User Manual

Tektronix

Profile Family

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Contents

Preface

About this Manual xvii
Related Documentation xviii
Terminology and Conventions xix

Chapter 1 **Introducing the Profile Family**

A Profile System Overview 4
  Video Disk Subsystem 4
  Video Compression 5
  Video and Audio Interface Boards 6
  Profile Software Development 8
What to Read First 9
Starting Your Profile System 10
Starting and Closing Profile Applications 11
  Starting an Application 12
  Viewing Help 12
  Closing an Application 12
    Profile Configuration Manager 13
    Media Manager 13
    Transcode Utility 14
    VdrPanel 14
    Profile Disk Utility 15
    Tool Box Editor 15
    List Manager 16
    TimeDelay 16
Profile Utilities 17
Fibre Channel Support 17

Chapter 2 **Using the Profile Configuration Manager**

Saving a Configuration File 21
Loading a Configuration File 22
Setting Master Timecode 23
Setting the System Timing 26
  E to E Timed Outputs 28
  Adjusting the Timing when Upgrading to 2.4 29
Auto Timing 29
Setting Up Fibre Channel Networking 30
Setting the Reference Genlock 32
Changing LTC Input and Output Names 34
Setting MPEG Input Timing 35
Video Input 36
  Analog Composite Video Input 36
  Analog Composite Video Input Advanced Control 39
  Analog Composite Video Input Time Base Correction 43

Analog Composite Video Input Vertical Interval 44
Analog Component Video Input... 46
Serial Digital Component Video Input.. 48
Serial Digital Component Video Input Advanced............................ 50
Video Output 51
Analog Composite Video Output 51
Analog Composite Video Output Vertical Interval 54
Analog Composite Monitor Output 55
Analog Composite Monitor Output Burn-in Timecode 56
Serial Digital Component Video Output.. 58
Serial Digital Component Video Output Advanced.......................... 60
PDR100 Audio 61
Analog Audio Input 62
Digital Audio Input 63
Analog Audio Output 65
Digital Audio Output... 66
PDR200 Audio 67
Analog Audio Input 68
Digital Audio Input 70
Analog Audio Output 73
Digital Audio Output... 76
Audio Configuration for the PDR200.. 77
Input and Output Mapping 77
Input Mapping 79
Output Mapping 80
Input Clocking.. 80
Audio Configuration Monitor Channels Tab.................................... 83
System Audio Configuration 85

Chapter 3 **Using Media Manager**

Starting and Exiting the Media Manager 88
Starting Other Applications from the Tools Menu........................... 90
Viewing and Hiding the Toolbar and Status Bar............................. 91
Viewing Help and Software Version Information 91
Connecting to a Remote Machine 92
Viewing the Media Hierarchy.. 94
Toolbar.. 97
Copying Media... 98
Moving Media 98
Duplicating Media.. 100
Creating, Renaming and Deleting Bins 100
Renaming Clips and Masters 101
Deleting Clips and Masters... 102
Emptying the Recycle Bin... 102

Viewing Properties 104
Finding Clips and Masters 107
Using the Transcode Utility 109
Using a Library System 115
  Archiving a Clip 115
  Restoring a Clip 116
  Renaming an Archived Clip 117
  Deleting an Archived Clip 118
  Importing a Cartridge 119
  Exporting a Cartridge 121
  Updating and Inventorying Cartridges 123
  Inventorying the Library 125
  Formatting Cartridges 126
  Viewing Library, Cartridge and Archived Clip Properties 129
  Viewing Tape Transport Status 132
Viewing the Transfer Monitor 135

Chapter 4 **Using VdrPanel**

Selecting a Controller 140
  Selecting a Communications Port 142
  Selecting Clip Length (BVW Only) 143
  Configuring a Controller 144
  Setting Compression Presets 146
  Setting up BVW [insert edit] Emulation 150
  Setting Louth Modes 152
  Selecting Video Crosspoints 153
Setting Timecode 155
  Selecting How to Display Timecode on a Panel 155
  Setting Timecode Crosspoints 157
  Setting Drop-Frame Timecode 159
Panel Basics 160
  Opening a Panel 165
  Making a Panel Active 165
  Arranging Panels and Icons 166
  Viewing Record Capacity 166
  Viewing an Audio Monitor for a Panel 167
Using Clips 168
  Defining a New Clip 168
    Name Clips First 168
    Record Clips First 170
  Loading and Playing a Clip 171
  Renaming a Clip 173
  Setting Clip Protection 174
  Striping a Clip 175

Setting Long or Short Clip Names 176
Ejecting All Clips 176
Deleting a Clip 177
Clip Lists 178
Saving a Group of Clips in a Clip List 178
Playing a Clip List 179
Editing a Clip List 180
Setting In and Out Marks in Clips 181
Setting Marks 181
Removing Marks 182
Setting Field Dominance for Marks 182

