

Avid® Media Composer®

Adrenaline™ HD

Input and Output Guide

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Using This Guide

The *Avid® Media Composer® Adrenaline™ HD Input and Output Guide* presents information to help you bring material into your Avid system and send material out. Material for input includes video footage, film footage transferred to video, graphic images, audio, and other elements you use to create a sequence. Material for output includes sequences, clips, individual frames, and audio, either as a work in progress or as a finished piece.

This guide includes information on planning projects, logging information into bins, capturing footage, and generating output. It also includes information on importing files, exporting files, and exchanging projects between systems.



The documentation describes the features and hardware of all models. Therefore, your system might not contain certain features and hardware that are covered in the documentation.

Who Should Use This Guide

This guide is intended for editors at all levels of experience, particularly video editors who are unfamiliar with film-originated projects and editors responsible for the input and output stages of a project.

About This Guide




The Contents lists all topics included in the book. They are presented with the following overall structure:

- Chapters 1 presents conceptual information to help you plan a project and understand the film-to-tape transfer process.

- Chapters 2 through 7 include conceptual information and step-by-step procedures for all aspects of input and output.
- Appendix A includes information on working with HD media.
- An index at the end of this manual helps you locate the information you need.

Symbols and Conventions

Avid documentation uses the following symbols and conventions:

Symbol or Convention	Meaning or Action
	A note provides important related information, reminders, recommendations, and strong suggestions.
	A caution means that a specific action you take could cause harm to your computer or cause you to lose data.
	A warning describes an action that could cause you physical harm. Follow the guidelines in this document or on the unit itself when handling electrical equipment.
>	This symbol indicates menu commands (and subcommands) in the order you select them. For example, File > Import means to open the File menu and then select the Import command.
►	This symbol indicates a single-step procedure. Multiple arrows in a list indicate that you perform one of the actions listed.
⌘	This symbol represents the Apple or Command key. Press and hold the Command key and another key to perform a keyboard shortcut.
Margin tips	In the margin, you will find tips that help you perform tasks more easily and efficiently.
<i>Italic font</i>	Italic font is used to emphasize certain words and to indicate variables.
Courier Bold font	Courier Bold font identifies text that you type.

Symbol or Convention	Meaning or Action
Click	Quickly press and release the left mouse button (Windows) or the mouse button (Macintosh).
Double-click	Click the left mouse button (Windows) or the mouse button (Macintosh) twice rapidly.
Right-click	Quickly press and release the right mouse button (Windows only).
Drag	Press and hold the left mouse button (Windows) or the mouse button (Macintosh) while you move the mouse.
Ctrl+ <i>key</i>	Press and hold the first key while you press the second key.

If You Need Help

If you are having trouble using your system:

1. Retry the action, carefully following the instructions given for that task in this guide. It is especially important to check each step of your workflow.
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The Online Library includes a Master Glossary of all specialized terminology used in the documentation for Avid products.



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Using This Guide

Chapter 1

Planning a Project

This chapter gives a brief description of video formats and resolutions supported by your Avid editing system and other information that can help you plan your project. This chapter includes the following topics:

- [Types of Projects](#)
- [Project Resolutions](#)
- [Working with Mixed-Resolution Projects](#)
- [Video and Film Projects](#)

Types of Projects

When you start a project on your Avid system, you need to decide on a project type. Select your project type based on your source footage. You can select one of the following options from the New Project dialog box:

- **24p NTSC:** For film-originated footage or other 24-fps footage, transferred to NTSC videotape
- **23.976p NTSC:** For film-originated or other 24-fps footage in which you want to use digital audio, or for footage which has been shot at 23.976
- **30i NTSC:** For NTSC video-originated footage (30 fps)
- **24p PAL:** For film-originated footage or other 24-fps footage, transferred to PAL videotape
- **25i PAL:** For PAL video-originated footage (25 fps)

In these options, *23.976p*, *24p*, and *25p* designate *23.976-fps*, *24-fps*, and *25-fps progressive media*. For these projects, your source footage is captured and stored as 23.976, 24, or 25 full, discrete frames per second. In the 30i NTSC

and 25i PAL options, the *i* represents *interlaced frames* played at 30 fps or 25 fps. An interlaced frame consists of two fields, each of which contains one-half the scan lines of the frame. Interlaced frames are standard for NTSC and PAL video media.

For information on Film Projects, see “Planning a Film Project” in the Help.

Project Resolutions

You must capture media to begin a project. Connect your media device to the Avid Adrenaline Digital Nonlinear Accelerator (DNA). The *Using the Avid Adrenaline* information in the Help identifies all of the connectors on your Avid Adrenaline DNA. You can use a Media Station XL system or an Avid Xdeck™ in an Avid Unity™ MediaNetwork environment to capture media. For more information about these products, contact your Avid representative, or visit the Avid Web site.

Project formats are described as follows:

- An Avid video projects capture and store 30i-fps NTSC or 25i-fps PAL media as digital video that conforms to the ITU-R 601 standard (SDTV or standard-definition TV).
- Film projects capture and store 23.976p-fps NTSC or 25p-fps PAL media. You do your offline editing on an Avid editing system and finishing on a Symphony or Avid|DS system.



You cannot create 24p or 25p media or multiple output formats from video footage shot at 30 fps (NTSC) or 25 fps (PAL). The source must be film or HD (high-definition).

- Digital video (DV) is an international standard created by a consortium of 10 companies to serve as a consumer digital video format. Avid editing systems support two DV resolutions: DV25 and DV50.
- MPEG 30, MPEG 40, and MPEG 50 are resolutions specifically intended to support the SMPTE Type D-10 bit stream produced and recorded by devices such as Sony® MPEG IMX™ VTRs. It uses 4:2:2 sampling.



With the Media Composer application, there are two ways to capture and playback. You can capture and playback through the Adrenaline hardware or you can capture and playback through a separate 1394 card. For additional information see “Capturing DV50 and DVCPRO HD Media Directly from a DV Device” on page 135.

- 10-bit resolutions are available for Render, Import, Capture, Consolidate/Transcode, and Video Mixdown. You must be connected to Adrenaline hardware to capture and play back 10-bit, high quality video. 10-bit is available for both Standard Definition (SD) and High Definition (HD) projects. When working with an HD project, the 10-bit resolution options depend on the project format.

When working with an SD project, the 10-bit resolution appears as 1:1 10b MXF. The 10-bit resolutions are available in MXF format, not OMF format.

Resolutions are selectable in the Media Creation dialog box (Capturing, Titles, Import, Mixdown, Motion Effects, and Render tabs).

Avid editing systems allow you to capture, edit, and play back in the resolution listed in the following table, except where noted.

Supported Resolutions and Hardware Configurations

Resolution	Hardware Configuration
DV25 411	Avid Adrenaline or separate 1394 card
DV25p 411	Avid Adrenaline or separate 1394 card
DV25 420	Avid Adrenaline or separate 1394 card
DV25p 420	Avid Adrenaline or separate 1394 card
DV50 422	Separate 1394 card
DVCPRO HD	Separate 1394 card
MPEG 30	(editing and playback only)
MPEG 40	(editing and playback only)
MPEG 50	(editing and playback only)
35:1	Avid Adrenaline

Supported Resolutions and Hardware Configurations

Resolution	Hardware Configuration
28:1	Avid Adrenaline or separate 1394 card
20:1	Avid Adrenaline
14:1	Avid Adrenaline
10:1	Avid Adrenaline
3:1	Avid Adrenaline
2:1	Avid Adrenaline
1:1 (Uncompressed)	Avid Adrenaline
10:1m	Avid Adrenaline
8:1m	Avid Adrenaline
4:1m	Avid Adrenaline
3:1m	Avid Adrenaline
35:1p	Avid Adrenaline
28:1p	Avid Adrenaline
14:1p	Avid Adrenaline
3:1p	Avid Adrenaline
2:1p	Avid Adrenaline
1:1p	Avid Adrenaline
15:1s	Avid Adrenaline or separate 1394 card
4:1s	Avid Adrenaline
2:1s	Avid Adrenaline
1:1 10b MXF	Avid Adrenaline
DNxHD 220X - (10 bit)	Avid Adrenaline
DNxHD 220 - (8 bit)	
DNxHD 145 - (8 bit)	

Supported Resolutions and Hardware Configurations

Resolution	Hardware Configuration
DNxHD 185X - (10 bit)	Avid Adrenaline
DNxHD 185 - (8 bit)	
DNxHD 175X - (10 bit)	Avid Adrenaline
DNxHD 175 - (8 bit)	

These resolutions appear, along with other Avid resolutions, wherever a list of resolutions appears (for example, in the Video Resolution pop-up menu of the Media Creation dialog box). The exact list depends on the project format (NTSC or a PAL).

For information about input and output, see the following sections:

- [“Configuring Decks” on page 80](#)
- [“Setting Up the Capture Tool” on page 89](#)
- [“Using the Digital Cut Tool” on page 209](#)

Working with Mixed-Resolution Projects

The Avid Media Composer Adrenaline system allows you to work with mixed resolutions in the same sequence. However, you cannot mix NTSC with PAL.

Avid recommends you do not mix interlaced resolutions with progressive resolutions. Mixing interlaced resolutions with progressive resolutions might result in problems with scrolling titles, exporting, and performing Digital Cuts.

For more information on mixing resolutions, see “Resolutions and Storage” in the Help.

Video and Film Projects

Avid systems offer you a flexible approach to finishing your project, whether it originates as video or film.

For video projects, you can use the offline capabilities of the Avid editing system and the Total Conform capabilities of the Symphony system to produce the highest quality, uncompressed broadcast masters.

For film and 24-fps or 25-fps HDTV (high-definition television) projects, you can use the Avid editing system's Universal Offline Editing capabilities to capture footage at 24 fps or 25 fps and edit the content in its native frame rate. Then use the Symphony system's film-tape-film-tape (FTFT) and Total Conform capabilities to finish and deliver uncompressed NTSC, PAL, 4:3, 16:9, and letterbox formats, as well as frame-accurate film cut lists and edit decision lists (EDLs), all from the same 24p (24-fps progressive) or 25p media.

Chapter 2

Logging

When you import shot log files or log directly into a bin, you provide the Avid system with frame-accurate clip information used to capture the source footage. The logs you create form the foundation for organizing, tracking, storing, retrieving, and generating lists of edit information throughout your project. The following sections provide techniques for preparing log information before capturing:

- [Preparing Log Files for Import](#)
- [Importing Shot Log Files](#)
- [Setting the Pulldown Phase](#)
- [Logging Directly into a Bin](#)
- [Logging Film Information](#)
- [Modifying Clip Information Before Capturing](#)
- [Exporting Shot Log Files](#)

Preparing Log Files for Import

You can use the ALE utility included with your system to quickly convert shot log files created by other sources:

The ALE utility allows you to:

- Modify the text in a log file. (Windows only.)
- Convert log files of different formats to ALE files (see [“Compatible Log Formats” on page 35](#)).
- Convert an ALE file to either an ATN or FLX file.

Any options you set in the ALE utility are saved each time you close the ALE utility.

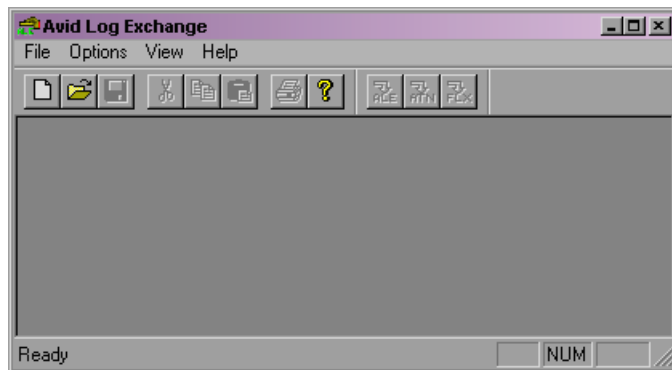
When you are converting an ATN file that contains multiple sections to an ALE file, multiple ALE files are created. The Avid Log Exchange window displays only the first ALE file created. The succeeding ALE files are given the same file name with incremental numbering. For example, the file Nations1.atn is converted to Nations001.ale, Nations002.ale, Nations003.ale, and so on. The converted output files are stored in the folder containing the original input file.

Converting Log Files with Avid Log Exchange

To convert a log file to an ALE file:

1. Click the Start button, and select All Programs > Avid > Avid Log Exchange.

The Avid Log Exchange window opens.

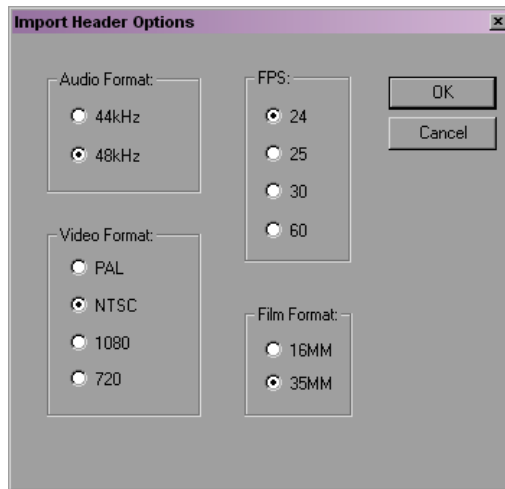


2. Perform one of the following:
 - ▶ If the log file is a Final Cut Pro, Cinema Tools, or a Tabbed shot log file, select File > Import and then choose the file type.
 - ▶ If the log file is another file type, such as .flx or .atn, select File > Open.

The Open dialog box opens.

3. Double-click the file you want to convert.

The Import Header options box appears.



4. Select the information you want to appear in the global settings of the .ale file. The global settings appear at the top of the .ale file.
5. Click OK.
6. Depending on the type of file you are opening, one of the following occurs:
 - If the file type is recognized by the ALE utility, the file appears in the Avid Log Exchange window.
 - If the file does not contain the Windows line-ending format, then the Line Endings dialog box opens. Select an option from the following table.

Click	To
Display & Save	Open the file in the Avid Log Exchange window and change the file to the Windows format.
Display Only	Open the file in the Avid Log Exchange window, but not change the file.
Ignore	Display the file as is without changes.

The file appears in the Avid Log Exchange window.

- If the file type is not recognized, the Select File Type dialog box opens. Select the type of file you are converting and click OK.

The file appears in the Avid Log Exchange window.

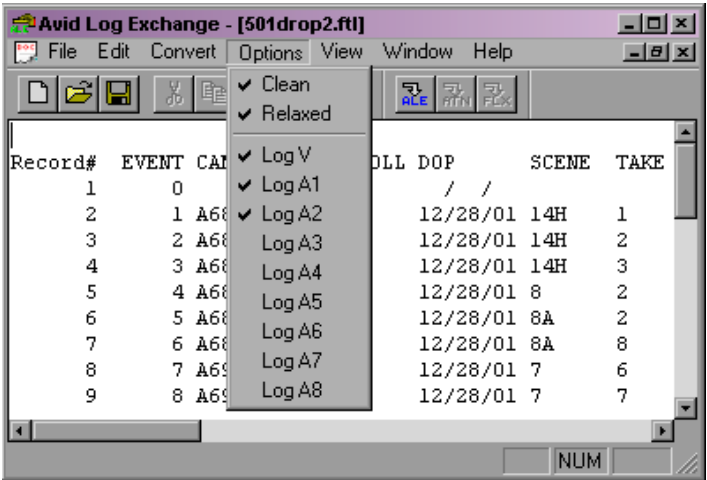


For specific information on the various file types, see “Compatible Log Formats” on page 35.

7. Use the Options menu to select the tracks to include in the Tracks column of the log. The default track selections are Log V, Log A1, and Log A2.
- After you import the log into an Avid bin, the system captures all tracks shown in this column when batch capturing.



The Track selection only works on non ALE files being converted to ALE format. When ALE is the incoming format, Track selection does not work.



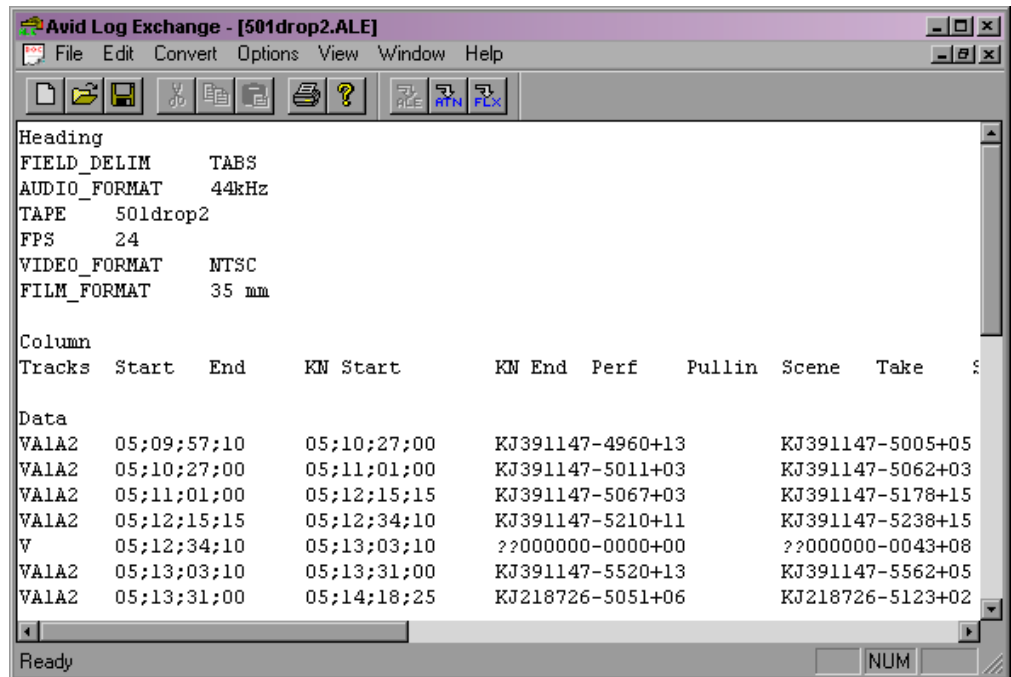
8. Select Options > Clean if you want ALE to clean the ALE output file to eliminate overlapping timecodes for clips. By default, Clean is selected.
- When you select Clean, the utility changes the end timecode of a previous event to be less than the following event.
9. If you selected Clean, you can also select Options > Relaxed to prevent the deleting of events that come earlier in the transfer. Relaxed is not set by default.

For example, if you transfer film footage with a timecode of 2:00:00:00 and then add some clips at the end with a timecode of 1:00:00:00, Relaxed prevents the deleting of events that come earlier in the transfer. This occurs when you shoot footage across the midnight hour and the first half of the film has 24 hours and the second half has 0 hours.

10. Select Convert > ALE.

The default output selection is the ALE format. This is the required format for import into an Avid bin.

The Avid Log Exchange window displays the converted ALE file. The converted file has the same file name as the original file, except the file name extension matches the converted file format.



11. (Option) Select the original file from the Window menu if you want to convert the file again using different options.

12. Select File > Close.

If you made changes in the editor, a message box opens.

13. Click Yes.

The converted file is stored in the same folder as the original log file.

Using Drag-and-Drop Conversion for Log Files

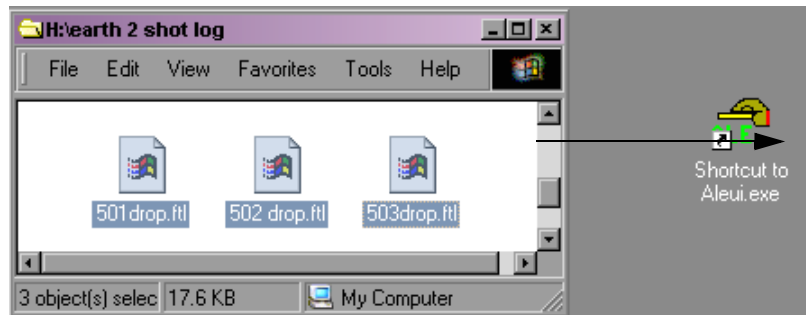
Use this shortcut to convert files into an ALE file.



If the log file is a Final Cut Pro, Cinema Tools, or a Tabbed shot log file, you cannot use drag-and-drop conversion. Use the procedure in [“Converting Log Files with Avid Log Exchange” on page 30](#) to convert files of this type.

To convert a log file by using drag-and-drop conversion:

1. Check the options that are set in the ALE utility. See [“Converting Log Files with Avid Log Exchange” on page 30](#). The current options are used when you perform drag-and-drop conversion.
2. Create a shortcut for the ALE utility.
3. Open the folder that contains the files you want to convert, positioning the folder so the Shortcut icon for the ALE utility is visible.
4. Select the files you want to convert.



5. Drag the selected files to the Shortcut icon for the ALE utility, and release the mouse button.
6. Depending on the type of files you are converting, one of the following occurs:
 - If the file type is recognized by the ALE utility, a message box opens, indicating the conversion was successful.
 - If the file type is not recognized, the Select File Type dialog box opens. Select the type of file you are converting and click OK.
A message box opens, indicating the conversion was successful.

- If the file type is an ALE file, the ALE Convert Type dialog box opens. Select a file type for the converted output file and click OK.

A message box opens, indicating the conversion was successful.

7. Click OK to close the message box.

The converted files have the same file names as the original files, except the file name extension matches the converted file format.

For example, the .ale file name extension is added to the new file names for the Avid format. The converted files are stored in the folder containing the original log files.

Compatible Log Formats

The following table lists the log formats that can be imported directly or converted for import using Avid Log Exchange (ALE).

Compatible Log Formats

Log Format	Requirements	File Name Extension
AatonBase	Conversion required	.atn or .atl
Avid Log	Import directly	.ale
Cinema Tools	Conversion required	.txt
CMX EDL	Conversion required	.cmx
Evertz	Conversion required	.ftl
Excalibur	Conversion required	.ale or .flx
Final Cut Pro	Conversion required	.txt
FLEx	Conversion required	.flx
Keyscope	Conversion required	.ksl
Log Producer	Conversion required	.llp
Log right	Import directly	.ale
OSC/R (Macintosh® only)	Conversion required	.asc
OLE (Windows only)	Conversion required	.odb

Compatible Log Formats (Continued)

Log Format	Requirements	File Name Extension
Shotlister	Import directly	.ale
Tab Delimited	Conversion required	.txt

Creating Avid Logs

You can prepare an Avid log on any type of Windows or Macintosh computer by using a word processing application or a text editor. To ensure accuracy, you must follow the Avid log specifications described in “Avid Log Specifications” in the Help.

Applications for Creating Avid Logs

You can use any word processing application or text editor to create Avid logs. However, you must save the file as a text document (ASCII format).

Windows systems ship with a text editor called WordPad.

To open WordPad:

- ▶ Click the Start button, and select All Programs > Accessories > WordPad.

Mac OS X systems ship with a text editor called Text Edit.

To open Text Edit:

- ▶ Select Go > Applications, and double-click Text Edit.

To create a text document in Text Edit:

- ▶ Select Format > Make Plain Text.

Required Information for Logging

When logging manually, you should document the following information:

- Identify the source tape for each shot.
- Document each clip’s name, start timecode, and end timecode.

- In the case of NTSC transfer tapes for film projects, you must supply pulldown information in the Pullin column of the bin before you can capture.

This is the minimum information required to capture successfully. You can also add other information such as comments, auxiliary timecodes, or key numbers for film projects. You can make a separate log file for each videotape, or log clips from several different videotapes in one log.

Creating an Avid Log

To create an Avid Log by using a word processor or text editor:

1. Enter shot log information according to the specifications described in Avid Log Specifications in the Help.
2. Save your file as a text file in the Save As dialog box. You can use the file name extension .txt, but it is not required.



The Avid editing application only accepts text files (ASCII format).

After you double-check the log, import it into the Avid system. For more information, see [“Importing Shot Log Files” on page 39](#).

Transferring Bins from MediaLog

The MediaLog program is a standalone application that speeds the process of creating and importing log information from a Windows or Macintosh computer. MediaLog mirrors the Avid system interface for creating projects, bins, and clip information in the bin, and includes serial deck control for logging directly from tape.



For information on specific MediaLog procedures, see the Avid MediaLog Help.



The version of MediaLog for your platform is included with your Avid system. To order a different version of MediaLog, contact your Avid representative.

If you log your source footage by using MediaLog, you can transfer the bins directly to the Avid system for batch capturing by moving the bin files. You can also import the logs by using the same procedure as you would for other Avid-compatible log formats, as described in [“Importing Shot Log Files” on page 39](#).

Transferring Bins

To transfer bins from MediaLog:

1. Save the MediaLog bins to a floppy disk.
If you are using MediaLog for Macintosh, make sure the disk is DOS-formatted or that your Windows system can mount Macintosh-formatted disks by using a third-party utility.
If your MediaLog folders are available through a server or other networked source, then locate the MediaLog folder there instead.
2. Insert the floppy disk from MediaLog into the Avid system's floppy drive.
3. Open the project folder in which you want to store the MediaLog bins. This folder is usually located in the following folder:
drive:\Program Files\Avid\Media Composer Adrenaline\Avid Projects
4. Double-click the My Computer icon and double-click the Floppy Disk icon.
5. Ctrl+click the bins in the floppy disk window, and select Edit > Copy.
6. Click the project folder window, and select Edit > Paste.

Associating the Bin with Your Project

To associate the transferred bins with your project:

1. Restart the Avid application and open your project.
2. Associate the imported bins with your project by doing the following:
 - a. Select File > Open Bin.
 - b. Locate the new bin by using the Open Bin dialog box.
 - c. Double-click the bin to open it within your project.

The new bin appears in the Bins scroll list in the Project window.

The bins you have imported contain master clips only with no associated media files. Before you can view or manipulate these clips, you must create the associated media files by batch capturing the source material. For information about batch capturing, see [“Batch Capturing from Logged Clips” on page 151](#).

Double-Checking the Log Files

When importing shot logs for video, the Avid system compares the video duration to the video out minus the video in. When importing film shot logs, the system compares the key number out minus the key number in.

If the system detects a discrepancy, it reports the error to the Console and does not bring the clip into the bin. The best way to ensure that clips are not discarded on import is to double-check the logs for discrepancies in duration and marks.



Open the Console by selecting Console from the Tools menu. For more information, see “Using the Console Window” in the Help.

Importing Shot Log Files

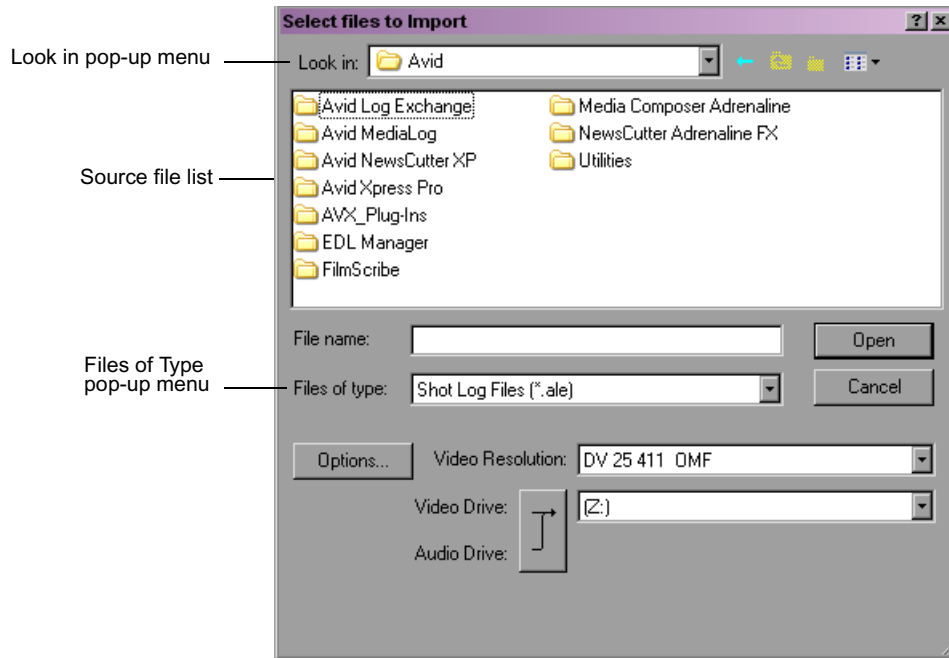
You can import any log created or converted to meet Avid log specifications (see [“Creating Avid Logs” on page 36](#)). For film projects, most telecine and other film-to-tape transfer systems generate a log you can import directly to the bin, after you convert it to .ale format by using the ALE utility. Even if the telecine facility supplies you with an .ale file, you should process it through the ALE utility, using the Clean function. For more information, see [“Preparing Log Files for Import” on page 29](#).

You can combine or merge events while importing a log so that fewer master tapes require capturing, as described in this section.

To import shot log files into a bin:

1. If you have created Import settings for importing shot log files, select the Import setting you want to use from the Settings scroll list. See [“Creating and Using Import Settings” on page 172](#).
2. Open the bin in which you want to store the imported files. Click anywhere in an open bin to select it, or create a new bin for the shot log import.
3. Select File > Import.

The Select Files to Import dialog box opens.



4. Click the Options button to open the Import Settings dialog box, if you want to select options for combining events on import.

For information on Import settings, see “Import Settings” in the Help.

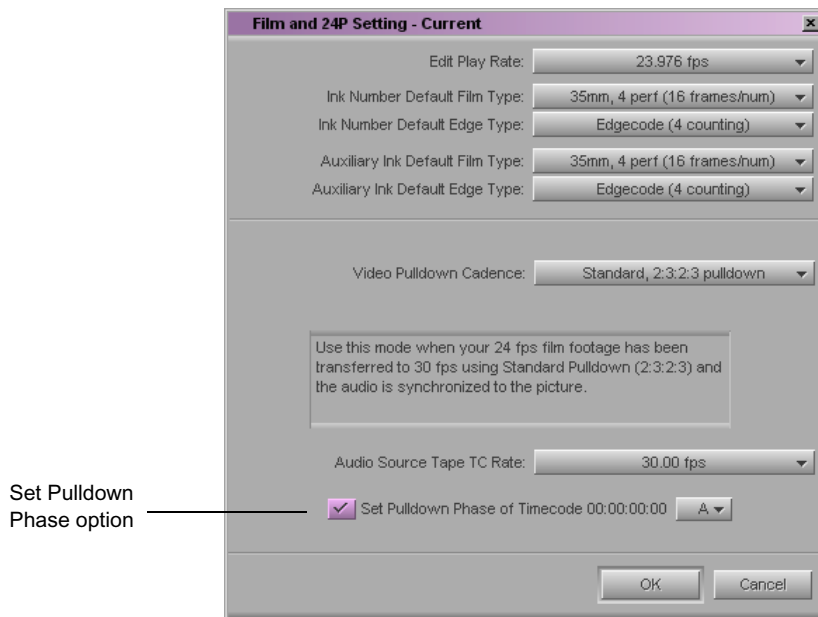
5. After selecting the appropriate options, click OK to close the Import Settings dialog box and return to the Select Files to Import dialog box.
6. Do one of the following:
 - ▶ If you are importing an .ale file, click the Files of type pop-up menu and select Shot Log.
 - ▶ If you are importing a text file, click the Files of type pop-up menu and select All Files.
7. Use the Look in pop-up menu to locate the folder containing the source file.
8. Select the source file from the list and click the Open button.

When the system finishes importing the file, the clips appear in the selected bin.

Setting the Pulldown Phase

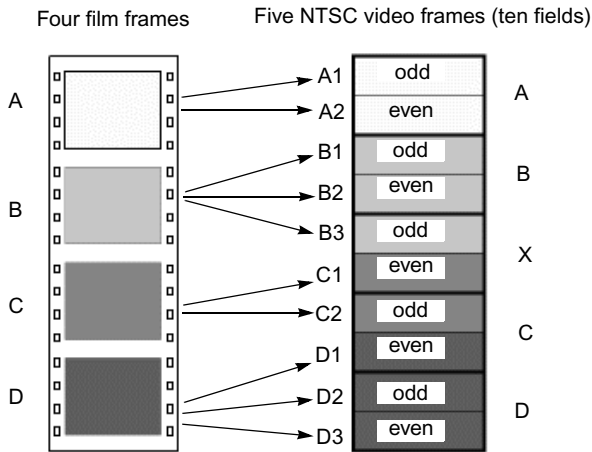
If you are logging or capturing 24-fps sources (film-to-tape transfers, media downconverted from 1080p/24 footage, or both), you can set the pulldown-to-timecode relationship for a transferred tape in the Film Settings dialog box.

For information about the pulldown process, see. “Transferring 24-fps Film” in the Help.



You set this relationship by selecting the *pulldown phase* (sometimes called the *pulldown frame* or *pullin frame*), which is the video frame at which the master clip starts. The pulldown phase is designated A, B, X, C, or D. Film labs and transfer houses typically use the A frame to start the transfer.

The following illustration shows the relationship between film frames and video frames.



This setting is not available in matchback projects. However, you can modify the pulldown phase after you log it. See “Entering Pulldown Information” on page 55.

The Set Pulldown Phase setting lets you log, batch capture, and capture-on-the-fly more easily, because the correct pulldown phase of any IN point for a particular tape is automatically determined. Setting the correct pulldown phase prevents inaccuracies in cut lists and matchback EDLs. It also prevents incorrectly captured clips that appear to stutter when played in 24p NTSC projects.

For example, if you set the pulldown phase of 00:00:00:00 as A (indicating that the A frame is located at timecodes ending in 0 or 5), any timecode you log will calculate its pulldown phase based on the same sync point, regardless of where you set the IN point. If you use the Capture tool to log a clip that starts at 01:00:10:01, the Avid system automatically enters B in the Pullin column of the bin. If you capture on-the-fly starting at 01:00:10:01 (a B frame), the system begins to capture at the next A frame, in this case, 01:00:10:05.



The Set Pulldown Phase feature does not work if you capture from a mark IN.

The pulldown-to-timecode relationship might vary from tape to tape, or within the same tape, depending on how the footage was transferred. If you find that a tape requires a different pulldown phase, you can change the setting in the Film Settings dialog box, or use the Modify Pulldown Phase dialog box before capturing (see [“Modifying the Pulldown Phase Before Capturing” on page 58.](#))



For information about fixing an incorrectly logged sync point, see [“Modifying the Pulldown Phase After Capturing” on page 164.](#)

To set the pulldown phase:

1. Determine the correct pulldown phase for 00:00:00:00 in one of the following ways:
 - ▶ If you are capturing film-to-tape transfers, check the transfer log.
 - ▶ If you are capturing tapes that have been downconverted from 1080p/24, check what pulldown frame was set for 00:00:00:00 on the deck that performed the conversion.
 - ▶ If you still cannot determine the pulldown phase, see [“Determining the Pulldown Phase” on page 57.](#)
2. Double-click Film in the Settings scroll list of the Project window.
3. Select the option Set Pulldown Phase of Timecode 00:00:00:00 and then click the pop-up menu, and select the correct pulldown phase (A, B, X, C, D).
4. Click OK.

Logging Directly into a Bin

You can log clips directly into a bin by using the Capture tool in one of two ways described in this section:

- Log directly into a bin with an Avid-controlled deck for semiautomated data entry.
- Log manually during or after viewing of footage offline with a non-Avid-controlled deck or other source.

Tips for Logging Preroll, Logging Timecode, and Naming Tapes

Observe the following important guidelines for preroll, timecode formats, and naming of tapes when logging prior to capturing.

Logging Preroll

Be sure to leave adequate preroll with continuous timecode prior to IN points when logging your tapes. The recommended minimum preroll is 2 seconds for Betacam playback, 5 seconds for 3/4-inch U-matic playback, and 6 seconds for DV playback.



You set the default preroll for tape playback by using Deck Settings. For more information, see “Deck Settings” in the Help.

Logging Timecode

Within an NTSC project, check the timecode format of each tape (drop-frame versus non-drop-frame timecode) when you are logging without a tape in the deck. Log drop-frame timecode by using semicolons (;) between the hours, minutes, seconds, and frames. Log non-drop-frame timecode with colons (:).



To change the logged timecode format, select Clip > Modify. For information, see “Modifying Clip Information Before Capturing” on page 62.

Naming Tapes

When entering tape names in the Capture tool, consider the following:

- Tape names must be alphanumeric characters (A to Z, 0 to 9). They can include uppercase and lowercase characters. The maximum length of a name is 32 characters.
- It is possible to have a single tape listed as several different tapes if you alter the case of the letters. For example, if you type a single name as *TAPE*, *Tape*, and *tape* on three different occasions, all three names will appear. This can cause significant problems in keeping track of clips when batch capturing, recapturing, and generating an EDL. Select a case convention and maintain it throughout a project.



If you want your Avid system to consider master clips as coming from the exact same tape, you should try to select that tape name from the Select Tape dialog box. If you do not see the tape you are looking for, but know you have online media from that tape, you should click the Scan for Tapes button. For more information, see “Logging with an Avid-Controlled Deck” on page 46.

- It is important that you devise a naming scheme for your tapes. For example, tapes with similar names can be easily sorted and viewed together in a bin. However, it can be difficult to distinguish among numerous tapes with similar names when trying to locate a specific tape quickly. Name tapes based upon the amount and complexity of your source material.
- If you are planning to generate an edit decision list (EDL) for import into an edit controller for online editing, double-check the controller’s specifications beforehand. Some edit controllers will truncate source tape names to as few as six characters, while others will eliminate characters and truncate to three numbers. Alterations like these at the EDL stage might cause the system to identify different source tapes with similar names in the same way, causing you to lose track of source material.

Naming a New Tape from the Keyboard

You can name a new tape without taking your hands off the keyboard.

To create a new tape name by using a keystroke in Capture mode:

1. Select Tools > Capture.
The Capture tool opens.
2. Put a tape in the deck or click the Source Tape Display button.
The Select Tape dialog box opens.
3. Press Ctrl+N.
A new tape name text box opens.
4. Type the new tape name.
5. Press Enter to register the tape name.
6. Press Enter or click OK to close the Select Tape dialog box.

Logging with an Avid-Controlled Deck

When you log with a compatible tape deck controlled from within your Avid system, you can automate part of the logging process by using buttons to enter frame-accurate timecode information from the deck. This method is more accurate than manual entry because timecodes are transferred directly from tape to the bin.

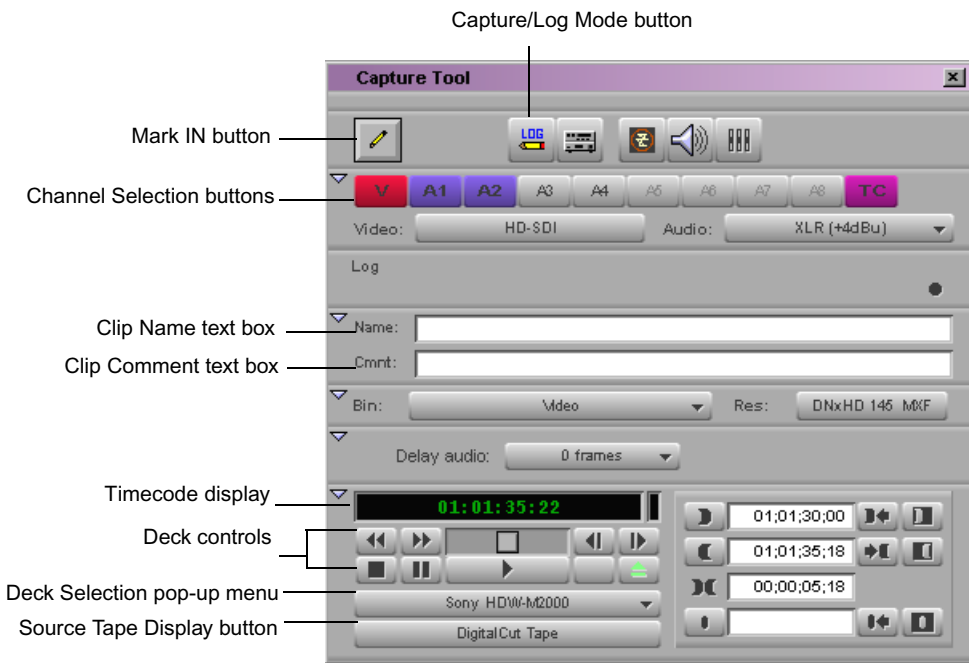


For information about connecting a compatible deck to your system, see the setup guide for your Avid system.

To log clips directly into a bin from an Avid-controlled deck:

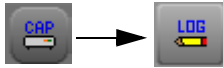
1. Make sure the deck is properly connected and turned on.
2. Open the bin where you want to store the clips.
3. Select Tools > Capture.

The Capture tool opens. Playback from the deck is displayed in the Client monitor.





If you forget to connect and turn on the power to the deck before opening the Capture tool, you can reinitialize deck control after turning it on by clicking the Deck Selection pop-up menu, and selecting Check Decks.



4. If the Capture tool is not currently in Log mode, click the Capture/Log Mode button until the LOG icon appears.

5. Click the Deck Selection pop-up menu, and select a deck.

For more information, see [“Selecting a Deck in the Capture Tool” on page 91.](#)

6. Insert your tape into the deck.

The Select Tape dialog box opens.

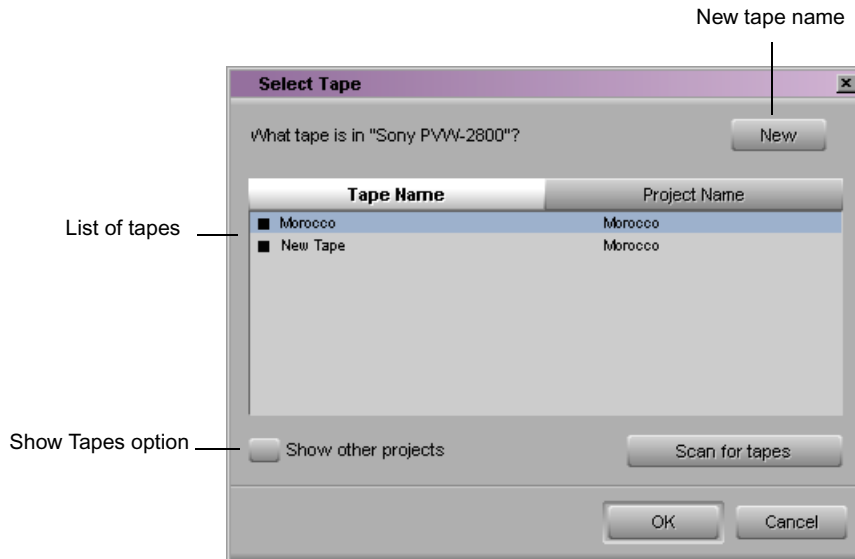
You can select the option “Show other project’s tapes” to display the tape names and associated project names for all bins that have been opened in the current session.



Because the media file database does not open when you start your Avid system, tape names of all online media files do not appear automatically.



If the tape name you are searching for does not appear in the Select Tape dialog box, click the Scan for Tapes button. Tape and project names are listed.



7. Provide the system with a tape name in one of the following ways:
 - ▶ Select the name of the tape from the list in the Select Tape dialog box and click OK.
 - ▶ Click New if the tape is not in the list. A new tape name line appears in the dialog box. Type the new name and click OK.

The tape name is displayed in the Capture tool.



For guidelines when naming tapes, see “Naming Tapes” on page 44.

A message that the system is waiting for you to mark an IN point is displayed in the message bar.

8. Set either an IN point or an OUT point for the clip you want to log using one of the following methods:
 - ▶ **If you want to keep the deck running while you log:** Start the deck. At the point where you want to start the clip, click a Mark IN button (you can use either the Mark IN button in the upper left of the Capture tool or the Mark IN button in the lower right) or press the F4 key. The deck continues to play.



Mark IN



If you want to pause the deck while you enter a clip name and comments, see “Pausing the Deck While Logging” on page 49.



Mark IN



Mark OUT



Go to IN



Go to OUT



Mark OUT
and Log



Mark IN
and Log

- ▶ **If you want to cue your source tape to the start or end point:** Use the deck controls in the Capture tool to cue your source tape to the start or end point. Click a Mark IN button or the Mark OUT button in the lower right of the Capture tool.
- ▶ **If you want to log using timecode:** If the footage starts at a known IN point or ends at a known OUT point, type the timecode in the text box next to the Mark IN button or the Mark OUT button. Then enter the mark by pressing the Go to IN button or the Go to OUT button, which scans the tape forward to the mark, or by pressing Enter.

After you set the mark, the Mark IN button changes to the Mark OUT and Log button or the Mark IN and Log button, depending on the first mark you set.

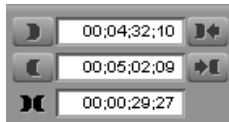


For NTSC film-to-tape transfer or footage downconverted from 1080p/24, you must log the correct pulldown phase. See “Setting the Pulldown Phase” on page 41 and “Entering Pulldown Information” on page 55.

9. (Option) Enter a clip name and comment in the corresponding text boxes in the Capture tool.

10. To finish logging the clip, do one of the following:

- ▶ **If the deck is running:** Click the Mark OUT and Log button or press the F4 key. The clip is logged into the bin and the deck continues to play.
- ▶ **If you want to cue the remaining start or end point:** Use the deck controls to locate the start or end point. Set the remaining IN point or OUT point either by clicking the Mark OUT and Log button or the Mark IN and Log button. The clip is logged into the bin.
- ▶ **If you want to log using timecode:** Type a timecode for the clip's IN point, OUT point, or duration in the timecode text boxes next to the corresponding icon. Then enter the mark by pressing the Go to IN button or the Go to OUT button, which scans the tape forward to the mark, or by pressing Enter. To log the clip into the bin, click the Log Clip button in the upper left of the Capture tool.



Log Clip

The clip name, which is automatically named and numbered by the system, is highlighted in the bin and ready to be renamed.

11. (Option) Rename the clip by typing a new name in the highlighted area.



Consider changing the clip name immediately, because it is easy to forget the contents of each clip if you are logging many clips. You can, if necessary, accept the clip name and proceed with the logging process and change the clip names in the bin at a later time.

12. Repeat these steps until you have logged all your clips.



While viewing the footage, you can continuously update your marks on-the-fly by clicking the Mark IN button or the Mark OUT button repeatedly before entering the second mark.

Pausing the Deck While Logging

If the deck is playing while you log clips, you can direct the Avid system to automatically pause the deck after you set an IN point and an OUT point. While the deck is paused, you can enter the name and comment for the clip you want to log.

To pause the deck while logging:

1. In the General tab of the Capture Settings dialog box, select the “Pause deck while logging” option.
2. Set up your deck and the Capture tool as described in [“Logging with an Avid-Controlled Deck” on page 46](#).
3. When you reach the point where you want to start the clip, click the Mark IN button in the upper left of the Capture tool or press the F4 key. The Mark IN button changes to the Mark OUT button and the deck continues to play.
4. When you reach the point where you want to end the clip, click the Mark OUT button in the upper left of the Capture tool or press the F4 key again. The Mark OUT button changes to the Log Clip button, and the deck pauses.
5. Enter a clip name and comment in the corresponding text boxes in the Capture tool.
6. Click the Log Clip button or press the F4 key.



Mark IN



Mark OUT



Log Clip

The system logs the clip in a bin, and the deck starts playing again.

Using a Memory Mark

To use a memory mark for a particular location on a tape:

- ▶ Click the Mark Memory button in the Capture tool to mark the location.
- ▶ Click the Go to Memory button to move through the tape to the marked location.
- ▶ Click the Clear Memory button to clear the memory mark.

You can add one mark per tape. The memory mark is not stored on the tape. When you remove the tape from the deck and insert another tape into the deck, the mark is cleared.



Mark Memory button

Go to Memory button

Clear Memory button

Logging with Non-Avid-Controlled Decks

You can use the Capture tool to log clips directly into a bin from a source that is not controlled by your Avid system. For example, you can log clips from a deck that is not connected to the system, or from handwritten or printed log information for a tape that was previously logged but is not currently available.

To log clips directly into a bin from a non-Avid-controlled deck:

1. If there is a deck connected to the system, eject the tape from the deck.

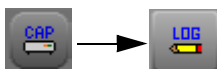


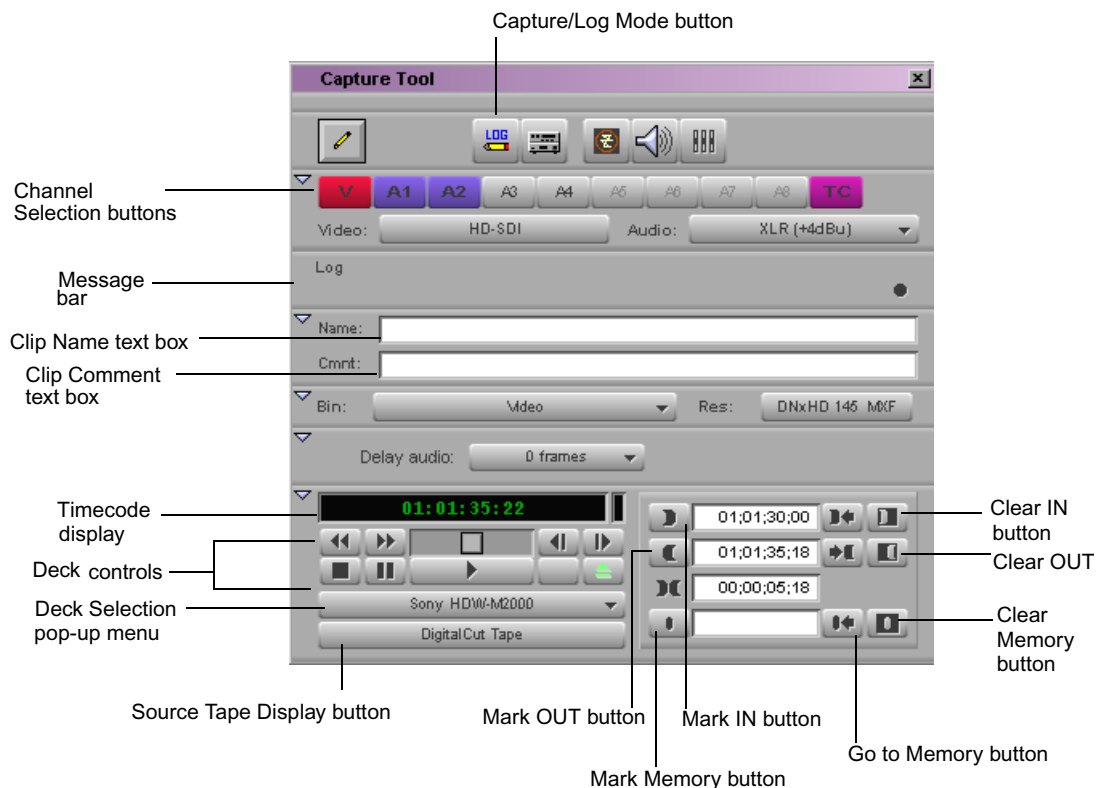
For NTSC projects, when you are logging within the Capture tool, you should leave the deck empty. If a tape remains in the deck, the system will determine drop-frame or non-drop-frame from that tape whether or not it matches your tape's timecode format.

2. Double-click Deck Preferences in the Settings scroll list of the Project window to open the Deck Preferences dialog box.
3. For NTSC projects, click the “When no tape in deck log as” pop-up menu, and select Non-Drop-Frame or Drop-Frame.
4. Click OK to close the dialog box.
5. Open the bin where you want to store the clips.
6. Select Tools > Capture.

The Capture tool opens.

7. Click the Capture/Log Mode button in the Capture tool until the LOG icon appears.





8. Click the Source Tape Display button.
A dialog box opens.
9. Click Yes to open the Select Tape dialog box.
10. Double-click the name of the tape in the dialog box, or click New and enter the name of the tape.
11. Click OK.
12. Select the tracks you want to log, using the Channel Selection buttons in the Capture tool.
13. Type the start timecode in the Mark IN text box.
14. (Option) Enter a clip name and comment in the corresponding text boxes.
15. Type the end timecode in the Mark OUT text box.



For NTSC film-to-tape transfer or footage downconverted from 1080p/24, you must log the correct pulldown phase. See “Setting the Pulldown Phase” on page 41 and “Entering Pulldown Information” on page 55.



Log Clip

16. Click the Log Clip button.

The clip is logged into the bin. The clip name, which is automatically named and numbered by the system, is highlighted in the bin and ready to be renamed.

17. (Option) Rename the clip by typing a new name in the highlighted area.



Consider changing the clip name immediately, because it is easy to forget the contents of each clip if you are logging many clips. You can, if necessary, accept the clip name and proceed with the logging process and change the clip names in the bin at a later time.

18. Repeat these steps until you have logged all your clips.

Logging Film Information

Once you have entered or imported the basic log information into a bin, you might want to add film-related log information before capturing. This section describes procedures and formats for adding various film headings.

The following are some important requirements for film-based projects:

- The minimum information required for capturing is the data recorded in the Start and End video timecode columns, and the pulldown phase for NTSC transfers, which is noted in the Pullin column (24-fps capture only).
- Each reel of film can be logged as a separate clip, and will correspond to a single master clip, only if the video transfer of the film reel has continuous pulldown (NTSC format), and continuous timecode (NTSC and PAL). If the film reels for your project do not meet this condition, then you must log each *take* on a reel of film as a separate clip, which will correspond to a single master clip.

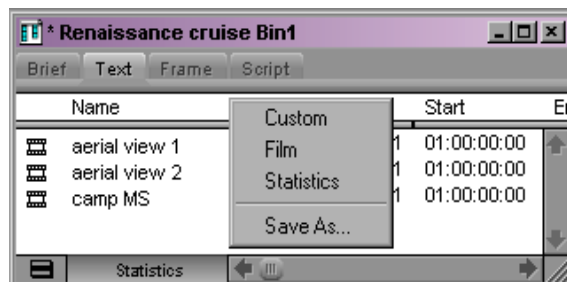
If you log each reel as a separate clip, you can use the F1 and F2 keys to create subclips for each take. See “Creating Subclips While Capturing” on page 130.

- If you want to produce a cut list, or use film-tape-film-tape for recapturing, you must log key numbers. You can add key numbers after capturing, before you create the cut list.
- All film and video reference numbers must be in ascending order.

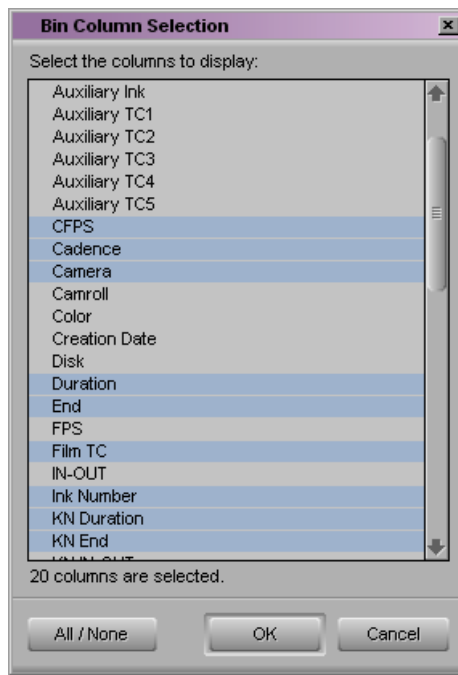
Displaying Film Columns

To display film columns in the bin:

1. Click the Bin View pop-up menu, and select Film to display all the required film column headings. The Bin View pop-up menu is located at the bottom of the Bin window.



2. To log data under optional headings (such as Ink Number, Auxiliary TC1-Auxiliary TC5, or Film TC), select Bin > Headings and Ctrl+click the specific headings you want to add from the Bin Column Selection dialog box.



3. You can also track custom information for the job by creating a custom heading. To create a new heading, type a name that describes the information in the headings bar at the top of the bin. For more information on customizing bin views, see “Customizing Bin Views in Text View” in the Help.

Entering Pulldown Information

To accurately capture NTSC transfer tapes in 24p projects, you need to enter pulldown information into the bin. (This information is not required for PAL transfer tapes.) Setting the correct pulldown phase prevents inaccuracies in cut lists and matchback EDLs. If you are importing a log generated during the telecine transfer, the pulldown information is automatically included in the bin.

Start timecode

Pullin column
(information required for NTSC)

Name	Start	Duration	KN End	KN Start	KN Duration	Pullin
forest pan	04:16:41:15	34:15	5203+09	KL 03 4162-5151+14	51+12	A
aerial view 1	04:18:19:05	33:15	5731+12	KL 03 4162-5681+09	50+04	A
aerial view 2	04:21:47:15	34:10	5011+07	KL 16 3468-4960+00	51+08	A
camp MS	04:22:21:25	41:20	5079+03	KL 28 1847-5016+12	62+08	A
camp CU	04:23:03:15	1:11:10	5349+04	KL 28 1847-5242+05	107+00	A
camp CU 2	04:35:25:15	14:05	0197+07	KL 12 3476-0176+04	21+04	A
starting fire	04:35:39:20	12:05	0311+13	KL 12 3476-0293+10	18+04	A
fire	04:35:51:25	11:05	0329+14	KL 12 3476-0313+03	16+12	A

If you do not have a transfer log, or if the transfer log is incorrect, you need to add the information manually. If you log clips by using the Capture tool, the Avid system uses the A frame as the default pulldown phase. You might need to edit this value.



For 24p projects, you can set a default pulldown phase in the Film Settings dialog box. See “Setting the Pulldown Phase” on page 41 (24p projects only).



For matchback projects, you need to log key-number information before you can log pulldown information.

By specifying the pulldown phase in the Pullin column, you accomplish the following:

- You ensure that the clips will start with the correct frame for the pulldown. Otherwise, you might experience inaccuracies in key-number tracking and in the cut lists.
- You indicate where the pulldown fields are located so the Avid system can accurately eliminate the pulldown fields during the capturing process, leaving you with a frame-to-frame correspondence between your digital media and the original 24-fps footage (24p projects only).

To do this, you must indicate whether the sync point at the start of each film clip transferred to tape is an A, B, C, or D frame, as described in this section. In most cases, the sync point is the A frame.

Determining the Pulldown Phase

It is easiest to determine the pulldown of a sync point (or pulldown phase) if you ask your film lab to keypunch (cut a small hole in) the sync frame at the zero frame in the original film footage before transferring the film to video. Many film labs or transfer houses can also provide a pulldown frame indicator displayed at the far right of the burn-in key numbers, depending on the equipment available. Ideally, the A-frame pulldown coincides with timecode ending in 0 and 5 (:00, :05, :10, and so on).

