Drastic DDR

User Guide

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Introduction

The **VTRIF** interface can be used for digital video capture, conversion, control and playback. It allows a user to operate a computer 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

Clip Mode and Conform Mode

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. Each recorded clip is placed into the current **Clip Bin** upon completion of the record. Clips may be added to or removed from the current clip list without affecting their status on the storage drives. Multiple clip lists may be used to access the same, overlapping or completely different pools of media based on workflow requirements.

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 clip lists may be used to access the same, overlapping or completely different pools of media based on workflow requirements.

Video Capture

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

In **Clip Mode**, captured files become clips, which are displayed in **Clip View** as a series of picons with associated clip information. In **Clip Mode** the user may scroll to view, and click to select clips from the **Clip View** for playback.

In **Conform Mode**, captured files are similarly displayed in **Clip View** as a series of picons with associated clip information. However since they also have an associated time code location, they exist as a series of edits in a **Conform Mode EDL**. Because the **Conform Mode EDL** is time code based, it allows media captured or placed end to end to be played out seamlessly, as a PlayList.

Video Playback

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

In **Conform Mode**, the user may select individual edits and use the transport controls to play media from given In points, or use In and Out points to preview media segments.

Transport Controls are available for playback and cueing within a range of speeds, including a **Jog/Shuttle** type knob 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. This control is based on RS-422 serial protocol as in the *VTR Emulation* section.

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 **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.

Media Import

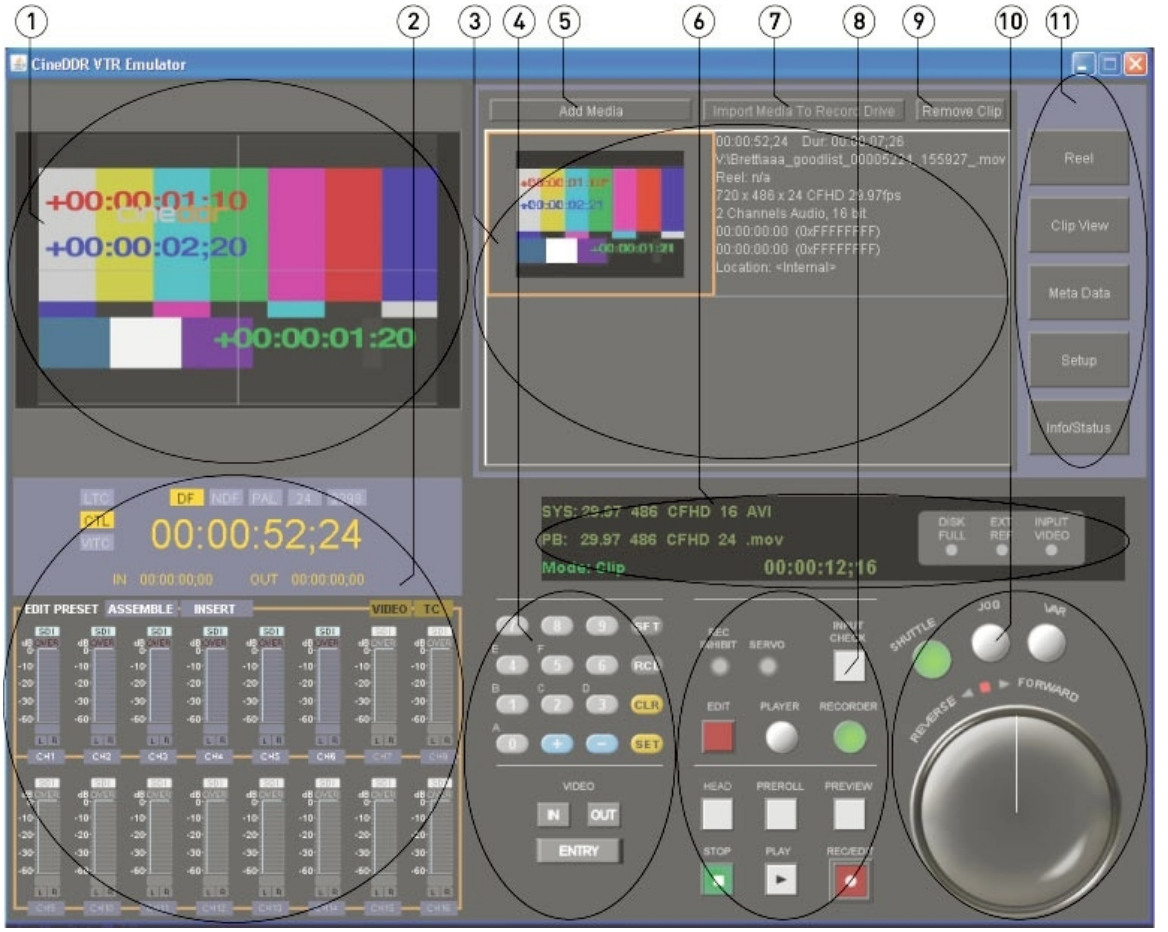
Media existing on networked drives accessible to the DDR may be imported into the clip list. Where the media is of a different (supported) file type, it will be converted during the import process into the format the DDR has been set to.