Chapter 5 **Using the Profile Disk Utility**

Creating a File System 184
Setting a Disk Label 185
Formatting a Disk Volume 186
Loading Microcode 187
Relocating and Testing Bad Blocks 188
The Detail Log 189

Chapter 6 **Using Profile Utilities**

Viewing Profile Logs 191
ProLink 193
PortServer 193
PDR Access Control 194
Updating Firmware 196
Updating Fibre Channel Microcode 198

Chapter 7 **Fibre Channel Video Networking**

Setting Up Hardware for Fibre Channel 200
Setting Up Software for Fibre Channel 200
Ethernet IP Address Set Up 201
Fibre Channel IP Address Set Up 202
Editing the Hosts File 204
Testing the Fibre Channel Network 206
The Listnames and Copymovie Commands 207
The PDR Network Configuration Service 209

Chapter 8 **Using the Tool Box Editor**

Starting and Exiting the Tool Box Editor 212
Configuring Resources 213
Project Files 214
Connecting to a Remote Profile Machine 215
Selecting a Current Bin 216
Opening a Bin 218

Creating a New Bin 218
Record Time Remaining 218
Renaming Media 218
Viewing Media Properties 219
Deleting Media 220
Emptying the Recycle Bin 221
The Capture Timeline 221
Capturing a New Clip 223
Loop Recording 225
Playing a Clip 226
Trimming a Clip 226
Creating a Subclip 227
User Marks 228
Event and Frame Controls 229
Shuttle Controls 229
Creating Subclips on the Fly 229
The Edit Timeline 230
Creating a New Master 232
Adding Media to a Master 232
Playing a Master 233
Using the Audio Controls 234
Tool Box Editor Keyboard Shortcuts 236

Chapter 9 **Using the List Manager**

List Manager Overview 240
Starting List Manager 242
The Toolbar and Status Bar 244
Viewing Help 244
Closing List Manager 244
Configuring Resources 244
Connecting to a Remote Profile Machine 245
Building a Playback List 246
Adding Media for Playback 246
Changing Event Settings 248
Monitoring a List as it Runs 251
Validating a List 251
Scheduling Recording Operations 252
Using a Live Feed 253
Scheduling a Transfer Event 254
Scheduling an Archive Event 255
Editing Event Lists 256
Changing the Order of Events 256
Inserting Events 256
Removing Events From a List 257

Using the Edit Window 258
Creating a New List 258
Saving a List 258
Reusing a List 259
Closing a List 259
Exporting a List 259
List File ASCII Text Format 260
Importing a List 262
Deleting an Entire List 262
Overriding Events in a List 263
Taking an Event 263
Stopping an Event 263
Customizing Your List Display 264
Using the Event Log 268

Chapter 10 **Using the Resource Manager**

Using Resource Manager with Tool Box Editor 269
Acquiring Resources 270
Acquiring Profile Channels 271
Configuring Video Resources 272
Configuring Audio Resources 273
Configuring Timecode Resources 274
Using Resource Manager with List Manager 276
Acquiring Profile Channels 277
Configuring Video Resources 278
Configuring Audio Resources 279
Using the PRC100 Configuration Tool 280
Configuring Video Resources 281
Configuring Audio Resources 283
Configuring Timecode Resources 284
PRC100 Configuration Tool Constraints 286

Chapter 11 **Using TimeDelay**

Getting Started with TimeDelay 289
Record Panel Controls 290
Playback Panel Controls 292
Censor Panel Controls 293
Exiting TimeDelay 295
Configuring the Panels 296
Selecting a Controller 296
Selecting a Communications Port for Remote Control 297
Configuring a Controller 298
Setting up the Signal Routing 300
Assigning Video Crosspoints 301
Setting up Timecode 302

Assigning Timecode Crosspoints 304
Setting a Delay Time 306
Starting Video Recording 307
Manual Recording 307
Automatic Recording 307
Changing Playback Delay Time 308
Pausing the Playback Panel 308
Changing the Timecode 308
Locking the System 309
Recording a New Clip 310
Renaming a Clip 311
Deleting a Clip 311
Using Drop-Frame Timecode 311
Auto Restore 311
Auto Shuttle 312
Starting the Censor Channel 312
Understanding Segments 313
Marking Segments 314
Reviewing Segments 315
Editing Segments 315
Marking and Trimming Segments 315
Deleting Segments 315
Combining Segments 316
Closing the Censor Channel 316
Using Remote Control 317
Packet Format 317
Arguments 318
Commands 318
Capacity 318
Censor 319
ClipSelect 319
Close 319
Cue 320
Drive 320
EE 320
EndClip 321
Frame 321
GotoTimecode 321
Jog 322
JoinBoth 322
JoinDelete 323
JoinNext 323
JoinPrevious 324
Lockout 324

