in the timeline are displayed. Clicking and dragging allows the user to adjust the location of clips in the timeline. Clips may also be dragged from the **Clip View** list to add them to the timeline.

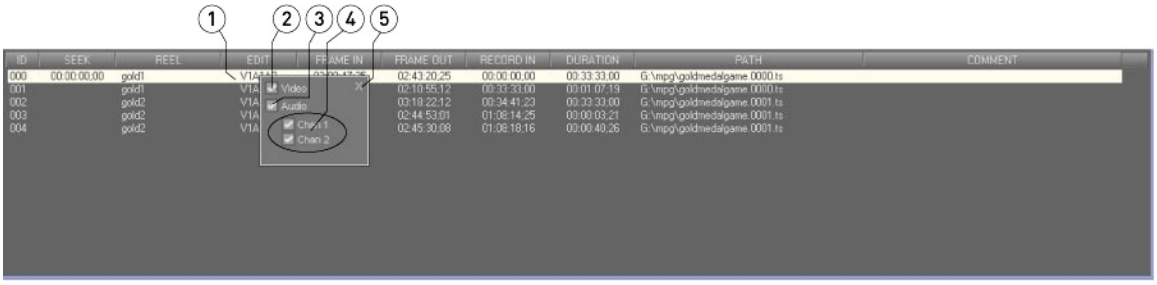
Output - EDL

From the main menus, select **Operation|Output|EDL**. Alternately use the **Operations Selector** to select **Output|EDL**. The columns may be moved (drag and release) or re-sized (hover near the edge and drag the line) so you can put them in the order and width you prefer. Therefore at some point they may not be exactly the same as the below diagram.



1	**#** column	Displays the number of each media segment.
2	**Seek** column	Displays the seek parameters of each media segment.
3	**Reel** column	Displays the Reel ID of each media segment.
4	**Edit** column	Displays the channels present in each media segment.
5	**Frame In** column	Displays the Frame In of each media segment.
6	**Frame Out** column	Displays the Frame Out of each media segment.
7	**Record In** column	Displays the Record In of each media segment.
8	**Duration** column	Displays the duration, or length of each media segment.
9	**Path** column	Displays the file path of each clip in the media segment.
10	**Comment** column	Displays the comment for each media segment.
11	**EDL** field	Displays each media segment from first at the top to last at the bottom of the list, and offers a slider to display any clips not shown by the view.

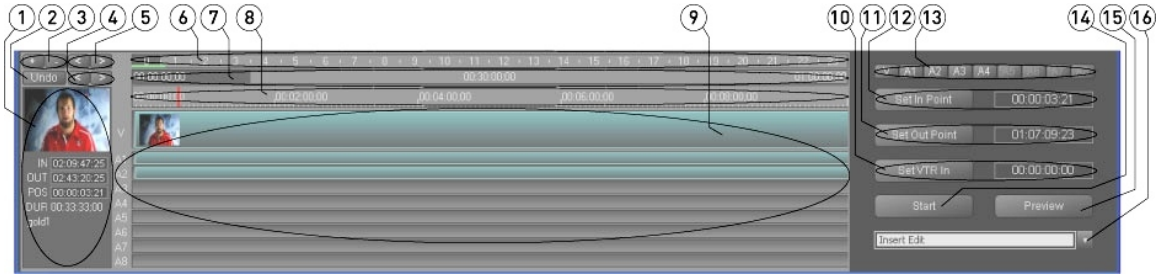
The Channel Presets Window



1	**Edit** field	For each clip the current channel presets, or how many audio and possibly video channels are associated with a clip, are displayed in the **EDIT** column. Double clicking on this field opens the **Channel Presets** window.
2	**Video** checkbox	Typically there will be one video channel associated with a clip. When selected this video channel will be played out when the clip is played. If it is deselected, only the audio channels will be played out. If single channel output is desired where the user has set the DDR up for stereo or greater playback, leave all channels selected, close **MediaNXS** and use **DDRConfig** to set the DDR up for a single channel of video (and different clips will be required).
3	**All Audio** checkbox	When selected all of the audio channels will be available for selection or deselection individually. When deselected the audio channels will not be played out when the clip is played.
4	**Audio** checkboxes	These checkboxes become available when the **All Audio** checkbox is selected. When each audio channel is selected, it will be played out when the clip is played. If the user deselects specific audio channels, they will not be played out when the clip is played.
5	**Close** x	The **x** in the corner of the box closes the **Channel Presets** window and accepts any choices made.

Output - VTR Out

From the main menus, select **Operation|Output|VTR Out**. Alternately use the **Operations Selector** to select **Output|VTR Out**.

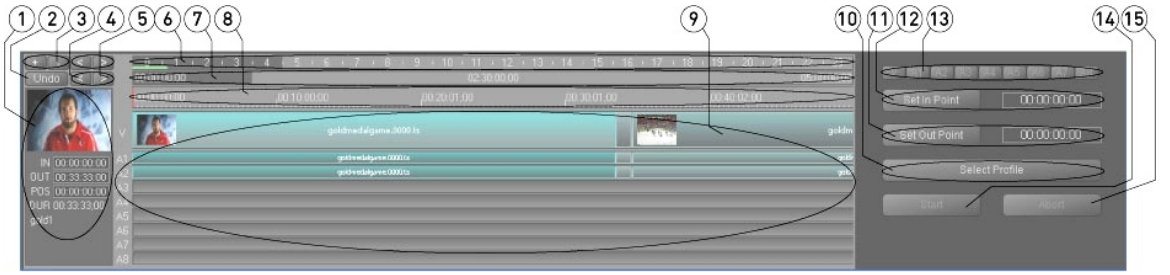


1	**Clip Details** display	Displays the details of the last selected clip including a picon, In/Out points, Position on the timeline and the clip's duration.
2	**Undo** button	Press the **Undo** button to revoke the most recent action on the timeline, such as a clip add or remove.
3	**Magnify/Reduce** controls	Press the + button to zoom in, or magnify the view of the time line and clips, so that less of the entire time line is shown. Press the - button to zoom out, or reduce the size of the individual clips so that more of the entire time line is shown.
4	**Move Clip Timeline** controls	Use the right and left arrows to move just the **Clip Timeline** along.
5	**Move TC Timeline View** controls	One press of the right or left arrow moves the **TC Timeline** view along, including the clips list, to reveal the next adjacent portion of the time line, at the same level of zoom.
6	**TC Timeline** row	Displays the entire 24 hour timeline and offers a slider to move the **TC Timeline** row around within the timeline.
7	**Display Timeline** row	Displays the section of the timeline the user has zoomed in on, and offers a slider to move within this area.
8	**Clip Timeline** row	Displays the time code location associated with the clip locations, and if the user double clicks on a location within the Clip Timeline, a red bar will move to indicate the cued to location, and any media at that location will be loaded into the VGA display.
9	**Timeline Display** field	Displays the audio and video tracks of the clips that have been loaded into the timeline.
10	**Set VTR In** controls	Set an **In Point** on the external VTR for the record to begin at
11	**Set Out Point** controls	Set an **Out Point** on the timeline for media to end at
12	**Set In Point** controls	Set an **In Point** on the timeline for media to start at
13	**Channel Presets** buttons	Indicates whether each video or audio channel is active or present in the file or signal. Allows the user to select or deselect channels depending on hardware constraints.
14	**Start** button	Press the **Start** button to begin the layback
15	**Preview** button	Press the **Preview** button to see the clips you intend to use in the

		layback.
16	**Insert** or **Assemble** pulldown menu	This pulldown menu allows the user to choose between **Insert** and **Assemble** modes of editing to the VTR. **Insert** mode assumes a tape striped with time code into which the user can place video or audio or both but leave the time code intact. **Assemble** mode assumes time code will be laid down along with all audio and video channels present in the signal, replacing any material in this portion of the tape.

Output - To File

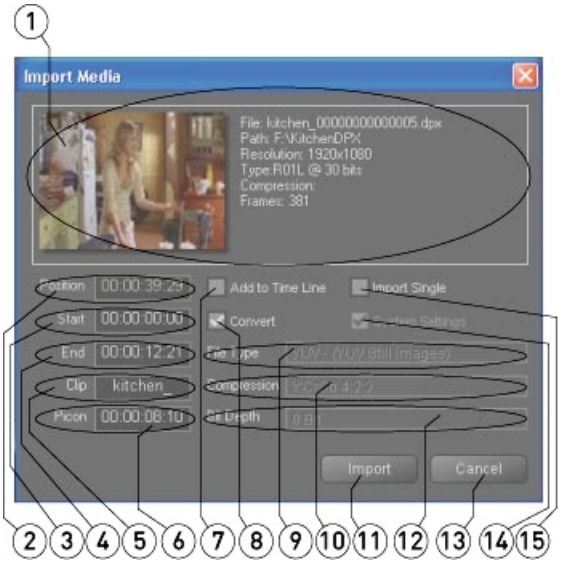
From the main menus, select **Operation|Output|To File**. Alternately use the **Operations Selector** to select **Output|To File**.



1	**Clip Details** display	Displays the details of the last selected clip including a picon, In/Out points, Position on the timeline, duration and name.
2	**Undo** button	Press the **Undo** button to revoke the most recent action on the timeline, such a clip add or remove.
3	**Magnify/Reduce** controls	Press the + button to zoom in, or magnify the view of the time line and clips, so that less of the entire time line is shown. Press the - button to zoom out, or reduce the size of the individual clips so that more of the entire time line is shown.
4	**Move Clip Timeline** controls	Use the right and left arrows to move just the **Clip Timeline** along.
5	**Move TC Timeline View** controls	One press of the right or left arrow moves the **TC Timeline** view along, including the clips list, to reveal the next adjacent portion of the time line, at the same level of zoom.
6	**TC Timeline** row	Displays the entire 24 hour timeline and offers a slider to move the **TC Timeline** row around within the timeline.
7	**Display Timeline** row	Displays the section of the timeline the user has zoomed in on, and offers a slider to move within this area.
8	**Clip Timeline** row	Displays the time code location associated with the clip locations, and if the user double clicks on a location within the Clip Timeline, a red bar will move to indicate the cued to location, and any media at that location will be loaded into the VGA display.
9	**Timeline Display** field	Displays the audio and video tracks of the clips that have been loaded into the timeline.
10	**Select Profile** button	Press to open the **MediaReactor Profile** window, which allows the user to set up which type of file they will create.
11	**Set Out Point** controls	Set an **Out Point** on the timeline for media to end at
12	**Set In Point** controls	Set an **In Point** on the timeline for media to start at
13	**Channel Presets** buttons	Indicates whether each video or audio channel is active or present in the file or signal. Allows the user to select or deselect channels depending on hardware constraints.
14	**Start** button	Press the **Start** button to begin the translation
15	**Abort** button	Press to discontinue any translation in progress.

File – Import Media

The **Import Media** dialog box allows you to add media to the **Time Line** and **EDL** output lists, and **Clip List** or **Thumbs View** lists. From the main menus, select **File|Import|Media**. Use the **Open** window to select a clip. Upon selection it is loaded into the **Import Media** dialog.

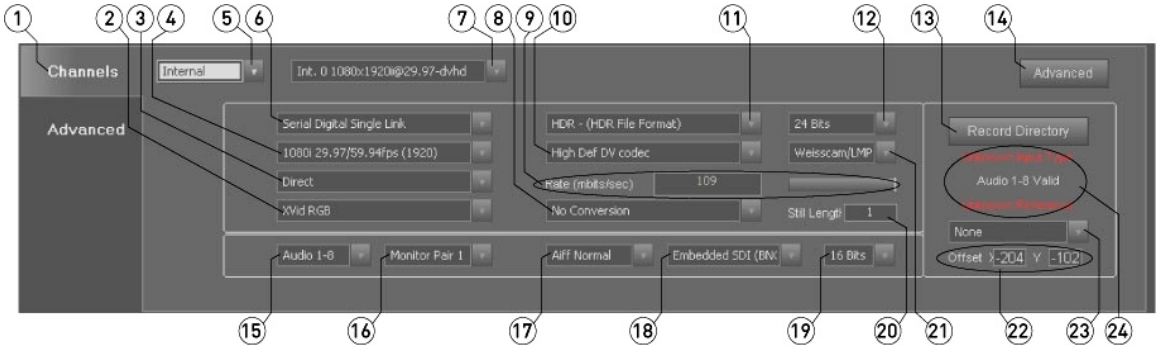


1	**Clip Details** section	The selected clip's picon is displayed, along with the file name, file path, resolution setting, video type, compression and length information (in frames).
2	**Position** field	The **Position** field becomes active when the **Add to Time Line** checkbox is checked. Enter a time code location within this field to set where the media will be placed on the **Time Line**.
3	**Start** field	The clip's starting time code location (00:00:00:00) is loaded here. To trim frames from the beginning, enter a time code location greater than zero (and less than the **End** time code) in this field.
4	**End** field	The clip's end time code location is loaded here. To trim frames from the end, enter a time code less than the current **End** time code but after the **Start** time code in this field.
5	**Clip** field	The current clip name is displayed. It can be edited to help identify this instance of the clip more clearly, especially useful where a portion of a clip (sub-clip) has been imported.
6	**Picon** field	This field displays the time code location of the frame of video being used to create the picon for the selected clip. The user can reset the picon frame during the **Import** process by clicking in the field and typing in a new time code location within the file.
7	**Add to Time Line** checkbox	Checking this checkbox activates the **Position** field and specifies that the clip shall be added to the **Time Line** (at that location) during this import operation.
8	**Convert Media** checkbox	Clicking in the **Convert Media** checkbox activates the **System Settings** checkbox, and allows you to specify that the media shall be converted during this import operation.
9	**File Type**	Where the **Convert Media** checkbox is checked, and the **System Settings**

	pulldown menu	checkbox has been unchecked, this pulldown menu becomes active. Use it to select the file type you would like to create with the conversion.
10	**Compression** pulldown menu	Where the **Convert Media** checkbox is checked, and the **System Settings** checkbox has been unchecked, this pulldown menu becomes active. Use it to select the compression for the file type being created with the conversion.
11	**Import** button	Press this button to begin the import process.
12	**Bit Depth** pulldown menu	Where the **Convert Media** checkbox is checked, and the **System Settings** checkbox has been unchecked, this pulldown menu becomes active. Use it to select the compression for the file type being created with the conversion.
13	**Cancel** button	Press this button to exit the **Import** window without importing any files.
14	**System Settings** checkbox	Where the **Convert Media** checkbox is checked, the **System Settings** checkbox becomes active. With the **System Settings** checkbox checked, the file will be converted to the same file type, compression and bit depth the system is currently set to. With the **System Settings** checkbox unchecked, the **File Type**, **Compression** and **Bit Depth** pulldown menus become active, and can be reset to create the required file type upon import.
15	**Import Single** checkbox	When selected, a single frame can be imported from a selected file.

Setup – Config Channels Internal

From the main menus, select **Operation|Setup|Config**. Alternately use the **Operations Selector** to select **Setup|Config**. The **Config** section of the interface opens with the **Channels** tab selected. Confirm that the **Channel Type** pulldown menu is set to **Internal**.

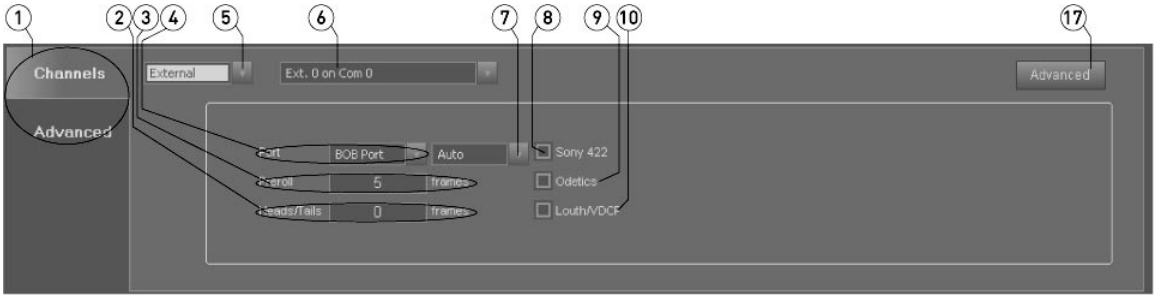


1	**Config Selector** tabs	Use the **Channels** tab to display the **Config Channels** section of the setup controls. Use the **Advanced** tab to display the **Config Advanced** section of the setup controls.
2	**Analog I/O** pulldown menu	Use the **Analog I/O** pulldown menu to select the analog input/output type. Choices may include **XVid RGB**, **Component YUV**, **Component RGB**.
3	**Up-, Down-, or Cross-Conversion** pulldown menu	Use this pulldown menu to select the up-, down-, or cross-conversion that will be applied to the output for monitoring. Choices may include **to SD (NTSC/PAL)**, **Direct**, **to HD 720** and **to HD 1080**.
4	**Video Standard** pulldown menu	Use the **Video Standard** pulldown menu to select the video standard that will be used. These will include all the SD, HD and possibly 2K and greater video standards which both the license level and hardware support.
5	**Channel Type** pulldown menu	Use the **Channel Type** pulldown menu to select between the internal or external channel settings.
6	**I/O Type** pulldown menu	Use the pulldown menu to set the input/output type, typically between composite, component and SDI.
7	**Channel Selector** pulldown menu	Use the **Channel Selector** pulldown menu to select the internal channel to which any configuration changes will apply. Choices will be limited to the channels supported by the system.
8	**Conversion** pulldown menu	Use the **Conversion** pulldown menu to set the conversion cropping/scaling strategy (for up-, down- or cross-conversion) that will be applied to the output signal for monitoring.
9	**Quality** section	Displays the current setting for the relative quality of specific compressed formats; may be adjustable depending on the DDR and format selected. Can reflect changes made in the **Video Bit Depth** pulldown menu when the DDR is set to specific compressed formats.
10	**Codec** pulldown menu	Use the **Codec** pulldown menu to select the type of codec (compressed or uncompressed) used for this format.
11	**File Format** pulldown menu	Use the **File Format** pulldown menu to select the file format that will be used.

12	**Video Bit Depth** pulldown menu	Use the **Video Bit Depth** pulldown menu to set the bit depth for the selected format. Bit depth setting choices vary according to the file format selected.
13	**Record Directory** button	Use the **Record Directory** button to open a browser which lets you set a new directory into which records will be saved.
14	**Advanced** button	Use the **Advanced** button to display the **Config Advanced** section of the setup controls.
15	**Audio Channels** display	This field displays the number of audio channels detected, if any.
16	**Monitor Pair** pulldown menu	Use the pulldown menu to select the two audio channels that will be output through the monitor as stereo output.
17	**Audio Container** pulldown menu	Use the **Audio Container** pulldown menu to set the audio file type and how audio files are created.
18	**Audio Type** pulldown menu	Use the **Audio Type** pulldown menu to set the audio input/output type. Choices may include: **AES/EBU**, **Unbalanced** or **Embedded**.
19	**Audio Bit Depth** pulldown menu	Use the **Audio Bit Depth** pulldown menu to set the bit depth for the selected audio file type.
20	**Still Length** field	This field displays the current setting for the number of frames for a still, which may be edited by the user.
21	**Camera** selector	Select between camera input types - only applies to RAW formats.
22	**Offset** fields	X and Y coordinate fields allow the user to adjust the position of the VGA display monitor.
23	**Genlock Source** pulldown menu	Displays and allows the user to set the genlock source. Choices include: **None**, **Input** and **Reference In**.
24	**DDR Status** display	Displays the current status of the video input if detected, the audio input if detected, and the genlock input, if detected.

Setup – Config Channels External

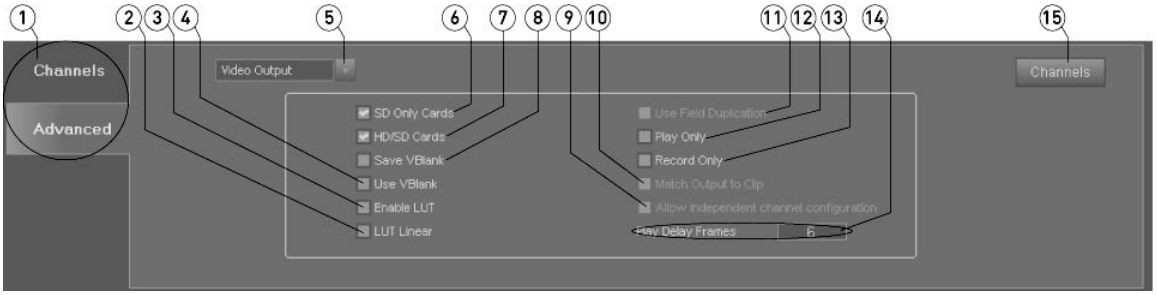
From the main menus, select **Operation|Setup|Config**. Alternately use the **Operations Selector** to select **Setup|Config**. The **Config** section of the interface opens with the **Channels** tab selected. Set the **Channel Type** pulldown menu to **External**.



1	**Config Selector** tabs	Use the **Channels** tab to display the **Config Channels** section of the setup controls. Use the **Advanced** tab to display the **Config Advanced** section of the setup controls.
2	**Heads/Tails** field	Displays the current number of frames set up for the heads and tails, or the extra frames captured at the beginning and end of each clip to provide a safe (editable) zone of media around each edit.
3	**Preroll** field	Displays the current setting for preroll in number of frames. The default setting is best for most devices, but the setting can be edited where this will produce a more accurate response by selecting the value in the field and typing in a new number of frames.
4	**COM Port** pulldown menu	Use the **COM Port** pulldown menu to specify the COM port or serial control port that will be used to control the external VTR.
5	**Channel Type** pulldown menu	Use the **Channel Type** pulldown menu to select between the internal or external channel settings.
6	**External Channel** pulldown menu	Use the **External Channel** pulldown menu to choose the external channel to which these configuration settings apply.
7	**Video Standard** pulldown menu	Use the **Video Standard** pulldown menu to specify the video standard of the external VTR. In many cases the user will be able to select **Auto**, or auto-sensing.
8	**Sony 422** checkbox	Check to specify the use of **Sony 422** protocol to control an external VTR.
9	**Odetics** checkbox	Check to specify the use of **Odetics** protocol to control an external VTR.
10	**Louth/VDCP** checkbox	Check to specify the use of **Louth/VDCP** protocol to control an external VTR.
11	**Advanced** button	Use the **Advanced** button to display the **Config Advanced** section of the setup controls.

Setup – Config Advanced – Video Output

From the main menus, select **Operation|Setup|Config**. Alternately use the **Operations Selector** to select **Setup|Config**. Press the **Advanced** button, or use the **Advanced** tab to select the **Advanced** section of the **Config** menu. Use the **Advanced Config** pulldown menu to select **Video Output**.

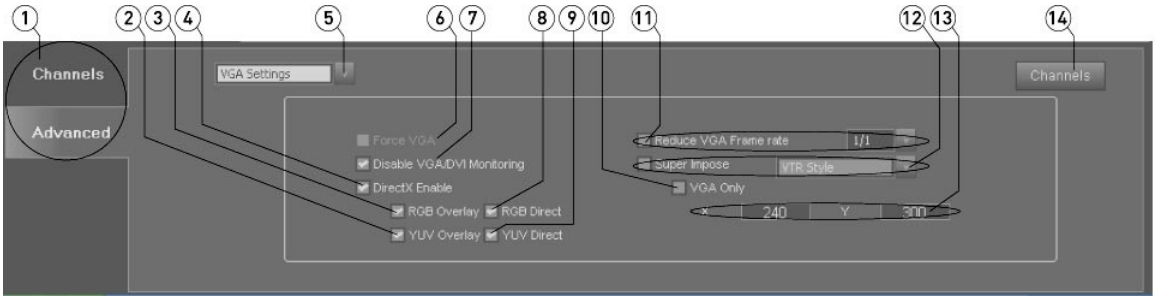


1	**Config Selector** tabs	Use the **Channels** tab to display the **Config Channels** section of the setup controls. Use the **Advanced** tab to display the **Config Advanced** section of the setup controls.
2	**LUT Linear** checkbox	Select the **LUT Linear** checkbox to apply a linear lookup table to output, otherwise it will be algorithmic. Confirm that the **Enable LUT** checkbox is selected for this to have any effect.
3	**Enable LUT** checkbox	Select the **Enable LUT** to apply a lookup table to output. The lookup table used is algorithmic by default; you must select **LUT Linear** to use a linear lookup table.
4	**Use VBlank** checkbox	Select the **Use VBlank** checkbox to decode and display VITC time code values.
5	**Advanced Config** pulldown menu	Use the **Advanced Config** pulldown menu to select between the **Video Output**, **VGA Settings** and the **3D VGA** sections of the **Advanced Config** section of **Setup**.
6	**SD Only Cards** checkbox	Select the **SD Only Cards** checkbox to set up the system for SD-only applications.
7	**HD/SD Cards** checkbox	Select the **HD/SD Cards** checkbox to set up the system to support both SD and HD formats. Some configurations may require that the **HD/SD Cards** checkbox and the **SD Only Cards** checkboxes both be checked before all formats will be supported.
8	**Save VBlank** checkbox	Select the **Save VBlank** checkbox to write VITC into files being created and/or recorded.
9	**Allow Independent Channel Configuration** checkbox	Select the **Allow Independent Channel Configuration** checkbox to allow the user to configure different channels in a multiple channel system independently. For example one channel might be set up for SD MOV, and the other set up for HD DPX.
10	**Match Output to Clip** checkbox	Select the **Match Output to Clip** checkbox to match the video output to the current clip settings.
11	**Use Field Duplication**	Select the **Use Field Duplication** checkbox to duplicate fields for output in slow motion display applications.

	checkbox	
12	**Play Only** checkbox	Select the **Play Only** checkbox to disable all capture/encoding functions. Note: if you select both the **Play Only** and **Record Only** checkboxes, you will disable the DDR.
13	**Record Only** checkbox	Select the **Record Only** checkbox to disable all playback functions. Note: if you select both the **Play Only** and **Record Only** checkboxes, you will disable the DDR.
14	**Play Delay Frames** section	Displays the number of frames delay between receiving a play command and the actual output of frames. This number may be reset (for select applications) by selecting it and typing in a new number, which may improve frame accuracy for serial control.
15	**Channels** button	Press the **Channels** button to reveal the **Channels Config** section of **Setup**.

Setup – Config Advanced – VGA Settings

From the main menus, select **Operation|Setup|Config**. Alternately use the **Operations Selector** to select **Setup|Config**. Press the **Advanced** button, or use the **Advanced** tab to select the **Advanced** section of the **Config** menu. Use the **Advanced Config** pulldown menu to select **VGA Settings**.

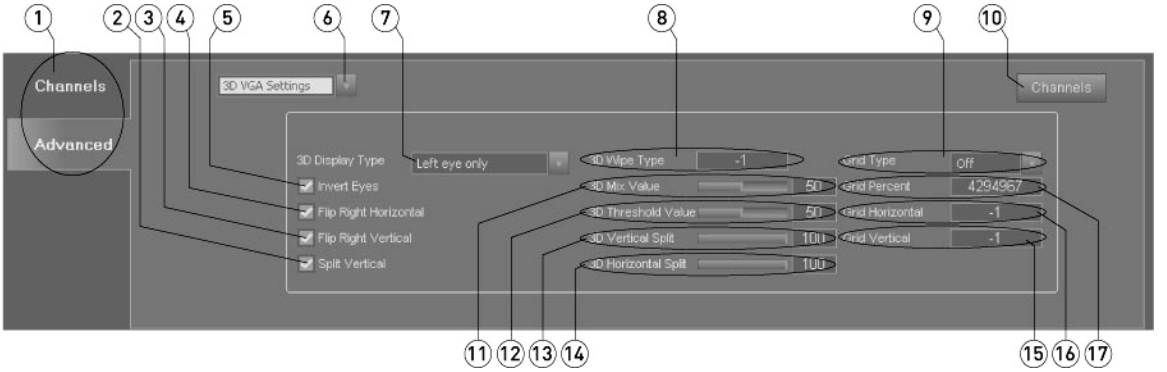


1	**Config Selector** tabs	Use the **Channels** tab to display the **Config Channels** section of the setup controls. Use the **Advanced** tab to display the **Config Advanced** section of the setup controls.
2	**YUV Overlay** checkbox	With the **DirectX Enable** checkbox selected, select the **YUV Overlay** checkbox to use YUV overlay within DirectX.
3	**RGB Overlay** checkbox	With the **DirectX Enable** checkbox selected, select the **RGB Overlay** checkbox to use RGB overlay within DirectX.
4	**DirectX Enable** checkbox	Select the **DirectX Enable** checkbox to activate the 4 checkboxes just below for DirectX display options.
5	**Advanced Config** pulldown menu	Use the **Advanced Config** pulldown menu to select between the **Video Output**, **VGA Settings** and the **3D VGA** sections of the **Advanced Config** section of **Setup**.
6	**Force VGA** checkbox	Select the **Force VGA** checkbox to display only VGA/DVI and ignore the video hardware if present. Note, if you select both the **Disable VGA/DVI Monitoring** checkbox and the **Force VGA** checkbox, the DDR will not be able to output video.
7	**Disable VGA/DVI Monitoring** checkbox	Select the **Disable VGA/DVI Monitoring** checkbox to only play out through the video hardware, and disable VGA/DVI output. Note, if you select both the **Disable VGA/DVI Monitoring** checkbox and the **Force VGA** checkbox, the DDR will not be able to output video.
8	**RGB Direct** checkbox	With the **DirectX Enable** checkbox selected, select the **RGB Direct** checkbox to use RGB Direct within DirectX.
9	**YUV Direct** checkbox	With the **DirectX Enable** checkbox selected, select the **YUV Direct** checkbox to use YUV Direct within DirectX.
10	**VGA Only** checkbox	Select the **VGA Only** checkbox to superimpose time code on the VGA/DVI output only, and allow the video output through hardware to pass through unaffected. For this to work, the **Superimpose** checkbox must be selected.
11	**Reduce VGA Frame Rate** section	The **Reduce VGA Frame Rate** section provides a checkbox to activate the setting, and a pulldown menu which allows the user to reduce the number of frames output through the VGA/DVI display during playback, for bandwidth-intensive operations.
12	**Superimpose**	The **Superimpose** section allows the user to superimpose time code

	section	over both the VGA/DVI and the video output. A checkbox is provided to activate the setting, and a pulldown menu which allows the user to select the type of time code that will be superimposed.
13	**Superimpose Location** x and y fields	The **X** and **Y** fields allow the user to set the location of the time code that is superimposed on output. This setting applies to the **VTR Style** superimposition style only. The **Film Minimum** and **Film Full** are fixed in location.
14	**Channels** button	Press the **Channels** button to reveal the **Channels Config** section of **Setup**.

Setup – Config Advanced – 3D VGA

From the main menus, select **Operation|Setup|Config**. Alternately use the **Operations Selector** to select **Setup|Config**. Press the **Advanced** button, or use the **Advanced** tab to select the **Advanced** section of the **Config** menu. Use the **Advanced Config** pulldown menu to select **3D VGA Settings**.

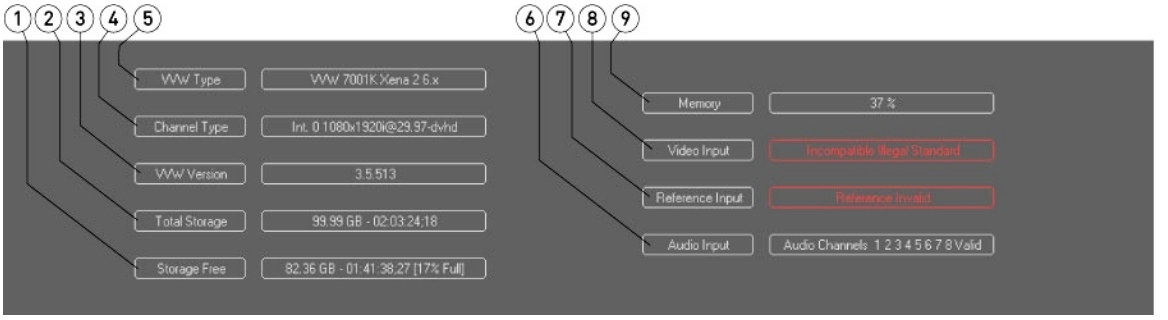


1	**Config Selector** tabs	Use the **Channels** tab to display the **Config Channels** section of the setup controls. Use the **Advanced** tab to display the **Config Advanced** section of the setup controls.
2	**Split Vertical** checkbox	When using a split, by default it is horizontal. If this is checked, a vertical split will be used instead, where available
3	**Flip Right Vertical** checkbox	Select this checkbox to reverse the right eye stream along its vertical axis
4	**Flip Right Horizontal** checkbox	Select this checkbox to reverse the right eye stream along its horizontal axis
5	**Invert Eyes** checkbox	Select this checkbox to switch the left and right eye streams so that the left eye signal goes out through the right eye channel, and vice versa
6	**Advanced Config** pulldown menu	Use the **Advanced Config** pulldown menu to select between the **Video Output**, **VGA Settings** and the **3D VGA** sections of the **Advanced Config** section of **Setup**.
7	**3D Display Type** pulldown menu	Use the pulldown menu to select between available 3D VGA display settings. Choices may include: **Left Eye Only** – displays only the left eye **Right Eye Only** - displays only the right eye **Anaglyph Red-Blue** - displays an anaglyph image for red/blue glasses **Anaglyph Red-Cyan** - displays an anaglyph image for red/cyan glasses **Anaglyph Amber-Blue** - displays an anaglyph image for amber/blue glasses **Anaglyph Green-Magenta** - displays an anaglyph image for green/magenta glasses. **Interlaced Eyes** - displays the streams for the left and right eyes as alternating lines within an interlaced signal. This is used for 3D monitors or projectors when running the VGA output on a second screen

		Onion Skin - displays the streams for the left and right eyes overlapped with a 50% dissolve. **Difference** - displays the absolute difference between the left and right eye streams **Over Under** - displays one eye at half height on top, and the other at half height on the bottom **Side By Side** - displays the left and right eye streams side by side within the monitor, each at half width **Seamless Split** - displays the left half of the left eye stream and the right half of the right eye stream using a seamless split to allow comparison of the two signals and any vertical or horizontal line **Mirror** - displays the right eye and the mirror or invert of the left eye attached together at the center of the display **A-B With Threshold** - displays those portions of both left and right eye streams which exceed the threshold **Dissolve** - allows the user to set a variable dissolve between the left and right eye **Wipe** - allows the user to wipe between the left and right eye streams for signal quality comparison
8	**3D Wipe Type** field	Displays the current setting for the type of wipe being used, and allows the user to enter a SMPTE wipe number corresponding to a specific wipe type. Currently supported wipes include: 1, 2, 3, 4, 5, 6, 7, 8, 21, 22, 23, 24, 25, 26, 101
9	**Grid Type** pulldown menu	Use this to select between no grid, a percentage based grid and a pixel sized grid
10	**Channels** button	Press the **Channels** button to reveal the **Channels Config** section of **Setup**.
11	**3D Mix Value** slider	This is used to adjust the dissolve mix or the wipe transition amount
12	**3D Threshold Value** slider	Use the slider to adjust the threshold when doing a A-B comparison with threshold
13	**3D Vertical Split** slider	Use the slider to adjust the setting for the vertical split in seamless split
14	**3D Horizontal Split** slider	Use the slider to adjust the setting for the horizontal split in seamless split
15	**Grid Vertical** field	When the pixel grid type is selected, this is the number of vertical pixels from one line to the next
16	**Grid Horizontal** field	When the pixel grid type is selected, this is the number of horizontal pixels from one line to the next
17	**Grid Percent** field	When the percent grid type is select, this sets the percentage to leave open between grid lines

Setup - Info

From the main menus, select **Operation|Setup|Info**. Alternately use the **Operations Selector** to select **Setup|Info**.



1	**Storage Free** field	Displays the amount of storage available that can be written to without deleting files.
2	**Total Storage** field	Displays the total amount of storage available to the system.
3	**VVW Version** field	Displays the software version number.
4	**Channel Type** field	Displays the channel number, I/O standard and compression settings for the channel.
5	**VVW Type** field	Displays the system configuration.
6	**Audio Input** field	Displays the status of the audio input if detected.
7	**Reference Input** field	Displays the status of the reference input if detected.
8	**Video Input** field	Displays the status of the video input if detected
9	**Memory** field	Displays the memory (RAM) usage

Setup - Licensing

From the main menus, select **Operation|Setup|Licensing**. Alternately use the **Operations Selector** to select **Setup|Licensing**.

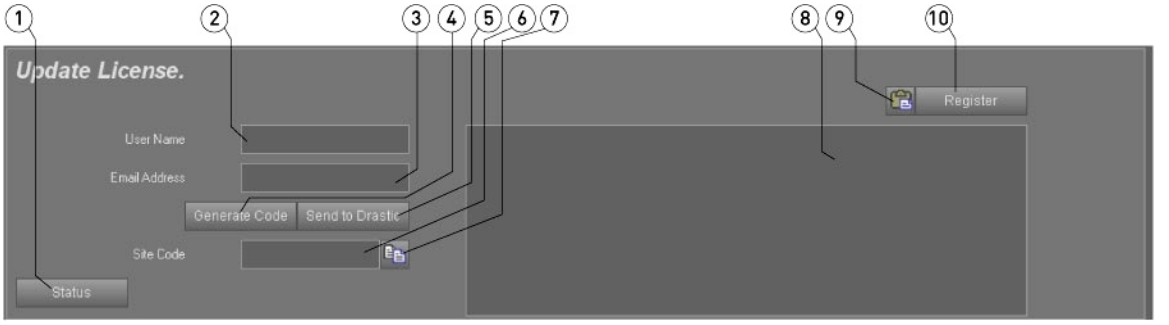
Licensing - License Status

If the license is valid, the licensing portion of the interface will display the following information.

Type of License and days remaining - if the license is a trial license, the number of days remaining will be listed on the first line.
Customer Information - the information provided within the licensing dialog will appear in these fields; the Registered Customer, the Customer Email and the Registration Date.
Options Licensed - each Drastic DDR product licensed will be displayed in this section.
License/Status toggle - press the **License** button to reveal the licensing update tab, if you need to update the DDR's license.

Licensing - Update License

The user may press the **License** button to create a license for the DDR, or to update the existing license.



1	**License/ Status** toggle	Pressing the **Status** button displays the license status section, whereupon the **Status** button becomes a **License** button, so the user may return to the above **Update License** section of the interface.
2	**User Name** field	Input your user name for this install of **DDR**.
3	**Email Address** field	Input the email address at which you would like to receive the site code to license this install of **DDR**.

4	**Generate Code** button	Press this button to generate a site code once you have input a user name and email.
5	**Send to Drastic** button	Press the **Send to Drastic** button to create an email addressed to Drastic Licensing with the site code in the body of the email.
6	**Site Code** field	If you input a user name in the **User Name** field and an email address into the **Email Address** field, pressing the **Generate Code** button places a site code in the **Site Code** field.
7	**Copy** button	Press this button to copy the site code to the clipboard.
8	**Site Key** field	When you receive your **Site Key**, paste it into this field and press the **Register** button to update the license for the system.
9	**Paste** button	Press this button to paste the contents of the clipboard into the **Site Key** field.
10	**Register** button	Once you have received your new site key and pasted it into the **Site Key** field, press this button to update the license.

View - VGA Display

From the main menus, select **View|VGA Display**. Alternately press the **VGA Display** button above the **Clip View** window, or press **F2**.

The **VGA Display** shows video output in **Play** (stream) or **Pause** (frame) modes, and displays pass-through video (or E/E) if present when in **Stop** mode. The user may click and drag on the **VGA Display** to provide shuttle-through functionality of a selected clip for cueing purposes. Dragging to the right moves forward through the media and advances the time code. Dragging to the left moves in reverse through the media.

View - Vector Scope

From the main menus, select **View|Vector Scope**. Alternately press the **Vector Scope** button above the **Clip View** window, or press **F3**.

The **Vector Scope** displays the distribution of chrominance within the signal, isolating specific regions of color within assigned vectors, useful for maintenance of optimum signal reproduction. The **Luma Stick** provides a representation of the luminance within a signal, and offers markers for legal color signal gamut.

1	**Min/Max** display	These three fields list the minimum and maximum values for Y, Cr and Cb. Where these values are within a standard range, they will be displayed in yellow. Where the values are borderline they will be displayed in red. Where these values exceed the gamut they will be displayed in white.
2	**Green** field	Describes where the green component of a color bar signal should be located
3	**Yellow** field	Describes where the yellow component of a color bar signal should be located
4	**Cyan** field	Describes where the cyan component of a color bar signal should be located
5	**Red** field	Describes where the red component of a color bar signal should be located
6	**View** buttons	Each **View** button when clicked displays its labeled view. The **Vector Scope** view is selected, and so the button is highlighted. The function keys corresponding to the views are also displayed.
7	**Magenta** field	Describes where the magenta component of a color bar signal should be located
8	**Blue** field	Describes where the blue component of a color bar signal should be located
9	**Luma Stick** display	Displays the distribution of luminance within the signal in a "stick" format, with white at top and black on the bottom.
10	**Signal** display	The signal being passed through the vector scope is displayed in a scaled down version. This VGA display is also dynamic; dragging and pulling the image shuttles through the loaded clip. Moving to the right shuttles

		forward, to the left shuttles in reverse.

View - Wave Form Monitor

From the main menus, select **View|Wave Form**. Alternately press the **Wave Form** button above the **Clip View** window, or press **F4**.

The **Wave Form Monitor** displays the distribution of chrominance within YCbCr signal types as three separate displays.

