

Chapter Ten: Digital Disk Recorder



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The DR15 Digital Disk Recorder (DDR) is a tool for viewing, adjusting, and combining video clips quickly. This chapter explains how you can assemble video clips to create a playlist and use the familiar deck controls to complete your work. You learn how to record your playlist directly from the DDR, and how to patch the DDR to the Switcher as an input source.



Figure 10.1 The Digital Disk Recorder

WORKING WITH THE DDR

When you play clips in the DDR you view them as they will appear if you were to send them to output. The DDR also fully supports audio, so you hear any audio that accompanies your clips. Adjusting the length of video clips adjusts the associated audio. You can also load and adjust independent audio files in the DDR, and the audio will play separately from the video files around it. Because the DDR uses the ToasterEdit engine, you can add transitions or DVEs directly to the playlist.

PLAYLIST

The playlist is your active work area in the DDR; here you adjust and assemble video clips. Your clip stretches across the playlist, buttressed by icons that represent the frames for the in and out points. You can see the clip name and timecode within the length of the gray bar.

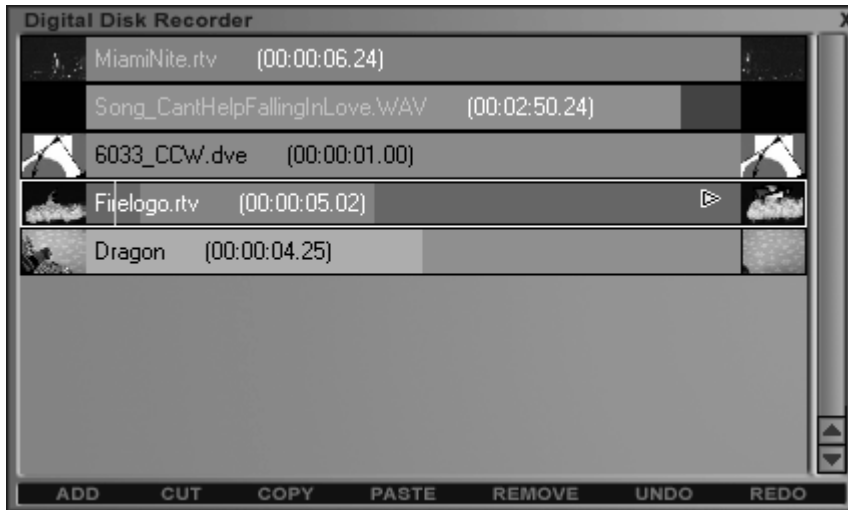


Figure 10.2. A sample playlist of video clips, audio clips and a DVE.

Adding Clips

To work with the DDR, you must add one or more clips. You can use either of two simple methods to add a clip:

- Drag and drop a clip from the File Bin directly on the playlist.
- Choose the **Add** option to launch the File Bin, then browse to a file and click **Open**.

To add multiple clips to the DDR

- 1 Open the File Bin and browse to the folder that contains your files.
- 2a SHIFT-click to select multiple files in a consecutive range
- 2b CTRL-click to select multiple files non-consecutively.
- 3 Click the **Open** button and all files load into the DDR.

The order in which you select files is the order that the files load into the DDR. You can also drag and drop multiple items from the File Bin to the DDR, because the items will move together as you drag. Because the DDR adds clips to the playlist in the order you select them, you can conveniently choose certain clips to follow others.

DECK CONTROLS

The DDR offers standard deck controls: rewind, play, fast forward, stop, and record. Indicator lights above the buttons give you a quick reference so you can spot which deck control is active. Click on a control, like **Play**, and the light above it illuminates. Change to a different control, like **Record**, and the light illuminates above the new button.



Figure 10.3. Deck controls

Playing Clips

Click on the **Play** button to play your video clips. Depending on the play mode you choose, the DDR plays all of the clips in your playlist or selected clips (discussed later in the chapter).

To force the DDR to jump to the beginning of a clip, double-click on the **Stop** button.

**NOTE**

Remember to adjust the DDR Resource Usage on the Preferences panel for the types of clips you plan to play. Use **low resource usage** for cuts-only, low-motion video, **medium resource usage** for files with few transitions, and **high resource usage** for projects with a lot of special effects. Using more resources makes your processor work harder, and may slow other areas of Video Toaster.

Rewinding and Fast Forwarding Clips

Click on **REW** to rewind through frames, and click on **FFWD** to fast forward through frames. Double-click on **REW** to jump to the first frame—the first frame in the playlist in **Project** mode, or the first frame of the clip in **Selection** mode. Double-click on the **FFWD** button to jump to the last frame. These controls are most effective for moving quickly through clips. If you seek a certain frame, you use **SHTL** or **JOG**, discussed next.