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), resized (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. Some controls will open other windows for browsing or adjusting settings.

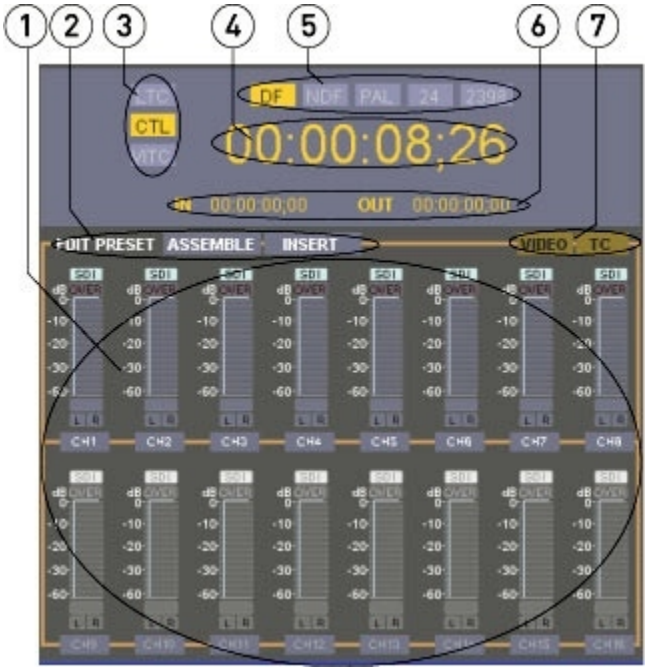


1	**VGA** field	The **VGA Field** displays the video portion of clip playback or the selected frame during cueing or pause, or passthrough video when recording or in stop mode. Where a clip has been selected the **VGA Field** will show a picon. A picon is a scaled down image of a frame of video from 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.
2	**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.
3	**Clip Access** field	Displays the views selected in the **View** buttons: **Reel**, **Clip View**, **Meta Data**, **Setup**, and **Info/Status**.
4	**Edit Entry** section	Offers controls to enter in and out points for edits and to enter user bits information.
5	**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.
6	**Status Display** section	Displays the DDR's system settings, the selected clip's settings, secondary time code source if present and warning indicators
7	**Import Media To Record Drive** button	Press to open a browser which allows the user to select existing media on the network and convert it to the format of the current system settings available for real time playback.
8	**Transport Functions** section	Offers controls for playback and record operations and indicators for record inhibit and servo conditions.
9	**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.
10	**Jog/Shuttle** section	Offers **Jog**, **Shuttle**, and **Variable** speed controls for previewing and media cueing.
11	**View** buttons	Provides buttons to select the view displayed in the **Clip Access** field. Available choices are: **Reel**, **Clip View**, **Meta Data**, **Setup**, and **Info/Status**.

Transport Display

The **Transport Display** section is located on the **Main Interface**, in the lower left corner.