MarkIn.... 324
MarkOut.... 325
NewChannel.... 325
Pause.... 325
Play.... 326
Record.... 326
RecordPair.... 326
Rename.... 327
SegmentReview.... 327
SetTime.... 327
Stop.... 328
SysPause.... 328
StartClip.... 328
Status.... 329
TimeSet.... 329
Timecode.... 329
TrimIn.... 329
TrimOut.... 330
System Control Returns.... 331
ACK.... 331
NAK.... 331
Status Responses.... 332
CapacityData.... 332
StatusData.... 332
TimeSetData.... 333
TimecodeData.... 333

Glossary

Tables

1 Digital audio input channel indicators 71
2 Board representation key..81
3 Configuration example, two video input clocking sources 81
4 Configuration example, four video input clocking sources.......................................82
5 Video quality (compression) 111
6 Factory set values for JPEG compression presets...146
7 Factory set values for MPEG compression presets..148
8 VdrPanel shortcut keys..164
9 Microcode update files...187
10 Tool Box Editor Keyboard Shortcuts...236
11 Event status indicators..248
12 Factory set values of the compression presets 299

Figures

1 The PDR200 block diagram 7
2 PDR Application shortcuts on the Windows NT 4.0 desktop 11
3 Profile Configuration Manager window 19
4 Save As dialog box for saving a configuration file 21
5 Open dialog box for loading a configuration file 22
6 Master Timecode dialog box, genlock settings 23
7 System Timing dialog box, zero-timed 27
8 System Timing dialog box, E to E timed 28
9 Fibre Channel Network Configuration dialog box 30
10 Reference Genlock dialog box 32
11 LTC Inputs & Outputs dialog box 34
12 MPEG Input Timing dialog box 35
13 Analog Composite Video Input dialog box, Main tab (A) 36
14 Analog Composite Video Input dialog box, Main tab (B) 37
15 Analog Composite Video Input dialog box, Advanced Control tab (A) 39
16 Analog Composite Video Input dialog box, Advanced Control tab (B) 40
17 Analog Composite Video Input dialog box, Time Base Correction tab 43
18 Analog Composite Video Input dialog box, Vertical Interval tab 44
19 Component Analog Video Input dialog box (CAV) 46
20 Serial Digital Component Video Input dialog box 48
21 Serial Digital Component Video Input, Advanced 50
22 Analog Composite Video Output dialog box 51
23 Analog Composite Video Input Vertical Interval tab 54
24 Analog Composite Monitor Output dialog box, Main tab 55
25 Analog Composite Monitor Output dialog box, Burn-in Timecode tab 56
26 Serial Digital Component Video Output dialog box 58
27 Serial Digital Video Output dialog box, Advanced tab 60
28 Analog Audio Input dialog box 62
29 Digital Audio Input dialog box 63
30 Analog Audio Output dialog box 65
31 Digital Audio Output dialog box 66
32 Analog Audio Input dialog box, Main tab 68
33 Analog Audio Input dialog box, Line Level tab 69
34 Digital Audio Input dialog box, Main tab 70
35 Digital Audio Input dialog box, Status tab 71
36 Digital Audio Input dialog box, Sample Rate Converter tab 72
37 Analog Audio Output dialog box, Main tab 73
38 Analog Audio Output dialog box, Line Mode tab 74
39 Analog Audio Outputs dialog box, Line Level tab 75
40 Digital Audio Output dialog box 76
41 Audio Configuration dialog box, Input Mapping tab 77
42 Audio Configuration dialog box, Output Mapping tab 78

43 Audio Configuration dialog box, Input Clocking tab 82
44 Audio Configuration dialog box, Monitor Channels tab 83
45 System Audio Configuration dialog box....85
46 Media Manager window....88
47 Hardware Communication Monitor message box....89
48 Add/Remove Machine dialog box....92
49 Add Network Host dialog box 93
50 The Media Manager tree pane 95
51 Confirm Copy dialog box 99
52 Recycle Bin properties dialog box 103
53 Properties dialog box for volumes 104
54 Properties dialog box for clips or masters 105
55 Find dialog box 107
56 Transcode Utility window....109
57 Custom Video Quality Settings dialog box, JPEG....112
58 Custom Video Quality Settings dialog box, MPEG....112
59 Transcode Utility dialog box, Convert tab....113
60 Transcode Utility dialog box, Preview tab....114
61 Import Cartridge dialog box 119
62 Export Cartridge dialog box....121
63 Confirm Update dialog box....123
64 Confirm Inventory dialog box....124
65 Confirm Inventory dialog box....125
66 Format Cartridge dialog box....126
67 Format Cartridge dialog box....127
68 Properties dialog box for the library....129
69 Properties dialog box for a cartridge....130
70 Properties dialog box for an archived clip....131
71 Tape Transport Status dialog box 132
72 Add Tape Transport dialog box 134
73 Transfer Monitor dialog box....135
74 VdrPanel window....139
75 Controller Setup dialog box 141
76 Comm Port dialog box....142
77 Set Clip Marks dialog box....143
78 Profile Options dialog box....144
79 Profile Options dialog box (BVW [insert-edit] only)....145
80 Edit Compression Presets dialog box....149
81 Video Crosspoint dialog box....153
82 Timecode Setup dialog box....155
83 Timecode Crosspoint dialog box 158
84 Panel dialog box....160
85 Open Panel dialog box 165
86 Message box showing record capacity....166