If the footage has not been keypunched, you can determine pulldown according to clapsticks or any other distinctive frame at the beginning of the clip. Determining the pulldown is easier if the frames depict motion.

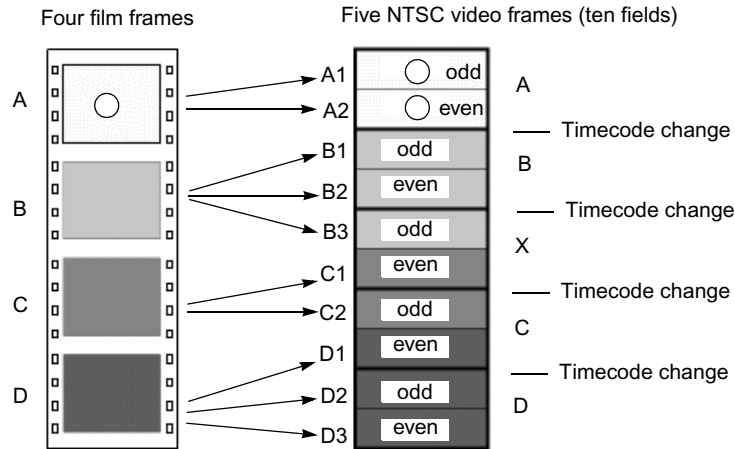


For instructions on determining the pulldown phase for material already captured, see “Modifying the Pulldown Phase After Capturing” in the Help.

To determine the pulldown phase:

1. While viewing the video transfer on a monitor, go to the keypunched (or clapsticks) sync point for the beginning frame of the clip you’re logging.
2. Step (jog) past the sync point frame field-by-field, using the step wheel on the tape deck. You will see either two or three keypunched fields. If the footage is not keypunched, look for two or three fields with little or no motion.
3. If there are two fields, the pulldown is either A or C. Step through the fields again, and note where the timecode changes:
 - If the timecode does not change from the first to the second field, the fields came from an A frame.
 - If the timecode changes from the first to the second field, the fields came from a C frame.

The following illustration shows a keypunch on the A frame. Notice where the timecode changes.



4. If there are three keypunched fields, or fields without motion, the pulldown is either B or D. Step through the fields again and note where the timecode changes:
 - If the timecode changes from the second to the third field, the fields came from a B frame.
 - If the timecode changes from the first to the second field, the fields came from a D frame.
5. Enter or edit the information in the Pullin column in the appropriate bin, as described in the next section.

Modifying the Pulldown Phase Before Capturing

After you determine the correct pulldown phase (as described in the previous section) you can modify the pulldown phase before capturing in one of the following ways.

To modify the pulldown phase directly in the Pullin column:

1. Click the Text tab to display all bin information.
2. Click the cell you want to modify.
3. Click the cell again. The pointer changes to an I-beam.
4. Type the pulldown phase and press Enter.

To modify the pulldown phase for multiple clips:

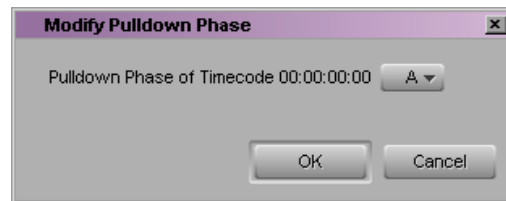
1. Ctrl+click the clips you want to modify.
2. Select Clip > Modify.
3. Click the Modify Options pop-up menu, and select Pull-in.
4. Select A, B, C, or D.
5. Click OK.

The pullin for all selected clips is changed, based on the pulldown phase you selected.

To modify the pulldown phase for multiple clips that have the same pulldown-to-timecode relationship:

1. Ctrl+click the clips you want to modify.
2. Select Clip > Modify Pulldown Phase.

The Modify Pulldown Phase dialog box opens.



3. Click the pop-up menu, and select the correct pulldown phase for timecodes ending in 0 or 5.
4. Click OK.

The pulldown phase for each selected clip is changed, based on the pulldown phase you selected for 00:00:00:00.

The Pulldown Phase setting also appears in the Film Settings dialog box (24p projects only). You can override that setting with the Modify Pulldown Phase dialog box. The selection in the Film Settings dialog box remains the same. For more information, see [“Setting the Pulldown Phase” on page 41](#).



If you want to modify the pulldown phase after capturing, you must first unlink the clips. See [“Modifying the Pulldown Phase After Capturing” on page 164](#).



After you capture an NTSC transfer, the timecode shows a loss of every fifth frame of video. For example, don't be alarmed if you find that your timecode jumps at one point from 1:00:14:15 to 1:00:14:17. You haven't lost a frame, just an extra pulldown field.

Entering Frames-per-Second Rates for PAL Transfers

When you log in advance for PAL film-to-tape transfers, you must log the footage as clips that have a 25-fps play rate, as listed in the FPS column of the bin. If you want, you can capture the footage on-the-fly, without logging the clips first. The minimum information required to capture the footage is the data logged in the Start and End video timecode columns.

Entering Key Numbers

To add key numbers:

- ▶ Highlight the KN Start column, then type the key number for the sync point at the start of the clip by using one of the following formats:
 - **Keycode™ Format:** Type a two-character manufacturer and film-type code, a six-digit prefix for identifying the film roll, a four-digit footage count, a two-digit frame offset, and then press Enter.

The Avid system adds a space, hyphen, and either a plus sign (for 35mm projects) or an ampersand (for 16mm projects) to format the number. For example, in a 35mm project, to enter KJ 23 6892-1234+15, type KJ236892123415. In a 16mm project, typing the same number results in the code KJ 23 6892-1234&15.
 - **Other Formats:** Enter other key-number formats in the Ink Number column. Type up to eight characters for the prefix, up to five characters for the footage count, two digits as the frame count, and then press Enter.

The Avid system automatically calculates the ending key number (KN End), based on the timecode duration.



Make sure the correct number appears when you press Enter. For key-number formats other than Keycode, you might need to type the space, hyphen (-), and plus sign (+) or ampersand (&) to format the number correctly.

Entering Additional Timecodes (Option)

Consider the following when you enter additional timecodes:

- In one of the Aux TC columns (that is, Aux TC1 through Aux TC5), type an auxiliary timecode that syncs with the video timecode logged in the Start column. You can enter up to five auxiliary timecodes. Supported timecodes depend on your project: 30-fps for NTSC (drop-frame or non-drop-frame) and 25-fps for PAL. Use one of the following formats:
 - ▶ Enter a two-digit format for hours, minutes, seconds, and frames. You need not enter a leading zero. (For example, to enter 01:23:02:00, type 1230200.)
 - ▶ When working with drop-frame timecode in the NTSC format (not applicable to PAL), enter a semicolon to indicate drop-frame timecode (for example, to enter 01;23;02;00, type 01;230200).
- In the Sound TC column, enter the Nagra or DAT timecode for the original audio for the start of the clip. The timecode should sync with the video timecode logged in the Start column in the bin. Enter the source sound-roll identifier in the Soundroll column. Supported timecodes depend on your project: 30-fps for NTSC (drop-frame or non-drop-frame) and 25-fps for PAL. The clip to be captured must contain an audio track.
- In the Film TC column, enter timecode generated by a film camera (using Aaton or Arri timecode) for tracking the picture at the start of the clip. The film timecode should sync with the video timecode logged in the Start column. Only 24-fps timecode is supported. The clip to be captured must contain a video track.
- In the TC24 column, enter timecode for original HDTV sources (1080p/24) or audio DATs created for PAL feature film productions that use in-camera timecode.



You can use the Duplicate command to convert timecodes from one format to another. For more information, see “Duplicating a Column” in the Help.

Entering the Ink Number (Option)

To enter ink numbers:

1. Open the Film Settings dialog box by clicking Film in the Settings scroll list of the Project window.
2. Make sure the correct options are selected for ink number format and ink number display, and click OK.



You can log different ink number formats in the same project as long as you change the ink number setting to the appropriate format before you log each type. Changing the ink number setting affects only the next ink numbers you log, not numbers that are already logged.

3. Return to the bin and enter numbers under the Ink Number heading.

For example, use Keycode format or use a two-digit prefix to identify the roll, a hyphen, a four- or five-digit footage count, a plus sign, and a two-digit frame count (for example, AA-00924+00).

Entering Additional Film Data

You can continue to log additional film data into the Labroll, Camroll, Soundroll, Scene, and Take columns, or into your own custom columns, as necessary. You can include the information in these columns on the cut lists you create for your edited sequence.

Modifying Clip Information Before Capturing

You can change or modify the information logged in the bin. This is especially useful if you find that some of the data is incorrect, or if you need to update the information based on technical needs, such as varying timecode formats or film specifications.

There are two ways to modify clip information before capturing:

- You can modify the information directly by clicking in a column and by entering the new information one field at a time.
- You can use the Modify command to change selected groups of clips all at once.

For more information, see “Modifying Clip Information” in Help.

For information on modifying the pulldown phase, see [“Entering Pulldown Information” on page 55](#).



Modifying tape names and timecodes affect any key numbers entered for the selected clips.

Exporting Shot Log Files

You can export a shot log file from the Avid system in one of two formats for making adjustments in a text processor or for importing into another system.

To export a shot log based on clip information in a bin:

1. Open the bin containing the clips you want to export. If necessary, click the Text tab to display all clip information.
2. Click a Clip icon to select it. Ctrl+click each additional clip you want to export.
3. Select File > Export.

The Export As dialog box opens with a default file name in the File name text box based on the file type.

4. Select the Export setting by doing one of the following:
 - ▶ If you have previously created an Export setting for exporting shot log files, click the Export pop-up menu, and select the setting. Then, go to step 9.

For information on creating Export settings, see [“Creating a New Export Setting” on page 252](#).

 - ▶ If you want to review or edit Export settings, go to step 5.
5. Click Options.

The Export Settings dialog box opens.

6. Click the Export As pop-up menu, and select one of the following:
 - ▶ Select Avid Log Exchange to export the selected bin as a shot log file that complies with ALE specifications. For information about Avid Log Exchange, see [“Preparing Log Files for Import” on page 29](#).

- ▶ Select Tab Delimited to export the selected bin as a tab-delimited ASCII text file.



ALE and tab-delimited files include information for master clips and subclips only. Information for other objects, such as group clips, sequences, and precomputes, is not included.

7. To modify an existing setting, select Save.
8. To save the setting with a new name, select Save As and type a name in the dialog box that opens.

The Export Setting name is added to the list of formats available from the Export dialog box.
9. Click Save to close the Export As dialog box.
10. (Option) Change the file name. In most cases, keep the default file name extension.
11. Select the destination folder for the file and click Save.

The file is exported and appears at the selected destination.

Chapter 3

Preparing to Capture Media

Capturing is the process of creating digital media from videotape or audio input. Before you begin this process — described in [Chapter 4](#) — you need to complete the following preparations:

- [Preparing the Hardware for Capture](#)
- [Selecting Settings](#)
- [Configuring Decks](#)
- [Setting Deck Preferences](#)
- [Understanding Drop-Frame Timecode and Non-Drop-Frame Timecode](#)
- [Entering Capture Mode](#)
- [Setting Up the Capture Tool](#)
- [Preparing for Audio Input](#)
- [Preparing for Video Input](#)

This chapter also provides a check list for preparing to capture.

Preparing the Hardware for Capture

Your source material can originate from a videotape, a digital audiotape (DAT), a compact disc (CD), an in-house router, a tuner, or straight off-the-air, with the proper hardware configuration.



For information on connecting your equipment, see “Using the Avid Adrenaline” in the Help.

You should check the following items before capturing:

- **Client monitor:** Before you begin capturing and editing, set up your NTSC or PAL Client monitor by using a color-bar generator (or house pattern) and lock in those settings, if you have not done so already.
- **16:9 format:** You can edit with video in the 16:9 aspect ratio for display of wide-screen images used in the high-definition television (HDTV) format. To view the footage on a Client monitor, you must have a 16:9-compatible Client monitor.



For more information on the 16:9 format option, see “Customizing the Composer Window” in the Help.

- **Remote switch:** The deck control switch on the front of the source deck must be set to remote rather than local to control the deck with the Capture tool.
- **Striped drives:** If your footage contains complex images that you capture at high resolution, you must use striped drives. See “[Getting Information About Striped Drives](#)” on page 66.
- **DAT (digital audiotape):** To capture music or audio from a DAT machine, check the setup guide for your Avid system to determine whether your model requires VLXi[®] for deck control. Also, when capturing from DAT, you must select the proper sync setting. For more information, see “[Preparing for Audio Input](#)” on page 103.

Getting Information About Striped Drives

Avid maintains a set of tables on the Web containing information about striping drives.

To get information about striped drives:

1. Go to www.avid.com, click Support and select Knowledge Base.
2. Search for Drive Striping Tables.

Selecting Settings

Several settings dialog boxes have a direct bearing on the capturing process. Before capturing, review the options in the following sections.

For information about locating and modifying settings, see “Using the Settings Scroll List” in the Help.

Media Creation Settings

The Media Creation dialog box allows you to set the video resolution and to select drives for capturing, creating titles and motion effects, importing, and performing audio and video mixdowns. You also set drive filtering in the Media Creation dialog box.



You can also select a video resolution and select drives directly in the Capture tool, the Save Title dialog box, the Select Files to Import dialog box, the Audio Mixdown dialog box, and the Video Mixdown dialog box. The Media Creation settings change to the resolution and drives you have selected.



If you are using Avid Unity LANshare or Avid Unity PortServer Pro, make sure to specify a supported resolution. For information on supported resolutions, see the LANshare or PortServer Pro documentation.

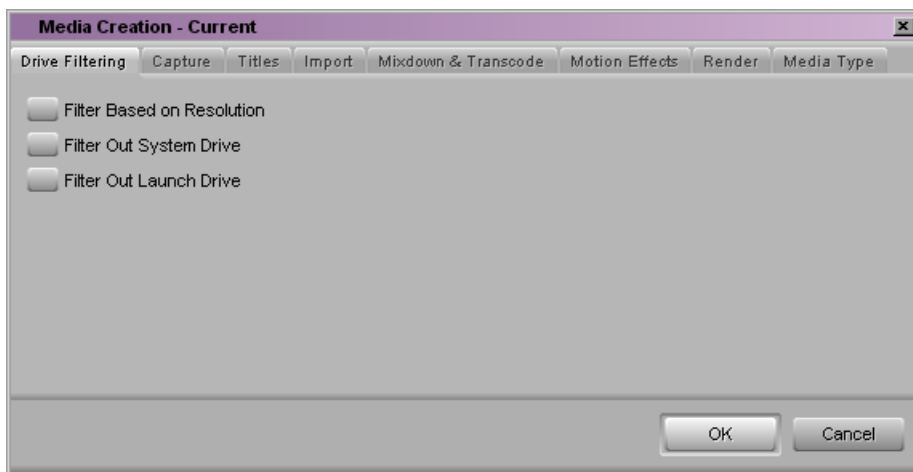
Setting Drive Filtering

Because media files are very large, you can remove from the list of available drives the drive where the operating system is located and the drive where the Avid editing system is located. This allows you to choose to store media only on drives with sufficient space.

To set drive filtering:

1. Double-click Media Creation in the Settings scroll list of the Project window.

The Media Creation dialog box opens.



2. If necessary, click the Drive Filtering tab.
3. Select an option, as described in “Media Creation Settings” in the Help.
4. Click OK to save your settings.



The Avid system does not prevent you from using non-Avid drives, but their reliability cannot be assured.

Selecting a Video Resolution and Drives

To select a video resolution and drives in the Media Creation dialog box:

1. Do one of the following:
 - ▶ Double-click Media Creation in the Settings scroll list.
 - ▶ Select Tools > Media Creation.

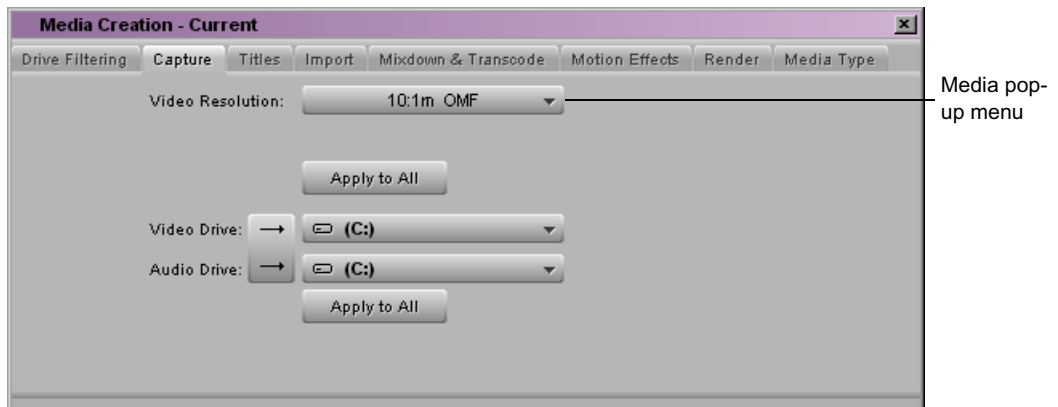
The Media Creation dialog box opens.

2. Click the Drive Filtering tab.
3. Select a drive to filter out:

- ▶ Select Filter Based on Resolution to remove from the list drives that cannot support the selected resolution. This option causes the Avid editing system to utilize only Avid MediaDrives.
- ▶ Select Filter Out System Drive to remove from the list the drive on which the operating system resides.
- ▶ Select Filter Out Launch Drive to remove from the list the drive on which the Avid editing system resides.

The drive or drives you filter out do not appear in the other Media Creation tabs as possible locations where you can store media. They also do not appear in other drive selection menus in the application except for the Import, Export, and Relink dialog boxes.

4. Click the tab for the area in which you want to work.



5. Click the Video Resolution pop-up menu, and select a video resolution.

The Video Resolution pop-up menu contains a list of the available resolutions.



Avid editing applications have the ability to play back and edit media that has been captured using a Meridien-based Avid editing system or an Editcam™ when in a shared storage workgroup. For more information on supported resolutions, see “Compression and Resolutions” in the Help.

6. Click the Media Type tab, and select either OMF or MXF file format.



If your project uses an HD resolution, you cannot select OMF as a file format. MXF is selected by default.

7. Click the tab for the area in which you want to work.
8. Click the Video Resolution pop-up menu, and select a video resolution.

The Video Resolution pop-up menu contains a list of the available resolutions.



*Clicking **Apply to All** sets your selected video resolution for all applicable tabs in the Media Creation dialog box. Your settings are not saved until you click **OK**.*



9. Select a video drive and an audio drive. To select the same drive for both video and audio, click the Single/Dual Drives Mode button until only a single drive pop-up menu opens.



The drive that appears in boldface type has the most available space.

10. (Option) If you are working with the Capture tab, you can select a drive group. Click the Target Drive pop-up menu, and select Change Group. For more information on selecting a drive group, see [“Capturing to Multiple Media Files” on page 74](#).



Because there is no audio associated with titles or motion effects, you can only select a video drive in the Titles or the Motion Effects tab of the Media Creation dialog box.

11. To apply your drive selection to all the Media Creation tabs and the rest of the application, click **Apply to All**.

This sets your selected video and audio drives for all the Media Creation tabs. It also sets them for any place in the application where you select drives.



*Your settings are not saved until you click **OK**.*

12. Click **OK** to save your settings.

For more information about options, see “Media Creation Settings” in the Help.

Capture Settings Dialog Box

Capture settings include essential options for capturing, batch capturing, autocapturing, capturing to multiple media files, DV scene extraction, and setting key commands.

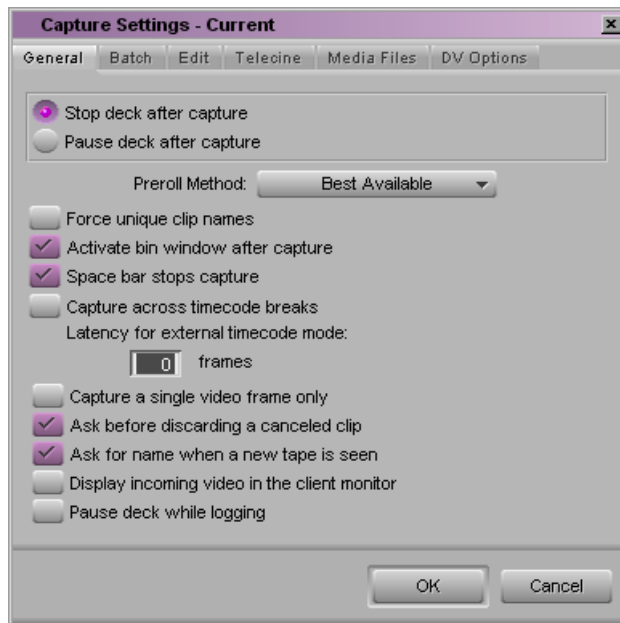
To open the Capture Settings dialog box:

- Double-click Capture in the Settings scroll list.

For more information on Capture Settings tabs, see “Capture Settings” in the Help.

Capture Settings: General Tab

See “Capture Settings” in the Help for a description of the options in the General tab of the Capture Settings dialog box.



Selecting the Preroll Method

The Preroll Method pop-up menu in the General tab of the Capture Settings dialog box includes the following four methods that help you capture more efficiently when a source tape contains timecode breaks:

- **Best Available:** The Avid system first checks the tape for timecode to use for preroll.
 - If there is no timecode, or not enough timecode, the system uses the control track for preroll.
 - If there is not enough control track for preroll, the system adjusts the specified preroll time to accommodate the amount of valid control track available.

After the system adjusts the preroll to the individual shot, it returns to using the user-specified preroll time until it needs to adjust the time again.

- If the adjusted preroll time is too short to sync lock at the IN point, the system does not capture the shot and displays an error message.

Use this method to capture material as automatically as possible. As the system makes multiple attempts to preroll, this method is slower at times but almost always performs the preroll without interruption.

- **Standard Timecode:** The Avid system uses timecode to determine the preroll point.

If there is not enough consecutive timecode (for example, if there is a break in the timecode), the system does not capture the shot and displays an error message.

Use this method if you know the timecode is consecutive or if you want to determine if there are timecode breaks.

- **Best Available Control Track:** The Avid system uses the control track to determine the preroll point.
 - If there is not enough control track for preroll, the system adjusts the specified preroll time to accommodate the amount of valid control track available.

After the system adjusts the preroll to the individual shot, it returns to using the user-specified preroll time until it needs to adjust the time again.

- If the adjusted preroll time is too short to sync lock at the IN point, the system does not capture the shot and displays an error message.

Use this method if you know there are timecode breaks and want to capture material as automatically as possible. Because the system does not use timecode, it might occasionally capture the wrong frames if there is a problem with the control track.

- **Standard Control Track:** The Avid system uses the control track to determine the preroll point.

If there is a break in the control track, the system stops capturing and displays an error message.

Use this method if you know the control track is continuous or if you want to determine if there are breaks in the control track.

To set the preroll method:

1. Double-click Capture in the Settings scroll list of the Project window.
The Capture Settings dialog box opens.
2. Click the General tab.
3. Click the Preroll Method pop-up menu, and select a method.
4. Click OK to close the dialog box and apply the options.

Capturing Across Timecode Breaks

If the tape you are capturing contains breaks in the timecode, there are two settings in the General tab of the Capture Settings dialog box you can use to capture across the timecode breaks:

- **Preroll Method**

By default, the Avid system uses the Best Available preroll method (see [“Selecting the Preroll Method” on page 72](#)). If you know the timecode contains breaks, you can select Best Available Control Track.

- **Capture across timecode breaks**

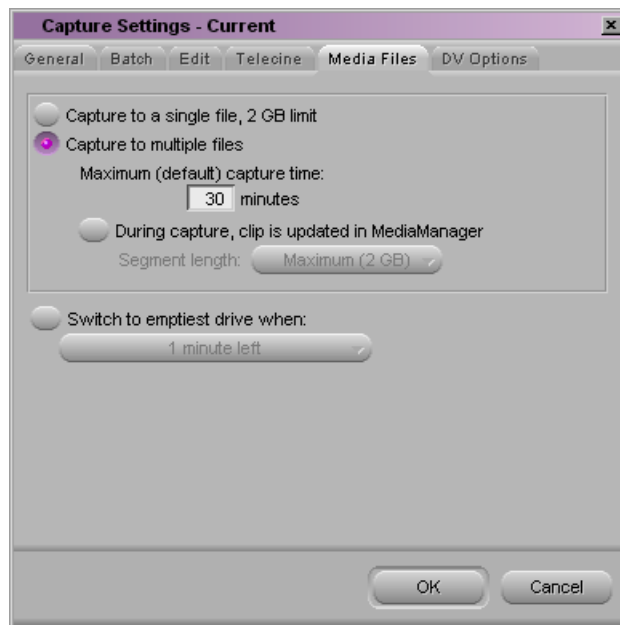
When you select this option, the system begins capturing a new master clip at each timecode break. Select this option when you are performing an unattended batch capture or autocapture. Deselect this option if you plan to capture the entire tape as a single clip by capturing to multiple media files.

To select settings for capturing across timecode breaks:

1. Double-click Capture in the Settings scroll list of the Project window.
The Capture Settings dialog box opens.
2. Click the General tab.
3. Select the preroll method (see [“Selecting the Preroll Method” on page 72](#)).
4. Select the “Capture across timecode breaks” option.
5. Click OK to close the dialog box and apply the options.

Capture Settings: Media Files Tab

See “Capture Settings” in the Help for a description of the options in the Media Files tab of the Capture Settings dialog box.



Capturing to Multiple Media Files

You can capture video and audio to multiple media files across multiple drives, with the following advantages:

- You can create longer clips whose media files would otherwise exceed the file size limitation of 2 GB.
- You can group all drives with the multiple file options, enabling the system to capture long clips continuously; for example, satellite feeds.
- The system makes more efficient use of drive space, particularly when capturing long clips.

To capture video or audio to multiple media files:

1. Click the Settings tab in the Project window.

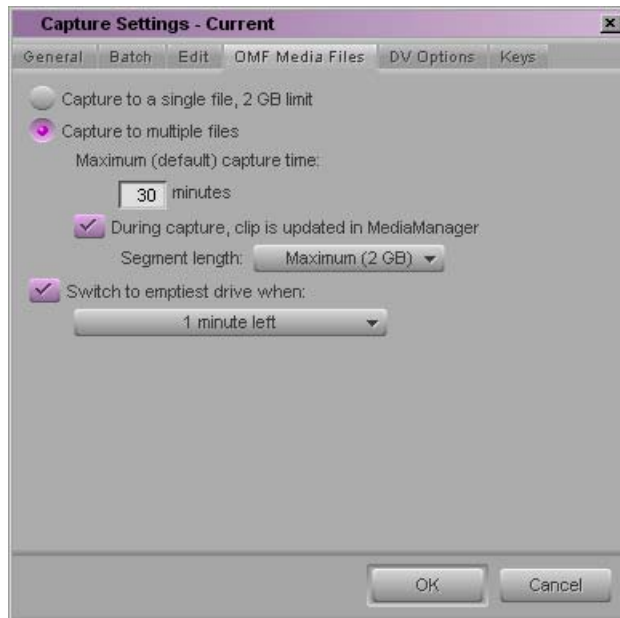
The Settings scroll list appears.

2. Double-click Capture.

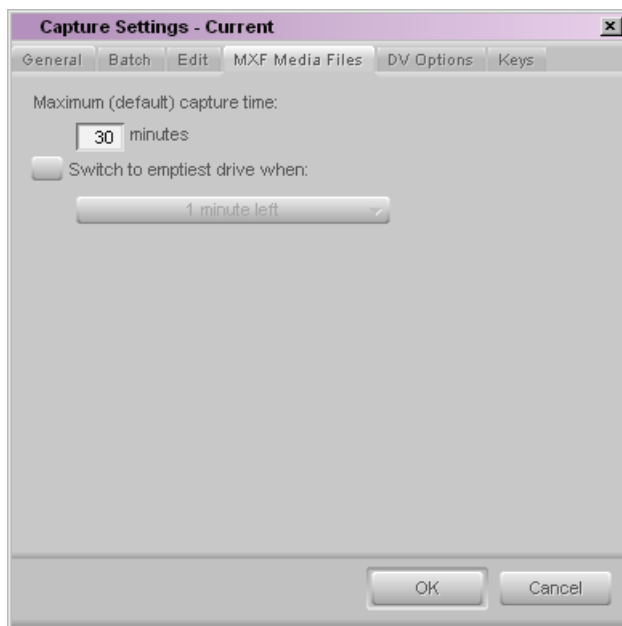
The Capture Settings dialog box opens. If you selected OMF in the Capture tab of the Media Creation dialog box, you see a tab labeled OMF Media Files. If you selected MXF, the tab is labeled MXF Media Files.

3. Do one of the following:

- For OMF media, click the OMF Media Files tab.



- For MXF media, click the MXF Media Files tab.



4. In the OMF Media Files tab, select the option “Capture to multiple files.”



MXF media only captures to multiple files.

5. Accept the default or type a different time limit in the “Maximum (default) capture time” text box.



If you think that any of your captured clips might exceed 30 minutes, make sure you enter a higher estimate in this text box; otherwise, the system stops capturing at 30 minutes.



For information about options, see “Capture Settings” in the Help.

6. Click OK to close the dialog box and apply the options.
7. Select Tools > Capture.
The Capture tool opens.
8. To capture to multiple files across drives, click the Target Drive pop-up menu in the Capture tool, and select Change Group.

The Drive Group dialog box opens.

9. Ctrl+click multiple drives to include in the capturing session, or click the All button to select all drives.



If you click Clear, all selections are removed. You must select at least one drive before you can click OK to exit the dialog box.

10. Click OK to close the dialog box and apply the changes.
11. Proceed with capturing.



For media file management purposes, any clip whose media exceeds the 2-GB limit has more than one media file associated with it.



For more information on managing media files, see “Managing Media Files” in the Help.

General Settings

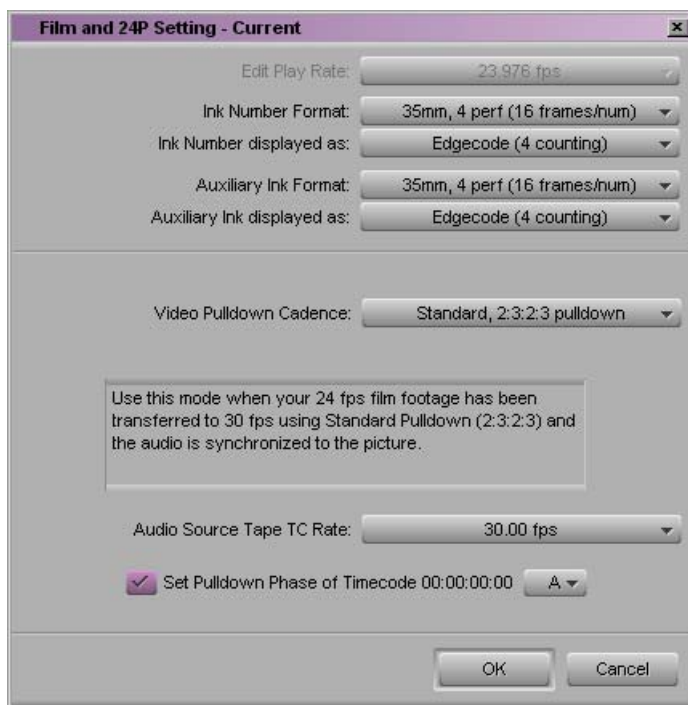
The General Settings dialog box (accessed through the Settings scroll list of the Project window) includes the following options that are important for capture.

- **Project Type:** The top portion of the dialog box displays the project type (NTSC or PAL) and other useful information such as the type of film used as source media.
- **NTSC Has Setup:** This option applies to standard NTSC format and is selected by default. If the source footage is in the NTSC-EIAJ format standard (used primarily in Japan), deselect NTSC Has Setup.

For information about other settings in the General Settings dialog box, see “General Settings” in the Help.

Transfer Settings for Film Projects

The following settings are important for transferring media in a film project. You should set the transfer settings for film projects immediately after you create a new project and before capturing. For information about other film settings, see “Film and 24p Settings” in the Help.



- **Video Pulldown Cadence:** allows you to specify the type of film-to-tape transfer that you capture:
 - *Video rate, no pulldown:* Select this option when working with 24-fps footage that has been transferred MOS (roughly translated as “without sound”) to 30 fps by speeding up the film, and the audio has been brought into the Avid system separately at 100 percent of the actual speed.
 - *Standard 2:3:2:3 pulldown:* Select this option when working with 24-fps footage that has been transferred to 30 fps by duplicating frames (pulldown) and the audio has been synchronized to the picture.

- *Advanced 2:3:3:2 pulldown*: Select this option when using native DV editing with capture over Firewire.

If you are capturing sound that has been created during an NTSC film-to-tape transfer, you need to set the pulldown switch before you begin capturing. See [“Setting the Pulldown Switch” on page 95](#).

For NTSC projects, you can mix footage transferred with pulldown and footage transferred without pulldown (video rate). You can also mix sound transferred at 0.99 (with pulldown) and 1.00 (without pulldown).



For information about film-to-tape transfer methods, see “Film-to-Tape Transfers” in the Help.

- **(PAL only)** You define the **Audio Transfer Rate** in the New Project dialog box when you create a 24p PAL film project. (It is not needed for a 25p PAL project because there is no film speedup during the transfer.) It is important to keep the audio transfer rate constant for the project. However, if there is a specific element that you need to capture at a different rate, you can use the Film and 24p Settings dialog box to change the rate. The following options are available:
 - *Film Rate (100%)*: Select this option when your 24-fps film footage has been transferred MOS to 25 fps by speeding up the film, and the audio comes in separately at 100 percent of the actual speed (PAL Method 2).
 - *Video Rate (100%+)*: Select this option when your 24-fps film footage has been transferred to 25 fps by speeding up the film, and the audio is synchronized to the video picture. This means that the audio speed is increased by 4.1 percent (PAL Method 1).

For PAL 24p projects, you can mix audio that has been transferred at 4.1 percent speedup (video rate, PAL Method 1) with audio that has not been transferred (film rate, PAL Method 2). However, Avid does not recommend this. See “Audio Transfer Options for 24p PAL Projects” in the Help.



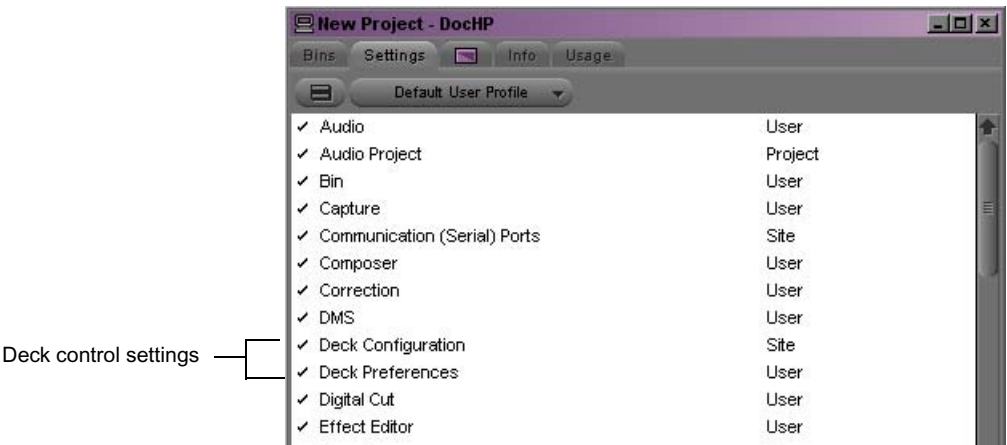
The Info tab in the Project window allows you to view the audio transfer rate you selected when you created the project. The actual audio transfer rate might be different from the display if you used the Film and 24p Settings dialog box to change the audio transfer rate.

- **Audio Source Tape TC Rate** allows you to specify the digital audiotape (DAT) timecode format: either 30 fps or 29.97 fps (NTSC only). This timecode format must conform to the timecode format on your original DAT tapes. This setting is active when capturing audio only.
This setting does not appear in 23.976p projects.
- **Set Pulldown-to-Timecode Relationship** allows you to set a default pulldown phase for a 24p NTSC project. See [“Setting the Pulldown Phase” on page 41](#).

Configuring Decks

Deck Configuration settings allow you to establish deck control parameters for a single deck or for multiple decks. As with all settings, you can create multiple versions, allowing you to select among them for frequent changes in hardware configurations.

Deck Configuration settings and global deck control preferences appear as separate items in the Settings scroll list of the Project window.



For information on setting Deck Preferences, see [“Setting Deck Preferences” on page 86](#).

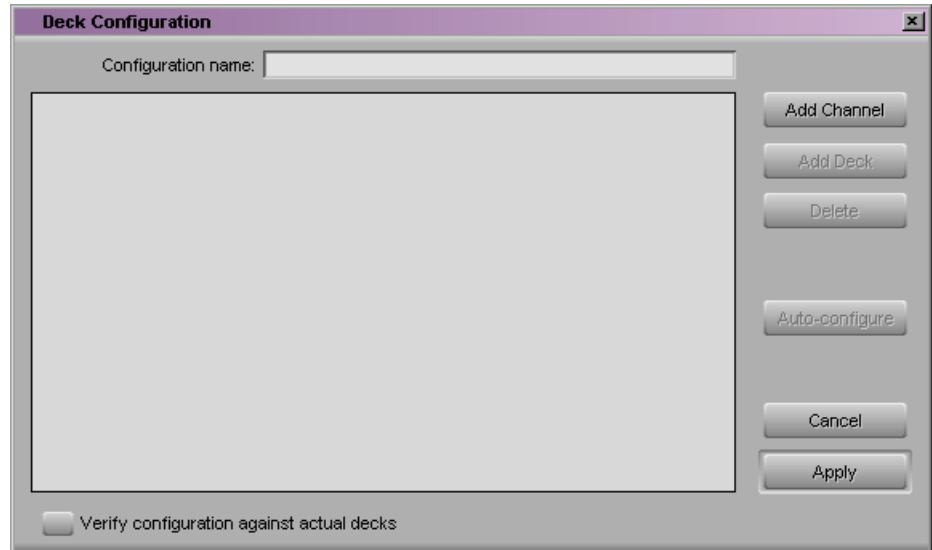


You must manually configure the appropriate hardware connections before Deck Configuration settings can take effect. For more information, see “Using the Avid Adrenaline” in the Help.

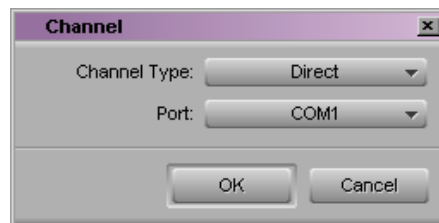
To configure a deck or multiple decks:

1. Double-click Deck Configuration in the Settings scroll list of the Project window.

The Deck Configuration dialog box opens.



2. If you are configuring your system for the first time, click the Add Channel button to add a new channel box on the left side of the Deck Configuration dialog box and to automatically open a Channel dialog box.



Channel refers to the signal path for deck control, whether directly through a serial port or through a V-LAN[®] VLXi system connected to a serial port, or via Firewire. Direct serial port connection allows one deck for each channel, while a V-LAN VLXi system provides multiple decks.

3. Click the Channel Type pop-up menu, and select one of the following items, depending upon your system configuration:
 - **FireWire** if you are controlling a DV camera or deck through a FireWire connection.
 - **Direct** if you are controlling a deck through an RS-422 connection to the serial port.
 - **VLAN VLX** if you are controlling decks through a V-LAN/VLXi connection.
4. Click the Port pop-up menu, and select one of the following items:
 - **Avid DNA or OHCI** if you selected FireWire for the channel.
 - **COM1 or COM2** if you selected Direct or VLAN VLX for the channel.



If you are not sure which port to select, check the 9-pin serial port connectors on the back of the system. If the ports are not labeled, see the manufacturer's documentation supplied with your system.

5. Click OK to close the Channel dialog box.

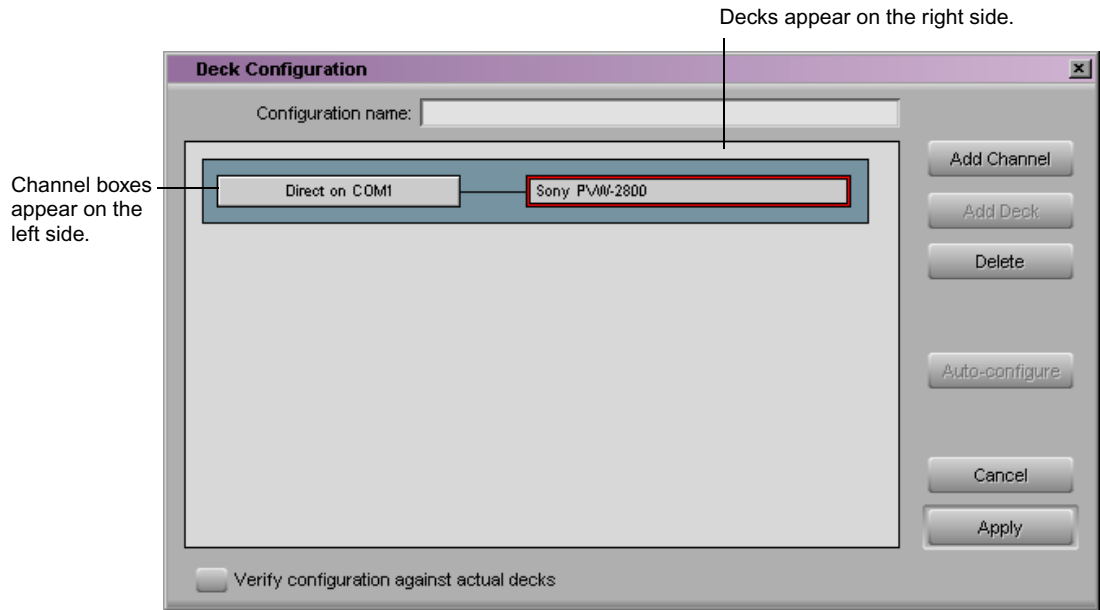
A dialog box opens with a question asking if you want to automatically configure the channel now.

6. Click Yes if you want to automatically configure the channel.

A new channel appears in the display area of the Deck Configuration dialog box, along with the autoconfigured deck.



Do not autoconfigure a DV camera or deck. Not all DV devices respond to the Auto-configure command. Due to this limitation, Auto-configure selects only a generic device template. When a digital camera is attached to your system, click the Deck Type pop-up menu, and select the proper device (described later in this procedure). When a deck is attached, click the Deck Type pop-up menu, and select the applicable deck.

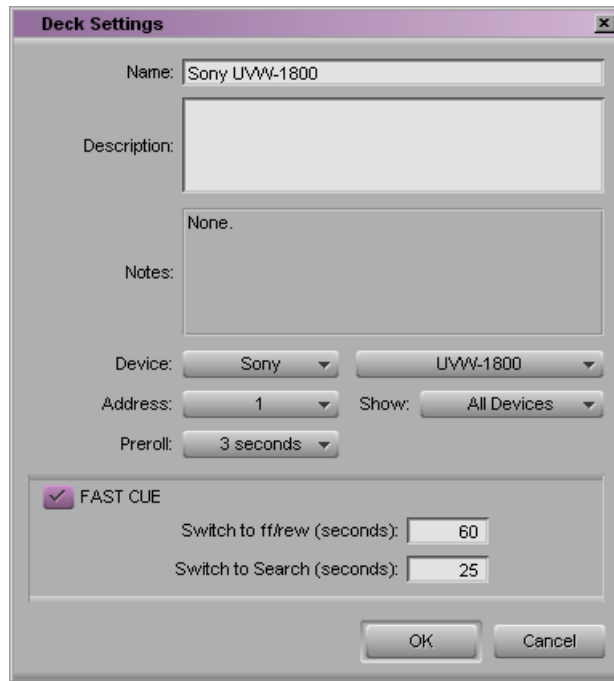


You can reopen the Channel settings to change the options at any time by double-clicking the channel box in the Deck Configuration dialog box.

7. If you did not autoconfigure the deck, click the channel box to select it.
8. Click the Add Deck button to open the Deck Settings dialog box.



With a deck already connected to the system, you can click the Auto-configure button to bypass the Deck Settings dialog box and automatically configure a deck with the default settings.



9. Select settings based on your deck. For information on Deck settings, see [“Deck Settings Options” on page 85](#).
10. Click OK to close the Deck Settings dialog box and return to the Deck Configuration dialog box.



You can reopen the Deck Settings dialog box to change the options at any time by double-clicking the deck box in the Deck Configuration dialog box.

11. Repeat steps 2 through 9 for each additional channel or deck you want to configure.
12. (Option) Select the “Verify configuration against actual decks” option if you want the system to check the deck configuration against the decks physically connected to the system.

The system checks the deck configuration after you click the Apply button in the Deck Configuration dialog box and when you start the Avid application. A message box warns you if the configuration does not match the deck.

13. Type a name in the Configuration name text box to name the deck configuration. The new deck configuration will appear in the Settings scroll list of the Project window.
14. Click the Apply button to complete the configurations and close the Deck Configuration dialog box.
15. If necessary, double-click Deck Preferences in the Settings scroll list of the Project window to adjust global deck control options. For more information, see [“Setting Deck Preferences” on page 86](#).

Deck Settings Options

To access the Deck Settings dialog box, do one of the following:

- ▶ Click the Add Deck button in the Deck Configuration dialog box.
- ▶ In the deck controller section of the Capture tool, click the Deck Selection pop-up menu, and select Adjust Deck. See [“Setting Up the Capture Tool” on page 89](#).
- ▶ Double-click the deck name in the Deck Settings dialog box.

See “Deck Settings” in the Help for a description of the Deck Settings options.

Deleting Deck Configuration Elements

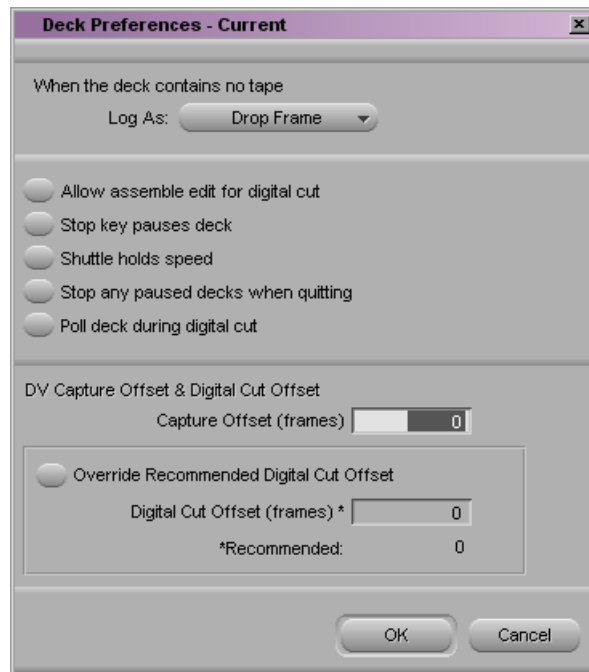
You can delete deck configuration elements to remove or replace them.

To delete deck configuration elements in the Avid system:

1. Double-click Deck Configuration in the Settings scroll list of the Project window.
The Deck Configuration dialog box opens.
2. Click a channel box, a deck box, or the entire configuration to select it.
3. Click the Delete button.
4. Click the Apply button to complete the changes and close the dialog box.

Setting Deck Preferences

Deck preferences are global settings for basic deck control. These settings apply to all decks connected to your system, regardless of your deck configuration. You can open the Deck Preferences dialog box from the Settings scroll list of the Project window.



See “Deck Preferences Settings” in the Help for a description of the Deck Preferences options.

Understanding Drop-Frame Timecode and Non-Drop-Frame Timecode

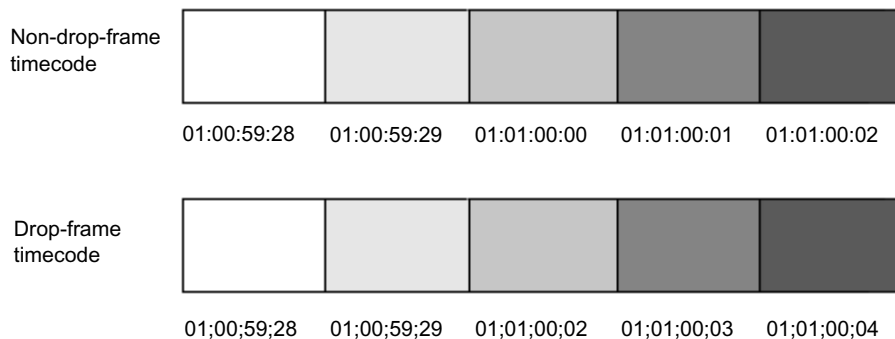
Timecode is an electronic indexing method that denotes hours, minutes, seconds, and frames that have elapsed on a videotape. For example, a timecode of 01:03:30:10 denotes a frame that is marked at 1 hour, 3 minutes, 30 seconds, and 10 frames.

NTSC video (the video format used mainly in the United States) uses one of two formats: *drop-frame timecode* and *non-drop-frame timecode*. Drop-frame (DF) timecode is designed to match the NTSC scan rate of 29.97 frames per second (fps). Two frames of timecode are dropped every minute except for the tenth minute. No video frames are actually dropped. Drop-frame timecode is indicated by semicolons between the digits; for example, 01;00;00;00.

Non-drop-frame (NDF) timecode tracks NTSC video at a rate of 30 fps and is indicated by colons between the digits; for example, 01:00:00:00. Non-drop-frame timecode can be easier to work with, but does not provide accurate timing for NTSC broadcast.

For example, a typical 1-hour show uses 52 minutes of video. If your program ends at 01:52:00:00 (non-drop-frame), and it is broadcast at 29.97 fps, it will last 94 frames too long (approximately 3 seconds). The final credits could be cut off.

The following illustration compares the two types of timecode at the 1-minute mark. No frames are actually dropped.



PAL video (the video format used in many countries other than the United States) uses a scan rate of 25 fps. Timecode is indicated by colons. There is no need for drop-frame timecode in PAL video.

You set the default timecode format for logging clips in the Deck Preferences dialog box (see [“Setting Deck Preferences” on page 86](#)). You set the default starting timecode in the General Settings dialog box (see [“General Settings” in the Help](#)). In both cases, you can select drop or non-drop.

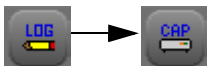
You can change the starting timecode of a sequence or, for NTSC projects, the type of timecode. See [“Changing the Sequence Name and Timecode” in the Help](#).

Entering Capture Mode

Capture mode provides you with the Capture tool and the controls you need to capture your footage in digital form. When you enter Capture mode, the system initializes the Capture tool and establishes an interface with the playback equipment attached to the system.

To enter Capture mode:

1. Make sure the playback device is properly connected to the system and is turned on.
2. Open your project and the bin in which you want to store your master clips.
3. Enter Capture mode in either of the following ways:
 - ▶ With the bin active, select Bin > Go To Capture Mode. The Capture tool opens, with the active bin positioned directly below it.
 - ▶ Select Tools > Capture. The Capture tool opens, but the active bin does not change its position.
4. Make sure you are in Capture mode. If the Capture tool is in Log mode, click the Capture/Log Mode button until the CAP icon appears.



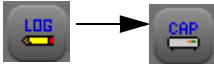
In Capture mode, the Client monitor displays the playback footage whenever the video track is selected in the Capture tool.

Setting Up the Capture Tool

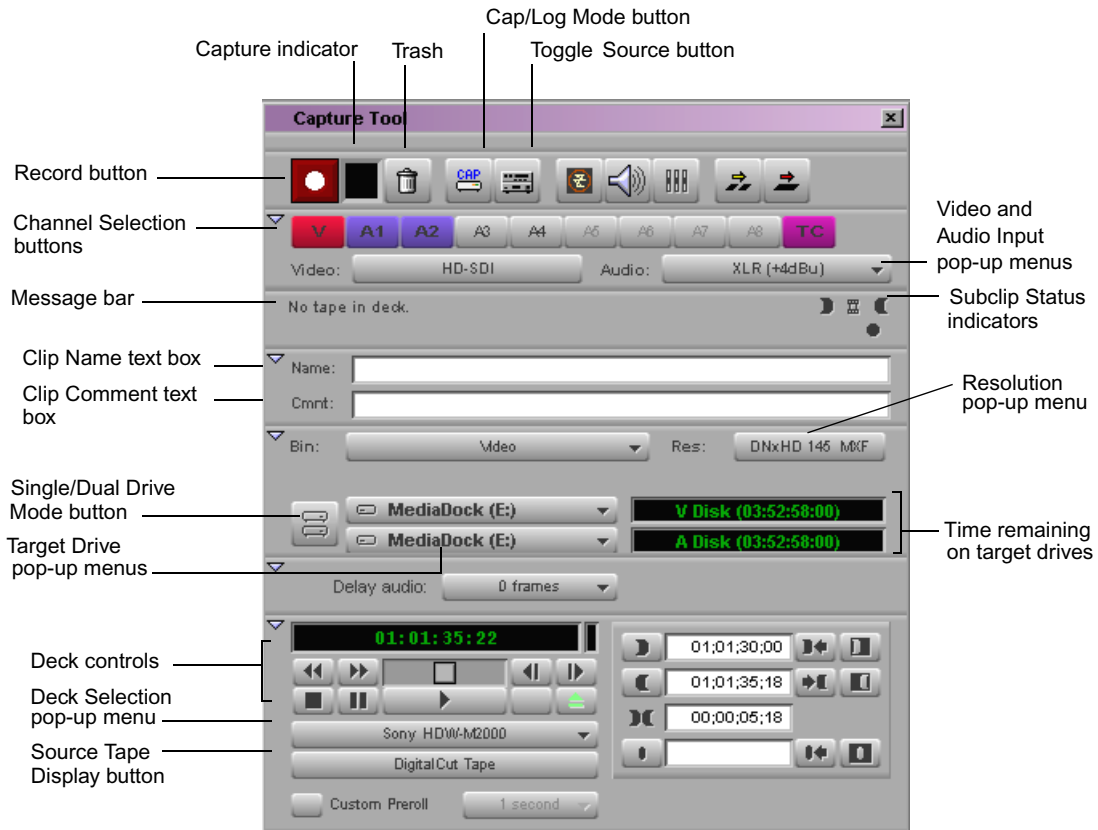
The Capture tool provides controls for cueing, marking, and logging footage, and specifies capturing parameters such as source and target locations. Deck control in the Capture tool operates in the same way as in the deck controller.

To open the Capture tool:

1. Do one of the following:
 - ▶ Click a bin to activate it and select Bin > Go To Capture Mode. (For more information, see [“Entering Capture Mode” on page 88.](#))
 - ▶ Select Tools > Capture.
2. Make sure you are in Capture mode. If the Capture tool is in Log mode, click the Capture/Log Mode button until the CAP icon appears.



The following illustration shows the Capture tool for 25-fps and 30-fps projects.



When you are working in a 24p NTSC project, the Capture tool includes a pulldown button. For more information, see [“Setting the Pulldown Switch” on page 95](#).

Set up the Capture tool by using the following procedures:

- [Selecting a Deck in the Capture Tool](#)
- [Selecting a Source Tape](#)
- [Selecting Source Tracks](#)
- [Detecting Valid or Locked Capture Input](#)

- [Setting the Video and Audio Input](#)
- [Setting the Pulldown Switch](#)
- [Selecting a Resolution in the Capture Tool](#)
- [Selecting a Format in the Capture Tool](#)
- [Selecting a Target Bin](#)
- [Selecting the Target Drives](#)
- [Interpreting the Time-Remaining Display](#)
- [Selecting a Custom Preroll](#)

Selecting a Deck in the Capture Tool

The Deck Selection pop-up menu in the Capture tool contains a list of any decks that were connected to the system, powered up, and initialized when you entered Capture mode.



Device templates from older Avid systems are not compatible with Adrenaline DNA systems. Do not copy Meridien templates to Adrenaline DNA systems, and do not copy Adrenaline DNA templates to Meridien systems.

The Deck Selection pop-up menu also lists three commands:

- **Adjust Deck** opens the Deck Settings dialog box. Changes you make apply to the selected deck. For information on Deck settings, see [“Deck Settings Options” on page 85](#).
- **Auto-configure** allows you to automatically configure the selected deck with the default deck settings for that deck.
- **Check Decks** helps to reestablish deck control if the power to your decks was turned off or the decks were disconnected when you first entered Capture mode.

If the words “No Deck” appear in the pop-up menu, you need to configure a deck in the Deck Configuration dialog box. See [“Configuring Decks” on page 80](#).

If a deck name appears in *italics* in the pop-up menu, the deck has lost power or has been disconnected. Click the pop-up menu, and select Check Decks to reestablish deck control.



Once deck control has been properly initialized, it will remain active for all deck controllers throughout the session until you quit the application.

To activate playback from an available deck:

- Click the Deck Selection pop-up menu, and select the deck.



You must have V-LAN VLXi hardware to manage more than one deck at a time. For more information on V-LAN equipment, contact your Avid sales representative.

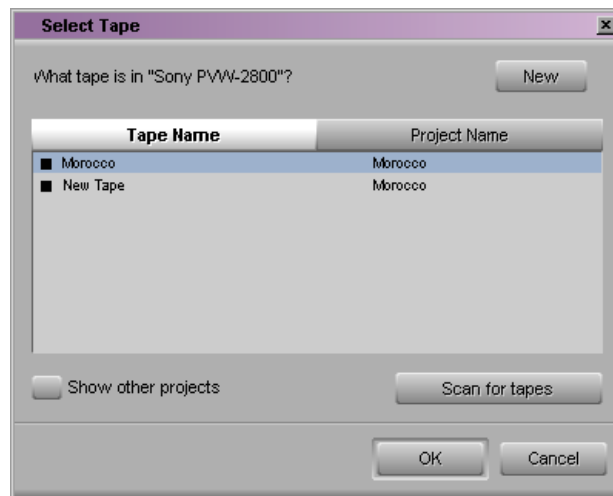
Selecting a Source Tape

To select a source tape:

1. Insert a tape into your deck.
The Select Tape dialog box opens.



If a tape is already in the deck, click the Source Tape Display button in the Capture tool.