SHUTTLE AND JOG

The knob beside the deck controls will shuttle or jog through your video. The **SHTL** option lets you quickly scan forward or backward through your clip. The **JOG** option lets you scan forward and backward through the clip with frame-by-frame accuracy so that you can jog to a particular frame. These options work with video and audio, so you will hear audio if it exists.

The LEDs around the Shuttle/Jog control work the same in the DDR as they do in ToasterEdit. The LEDs are speed controls for playback, and each represents an incremental change in speed. LEDs near the center give you playback in slow motion, while LEDs at the ends play back at high speed. Click the LEDs on the right side to play forward; click the LEDs on the left to play in reverse.

A vertical black line that crawls along the bar of the clip gives you a visual reference about your position when you use any of the deck controls or **SHTL/JOG**.

To see your clips play or fast forward or react at all to the deck controls, the ToasterVision panel must be open. The DDR will still play and fast forward without ToasterVision, but you won't see anything.

RECORDING

The **REC** button launches the Capture panel, which lets you specify your formats and other options for recording new video clips. Once you've assembled and trimmed your clips, you can record them as a single video file. See Chapter Four: Capture for more information.

When you record a clip in the DDR, the clip is inserted at the end of the current selection, or at the end of the project if there is no selection.

CUE

The **Cue** button waits for a signal from the Switcher and plays the DDR when the signal is received. You place the DDR on the Preview bus in the Switcher, then when you switch (i.e., with **Take**, **Auto**, or the T-bar), the Switcher tells the DDR to start playing.



Figure 10.4. The Cue button sits beside the Pause button

Cue works with the **Pause** button. Click **Pause** to hold the DDR at the frame where you want the clip to begin and click **Cue** to tell the DDR to wait for a prompt from the switcher. **Cue** illuminates when you activate it.

To cue the DDR

- 1 Add a file or files to the DDR.
- 2 Set the clip to the frame where you want it to start playing. You can do this by using **Play**, **FFWD** and so on, but it may be easiest to use **Jog** to get to a specific frame.
- 3 Click on the **Pause** button; **Pause** and **Play** both illuminate
- 4 Click on the **Cue** button. This button turns a brighter yellow when you activate it.
- 5 Add the DDR to the Switcher and place the DDR channel on the Preview bus.
- 6 Switch between your Main source and Preview source. As soon as the switch occurs, your DDR runs automatically.
- 7 Switch between Main and Preview again. When the DDR returns to the Preview bus, it pauses and awaits a further prompt from the switcher.

DDR AND AUDIO

You add audio to the DDR by using clips with audio/video or using audio-only clips. Of course, the audio in the audio/video clips runs with the video. As with ToasterEdit, clips with audio/video sport a two-tone bar that is blue and green, video-only clips show a blue bar, and audio-only clips show a green bar.

Audio from an audio-only clip plays with the video clip directly above it and all video clips below it. This behavior is true even if the clip above or below is an audio/video clip, which means you'll hear audio from everything that's playing. The audio-only clip will also play without any video clips in the DDR.

You have two methods for controlling DDR volume. The first approach lets you work on separate clips. The second method lets you control the volume of the DDR as a whole.

To adjust the volume of a clip in the DDR

- 1 Drag and drop the clip into ToasterEdit.
- 2 Open the InOut panel, select the audio stream and change the audio settings.
- 3 Drag the clip back to the DDR. All of your changes are maintained.

To control the overall volume of the DDR

- 1 Drag and drop the DDR tag onto an open patch bay on the Audio Mixer.
- 2 Adjust the volume.

When you patch the DDR to the Audio Mixer, your changes affect every clip in the DDR as a whole; you cannot drag specific clips into the Audio Mixer. For more information about audio, see Chapter Nine: Audio Mixer.

TRIMMING CLIPS

Often you want to use specific scenes in the clips in your playlist, so you adjust the length of the clip by trimming it from either end. You mark where you want the clip to start, which is the *in* point, and where you want it to end, which is the *out* point. When you scrub in and out points, you hear the audio that accompanies your clip.

**NOTE**

Trimming clips in the DDR is a non-destructive action; you can always go back and adjust your in and out points if you want to include more of the video. Trimming affects only the clip in the DDR, not the file on your hard drive.

TRIMMING DDR CLIPS

To trim clips in the DDR, you must graphically mark your in and out points.