1	**Cr** display	The distribution of Cr or R Chroma within the signal is displayed.
2	**Cb** display	The distribution of Cb or B Chroma within the signal is displayed.
3	**Y** display	The distribution of Y or Luma within the signal is displayed.
4	**Min/Max** display	These three fields list the minimum and maximum values for Y, Cr and Cb. Where these values are within a standard range, they will be displayed in yellow. Where the values are borderline they will be displayed in red. Where these values exceed the gamut they will be displayed in white.
5	**View** buttons	Each **View** button when clicked displays its labeled view. The **Wave Form** view is selected, and so the button is highlighted. The function keys corresponding to the views are also displayed.
6	**Signal** display	The signal being passed through the wave form monitor is displayed in a scaled down version. This VGA display is also dynamic; dragging and pulling the image shuttles through the loaded clip. Moving to the right shuttles forward, to the left shuttles in reverse.

View - Wave Form RGB

From the main menus, select **View|Wave Form RGB**. Alternately press the **Wave Form RGB** button above the **Clip View** window, or press **F5**.

The **Wave Form RGB Monitor** displays the distribution of chrominance within RGB signal types as three separate displays.

1	**B** display	The distribution of Blue within the signal is displayed.
2	**G** display	The distribution of Green within the signal is displayed.
3	**R** display	The distribution of Red within the signal is displayed.
4	**Min/Max** display	These four fields list the minimum and maximum values for R, G, B and A (alpha). Where these values are within a standard range, they will be displayed in yellow. Where the values are borderline they will be displayed in red. Where these values exceed the gamut they will be displayed in white.
5	**View** buttons	Each **View** button when clicked displays its labeled view. The **Wave Form RGB** view is selected, and so the button is highlighted. The function keys corresponding to the views are also displayed.
6	**Signal** display	The signal being passed through the wave form monitor is displayed in a scaled down version. This VGA display is also dynamic; dragging and pulling the image shuttles through the loaded clip. Moving to the right shuttles forward, to the left shuttles in reverse.

View - Histogram

From the main menus, select **View|Histogram**. Alternately press the **Histogram** button above the **Clip View** window or press **F6**.

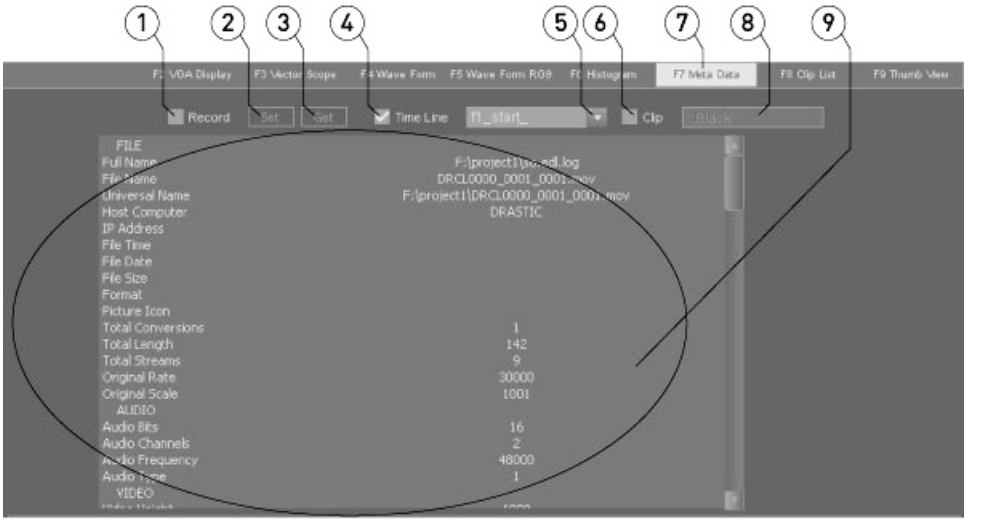
The **Histogram** view displays the signal as a histogram.

1	**B** display	The distribution of Blue within the signal is displayed.
2	**G** display	The distribution of Green within the signal is displayed.
3	**R** display	The distribution of Red within the signal is displayed.
4	**View** buttons	Each **View** button when clicked displays its labeled view. The **Histogram** view is selected, and so the button is highlighted. The function keys corresponding to the views are also displayed.
5	**Signal** display	The signal being passed through the wave form monitor is displayed in a scaled down version. This VGA display is also dynamic; dragging and pulling the image shuttles through the loaded clip. Moving to the right shuttles forward, to the left shuttles in reverse.

View - Meta Data

From the main menus, select **View|Meta Data**. Alternately press the **Meta Data** button above the **Clip View** window.

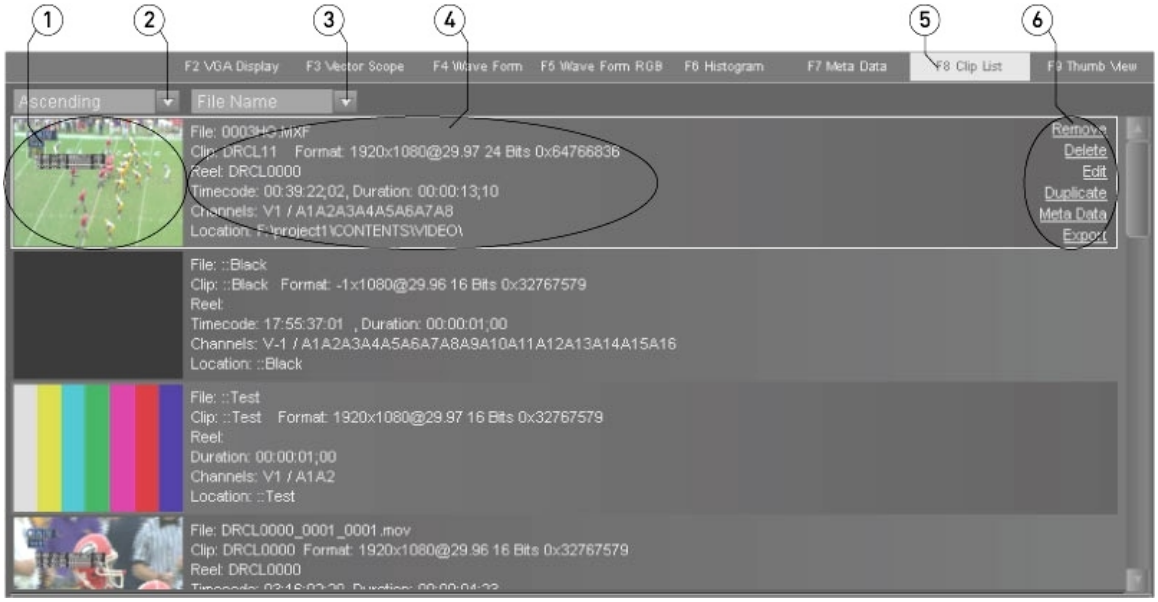
The **Meta Data** view displays meta data associated with selected media, and allows the user to set new meta data values, or to return to default meta data values.



1	**Record** checkbox	Click in the **Record** checkbox to reset metadata elements or to retrieve the default settings for meta data.
2	**Set** button	Press the **Set** button to set any changes to meta data elements into memory.
3	**Get** button	Press the **Get** button to return the meta data elements to their default settings.
4	**Time Line** checkbox	Click in the **Time Line** checkbox to view meta data information for media on the timeline.
5	**Time Line** pulldown menu	Use the **Time Line** pulldown menu to select media from the timeline to view its meta data elements.
6	**Clip** checkbox	Click in the **Clip** checkbox to view meta data information for clips in the **Clip List**.
7	**View** buttons	Each **View** button when clicked displays its labeled view. The **Meta Data** view is selected, and so the button is highlighted. The function keys corresponding to the views are also displayed.
8	**Clip** pulldown menu	Use the **Clip** pulldown menu to select a clip from the **Clip List** to view its meta data elements.
9	**Meta Data** display	Meta data information is displayed in this table.

View - Clip List

From the main menus, select **View|Clip List**. Alternately press the **Clip List** button above the **Clip View** window.

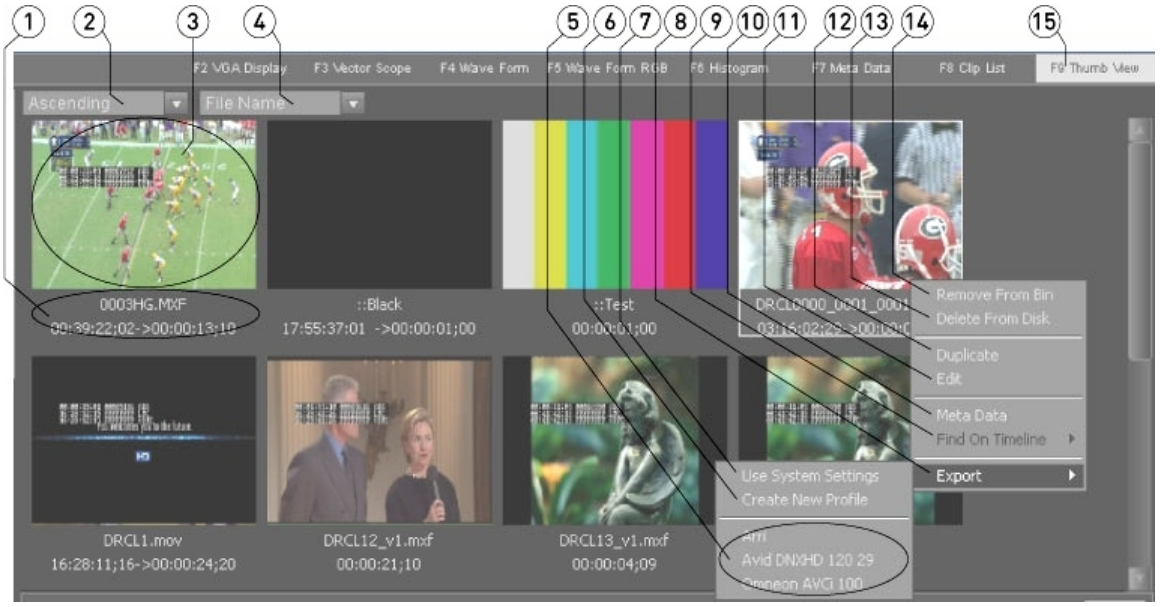


1	**Picon** display	A picon (a picture icon, or reduced size image of one frame of the video) is displayed for each clip in the **Clip List**.
2	**Order** pulldown menu	Provides choices to list the clips in priority of their attribute. **Ascending** - list the clips with the first clip at the bottom of the list and the last clip at the top of the list **Descending** - list the clips with the first clip at the top of the list and the last clip at the bottom of the list
3	**Attribute** pulldown menu	Provides choices to list the clips by a selected attribute. **File name** - list the clips by file name - numbered files first, then in alphabetical order, case-sensitive (capitals first then lower case) **Full Path** - list the clips by their location/path name **Duration** - list the clips by their duration **Size** - list the clips by their file size **Date** - list the clips by their date of creation
4	**Clip Info** display	Displays the following information about the selected clip: **File name** - includes the file extension **Clip Name and format** - the 8 character clip name is displayed, then the video standard and bit depth information **Duration** - the length of the media segment is displayed **Channels** - the channel presets associated with the clip are displayed, V for the video and numbered audio channels (A1, A2...) **Location** - the clip's file path and location information id displayed
5	**View** buttons	Each **View** button when clicked displays its labeled view. The **Clip List** view is selected, and so the button is highlighted. The function keys corresponding to the views are also displayed.
6	**Clip Options**	Displays the following options for the selected clip: **Remove** - remove the selected clip from the **Clip Bin**, but do not delete

	display	the clip from the storage **Delete** - remove the selected clip from the **Clip Bin** and permanently delete, or erase the clip from the storage **Edit** - pressing the **Edit** control loads the clip into an edit box where the user may trim frames from the In or Out point to create a subclip (a virtual subclip - does not actually diminish the file on the storage), and/or rename this instance of the clip **Duplicate** - pressing the **Duplicate** control creates another instance of the selected clip which may be altered, i.e. a subclip (trim the In and/or Out), or renamed version **Meta Data** - pressing the **Meta Data** controls displays meta data associated with the selected clip as an overlay on the **Clip List** **Export** - Press to display choices for exporting the clip: **Use System Settings** - export the clip, using the settings to which the DDR is set. **Create New Profile** - opens the **MediaReactor Profile** window, which allows the user to set up a profile to which the clip will be transcoded during the export process.

View - Thumb View

From the main menus, select **View|Thumb View**. Alternately press the **Thumb View** button above the **Clip View** window.

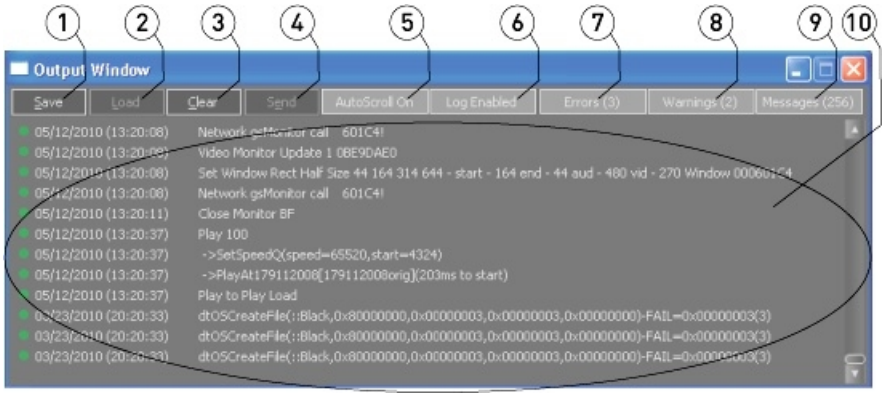


1	**Clip Info** display	The clip's **Name**, **In Point** and **Out Point** are displayed below its picon.
2	**Order** pulldown menu	Provides choices to list the clips in priority of their attribute. **Ascending** - list the clips with the first clip at the bottom of the list and the last clip at the top of the list **Descending** - list the clips with the first clip at the top of the list and the last clip at the bottom of the list
3	**Picon** display	A picon (a picture icon, or reduced size image of one frame of the video) is displayed for each clip in the **Thumb View**.
4	**Attribute** pulldown menu	Provides choices to list the clips by a selected attribute. **File name** - list the clips by file name - numbered files first, then in alphabetical order, case-sensitive (capitals first then lower case) **Full Path** - list the clips by their location/path name **Duration** - list the clips by their duration **Size** - list the clips by their file size **Date** - list the clips by their date of creation
5	**Codec** display	Specific codecs available for export can be selected at the end of the list, as they are integrated outside of the profile setup.
6	**Create New Profile** control	**Create New Profile** - opens the **MediaReactor Profile** window, which allows the user to set up a profile to which the clip will be transcoded during the export process.
7	**Use System Settings** control	**Use System Settings** - export the clip, using the settings to which the DDR is set.

8	**Export** control	Press to display choices for exporting the clip
9	**Find on Timeline** control	Press to display the In Point of the clip on the timeline, if it has been added to the timeline. If the clip has not been added to the timeline, the pullout menu will be empty.
10	**Meta Data** control	Press to display meta data associated with the clip over the **Clip View.**
11	**Edit** control	Loads the clip into the **Open Media** window, which allows the user to alter this instance of the clip in the **Clip Bin**, by either trimming the In and/or Out point to create a subclip, and/or change the clip's name.
12	**Duplicate** control	Loads the clip into the **Open Media** window, which allows the user to create another instance of the clip in the **Clip Bin**, possibly having its duration trimmed, and/or its name changed in the process.
13	**Delete From Disk** control	Press to delete the clip from the **Clip Bin**, and also delete it from the storage drives. It will be gone forever.
14	**Remove From Bin** control	Press to remove the clip from the **Clip Bin**. This option does affect the file on the storage drives.
15	**View** buttons	Each **View** button when clicked displays its labeled view. The **Thumb View** view is selected, and so the button is highlighted. The function keys corresponding to the views are also displayed.

View - Output Window

From the main menus, select **View|Output Window**.



1	**Save** button	Press the **Save** button to save the messages in the **Output Window**.
2	**Load** button	Press the **Load** button to load the contents of a saved **Output Window**.
3	**Clear** button	Press the **Clear** button to empty the **Output Window** of any messages.
4	**Send** button	Press the **Send** button to send the current **Output Window** information as an email.
5	**AutoScroll On** button	The **AutoScroll** button when selected automatically scrolls the output message list to display information about specific DDR related events as they arrive in the list.
6	**Log Enabled** button	The **Log Enabled** button functions as an on/off toggle for the display of the log messages displayed in the **Output Window**.
7	**Errors** button	The **Error** button functions as an on/off toggle for the display of any error messages in the **Output Window**.
8	**Warnings** button	The **Warnings** button functions as an on/off toggle for the display of any important warning messages in the **Output Window**.
9	**Messages** button	The **Messages** button functions as an on/off toggle for the display of various non-critical messages in the **Output Window**.
10	**Output Log** list	The list of DDR-related events is displayed in this area. The list includes errors (indicate problems), warnings (not critical but should be noted) and messages (typical behavior the user might possibly want to know about).

Setup

Connecting external equipment is covered in the *Connecting External Equipment* section of this manual. Specific setup tools for configuration are available within this application.

The setup tools within the application provide for a wide range of functionality by enabling differing setups using the same software. These tools can be revealed by pressing the **Setup** tab or via the **Operations** selector in the main menus. Some of the features described below are only available where supported by the hardware and configuration.

Setup – the Config Section

The **Config** section provides access to a number of DDR configuration settings, some of which are duplicated in the **DDRConfig** or **Setup Wizard** utilities.

Select the **Setup** tab and click on the **Config** button. Or, go to the main menus, under **Operation|Setup|Config**. This reveals the **Config** section of the interface, which has a **Channels** tab, and an **Advanced** tab. The most recently selected tab and sub-menu will be displayed, and the user may point and click to access all of the sub-menus available within both tabs.

Note: The range of controls offered will be limited in most cases to the set of capabilities supported by the configuration of the DDR. However there are controls which can be set incorrectly, and this may result in a loss of the DDR functionality. So take care to make only necessary changes to the settings, and to limit the changes to known good values.

Config – Internal Channels Tab

The **Internal Channels** Tab features controls for the internal channel(s), to control a video board or DVI/VGA playback channel in the DDR.

Select the **Setup** tab and click on the **Config** button, or go to the main menus under **Operation|Setup|Config**, and select **Channels**. If the **Advanced** section is displayed, click on the **Channels** tab on the left or **Channels** button on the right. Use the **Channel Type** pulldown menu to select **Internal**.

Select the Channel - Use the **Channel** pulldown menu to select the internal channel to which any changes will apply. In a one channel DDR this will be identified as **Int. 0**.

Video Settings - the upper middle rectangle offers controls for the video input/output type used.

- **Video I/O** - use the **Video I/O** pulldown menu to select between **Serial Digital Single Link**, **Serial Digital + Alpha**, or **Serial Digital Dual Link**.
- **Video Standard** - use the **Video Standard** pulldown menu to select a video standard. Choices may include **NTSC**, **PAL**, **720** and **1080** standards.
- **Conversion Standard** - use the **Conversion Standard** pulldown menu to select the video conversion mode, for monitor output (to SD, to 720, to 1080 or direct).
    - **To SD** - Where the monitor is standard definition, an **NTSC** or **PAL** setting would provide downconverted output of any high definition (720 or 1080) files played out.
    - **To HD** - Where the monitor is high definition, setting the **Conversion Standard** to the appropriate 720 or 1080 setting will provide an upconverted output of any standard definition files played out. The conversion for output does not affect the files on the storage, just the output.

Direct - Where the files and the DDR are set to the same standard and no conversion will be necessary, the user may select **Direct**, and no conversion will be applied.

Output Type - use the **Output Type** pulldown menu to set the analog video output type; choices may include **Component YUV**, **Component RGB** or **Composite**. All outputs are live, so it is not necessary to specify the digital outputs which have dedicated connections. The analog outputs however may overlap in the ports they use to provide cable connections, so the user should select the type they need to specify which signal type will be sent through which connections.

File Type - use the **File Type** pulldown menu to select the file type that will be created during capture.

Compression - use the **Compression** pulldown menu to select between available compression settings for the selected file type.

Bit Depth - use the **Bit Depth** pulldown menu to select between available bit depth settings for the selected file type.

Rate - the **Rate** setting displays the relative quality level produced by changing the **Bit Depth** setting. The slider to the right of the **Rate** display also functions to adjust the **Bit Depth** setting in this mode.

Conversion Type - use the **Conversion Type** pulldown menu to specify the up-, down- or cross-conversion signal mapping strategy to be used, if any.

Audio Settings - the lower middle rectangle offers controls for the audio type used.

Audio Channels - use the **Audio Channels** pulldown menu to set the number of audio channels.

Monitor Pair - use the pulldown menu to specify which pair of audio channels will be provided with the monitor output - choices may include 1-2, 3-4, 5-6 and so on depending on how many audio channels the DDR is set up for.

Audio Container - use the **Audio Container** pulldown menu to set the audio container type.

Audio Source - use the **Audio Source** pulldown menu to set between available audio input types. Choices may include AES/EBU, Embedded, SPDIF.

Audio Bit Depth - use the **Audio Bit Depth** pulldown menu to set the bit depth for the selected audio type.

Directory and System display The rectangle on the right provides a display for the audio and video type, reference and offers a button to confirm or change the record directory.

Record Directory - Pressing the **Record Directory** button opens a browser which allows the user to browse to and select the storage location to record the video/audio/data files onto.

Video Input - information is displayed regarding the video input signal, if detected.

Audio Input - information is displayed regarding the audio input signal, if detected.

Reference (Genlock) - information id displayed regarding the genlock source, if detected. Use the **Reference Source** pulldown menu to set the reference source, or where the DDR will receive genlock from. Choices may include **Input** (use the timing signal in the video input), **Reference Input** (use an external genlock source), and **None** (do not use an external timing reference).

Offset - X and Y fields are provided for the user to set the position of the VGA Display monitor.

The **Advanced** button at the upper right allows you to select the **Advanced** section. You can also select the tab at the left - click on the word **Advanced** (just under the word **Channels**).

Config – External Channels Tab

The **External Channels** Tab features controls for the external channel(s), to control an external VTR.

Select the **Setup** tab and click on the **Config** button, or go to the main menus under **Operation|Setup|Config**, and select **Channels**. If the **Advanced** section is selected, click on the **Channels** tab on the left or **Channels** button on the right. Use the **Channel Type** pulldown menu to select **External**.

Select the Channel - Use the **Channel** pulldown menu to select the external device to which any settings will apply. The first external device will typically be set up as **Ext. 0**. More than one device may be set up. A natural limitation would be the number of serial ports available on the DDR.

Serial Control Port

Port - Use the **Port** pulldown menu to set the COM port through which serial control will be exercised.

Standard - Use the **Standard** pulldown menu to specify the video standard of the external device or select **Auto** (automatic sensing)

Timing Adjustments

Preroll - the preroll is the number of seconds the DDR will roll back prior to starting a pull-in. This may be adjusted to match the VTR's preroll by selecting the text and typing a new number of seconds.

Heads/Tails - the heads/tails setting adds a number of frames prior to the start and after the end of every pull-in edit. This creates a safe (editable) zone of media around the edit. This may be adjusted by selecting the number of frames and typing in a new number.

Protocol

Sony 422 - Check the **Sony 422** checkbox to specify Sony 422 serial protocol

Odetics - Check the **Odetics** checkbox to specify Odetics protocol

Louth/VDCP - Check the **Louth/VDCP** checkbox to specify Louth/VDCP protocol

Config – Advanced Tab – Video Output

The **Advanced** tab provides controls and displays for Video, VGA and General settings.

Click on the **Setup** tab and click on the **Config** button, or go to the main menus under **Operation|Setup|Config**, and select **Channels**. To select the **Advanced** tab (if it is not already selected) - click on the **Advanced** tab on the lower left or **Advanced** toggle button to the right.

Select **Video Output** in the upper pulldown menu. The **Advanced** Tab **Video Output** section features the following application specific controls

Video Hardware

SD Only Cards - Select the **SD Only Cards** checkbox to allow direct capture and playback of SD video types. If the hardware is SD-only, leave the **HD/SD Cards** checkbox unchecked.

HD/SD Cards - Select the **HD/SD Cards** checkbox to allow direct capture and playback of both SD and HD video types. Some SD/HD hardware may require that both the **SD Only Cards** and **HD/SD Cards** checkboxes are checked to ensure all formats work correctly.

Vertical Blanking Interval - to use VITC, confirm that the source video signal is generating/sending VITC time code. Click through the control types in the **Transport Display** to select **VITC**.

Save VBlank - To capture VITC (vertical blanking interval) time code into recorded files, click to select the **Save VBlank** checkbox, otherwise leave it unchecked.

Use VBlank - To display the VITC time code present in recorded files, click to select the **Use VBlank** checkbox, otherwise leave it unchecked.

Lookup Table (LUT) - uses a color lookup table to apply adjustments to the chrominance and luminance of the output.

Enable LUT - To apply a color lookup table to the DDR's output, click to select the **Enable LUT** checkbox, otherwise leave it unchecked.

LUT Linear - To apply a Linear color lookup table to the DDR's output, click to select the **LUT Linear** checkbox, otherwise leave it unchecked. For this to work the **Enable LUT** checkbox will also need to be checked.

Slow Motion Interpolation

Use Field Duplication – use field duplication for slow motion when checked.

Inhibit Record/Play

Play Only – select the **Play Only** checkbox to disable any record functionality for the DDR if present.

Record Only – select the **Record Only** checkbox to disable any playback functionality for the DDR if present. Note that with both **Play Only** and **Record Only** checked, the system will have very few capabilities left as it will not be able to play or record.

Output Channel

Match Output To Clip – select **Match Output to Clip** checkbox to match the video output to current clip settings

Allow Independent Channel Configuration – select **Allow Independent Channel Configuration** to allow separate channels in a multichannel DDR to be set up differently.

Play Delay

Play Delay Frames – use the field to set the number of frames the DDR will delay before entering play mode. This helps fine tune the DDR to provide frame accurate response to connected devices.

The **Channels** button at the upper right allows you to select the **Channels** section. You can also select the tab at the left - click on the word **Channels** (just above the word **Advanced**).

Config – Advanced Tab – VGA Settings

Click on the **Setup** tab and click on the **Config** button, or go to the main menus under **Operation|Setup|Config**, and select **Channels**. To select the **Advanced** tab (if it is not already selected) - click on the **Advanced** tab on the lower left or **Advanced** toggle button to the right.

Select **VGA Settings** in the upper pulldown menu. The **Advanced** Tab **VGA Settings** section features the following application specific controls

Force Overlay On/Off

Force VGA – select the **Force VGA** checkbox to display only VGA/DVI and ignore any video hardware if present.

Disable VGA/DVI Monitoring – select the **Disable VGA/DVI Monitoring** checkbox to turn off VGA/DVI display and route all video output through the video hardware.

DirectX Settings

DirectX Enable – select the **DirectX Enable** checkbox to enable specific YUV/RGB settings for display

RGB Overlay – select **RGB Overlay** to enable RGB Overlay for DirectX

RGB Direct – select **RGB Direct** to enable RGB for DirectX.

YUV Overlay – select **YUV Overlay** to enable YUV Overlay for DirectX
YUV Direct – select **YUV Direct** to enable YUV for DirectX.

Display Frame Rate

Reduce VGA Frame Rate – select the **Reduce VGA Frame Rate** checkbox to activate the pulldown menu. The pulldown menu allows the user to set a reduced number of frames for VGA display as a ratio of frames displayed to frames output. This allows the user to place fewer demands on the DDR during specific resource intensive operations.

Superimpose Time Code - on all video output or VGA only

Superimpose – select the **Superimpose** checkbox to activate the pulldown menu, which allows the user to set the type of time code overlay they will superimpose over the video output of the DDR.

VGA Only – select the **VGA Only** checkbox to superimpose time code only on the VGA display and not on the video output through hardware.

X and Y Position fields – set the position of the **VTR Style** time code over the VGA display. The **Film Style** time code superimposition is fixed and may not be adjusted. Clicking in the fields and editing the X (left to right) and Y (up and down) fields adjusts where the **VTR Style** time code will appear on the screen.

The **Channels** button at the upper right allows you to select the **Channels** section. You can also select the tab at the left - click on the word **Channels** (just above the word **Advanced**).

Config – Advanced Tab – 3D VGA

Click on the **Setup** tab and click on the **Config** button, or go to the main menus under **Operation|Setup|Config**, and select **Channels**. To select the **Advanced** tab (if it is not already selected) - click on the **Advanced** tab on the lower left or **Advanced** toggle button to the right.

Select **3D VGA** in the upper pulldown menu. The **Advanced** Tab **3D VGA** section features the following application specific controls

3D Display Type settings pulldown menu - use the pulldown menu to select between available 3D VGA display settings. Choices may include:

Left Eye Only – displays only the left eye
Right Eye Only - displays only the right eye
Anaglyph Red-Blue - displays an anaglyph image for red/blue glasses
Anaglyph Red-Cyan - displays an anaglyph image for red/cyan glasses
Anaglyph Amber-Blue - displays an anaglyph image for amber/blue glasses
Anaglyph Green-Magenta - displays an anaglyph image for green/magenta glasses.
Interlaced Eyes - displays the streams for the left and right eyes as alternating lines within an interlaced signal. This is used for 3D monitors or projectors when running the VGA output on a second screen
Onion Skin - displays the streams for the left and right eyes overlapped with a 50% dissolve.
Difference - displays the absolute difference between the left and right eye streams
Over Under - displays one eye at half height on top, and the other at half height on the bottom
Side By Side - displays the left and right eye streams side by side within the monitor, each at half width
Seamless Split - displays the left half of the left eye stream and the right half of the right eye stream using a seamless split to allow comparison of the two signals and any vertical or horizontal line
Mirror - displays the right eye and the mirror or invert of the left eye attached together at the center of the display

A-B With Threshold - displays those portions of both left and right eye streams which exceed the threshold

Dissolve - allows the user to set a variable dissolve between the left and right eye

Wipe - allows the user to wipe between the left and right eye streams for signal quality comparison

Invert Eyes checkbox - select this checkbox to switch the left and right eye streams so that the left eye signal goes out through the right eye channel, and vice versa

Flip Right Horizontal checkbox - select this checkbox to reverse the right eye stream along its horizontal axis.

Flip Right Vertical checkbox - select this checkbox to reverse the right eye stream along its vertical axis

Split Vertical checkbox - when using a split, by default it is horizontal. If this is checked, a vertical split will be used instead, where available

3D Wipe Type field - displays the current setting for the type of wipe being used, and allows the user to enter a SMPTE wipe number corresponding to a specific wipe type. Currently supported wipes include: 1, 2, 3, 4, 5, 6, 7, 8, 21, 22, 23, 24, 25, 26, 101

3D Mix Value slider - This is used to adjust the dissolve mix or the wipe transition amount

3D Threshold Value slider - use the slider to adjust the threshold when doing a A-B comparison with threshold

3D Vertical Split slider - use the slider to adjust the setting for the vertical split in seamless split

3D Horizontal Split slider - use the slider to adjust the setting for the horizontal split in seamless split

Grid Type pulldown menu - used to select between no grid, a percentage based grid and a pixel sized grid

Grid Percent field - when the percent grid type is select, this sets the percentage to leave open between grid lines

Grid Horizontal field - when the pixel grid type is selected, this is the number of horizontal pixels from one line to the next

Grid Vertical field - when the pixel grid type is selected, this is the number of vertical pixels from one line to the next

The **Channels** button at the upper right allows you to select the **Channels** section. You can also select the tab at the left - click on the word **Channels** (just above the word **Advanced**).

Setup - Info

The **Info** section displays certain important system settings. Select the **Settings** tab and click on the **Info** button. Or, go to the main menus, under **Operation|Setup|Info**. This reveals the **Info** section of the interface.

The following displays are present:

VVW Type - the **VVW Type** field describes the settings for the type of DDR and video hardware or DVI/VGA if none

Channel Type - the **Channel Type** field describes channel settings for the DDR.
VVW Version - the **VVW Version** field specifies the version of **DDR** software installed.
Total Storage - the **Total Storage** field describes the entire amount of storage present in the selected media drive or drive set.
Storage Free - the **Storage Free** field describes the available amount of space that can be overwritten without deleting files.
Memory - the **Memory** field describes current memory usage.
Video Input - the **Video Input** field describes the video signal seen by the DDR if detected.
Reference Input - the **Reference Input** field describes the timing source the DDR is set to if detected.
Audio Input - the **Audio Input** field describes the audio channels seen by the DDR if detected.

Setup - Licensing

DDR software may be licensed globally using the **License DDR** utility. Notwithstanding, there may be instances where **MediaNXS** is offered as a standalone application. For these installs, it is possible to use the licensing dialog built into **MediaNXS**.

The **Licensing** section of the interface provides information about the current licensing status and allows you to request a new license. To open the licensing dialog, click on the **Setup** tab and select the **Licensing** option. Or, go to the main menus, under **Operation|Setup|License**. This reveals the **Licensing** section of the interface.

MediaNXS must be licensed in order to run without the "D" overlay (and/or cross hairs or other watermarking) on output. Where the software has a valid license, information about the status of the license will be displayed. Where the DDR is unlicensed, the licensing section will display "**No authorization present for MediaNXS**", and offer a licensing dialog. At any time the user may press the **License** button to update the status of their license.

Here is how to update the license status using the licensing dialog:

Fill Out the form
Enter a user name in the **User Name** field.
Enter a valid email address into the **Email Name** field - this is where the license reply will be sent.
Generate a Site Code
Press the **Generate Code** button. This generates a Site Code (a lengthy and random string of alphanumeric characters) in the Site **Code** field.
Send us the Site Code
Copy the **Site Code** (either select it and press Ctrl+C, or press the **Copy** button) to place the code into a file to send to us via email. If this DDR is set up for email you can press the **Send to Drastic** button. This will create a new email to Drastic with the **Site Code** in the body of the email. Include any particular specifications about your workflow or application you think we may need to know about in this email.
Send us the email containing the **Site Code** (this must be sent to: authorization@drastictech.com) .
Input the Site Key
You will receive a reply with a **Site Key** (another string of numbers and letters) matched to the **Site Code** you sent.
Run this licensing dialog and paste the **Site Key** into the field to the right of the **Send to Drastic** button.
Register and Restart
Press the **Register** button.
Restart the DDR after licensing.

This will enable all features provided by the license.

Functions

This section describes the various functions and how to perform them.

Video In

This section describes how to get files into the system:

Input From File

Here is how to select files from local or networked storage for conversion to a specific format. Select the **Input** tab and click on the **From File** button. Or, go to the main menus, under **Operation|Input|From File**. This reveals the **Input From File** section of the interface.

- **Create a list of files to be converted** - press the **Add Files** button. This opens a browser which allows you to find and load the file you want. It will be added to the list with its **File Name**, **Size** and **Full Path** information displayed. Any number of files can be selected and added to the list using this procedure.
- **Target file choices** – the Target file is the file type you are going to create during this conversion. Use the **File Type** pulldown menu to select the file type. Use the **Compression** pulldown menu to select the compression setting for the file. Use the **Bit Depth** pulldown menu to set the bit depth of the file.
- **"Save at" choices** – this is where the files will be saved upon conversion. The current directory is displayed in the field to the right of the **Directory** button. If the converted files should be placed in the same directory as the source files, click to select the **With Source** checkbox. To set another location, make sure the **With Source** button is unchecked and press the **Directory** button (this opens a browser), then browse to select the folder of your choice.
- **Preview a file** - to play a file before it is converted, select it and press the **Preview** button. Playback may not be possible with incompatible file types.
- **Edit the list** - If you decide a file on the list does not need to be converted, select it and press the **Remove** button.
- **Translate** - once all of the choices have been addressed and you are ready to convert the files, press the **Translate** button. The files will be converted one by one. A progress bar arises to the right of the **File List** field, which shows you percentage of completion of each conversion.
- **Terminate** - if you want to stop the conversion procedure at any point, press the **Terminate** button.

Input Record

Here is how to capture media from an incoming video signal using triggered capture control or stop motion (set interval-based) capture control. Select the **Input** tab and click on the **Record** button. Or, go to the main menus, under **Operation|Input|Record**. This reveals the **Record** section of the interface.

Clip Capture Details

- **Use Duration** - to capture a clip of a set length, select the **Use Duration** checkbox, then enter the desired clip length into the time code field to the left of the **Use Duration** checkbox.
- **Clip Naming** – clip naming is designed to be flexible enough for the user to customize each clip name, or to leave clip naming alone and let an automated nomenclature provide clip names. A default clip name is supplied (the default clip naming convention starts at DRCL0000, then DRCL0001 etc.) - and each subsequent clip captured without changing the clip name will automatically increment the numerical suffix of the clip name (upward by single integers from "0000" using the last characters as

placeholders for numbers - if more than 9999 clips are recorded with the same 4 digit suffix, the character immediately preceding the numbers will be dropped to provide a new decimal place for numbering). Alternately the user may input a clip name of their choice of up to 8 characters for each record or for specific batches of recording. Input up to 8 characters for the first one and then the clip name will begin to increment upward with each subsequent record.

Using **Shot** and **Take** in the clip names - where desired the user may integrate shot and take information within the clip names. To enable this feature, confirm that both the **Shot** and **Take** checkboxes are selected. Using the first shot number (by default 0001), each record will cause the take number to advance by one. Once the user is ready to proceed to another shot, they may click on the **Shot +** button to increment the shot number upward by one, and reset the take number to 0001.

Where the Clip is Placed

After the last clip on the time line - select **Add Clip To End** to specify that the captured clip should be placed at the end of the current time line.

At a location you type in - select **Add Clip At Time Code** and enter a time code location to specify that the captured clip should be added to a specified time code location in the time line.

Don't add the clip to the time line - select **Don't add clip** to specify that the captured clip should not be added to the time line, but simply created and stored on the hard drive.

Trigger Capture - **Trigger Capture** assumes the user will start the capture using a trigger such as a control in the GUI, or a keyboard/controller record command.

Start Record - Press the **Press Shift+Q to Record** button to start the recording. Actually pressing the **Shift** key + the **Q** key on the keyboard will work the same way. If you have checked the **Use Duration** checkbox, the capture will automatically stop once the set number of frames has been captured.

Stop Record - If the **Use Duration** checkbox has not been checked, press the **Space to Stop** button to end the capture. Actually pressing the **Space** key on the keyboard will work the same way.

Automated, or Stop Motion Capture - Stop motion capture assumes the user will capture a set number of frames (this is often one frame) at a regular interval, as in a time lapse video or frame by frame animation application.

Time Between Record Starts - Enter a time code length into the **Rec Interval** field - this is how often the system will go into record.

How long it goes into record for - Enter a number of frames into the **Duration** field and click in the **Use Duration** checkbox.

Sequence naming - If the **Auto Increment** field is checked, or selected, the names of the frames captured will follow in numerical sequence. This can be handy if you intend to reconstruct a series of frames as a stream.

Start the Stop Motion Record - Press the **Rec Interval** button. The button changes to **Cancel**, and the DDR should begin performing the records as set up by the user.

Stop the Stop Motion Record - To exit time lapse capture mode, press the **Cancel** button.

If for example the **Duration** field is set to 00:00:00:01 (one frame of video), and the **Rec Interval** field is set to 00:00:10:00 (ten seconds), upon pressing the **Rec Interval** button, every 10 seconds the system would capture one frame of video.

Input Record At

Here is how to capture incoming video at a certain time of day. Confirm that the DDR "system clock" is set correctly. Select the **Input** tab, and click on the **Record At** button. Or, go to the main menus, under **Operation|Input|Record At**. This activates the **Record At** section of the interface.

Clip Capture Details

Use Duration - to capture a clip of a set length, select the **Use Duration** checkbox, then enter the desired clip length into the time code field to the left of the **Use Duration** checkbox.

Clip Naming – clip naming is designed to be flexible enough for the user to customize each clip name, or to leave clip naming alone and let an automated nomenclature provide clip names. A default clip name is supplied (the default clip naming convention starts at DRCL0000, then DRCL0001 etc.) - and each subsequent clip captured without changing the clip name will automatically increment the numerical suffix of the clip name (upward by single integers from "0000" using the last characters as placeholders for numbers - if more than 9999 clips are recorded with the same 4 digit suffix, the character immediately preceding the numbers will be dropped to provide a new decimal place for numbering). Alternately the user may input a clip name of their choice of up to 8 characters for each record or for specific batches of recording. Input up to 8 characters for the first one and then the clip name will begin to increment upward with each subsequent record.

Using **Shot** and **Take** in the clip names - where desired the user may integrate shot and take information within the clip names. To enable this feature, confirm that both the **Shot** and **Take** checkboxes are selected. Using the first shot number (by default 0001), each record will cause the take number to advance by one. Once the user is ready to proceed to another shot, they may click on the **Shot +** button to increment the shot number upward by one, and reset the take number to 0001.

Where the Clip is Placed

After the last clip on the time line - Select **Add Clip To End** to specify that the captured clip should be placed at the end of the current time line.

At a location you type in - Select **Add Clip At Time Code** and enter a time code location to specify that the captured clip should be added to a specified time code location in the time line.

Don't add the clip to the time line - Select **Don't add clip** to specify that the captured clip should not be added to the time line, but simply created and stored on the hard drive.

Time of Day Capture

Start of Capture - Set a time for video capture to start in the **Wait** field. This is accomplished by selecting each of the time code segments (hours, minutes, seconds) and pressing the up or down arrows at the side of this field to adjust them.

End of Capture - Set a time for video capture to stop in the **End Time** field. This is accomplished by selecting each of the time code segments (hours, minutes, seconds) and pressing the up or down arrows at the side of this field to adjust them.

Start Recording - Click in the **Record Enabled** checkbox. The DDR will display a countdown from the present time to the record time, based on the DDR's system clock. Wait until the specified time and video capture will start.

Wait for it - the capture will end at the time of day specified in the **End Time** field, unless interrupted by the operator or some other factor.

In this mode, the DDR will proceed to capture the set amount of video at the specified time of day. Upon completion of each daily capture, the DDR will begin counting down to the next day’s record time.