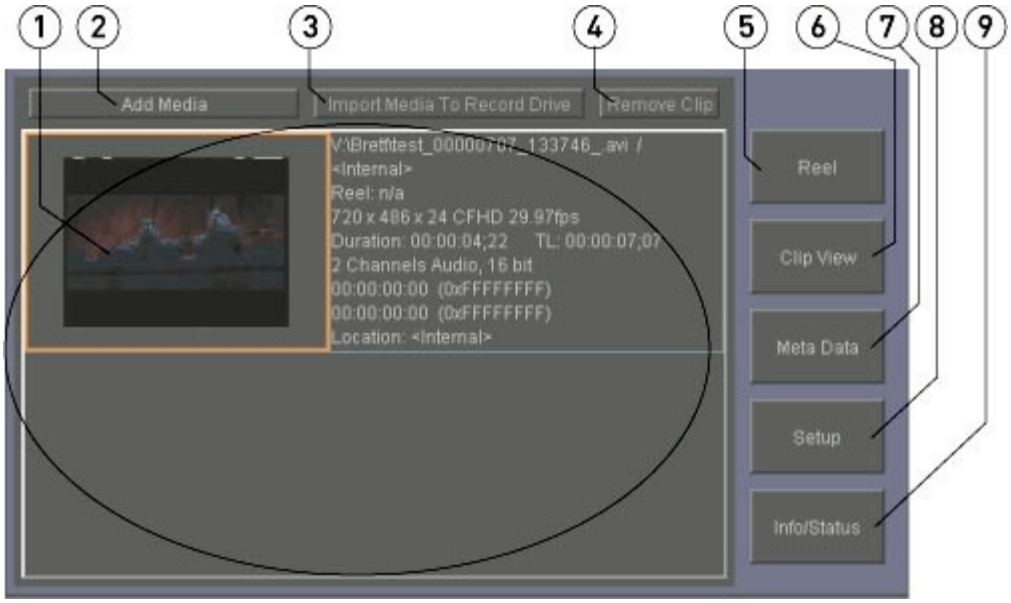


1	**Audio rails** section	This section provides an audio "rail" for each channel of audio in the system. Each rail provides a **channel** toggle button which can be clicked to turn the channel on or off for insert edits. Each rail provides level meters to display relative signal strength, as well as 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 system 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**	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

	buttons	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.



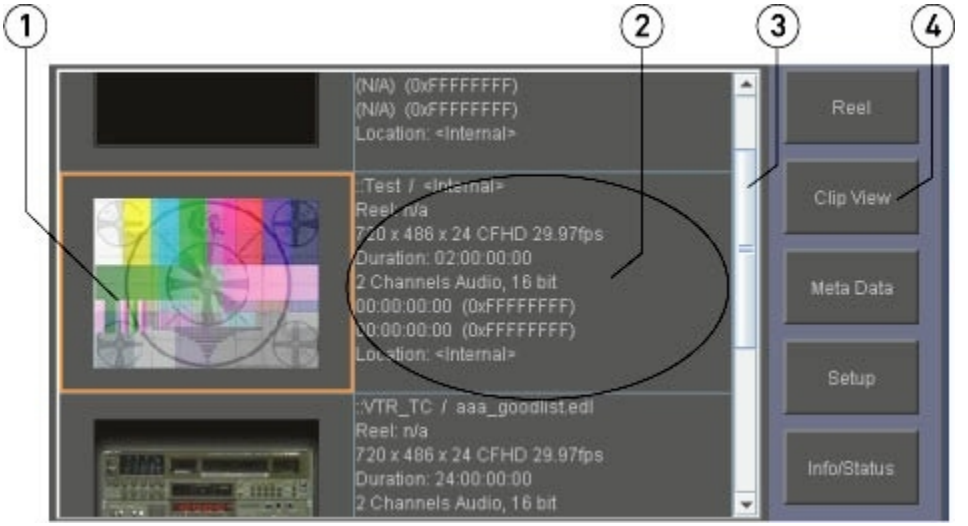
1	**Clip Access** field	Displays the view selected using the **View** selectors to the right. The **View** selectors are: **Clip View**, **Meta Data**, **Setup**, and **Info/Status**.
2	**Add Media** button	Press to open a browser which allows the user to browse for media to add into the current clip list.
3	**Import Media to Record Drive** 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. In **Conform Mode** this button will be inactive.
4	**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.
5	**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.
6	**Clip View** selector	Press the **Clip View** button to display the contents of the clip list in the **Clip Access** field.
7	**Meta Data** selector	Press the **Meta Data** button to display meta data information in the **Clip Access** field.
7	**Clip View** selector	Press the **Clip View** button to display the contents of the clip list in the **Clip Access** field.
8	**Setup** selector	Press the **Setup** button to provide the setup controls in the **Clip Access** field.