2. In an NTSC project, play the tape for a few seconds so the system can detect the timecode format of the tape (drop-frame or non-drop-frame). Otherwise, the system maintains the timecode format set in the Deck Preferences dialog box, regardless of the format on the tape, and you might receive a message indicating a wrong tape.



Drop-frame timecode appears in the Timecode indicator with semicolons between hours, minutes, seconds, and frames. Non-drop-frame timecode appears with colons. For more information, see “Understanding Drop-Frame Timecode and Non-Drop-Frame Timecode” on page 87.

3. Provide the system with a tape name in one of the following ways:
 - ▶ Select the name of the tape from the list in the Select Tape dialog box and click OK.
 - ▶ Expand the list by selecting the “Show other projects” option or by clicking the Scan for tapes button.
 - ▶ Click New if the tape is not in the list. A new tape name line appears in the dialog box. Type the new name and click OK.

Selecting Source Tracks

You can select the tracks to capture from the source tape.

To select only those tracks you want to capture:

- ▶ Click the Channel Selection buttons in the Capture tool.



When you use an Avid-controlled deck, the TC (timecode) track is selected by default, and the system captures the timecode from the source tape. If you deselect the TC button, the system captures with time-of-day timecode. For more information, see “Capturing with Time-of-Day Timecode” on page 145.

If you are not seeing the source video or hearing source audio in Capture mode, click the Channel Selection buttons to make sure they are not the cause.



When batch capturing, if the tracks are already logged into the bin, this selection will be made automatically, unless you deselect the option “Capture the tracks logged for each clip” in the Batch tab of the Capture Settings dialog box. For more information on Batch Capture settings, see “Batch Capturing Clips” on page 153.

Detecting Valid or Locked Capture Input

On systems with an Avid Adrenaline DNA, the Capture tool indicates the kind of signal you have selected to capture, and if the signal you want to capture is valid or locked.

When you select a video track you want to capture, the Video Lock icon appears in the Comment area of the Capture tool. If the current source has a valid video signal and the Avid Adrenaline DNA or Mojo device can lock to it, the icon displays in green.

Setting the Video and Audio Input

The Video and Audio pop-up menus show you the current input settings for the Video Input tool and the Input tab in the Audio Project Settings dialog box. The pop-up menus also provide a convenient way to change the settings if necessary.



The Video Input tool is not available on all models. If your model does not have the Video Input tool, the Avid editing application sets the default input options automatically.

The choices are as follows (depending on your model):

- **Video input:** Composite, Component, S-video, SDI, HD-SDI, and DV
Software-only models include: OHCI
- **Audio input:** XLR (+4dBu), RCA (–10dBu), AES/EBU, Optical (ADAT), Optical (S/PDIF), and SDI



If your project uses an HD resolution, you cannot select SDI as an audio input.

For more information, see “Preparing for Audio Input” on page 103.



If you change the settings, the settings in the Video Input tool or in the Audio Project Settings dialog box change automatically.

Setting the Pulldown Switch

If you are capturing sound created during an NTSC film-to-tape transfer, you need to set the pulldown switch before you begin capturing. If you are capturing picture only, you do not need to set the switch.

If you are working in a 23.976p project, the pulldown switch is not necessary and does not appear.



Make sure your film preferences are set properly. For more information, see “Transfer Settings for Film Projects” on page 78.

To set the pulldown switch:

- Click the Pulldown button in the Capture tool.

When the pulldown switch is off, the button is dimmed (gray), and a label explains that audio will be captured (sampled) at the same speed at which it was recorded (1.00).



When the pulldown switch is on, the button is green, and a label explains that you can capture audio (sampled) at 0.99 percent of its recorded speed (referenced to NTSC video), to match the slowdown rate at which the footage was transferred.

For more information about setting the pulldown switch, see “Film Project Pulldown and Transfer Settings” on page 96.

Film Project Pulldown and Transfer Settings

The following table indicates how the pulldown switch and transfer settings should be set, depending on your input media.

Film Project Pulldown and Transfer Settings

Type of Input Media	Project (Set in the New Project Dialog Box)	Pulldown Switch Setting and Indicator on I/O Box	Source Playback Speed	Film to Video Transfer Settings (Set in Film Settings Dialog Box)
Original sound source synced to NTSC during transfer ^a .	24p NTSC	On (0.99)	29.97 fps	Picture Transfer Rate: With 2:3 pulldown
NTSC MOS film-to-tape transfer with separate audio. Digital audio (DAT) or analog audio (Nagra) to sync with video in the Avid system ^b .	24p NTSC	Off (1.00)	Audio: 30.00 fps Picture: 29.97 fps	Picture Transfer Rate: With 2:3 pulldown Audio Source Tape TC Rate: 30.00
FTFT transfer or retransferring an effect. This method allows you to save time since no audio is involved in the transfer.	24p NTSC	NA ^c	29.97 fps	Picture Transfer Rate: Without pulldown
PAL film-to-tape transfer with synced sound or simul-DAT tapes.	24p PAL (Method 1)	Off (1.00)	Audio and picture both 25 fps (100%+)	Picture Transfer Rate: NA Audio Transfer Rate: Video Rate
PAL MOS film-to-tape transfer with separate audio. Digital audio (DAT) or analog audio (Nagra) to sync with video in the Avid system.	24p PAL (Method 2)	Off (1.00)	Audio: 25 fps (100%) Picture: 25 fps	Picture Transfer Rate: NA Audio Transfer Rate: Film Rate
PAL film-to-tape transfer with synced sound or simul-DAT tapes.	25p	Off (1.00)	Sound and picture at 25 fps	Picture Transfer Rate: NA

a. For capturing picture and sound from NTSC tape, or sound only from simul-DAT tapes created during telecine transfer.

b. For direct input of audio. Digital audio requires proper AES/EBU or S/PDIF connections.

c. NA = Not applicable.

If you are capturing audio only, make sure to select the proper audio setup options. For more information, see [“Adjusting Audio Project Settings” on page 103](#) and [“Adjusting Audio Project Settings” on page 103](#).

If you have set a digital sync mode in the Audio Project Settings dialog box, the Pulldown button is inactive and a message states that the Pulldown button has no effect.

Selecting a Resolution in the Capture Tool

You can set the resolution used for capturing in the Capture tool or in the Media Creation dialog box, accessed through the Settings scroll list of the Project window. See [“Media Creation Settings” on page 67](#).

To select a resolution in the Capture tool:

- ▶ Click the Res (Resolution) pop-up menu, and make a selection.

The resolution list contains a list of the available resolutions, depending on the model of your Avid system. For 25-fps and 30-fps projects, the list shows single-field and two-field interlaced resolutions, and DV. For 24p and 25p projects, the list shows progressive, full-frame resolutions. Select 1:1 for uncompressed media. For HD projects, the list shows Avid DNxHD resolutions or DVCPRO HD, depending on your video input. For more information, see [“Capturing DV 50 and DVCPRO HD Media Directly from a DV Device” in the Help](#).

You can select from two types of HD resolutions:

- DNxHD resolutions in all HD project formats
- DVCPRO HD (DV100) resolution in 720p/59.94, 1080i/59.94, and 1080i/50 project formats

To capture DVCPRO HD material, you need to change the input device setting (see [“Setting the Video and Audio Input” on page 94](#)).



For more information on the video resolutions, see [“Resolutions and Storage” in the Help](#).

Selecting a Draft Resolution for DV Media

You can also capture DV media via FireWire®, and have it transcoded to a draft resolution before it is written to disk. This is helpful if you need to reduce storage requirements (the draft resolution takes much less storage space).

To select the draft resolution in the Capture tool while capturing DV media:

- ▶ Click the Res (Resolution) pop-up menu, and select 15:1s. For film projects select 28:1p.

Selecting a Format in the Capture Tool

You can select either OMF® or MXF format used for capturing in the Media Type tab of the Media Creation dialog box. You can select a specific video resolution in the Capture tool or in the Media Creation dialog box (accessed through the Settings scroll list). See [“Selecting a Resolution in the Capture Tool” on page 97](#). For information on OMF and MXF, see “File Format Specifications” in the Help.



If your project uses an HD resolution, you cannot select OMF as a file format. MXF is selected by default.

Selecting a Target Bin

You select a target bin as the destination for the master clips created when you capture on-the-fly. Alternatively, you select a target bin containing the logged clips you will use to batch capture your media.

To select a target bin:

- ▶ In the Capture tool, click the Bin pop-up menu and make a selection. If you have opened the Capture tool through Capture mode, a bin is already selected. Only opened bins appear in the Bin pop-up menu.

To open a bin, do one of the following:

- ▶ For a bin created in the current project, double-click the bin in the Project window.
- ▶ For a bin created in a different project, select File > Open Bin, and then locate and open the bin in the Open dialog box.
- ▶ Create a new bin by clicking the New Bin button in the Project window.



For more information on working with bins, see “Organizing with Bins” in the Help.

Selecting the Target Drives

To select a target drive:

1. Decide whether to capture audio and video to a single drive, or separate drives, as described in the following sections.
2. Click the pop-up menus, and select the specific target drives as described in the following sections.

Targeting a Single Drive

By default, the Capture tool targets a single media drive volume for capturing the audio and video for each clip. Target a single drive when you are capturing in a single-field resolution, for instance, and playback performance is not an issue.

To target a single drive:



1. Click the Single/Dual Drive Mode button to display the Single Drive icon.
2. Click the Target Drive pop-up menu, and select a drive volume.

The name shown in bold in the menu has the most storage available. The time remaining on the selected drive, displayed to the right of the menu, is calculated based on your resolution selection.

Targeting Separate Drives for Audio and Video

You can target separate physical drives for audio and video tracks. This improves performance because the system is not required to address all the information in separate locations on a single drive. You can also capture for the longest continuous amount of time because the system is storing material on two drives rather than one.



To achieve optimal performance, stripe two or more drives. For more information, see “Getting Information About Striped Drives” on page 66.

To target separate drives for audio and video:



1. Click the Single/Dual Drive Mode button to display the Dual Drive icon.
Two Target Drive pop-up menus appear. The top one is targeted for video and the bottom one is targeted for audio.
2. Click each Target Drive pop-up menu, and select separate drives for audio and video.

The names shown in bold in the menus have the most storage available. The time remaining on each selected drive, displayed to the right of each menu, is calculated based on your resolution selection.

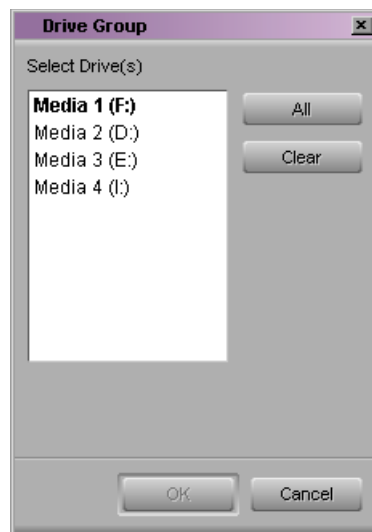
Targeting a Drive Group

Targeting a drive group (a group of media drives) is especially useful when you are capturing long clips to multiple media files (see [“Capturing to Multiple Media Files” on page 74](#)). After you create a drive group, it appears in the Target Drive pop-up menu for the project.

To create and target a drive group:

1. Click the Target Drive pop-up menu, and select Change Group.

The Drive Group dialog box opens.



2. Ctrl+click to select multiple drives to include in the capturing session, or click the All button to select all drives.
3. Click OK to close the dialog box and create the drive group.

The group appears in the Target Drive pop-up menu.

When you capture, any clip that exceeds the capacity of a drive (whether that drive is empty or already contains media files) continues capturing onto another drive in the group.

Using the Console Window to Access Network Drives

This is a console command that allows your Avid editing application to access network drives that you have mapped to your Avid editing system. Once your network drives are mapped, typing in the console command displays the mapped drive letter in the appropriate tools in the Avid editing application.



For information about mapping drives to your computer, see your Windows documentation.

When the feature is turned on, the mapped drive letter appears in the Target Drive pop-up menu. When you turn the feature off, the mapped drive letter is dimmed. If you quit and restart the application, the mapped drive letter does not appear in the Target Drive pop-up menu.

Network drives are available only if the Filter Based on Resolution option is not selected in the Media Creation settings. For more information, see “Media Creation Settings” in the Help.

To make your mapped network drives available:

1. Open the Console window by selecting Tools > Console.
2. In the Console command line, type:
`alldrives 1`
3. Press Enter.

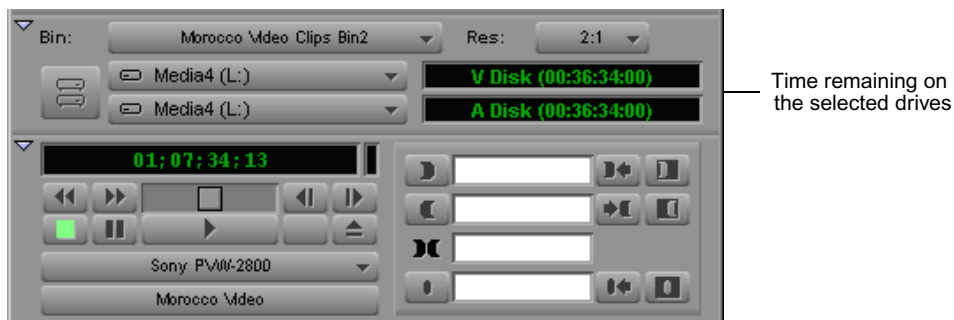
Network drives will now be visible in the Avid editor application.



Typing `alldrives` in the console window turns this feature on and off. Typing `alldrives 2` returns things to normal where only media drives are available.

Interpreting the Time-Remaining Display

The Capture tool displays the time remaining on the selected drive after you select a resolution and target drive or drives for the captured media.

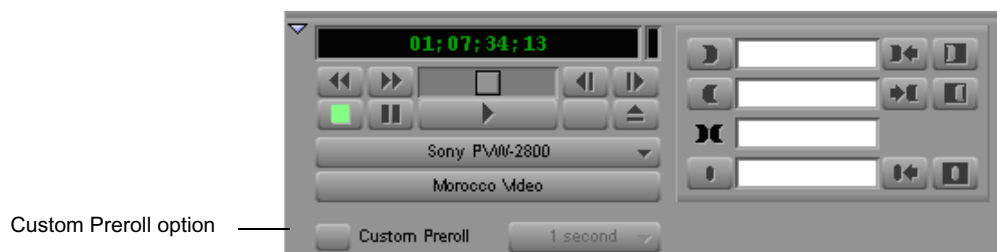


You can interpret this display based on the following factors:

- Each captured clip has a maximum file-size limit of 2 GB. Any video clip whose media exceeds the 2-GB limit will have more than one media file associated with it.
- When you select another resolution, the time-remaining display adjusts accordingly.

Selecting a Custom Preroll

The Custom Preroll option and pop-up menu in the Capture tool allow you to select how many seconds the tape rolls before the capturing starts. This option overrides the global preroll setting in the Deck Settings dialog box.



Preparing for Audio Input

Avid editing systems support direct input of four channels of audio. Source track assignments are mapped directly to audio tracks in the recorded clips.

For example, when you record source footage with audio channels 1 to 3, the resulting master clip has matching audio tracks 1 to 3. Source track assignments are mapped directly to audio tracks in the captured clips. Prepare for audio input by using the following procedures:

- [Adjusting Audio Project Settings](#)
- [Selecting the Audio File Format](#)
- [Using the Audio Tool](#)
 - [Adjusting Audio Input Levels](#)
- [Using the Passthrough Mix Tool](#)
 - [Monitoring Audio with the Passthrough Mix Tool](#)
 - [Changing an Audio Level in the Passthrough Mix Tool](#)
 - [Adjusting Pan Values in the Passthrough Mix Tool](#)
 - [Calibrating Input Channels for the Audio I/O Device](#)
- [Using the Console Window to Check Audio Levels](#)

Adjusting Audio Project Settings

You can use the Audio Project Settings dialog box to check the current configuration of audio hardware and to choose various input and output options. The Audio Project Settings dialog box has four tabs: Main, Input, Output, and Hardware.



Some options depend on the audio configuration of your system, so your system might not contain certain features and hardware that are covered in the documentation.

To open the Audio Project Settings dialog box:

1. In the Project window, click the Settings tab.
The Settings scroll list appears.
2. Double-click Audio Project.

The Audio Project Settings dialog box opens.

For information on Audio Project Settings, see “Audio Project Settings” in the Help.

Saving the Audio Project Settings as Site Settings

The values you set in the Audio Project Settings dialog box are saved as Project settings.

Besides the entries in the Audio Project Settings dialog box, the Audio Project settings also store the mappings between tracks and output channels that you set up in the Audio tool. The values are not visible in the Audio Project Settings dialog box. Open the Audio tool to view the current values (see [“Using the Audio Tool” on page 105](#)).

You can also save the Audio Project settings as Site settings so that all projects open with the same audio settings.

To save the Audio Project settings as a Site setting:

1. Select Special > Site Settings.
The Site Settings folder opens.
2. Click the Settings tab in the Project window.
3. Click the Audio Project Settings icon (or the icon of an Audio Project setting you created using the Setting option), and drag it to the Site Settings folder.

New projects that you open on this system will use the Audio Project Site settings.

Selecting the Audio File Format

.AIFF-C and WAVE audio media files can be mixed within a project. The system default is OMF (WAVE) audio.



Select the AIFF-C format for all audio media when you need to transfer media files directly to a Pro Tools® system for audio sweetening.

Audio is written in the selected file format when you:

- Record audio tracks in Capture mode.

- Create tone media by using the Audio tool.
- Mix down audio tracks by using the Audio Mixdown tool.
- Import files by using the Import dialog box.
- Apply an AudioSuite plug-in that creates new source audio.

If you switch the audio format in the middle of a project, all new audio media files are written in the new format with the following exceptions:

- **Media files written when rendering audio effects:** The system uses the file type of the A-side (outgoing audio) media for a transition. For example, if the A-side of an audio dissolve is in OMF (AIFF-C) format and the B-side (incoming) is in OMF (WAVE) format, the rendered file is OMF (AIFF-C).
- **Audio media files written when using the Consolidate feature:** Media files that are copied or created during a consolidate procedure retain their original file types.

To select the audio file format:

1. In the Project window, click the Settings tab.
The Settings scroll list appears.
2. Double-click Audio Project.
The Audio Project Settings dialog box opens.
3. Click the Main tab.
4. Click the Audio File Format pop-up menu, and select OMF (WAVE) or OMF (AIFF-C).
5. Close the Audio Project Settings dialog box.

Using the Audio Tool

Use the Audio tool primarily for mixing and monitoring audio. The Audio tool, along with your hardware's audio parameters, allows you to do the following in preparation for input:

- Check and manage your audio hardware setup.
- Set audio levels before recording.

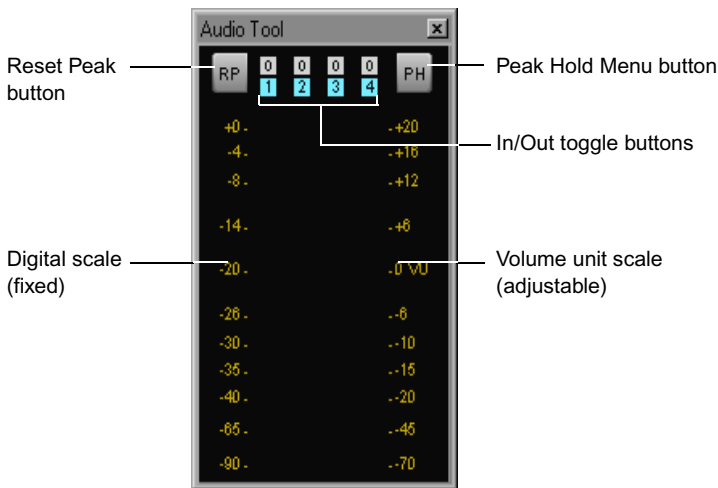
In addition, controls in the Audio tool allow you to calibrate, set levels, and generate customized calibration tones for output to the speakers or a record device.

To open the Audio tool, do one of the following:

- ▶ Select Tools > Audio Tool.
- ▶ Click the Audio Tool button in the Capture tool.



The Audio tool opens and displays meters for two to eight channels, depending on the configuration of your system.



The following table describes the components in the Audio tool.

Audio Tool Components

Component	Description
Reset Peak button	Resets the current maximum peak measurements. It also stops the playback of the internal calibration tone.
In/Out toggle buttons	Switch the meter displays for each channel between input levels from a source device and output levels to the speakers and record devices. I indicates Input, and O indicates Output.
Peak Hold Menu button	Displays a pop-up menu that allows you to select options for customizing the meter displays and for setting and playing back the internal calibration tone.

Audio Tool Components (Continued)

Component	Description
Digital scale to the left of the meters	Displays a fixed range of values from 0 to –90 decibels (dB), according to common digital peak meter standards.
Volume unit (VU) scale (analog) to the right of the meters	Displays a range of values that you can conform to the headroom parameters of your source audio.
Meters	<p>Dynamically track audio levels for each channel as follows:</p> <ul style="list-style-type: none">• Meters show green below the target reference level (default reference level is –20 dB on the digital scale).• Meters show yellow for the normal headroom range, above the reference level to approximately –3 dB.• Meters show red for peaks approaching overload, between –3 dB and 0 (zero) dB.• Thin green lines at the bottom indicate signals below the display range.

Adjusting Audio Input Levels

You can use the Audio tool and the Audio Project Settings dialog box to check the audio input levels. If the input levels are too high or too low, you need to adjust the output level of your source signal, if possible.

Before you capture, make sure the audio I/O device is properly calibrated. See [“Calibrating Input Channels for the Audio I/O Device” on page 111](#).

Depending on your audio hardware configuration, you can use one of the following methods to adjust audio levels.

To check and adjust input levels using an audio input device:

1. Click the In/Out toggle buttons in the Audio tool for the channels that you use for input. The Audio tool displays an I for Input.
2. Play back the source audio (from a videotape or DAT, for example). If the recording includes reference tone, cue to the tone and play it back.

3. Adjust the output on the playback device so that the device's volume meter shows the appropriate level for the reference signal in the Audio tool (0 VU for videotape playback, for example). You can adjust the output by using a deck that supports output gain or by sending the signal through a mixing console.

Creating Tone Media

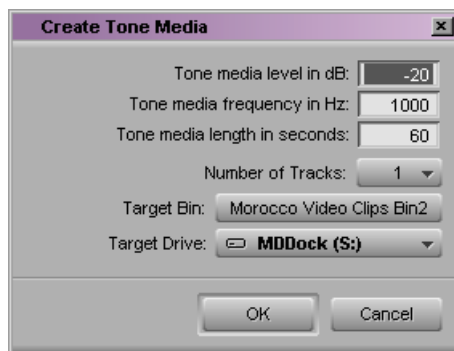
You can create your own tone media as a master clip for editing directly into sequences.

To create tone media:

1. Open a bin.
2. Click the PH (Peak Hold) pop-up menu in the Audio tool, and select Create Tone Media.



The Create Tone Media dialog box opens.



3. Set the appropriate calibration tone parameters for the project. You can also use the default output tone of -20 dB (digital scale) with a 1000-Hz signal.



If you set the tone media frequency to 0, the system generates random noise. Also, a value of -777 generates a tone sweep.

4. Select the number of tracks of tone you want to create (up to 8 tracks).
5. Click the pop-up menus, and select a target bin for the tone master clip and a target drive for the tone media file.

6. Click OK.

After a few seconds, the media file is created and a master clip appears in the target bin. The default name reflects the options you selected. You can rename the clip by typing a new name.

Using the Passthrough Mix Tool

The Passthrough Mix tool allows you to select the mix and adjust the volume and pan values of the source audio that you monitor. You can adjust the mix, volume, and pan values of multiple monitored channels, controlling either individual channels manually or several channels simultaneously by ganging them together.



The Passthrough Mix tool adjusts monitored audio only and has no effect on the recorded audio signal. You can adjust volume levels within a clip in the Timeline after you record audio by using Audio Gain Automation. For information, see "Using the Audio Mixer Tool" in the Help.

To open the Passthrough Mix tool:

1. Double-click Audio Project in the Settings scroll list.

The Audio Project Settings dialog box opens.

2. Click the Input tab.
3. Click the Passthrough Mix Tool button.

The Passthrough Mix tool opens.



You can open the Passthrough Mix tool by clicking the Passthrough Mix Tool button in the Capture tool or the Audio Punch-In tool.

Resizing the Passthrough Mix Tool

You can use the Number of Mix Panes button to change the display from 4 tracks to 8 tracks. When you select 4 tracks, a button appears that allows you to display the first 4 or last 4 enabled tracks. With the tool minimized, you can continue to adjust levels by selecting a track and typing values by using the numeric keypad on the keyboard or by typing a value in the Volume Level display.

Monitoring Audio with the Passthrough Mix Tool

When you record, you can monitor the mix, volume, and pan values of audio channels with the Passthrough Mix tool.



The Passthrough Mix tool adjusts monitored audio only and has no effect on the recorded audio signal.

To adjust audio in the Passthrough Mix tool:

1. Double-click Audio Project in the Settings scroll list.
The Audio Project Settings dialog box opens.
2. Click the Input tab.
3. Click the Passthrough Mix Tool button.
The Passthrough Mix tool opens.
4. Switch the Input Mix Mode button to select a type of input:
 - Select Stereo Mix to mix audio channels to a stereo pair. Use the Stereo Mix Tracks pop-up menu to specify which stereo pair to use.
 - Select Direct Mix to send the input signal to its corresponding output channel.



In Direct Mix mode, the Pan Value display and pop-up sliders at the bottom of the Passthrough Mix tool are replaced by Channel Menu buttons.

5. Select the audio channel to be adjusted by doing one of the following:
 - ▶ Click the Channel Selection button for the appropriate audio channel.
 - ▶ In Direct Out mode, click the Channel Menu button, and select a channel from the pop-up menu.



You can select only channels that exist in the source audio.

6. Adjust the volume as needed. You can adjust the volume of multiple channels by clicking the appropriate Gang button. See [“Changing an Audio Level in the Passthrough Mix Tool”](#) on page 111.
7. Adjust the pan values as needed. See [“Adjusting Pan Values in the Passthrough Mix Tool”](#) on page 111.

Changing an Audio Level in the Passthrough Mix Tool

To change an audio level value in the audio panel in the Passthrough Mix tool, do one of the following:

- ▶ Click a number along the vertical edge of the Volume Level slider.
- ▶ Click the Volume Level slider, and type a value.
Values are cumulative until you press Enter. For example, if you want to enter the value 12, type it. However, if you type 1 and then want to change the value to 2, press Enter before typing the 2.
- ▶ Click the Volume Level slider, and drag the slider to a new position.
- ▶ Click the Volume Level display, and type a value.
- ▶ Alt+click the Volume Level slider to reset the value to 0 dB.

Adjusting Pan Values in the Passthrough Mix Tool

To adjust the pan values in the audio panel of the Passthrough Mix tool, do the following:

- ▶ Click the Pan Value display to reveal the pop-up slider, and then drag the slider to a new position.

Calibrating Input Channels for the Audio I/O Device

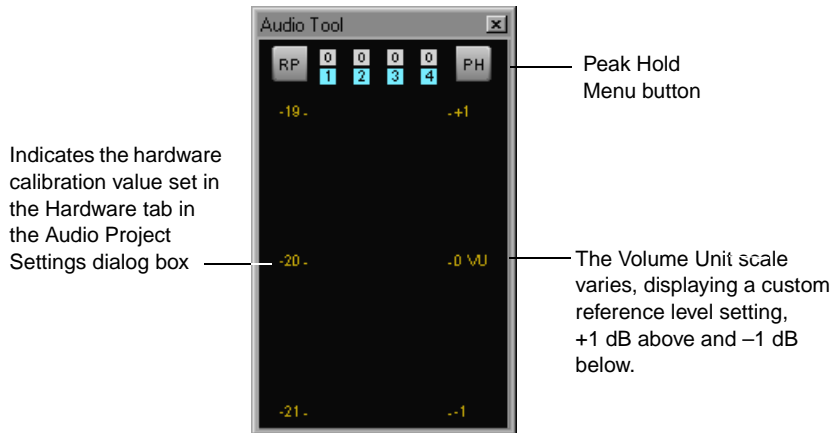
To calibrate input channels for the audio I/O device:

1. Connect a sine wave generator that can produce a 1-kHz tone, +4 dB @ 0 VU to channel 1 of the audio I/O device.
2. Send a 1-kHz tone into channel 1 of the audio I/O device.
3. In the Audio tool, click the In/Out toggle buttons for channel 1 to display I for input.

You should see a level in the meter display.

4. Select Calibrate from the PH (Peak Hold) Menu button in the Audio tool.

The Audio tool changes to Calibrate mode: the scales display a range of approximately 2 dB, and the meters indicate levels within this range.



5. Adjust the channel 1 input level by inserting a screwdriver into the trim pot on the audio I/O device and turning it until the Audio tool's on-screen meter reaches 0 VU.

The input channel is now calibrated.

6. Repeat this procedure for each input channel of the audio I/O device.

To return to the default Audio tool display:

- Click the Peak Hold Menu button, and select Calibrate.

Calibrating Output Channels for the Audio I/O Device

If the input channels of the audio I/O device are calibrated correctly, you can use the input channels to calibrate the output channels.

To calibrate output channels for the audio I/O device:

1. Make sure the audio I/O device is calibrated properly for input (see [“Calibrating Input Channels for the Audio I/O Device” on page 111](#)).
2. Connect two output channels to two different input channels. For example, connect output channels 1 and 2 to input channels 7 and 8.
3. Click the PH (Peak Hold) pop-up menu in the Audio tool, and select Set Calibration Tone.

4. Click the In/Out toggle buttons to display I for the channels you are using for input, for example, 7 and 8. Click the In/Out toggle buttons to display O for the channels you are calibrating, for example, 1 and 2.
5. Click the PH pop-up menu, and select Calibrate.
6. Click the PH pop-up menu, and select Play Calibration Tone.
7. Adjust the audio I/O device trim pots on the output channels (1 and 2) to 0 VU, using the meters of the input channels (7 and 8) as your guide.
8. Repeat this procedure for each channel.

Using the Console Window to Check Audio Levels

Once you have played back audio through the Audio tool, you can use the Console window to view a list of precise information about the peak levels.



Reset Peak button

To check peak levels in the Console:

1. Open the Audio tool (see [“Using the Audio Tool” on page 105](#)).
2. Click the RP (Reset Peak) button to clear the system’s record of the most recent maximum peaks.
3. Play a sequence or portion of the sequence.
4. After playing back the audio, open the Console window by selecting Tools > Console.
5. In the Console command line, type:

DumpMaxPeaks



6. Press Enter.

A list of peak values appears in the Console window.

Preparing for Video Input

The Avid system provides a Video Input tool for calibrating composite video, component video, and S-Video.



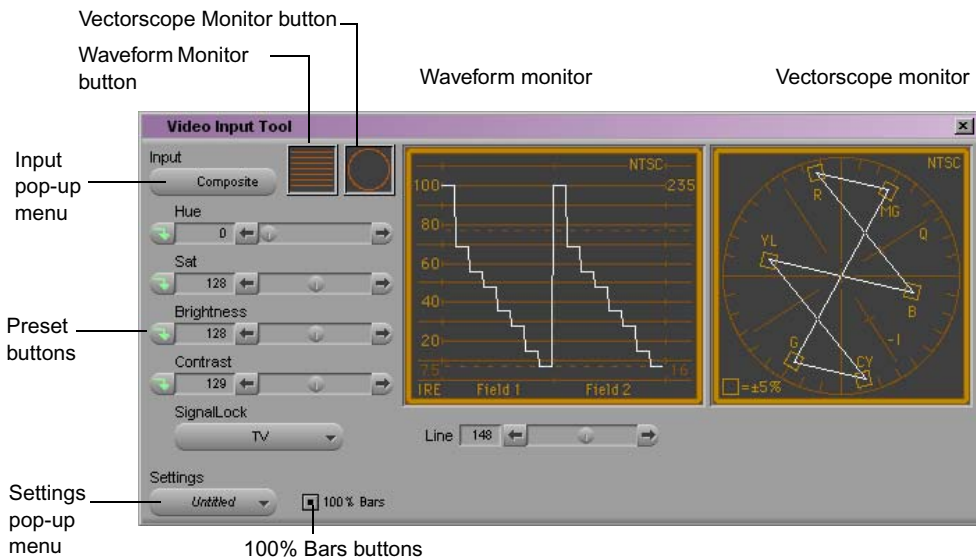
If you are capturing SDI, HD-SDI, or DV, for example, from a D1, D5, digital Betacam, DV, or HD deck, you cannot adjust levels by using the video input controls in your Avid system. If you plan to make adjustments at the source deck, information in this section regarding the internal Waveform and Vectorscope monitors might be useful.

To open the Video Input tool, do one of the following:




- ▶ Select Tools > Video Input Tool.
- ▶ Click the Video Input Tool button in the Capture tool.

The Video Input tool opens.



The following table describes the Video Input tool components.

Video Input Tool Components

Component	Description
Input pop-up menu	Lets you select the video input for SD projects: Composite, Component, S-Video, SDI, or DNA-1394. For HD projects, the menu displays HD-SDI. For SD or HD projects that use an optional 1394 board on the computer, the menu displays Host-1394.
Sliders	Let you change the value for each setting.
Preset buttons	The preset buttons are highlighted when the factory preset levels are displayed.
Settings pop-up menu	Lets you save the settings for an individual tape each time you calibrate bars.
Waveform Monitor and Vectorscope Monitor buttons	Open or hide the Waveform monitor and the Vectorscope monitor.  <i>Your Avid system supports the SMPTE/EBU component standard for 625 timing and Betacam component levels for 525 timing. The system does not support the MII component video standard.</i>
100% Bars button	This option is used when the source tape has color bars with 100% (versus 75%) chrominance levels.

Using the Factory Preset Buttons

The preset buttons in the Video Input tool show the status of each calibration setting as follows:

- When you first open the Video Input tool in a new project, all preset buttons are lit (green), with the factory presets loaded for each slider.
- When you click the slider of a lit preset button, the arrow changes to black and the slider moves to the position of the pointer.
- When a preset button has a black arrow and you click it, the arrow becomes lit (appears green), and the slider moves to the factory preset level for that parameter.
- When you click a lit preset button, the arrow changes to black, and the slider returns to the last manual setting.

As you adjust levels in the tool, you can switch the preset buttons between the levels you set manually and the factory preset levels.

Calibrating Video Input

This section provides essential information for input calibration. You should calibrate the input levels for each videotape when you capture to ensure the continuity of picture quality between tapes.



When you recapture media from a project created on a different Avid system, only reuse settings that originate on systems that use the video I/O board. For projects from other Avid systems, check the Video settings for each tape.

Before you calibrate the video input, check the following:

- Make sure your monitor is properly calibrated for displaying footage accurately. For more information, see your monitor's hardware documentation.
- If your system's output settings have not already been calibrated according to house standards, use the procedures described in [“Video Output Tool” on page 194](#). If you are in a facility where this is not necessary, leave the output settings at their preset values.
- If you are using footage in the NTSC-EIAJ format (used primarily in Japan), deselect the option NTSC Has Setup in the General Settings dialog box. This enables the appropriate display for the setup portion of the signal in the Waveform monitor and also adjusts the gain range. For more information, see [“General Settings” on page 77](#).

To calibrate the video input:

1. Make sure you have properly connected the playback VTR to the system. For more information, see the setup guide for your Avid system.
2. Select Tools > Video Input Tool.

The Video Input tool opens.

3. Click the Input pop-up menu, and select the appropriate input channel, based on your source tape format: Composite, Component, or S-Video.

The Video Input tool displays the appropriate parameters for the selected video format.



For a description of each parameter, click the Video Input tool and press the F1 key.



Sync for video input comes from the source selected in the Video Input tool.



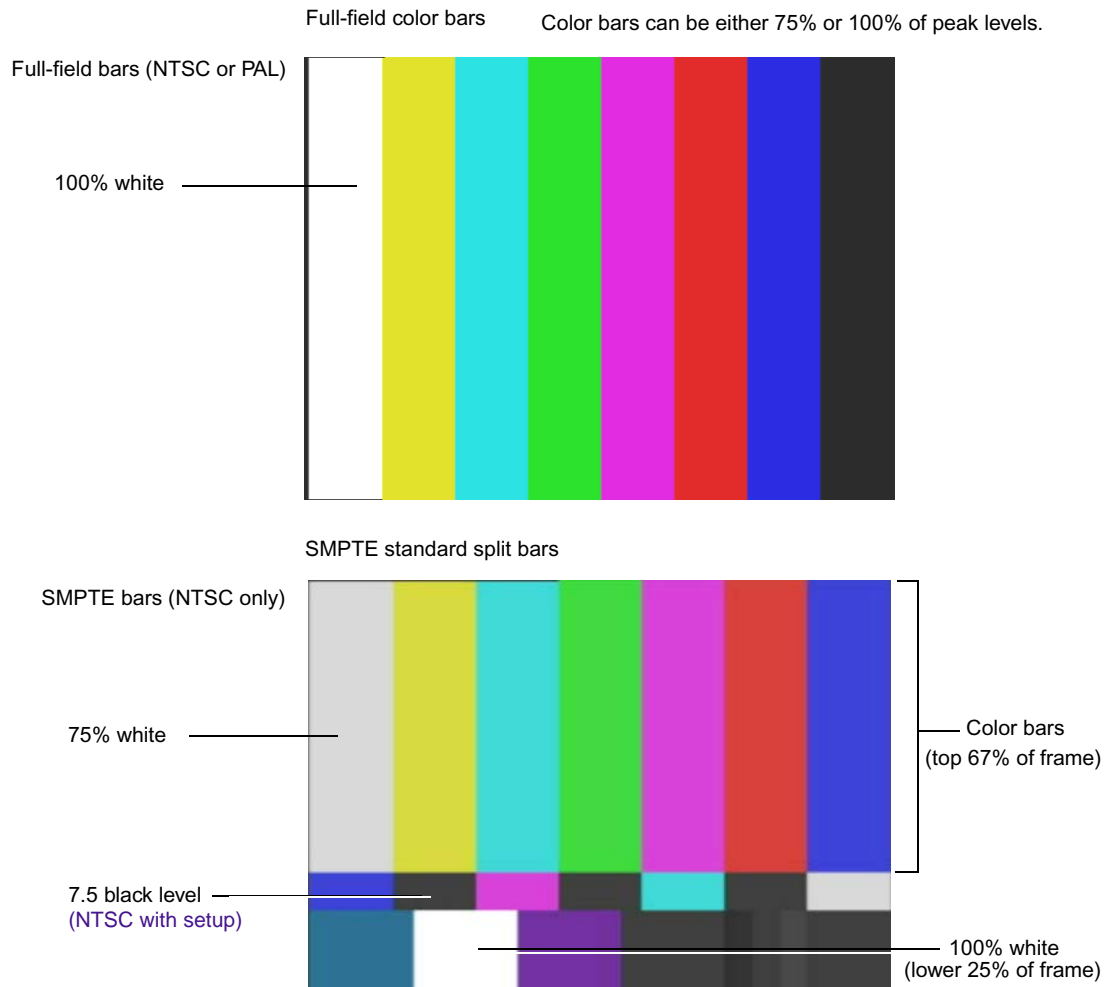
When you capture audio with video, the audio is always synced to the video source. For information regarding sync during audio-only input, see “Adjusting Audio Project Settings” on page 103.

4. Cue the tape to the section containing bars and tone (usually the beginning) and play the tape.



Always play the tape when calibrating. Signal display is unstable when the tape is paused.

The Client monitor displays one of the following types of bars (or a variation of them).



5. If you are capturing from a consumer-grade video deck (such as a home VCR) or a deck that has no built-in time-base corrector (which includes a number of 3/4-inch U-matic or S-Video models), and you are having trouble with the incoming video quality, click the Signal Lock button and select Auto in the Video Input tool.
6. Click the 100% Bars button if the source tape contains 100% bars for calibration.

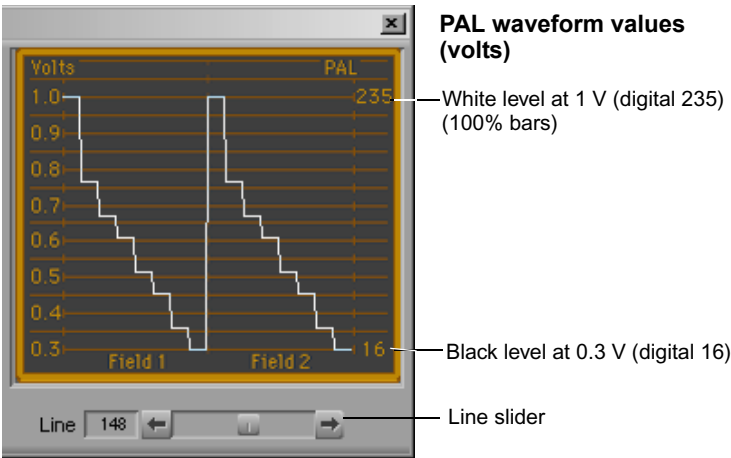
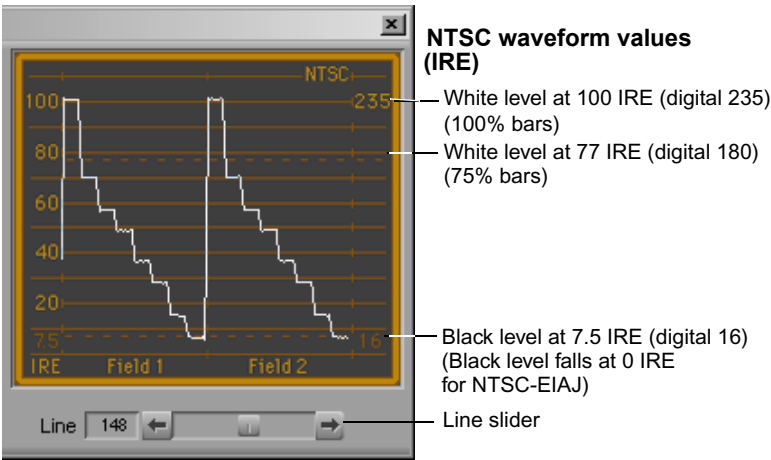


To distinguish between 100% and 75% full-field bars, you will notice in 100% bars that the luminance waveform plot displays fairly even steps from the first bar (white) to the last bar (black). In 75% bars, the white bar is at 100%, which causes a larger step from the first bar (white) to the first color bar.



Waveform Monitor button

7. Open the Waveform monitor by clicking the Waveform Monitor button.



8. Adjust the Line slider located below the Waveform monitor to display the appropriate line of the test pattern, then adjust the luminance values based on the following table.

Luminance Settings for Video Input

Parameter/ Video Standard ^a	SMPTE Bars	Full-Field Bars at 75% or 100% Signal Level
Black level (setup)	Adjust Line slider to approximately 190	Adjust Line slider to approximately 150
	Adjust Black or Brightness slider to place black level at:	Adjust Black or Brightness slider to place black level at:
Video Standard:		
NTSC	7.5 IRE	7.5 IRE
NTSC-EIAJ	0.0 IRE	0.0 IRE
PAL	NA ^b	0.3 V
White level (gain)	Adjust Line slider to approximately 220	Adjust Line slider to approximately 150
	Adjust Gain/Y Gain slider to place white level at:	Adjust Gain/Y Gain slider to place white level at:
Video Standard:		
NTSC	100 IRE	100 IRE
NTSC-EIAJ	100 IRE	100 IRE
PAL	NA ^b	1.0 V

a. Includes NTSC-EIAJ used in Japan.

b. NA = Not applicable.



Vectorscope
Monitor
button

- Open the Vectorscope monitor by clicking the Vectorscope Monitor button.
- Adjust the Line slider to display the signal for color bars at around line 150 (this applies to all formats and all types of bars).
- Adjust the Sat and Hue sliders (composite or S-Video) or the RY Gain and BY Gain sliders (component) until the angle and amplitude of the six color vectors fall within the target boxes on the Vectorscope monitor.



To switch between a display of perfectly calibrated bars and your input signal while making adjustments, press and release the Shift key.



There is no hue adjustment for PAL video.



If you incorrectly selected or deselected the 100% Bars button, the factory presets for Saturation or RY and BY Gain will be incorrect. Adjusting these controls in this condition results in oversaturated or undersaturated video.

Limitation When Using Consumer Decks or Decks Without Time-Base Correctors

This section describes some difficulties you might encounter when working with consumer video decks and tapes (such as VHS) or decks that do not provide time-base correction or stabilized timing on their outputs. Workarounds are described when available.

Capturing from Unstable Time-Base Sources

The subsystem used in your Avid system is optimized for use with modern, broadcast-quality VTRs that contain time-base correctors (TBCs). When presented with a stable input, the subsystem will capture that video by using a high-quality, very-low-jitter clock reference. However, some sources do not include an internal TBC (including various S-Video decks or composite VHS, 3/4-inch, or Hi8™ decks). In some cases, due either to the deck performance or the deck performance in conjunction with a particular videotape, the subsystem will not lock to non-TBC sources. As a result, the image might be unstable or might have reduced or missing color, or syncing might not be possible at all.

If you select the Signal Lock TV in the Video Input tool, a wider bandwidth (more closely tracking time-base) will improve the range of syncing capability. In this mode, the video input levels will be set by automatic gain control. Not all of the Video Input tool's adjustment sliders will operate, and the video might be slightly softened, but the syncing in most cases will be more reliable and more stable. The overall image quality will not be as high as with normal operation.

If you continue to experience difficulty with a source that does not include an internal TBC, Avid recommends the video signal be processed through an external TBC for maximum image quality. For more information on time-base correctors, contact your Avid Reseller.

Green Line in VHS Video

Some VHS tape decks do not output the full 240 lines of video normally included in the VHS format. As a result, after you capture from a device such as a VCR, a green line might appear at the bottom of the monitors in the Avid application.

This line is at the bottom of the visible area of the picture, and is not seen in a standard consumer monitor in most cases. If you use the video in a circumstance in which the line is visible, you can remove it by cropping the bottom edge of the picture.

Saving Video Input Settings

You can save the settings for an individual tape each time you calibrate bars. Saved settings are restored each time you select the same tape for recapturing clips.

The following are the Video Input settings that are saved and restored:

- Level adjustments made with the sliders
- Selection status of the Signal Lock TV or 100% Bars options



Video Input settings do not restore the source format (Composite, Component, S-Video, DV, or SDI). Instead, the source format you select in the Video Input tool remains the default for that project until you select another format from within the project. This allows you to establish a new format on a project basis when moving between systems, or from the offline to the online phase.

To save the Calibration settings for a tape:

1. After calibrating as described in [“Calibrating Video Input” on page 116](#), click the Settings pop-up menu, and select Save As.

The View Name dialog box opens.

2. Accept the default name (matching the tape name), or type a new name for the settings.



If you do not use a name that matches the tape name, the system does not recall the setting automatically the next time you load the tape.

3. Click OK.

Whenever you batch capture or select a tape name during capturing, the system recalls the saved settings as follows:

- The system looks for a Tape setting with the same name as the tape. If the setting exists, the system recalls it.
- If no matching Tape setting exists, the system looks for a setting labeled “Default” and loads that setting. For information on customizing this default setting, see [“Saving a Custom Default Setting for the Video Input Tool” on page 123](#).
- If no matching Tape setting or “Default” setting exists, the Video Input tool is left in its prior state (with the most recent settings applied during the session).



Tape settings and the Default setting are Project settings, and are available to the current project only.

Saving a Custom Default Setting for the Video Input Tool

You can create a default setting that is recalled by the system whenever you load a new tape or when there is no Tape setting that matches a loaded tape.

Whenever you mount a new tape that does not have its own setting, the system will recall these default settings.

To create a customized default Video Input Tool setting:

1. Select Tools > Video Input Tool.
The Video Input tool opens.
2. Adjust the Calibration settings, as described in [“Calibrating Video Input” on page 116](#).
3. Click the Settings pop-up menu in the Video Input tool, and select Save As.
The View Name dialog box opens.
4. Type **Default**, and click OK. (You must use this spelling and initial capitalization.)

Adjusting Video Levels for Tapes Without Color Bars

Color bars are the best way to set the video levels consistently. However, if you have a tape or series of tapes with no color bars, you might need to adjust levels by using the internal Waveform and Vectorscope monitors.



Calibrate your Client monitor before making these adjustments.

To adjust video levels for tapes without color bars:

- Find a series of frames in the footage that includes black areas. Blacks should fall around 7.5 IRE for NTSC, 0 IRE for NTSC-EIAJ, or 0.3 V for PAL on the Waveform monitor. Blacks should not seem flat and lacking detail.
- Find a series of frames in the footage that includes white areas. (Bright, well-lit regions work better than white objects.) Whites should peak at around 100 IRE for NTSC and NTSC-EIAJ, or 1.0 V for PAL on the Waveform monitor. Whites should not be washed out or lacking detail.
- Find a series of frames in the footage that includes skin colors. Skin colors should fall generally between the target boxes for the red and yellow vectors in the Vectorscope monitor. Skin colors should be realistic.
- Check that chroma does not exceed 110 or fall below –120 on the vector.
- Check that pure yellows are a rich gold and not reddish or greenish in tone. Find a pure yellow and adjust both hue and saturation as necessary.

Capture Preparations Check List

Use this check list to help you prepare for the capture process.

- ☐ Check your hardware configurations, particularly connections between your deck and the Avid system. (See the *Using the Avid Adrenaline* information in the Help and [“Preparing the Hardware for Capture” on page 65.](#))
- ☐ If you are working on a complex project with multiple streams of video and high-resolution images, make sure your drives are striped properly. (See [“Getting Information About Striped Drives” on page 66.](#))
- ☐ Select options in the Capture Settings, General Settings, and Film Settings (24p and 25p projects only) dialog boxes. (See [“Selecting Settings” on page 67.](#))

- ☐ Configure your deck or decks using Deck Configuration and Deck Preferences settings. (See [“Configuring Decks” on page 80](#) and [“Setting Deck Preferences” on page 86](#).)
- ☐ Set up the Capture tool for video resolution and color compression. (See [“Setting Up the Capture Tool” on page 89](#).)
- ☐ Insert a tape into the deck, enter Capture mode, and set up the Capture tool for source tape, source deck, pulldown switch (24p projects), and other requirements. (See [“Entering Capture Mode” on page 88](#) and [“Setting Up the Capture Tool” on page 89](#).)
- ☐ Select audio settings, and set up the Audio tool. (See [“Preparing for Audio Input” on page 103](#).)
- ☐ Use the Video Input tool to select the input source; set the video input levels for setup, gain, saturation, and hue; save your Video settings for future use. (See [“Preparing for Video Input” on page 114](#).)

Chapter 4

Capturing Media

When you capture, you convert source material from videotape into master clips that contain reference information. You also create associated media files that contain the digital audio and video. Once you prepare the capture tools, as described in [Chapter 3](#), you can capture the source material in one of several ways, as described in the following sections:

- [Before You Begin Capturing](#)
- [Function Keys Available When Capturing](#)
- [Special Capture Procedures](#)
- [Capturing DV50 and DVCPRO HD Media Directly from a DV Device](#)
- [Delaying Audio](#)
- [Capturing and Logging at the Same Time](#)
- [Live Capture with External Timecode](#)
- [Capturing to the Timeline](#)
- [Capturing Video Without Pulldown into a 24p NTSC Project](#)
- [Batch Capturing from Logged Clips](#)
- [Changing Function Key Commands](#)
- [Recapturing Your Material](#)
- [Relinking Clips by Key Number](#)
- [Modifying the Pulldown Phase After Capturing](#)
- [DV Scene Extraction](#)

Before You Begin Capturing

Depending on your immediate needs, use the following guidelines for working through this chapter:

- If you want to add locators, create subclips, or log errors to the Console during capturing, see [“Special Capture Procedures” on page 129](#).
- If you have no logs and want to begin capturing right away, see [“Capturing and Logging at the Same Time” on page 136](#).
- If you want to capture video to multiple media files across multiple drives, see [“Capturing to Multiple Media Files” on page 74](#).
- If you have logs already entered in a bin and would like to automate the capturing process with playback from an Avid-controlled deck, see [“Batch Capturing from Logged Clips” on page 151](#).
- If you are recapturing deleted media or have imported a sequence that lacks the associated media files, see [“Recapturing Your Material” on page 156](#).
- If you have not already prepared a structure of bins for your project, as described in “Managing Folders and Bins” in the Help, consider the following tips before capturing:
 - You can create one bin for each source tape. This avoids slowing the system with large bins, associates each bin with a source tape for better organization, and simplifies recapture.
 - You can name the bin after the tape, so that when you autocapture or capture on-the-fly without noting a tape name, the system will automatically name each clip or take after the bin (tape) and will number them sequentially for easy reference.
- If you want to capture DV50 or DVCPRO HD media, see [“Capturing DV50 and DVCPRO HD Media Directly from a DV Device” on page 135](#).

Function Keys Available When Capturing

The following table lists the Function keys that are available when the Capture tool is active. Capture mode overrides any other functions mapped to these keys.



Capturing on-the-fly can cause incorrect pulldown and stuttering playback. Do not use the F1 or F2 keys for capturing 24-fps film that has been transferred to NTSC video unless you have set the correct pulldown phase. See “Setting the Pulldown Phase” on page 41.

Function Keys Available When Capturing

Press	To
F1	Mark the beginning of the subclip while capturing.
F2	Mark the end of the subclip while capturing.
F3, F5 through F12	Add a locator to the current frame while capturing. Each Function key adds a different color locator. See “Adding Locators On-the-Fly” on page 132 .
F4	Start the capture process when in Capture mode. In Log mode, press once to mark an IN point. Press again to mark an OUT point to log the clip in the bin.

Special Capture Procedures

This section describes several optional procedures you can use during the capture process.

Logging Errors to the Console Window

The Console window is useful for logging errors that occur during the capture process.

To open the Console window:

- Select Tools > Console.



For more information about the Console, see “Using the Console Window” in the Help.

Consider the following when selecting whether to log errors to the Console during capture:

- If the option “Log errors to the console and continue capturing” is selected on the Batch tab of the Capture Settings dialog box, when you batch capture and the system encounters an error, it aborts the clip, enters error comments into the Console, and continues capturing the next clip.
- If the option “Log errors to the console and continue capturing” is not selected, a message appears and the system pauses if an error occurs while capturing. If this happens, do the following:
 - a. Click Try Again to retry the operation. The clip might capture successfully.
 - b. If the clip does not capture the second time you try, the error message appears again. Click Next Clip to bypass the clip that caused the error, and continue batch capturing any remaining clips, or click Abort to cancel the entire batch capturing process.

Note all errors, messages, and steps you have taken. Try to troubleshoot the problem on your own, or contact Avid Customer Support.

Creating Subclips While Capturing

Subclips are marked sections of a longer master clip you can view and edit like any other object in a bin. This section describes two methods for creating subclips while capturing: by creating subclips on-the-fly and by creating timed subclips. The maximum number of subclips you can generate while capturing a clip is 100.



For information about creating subclips after capturing, see “Creating Subclips” in the Help.

When Subclips are created in 24p or 25p projects, they are always created as “hard” subclips. This means you cannot trim past the edges of the subclip when adjusting transitions and edits. Hard subclips prevent film-tracking information errors for editing and cut lists.



Subclip Status
indicator

To create a subclip on-the-fly:

1. Start capturing as usual.
2. At the point where you want the subclip to begin, press the F1 key.
This highlights the subclip IN point in the Capture tool.
3. While the system is capturing, you can type a name for the subclip. Press the Tab key to type comments about the clip.
4. When you want the subclip to end, press the F2 key.

This highlights the subclip OUT point in the Capture tool.



You can press the F2 key repeatedly as you search for the end point of the subclip. The system accepts the last occurrence as the end point. You can also press the F1 key at any time before pressing F2 again to remove the previous subclip marks and to start a new subclip IN point.

The subclip appears in the target bin when you stop capturing.

When capture is complete, a number appears between the subclip indicators to show the number of subclips created.



For NTSC film-to-tape transfers, you must log the correct pulldown phase before you create subclips. For more information, see “[Entering Pulldown Information](#)” on page 55.



If you are capturing with shared volume segmentation (“chunking”) enabled, see the Avid Unity MediaManager Setup and User’s Guide for details on the capture procedure.

You can also capture a subclip of a preset duration. The Keys tab in the Capture Settings window allows you to specify the duration of a subclip that is automatically created when you press the function key mapped to the Timed Subclip button (the default mapping is to F3). IN and OUT points are created at predetermined intervals before and after the point you mark in the source media by pressing the Timed Subclip button.

For information on changing the function key mapped to the Timed Subclip button, see “[Changing Function Key Commands](#)” on page 155.

To set the duration of a timed subclip:

1. Double-click Capture in the Settings tab in the Project window, and click the Key tab.

The Key tab in the Capture Settings window appears.

2. Enter the time in minutes and seconds to be used by the timed subclip in the Before mark (M:SS) and the After mark (M:SS) text boxes.
3. Click OK.

To create a timed subclip:

1. Start capturing as usual.
2. At the point where you want to start a timed subclip, press the F3 key.

This highlights the subclip IN and OUT points in the Capture tool, and the subclip is created automatically.

3. While the system is capturing, you can type a name for the subclip. Press the Tab key to type comments about the clip.



Subclip Status
indicator

Adding Locators On-the-Fly

Locators mark a single frame within a clip or sequence so you can attach a note or find the frame at a later time. This section describes a shortcut method of adding locators on-the-fly while capturing. When the Capture tool is active, eight colored locators are mapped to eight Function keys on the keyboard: F5–F12. The locators override any other functions mapped to these keys.

To add a locator to a frame while capturing:

1. Start capturing as usual.
2. Watch the playback of the footage in the monitor, and press one of the locator keys (F5–F12) when you see the shot or frame with which you want to associate a locator.

A default name and number for the locator appear in the Name text box in the Capture tool.

3. While the system is capturing, you can add comments for the locator. Press the Tab key to move the cursor to the Comments text box, and type your comment.
4. When you finish adding your comment for the locator, press the F4 key (End Locator Entry).

The Name and Cmnt (Comment) text boxes revert to association with the master clip or the subclip being captured.