To stop the process, press the **Stop** button.

Input Batch Capture

Here is how to batch capture media from a VTR under control, using a time code based edit decision list (EDL).

The DDR will need to be set up to control the VTR. Typically an RS-422 port from a PCI card in the DDR, or an adapter connected to a port in the DDR will be attached to the serial control (incoming) port on the VTR via a standard 9 pin serial cable. Specific settings will be available within the **Settings|Channel|External** tab. Full setup controls are offered within the **DDRConfig** application included in the utilities.

The VTR may also need to be set up to operate under control. This may involve selecting a "Slave" mode on the VTR and/or other setting changes.

Confirm that the video output of the VTR is attached to the video input on the DDR, and that all connected devices including the DDR and VTR are properly genlocked.

Select the **Input** tab, and click on the **Batch Capture** button. Or, go to the main menus, under **Operation|Input|Batch Capture**. This activates the **Batch Capture** section of the interface. The current channel display shows: **Ext VTR**. The time code display should now reflect the state of the VTR (if the time code display shows all 8's, VTR control has not been set up properly) and the transport controls should be able to operate the VTR. To see the output of the external device in the VGA display and through the video hardware output, select the **E/E** checkbox.

If an EDL already exists for this pull-in, press the **File** button and select **Open**. Alternately you can right click on the list and select **Open Existing List** from the context menu. This opens a browser which lets you browse for and load the EDL. Otherwise, it is possible to set up an EDL using the "Batch Capture" dialog as below.

Make an Edit - each edit specifies an In and Out point and references a specific tape (Reel). Here is how to make edits.

Reel ID - set the **Reel ID** to an identifier (4 alphanumeric characters or shorter) for the tape you are pulling media from. You can use the default Reel ID supplied or type in a new one. If you intend to use the EDL to pull in media from more than one tape, use a different **Reel ID** for the edits from the second and for each subsequent tape. When the batch capture is performed, each time the **Reel ID** changes in the list, the operator will be prompted to load the new tape.

Set In Point - use the transport controls to control the VTR, and seek to the first frame of the section of media you want to record. Alternately you can enter this time code location into the time code field, and press the **Q In** button. Press the **Set In** button to set this location as the In Point.

Set Out Point - seek to the last frame of the first section, (or go there by time code) and press the **Set Out** button.

Set Timeline In - to set an In point on the time line (where the clips pulled in will be placed on the time line), enter this location into the **Record In** field (to the right of the **Set Rec In** button) and press the **Set Rec In** button.

Rename - If you want a file name that is different from the clip name for one or more items, enter a name into each **File Name** field.

Add Comment - If desired, enter a comment into the **Comment** field for each item.

Preview - To preview this edit, press the **Preview** button.

Add to the List - If everything seems correct, press the **Add** button to add it to the list.

Make More Edits - This is a single correct edit added to the list. More edits may be constructed and added to the EDL using these methods.

Correct an Edit you can change an edit if desired.

Double Click on the Edit - if you notice that an edit in the list is incorrect (maybe the comment is mistyped or the out point is a frame off for example), double click on it to load its parameters back into the dialog.
Revise the Edit - change the parameters that need changing.
Set the Changes - press the **Set** button. This changes the edit in the EDL.

Delete an Edit - where an edit is not needed in the list, it is possible to delete it.
Context Menu - Right click on the edit and select **Delete** from the context menu.

EDL File Options
New File - if you decide that you want to start with an empty list (or clear the current list), press the **File** button and select **New**.
Save File - once the list contains all the edits to be performed, you can save it. Press the **File** button and select **Save**.

Options to Perform the Pull-in
Capture button options - to perform all of the edits in the list press the **Capture** button and select **All**. To perform some of the edits but not all, select them and press the **Capture** button then select **Selection**. To perform one of the edits, select it, press the **Capture** button and select **Single**.
Context menu options - to perform one of the edits in the list, select it, right click on it and select **Capture Single** from the context menu. To perform all the edits in the list, right click on the list and select **Capture All** from the context menu.

Video Output

This section describes how to play, or output files.

The interface features transport controls (play, stop, pause, fast forward etc.) analogous to a home VTR. Real time display of transport status is provided. Above these controls is the Jog/Shuttle transport control bar. Pressing the **Position** button shuttles through various transport controls for quick review, cueing, variable speed playback and display.

Output - Time Line

Here is how to play media using the time line. Select the **Output** tab in the operations section, and click on the **Time Line** button. Or, go to the main menus, under **Operation|Output| Time Line**. This reveals the **Time Line** section of the interface.

The **Timeline** display offers a way to quickly arrange one or more clips for sequential playback, and to view details about each clip on the timeline.

TC Timeline - The top timeline is the **TC Timeline** - it displays all 24 hours of time code space.

The **TC Timeline** contains a slider whose size represents the amount of time code space displayed at the current zoom level. To zoom in (see less of the time line but more detail) press the **+** button. To zoom out (see more of the time line but less detail) press the **-** button. When zoomed out enough (it grows as you zoom out), it becomes gray and may be dragged along to any section of time code space to display that area. When zoomed in enough (it shrinks as you zoom in), it turns into a yellow line.

The left arrow next to the **TC Timeline** selects and displays the previous adjacent section of media (or cues to the beginning if close enough). The right arrow selects and displays the next adjacent section of media (or the last section if close enough to the end).

Display Timeline - The middle timeline is the **Display Timeline**. It shows the section of time code space displayed at this zoom level, and corresponds to the size of the upper bar's slider. There is a slider in the **Display Timeline** to move along what is displayed in the **Clip Timeline**.

Clip Thumb - A thumb of the clip is present on the left lower side of the time line, containing a picon (scaled down frame of the clip), with the In point, out point, position (on the time line), duration and clip name displayed. To display this information for each clip in the time line, use the mouse to cross over, hover near or click on the clip.

Clip Timeline - The lower timeline is the **Clip Timeline.** Each clip you have captured or placed into the time line is displayed graphically as a group of "tracks" represented by colored bars. The top bar of each group represents the video portion of the file, and the lower associated bars represent the audio tracks in the file. When selected (or hovered over), the clip's information is displayed to the left of the time line along with its picon. Each clip may be moved to a different position on the time line by dragging it with the mouse - right is forward, left is back, or reverse. Use the **+** button to zoom in on the time line, and use the **-** button to zoom out.

Cue to any location by double clicking at that point on the lower time line row - this will change where the DDR is cued to. Or, double-click on a clip to load its first frame. Double click on it again to load its last frame.

The **Transport Controls** can be used to play media from any cued location. The DDR's non-linear flexibility allows the user to play in reverse or forward (also fast forward or fast reverse) through the entire Timeline, or to jump forward or backward frame by frame, or by 5 second intervals. **Pause** displays the current frame, and **Stop** provides passthrough signal if present (reverts to **Pause** if not). Where there is no media in the Timeline, the DDR will play black and silence.

Timeline Context Menu

The **Timeline** offers a context menu which allows the user to add or remove clips from the **Timeline**.

Insert choices - right click on a clip to reveal the context menu choices:

Insert Before - To insert a clip before the selected clip, select **Insert Before**. This reveals the choices: **From Disk** or **From Bin**.

Choosing **From Disk** opens a browser which allows you to search your storage for a file to add.

Choosing **From Bin** reveals a list which allows you to select any clip present in the **Clip Bin**.

Once a clip is selected from the disk or from the bin, it is loaded into the **Import Media** dialog box, to allow you to set the parameters of its inclusion. Unless you change the **Timeline In** in the **Import Media** dialog box, the media will be added before the selected clip.

Insert After - To insert a clip after the selected clip, select **Insert After**. This reveals the choices: **From Disk** or **From Bin**.

Choosing **From Disk** opens a browser which allows you to search your storage for a file to add.

Choosing **From Bin** reveals a list which allows you to select any clip present in the **Clip Bin**.

Once a clip is selected from the disk or from the bin, it is loaded into the **Import Media** dialog box, to allow the user to set the parameters of its inclusion. The media will be

added after the selected clip. To change this, the user may edit the **Timeline In** in the **Import Media** dialog box.

Relink File

Relink File – where a file has been moved or renamed on the storage, it may not be found in the location that a list expects it to be, so the media may not be playable. If you find such an instance, select the clip and press **Relink File** to browse to the location of the file and select it. This action revises the path and file name information for the clip so the list has correct references and can play the media.

Relink All - if all of the files within the timeline are no longer in the original location (perhaps they have been moved to another folder for example), the user may select **Relink All**. This opens a browser which allows the user to browse to the new location of each file, and select it. This action revises the path and file name information for each clip so the list has correct references and can play the media.

Export File - to export a file, right click on it and select **Export File**, then select either **Use System Settings** or **Create New Profile**.

Use System Settings – the selected file will be exported, in the format to which the DDR is set.

Create New Profile - this choice opens the **MediaReactor Profile Editor** window, which allows the user to set up a profile for the media file which will be created during the export. Once all the choices have been addressed within the **MediaReactor Profile Editor** the user will need to save the profile. Once the profile has been saved, the user will then be able to right click on a clip in the timeline, and select the saved profile (a list of saved profiles will appear at the bottom of the context menu) to begin the export process.

Edit a Profile - Where a profile exists that is close to what the user wants, but not perfect, the user can right click on a clip, select **Create New Profile**, and select **Load** from the **MediaReactor Profile Editor**. This action opens the desired profile, allowing the user to edit the parameters that need changing, and save the new profile to make it available for selection.

Looping playback

Play Loop – to loop a clip in the **timeline**, select it and right click on it, then select **Play Loop**. The clip will play from start to finish (100% speed) over and over again until interrupted (press stop or pause).

Remove media from the timeline

Remove - to remove a selected clip from the **timeline**, right click on it and press **Remove**.

Remove Ripple - to remove a clip from the **timeline** and pull all subsequent edits in the **Timeline** back the same number of frames as were in the removed clip, right click on the clip and select **Remove Ripple**.

Remove All - to remove all the clips from the **Timeline**, right click on the timeline and select **Remove All**.

Delete From Disk - to remove a clip from the timeline AND erase it from storage (warning - the clip will be permanently gone), right click on a clip and select **Delete From Disk**.

Undo - where an action has taken place that can be undone, a menu item such as **Undo Last** or **Undo Remove** (context-specific) will be placed at the bottom of the context menu list. To undo the action, select this option.

Select Channels

Select Channels - individual channels may be deselected, so that they do not play along with the rest of the clip. This may be useful where the user needs to review what may appear to be an audio glitch or other artifact without the distraction of the rest of the media in the clip. To deselect specific channels, right click on a clip and click to

remove (or add) the check marks which indicate a channel's inclusion. Once the channels have been deselected, they will also disappear from the timeline visually. Deselecting specific channels for playback within a timeline does not affect the original media, it only affects playback of these channels for this instance of the specific clip within the timeline.

Move Audio 1-2

Move Audio 1-2 - internal audio playback (i.e. not through video hardware) monitors channels 1-2 for stereo output by default. The user can choose to monitor a different audio pair by right clicking on a clip, clicking on **Move Audio 1-2**, and select another pair of audio channels to monitor. Audio output through hardware always provides all channels live output, which the user can monitor or not as desired.

Output - Edit Decision List

Here is how to output files using the EDL (Edit Decision List). Select the **Output** tab and click on the **Edit Decision List** button. Or, go to the main menus, under **Operation|Output|Edit Decision List**. This reveals an **Edit Decision List** section of the interface.

Select any clip in the EDL by clicking on it. It will be highlighted and the transport display loads the first frame of the clip into the display in pause mode.

The **Transport Controls** can be used to play media from any cued location. The DDR's non-linear flexibility allows the user to play in reverse or forward (also fast forward or fast reverse) through the entire Timeline, or to jump forward or backward frame by frame, or by 5 second intervals. **Pause** displays the current frame, and **Stop** provides passthrough signal if present (reverts to **Pause** if not). Where there is no media in the Timeline, the DDR will play black and silence.

EDL Context Menu

The **Edit Decision List** (EDL) may be edited by inserting or removing clips. It also offers a context menu which allows you to add or remove clips from the **EDL**. Select the **Output** tab, then the **Edit Decision List** button. Or, go to the main menus, under **Operation|Output| Edit Decision List**. Right click on any clip in the **EDL** to reveal the context menu.

Insert choices - right click on a clip to reveal the context menu choices:

Insert Before - To insert a clip before the selected clip, select **Insert Before**. This reveals the choices: **From Disk** or **From Bin**.

Choosing **From Disk** opens a browser which allows you to search your storage for a file to add.

Choosing **From Bin** reveals a list which allows you to select any clip present in the **Clip Bin**.

Once a clip is selected from the disk or from the bin, it is loaded into the **Import Media** dialog box, to allow you to set the parameters of its inclusion. Unless you change the **Timeline In** in the **Import Media** dialog box, the media will be added before the selected clip.

Insert After - To insert a clip after the selected clip, select **Insert After**. This reveals the choices: **From Disk** or **From Bin**.

Choosing **From Disk** opens a browser which allows you to search your storage for a file to add.

Choosing **From Bin** reveals a list which allows you to select any clip present in the **Clip Bin**.

Once a clip is selected from the disk or from the bin, it is loaded into the **Import Media** dialog box, to allow the user to set the parameters of its inclusion. The media will be

added after the selected clip. To change this, the user may edit the **Timeline In** in the **Import Media** dialog box.

Relink File

Relink File – where a file has been moved or renamed on the storage, it may not be found in the location that a list expects it to be, and the media may not be playable. Press **Relink File** to browse to the location of the file and select it. This action revises the path and file name information for the clip so the list has correct references and can play the media.

Relink All - if all of the files within the timeline are no longer in the original location (perhaps they have been moved to another folder for example), the user may select Relink All. This opens a browser which allows the user to browse to the new location of each file, and select it. This action revises the path and file name information for each clip so the list has correct references and can play the media.

Export File - to export a file, right click on it and select **Export File**, then select either **Use System Settings** or **Create New Profile**.

Use System Settings – the selected file will be exported, in the format to which the DDR is set.

Create New Profile - this choice opens the **MediaReactor Profile Editor** window, which allows the user to set up a profile for the media file which will be created during the export. Once all the choices have been addressed within the **MediaReactor Profile Editor** the user will need to save the profile. Once the profile has been saved, the user will then be able to right click on a clip in the timeline, and select the saved profile (a list of saved profiles will appear at the bottom of the context menu) to begin the export process.

Edit a Profile - Where a profile exists that is close to what the user wants, but not perfect, the user can right click on a clip, select **Create New Profile**, and select **Load** from the **MediaReactor Profile Editor**. This action opens the desired profile, allowing the user to edit the parameters that need changing, and save the new profile to make it available for selection.

Looping playback

Play Loop – to loop a clip in the **timeline**, select it and right click on it, then select **Play Loop**. The clip will play from start to finish (100% speed) over and over again until interrupted (press stop or pause).

Remove media choices

Remove - to remove a selected clip from the **timeline**, select it and press **Remove**.

Remove Ripple - to remove a clip from the **timeline** and pull all subsequent edits in the **Timeline** back the same number of frames as were in the removed clip, select **Remove Ripple**.

Remove All - to remove all the clips from the **Timeline**, select **Remove All**.

Delete From Disk - to remove a clip from the timeline AND erase it from storage (warning - the clip will be permanently gone), right click on a clip and select **Delete From Disk**.

Undo - where an action has taken place that can be undone, a menu item such as **Undo Last** or **Undo Remove** (context-specific) will be placed at the bottom of the context menu list. To undo the action, select this option.

Channel Presets Window

The user may double click on the channel presets field (displayed in the **EDIT** column of the EDL) to open the **Channel Presets** window.

Channels

Video – typically there will be one video channel associated with a clip. It is possible to set up a DDR to play back linked files for stereo or greater output - in these cases multiple checkboxes for video may be present, but they should remain selected. If in these cases the user requires single channel playback it may be prudent to close MediaNXS, open DDRConfig and reset the DDR back to a single channel.

Audio - typically there will be between two and sixteen audio channels associated with a clip. It is possible to deselect all of the audio channels by deselecting the **All Audio** checkbox. If the **All Audio** checkbox is selected, it will then be possible to deselect or select individual audio channels. Deselected audio channels will not be played out when the clip is played.

Close - click on the **x** in the right corner of this window to close it and accept any changes made.

Output – Insert Media to Timeline

Once you have selected **Insert After** or **Insert Before** from the context menu, the media is loaded into the **Import Media** window.

Position on the time line - to add the selected media to the timeline or EDL, confirm that the **Add to Time Line** checkbox is selected. The current selected position (before or after the selected media segment or clip) is loaded into the **Position** field, but may be edited here.

Edit the length of the clip you are going to add - the **Start** and **End** times of the clip are displayed, but may be trimmed (new In point greater than 00:00:00:00, and/or new Out point less than the current Out point) to add only a portion of a clip.

Rename the clip - the clip name is displayed, but may be edited to help keep track of sub-clips (for example). Select the existing name, backspace and type in a new name.

Change the file type during import - the clip may be transcoded to another file type during the Import Media process. Check the **Convert Media** checkbox to enable conversion.

Convert to current system settings - to convert the selected file to the current DDR settings, click to select the **System Settings** checkbox.

Convert to a different file type and/or format

System Settings - to create another file type during the import process, confirm that the **System Settings** checkbox is not selected.

File Type - use the **File Type** pulldown menu to select the file type.

Compression - use the **Compression** pulldown menu to set the compression for the selected file type.

Bit Depth - use the **Bit Depth** pulldown menu to set the bit depth for the selected file type.

Once all the choices are correctly entered, press the **Import** button to insert the media as specified, or press the **Cancel** button to exit this procedure without inserting any media.

Output - VTR Out

Here is how to record files onto an external VTR using the **VTR Out** mode. Select the **Output** tab, and select the **VTR Out** button. Or, go to the main menus, under **Operation|Output| VTR Out**. This reveals a **VTR Out** section of the interface.

In **VTR Out** mode, the DDR controls an external VTR to make it record cooperatively while a portion of the timeline is played out. This is sometimes referred to as a "layback", in that media is laid back from the DDR to the VTR.

Place the edit tape (the one upon which you want to record) into the VTR.

Confirm control over the external VTR - there are a number of quick tests you can use to confirm whether control has been established over the external VTR.

Time Code Display - where control over an external VTR has been established, upon selecting **VTR Out** mode the **Transport Display** should show time code and other information from the external VTR.

Play the VTR Media - pressing **Play** should cause the VTR to go into play mode.

Cue to a Location - entering a time code into the time code field and pressing the **Go To** button should cause the VTR to cue to a specific location on its tape.

Edit clips onto the time line

Get the Timeline Ready - set up the time line to contain the media you would like to lay back to the external VTR. See the *Timeline Output* section for more information about adding media to (or removing media from) the timeline.

Set In and Out points for the media on the time line

Set In Point - Enter the time code location of the first frame of the media into the In Point field. If this location is the first frame of a clip on the time line, you can double click on the clip to toggle between cueing the first frame and cueing the last frame. Or you can enter a known location into the Go To time code field and press the **Go To** button. It is possible to roughly cue to a location on the time line by double clicking on the **Clip Time Line**. Press the **Set In Point** button.

Set Out Point - Enter the time code location of the last frame of the media you want to be recorded onto the VTR into the **Out Point** field. Or, cue to this frame, press the **Set Out Point** button.

Set the In Point on the external VTR

Cue Up an In Point - use the **Transport Controls** to operate the external VTR to cue up the point on the tape at which you would like to start recording the media from the DDR. Press the **Set VTR In** button.

Confirm the layback using Preview

Preview - to preview the media being laid back, press the **Preview** button.

Choose between Insert and Assemble Edit modes

Assemble Edit - To perform an assemble edit (replace all tracks including the control track within the destination time code locations) select **Assemble** from the pulldown menu.

Insert Edit - To perform an insert edit (replace specific audio or video tracks within the destination time code locations but leave the control track intact) select **Insert** from the pulldown menu. To choose which tracks will be laid back to the external VTR, click on their channel preset buttons to toggle them on or off. Depending on the display scheme the colors may vary but selected buttons will be "active" (typically will look lit up) and deselected buttons will be "inactive" (typically will appear unlit).

Once all the parameters are correctly set, press the **Start** button to begin the layback. Where a number of clips have been laid end to end they will be output as a single stream of frames to the VTR. Where there is space in between clips, black and silence will be laid back to the external VTR.

Output - VTR Out Context Menu

The **VTR Out** list may be edited before laying media back to the external device. Select the **Output** tab, and select the **VTR Out** button. Or, go to the main menus, under **Operation| Output|VTR Out**. This reveals a **VTR Out** section of the interface.

Right click on a clip in the **VTR Out** list to reveal the context menu.

Insert choices - right click on a clip to reveal the context menu choices:

Insert Before - To insert a clip before the selected clip, select **Insert Before**. This reveals the choices: **From Disk** or **From Bin**.

Choosing **From Disk** opens a browser which allows you to search your storage for a file to add.

Choosing **From Bin** reveals a list which allows you to select any clip present in the **Clip Bin**.

Once a clip is selected from the disk or from the bin, it is loaded into the **Import Media** dialog box, to allow you to set the parameters of its inclusion. Unless you change the **Timeline In** in the **Import Media** dialog box, the media will be added before the selected clip.

Insert After - To insert a clip after the selected clip, select **Insert After**. This reveals the choices: **From Disk** or **From Bin**.

Choosing **From Disk** opens a browser which allows you to search your storage for a file to add.

Choosing **From Bin** reveals a list which allows you to select any clip present in the **Clip Bin**.

Once a clip is selected from the disk or from the bin, it is loaded into the **Import Media** dialog box, to allow the user to set the parameters of its inclusion. The media will be added after the selected clip. To change this, the user may edit the **Timeline In** in the **Import Media** dialog box.

Relink File

Relink File – where a file has been moved or renamed on the storage, it may not be found in the location that a list expects it to be, and the media may not be playable. Press **Relink File** to browse to the location of the file and select it. This action revises the path and file name information for the clip so the list has correct references and can play the media.

Relink All - if all of the files within the timeline are no longer in the original location (perhaps they have been moved to another folder for example), the user may select **Relink All**. This opens a browser which allows the user to browse to the new location of each file, and select it. This action revises the path and file name information for each clip so the list has correct references and can play the media.

Looping playback

Play Loop – to loop a clip in the **timeline**, select it and right click on it, then select **Play Loop**. The clip will play from start to finish (100% speed) over and over again until interrupted (press stop or pause).

Remove media choices

Remove - to remove a selected clip from the **timeline**, select it and press **Remove**.

Remove Ripple - to remove a clip from the **timeline** and pull all subsequent edits in the **Timeline** back the same number of frames as were in the removed clip, select **Remove Ripple**.

Remove All - to remove all the clips from the **Timeline**, select **Remove All**.

Delete From Disk - to remove a clip from the timeline AND erase it from storage (warning - the clip will be permanently gone), right click on a clip and select **Delete From Disk**.

Undo - where an action has taken place that can be undone, a menu item such as **Undo Last** or **Undo Remove** (context-specific) will be placed at the bottom of the context menu list. To undo the action, select this option.

Select Channels

Select Channels - individual channels may be deselected, so that they do not play along with the rest of the clip. This may be useful where the user needs to review what may appear to be an audio glitch or other artifact without the distraction of the rest of the media in the clip. To deselect specific channels, right click on a clip and click to remove (or add) the check marks which indicate a channel's inclusion. Once the channels have been deselected, they will also disappear from the timeline visually. Deselecting specific channels for playback within a timeline does not affect the original media, it only affects playback of these channels for this instance of the specific clip within the timeline.

Move Audio 1-2

Move Audio 1-2 - internal audio playback (i.e. not through video hardware) monitors channels 1-2 for stereo output by default. The user can choose to monitor a different audio pair by right clicking on a clip, clicking on **Move Audio 1-2**, and select another pair of audio channels to monitor. Audio output through hardware always provides all channels live output, which the user can monitor or not as desired.

Output - To File

Here is how to output media on the timeline to a specified file type using the **To File** mode. Select the **Output** tab, and click on the **To File** button. Or, go to the main menus, under **Operation|Output|To File**. This reveals a **To File** section of the interface.

The **Time Line** is loaded into the **Transport Displays**. **The Transport Controls** can now play media from the **Time Line**. Here is how to set up converting selected media on the timeline to a specific file type.

Set the target file type

Press the **Select Profile** button - it functions as a pulldown menu to reveal a choice between **Use System Settings** (convert the selected media from the timeline into a single file), **Create New Profile** (open the **MediaReactor Profile Editor** and set up a new profile), and where a profile has been set up, it will appear in the pulldown menu after the two above choices, available for selection.

Cue to and Set the In location

Use the transport controls to cue the first frame of media to be converted (it doesn't necessarily have to be 00:00:00:00 though this is one way you could organize the time line), or enter a time code location into the time code field to the right of the **Transport Controls**, and press the **Go** button to cue up a specific frame.

Press the **Set** button to the right of the **In Point** field to set then cued location as the In Point.

Cue to and Set the Out location

Use the transport controls to cue to the last frame of media to be converted. Press the **Set** button to the right of the **Out Point** field to set this location as the Out Point. Alternately type an out point time code location into the time code field to the right of the **Set Out Point** button, and press the **Set Out Point** button.

Convert the selected media

To convert the media within the selected area of time code space to the file type selected, press the **Translate** button.

A progress meter will arise to the left of the pulldown menus, showing the percentage of completion. Once complete, the files will become available in the directory you set. They should function identically to files generated on hardware which uses the file type as native.

Terminate the conversion

If for any reason you need to cancel this operation while it is in progress, press the **Terminate** button.

Signal Display and Analysis Tools

This section describes the various views. Clips may be displayed during playback/passthrough via the on-screen **VGA Display**. The signal may also be reviewed using the on-board **Vector Scope**, **Wave Form Monitor** or **Histogram**.

View - VGA Display

The output of the system can be viewed using the on-screen **VGA Display**. Click on the **VGA Display** button to invoke the **VGA Display** view. Alternately, go to the main menus, click on **View**, and select **VGA Display**.

Clips played, cued, being recorded or shown in passthrough will be displayed here. The proportional size of the **VGA Display** window within the GUI varies depending on the source media and any up-, down- or cross-conversions being applied, and may be scaled down if the interface is not "maximized".

Mouse "Drag and Scroll" – Click with the mouse on the frame of video in the window and "drag" to the right to shuttle forward through the clip. Click and "drag" to the left to shuttle backward through the clip.

Mouse "Click to toggle play" - Double click the VGA Display screen with the mouse to start playback, or go into **Pause** if already in **Play**.

View - Vector Scope

The output of the system can be viewed using the built in **Vector Scope**. Click on the **Vector Scope** button to invoke the **Vector Scope** view. Alternately, use the main menus, under **View**, to select **Vector Scope**.

A virtual vector scope is displayed as above to assist in signal review and analysis. The **Luma Stick** shows the distribution of luminance within the signal and is displayed in the middle. The signal being analyzed is displayed on the right (scaled down) to confirm the correct signal.

This vector scope and its accompanying VGA monitor are real time and will display vector scope information and the video stream while media is playing.

Mouse "Drag and Scroll" – Click with the mouse on the frame of video in the window and "drag" to the right to shuttle forward through the clip. Click and "drag" to the left to shuttle backward through the clip.

Mouse "Click to toggle play" - Double click the VGA Display screen with the mouse to start playback, or go into **Pause** if already in **Play**.

View - Wave Form Monitor

The output of the system can be viewed using the built in **Wave Form Monitor**. Click on the **Wave Form Monitor** button to invoke the **Wave Form Monitor** view. Alternately, go to the main menus, click on **View**, and select **Wave Form**.

A virtual wave form monitor is displayed as above. Three views are displayed - Y, Cb and Cr. A scaled down version of the Y (luma) portion of the signal is displayed.

This wave form monitor and its accompanying VGA monitor are real time and will display wave from monitor information and the video stream while media is playing.

Mouse "Drag and Scroll" – Click with the mouse on the frame of video in the window and "drag" to the right to shuttle forward through the clip. Click and "drag" to the left to shuttle backward through the clip.

Mouse "Click to toggle play" - Double click the VGA Display screen with the mouse to start playback, or go into **Pause** if already in **Play**.

View - Wave Form RGB Monitor

The output of the system can be viewed using the built in **Wave Form RGB Monitor**. Click on the **Wave Form RGB** button to invoke the **Wave Form RGB Monitor** view. Alternately, go to the main menus, click on **View**, and select **Wave Form RGB**.

A virtual wave form monitor is displayed as above. Three views are displayed - R, G and B. A scaled down version of the signal is displayed.

This RGB wave form monitor and its accompanying VGA monitor are real time and will display RGB wave form monitor information and the video stream while media is playing.

Mouse "Drag and Scroll" – Click with the mouse on the frame of video in the window and "drag" to the right to shuttle forward through the clip. Click and "drag" to the left to shuttle backward through the clip.

Mouse "Click to toggle play" - Double click the VGA Display screen with the mouse to start playback, or go into **Pause** if already in **Play**.

View - Histogram

The output of the system can be viewed using the built in the **Histogram** view. Click on the **Histogram** button to invoke the **Histogram** view. Alternately, go to the main menus, click on **View**, and select **Histogram**.

A histogram is displayed as above showing the distributed frequencies of the red, blue and green portions of the spectrum. Three views are displayed - one for each of R, G and B. A scaled down version of the signal is displayed.

This Histogram and its accompanying VGA monitor are real time and will display histogram information and the video stream while media is playing.

Mouse "Drag and Scroll" – Click with the mouse on the frame of video in the window and "drag" to the right to shuttle forward through the clip. Click and "drag" to the left to shuttle backward through the clip.

Mouse "Click to toggle play" - Double click the VGA Display screen with the mouse to start playback, or go into **Pause** if already in **Play**.

Meta Data

View - Meta Data

Meta data may be viewed in association with a clip or to view or change system meta data settings. Meta data elements can be viewed and set in the **Meta Data** view. Click on the **Meta**

Data button to invoke the **Meta Data** view. Alternately, go to the main menus, click on **View**, and select **Meta Data**.

A list of meta data elements is displayed, the contents of which vary depending on the mode selected.

Record Meta Data - with the **Record** checkbox selected, the **Set** and **Get** buttons become active. Selecting **Set** allows the user to set meta data elements for media captured on the system. Selecting **Get** returns each meta data element to its default setting.

View Timeline Meta Data - with the **Time Line** checkbox selected, the **Time Line** pulldown menu becomes active and the user may select any of the clips currently in the **Time Line**. Use the pulldown menu to select a clip and the selected clip's meta data will be displayed in the list.

View Clip Meta Data - with the **Clip** checkbox selected, the **Clip List** pulldown menu becomes active and the user may select any of the clips currently in the **Clip List**. Use the pulldown menu to select a clip and the selected clip's meta data will be displayed in the list.

Clip Access

A list of clips may be viewed in either **Clip List** or **Thumb View** views. Click on a clip in either of these views to select it. Once a clip is selected, pressing the **Play** button will play it out through video hardware, whether the **VGA Display** is up or not. The user may edit the contents of either list directly, through point and click maneuvers in the **Clip View**, or the context (right click) menu in the **Thumb View**.

View - Clip List

The contents of the current clip list can be viewed in the **Clip List** view. Click on the **Clip List** button to invoke the **Clip List** view. Alternately, go to the main menus, click on **View**, and select **Clip List**.

The **Clip List** contains information about each of the clips that have been captured into or added to the list. Each clip occupies a row. For each clip, there is a picon, the clip name, its Reel ID (if present), clip duration, the channel presets (audio and video channels associated with each clip) and the file's location.

To view the options for a clip, select it. A selected clip will display its context options as links on the right of the clip – they are as follows:

Remove - to remove a clip from the list, select **Remove**. This choice takes the clip out of the **Clip List**, but leaves the file on the disk.

Delete- to permanently delete a clip, select **Delete**. This choice takes the clip out of the **Clip List**, and as well permanently deletes the clip from the disk - make sure this choice is intentional because the clip will become permanently unavailable.

Edit - to edit the length of the clip, select **Edit**. This choice does not create another instance of the clip in the **Clip List.** Selecting **Edit** loads the clip into the following **Clip Edit** dialog box, where the user can edit the clip parameters.

Duplicate - to create a duplicate copy of the selected clip (often to trim the in and out points to create a sub-clip), select **Duplicate**. This choice loads the clip into an **Open Media** dialog box, where the user can edit the clip's details, such as its name, the In and Out points, and its position on the timeline. A second copy of the same clip will show up in the **Clip List** with the new details.

Meta data - to view any meta data associated with the clip, select **Meta data**. This choice displays a list of meta data elements for the selected clip over the **Clip List**. Meta data displayed includes over 100 elements - each clip may not have a value

associated with each category of meta data. You may be able to set specific meta data elements using the **Meta Data** window, which will apply to subsequent clip captures.

Export - Press the **Export** link - it functions as a pulldown menu to reveal a choice between **Use System Settings** (convert the selected media from the timeline into a single file), **Create New Profile** (open the **MediaReactor Profile Editor** and set up a new profile), and where a profile has been set up, it will appear in the pulldown menu after the two above choices, available for selection.

View - Thumb View

The contents of the clip list can be viewed in the **Thumb View** view. Click on the **Thumb View** button to invoke the **Thumb View** view. Alternately, go to the main menus, click on **View**, and select **Thumb View**.

The **Thumb View** contains information about each of the clips that have been captured into or added to the list. For each clip, there is a picon, the clip name, the start time code and the clip's duration.

View - Thumb Context Menu

Each clip in the **Thumb View** view may be edited or removed from the list. Click on the **Thumb View** button to invoke the **Thumb View** view. Alternately, go to the main menus, click on **View**, and select **Thumb View**.

Right click on a clip to view the choices in the context menu.

Remove From bin - takes the clip out of the **Clip List**, but leaves the file on the disk.

Delete From Disk - takes the clip out of the **Clip List**, and as well permanently deletes the clip from the disk - make sure this choice is intentional because the clip will become permanently unavailable.

Duplicate - loads the clip into an **Open Media** dialog box, where the user can trim the clip and set a new In Point on the timeline. A second copy of the same clip will show up in the **Thumbs View**.

Edit - loads the clip into an **Open Media** dialog box, where the user can edit the clip parameters. This choice does not create another instance of the clip in the **Thumbs View**.

Meta Data - displays the clip’s meta data over the **Clip List**. Meta data displayed includes over 100 elements - each clip may not have a value associated with each category of meta data.

Find On Timeline - this displays the selected clip's location on the timeline if the clip has been placed on the timeline.

Export - Press the **Export** link - it functions as a pulldown menu to reveal a choice between **Use System Settings** (convert the selected media from the timeline into a single file), **Create New Profile** (open the **MediaReactor Profile Editor** and set up a new profile), and where a profile has been set up, it will appear in the pulldown menu after the two above choices, available for selection.

System Activity List

View - Output Window

Errors, **Warnings** and **Messages** are automatically recorded and can be viewed in the **Output Window**. Go to the main menus, click on the **View** pulldown menu and select **Output Window**. This opens the **Output Window**.

Typical information displayed relates to add clip events, conversions, recordings made and so on. Where an action or process has encountered errors, it may be useful to view the **Output Window** to gain more information.

The three buttons on the right function as on/off toggles for display of categories of information. The **Errors** button displays/hides error entries. Errors are important and indicate serious problems. The **Warnings** button displays/hides warning entries. Warnings may be useful to know about, but do not usually indicate serious issues. The **Messages** button displays/hides message entries. Messages are simple notifications of events as they occur.

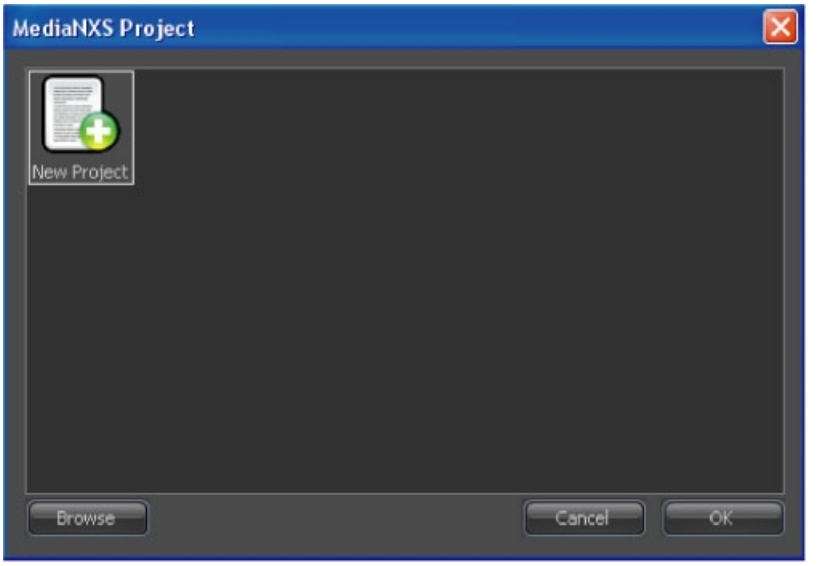
Save - to save the information contained in the **Output Window** for later review, press the **Save** button.
Load - to load a saved file, press the **Load** button. This opens a browser which enables the user to find the saved file and open it.
Clear - to clear the list, press the **Clear** button.
Send - to send this information via email, press the **Send** button. For this to work, the DDR would need to be set up with email capabilities.

Media List Management

Project Files

MediaNXS maintains a **Project** file with settings, clip and timeline information pertinent to the operation being performed. The user may create a **New Project**, **Open** an existing **Project** or **Save** an open **Project**. The **Project** feature allows users to specify custom pools of media on a per-project basis.

When the software is run, the user will be prompted to open an existing project file or create a new project file. The project file provides the application with a number of settings (for example the file format and video standard), and the clip (media) list for the project.



The user can either select the **New Project** icon displayed, or an existing project if there is one. Pressing the **Browse** button or selecting the **New Project** icon opens a browser which allows the user to set a name and location for a new project (or select an existing project from an alternate location than the default folder).

New Project

The application maintains all changes to the current project file automatically, so the user will not have to save every so often to make sure changes are not lost.

Once the application is running the user may still open an existing or create a new project without reopening **MediaNXS**.

In the main menu, under **File**, select **New Project**. This opens the **Save As** dialog box, with the Drastic Config File (*.dt) file type in the **Save as Type** field. It is also possible to select XML (*.xml) file types using this pulldown menu.

To save the current project file in an alternate location (or rename), go to the main menus and select **File|Save Project**. To create another project file with the same parameters as the current one, select **Save Project As**. Use the dialog box which arises to save the file in the location and with the new name of your choice.

Existing Projects

To open an existing (saved) project file, go to the main menus and select **Open Project**. This opens an **Open** dialog box with the Drastic Config File (*.dt) file type in the **Files of Type** field. It is also possible to select XML (*.xml) file types using this pulldown menu.

Import

In the main menus, under **File|Import**, there are options for importing media onto the system. The **Import** operation can add network-accessible media files to the clip list or timeline/EDL, and provides the option to change the file type during the import, in order to make them available for real time playback.

The **Import** process allows the user to browse for existing media to add to the **Clip List** or timeline for the DDR. Select **File|Import|Media** to invoke the **Open** dialog. The **Files of Type** field offers a pulldown menu to restrict the search to specific file types.

Import Media Dialog: Once the file has been selected, pressing **Open** loads it into the **Import Media** window. A picon of the clip and specific file information is displayed so the user may confirm the veracity of their choice.

Timeline insertion: to add the media to the timeline, Click in the **Add to Timeline** checkbox. This activates the **Position** field. Enter into the **Position** field the location on the **Timeline** where the clip should be inserted. Otherwise leave the **Add to Time Line** checkbox unchecked, and the media will not be added to the timeline.

Single Frame - to import a single frame, click to select the **Single** checkbox. Otherwise, leave this checkbox unselected.

Sub-clip: The **Start** and **End** points of the clip may be edited to add only a portion of the clip. To trim frames off the beginning, click in the **Start** time code field and enter a time code location (greater than zero, less than the out point). To trim frames off the end, click in the **End** time code field and enter a time code location (less than the current out point but greater than the current/edited in point). To add the whole clip (and not a portion) leave the time codes of the **Start** and **End** points as they are.

File Conversion: to convert the media to another file type, click to select the **Convert** checkbox. This activates the **Convert** section. To convert the media to the file type to which the DDR is currently set, keep the **System Settings** checkbox checked. To convert the file to a different file type, uncheck the **System Settings** checkbox. This activates conversion options other than the settings the DDR is currently using. This activates the **File Type**, **Compression** and **Bit Depth** pulldown menus. Use the pulldown menus to set the **File Type**, **Compression** and **Bit Depth** for the file type you wish to create. Otherwise, leave the **Convert** checkbox unchecked and the file will not be converted during the **Import** process.

Picon - the picon is a (typically smaller and lower resolution) frame of video generated from a specific frame of video within the clip. It appears on a clip in the timeline, in the clip bin, and in other places to help the user clearly identify which clip they are looking at. The time code location of the frame of video used to generate the current picon is displayed within the **Picon** field. To use a different frame, edit the time code location in this field to match the frame of video you want the new picon to be generated from. The imported clip will use the new picon.

Press the **Import** button to import the clip, or **Cancel** to exit the operation without importing the clip.

File|Import|Batch Capture EDL allows the user to open an EDL to use for a batch capture.

File|Import|Time Line EDL allows the user to browse for and open an existing time line EDL to replace the current time line.

File|Import|Merge Time Line allows the user to import media from the time line as a merged clip.

Export

In the main menus, under **File|Export**, there are options for exporting the time line as an EDL.