9	**Info/Status** selector	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.

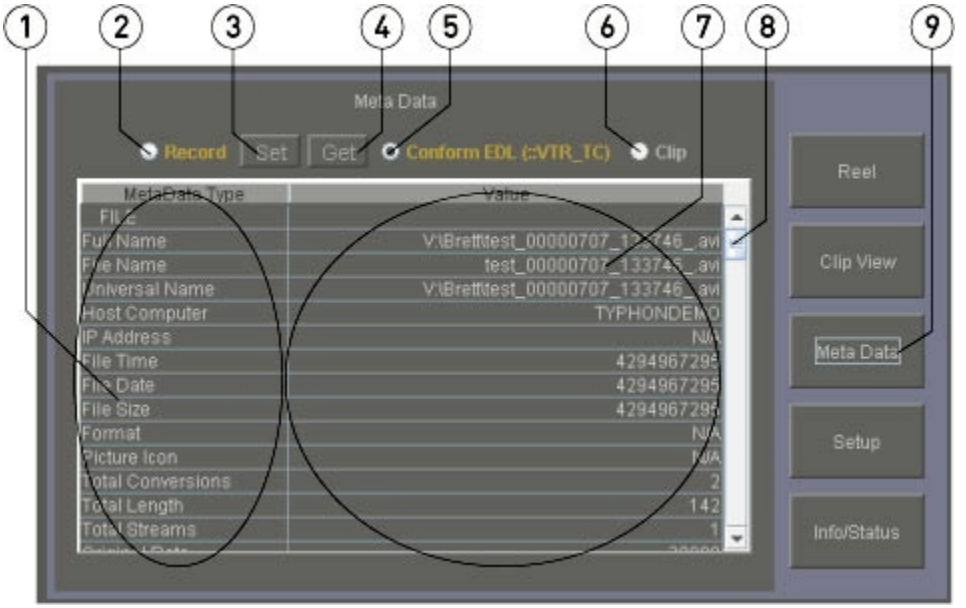


1	**Picon** display	For each clip in the clip list a picon will be displayed if available (however an audio-only file will not have an associated picon for example). A picon is generated upon clip capture as a scaled down image of a default frame of video in the clip. To select a clip from this list, 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 bin but not shown.
4	**Clip View** button	The **Clip View** button is selected.

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.