- ▶ Locator comments appear in the Locators window. To see the locator comments, open the Locators window as described in “Viewing and Navigating in the Locators Window” in the Help.



If you are capturing with shared volume segmentation (“chunking”) enabled, see the Avid Unity MediaManager Setup and User’s Guide for details on the capture procedure.

For more information about locators, see [“Using Locators” in the Help](#).

Adding Clip Names and Comments On-the-Fly

The Avid system’s Annotate feature allows you to type clip names and comments during the capture of a clip. This information is saved in the clip Name and Comments columns in the bin. You can add comments about such things as color correction or directions for editing.



To carry your comments over to the sequence so that they appear in the Timeline, in cut lists, or in EDLs, you must add the comments again when creating the sequence by using the Add Comments command in the Clip Name menu.

To add clip names and comments on-the-fly:

1. Start typing the clip name at any time during the capture of a clip.
The Annotate window opens on screen, allowing you to see the text as you type.
2. After typing the clip name, press the Tab key and begin typing comments. You cannot edit the text until after the capture is complete, but you can backspace to retype the comments.

Controlling Decks from the Keyboard

You can use the J-K-L keys to control a deck from the Capture tool, Digital Cut tool, and Deck Controller window.

The J-K-L keys work the same as they do in the Source and Record monitors as shown in the following table.

J-K-L Functions for Deck Control

Press	To
K	Stop the deck.
L	Shuttle the deck at 1x, 2x, 3x, 5x, 8x, 16x, or 24x normal speed.
J	Shuttle the deck at -1x, -2x, -3x, -5x, -8x, -16x, or -24x normal speed.
K+L	Shuttle the deck at 0.25x normal speed.
J+K	Shuttle the deck at -0.25x normal speed.

The following restrictions apply:

- The Capture tool, Digital Cut tool, or Deck Controller window must be selected for keys to be active.
- Single-field stepping is not supported.
- If you remap the function of the J-K-L keys, you will no longer be able to control decks with those keys.

Mapping the Record Button

You can map the Record button from the Play tab in the Command palette to a key on the keyboard. This allows you to start capturing by pressing a key.



The Record button works for either the Capture tool or the Audio Punch-In tool, depending on which tool is active.

For more information on mapping buttons, see “Understanding Button Mapping” in the Help.

Capturing DV50 and DVCPRO HD Media Directly from a DV Device

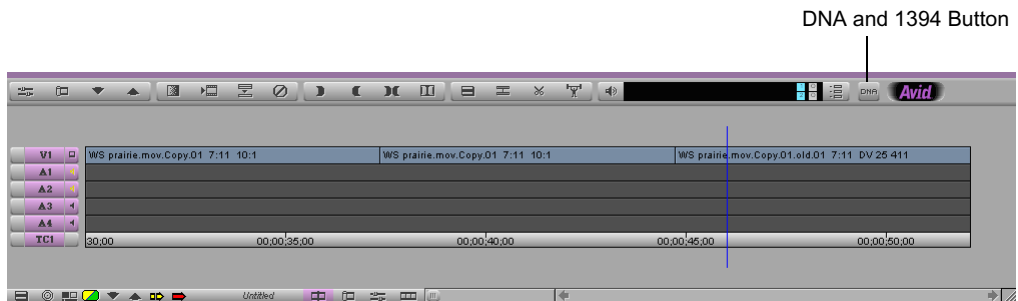


DNA button



1394 button

When you capture DV50 or DVCPRO HD media, you can capture directly from a DV camera or deck connected through a separate IEEE-1394 port. The DNA or 1394 button icons above the Timeline window and the Device menu allow you to switch between an attached Avid Adrenaline and a DV camera or deck without disconnecting your Avid Adrenaline.



This option switches all capture, play, and digital cut operations to the selected device. For example, if DNA is selected, then all capture, play, and digital cut operations use the Adrenaline box. If 1394 is selected, then all capture, play, and digital cut operations use the DV camera or deck attached to the separate IEEE-1394 card.

In addition, the Video Output tool, Video Input tool, Capture tool, and Digital Cut tool all reflect the Device menu selection.

The system default is DNA. When a new project is selected, the system automatically selects DNA.

To switch between your Avid DNA and the IEEE-1394 port:

1. With a DV camera or deck connected to a separate IEEE-1394 port, do one of the following:
 - c. Click the DNA and 1394 button above the Timeline.
 - d. Select Special > Device > Adrenaline or IEEE 1394.
2. To capture DV50 or DVCPRO HD media, select 1394.

The 1394 icon displays above the Timeline, and a check mark appears next to IEEE 1394 in the Device menu.



For information on playing back DV50 and DVCPRO HD media, see "Playing Back Footage" in the Help.

Delaying Audio

Sometimes the source from which you are capturing provides an audio signal that is one or more frames ahead of the video. For example, the Panasonic AG-DVX100 DV camcorder always records audio one frame ahead of the video. Also, the use of a timebase corrector (TBC) or other video processing devices on your input signal might introduce fixed frame delays of video.



If the input signal is not DV when you choose your IN point, the audio that lines up with the IN point should remain in sync with the captured media. The video is what shifts in the captured media. If the input signal is a DV signal however, then the audio shifts.

If the audio you are capturing is always at a fixed offset ahead of the video, then use the Delay Audio feature to correct this problem and produce a master clip with correct A/V sync.

To offset your audio:

1. Prepare for capturing. See ["Preparing to Capture Media" on page 65](#).
2. Select Tools > Capture.
3. Select the number of offset frames from the Delay audio pop-up menu.
4. Capture your material. See ["Capturing from a Mark IN to a Mark OUT" on page 138](#) and ["Capturing On-the-Fly" on page 139](#).
5. Play the captured media to verify that the audio and video are in sync.

Capturing and Logging at the Same Time

When you capture without entering log information in a bin ahead of time, the system creates clips and associated media files while you capture. Capturing in this manner involves manually cueing source footage with an Avid-controlled deck, using the deck controls in the Capture tool.

There are several ways to capture and log at the same time:

- **Capturing from a mark IN to a mark OUT.** This method lets you specify the exact timecode location to begin and end capturing. You can also specify only a mark IN or mark OUT, and enter the other mark on-the-fly. These procedures are described in [“Capturing from a Mark IN to a Mark OUT” on page 138](#).
- **Capturing on-the-fly.** This method is easier than setting marks, but it is less precise. It involves using the deck controls in the lower left corner of the Capture tool to cue, play, and stop the source footage manually while capturing. These procedures are described in [“Capturing On-the-Fly” on page 139](#).



Capturing on-the-fly and autocapturing can cause incorrect pulldown and stuttering playback. Do not use these methods for capturing 24-fps film that has been transferred to NTSC video unless you have set the correct pulldown phase. See [“Setting the Pulldown Phase” on page 41](#).

- **Autocapturing.** This method requires the least amount of supervision and effort, but usually calls for more capture time and drive storage space. It involves playing each source tape from a cue point near the beginning and letting the system capture the entire tape, automatically naming and entering each cut into the bin. These procedures are described in [“Autocapturing” on page 142](#).

Two additional techniques you can use when capturing and logging at the same time are described in [“Capturing from a Non-Avid-Controlled Deck” on page 144](#) and [“Capturing with Time-of-Day Timecode” on page 145](#).

You can log and capture at the same time with either a PAL or NTSC film-to-tape transfer as the source. However, when capturing an NTSC transfer, you must observe the following basic rules:

- Specify the pulldown frame before capturing. See [“Entering Pulldown Information” on page 55](#).
- The mark IN must be an A frame, and you cannot capture with a mark OUT only, unless you have set the correct pulldown phase. See [“Setting the Pulldown Phase” on page 41](#).



When you capture footage from an NTSC film-to-tape transfer with pulldown, the playback flickers in the Client monitor during capturing because the system is dropping occasional frames due to the pullin process. The footage will play back smoothly in the Avid system, however, once the pullin conversion is complete.

Capturing from a Mark IN to a Mark OUT

Capturing from a mark IN to a mark OUT lets you specify exactly where to begin and end capturing. You can specify both marks, or only a mark IN or a mark OUT, and the system enters the other mark on-the-fly.

Use this method in the following circumstances:

- If logs exist in written or printout form but not in the proper format for quick import into the system
- If the IN and OUT points are rough and need to be double-checked for accuracy
- If you are familiar enough with the source material to estimate the timecode for the mark IN, the mark OUT, or both, quickly and accurately

Setting Both Marks

To capture by specifying a mark IN and a mark OUT:

1. Make sure you selected the proper Capture settings and set up the capture tools, as described in [Chapter 3](#).
2. Set either a mark IN or a mark OUT for the clip you want to capture, using either of the following methods:



Mark IN



Mark OUT

- ▶ Use the deck controls in the Capture tool. Cue your source tape to where you want to start or end the clip, and click the Mark IN or Mark OUT button.
- ▶ If the material starts at a known IN point or ends at a known OUT point, you can type the timecode in the display area next to the mark. Press Enter to enter the mark.



Go to IN

To double-check the accuracy of the IN or OUT point, click the Go to IN button. The system cues the tape and pauses the deck at the mark. You can play the tape and reset the mark, if necessary.

3. Finish logging the clip, using either of the following methods:
 - ▶ Set the corresponding IN or OUT point.

- ▶ Type a timecode for the clip's duration in the text box next to the Duration mark (below the mark OUT) in the format HH:MM:SS:FF.

The system automatically calculates the appropriate timecode for the corresponding mark IN, mark OUT, or duration.

4. Click the Record button in the Capture tool, or press the F4 key.

The Capture tool automatically rewinds the tape to the preroll point before the IN point of the clip, and the tape begins to play. The Record button becomes bright red, and the message bar displays the message that the Avid system is capturing.

5. While the system is capturing, you can type a clip name. To add comments about the clip, press the Tab key after typing a clip name, and type comments in the Comment text box. The information you type does not appear on the screen until capturing is complete. (After you log clips, you can modify information to correct input errors or to add information.)

When the tape reaches the clip's OUT point, capturing stops and the system creates a new clip in the bin.

Setting Only One Mark

To set only one mark and enter the other mark on-the-fly:

- ▶ Set an IN point and click the Record button to begin capturing. Then, click the Record button again to stop capturing on-the-fly and set a mark OUT.

This method is useful if you do not need a precise mark OUT. You save time because you do not have to shuttle to locate the mark OUT before capturing.

- ▶ Set a mark OUT only, then move to a position on the tape that is a few seconds before where you want to start capturing. Play the tape and then immediately click the Record button to begin capturing on-the-fly. When the tape reaches the clip's OUT point, capturing stops.

This method is useful if you do not need a precise mark IN, but do need to stop at a precise OUT point, for example, just before a timecode break.

Capturing On-the-Fly

Use the capturing on-the-fly method in any of the following circumstances:

- If you are eager to begin editing immediately and no adequate logs exist for importing into the system or setting marks

- If your source tape does not have timecode
- If you are capturing from a digital source such as a CD or DAT player
- If you are capturing from a live source, such as a studio feed, or an in-house router



There is a slight delay of several frames after you manually select a spot to either start or to stop capturing. Therefore, use this method when you do not need precise beginning and end points in your clip.

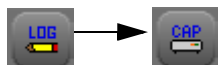
- If you are capturing from a source deck that cannot be controlled by the Capture tool or a V-LAN VLXi unit



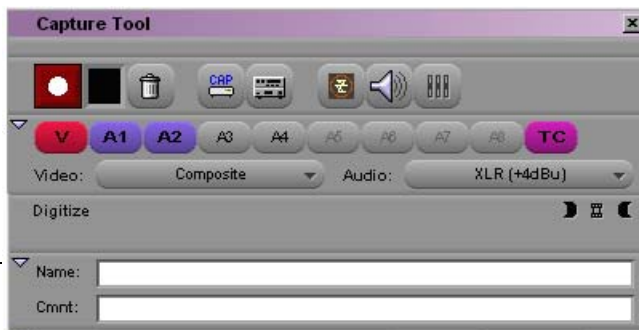
Capturing on-the-fly can cause incorrect pulldown and stuttering playback. Do not use this method for capturing 24-fps film that has been transferred to NTSC video unless you have set the correct pulldown phase. See “Setting the Pulldown Phase” on page 41.

To capture on-the-fly:

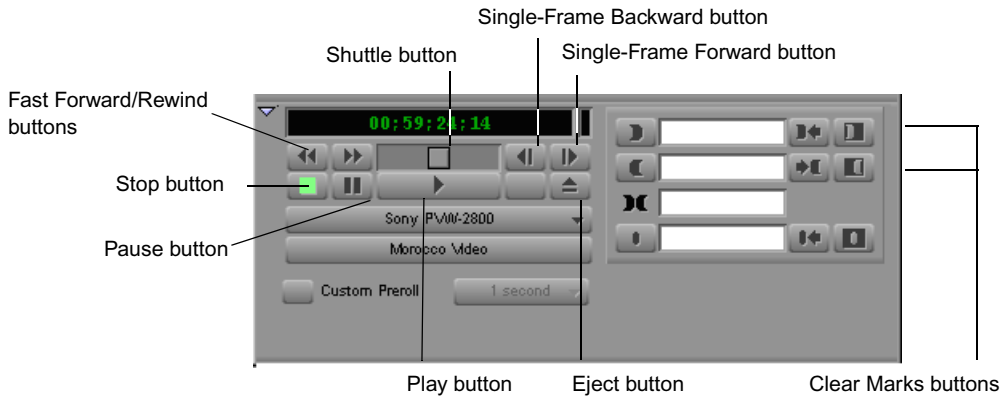
1. Select the proper Capture settings and set up the capture tools as described in [Chapter 3](#).
2. Click the Capture/Log Mode button in the Capture tool until the CAP icon appears.
3. (Option) Click the triangular opener in the Capture tool to display the Name and Cmmt text boxes if you plan to enter clip names or comments during capture.



Triangular opener
(Click to display
comments.)



4. Use the deck controls in the bottom left corner of the Capture tool to locate the position on the tape where you want to start capturing.



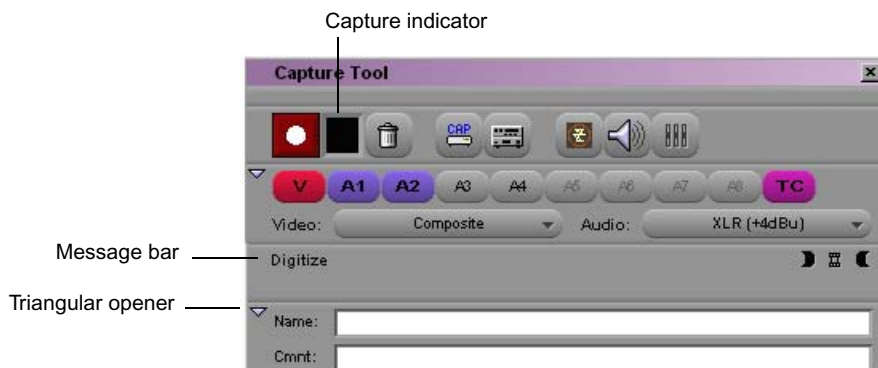
- To begin capturing, play the deck; when it gets up to speed, click the Record button or press the F4 key.



Make sure you have cleared any previous marks so the deck does not begin cueing to the previous location.

Capturing begins within a few frames, and the timecode for the clip's IN point appears. The Capture indicator, to the right of the Record button, flashes on and off. The message bar displays a message that your Avid system is capturing.

- While the system is capturing, you can type a clip name in the Name text box.





If the Name text box is not visible on the Capture tool, you can type a clip name but you cannot view your typing. To display the Name text box, you must click the triangular opener before you begin capturing.

7. Press the Tab key after typing a clip name to enter comments about the clip. You cannot edit the text during capturing, but you can backspace to retype the comments.



If you want comments to appear in EDLs or cut lists, add them during editing by using the Add Comments command from the Clip Name menu. For more information, see “Adding Comments to Sequence Clips” in the Help.

8. Click the Pause button at any time to pause play. You can also abort the capture procedure by clicking the Trash button. The clip is discarded.
9. To stop capturing and enter the OUT point of the clip, click the Record button, or press the Escape key on the keyboard.

The system creates a new clip in the bin. It also enters basic log information for each clip, consisting of the mark IN, the mark OUT, the duration, and any other information typed in during the capture procedure.

10. If you did not type a clip name while capturing, type it now while the clip name is highlighted in the bin. If you return to the Capture tool and begin another clip, the default clip name remains in the bin until you change it.

In some circumstances, the captured material might exceed the 2-GB media file size limit. In such a case, set up the Capture tool to capture to multiple media files. For more information, see [“Capturing to Multiple Media Files” on page 74](#).

Autocapturing

Autocapturing an entire tape can save you time by allowing you to bypass both the logging process and the time it takes to cue each shot. However, this process requires the most storage space, and it takes time to capture an entire tape.

When you autocapture, you mount and cue your tape to a starting point and start the capturing process through the Capture tool. If you follow the tips and techniques described in this section, you can allow the system to complete the capturing process unattended.



The Avid system can capture across timecode breaks, but it cannot capture across control-track breaks in the recording (that is, if the recorded footage breaks up into noise between shots). If such breaks in recording exist on your tape, consider using the methods described in **“Capturing On-the-Fly” on page 139.**



Capturing on-the-fly can cause incorrect pulldown and stuttering playback. Do not use this method for capturing 24-fps film that has been transferred to NTSC video unless you have set the correct pulldown phase. See “Setting the Pulldown Phase” on page 41.

Before you begin autocapturing entire tapes:

- Select the following settings in the Capture Settings dialog box (accessed from the Settings scroll list in the Project window):
 - Capture to multiple files (Media Files tab)
 - Preroll Method: Best Available or Best Available Control Track (General tab)
 - Capture across timecode breaks (General tab)
 - Log errors to the console and continue capturing (Batch tab)



For more information on Capture settings, see “Capture Settings: General Tab” on page 71.

- Turn off the FAST CUE option and set the preroll to approximately 4 seconds in the Deck Settings dialog box. For more information, see “Deck Settings” in the Help.
- You should have accurate notes on the number and content of takes on each tape to identify the content of each clip when necessary.

To autocapture:

1. Create one bin for each tape.

This keeps bins to a manageable size and automatically names all clips from each tape after the name of their respective bins.

2. Name each bin after the source tape number. By default, all clips are named after the tape and are numbered incrementally beginning with .01.
3. Open the bin for the first tape and select Bin > Go To Capture Mode.
4. Make sure you selected the proper Capture settings and set up the capture tools, as described in [Chapter 3](#).

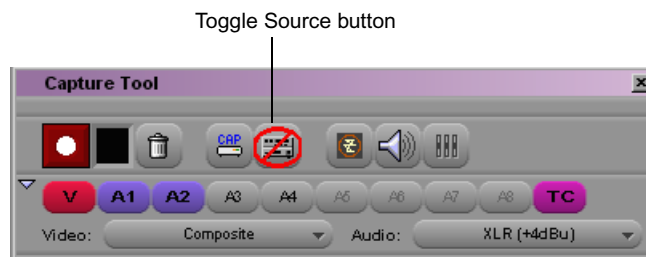
5. Load the source tape and cue past any false starts.
6. Play the tape, and wait 4 seconds before clicking the Record button.

Capturing from a Non-Avid-Controlled Deck

If you have a deck that cannot be controlled directly by the system, you can capture with manual deck control.

To capture with manual deck control:

1. Enter Capture mode and set up the tools, as described in [Chapter 3](#).
2. Click the Toggle Source button in the Capture tool until the Deck Offline icon appears to disable the deck controls and leave only the Tape Name display.



3. Click the Tape Name display to open the Select Tape dialog box and identify the source tape.

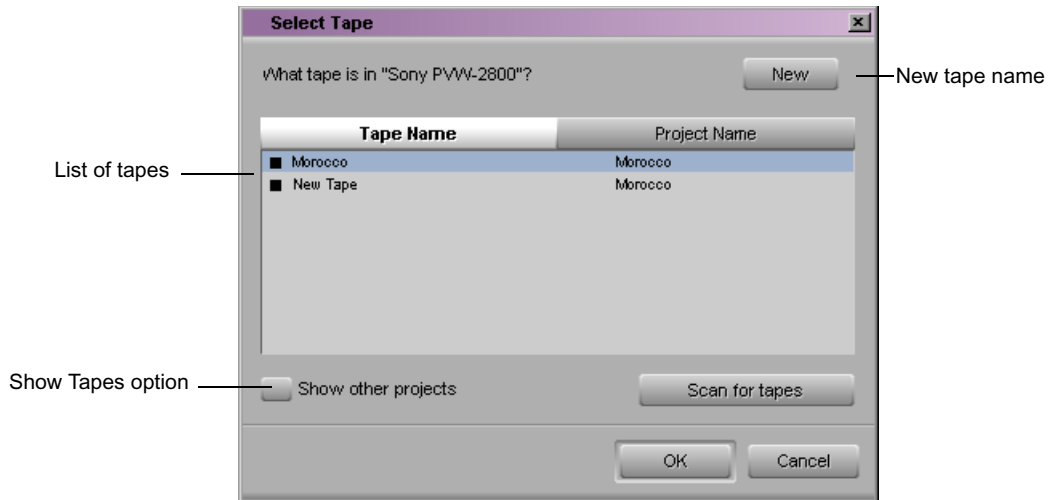
You can select the option “Show other projects” to display the tape names and associated project names for all bins that were opened in the current session.



Because the media file database does not open when you start your Avid system, tape names of all online media files do not appear automatically.



If the tape name you are searching for does not appear in the Select Tape dialog box, click the Scan for tapes button. Tape and project names are listed.



4. Provide the system with a tape name in one of the following ways:
 - ▶ Select the name of the tape from the list in the Select Tape dialog box and click OK.
 - ▶ Click the New button if the tape is not in the list. A New Tape name line appears in the dialog box. Type the new name and click OK.

The tape name is displayed in the Capture tool.

5. Play the tape manually and click the Record button to stop and start the capturing of each clip.

Capturing with Time-of-Day Timecode

When you capture with an Avid-controlled deck, you can capture your footage with time-of-day timecode rather than source timecode.

To capture with time-of-day timecode:

1. Enter Capture mode and set up the tools, as described in [Chapter 3](#).
2. When selecting tracks, deselect the TC button.
3. Capture by using any of the techniques described in [“Capturing On-the-Fly” on page 139](#).

Live Capture with External Timecode

LTC (longitudinal or linear timecode) from an external source allows production facilities to capture from multiple sources at the same time they are recording to tape. A facility that has a central timecode generator can use that clock to send identical timecode to all systems. This timecode output can be run directly to the Avid system through the LTC IN connection on the Adrenaline DNA.

External timecode is especially useful for live events, dramatic multicamera shows, and video material coming in on routers that do not support timecode through normal RS-422 communication. You can start editing immediately after the shooting without waiting to capture from the backup reference tapes.

If you are capturing 24p film however, the pulldown phase needs to be accounted for. This allows for 24p capture to have the same behavior as a video rate. Depending on what you have chosen in the Set Pulldown Phase of Timecode (A, B, X, C, or D) in the Film Settings window, will determine what type of pulldown the system will use during the 24p capture.



Only non-drop-frame timecode is supported with the Pulldown Phase of Timecode option.

If you are taking a feed from a source based on a time-of-day timecode generator, setting IN and OUT points is especially useful. When the time of the external timecode source matches the IN point, the Avid system begins to capture. Capturing stops when the external timecode matches the OUT point.

To prepare for capturing with external timecode:

1. If capturing 24p film, in the Film settings window, click the Set Pulldown Phase of Timecode 00:00:00:00 button to select it.
2. Select a pulldown cadence that matched the pulldown cadence of the incoming signal.

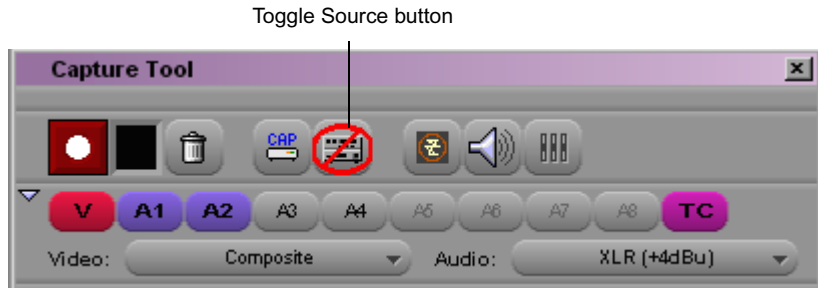


For more information, see “Setting the Pulldown Phase” on page 41.

3. Click OK.
4. Select Tools > Capture.

The Capture tool opens.

- Click the Toggle Source button until the No Deck icon appears.



- Click the TC Source pop-up menu, and select LTC Input.

The menu contains two other choices:

- **Internal:** Uses internal system timecode.
- **Auto Detect:** Detects LTC input by default. If the LTC input is deactivated, the Capture tool automatically switches to internal timecode. If the LTC input is reactivated, the Capture tool switches back to LTC input.



LTC is only available with Avid Adrenaline DNA products. If you do not have an Avid Adrenaline attached to your system, the LTC Input option is grayed out.

- Capture by using any of the techniques described in [“Capturing On-the-Fly”](#) on page 139.



If you notice your captured material is consistently one or more frames off, use the “Latency for external timecode mode” option in the Capture Settings dialog box to fix the problem. See “Capture Settings” in the Help.



You can log an event ahead of time and it automatically starts recording that signal when the internal clock or external LTC arrives at that timecode. For example, log a clip at 14:00:00:00 to 14:30:00:00 sometime in the morning, and at 2:00, the capture starts and then ends at 2:30.

Capturing to the Timeline

You can capture footage directly from tape to a sequence loaded in the Timeline in one step, bypassing several steps such as organizing and reviewing clips, marking edit points, and performing edits.

To capture to the Timeline:

1. Prepare for capturing (see [Chapter 3](#)).
2. Set options in the Capture Settings dialog box:
 - a. Click the Settings tab in the Project window.
 - b. In the Settings scroll list, double-click Capture. The Capture Settings dialog box opens.
 - c. Click the Edit tab.
 - d. Select the “Enable edit to timeline (splice, overwrite)” option.
 - e. Set the handle length (the amount of footage you want to capture before and after the IN and OUT points of the clips).
 - f. Click OK.
3. Load a sequence into the Record monitor.
4. (Option) Patch tracks you are capturing (source tracks) to the tracks in your sequence (record tracks). See [“Patching When Capturing to the Timeline” on page 149](#).
5. Mark an IN point in the sequence or move the position indicator to where you want the edit to take place.
6. Mark the source material you want to capture by using the Capture tool logging controls. For a description of the controls, see [“Logging with an Avid-Controlled Deck” on page 46](#).
7. (Option) Mark an OUT point based on the following:
 - ▶ If you are recording to the middle of a sequence in the Timeline, mark both IN and OUT points for frame accuracy.
 - ▶ If you are recording to the end of a sequence, you can mark just an IN point and then mark the OUT point later on-the-fly.

8. Click the yellow Splice-in button or the red Overwrite button in the Capture tool to select the type of edit.



9. Click the Record button to begin recording.
10. If you did not mark the OUT point in advance, click the Record button again when the footage reaches the appropriate frame.

If you already marked an OUT point, recording stops automatically.

When capturing ends, the clip appears in place in the sequence, and a master clip appears in the bin.

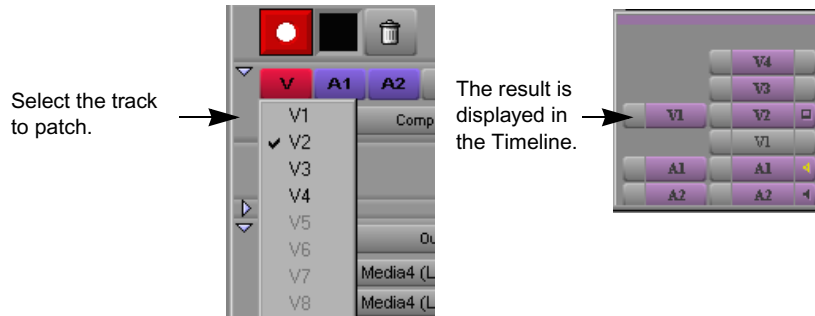
Patching When Capturing to the Timeline

By default, the tracks you selected for capturing (V1, A1, A2, and so on) are edited to the corresponding tracks in the Timeline. You can patch the captured footage to any track in the Timeline.

To patch tracks when capturing to the Timeline:

1. In the Capture tool, click and hold the Track Selector button for the track (video or audio) you want to patch.
2. From the pop-up menu, select the track to which you want to patch the captured footage.

For example, if you want to capture video footage to track V2, click and hold the red V button in the Capture tool and select V2 from the pop-up menu. The Track Selector panel in the Timeline displays the resulting patch.



You can also patch tracks in the Timeline in the same way you patch tracks when editing from the Source monitor. See “Patching Tracks” in the Help.



Only tracks that are enabled in the Timeline are available for tracking. Other tracks appear dimmed in the pop-up menu.

Capturing Video Without Pulldown into a 24p NTSC Project

Film-to-tape transfers that were made without using pulldown can be captured directly into a 24p project. This feature is useful when special effects are generated on a frame-to-frame basis to tape, and need to be integrated into a 24p project.

Before capturing the footage, click the Film to Video Transfer pop-up menu in the Film Settings dialog box, and select Video Rate. The Film-to-Video Transfer setting allows you to specify the type of film-to-tape transfer you are capturing. For more information, see [“Transfer Settings for Film Projects” on page 78](#).



For normal 24-frame capture, click the Film to Video Transfer pop-up menu in the Film Settings dialog box, and select Pulldown.

Batch Capturing from Logged Clips

Once you have imported a log or have manually logged a group of clips into a bin, you can automate the capture process by using the Avid system's batch-capturing capabilities. When you batch capture, you open a bin, select the clips you want to capture, and select **Clip > Batch Capture**. The Avid system automatically finds the start and end timecode for each clip and captures it. To batch capture, source tapes must have timecode that matches the timecode for the selected clips.

You can also use the batch-capturing process to recapture clips you have already captured. The recapturing process is described in [“Recapturing Your Material” on page 156](#).



When you capture footage from an NTSC film-to-tape transfer with pulldown, the playback flickers in the Client monitor during capturing because the system is dropping occasional frames due to the pullin process. The footage will play back smoothly in the Avid system, however, once the pullin conversion is complete.

Preparing to Batch Capture

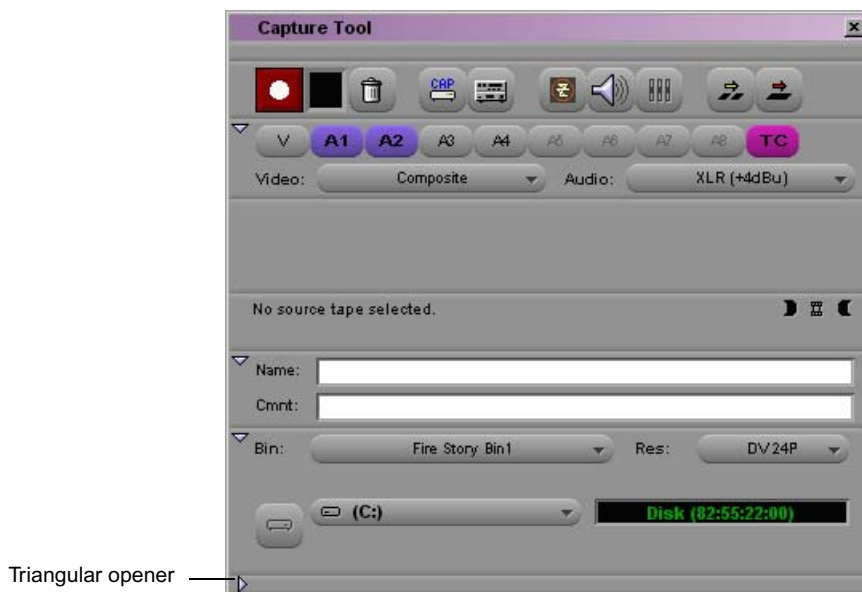
Preparing for batch capturing involves an option of resizing the Capture tool, and establishing settings that allow you to batch capture with minimal supervision.

Resizing the Capture Tool

Because your clips are already logged in a bin, you can simplify the interface during batch capture by hiding the deck controller and logging controls in the Capture tool.

To resize the Capture tool during batch capturing:

- ▶ Click the triangular opener to the left of the deck controller.



The triangle points to the right, and the deck control and logging controls close.

Preparing Settings for Unattended Batch Capturing

Unattended batch capturing allows you to capture a large number of clips with minimal supervision by selecting Capture settings that avoid a pause in the capture process.

To prepare for unattended batch capturing:

1. Double-click Capture in the Settings scroll list of the Project window.
The Capture Settings dialog box opens.
2. Click the Batch tab and select the following options:
 - Log errors to the console and continue capturing
 - Switch to the emptiest drive if current drive is fullFor additional options, see “Capture Settings” in the Help.

3. Click the General tab and select the “Capture across timecode breaks” option. For more information, see [“Capturing Across Timecode Breaks” on page 73.](#))
4. Click OK to close the dialog box and apply the options.



You cannot batch capture clips that contain timecode breaks between the logged IN and OUT points. Also, you cannot capture across breaks in the recording (that is, if the recorded footage breaks up into noise between shots). If such breaks in recording exist on your tape, consider using the methods described in [“Capturing On-the-Fly” on page 139.](#)

Capture Settings: Batch Tab

The Batch Capture settings specify how to batch capture clips. For information on the General Capture settings, see “Capture Settings” in the Help. For information on the Media Files Capture settings, see “Capture Settings” in the Help. For information on the Edit options, see [“Capturing to the Timeline” on page 148.](#)

Batch Capturing Clips

To batch capture clips:

1. Make sure you selected the proper Capture settings and set up the capture tools, as described in [Chapter 3.](#)
2. Open the bin that stores the clips you want to capture.



If you are recapturing media from a project created on a different Avid system, only reuse settings that originate on systems that use the video I/O board. For projects from other Avid systems, check the Video settings for each tape. For more information, see [“Calibrating Video Input” on page 116.](#)

3. Select the clips to batch capture:
 - ▶ Select Edit > Select All.
 - ▶ Ctrl+click to select specific clips.



If you are batch capturing the original source master clips used in the sequence, the sequence is updated automatically. Therefore, you might want to deselect the sequence during this procedure.

4. Select Clip > Batch Capture.

The Batch Capture dialog box opens.



If the clips you want to batch capture are not highlighted in the active bin, Batch Capture appears dimmed in the Clip menu.

5. Select options in the dialog box:

- If the bin contains some clips that are already captured and you do not want to recapture those clips, select the “Offline media only” option. If this option is not selected and some of the selected clips have media files, the system deletes the media files and recaptures new media files.
- Select the “All clips in a group edit” option to allow capturing of each clip in a group clip.



For more information on handle lengths when recapturing, see “Recapturing Sequences” on page 158.

- If your selections include a sequence for batch capturing, the dialog box prompts you for handle length information; the system creates new master clips based on the length of edited clips in the sequence.
- (Option) Select the “Extend handles beyond master clip edges” option to allow the handles to extend before the beginning and after the end of the original master clip. When you batch capture, deselecting this option prevents capturing across a discontinuous timecode error.

For example, if the starting timecode for a master clip is 1:00:10:00 and the resulting master clip after a decompose with handles causes the new master clip to begin at 1:00:09:00, batch capturing fails if there are any timecode discontinuities between 1:00:09:00 and 1:00:10:00.

6. Click OK.

If you have not loaded a tape, the system prompts you to load the first tape.

7. Load the tape into the tape deck and click Mounted.

A dialog box opens.

8. Click OK to confirm the tape and deck entries and begin the capture process. The system captures each clip from the tape, in start timecode order.

9. If the system needs another source tape, the system prompts you for the tape. At this point, you have several options:
 - ▶ Load the new tape and click Mounted to continue the capturing process.
 - ▶ Select the “Skip this clip” option to bypass just the first clip from the tape and continue capturing the remaining clips.
 - ▶ Select the “Skip this tape” option to bypass all the clips from the mounted tape. The system then prompts you for the next tape.
 - ▶ Click Abort to end the batch-capturing process. You can also stop capturing at any time by clicking the Trash button in the Capture tool.



To bypass specific clips in the process of batch capturing a particular tape, you must abort each clip manually by clicking the Trash button. Then click the Skip Clip button in the Abort window to continue.

When the system has finished batch capturing, a dialog box notifies you that the process is complete.

Changing Function Key Commands

The Keys tab in the Capture Settings window allows you to customize the commands mapped to the function keys on your keyboard that are used while capturing.



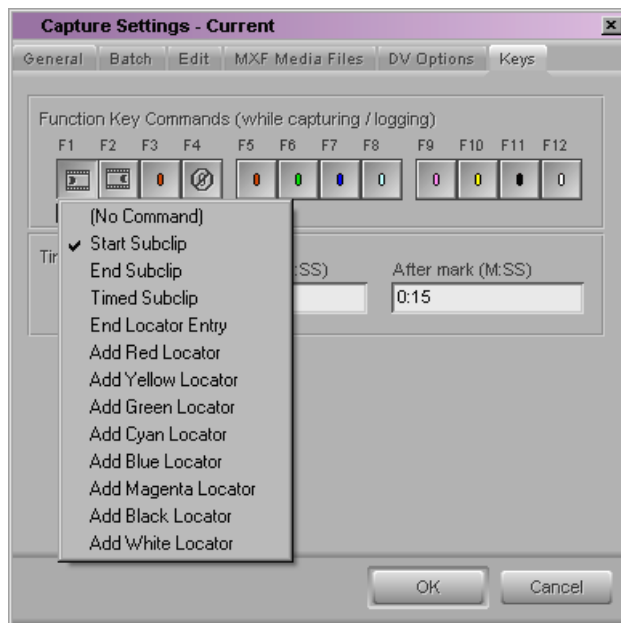
The functions described here only apply in Capture mode. When you are not in Capture mode, function keys operate with their default mappings. For more information on using function keys as keyboard shortcut keys, see “Shortcuts” in the Help.

To change function key commands for capturing media:

1. Double-click Capture in the Settings tab in the Project window, and click the Key tab.

The Key tab in the Capture Settings window appears.

2. Click the key you want to map, and then select the new function from the menu.



3. Click OK.

Recapturing Your Material

Recapturing is the process of recording previously captured source footage based on existing clips and sequences. Recapturing uses the batch-capturing process and does not require extra logging time because the clip information for such things as source tracks, timecodes, and compression settings already exists in the bin.

There are several situations in which you might want to recapture:

- You can recapture a sequence after you transfer it from another system.
- You can recapture low-resolution clips at a higher resolution setting after they have been edited into a sequence.

- You can quickly recapture selected clips if you make an error while capturing the first time (for example, if you forget to check audio levels or set the wrong resolution).
- You can recapture clips if you accidentally delete media files.



Recapturing requires your original source footage. Do not delete the media files if the source footage is no longer available, unless you will not need the material again.

For information on loading the media database to relink clips, see “Loading the Media Database” in the Help.

Recapturing Master Clips and Subclips

The procedure for recapturing master clips and subclips is identical to the process for batch capturing logged clips. See [“Batch Capturing from Logged Clips” on page 151](#).

Although the procedure is the same, the result is slightly different, as follows:

- Master clips are linked to entire media files and serve as sources for subclips and sequences. Therefore, when you recapture a master clip, changes in compression settings and levels affect all subclips and sequences created from the master clip.
- Subclips are smaller sections of master clips. When you recapture a subclip, the system creates a new master clip that is linked to new media files and reflects the shortened length of material. Therefore, recapturing subclips streamlines the capturing process.

Also, recapturing breaks the link from the subclip to the original master clip. But if you edit the subclip into a sequence, the sequence reflects any changes in the newly captured subclip.

Recapturing Sequences

Recapturing a sequence creates new master clips and associated media files based on the length of each clip edited into the sequence. It breaks any links to the original source clips, and only the sequence and its new master clips are linked to the newly captured media files. There are two approaches to recapturing a sequence:

- Use Decompose to create a bin of clips, and then batch capture the clips.
- Recapture the sequence without using Decompose.

Saving Two Versions of a Sequence When Recapturing

To save the original version of your sequence before recapturing, you can create a duplicate. For example, use this method if you create a sequence at a low resolution to save storage space and want to recapture the sequence at a higher resolution while retaining the first version. Avid recommends this method if you intend to use the Decompose feature.

To make a duplicate of the sequence:

1. Select the sequence in the bin, and select Edit > Duplicate.
2. (Option) Create a new bin by selecting File > New Bin and move the duplicate sequence into the new bin. This step saves you the confusion of mingling new sequences and master clips with existing ones, especially when using Decompose.

Using Decompose When Recapturing

Decompose allows you to create new, shorter master clips based only on the material you have edited and included in your sequence, which saves system disk space. You can specify the handle length of the new master clips. Decompose breaks any links to the original source clips, and only the sequence and its new master clips are linked to the newly captured media files.

Decompose creates new master clips in the bin for each clip in the sequence prior to recapturing. Using Decompose gives you greater control during the recapturing process. You can use this procedure to sort clips in the bin, modify the clips, and then recapture selected clips in the sequence.

For film projects, clips created with Decompose retain all the information from the original master clips, including Pullin column information, key numbers, ink numbers, or any other information formerly entered in the bin.

To use Decompose:

1. Activate the bin that stores the sequence and select the sequence.
2. Select Clip > Decompose.

The Decompose dialog box opens.



3. To preserve clips that already have existing media files, select the “Offline media only” option. Do not select this option if you plan to decompose and recapture the entire sequence.
4. Select other options for the types of clips to decompose: captured, imported, or all clips in a group edit.
5. Click the Handle Length text box and type the number of additional frames you want to capture at the heads and tails of the new master clips. This provides enough overlap for trimming and adding transition effects.



If you attempt to trim or add effects with no handles, you receive an error message notifying you that there is insufficient media.

6. (Option) Select the “Extend handles beyond master clip edges” option to allow the handles to extend before the beginning and after the end of the original master clip. When you batch capture, deselecting this option prevents capturing across a discontinuous timecode error.

For example, if the starting timecode for a master clip is 1:00:10:00 and the resulting master clip after a decompose with handles causes the new master clip to begin at 1:00:09:00, batch capturing will fail if there are any timecode discontinuities between 1:00:09:00 and 1:00:10:00.

7. Click OK.

The new master clips appear in the bin. You can now sort and select these clips like all other objects in the bin.

8. Proceed with the recapturing procedures described in [“Batch Capturing Clips” on page 153](#).

Recapturing the Sequence Without Using Decompose

When you recapture the sequence without using Decompose, the capturing process creates media files for each clip in the sequence during the capturing process. Bypassing the Decompose procedure saves only a small amount of time, and you cannot make changes after the media files are created without repeating the entire procedure. Therefore, review [“Using Decompose When Recapturing” on page 158](#) before proceeding.

To recapture a sequence:

1. Make sure you selected the proper Capture settings and set up the capture tools, as described in [Chapter 3](#).
2. Open or activate the bin that stores the sequence.
3. Select Bin > Go To Capture Mode.
4. Select the sequence you want to recapture.
5. Select Clip > Batch Capture.

The Batch Capture dialog box opens.

6. To preserve clips that already have existing media files, select the “Offline media only” option. Deselect this option if you plan to recapture the entire sequence.
7. (Option) Select the “All clips in a group edit” option.
8. Click the Handle Length text box and type the number of additional frames you want to capture at the heads and tails of the new master clips. This provides enough overlap for trimming and adding transition effects.



If you attempt to trim or add effects with no handles, you will receive an error message notifying you that there is insufficient media.

9. (Option) Select the “Extend handles beyond master clip edges” option to allow the handles to extend before the beginning and after the end of the original master clip. When you batch capture, deselecting this option prevents capturing across a discontinuous timecode error.

For example, if the starting timecode for a master clip is 1:00:10:00 and the resulting master clip after a decompose with handles causes the new master clip to begin at 1:00:09:00, batch capturing fails if there are any timecode discontinuities between 1:00:09:00 and 1:00:10:00.

10. Click OK.

The system prompts you to load the first tape.

11. Load the tape into the tape deck if you have not already done so.

12. Click Mounted to indicate to the system that the correct tape is loaded and ready for capturing.

A dialog box opens.

13. Click OK to confirm the tape and deck entries.

The system captures each clip from the tape, in start timecode order. If another source tape is needed, the system prompts for the tape.

You can stop the batch-capturing process at any time by clicking the Trash button in the Capture tool.

When batch capturing is finished, a message box notifies you that the process is complete. The new master clips appear in the bin, and associated media files exist on the targeted drive or drives.

Relinking Clips by Key Number

The film-tape-film-tape (FTFT) relinking feature lets you re-create an offline, film-originated sequence as a final finished sequence by using the key numbers of the original film footage. During the offline stage, you capture and edit footage that was transferred to tape through a one-light or best-light telecine transfer (FT). During the finishing stage, you batch capture, relink by key number, and edit footage that was transferred through a second timed, color-corrected telecine transfer (FT). Alternatively, if you are finishing a sequence in an online suite and need only an EDL, you do not need to batch capture the footage. Just import the new shot log, relink to the offline items, and then create the EDL.

Relinking by key number eliminates the need for the telecine transfer facility to match the timecode and pulldown of the second transfer to the timecode of the first transfer.



For more information about relinking, see “Relinking Media Files” in the Help.

To relink clips by key number:

1. After you have finished editing the offline sequence, use the FilmScribe application to create a pull list of the clips used in the sequence. (For information on using FilmScribe, see the FilmScribe documentation.)
2. Have the telecine facility use the pull list to pull selects from the original negative and to transfer picture-only footage by using a timed, color-corrected telecine process. You do not need to transfer audio again. The telecine facility supplies a new shot log file along with the transfer tape.
3. In your original project, create a new bin.
4. Duplicate the edited offline sequence and move it to the new bin.

At this point, the duplicate sequence is still linked to the original media.

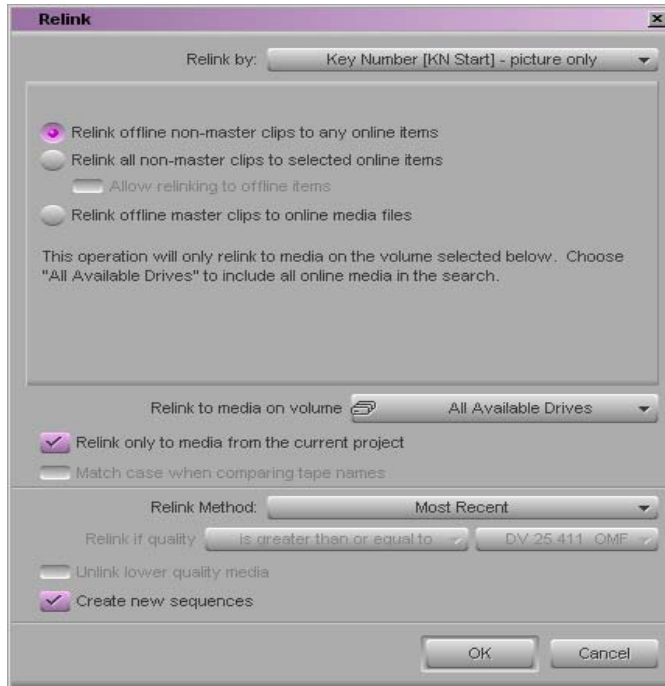


Duplicate your sequence before relinking. If you relink to the original sequence, you will lose your links to the original media.

5. Process the new log file through ALE and import it into the bin that holds the duplicated sequence. (For more information, see [“Preparing Log Files for Import” on page 29](#) and [“Importing Shot Log Files” on page 39](#).)
6. (Option) Batch capture the clips imported from the new log file. Select 1:1 or another high-quality resolution. (For more information, see [“Batch Capturing from Logged Clips” on page 151](#).)
7. Select the duplicated sequence and the new clips.

8. Select Clip > Relink.

The Relink dialog box opens.



9. Click the Relink by pop-up menu, and select “Key Number [KN Start] - picture only”.
10. Select the “Relink all non-master clips to selected online items” option.
11. (Option) If you did not batch capture the original clips, select the “Allow relinking to offline items” option.
12. In most cases, select the “Relink only to media from the current project” option.

Deselect this option if you know the new clips were captured with a different project name. Also, if the sequence does not relink to the new clips, try deselecting the option and relinking again.

13. Click OK.

The new clips are linked to the sequence.

If you duplicated the offline sequence, the offline sequence is still linked to the original clips. If you did not duplicate the sequence and you need to relink to the original clips, follow this procedure.

To relink a sequence to the original clips:

1. Duplicate the sequence.
2. Create a new bin and move the sequence to the bin.
3. Locate the original clips. Look for a bin with the original clips, or use the Media tool to locate the original clips.



For information on the Media tool, see “Using the Media Tool” in the Help.

4. Copy the clips to the bin that contains the duplicated sequence.
5. Select the sequence and the original clips.
6. Follow steps in the previous procedure.

Modifying the Pulldown Phase After Capturing

If you have captured film-originated clips (NTSC transfer only) that seem to stutter, the problem could be an incorrectly logged pulldown phase. The pulldown phase is the video frame at which the master clip starts: A, B, X, C, or D. You log this pulldown phase in the Pullin column of a bin. To solve the problem, you need to determine the correct “pullin” frame, modify the clip information, and recapture the clip.

To check for an incorrect pullin frame:

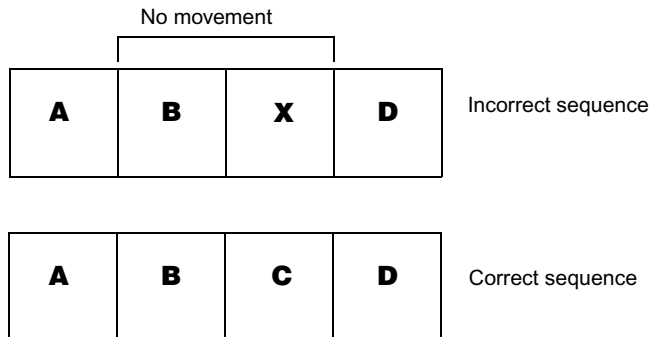
1. Look for a section of the clip that includes a series of frames with motion.
2. Step through the clip frame by frame (using the Step buttons or another method) and look for two frames that have no movement.

If the pattern is two frames of movement followed by two frames of no movement, the pullin is incorrect.

To determine the correct pullin frame, use one of the following approaches:

- ▶ If the source footage includes burn-in code with the pulldown phase, go to the start of the clip and look for the pulldown for the first frame.

- ▶ If you want to maintain the start timecode for each clip, review the original tape field by field, using the procedure described in [“Entering Pulldown Information” on page 55](#).
- ▶ If you do not need to maintain the start timecode:
 - a. Step through the clip frame by frame (using the Step buttons or another method). Look for two frames that are identical (no movement).
 - b. Think of these frames as frames B and X of a four-frame series.



Step backward (either one frame from the B frame or two frames from the X frame) to locate the correct A frame. Note the last digit of its timecode. Timecode for all A frames in the clip will start either with this digit or this digit plus 5. For example, if the A frame has the timecode 1:00:10:20, timecode for all A frames in the clip will end in either 0 or 5.

- c. Compare these digits with the last digit of the start timecode (first frame) of the clip to determine the correct pullin. For example, if the A frame ends in 0 or 5, and the start timecode ends in 4, the pullin is D.
- d. If the pullin for the clip is the X frame, you need to modify the timecode to produce a number you can associate with a pullin. For example, if the A frame ends in 0 or 5, and the start timecode ends in 2, the pullin falls on the X frame and you need to modify the timecode along with the pullin. Move forward one frame to create a start timecode ending in 3. Then you can change the pullin to C.



When you change the timecode of a clip, you lose the key number of the clip and need to enter it in the bin, adjusting it to match any changes to the timecode.

After you determine the pullin frame, modify the clip information as follows.

To modify the clip information:

1. In a bin, select the clip you want to modify and press the Delete key.
The Delete dialog box appears.
2. Deselect the option “Delete master clip(s)” and select “Delete associated media file(s).”
3. Click OK.

The original media file is deleted.

4. Make sure the clip is still selected. Press Ctrl+Shift and choose Unlink from the Clip menu.

The clip information is unlinked and you can modify the clip information.

5. Type the correct letter for the pulldown phase in the Pullin column. If necessary, type a new timecode and key number.

For multiple clips, you can use the Modify command or the Modify Pulldown Phase command. See [“Modifying the Pulldown Phase Before Capturing” on page 58](#).

With the new clip information in the bin, batch capture the clip. See [“Batch Capturing Clips” on page 153](#). If the pulldown phase is accurate, the clip should play smoothly, with no repeated frames.



This method might not work for some clips that start with either an A frame or a D frame. If, after you modify the clip as described previously, the clip still stutters, modify the clip again. This time, if the pullin is A, change it to D. If the pullin is D, change it to A.

DV Scene Extraction

While you are capturing, DV Scene Extraction allows you to generate subclips and locators automatically, based on time-of-day (TOD) information contained in the DV format.

Discontinuities in the DV TOD metadata indicate each place in a master clip or subclip where a new take was initiated on a DV camera. Using this feature, you can capture an entire DV tape as a single master clip and have the system automatically locate all the takes for you, eliminating the need to manually log.

You can perform a DV Scene Extraction in two ways:

- Set up the DV Scene Extraction option before capturing. When capturing is performed, subclips and locator marks appear in the bin.
- Perform DV Scene Extraction after capturing. Select those clips in the bin for which you want to generate subclips and locator marks.

Consider the following:

- You can perform DV Scene Extraction on any existing clip or subclip in a bin that has TOD information breaks.
- DVCPRO format does not provide TOD metadata; you cannot use DV Scene Extraction with DVCPRO format.
- DV Scene Extraction does not work on non-DV or audio-only clips.

Setting Up DV Scene Extraction Before Capturing

To set up DV Scene Extraction before capturing:

1. Click the Settings tab in the Project window.
The Settings scroll list appears.
2. Double-click Capture Settings.
The Capture Settings dialog box opens.
3. Click the DV Options tab.
4. Select DV Scene Extraction.
5. Select one of the following options:

- **Add Locators:** Creates locator marks where the TOD information breaks occur while capturing.
- **Create Subclips:** Creates subclips where the TOD information breaks occur while capturing.
- **Both:** Creates subclips and locator marks where the TOD information breaks occur while capturing.

6. Click OK.



7. Select Tools > Capture and then click the Record button.

When capturing has finished, subclips are created with the same source clip name and the file name extension *.sub.01* where TOD information breaks occurred. Locator marks appear in the master clip where TOD information breaks occurred.

Setting Up DV Scene Extraction After Capturing

You can use DV Scene Extraction with systems that include the DV/MPEG option.

To set up DV Scene Extraction after capturing:

1. Open a bin.
2. Click the clip for which you want to create subclips or locator marks.
Ctrl+click to select multiple clips.
3. Select Bin > DV Scene Extraction.
The Capture Settings dialog box opens.
4. Click the DV Options tab.
5. Select DV Scene Extraction.
6. Select one of the following options:
 - **Add Locators:** Creates locator marks where the TOD information breaks occur while capturing.
 - **Create Subclips:** Creates subclips where the TOD information breaks occur while capturing.
 - **Both:** Creates subclips and locator marks where the TOD information breaks occur while capturing.
7. If you have chosen to create subclips, select the bin where you want these subclips stored.



To cancel the process, press Ctrl+period.

8. Click OK.

In the bin, subclips are created with the same source clip name and the file name extension *.sub.01* where TOD information breaks occurred. Locator marks appear in the master clip where TOD information breaks occurred.

If you select a DVCPRO, a non-DV, or an audio-only clip, an error message appears, informing you that an incompatible clip was selected. These clips are bypassed during the DV Scene Extraction process.

Chapter 5

Importing Files

When you import files, the system converts them into objects in a bin. You can manipulate and edit these objects as you would any other clip or sequence. Any corresponding media files are stored on a target drive that you specify. The following sections describe how to import files:

- [Preparing to Import Files](#)
- [Creating and Using Import Settings](#)
- [Importing Files](#)
- [Using the Drag-and-Drop Method to Import Files](#)
- [Importing Photoshop Graphics](#)
- [Importing Editcam Files](#)
- [Reimporting Files](#)

Preparing to Import Files

Before you begin the import process, make sure the system and the files are ready for import as follows:

- For graphics file and OMFI (Open Media Framework® Interchange) file import, prepare the files in advance according to specifications described in “File Format Specifications” in the Help.
- For a complete description of all options in the Import Settings dialog box, see “Import Settings” in the Help.

Creating and Using Import Settings

You can create one or more sets of import parameters and save them as an Import setting. For example, you can create one setting for importing QuickTime® files and another for importing files from AudioVision®. This feature is especially useful when you use the drag-and-drop method to import multiple files (see [“Using the Drag-and-Drop Method to Import Files” on page 177](#)).

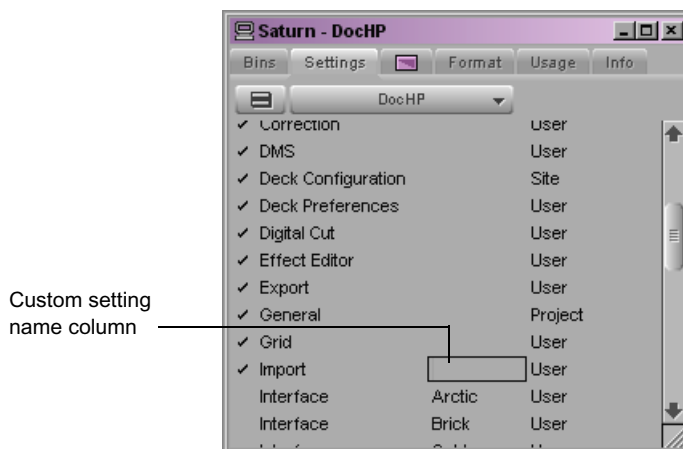
The default Import setting and any additional Import settings you create appear in the Settings scroll list (see “Understanding Settings” in the Help). After you select a setting in the Settings scroll list, the parameters remain the default settings for all imported files, unless you change them during import.

Creating a New Import Setting

To create a new Import setting:

1. Click the Settings tab in the Project window.

The Settings scroll list appears.