To export the time line, select **File|Export|Time Line As**. This opens a browser which allows the user to save the time line with the name and in the location of their choice. Use the **Save As Type** pulldown menu to select the correct EDL type for the application. Supported types include:

CMX 340, 3400, 3600 EDLs (*.edl)
Grass Valley EDL (*.edl)
Sony 9100 EDL (*.edl)
Avid Log Exchange (*.ale, *.alg)
Avid EDL (*.edl)
Final Cut Pro EDL (*.edl)
Flex Format (*.flx)
PlayLists and Logs (*.ply, *.log)
Text Format (*.txt)
EDL and Time Code Space (*.edl, *.tcs)

Press the **Save** button to save the Time Line EDL as specified or press **Cancel** to exit the operation without saving a file.

Recent

In the main menus, under **File|Recent**, there is a list of recent timeline EDLs. To load one of the recent EDLs, use the main menus to select it.

Exit

In the main menus, select **File|Exit** to close the application. Or, click on the **X** in the upper right hand corner. Or, right click on the **MediaNXS** icon in the **Status Bar**, and select **Close** from the context menu.

QuickClipXO

User Guide

Introduction

QuickClipXO can be used for digital video capture, conversion, control and playback. It allows a user to operate a computer (the DDR) as a video capture and playback device, and to operate under serial protocol and control external VTRs as would a production VTR.

QuickClipXO may be used locally to control the DDR upon which it is installed, or remotely to control a DDR on the network.

To run this application click on the following: **Start|Programs|<install directory>| QuickClipXO**.

Features

Mode Selection

There are three main modes of operation:

Clip Mode treats media segments as a series of discrete clips, each having their own time code unrelated to other clips (other than being in the same list) or a timeline as such. In **Clip Mode**, recorded video shows up as a clip in the **Clip View** list. It has an **In Point** of 00:00:00:00 and its duration for an **Out Point**. The user may trim clip durations or create multiple sub-clips without any alteration to or duplication of the original media. Multiple **Clip Mode** lists may be used to access the same, overlapping or completely different pools of media based on workflow requirements.
Clip Mode may be enabled by clicking on the **Clip** button.

Film Mode treats media segments as a series of single frames of video associated with a virtual timeline. This timeline is based on a series of folders whose structure allows for an exclusive number of sequentially numbered files, each being a single frame of video. Therefore **Film Mode** is completely destructive, in that frames of video that are recorded over are also deleted from the hard drive, essentially being replaced by the new frame. Multiple **Film Mode** lists may be used to access the same, overlapping or completely different pools of media based on workflow requirements.
Film Mode may be enabled by selecting the **Clip** button and clicking on the **::Film** clip in the **Clip Bin**. If there is no **::Film** clip in the Clip Bin, this means that a **Film Space** has not been set up. To set up a **Film Space**, the user can run the **Drastic Setup Wizard**.

Conform Mode treats media segments as having a time code In and Out point associated with a virtual timeline. This timeline may be recorded onto, edited and played out as a tape. Clips may be added to or removed from the current timeline without affecting their status on the storage drives. Multiple **Conform Mode** EDLs may be used to access the same, overlapping or completely different pools of media based on workflow requirements.
Conform Mode may be enabled by clicking on the **Conform** button.

Video Capture

Capture from an incoming (audio/video) signal directly to a file.

In **Clip Mode**, captured files are handled as discrete media objects, each having a start time of 00:00:00:00 (this may be different if an alternate time code source is used). In **Clip Mode** the user accesses a **Clip Bin** to select clips for playback. The user may add or remove clips from the **Clip Bin**. In **Clip Mode** a series of clips can be placed together in a **PlayList**, including sub-clips created within the application. Because the inclusion in the **PlayList** is virtual, a clip can be placed in the **PlayList** many times without any duplication or alteration of the original file.

In **Film Mode**, captured files are handled in one of the sequential frame formats such as DPX, CIN, TGA, TIFF. The files are captured into a structured series of folders which relate to a timeline in hour or half hour blocks. Each of the folders is designed to "hold" exactly enough frames to make up its portion of the 24 hour timeline. Incoming records which overlap the time code span of any other media, replaces the existing media with its own frames. In this sense **Film Mode** is a completely destructive mode of capture, as any replaced frames are also deleted from the hard drive.

In **Conform Mode**, captured files are accessed the same way clips are, but they also exist as a series of edits in a **Conform Mode EDL** (edit decision list). Because the **Conform Mode EDL** is time code based, it allows clips captured or edited together to be played out seamlessly, similar to a **PlayList**. Because the inclusion in the list is virtual, a clip or any portion thereof can be placed in the list many times without any duplication or alteration of the original file.

Video Playback

In **Clip Mode**, the user may scroll through the **Clip Bin** to see available clips, click to select individual clips, and use the transport controls to play selected clips.

Film Mode is a sub-mode of **Clip Mode**, as the user selects **Clip Mode** and then select the **::Film** clip in the **Clip Bin** to enter **Film Mode**. Once the **::Film** clip is selected, the user may use the **Transport Controls** to play media. Use the **GoTo** button to quickly cue up known time code locations. Use the **Preview** button to play selected sections of media.

In **Conform Mode**, the user may access the **Conform Mode EDL** to access media, and then use the **Transport Controls** to play media. Use the **GoTo** button to quickly cue up known time code locations. Use the **Preview** button to play selected sections of media.

Transport Controls are available for playback and cueing within a range of speeds, including a **Jog/Shuttle** type control for convenient yet frame accurate cueing, **Preview** for playing a section of media, and VTR-type **Play/Stop** controls.

VTR Emulation

The DDR may be set to operate under serial control as a production VTR. Wide protocol support provides compatibility with major automation systems and controller devices. This allows the DDR to be easily integrated into an automated environment.

The serial port on the motherboard can be used with an adapter or adapter set to convert the RS-232 to RS-422 for incoming serial control. Alternately the DDR may be set up with a PCI-based adapter to provide multiple serial ports through the rear panel.

VTR Control

The DDR may be set to control an external VTR to frame accurately capture media from a tape in the VTR. This control is based on RS-422 serial protocol.

The serial port on the motherboard can be used with an adapter or adapter set to convert the RS-232 to RS-422 for outgoing serial control. Alternately the DDR may be set up with a PCI-based adapter to provide multiple serial ports (2 in, 2 out) through the rear panel.

List Management

The list of clips displayed in the **Clip Bin**, **Film Space** or **Conform Mode EDL** is maintained as a simple list-based file (a separate list exists for each mode). Multiple lists may be created to reference different pools of media. The files may be copied and renamed, and when opened may be further edited to offer lists tailored to each application or project.

Upon capture a clip is added to the list, which is automatically updated (saved) whenever the list is changed. Upon opening a new **Clip Bin**, **Film Space** or **Conform Mode EDL**, a default blank list is created.

Clips can be added to or removed from the lists as needed, and altered lists saved with the name and location of the user's choice.

Meta Data Display

Meta data associated with clips is maintained and can be viewed using the **Clip View** in the **MetaData** window. A full set of meta data elements are supported. Meta data values may be set, changed, or returned to default as selected by the user.

Clip List Display

Media added to the **Clip Bin**, **Film Space** or **Conform Mode EDL** will be displayed in a list which provides details about the media including the clip name and associated clip information.

The user can click to select a clip for editing or playback. Selecting a clip loads the clip's In/Out details into the **Clip Extents** section for preview and sub-clip creation.

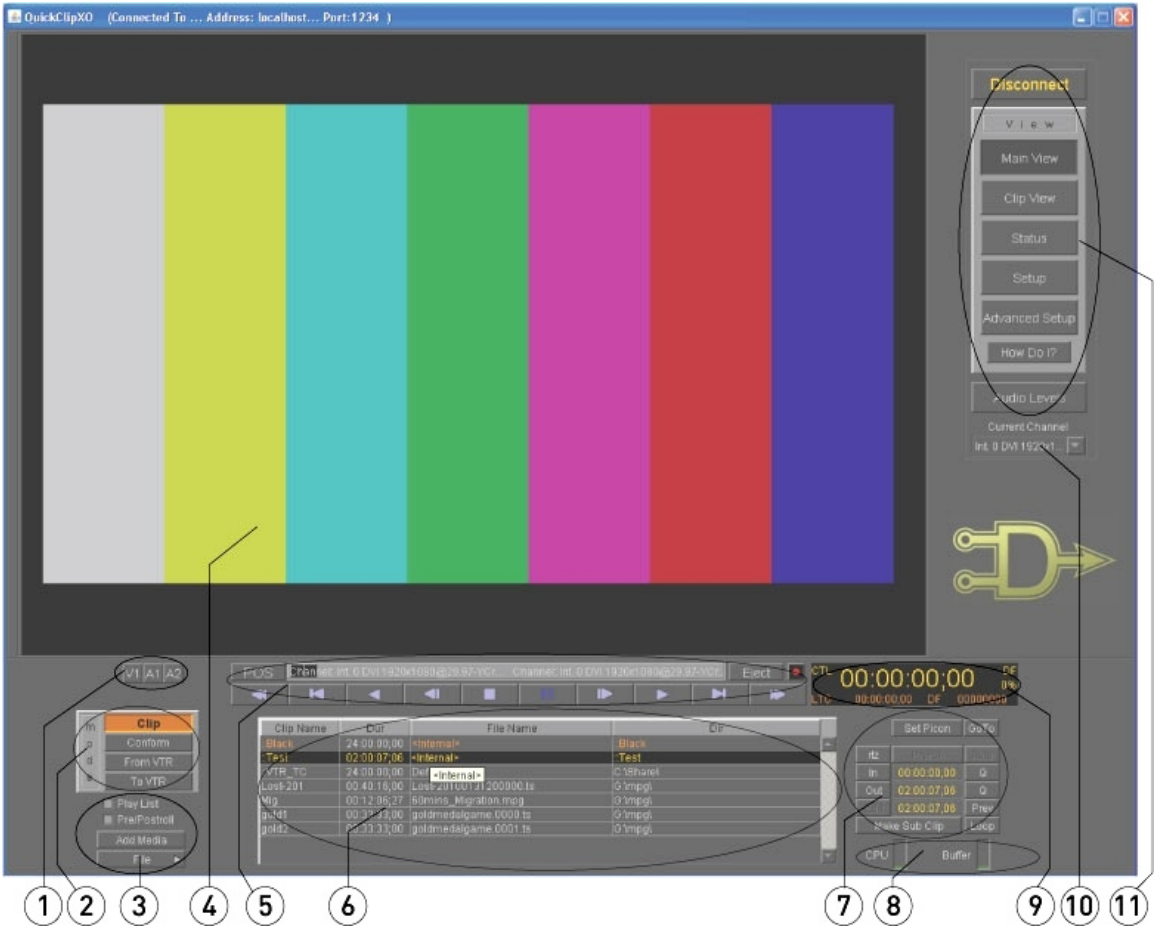
Output Display

Activity taking place within the application is automatically recorded and maintained as a list of events. The **Debug Log** list maintains any errors, attempted actions, and successful actions so the user can confirm the DDR's condition when troubleshooting performance issues. This list can be viewed, saved, and sent for review as a simple test file.

Controls and Displays

The functions and locations of the controls and displays of the interface are detailed in this section.

Main View

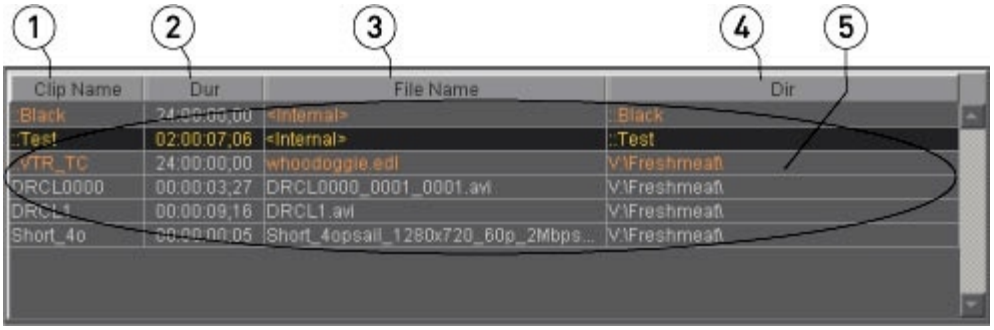


1	**Channel** presets	Displays the number of audio and video channels set up on the DDR (Local Control) or the **Target Device** (Network Control). Indicates selected or deselected audio or video channels in some applications.
2	**Control Mode** selector	Select between **Clip** mode (clip-based media handling), **Conform** mode (a non-destructive 24 hour time code space), **From VTR** (Pull-in from external VTR) and **To VTR**

		(Lay back media to an external VTR) Control Modes. The selected mode will be displayed in orange.
3	**PlayList** checkbox, **Pre/Postroll** checkbox, **Add Media** button and **File** button	Selecting the **PlayList** checkbox enters **PlayList** mode, where the user may place a number of clips in a list for sequential playback. Selecting the **Pre/Postroll** checkbox adds I minute of black to the beginning and end of each clip in the **Clip Bin** (making each clip 2 minutes longer in duration). The **Add Media** button opens a standard browser, which allows the user to search for and load media. The **File** pulldown menu allows the user to create a new or open an existing **Clip List**, **Film Space**, **Time Code Space List** or **Reel**. An **Add Clip** button is added in **Conform Mode** (and the **PlayList** and **PreRoll** checkboxes are removed), which allows the user to add media directly from the **Clip Bin**.
4	**VGA Display** Screen	Shows the clips being selected or played. Shows pass-through video in **E-E** mode.
5	**Transport** controls	Provides media transport controls: **Fast Reverse**, **Play Reverse**, **5 Seconds Reverse**, **1 Frame Reverse**, **Pause**, **Play**, **1 Frame Forward**, **5 Seconds Forward**, and **Fast Forward** a Jog/ Shuttle/ Variable/ Position slider bar.
6	**Clip Bin** section	Displays all the clips in the **Clip Bin** of the DDR (Local Control) or the Target device (Network Control).
7	**Extents** section	Displays the extents (In/Out points) of the selected media. Allows the user to cue to and edit the clip extents, creating subclips by trimming existing clips. Edit **Preview** and Looped playback controls are offered. The **Set Picon** button allows the user to reset the picon displayed by cueing to a frame in the clip and pressing the button. **Go To** opens a window which allows the user to enter a time code location and go to that location by pressing a button.
8	**CPU** and **Buffer** section	These two displays show processor usage and buffer levels in real time as a percentage of 100. This helps a user understand and monitor when and how intensively their resources are being used during specific activities.
9	**Transport** display	Displays information associated with the media transport, such as time code and control types, play speed, current time code location etc.
10	**Channel** pulldown menu	Displays the current internal, external or network channel the DDR is set to, and allows the user to choose between available channels that have been set up in the DDR.

11	**Connect/ Disconnect** button, **View** selector, **How Do I?** button and **Audio Levels** display	The **Connect** button allows the user to select which DDR the application is controlling. If disconnected, this button will display as **Connect**. Press to connect. If connected, this button will display as **Disconnect**. Press to disconnect or to change the DDR being controlled if desired. The **View** selector allows the user to select between **Views**. Select between the **Main View**, **Clip View**, **Status**, **Setup**, and **Advanced Setup** tabs to access various controls and displays. The **How Do I?** button offers a help file for the user. The **Audio Levels** button when selected replaces the **View** selector tabs with virtual audio meters. Use this button to return to the **View** tabs.

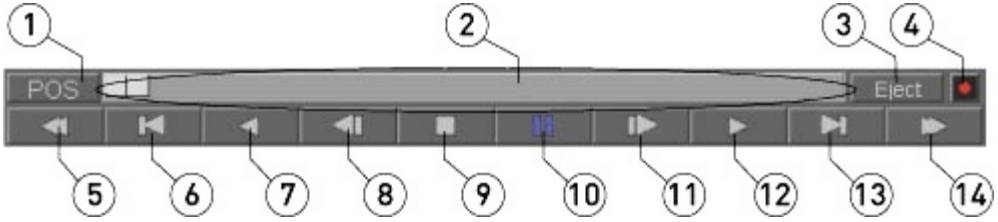
Clip Bin



The **Clip Bin** is available in **Clip Mode** to display all the clips that have been captured or added in **Clip Mode**. Clicking on a clip in the **Clip Bin** will select it, allowing the user to view information about the clip. Double clicking on a clip in the **Clip Bin** will load the clip into an edit dialog, which allows the user to create sub-clips.

1	**Clip Name** column	Displays the clip name (restricted to 8 characters to maintain compatibility with specific controllers).
2	**Duration** column	Displays the clip duration in standard SMPTE format (hours:minutes:seconds;frames).
3	**File Name** column	Displays the file name.
4	**Directory** column	Displays the file path and directory in which the clip is stored.
5	**Clips** field	Displays all the clips in the **Clip Bin**.

Transport and Shuttle Controls



1	**Position Controller** selector	Pressing this selector shuttles between available transport modes. Available modes include **POS** (positioning selector), **JOG** (jog functionality), **SHTL** (shuttle functionality), and **VAR** (variable speed).
2	**Position Control** pointer and field	The position of this pointer in this field indicates the relative cued position within the clip, or the relative speed and direction of media transport, depending on the **Position Controller** setting selected.
3	**Eject** button	Press to eject a tape from an external VTR. External device control must first be established before this capability is enabled, and there should be a tape in the VTR.
4	**Record** button	Enter record mode for the selected channel - capture an incoming video signal and create digital media files for playback and editing.
5	**Fast Reverse** button	Shuttle through media in reverse at the fastest possible speed.
6	**5 Seconds Reverse** button	Go to the location 5 seconds prior to the present location and display the frame of video found there. If pressed at less than 5 seconds before the start of media, will cue to the beginning.
7	**Reverse Play** button	Play the selected media in reverse, at -100% of play speed. Playback stops at the first frame of video.
8	**Step Frame Reverse** button	Go to the location one frame prior to the present location, and display the frame of video found there.
9	**Stop** button	Stop any playback actions in progress and display pass-through video, if present.
10	**Pause** button	Stop any playback actions and display the frame of video found at the present location. If in Stop mode, display the last cued location of the selected clip.
11	**Step Frame Forward** button	Go to the location one frame after the present location, and display the frame of video found there
12	**Play** button	Play the selected media at 100% of normal play speed.

13	**5 Seconds Forward** button	Go to the location 5 seconds after the present location and display the frame of video found there. If pressed at less than 5 seconds before the end of media, will cue to the last frame.
14	**Fast Forward** button	Shuttle forward through the media at the fastest possible speed.

Position Controller

Press the **Position Controller** selector to cycle through the available Jog/Shuttle modes. The available choices are:

JOG

The Position Controller **JOG** setting allows the user to pull the red slider to move by one or two frames to seek for a location within the media (right is forward and advances the time code; left is reverse). When the **JOG** slider is released it goes back to a rest position. Press the **JOG** button to cycle through the available Jog/Shuttle controls.

POS

The Position Controller **POS** (position) setting displays the relative location, or position within the media. The user may "pull" the slider to cue up to any location within the clip. Alternately, the user may press a location within the **Position Slider** field to cue up to that point. The **POS** slider is unavailable during specific VTR capture activities. Press the **POS** button to cycle through available Jog/Shuttle controls.

SHTL

The Position Controller **SHTL** (shuttle) setting allows the user to view media at variable speeds in forward or reverse. When the **SHTL** slider is released it goes back to a rest position in **Pause** mode. Press the **SHTL** button to cycle through available Jog/Shuttle controls.

VAR

The Position Controller **VAR** (variable) setting allows the user to play media at a speed other than 100%, in forward or reverse. "Grab" the slider. Move it to another position and release it. It stays there, playing the media at the relative speed corresponding to that location. Press the **VAR** button to cycle through available Jog/Shuttle controls.

Transport Display

1	**Time Code Source** display	Displays the current time code source type. Click on this field to cycle through the available time code source types.
2	**Alert** field	Displays a warning state for specific aspects of DDR functionality: if flashing **IN**, the input is invalid, or of a different video standard. If flashing **REF**, the reference input is invalid or of a different, incompatible video standard. If flashing **DISK**, the current media storage drives are full or nearing full. If flashing **AUD**, the audio input is invalid or unrecognized.
3	**Time Code Location** display	Displays the current time code location.
4	**Video Standard** display	Displays the current video standard setting. Click to cycle through available video standards. Confirm that the standard is set correctly for the video files you need to play.
5	**Time Code Source 2** display	Displays information from the second time code source type used.
6	**TC Location 2** display	Displays the time code location generated by the second time code source type used.
7	**Video Standard 2** display	Displays the video standard associated with the second time code source type.
8	**User Bits** display	Displays the user bits associated with the clip.
9	**Transport Speed** display	Displays the current transport speed as a percentage of normal play speed.

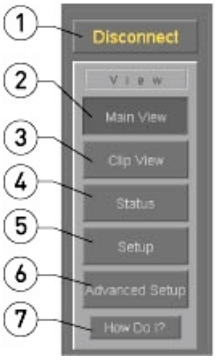
Audio Levels

Pressing the **Audio Levels** button brings up the audio levels indicator in the place of the **View Selector** section of the interface.

1	**View Selector** button	The **View Selector** button functions to close the **Audio Levels** display and return the **View** selector.
2	**Relative Decibel** display	Positioned within to the left of the meter in some configurations will be a relative decibel display, which gives a reference as to whether a signal provides optimum level during record or playback.
3	**Channel Number** display	Each channel's assignation will be displayed below its meter.

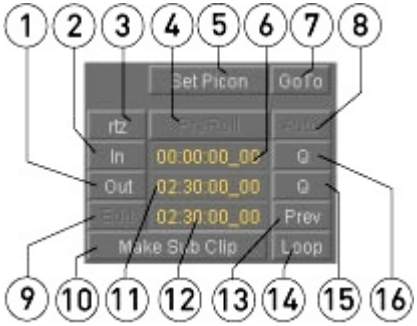
Press the **View Selector** button to close the **Audio Levels** display and return to the **View Selector**.

View Selector



1	**Disconnect** button	Pressing the **Disconnect** button will deactivate the connection between **QuickClipXO** and the DDR it is controlling. The **Disconnect** button will then turn into a **Connect** button, so the user may connect to the DDR itself (local control) or another networked DDR (remote control).
2	**Main View** button	Press to display the **Main View** featuring the **VGA Display** in the **View** area.
3	**Clip View** button	Press to display the **Clip View** featuring information about the clip, including picons, clip properties and metadata display in the **View** area.
4	**Status** button	Press to display the **Status View** which displays current DDR settings in the **View** area.
5	**Setup** button	Press to display the **Setup View** featuring configuration controls and displays in the **View** area.
6	**Advanced Setup** button	Press to display the **Advanced Setup View** featuring advanced configuration controls and displays in the **View** area.
7	**How Do I?** button	Press to open the **How Do I?** document, which provides recommendations regarding how to accomplish discrete functions within the application.

Clip Extents



1	**Set Out Point** button	Set the present location as the new **Out Point**.
2	**Set In Point** button	Set the present location as the new **In Point**.
3	**rtz (Return to Zero)** button	Cue to the beginning of the selected clip (**Server/ Clip Mode**), or to the start of Time Code Space (**Conform Mode**) and display the frame of video found there.
4	**PreRoll** button	Preview the preroll, to confirm that the preroll does not attempt to roll past the beginning.
5	**Set Picon** button	Resets the picon to the frame found at the cued location.
6	**In TC Location** field	Displays the time code location of the first frame of the selected clip or media section.
7	**GoTo** button	Press to open the **GoTo TC** window, which allows the user to enter a time code location and cue to that location.
8	**Auto** indicator	Displays as active during pull-in activities on specific platforms, indicating operation under control, or VTR emulation.
9	**Edit** button	Perform a set length capture in **Conform Mode**. Enter In/ Out extents in **Conform Mode** and press the **Edit** button to capture incoming video into the specified time code location coordinates.
10	**Make Sub Clip** button	Trim the clip and save the edited version with a new name. This does not change or delete the original clip.
11	**Out TC Location** field	Displays the time code location of the last frame of video in the selected clip or media section.
12	**Edit Duration** field	Displays the edited duration of the selected clip or media section, based on any new In/Out points entered by the user.
13	**Preview** button	Press the **Preview** button to play the media from the **In** to the **Out** points selected. **Preview** can be looped by selecting the **Loop** button.

14	**Loop** button	Looped playback - play from the present location to the end, then from the beginning to the end over and over again.
15	**Q (cue) Out Point** button	Cue to and display the last frame of video in the selected clip or media section.
16	**Q (cue) In Point** button	Cue to and display the first frame of video in the selected clip or media section.

Goto TC

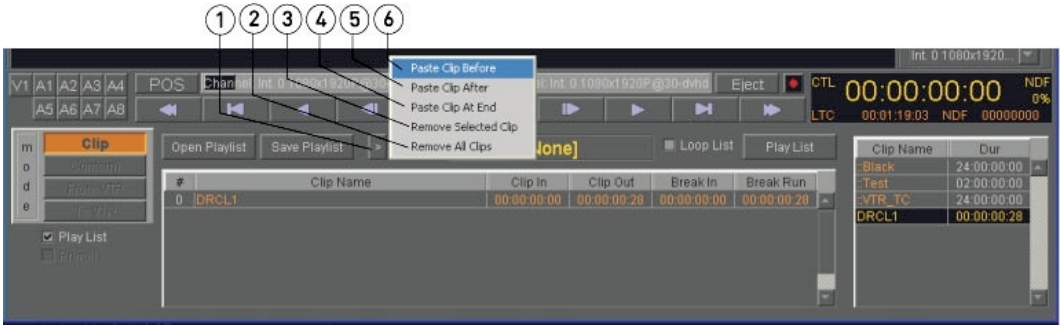
This window is opened when the user presses the **GoTo** button in the **Extents** section.

1	**GoTo** button	Press to cue to the location displayed in the time code window.
2	**Time Code** field	The user may enter a time code location into this field. Pressing the **GoTo** button will cue to the location specified.
3	**Cancel** button	Press to cancel the operation and not change the time code location.

PlayList

1	**PlayList** checkbox	When selected, the **PlayList** elements are added to the interface, allowing the user to play multiple clips or subclips in sequence.
2	**PlayList** section	Displays each clip or subclip in the **PlayList**.
3	**Open PlayList** button	Opens a standard browser, which allows the user to search for any saved **PlayLists**.
4	**Save PlayList** button	Press the **Save PlayList** button to open a browser which allows the user to save the **PlayList** with the name and in the location of their choice.
5	**Context menu** button	Press the **Context menu** button to invoke the context menu for the **PlayList**.
6	**PlayList Name** field	Displays the **PlayList** name, if it has been saved, or **[None]** if it has not been saved.
7	**Loop List** checkbox	Selecting the **Loop List** checkbox specifies that when the user presses the **Play List** button, the **PlayList** shall play from start to finish, over and over again.
8	**Play List/ Stop PlayList** button	Press this button to play the **PlayList**. This control turns into the **Stop Playback** button once it is pressed, and so functions as a toggle between playing the list and not playing the list.
9	**Clip Bin** section	Displays all the media loaded into the **Clip Bin** of the DDR (Local Control) or the **Target Device** (Network Control). The user may "drag and drop" or "copy and paste" clips from this **Clip Bin** to the **PlayList**.

PlayList Context Menu



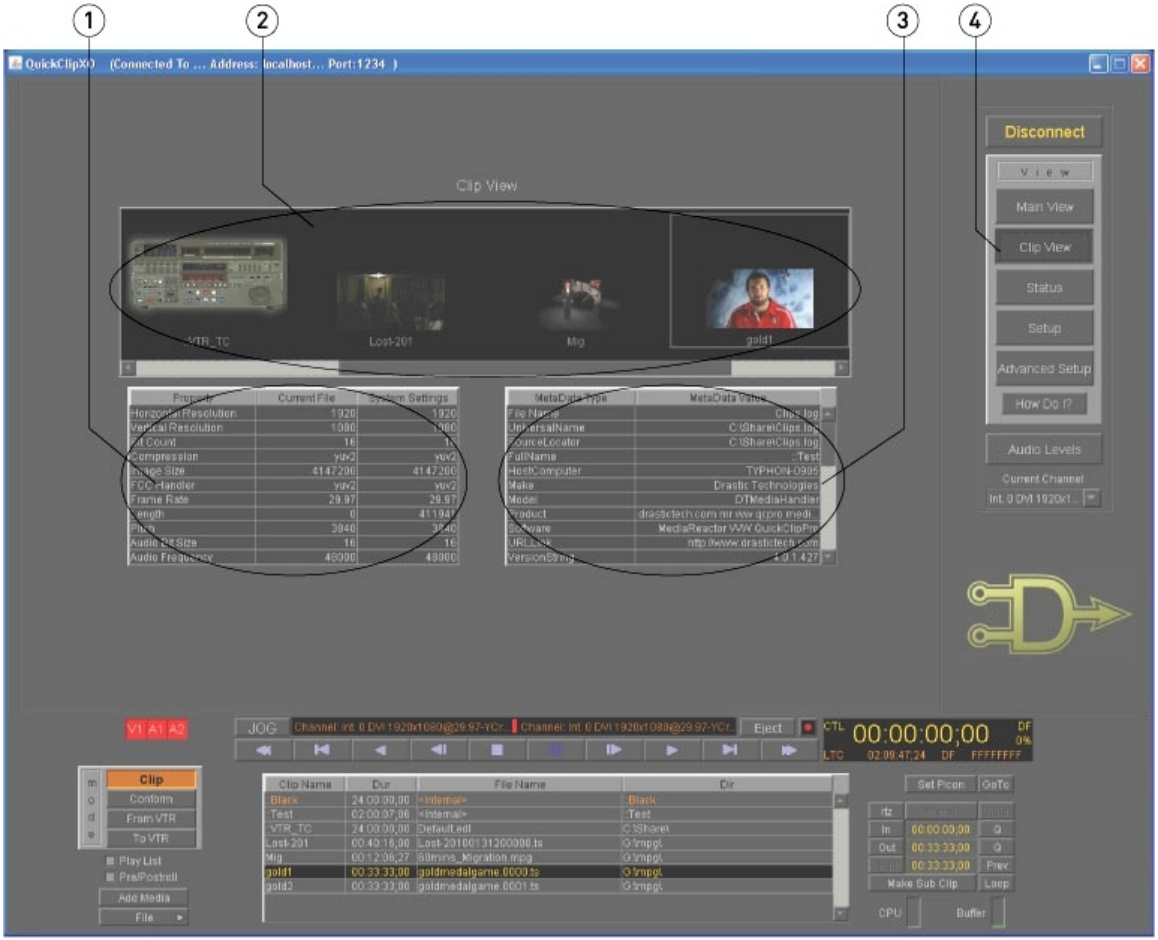
The context menu for the **PlayList** can be opened either by clicking on the **Context menu** button, or by right-clicking on a clip in the **PlayList** field. Choices in the **Context menu** mainly affect a selected clip, so make sure you have selected the right clip before invoking the **Context menu** for the **PlayList**.

1	**Context Menu** button	Press the **Context Menu** button to open the context menu.
2	**Paste Clip Before** option	Paste the copied clip into the location immediately prior to the selected clip.
3	**Paste Clip After** option	Paste the copied clip into the location immediately after the selected clip.
4	**Paste Clip At End** option	Paste the copied clip into the location immediately after the last clip in the **PlayList**.
5	**Remove Selected Clip** option	Remove the selected clip from the **PlayList**.
6	**Remove All Clips** option	Clear the **PlayList** of all clips.

File Menu

1	**File** button	Press the **File** button to display the **File** pulldown menu.
2	**Open/New Reel** option	Opens a browser which allows the user to search for an existing **Reel**, or **Project** file. Alternately the user may create a new **Reel** by entering a name for the project file and pressing **Open**.
3	**Open/New ::Film** option	Opens a browser which allows the user to search for an existing **Film Space**. Alternately a new **Film Space** may be created by entering a new **Film Space** name into the browser **File Name** field (be sure to add the file extension, *.film) and pressing **Open**.
3	**Open/New Conform** option	Opens a browser which allows the user to search for an existing **Conform Mode EDL**. Alternately a new **Conform Mode EDL** may be created by entering a new **Conform Mode EDL** name into the browser **File Name** field (be sure to add the file extension, *.log or *.edl) and pressing **Open**.
4	**Open/New Clip Bin** option	Opens a browser which allows the user to search for an existing **Clip Bin**. Alternately a new **Clip Bin** may be created by entering a new **Clip Bin** name into the browser **File Name** field (be sure to add the file extension, *.log or *.cls) and pressing **Open**.

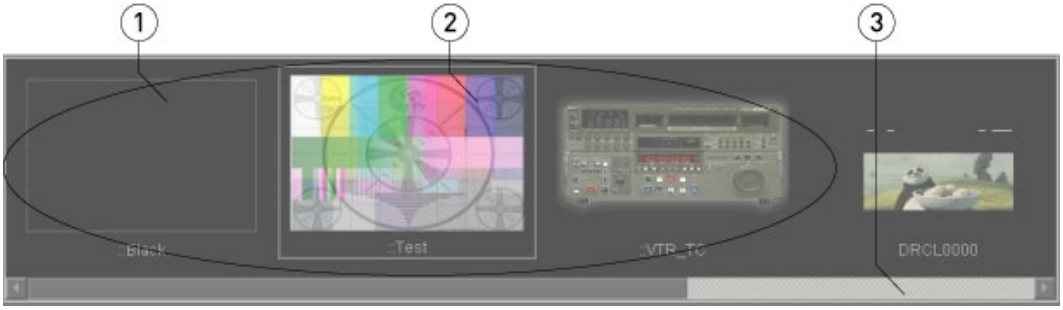
Clip View



Pressing the **Clip View** button adds the sections indicated in the above diagram to the interface.

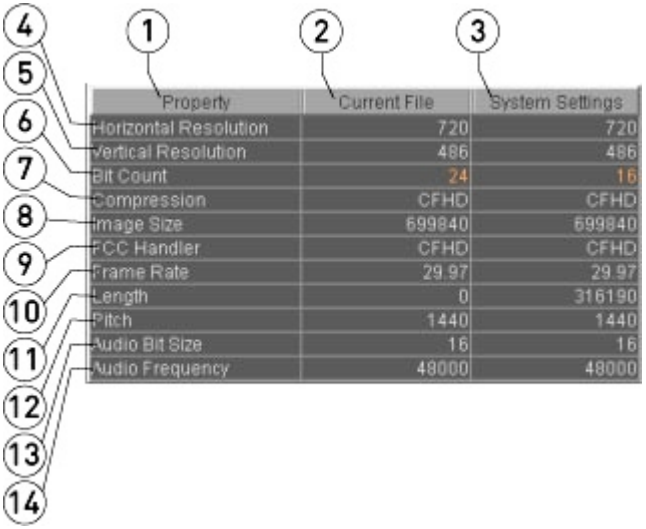
1	**Properties** window	Displays the properties of the selected media.
2	**Picons** window	Displays the media available as a series of picons (a picture icon, a scaled down version of a selected frame of the clip). A clip can be selected by clicking on it. A selected clip will be outlined.
3	**Meta Data** window	Displays meta data associated with the selected media.
4	**Clip View** button	**Clip View** button is selected.

Picons window



1	**Default Clips**	In **Clip Mode** there are specific default clips that appear in a new **Clip Bin** and cannot be deleted. The above example shows the **::Black** clip (generates black on output), the **::Test** clip (generates a series of test patterns on output) and the **::VTR_TC** clip (provides the contents of the **Conform Mode EDL** for playback and record operations).
2	**Selected Clip**	The media that has been selected has its picon outlined, to confirm the user's selections. The user may click on a picon in this window to select a clip.
3	**Scroll L/R** slider	Scroll to the left and right to reveal any clips not displayed.

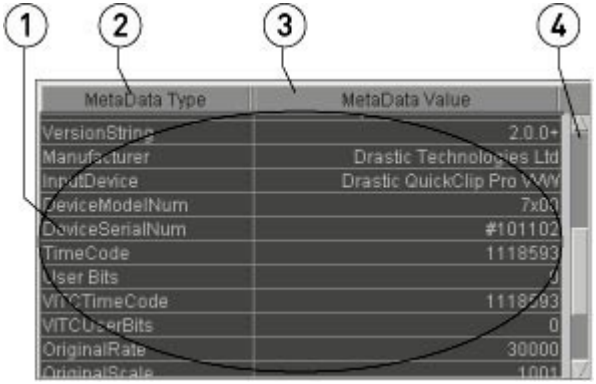
Properties Window



1	**Property** column	The property being described is listed in this column.
2	**Current File** column	This column displays the properties for the current file (the selected clip).
3	**System Settings** column	This column displays the DDR's system settings for each property being described.
4	**Horizontal Resolution** settings	This row displays the current horizontal resolution settings in number of lines for the selected media and for the DDR.
5	**Vertical Resolution** settings	This row displays the current vertical resolution setting in number of pixels for the selected media and for the DDR.
6	**Bit Count** settings	This row displays the bit count settings for the selected media and for the DDR. Bit count settings relate to the resolution of the media.
7	**Compression** settings	This row displays the compression settings for the selected media and for the DDR.
8	**Image Size** settings	This row displays the image size settings for the selected media and for the DDR.
9	**FCC Handler** settings	This row displays the FCC Handler settings for the selected media and for the DDR.
10	**Frame Rate** settings	This row displays the frame rate settings in frames per second for the selected media and for the DDR.
11	**Length** settings	This row displays the length settings for the selected media and for the DDR.

12	**Pitch** settings	This row displays the pitch settings for the selected media and for the DDR.
13	**Audio Bit Size** settings	This row displays the audio bit size settings for the selected media and for the DDR.
14	**Audio Frequency** settings	This row displays the audio frequency settings for the selected media and for the DDR.

Meta Data Window



1	**Meta Data** fields	Each row offers a meta data type and its value if any. Available meta data information includes: FileName, UniversalName, SourceLocator, Source, Author, HostComputer, Make, Model, Product, Software, Track, URLLink, VersionString, Manufacturer, InputDevice, DeviceModelNum, DeviceSerialNum, TimeCode, UserBits, VITC Time Code, VITCUserBits, OriginalRate, OriginalScale, VersionNumber, TotalLength, TimeCodeType, LTCTimeCodeType, VITCTimeCodeType.
2	**Meta Data Type** column	The meta data being described is displayed in this column.
3	**Meta Data Value** column	The value or setting for the meta data being described is displayed in this column.
4	**Up/Down** slider bar	Slide bar up or down to display any meta data not shown

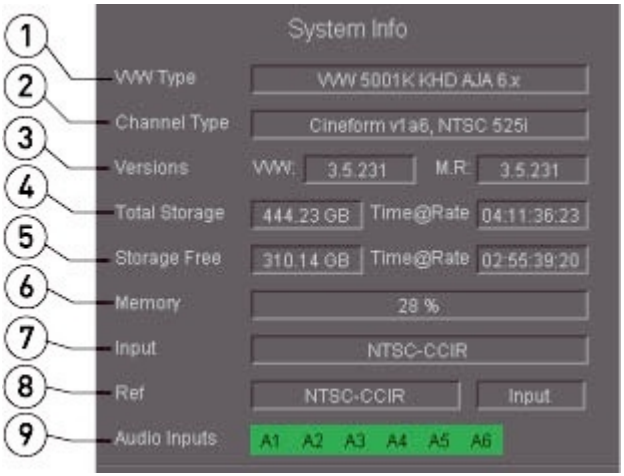
Status View

Pressing the **Status** button adds the sections indicated in the above diagram to the interface.

1	**Record Folder** button	Press to open a standard browser, which allows the user to set the default "record to" folder for the Control Station (Local Control) or the Target device (Network Control).
2	**System Info** section	Displays the system information that can be gleaned from the Control Station (Local Control) or the Target device (Network Control).
3	**Setup Wizard** button	Press to open the **Setup Wizard**, which allows the user to adjust settings for the DDR.
4	**Debug Log** button	Press to open the **Debug Log**, which offers details

		regarding specific activities. This allows the user to troubleshoot the application based on this information.
5	**Settings** section	Displays the directories for records and log files, and DDR I/O settings.
6	**Help** button	Opens the **Help** menu, which offers details on how to perform certain actions.
7	**Status** button	**Status** button is selected.

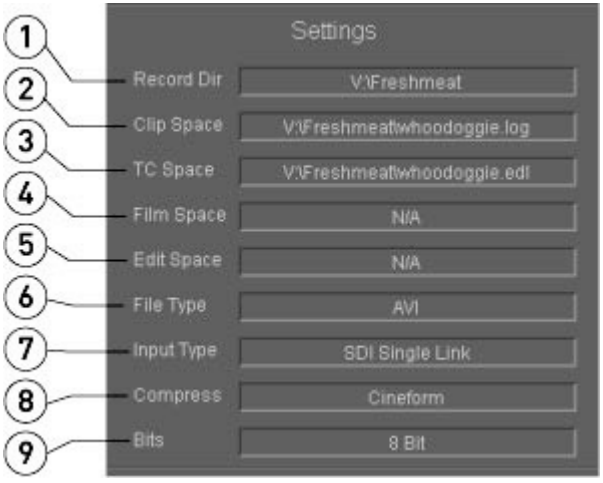
System Info Section



1	**VVW Type** field	Displays information specific to the hardware platform and associated software version being used.
2	**Channel Type** field	Displays Channel Type information, or which codec and video standard the system is set to.
3	**Versions** field	Displays software version information for the installations of **DDR** software in the system.
4	**Total Storage** field	Displays the total amount of storage available on the DDR and the amount of video that could be recorded given the amount of available storage and the video format being used.
5	**Storage Free** field	Displays the amount of storage not occupied by saved files as well as the amount of video that can be recorded onto the remaining space on the media drives.
6	**Memory** field	Displays the current percentage of RAM usage.
7	**Input** field	Displays the current setting for video input type.
8	**Ref** field	Displays details regarding the reference signal if present.