87 Audio Monitor dialog box 167
88 New Clip dialog box 169
89 Load Clip dialog box 172
90 Rename Video Clip dialog box 173
91 Set Clip Protection dialog box 174
92 Stripe Timecode dialog box 175
93 Delete Clip dialog box 177
94 Save Group of Clips dialog box 178
95 Load Group of Clips dialog box 179
96 Edit Clip List dialog box 180
97 Field Dominance dialog box 182
98 Profile Disk Utility window 183
99 Set Label dialog box 185
100 Format Disk(s) dialog box 186
101 Microcode Filename to Load dialog box 187
102 Detail Log dialog box 189
103 WinTail window 191
104 PortServer window 193
105 Services dialog box 195
106 Update Firmware window 197
107 The Update FC Microcode window 198
108 Tool Box Editor window 212
109 Hardware Communication message box 213
110 Remote Machine dialog box 215
111 Current bin display 217
112 Properties dialog box 219
113 Capture timeline 221
114 Timecode entry window 223
115 E to E button 223
116 Record buttons 223
117 Clip Name text box 224
118 Transport controls 224
119 Record Buffer dialog box 225
120 Create and User Mark buttons, plus event and frame controls 227
121 Edit timeline 230
122 Trim handles on the edit timeline 231
123 Audio controls 234
124 List Manager window 242
125 Hardware Communication Monitor message box 243
126 Remote Machine dialog box 245
127 A basic playback list 247
128 Creating a record event 252
129 New Switch Event dialog box 253
130 New Transfer Event dialog box 254

131 New Transfer Event dialog box 255
132 New List dialog box 258
133 Font dialog box 264
134 Color dialog box, with custom color controls shown 265
135 Columns dialog box 266
136 An example of a log file 268
137 Resource Manager dialog box 269
138 Channel tabs in Tool Box Editor 271
139 Custom Video Quality Settings dialog box 272
140 Resource Manager dialog box, Timecode 274
141 Resource Manager dialog box 276
142 Custom Video Quality Settings dialog box 278
143 Resource Manager for PRC100 Configuration Tool 280
144 Configuring video resources 281
145 Custom Video Quality Settings dialog box 282
146 Configuring audio resources 283
147 Configuring timecode resources 284
148 Configuring timecode internal generator resources 285
149 TimeDelay conceptual model 287
150 TimeDelay window with record/playback pair 289
151 Record panel controls 290
152 Playback panel controls 292
153 Censor panel controls 293
154 Controller Setup dialog box 296
155 Communication Port dialog box 297
156 Profile Options (controller configuration) dialog box 298
157 Edit Compression Presets dialog box 299
158 Video crosspoint dialog box 301
159 Timecode Setup dialog box 302
160 Timecode crosspoint dialog box 304
161 Go To Timecode dialog box 308
162 Panel Lockout dialog box 309
163 New Clip dialog box 310
164 Segments in the clip window 313
165 Censor channel 314

Preface

About this Manual

The *Profile® Family User Manual* supports Profile system software 2.4 for the PDR200 Profile Video File Server and, with a Master Enhanced Disk Recorder board upgrade, the Profile PDR100 Video Disk Recorder. Profile disk recorders use digital technology to store and produce broadcast-quality JPEG and MPEG video and CD-quality audio. This manual documents the standard and optional software applications that run on the Profile platform:

- The Profile Configuration Manager configures your hardware for input and output of video and audio, genlock, and system timing.
- The Media Manager manages clips and masters on disk and in a cartridge library system. With Fibre Channel, you can use Media Manager to copy or move media between Profile units.
- The Transcode Utility converts media between different video compression formats, such as from JPEG to MPEG.
- VdrPanel lets you capture and use JPEG and MPEG video and audio clips.
- The Profile Disk Utility lets you manage the Profile systems media disk drives.
- The optional Tool Box Editor records media (JPEG only) and performs simple, cuts-only edits. It also allows you to create a sequence of clips called a master.
- The optional List Manager allows you to set up simple station automation. (JPEG media only).
- The Resource Manager allocates video, audio, and timecode resources for the Tool Box Editor and the List Manager.
- TimeDelay, also optional, allows you to delay a video feed by a specific amount of time (JPEG only).
- Other Profile utilities include Profile Log (via WinTail), ProLink, and PortServer, among others.