2. Click Import.
3. Select Edit > Duplicate.

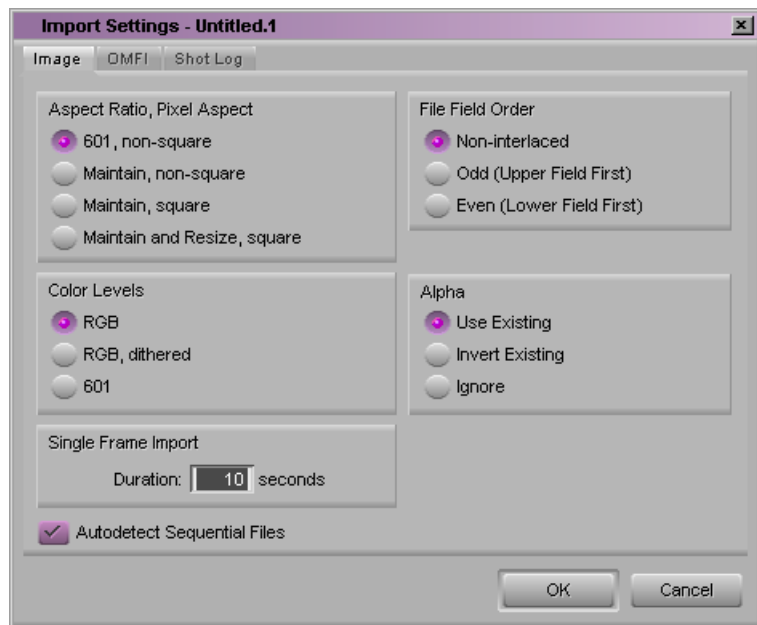
4. Name the setting by clicking the Custom setting name column, typing a name, and pressing Enter.
5. Double-click the new Import setting.
The Import Settings dialog box opens.
6. Select the appropriate options. See “Import Settings” in the Help.
7. Click OK.

Once you create a new Import setting, you can select the setting whenever you import a frame, clip, or sequence. For more information, see [“Importing Files” on page 174](#) and [“Using the Drag-and-Drop Method to Import Files” on page 177](#).

Modifying an Existing Import Setting

To modify an existing Import setting:

1. Click the Settings tab in the Project window.
The Settings scroll list appears.
2. Double-click an Import setting.
The Import Settings dialog box opens.



3. Select the appropriate options, as described in “Import Settings” in the Help.
4. Click OK.

Importing Files

You can access files for import from any folder, disk, or drive source mounted on the desktop, such as a floppy disk, fixed drive, removable drive, or network server. You can import more than one file at a time, including files of multiple types.

Consider copying all graphics files to a single folder before you import the files. Using this folder helps you manage graphics from multiple sources and streamlines the reimporting process because all graphics point to the same original path.

For information on using the drag-and-drop method, see “Using the Drag-and-Drop Method to Import Files” on page 177.

To import files:

1. If you created one or more Import settings, select the Import setting you want to use from the Settings scroll list (see “Creating and Using Import Settings” on page 172).
2. Do one of the following:
 - ▶ Double-click Media Creation in the Settings scroll list.
 - ▶ Select Tools > Media Creation.The Media Creation dialog box opens.
3. Click the Media Type tab.
4. Click the File Format menu, and select the format (MXF or OMF).

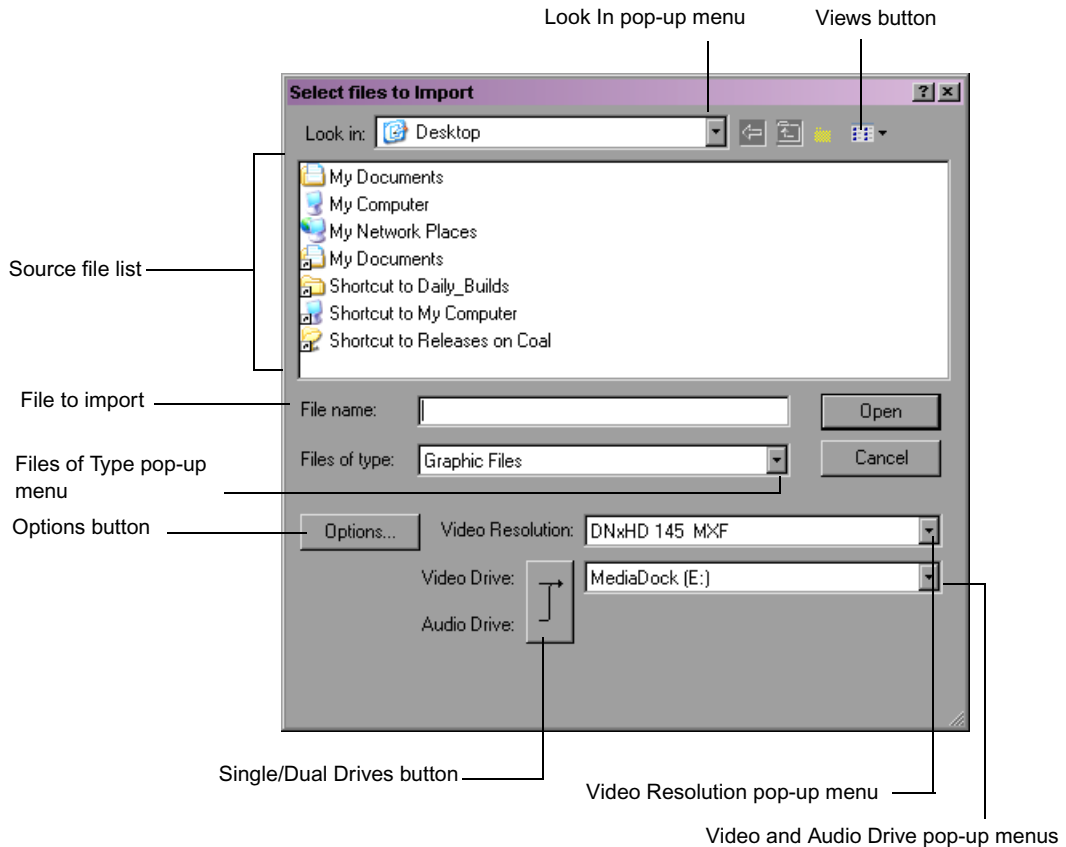


If your project uses an HD resolution, you cannot select OMF as a file format. MXF is selected by default.

5. (Option) Select audio options in the Audio tab to ensure that imported media matches the current project sample rate and bit depth.
6. Open the bin in which you want to store the imported files.

7. Select File > Import.

The Select Files to Import dialog box opens.



8. Click the Files of Type pop-up menu, and select an import file type to display only files of the selected file type in the source file list:

- ▶ Select Shot Log to import Avid Log Exchange (.ALE) files containing clip information to a bin. For more information about Avid log specifications, see “Avid Log Specifications” in the Help.
- ▶ Select either Graphic or Audio to import one of more than 30 supported graphics and audio file types. For more information on the various file types and their import specifications, see “File Format Specifications” in the Help.

- ▶ Select OMFI to import files that have been saved in the OMFI file format, such as sequences transferred from an effects or digital audio workstation.
- ▶ Select CamCutter to import clips recorded with Editcam™ or Editcam-station products. See [“Importing Editcam Files” on page 184](#).
- ▶ Select AAF to import files that have been saved in the AAF file format.
- ▶ (Windows only) Select MetaSync™ Files to import XML files that have been created by MetaSync Manager. These files must use the .aef file name extension. For more information, see *“MetaSync” in the Help*.



Avid Media Composer Adrenaline supports 24 MetaSync tracks.



By default, the system displays only file types that belong to the selected category in the file browser section of the dialog box. Click the Files of Type pop-up menu and select All Files to display all files in a selected folder, regardless of file type. Use this option if you want to batch import from multiple file types.

To import a series of sequentially numbered files, select the first file in the sequence. To automatically select the entire sequence of files, you must select the Autodetect Sequential Files option in the Import Settings dialog box.



For sequentially numbered files (for example, myfile_001.jpg, myfile_002.jpg, and so on.), the system combines all of the files into one clip.

9. (Option) Click the Options button to adjust the Import settings.

The Import Settings dialog box opens. For a complete description of all options in the Import Settings dialog box, see “Import Settings” in the Help.

- a. Select the options you want and click OK to save the settings.
 - b. Close the Import Settings dialog box and return to the Select Files to Import dialog box.
10. Use the Look In pop-up menu (Windows) to locate the folder containing the source files.

11. Click the Video Resolution pop-up menu, and select a resolution for the imported media. See [“Creating and Using Import Settings” on page 172](#).
12. Click the Single/Dual Drives button. From the pop-up menu, select a destination drive for the imported file.
13. Select files or deselect files from the source file list by using the standard selection methods for your operating system.
14. Click Open.

When the system finishes importing the files, the clips appear in the selected bin.

Using the Drag-and-Drop Method to Import Files

To import one or more files by using the drag-and-drop method:

1. Click the Settings tab in the Project window.
The Settings scroll list appears.
2. Select the setting you want to use for import. Select either the default Import setting or one you have created.
To view or modify the parameters, double-click the setting. For more information, see [“Creating and Using Import Settings” on page 172](#).
3. Open the bin in which you want to store the imported files.
4. From the desktop, open the folder that contains the files you want to import. You might have to resize the application to access the desktop.
5. Click the file you want to import and drag it to the bin. To select multiple files, Ctrl+click the files and drag them to the bin.

Importing Photoshop Graphics

You can import both single-layer and multilayered graphics created in Adobe Photoshop®. If you import multilayered graphics, you can preserve the original layers, and then edit them individually in your Avid application.

This section contains the following topics:

- [Importing Single-Layer Photoshop Graphics](#)
- [Importing Multilayered Photoshop Graphics](#)

Importing Single-Layer Photoshop Graphics

A single-layer graphic is a graphic file that was created on a single layer or a layered graphic that was flattened in Photoshop. The Avid system imports this kind of graphic as a matte key or master clip, depending on the format of the Photoshop file.

- If the graphic uses a transparent background or an alpha channel, the Avid system creates a matte key.
- If the graphic uses a background color, the Avid system creates a master clip.

To import a single-layer graphic, or a multilayered graphic that was flattened in Photoshop:

- Follow the standard instructions for importing a graphic, as described in [“Importing Files” on page 174](#).



*Single-layer files that contain transparency gradients or feathering and a transparent background do not import correctly. Partially transparent pixels are displayed with either white or black blended into them, based on the percentage of transparency. To avoid this problem, create an additional layer in the original Photoshop file that contains at least one pixel of information, such as a spot drawn with a paintbrush. Then import it as a layered file, as described in [“Importing Multilayered Files” on page 182](#). In the message box, click *Select Layers* and select only the layer that contains the graphic elements; do not select the additional layer.*

Importing Multilayered Photoshop Graphics

A multilayered graphic is a graphic file that was created in Photoshop with two or more layers. This section includes the following topics:

- [Understanding Multilayered Graphics Import](#)
- [Importing Multilayered Files](#)



You can import multilayered graphics created in Photoshop v6.0 or later.

Understanding Multilayered Graphics Import

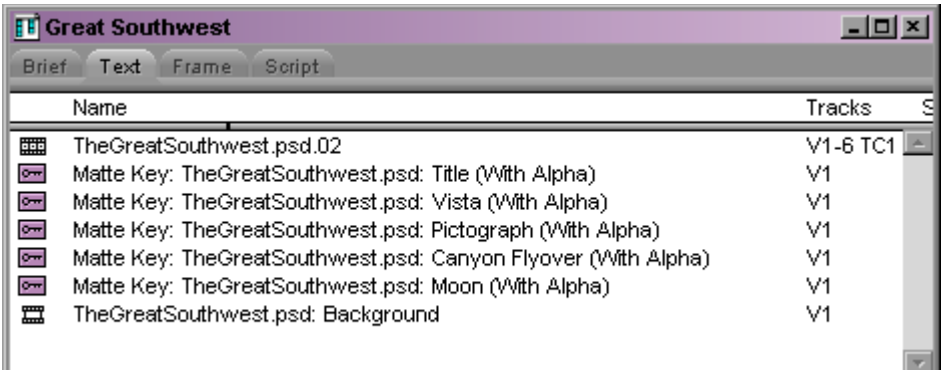
When you import a multilayered graphic, you can import each layer as a separate object (a matte key or master clip). You can then manipulate individual layers like any other matte key or master clip. You can also import the graphic as a flattened image, or select the layers to import.

For example, a graphic artist might create a collage of still images, with a layer of text. The goal is to edit the collage into a sequence, building it up one image at a time, and then add the text. The following illustration shows the graphics and layers in Photoshop.

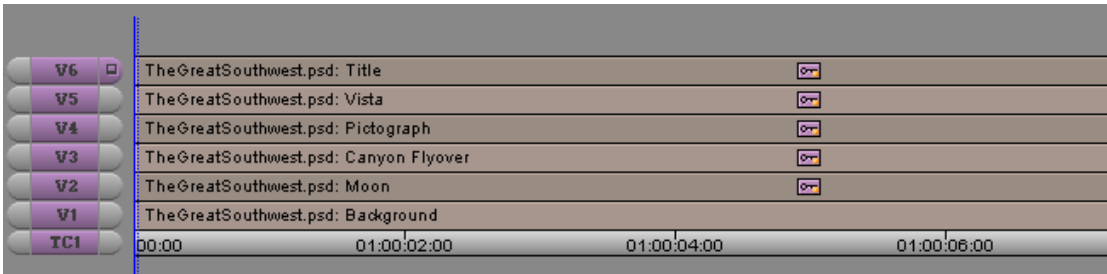


The Avid system imports each layer as an individual matte key with alpha channel. In this example, the graphic uses a background image, so the system creates the background image as a master clip. (If the graphic used a transparent background, the background layer would be imported as a matte key.)

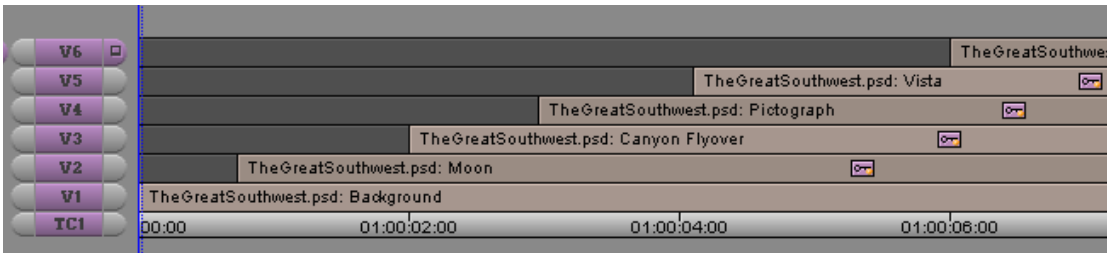
The following illustration shows the layers as they appear in a bin.



During the import, the Avid system creates a sequence with each layer on a separate video track; this makes it easy to edit all layers into the final sequence. This sequence preserves the names and order of the layers as created in the original Photoshop file, as shown in the following illustration.



You can then edit the tracks to build up to the full collage.



Note the following:

- Graphics must be RGB 8 or 16 bits, or grayscale.

- Layer order and layer names are preserved during import.
- Hidden layers are imported as matte keys.
- Opacity is converted to Foreground level in the Matte Key effect.
- Text and shape layers are rasterized (converted from vector-based to bitmap) during import.

Not all layer options and types are supported for import (see [“Support for Photoshop Layer Options” on page 181](#) and [“Support for Photoshop Special Layer Types” on page 182](#)). For example, a title with a Drop Shadow and an Outer Glow effect would not keep these effects when imported. To preserve the effects in these layers, merge them in Photoshop (as described in the Photoshop documentation) and then import the file.

You can also preserve layer effects and the original structure of the file by importing the file in two stages:

1. For the first import, click Select Layers and select all layers *except* the layers that contain layer effects.
2. For the second import, open Photoshop, hide the layers you’ve already imported, and show the layers that contain layer effects. During the import, click Flattened Image. The resulting image contains only the layers that contain layer effects.

Support for Photoshop Layer Options

Layer Option	Supported	Notes
Blending Mode	No	To preserve the blending mode (Dissolve, Multiply, and so on), merge the layer into another layer that does not use a special blending mode. Only normal mode is supported.
Opacity	Yes	The imported layer’s Level is set to the opacity specified in Photoshop. You can adjust opacity levels with the Foreground Level control in the Effect Editor.
Layer Group	Partial	Layer grouping is ignored. All layers, including grouped layers, are imported as individual layers. To preserve a clipping group, merge the grouped layers into the base layer.
Layer Set	Partial	All layers within a set are imported as individual layers.

Support for Photoshop Layer Options (Continued)

Layer Option	Supported	Notes
Layer/Set Mask	No	Layer and set masks are ignored. To preserve a layer mask, apply it to the layer. To preserve a set mask, merge the set into an empty layer. To preserve a special layer's mask, rasterize the layer.
Layer Style	No	Layer styles are ignored. To preserve a layer style, you must convert the style into layers.

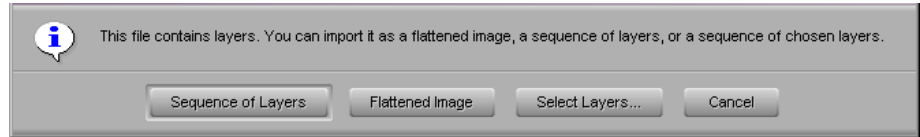
Support for Photoshop Special Layer Types

Layer Option	Supported	Notes
Type Layer	Yes	—
Solid Layer	Yes	Solid layers are imported as a graphic with a full-screen opaque alpha channel.
Gradient Layer	Yes	Gradient transparency is preserved.
Pattern Layer	Yes	—
Adjustment Layer	No	Adjustment layers include Levels, Curves, Color Balance, Brightness/Contrast, Hue/Saturation, Channel Mixer, Gradient Map, Invert, Threshold, and Posterize.

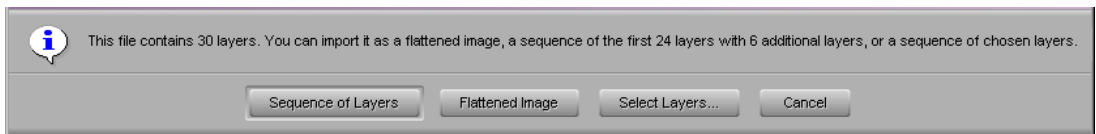
Importing Multilayered Files**To import a multilayered Photoshop file:**

1. Prepare the Photoshop graphic for import, as described in [“Understanding Multilayered Graphics Import” on page 179](#).
2. Follow the standard instructions for importing a graphic, as described in [“Importing Files” on page 174](#). To create the matte correctly, you need to click the Options button and select Alpha: Invert Existing.
3. After you select one or more files and click Open, a message box opens.

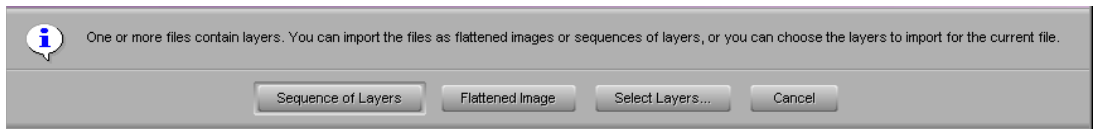
- ▶ If you select a single file, and the number of layers does not exceed the number of tracks supported by your Avid application, the following message box opens.



- ▶ If you select a single file, and the number of layers exceeds the number of tracks supported, the following message box opens.



- ▶ If you select multiple files, the following message box opens.



4. In the message box, do one of the following:

- ▶ Click Sequence of Layers if you want to preserve all layers. If the number of layers exceeds the number of tracks supported, the Avid application creates a sequence that contains the number of tracks supported. Additional layers are imported into the bin, but not as tracks in a sequence. This selection applies to all files you selected for import.
- ▶ Click Flattened Image if you want to import the graphic as a single matte key or clip. The Avid application flattens the file by combining the layers. This selection applies to all files you selected for import.



Hidden layers are not combined in the flattened image. Make sure all layers you want in the final image are visible. In addition, layers with partial transparency do not display properly in the flattened, imported image. See “Importing Single-Layer Photoshop Graphics” on page 178.

- ▶ Click Select Layers if you want to select which layers to preserve. The Select Layers dialog box opens.

Select the layers you want to import and click OK. If you select more than 24 layers, the additional layers will be imported but will not be included in the sequence.

The Avid application displays messages as it creates media for each layer. At the end of the process, the objects are displayed in the bin you selected.



The matte keys will be edited into the sequence as downstream keys. In the Effect Editor, to access parameters such as Position, deselect the Downstream Key option. You might need to render multiple matte keys. For complete information on downstream keys and rendering, see “Real-Time and Downstream Key Effects” in the Help.

Importing Editcam Files

You can import clips recorded with Ikegami® disk-based Editcam™ or Editcam-station products. The Editcam is a digital news-gathering (DNG) camera that uses Avid's CamCutter® technology.

To import Editcam files:

1. (Option) Select File > Mount All.

Performing this step in all cases is good practice, but is not necessary if you performed it previously or if you inserted the FieldPak® before starting the Avid editing application.

2. Open a bin.
3. Select File > Import.

A dialog box opens.

4. Click the Files of Type pop-up menu (Windows) and select CamCutter. Select the CamCutter bin as follows:
 - a. From the desktop, select the FieldPak by selecting the FieldPak drive letter.
 - b. Open the bin folder on the FieldPak.
 - c. Select the CamCutter bins or select the .spl files to be imported.



The Outakes.bin contains clips that were discarded by the Editcam operator. These clips are generally not imported.

5. Ignore the field specifying video resolution to be imported.
6. Ignore the field regarding video and audio drive selection.
7. Proceed with the import operation.

The system displays a dialog box asking you to identify the drives that contain the media files.

8. Select the FieldPak drive letters as appropriate.



If the drive or volume is not listed, go back to step 1 and follow the procedure again.

9. Complete the import process.

The Avid system creates entries in the selected bin that reference the clips on the FieldPak.

For more information on importing files, see [“Importing Files” on page 174](#).

Note the following restrictions:

- The CamCutter clips are not copied onto a media drive. The Avid application’s bin references the clips physically located on the FieldPak. If you remove the FieldPak, the referenced clips will appear as Media Offline.
- The FieldPak has limited performance and is used only to record and play back clips. If multiple streams of video are required to perform advanced effects, it is possible that the data cannot be supplied fast enough for proper operation. If this situation occurs, you can do one of the following:
 - ▶ Render the effects (see “Rendering Effects” in the Help).
 - ▶ Consolidate the sequence to a valid media drive (see “Consolidating Media” in the Help).
 - ▶ Import the CamCutter clips as OMFI files. This effectively copies the clips to a media drive (see “Import Settings” in the Help.)

For additional information regarding Editcam, CamCutter technology, and how these systems operate with nonlinear editors, see the Web site www.nltek.com

Reimporting Files

If you are working with master clips or sequences that contain imported material, you can use the Batch Import command to reimport the imported files. For example, you might want to:

- Upgrade the video resolution of the imported files to an online resolution for distribution.
- Create new media files when the media files are lost or accidentally deleted.



Reimporting requires your original source file. Do not delete the media files for imported files unless you have access to the source files.

The Batch Import command allows you to reimport the imported files while automatically linking the new imported material with the original master clips and sequences. When you play your sequence after reimporting the files, the new imported material plays in your sequence.

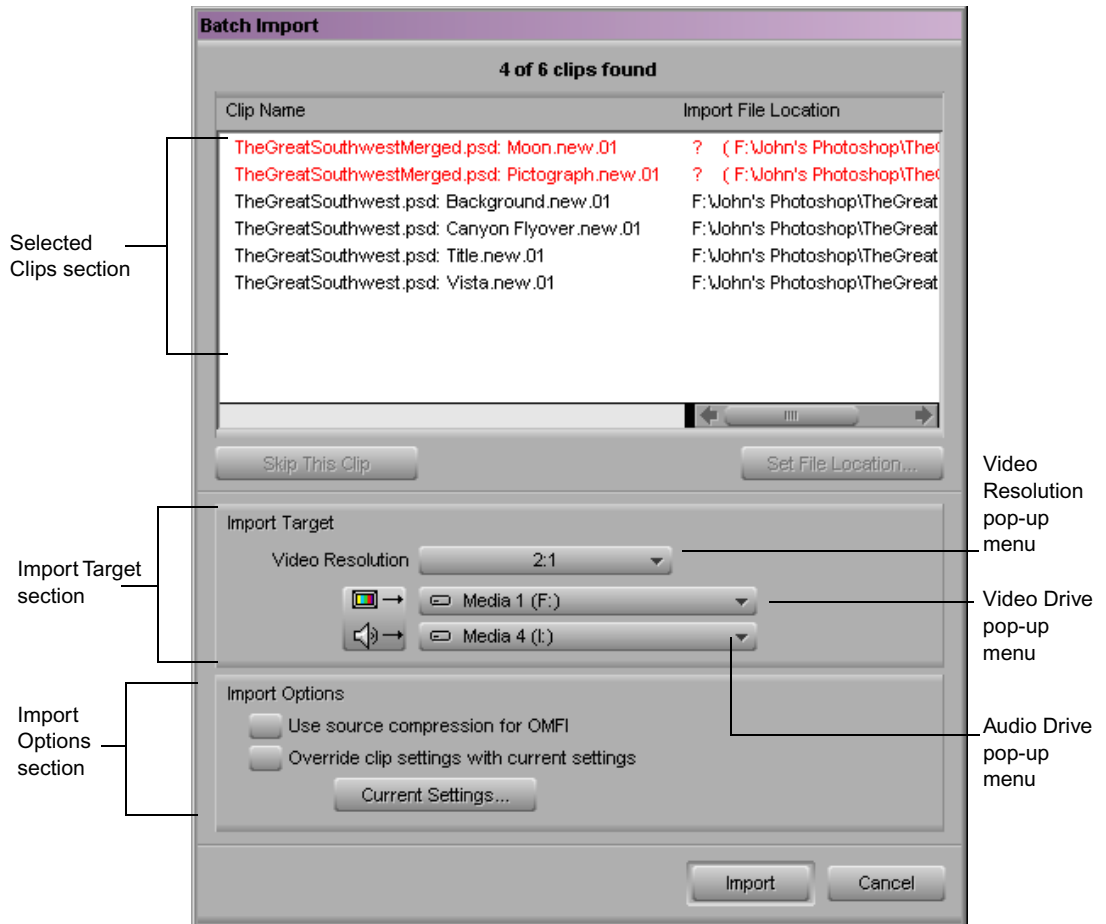
When you reimport a media file, the entire media file, including all tracks, is reimported. For example, if only the video track of an imported file that contains both video and audio was edited into the sequence, the reimport process will import both the video and audio from the source file.



OMFI files can contain only one master clip when you reimport them.

Batch Import Dialog Box

The Batch Import dialog box allows you to select a source file for each master clip that you selected in a bin. Your Avid system finds the source file automatically if the source file is located in the same folder where you last imported the file. The Batch Import dialog box opens when you select a master clip or sequence and select Clip > Batch Import.



Selected Clips Section

The Selected Clips section shows the clips you selected for import. The caption at the top of the section summarizes the total number of clips shown and how many of them were found and are available to be imported. Clips displayed in black were found and are imported. Clips displayed in red were not found in their original location. Use the Set File Location button to find the source files for clips that were not found. If you select one or more clips and click the Skip This Clip button, the clips are removed from the list and are not imported.

Import Target Section

The Import Target section allows you to select a resolution and destination drives.

- **Video Resolution pop-up menu:** Allows you to select a video resolution.
- **Video Drive and Audio Drive pop-up menus:** Allow you to select a destination drive for the media files. To select the same drive for both audio and video, click the Single/Dual Drives button.

Import Options Section

The Import Options section contains global settings that affect all the files you are importing.

- **Use source compression for OMFI:** When selected, the resolution for OMFI files compressed with native resolution types (4:1s, 3:1, 1:1) is used. This allows for fast import of these files. When deselected, the resolution in the Video Resolution pop-up menu is used as the resolution for import. This option always overrides the OMFI Resolution setting in the Import Settings dialog box.
- **Override clip settings with current settings:** Allows you to change the Import settings for all imported files. By default, each file imports using the Import settings from the last time it was imported.



If you change the Import settings by using the Import Options section, the new settings apply to all the files you are importing.

Starting the Reimport Process

To reimport imported files:

1. Mount any removable media drives that held the original graphics.
2. Do one of the following:
 - ▶ Double-click Media Creation in the Settings scroll list.
 - ▶ Select Tools > Media Creation.

The Media Creation dialog box opens.

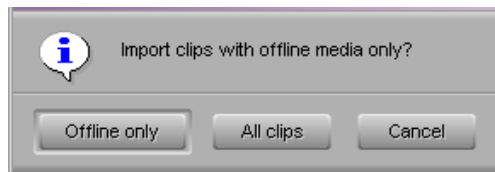
3. Click the Media Type tab.
4. Click the File Format menu, and select the format (MXF or OMF).



If your project uses an HD resolution, you cannot select OMF as a file format. MXF is selected by default.

5. Open the bin, and select the imported master clips and sequences you want to reimport.
6. Select Clip > Batch Import.

A message box opens.



7. Click one of the following:
 - ▶ **Offline only:** Reimports only the selected imported master clips that are missing their media files.
 - ▶ **All clips:** Reimports all the selected imported master clips. For example, click this button if you need to change the video resolution of the imported master clips.

The message box closes and the Batch Import dialog box opens.

8. Click the Skip This Clip button to remove a clip from the list. It will not be imported.
9. Locate the sources for files that weren't found by doing the following:

- a. Select a clip or clips displayed in red in the Selected Clips section.
- b. Click the Set File Location button.

The Locate File dialog box opens.

- c. Navigate to the location of the source file.

If you select more than one clip displayed in red, the system attempts to find the rest of the clips in the same folder as the first clip and then, if not found there, in folders that maintain the same relationship with the first clip's folder.

When the clips are found, they are displayed in black.

10. Click the Video Resolution pop-up menu, and select a video resolution for all the reimported files.
11. Click the Video Drive and Audio Drive pop-up menus, and select a destination drive or drives for all the media files.

You can separate video and audio onto different drives.

12. (Option) By default, the file is imported using the Import settings from the last time it was imported. You can change the Import settings for all clips being imported by doing the following in the Import Options section:
 - a. Select the "Override clip settings with current settings" option.
 - b. Click the Current Settings button to open the Import Settings dialog box.
 - c. Select the appropriate options.
 - d. Click OK to close the Import Settings dialog box.
 13. Click Import.
- The file is imported.

Chapter 6

Generating Output

The Avid system provides tools for generating output for individual tracks or entire sequences to various videotape or audiotape formats. In addition, you can generate an edit decision list (EDL) for use in an online suite and a cut list for creating film negatives. These options are described in the following sections:

- [Preparing for Output](#)
- [Video Output Tool](#)
- [Using the Digital Cut Tool](#)
- [Using EDL Manager](#)
- [Using the Matchback Option](#)
- [Using FilmScribe](#)
- [Preserving Information in the Vertical Blanking Interval](#)

Preparing for Output

Preparing for video output involves the following procedures:

- Render all non-real-time effects in the sequence, as described in “Real-Time and Downstream Key Effects” in the Help.
- Establish a sync source for output, as described in [“Establishing Sync for Output” on page 192](#).
- Calibrate and adjust video output levels, as described in [“Video Output Tool” on page 194](#).
- Calibrate and adjust audio output levels, as described in [“Preparing for Audio Output” on page 202](#).

- Decide whether you want to generate stereo or mono audio.
- Mix down multiple audio tracks, if necessary, as described in “Mixing Down Audio Tracks” in the Help.
- Prepare the record tapes, as described in [“Preparing Record Tapes” on page 206](#).
- (Option) Record reference bars and tone to tape, as described in [“Recording Bars and Tone” on page 207](#).
- (Option) Prepare for assemble editing, as described in [“Enabling Assemble-Edit Recording” on page 208](#).
- For 24p projects and 25p projects, select from among multiple output formats, as described in [“Selecting Output Formats for 24p and 25p Projects” on page 225](#).
- For HD projects, you can select to crossconvert or downconvert your sequence. See “Setting Video Output for HD” in the Help..

Establishing Sync for Output

You can use one of the following sources as sync for output:

- Black burst or house sync through the reference input (REF) of the Adrenaline DNA
- Tri-level sync through the HD Tri-Level Sync input of the Adrenaline hardware
- Internal timing from the Adrenaline hardware.

The source that you use depends on your production environment and your project needs.



If you are working in a facility that uses house sync or a black burst generator to maintain accurate timing between various input and output devices, you should connect the reference signal to the reference input (REF) on the Adrenaline hardware before performing a digital cut.

You should connect the sync source before you start the Avid application. If you connect a sync source while the application is running, you can reestablish sync by doing one of the following:

- ▶ Quit and then restart the Avid application.
- ▶ Open the Digital Cut tool.

- Enter and then exit Capture mode.

To select the sync source:

1. Select Tools > Video Output Tool.
2. Select the sync source from the OutputLock menu: Reference or Tri-Level.

If the source you select is not correctly connected, or if the sync generator is set to an incorrect frame rate, the application will automatically switch to internal timing.



Avid recommends that you use an external sync source whenever you record a digital cut to tape. Connect the sync source to both the Adrenaline hardware and the tape deck.

Selecting Sync for HD Formats

Most HD formats allow you to use either black burst or tri-level as a sync source. One exception is 1080p/23.976; you cannot use reference for 1080p/23.976. Select the type of sync generator according to the following table.

Output Sync Options

Sync Source	Project Format				
	1080i/59.94	720p/59.94	1080p/23.976	1080p/25	1080i/50
Tri-Level frame rate setting	1080i/59.94	720p/59.94	1080Psf/23.976	1080P/25	1080i/50
Black burst	NTSC	NTSC	—	PAL	PAL

Using LTC Timecode for Output

Your Avid system supports LTC (longitudinal or linear timecode) output. The LTC OUT connector on the Adrenaline DNA provides SMPTE or EBU timecode you can use as a sync source for decks with built-in synchronizers or to stripe a destination tape. You can also use LTC to record non-drop-frame

timecode for downstream encoding. See [“Outputting Drop-Frame and Non-Drop-Frame Timecode Simultaneously for Downstream Encoding”](#) on page 229.

Video Output Tool

Use the Video Output tool to set options for the video output signal. Select the SD tab for standard-definition sequences, and select the HD tab for high-definition sequences.

For information on these options, see the following topics:

- [Calibrating for Video Output](#)
- [Establishing Sync for Output](#)
- [Preserving Information in the Vertical Blanking Interval](#)

Calibrating for Video Output

You can calibrate for video output by using any of the following methods:



Before you calibrate video output for an NTSC-EIAJ project (for Japan), make sure the “NTSC Has Setup” option is *not* selected in the General Settings dialog box, accessed from the Settings scroll list of the Project window.

- **Calibrating for video output by using the factory presets:** You should use the factory presets if you do not have an external Waveform monitor, or your site engineers calibrate the system as a general maintenance procedure. See [“Using the Factory Preset Buttons”](#) on page 195.
- **Calibrating for video output:** All users can follow the steps for calibrating video output, as described in [“Basic Video Output Calibration”](#) on page 195.
- **Calibrating/syncing output signals in a production facility:** Advanced users and house engineers should follow the steps for adjusting and conforming output signals to house standards, as described in [“Advanced Video Output Calibration”](#) on page 200.

Using the Factory Preset Buttons

The preset buttons in the Video Output tool show the status of each Calibration setting as follows:



- When the Video Output tool opens the first time you run the application, all preset buttons are lit (green), with the factory presets loaded for each slider.
- When you click a slider of a lit preset button, the button dims (appears gray), and the slider returns to the most recent manual level setting.
- When you click an unlit preset button, it becomes lit (green), and the slider moves to the factory preset level for that parameter.

As you adjust levels in the tool, you can switch the preset buttons between the levels you set manually and the factory preset levels.

Basic Video Output Calibration

You can perform basic output calibration when working with a standalone editing workstation or in a production environment that does not require advanced calibration of horizontal phase or use of test patterns according to specific house standards.

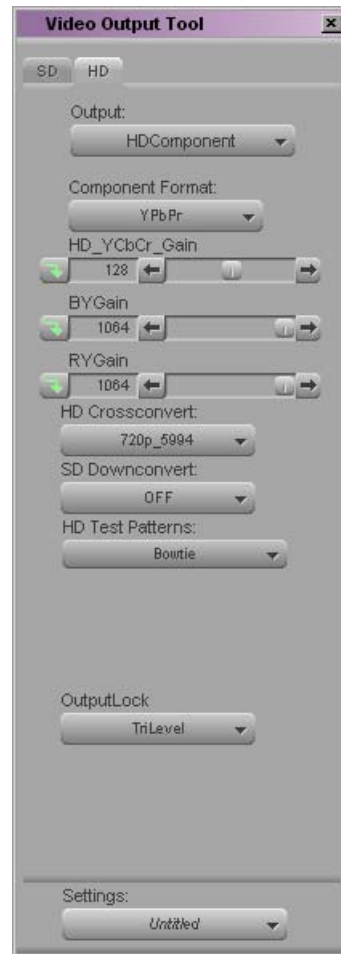
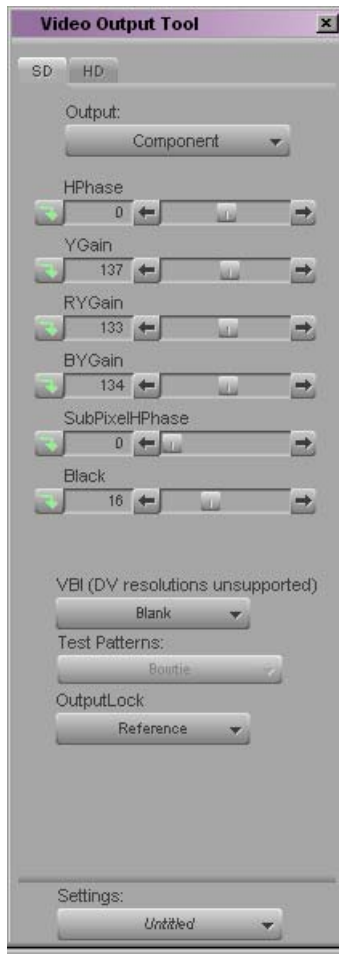


Calibrating video output requires external Waveform and Vectorscope monitors. If you do not have external Waveform or Vectorscope monitors, keep the Video Output tool preset values.

To calibrate for video output:

1. Select Tools > Video Output Tool.

The Video Output tool opens.



2. Click the SD or HD tab, depending on the project format.
3. From the Output menu, select the video signal for your output device:
 - For SD, select either Component, Composite, or SVideo.
 - For HD, select HD Component. Then from the Component Format menu, select YPbPr (the default) or RGB.




The Video Output tool does not display basic calibration controls for Serial Digital, DV, or HD-SDI. All basic levels remain in digital form and cannot be adjusted from within the Avid application. For H-phase adjustment of a Serial Digital output signal, see “Calibrating the System with Passthrough Signals” on page 201.

The Video Output tool displays the appropriate parameters for the selected video format, as described in the following table.

Video Format Output Parameters

Parameter	Video Formats	Description
H Phase	SVideo, Component and Composite	See “Calibrating the System with Passthrough Signals” on page 201.
Hue	SVideo and Composite	An attribution of color perception based on varying proportions of red, green, and blue in the video signal. Also known as <i>color phase</i> .
Sat	SVideo and Composite	Saturation: a measurement of chrominance or the intensity of color in the video signal.
SC Phase	SVideo and Composite	Subcarrier phase: The color-burst portion of a composite or S-Video signal used to synchronize the timing of two or more video signals.
Brightness	SVideo and Composite	Brightness is the relative lightness or darkness of the image.
Contrast	SVideo and Composite	The variation of the lightest or brightest in comparison to the darkest portions of the image.
SubPixel HPhase	SVideo, Component and Composite	A fine adjustment of Horizontal phase.
Y Gain YCbCr Gain	Component HD Component	A measurement of luma (Y) in the video signal that is the whitest point in the visible picture. Color bars are used to set the white level.
RY Gain	Component HD Component	The red (R) minus luminance (Y) color-difference signal of an <i>analog</i> component system in the SMPTE NTSC video standard. The signal consists of the following base equation for red (R), green (G), and blue (B) components: $R-Y = -0.587G - 0.114B + 0.701R$

Video Format Output Parameters (Continued)

Parameter	Video Formats	Description
BY Gain	Component HD Component	<p>The blue (B) minus luminance (Y) color-difference signal of an <i>analog</i> component system in the SMPTE NTSC video standard. The signal consists of the following base equation for red (R), green (G), and blue (B) components:</p> $B-Y = (-0.587G + 0.886B - 0.299R) * \text{gain value}$
VBI		<p>(Vertical Blanking Interval) Instructs the system to preserve or blank 5 lines above each field in NTSC and 8 lines above each field for PAL when you when you display a sequence or perform a digital cut. These lines are used to store additional encoded information such as closed captioning, edgecodes or key numbers for film projects, or various interactive or enhanced TV codes.</p> <ul style="list-style-type: none">• Blank — Blank the VBI information when the system performs a digital cut. This option also allows you to turn off the display of VBI information.• Preserve — Preserve the VBI information for a digital cut. This option also allows you to turn on the display of VBI information after a Blank command has been issued. <p>If your facility uses VBI information, you add the VBI information to the video before the footage is captured by the Avid system. The system automatically captures VBI information when you capture footage, The VBI option in the Video Output tool allows you to preserve the information when you output your sequence.</p> <p> You cannot preserve VBI information for DV or HD resolutions. You can only preserve VBI information for JFIF, uncompressed, and MPEG IMX resolutions.</p> <p>By default the system does not display VBI information and does not preserve the information for digital cuts. The system fills the vertical blanking interval with video black (R=G=B=16).</p> <p>Only preserve these extra lines if you have a specific need for the information. For more information see “Preserving Information in the Vertical Blanking Interval” on page 238.</p> <p><i>The VBI value resets to Blank each time you launch the application. If you want to preserve VBI information, set the value before you perform a digital cut.</i></p>

4. Display color bars for calibrating:

- If you edited digital bars and tone into the sequence, go to the head of the bars and tone and click Play.
- You can use internal bars from the Video Output tool by clicking the Test Patterns pop-up menu, and selecting either SMPTE_Bars, (SMPTE standard bars), ColorBars (full-field bars at 75% level), or ColorBars_100 (full-field color bars at 100% level).

Bars are displayed on the Client monitor, and the signal appears on the external Waveform and Vectorscope monitors.



The internal Waveform and Vectorscope monitors do not display output signals from the system.

5. Adjust luminance values based on the following table.

Luminance Settings for Video Output

Parameter/ Video Standard ^a	SMPTE Bars	Full-Field Bars at 75% Signal Level	Full-Field Bars at 100% Level
Black level (setup)	Adjust Black or Brightness slider to place black level at:	Adjust Black or Brightness slider to place black level at:	Adjust Black slider to place black level at:
Video Standard:			
NTSC	7.5 IRE	7.5 IRE	7.5 IRE
NTSC-EIAJ	0.0 IRE	0.0 IRE	0.0 IRE
PAL	NA ^b	0.3 V	0.3 V
White level (gain)	Adjust Video/Y Gain slider to place white level at:	Adjust Video/Y Gain slider to place white level at:	Adjust Video/Y Gain slider to place white level at:
Video Standard:			
NTSC	100 IRE	100 IRE	100 IRE
NTSC-EIAJ	100 IRE	100 IRE	100 IRE
PAL	NA ^b	1.0 V	1.0 V

a. Includes NTSC-EIAJ used in Japan.
b. NA = Not applicable.

6. Adjust the Hue and Sat slider (composite or S-Video output), or the RY Gain and BY Gain sliders (component output) until the angle and amplitude of the six color vectors fall within the target boxes on the Vectorscope monitor.
7. Select from the VBI menu to preserve 5 lines above each field in NTSC or 8 lines above each field for PAL.
8. Select Internal, Reference, or Tri-Level from the OutputLock menu to lock your output connection to the appropriate signal.



Sync for output comes from the reference input (REF) or HD Tri-Level Sync input on the Adrenaline DNA or from internal timing. For more information, see “Establishing Sync for Output” on page 192.



If you do not have separate Vectorscope and Waveform monitors, you can use the Client monitor’s “blue only” feature, if available, to adjust SC phase output. For more information on this feature, see your monitor’s documentation.

9. Save this setting by clicking the Settings pop-up menu, selecting Save As, typing a name, and clicking OK.



Output settings are Site settings, available to all users and all projects on the system.

Advanced Video Output Calibration

Advanced users and site engineers can use the following procedures to fine-tune output signals by using various test patterns and phase control. You can also adjust output by using the passthrough signal from an input device.

Using Test Patterns

Use the pop-up menu of test patterns to calibrate the system output.

To display a test pattern:

- In the Video Output tool, click the Test Patterns pop-up menu, and select a pattern.

Calibrating the System with Passthrough Signals

If you work in a production environment in which house standards are used to synchronize a number of devices including the source decks connected to your Avid system, you can calibrate the system one time to conform to existing standards with the least amount of alteration of the signal. This method involves the use of a passthrough signal (a signal that gets sent directly from an input source through to the output channels).

This advanced form of calibration is an alternative to Video Input tool Calibration settings for each source tape, and involves calibrating tapes at the source device, using external time-base correction. You need both a signal generator and external Waveform and Vectorscope monitors to calibrate the system with passthrough.

To calibrate using a passthrough signal:

1. Connect a source signal with a test pattern from a signal generator.
2. Select Tools > Video Input Tool.
The Video Input tool opens.
3. Click the Input pop-up menu, and select a video format.
The selected input provides the passthrough signal.
4. Calibrate the input if necessary by using the Video Input tool, as described in [“Calibrating Video Input” on page 116](#).
5. Save the input calibration settings as the system *Default* setting, as described in [“Saving Video Input Settings” on page 122](#).
6. Select Tools > Video Output Tool.
The Video Output tool opens.
7. Select Tools > Capture Tool.
The Capture tool opens.
With the Capture tool active, the input signal passes through to the output channels.
8. Select an output format in the Video Output tool.



You can precisely match only one output format at a time in phase to the reference signal. In most cases, you should select either Composite or Serial Digital.

9. Calibrate any of the available controls in the Video Output tool while checking the external Waveform and Vectorscope monitors. For example, composite output provides Gain, and Saturation controls.



For more information on using the Video Output tool, see “Video Output Tool” on page 194.

10. In the Video Output tool, click the Test Patterns pop-up menu, and select a test pattern.

The test pattern appears and is sent to the output channels (the input signal is no longer passed through). Additional controls are enabled in the Video Output tool for phase control.

11. Make any necessary adjustments to H phase, SC phase, and Hue by using the sliders in the Video Output tool while checking the external Waveform and Vectorscope monitors.



Whenever the Capture tool is active, hue, horizontal phase (H phase), and subcarrier phase (SC phase) are set to values determined by the input circuitry and are not available to control the outputs. Therefore, these controls appear dimmed during passthrough.

12. Save this setting with an appropriate name by clicking the Settings pop-up menu in the Video Output tool, selecting Save As, typing a name, and clicking OK.

The Video Output setting, a Site setting, applies to all users and all projects on the system. The Video Input setting you saved and named *Default* is recalled each time a new tape is loaded for capturing in the current project only.

Preparing for Audio Output

The Audio tool allows you to generate and customize calibration tone, and to adjust global output levels. For information on additional audio mix procedures such as adjusting volume and pan or mixing down selected tracks, see “Exploring the Audio Tools” in the Help.

The Avid system supports direct output of up to eight channels of audio, depending upon your system’s configuration.

Setting the Calibration Tone

The Audio tool provides an internal calibration tone you can customize and play as a reference signal on a digital cut. You can use the recorded reference signal for calibrating the digital cut audio at another site.

The default tone playback is –20 dB (digital scale) with a 1000-Hz signal. In some cases, you might need to customize the signal. For example, a common reference signal convention for audio work involves recording 30-second segments of 1-kHz, 10-kHz, and 100-Hz tone back-to-back.

For information on creating tone media, see [“Creating Tone Media” on page 108](#).

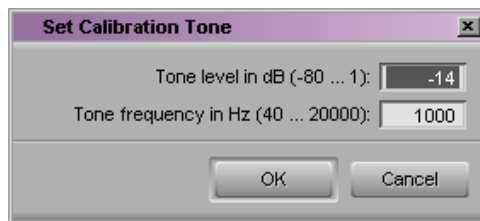
To change the parameters for the calibration tone:

1. Select Tools > Audio Tool.

The Audio tool opens.

2. Click the PH (Peak Hold) pop-up menu, and select Set Calibration Tone.

The Set Calibration Tone dialog box opens.



3. Type new values for the tone level and frequency text boxes, and click OK.

To play back the tone:

- ▶ Click the PH (Peak Hold) pop-up menu, and select Play Calibration Tone.

To check the adjusted tone level in the meters:

- ▶ Switch the In/Out toggle buttons to O for Output.

Calibrating Global Output Levels

You can use the meters in the Audio tool and the Output Control slider (master attenuator) in the Output tab in the Audio Project Settings dialog box to make global level adjustments for output from the system. These adjustments affect levels for all output tracks to both the speakers and record devices.

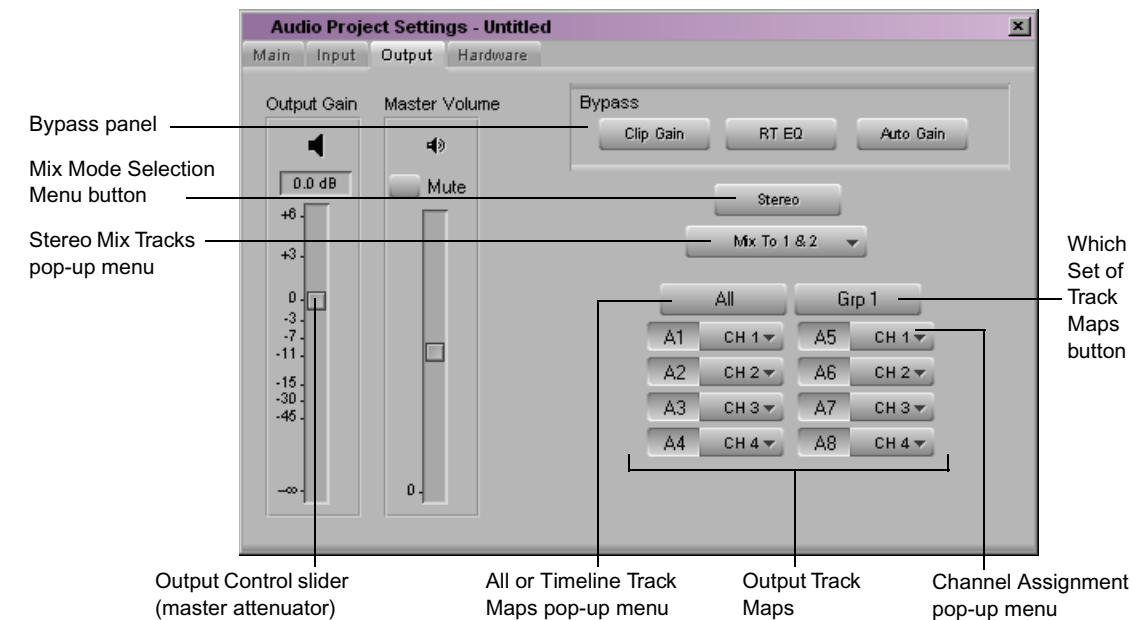


You should leave this output level at the factory preset of 0 dB. Adjust the level only when necessary to raise or lower the overall volume, based on the headroom parameters of the record format, or for consistently overmodulated or undermodulated source material.

Adjusting Audio Output

To adjust global audio output:

- 1. In the Project window, click the Settings tab.
The Settings scroll list appears.
- 2. Double-click Audio Project.
The Audio Project Settings dialog box opens.
- 3. Click the Output tab.



4. Click the Mix Mode Selection Menu button, and select a type of output.
 - Select Stereo to mix the currently monitored audio tracks into a stereo pair.
 - Select Mono to pan all the currently monitored tracks to center.
 - Select Direct Out to map monitored tracks directly to up to eight channels of output (depending on your hardware configuration). By default, Direct Out maps all audio tracks in numerical sequence to existing output channels. You can remap a track to any channel by clicking a Channel Assignment pop-up menu and by selecting another channel.
5. (Option) Depending on your type of output, you can make additional adjustments:
 - By default, Stereo directs the mixed tracks to output channels 1 and 2. You can also direct mixed tracks to output channels 3&4, 5&6, or 7&8.
 - You can select All or Timeline from the All or Timeline Track Maps pop-up menu above the track and channel selectors buttons as follows:

Timeline allows you to assign output channels to the tracks monitored in the Timeline.

All allows you to select between all available tracks.

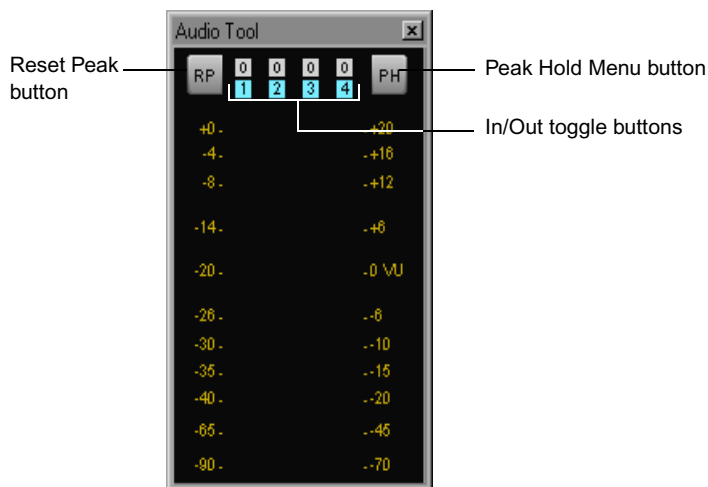


If you want to map output channels to audio channels not listed in the Output Tracks Maps area, click the Which Set of Track Maps button to display other available audio tracks. The maximum number of available tracks is 24.

- You can select Clip Gain, RT EQ, or Auto Gain in the Bypass panel to disable the customized volume, real-time EQ, or automation gain effects you applied with the other audio tools.

6. Select Tools > Audio Tool.

The Audio tool opens.



7. Click the In/Out toggle buttons above the meters to display O for Output.
8. Play back one of the following sources of reference audio by doing one of the following:
 - ▶ Click the Peak Hold (PH) Menu button, and select Play Calibration Tone.
 - ▶ Play back a representative sequence or clip containing audio.
9. Watch the levels in the meters, and adjust the master attenuator to the level that you want.



To adjust levels for individual tracks, use the Audio Mix tool.

10. Close the Audio tool.
11. Close the Audio Project Settings dialog box.

Preparing Record Tapes

There are two basic methods of recording to tape: frame-accurate recording by using the Digital Cut tool, and manual recording by using controls on the record deck. Each of these methods requires different treatment of the record tapes.

Frame-Accurate Recording

Frame-accurate recording involves using the Digital Cut tool to record your sequence onto either a *prestriped* tape (a tape with prerecorded control track and timecode) or a partially striped tape.

Before you can record a frame-accurate digital cut, you must prepare the record tapes in advance by using one of the following options:

- If you intend to perform *assemble-edit* recording, you must record black with timecode onto the tape including the necessary preroll prior to the IN point plus at least 10 seconds (partially striped tape).
- If you intend to perform *insert-edit* recording, you must *stripe* the record tapes (record black and timecode for the entire duration of the tape) in advance (prestriped tape).

For complete instructions on recording a frame-accurate digital cut, see [“Using the Digital Cut Tool” on page 209](#).



The Avid system supports LTC output for recording onto tapes. For more information, see “Establishing Sync for Output” on page 192.



DV cameras or decks controlled through a 1394 connection do not support commands for frame-accurate recording. As a result, if you are preparing to record to one of these devices, you can use the Digital Cut tool in either Local mode or Remote mode, but all tracks are enabled for recording and cannot be modified.

Recording Bars and Tone

You can record a portion of bars and tone onto the tape before recording a digital cut. There are two methods of recording bars and tone to tape:

- If your recording must be frame accurate, consider adding a segment of digital bars and tone to the front of your sequence, or prepare it as a separate sequence you can record by using the Digital Cut tool. For more information, see “Importing Color Bars and Other Test Patterns” in the Help.
- If your recording does not need to be frame accurate, you can manually record direct output of bars and tone from your Avid system.

To manually record bars and tone:

1. Select Tools > Video Output Tool and Tools > Audio Tool.
2. In the Video Output tool, click the Test Patterns pop-up menu, and select a color bars pattern.
3. In the Audio tool, click the PH (Peak Hold) pop-up menu, and select Play Calibration Tone (see [“Setting the Calibration Tone” on page 203](#)).
4. Set the record deck to Local for manual recording.
5. Record the bars and tone as either an insert or assemble edit according to the operation of your record deck and selected method. Your deck must be capable of frame-accurate editing to perform this step.

For information on creating your own tone media, see [“Creating Tone Media” on page 108](#).

Enabling Assemble-Edit Recording

Insert editing is the default setting for the Digital Cut tool. You can also use Assemble-Edit settings in the Avid application, along with the assemble-editing capabilities of your record deck, to quickly record frame-accurate digital cuts without striping entire tapes in advance.



To avoid accidentally breaking timecode on prestriped tapes during digital cut recording, enable assemble editing only when in use, and disable it during normal insert edit recording.



DV cameras or decks controlled through a 1394 connection do not support commands for frame-accurate recording. As a result, if you are preparing to record to one of these devices, you can use the Digital Cut tool in either Local mode or Remote mode, but all tracks are enabled for recording and cannot be modified.

To enable assemble editing:

1. Double-click Deck Preferences in the Settings scroll list of the Project window.
The Deck Preferences dialog box opens.
2. Select the “Allow assemble edit for digital cut” option.
3. Click OK.

Once assemble editing is enabled, you select additional options in the Digital Cut tool when you are ready to record, as described in [“Recording a Digital Cut to Tape \(Remote Mode\)” on page 214](#).

These switches are often located below the deck’s playback control buttons. For more information, see the documentation provided with your record device.