To graphically mark your in and out points in the DDR

- 1 Place your cursor over the left edge of the clip. When you hover over the left side of the clip, the cursor changes to crossbars with the word “In.”

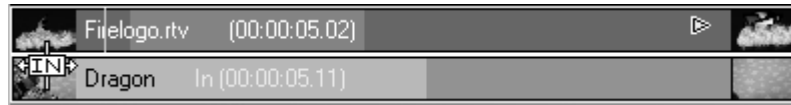


Figure 10.5. Cursor changes to the word “In” when you hover over the left edge of the clip

- 2 Drag the mouse to the right to move the in point of your clip; as you do this, you will see the icon animate as it scrubs through frames, and the DDR timecode updates as you move to your new position. You can drag right and left until you find the frame you want.
- 3 When you reach the frame you want as the in point, release the mouse button.
- 4 Follow the same procedure to mark your out point, except you must hover over the right edge of the clip and start by scrubbing to the left.

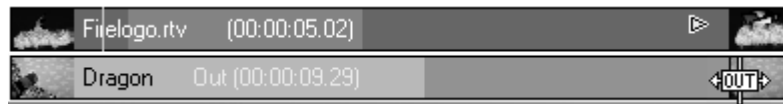


Figure 10.6. Cursor changes to the word “Out” when you hover over the right edge

**NOTE**

If you need to adjust the in or out point again, you must place the mouse cursor at the appropriate edge of the clip; you do not place the cursor at the position of the in point or out point.

TRIMMING AUDIO CLIPS

Because the DDR plays audio and video, you can add video clips, audio clips, and video clips with interleaved audio. When you work with the latter file type, you can trim the in and out points for video and audio together or independently.

- To trim both audio and video, follow the procedure above for trimming a video clip.
- To trim only audio, hold the CTRL key and follow the procedure for trimming a video clip. Notice that the word 'Audio' appears on the clip.



Figure 10.7. Cursor changes and the word "Audio" appears beside the timecode

POSITION INDICATORS

Several indicators hint at your position in the clip—you can see the frame you're in on ToasterVision, you can judge your position by the timecode, and you can see the black line that marks your position in the clip on the playlist.

The DDR displays the frames of your new in and out points in the preview icons; also notice that the shading for the bar is darker gray to set off your new in and out points from the entire clip.

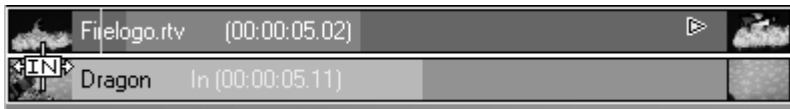


Figure 10.8. The line and the arrow in FIRELOGO represent which clip is playing and the current timecode; dark gray areas are active play areas.



NOTE

When you trim a clip on the DDR, you make a non-destructive edit. That is, you trim it only on the DDR, not on your hard drive. Files on your hard drive are not affected by actions in the DDR.

MOVING AND CLONING CLIPS

You can easily change the order of items in the playlist: just select a clip and drag it up or down. The item will insert between other clips in real-time. When you find the new position for your clip, release the mouse button to accept.

Sometimes you want additional copies of a clip. To duplicate a clip in your playlist, select the clip and click the **Clone** option. You can click multiple times to clone the same item repeatedly. You can give clones of a clip different in and out points from the original and other clones.

**NOTE**

When you clone a clip, you clone only on the DDR. This action does not clone clips on your hard drive.

You can always choose multiple items, then move or clone the group. SHIFT-click to select a consecutive range of items or CTRL-click to select several items non-contiguously.

DELETING VIDEO CLIPS

You can delete the entire playlist or you can delete selected clips. Select the **Clear** option to delete the entire playlist; you do not need to select anything. To delete a specific clip, select that clip and then choose **Delete**.

**NOTE**

When you delete a clip from the DDR, you delete it only from the DDR not from your hard drive. Files on your hard drive are not affected by actions in the DDR.

CLOSING THE DDR

To close the DDR panel, click on the **X** in the upper left corner. Like other panels in Video Toaster, the DDR remembers your most recent settings when you close the panel, and that includes any clips that you loaded into the playlist. Any clips in the playlist will appear when you open the DDR again, unless you delete them before you close the panel.

**VIDEO 101:
TIMECODE**

The timecode system known as non-drop frame assigns a progressive number to every video frame (0-29). However, because video actually runs at 29.97 frames per second, not 30 frames, you must compensate for 3.6 seconds for each hour, which is where drop-frame timecode comes in.

Drop-frame timecode was created by video engineers to adjust for this loss. Every minute, the timecode counter skips counting two frames, except when the number of the minute ends in zero (ie., 10, 20, etc.). No frames are lost, the counter just skips the numbers for the two frames.