NOTE: This manual assumes that you are familiar with basic Microsoft® Windows™ operation.

Related Documentation

Several manuals related to the *Profile Family User Manual* include:

- On-line manuals. You can access on-line help for an application at any time by choosing **Help | Help Topics**.
- *Profile System Version 2.4 Release Notes*.
- *Profile PDR200 Installation Manual*.
- *PLS20 Library System Manual.*
- *PLS200 Library System Manual*.
- *PRS200/A RAID Storage Instruction Manual*.
- *PRS250 RAID Storage Instruction Manual.*
- *PDX103 Disk Expansion Unit Installation Manual*.
- *PDX208 Disk Expansion Chassis Instruction Manual*.
- *PRC100 Profile Control Panel User Manual.*
- Microsoft Windows NT user documentation.

Terminology and Conventions

Button (graphical)	Buttons shown in bold (**OK**, for example) that you click with the mouse pointer.
Button (mouse)	The two or three buttons on the top of the mouse.
Choosing	Choosing menu items, **File | Exit**, for example. (**File | Exit** means *choose the Exit menu item under the File menu.*)
Commands	Commands (**a:\setup**, for example) are shown in bold.
Clicking	Pressing and releasing the mouse button without moving the pointer.
Ctrl key	Hold **Ctrl** down while pressing other keys in a sequence.
Double-clicking	Pressing and releasing the left mouse button twice without moving the pointer.
Dragging	Pressing and holding the mouse button while moving the pointer.
Moving	Changing the location of the pointer on the screen by moving the mouse.
Pointer	An arrow or other graphic on the screen indicating the current cursor position for selecting or clicking.
Pointing	Positioning the pointer on an object on the display by moving the mouse.
Right-click	Pressing and holding the right mouse button.
Shift key	Hold **Shift** down while pressing other keys in a sequence.

Chapter **1**

Introducing the Profile Family

The Profile PDR100 Video Disk Recorder and the Profile PDR200 Video File Server store broadcast-quality motion JPEG or MPEG (PDR200 only) video and CD-quality audio on computer disk drives rather than on video tape, allowing almost instant access to any timecode location of your video and audio material.

A Profile system is more than just a one-for-one replacement of a VTR: it can have up to six record and eight playback video channels. Clips are available on all channels at once, so you can play a clip on more than one channel at the same time, without making a copy of it. Since each channel is independent of the others, each playback can start at a different time and at a different place in the clip.

You can even start playing a clip while it's still being recorded. Just start capturing the clip on one channel, wait about five seconds, and then play the clip back on another channel. This kind of control makes the Profile system an ideal solution if you want to go to air with a clip before you are finished recording it.

NOTE: Profile System Software version 2.4 supports the PDR200, and, when upgraded with a Master and Slave Enhanced Disk Recorder (EDR) boards, the PDR100. In addition, version 2.4 runs on Microsoft Windows® NT™ 3.51 and 4.0.

This version of system software offers support for the new optional MPEG-2 4:2:2 @ Main Level encoder/decoder boards. Upgrading your PDR200 with MPEG can approximately double its video/audio storage capacity and enables much faster data transfers over Fibre Channel. The MPEG encoder offers both 4:2:2 and 4:2:0 chroma sampling, variable bit rates from 4 Mb/s to 50 Mb/s, and group of picture (GOP) structures from I-frame only to 16-frame GOPs.

MPEG uses motion prediction to increase efficiency—essentially, it uses lower data rates because it does not duplicate video that does not change from frame to frame. MPEG accomplishes this through both backward and forward prediction. To do this, it uses GOPs, consisting of I-frames, P pictures and B pictures.

An I-frame (also known as an I-picture or Intra-picture) is analogous to a single motion JPEG frame, where all data required to display a frame is stored in one picture. A P picture (also called a predictive picture) uses a motion vector to predict what will happen in the next frame and contains only the changed data, rather than passing along another complex frame of video. In addition, a B picture (known also as a bidirectional picture) relies on data from both backward and forward motion vectors to determine how a future frame will be composed. In general, the longer the GOP, the more efficient your MPEG video stream will be.