In addition, make sure the record deck has the following settings:

- The free run/rec (record) run switch should be set to record run.
- The Ext (external)/Int (internal) sync switch should be set to internal.
- The switch for internal timecode should be set to Regen (regenerate) or Slave Lock, not Preset.
- After you record 15 to 30 seconds of timecode onto the record tape for jam syncing, return the Local/Remote switch to Remote for deck control from within the Avid application.

Using the Digital Cut Tool

The Digital Cut tool provides controls when you record a sequence to tape. The Digital Cut tool has the following operating modes:

- **Remote mode** allows you to control the record deck by using the deck controller in the Digital Cut tool. This mode provides frame-accurate control when you record a sequence to tape. See [“Recording a Digital Cut to Tape \(Remote Mode\)” on page 214](#).
- **Local mode** allows you to manually control the record deck by using the controls on the deck. This mode is useful when you need to use non-Avid-controlled decks, such as consumer-grade VHS or Hi8. [“Recording a Digital Cut to Tape \(Local Mode\)” on page 217](#).

You can use either Remote mode or Local mode to preview the output of a digital cut before recording it to tape. See [“Previewing a Digital Cut” on page 213](#).

You can manually record a digital cut, but the recording is not frame accurate. See [“Preparing Record Tapes” on page 206](#).



Sync for output comes from the reference input (REF) or HD Tri-Level Sync input on the Adrenaline DNA, or from internal timing. For more information, see [“Establishing Sync for Output” on page 192](#).

The Digital Cut tool provides several options for you to manage the recording of your sequence. For example, you can:

- Record by using either assemble edit, insert edit, or crash record.
- Record a selected portion of the sequence or selected tracks.
- Record an entire sequence.
- Record according to different timecode parameters.
- Select the sequence video and audio tracks to record (Sequence Track buttons).
- Have the system locate real-time effects with dropped frames.
- Select the tracks to record to on the tape (Enable Track button – Remote mode only).
- Add black at the end of a digital cut.

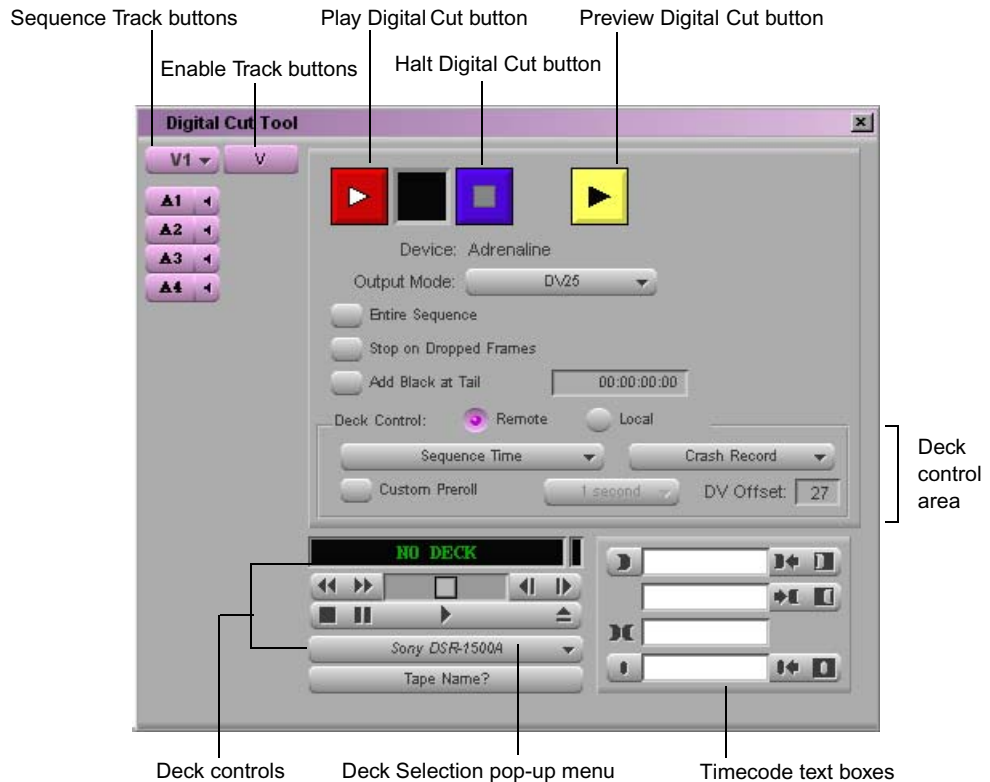
In Remote mode, the Digital Cut tool includes its own deck controls for:

- Cueing a record deck from the Digital Cut tool.
- Cueing the tape and adding an IN point. This capability applies when you click the pop-up menu in the deck control area, and select Mark In Time.

The Mark OUT button does not appear in the deck controller section of the Digital Cut tool because it has no effect on digital cuts. Also, the Mark OUT and Duration text fields are read-only. You cannot alter them.



Depending on the system configuration, you might need to use the deck controls in the Capture tool to review a digital cut.



Selecting a Deck in the Digital Cut Tool

The Deck Selection pop-up menu in the Digital Cut tool contains a list of all decks that were connected to the system, turned on, and initialized when you opened the Digital Cut tool.



Device templates from older Avid systems are not compatible with Adrenaline DNA systems. Do not copy Meridien templates to Adrenaline DNA systems, and do not copy Adrenaline DNA templates to Meridien systems.

The Deck Selection pop-up menu also lists three commands:

- **Adjust Deck** opens the Deck Settings dialog box. Changes you make apply to the selected deck. For information on Deck settings, see “Deck Settings” in the Help.

- **Auto-configure** allows you to automatically configure the selected deck with the default deck settings for that deck.
- **Check Decks** helps to reestablish deck control if the power to your decks was off or the decks were disconnected when you opened the Digital Cut tool.

If the words “No Deck” appear in the pop-up menu, you need to configure a deck in the Deck Configuration dialog box. See [“Configuring Decks” on page 80](#).

If a deck name appears in *italics* on the pop-up menu, the deck has lost power or has been disconnected. Click the pop-up menu, and select Check Decks to reestablish deck control.

To activate an available deck for a digital cut:

- ▶ Click the Deck Selection pop-up menu, and select the deck.

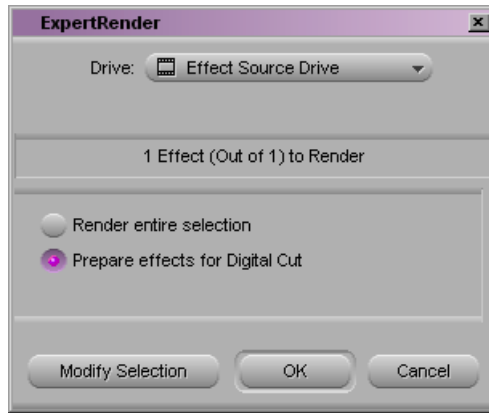
Using ExpertRender to Prepare Effects for a Digital Cut

Real-time effects might exceed the capabilities of your CPU and cause dropped frames during a digital cut. You can choose to have the Avid application select and render effects that might cause dropped frames.

To prepare effects for a digital cut:

1. Load the sequence you want to output.
2. Open the ExpertRender dialog box:
 - ▶ Select Clip > ExpertRender at Position.
 - ▶ Right-click in the Timeline, and select ExpertRender at Position.

The ExpertRender dialog box opens.



3. Select “Prepare effects for Digital Cut,” and then click OK.

Previewing a Digital Cut

You can preview your digital cut in Remote mode or Local mode before actually making the cut.



You can manually record a digital cut, but the recording is not frame accurate. For more information, see “Preparing Record Tapes” on page 206.

To preview a digital cut:

1. Select Output > Digital Cut.
The Digital Cut tool opens.
2. Select Remote or Local in the Deck Control options area.
3. Select the options you want for the digital cut.
4. Select the audio tracks and topmost video track you want represented in the digital cut preview by using the Sequence Track buttons.
The track display in the Digital Cut tool varies according to the tracks existing in the sequence.
5. Click the yellow Preview Digital Cut button.



The Digital Cut tool goes through the motions of an insert edit and shows you how the tape will appear before, during, and after the cut, but does not actually change the master tape. You can then modify your digital cut, if you want, before it is committed to the master tape.



To stop the preview at any time, press the space bar or click the Halt Digital Cut button.

Recording a Digital Cut to Tape (Remote Mode)

Recording in Remote mode allows you to control your record deck by using the deck controller in the Digital Cut tool. This mode provides frame-accurate control when you record a sequence to tape.

Prior to recording a digital cut, make sure you have selected the appropriate device.

To select a device for a digital cut, do one of the following:



- ▶ Click the DNA or 1394 button in the Timeline top toolbar to display either DNA or 1394.
- ▶ Select Special > Device > IEEE 1394 or Adrenaline.

The appropriate icon displays in the Timeline top toolbar, and a check mark appears next to the selected option in the Device menu.

To record a digital cut to tape:

1. Load a sequence into the Record monitor. (You cannot access digital cut options without a sequence loaded.)
2. Select Output > Digital Cut.
The Digital Cut tool opens.
3. Select the Output Mode and Bit Depth according to the [“Output Mode Resolution Options” on page 220](#).
4. Select or deselect the Entire Sequence option based upon the following:
 - ▶ Select the Entire Sequence option if you want the system to ignore any IN or OUT points and to play the entire sequence from start to finish.
 - ▶ Deselect the Entire Sequence option if you have established an IN point, an OUT point, or both for recording a portion of the sequence.

5. Click the Effect Safe Mode button (selected by default) to allow the system to notify you that an effect needs to be rendered.

During a digital cut, real-time effects can drop frames. To eliminate the chance of dropping frames, it's best to render the real-time effects that might drop frames. The Effect Safe Mode option analyzes and identifies real-time effects that might cause dropped frames during the digital cut and allows you to render them. After all the real-time effects are rendered, the system automatically initiates the digital cut.

6. (Option) Select Stop on Dropped Frames. This option appears for all real-time digital cuts if you have an Avid Adrenaline or a DV device attached to your 1394 port. When you select this option, if the system detects a dropped frame during output, the digital cut stops. You can fix the frame with ExpertRender and then continue. For more information, see “ExpertRender” in the Help.
7. (Option) Select the Add Black at Tail option and enter a duration to add black at the end of the digital cut.
8. Click the Deck Selection pop-up menu, and select a deck. See [“Selecting a Deck in the Digital Cut Tool” on page 211](#).
9. Select Remote in the Deck Control options area.
10. Click the pop-up menu, and select either Insert Edit or Assemble Edit.

This menu appears only if you enabled assemble editing in the Deck Preferences dialog box. For more information about this option, see [“Enabling Assemble-Edit Recording” on page 208](#).



DV cameras or decks controlled through a 1394 connection do not support commands for frame-accurate recording. As a result, if you are preparing to record to one of these devices, you can use the Digital Cut tool in either Local mode or Remote mode, but all tracks are enabled for recording and cannot be modified.

11. Click the pop-up menu in the Deck Control options area, and select an option to indicate where to start recording on the tape.
 - ▶ Select Sequence Time to start the recording at a timecode existing on tape that matches the start timecode of the sequence. If you intend to record several sequences to tape one after another, this option requires resetting the start timecode on each sequence to match appropriate IN points on the tape.

- ▶ Select Record Deck Time to ignore the timecode of the sequence and to start the recording wherever the record deck is currently cued.



You can change the start timecode to match the record tape by using the Get Clip Info command. For more information, see “Changing the Sequence Name and Timecode” in the Help.

- ▶ Select Mark In Time to ignore the sequence timecode. Establish a specific IN point on the record tape by cueing and marking with the deck controls.



12. (Option) Select the Custom Preroll option, click the pop-up menu, and select the number of seconds to indicate how many seconds the tape rolls before the digital cut starts. This option overrides the Preroll setting in the Deck Settings dialog box.
13. Select the audio and video tracks you want represented in the digital cut by using the Sequence Track buttons. The display of tracks in the Digital Cut tool varies according to the tracks existing in the sequence.
14. Select the video and audio tracks to record to on the tape by using the Enable Track buttons.
15. For 23.976p, 24p, and 25p projects, select an output format as described in “Selecting Output and Timecode Formats for 23.976p, 24p, and 25p Projects” on page 225.



Make sure you connect the correct deck and black burst generator for the output format you selected (NTSC or PAL).



16. Click the Play Digital Cut button or the Preview Digital Cut button.
The system cues the record deck, then plays and records the sequence. The playback appears in the Record monitor and in the Client monitor.



Depending on the system configuration, you might need to use the deck controls in the Capture tool to review a digital cut.



17. To stop the recording at any time, press the space bar or click the Halt Digital Cut button.



After assemble-edit recording, a freeze frame is usually added after the OUT point for 1 second or more, depending upon the record deck model. This provides several frames of overlap for the next IN point before the control track and timecode break up.



If you see degraded image quality in your digital cut (particularly visible as noise during black), deselect the “Poll deck during digital cut” option in the Deck Preferences dialog box, which you access from the Settings scroll list of the Project window. Then record the digital cut again. With the option deselected, the timecode display in the deck controller will not update for the duration of the digital cut.

Crash Recording

You can crash record to a device without positioning the device beforehand. Crash record can either start recording at the current location or it can work with a starting timecode.

To perform crash record to devices that do not support insert edit or assemble edit:

1. Prepare for Digital Cut as described [“Using the Digital Cut Tool” on page 209](#).
2. In the Deck Control area, select Remote.
3. Crash Record appears in the right pop-up menu.
4. Do one of the following:
 - ▶ To ignore the starting timecode and start recording at the current location, select Ignore Time from the left pop-up menu.

If you select one of the timecode options for which your device is not equipped, a message box appears.

 - ▶ To begin recording at a starting timecode, select a timecode option from the left pop-up menu.

Recording a Digital Cut to Tape (Local Mode)

Recording in Local mode allows you to manually control your record deck by using the controls on the deck. This mode is useful when you need to use non-Avid-controlled decks, such as consumer-grade VHS or Hi8.

Prior to recording a digital cut, make sure you have selected the appropriate device.

To select a device for a digital cut, do one of the following:



- ▶ Click the DNA or 1394 button in the Timeline top toolbar to display either DNA or 1394.
- ▶ Select Special > Device > IEEE 1394 or Adrenaline.

The appropriate icon displays in the Timeline top toolbar, and a check mark appears next to the selected option in the Device menu.

To record a digital cut to tape by using the deck controls on the deck:

1. Load a sequence into the Record monitor. (You cannot access digital cut options without a sequence loaded.)
2. Select Output > Digital Cut.
The Digital Cut tool opens.
3. Select the Output Mode and Bit Depth according to the [“Output Mode Resolution Options” on page 220](#).
4. Select or deselect the Entire Sequence option based upon the following:
 - ▶ Select the Entire Sequence option if you want the system to ignore any IN or OUT points and play the entire sequence from start to finish.
 - ▶ Deselect the Entire Sequence option if you have established an IN point, an OUT point, or both for recording a portion of the sequence.
5. Click the Effect Safe Mode button (selected by default) to allow the system to notify you that an effect needs to be rendered.

During a digital cut, real-time effects can drop frames. To eliminate the chance of dropping frames, it's best to render the real-time effects that might drop frames. The Effect Safe Mode option analyzes and identifies real-time effects that might cause dropped frames during the digital cut and allows you to render them. After all the real-time effects are rendered, the system automatically initiates the digital cut.

6. (Option) Select Stop on Dropped Frames. This option appears for all real-time digital cuts if you have an Avid Adrenaline or a DV device attached to your 1394 port. When you select this option, if the system detects a dropped frame during output, the digital cut stops. You can fix the frame with ExpertRender and then continue. For more information, see “ExpertRender” in the Help.

7. (Option) Select the Add Black at Tail option and enter a timecode to add black at the end of the digital cut.
8. Select Local in the Deck Control options area.
9. Click the Sequence Track buttons to select the audio and video tracks you want represented in the digital cut. The display of tracks in the Digital Cut tool varies according to the tracks existing in the sequence.
10. For 23.976p, 24p, and 25p projects, select an output format, as described in [“Selecting Output and Timecode Formats for 23.976p, 24p, and 25p Projects”](#) on page 225.



Make sure you connect the correct deck and black burst generator for the output format you selected (NTSC or PAL).

11. Press the Record button on the deck.
12. Click the Play Digital Cut button.



The deck plays and records the digital cut. The playback appears in the Record monitor and in the Client monitor.



13. To stop the recording at any time, press the space bar or click the Halt Digital Cut button.

Output Mode Resolution Options

The output mode pop-up menu in the Digital Cut Tool displays the relevant resolution options depending on your project type and the output device. The connected output device is displayed in the Digital Cut Tool.



The following table provides information on the available output resolutions.

Output Mode Resolution Options

Project Type	Device	Available Output Mode Resolution and Bit Depth	Comments
30i and 25i, or 25p SD Project	Adrenaline	RT ^a DNA (8-bit or 10-bit) RT DV25 (8-bit or 10-bit) ^b DV25 ^b	With RT DNA selected, RT DNA allows you to output through the following connectors: Composite, SVideo, Component, SDI, or DNA-1394. With RT DNA selected, output is 1:1 uncompressed. With RT DV25 selected, full real-time effects playback is supported. With DV25 selected, real-time effects playback is not supported. All media must be DV25.
24p or 23.976p SD Project	Adrenaline	RT DNA (8-bit or 10-bit) RT DV25 (8-bit or 10-bit) ^b	
30i, 25i, or 25p SD Project	Separate IEEE 1394 board	RT DV25 (8-bit or 10-bit) ^b RT DV50(8-bit or 10-bit) ^b DV25 ^b DV50 ^b	With DV50 selected, real-time effects playback is not supported. All media must be DV50.
HD Project	Adrenaline HD	DNxHD	Does not support real-time effects playback. All media must be DNxHD.
HD Project	Separate IEEE 1394 board	DVCPRO HD	Does not support real-time effects playback. All media must be DVCPRO HD.

a. RT indicates real-time effects playback is supported.

b. There are restrictions for progressive formats. See [“Output Mode Resolutions with Progressive Projects”](#) on page 222.

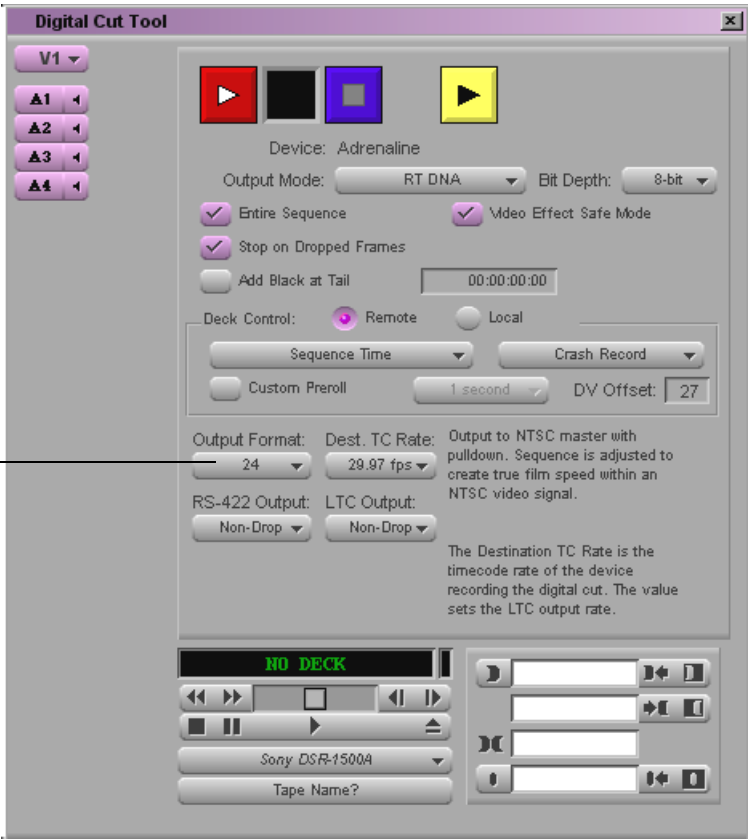


Performing a digital cut to a serial-controlled deck might not be frame-accurate if the output resolution is set to RT DV25 or DV25. When performing a digital cut to a serial-controlled deck, set the output resolution to RT DNA and make sure your output device is connected to a connection other than 1394 (for example, SDI or Composite).

Output Mode Resolutions with Progressive Projects

The availability of the Output Mode resolutions for progressive projects depends on the Output Format play rate in the Digital Cut Tool.

Output Format
Play Rate



The following table describes the Output Mode resolutions for progressive projects.

Progressive Project Output Mode Resolution Options

Project Type	Play Rate	Available Output Mode Resolution and Bit Depth
PAL 25p project	25	DV25
		DV50
		RT DV50 (8-bit or 10-bit)
		RT DV25 (8-bit or 10-bit)
NTSC 23.976p projects	23.976	RT DV50 (8-bit or 10-bit)
		RT DV25 (8-bit or 10-bit)
NTSC 24p projects	24	RT DV50 (8-bit or 10-bit)
		RT DV25 (8-bit or 10-bit)
PAL 24p Method 1 For information on Method 1 and Method 2, see “Transferring 24-fps Film to PAL Video” in the Help.	25	RT DV50 (8-bit or 10-bit)
		RT DV25 (8-bit or 10-bit)
PAL 24p Method 2 For information on Method 1 and Method 2, see “Transferring 24-fps Film to PAL Video” in the Help.	24	RT DV50 (8-bit or 10-bit)
		RT DV25 (8-bit or 10-bit)



Performing a digital cut to a serial-controlled deck might not be frame-accurate if the output resolution is set to RT DV25 or DV25. When performing a digital cut to a serial-controlled deck, set the output resolution to RT DNA and make sure your output device is attached to a connection other than 1394 (for example, SDI or Composite).

Outputting DV50 and DVCPRO HD Media Directly to a DV Device


You can output DV50 or DVCPRO HD sequences directly to a DV device. This lets you output without any loss due to compression and decompression.

DV50 and DVCPRO HD Output

You can output:	If the project is:	And if the output device is:
DV50	Any SD project	IEEE 1394
DVCPRO HD	The following HD projects: <ul style="list-style-type: none">• 720p/59.94• 1080i/50• 1080i/59.94	IEEE 1394

To output DV50 or DVCPRO HD media directly to a DV device:

1. Select the DV50 or DVCPRO HD sequence you want to output.
2. Render all effects.
3. Do one of the following:



 - ▶ Click the Adrenaline and 1394 button above the Timeline to display the 1394 icon.
 - ▶ Select Special > Device > IEEE 1394.

The 1394 icon displays above the Timeline, and a check mark appears next to IEEE 1394 in the Device menu.
4. Select Output > Digital Cut.

The Digital Cut tool opens.
5. Select other Digital Cut options.
6. Perform the digital cut.

Selecting Output and Timecode Formats for 23.976p, 24p, and 25p Projects

When you are working in a 23.976p, 24p, or 25p project, you can output multiple formats for NTSC video, PAL video, and audio — all from the same progressive media. You click the Output Format pop-up menu in the Digital Cut tool to select the formats you want, as described in [“Selecting Output Formats for 24p and 25p Projects” on page 225](#) and [“Selecting Output Formats for 23.976p Projects” on page 228](#).

Depending on the format you select, you also need to:

- Select the timecode to output (see [“Selecting the Timecode Format for Output” on page 228](#)).
- Indicate the Destination Timecode Rate (see [“Indicating the Destination Timecode Rate” on page 229](#)).

Selecting Output Formats for 24p and 25p Projects

To output a particular format:

1. Select Output >Digital Cut.
2. Click the Output Format pop-up menu, and select a play rate.

A brief description of each output format is displayed in the Digital Cut tool. [“24p and 25p Project Output Options” on page 226](#) provides more extensive descriptions.

The play rate you select determines how the digital cut is recorded. For example, if you select 23.976, you tell the Avid system to slow down the play rate to match the play rate used during an NTSC telecine transfer. When the system records the digital cut, it adds the pulldown frames and re-creates a telecine transfer to an NTSC videotape.

For NTSC output, the Avid system automatically sets the pulldown if necessary and turns on an indicator on the Adrenaline DNA.

24p and 25p Project Output Options

Digital Cut Tool Menu Choice (Playback Speed)	Target Project or System	Pulldown Indicator on Adrenaline DNA	Output Format and Recording Media
23.976 (NTSC)	NTSC TV; video screenings; digital audio workstations (DAWs) that support pulldown	On (0.99)	Picture and sound to NTSC tape; sound to video-referenced audiotape
24 (NTSC)	Audio for film projection; DAWs (video for reference only)	Off (1.00)	Picture and sound to NTSC tape; sound to DAT or mag tape
29.97 (NTSC)	Animation projects; negative cutting with lockbox; some kinescope printing	On (0.99)	Picture and sound to NTSC tape (sound for reference only)
24 (PAL)	Audio for film projection; DAWs (video for reference only)	Off (1.00)	Picture and sound to PAL tape; sound to DAT or mag tape
25 (PAL)	PAL TV; video screenings	Off (1.00)	Picture and sound to PAL tape; sound to DAT or mag tape

The following information describes what happens when you select each of these options:

- **23.976 (NTSC):** Plays back the sequence at 23.976 fps (film rate). This playback rate tells the Avid system to replicate a telecine transfer with perfect 2:3 pulldown. The system adds frames and slows the playback speed to create a digital cut to 29.97 fps. Use this option for NTSC video output, such as broadcast masters. For 25p, the media is slowed down by 4.1 percent.
- **24 (NTSC):** Plays back the sequence at 24 fps (film rate). This playback rate tells the system to record audio at the film rate. If the system records video, it maintains sync by adding pulldown fields and dropping every 1000th frame. This video should be used for reference only. Use this setting for direct audio output to be used in sync with film projection. Also use this setting when audio media files are being used in a digital audio workstation (DAW) and you need a digital cut for picture reference. For 25p projects, video and audio are slowed down 4 percent.

Before you output the digital cut, make sure you select the correct destination timecode rate. See [“Indicating the Destination Timecode Rate” on page 229](#).

- **29.97 (NTSC):** Plays back the sequence at 29.97 fps. This playback rate tells the system to speed up the playback speed *without* adding pulldown fields. As a result, the sequence plays faster (25 percent faster for 24p, 20 percent faster for 25p). Use this option for animations and tape-to-film transfers where the pulldown needs to be removed to have an exact frame-to-frame relationship between the film and video.
- **24 (PAL):** Plays back the sequence at 24 fps. This playback rate tells the system to record audio at the film rate. For 25p projects, audio is slowed down 4 percent. Video, when output to tape, can be used only for reference because, to maintain sync, the system replicates a pulldown telecine transfer with one extra pulldown field occurring every 12th and 24th frame. Use this option when audio media files are being used for film projection (PAL Method 2) or in a DAW, and you need a digital cut for picture reference.
- **25 (PAL):** Plays back the sequence at 25 fps. For 24p projects, this playback rate tells the system to speed up the sequence by 4.1 percent, creating a frame-to-frame relationship between film and video (PAL Method 1). For 25p projects, there is no change in playback speed. There are no pulldown frames with this setting. Use this option for PAL video output, such as a broadcast master.

The following table summarizes the change in audio rates for 24p and 25p output options.

Audio Play Rates for 24p and 25p Projects

Output Play Rate	24p Source	25p Source
23.976 NTSC	0.1% slowdown	4.1% slowdown
24 NTSC	No change	4% slowdown
29.97 NTSC	25% speedup	20% speedup
24 PAL	No change	4% slowdown
25 PAL	4.1% speedup	No change

Selecting Output Formats for 23.976p Projects

If you are working in a 23.976 project, all output play rates are available, but only 23.976 NTSC maintains the original audio quality. For 23.976 NTSC, the audio rate is not slowed down for output and remains at 48 kHz. For 29.97 NTSC, the audio rate is sped up 25 percent and is not usable. Use this output rate for animations and other special applications. 24 fps NTSC, 24 fps PAL, and 25 fps PAL all require a sample-rate conversion, so high-quality audio is not guaranteed. The following table displays how the output audio rate is affected by the output play rate.

Audio Play Rates for 23.976p Projects

Output Play Rate	Source	Output Audio Rate
23.976 NTSC	23.976 fps	48 kHz (no change)
24 NTSC	23.976 fps	48.048 kHz (0.1% speedup)
29.97 NTSC	23.976 fps	60 kHz (25% speedup)
24 PAL	23.976 fps	48.048 kHz (0.1% speedup)
25 PAL	23.976 fps	50.016 kHz (4.2% speedup)

Selecting the Timecode Format for Output

If you select one of the three NTSC output formats, you need to indicate the timecode format for output: drop-frame or non-drop-frame.

You can designate drop-frame or non-drop-frame timecode for devices connected to one or both of the following outputs:

- RS422 Output (serial port on the computer)
- LTC (LTC OUT on the Adrenaline DNA)

By default, the pop-up menus display the timecode format of the sequence you loaded into the Timeline.

To select the timecode format for output:

1. Select Output > Digital Cut.
2. Do one or both of the following:

- ▶ Click the RS422 Output pop-up menu, and select Drop or Non-Drop
- ▶ Click the LTC Output pop-up menu, and select Drop or Non-Drop

Outputting Drop-Frame and Non-Drop-Frame Timecode Simultaneously for Downstream Encoding

You can output drop-frame and non-drop-frame NTSC timecode simultaneously from a 24p or 25p project. A broadcast production company might need to output drop-frame timecode for a broadcast master while outputting non-drop-frame timecode to track NTSC film pulldown.

Tracking the pulldown is important because some networks require the 2:3 pulldown phase to be inserted in the VITC (vertical interval timecode). Inserting the pulldown phase enables downstream encoding of various compression formats (like MPEG-2) to be faster and of higher quality.



For information about 2:3 pulldown, see “Transferring 24-fps Film to NTSC Video” in the Help.

It is easy to track pulldown information within non-drop-frame timecode, because the relationship stays the same for the length of the digital cut. The Avid system can use LTC to output the non-drop-frame timecode.

To output drop-frame and non-drop-frame timecode simultaneously for downstream encoding:

1. Select Output > Digital Cut.
2. Do the following:
 - ▶ Click the RS-422 Output pop-up menu, and select Drop.
 - ▶ Click the LTC Output pop-up menu, and select Non-Drop.

Indicating the Destination Timecode Rate

When you select 24 (NTSC) as your output format, the Destination Timecode Rate pop-up menu (labeled Dest. TC Rate) opens. Select a timecode rate that matches the timecode rate of the recording device, such as a DAT deck.

If you select 29.97 fps as your Dest. TC Rate, the sequence duration displayed in the Timecode Duration display of the Digital Cut tool is slightly shorter than the duration shown in the Timeline. This shorter duration occurs because

the video play rate is sped up in comparison with the audio timecode rate. If you select 30.00 fps, the sequence duration in the Digital Cut tool matches the sequence duration in the Timeline.

The value you select (29.97 or 30.00) also sets the rate for LTC output, if any, without changing the playback rate of the media being output (24 NTSC).

To indicate the destination timecode rate:

1. Select Output > Digital Cut.
2. Click the Dest. TC Rate pop-up menu, and select 29.97 fps or 30.00 fps.

Performing an Insert Edit with Pulldown

If you are working in an NTSC 24p project, and you need to insert a segment into a sequence that has already been cut to tape, the Avid system automatically adjusts the insert edit to maintain the correct pulldown.

To perform an insert edit with pulldown:

1. Use IN and OUT points to mark the segment you want to insert.
2. Select Output > Digital Cut.
The Digital Cut tool opens.
3. Deselect the Entire Sequence option.
4. Select Remote in the Deck Control options area.
5. Select Sequence Time to start the recording at a timecode existing on tape that matches the start timecode of the sequence.
6. Click the pop-up menu, and select Insert Edit. This menu only appears if you enabled assemble editing in the Deck Preferences dialog box. For more information about this option, see [“Enabling Assemble-Edit Recording” on page 208](#).
7. Click the Deck Selection pop-up menu, and select a deck. See [“Selecting a Deck in the Digital Cut Tool” on page 211](#).
8. Click the Sequence Track buttons to select the video tracks you want represented in the digital cut. The display of tracks in the Digital Cut tool varies according to the tracks existing in the sequence.
9. Select the video track to record to on the tape by using the Enable Track buttons.

10. Click the Output Options area, and select 23.976 (NTSC) and either 4:3 or 16:9.



11. Click the Play Digital Cut button.

The system cues the record deck, then plays and records the insert edit. The Avid system automatically adds the correct pulldown fields.



12. To stop the recording at any time, press the space bar or click the Halt Digital Cut button.

Digital Cuts and Audio

You can use one of several tape formats and methods for audio output, but the following are most common:

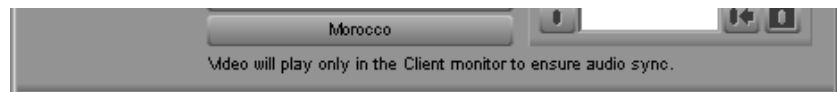
- Record a digital cut directly to videotape by using analog output.
- Record a digital cut directly to DAT or DA-88 by using digital output.
- Play the sequence to an audiotape recorder by using analog output.



You cannot control some analog audio decks from the Digital Cut tool. If the deck does not have a serial control port, you need to select Local when you record the digital cut.

Your output choice in the Digital Cut tool automatically sets the pulldown switch).

If you perform an audio-only digital cut, the Avid system plays the video tracks in the Client monitor to ensure the most accurate audio sync. A message appears at the bottom of the Digital Cut tool.



For information about connecting a deck, see “Using the Avid Adrenaline” in the Help.



If your sequence contains audio clips with different sample rates, use the Change Sample Rate dialog box to ensure that all the clips have the same sample rate. For more information, see “Changing the Sample Rate for Sequences and Audio Clips” in the Help.

Changing the Default Pulldown Phase for Sequences

For more information on film-to-tape transfers, see “Film-to-Tape Transfers” in the Help.

During a digital cut to 30-fps NTSC videotape, the Avid system defaults to an A-frame pulldown conversion. If you are appending sequences to the same output tape on which continuous pulldown is required, you might need to change the default pulldown phase (or pullin) to a B frame. A digital cut can begin only on field one of an A or B frame.

For example, if one cut ends on an A frame, then before performing the digital cut of the next sequence, change the pullin for the next sequence to the B frame. You can determine the frame that ends a sequence by checking the Pullout column in the bin that holds the sequence.

If your sequence ends on a B or C frame, edit the sequence to end on an A or D frame to create a continuous 2:3 pulldown.

To change the default pulldown phase for a sequence:

1. Open the bin that holds the sequence.
2. Check if the Pullin column appears. If not, follow these steps:
 - a. Click the Bin Fast Menu button, and select Headings.
 - b. Ctrl+click or click Pullin.
3. Type A or B in the Pullin column.
 - **Pullin A:** The first frame of the sequence plays back as two fields, the second frame as three fields, the third frame as two fields, and so on.
 - **Pullin B:** The first frame of the sequence plays back as three fields, the second frame as two fields, the third frame as three fields, and so on.

Now you can perform a digital cut to append the new sequence.

Using DV Digital Cut Delay

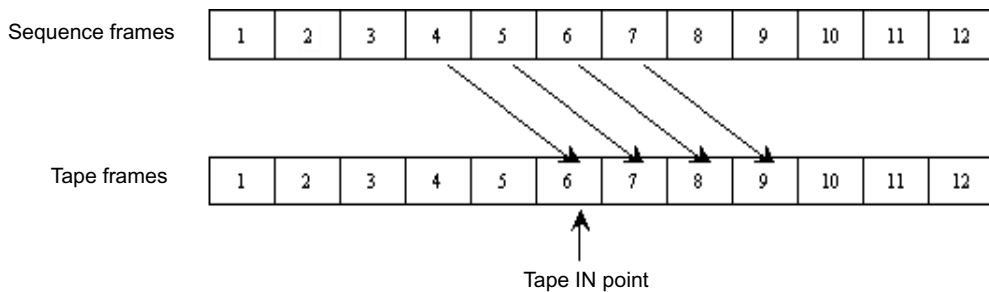
DV digital cut delay affects the timing of the DV data sent to the DV device for a digital cut. Increasing the digital cut delay will cause the sequence stream to be delayed when it is sent to the DV device when digital cut begins. While the system is waiting for this delay, the first frame of the sequence is continually sent to the DV device.

There are several components to this setting.

- The recommended value represents the delay that is found in the machine template for the online DV device. If for some reason, there is no “online” DV device, the recommended value is set to the delay in the machine template of the “offline” DV device. If no DV device is configured in the Deck Configuration and Deck Settings dialog boxes, this value is set to 0.
- If you want to override the recommended digital cut delay, select the Override Recommended Digital Cut Delay option, and type a delay value into the Digital Cut Delay (frames) text box. When a digital cut is performed, the delay value used for the cut is based on whether the Override Recommended Digital Cut Delay option is selected. If the option is deselected, the recommended value is used.

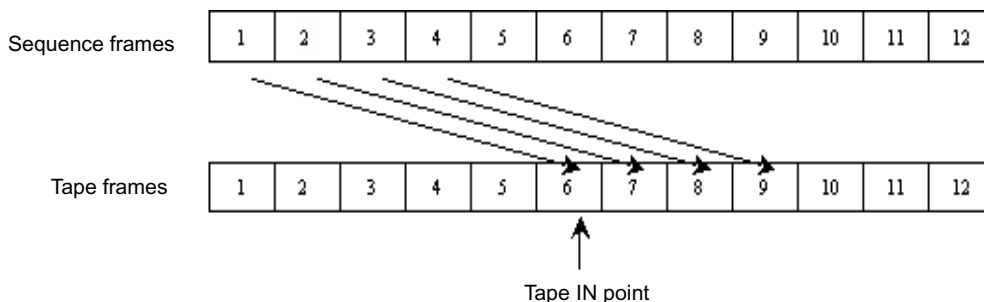
Before setting this delay, you should perform several digital cuts to determine the frame-accuracy behavior of the recording device. Begin with the DV digital cut delay set to 0 frames. If the digital cut frame accuracy of the device is inconsistent, the results of using the delay are also inconsistent. If the sequence is missing frames at the beginning of the digital cut on the tape, increase the delay. If the first frame of the sequence is repeated, decrease the DV digital cut delay. The starting frame of the sequence should change according to your delay.

For example, suppose the DV digital cut delay is set to 0 frames. The digital cut is expected to begin with the first frame of the sequence being recorded on the IN point designated on the tape. In this example, the IN point is set to frame number 6. This is where the recording would begin on the tape. However, due to the behavior of the particular DV device, the digital cut does not perform as expected. The first frame of the sequence recorded on the tape is actually the fourth frame, as shown in the following figure.



Digital Cut with No Delay

To correct this, the DV digital cut delay should be increased to have the Avid system delay sending the sequence to the device. If the DV digital cut delay is set to three frames, this should cause recording on the tape to begin with the correct sequence frame, as shown in the following figure.

**Digital Cut with Delay****To delay the sequence for a digital cut:**

1. Click the Settings tab in the Project window.
2. Double-click Deck Preferences.
The Deck Preferences dialog box opens.
3. Select Override Recommended Digital Cut Delay.
4. Determine the approximate delay and type the delay in the Digital Cut Delay (frames) text box.
5. Click OK.
6. Perform a digital cut. See [“Using the Digital Cut Tool” on page 209](#).
7. Repeat this process until you achieve the appropriate delay.

Using EDL Manager

An EDL (edit decision list) is a detailed list of the edits contained in a sequence, including all the timecode and supported effects information required to re-create the sequence in an online videotape suite. The EDL is

organized into a series of chronological instructions called *events*, which are interpreted by an edit controller that automates the assembly of the videotape master.

Your Avid system includes EDL Manager, an application with powerful features and sorting capabilities to help you prepare an EDL.

To start EDL Manager:

- ▶ Select Output > EDL.

For more information on specific features and capabilities of EDL Manager, see the EDL Manager Help.

Using the Matchback Option

The Matchback option on an Avid system, along with the Avid FilmScribe application, allows you to generate a film cut list from a 30-fps or 25-fps video project that uses film as the source material. This video-to-film conversion is useful in a variety of matchback circumstances, including the following:

- Use the Matchback option to generate both a videotape master for the project along with a final cut on film.
- Use the Matchback option to generate pull lists for retransferring selects at high quality before online editing.

Matchback supports 16mm, 35mm 3-perf, and 35mm 4-perf formats.



Your system might not include the Matchback option. To purchase the Matchback option, contact your Avid sales representative.

If you plan to use matchback, you must select the Matchback option when you first create the project. See “Creating a New Project” in the Help.



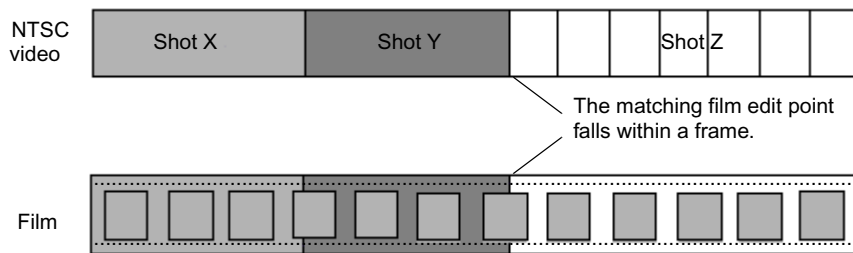
Editors working in a film matchback project for the first time should pay extra attention to duplicate material in the final edited piece. Use Dupe Detection in the Timeline and verify any dupes flagged when delivering a cut negative. For information on dupe detection, see “Detecting Duplicate Frames” in the Help.

How Matchback Works

The matchback process refers to the video edit information for your sequence and performs a conversion to create a matching 24-fps cut list.

Because of the difference in frame rates between video and film (30 fps or 25 fps for video versus 24 fps for film), the conversion of video edit points might fall within a film frame, requiring the addition or subtraction of a frame in that edit event in the resulting cut list.

For example, with a ratio of 24 film frames to 30 video frames, a 7-frame video edit corresponds to approximately 5.6 film frames. However, film cuts cannot include partial frames, so the edit must be rounded to 5 or 6 frames.



To make these adjustments, the following occurs during matchback:

- If the total video-sequence duration at the end of each cut is a frame longer than the film, the system subtracts a frame from the last video edit. If the video is a frame too short, a frame is added to the last video edit.
- Where an essential frame was added to or subtracted from the beginning or end of each edit, the system adds matchback information to the cut list, stating that matchback shortened or lengthened the tail of the clip by one frame. The assistant editor or negative cutter can use this information to check the edit.
- Each track in the sequence must be corrected independently because the start and end points for split edits are different for each track. As a result, the picture and audio for a matchback video edit might be out of sync by no more than one frame.

Matchback Limitations

Matchback is subject to the following limitations:

- The Matchback option uses key numbers to conform the negative. Therefore, you must have key-number information entered into the bins for the project.
- You can generate cut lists, but not change lists in a matchback project.
- The matchback information applies to the picture only. You must generate a separate list (an EDL, for instance) for conforming the audio source tapes.
- Be sure to remove unwanted match frames (add edits) from your sequence before generating the cut list. Otherwise, the calculation of matchback frames will include these edits. For information about removing match-frame edits, see “Removing Match-Frame Edits” in the Help.

Using FilmScribe

The FilmScribe application provides tools for creating frame-accurate cut lists and change lists from 23.976p, 24p, 25p, and matchback projects. You can use these lists to conform a work print, a film negative, audio tracks, or videotape transfers.

To start FilmScribe:

- Select Output > FilmScribe.

For information on how to use FilmScribe, see the *Avid FilmScribe User's Guide* or the FilmScribe Help.



Your system might not include the FilmScribe application. To purchase FilmScribe, contact your Avid sales representative.

Preserving Information in the Vertical Blanking Interval

You can choose whether or not to display 5 lines above each field in NTSC and 8 lines above each field for PAL and whether to preserve the lines when you perform a digital cut. These lines can be used to store additional encoded information such as closed captioning, edgecodes or key numbers for film projects, or various interactive or enhanced TV codes. This section describes when it is useful to preserve the information and describes the limitations involved when preserving these lines.



You can preserve VBI information for JFIF, uncompressed, and MPEG IMX resolutions. You cannot preserve VBI information for DV resolutions.



In the majority of cases, you should not preserve these extra lines when you perform a digital cut. Only do so if you have a special need for the information.

Line Ranges

The Avid system is capable of capturing 248 lines per field in NTSC or 296 lines per field in PAL. For NTSC, only 243 of these lines are in RP-187's production aperture. For PAL, the number is 288. The additional lines in each field are located immediately above the active part of each of the two fields. These lines (5 per field in NTSC and 8 per field in PAL) can be used for carrying additional data.

The following table lists the extra vertical blanking lines for both NTSC and PAL:

Field	Video Raster Line Number Ranges	
	NTSC (5 Lines/Field)	PAL (8 Lines/Field)
Field 1	16-20	15-22
Field 2	278-282	328-335

Preserving Vertical Blanking Information

Avid DNA systems automatically preserve the extra lines of VBI information when you capture footage. You can choose whether to display the lines and whether to retain the lines when you output your sequence as a digital cut.

You might want to preserve the following vertical blanking information:

- Edgecode or key number information for a film project

You might want to preserve edgecode information to easily identify the source film reel for a clip. In this case, the edgecode information would have been originally inserted during the telecine process.

- Closed-captioning information

If you are repurposing a finished sequence for another market, you might want to retain closed-captioning codes that were added after the tape was output from the Avid system. This would allow you to perform some basic editing on the recaptured sequence and not to have to reapply the closed-captioning codes afterward.



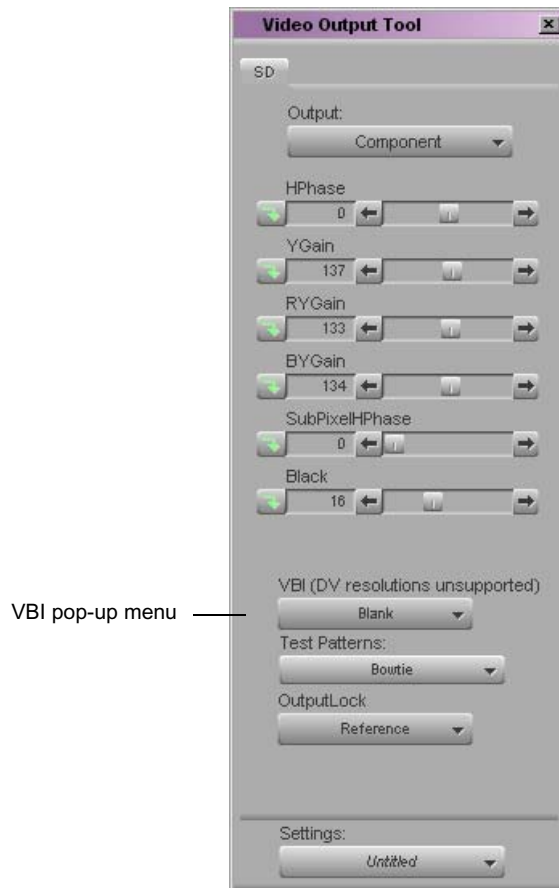
The Avid system does not interpret the vertical blanking information (i.e., encoded data). It treats the coded values simply as pixels in the video frame. If you want to read the vertical blanking information during editing, you must connect an external vertical blanking information reader to the Avid system.

Displaying VBI Information and Preserving VBI Information on Output

To display VBI information and preserve VBI information for a digital cut:

1. Select Tools > Video Output Tool.

The Video Output tool opens.



2. Click the VBI pop-up menu and select Preserve.



If you select Blank, the Avid system fills the vertical blanking interval with video black (R=G=B=16).

3. Close the Video Output tool.

Any VBI information that is present in your clips or sequences will now be displayed. If you perform a digital cut, any VBI information that is in your sequence will be output.



The VBI value resets to Blank each time you launch the application. If you want to preserve VBI information on output, set the value before you perform a digital cut.

Editing a Sequence with VBI Information

After a sequence is created and output from the Avid editing system, some facilities apply VBI information to the tape to add information such as closed captioning. Often, the tape is recaptured so that the sequence can be repurposed for another market. The VBI option in the Video Output tool allows you to display the VBI information and maintain the information when you output the repurposed sequence.

The Avid system uses the following rules when applying effects to material containing VBI information:

- Single track effects do not alter the VBI information. For example, if you apply a color correction effect to the sequence, the VBI lines are not affected.
- Multi-track effects such as picture-in-picture effects or 3D Warp effects use the VBI information of the track on the lowest layer. (Swap sources is ignored in the VBI area).



If you apply a multi-track effect such as a 3D Warp effect to a sequence with a single track, the VBI information will not be visible. One way to work around this problem is to create a second video track and duplicate that portion of the sequence on the second track. Then apply the 3D Warp effect to the top track. The VBI information will display on the bottom track.

- Transitions are treated as cuts in the VBI area.
- Timewarp effects copy the VBI of the input's temporally nearest field. In mild timewarp effects this may allow VBI to pass through unaltered.



You cannot add or remove VBI information from a sequence. However, you can use the Blank option to turn off the VBI display for the entire sequence.



You cannot preserve VBI information for DV resolutions. You can only preserve VBI information for JFIF, uncompressed, and MPEG IMX resolutions.

Effects of Preserving Vertical Blanking Information on Compressed Video Quality

For resolutions other than 1:1, preserving vertical blanking information when you capture can affect the video quality in the rest of the frame. For example, depending on the compression ratio, a video frame might look more blocky with vertical blanking information included.

The Avid system performs the following operations when capturing a frame:

1. It captures the entire frame (including the 5 or 8 extra lines per field) as an uncompressed frame.
2. It compresses the frame if compression is selected.

The following problems may occur:

- If the frame contains vertical blanking information, the picture quality of the entire frame might be slightly degraded due to the added entropy or complexity from the vertical blanking lines.

The higher the compression ratio, the greater the number of artifacts that might be visible. For a compression ratio of 2:1, the number of artifacts might not be noticeable at all.

- Depending on the compression ratio, the vertical blanking information itself may be distorted.

If you want to preserve vertical blanking information, either use the 1:1 (uncompressed) resolution or experiment with different compression ratios to make sure the captured footage or the vertical blanking information is not unacceptably affected by the compression.

Comparison with VBI on Meridien Systems

The following table shows the differences between how VBI is treated on systems with Meridien hardware (for example, Media Composer v12.0 or Avid Symphony v5.0) and systems with Adrenaline DNA hardware.

Feature	Meridien	Adrenaline DNA
When does the system give you the opportunity to blank VBI information?	During capture and during a digital cut ^a	During playback and during a digital cut
What dialog box or tool do you use to set VBI blanking?	General Settings dialog box	Video Output tool
Is VBI supported for DV resolutions?	No	No
Is VBI supported for MPEG IMX?	No	Yes
Does NewsCutter support VBI?	No	Yes
Does NewsCutter XP support VBI?	No	No (Adrenaline only)
Is VBI supported for JFIF and uncompressed resolutions?	Yes	Yes
Is VBI information preserved when you apply effects?	Not always ^b	Yes (see “Editing a Sequence with VBI Information” on page 241.)
Can you use a two layer effect to wipe in VBI information?	Yes	No
Can VBI information affect compression quality?	Yes	Yes
Can compression affect VBI quality?	Yes	Yes

a. In order to view VBI on a Meridien system you must disable the 3D hardware.

b. For example, a color effect can modify the VBI information on a Meridien system.

For details on how Meridien systems support VBI, see the white paper entitled *Preserving Information in the Vertical Blanking Interval* on the Avid Knowledge Base.

Chapter 7

Exporting Frames, Clips, or Sequences

You can export files for use with another system, another application, or another platform. Your Avid video-based editing system provides tools for exporting clips and sequences in various formats.

The following sections describe how to export files:

- [Understanding Export](#)
- [Preparing to Export a Sequence](#)
- [Exporting Frames, Clips, or Sequences](#)
- [Using the Drag-and-Drop Method to Export Frames, Clips, or Sequences](#)
- [Customizing Export Settings](#)
- [Exporting OMFI and AAF Files](#)
- [Improving Workflow Using Send To](#)
- [Exporting Video in DV Stream Format](#)
- [Exporting QuickTime Movies](#)
- [Exporting As an AVI File](#)
- [Installing the Avid Codecs for QuickTime on Other Systems](#)
- [Exporting from a Third-Party QuickTime or AVI Application](#)
- [Exporting as Windows Media](#)
- [Exporting Tracks As Audio Files](#)
- [Exporting As a Graphic File](#)

Understanding Export

You can export material directly from your Avid system to many supported file types. You can export an individual frame, a selected region of footage, or an entire clip or sequence.

You can export video, audio, or both for any of the following reasons:

- You can export video files for touching up or creating special effects in third-party applications or other Avid applications.
- You can export files to be viewed as AVI or QuickTime movies.
- You can export files for further processing to create streaming media files in formats such as RealVideo®, QuickTime, and Windows Media™.
- You can export files compatible with CD-ROM and DVD-R for use in multimedia projects.
- You can export audio files for audio sweetening in a digital audio workstation (DAW), such as a Pro Tools system.
- You can use the export process to convert audio media files from one supported audio format to another. Your Avid system supports the AIFF-C and WAVE formats.

Preparing to Export a Sequence

If you are exporting part or all of a sequence — to create an OMFI file, an AAF file, a QuickTime file, an AVI file, or a graphic sequence, for example — you can speed the export process by preparing the sequence in advance, as follows:

- Make sure all media for the sequence is online. For more information about selecting offline items in a bin, see “Basic Bin Procedures” in the Help.
- If you want to archive the source sequence before making any alterations, duplicate the sequence, place the duplicate in another bin, and prepare the duplicate for export. The original sequence will be unaffected.
- Consider rendering all effects in advance. Although any unrendered effects are rendered on export (except for an OMFI or AAF export), rendering effects in advance saves time during the export process.

For more information on rendering, see “Real-Time and Downstream Key Effects” in the Help.

- Always render fast-saved titles before using OMFI or AAF to export a sequence, or before creating an EDL from the sequence.
- If your sequence contains numerous video tracks, consider mixing down the tracks in advance for faster export, unless you need to preserve the multiple-track information. For more information about mixing down video tracks, see “Performing a Video Mixdown” in the Help.
- If your sequence contains numerous audio tracks with various audio effects and level adjustments, consider mixing down the tracks in advance for faster export, unless you need to preserve the multiple-track information. For more information about mixing down audio tracks, see “Mixing Down Audio Tracks” in the Help.
- If your sequence contains audio clips with different sample rates, use the Change Sample Rate dialog box to ensure that all the clips have the same sample rate. See “Changing the Sample Rate for Sequences and Audio Clips” in the Help. You can also use OMFI or AAF to change the sample rate. See “Exporting OMFI and AAF Files” on page 253.
- Check and adjust all pan and audio levels in advance. All current Pan and Level settings in the sequence are carried to the exported media. For more information on performing an audio mixdown, see “Mixing Down Audio Tracks” in the Help.
- You cannot export OMFI files that are larger than 2 GB. For OMFI files, consider consolidating the sequence to create smaller source clips, thereby saving time and disk space. For more information on consolidating media, see “Using the Consolidate Command” in the Help. You can also consolidate as part of the export. See “Exporting OMFI and AAF Files” on page 253.
- OMFI or AAF files with very complex sequences can fail during import into some applications due to memory limitations. Try one of the following solutions:
 - ▶ Break the sequence into smaller sequences and export the new sequences.
 - ▶ Add more physical memory.
- To export multiple clips in a single file, create a sequence from them. For example, you can select all the clips, Alt+drag them into the Record monitor to create an instant sequence, and then export the sequence.

Exporting Frames, Clips, or Sequences

This section provides the basic steps for exporting frames, clips, or sequences. More specific information is provided in the following sections:

- “Exporting OMFI and AAF Files” on page 253
- “Improving Workflow Using Send To” on page 257
- “Exporting Video in DV Stream Format” on page 271
- “Exporting As a QuickTime Movie” on page 273
- “Exporting As an AVI File” on page 281
- “Exporting as Windows Media” on page 285
- “Exporting As a Graphic File” on page 294

For information on using the drag-and-drop method, see “Using the Drag-and-Drop Method to Export Frames, Clips, or Sequences” on page 251.

To export frames, clips, or sequences:

1. Identify the portion of the clip or sequence you want to export in one of the following ways:
 - ▶ To export specific tracks in a clip or sequence, enable those tracks in the Track Selector panel, and disable all others. Make sure Use Enabled Tracks is selected in the Export Settings dialog box. You can set this option before the export. See “Customizing Export Settings” on page 252.
 - ▶ To export a single-frame graphic, mark an IN point to export the marked frame from a bin or a monitor, or move the position indicator to the frame you want to export. Make sure Use Marks is selected and Sequential Files is deselected in the Export Settings dialog box.
 - ▶ To export part of a clip or sequence, mark IN and OUT points to export the marked range from a bin or a monitor. If you mark an IN point and no OUT point, the system exports from the IN point to the end of the clip or sequence. Make sure Use Marks is selected in the Export Settings dialog box.
 - ▶ To export the entire clip or sequence, deselect the options Use Enabled Tracks and Use Marks in the Export Settings dialog box, and make sure the topmost track is monitored.



The entire clip or sequence is included when you export as an OMFI or an AAF file.



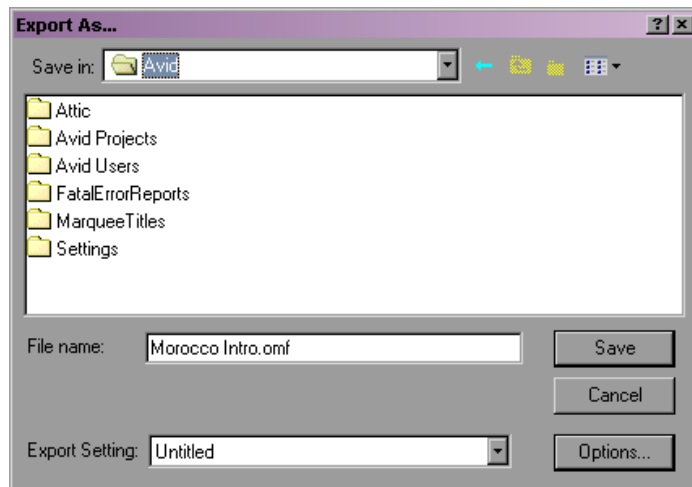
When you export as an OMFI or an AAF file, you do not need to select both the sequence and its source clips. Select only the sequence to export all the necessary information, including reference clips or source media.