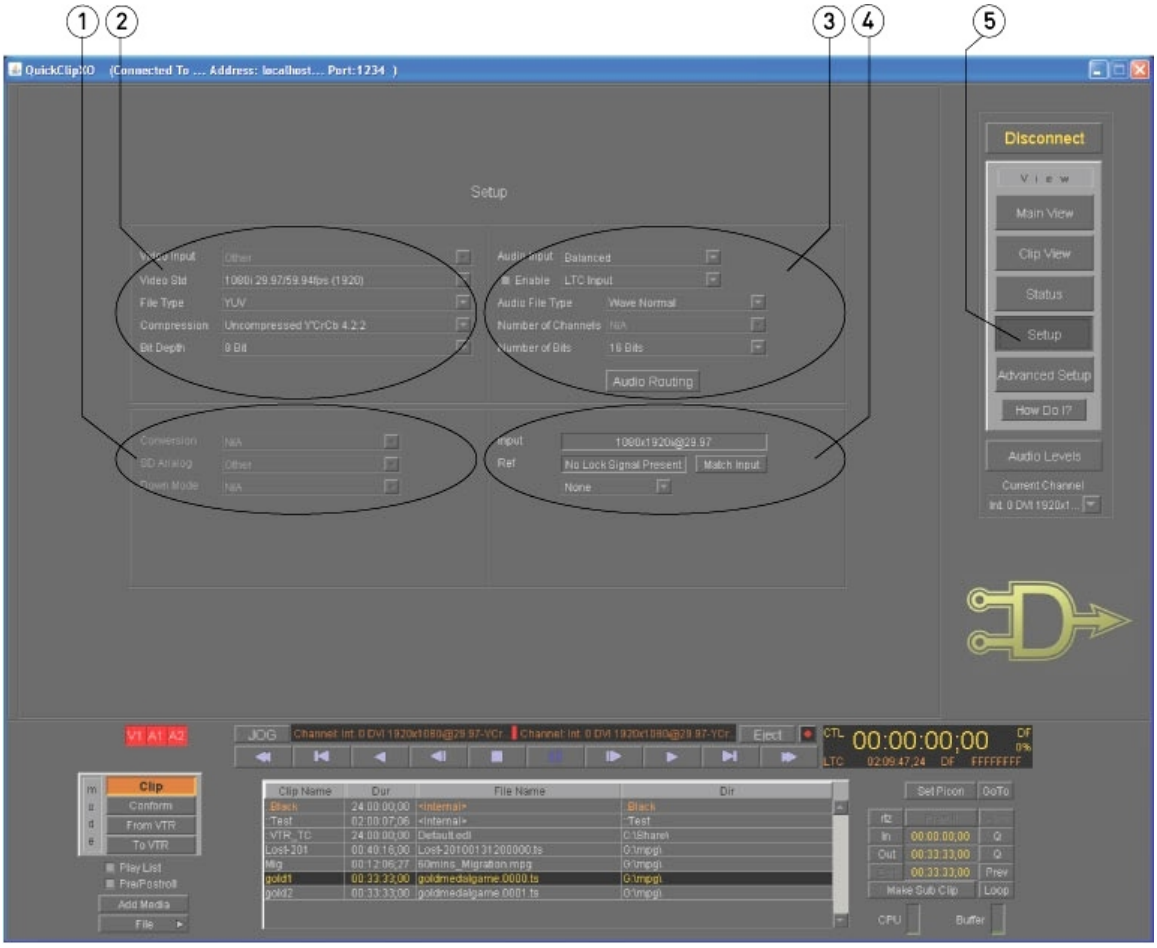
9	**Audio Inputs** field	Displays each preset audio channel; in green if a valid signal is present, or in red if there is no valid signal connected to the audio input.

Settings Section



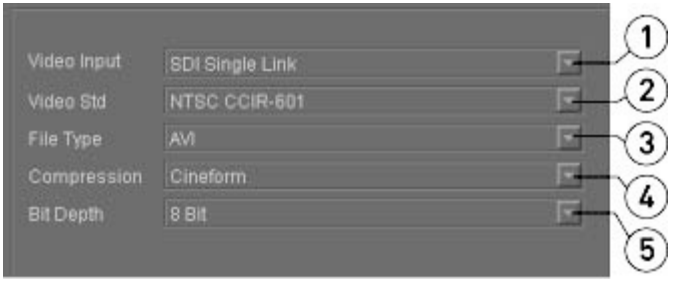
1	**Record Directory** display	Displays the current **Record Directory** location.
2	**Clip Space** display	Displays the location and name of the current **Clip Mode** .log file.
3	**TC Space** display	Displays the location and name of the current **Conform Mode** .edl file.
4	**Film Space** display	Displays the location and name of the current **Film Space** .film file.
5	**Edit Space** display	Displays the location and name of the current **Edit Space Mode** log file. Not applicable in most applications.
6	**File Type** display	Displays the current **File Type** setting.
7	**Input Type** display	Displays the current **Input Type** setting.
8	**Compress** display	Displays the current **Compression** setting.
9	**Bits** display	Displays the current **Bits** setting.

Setup View



1	**Conversion Settings** section	Allows the user to choose up-, down- and cross-conversion for cross-standard monitor output where the hardware is capable, and offers a menu for **SD Analog** input.
2	**Video Settings** section	Allows the user to confirm or adjust the settings for the video input.
3	**Audio Settings** section	Allows the user to confirm or adjust the settings for the audio input.
4	**Reference** section	Allows the user to adjust the genlock, or timing reference signal input settings.
5	**Setup View** button	The **Setup View** is selected.

Video Input Section



1	**Video Input** pulldown menu	Use the pulldown menu to select between available choices for the video input.
2	**Video Standard** pulldown menu	Use the pulldown menu to select between available choices for the video standard.
3	**File Type** pulldown menu	Use the pulldown menu to select between available choices for the video file type.
4	**Compression** pulldown menu	Use the pulldown menu to select between available choices for compression based on the file type selected.
5	**Bit Depth** pulldown menu	Use the pulldown menu to select between available choices for bit depth, a video quality setting.

Conversion Section

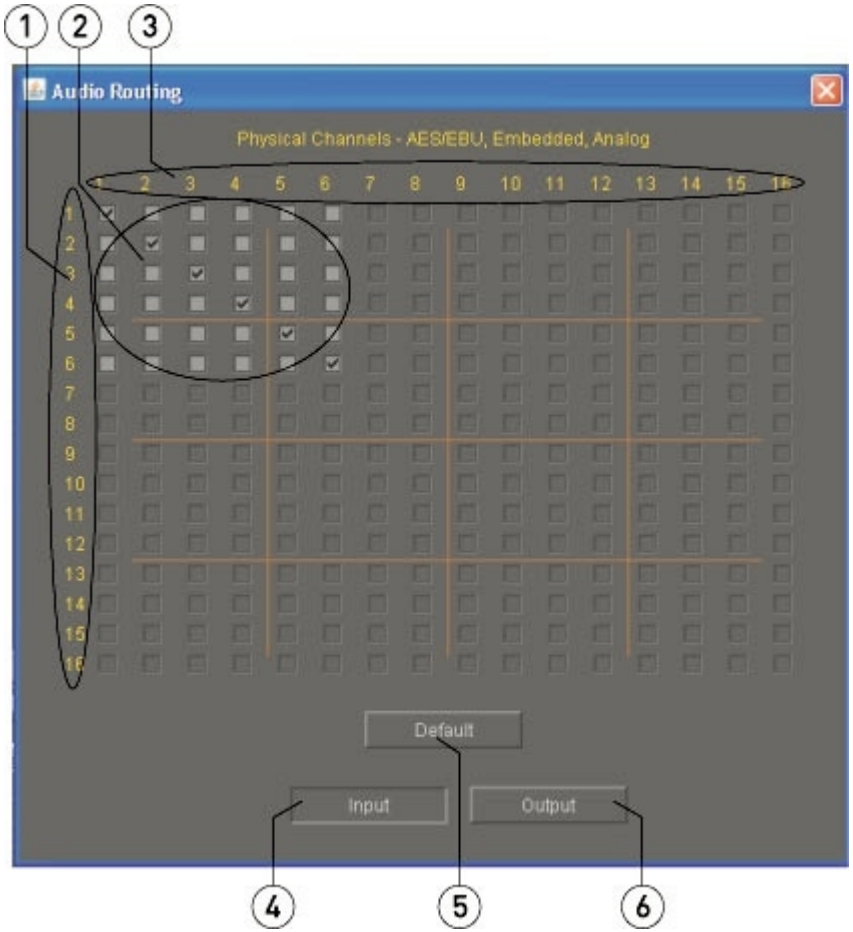
1	**Conversion** pulldown menu	Use the pulldown menu to select between available choices for the type of up- or cross-conversion that will be applied to video output.
2	**SD Analog** pulldown menu	Use the pulldown menu to select between available choices for the SD Analog input.
3	**Down Mode** pulldown menu	Use the pulldown menu to select between available choices for the down-conversion mode that will be applied to video output.

Audio Section

1	**Audio Input** pulldown menu	Use the pulldown menu to select between available audio input types.
2	**Enable** checkbox	Use the **Enable** checkbox to activate the **LTC Input** pulldown menu, in order to dedicate a channel of audio to LTC time code signals.
3	**LTC Input** pulldown menu	Use the pulldown menu to select the audio channel to dedicate to LTC input, if any is being used. The **Enable** checkbox must be selected to activate this control.
4	**Audio File Type** pulldown menu	Use the pulldown menu to select between available choices for the audio file type and container.
5	**Number of Channels** pulldown menu	Use the pulldown menu to select between available choices for the number of audio channels.
6	**Number of Bits** pulldown menu	Use the pulldown menu to select between available choices for the bit depth setting for audio files.
7	**Audio Routing** button	Use the **Audio Routing** button to open the **Audio Routing** window, which allows the user to route audio input channels to specific physical audio output ports.

Audio Routing

The **Audio Routing** window allows the user to route the audio throughput to specific physical inputs or outputs. The **Audio Routing** matrix is sized to accommodate a range of hardware capabilities, but those channels which are not present in the DDR will be inactive and non-selectable.



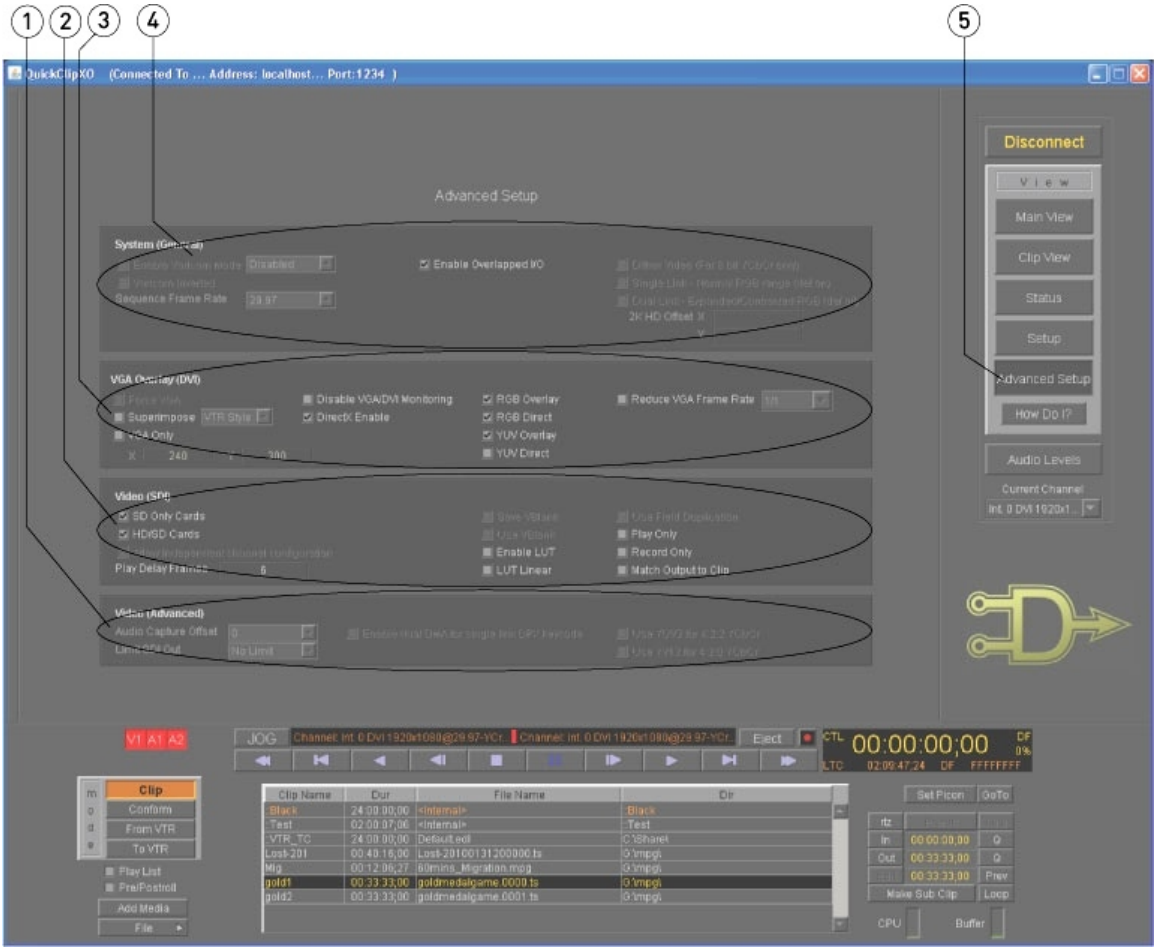
1	**Channel** column	Displays the audio channels. With the **Input** button selected, displays the input channels. With the **Output** channel selected, displays the output channels.
2	**Routing** checkbox field	Displays the selected routing path - the selected routing path will have a check mark in it.
3	**Path** row	Displays where the channel is being routed.

4	**Input** button	When the **Input** button is pressed, it deselects the **Output** button and the **Audio Routing** window addresses the audio input channels.
5	**Default** button	Returns the audio routing to its default settings.
6	**Output** button	When the **Output** button is pressed, it deselects the **Input** button and the **Audio Routing** window addresses the audio output channels.

Reference/Genlock Section

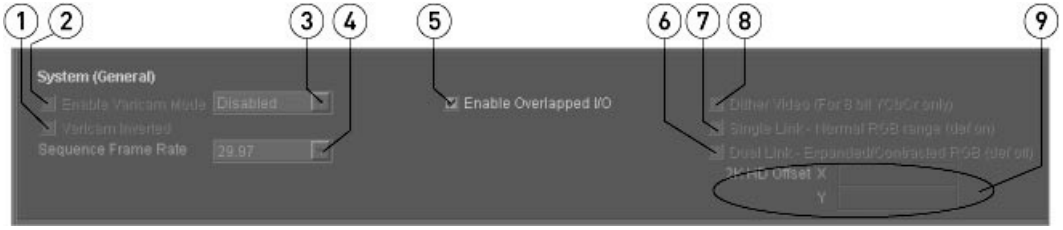
1	**Input Standard** display	Displays the video standard the DDR is currently set to.
2	**Match Input** button	Press the **Match Input** button to set the DDR to the video standard of the incoming video signal, if detected and if the DDR is capable.
3	**Reference Confirm** display	Displays any reference input seen at the genlock input port. Where the DDR is set to lock to an incoming video signal, this field will display as **Not Connected**, as there is no signal going to the genlock input port.
4	**Reference Selector** pulldown menu	Use the **Reference Selector** pulldown menu to set the DDR to lock to either a genlock signal sent to the genlock input port, or an incoming video signal, or to not use any genlock signal for video timing.

Advanced Setup View



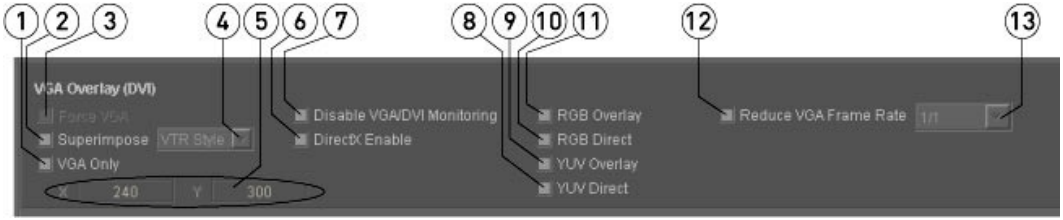
1	**Video (Advanced)** section	Controls specific advanced video settings.
2	**Video (SDI)** section	Controls the video hardware's SDI settings.
3	**VGA Overlay (DVI)** section	Controls the settings for VGA/DVI output and time code superimposition.
4	**System (General)** section	Controls general system settings for the DDR.
5	**Advanced Setup** button	The **Advanced Setup** button is selected.

General Section



1	**Varicam Inverted** checkbox	With the **Enable Varicam Mode** checkbox selected, select this checkbox to invert Varicam field bits for old equipment.
2	**Enable Varicam Mode** checkbox	Select the **Enable Varicam Mode** checkbox to send a variable frame rate signal down a fixed frame rate pipeline, marking correct frames for playback.
3	**Varicam Mode** pulldown menu	With the **Enable Varicam Mode** checkbox selected, select between available Varicam modes.
4	**Sequence Frame Rate** pulldown menu	Use the **Sequence Frame Rate** pulldown menu to select between available frame rates that will be used to output a series of sequential frames.
5	**Enable Overlapped I/O** checkbox	Select the **Enable Overlapped I/O** checkbox to allow overlapped reads and writes on the DDR.
6	**Dual Link Expanded Contracted RGB** checkbox	Select the **Dual Link Expanded/Contracted RGB (def off)** checkbox to use the normal RGB range (contracted) for dual link formats. By default the DDR will use an expanded RGB range for dual link formats.
7	**Single Link - Normal RGB Range** checkbox	Select the **Single Link Normal RGB range (def on)** checkbox to use an expanded RGB range for single link formats. By default the DDR will use the normal RGB range for single link formats.
8	**Dither Video (for 8 bit YCbCr only)** checkbox	Select the **Dither Video (for 8 bit YCbCr only)** checkbox to apply a dithering effect to smooth out noticeable luminance artifacts associated with 8 bit YCbCr.
9	**2K HD Offset X and Y** position fields	Use the **2K HD Offset X and Y** position fields to set the location within the **VGA Display** window to display 2K sequences via VGA/DVI output.

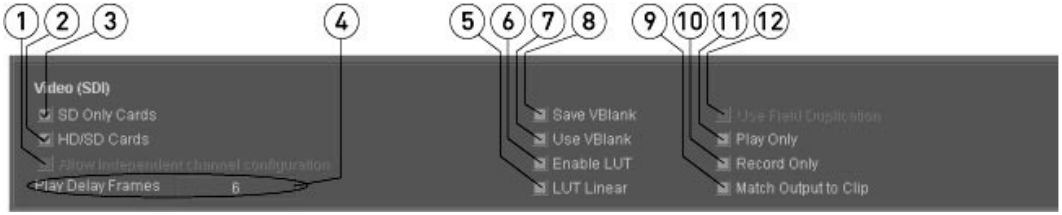
VGA Section



1	**VGA Only** checkbox	Select the **VGA Only** checkbox to superimpose time code on the VGA/DVI output only, and allow the video output through hardware to pass through unaffected. For this to work, the **Superimpose** checkbox must be selected.
2	**Superimpose** checkbox	The **Superimpose** section allows the user to superimpose time code over both the VGA/DVI and the video output. A checkbox is provided to activate the setting, and a pulldown menu which allows the user to select the type of time code that will be superimposed.
3	**Force VGA** checkbox	Select the **Force VGA** checkbox to display only VGA/DVI and ignore the video hardware if present. Note, if you select both the **Disable VGA/DVI Monitoring** checkbox and the **Force VGA** checkbox, the DDR will not be able to output video.
4	**Superimpose Style** pulldown menu	The **Superimpose Style** pulldown menu allows the user to select between available superimposition styles. Choices may include **VTR Style**, **Film Minimum**, and **Film Full**.
5	**Superimpose Location** x and y fields	The **X and Y** fields allow the user to set the location of the time code that is superimposed on output. This setting applies to the **VTR Style** superimposition style only. The **Film Minimum** and **Film Full** are fixed in location.
6	**DirectX Enable** checkbox	Select the **DirectX Enable** checkbox to activate the 4 checkboxes just below for DirectX display options.
7	**Enable VGA/DVI Monitoring** checkbox	Select to enable monitoring of video output via the VGA screen or DVI output.
8	**YUV Direct** checkbox	With the **DirectX Enable** checkbox selected, select the **YUV Direct** checkbox to use YUV Direct within DirectX.
9	**YUV Overlay** checkbox	With the **DirectX Enable** checkbox selected, select the **YUV Overlay** checkbox to use YUV overlay within DirectX.
10	**RGB Direct** checkbox	With the **DirectX Enable** checkbox selected, select the **RGB Direct** checkbox to use RGB Direct within DirectX.
11	**RGB Overlay** checkbox	With the **DirectX Enable** checkbox selected, select the **RGB Overlay** checkbox to use RGB overlay within DirectX.

12	**Reduce VGA Frame Rate** checkbox	The **Reduce VGA Frame Rate** checkbox activates the reduced frame rate setting. This setting allows the user to reduce the number of frames output through the VGA/DVI display during playback, to reduce demands on the DDR's resources during bandwidth-intensive operations.
13	**Frame Rate** pulldown menu	The **Frame Rate** pulldown menu allows the user choose between available reduced frame rate settings for display.

Video (SDI) Section



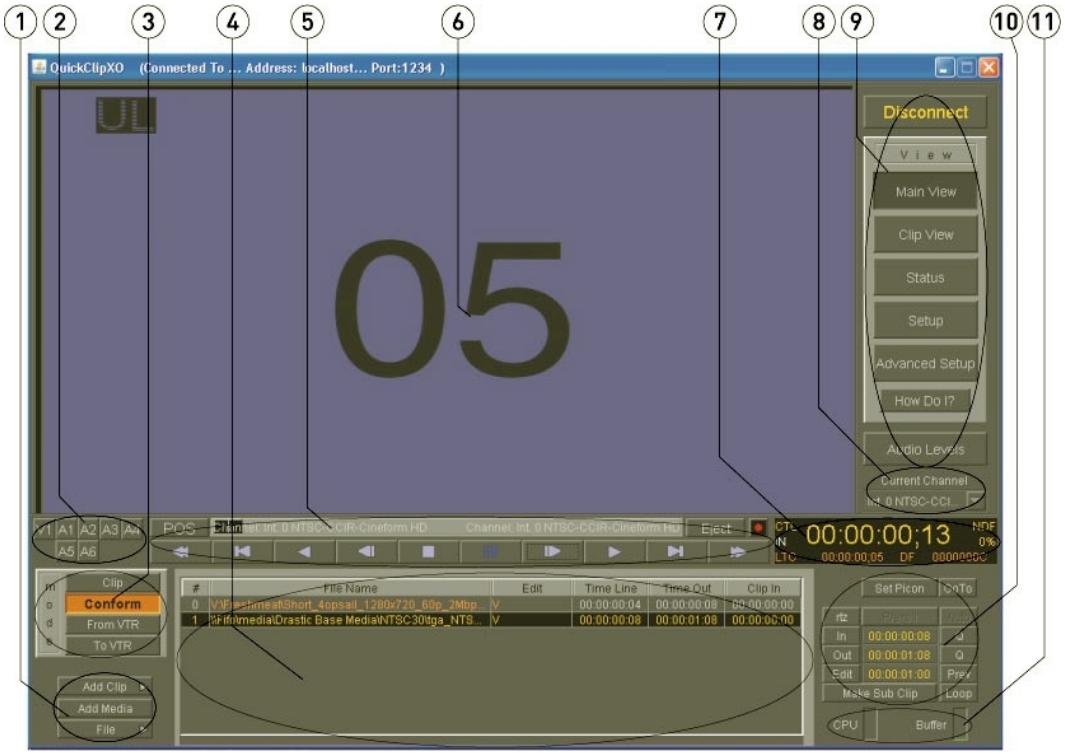
1	**Allow Independent Channel Configuration** checkbox	Select the **Allow Independent Channel Configuration** checkbox to allow the user to configure different channels in a multiple channel system independently. For example one channel might be set up for SD MOV, and the other set up for HD DPX.
2	**HD/SD Cards** checkbox	Select the **HD/SD Cards** checkbox to set up the system to support both SD and HD formats. Some configurations may require that the **HD/SD Cards** checkbox and the **SD Only Cards** checkboxes both be checked before all formats will be supported.
3	**SD Only Cards** checkbox	Select the **SD Only Cards** checkbox to confirm support for SD formats. Some configurations may require that the **HD/SD Cards** checkbox and the **SD Only Cards** checkboxes both be checked before all formats will be supported.
4	**Play Delay Frames** display	Displays the number of frames delay between receiving a play command and the actual output of frames. This number may be reset (for select applications) by selecting it and typing in a new number, which may improve frame accuracy for serial control.
5	**LUT Linear** checkbox	Select the **LUT Linear** checkbox to apply a linear lookup table to output, otherwise it will be algorithmic. Confirm that the **Enable LUT** checkbox is selected for this to have any effect.
6	**Enable LUT** checkbox	Select the **Enable LUT** to apply a lookup table to output. The lookup table used is algorithmic by default; you must select **LUT Linear** to use a linear lookup table.
7	**Use VBlank** checkbox	Select the **Use VBlank** checkbox to decode and display VITC time code values.
8	**Save VBlank** checkbox	Select the **Save VBlank** checkbox to write VITC into files being created and/or recorded.
9	**Match Output to Clip** checkbox	Select the **Match Output to Clip** checkbox to match the video output to the current clip settings.

10	**Record Only** checkbox	Select the **Record Only** checkbox to disable all playback functions. Note: if both the **Play Only** and **Record Only** checkboxes are selected, the DDR will have very little functionality left.
11	**Play Only** checkbox	Select the **Play Only** checkbox to disable all capture/encoding functions. Note: if both the **Play Only** and **Record Only** checkboxes are selected, the DDR will have very little functionality left.
12	**Use Field Duplication** checkbox	Select the **Use Field Duplication** checkbox to duplicate fields for output in slow motion display applications.

Video (Advanced) Section

1	**Limit SDI Out** pulldown menu	Use the pulldown menu to select between available settings to either apply a limit to the SDI output, or none.
2	**Audio Capture Offset** pulldown menu	Use the pulldown menu to select between available choices to offset the audio during capture.
3	**Enable dual DMA for single link DPX keycode** checkbox	Select the **Enable dual DMA for single link DPX keycode** checkbox to enable dual DMA (dynamic memory allocation) when using single link DPX keycode.
4	**Use YUV2 for 4:2:2 YCbCr** checkbox	Select this checkbox to specify the YUV2 codec for 4:2:2 YCbCr format. Otherwise the default codec is used.
5	**Use YV12 for 4:2:0 YCbCr** checkbox	Select this checkbox to specify the YV12 codec for 4:2:0 YCbCr format. Otherwise the default codec is used.

Conform Mode



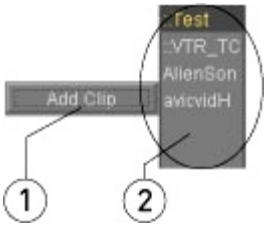
1	**Add Clip**, **Add Media** and **File** buttons	The **Add Clip** button opens a pulldown menu which allows the user to add media directly from the **Clip Bin**. The **Add Media** button opens a standard browser, which allows the user to search for and load media into the **Time Code EDL**. The **File** button opens a browser which allows the user to search for an existing or open a new **Clip List**, **Film Space List**, or **Time Code Space List**.
2	**Channel Preset** buttons	These buttons display the number of audio and video channels set up on the DDR (Local Control) or the **Target Device** (Network Control). The **Channel Preset** buttons indicate selected or deselected audio or video channels in some applications.
3	**Control Mode** selector	Select between **Clip Mode** (clip-based media handling), **Conform Mode** (a non-destructive 24 hour time code space), **From VTR** (Pull-in from external VTR) and **To VTR** (Lay back media to an external VTR) Control Modes.

4	**TC Edit List** section	Displays all the media that has been added to time code space (**Conform Mode**).
5	**Transport and Shuttle** controls	Provides media transport controls, including a **Jog/ Shuttle/ Variable/ Position** slider bar for cueing and media review.
6	**VGA Display** Screen	Shows the clips being selected or played. Shows pass-through video in **E-E** mode.
7	**Transport** display	Displays information associated with the media transport, such as time code and control types, play speed, current time code location etc.
8	**Channel** selector	Allows the user to select between available channels.
9	**Connect/ Disconnect** button, **View** selector, **How Do I?** button and **Audio Levels** display	The **Connect** button allows the user to select the DDR this application is controlling. If disconnected, this button will display as **Connect**. Press to connect. If connected, this button will display as **Disconnect**. Press to disconnect. The **View** selector allows the user to select between **Views**. Select between the **Main View**, **Clip View**, **Status, Setup**, and **Advanced Setup** tabs to access various controls and displays. The **How Do I?** button offers the **How Do I?** document, which provides recommendations on how to perform discrete actions within this application. The **Audio Levels** button toggles between displaying the **View** selector tabs and virtual audio meters.
10	**Extents** section	Displays the extents (In/Out points) of the selected media. Allows the user to cue to and edit the clip extents, creating subclips by trimming existing clips. Edit Preview and Looped playback controls are also offered.
11	**CPU** and **Buffer** section	These two displays show processor usage and buffer levels in real time as a percentage of 100. This helps a user understand and view when and how intensively the DDR's resources are being used during specific activities.

Conform Mode TC Edit List

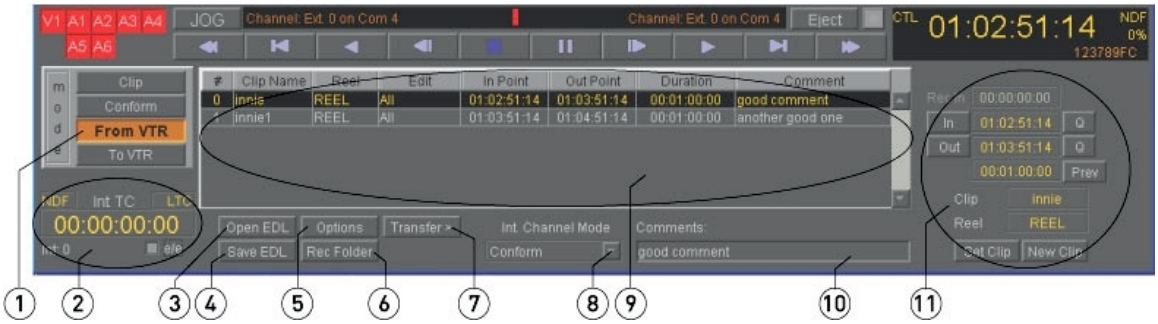
1	**Number** column	Displays the sequential location of the media segment in time code space. The first media segment is number 0, and the list increments upward in single integers for each subsequent media segment.
2	**File Name** column	Displays the **File Name** associated with the media segment.
3	**Edit** column	Displays the edit presets for each of the audio and video channels associated with the media segment.
4	**Time Line** column	Displays the location of the first frame of the selected media segment in time code space.
5	**Time Out** column	Displays the location of the last frame of the selected media segment in time code space.
6	**Clip In** column	Displays the **Clip In** time code. Where a clip has been trimmed (subclip), or where subsequent media insertions have shortened the clip, its **In Point** may not be 00:00:00;00.

Conform Mode Add Clip



1	**Add Clip** button	Pressing the **Add Clip** button displays the contents of the **Clip Bin**, allowing the user to add media directly from the **Clip Bin**.
2	**Clip** list	Displays the clips in the DDR's **Clip Bin**.

From VTR Mode

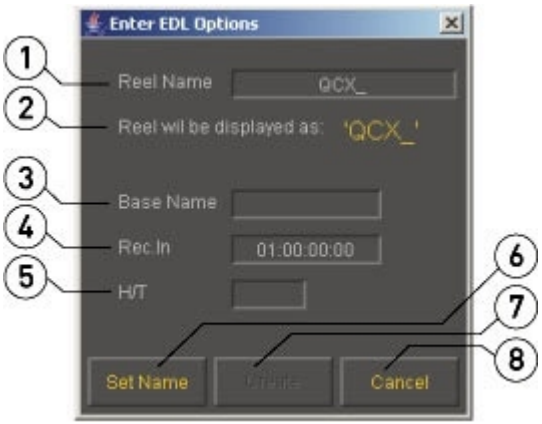


Pressing the **From VTR Mode** button opens the **Enter EDL Options** dialog box, which the user must set before attempting to perform a pull-in from an external VTR. Once completed, the DDR opens in **From VTR Mode**, which adds the sections indicated in the above diagram to the interface.

1	**From VTR Mode** button	**From VTR Mode** is selected.
2	**Internal TC** section	Displays information about the internal channel upon which the media will be captured, and offers the **e/e** checkbox to specify that the video input (from the VTR) be passed through the **VGA Display Monitor**.
3	**Open EDL** button	Opens a standard **Open** browser with the EDL filter selected, which allows the user to search for and load a saved EDL.
4	**Save EDL** button	Opens a standard **Save As** browser which allows the user to save their current EDL in a location of their choice.
5	**Options** button	Opens the **Enter EDL Options** dialog window. These settings may be adjusted independently for each item in the pull-in.
6	**Rec Folder** button	Opens a standard browser which allows the user to reset their record folder.
7	**Transfer** button	Offers options regarding performing all, some or one of the edits in the EDL.
8	**Internal Channel Mode** selector pulldown menu	Allows the user to select between **Clip Mode** and **Conform Mode** for the internal channel. This determines whether media is created as a series of clips and available for use in **Clip Mode**, or placed into the **Conform Mode** timeline as a sequence of media segments.
9	**EDL** section	Displays the EDL being created.
10	**Comments** field	The user may add a comment to each item in an EDL by typing the comment into this field before pressing the **New Clip**

		button. The user may also add a new or edit an existing comment by double clicking on an item in an EDL (load it into the **Edit** section), typing in a new comment and pressing the **Set Clip** button.
11	**Clip Extents** section	Provides controls to create or modify edits in the EDL.

Enter EDL Options



Pressing the **From VTR** button opens the above **Enter EDL Options** window. The user must confirm these settings to perform a pull-in of media from an external VTR.

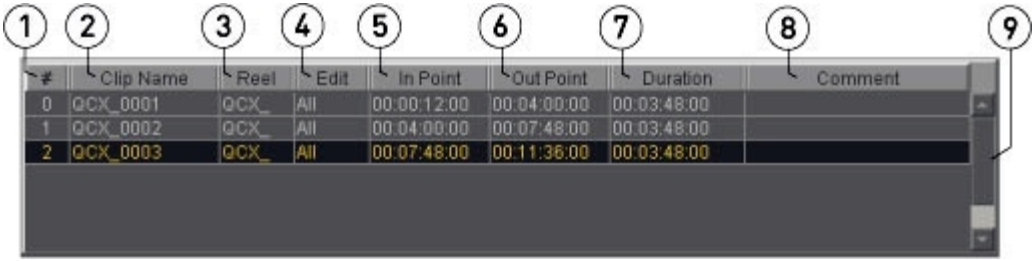
1	**Reel Name** field	Displays the default or current **Reel Name**, if it has been set. The user may type a new **Reel Name** in this field. Pressing the **Set Name** button enters this setting into memory.
2	**Current Reel Name** setting	Displays the current **Reel Name** setting.
3	**Base Name** field	The user may type in a **Base Name** which is added to the beginning of the clip names for items in a Pull-in. This setting is enabled in **Clip Mode**. Clip names are automatically generated in **Conform Mode**.
4	**Rec In** field	Displays the current **Rec In** (record in point) setting. This is where the first frame of video from the pull-in will be located on the timeline in a **Conform Mode** Pull-in. The user may change this setting by typing in a new time code location and pressing the **Set Name** button. This setting is enabled in **Conform Mode** and inactive in **Clip Mode**.
5	**H/T (Heads/ Tails)** field	The user may add a number of frames that will be added to the beginning and end of each media segment captured in the Pull-in. This allows the user to ensure that all of the desired media will be captured, with a safety cushion to prevent missed

		frames.
6	**Set Name** button	Pressing the **Set Name** button sets the new **Reel Name** and any other applicable parameters set by the user into memory. Once the name has been set, the **Create** button becomes active, allowing the user to enter **From VTR Mode** and perform a Pull-in.
7	**Create** button	Enters the details of the **Enter EDL Options** dialog box into **From VTR Mode**. Becomes active once the user has pressed the **Set Name** button.
8	**Cancel** button	Press the **Cancel** button to exit from the **Enter EDL Options** dialog window without changing the setup.

Int TC Section

1	**Video Standard** section	Displays the current video standard the DDR is set to. The user may click on this item to cycle through the available choices for video standard.
2	**Internal Channel** indicator	Displays the internal channel being addressed.
3	**Internal Time Code Location** field	Displays the time code location the internal channel is cued to.
4	**e/e** checkbox	Select to display the video signal from the external VTR within the **VGA Display Monitor** while in **From VTR Mode**.
5	**Control** type	Displays the current control type setting. The user may click on this item to cycle through the available choices for control type.

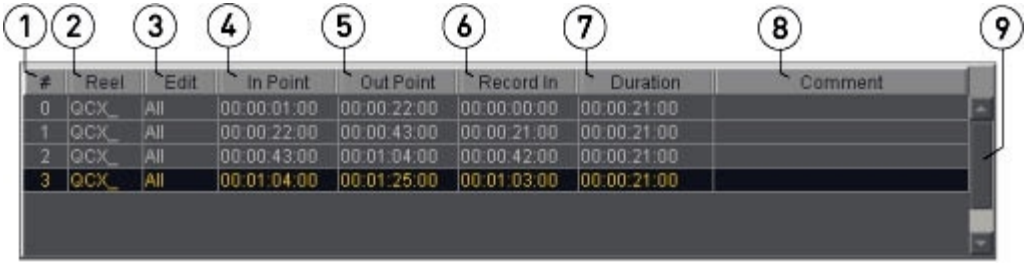
Pull-in EDL – Clip Mode



In **From VTR** Mode, the **Pull-In EDL** section has different column headings when in **Clip Mode** as compared to **Conform Mode**. Here is the chart for **Clip Mode** Pull-ins.

1	**Number** column	Displays a number for each item in the EDL (or Pull-in List). The first pull-in item is number 0, and the list increments upward in single integers for each subsequent item.
2	**Clip Name** column	Displays the name of the clip that will be created in this pull-in. This column is only present in **Clip Mode**.
3	**Reel** column	Displays the **Reel** information for each item in the EDL. During the pull-in the user will be prompted to place the **Reel** in the VTR. If the **Reel** name changes from one item to the next, the user will be prompted to place the new tape, or reel in the VTR.
4	**Edit** column	Displays the Edit presets for each item in the EDL, or which audio and/or video channels have been enabled for the pull-in.
5	**In Point** column	Displays the **In Point** time code location (from the VTR) of this item in the EDL.
6	**Out Point** column	Displays the **Out Point** time code location (from the VTR) of this item in the EDL.
7	**Duration** column	Displays the **Duration** (temporal length) of each item in the EDL.
8	**Comment** column	Displays the **Comment** if any has been entered for this item in the EDL.
9	**Up/Down Slider** control	Grab the pointer and pull up or down to reveal any EDL items not shown.

Pull-in EDL – Conform Mode



In **From VTR** Mode, the **Pull-In EDL** section has different column headings when in **Clip Mode** as compared to **Conform Mode**. Here is the chart for **Conform Mode** Pull-ins.

1	**Number** column	Displays a number for each item in the EDL (or Pull-in List). The first pull-in item is number 0, and the list increments upward in single integers for each subsequent item.
2	**Reel** column	Displays the **Reel** information for each item in the EDL.
3	**Edit** column	Displays the Edit presets for each item in the EDL, or which audio and/or video channels have been enabled for the pull-in.
4	**In Point** column	Displays the **In Point** time code location (from the VTR) of this item in the EDL.
5	**Out Point** column	Displays the **Out Point** time code location (from the VTR) of this item in the EDL.
6	**Record In** column	Displays the **Record In** point information for each item in the EDL, or where the first frame of this media section will occur in time code space. This column is only present in **Conform Mode**.
7	**Duration** column	Displays the **Duration** (temporal length) of each item in the EDL.
8	**Comment** column	Displays the **Comment** if any has been entered for this item in the EDL.
9	**Up/Down Slider** control	Grab the pointer and pull up or down to reveal any EDL items not shown.

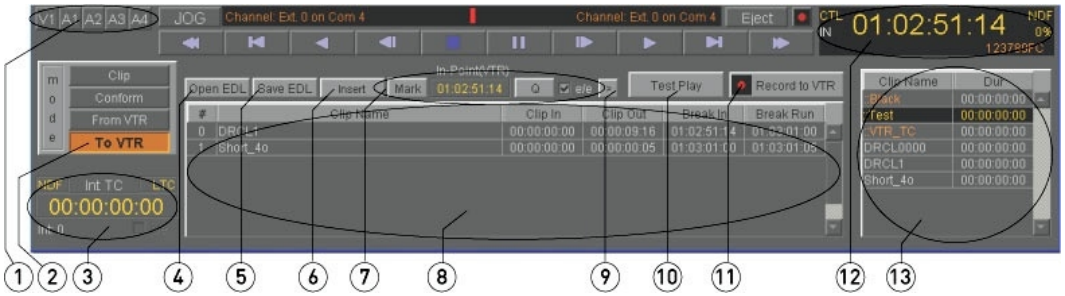
EDL Item Editor Clip Mode

1	**In Point** section	The **In** button sets the current time code location of the external VTR as the new In point for the edit. The current **In Point** setting for this item is displayed in the center time code field. The **Q** button cues the VTR to the location displayed (or entered) in the In time code field.
2	**Rec In** section	Displays the **Record In**, which is the time code location in **Conform Mode** where the first frame of video being pulled in will be placed. This information is not used in **Clip Mode**.
3	**Out Point** section	The **Out** button sets the current time code location of the external VTR as the new **Out Point** for the edit. The current **Out Point** setting for this item is displayed in the center time code field. The **Q** button cues the VTR to the location displayed (or entered) in the **Out Point** time code field.
4	**Prev** section	The time code field displays the length of the current edit. Press the **Prev** button to preview the section of media currently loaded in the EDL Editor without adding it to the pull-in list.
5	**Clip Name** field	Displays the **Clip Name** that will be given to the current clip being created for the Pull-in EDL. This information is not used in **Conform Mode**.
6	**Set Clip** button	The **Set Clip** button becomes active when a user has double-clicked on an item in the EDL. The user may adjust the In/Out parameters and press the **Set Clip** button to retain the changes.
7	**Reel Name** field	Displays the **Reel Name** of the current item being created for the Pull-in EDL.
8	**New Clip** button	This becomes active when a new In and Out point have been loaded into the EDL Editor. Pressing the **New Clip** at this point will create an item in the pull-in EDL based on these parameters.