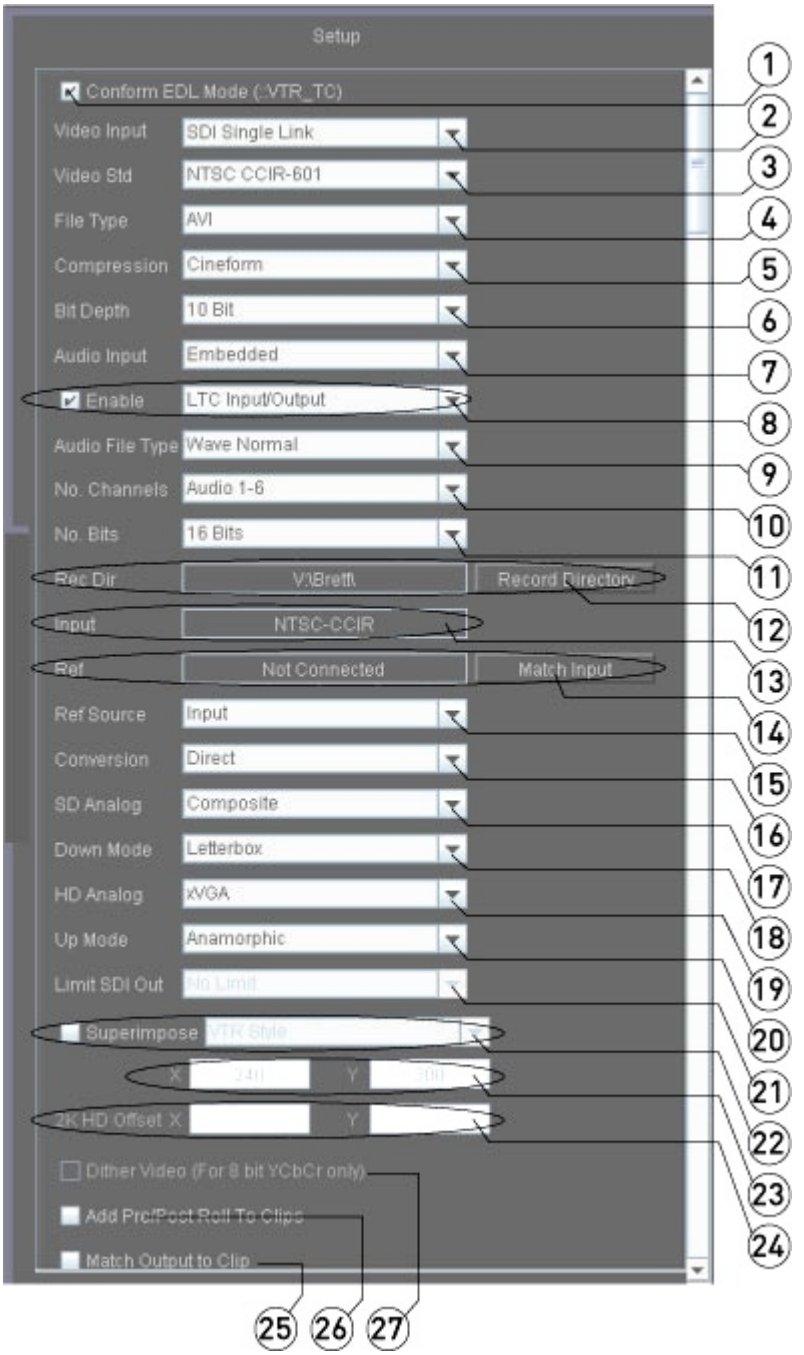
1	**Meta Data Type** field	The types of available meta data are displayed in this column.
2	**Record** checkbox	Select the **Record** checkbox to set new meta data values, view the current meta data value settings and to return meta data values to their default settings.
3	**Set** button	Enter a new 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** view button is selected.

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 offered within a scrollable window. In the above image it has been reproduced with all

the controls offered (essentially without the interface overlay) so that each component may be identified and discussed for the purposes of this manual.

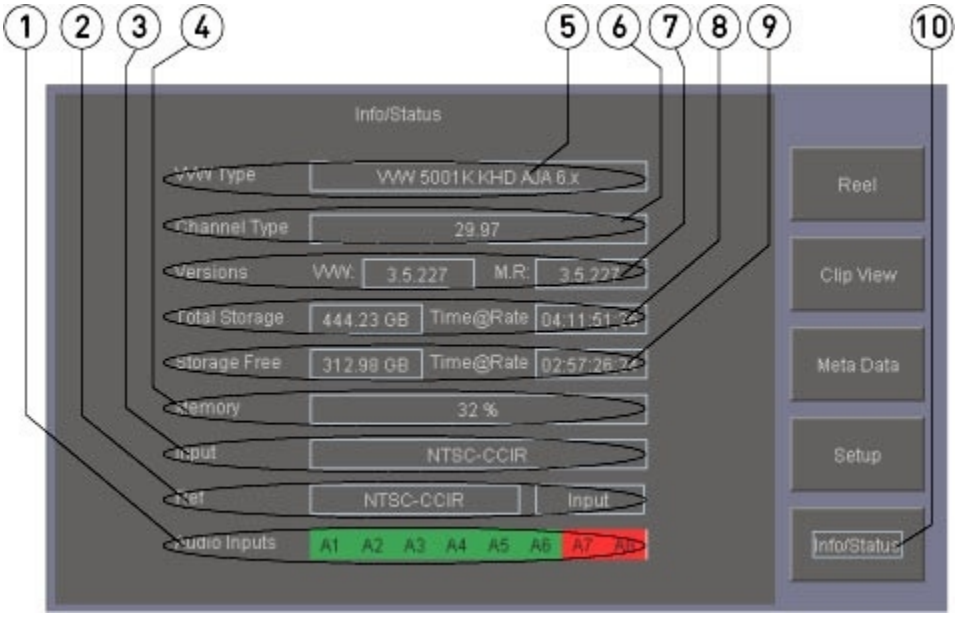
1	**Conform Mode** checkbox	Select the **Conform Mode** checkbox to specify **Conform Mode** operation. To specify **Clip Mode** operation, leave this checkbox unselected.
2	**Video Input** pulldown menu	Use the **Video Input** pulldown menu to select between available video input types.
3	**Video Standard** 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	**Compression** pulldown menu	Use the **Compression** pulldown menu to select between available compression settings for the selected video file type.
6	**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.
7	**Audio Input** pulldown menu	Use the **Audio Input** pulldown menu to select between available audio types.
8	**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. Select LTC from the **Transport Display** section to display LTC time code.
8	**Audio File Type** pulldown menu	Use the **Audio File Type** pulldown menu to select between available audio file types.
10	**Number of Channels** pulldown menu	Use the **Number of Channels** pulldown menu to select the number of audio channels supported by the DDR.
11	**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.
11	**Input** signal detected	Displays the type of video input signal detected, if any.
12	**Record Directory**	Displays the current record directory and provides the **Record Directory** button, which allows the user to browse for and set a new record