2. Select the clip or sequence in one of two ways:
 - ▶ Click the monitor that displays the clip or sequence you want to export.
 - ▶ Click the clip or sequence in a bin. Ctrl+click to select multiple clips or sequences.
3. Select File > Export.

The Export As dialog box opens with a default file name in the File name text box based on the file type.



You can also right-click the file name and select Export.

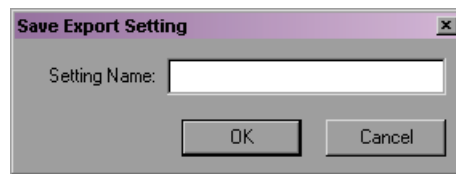


4. Click the Export Setting pop-up menu, and select a setting.

This setting determines the format of the exported file. The default setting is labeled Untitled. Any settings that appear in the Settings scroll list of the Project window appear in the pop-up menu. For information on creating custom settings, see [“Customizing Export Settings” on page 252](#).

5. (Option) If you want to view or modify the current Export setting, or create a new one:
 - a. Click the Options button to open the Export Settings dialog box. For a description of your selections, see [“Exporting OMFI and AAF Files” on page 253](#).
 - b. To save your settings in the existing settings file, click Save.
 - c. To create a new settings file, click Save As.

The Save Export Setting dialog box opens.



Name the setting by typing a name in the Setting Name text box, and click OK. The new setting appears in the Settings scroll list of the Project window.

6. In the Export As dialog box, select the destination folder for the file.
7. (Option) Change the file name.

In most cases, keep the file name extension the same.

8. Click Save.

The file is exported to the selected destination.



Your Avid system saves the intermediate movie that it makes for some formats in a temporary folder. Make sure the temporary folder is on a drive with plenty of space. You can view and change the location of the temporary folder in the General Settings dialog box, which you access from the Settings scroll list of the Project window.



If a power failure or application error occurs during the export process, the entire file is unusable. You need to repeat the export process. The only exception is a sequential file sequence, where all frames up to the point of failure are usable.

Using the Drag-and-Drop Method to Export Frames, Clips, or Sequences

To export a frame, clip, or sequence by using the drag-and-drop method:

1. Prepare the sequence, as described in [“Preparing to Export a Sequence” on page 246](#).
2. Select a clip or a sequence to export, as described in [“Exporting Frames, Clips, or Sequences” on page 248](#).



You cannot use the drag-and-drop method to export ALE, tab-delimited, or sequential files.

3. In the Settings scroll list of the Project window, select the setting you want to use for export.

The default Export setting, the preset templates, and any additional Export settings you create appear in the Settings scroll list. After you select a setting in the Settings scroll list, the parameters remain the default settings for all exported files, unless you change them during the export. This is especially useful when you batch export a number of files directly from a bin at the same time. To view or modify the parameters, double-click the setting. For information on modifying options, see [“Customizing Export Settings” on page 252](#).

4. Export the frame, clip, or sequence by clicking the clip or sequence you want to export and dragging it to the location (folder or drive) where you want to store the file. To select multiple objects, Ctrl+click the objects and drag the objects to the folder or drive.



During a drag-and-drop export, your Avid system saves an intermediate file in a temporary folder. Make sure the temporary folder is on a drive with plenty of space. You can view and change the location of the temporary folder in the General Settings dialog box, which you access from the Settings scroll list of the Project window. To save time, assign the temporary folder to a folder on the same drive where you will be dragging the export.

Customizing Export Settings

In addition to selecting preset templates, your Avid system allows you to customize and name your Export settings.

Preset Export Templates

Your Avid system includes the following export templates:

- **Fast-Export QuickTime:** Exports a QuickTime movie that uses the Same as Source setting. See [“Exporting QuickTime Movies” on page 272](#).
- **Macintosh Image:** Exports a PICT file for use in Macintosh graphic applications. See [“Exporting As a Graphic File” on page 294](#).
- **Windows Image:** Exports a BMP file for use in Windows graphic applications. See [“Exporting As a Graphic File” on page 294](#).

You can select or customize these settings, as described in [“Exporting Frames, Clips, or Sequences” on page 248](#).

Creating a New Export Setting

To create a new Export setting:

1. Click the Settings tab in the Project window.
The Settings scroll list appears.
2. Click Export.
3. Select Edit > Duplicate.
4. Name the setting by clicking the custom name column, typing a name, and pressing Enter.



The custom name column is the center column in the Project window. When you move the pointer over the custom name column, the pointer changes from a pointing finger to a text insertion bar.

5. Double-click the new setting.
The Export Settings dialog box opens.
6. Select the appropriate file type and options based on the descriptions in [“Export Settings Dialog Box Options” in the Help](#).

7. Click OK.

You can select this new setting whenever you export.



You can also create a new setting during the export process. See “Exporting Frames, Clips, or Sequences” on page 248.

Exporting OMFI and AAF Files

OMFI and AAF are industry-standard file formats that let you exchange compositions and media between applications.

Exporting Through OMF Interchange

OMF Interchange[®] (OMFI) is a platform-independent file format that stores both the digital media (video, audio, graphics, animation) and the information describing how the media is edited together to form a final sequence. This editing information, called a composition, is the OMFI representation of the sequence created in your Avid system. The OMF Interchange format is the result of cooperative efforts of many industry and standards partners and Avid Technology, Inc.

Any other program that supports OMFI can read OMFI files, even if the program resides on a different computer platform. As a result, with OMFI, you can transfer among different applications on different platforms without worrying about cross-platform translations. This can be very effective for importing animation or audio files created on proprietary platforms.



To avoid errors and incompatibilities when you import and export OMFI files, observe the recommendations in “File Format Specifications” in the Help.

Exporting Through AAF

Advanced Authoring Format (AAF), is a cross-platform, multimedia file format that allows interchange of media and composition information between AAF-compliant applications. These applications are primarily content creation tools such as Avid editing systems, Avid|DS, and Sonic Foundry's Sound Forge[®], to name a few.

There are two general types of data in an AAF file:

- Media such as audio and video
- Composition information, or metadata, that provides the instructions needed to combine and modify the media portions of the AAF file to produce a complete multimedia program

Selecting an OMFI or an AAF Transfer Method

OMF Interchange and AAF, as implemented in your Avid system, provide two basic methods for exporting files.

Method 1: Compositions with Linked Media

The Avid system can export an OMFI or an AAF file that contains only the editing information about a selected master clip or sequence. The file also contains links to the media used in the clip or sequence. You then need to transfer the OMFI or AAF file to the other system, and either transfer the media files or recapture the media. After you have transferred or recaptured the media, you can transfer revised composition-only files. However, if you consolidate the media, you must transport the consolidated media files, as well. You can consolidate media during the export (see [“Exporting As an OMFI or an AAF File” on page 254](#)) or before the export (see “Consolidating Media” in the Help).

Method 2: Compositions with Embedded Media

The Avid system can export an OMFI or an AAF file that contains all the editing information for the selected master clip or sequence along with the video and audio media files for that master clip or sequence. See [“Exporting As an OMFI or an AAF File” on page 254](#).

Exporting As an OMFI or an AAF File



You cannot export OMFI files that are larger than 2 GB. If you exceed this limit, an error message is displayed. For information on exporting large sequences, see [“Preparing to Export a Sequence” on page 246](#).

To export master clips or sequences as an OMFI or an AAF file:

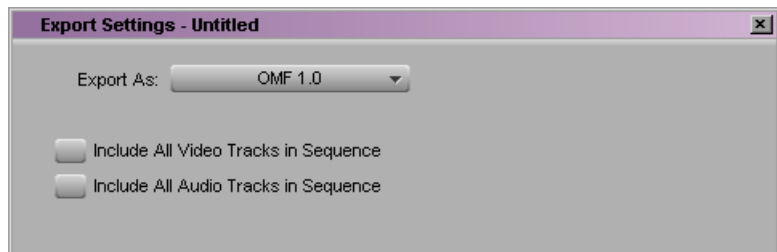
1. Prepare the sequence, as described in [“Preparing to Export a Sequence” on page 246](#).
2. Select a clip or a sequence to export, as described in [“Exporting Frames, Clips, or Sequences” on page 248](#).
3. Select File > Export.

The Export As dialog box opens.

4. Click the Export Settings pop-up menu, and select a setting.
If you want to create a new setting, select Untitled.
5. Click the Options button.

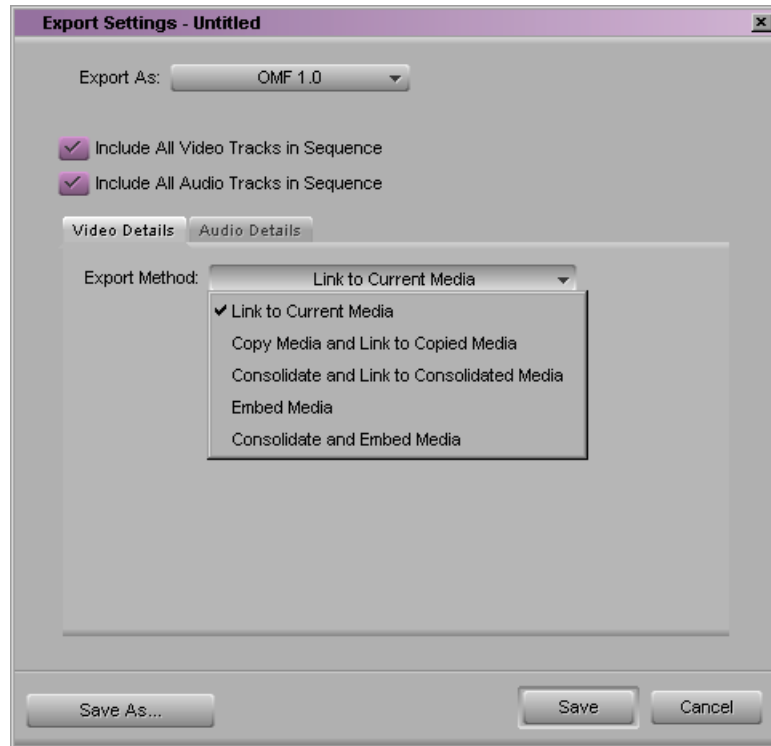
The Export Settings dialog box opens.

You can create settings in advance. See [“Customizing Export Settings” on page 252](#).



6. Click the Export As pop-up menu, and select OMF 1.0, OMF 2.0, or AAF.

7. Select other options as described in “Export Settings: OMFI and AAF Options” in the Help.



8. Do one of the following:
 - ▶ To save your settings in the existing settings file, click Save.
 - ▶ To create a new settings file, click Save As.

The Save Export Setting dialog box opens.

Name the setting by typing a name in the Setting Name text box, and click OK.
9. In the Export As dialog box, select the destination folder for the file.
10. (Option) Change the file name.

In most cases, keep the file name extension the same.
11. Click Save.

The file is exported to the selected destination.



If a power failure or application error occurs during the export process, the entire file is unusable. You need to repeat the export process.

Improving Workflow Using Send To

The Send To feature enables you to send sequences or master clips from your Avid editing system to other applications, automating your workflow. The Send To option provides you with a choice of several pre-defined templates to streamline your workflow. These templates are set to default parameters, customized for the specific workflow. In many instances you can choose to automatically launch the application to which you are sending your clip or sequence.

Avid recommends you use the pre-defined template default settings, which have been qualified by Avid.

To use the predefined templates:

1. Select a sequence in a bin.
2. Select File > Send To.
3. Select the desired Send To template option.
4. Click Set and choose a destination folder for the exported files.
5. Click OK.

The file is exported to the selected destination.

For more details about individual Send To options, see the following topics:

- [Send To Digidesign Pro Tools](#)
- [Send To DVD](#)
- [Send To Sorenson Squeeze](#)
- [Send To Avid | DS](#)
- [Send To Third-Party Applications](#)



The Avid Xpress Studio Send To submenu may appear in your editing application, but is applicable only when running the Avid Xpress Studio package.

Send To Digidesign Pro Tools

When exporting a sequence to Digidesign Pro Tools, simply choose Digidesign Pro Tools and choose how you want to export (i.e., linking or consolidating the audio) and the best export template for your request is automatically selected.

To export directly to Digidesign Pro Tools:

1. Prepare the sequence, as described in [“Preparing to Export a Sequence” on page 246](#).
2. Select a sequence in a bin.
3. Select File > Send To.

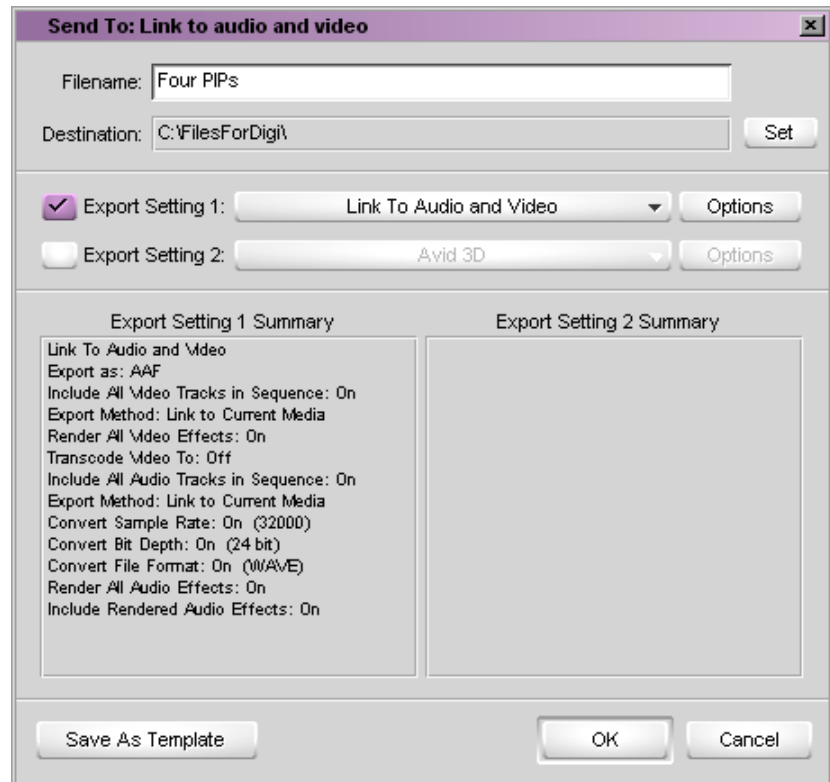
The Send To submenu opens.



To access Send To from the shortcut menu, right-click the clip or sequence in the bin.

4. Select Digidesign Pro Tools from the Send To submenu.
5. Select from one of the following options.
 - Link to audio + video
 - Link to audio + QT ref
 - Link to audio + QT mov
 - Consolidate - link to audio + video
 - Consolidate - embed audio only
 - Consolidate - embed audio + QT mov

The Send To dialog box opens with a default export template.



The filename displays the name of the sequence or clip you chose.

6. (Option) Change the file name.
7. Click Set to browse to the drive and folder to which you want to export the sequence. Click OK.

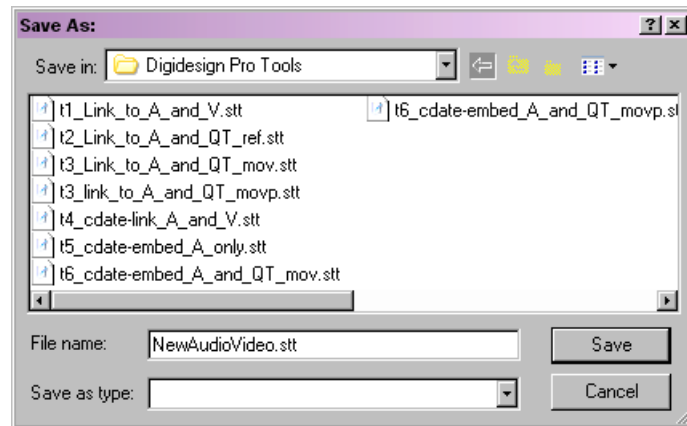


Whenever you return to a Send To dialog box, the destination folder that was last set appears in the destination field.

8. Review the Export Setting Summary.

If you chose Link to audio + QT ref, Link to audio + QT mov, or Consolidate - embed audio + QT mov, the Export Setting 1 Summary will display the appropriate settings options for link or consolidate to audio. The Export Setting 2 Summary will display the appropriate settings options for QuickTime Movie, or QuickTime Reference.

9. (Option) If you need to make any changes, select the Options button and make any necessary changes and click Save.
10. (Option) If you make any changes to the Send To dialog box, you can choose to save these changes as a new template.
 - a. Click the Save As Template button.



- b. Rename the file. Make sure you leave the .stt extension.
 - c. Click Save.
- The new template is saved. The next time you select a sequence, and choose File > Send To, the new template appears in the list.
11. Click OK.
- The file is exported to the selected destination.

Send To DVD

When you choose to export to a DVD authoring application, a QuickTime Reference Movie template is selected. If your sequence includes MetaSync tracks you can choose to export the MetaSync tracks as XML.

To export directly to DVD:

1. Prepare the sequence, as described in [“Preparing to Export a Sequence” on page 246](#).
2. Select a clip or a sequence in a bin.
3. Select File > Send To.

The Send To submenu opens.



To access Send To from the shortcut menu, right-click the clip or sequence in the bin.

4. Select DVD from the Send To submenu. And Select QuickTime Reference submenu.

The Send To dialog box opens with a default export template.



The filename displays the name of the sequence or clip you chose.

5. (Option) Change the file name.
6. Click Set to browse to the drive and folder to which you want to export the sequence. Click OK.



Whenever you return to a Send To dialog box, the destination folder that was last set appears in the destination field.

7. Review the Export Setting Summary.

8. (Option) If you need to make any changes, select the Options button and make any necessary changes. Click Save.
9. (Option) Perform the following if you want the DVD application to automatically launch after you export.
 - a. (Option) Click the Auto Launch button, and select Add Item.
 - b. (Option) Browse to find the DVD application.
 - c. Click Open.
 - d. Select Auto Load Exported File(s) if you want the files you export to automatically load in the DVD application.
 - e. Select Reveal file if you want the system to search available drives, open Windows Explorer, and highlight related media files.
10. (Option) Select the following if your sequence includes MetaSync tracks:
 - a. Choose to export the MetaSync tracks as XML or AAF files. If you choose XML, the system performs an AAF export, and then automatically opens MetaSync Publisher which produces the XML file. For more information on MetaSync Publisher, see “Using MetaSync Publisher” in the Help.
 - b. Select Reveal file if you want the system to search available drives, open Windows Explorer, and highlight related MetaSync files.
 - c. (Option) If you want to automatically load the XML files in another application, choose Auto Launch, and select the application.
11. (Option) If you make any changes to the Send To dialog box, you can choose to save these changes as a new template.
 - a. Click the Save As Template button.
 - b. Rename the file. Make sure you leave the .stt extension.
 - c. Click Save.

The new template is saved. The next time you select a sequence, and choose File > Send To, the new template appears in the list.

12. Click OK.

The QuickTime references movie and optional MetaSync files are exported to the selected destination.

Send To Sorenson Squeeze

When you send directly to Sorenson Squeeze, a QuickTime Reference template is selected.

1. Prepare the sequence, as described in [“Preparing to Export a Sequence” on page 246](#).
2. Select a sequence in a bin.
3. Select File > Send To.

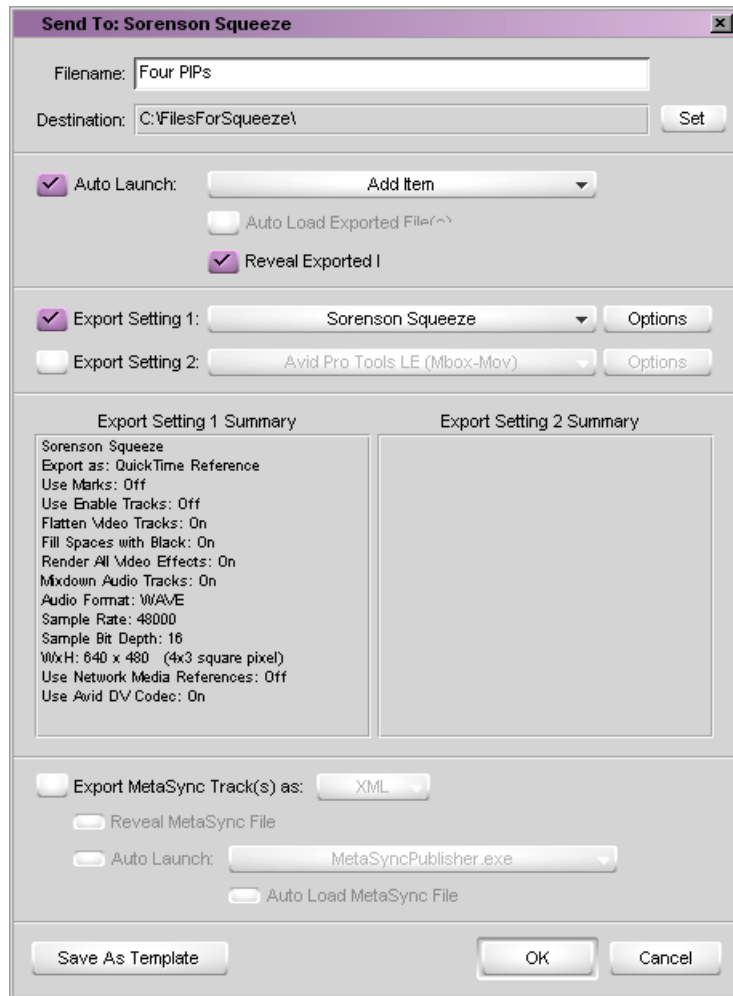
The Send To submenu opens.



To access Send To from the shortcut menu, right-click the clip or sequence in the bin.

4. Select Encoding from the Send To submenu. Then Select Sorenson Squeeze from the submenu.

The Send To dialog box opens with a default template.



The filename displays the name of the sequence or clip you chose.

5. (Option) Change the file name.
6. Click Set to browse to the drive and folder to which you want to export the sequence. Click OK.



Whenever you return to a Send To dialog box, the destination folder that was last set appears in the destination field.

7. Review the Export Setting Summary.

8. (Option) If you need to make any changes, select the Options button and make any necessary changes. Click Save.
9. (Option) Perform the following if you want the Sorenson Squeeze application to automatically launch after you export.
 - a. (Option) Click the Auto Launch button, and select Add Item.
 - b. (Option) Browse to find the Sorenson Squeeze application.
 - c. Click OK Open.
 - d. Select Auto Load Exported File(s) if you want the files you export to automatically load in the Sorenson Squeeze application.
 - e. Select Reveal file if you want the system to search available drives, open Windows Explorer, and highlight related media files.
10. (Option) Select the following if your sequence includes MetaSync tracks:
 - a. Choose to export the MetaSync tracks as XML files. The system performs an AAF export, and then automatically opens MetaSync Publisher which produces the XML file. For more information on MetaSync Publisher, see “Using MetaSync Publisher” in the Help.
 - b. Select Reveal file if you want the system to search available drives, open Windows Explorer, and highlight related XML files.
 - c. (Option) If you want to automatically load the XML files in another application, choose Auto Launch, and select the application.
11. (Option) If you make any changes to the Send To dialog box, you can choose to save these changes as a new template.
 - a. Click the Save As Template button.
 - b. Rename the file. Make sure you leave the .stt extension.
 - c. Click Save.

The new template is saved. The next time you select a sequence, and choose File > Send To, the new template appears in the list.
12. Click OK.

The QuickTime references movie and optional MetaSync files are exported to the selected destination.

Send To Avid | DS

When you choose to send to Avid | DS, the sequence is exported as an AFE file.

1. Prepare the sequence, as described in [“Preparing to Export a Sequence” on page 246](#).
2. Select a clip or a sequence in a bin.
3. Select File > Send To.

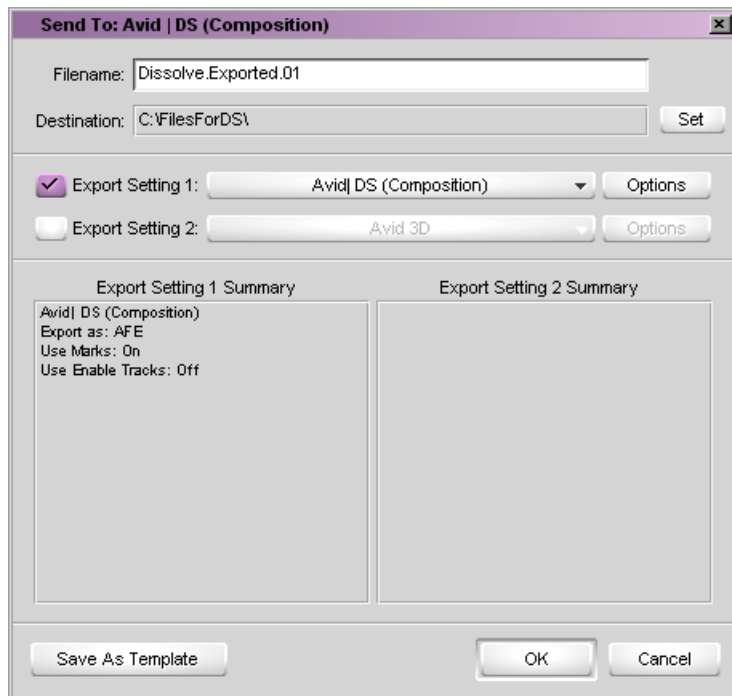
The Send To submenu opens.



To access Send To from the shortcut menu, right-click the clip or sequence in the bin.

4. Select Avid DS from the Send To submenu.

The Send To dialog box opens with a default export template.



The filename displays the name of the sequence or clip you chose.

5. (Option) Change the file name.
6. Click Set to browse to the drive and folder to which you want to export the sequence. Click OK.



Whenever you return to a Send To dialog box, the destination folder that was last set appears in the destination field.

7. Click the OK to save the AFE file.
The file is exported to the selected destination.

Send To Third-Party Applications

Avid provides a Make New option that allows you to customize your own Send To template for third-party applications.

To create your own template:

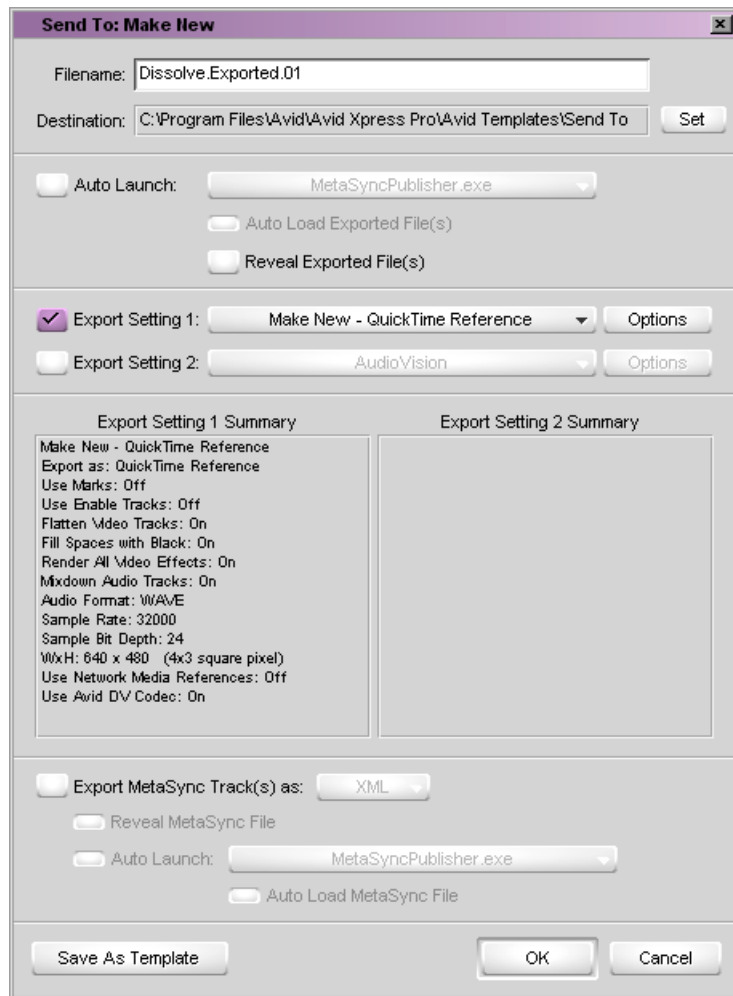
1. Prepare the sequence, as described in [“Preparing to Export a Sequence” on page 246](#).
2. Select a clip or a sequence in a bin.
3. Select File > Send To.

The Send To submenu opens.



To access Send To from the shortcut menu, right-click the clip or sequence in the bin.

4. Select Make New from the Send To submenu.
The Send To dialog box opens with a default export template.



5. (Option) Change the file name.
6. Select the destination folder for the file. Click OK.



Whenever you return to a Send To dialog box, the destination folder that was last set appears in the destination field.

7. Review the Export Setting Summary.
8. (Option) If you need to make any changes, select the Options button and make any necessary changes. Click Save.

9. (Option) Perform the following if you want the third-party application to automatically launch after you export.
 - a. (Option) Click the Auto Launch button, and select Add Item.
 - b. (Option) Browse to find the third-party application.
 - c. Click OK Open.
 - d. Select Auto Load Exported File(s) if you want the files you export to automatically load in the third-party application.
 - e. Select Reveal file if you want the system to search available drives, open Windows Explorer, and highlight related media files.
10. (Option) Select the following if your sequence includes MetaSync tracks:
 - a. Choose to export the MetaSync tracks as XML files. The system performs an AAF export, and then automatically opens MetaSync Publisher which produces the XML file. For more information on MetaSync Publisher, see Using MetaSync Publisher in the Help.
 - b. Select Reveal file if you want the system to search available drives, open Windows Explorer, and highlight related XML files.
 - c. (Option) If you want to automatically load the XML files in another application, choose Auto Launch, and select the application.
11. Click OK.
12. The Save As dialog opens.
13. Name the new Send To (.stt) template.
14. Click Save.

You can use this new template when working with the third-party application.

Exporting Video in DV Stream Format

Use the DV Stream format when exporting video that will be combined or processed with other DV-formatted media. This option requires a video track.

To export in DV Stream format:

1. Prepare the sequence, as described in [“Preparing to Export a Sequence” on page 246](#).
2. Select a clip or a sequence to export, as described in [“Exporting Frames, Clips, or Sequences” on page 248](#).
3. Select File > Export.

The Export As dialog box opens.

4. Click the Export Settings pop-up menu, and select a setting.

If you want to create a new setting, select Untitled.

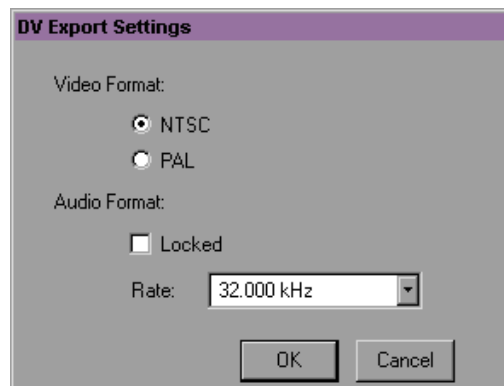
5. Click the Options button.

The Export Settings dialog box opens.

6. Click the Export As pop-up menu, and select DV Stream.
7. Select other options as described in “Export Settings: DV Stream Options” in the Help.
8. Click the Format Options button.

The DV Export Settings dialog box opens.

You can create settings in advance. See [“Customizing Export Settings” on page 252](#).



9. Select a video format and an audio format. For compatibility with DV cameras that require unlocked audio, deselect Locked.
10. Click OK.
11. In the Export Settings dialog box, do one of the following:
 - ▶ To save your settings in the existing settings file, click Save.
 - ▶ To create a new settings file, click Save As.The Save Export Setting dialog box opens.

Name the setting by typing a name in the Setting Name text box, and click OK.
12. In the Export As dialog box, select the destination folder for the file.
13. (Option) Change the file name.

In most cases, keep the file name extension the same.
14. Click Save.

The file is exported to the selected destination.



If a power failure or application error occurs during the export process, the entire file is unusable. You need to repeat the export process.

Exporting QuickTime Movies

You can export a sequence as a QuickTime movie for final distribution or for further processing in another application. There are three basic methods for QuickTime export, as described in the following table.

Selecting a QuickTime Export Option

Option	Description
Same as Source	This option is available when you select QuickTime Movie from the Export Settings dialog box. When you select this option, the system copies the media files directly with no resolution change. This method is fast and creates output that uses the same quality as your source files. Selecting Same as Source is the best method to use if you plan to process the video on another system, using a third-party application. See “Exporting As a QuickTime Movie” on page 273 .

Selecting a QuickTime Export Option (Continued)

Option	Description
Custom	<p>This option is also available when you select QuickTime Movie from the Export Settings dialog box. When you select this option, the system decompresses the files, processes them, and compresses the files at the requested resolution. This method is slower and often loses quality. In general, you should only use the Custom option if you have to directly export a clip or sequence in a particular file format. See “Exporting As a QuickTime Movie” on page 273.</p> <p>The Custom format is useful if you plan to export to an older ABVB or NuVista system.</p>
QuickTime Reference	<p>QuickTime Reference is available from the Export As pop-up menu in the Export Settings dialog box. This option is similar to Same as Source, but the system links to the original media files. This is the fastest method of export, but the movie can only be run or processed on your local system or in an Avid Unity MediaNetwork workgroup environment. If you want to transfer a QuickTime movie to another system, you must also move the associated media files by creating a self-contained QuickTime movie. See “Exporting As a QuickTime Reference Movie” on page 275.</p>

Exporting As a QuickTime Movie

To export as a QuickTime movie:

1. Prepare the sequence, as described in [“Preparing to Export a Sequence” on page 246](#).
2. Select a clip or a sequence to export, as described in [“Exporting Frames, Clips, or Sequences” on page 248](#).
3. Select File > Export.

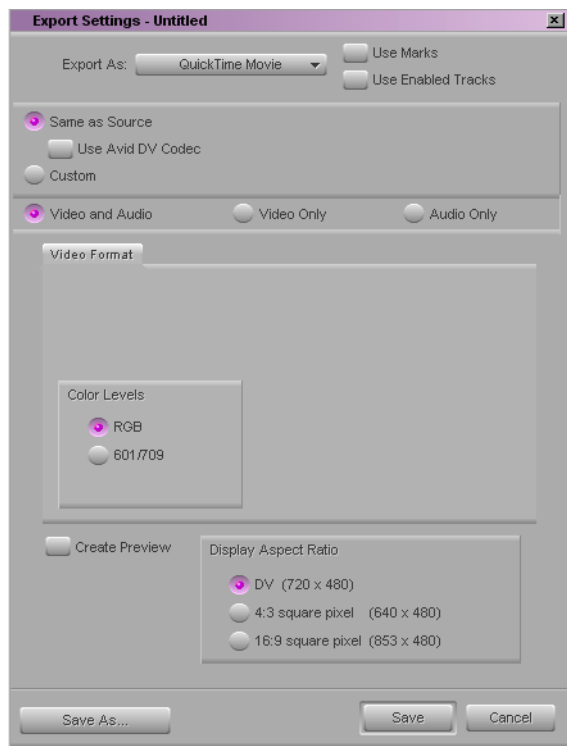
The Export As dialog box opens.

You can create settings in advance. See [“Customizing Export Settings” on page 252](#).

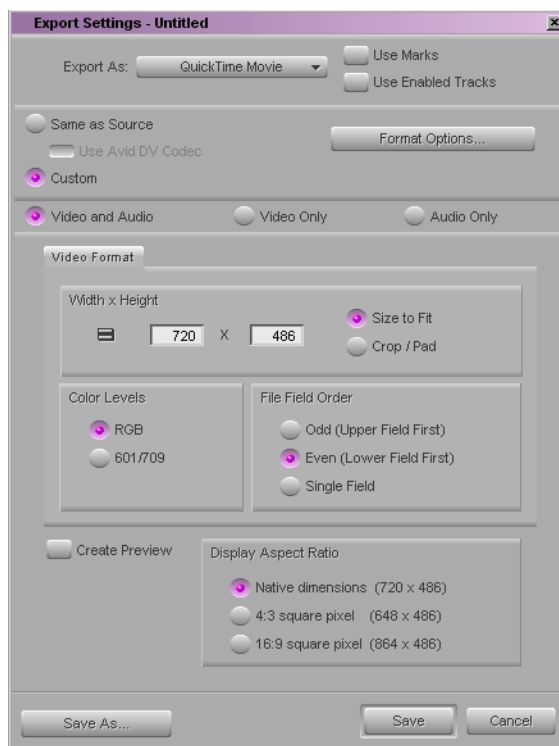
4. Click the Export Settings pop-up menu, and select a setting.
If you want to create a new setting, select Untitled.
5. Click the Options button.
The Export Settings dialog box opens.
6. Click the Export As pop-up menu, and select QuickTime Movie.



If you installed additional QuickTime Export formats, they appear in the pop-up menu with tildes (~) before their names. This indicates they have not been qualified and are not supported by Avid.



QuickTime Movie (Same as Source)



QuickTime Movie (Custom)

7. Select the Same as Source option to use the resolution of the source file or select the Custom option to customize your settings.



Using Same as Source results in the fastest export and is usually the best selection for a movie that will be processed by another application. See “Exporting QuickTime Movies” on page 272.

8. Select the remaining options as described in “Export Settings: QuickTime Movie Export Options” in the Help.

To change the codec (*compressor/decompressor*) used for compression, click the Format Options button. For a description of the options, see “Selecting QuickTime Movie Format Options” on page 275.

9. Do one of the following:

- ▶ To save your settings in the existing settings file, click Save.
- ▶ To create a new settings file, click Save As.

The Save Export Setting dialog box opens.

Name the setting by typing a name in the Setting Name text box, and click OK.

10. In the Export As dialog box, select the destination folder for the file.

11. (Option) Change the file name.

In most cases, keep the file name extension the same.

12. Click Save.

The file is exported to the selected destination.



If a power failure or application error occurs during the export process, the entire file is unusable. You need to repeat the export process.

Selecting QuickTime Movie Format Options

“Export Settings: QuickTime Movie Settings” in the Help describes QuickTime codecs and settings that are available on your Avid system. The codecs that appear depend on the version of QuickTime that is installed. Not all settings are available for all codecs.

Exporting As a QuickTime Reference Movie

A QuickTime reference movie is a QuickTime movie that contains composition information but no movie data. Instead, the movie contains pointers to the original media in the OMFI MediaFiles directory on local or network media drives. Because the QuickTime reference movie does not contain media, the file is much smaller than a QuickTime movie, usually only a few kilobytes per file. Therefore, exporting a sequence as a QuickTime reference movie is faster and takes up less disk space than exporting a sequence as a QuickTime movie. When you play back the movie in QuickTime Player, the movie references the media files for playback.

QuickTime reference movies are useful as long as you are working with Avid OMFI media files available on your local system or in an Avid Unity MediaNetwork workgroup. Advantages are speed and small file size because the system does not copy the source media files into the exported QuickTime

file. However, if you expect to move the exported QuickTime file to a system that doesn't have access to the media, then you should use the standard QuickTime export so the media files and QuickTime wrapper can be moved as one file.

To export as a QuickTime reference movie:

1. Prepare the sequence, as described in [“Preparing to Export a Sequence” on page 246](#).
2. Select a clip or a sequence to export, as described in [“Exporting Frames, Clips, or Sequences” on page 248](#).
3. Select File > Export.

The Export As dialog box opens.

4. Click the Export Settings pop-up menu, and select a setting.

If you want to create a new setting, select Untitled.

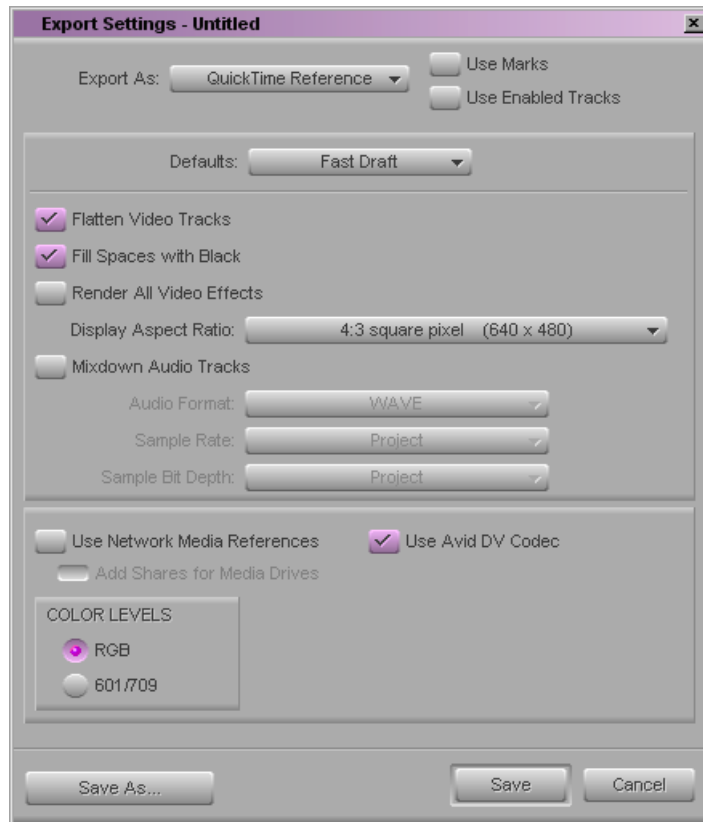
5. Click the Options button.

The Export Settings dialog box opens.

6. Click the Export As pop-up menu, and select QuickTime Reference.

The Export Settings dialog box displays the QuickTime Reference options.

You can set these options in advance. See [“Customizing Export Settings” on page 252](#).



7. Select other options as described in “Export Settings: QuickTime Reference Options” in the Help.

8. Do one of the following:

- ▶ To save your settings in the existing settings file, click Save.
- ▶ To create a new settings file, click Save As.

The Save Export Setting dialog box opens.

Name the setting by typing a name in the Setting Name text box, and click OK.

9. In the Export As dialog box, select the destination folder for the file.

10. (Option) Change the file name.

In most cases, keep the file name extension the same.

11. Click Save.

The file is exported to the selected destination.



If a power failure or application error occurs during the export process, the entire file is unusable. You need to repeat the export process.

Using Avid Codecs for QuickTime

You can use the following Avid codecs when exporting QuickTime files from your Avid system or from third-party applications for fast import into an Avid system:

- Avid 1:1x (Uncompressed MXF 8-bit resolution)
- Avid ABVB NuVista (AVR resolutions)
- Avid DNxHD (HD MXF 8-bit and 10-bit resolutions)
- Avid DV (DV 25/DV 50 resolutions)
- Avid DV100 (DV 100 MXF resolution)
- Avid Meridien Compressed (JFIF resolutions)
- Avid Meridien Uncompressed (OMF 8-bit resolution)
- Avid MPEG-50 mbit (MPEG-IMX resolutions)
- Avid Packed (Uncompressed MXF 10-bit resolution)

The Avid codecs create encapsulated media files for export of high-resolution files that are readable within QuickTime applications. The Avid codec you use to export the file must be loaded on the system running the QuickTime application for the application to read the exported file. See [“Installing the Avid Codecs for QuickTime on Other Systems”](#) on page 283.



You get the best results by using the Same as Source option. See “Exporting As a QuickTime Movie” on page 273.

Exporting with Avid QuickTime Codecs

To export a clip or sequence by using one of the Avid codecs:

1. Prepare the sequence, as described in [“Preparing to Export a Sequence”](#) on page 246.
2. Select a clip or a sequence to export, as described in [“Exporting Frames, Clips, or Sequences”](#) on page 248.
3. Select File > Export.

The Export As dialog box opens.

You can create settings in advance. See [“Customizing Export Settings”](#) on page 252.

4. Click the Export Settings pop-up menu, and select a setting.

If you want to create a new setting, select Untitled.

5. Click the Options button.

The Export Settings dialog box opens.

6. Click the Export As pop-up menu, and select QuickTime Movie.

7. Select the Custom option.

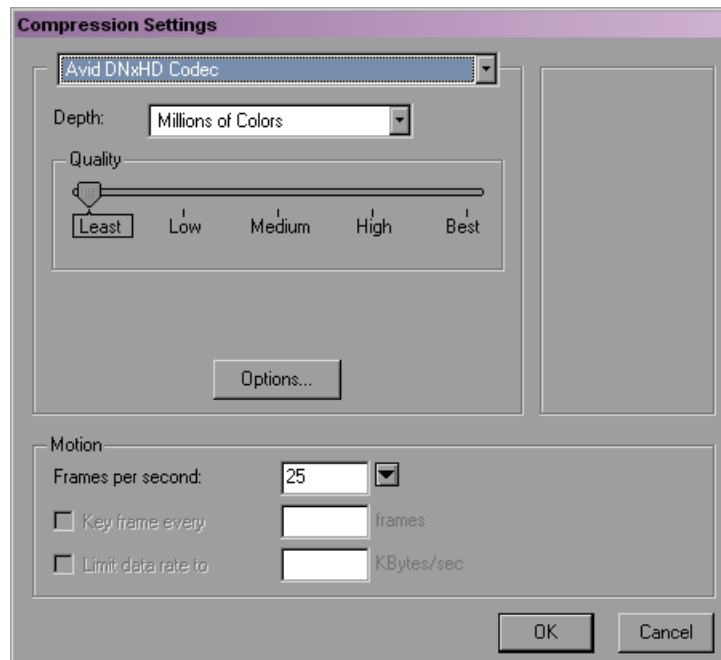
8. Click the Format Options button.

The Movie Settings dialog box opens.

9. Click Settings in the Video area.

The Compression Settings dialog box opens.

10. Select the codec that you want to use for export.

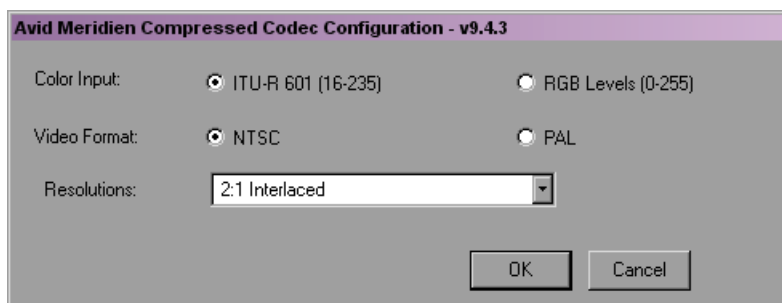
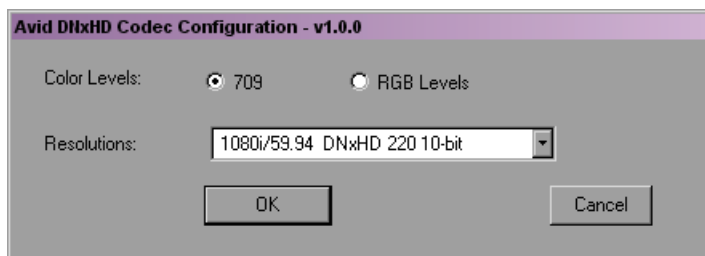


11. Click the Options button.

A Codec Configuration dialog box opens. The settings depend on the codec that you selected.



The Quality slider does not affect your settings.



12. Select the settings that you want, and click OK.

For Color Levels or Color Input, select the color levels of the source media. If you are exporting from an Avid editing system, use ITU-R 601 (SD) or 709 (HD).

13. Click OK in the Compression Settings dialog box.
14. Click OK in the Movie Settings dialog box.

The Export Settings dialog box reopens.

15. Do one of the following:

- ▶ To save your settings in the existing settings file, click Save.
- ▶ To create a new settings file, click Save As.

The Save Export Setting dialog box opens.

Name the setting by typing a name in the Setting Name text box, and click OK.

16. In the Export As dialog box, select the destination folder for the file.

17. (Option) Change the file name.

In most cases, keep the file name extension the same.

18. Click Save.

The file is exported to the selected destination.



If a power failure or application error occurs during the export process, the entire file is unusable. You need to repeat the export process.

Exporting As an AVI File

To export as an AVI file:

1. Prepare the sequence, as described in [“Preparing to Export a Sequence” on page 246](#).
2. Select a clip or a sequence to export, as described in [“Exporting Frames, Clips, or Sequences” on page 248](#).
3. Select File > Export.

The Export As dialog box opens.

4. Click the Export Settings pop-up menu, and select a setting.
If you want to create a new setting, select Untitled.
5. Click the Options button.

You can create settings in advance. See [“Customizing Export Settings” on page 252](#).

The Export Settings dialog box opens.



6. Click the Export As pop-up menu, and select AVI.
7. Select AVI options as described in “Export Settings: AVI Settings” in the Help.
8. Select an AVI codec by clicking the Codec Options button.

The Video Compression dialog box opens.
9. Select the compressor you want, and click the Configure button to further configure the codec. For more information, see “Export Settings: AVI Video Compression Options” in the Help.
10. Click OK to close the Video Compression dialog box and to return to the Export Settings dialog box.
11. Do one of the following:
 - ▶ To save your settings in the existing settings file, click Save.
 - ▶ To create a new settings file, click Save As.

The Save Export Setting dialog box opens.

Name the setting by typing a name in the Setting Name text box, and click OK.

12. In the Export As dialog box, select the destination folder for the file.

13. (Option) Change the file name.

In most cases, keep the file name extension the same.

14. Click Save.

The file is exported to the selected destination.



If a power failure or application error occurs during the export process, the entire file is unusable. You need to repeat the export process.

AVI Settings Options

“Export Settings: AVI Settings” in the Help describes the AVI settings options in the Export Settings dialog box. In the Video Format tab, you can also select further options by clicking the Codec Options button.

Installing the Avid Codecs for QuickTime on Other Systems

When you install the Avid editing application on your system, the Avid Codecs for QuickTime are automatically installed. If you want to export a QuickTime movie from a third-party application such as Adobe After Effects® for use on an Avid system, you should have the appropriate Avid codec installed on the system running the third-party application.

Use the following technique to copy the codecs to other systems:

- Copy the Avid Codecs for QuickTime to other Windows or Macintosh workstations where you are using QuickTime compatible applications. Once the Avid Codecs for QuickTime are installed on the workstation, you can export files from the QuickTime compatible application for reimport into the Avid editing system. See [“Copying the Avid Codecs for QuickTime to Another Windows System”](#) on page 284.

Copying the Avid Codecs for QuickTime to Another Windows System

To copy the Avid Meridien Codecs for QuickTime to another Windows system:

1. On your Avid system, open the following folder:
drive:\WINNT\System32
2. Copy the codecs you need to a floppy disk or network server.
The following table describes the codecs:

Codec	Description
AvidAV1xCodec.qtx	Avid 1:1x codec (Uncompressed MXF 8-bit)
AvidAVd1Codec.qtx	Avid DV 100 codec (MXF)
AvidAVdnCodec.qtx	Avid DNxHD codec (MXF)
AvidAVdvCodec.qtx	Avid DV codec(DV 25 and DV 50, OMF and MXF)
AvidAVmpCodec.qtx	Avid MPEG 50 codec (MPEG-IMX, OMF and MXF)
AvidAVpkCodec.qtx	Avid Packed codec (Uncompressed MXF 10-bit)
AvidQTAVJICodec.qtx	Avid Meridien Compressed codec (OMF 8-bit)
AvidQTAVUICodec.qtx	Avid Meridien Uncompressed codec (OMF 8-bit)
AvidQTCCodec.qtx	Avid ABVB NuVista codec (OMF)

For the DV 100 and DNxHD codecs, you must also copy the following files:

- libmmd.dll
 - msvcr71.dll
3. On the other system, copy the files to one of the following folders:
drive:\WINNT\System32 (Windows 2000)
drive:\Windows\System32 (Windows XP)

Exporting from a Third-Party QuickTime or AVI Application

To export files from a QuickTime compatible application or from an AVI compatible application on a Windows system for import (or reimport) into your Avid system:

1. Make sure the applicable codec is installed on the system. See [“Installing the Avid Codecs for QuickTime on Other Systems” on page 283](#).
2. Conduct the export procedure according to the procedures used by the particular software.
3. When you get to the step where the standard Export Settings dialog box opens, select the applicable Avid compressor.

For QuickTime exports, most applications will have format options similar to those described in [“Selecting QuickTime Movie Format Options” on page 275](#). Make sure you select settings that will be compatible with your existing media on the Avid system.



If you select a nonstandard frame size, your Avid system will not import the file quickly.

4. Complete the export.

Exporting as Windows Media

The Avid editing application allows you to export your sequence as native Windows Media. Before you perform any export procedures, make sure you have reviewed [Preparing to Export a Sequence](#).

This section includes the following:

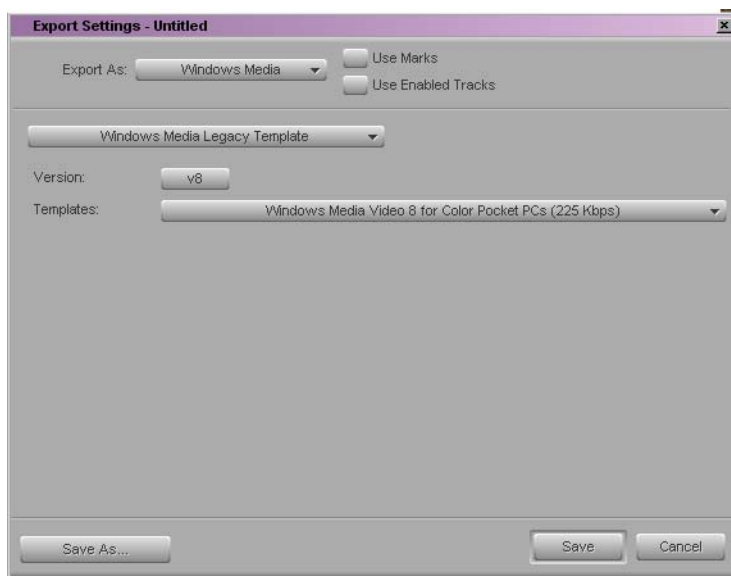
- [Exporting Using an Avid Supplied Template](#)
- [Exporting Using an Existing Windows Media Profile](#)
- [Exporting Using a Custom Profile](#)
 - [Creating a Custom Video Profile](#)
 - [Creating a Custom Audio Profile](#)

Exporting Using an Avid Supplied Template

The Avid editing application includes a number of Windows Media templates you can use to export media.

To export as Windows Media using an Avid supplied template:

1. Select the sequence or clips to export.
2. Select File > Export.
The Export A dialog box opens.
3. Click the Options button.
The Export Settings dialog box opens.
4. In the Export As menu, select Windows Media.
5. Select Use Marks and/or Use Enabled Tracks. When Use Marks is selected the current IN and OUT points in the selected clip or sequence determine starting and ending frames for the export. When Use Enabled Tracks is selected, the system uses tracks that are enabled in the Timeline. To export all the tracks in the sequence, deselect this option.



6. Select Windows Media Legacy Template.

7. Select Version: 8, 7 or 4. This refers to the available version 8, version 7, and version 4 Windows Media templates.
8. Choose from the Templates list of Windows Media options that best fits your needs.



Windows Media Legacy Template compatibility is subject to Windows media updates.

9. Click Save.
10. In the Export As dialog box, select the destination folder for the file.
11. (Option) Change the file name.
In most cases, keep the file name extension the same.
12. Click Save.
13. The sequence is exported using the selected template.

Exporting Using an Existing Windows Media Profile

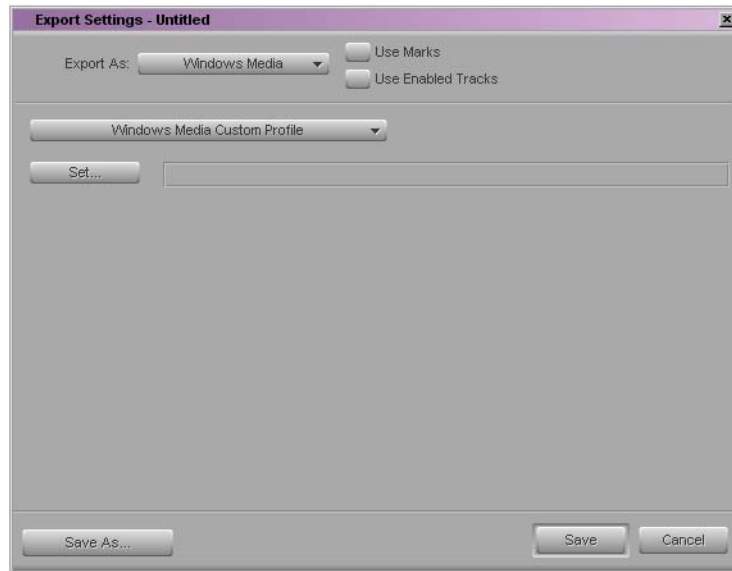
A Profile is a group of settings that match content type and bit rate with the appropriate audio and video codecs. Profiles have the file name extension .prx. If you have an existing .prx file, select that file to use for the Windows Media export settings.



A .prx file is basically a saved template. You can create and save .prx files to share with others.

To use an existing Windows Media Profile:

1. Select the sequence or clips you want to export.
2. Select File > Export.
The Export As dialog box opens.
3. Click the Options button.
The Export Settings dialog box opens.



4. From the Export As menu, select Windows Media.
5. Select Use Marks and/or Use Enabled Tracks. When Use Marks is selected the current IN and OUT points in the selected clip or sequence determine starting and ending frames for the export. When Use Enabled Tracks is selected, the system uses tracks that are enabled in the Timeline. To export all the tracks in the sequence, deselect this option.
6. Select Windows Media Custom Profile.
7. Click Set.
8. Browse to the location where the .prx file is located on your system, and select the file.
9. Click Open.
10. Click Save.
11. In the Export As dialog box, select the destination folder for the file.
12. (Option) Change the file name.

In most cases, keep the file name extension the same.
13. Click Save.

The file is exported using the selected profile settings.

Exporting Using a Custom Profile

The Avid editing system allows you to create custom audio and video profiles. Once you create the profile, you can use the settings in that profile to export a sequence.