Table 1 compares the capabilities of the PDR100 and PDR200. The optional products supported by theses disk recorders are listed here:

- MPEG encoder/decoder board (PDR200)
- Fibre Channel interface board
- Video mix effects board
- PDX103 and PDX208 Profile Disk Expansion Units
- PAC208 and PAC216 Analog/Digital Audio Interface chassis (PDR200)
- XLR216 and BNC216 Digital Audio Interface chassis (PDR200)
- PRS200 and PRS250 Profile RAID Storage Systems
- PLS20 and PLS200 Profile Library Systems
- PRC100 Profile Control Panel unit
- LVS100 Live Controller
- Profile VideoGateway
- CD-ROM Drive
- Profile Tool Box Editor software
- Profile Tool Box List Manager software
- Profile TimeDelay application software

Table 1. PDR100 and PDR200 features compared

Feature	PDR100	PDR200
Video inputs	Analog composite, component analog (CAV), serial digital component	Analog composite, component analog (CAV), serial digital component
Video channels: JPEG CODECs	2 or 4 play/record channels	2 or 4 play/record channels
Video channels: MPEG encoders and decoders	None	1 or 2 record channels (encoders), 4, 6, or 8 playback channels (decoders)
Disk drives	Up to eight 4-GB SCSI	Up to eight 9-GB Ultra-SCSI
Audio	Up to 16 channels, 16-bit analog standard; digital embedded optional (625 only)	16 channels, digital standard (AES/EBU, embedded); up to 32 channels possible; analog optional
Digital audio interfaces	None	XLR216, BNC216
Analog audio interfaces	XLR100	PAC208 (8 channel), PAC216 (16 channel)
Internal storage at 24 Mb/s	3 hours	6 hours (JPEG), 12 hours (MPEG)
Mainframe bandwidth	24 Mb/s	30 Mb/s
Ethernet	10/100 BaseT	10/100 BaseT
Video network	Fibre Channel upgradeable	Fibre Channel ready
RS-422 protocols	Profile, Louth, Odetics, BVW	Profile, Louth, Odetics, BVW
Reference signals	NTSC and PAL	NTSC and PAL
Line formats	525/60 and 625/50	525/60 and 625/50
Video compression	Continuously variable motion JPEG	Continuously variable motion JPEG, MPEG 4:2:0 or 4:2:2

A Profile System Overview

The PDR100 and PDR200 are multichannel digital disk recorders capable of supporting up to four play/record channels (CODECs) of continuously variable motion JPEG video compression. The PDR200 is also capable of supporting MPEG 4:2:0/4:2:2 video compression, with up to two record channels (encoders) and up to eight playback channels (decoders). Each channel can play back one video and up to 16 audio signals, each capable of using different video formats. In other words, one Profile unit can replace up to eight VTRs, with the added benefit of random access to video and audio data stored on disk.

The Profile system has an EISA motherboard with an internal digital video routing system. There are sixteen EISA slots and one ISA slot used for interface cards and routing audio data. It also uses a PCI bus for routing data between the master and slave enhanced disk recorder (EDR) boards, Fibre Channel boards, and MPEG boards.

The applications processor subsystem, which runs the Windows NT operating system, is based on an Intel Pentium processor. The subsystem also has a hard disk drive and a 3.5-inch floppy disk drive, plus a keyboard, mouse, and an SVGA card.

A video router chip set is integrated on the mother board. It routes video signals between the video disk system, video mix effects cards, and video I/O cards. The video router is a 32 x 32 crosspoint matrix capable of full bandwidth 4:2:2 CCIR 601 8-bit digital video. The video router allows real-time transfer of video throughout the system without impacting overall system performance. The video router also makes simultaneous record and playback possible on separate channels.

Video Disk Subsystem

In the video disk subsystem, video data is compressed and written to up to eight 4-gigabyte or 9-gigabyte disks, or read from these disks and decompressed. This video data is read from and written to the video router in 8-bit, parallel component digital video format. The video disk subsystem has disk recorder boards, a SCSI interface to the disks, and an Intel i960 real-time processor.

The video disk subsystem uses master and slave disk recorder or enhanced disk recorder boards with two SCSI channels on each board. The master disk recorder board comes standard with a two-channel JPEG Profile unit, and a four-channel JPEG system adds a slave disk recorder board. The master board has a Intel i960 real-time processor which controls compression and the data flows on SCSI channels and JPEG CODECs.

A two-channel Profile has two JPEG CODECs and an i960 processor located on the master disk recorder board. Bidirectional CODEC channels allow channels to be configured for recording or playback. In a four-channel Profile system, a slave disk recorder board adds two additional video disk recorder channels (JPEG CODECs) and another SCSI-2 interface to support more disk drives.

Video Compression

The i960 on the master board is used to control data flow and compression coefficient loading of the JPEG CODECs and, if present, MPEG encoders and decoders. The amount of video compression varies according to the setting of the compression coefficient. Higher compression ratios store more video, but the result is lower quality video. On the other hand, lower compression ratios result in higher quality video and less storage capacity. Audio is not compressed.

Since the video compression ratio can be varied to change the video quality given available storage time, the amount of storage depends on your choice of compression ratio. A quick rule of thumb is that five minutes of JPEG video—plus four channels of audio and two channels of timecode—is roughly equal to one gigabyte of disk storage at a 24 Mbps compressed video data rate. For example, a PDX208 Disk Expansion unit expands storage up to twelve hours and a PRS200 RAID Storage System can bring it up to approximately 96 hours.