	section	directory.
13	**Input** section	Displays the video standard the DDR is set to.
14	**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.
15	**Reference Source** pulldown menu	Use the **Reference Source** pulldown menu to select between available reference, or genlock sources.
16	**Conversion** pulldown menu	Use the **Conversion** pulldown menu to select between a default conversion setting for video output, if any.
17	**SD Analog** pulldown menu	Use the **SD Analog** pulldown menu to select the default SD analog output type.
18	**Down Mode** pulldown menu	Use the **Down Mode** pulldown menu to select the default display strategy for downconverted output.
19	**HD Analog** pulldown menu	Use the **HD Analog** pulldown menu to select the default HD analog output type.
20	**Up Mode** pulldown menu	Use the **Up Mode** pulldown menu to select the default display strategy for upconverted output.
21	**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.
22	**Superimpose** section	Select the **Superimpose** checkbox to superimpose time code on the 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**.
23	**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.
24	**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.
25	**Match Output to Clip** checkbox	Select the **Match Output to Clip** checkbox to compare the DDR's system settings to a selected clip, and to change the DDR settings to match the clip's settings, if different.
26	**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**.
27	**Dither Video** checkbox	Select the **Dither Video for 8 bit YCbCr only** checkbox to dither the video for 8 bit YCbCr files only.

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.

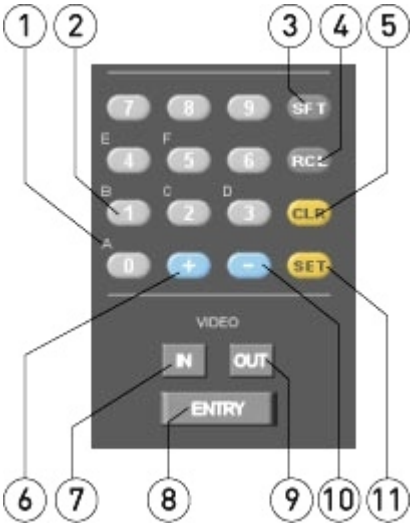


1	**Audio Inputs** information display	Displays the number of audio input channels set up for the system.
2	**Ref** information display	Displays the type of external reference (genlock) detected, if any, and the setting, whether "none" (do not use genlock for a timing reference), "input" (lock to the 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 system.

8	**Total Storage** information display	Displays how much total storage is set up for the system.
9	**Storage Free** information display	Displays how much storage remains unallocated that can be overwritten without deleting files.
10	**Info/Status** button	The **Info/Status** button is selected.

Edit Entry

The **Edit Entry** section is located on the **Main Interface**, in the lower middle area.