Creating a Custom Video Profile

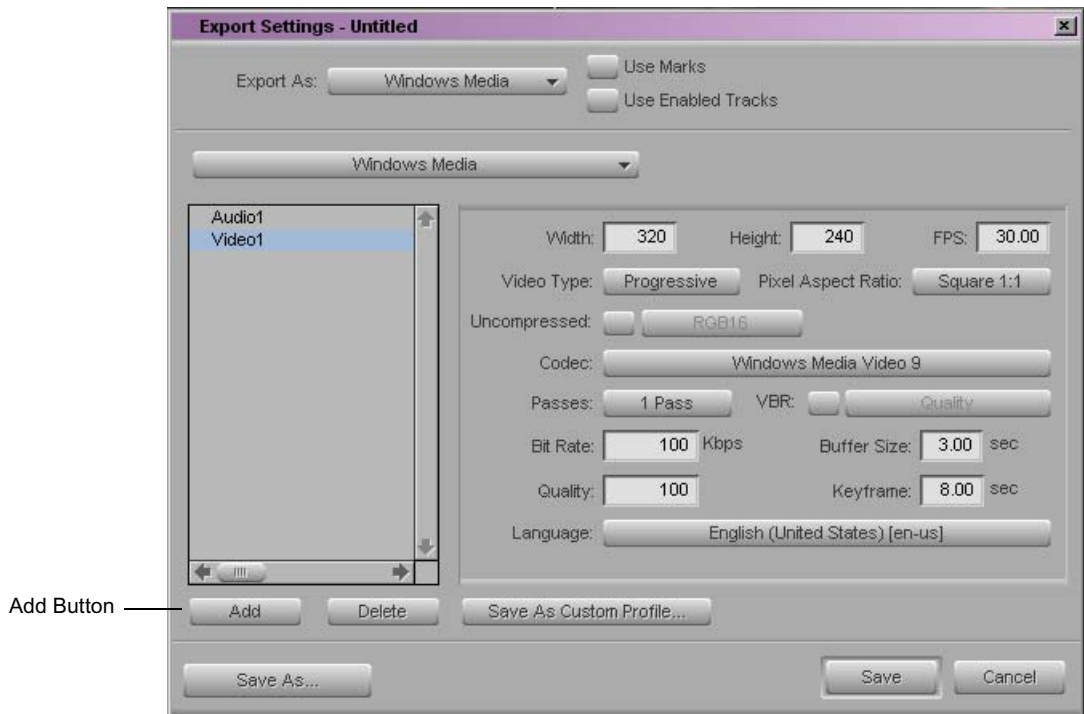
To create a custom video profile:

1. Select the sequence or clips you want to export.
2. Select File > Export.

The Export As dialog box opens.

3. Click the Options button.

The Export Settings dialog box opens.



4. In the Export As menu, select Windows Media.
5. Select Use Marks and/or Use Enabled Tracks. When Use Marks is selected the current IN and OUT points in the selected clip or sequence determine starting and ending frames for the export. When Use Enabled Tracks is selected, the system uses tracks that are enabled in the Timeline. To export all the tracks in the sequence, deselect this option.
6. Click the Add button and select Video.
7. Choose the custom profile settings according to “Custom Profile Video Settings” in the Help.
8. (Option) Click Save As Custom Profile if you want to save the .prx file.
 - a. Browse to the location on the system where you want to save the .prx file.
 - b. Name the file and click Save. The .prx file is saved.

You are returned to the Export Settings window
9. Click Save to export the sequence.
10. In the Export As dialog box, select the destination folder for the file.
11. (Option) Change the file name.

In most cases, keep the file name extension the same.
12. Click Save.

The sequence is exported using the selected profile settings.

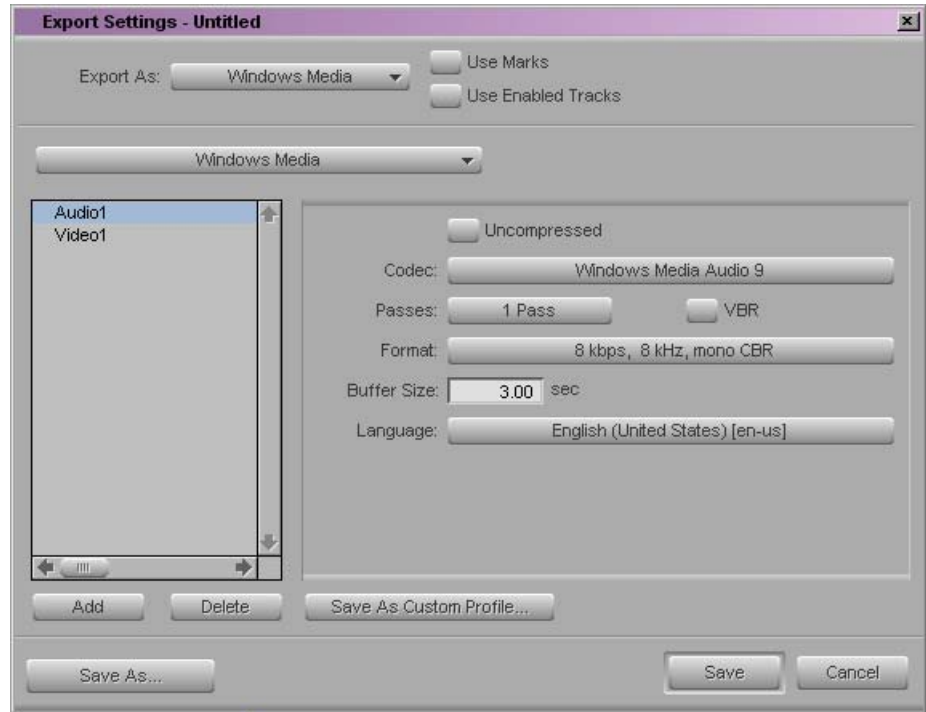
Creating a Custom Audio Profile

To create a custom audio profile:

1. Select the sequence or clips you want to export.
2. Select File > Export.

The Export As dialog box opens.
3. Click the Options button.

The Export Settings dialog box opens.



4. In the Export As menu, select Windows Media.
5. Select Use Marks and/or Use Enabled Tracks. When Use Marks is selected the current IN and OUT points in the selected clip or sequence determine starting and ending frames for the export. When Use Enabled Tracks is selected, the system uses tracks that are enabled in the Timeline. To export all the tracks in the sequence, deselect this option.
6. Click the Add button and select Audio.
7. Choose the custom profile settings according to “Custom Profile Audio Settings” in the Help.
8. (Option) Click Save As Custom Profile if you want to save the .prx file.
 - a. Browse to the location on the system where you want to save the .prx file.
 - b. Name the file and click Save. The .prx file is saved.

You are returned to the Export Settings window

9. Click Save to export the sequence.
10. In the Export As dialog box, select the destination folder for the file.
11. (Option) Change the file name.
In most cases, keep the file name extension the same.
12. Click Save.

The sequence is exported using the selected profile settings.

Exporting Tracks As Audio Files

To export the audio tracks in a clip or sequence as an audio file:

1. (Option) Mark IN or OUT points to identify a particular portion of the audio in a sequence.
2. Select the clip or sequence in one of two ways:
 - ▶ Click the monitor that displays the clip or sequence you want to export.
 - ▶ Click the clip or sequence in a bin.
3. Select File > Export.

The Export As dialog box opens.

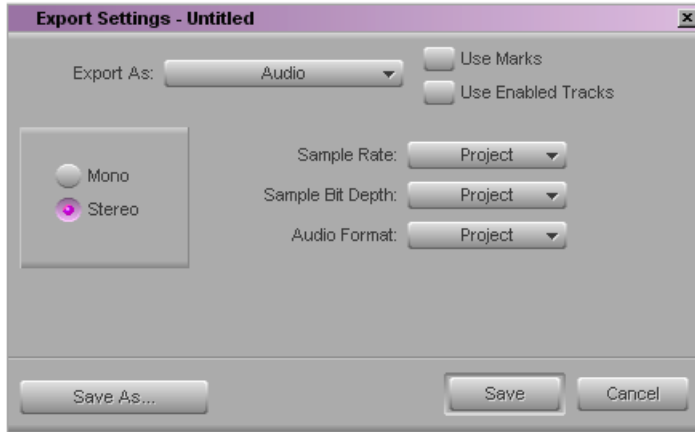
4. Click the Export Settings pop-up menu, and select a setting.
If you want to create a new setting, select Untitled.
5. Click the Options button.

The Export Settings dialog box opens.

6. Click the Export As pop-up menu, and select Audio.

The Export Settings dialog box displays the Audio options.

You can create settings in advance. See [“Customizing Export Settings” on page 252.](#)



7. Select the options you require. Use the “Export Settings: Audio Options” in the Help to make your selections.

8. Do one of the following:

- ▶ To save your settings in the existing settings file, click Save.
- ▶ To create a new settings file, click Save As.

The Save Export Setting dialog box opens.

Name the setting by typing a name in the Setting Name text box, and click OK.

9. In the Export As dialog box, select the destination folder for the file.

10. (Option) Change the file name.

In most cases, keep the file name extension the same.

11. Click Save.

The file is exported to the selected destination.



If a power failure or application error occurs during the export process, the entire file is unusable. You need to repeat the export process.

Exporting As a Graphic File

You can export a single frame as a graphic file or you can select to export multiple frames as sequentially numbered files.

To export as a graphic file:

1. Do one of the following:
 - ▶ If you plan to export a single frame, mark an IN point to export the marked frame from a bin or a monitor, or move the position indicator to the frame you want to export.
 - ▶ If you plan to export multiple frames, use IN and OUT points to identify the region to export.

2. Select File > Export.

The Export As dialog box opens.

3. Click the Export Settings pop-up menu, and select a setting.

If you want to create a new setting, select Untitled.

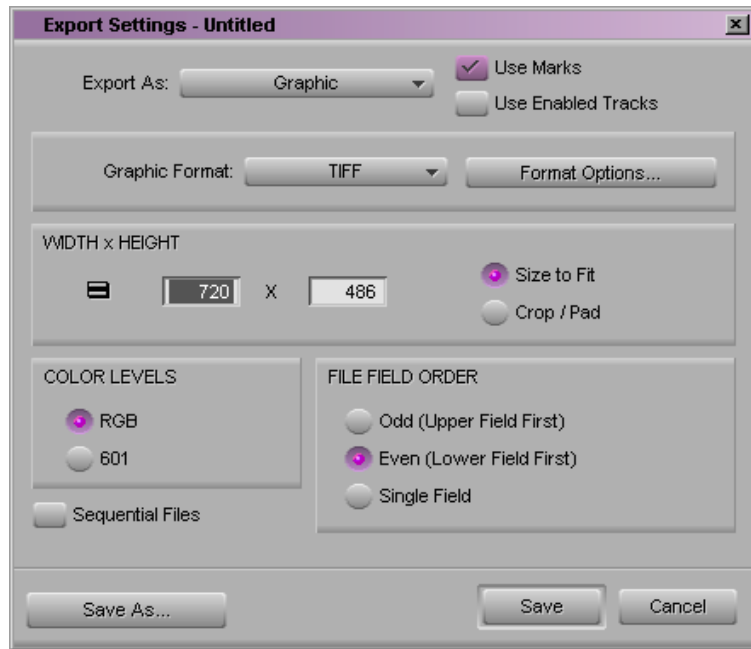
4. Click the Options button.

The Export Settings dialog box opens.

5. Click the Export As pop-up menu, and select Graphic.

The Export Settings dialog box displays the Graphic options.

You can create settings in advance. See [“Customizing Export Settings”](#) on page 252.



6. Click the Graphic Format pop-up menu, and select a format. Use “Export Settings: Graphic Format Options” in the Help to make your selection.
7. Select other options as appropriate. Use “Graphic Export Settings Options” in the Help to make your selection.
8. Do one of the following:
 - ▶ To save your settings in the existing settings file, click Save.
 - ▶ To create a new settings file, click Save As.

The Save Export Setting dialog box opens.

Name the setting by typing a name in the Setting Name text box, and click OK.
9. In the Export As dialog box, select the destination folder for the file.
10. (Option) Change the file name.

In most cases, keep the file name extension the same.
11. Click Save.

The file is exported to the selected destination.

When you are working with the Format Options settings, you can click Defaults to return the settings to their default values.



If a power failure or application error occurs during the export process, the entire file is unusable. You need to repeat the export process.

Appendix A

Working with HD Media

Media Composer Adrenaline HD includes support for capture, editing, and output of high-definition (HD) media in the following resolutions:

- Avid DNxHD™
- DVCPRO HD®

Avid DNxHD encoding technology delivers mastering-quality 8-bit or 10-bit HD media at standard definition (SD) data rates and file sizes.

Media Composer Adrenaline HD captures and processes DVCPRO HD media in its native format, through an optional 1394 (FireWire) card in your computer.

The following sections describe the features and options that let you capture, edit, and output HD media:

- [High-Definition Television](#)
- [HDTV Workflows](#)
- [Starting an HD Project](#)
- [Capturing HD Video and Audio](#)
- [Playback Modes for HD](#)
- [Video Color Space for HD](#)
- [Changing the Project Format](#)
- [Editing in HD](#)
- [Video Effects for HD](#)
- [Setting Video Output for HD](#)

- [Recording a Digital Cut for HD](#)
- [Video Import and Export for HD](#)

High-Definition Television

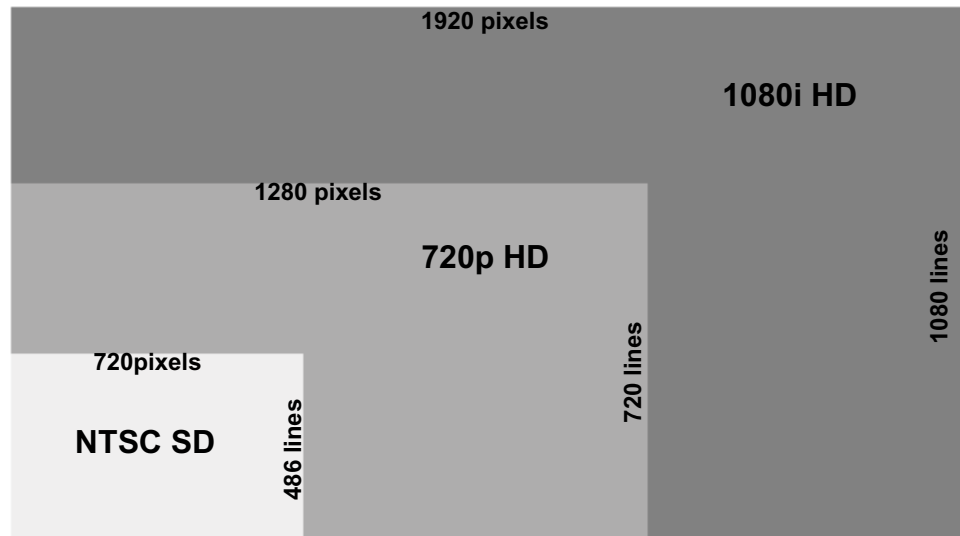
High-definition television (HDTV) is a digital broadcasting technology that delivers a larger, clearer, more detailed picture than standard definition television (SDTV). HDTV refers to specific digital television (DTV) formats that have been standardized by the Advanced Television Systems Committee (ATSC) and adopted by the United States Federal Communications Commission (FCC). HDTV for PAL has been standardized by the Digital Video Broadcasting (DVB) consortium.

The following table lists the HDTV digital formats that are supported in Media Composer Adrenaline HD.

Supported HDTV Formats

Pixel Dimension	Aspect Ratio	Interlaced Fields per Second	Progressive Frames per Second
1280 x 720	16:9	—	59.94
1920 x 1280	16:9	50, 59.94	23.976, 25

HDTV uses a 16:9 aspect ratio in place of the standard definition 4:3 ratio. The following illustration compares the pixel size of the most common HD formats—720p and 1080i—to that of the digital version of standard definition NTSC media (ITU-R 601). Both 1080i and 720p formats fill the 16x9 screen on HD television sets.



For more information about HD technology, see the *Avid HD Handbook: An A to Z Guide*, which is available on the Avid web site, www.avid.com.

HDTV Workflows

This section describes three common workflows in which you can use Avid HD systems:

- Creation of film-based television programs
- Creation of video-based television programs
- Creation of video graphics for broadcast

Film-Based Television Workflow

The following workflow describes the steps in creating film-based television programs that originate on film footage shot at 24 fps and that are planned for NTSC HDTV broadcast. This workflow uses features that let you change the project and sequence format, eliminating the need to create a new project and sequence (see “[Changing the Project Format](#)” on page 314 and “[Modifying the](#)”

[Format of a Sequence” on page 316](#)). Modifying the format of the sequence lets you keep both offline SD material and online HD material available in the same project.

For PAL broadcast, transfer film at 1080p/25, edit offline in a 25p PAL project, and edit online in a 1080p/25 project.

[“Offline Workflow: 24-fps Film Source for HDTV” on page 302](#) shows the offline stage of the workflow for such programs, and [“Online Workflow: 24-fps Film Source for HDTV” on page 303](#) shows the online stage.

To create a film-based HDTV program:

1. Use a telecine process to transfer 24-fps film footage to HD 1080p/23.976 video at 1:1 (no pulldown). The transfer should also create a shot log (for example, a FLEx file).
2. Create a 23.976p SD project on any Avid editing system that supports a 23.976p project.
3. Convert the shot log file with ALE and import it into the project to create a bin or bins.
4. Use a 24p deck to downconvert the HD video to ITU-R 601 SD video and batch capture the logged clips in an offline resolution, based on the shot log. The deck adds 2:3 pulldown (NTSC). The Avid system removes the extra pulldown fields and creates 23.976p media.
5. Edit at 23.976 fps, apply effects, and create a final sequence.
6. Use FilmScribe to create an OCN (original camera negative) pull list for another telecine process, to retransfer footage used in the final edit.
7. A negative cutter uses the pull list to create a reel of selects from the original negative (picture only). The telecine process uses the assembled reel to create a full color-corrected or flat-grade transfer to tape. The process also creates a new transfer file.
8. Transfer the project files to a Media Composer Adrenaline HD system. If you are using an Avid Unity shared storage system, the project will link to the existing SD media. If you are not using Avid Unity, transfer the SD media.
9. Open the project and change its format to 1080p/23.976. Review the offline sequence. Then modify the format of the sequence to create a new 1080p/23.976 sequence.
10. Convert the transfer file with ALE and import it.

11. Relink the 1080p/23.976p sequence and clips by key numbers (FTFT). Then batch capture clips as HD media, using an Avid DNxHD resolution.
12. Complete any other finishing, using the original offline sequence for reference.
13. Use the Digital Cut tool to output a 1080p/23.976 master tape. Then convert the master tape to 720p/59.94 or 1080i/59.94 for broadcast. Optionally, use the Avid editing system to crossconvert to 720p/59.94 or 1080i/59.94 for preview or reference.

Offline Workflow: 24-fps Film Source for HDTV

1. The telecine process transfers 24-fps film footage to HD 1080p/23.976 video at 1:1 (no pulldown) and creates a shot log.

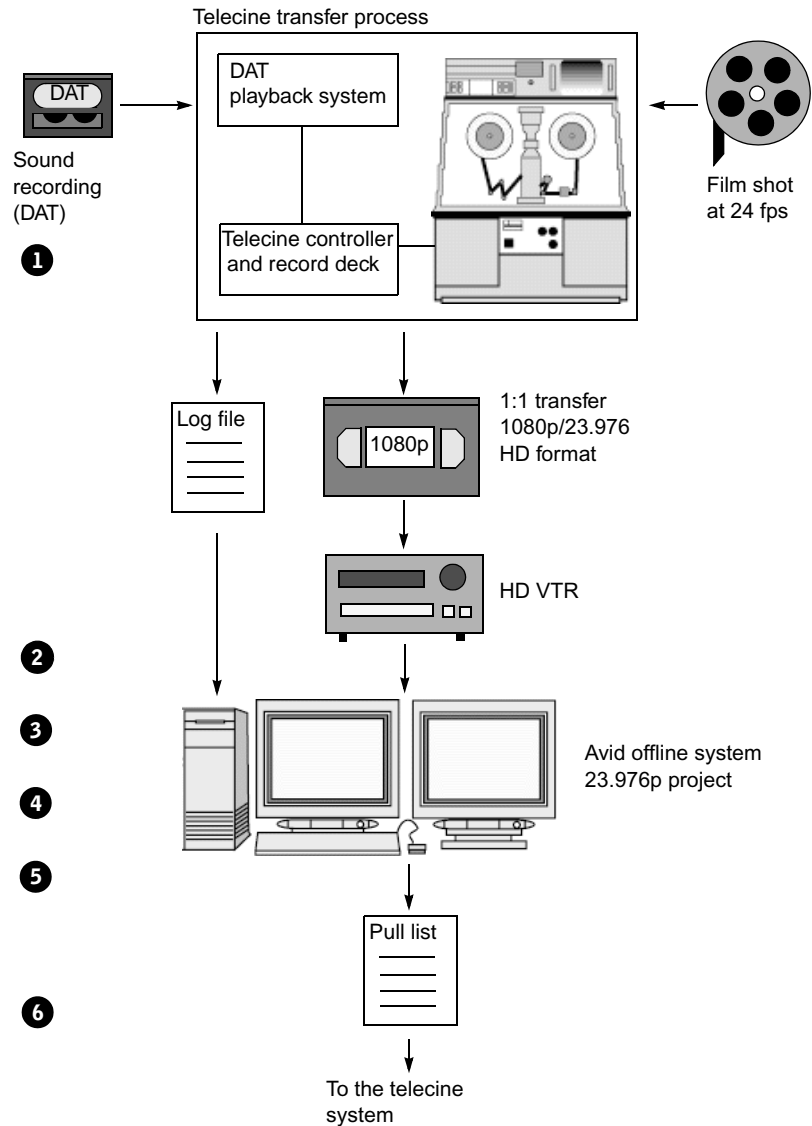
2. Create a 23.976p SD project on any Avid editing system that supports a 23.976p project.

3. Convert the shot log file with ALE and import it into the project to create a bin or bins.

4. Use a 24p deck to downconvert HD video to ITU-R 601 SD video and batch capture the logged clips in an offline resolution.

5. Edit at 23.976 fps, apply effects, and create a final sequence.

6. Use FilmScribe to create an OCU pull list for another telecine process, to retransfer footage used in the final edit.



Online Workflow: 24-fps Film Source for HDTV

7. The telecine process creates HD video with selects from the original negative (picture only) and a new transfer file.

8. Transfer the project files and media to a Media Composer Adrenaline HD system.

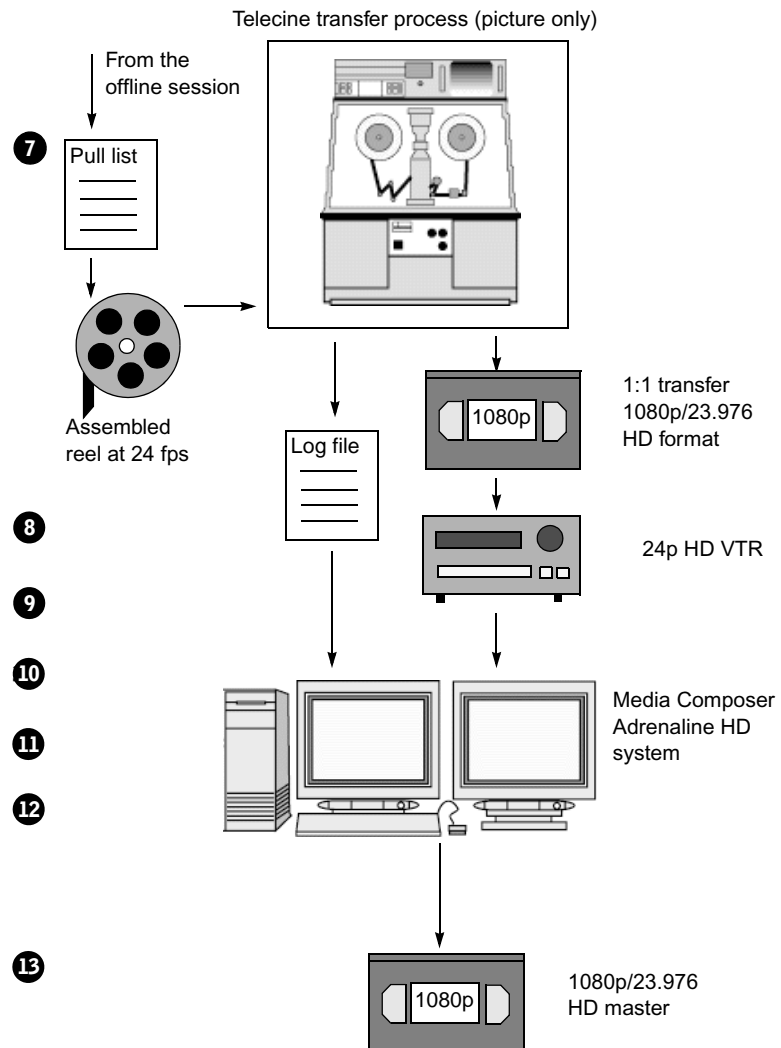
9. Open the project and change its format to 1080p/23.976. Modify the format of the sequence to create a new 1080p/23.976 sequence.

10. Convert the new transfer file with ALE and import it.

11. Relink the sequence and clips by key numbers (FTFT). Batch capture clips as HD media, using an Avid DNxHD resolution.

12. Complete any other finishing, using the original offline sequence for reference.

13. Output a 1080p/23.976 master tape and convert to 720p/59.94 or 1080i/59.94 for broadcast.



Video-Based Television Workflow

The following workflow describes the steps in creating video-based television programs that originate on video footage and are planned for HDTV broadcast. Footage can be shot at

- 1080p/23.976
- 1080p/25
- 1080i/50
- 1080i/59.94

The workflow for creating such programs uses a single system for offline and online editing, but you can adapt it to use one system for offline editing and another for online editing. This workflow uses features that let you change the project and sequence format, eliminating the need to create a new project and sequence (see [“Changing the Project Format” on page 314](#) and [“Modifying the Format of a Sequence” on page 316](#)). Modifying the format of the sequence lets you keep both offline SD material and online HD material available in the same project.

You can also use this workflow for video footage shot at 720p/59.94. In this case, however, you cannot simply change the project format (step 6). Instead, you need to create a new 720p/59.94 project, open the bin or bins from the NTSC 30i project, change the sequence format, decompose, and batch capture.

To create a video-based HDTV program:

1. Shoot HD video at 1080p/23.976, 1080p/25, 1080i/50, or 1080i/59.94.
2. Use an HD VTR to downconvert the source tape to 30i NTSC, 25i PAL, or 25p PAL.

3. Create an offline project as shown in the following table:

HD Online	SD Offline
1080p/23.976	23.976p NTSC
1080p/25	25p PAL
1080i/50	25i PAL
1080i/59.94	30i NTSC

4. Capture your material. Edit, apply effects, and create a final sequence.
5. Change the project format to the corresponding HD online format.
Duplicate the final sequence, and then modify the format of the sequence to create a new sequence in the corresponding HD format
6. Decompose the new HD sequence and batch capture from the source tape.
7. Finish the sequence by batch capturing graphics, recreating title media and reviewing the program for effects that need fine-tuning. Use the original offline sequence for reference.
8. Render all effects and output a master tape.

Offline/Online Workflow: HD Video Source for HDTV

1. Shoot HD video at 1080p/23.976, 1080p/25, 1080i/50, or 1080i/59.94. This illustration uses 1080i/59.94 as an example.

2. Use an HD VTR to downconvert the source tape to 30i NTSC, 25i PAL, or 25p.

3. Create a corresponding offline project.

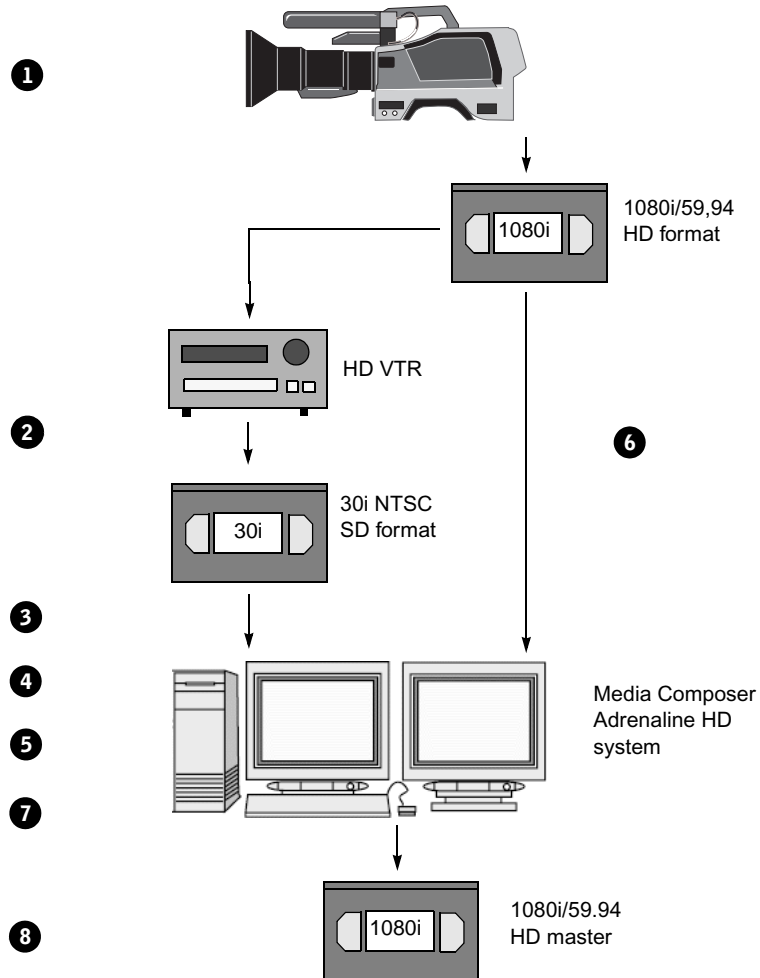
4. Capture your material. Edit, apply effects, and create a final sequence.

5. Change the project format to the corresponding online format. Duplicate the final sequence and modify the format to create a new sequence in the final HD format.

6. Decompose the new HD sequence and batch capture from the source tape.

7. Finish the sequence by batch capturing graphics, recreating title media, and fine-tuning effects.

8. Render all effects and output a master tape.



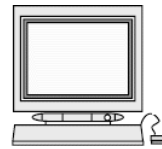
Broadcast Graphics Workflow

Another HDTV workflow produces graphics, such as bumpers and promos that are created in graphics programs for HDTV broadcast.

Broadcast Graphics Workflow

1. Create files on a graphics workstation, using either 1280x720 for 720p or 1920x1080 for 1080i.

1



Graphics workstation

2. Export the files to a location that the Avid editing system can access.

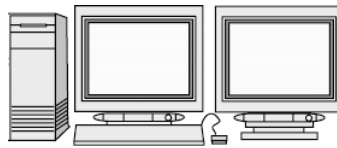
2



Files created for 720p or 1080i

3. Create a 720p or 1080i project, import the files, edit, and finish.

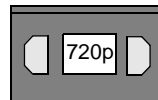
3



Media Composer Adrenaline HD system

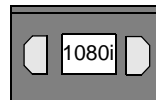
4. Create a broadcast master tape in the desired format. Cross-convert to output an alternative format.

4



720p/59.94
broadcast master

or

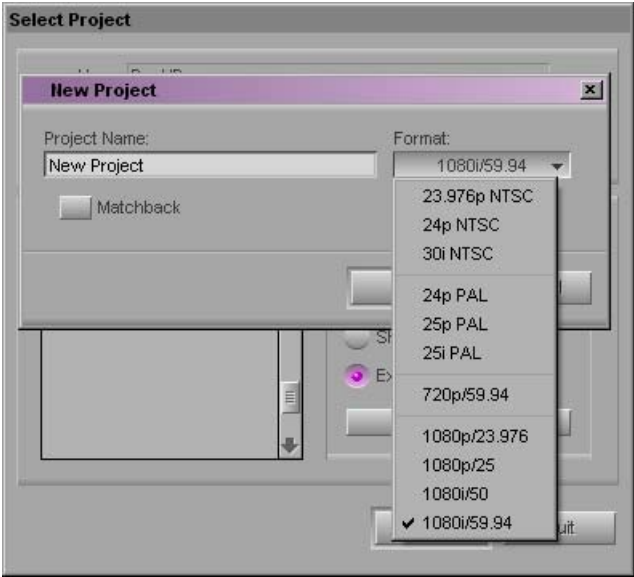


1080i/59.94
broadcast master

Starting an HD Project

To create a new HD project:

- ▶ Select an appropriate format in the New Project dialog box.



The following table describes the HD online formats.

HD Online Formats

Format/Frame rate	Units/second	How used
720p/59.94	Frames	HD broadcast. Video-originated material can be directly captured, edited, and output in this format.
1080p/23.976	Frames	HD online. Film-originated material can be transferred to this format for editing and effects. For broadcast, output in the native frame rate and convert the output to the broadcast format.

HD Online Formats (Continued)

Format/Frame rate	Units/second	How used
1080p/25	Frames	HD online. Film-originated material can be transferred to this format for editing and effects. For broadcast, output in the native frame rate and convert the output to the broadcast format.
1080i/50	Fields	HD broadcast. Video-originated material can be directly captured, edited, and output in this format.
1080i/59.94	Fields	HD broadcast. Video-originated material can be directly captured, edited, and output in this format.

Capturing HD Video and Audio

After starting a project, you need to select a video resolution and audio input, and then check other settings.

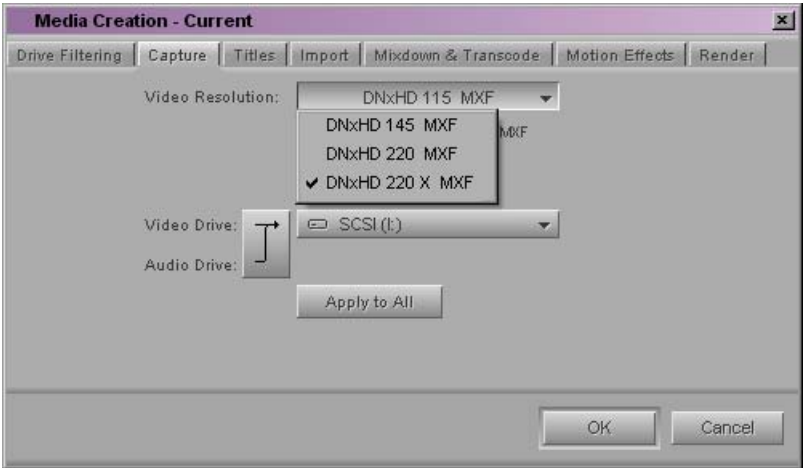
HD Resolutions

You can select from two types of HD resolutions:

- DNxHD resolutions in all HD project formats
- DVCPRO HD resolution in 720p/59.94, 1080i/59.94, and 1080i/50 project formats

To capture DVCPRO HD material, you need to change the input device setting (see [“HD Video and Audio Input” on page 311](#)).

You can select an HD resolution in the Media Creation tool or the Capture tool.



DNxHD resolutions are available in 10-bit and 8-bit versions. 10-bit compressions are indicated by an X, such as DNxHD 220 X. DNxHD resolutions use the MXF media format. JFIF, MPEG, DV 25, and DV 50 resolutions are not available in HD projects. Available HD resolutions depend on the project format, as shown in the following table.

HD Resolutions

Project Format	Resolution	Project Format	Resolution	Project Format	Resolution
1080i/59.94	DNxHD 220 X	1080i/50	DNxHD 185 X	1080p/23.976	DNxHD 175 X
	DNxHD 220		DNxHD 185		DNxHD 175
	DNxHD 145		DNxHD 120		DNxHD 11
	DVCPRO HD		DVCPRO HD		
720p/59.94	DNxHD 220 X	1080p/25	DNxHD 185 X		
	DNxHD 220		DNxHD 185		
	DNxHD 145		DNxHD 120		
	DVCPRO HD				



The data rate (bandwidth) for Avid DNxHD resolutions is calculated per second for each frame rate. For example, DNxHD 220 has a compressed data rate of 220 Mb/sec at 29.97 fps. DNxHD 185, which is an equivalent resolution, has a compressed data rate of 185 Mb/sec at 25 fps. For more information about DNxHD resolutions, see “Resolution Specifications: Avid DNxHD” in the Help.

A good guideline for selecting a resolution is to use the Avid DNxHD resolution that matches the megabit data rate of the acquisition format. For HDCAM-originated material, for example, select DNxHD 145, which closely matches the data rate of HDCAM but provides better mastering results with significantly less storage required. The following table compares Avid HD formats to other HD formats.

Avid HD Formats and Other HD Formats

	Avid DNxHD 145	Avid DNxHD 220	Sony HDCAM™	Panasonic D5 HD
Bit Depth	8-bit	8-bit and 10-bit	8-bit	8-bit and 10-bit
Sampling	4:2:2	4:2:2	3:1:1	4:2:2
Bandwidth	145 Mb/sec	220 Mb/sec	135 Mb/sec	220 Mb/sec

HD Video and Audio Input

You can capture HD video through the following inputs:

- HD-SDI video through the Adrenaline HD-SDI IN connector
- DVCPRO-HD video through an optional 1394 (FireWire) card in your computer



A sync source is not required for capture when capturing video or video with audio. The Avid editing application gets its sync from the incoming video signal.

To set the video input for an HD project:

- ▶ Select one of the following:
 - Special > Device > Adrenaline

- Special > Device > IEEE 1394

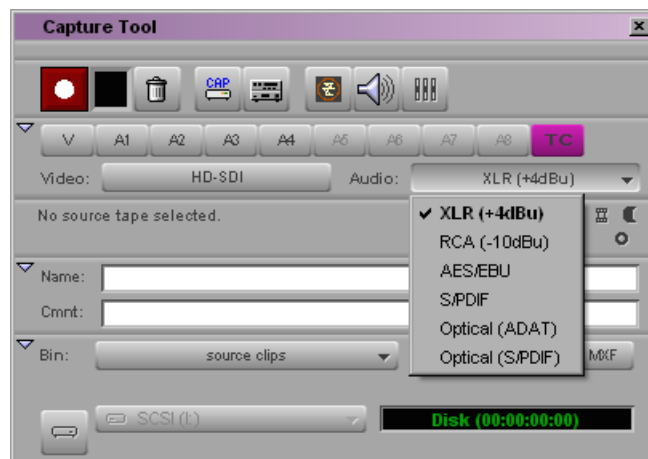
Your selection appears in the Video menu of the Capture tool: HD-SDI for input through the Adrenaline and Host-1394 for input through the optional 1394 board.

For more information, see [“Capturing DV50 and DVCPRO HD Media Directly from a DV Device”](#) on page 135.

If the device input is set to Adrenaline, you can capture audio from any input that appears in the Audio menu of the Capture tool, such as XLR. You cannot capture embedded HD SDI audio through the HD SDI IN connector. If the device input is set to IEEE 1394, you can only capture through the IEEE 1394 connection.



You can capture embedded SDI audio in standard definition (SD) projects.



In HD projects, only HD resolutions are available for capture, and in SD projects only SD resolutions are available for capture. You can switch the project format without creating a new project, and thus use other resolutions. For more information, see [“Changing the Project Format”](#) on page 314.

Video Input Tool for HD

The Input menu on the Video Input tool displays HD-SDI or Host-1394, depending on your video input device. As with the standard definition SDI input, you cannot adjust video input for these digital formats.

True 24 FPS Timecode

Avid HD editing systems support direct device control at 24-fps, enabling you to capture true 24-fps timecode from HD decks. When you are capturing 24 fps material in HD, the Capture tool displays 24-fps timecode for the Mark IN and Mark OUT points. After you capture a clip, the Start and End timecodes are also shown as 24-fps timecode.

Playback Modes for HD

In HD projects, as in SD projects, you can choose one of three playback modes:

- Full Quality, which provides the highest quality resolution. In this mode, the system cannot play real-time effects.
- Draft Quality, which reduces the quality of the image so you can view greater effect complexity in real time
- Best Performance, which reduces the quality of the image even more, so that you can view the highest-level of effect complexity in real time.

For more information, see “Playing Back at Different Video Qualities” in the Help.

Video Color Space for HD

Color space determines how the color components of the video signal are stored and processed. HD video uses an international specification for the YCbCr color space called ITU-R 709. It is an expansion of the earlier YCbCr specification for SD called ITU-R 601. ITU-R 601 and ITU-R 709 share some information: for example, for 8-bit components, black is mapped to 16 and

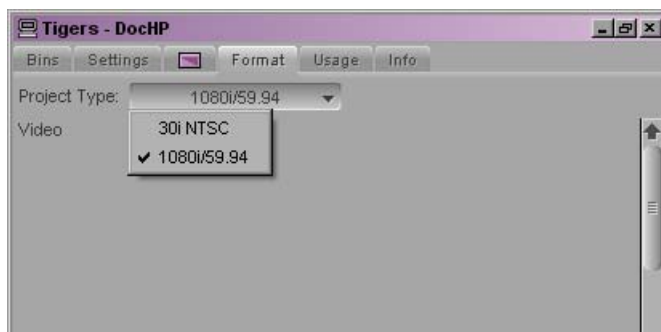
white is mapped to 235. However, color values can change when converting from SD to HD, and vice versa. Avid HD systems automatically compensate for these differences (see [“Video Effects for HD” on page 320](#)).



YCbCr and YPbPr refer to the same color space. Avid editing systems use YPbPr to designate HD analog output, both in the Video Output tool and on the back of the Adrenaline. The HD tab of the Video Output tool provides sliders to adjust the YPbPr analog output through the YPbPr connectors on the back of the Adrenaline.

Changing the Project Format

The Format display on the Project window lets you change the format of the project to another format that shares the same frame rate.



This feature is especially useful if you are working with downconverted HD material in an offline-to-online workflow (see [“Video-Based Television Workflow” on page 304](#)). Each HD format has an equivalent SD format that you can use for offline editing, as shown in the following table.

Offline Formats for HD

HD Online	SD Offline
720p/59.94 ^a	30i NTSC
1080p/23.976	23.976p NTSC
1080p/25	25p PAL
1080i/50	25i PAL
1080i/59.94	30i NTSC

- a. You cannot use this feature to change a 720p/59.94 project to an NTSC 30i project or an NTSC 30i project to a 720p/59.94 project, because the edit rates are different (see [“Editing at 60 fps” on page 319](#)). Use an NTSC 30i project for offline editing, then open a new 720p/59.94 project for online editing and open the desired NTSC 30i bins.

To change the project format:

1. Click the Format tab on the Project window.
2. Select the corresponding format for your workflow.

When you change the project format, the following changes take place:

- The hardware changes to support input and output for the new project.
- The available resolutions change to those of the new project.
- New sequences are created in the format of the new project.

You can then modify the format of an existing sequence (see [“Modifying the Format of a Sequence” on page 316](#)).

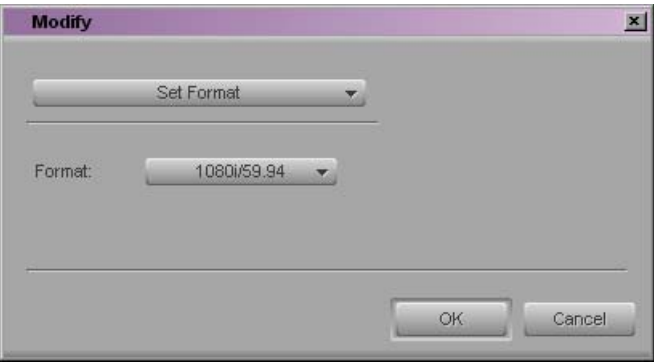
Another use for this feature is if you are working in an HD project and need to capture SD material. In an HD project, you can capture only HD material, and in an SD project, you can capture only SD material. Temporarily changing from an HD project to an SD project gives you access to the SD compressions. You can capture the material you need, then change back to the HD project and work with both SD and HD clips (see [“Mixing SD and HD” on page 318](#)).

Editing in HD

On Avid HD systems, editing HD media is very similar to editing SD media. The following sections describe features specific to HD projects.

Modifying the Format of a Sequence

When the Avid editing system creates a sequence, it uses the format of the current project. You can change this format by selecting Clip > Modify.



The choice of formats is limited to the compatible frame rate of the sequence. For example, you can change an NTSC 30i sequence to 1080i/59.94 or to 720p/59.94, but not to 1080p/23.976. In some cases, where the timecode format needs to be changed, the Avid editing system creates a new sequence rather than modifying the existing sequence.

New 720p sequence

Modified 1080i sequence

Name	Creation Date	Format	Duration	Drive	M
Combined Clips.60 fps.01	09/23/2004 15:27:45	HD 720p/59.94	1:08:10		
Combined Clips	09/21/2004 13:51:40	HD 1080i/59.94	1:08:10		
1080i_5994_Clip_1	09/21/2004 11:28:47	1080i/59.94	22:06	SCSI (t)	
1080i_5994_Clip_2	09/21/2004 11:30:09	1080i/59.94	38:02	SCSI (t)	
1080i_5994_Clip3	09/21/2004 11:31:29	1080i/59.94	11:27	SCSI (t)	

The following table shows the choices you have for modifying sequences and how each type of sequence is modified.

Choices for Modifying Sequences

SD Offline	HD Online	How Sequence is Modified
23.976p NTSC	1080p/23.976	New sequence is created.
25p PAL	1080p/25	Existing sequence is modified.
25i PAL	1080i/50	Existing sequence is modified.
30i NTSC	720p/59.94	New sequence is created.
	1080i/59.94	Existing sequence is modified.

If you want to keep the original sequence linked to the SD media, duplicate the sequence before modifying its format.

To modify the format of clips not used in the sequence, create a sequence of the selected clips and then modify the sequence. One way to create a sequence of clips is to select the clips, hold down the Alt key, and select Bin > AutoSequence. See “Using the AutoSequence Command” in the Help).

To modify the format of a sequence:

1. (Optional) Duplicate the sequence.
2. Select the sequence you want to modify.
3. Select Clip >Modify.

The Modify dialog box opens.

4. Select Set Format from the top list.
5. Select the format to which you want to convert from the Format menu.
6. Click OK.

The Avid editing system changes the format of the sequence and unlinks the media. You can check the format in the Format column of the bin (see [“Displaying Formats in a Bin” on page 318](#)).

Mixing SD and HD

You can mix SD and HD material in the same project. You can even mix SD and HD material in the same timeline if the edit rates match. For example, you can edit both NTSC 30i and 1080i/59.94 into the same sequence and then play the sequence in real time. This feature is useful if you want to preview SD material in an HD project.

- In an HD sequence, an SD image is stretched to fill a 16:9 monitor.
- In an SD sequence, an HD image is anamorphically squeezed to fit the 4:3 monitor.

You cannot output a sequence that mixes SD and HD material. To output a mixed sequence, you need to transcode the clips that use the unsupported resolution to an HD resolution (see [“Transcoding HD Media” on page 320](#)). All master clips will then share the same format.

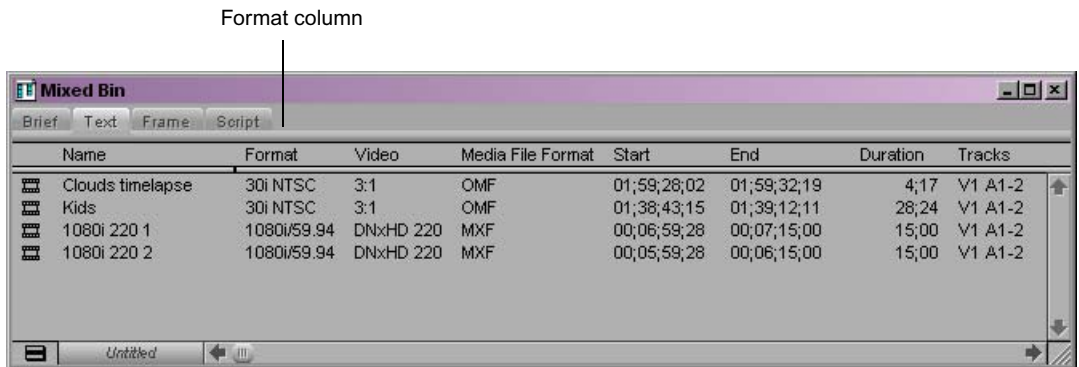
You might also need to apply an effect, such as Reformat or Resize, in which case you need to render the effects. This process creates new media in the format of the sequence.



If you have a sequence that mixes SD and HD clips, and you need to recapture the SD clips in an HD resolution, you can create a subsequence of the SD clips, modify the format of the subsequence (see [“Modifying the Format of a Sequence” on page 316](#)), decompose, and recapture.

Displaying Formats in a Bin

The Format column displays the format of a clip or sequence as determined by the project type, such as 30i NTSC or 1080i/59.94. This is especially useful if you have both SD and HD clips in the same bin.



For information on displaying a column, see “Showing and Hiding Columns” in the Help.

Displaying 16:9 HD Video in Monitors

For HD projects, the monitors are displayed by default in the 16:9 aspect ratio.

To switch between 16:9 and 4:3 aspect ratios:

- Right-click in a monitor and select 16:9 Video.

A check mark indicates that the monitors are displayed in the 16:9 aspect ratio.

Editing at 60 fps

The project type 720p/59.94 uses a screen resolution of 1280 x 720 at a frame rate of 60 frames per second. Editing at 60 fps is similar to editing at 24 fps because both resolutions are progressive — they use full frames instead of interlaced fields. Note the following:

- Single-frame step commands move at 1/60th of a second. Single-field step commands are deactivated; if you click a button, the application beeps.
- Draft Quality playback runs at 30 fps. Full Quality playback runs at 60 fps.
- Marking in and out points work at 60 fps.
- Trimming can be done at 1/60th of a second.
- Transition effects default to one-second duration (60 frames)

- Deck control for capture and digital cut is limited to 30 fps. A message box warns you if you try to mark an odd timecode value (such as 01:00:00:03).



1080i/50 and 1080i/59.94 are interlaced resolutions that you edit at 25 frames per second and 30 frames per second.

Transcoding HD Media

For HD projects, the Consolidate/Transcode dialog box lists compatible Avid DNxHD and DVCPRO HD resolutions, as listed in [“HD Resolutions” on page 309](#). For information on transcoding media, see “Using the Transcode Command” in the Help.

Video Effects for HD

Many of the video effects work the same way in SD and HD, for example, dissolves, superimposes, flips, and so on.

Effects that use square geometry automatically use the correct pixel aspect ratios. These effects include Titles, Box Wipes, certain paint modes like Mosaic, and so on. Effects such as Color Correction, Color Effect, and Luma keys automatically use the correct color space (ITU-709 for HD).

Note the following:

- Titles: There is no need to generate 4:3 media.
- Timewarps: These effects use a 60p input and output format in 720p/59.94 projects.

All effects are rendered at Full Quality. Real-time previews of effects in HD projects play at either Draft Quality or Best Performance (see “Playing Back at Different Video Qualities” in the Help).

Setting Video Output for HD

Before recording output for HD, you need to check the settings in the Video Output tool. The Video Output tool includes two tabs. For HD projects, select the HD tab.



The following topics explain the options in the HD tab.

Output Menu (HD Tab)

This selection displays controls for adjusting output gain to an HD component device, such as a monitor or a deck. Select one of the following, depending on the connections from the Adrenaline to the output device:

- HD Component YPbPr
- HD Component RGB

For information on connections on the Adrenaline, see “Using the Avid Adrenaline” in the Help. For information on adjusting output gain, see “Calibrating for Video Output” in the Help.

HD Crossconvert

This option lets you output an HD format from an HD sequence with a compatible frame rate.



You can select an HD crossconvert format for output or an SD downconvert format for output, but you cannot output both at the same time.

To output a crossconverted sequence:

1. Select the format that you want to output from the Crossconvert menu.
2. Select OFF from the Downconvert menu.

The Crossconvert choices depend on the format of the sequence, as described in the following table.

HD Sequence Format	Crossconverted HD Format
720p/59.94	1080i/59.94
1080p/23.976 ^a	1080i/59.94 720p/59.94
1080p/25	--
1080i/50	--
1080i/59.94	720p/59.94

a. When converting 1080p/23.976 to 1080i/59.94 or 720p/59.94, the Avid editing system adds 2:3 pulldown frames to create a sequence with the correct frame rate.



Avid recommends using crossconverted sequences for preview or reference only. When using digital cut to output the HD master sequence to tape, use the native frame rate of the sequence. Crossconvert and downconvert options that change the edit rate are not supported for digital cut. For example, if you have a 1080p/23.976 sequence, you can preview the sequence at 1080i/59.94, 720p/59.94, or NTSC 30i. But when creating the digital cut, use the native format of 1080p/23.976.

SD Downconvert

This option lets you specify how downconverted SD video is resized.



You can select an SD downconvert format for output or an HD crossconvert format for output, but you cannot output both at the same time.

To output a downconverted sequence:

1. Select OFF from the Crossconvert menu.
2. Select the format that you want to output from the Downconvert menu.

The options are Anamorphic, Letterbox, Center Cut.



High Definition



SD - Anamorphic



SD - Letterbox



SD - Center Cut

The format for SD downconvert matches the frame rate of the HD sequence, as described in the following table.

HD Sequence Format	Downconverted SD Format
720p/59.94	30i NTSC
1080p/23.976 ^a	30i NTSC
1080p/25	25i PAL
1080i/50	25i PAL
1080i/59.94	30i NTSC

a. When converting 1080p/23.976 to 30i NTSC, the Avid editing system adds 2:3 pulldown frames to create a sequence with the correct frame rate.



Avid recommends using downconverted 720p/59.94 and 1080p/23.976 sequences for preview or reference only. When using digital cut to output the HD master sequence to tape, use the native frame rate of the sequence. Crossconvert and downconvert options that change the edit rate are not supported for digital cut.

Test Patterns for HD

This option lets you select a pattern from the HD Test Patterns menu.

The following test patterns are available in both 1920 x 1080 and 1280 x 720 pixel resolutions:

- Bowtie: Alternating green and magenta sine wave
- BWRamp: Luma ramp from 16 to 235
- ColorBars: Color bars at 75% gain
- ColorBars_100%: Color bars at 100% gain
- MultiBurst: Sine wave in luma with increasing frequency
- Ramp_1_254: Luma ramp from 1-254
- SMPTE_Bars

These HD test patterns are available for import as 16-bit tiff files in the Supporting Files\Test Patterns folder. For Media Composer Adrenaline, the default path is

C:\Program Files\Avid\Media Composer Adrenaline\Supporting Files\Test Patterns

Be sure to use 601/709 levels when importing them. For more information, see “Importing Color Bars and Other Test Patterns” in the Help.

OutputLock for HD

This option lets you select the type of sync generator the system uses when outputting a sequence: reference (black burst), tri-level, or internal.



Avid recommends that you use an external sync source whenever you record a digital cut to tape. Connect the sync source to both the Adrenaline hardware and the tape deck.

Most HD formats allow you to use any of these options, but you cannot use reference for 1080p/23.976. Select the type of sync generator according to the following table.

Output Sync Options

Sync Source	Project Format				
	1080i/59.94	720p/59.94	1080p/23.976	1080p/25	1080i/50
Tri-Level frame rate setting	1080i/59.94	720p/59.94	1080Psf/23.976	1080P/25	1080I/50
Black burst	NTSC	NTSC	—	PAL	PAL

Recording a Digital Cut for HD

You can record HD video through the following outputs:

- DNxHD media through an HD-SDI Out connector on the Adrenaline
- DVCPRO HD media through an optional 1394 (FireWire) card in your computer

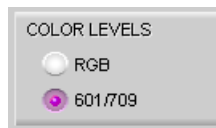
In the Digital Cut tool, the Output Mode menu displays DNxHD or DV 100, depending on the output device you set (see [“HD Video and Audio Input” on page 311](#)).

Before recording an HD sequence to tape, you must render all effects.

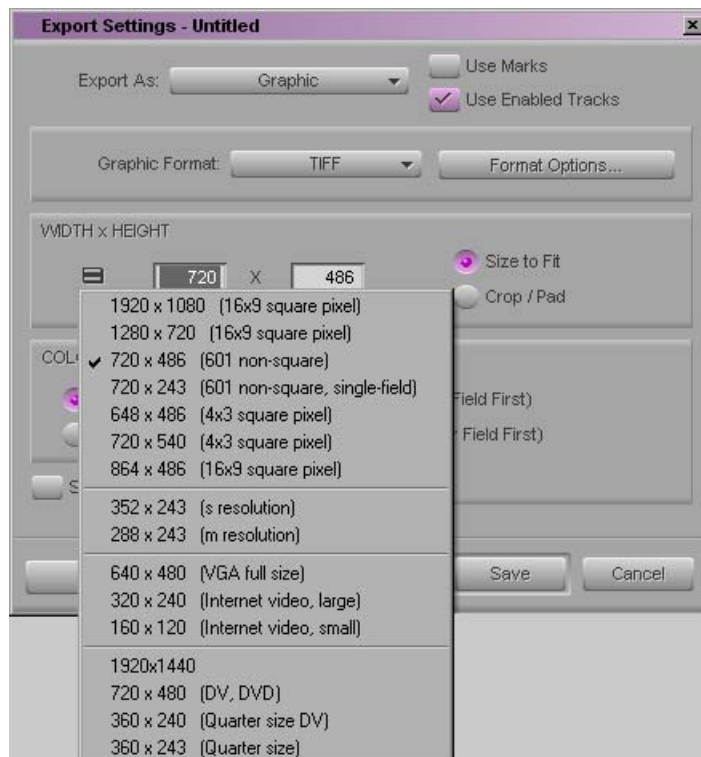
Video Import and Export for HD

Video import and export includes the following changes to support HD media:

- HD projects use the ITU-R 709 color space instead of ITU-R 601. During import and export, the Avid editing system automatically uses the appropriate color space. For import and export, you can select RGB or 601/709 in the settings dialog box.



- Export Settings for Graphic, QuickTime, Custom, and AVI include additional choices for width and height: 1920 x 1080, 1280 x 720, and 1920 x 1440. The default setting is the image size of the open project.



- 16:9 is the default pixel aspect ratio in the QuickTime and QuickTime Reference export dialogs.
- Export of Windows Media format is available for both SD and HD projects.
- Avid HD applications include two QuickTime codecs that support Avid HD compression:
 - Avid DNxHD
 - Avid DV100

For more information about using codecs and copying them to other systems, see “Using Avid Codecs for QuickTime” in the Help.

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