The 50 fps PAL system is exact and does not require drop-frame.

DDR PLAY MODES

PLAYLIST MODE

When more than one video clip sits in the playlist, you can play all of those clips at once or play only selected clips. **Selection** instructs the DDR to play only the selected clip or clips. You select a clip by clicking on it with your cursor. SHIFT-click to select a range of clips, and CTRL-click to select multiple clips independently.

Thus, you can select more than one video clip and the DDR plays only those items that you've selected and ignores any other clips in the playlist. You can also play the clips in a different order than you see them.



Figure 10.9. Modes and timecode region on the DDR

In **Selection** mode, select the clips in the order that you want and then play them. For example, let's say you have ten clips that you named One through Ten and the clips are displayed in numerical order. You want to play Three, Seven, Two, and Nine. Just choose them in the order you want and the DDR will play them in the order you selected them. Remember, to force the DDR to play from the beginning of a selected clip, double-click on the **Stop** button.

Because the DDR plays only those clips that you select when you are in **Selection** mode, this behavior carries into the Switcher. So you can choose specific clips that you want to play, **Cue** the DDR, and when the Switcher makes the DDR live, you play only your selected clips.

When you are in **Selection** mode, you must click on an empty part of the work area to unselect all clips. When no clips are selected, the DDR plays all clips.

You can also play all clips in the playlist, by changing to **Project** mode. In this mode, the DDR plays everything it sees in the playlist, regardless of any selections you make.

**HINT**

Before you start screaming ugly names at the DDR, did you choose the correct mode? If you want everything played, choose **Project**. If you want to play only select stuff, choose **Selection**.

LOOP PLAY MODE

The Loop Play Mode lets you play a clip once, or repeat it until you click **Stop**. Choose **On** to allow continuous looping playback. Choose **Off** under Loop Play to play your clip only once.

In **Project** Mode, only the current clip loops; the DDR does not loop through the entire project. You can loop a group of clips by choosing **Selection** mode and selecting the clips that you want to repeat. The DDR runs through each selected clip until it reaches the end of the last clip and then it loops back to the first clip. So if you wanted to loop the entire project, you just select all of the clips.

TIMECODE MODE

Video Toaster gives you different modes for timecode: **Project** displays the timecode for the combined duration of clips in your playlist; **Clip** displays the individual timecode for each clip. If you've changed the in and out points, the timecode refers to the new length of the clip.

TIMECODE DISPLAY

The timecode refers to the duration of the video, which is measured by HH:MM:SS:FF, or hours, minutes, seconds, and frames. Video professionals refer to timecode to find in and out points on video clips. Timecode is an absolute address for each frame of a video project, the address lets clients and producers reference the video in exact terms.

You can change the direction of the timecode on the DDR. A single click on the timecode display toggles between 'time elapsed' and 'time remaining.' In other words, you can read the timecode as time that has passed in the video clip, or as how much time remains in the video clip. When you choose 'time remaining,' a hyphen or negative sign appears before the timecode. The 'time remaining' mode is a great feature when you use the DDR with the Switcher—you can see the time left in a particular clip and know how long before you need to switch to your next source.

DDR CONTEXT MENU

You can also access options on the interface by right-clicking on the DDR panel to get the context menu. The context menu contains options for saving and loading panel configurations as well. Thus you can save different instances of the DDR with different playlists and load those instances at another time. You should give meaningful names to the saved configurations so that you can recognize them easily later.

A different context menu appears if you click on the DDR tag, and that menu is discussed later in the segment about the DDR and the switcher.

DDR AND TOASTERVISION

To preview your playlist, you open ToasterVision, Video Toaster's digital monitor. The clips in your DDR playlist will play when you select the **PGM Out** option on ToasterVision. Remember that the switcher overrides all other panels for access to ToasterVision. But you can immediately put your DDR playlist on the ToasterVision by right-clicking on the DDR tag and choosing **Put on Program Out**.

DDR AND SWITCHER

When the Switcher is already open, Video Toaster automatically adds a new DDR input to the next available channel. So if you were working in the switcher, and you opened the DDR and added a clip, that DDR immediately appears on the Switcher.

Below the timecode display, you see a tag labeled DDR. If you have multiple DDRs open, the label includes a number after DDR, such as DDR2, DDR3, and so on. To add DDR input to the switcher, you must drag and drop the tag onto an available channel on the Switcher, or you can right-click on the tag to perform switcher actions directly.