EDL Item Editor Conform Mode

1	**In Point** section	The **In** button sets the current time code location of the external VTR as the new In point for the edit. The current **In Point** setting for this item is displayed in the center time code field. The **Q** button cues the VTR to the location displayed (or entered) in the In time code field.
2	**Rec In** section	Displays the **Record In**, which is the time code location in Conform Mode where the first frame of video being pulled in will be placed. This information is not used in **Clip Mode**.
3	**Out Point** section	The **Out** button sets the current time code location of the external VTR as the new **Out Point** for the edit. The current **Out Point** setting for this item is displayed in the center time code field. The **Q** button cues the VTR to the location displayed (or entered) in the **Out Point** time code field.
4	**Prev** section	The time code field displays the length of the current edit. Press the **Prev** button to preview the section of media currently loaded in the EDL Editor without adding it to the pull-in list.
5	**Clip Name** field	Displays the **Clip Name** that will be given to the current clip being created for the Pull-in EDL. This control is inactive in **Conform Mode**.
6	**Set Clip** button	This becomes active when a user has double-clicked on an item in the EDL. The user may adjust the In/Out parameters and press the **Set Clip** button to retain the changes.
7	**Reel Name** field	Displays the **Reel Name** of the current item being created for the Pull-in EDL.
8	**New Clip** button	This becomes active when a new In and Out point have been loaded into the EDL Editor. Press the **New Clip** button to create an item in the pull-in EDL.

To VTR Mode



Pressing the **To VTR Mode** button adds the sections indicated in the above diagram to the interface. **To VTR Mode** allows the user to control an external VTR to capture the media existing on the DDR according to a Layback EDL (a form of **PlayList**). The Layback EDL may be loaded from storage, or created within **To VTR Mode**. The **Transport Display** shows information from the external VTR and the user can set In and Out points to create items in the pull-in list.

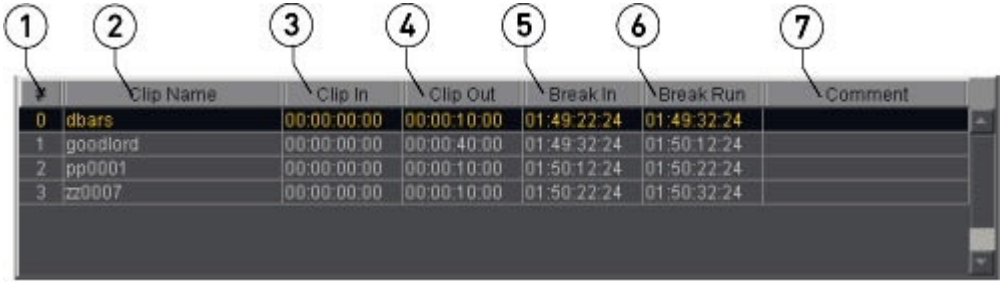
1	**Channel Preset** buttons	The video and audio channels of the external VTR are displayed. In an insert edit it may be possible to select and deselect audio or video channels for the layback.
2	**To VTR** button	**To VTR Mode** is selected
3	**Internal TC** section	Displays time code, standard, channel and control information for the internal channel upon which the video will be recorded. Confirm that the control type here matches that of the external VTR (check the **Transport Display**).
4	**Open EDL** button	Opens a standard browser which allows the user to locate and load their existing EDL/ PlayList into the layback list.
5	**Save EDL** button	Opens a standard save dialog box which allows the user to save the EDL they have created or edited in a location and with a name of their choice.
6	**Insert/ Assemble** toggle button	Pressing this buttons toggles between **Insert** and **Assemble** modes. **Insert** mode records selected channels to a VTR but does not replace the control track or other non-competing tracks in the same time code location. **Assemble** mode records all audio and video tracks and overwrites any existing control track.
7	**Mark, Cue and View** section	The **Mark** button sets the present location as the In point. The time code field next to it displays the current In point setting. The **Q** button cues to the location displayed in the time code field. The user may enter a location in the time code field and press the **Q** button to set it as the In point. The **e/e** checkbox

		displays the output of the VTR in the VGA display screen.
8	**Layback EDL** field	Displays all items entered as part of the layback being set up.
9	**Context Menu** button	Pressing the **Context Menu** button opens the context menu, allowing the user to choose between options for performing the layback.
10	**Test Play** button	Pressing the **Test Play** button plays the layback PlayList without setting the external VTR into record mode.
11	**Record to VTR** button	Press to begin the layback as it is currently set up. The external VTR will cue toward then preroll up to the In Point and begin recording the selected media onto the external VTR.
12	**Transport Display** field	Displays transport information gleaned from the external VTR including time code location, type, video standard.
13	**Clip Bin** field	Displays the clips available in the **Clip Bin**.

Int TC Section

1	**Video Standard** section	Displays the current video standard the internal channel is set to. Click on this item to cycle through the available choices for video standard.
2	**Channel** indicator	Displays the internal channel being addressed.
3	**Internal Time Code Location** field	Displays the time code location the DDR is cued to.
4	**Control** type	Displays the current control type setting. Clicking on this item cycles through the available choices for control type.

Layback EDL



1	**Number** column	Displays the sequential location of the clip within the layback EDL. The first item is number 0, and the list increments upward in single integers for each subsequent item.
2	**Clip Name** column	Displays the name of each clip in the layback
3	**Clip In** column	Displays the In point for each clip in the layback.
4	**Clip Out** column	Displays the Out point for each clip in the layback.
5	**Break In** column	This column displays the time code location at which each media segment starts based on the **Record In** point set by the user.
6	**Break Run** column	This column displays the Break Out point for each item in the layback.
7	**Comment** column	This column displays the **Comment** for each clip in the layback, if any has been entered.

External VTR Transport Display Section

1	**Reference/Input** status display	A warning state may be displayed here: if flashing **IN**, the video input to the VTR is missing, not detected or invalid. If flashing **REF**, the reference input to the VTR is missing, not detected or invalid.
2	**Control Type** display	Select between the available Control types. Cycle through the available choices by clicking on this field.
3	**Time Code Location** display	Displays the time code location to which the VR is cued.
4	**User Bits** display	Displays the user bits if present.
5	**Video Standard** display	Select between available video standards for the VTR. Confirm that this is set to match the DDR's configuration.
6	**Transport Speed** display	Displays the current transport speed as a percentage of normal play speed.

Clip Bin Section

1	**Clip Name** column	This column displays the clip name of each clip in the **Clip Bin**.
2	**Clips** list	Displays all of the clips loaded in the system.
3	**Duration** column	This column displays the **Duration** of the clip.
4	**Up/Down** slider	Allows the user to scroll up or down to reveal any clips not shown.

Setup

The system upon which this instance of the software has been installed will be referred to as the DDR. An external DDR being controlled will be referred to as a **Target Device**.

Connecting external equipment is covered in the *Connecting External Equipment* section of this manual. Specific setup tools for configuration are available within this application.

The setup tools within the application provide for a wide range of functionality by enabling differing setups using the same software. Some of the features described below are only available where supported by the hardware and configuration.

Connection

The interface connects to either the DDR itself (local control) or a **Target Device** on the network (network control), in which case it will operate as the **Control Station**. Note that in some installations the system may be set up to run the application as a service, so the connection will be made automatically upon bootup.

Where the software has not been run before, the first screen that will appear is **QuickClipXO** in disconnected state. The interface in this state is mainly grayed out, and the **Connect** button is active. Where the software has been run before (and the DDR connected to control itself or a **Target Device**), the DDR will open set to control the most recent connection.

The DDR

To control external DDRs, the DDR and any **Target Devices** being controlled must be on the same network and made accessible to each other. In external VTR control applications, device emulation must be properly set up. Where a serial controller is to be used, serial control must be properly set up.

Many features are common to **Local Control** and **Network Control** applications. Where there are differences they have been specified in the appropriate section of this manual.

The Target Device

The **Target Device** must be a computer with **DDR** software installed, licensed to operate under network control.

The hardware in the **Target Device** must be properly integrated for use in the intended application. The **Target Device** must be properly placed on the same network as and made accessible to the DDR.

Local Control

Here is how to connect to and control the DDR upon which this instance of the application is installed (Local Control). Run **QuickClipXO** on the DDR:

Press the **Connect** button. This opens the **Connection** window.
With the **Connection** window open: enter the Network Name or IP address (127.0.0.1) of the DDR into the **Address** field, or type in the word "localhost" into the **Address** field.
Enter the port number in the **Port** field. The default port number is 1234.
Press the **Connect** button. **QuickClipXO** should then display a "connected" screen. In this state, the interface controls the DDR upon which it is installed.

Network Control

Here is how to connect to and control an external DDR, also called a **Target Device**. The **Target Device** must be a **DDR**-based system, licensed to operate under network control:

Genlock - For accurate synchronization, ensure that the **Target Device**, the DDR and any other devices used in the setup (such as VTRs, cameras), are properly genlocked.
Network - Confirm that the DDR and any **Target Device** being controlled are placed on the same network (LAN, Internet) and made accessible to each other.
Run **QuickClipXO** running on the **Target Device**.
Connect - Press the **Connect** button on the DDR. This opens the **Connection** window.
Enter the IP Address - The **Address** field on the **Connection** window displays the name of the most recent connection (if any). Enter the IP address or the network "name" of the **Target Device** into the **Address** field. If the IP address is used, be sure to include the periods. Alternately, to select a device from a list of recent connections, click the pulldown menu to view and select a device from this list.
Port - Set the **Port** for this operation in the Port field. The default is 1234.
Browse - To search the network for available **Target Devices**, press the **Browse** button. This opens a browsing progress window, which searches the network for available devices and displays the results in a pulldown list. The user should be able to select the intended **Target Device** from this menu.
Connect - Press the **Connect** button. **QuickClipXO** should then display a "connected" screen.

In the connected state, the interface controls the **Target Device**. Given that specific capture or playback functionality is hardware-based, the user should confirm that the **Target Device** is capable of the actions they are attempting. For example, a playback-only **Target Device** cannot possibly respond correctly to a **Record** command.

DDR Configuration

There are a number of settings within the application that the user can access to confirm and adjust the various parameters of the DDR. In a **Network Control** operation, it may be best to set up the **Target Device** prior to exercising remote network based control.

Setup Tab

Press the **Setup** button to reveal the **Setup** tab. At the top left are the video settings.

Use the **Video Input** pulldown menu to confirm or set the the input source. Choices may include **Serial Digital Single Link**, **Serial Digital + Alpha**, or **Serial Digital Dual Link**. If the DDR does not have a video card (i.e. a VGA/DVI playout system), this pulldown menu will be inactive.

Use the **Video Standard** pulldown menu to confirm or set a video standard supported by the hardware.

Use the **File Type** pulldown menu to view the current setting or select a new file type from available choices. This is the file type that will be created by captures performed on the system.

Use the **Compression** pulldown menu to confirm or set the codec (compression/decompression scheme) that will be used (or uncompressed format).

Use the **Bit Depth** pulldown menu to confirm or set the bit depth for the codec.

On the **Setup** tab below the video type settings are the conversion settings.

Use the **Conversion** pulldown menu to confirm or set the conversion that will be applied (if any) to output. If there is no video card in the DDR, or if the video card does not support up-, down- or cross-conversion, this pulldown menu will be inactive.

Use the **SD Analog** pulldown menu to set the type of analog standard definition source, if any is being used.

Use the **Down Mode** pulldown menu to set the cropping strategy that will be used to display HD signals when outputting SD.

On the **Setup** tab at the top right are the audio input and output settings.

Use the **Audio Input** pulldown menu to confirm or set the type of audio being captured or output, whether embedded, AES/EBU (or other).

If a channel of (AES/EBU) audio is being used for LTC, select the **Enable** checkbox, then use the pulldown menu to set the channel of audio that will be dedicated to LTC capture/output.

Use the **Audio File Type** pulldown menu to set the audio file type and container strategy that will be used to create audio files during capture.

Use the **Number of Channels** pulldown menu to set the number of audio channels.

Use the **Number of Bits** pulldown menu to set the audio bit depth setting.

Press the **Audio Routing** button to open the **Audio Routing** dialog box. This displays the current routing and allows the user to set alternate routing paths by clicking checkboxes, for each audio "track" associated with the internal channel to which these settings apply. A **Default** button is provided to return the DDR to the default settings.

On the **Setup** tab below the audio settings are the genlock (timing reference) settings.

The **Input** field displays the current video standard setting.

The **Ref** field displays the current genlock source, if detected.

Use the **Reference** pulldown menu to set the reference input source, whether via the genlock/reference port, or the timing signal in the video input (or none).

Press the **Match Input** button to set the DDR to use the video standard of the incoming video signal, if detected.

Advanced Setup Tab

Press the **Advanced Setup** button to reveal the **Advanced Setup** tab.

On the **Advanced Setup** page at the top are the **System (General)** settings:

Use the **Enable Varicam Mode** checkbox to enable Varicam variable frame rate settings to be used. The pulldown menu lets you set or confirm the specific value. Use the **Varicam Inverted** checkbox if you want to invert the field order to support specific older Varicam hardware.

Use the **Sequence Frame Rate** pulldown menu to set or confirm the frame rate being used.

Select, or check the **Enable Overlapped I/O** checkbox to specify that files may be captured into time code space where they will overlap on a timeline. A single timeline will have displaced portions of files to create a single timeline, but the entirety of each file will have been captured to the hard drive.

Select, or check the **Dither Video (For 8 bit YCbCr only)** checkbox to apply dithering for 8 bit formats to minimize the appearance of large scale pattern errors.

Select, or check the **Single Link Normal RGB Range (def on)** checkbox to apply the normal RGB range to single link formats

Select, or check the **Dual Link - Expanded/Contracted RGB (def off)** checkbox to apply an expanded/contracted RGB range to dual link formats.

The **2K HD Offset X and Y** fields allow for the user to adjust the placement of the on-screen VGA monitor to accommodate various large size rasters within the interface.

Below this rectangle on the **Advanced Setup** tab are the **VGA Overlay (DVI)** settings:

Select, or check the **Force VGA** checkbox to ignore the video hardware, and output video using only the on-screen VGA monitor or DVI output

Select, or check the **Superimpose** checkbox to specify that time code should be superimposed on the video output. This is an internally generated time code and will not alter the actual files. Use the **Superimpose** pulldown menu to set the style of the time code that will be displayed.

Select, or check the **VGA Only** checkbox to specify that the time code on output (set using the **Superimpose** controls) is to be applied only to the on-screen VGA output.

Use the X and Y fields to specify the location in the screen (VGA or monitor) where the time code will be placed. A default location will be assumed but the user may change this by typing in new X and Y coordinates.

Select, or check the **Disable VGA/DVI Monitoring** checkbox to turn off the VGA/DVI monitor where it is not required for the application.

Select, or check the **DirectX Enable** checkbox to use DirectX settings for display. This activates the 4 checkboxes to its right for Direct/Overlay.

Select, or check the **RGB Overlay** checkbox to use RGB Overlay for DirectX.

Select, or check the **RGB Direct** checkbox to use RGB Direct for DirectX.

Select, or check the **YUV Overlay** checkbox to use YUV Overlay for DirectX.

Select, or check the **YUV Direct** checkbox to use YUV Direct for DirectX.

Select, or check the **Reduce VGA Frame Rate** to display less frames per second for VGA output - this enables the pulldown menu to allow the user to select the ratio of actual frames to frames displayed. This feature lets you reduce the demands on a system displaying formats which require more processing, yet still use the on-screen VGA display.

Below this rectangle on the **Advanced Setup** tab are the **Video (SDI)** settings:

Select, or check the **SD Only Cards** box to enable SD format capture and playback where the video card is capable.
Select, or check the **HD/SD Cards** box to enable both HD and SD format capture and playback where the video card is capable.
Select, or check the **Allow Independent Channel Configuration** checkbox to allow the user to configure the two channels of a two channel system independently, where hardware is capable.
Use the **Play Delay Frames** field to enter a number of frames the DDR will delay before entering play mode. This helps fine tune the DDR's behavior to match the behavior of a range of professional devices. The default setting is 6 frames.
Select, or check the **Save VBlank** checkbox to save information into the vertical blanking interval for equipment that uses this information.
Select, or check the **Use VBlank** checkbox to display the information contained in the vertical blanking interval of video frames.
Select, or check the **Enable LUT** checkbox to use a lookup table (LUT) on video output for color grading/reproduction.
Select, or check the **LUT Linear** checkbox to use a linear lookup table (LUT) on video output for color grading/reproduction.
Select, or check the **Use Field Duplication** checkbox to provide smooth slow motion replay in capable DDRs.
Select, or check the **Play Only** checkbox to disable any capture, or record functions in the DDR.
Select, or check the **Record Only** checkbox to disable any playback or display functions on the DDR.
Select, or check the **Match Output to Clip** checkbox to reset the DDR's output to match the selected clip.

Below this rectangle on the **Advanced Setup** tab are the **Video (Advanced)** settings:

Use the **Audio Capture Offset** pulldown menu to select between available settings to help adjust incoming audio and video feeds to avoid audio/video mismatch errors.
Use the **Limit SDI Out** pulldown menu to select between available settings to limit the SDI output to place less demands on a DDR during resource intensive activities.
Check, or select the **Use dual DMA for Single Link DPX keycode** checkbox to use dual DMA (dynamic memory allocation) for single link DPX keycode.
Check, or select the **Use YUV2 for 4:2:2 YCbCr** checkbox to use the YUV2 codec for 4:2:2 YCbCr formats - otherwise the default codec is used.
Check, or select the **Use YV12 for 4:2:0 YCbCr** checkbox to use the YV12 codec for 4:2:0 YCbCr formats - otherwise the default codec is used.

Confirm the Record-To Drive

Storage for Media – here is how to confirm that the DDR is set to record onto the correct drive or drive set:

Select the **Status** view tab.
Press the **Record Folder** button. This opens a **Record-To Folder** browser.

Browse to and select a record-to folder if necessary or keep the current folder if it is set correctly. Make sure the DDR is set to record onto a drive other than that which contains the software (if the default installation path is used, the software will be installed on the "C" drive of the DDR).

Functions

This section describes the various functions and how to perform them.

Video Capture

An incoming video signal may be captured in either **Clip Mode**, **Film Mode**, or **Conform Mode**, directly to a user selected file type. Captures may take place under Local Control or Network Control.

Video Signal - Confirm that there is a valid video signal of the correct type being sent to the video input of the DDR (or **Target Device**). If necessary, attach and configure genlock.

Target Folder - Confirm the "**Record To**" directory.
Select the **Status View** button to open the **Status View**.
Press the **Record Folder** button to confirm where the media will be recorded. If necessary, a new location can be set. It is important that the DDR is not set to record media onto the program drive.

Internal Channel - Use the pulldown menu labeled **Internal Channel** to select the correct channel to record onto. This is not applicable in a one channel system.

Setup - Confirm that any other applicable settings have been properly adjusted using the controls offered in the **Setup** and **Advanced Setup** tabs. Return to **Main View** by selecting the **Main View** button.

Clip Mode

Press the **Clip** button in the **Mode** selector.

Record Settings - Press the **Record** button to open the **New Clip Settings** window. This window allows the user to set the clip's name and if needed, length.

Clip Name - The first field at the top is the **New Clip Name** field. A default clip name will be supplied. To change this name, select the text and type in the preferred name. Press the **Set Name** button at any time to update the clip name.

Max Length - The next field is the **Max Length** field. It allows the user to define the length of the captured clip before the recording has started. If this checkbox is unselected, pressing the **Start** button will cause the DDR to continue recording until interrupted. Once the **Max Length** checkbox has been selected, enter a length for the clip (by time code) in the field to the right of the checkbox.

The last frame of video captured will actually be the clip duration minus one frame, as the first frame counted is always 00:00:00:00. A single frame of video for example

would technically have In and Out points of 00:00:00:00 but a duration of 00:00:00:01.

The **Time Remaining** field displays the amount of video the user should expect to be able to capture, based on the available drive space, and the video/audio settings.

Set Name button - The name of the clip is displayed just below the **Time Remaining** field. Enter a new clip name and press the **Set Name** button to change the current name.

Start - Once all parameters for the capture have been correctly set, press the **Start** button. **Clip** capture will begin. The record button will turn red, and the time code in the **Transport Display** will also turn red for the duration of the capture.

Upon completion of the record, the new clip should appear in the **Clip Bin**, available for playback.

Cancel - If it becomes useful or necessary to stop the capture dialog, press the **Cancel** button.

Film Space Mode

Set Capture Parameters

Select **Film Mode**. Select the clip named **::Film** in the **Clip Bin**. If there is no **::Film** clip in the **Clip Bin**, this means no **Film Space** has been set up. A new **Film Space** may be created by pressing the **File** button and selecting **Open/New Film**. This opens a dialog box which allows the user to create a new or load an existing **Film Space**. Where a new **Film Space** is being created, the user should specify the *.film file extension.

Create an Open Length Capture - If the user elects to press the **Record** button while cued to any time code location in **Film Space**, an open length record will begin at that point. So the user will need to confirm that the DDR is not cued to a location containing important media before pressing the **Record** button. Note that **Film Space** is a destructive record mode, in that each new frame recorded into the same time code location actually deletes the existing frames from the hard drive.

Cue to a Good In Point – the user may enter a time code location in the **In Point** field of the extents section and press the **Q** button. Alternately the user may use the transport controls to seek to a good location.

Record the specified video - At the top center of the **Transport/ Clip Control** window, press the red **Record** button. This performs the capture from the cued location and continues until the user presses **Stop** or the media storage drives are filled.

Conform Mode

Press the **Conform** button in the Mode selector.

In **Conform Mode**, automatically generated file names are created for captured files. These names are based on the name of the **Conform Mode** time code space EDL file. Multiple copies of this file may be maintained for different pools of media.

Pressing the **File** button and selecting **Open/New Conform** opens a dialog box which allows the user to create a new or open an existing **Conform Mode** space. In this dialog box, the user must specify the *.log or *.edl file extension.

Open Length Record - The user may perform a "crash" record, which is to simply start recording from the cued location and stop by pressing the **Stop** button. This may also be referred to as an "open length" record.

Set an In Point - Here is how to cue to a location where there is no media allocated.
If there is media already in **Time Code Space**, the user may cue to the last frame of the last clip. Select the last clip by clicking on its row. This action loads the clip's extents into the **Edit** section.
Press the **Q** next to the **Out** field in the **Clip Extents** section to cue up the last frame. Then press the **Frame Advance** button on the **Transport Controls**. This action cues up the first frame after the last clip, so the user might begin a record at this location.
The user can keep this time code location or enter a preferred start record location in the **In** time code field and press the **Q** button. Once the DDR is cued to a location in time code location, pressing the **Record** button uses this location as the **In Point**.

Note: if a record is placed to overlap or replace existing media in time code space, the old media is not deleted and still exists on the drive. So if two clips were recorded at 00:00:00:00, the second clip will appear to have removed the first clip where the two overlap, but the entire first clip will still be available on the drive, and can be added in as needed.

For a fully destructive capture mode (i.e. media in a give time code location is deleted upon a new record in the same time code location) see **Film Mode**.

Perform a Crash Record
To start the record, press the **Record** button.
To stop the record, press the **Stop** button. Upon completion of the record a new clip will appear in the **Conform EDL** having the specified parameters.

Set Length Record - The user may perform an "edit" record, which is to specify **In** and **Out** points and then record video into this area of time code space. This is also referred to as a "set length" record.

To set an **In Point**, select the time code in the **In** box and type in a start time code location. Press the **Q** button. Press the **In** button.
To set an **Out Point**, select the time code in the **Out** box and type in an end time code location. Press the **Q** button to cue to this location. Press the **Out** button to set this location as the new **Out Point**.

Preview the Edit - The user may preview this section of time code space prior to starting the capture.

Press the **Prev** (preview) button. This allows the user to confirm the edit and to adjust any parameters necessary before performing the capture.

Perform the Record

To perform the capture using the specified **In** and **Out** points, press the **Edit** button. The DDR will record the incoming video into the specified area of time code space.

Upon completion of the record a new clip will appear in the **Conform EDL** having the specified parameters.

From VTR - Pull-ins

QuickClipXO can control an external VTR to capture specified media segments onto the DDR. Once all the settings have been adjusted and the pull-in is in progress, the VTR seeks, pre-rolls, and goes into play mode while the DDR is playing. After each clip is captured both devices go into post-roll then begin cueing up to the next item if present. When the pull-in is finished, the new clips will be available in either the **Clip Bin** (**Clip Mode**) or the 24 hour time code space (**Conform Mode**).

The DDR may be set to operate under serial control using the **DDRConfig** application included in the utilities.

A pull-in may be performed either in a Local Control or Network Control application.

Confirm that all the relevant audio and video cables are connected with signal going into the DDR. Confirm that all the relevant serial cable connections have been made.

Following is how the options are set for a pull-in in either **Clip Mode** or **Conform Mode**.

Clip Mode Pull-ins

Here is how to set the options for a pullin in **Clip** mode:

Press the **Clip** button on the **Mode** selector.

Press the **From VTR** button. This opens the **Enter EDL Options** window in **Clip Mode**.

The top field is the **Reel Name** field. The **Reel Name** references a specific tape within the VTR. Keep the default name or type in a new name for the reel. Several pull-in items may be set from one tape, switch the **Reel Name** using this dialog box, insert a new tape, and set pull-in items from the new tape. If the **Reel Name** changes during the pull-in list, a prompt will arise allowing the user to change tapes.

The **Base Name** adds a prefix during the pull-in to create clip names. Enter (up to) 4 characters in the **Base Name** field or leave it blank.

In **Clip Mode** pull-ins, the **Record In** is disabled because the clips are not being added to the **Conform Mode EDL** at any point.

Set Heads and Tails - The user can add "heads" and "tails" to each clip. These are extra frames of media captured at the beginning and end of each clip so as to provide a safe (editable) zone surrounding the media being captured. Enter a number of frames in the **H/T** field. During the capture this amount of frames will be added a the beginning

and end of each clip so that each item captured is that much longer at each end. For example an **H/T** setting of 4 would add 8 extra frames to each clip created in the Pull-in.

Press the **Set Name** button to confirm all of the above adjustments. The **Create** button then becomes active.

Press the **Create** button to begin setting up the EDL in **Clip Mode**.

Conform Mode Pull-ins

Here is how to set the options for a pullin in **Conform Mode**.

Press the **Conform** button on the **Mode** selector.

Press the **From VTR** button. This opens the **Enter EDL Options** window in **Conform Mode**.

The top field is the **Reel Name** field. The **Reel Name** references a specific tape within the VTR. Keep the default name or type in a new name for the reel. Several pull-in items may be set from one tape, switch the **Reel Name** using this dialog box, insert a new tape, and set pull-in items from the new tape. If the **Reel Name** changes during the pull-in list, a prompt will arise allowing the user to change tapes.

In **Conform Mode** pull-ins, the **Base Name** is disabled, as media is captured into time code space using a default naming convention.

Set the **Record In** - The **Record In** field allows the user to set the **In Point** for the captured media in time code space. Enter a time code location within the

Set Heads and Tails - The user can add "heads" and "tails" to each captured item. These are extra frames of media captured so as to provide a safe (editable) zone surrounding the important media being captured. Enter a number of frames in the **H/T** field. During the capture this amount of frames will be added to the beginning and end of each clip so that each item captured is that much longer at each end. For example an **H/T** setting of 4 would add 8 extra frames to each media section in time code space created in the Pull-in.

Press the **Set Name** button to confirm all of the above adjustments. The **Create** button then becomes active.

Press the **Create** button to begin setting up the EDL in **Conform Mode**.

Create Pull-In Items

Once the user has set the **EDL Options**, all of the **View** tabs have been disabled except for the top one, now displayed as **Controlling VTR**.

The external channel (the external VTR/DDR) is loaded into the channel pulldown menu, which means that the transport controls and time code displays etc. now reference the external VTR.

Confirm the Mode - the pull-in can be created to record media into either **Conform Mode** or **Clip Mode**. The most recently used mode will be set by default for the pull-in.

To switch between **Clip Mode** and **Conform Mode** for the pull-in, use the **Internal Channel Mode** pulldown menu at the bottom center of the **From VTR** screen. If it is

necessary to change the mode during the creation of an EDL, select the correct mode, the press the **Options** button and confirm the parameter settings correctly for the new mode.

e/e Mode - To see the output of the VTR on the VGA screen, select the **e/e** checkbox. In a Network Control application, there may be limitations on real-time display of video on the VGA screen of the DDR.

Create Pull-In Items

Find and Set an In Point

Seek and/or cue to the first frame of video to be captured from the VTR using the transport controls. The user may also enter a time code location into the **Clip Extents In Point** field and press the **Q** button to cue to this point.

Press the **In** button in the **Clip Extents** section.

Find and Set an Out Point

Cue to a good last frame for the edit (to be the out point). This must be greater than the **In Point**. The user may also enter a time code location into the **Out Point** field and press the **Q** button to cue to this point.

Press the **Out** button to set this location as the last frame of the first pull-in item.

Comment

Click in the **Comments** field and type in a comment if it is useful to help identify the clip or its source etc.

Make a Pull-In Item

Press the **New Clip** button. This edit will be entered into the **Pull-in EDL**. More edits may be created using this method.

Edit a Pull-in Item - the user can edit a pull-in item at any time before the pull-in has been performed. Here is how:

If any of the parameters of a pull-in item have been entered incorrectly or need to be changed, double-click on its row in the pull-in EDL. This loads the item's parameters, allowing the user to edit the In, Out, Reel, Comment etc.

Revise any parameters that need to be corrected.

Once the pull-in item has been adjusted correctly, press the **Set Clip** button to enable the changes.

Automatic Length Calculation for Pull-in Item - Once the user presses the **New Clip** button, the **Out** point of the clip just created is loaded into the **In** field, and a new **Out** point has been calculated to create a clip of equal length, and loaded into the **Out** field in the **Clip Extents** section. The user could create a multitude of equal length edits by pressing the **New Clip** button repeatedly.

Multiple Reels - Multiple reels (or tapes) may be used during the pull-in. This means the same EDL can be used to pull in media from any number of tapes.

Set up a Second Reel

Once all necessary pull-in items have been created from the first tape, eject and remove the first tape from the VTR.

Select the **Options** button to open the **Enter EDL Options** window again.

Select the **Reel Name** field and type in a name (different from the **Reel Name** used for the first tape) for the second tape, or reel.

Press the **Set Name** button.

Press the **Create** button.

Load the second tape into the VTR.

Make new pull items from the new reel

Create any pull-in items needed from the second tape.

As the pull-in is being performed, when the **Reel Name** changes from one item to the next, the user will be prompted to insert the second tape into the VTR.

Delete Items in the EDL - The user may delete an item in the EDL if it becomes necessary. Select the offending item and right click on it. This opens the **Pull-In EDL** context menu. Select **Delete Clip** from the context menu. (This removes the clip from the EDL, but does not actually delete it from the hard drive).

Perform the Pull-in

Pull-In Context Menu - The Pull-In is performed using the context menu. Right click on a clip in the pull-in list to open the **Pull-in EDL** context menu, or click on the **Transfer** button. Here are the choices in the context menu:

Single Clip performs a pull-in of the selected clip. Select the necessary clip and right click on it, then select **Single Clip**.

Selection performs a pull-in of specific clips. Select the necessary clips and right click on them, and select **Selection**.

All performs each item in the EDL from start to finish. Once the pull-in has completed, the new clips should be available for playback. In **Conform Mode**, the media will have been placed into 24 hour time code space. In **Clip Mode**, the media will be available in the **Clip Bin** of the DDR as a series of clips.

Delete Clip removes the selected edit from the EDL.

Clear List opens the **Save/ Discard** window, which allows the user to either save their current edits or to discard all edits in the EDL.

EDL File Options

Save the EDL - Once the pull-in EDL has been created, the user may save it. Press the **Save EDL** button. This opens the **Save as EDL** browser which allows the user to save the EDL in a location of their choice.

Once the EDL has been saved, it is a simple file and may be copied and pasted and otherwise relocated to wherever the user needs to use it. Therefore pull-in EDLs can be created on a station set up for that purpose, and made accessible or moved to any station set up to remotely perform them.

Delete the EDL - To clear the entire list, right click on the list. The context menu will open. Select **Clear List**. This brings up the **Discard List** window.

Select between **Save** (save the list in a directory chosen by the user) or **Discard** (remove all edits from the list).

Open a Saved EDL - If a Pull-in EDL has already been created and saved in an accessible location, the user may open and run it. Select the **Open EDL** button. This opens a browser, which allows the user to locate and load the saved EDL.

Browse through the available directories to the location of the saved EDL.
To efficiently browse for specific EDL types the user may select the **Filter** pulldown menu, which limits the files displayed to certain EDL types.
Locate the saved EDL.
Press **OK** to select and load it.

To close this dialog box without opening an EDL, press the **Cancel** button.

Play Media

Media may be played in various modes through the video hardware if present, with playback also displayed in the VGA screen monitor. A unit may also be set up as a VGA/DVI playout-only system without video hardware, and only offer the VGA/DVI Display.

The user may advance forward or in reverse one frame at a time (**Step Frame** buttons). The user may jump ahead or back in 5 second increments. The user may play in fast forward or fast reverse. The user may **Play** at 100% speed in forward or reverse. **Pause** will stop at the present location and display the frame of video found there. **Stop** will cause playback to stop and allow pass-through video to display, if any is present.

The **Jog**, **Shuttle**, **Variable** and **Position** slider bars allow the user to cue to and review sections of media quickly and efficiently.

Clip Mode

In **Clip Mode** the media is accessed as a series of clips, or discrete media segments starting at 00:00:00:00. Confirm that the correct internal channel has been selected for playback. In a single channel system, this will be **Int0**.

Press the **Clip** button in the Mode selector. The interface will indicate **Server Mode**, and there are other controls and displays unique to **Clip Mode**.

Clip Playback

Select a clip from the **Clip Bin** by clicking on it. Upon its selection, the clip will be paused on the first frame, 00:00:00x00.

Press **Play**. The clip should play from the beginning to the end, and pause on the last frame (unless interrupted).

Pre/Postroll – To add 1 minute of black on the beginning and end of all the clips in the **Clip Bin**, click to select the **Pre/Postroll** checkbox. You will note each clip's length is increased by 2 minutes. You can still easily cue to the beginning of media within the clip by entering 00:01:00:00 into the **In** extents field and pressing the **Q** In button.

Preview a section of a clip – Select a clip. To edit the **In Point**, either cue to a point within the clip or enter the time code location into the **In Point** field, and press the **In** button to set this as a new **In Point**. To edit the **Out Point**, either cue to a point within the clip after the **In Point** just set, or enter the time code location into the **Out Point** field and press the **Out** button to set this as a new **Out Point**. To run the preview, (i.e. to view the portion of the clip specified by the edit) press the **Prev** button.

Looped Clip playback – playback of a clip may be looped for display or review applications. Select a clip. Press the **Loop** button. Press **Play**. The clip will play from start to finish, over and over again until stopped.

Looped Preview Playback - A **Preview** may be looped in the same way. Set up an edited portion of a clip as above and press the **Loop** button. Press the **Prev** button. The specified portion of the clip will play from start to finish, over and over again.

PlayList Playback

A **PlayList** allows the user to assemble clips from the **Clip Bin**, and arrange them in sequence for playback. A **PlayList** may be quickly assembled by the user, and multiple **PlayLists** may be saved and run as needed. A **PlayList** may be looped for display or review applications.

Create a PlayList - Confirm that there are clips in the **Clip Bin**. Select the **PlayList** checkbox to reveal the **PlayList** section of the interface. The large list in the lower center is the **PlayList**. The **Clip Bin** has been shifted to the right, and reduced in size.

Add **Clips** to the **PlayList** – clips are introduced to the **Clip Bin** from the **PlayList**. Here is how to add clips:

Add Clips from the Context Menu:

Right click on a clip in the **Clip Bin**.
Select **Copy Clip** from the context menu.
Right-click on the **PlayList** to open the **PlayList** context menu.
Select a pasting option from the context menu.

Add Clips Drag and Drop:

Click and hold on a clip.

"Drag" it over to the **PlayList** (move the mouse to a location over the **PlayList** while holding the select button down) and "Drop" it (release the select button on the mouse).

If dropped in a blank area of the **PlayList**, the selected clip will have been added to the end of the **PlayList**.

If dropped onto a clip in the **PlayList**, it will take that clip's place and move the rest of the list down.

If a clip has been placed out of order it may be deleted (right click on the clip) and re-added elsewhere in the list.

Selecting **Remove All Clips** from the context menu will clear the **PlayList** of all clips.

Play the PlayList - select the **Play List** button. The **PlayList** will begin playing at the first clip and continue until stopped or until the last frame of the last clip in the **PlayList**. The **Play List** button becomes a **Stop PlayList** button while the **PlayList** is playing. Therefore, it functions as a toggle for playback of the **PlayList**.

Play the PlayList in Looping Mode - To play the **PlayList** in looping mode, select the **Loop List** checkbox, then press the **Play List** button. The **PlayList** will play from start to finish, over and over again until interrupted. Deselect this checkbox to remove looping mode playback of the list.

PlayList File Options

PlayLists are saved as files, and may be copied and pasted, or moved to other locations on the network. This allows the user to create **PlayLists** on the **DDR**-based device of their choice locally or remotely based on that system's available media, and move these **PlayList** files as needed to whatever system is being used to control the DDR.

In a **Network Control** application, **PlayLists** may be composed based on a shared pool of media. These **PlayLists** may then be run by another Drastic DDR that can connect to the same network and access the same media files. To open and play a **PlayList** on a networked Drastic DDR, the clips specified in the **PlayList** will need to already be in the **Clip Bin** of the target device. It would be possible to open a **Clip List** that has been saved in an accessible network location, which includes the relevant media

To **Save** the open **PlayList**, select the **Save PlayList** button. In Local Control, this opens a standard browser which allows the user to save the **PlayList** with a name entered by the user, in a location of their choice.

In a **Network Control** application the browser will allow the remote user to save the **PlayList** in a location of their choice, but any drives local to the **DDR**-based device being controlled will need to be shared with the controlling system. See the *Add a folder to access remotely* section for more information on how to do this.

To **Open** a saved **PlayList**, select the **Open PlayList** button. This opens a standard browser which allows the user to search for and open a saved **PlayList file.**

Film Mode

Film Mode uses a 24 hour time code space, much like **Conform Mode**. This mode does not use clips, so the **Clip Bins** and **PlayLists** are not available in this mode. **Film Mode** is a fully destructive mode of operation; media captured into the same time code location as existing media will displace, and delete the existing media. For a non-destructive capture mode, see **Conform Mode**.

Select Film Mode – Confirm that the DDR is set to **Clip Mode**. Select the **::Film** clip in the **Clip Bin**. This places the system into **Film Mode**. If there is no ::Film clip in the Bin, it is possible you have not set up a Film Space. You can create a new on by pressing the **File** button and selecting **Open/New ::Film Space**, and selecting a location for the files to be saved in.

Play Everything - The default **In** location is 00:00:00;00. Pressing **Play** at this point will allow the user to play the entire time code space from beginning to end (23:59:59:29).

Cue to an In Point – Enter the time code location into the **In** field on the **Transport/ Clip Control** window and press the **Q** button (cue). Pressing **Play** will play from this location to the end of **Film Mode's** 24 hour time code space.

Preview a section of Film Mode media - sections of media may be played from specific time code locations set up by the user. Here is how:

To set an **In Point**, enter the time location into the **In point** field.
Press **the Q** button.
Press the **In** button.
To set an Out Point, enter the time code location into the **Out point** field
Press the **Q** button.
Press **the Out** button.
To view this section, press the **P (Preview)** button. This plays the selected section of media, pausing on the last frame.

Looped Preview Playback - A **Preview** may be looped in the same way. Set up an edited portion of **Film Space** as above and press the **Loop** button. Press the **Prev** button. The specified portion of **Film Space** media will play from start to finish, over and over again.

Conform Mode

In **Conform Mode**, the media is accessed as having an associated time code location within Drastic's 24 hour time code space. Media is captured or added into a virtual 24 hour time code space using system-generated names and allocated to specific time code locations.

Select the **Conform Mode** button. Any media loaded into **Conform Mode** will be displayed on the **Time Code Edit List**. Selecting any media section in the **Time Code Edit List** will load the In/ Out/ Duration parameters into the **Clip Extents** section, with the first frame of video loaded for playback (in **Main View**).

Play the Entire List - To play the entire list, cue to zero using one of the following methods. Select the time code in the **In** box and type in 00:00:00:00. Press the **Q** button. Alternately, press the **rtz** button. Press the **Play** button. The list will play from start to finish, all 24 hours of it whether there is media or not. If there is no media allocated to a section, the DDR will play black.

Play from In Point - Pressing the **Play** button will play from the cued location to the end of time code space unless interrupted.

Play a section of time code space media - select an item from the **Time Code Space List**. This loads its In and Out points into the **Extents** section. Press the **Prev** (preview) button in the **Clip Extents** section. Playback will stop on the last frame of the selected media section.