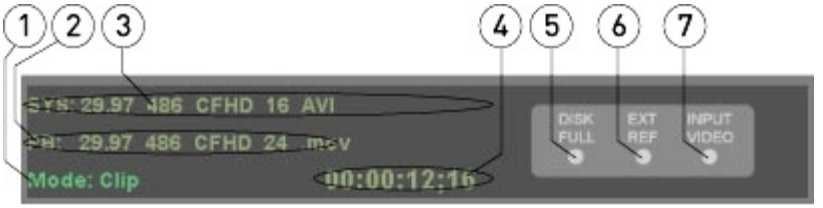


1	**Letters**	The letters are used to enter user bits information. To use a letter key, first press the **SFT** (shift) button, then the corresponding number button to the letter you need. For example, to enter an "A", press the **SFT** then the **0** button. User bits information entry, maintenance 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

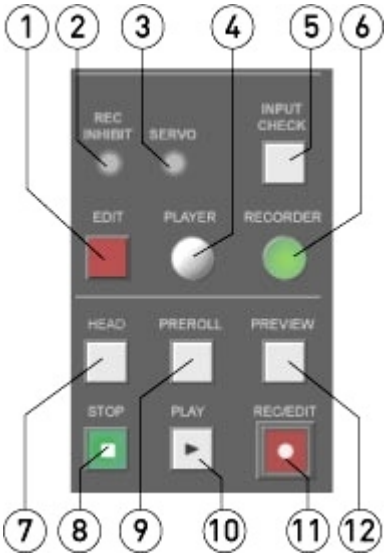
The **System Display** section is located on the **Main Interface**, in the right below the **Clip Access** section.



1	**Mode** display and 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.
2	**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 settings, the clip settings will be displayed in red.
3	**System** settings	Displays the DDR's current system settings for video standard, format and file type.
4	**Time Code** location	Displays the current time code location for the internal channel.
5	**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.
6	**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.
7	**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 start 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 3 buttons control the type of variable speed playback which is produced - the active button (lit up) 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

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 are revealed by pressing the **Setup** button. Some of the features described below are only available where supported by the hardware and configuration.

Conform and Clip Modes

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.

To switch from the mode the DDR is set to, press the **Mode** display/toggle switch. If this control displays as **Mode: Clip**, the DDR is set to **Clip Mode** and clicking on it will switch the DDR to **Conform Mode**. If this control displays as **Mode: Conform**, the DDR is set to **Conform Mode** and clicking on it will switch the DDR to **Clip Mode**.

Alternately to switch the modes, press the **Setup** button. To select **Conform Mode**, confirm that the **Conform EDL Mode** checkbox is selected (contains a check mark). To select **Clip Mode**, confirm that the **Conform EDL Mode** checkbox is not selected (is empty).

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.

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 Enable

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. 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 incoming LTC will not be used via an audio channel for the time code source, it is probably best to leave the **Enable** checkbox unselected. If the **Enable** checkbox is selected but no audio channel is chosen, this setting should 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.

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 files of varying size to a specified output size, to provide flexibility in the user's monitor requirements. 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 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 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 set by default.

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 are enabled by these blank media segments.

To enable this setting, press the **Setup** button and confirm that the **Conform EDL** checkbox is unselected.

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. Confirm that the application is running. 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

if your intent is 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, you can use **Clip Mode**. To set the 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. If this checkbox is not selected, the DDR will be set to **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

If your intent is to create files which are placed on a timeline, whose position and duration may be edited and the media played in sequence, you can use **Conform Mode**. To set the 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. If this checkbox is selected, the DDR will be set to **Conform Mode**. If this checkbox is unselected, the DDR will be set to **Clip Mode**.

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.

> Confirm that the VTR you want to control is connected to the serial control output of the DDR.
> Confirm that the video output of the VTR is connected to the video input of the DDR.
> Confirm that the audio output of the VTR is connected to the audio input of the DDR.
> Confirm that the DDR is set 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. 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**. 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** 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.

To view the meta data associated with a selected clip, click or double-click on it to select it (when selected it will be outlined) and then select the **Meta Data** view. Its meta data will be displayed in the meta data list.

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 or 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).

To view the meta data associated with a selected clip, click or double-click on it to select it (when selected it will be outlined) and then select the **Meta Data** view. Its meta data will be displayed in the meta data list.

Transport Controls for Playback

Once a clip has been selected for playback, use the **Transport Controls** to play it.

- 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**).
- 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.
- 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.
- Press the **Head** button to quickly cue up the first frame of the selected clip.
- 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.
- 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.
- 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** maintains a list of the media which has been added to the **Clip Bin** or **Conform Mode EDL**. This allows the user to customize which media is made available for playback. 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 is 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.

This manual has been compiled to assist the user in their experience using this DDR software product. 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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