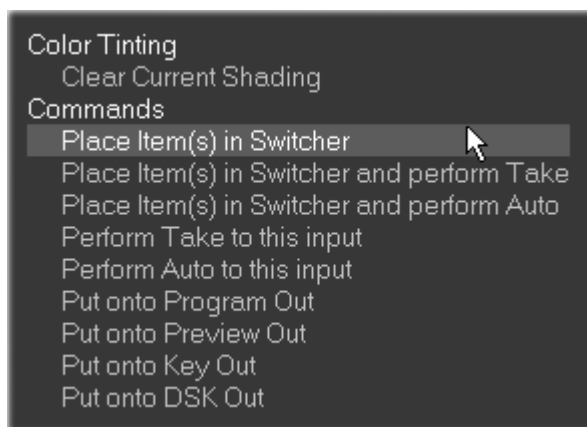


Figure 10.10. Context menu for the DDR tag



NOTE

If you double-click in the DDR tag, you automatically bring up the Switcher.

The numbered tags help you determine which DDR you are working with in the Switcher. And, when you assign the DDR to a switcher channel, the channel number appears in the tag on the panel (e.g., DDR2 5).

If you save a DDR panel, you can give it a meaningful name. Also, when you work with the Switcher, the tags show the color-coded dot that corresponds to the bus where the input sits: red for Main, green for Preview, and yellow for Key. For more information, see Chapter Seven: Switcher.

Remember that tinting helps you identify different instances of a panel. For example, if you open two DDRs, you can tint one red and one green. When you drag the red DDR tag into the switcher, that tag is also tinted red. For more information on tinting panels, see Chapter Three: Toaster Interface.

DDR AND TOASTEREDIT

You can drag clips between the DDR and ToasterEdit and that way you can make adjustments, like color correction, to the clip. You drag the clip into ToasterEdit, open the InOut panel, make your changes and drag it back. When you drag the clip back, it maintains all of the settings that you made. Similarly, when you work in ToasterEdit you can drag a clip from any view into a DDR and the DDR will keep all settings. See Chapter Eight: ToasterEdit for more information about editing clips.

TASK: DIGITAL DISK RECORDER

ADD CLIPS

- 1 Click on DR15 Digital Disk Recorder to launch the panel.
- 2 Click **Add** at the bottom of the playlist area to launch the File Bin.
- 3 Browse to the CONTENT/VIDEOCLIPS/MEXICO folder and CTRL-click to select HACIENDA.AVI and MIAMINITE.RTV.
- 4 Click **Open** to load the video clips into the DDR playlist.

TRIM CLIPS

- 1 Place your cursor over the left edge of HACIENDA.AVI.
- 2 Drag to the right slowly and watch the timecode display. Stop when the Timecode reads 00:00:02:00.

You automatically create the in point when you release the mouse button.

- 3 Place your cursor over the right edge of HACIENDA.AVI. Drag to the left slowly and watch the timecode display. Stop when the Timecode reads 00:00:09:00.

You automatically create the out point when you release the mouse button.

- 4 Use the above method to trim MIAMINITE.RTV. Use 00:00:01:20 for the in point and 00:00:05:20 for the out point.
- 5 Hit the **Play** button on the DDR deck controls.

CUE AND THE SWITCHER

- 1 Click on **DDR** in the main menu to launch another panel.
- 2 Click on **Add** to launch the File Bin, and browse to the CONTENT folder.
- 3 CTRL+Click to select FIRELOGO.AVI and DOGCU2.AVI.
- 4 Click on the **Playlist** switch to change the mode to **Selection** instead of **Project**. We chose two files just to show you that you don't need to play both if you don't need both at the time.
- 5 Also change the timecode to time remaining by clicking on the timecode display. A - (minus) appears in front of the timecode.

- 6 Select DogCU2 and hit the **Play** button.
- 7 When timecode reaches 00:00:02:00, hit **Pause** and hit the **Cue** button.
- 8 In the Switcher, place the DDR on the Preview bus. Click **Auto** to transition between Program and Preview; because the DDR uses **Cue**, it will run the clip when the switch occurs and it will stop the clip when you switch back.

RECORD A STILL PLAYLIST

The task that follows gives you a way to build a playlist of stills or freeze frames from a video source.

- 1 Open the DDR and click the **Rec** button.
- 2 In the record panel select a **Progressive** resolution.
- 3 Set **Timed** length to one frame (00:00:00:01).
- 4 Every time you click **Record**, it captures one frame, de-interlaces it and adds it to the DDR playlist.
- 5 If the DDR is in **Selection** mode then you can simply click on a still to put it on Program Out.