Play a selected section of media using time code - select the **In Point** time code and enter the new time code location (where the media will start playing). Press **Q** to cue to this location. Or use the transport controls to cue to a location at which you would like playback to start. Press the **In** button.

Select the time code location in the **Out** field, and enter a new time code location (greater than the In point) as the last frame. Press the **Q** button, then the **Out** button. Press the **Prev** (preview) button. This will play the selected section of media, even if it includes several sections of media in time code space. Playback will pause on the last frame.

Note that even with the new extents entered, the **Play** button will not look for an **Out Point**; it will keep on playing until it reaches the end of time code space.

Looped Playback in Conform Mode - To loop the playback of a media segment, load its extents into the **Clip Extents** section. This can either be a selected media item, or edited **In** and **Out Points** set by the user. Press the **Loop** button. Press the **Prev** button. The selected section of media will play from start to finish, over and over again until interrupted.

Note that even with the **Loop** button selected, the **Play** button will not loop the playback in this mode.

Laybacks

QuickClipXO may control an external VTR to lay clips back to the VTR under control. A **PlayList** is assembled, and the VTR is placed into record under the control of the DDR. The media within the **PlayList** is captured in sequence onto the tape in the VTR.

Confirm that the video/audio output(s) of the DDR are connected to the input(s) of the VTR. If it is necessary or useful to see the video output of the VTR on the VGA screen of the DDR (for example to cue to a good In Point location), confirm that the video output of the VTR is connected to the video input of the DDR.

Confirm that the RS-422 output of the DDR is connected to the RS-422 input of the VTR via a serial cable. Confirm that the VTR is set to Slave (or Remote) Mode (in order to accept external control). There may be an adapter or adapters required to effect serial communications.

Confirm that any media the user wants to lay back onto the external VTR is loaded into the **Clip Bin** before setting up the Layback. In a Local Control application, it is possible to exit **To VTR Mode** temporarily and add media to the pertinent **Clip Bin**, but in a Network Control application the user will have to confirm that any necessary clips have already been added to the **Clip Bin** of the Target Device.

Laybacks may be performed in a Local Control or Network Control application.

Create a Layback EDL

Enter To VTR Mode

Press the **To VTR Mode** button to select **To VTR Mode**. All of the **View** tabs become disabled except for the top one, now displayed as **Controlling VTR**. The external channel (the VTR) is loaded into the channel pulldown menu, which means that the Transport Controls and Displays now address the external VTR. The internal channel displays are relocated to the lower left hand corner of the interface.

Choose between Insert or Assemble

Assemble - to capture all video and audio channels present in the media, switch the **Insert/Assemble** toggle button to **Assemble**.

Insert - to capture specific channels of either video or audio and leave other channels on the tape intact, switch the **Insert/Assemble** toggle button to **Insert**, then deselect any video and/or audio channel(s) which you do not want to replace on the tape.

Cue to and Set an In Point on the VTR –

Use the **Transport Controls** to cue the tape to the location of the first frame of media to be captured.

Press the **Mark** button. This sets the current location on the VTR as the In Point for the Layback.

Alternately, enter the time code location into the **In-Point (VTR)** field and press the **Q** button. This cues the VTR to the specified location and sets this location as the In point.

Place Clips into the layback EDL. The user places clips from the **Clip Bin** into the **Layback EDL**. Either "drag and drop" or "copy and paste" will work to add clips to the EDL. Here's how:

Drag and Drop: Select a clip in the **Clip Bin** by clicking on it. "Drag" it over to the **EDL** section and "drop" it. It will be added as the first section of media that will be recorded onto the VTR. The user may continue to drag and drop clips until the **EDL**

section contains all the clips that are being laid back to the VTR. "Dropping" a clip in the location of an existing clip in the list will place the "dropped" clip before the existing clip.

Copy and Paste: Right click on a clip in the **Clip Bin** to reveal the context menu. Select **Copy Clip** from the context menu in the **Clip Bin**. This copies the selected clip to the clipboard. Move the cursor over to the **Layback EDL**. Right click on this EDL to reveal the context menu. Select from the options to put the clip into the list.

The user may add more clips using either of these methods.

Test Play - It may be useful to review the EDL by playing it. Press the **Test Play** button to see if the EDL is correct. This action runs the EDL without recording media onto the VTR.

Edit an Item in the EDL - If an item needs to be adjusted, right click on the offending clip and select **Edit Row**. This opens the **Edit Layback** window.

The current parameters of the selected clip are loaded into this window. The user may edit any of the parameters of the item. When the necessary adjustments have been made, select the **Change** button to set these details in memory.

Cancel - If the user does not wish to adjust the item (whether any changes have been entered or not) select the **Cancel** button.

Delete a Clip - To delete a clip from the **Layback EDL**, right click on it and select **Delete Clip**. This selection removes the clip from the EDL but does not actually delete it from either the **Clip Bin** or from the DDR's storage.

Perform the Layback

Once the layback EDL has been set up correctly, the user may begin the layback.

Press the **Record to VTR** button. The DDR and the VTR will synchronize, the VTR will pre-roll, then move forward and begin recording from the first frame of the first clip. Each clip will be played in sequence until all the clips have been recorded onto the VTR.

The clips will have been recorded (or laid back) onto the VTR contiguously, starting at the **In Point** specified by the user.

Layback EDL File Options

Save the EDL - To save the list, right click on the **Layback EDL** and select **Save List**. This opens a standard browser which allows the user to save the **EDL** in a location of their choice.

Delete List - To clear the entire list without saving, right click on the **Layback EDL** and select **Delete List**. This opens the **Save/ Delete** dialog box, which allows the user to discard the list if desired.

Open a Saved EDL - To open an EDL that has been saved in a location accessible to the user, press the **Open EDL** button. This opens a standard browser, with the filter set to show only **EDL** (*.edl) file types.

The user may select the **Filter** pulldown menu to view a list of file type filters which displays only one file type during the search. If the EDL type being used is not shown, the user may select * (show all files) to locate a specific EDL.

Select the correct EDL and press the **OK** button.

Cancel - The user may close this dialog box without selecting an EDL by pressing the **Cancel** button.

External VTR-Controlled Layback

An external VTR may act as a controller to capture media existing on the DDR.

Once control has been established over the DDR, the transport controls on the VTR allow the user to set In and Out points. The VTR then acts as a controller to perform the Layback. Each edit in this kind of layback is performed individually, so there is no EDL to create or save etc.

Here is how to perform an external VTR-controlled layback.

Set Up the DDR to be Controlled by an External VTR

Open **DDRConfig**.
Select the **Internal** tab.
Select the **9 Pin Device Emulation** checkbox.
Set the **Port** to the COM port allocated to incoming serial control.
Select the checkboxes for either **Sony 422**, **Odetics**, and/or **Louth/VDCP** as indicated by the VTR's serial protocol preferences.
If changes have been made to the configuration, the **Apply** button will become active. Press **Apply**.
Close **DDRConfig** by pressing the **Close** button.
Run **QuickClipXO**.

Cabling between the VTR and the DDR

Confirm that the video output of the DDR is connected to the correct input on the VTR.
Confirm that the audio output of the DDR is connected to the correct input on the VTR.
Attach a NULL adapter to the COM 1 port on the DDR. Connect a standard serial cable to the Drastic NULL adapter. Connect the other end of the cable to the serial control port on the VTR.

Set up the VTR

Confirm that the edit presets on the external VTR (the specific channels being captured, such as V1, A1, A2, A3, A4 etc.) are correct for the capture being set up.
Confirm that the VTR is set to Master (or Local) Mode (set to provide control over an external device).
Confirm that the correct tape is in the VTR.

Create In and Out points on the VTR

Use the transport controls on the VTR to seek to the location on the tape where the media should start recording.
Set this as the **In Point** on the VTR
Use the transport controls on the VTR to seek to the location on the tape where the media should stop recording.
Set this as the **Out Point** on the VTR

Set an In point on the DDR

Select the mode on the VTR that provides transport control over the DDR.
Cue the DDR to the first frame of media to capture (using the VTR's controls).
Using the VTR's controls set this as the In Point on the DDR.
Perform the edit (press the Auto-Edit button in some cases)

Using this method the user may capture media existing on the DDR to their VTR.

Editing and Accessing Media

Clip Mode - Add Clips to the Clip Bin

Local Control - Add Clips Clip Mode

Press the **Clip** button in the **Mode** selector.
Click on the **Add Media** button. The Java file browser will appear.
Select the file you want and press **Add Clip**. This loads the clip into the **Add Clip Options** dialog box. This dialog provides a default name which you can reset.
Press the **Set Name** button to confirm any name changes
Press the **Add** button to add the clip to the **Clip Bin**.

Network Control - **Clip Mode**: press the **Clip** button in the **Mode** selector. Click on the **Add Media** button. The web-based file browser will appear. This shows the folders accessible to the system you are controlling which have been added, allowing you to access them remotely. Select a file and press the **Open** button to add it to the **Clip Bin**.

Note: if the media file you are adding does not have the same frame rate, compression type and bit depth as the current DDR settings, it will appear in orange in the list and may not play back in real time.

Add a folder to access remotely

To be able to add media remotely, the folder to which the media is being added must be shared with the remote system that is doing the adding. This allows the user to provide access only to specific users. Here is how to add a folder for remote access:

Close **QuickClipXO** on the remote system being controlled.
Open **DDRConfig** on the remote system being controlled.
Select the **Network** tab. The **File Directories** section will display a list of all currently mapped folders.
Assuming the folder you want to share is not already present in this list, press the **Add** button
Browse to the desired folder and select it. Press **OK**. This loads the selected folder into the **Enter Alias** box.
Enter a name to help identify the folder, or leave it as it is. Press **OK**.
The remote user will now be able to "see" the folder for records, lists, media etc.
If a folder in the list needs to be removed, you can remove it from this list using the procedure outlined in the *Remove a folder from remote access* section.

Close **DDRConfig** and open **QuickClipXO** on the system to return to being controlled remotely.

Remove a folder from remote access

If a folder is no longer used it may be removed from remote access. Here is how to remove a folder so it cannot be accessed remotely via **QuickClipXO**:

Close **QuickClipXO** on the remote system being controlled.
Open **DDRConfig** on the remote system being controlled.
Select the **Network** tab.
Select a folder from the list.
Press the **Delete** button. This removes the folder from the list. The folder will no longer be visible to remote browsers and the remote user will not be able to "see" the folder to select it.
If a folder has been removed by accident or needs to be reactivated, you can add it back using the procedure outlined in the *Add a folder to access remotely* section.

Edit the Clip Bin

Remove or Delete a Clip - Right click on a clip in the **Clip Bin**. This brings up the **Clip Bin** context menu. Here are the options:

Select **Remove Clip**. This does not affect the media file as it has been saved to the storage, but the clip will no longer appear in the **Clip Bin**.
Select **Delete Clip**. The clip will be deleted, and the media file removed from the hard drive. It will be gone.

Clip Picon Reset

Select **Clip View**. Each clip is displayed with a small (compressed) image above its name. This image is referred to as the picon (picture icon). The picon is based on a default frame in the clip. In some cases this picon will not be the best visual reference for the

media contained in the clip. It may be useful to reset the picon to a more representative frame of the clip.

To reset a picon, select a clip. Cue the clip to a location other than the first frame. Press the **Set Picon** button. In **Clip View**, the picon is changed immediately. **In Main View**, the picon itself is displayed.

Once the picon has been reset, **Clip View** displays the clip with the new picon for the user's visual reference.

Create Sub-Clips

In **Clip Mode**, the user may create sub-clips from a clip by specifying new In/Out points. This operation does not alter the clip as it has been created on the hard drive; rather it functions to play only the specified portion of the clip. Another instance of the clip is added to the **Clip Bin** which may be played, added to **PlayLists**, etc.

Click on the **Clip Mode** button to select **Clip Mode**.

Select a clip in the **Clip Bin**. Note that its time code length is displayed in the **Clip Extents** section.

To trim frames from the beginning, select the time code in the **In** field and enter a new time code location greater than 00:00:00:00 (must be prior to the end of the clip). Press the **Q** button. This cues the clip to that frame of video. Press the **In** button. This sets this location as the new **In Point**. The clip length will automatically be recalculated to display its new duration, and the edited frames will be removed from the beginning of the clip if the user accepts these choices in the **Create New Sub Clip** dialog box.

To trim frames from the end, select the time code in the **Out** field and enter a new time code location (must be less than the present **Out** point). Press the **Q** button to cue the display to this location. Press the **Out** button. This sets the current location as the new **Out** point. The clip length will automatically be recalculated to display its new duration, and the edited frames will be removed from the end of the clip if the user accepts these choices in the **Create New Sub Clip** dialog box.

Press the **Create Sub-Clip** button. This opens the **Create New Sub-Clip** dialog box, which allows the user to rename the sub-clip.

Rename the Sub-clip – A default name is supplied for the sub-clip, but here is how to enter a new name. Select the text in the **New Clip Name** field, backspace and type in a new name.

Press the **Create** button. The sub-clip will be added to the **Clip Bin** for playback, and/or included in a **PlayList**.

Cancel - If the user does not wish to create the sub-clip at this time, press the **Cancel** button to close the **Create New Sub-Clip** dialog box.

Picon Display of a Sub-Clip - Where a sub-clip has been created, the user may note that in **Clip View** it retains as its picon the first frame of its parent clip, whether this matches the first frame of the sub-clip or not. In fact in many sub-clips the first frame of the parent clip will not be played at all.

Reset the Picon - To reset the picon for the sub-clip, select the sub-clip in the **Clip Bin** and then press the **Set Picon** button. This resets the picon to the first frame of the sub-clip. The user may also cue to any location within the sub-clip and reset the picon to that frame by pressing the **Set Picon** button.

The sub-clip will display the duration of its parent clip in the **Clip View Property** section, **Length** field. This is because the parent clip has not actually been shortened by the sub-clip creation. This allows the user to create multiple sub-clips from the same parent clip without duplicating media.

Custom Clip Bins

Clip Mode allows the user to either load an alternate saved **Clip Bin** or to create a new **Clip Bin**. This allows the user to tailor the contents of each **Clip Bin** to the user's requirements while maintaining the most efficient allocation of a shared pool of resources.

Create a New Clip Bin

Press the **File** button.
Select the **Open/New Clip Bin** option. This opens a browser which allows the user to search for the location in which they would like to create a new **Clip Bin**. The browser is set to the location of the current **Clip Bin** file, with a file named *.log in it.
The user may select the * part of the file name and type in a name for the new **Clip Bin**.
Press the **Open** button and the browser closes.
The **Clip Bin** will now display its default clips, **Black**, **::Test**, and **::VTR_TC**. If a **Film Space** has been set up, a default **::Film** clip will also be present. Otherwise the **Clip Bin** will be empty.

Open an Existing Clip Bin – To open a **Clip Bin**

Press the **File** button.
Select the **Open/New Clip Bin** option.
Browse to the location in which the **Clip Bin**'s log file is saved.
Select it, press the **Open** button, and the browser closes.
The **Clip Bin** will now display its default clips, plus any media clips which have been captured into or otherwise added to the **Clip List** just opened.

Conform Mode - Add Media to Time Code Space

The user may add media to the **Conform Mode EDL**.

Local Control - Add Media Conform Mode

Press the **Conform** button in the **Mode** selector.
Click on the **Add Media** button. The browser will appear.
Select the file you want and press **Add Clip**. This loads the clip into the **Add Clip Options** dialog box.
Set the **Timeline In** to set where the clip will be located in time code space.
If you want to trim frames from the beginning of the clip, edit the **Clip In** to a new In Point (greater than 00:00:00:00)

If you want to trim frames from the end of the clip, edit the **Clip Out** to a new **Out Point** greater than the **In Point**.

To only add some of the video or audio channels, deselect the channels not wanted by clicking on their specific button.

Press the **Add** button to add the media to time code space.

Local Control - Add Clips Conform Mode - **Conform Mode** also allows you to add clips directly from the **Clip Bin**.

Press the **Add Clip** button to reveal a pulldown menu containing all the clips in the **Clip Bin**.

Clicking on a clip in this menu loads it into the **Add Clip** dialog box so you can set the parameters and add the clip as above.

Remote Control - **add clips Conform Mode**:

Press the **Conform** button in the **Mode** selector.

Click on the **Add Media** button. The web-based file browser will appear. Only the folders which have been added will be available to browse to for this operation.

Select the file you want and press **Add Clip**. This loads the clip into the **Add Clip Options** dialog box.

Set the **Timeline In** to set where the clip will be located in time code space.

If you want to trim frames from the beginning of the clip, edit the **Clip In** to a new In Point (greater than 00:00:00:00)

If you want to trim frames from the end of the clip, edit the **Clip Out** to a new **Out Point** greater than the **In Point**.

To only add some of the video or audio channels, deselect the channels not wanted by clicking on their specific button.

Press the **Add** button to add the media to time code space.

Edit Time Code Space

The user may remove media from the **Time Code Edit List**. Select a media segment and right click on it.

This brings up the context menu for the **Time Code List**. Select **Remove** and the selected media segment will be removed.

Custom Time Code Space Lists

Conform Mode allows the user to either load an alternate saved **Conform EDL** or to create a new **Conform EDL**. This allows the user to tailor the contents of each **Conform EDL** to the user's requirements while maintaining the most efficient allocation of a shared pool of resources.

Press the **File** button. This opens a browser which allows the user to search for the location in which they have either saved a **Conform EDL** or in which they would like to create one.

If an existing **Conform EDL** is selected, pressing **Open Clip Bin** loads this **Conform EDL**, and so the contents of the new **Conform EDL** are accessible to the user for playback in **Conform Mode**.

VTRIF

User Guide

Introduction

The **VTRIF** interface can be used for digital video capture, conversion, control and playback. It allows a user to operate a computer ("the DDR") as a video capture and playback device, and to control external VTRs and operate under serial control as would a production VTR.

The interface is designed to provide the "feel" of a traditional VTR with graphic elements corresponding to common VTR controls and displays.

To run this application click on the following: **Start|Programs|<install directory>|VTR interface**.

Features

Mode Selection

Available Modes - **DDR4** software provides various modes of operation. Each mode has its advantages, and the user should be aware of the differences between them.

Clip Mode treats media segments as a series of discrete clips, each having their own time code unrelated to other clips or a timeline as such. In **Clip Mode**, recorded video shows up as a clip in the **Clip View** list. It has an **In Point** of 00:00:00:00 and its duration for an **Out Point**. The user may trim clip durations or create multiple sub-clips without any alteration to or duplication of the original media.

Clip Mode uses the **Clip Bin** to make the clips available for playback. The **Clip Bin** is based on a simple list maintained in this application as a **Reel**. Each install is provided with a default **Reel**, but a new one may be created by pressing the **Reel** button, and selecting a location for the file to be saved at. In **Clip Mode** the **Reel** provides specific default clips (**::Test**, **::Black**, and **::VTR_TC**).

To select **Clip Mode** the user may click on the **Mode** display until it reads: "**Mode: Clip**", or select the **Setup View** and make sure the **Conform EDL** checkbox is deselected (not checked).

Film Mode treats media segments as a series of single frames of video associated with a virtual timeline. This timeline is based on a series of folders whose structure allows for an exclusive number of sequentially numbered files, each file being a single frame of video. Therefore **Film Mode** is completely destructive, in that frames of video that are "recorded over" are also deleted from the hard drive, essentially being replaced by the new frame. Multiple **Film Mode** lists may be maintained to accommodate varying workflow requirements.

To set up a **Film Space**, press the **Add/New Film** button to open a browser. Set the location of the **Film Space** - this is where the files will be recorded. Name the **Film Space** and accept the choices. A series of folder will appear in the location you have specified, and a clip named **::Film** will appear in the **Clip Bin**.

To select **Film Mode**, first select **Clip Mode** (by clicking on the **Mode** display until it reads: "**Mode: Clip**", or alternately select the **Setup View** and make sure the **Conform EDL** checkbox is deselected). Next click on the **::Film** clip in the **Clip Bin**. If there is no **::Film** clip in the **Clip Bin**, the user must set up a **Film Space**.

Conform Mode treats media segments as having a time code In and Out point associated with a virtual timeline. This timeline may be recorded onto, edited and played out as a tape. Clips may be added to or removed from the current timeline without affecting their status on the storage drives. Multiple Conform Mode EDLs may be used to access the same, overlapping or completely different pools of media based on workflow requirements.

Conform Mode uses the **Conform Mode EDL** to make the clips available for playback. The **Conform Mode EDL** is based on a simple list maintained in this application as a **Reel**. Each install is provided with a default **Reel**, but a new one may be created by

pressing the **Reel** button, and selecting a location for the file to be saved at. In **Conform Mode EDL** the **Reel** provides an empty time code based list.

To select **Conform Mode** the user may click on the **Mode** display until it reads: "**Mode: Conform**", or select the **Setup View** and make sure the **Conform EDL** checkbox is selected (checked).

Video Capture

Capture from an incoming (audio/video) signal directly to a file.

In **Clip Mode**, captured files are handled as discrete media objects, each having a start time of 00:00:00:00 (this may be different if an alternate time code source is used). In **Clip Mode** the user may scroll through a **Clip Bin** to view, and click to select clips for playback. The user may add or remove clips from the **Clip Bin**. In **Clip Mode** a series of clips can be placed together in a **PlayList**, including sub-clips created within the application. Because the inclusion in the **PlayList** is virtual, a clip can be placed in the **PlayList** many times without any duplication or alteration of the original file.

In **Film Mode**, captured files are handled in one of the sequential frame formats such as DPX, CIN, TGA, TIFF. The files are captured into a structured series of folders which relate to a timeline in hour or half hour blocks. Each of the folders is designed to "hold" exactly enough frames to make up its portion of the 24 hour timeline. Incoming records which overlap the time code span of any other media, replaces the existing media with its own frames. In this sense **Film Mode** is a completely destructive mode of capture, as any replaced frames are also deleted from the hard drive.

In **Conform Mode**, captured files are accessed the same way clips are, but they also exist as a series of edits in a **Conform Mode EDL** (edit decision list). Because the **Conform Mode EDL** is time code based, it allows clips captured or edited together to be played out seamlessly, similar to a **PlayList**. Because the inclusion in the list is virtual, a clip or any portion thereof can be placed in the list many times without any duplication or alteration of the original file.

Video Playback

In **Clip Mode**, the user may scroll through the **Clip Bin** to see available clips, click to select individual clips, and use the transport controls to play selected clips.

Film Mode is a sub-mode of **Clip Mode**, as the user selects **Clip Mode** and then select the **::Film** clip in the **Clip Bin** to enter **Film Mode**. Once the **::Film** clip is selected, the user may use the **Transport Controls** to play media. Enter **In** and **Out** points and use the **Preview** button to play selected sections of media.

In **Conform Mode**, the user may access the **Conform Mode EDL** to access media, and then use the **Transport Controls** to play media. Use the **Preview** button to play selected sections of media.

Transport Controls are available for playback and cueing within a range of speeds, including a Jog/Shuttle type control for convenient yet frame accurate cueing, Preview for playing a section of media, and VTR-type Play/Stop controls.

VTR Emulation

The DDR may be set to operate under serial control as a production VTR. Wide protocol support provides compatibility with major automation systems and controller devices. This allows the DDR to be easily integrated into an automated environment.

The serial port on the motherboard can be used with an adapter or adapter set to covert the RS-232 to RS-422 for serial control. Alternately the DDR may be set up with a PCI-based adapter to provide multiple serial ports through the rear panel.

VTR Control

The DDR may be set to control an external VTR to frame accurately capture media from a tape in the VTR to a file on the DDR. The DDR may also be set to control an external VTR to frame accurately record segments of media from the DDR to the VTR. This control is based on RS-422 serial protocol.

Using the transport controls the user finds and sets In and Out points, then performs the capture. Both devices pre-roll, play and (depending on whether the action is a layback or a pull-in) one of the devices goes into record for the specified duration, the two devices post-roll then stop.

List Management

The list of clips displayed in the **Clip View** are maintained as simple files called **Reels**. Multiple lists may be created to define custom pools of media. The files may be copied and renamed, and when opened may be further edited to offer custom pools of media based on but not limited to a master pool.

Upon capture a clip is added to the clip list, which is automatically updated (saved) whenever the list is changed. Upon opening a new **Reel**, a blank list is created. Clips can be added to or removed from the lists as needed, and altered lists saved with the name and location of the user's choice.

A special mode called **Film Mode** us available within **Clip Mode** as a single clip capable of offering 24 hours of sequential frames within a framework of folders wherein each possible time code location within the 24 hours exists to contain only one frame of video and its associated audio. **Film Mode** lists are maintained as **Film Space** lists outside of the **Reel** arrangement.

Media Import

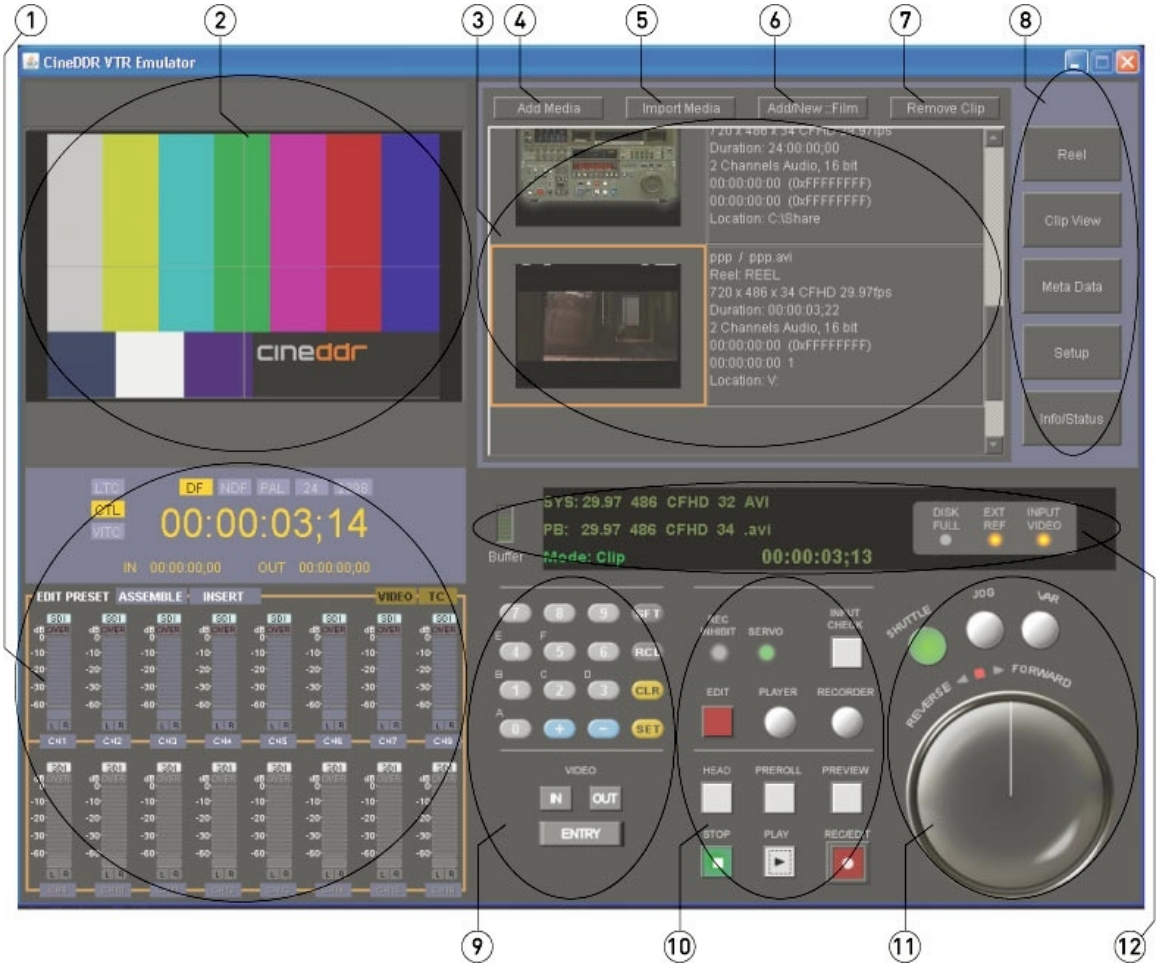
Media existing on networked drives accessible to the DDR may be imported into the clip list. Where the media is of a different (supported) file type, it will be converted during the import process into the format the DDR has been set to.

Controls and Displays

The functions and locations of the controls and displays of the interface are detailed in this section.

Main Interface Overview

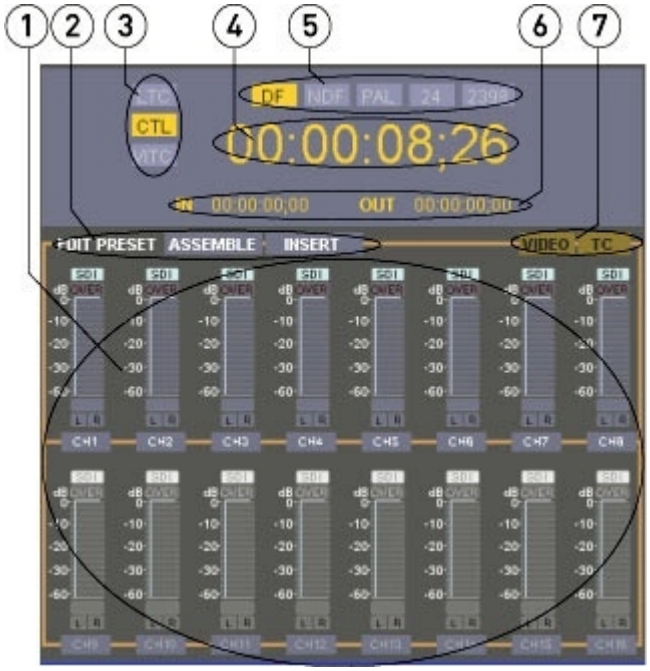
The **Main Interface** is displayed when the application is opened. It may be minimized (shrunk down to the bar), re-sized (hover near the edge to produce adjust tool and click and drag) or maximized (large square at top right of interface). The views displayed within the **Main Interface** vary according to the mode or functionality being performed.



1	**Transport Display** section	Displays time code source (LTC, VITC or CTL), video standard (DF, NDF, PAL, 24, 23.98), current time code location (HH:MM:SS;FF), in and out points for edits, edit channel presets and audio meters.
2	**VGA** field	The **VGA Field** displays the video portion of clip playback or the selected frame during cueing or pause, or passthrough video when recording or in stop mode. Where a clip has been selected the **VGA Field** will show a picon. A picon is a scaled down image of a frame of video from the clip. Where a media item such as an audio-only file has been added that would have no associated picon, a branded place marker may be substituted for the missing picon.
3	**Clip Access** field	Displays the views selected in the **View** buttons: **Clip View**, **Meta Data**, **Setup**, and **Info/Status**. The **Reel** button does not select a view, rather it opens a browser to allow the user to create a new or open an existing **Reel**.
4	**Add Media** button	Press to open a browser which allows the user to select existing media from networked storage and add it to the clip bin.
5	**Import Media** button	Press to open a browser which allows the user to select existing media on the network and convert it to the format to which the DDR is set, making it available for real time playback.
6	**Add/New :: Film** button	Press to open an existing or create a new **Film Space**, a series of folders designed to accommodate series of sequential stills, to create an editable timeline similar to frames of film.
7	**Remove Clip** button	Click on a clip to select it and then press the **Remove Clip** button to remove the selected clip from the clip bin.
8	**View** buttons	The **Reel** button opens a browser which allows a user to create a new or open an existing clip list. The other **View** buttons let the user select the view displayed in the **Clip Access** field. Available choices are: **Clip View**, **Meta Data**, **Setup**, and **Info/Status**.
9	**Edit Entry** section	Offers controls to enter in and out points for edits and to enter user bits information.
10	**Transport Functions** section	Offers controls for playback and record operations and indicators for record inhibit and servo conditions.
11	**Jog/Shuttle** section	Offers **Jog**, **Shuttle**, and **Variable** speed controls for previewing and media cueing.
12	**Status Display** section	Displays the DDR's system settings, the selected clip's settings, secondary time code source if present and warning indicators

Transport Display

The **Transport Display** section is located on the **Main Interface**, in the lower left corner.



1	**Audio rails** section	This section provides an audio "rail" for each channel of audio in the system. Each rail provides a **channel** toggle button which can be clicked to turn the channel on or off for insert edits. Each rail provides level meters to display relative signal strength, as well as an "over" indicator at the top of the rail which lights up to indicate audio levels that are "peaking" and likely to be over-modulated. Each rail indicates the audio input source at the top of the rail (SDI for embedded, ANA for analog, etc.) The interface has a capability of up to 16 channels. Channels not supported by the DDR hardware will be inactive (as are channels 9 to 16 in the above diagram).
2	**Assemble and Insert** buttons	**Assemble Edit**: Press the **Assemble** button to deactivate the **Insert** button and set the system to record all video and audio tracks as well as replacing any control track that may exist. This activates the **TC** button and leaves all video and audio channels active. **Insert Edit**: Press the **Insert** button to deactivate the **Assemble** button and set the system to record only the selected tracks and leave any

		existing control track (and video and audio tracks not recorded) intact. Click on the channel button at the bottom of each rail to toggle the audio channel on or off for on insert record. This deactivates the **TC** button and allows the user to deselect video or audio channels that will not be inserted.
3	**Time Code Source** buttons	Each button represents a time code source, either **LTC**, **CTL**, or **VITC**. Press a button to select it as the system time code source - the selected time code source will be displayed in yellow when active. Selecting **LTC** returns LTC time code values where present. To return proper LTC time code information requires that the LTC be set up as detailed in the *System Setup* section. Selecting **CTL** returns accurate time code values for clip-based media handling. Selecting **VITC** returns time code values based on time code information contained in the vertical blanking interval if present.
4	**Time Code Location** display	Displays the current time code location. Where the DDR is in **Play**, time code will roll. Where the DDR is in **Pause**, the time code will display the current frame's location. Where the DDR is in **Record**, the time code will be displayed in red. When controlling an external VTR, this time code will be gleaned from the external VTR.
5	**Video Standard** buttons	Each button represents a video standard, either **NDF**, **DF**, **PAL**, **24** or **23.98**. Press a button to select the correct video standard - it will be displayed in yellow when active. These buttons are conditionally available - when the DDR is set to NTSC, only **DF** and **NDF** selections will be accepted - other selections will be ignored. When the DDR is set to PAL, only the **PAL** button will be selectable. When the DDR is set to HD or 2K, the **24** and **23.98** settings will prevail.
6	**In and Out Points** fields	Use these fields to set the in and out points for edits. A value may be set by typing in the time code location and pressing the **Entry** button.
7	**Insert** buttons	Press the **Insert** button to perform an "insert" edit, which replaces only selected video or audio tracks but leaves the existing control track intact. An insert edit assumes that you have a recorded file (with a control track) and you need to replace a track or tracks of audio or video. The **Video** button may be pressed to deselect the video track from being recorded, and audio tracks may be individually selected or removed from selection by clicking on them.

Clip Access

The **Clip Access** section is located on the **Main Interface**, in the upper right corner.

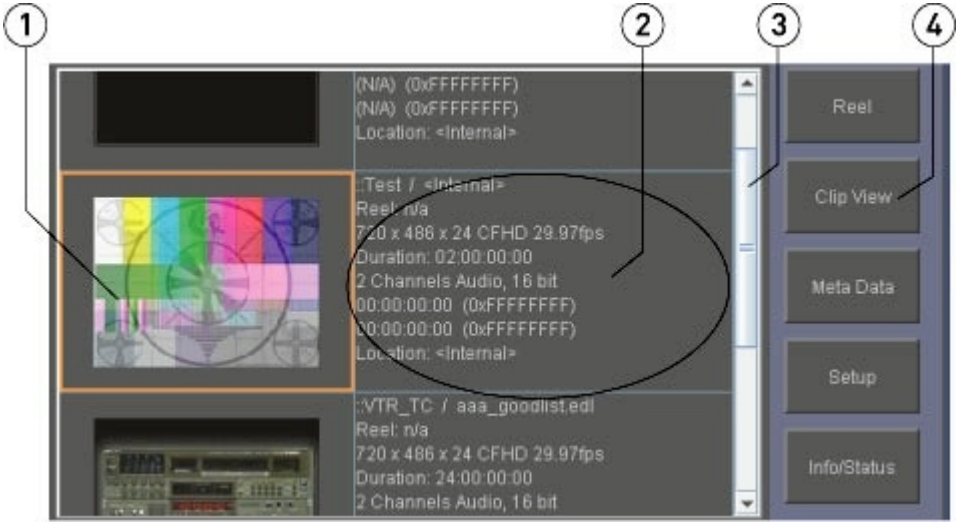
1	**Clip Access** field	Displays the view selected using the **View** selectors to the right. The **View** selectors are: **Reel**, **Clip View**, **Meta Data**, **Setup**, and **Info/Status**.
2	**Add Media** button	Press to open a browser which allows the user to browse for media to add into the current clip list.
3	**Import Media** button	In **Clip Mode** this button opens a browser which allows the user to browse for a file to import. A selected file which is imported will be converted to the file type, standard and compression format of the DDR.
4	**Add/New ::Film** button	Press to open an existing or create a new **Film Space**, a series of folders designed to accommodate series of sequential stills, to create an editable timeline similar to frames of film.
5	**Remove Clip** button	The **Remove Clip** button removes a selected clip from the clip list (but does not delete it from the hard drive). A clip can be selected by double clicking on it in the clip list.
6	**Reel** button	Opens a browser which allows the user to create a new or load an existing **Reel**. A **Reel** defines which clips are in the clip list. Creating a new **Reel** provides an empty list for the mode you are in. In **Clip Mode**, a new **Reel** provides default clips (Black, Test and VTR_TC clips are provided). In **Conform Mode** a new **Reel** provides an empty list. Every time a change is made (record a new clip for example) the current **Reel** information is saved.

7	**Clip View** button	Press the **Clip View** button to display the contents of the clip list in the **Clip Access** field.
8	**Meta Data** button	Press the **Meta Data** button to display meta data information in the **Clip Access** field.
9	**Setup** button	Press the **Setup** button to provide the setup controls in the **Clip Access** field.
10	**Info/Status** button	Press the **Info/Status** button to display system setup and status information in the **Clip Access** field.

Clip View

The **Clip View** is one of the views offered within the **Clip Access** field.

Select **Clip View** by pressing the **Clip View** button to the right of the **Clip Access** section.

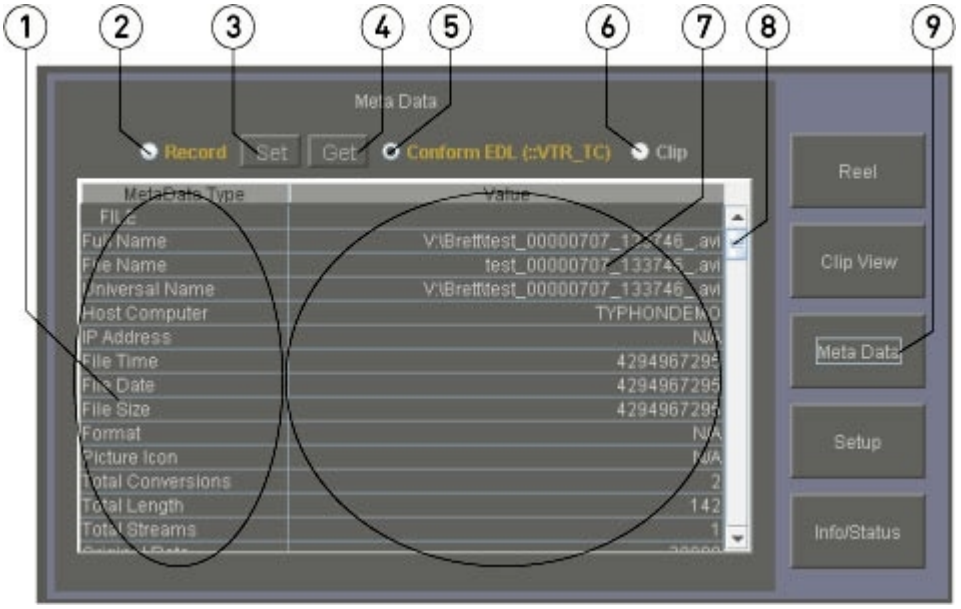


1	**Picon** display	For each clip in the clip list a picon will be displayed if available (however an audio-only file will not have an associated picon for example). A picon is generated upon clip capture as a scaled down image of a default frame of video in the clip. To select a clip from this list, double click on it. Where a clip has been selected, its picon will be outlined in yellow. Once selected, a clip may be played, its details viewed, it can be removed, and so on.
2	**Clip Details** display	To the right of each clip's picon, basic information about the clip is displayed. This information may include the file name, reel, size and video standard, duration, audio channels and file path. In **Conform Mode** the clip's position on the timeline will be listed as well.
3	**Clip View** slider	Use the slider to reveal any clips which are present in the **Clip** field but not shown.
4	**Clip View** button	The **Clip View** button has been selected to produce this view.

Meta Data

The **Meta Data** view is one of the views offered within the **Clip Access** field.

Select **Meta Data** view by pressing the **Meta Data** button to the right of the **Clip Access** section.

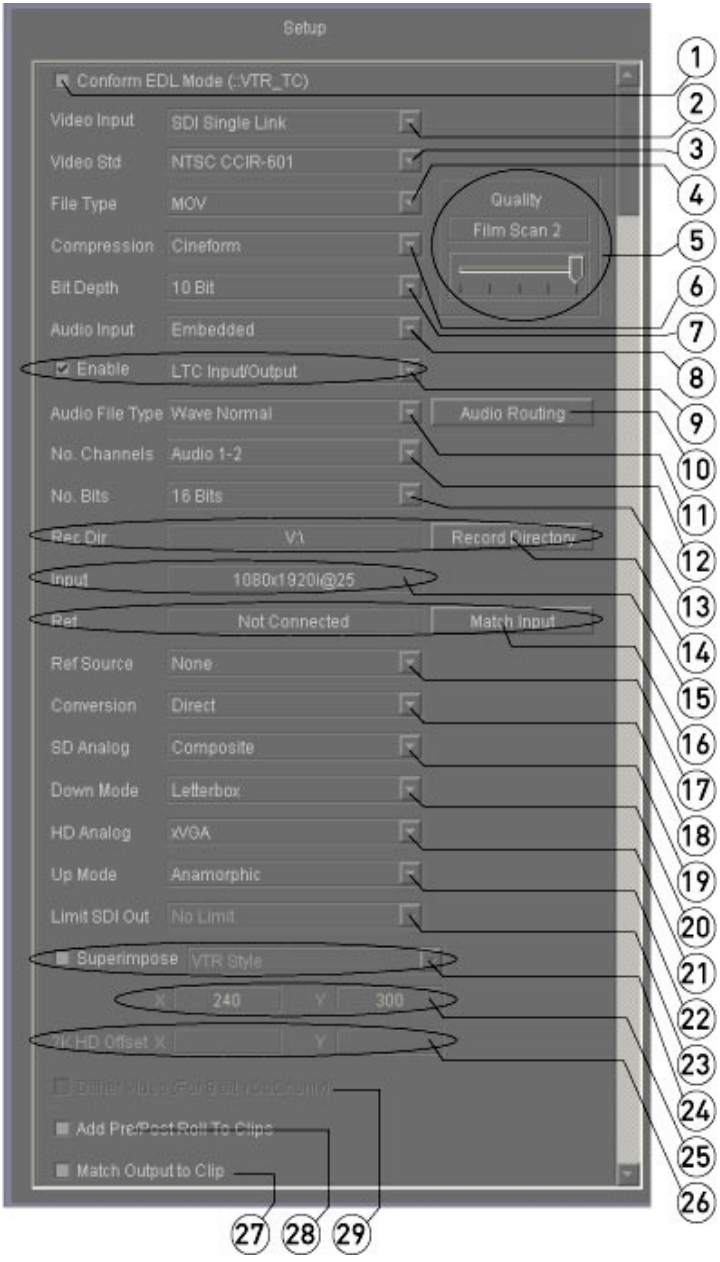


1	**Meta Data Type** field	The types of available meta data are displayed in this column.
2	**Record** checkbox	Select the **Record** checkbox to set new meta data values, view the current meta data value settings and to return meta data values to their default settings.
3	**Set** button	Enter a new value and press the **Set** button to set a new meta data value. The **Record** checkbox must be selected to change meta data values.
4	**Get** button	Select a meta data element and press the **Get** checkbox to retrieve the default meta data value for the selected meta data element. The **Record** checkbox must be selected to change meta data values.
5	**Conform EDL** checkbox	When the user is in **Conform Mode** and the **Meta Data** view has been selected, the **Conform EDL** checkbox will be selected and the information displayed will reflect any existing meta data values associated with the selected timeline media. This checkbox will not be selectable in **Clip Mode**.
6	**Clip** checkbox	When the user is in **Clip Mode** and the **Meta Data** view has been

		selected, the **Clip** checkbox will be selected and the information displayed will reflect any existing meta data values associated with the selected clip. This checkbox will not be selectable in **Conform Mode**.
7	**Value** field	The current meta data value is displayed for each meta data type.
8	**View** slider	Use the slider to move the meta data table up and down to view any meta data information not displayed.
9	**Meta Data** view button	The **Meta Data** button has been selected to produce this view.

Setup

The **Setup** view is one of the views offered within the **Clip Access** field. Select **Setup** view by pressing the **Setup** button to the right of the **Clip Access** section.



There are more controls available in the **Setup** section than can be displayed within the GUI, so it is displayed in the application within a scrollable window. In the above image it has been reproduced with all the controls offered (essentially without the interface overlay) so that all of the elements are available in one view and may be identified and discussed for the purposes of this manual.

1	**Conform Mode** checkbox	Select the **Conform Mode** checkbox to specify **Conform Mode** operation. To specify **Clip Mode** operation, leave this checkbox unselected.
2	**Video Input** pulldown menu	Use the **Video Input** pulldown menu to select between available video input types.
3	**Video Standard** pulldown menu	Use the **Video Standard** pulldown menu to select between available video standards.
4	**File Type** pulldown menu	Use the **File Type** pulldown menu to select between available video file types.
5	**Quality** section	Use the **Quality** slider to set the quality level for specific compressed file types. Options offered may include **Low**, **Medium**, **High**, **Film**, and **Film Scan 2**.
6	**Compression** pulldown menu	Use the **Compression** pulldown menu to select between available compression settings for the selected video file type.
7	**Bit Depth** pulldown menu	Use the **Bit Depth** pulldown menu to select between available bit depth settings for the selected video file type and compression level.
8	**Audio Input** pulldown menu	Use the **Audio Input** pulldown menu to select between available audio types.
9	**LTC** section	It is possible to use a LTC signal as the time code source. To set LTC as the time code source, select the **Enable** checkbox in the **LTC** section. LTC requires a dedicated channel of audio. Use the **Audio Channel** pulldown menu to select the audio channel that will be dedicated to LTC time code input and output. Connect the LTC source to this audio channel's input. **Note** that the selected audio channel will no longer be available for audio recording. Click through the time code source types to select **LTC** from the **Transport Display** section to display LTC time code.
10	**Audio Routing**	Press to open the **Audio Routing** window, which allows the user to route the audio inputs to specific physical outputs.

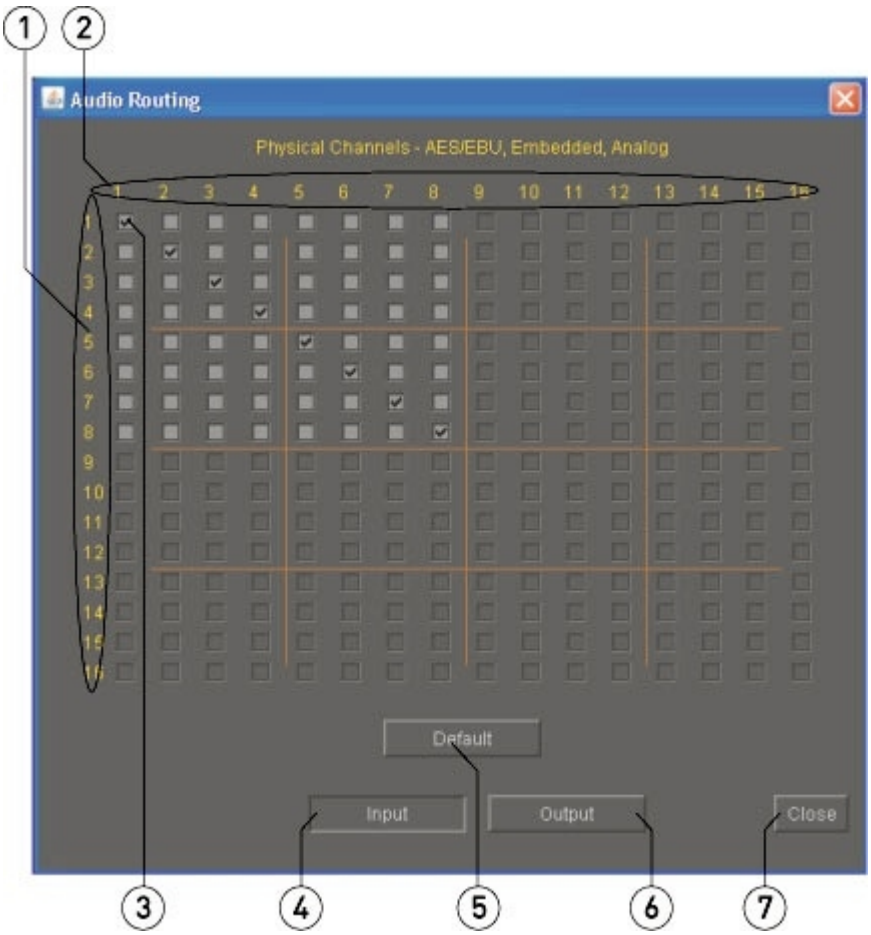
	button	
11	**Audio File Type** pulldown menu	Use the **Audio File Type** pulldown menu to select between available audio file types.
12	**Number of Channels** pulldown menu	Use the **Number of Channels** pulldown menu to select the number of audio channels supported by the DDR.
13	**Audio Bit Depth** pulldown menu	Use the **Audio Bit Depth** pulldown menu to select between available bit depth settings for the selected audio file type.
14	**Record Directory** section	Displays the current record directory and provides the **Record Directory** button, which allows the user to browse for and set a new record directory.
15	**Input** signal detected	Displays the type of video input signal detected, if any.
16	**Reference** section	Displays the source of the reference (genlock) detected, if any. Press the **Match Input** button to synchronize the system timing with the input signal.
17	**Reference Source** pulldown menu	Use the **Reference Source** pulldown menu to select between available reference, or genlock sources.
18	**Conversion** pulldown menu	Use the **Conversion** pulldown menu to select between a default conversion setting for video output, if any.
19	**SD Analog** pulldown menu	Use the **SD Analog** pulldown menu to select the default SD analog output type.
20	**Down Mode** pulldown menu	Use the **Down Mode** pulldown menu to select the default display strategy for downconverted output.
21	**HD Analog** pulldown menu	Use the **HD Analog** pulldown menu to select the default HD analog output type.
22	**Up Mode** pulldown menu	Use the **Up Mode** pulldown menu to select the default display strategy for upconverted output.
23	**Limit SDI Out** pulldown menu	Use the **Limit SDI Out** pulldown menu where it is useful and possible to limit the number of frames displayed to place fewer demands on the DDR during resource intensive activities.
24	**Superimpose**	Select the **Superimpose** checkbox to superimpose time code on the

	section	video output. Use the pulldown menu to choose the style of time code that will be displayed. Choices may include: **VTR Style**, **Film Minimum**, and **Film Full**.
25	**X/Y** position superimpose	Use the **X** and **Y** position fields to set where on the screen the time code will be superimposed over the video output. This only applies to **VTR Style** time code.
26	**2K HD Offset** section	Use the **2K HD Offset** X and Y fields to set where on the screen the 2K frame will be located for VGA output.
27	**Match Output to Clip** checkbox	Select the **Match Output to Clip** checkbox to compare the DDR's (playback) settings to those of a selected clip, and to change the DDR settings to match the clip's settings, if the clip's settings are different.
28	**Add Pre/Post Roll to Clips** checkbox	Select the **Add Pre/Post Roll to Clips** checkbox to add one minute to the beginning and one minute to the end of each clip in the **Clip Bin**. The length of each clip in the clip bin will increase by two minutes. Start of media for each clip will be incremented to 00:01:00:00. This feature is not available for **Conform Mode**.
29	**Dither Video** checkbox	Select the **Dither Video for 8 bit YCbCr only** checkbox to dither the video for 8 bit YCbCr files only.

Audio Routing Window

The **Audio Routing** window allows the user to set the audio pathway taken by each audio channel's input and output.

Open the **Audio Routing** window by pressing the **Audio Routing** button in the **Setup View**.



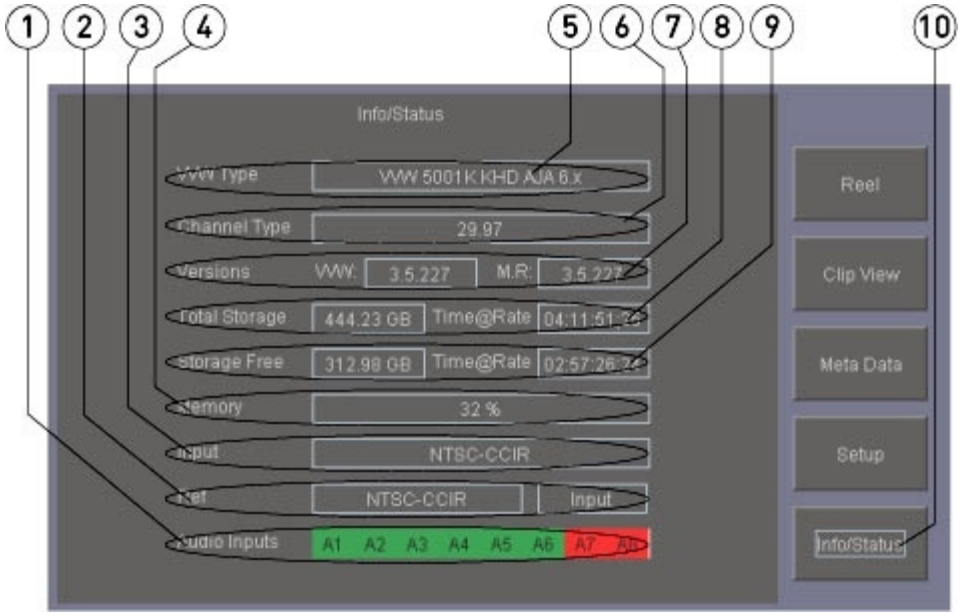
1	**Virtual Channels**	Represents the audio streams (A1, A2, A3, A4 etc.) that will be created or that exist in the media file.
2	**Physical Channels**	Represents the physical connector that the audio stream will be routed through. For **Input**, the physical connecter for each input channel. For **Output**, the physical connector for each output channel.
3	**Pathway**	The **Pathway** checkboxes set the routing of the virtual channels (on

	checkbox	the left) through specific physical inputs or outputs (at the top).
4	**Input** button	When the **Input** button is selected, audio routing settings made will apply to audio input only (also the **Output** button will be deselected).
5	**Default** button	Pressing the **Default** button will return the settings for the current routing (whether **Input** or **Output**) to their default state. Settings for **Input** and **Output** are maintained separately.
6	**Output** button	When the **Output** button is selected, audio routing settings made will apply to audio output only (also the **Input** button will be deselected).
7	**Close** button	Press the **Close** button to accept the current settings (or the present state of your changes) and close the **Audio Routing** window.

Info/Status

The **Info/Status** view is one of the views offered within the **Clip Access** field.

Select **Info/Status** view by pressing the **Info/Status** button to the right of the **Clip Access** section.

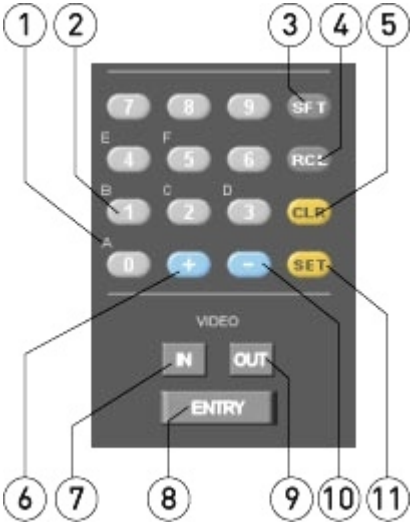


1	**Audio Inputs** information display	Displays the number of audio input channels set up for the system. Channels that are active are displayed in green. Channels that are present in the hardware but not set up to record or play are displayed in red.
2	**Ref** information display	Displays the type of external reference (genlock) detected, if any, and the setting, whether "none" (do not use genlock for a timing reference), "input" (lock to the timing signal in the input) or "reference" (lock to an externally generated genlock source).
3	**Input** information display	Displays the current video input signal, if detected.
4	**Memory** information display	Displays the current percentage of memory usage.
5	**VVW Type**	

	information display	Displays basic configuration information relating to the DDR and its video hardware.
6	**Channel Type** information display	Displays basic file type, audio/video setting information for the channel
7	**Versions** information display	Displays the software versions installed on the DDR.
8	**Total Storage** information display	Displays how much total storage is available in the selected storage drive or drive set.
9	**Storage Free** information display	Displays how much storage remains unallocated (storage that can be written to without deleting files).
10	**Info/Status** button	The **Info/Status** button has been selected to produce this view.

Edit Entry

The **Edit Entry** section is located on the **Main Interface**, in the lower middle area.



1	**Letters**	The letters are used to enter user bits information. To use a letter key, first press the **SFT** (shift) button, then the corresponding number button to the letter you need. For example, to enter an "A", press the **SFT** then the **0** button. User bits information entry, maintenance and display may not be implemented in all versions.
2	**Numbers**	The numbers are used to enter in and out points for edits.
3	**SFT** (shift) button	The **SFT** (shift) button is used to enter a letter character for user bits information entry. Press **SFT** (shift) button then press the corresponding number button to specify a letter character.
4	**RCL** (recall) button	Press the **RCL** (recall) button to recall the most recent value that was entered.
5	**CLR** (clear) button	Press the **CLR** (clear) button to clear the existing entry or value.
6	**+** (plus) button	Press the **+** (plus) button to increment the current value upward by one.
7	**IN** button	Press the **IN** button then the **ENTRY** button to mark the current time code location as the in point for an edit.
8	**ENTRY** button	Press the **ENTRY** button to enter the current value or edit into memory.
9	**OUT** button	Press the **OUT** button the the **ENTRY** button to mark the current time

		code location as the out point for an edit.
10	**-** (minus) button	Press the - (minus) button to increment the current value downward by one.
11	**SET** button	Press the **SET** button to set the current value or edit into memory.

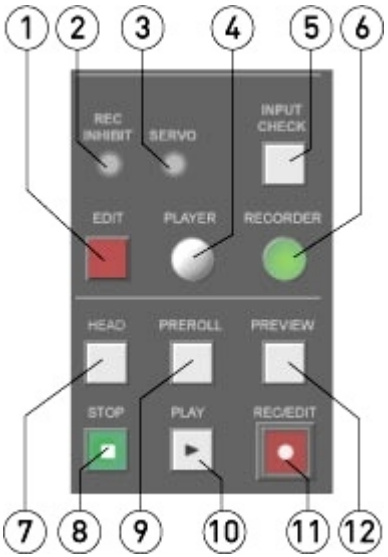
System Display

The **System Display** section is located on the **Main Interface**, in the right below the **Clip Access** section.

1	**Buffer** display	Displays the percentage of usage for the buffer, to help the user identify whether specific activities are properly utilizing the DDR's resources.
2	**Mode** display/toggle	Displays the current mode of operation, whether in **Clip Mode** or **Conform Mode**. Clicking on this display functions as a toggle to switch between the two modes.
3	**Clip** (playback) settings	Displays settings for the currently selected clip. The PB at the beginning of this string refers to playback. Where the clip settings are incompatible with the system (DDR) settings, the clip settings will be displayed in red.
4	**System** settings	Displays the DDR's current system settings for video standard, format and file type.
5	**Time Code** location	Displays the current time code location for the internal channel.
6	**Disk Full** indicator	Functions as a disk warning indicator - displays as "lit up" when the disk is nearing or completely full, or has other problems.
7	**Ext Ref** indicator	Functions as an external reference warning indicator - displays as "lit up" when the external reference is missing or not recognized as valid.
8	**Input Video** indicator	Functions as an input video warning indicator - displays as "lit up" when the video input is missing or not recognized as valid.

Transport Functions

The **Transport Functions** section is located on the **Main Interface**, in the lower middle area.



1	**Edit** button	Press the **Edit** button to preform the edit as it has been set up.
2	**Rec Inhibit** display	This functions as an indicator, displaying as lit up when the record inhibit has been set. When the record inhibit has been set, the system will function as a player only, as the record functions have been disabled.
3	**Servo** display	This functions as an indicator, displaying as "lit up" when the system is operating under control, or in servo mode.
4	**Player** button	Press the **Player** button to control an external VTR for the purpose of setting up and performing a pull-in. The external VTR may need to be set up to operate under the control of the DDR. When the **Player** button is selected, the **Transport Controls** (Play, Stop) operate the external VTR, and the time code from the VTR is displayed.
5	**Input Check** button	Press the **Input Check** button to confirm that the system sees a valid input signal. Where a valid signal is attached, pressing the button will send the input directly out through video hardware for as long as the button is "pressed", as a way to check that the input is valid.
6	**Recorder** button	Press the **Recorder** button to operate the internal channel. When the **Recorder** button is selected, the **Transport Controls** (Play, Stop) operate to play selected clips (**Clip Mode**) or media on the timeline (**Conform Mode**), and the time code associated with the selected media is displayed.
7	**Head** button	Press the **Head** button to cue up the first frame of a selected clip in the clip list.

8	**Stop** button	Press the **Stop** button to stop any transport or record actions and allow passthrough video and audio monitoring.
9	**Preroll** button	Press the **Preroll** button to send a command to test the preroll. This helps to determine whether there is enough tape prior to the first edit on an external VTR to perform an edit. Also, this helps to identify tapes with bad (e.g. non-contiguous or broken) time code.
10	**Play** button	Press the **Play** button to play selected media.
11	**Rec/Edit** button	Press the **Rec/Edit** button to start a record.
12	**Preview** button	Press the **Preview** button to play an edit without performing a pull-in so the media can be viewed before committing it to a record.

Jog Shuttle Controls

The **Jog Shuttle Controls** section is located on the **Main Interface**, in the lower right corner.

1	**Jog/Shuttle** control	This control provides a virtual jog/shuttle "knob" which can be operated by "grabbing" with the mouse and "dragging" to produce varying degrees of movement in the "knob", producing variable speed playback. The three buttons control the type of variable speed playback selected - the active button (lit up in green) indicates the current mode.
2	**Shuttle** button	Dragging the **Shuttle** button causes the **Jog/Shuttle** knob to shuttle through media at up to maximum speeds. Letting go causes the **Jog/Shuttle** knob to snap back to its upright (paused) position.
3	**Jog** button	Dragging the **Jog** button causes the **Jog/Shuttle** knob to shuttle through media at slower speeds for fine previewing or to cue to a specific frame. Letting go causes the **Jog/Shuttle** knob to snap back to its upright (paused) position.
4	**Variable** button	The **Variable** (**VAR**) button causes the **Jog/Shuttle** knob to "stick" at a location and play at a relative speed (percentage of playback speed forward/reverse) to its location.

Setup

Specific setup tools for configuration are available within this application. The setup tools within the application are revealed by pressing the **Setup** button. Some of the features described below are only available where supported by the hardware and configuration.

Conform, Clip and Film Mode

Conform Mode causes the DDR to use the specify time code locations for the clips and to record and output media based on a virtual 24 hour timeline. **Clip Mode** causes the DDR to handle records and media playback as a series of single, discrete clips selectable from a clip list. **Film Mode** is a subset of **Clip Mode** that uses sequential frames within a fully destructive time code space.

To select **Clip Mode**, click on the **Mode** display/toggle switch until it displays **Mode: Clip**. Alternately, press the **Setup** button and confirm that the **Conform EDL Mode** checkbox is not selected (appears empty/unchecked).

To select **Film Mode**, click on the **Mode** display/toggle switch until it displays **Mode: Clip**. Alternately, press the **Setup** button and confirm that the **Conform EDL Mode** checkbox is not selected (appears empty/unchecked). Once in **Clip Mode**, select the **::Film** clip in the **Clip Bin**.

To select **Conform Mode**, click on the **Mode** display/toggle switch until it displays **Mode: Conform**. Alternately, press the **Setup** button and confirm that the **Conform EDL Mode** checkbox is selected (appears to be "checked").

Video Input

Press the **Setup** button. Use the **Video Input** pulldown menu to select the correct video input type.

Choices may include **SDI**, **Composite**, **Component**, **S-Video**.

Video Standard

Press the **Setup** button. Use the **Video Standard** pulldown menu to select the correct video standard. Confirm that the setting does not exceed the capabilities of the DDR. SD-only DDRs will not support HD video standards, and SD/HD DDRs may or may not support 2K (or higher) video standards.

Choices may include standard definition (**NTSC**, **PAL**), high definition (**720**, **1080**), and **2K** standards.

File Type

Press the **Setup** button. Use the **File Type** pulldown menu to select the correct file format for the application.

Choices may include **MOV**, **AVI** and others where applicable.

Compression

Press the **Setup** button. Use the **Compression** pulldown menu to select the correct compression/decompression scheme for the file format.

Choices may include **MPEG-2**, **CineForm**, **DV**, **Uncompressed** and others where applicable.

Quality

Press the **Setup** button. Use the **Quality** slider to set the level of quality for the specific codecs.

When the slider is pulled it displays a description of the level of quality - levels may include: **Low**, **Medium**, **High**, **Film**, and **Film 2**. Not all formats support adjustable compression, so if you believe it is necessary to change this setting, confirm that your change is supported.

Bit Depth

Press the **Setup** button. Use the **Bit Depth** pulldown menu to select the correct video bit depth.

Choices may include **8**, **10**, **30**, **32** depending on the compression and file format.

Audio Input

Press the **Setup** button. Use the **Audio Input** pulldown menu to select the correct audio input type.

Choices may include **embedded**, **unbalanced**, **balanced** and **AES/EBU**.

LTC Time Code

It is possible to use an audio channel-based LTC signal as the video time code source. Keep in mind this will render the selected audio channel unavailable for audio recording and playback.

Here is how to set this up:

Press the **Setup** button.

Use the **Enable** button to activate the **LTC Setup** section. This activates the pulldown menu and allows you to choose which audio channel will be dedicated to receive an incoming LTC signal.
Select an audio channel to use for LTC. Remember that the selected channel will be unavailable for audio recording and playback.
Connect the LTC signal to the selected audio input.
Select the **LTC** button in the **Transport Display** section.

Where this has been successfully set up, the user should see LTC time code in the **Transport Display** section.

Where LTC is not used, it is best to leave the **Enable** checkbox unselected. If the **Enable** checkbox is selected but no audio channel is chosen, this setting will likely be ignored, but it is probably best to keep spurious settings down to a minimum.

Audio File Type

Press the **Setup** button. Use the **Audio File Type** pulldown menu to select the correct audio file type and container strategy.

The types offered include **Wave** and **Aiff** audio file types in a range of container types.

Audio Routing

Press the **Setup** button. This opens the **Audio Routing** window. Use the **Audio Routing** window to set the pathway between the physical audio connecters and the audio streams within or external to the video file.

Press the **Input** button to set which audio file each physical audio channel will create. With the **Input** button selected, the user may press the **Default** button to reset the audio input routing to the default settings.
Press the **Output** button to set which physical audio channel each audio file will be sent through. With the **Output** button selected, the user may press the **Default** button to reset the audio output routing to the default settings.

Once the routing has been properly set, press the **Close** button to accept all changes and close the **Audio Routing** window.

Number of Audio Channels

Press the **Setup** button. Use the **Number of Audio Channels** pulldown menu to select the number of audio channels. This is limited to the number of audio channels supported by the DDR.

Choices may include **Audio 1-2**, **Audio 1-6**, and **Audio 1-8**. Where the hardware is capable this list should also display **Audio 1-16**.

Audio Bit Depth

Press the **Setup** button. Use the **Audio Bit Depth** pulldown menu to select the bit depth for audio files being recorded.

Choices may include **16 bits**, **20 bits**, **24 bits**, and **32 bits**.

Record Directory

Press the **Setup** button. The current record directory (the location into which media will be recorded) is displayed. Use the **Record Directory** button to browse to and set a new record directory.

The **Record Directory** is the directory into which files are recorded. Also, files imported will be saved into the **Record Directory**.

Input

Press the **Setup** button. The video standard of the current video signal is displayed if it is detected.

To test that the signal is being properly passed through the hardware, press the **Input** button. It functions as a temporary passthrough (E to E) selector. While the button is pressed, it should light up and the signal should play through the video hardware's output.

Reference (Genlock)

Press the **Setup** button. The current reference source (or genlock) the system is set to use is displayed. Press the **Match Input** button to realign the genlock to the genlock source.

Use the **Reference Source** pulldown menu to select the reference, or genlock source.

Choices may include **None**, **Ref. In**, and **Input**.

If **None** is selected, the DDR will not use a timing reference source of any kind and edits may not be frame accurate.
If **Input** is selected, the timing source will be the video input.
If **Ref. In** is selected, the DDR will use an external timing source. Confirm that the reference source is connected to the reference input on the DDR.

Conversion

Press the **Setup** button. Use the **Conversion** pulldown menu to set any conversion for output.

This setting allows the user to scale carious files to a specified output size, to accommodate the user's monitor preferences. The actual files are not altered or converted at all. The resizing is applied only on output.

Choices may include **Direct**, **to SD**, **to HD 720**, **to HD 1080**, **x<>720**, **x<>1080**. The absence of these choices may indicate the DDR does not support up, down, or cross-conversion.

SD Analog

Press the **Setup** button. Use the **SD Analog** pulldown menu to set the analog input/output setting for standard definition.

Choices may include **Composite**, **Component**, **RGB**.

Down Mode

Press the **Setup** button. Use the **Down Mode** pulldown menu to set the down-conversion mode for output.

Choices may include **Letterbox**, **Crop** and **Anamorphic**. The absence of these choices may indicate the DDR does not support down-conversion.

HD Analog

Press the **Setup** button. Use the **HD Analog** pulldown menu to set the analog input/output setting for high definition.

Choices may include **Component**, **RGB** and **XVGA**.

Up Mode

Press the **Setup** button. Use the **Up Mode** pulldown menu to set the up-conversion mode for output.

Choices may include **Anamorphic**, **Pillarbox**, **Zoom 14x9**, **Letterbox** and **Zoom Wide**. The absence of these choices may indicate the DDR does not support up-conversion.

Limit SDI Out

Press the **Setup** button. Use the **Limit SDI Out** pulldown menu if you need to limit the SDI output.

Superimpose

Press the **Setup** button. The **Superimpose** controls allow the user to superimpose time code on the video output of the DDR.

To superimpose time code on video output, select the **Superimpose** checkbox.
This activates the pulldown menu which allows the user to set the type of superimposition that will be used. The choices are: **VTR Style**, **Film Minimum** and **Film Full**.

Change the (VTR Style) time code superimposition:
To change where the superimposed time code will be located within the screen, edit the **X** and **Y** fields by typing to reset the X (left or right) and Y (up or down) coordinates.
This only works on the VTR Style superimposition. The X and Y coordinates of the two **Film** superimposition types are fixed in their locations.

2K HD Offset

Press the **Setup** button. The **2K HD Offset** fields allow the user to set where within the VGA screen the virtual monitor will be located, which allows the user to accommodate varying monitoring requirements. Type in new X (left or right) and Y (up or down) coordinates to adjust this location.

Dither Video

Press the **Setup** button. The **Dither** checkbox allow the user to apply dithering for specific 8 bit YCbCr codecs where supported by the DDR.

Add Pre/Post Roll to Clips

Press the **Setup** button. The **Add Pre/Post Roll to Clips** checkbox adds one minute of black and silence to the beginning and end of each clip. This allows the DDR to respond properly to specific control protocols whose preroll and post roll capabilities may be fully realized by inserting these blank media segments.

This setting is only available in **Clip Mode**. Here is how to enable this setting:
Click on the **Mode** selector until it displays **Mode: Clip**, or alternately press the **Setup** button and confirm that the **Conform EDL** checkbox is unselected.
Press the **Setup** button and click to select the **Add Pre/Post Roll to Clips** checkbox.
Return to **Clip View** to confirm that all of the clips are now 2 minutes longer.
Select a clip and cue to the one minute location to confirm that the start of media is located at this point.

Match Output to Clip

Press the **Setup** button. The **Match Output to Clip** checkbox resets the output video standard and file format settings to match those of a selected clip.

Functions

This section describes the various functions and how to perform them.

Video Capture

For video capture, the user will need to have already performed all of the setup procedures. The equipment should all be connected and running. The setup controls available within the application should all be set correctly.

Capture Video Input

Here is how to record, or capture an incoming video signal to create video files. Confirm that the video signal is being output and is connected to the input on the DDR.

To view passthrough video on the VGA monitor if it is active, press the **Stop** button. To view passthrough using the output of the video hardware, connect the output to a monitor.

Clip Mode capture

Clip Mode allows the user to create a series of discrete files (clips) that all have a start time code of 00:00:00:00 available for individual selection and output. To set this mode, click on the **Mode** toggle in the **System Display** section or go to the **Setup** view - the top control is the **Conform EDL** checkbox. Confirm that this checkbox is not checked to specify **Clip Mode**.

Press the **Record** button. The **New Clip Dialog** will come up - a default clip name is supplied but you can type in a new name. Also, the option to set the duration of the clip is offered. To capture a clip of a specific length, select the **Clip Length** checkbox and type in a length by time code for the clip.

Press the **Set Name** button, then press the **Record** button.

The DDR will go into record mode. The time code will be displayed in red for the duration of the record. The DDR will continue recording until interrupted (for example by pressing the **Stop** button or reaching the specified duration) or until all the drives are filled up.

Once the record has ended a new clip will appear in the media list and will be available for selection and playback. Also, associated media and data files will appear in the record folder.

Conform Mode capture

Conform Mode allows the user to create files which are placed on a timeline, whose position and duration may be edited and the media played in sequence. To set this mode, click on the **Mode** toggle in the **System Display** section or go to the **Setup** view - the top control is the **Conform EDL** checkbox. Select, or check this checkbox to specify **Conform Mode**.

Conform Mode crash records are placed into the cued time code location on the timeline. Use the transport controls to cue up the location within the timeline at which you would like the recorded media to be located upon its capture.

Press the **Record** button. The DDR will go into record mode. The time code will be displayed in red for the duration of the record. The DDR will continue recording until interrupted (for example by pressing the **Stop** button) or until all the drives are filled up.

Once the record has ended a new clip will appear in the media list and will be available for selection and playback. Also, associated media and data files will appear in the record folder.

Capture from external VTR - Pull In

Set the DDR up to control an external device. This requires that the serial control output of the DDR is attached to the serial control input of the external VTR, and the VTR is set up to operate under control.

Use a 9 pin serial control cable to connect the VTR you want to control to the serial control output of the DDR.

Use a video cable or cables to connect the video output of the VTR to the video input of the DDR.

Use an audio cable or cables to connect the audio output of the VTR to the audio input of the DDR, if separate (non-embedded) audio is being used.

Set the DDR to the same video standard the VTR is set to. For example, where the video standard is NTSC, confirm that either both devices are in DF (drop frame) or NDF (non drop frame). A mismatch will prompt an error message, and any edits performed in this state may not be frame accurate.

Press the **Player** button. This allows you to address the In/Out points for the media on the VTR. A valid serial control connection will cause time code from the external VTR to display in the DDR time code display. It will then be possible to enter in and out points for the media that will be captured from the VTR.

Cue to the first frame of the media on the VTR that you would like to record. Press the **Entry** button, then the **In** button. It is also possible to type in a time code location into the **In Point** field, then press the **Entry** button, then the **In** button.

Cue to the last frame of media on the VTR that you would like to record. Press the **Entry** button, then the **Out** button. It is also possible to type in a time code location into the **Out Point** field, then press the **Entry** button, then the **Out** button.

Press the **Recorder** button to address the edit parameters for the DDR. In **Conform Mode**, the user can set the **In Point**, or the location on the timeline where the media will be placed. In **Clip Mode**, all clips are discrete and this step will not be necessary. To select between **Conform** and **Clip Modes**, click on the **Mode** toggle in the **System Display** section or use the **Setup** view to select (**Conform Mode**) or deselect (**Clip Mode**) the **Conform EDL** checkbox.

In **Conform Mode**, cue to the location in time code space you would like the media being recorded to end up at. Press the **Entry** button, then the **In** button. It is also

possible to type in a time code location into the **In Point** field, then press the **Entry** button, then the **In** button.

Pressing the **Preroll** button will perform a preroll to test that there is enough space before the start of the edit to perform a pull-in and that (for example) the preroll duration will not run out of space at the beginning of the tape.

Press the **Edit** button to perform the pull-in. The two systems should both perform a seek, then a preroll, then the DDR will go into record while the VTR will be in playback for the duration of the pull-in. Upon reaching the Out point, the DDR and the VTR will post-roll and stop, and the new clip that has been recorded during the pull-in will be added to the media list.

Video Playback

For video playback, the user will need to have already performed all of the setup procedures. The equipment should all be connected and running. The setup controls available within the application should all be set correctly.

Clip Mode Playback

Media playback in **Clip Mode** is made possible via the clip list.

To set the mode, click on the **Mode** toggle until it displays the mode you want or select the **Setup View**. Alternately, press the **Setup** button to reveal the **Setup View**. At the top of the field, confirm that the **Conform Mode** checkbox is not selected. Select the **Clip View**. The **Clip View** displays the contents of the **Reel** (in **Clip Mode**) as a series of selectable clips, appearing in alphanumerical sequence.

At the top of the **Clip Bin** there will be default clips:

The **::Black** clip provides a virtual black clip the user can play to confirm signal output, level.
The **::Test** clip provides a virtual series of test patterns the user can play to confirm signal output, level.
The **VTR_TC** clip provides the contents of the Conform Mode EDL as a single clip.

The clips that have been added to the **Clip Bin** list are displayed below the default clips. A clip may be selected from the **Clip Bin** by double-clicking on it. Once it has been selected, it can be viewed or played.

Conform Mode Playback

Media playback in **Conform Mode** is made possible via the clip list.

To set the mode, click on the **Mode** toggle until it displays the mode you want. Alternately, select the **Setup View**. At the top of the field, confirm that the **Conform Mode** checkbox is selected. Select the **Clip View**. The **Clip View** displays the contents of the **Reel** as a series of selectable clips, each having their own associated time code location, and appearing in time code sequence.

The clips that have been added to the **Conform Mode EDL** are displayed as a series of clips. A clip may be selected from the **Clip View** list by double-clicking on it. Once it has been selected, it can be viewed or played. However, each clip in the **Conform Mode EDL** will have an associated start time code location, and the **Conform Mode EDL** can be played straight through, from 00:00:00:00 to 23:59:59:29 (depending on the standard chosen).

Transport Controls for Playback

Once a clip has been selected for playback, use the **Transport Controls** to play it.

Play - Pressing the **Play** button will play the clip from the current location to the end of the clip (in **Clip Mode**) or to the end of the **Conform Mode EDL** (in **Conform Mode**).
Preview - Pressing the **Preview** button will play a selected clip, or if the **In** and **Out** points have been edited to specify a portion of a clip, will play this portion of the clip. Where a pull-in has been set up, pressing the **Preview** button will run the edit without recording a file.
Stop - Pressing the **Stop** button will cause any playback to stop, and passthrough video and audio to be sent to the VGA screen and the output of the video hardware.
Head - Press the **Head** button to quickly cue up the first frame of the selected clip.
Shuttle - Press the **Shuttle** button to use the **Jog/Shuttle** knob in shuttle mode. With a clip selected, pulling the knob in this mode allows the user to quickly shuttle in forward or reverse through a clip at faster than playback speeds.
Jog - Press the **Jog** button to use the **Jog/Shuttle** knob in jog mode. With a clip selected, pulling the knob in this mode allows the user to move forward or reverse through a clip at up to playback speeds.
VAR - Press the **VAR** button to use the **Jog/Shuttle** knob in variable mode. With a clip selected, pulling the knob in this mode allows the user to move forward or reverse through a clip at variable speeds. In variable mode, the knob stays where it is placed, and playback is commenced in forward or reverse at a speed relative to how far the knob has been pulled.

Media List Management

Reel

The **Reel** is a list of the media which is available within each mode for playback. The media lists for **Clip Mode**, **Conform Mode** and **Film Mode** are maintained separately. Every record is added to the current list. Media can be added to or subtracted from the list independent of a record, using simple 'point and click' file browsing to add media to the lists and a 'select and remove' option to take media out of the lists.

The **Reel** is a simple file which is saved in a default location with a default name. The user can create new **Reel** files or open existing **Reel** files.

To set a new **Reel** or open an existing one, press the **Reel** button. A browser will open which allows the user to find the correct folder location, and either select the required **Reel** or to set a new (empty) **Reel** type in a name (e.g. "xxxx.edl").

Where an existing **Reel** has been selected, the user can select **Clip View** to access clips for playback. Where a new **Reel** has been selected, the **Clip View** will have no media clips except the default test clips in **Clip Mode**. In **Conform Mode** the **Clip View** will be empty where a new **Reel** has been selected.

Add Media

To add media that is available on networked drives to the clip list, press the **Add Media** button. This opens a browser which allows the user to search local or networked storage for a file to add.

In **Clip Mode**, the option to rename the clip is offered. In **Conform Mode**, the option to specify the **In Point** is offered (default being the current cued location), as the clip is placed on a timeline.

Once the correct file has been selected and added using the dialog box, it will appear in the media list available for selection and playback.

Import Media To Record Drive

In **Clip Mode**, it is possible to select a media file and convert it to the format to which the DDR is set. Not all file types can be read by the import operation, but those that can will be imported to the record drive and added to the **Clip Bin**, available for selection and playback.

Select the **Setup** View and confirm that the **Conform EDL** checkbox is not selected. This places the DDR into **Clip Mode**.

Here is how to import media from a networked location to the record drive:

Press the **Import Media to Record Drive** button.
This opens a browser which lets the user locate and select a clip to be imported.
Select a clip and press the **Import Clip** button. This loads the clip into the **Import Clip Options** dialog box.
In the **Import Clip Options** dialog box the user may change the clip name if desired. Select the name, backspace and type in a new name. Press the **Set Name** button.
Press the **Import** button to begin the clip import. Or press the **Cancel** button to exit the clip import dialog without importing a clip.

This operation requires a network connection if the clips being imported are not located on a local drive.

Remove Clip

To remove a clip from the clip list, click on it to select it and press the **Remove Clip** button. This action does not delete the actual file from the hard drive, but simply removes it from the current list. A clip can be removed or added back in as needed.

Copyright Information

Disclaimer

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.

This manual has been compiled to assist the user in their experience using **DDR** products. It is believed to be correct at the time of writing, and every effort has been made to provide accurate and useful information. Any errors that may have crept in are unintentional and will hopefully be purged in a future revision of this document. We welcome your feedback.

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