In addition to video compression, the disk recorder boards also integrate the digital audio data coming from the EISA bus, with typically four channels of audio per channel of video (up to 16). These recorder boards communicate with the SCSI-2 interface using a Direct Memory Access (DMA) interface. The PDR200 also supports the audio signal processing board (ASPB). This board is capable of delivering 16 channels of analog, embeded digital, or AES/EBU digital audio. The PDR200 can be equipped with two of these boards, for a total of 32 channels of audio.

Video data is written to and read from disks over a fast/wide/differential or Ultra SCSI interface. A maximum of eight 9-gigabyte internal disk drives are used for storing the video and audio. Data is striped across disk drives for increased aggregate bandwidth. External disk drives may be added, such as the PDX208 Disk Expansion unit or the PRS200 RAID Storage system. A maximum of twelve drives can be supported on a single SCSI-2 bus. The master and slave recorder boards each have two SCSI-2 interfaces.

Video and Audio Interface Boards

Video and audio interface boards receive incoming and send outgoing video and audio data. These boards are responsible for converting the video and audio to internal formats used by the disk recorder.

There are several video boards that allow a Profile unit to be used with various standard video formats: composite analog, serial digital component, or component analog video are all possible. All boards accept 525 or 625 (NTSC or PAL) video standards.

The latest analog composite input and output board offers two input and output channels per board. The two output channels for this board are similar to the output channels of the original analog composite board. An analog composite monitor board allows you to display text and burn-in timecode on an output monitor.

The component analog input allows dithering, auto-timing, and vertical blanking. As with other inputs, you can automate VITC detection. You can adjust input gain and also select an input format such as Betacam.

A serial digital component board provides two channels of both input and output, plus embedded audio when used with an ASPB. You can also enable dithering, auto-timing, and automate VITC detection. The board also has error detection and handling.

The standard reference genlock board allows you to time your Profile disk recorder to other devices in a broadcast facility. You can lock a Profile unit to a PAL or NTSC reference signal (house black). The genlock board also lets you have LTC inputs and outputs, one input and one output for each possible channel.

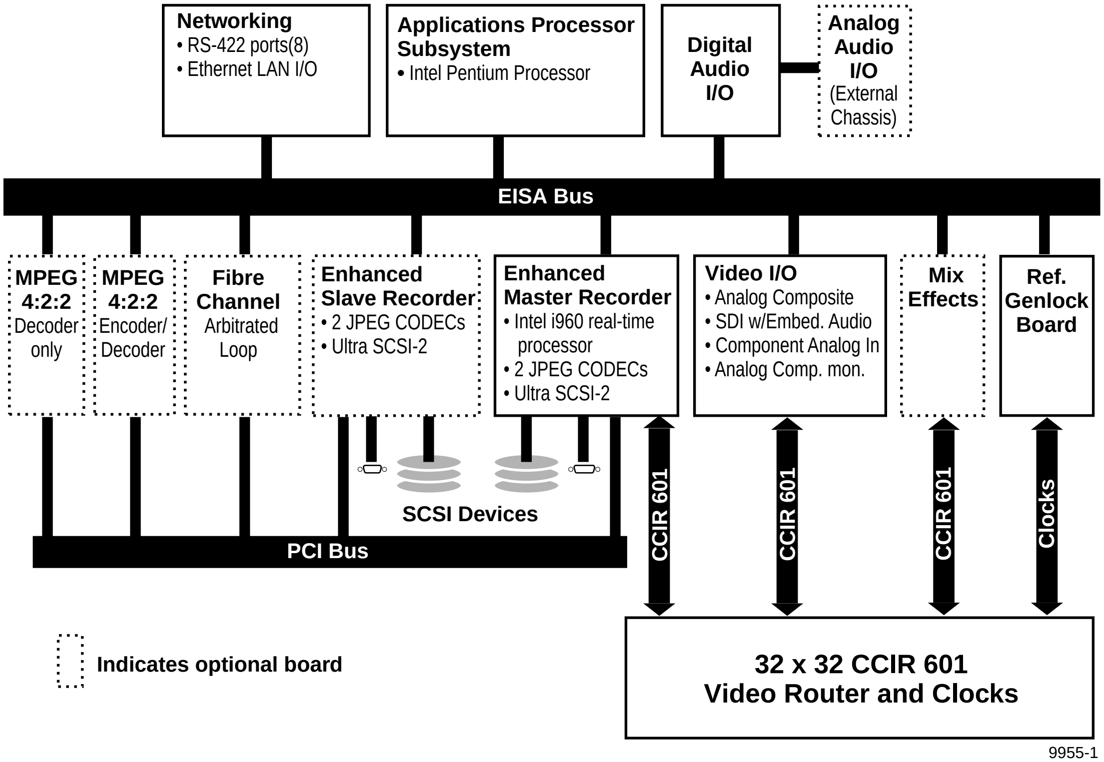


Figure 1. The PDR200 block diagram

Profile Software Development

The Profile Software Development Kit (SDK) provides an application programming interface (API) for libraries of Profile functions. We recommend that you call these functions via Microsoft Visual C++ 5.0; however, it is possible to use other languages that permit calls to C declared functions (contact your Tektronix representative for more information). Software developers can use the API to control the Profile from third-party hardware devices, for example. The API consists of seven libraries:

- The TekCfg library provides an interface to the Profile configuration.
- The TekPdr library furnishes calls that inventory and manage movies in Common Movie Format (CMF), an internal file format standard for video, audio, and timecode.
- The TekRem library makes it possible for a remote Windows NT system to control a Profile disk recorder over an Ethernet LAN.
- The TekVdr library provides an interface for playing and recording video and audio clips.
- The TekVfs library supports low-level access to individual media files in the media file system.
- The TekVme library controls the optional video mix effects board.
- The TekXfr library supports media streaming of Fibre Channel connections.

Eight RS-422 serial ports come standard on a disk recorder. A disk recorder can issue serial commands or receive them from an external device via RS-422 communication lines. The Profile Protocol associates each API call with a specific number that can be sent over an RS-422 line. The ProLink application monitors Profile Protocol calls over an RS-422 link, allowing you to use compatible hardware devices, such as the PRC100 Control Panel, to issue commands to a Profile unit.

Windows applications are also available to control the Profile system. Your disk recorder comes with several standard and optional applications. See “Starting and Closing Profile Applications” on page 11 for more information.

NOTE: Louth and Odetics RS-422 protocols are also supported, although there is not a one-to-one correspondence between these protocols and the Profile API. Louth and Odetics protocols do not allow you full access to the functionality of the Profile system.

What to Read First

The order in which you should read the chapters of this manual depends on how you want to set up your Profile system.

- Before using your Profile unit, you must first configure your video and audio boards. Refer to Chapter 2, “Using the Profile Configuration Manager.”
- If you are upgrading a PDR100 to version 2.4 of Profile system software from version 1.4.XX or earlier, you must install enhanced disk recorder (EDR) boards and you must rebuild your file system. To install the EDR boards, you must install a field kit that is sold separately. To rebuild your file system, refer to Chapter 5, “Using the Profile Disk Utility.” Your file system may consist of internal disks, a disk expansion unit, or a RAID unit.
- Once you have configured your video and audio boards, and, if necessary rebuilt your file system, you are ready to capture and replay video and audio clips. Refer to Chapter 4, “Using VdrPanel.”
- To configure your Fibre Channel board, see Chapter 7, “Fibre Channel Video Networking.”
- To read Profile logs, access your Profile system from a remote PC, or attach a PRC100 Profile Control Panel, refer to Chapter 6, “Using Profile Utilities.”
- To learn how to manage media on disk or over Fibre Channel on a Profile network, see Chapter 3, “Using Media Manager.”
- If want to use purchase and use optional software applications, see Chapter 8, “Using the Tool Box Editor,” Chapter 9, “Using the List Manager,” or Chapter 11, “Using TimeDelay.” To allocate resources for Tool Box Editor and List Manager, see Chapter 10, “Using the Resource Manager.”

Starting Your Profile System

Once the unit is properly installed, you are ready to log in. For instructions on how to install and power-on either a PDR100 or PDR200, see the installation manual that came with the unit.

To log in automatically:

1. Power up the Profile unit, and the start up routine begins. During normal start up, you are logged in automatically and the VdrPanel application starts. You can hold down the **Shift** key during start up to interrupt the automatic log in process.

   NOTE: If you stop the automatic log in, or if it fails, the Windows NT log in dialog box appears. When logging in, remember that this dialog box is case-sensitive.

To manually log in:

1. At the Windows NT 4.0 log in window, enter the username: **profile** (However, you must log in as **administrator** when installing software, performing Windows NT administration, starting a service, or setting an Ethernet IP address.)
2. Use the Tab key to advance to the password field.
3. The password appears as asterisks (*) for password security. For the password, enter: **profile**
4. Use the Tab key to advance to the **From** field.
5. If your domain name or local computer name is not displayed in the box, click in the box to access a list of choices. Select your domain or local computer name from the list.
6. Click **OK** or press Enter.

   NOTE: If a log in error message appears, and all the information is correct, try deleting the password and clicking OK.

Starting and Closing Profile Applications

After logging into your Profile system, you see shortcut icons for the Profile applications on the Windows NT 4.0 desktop.

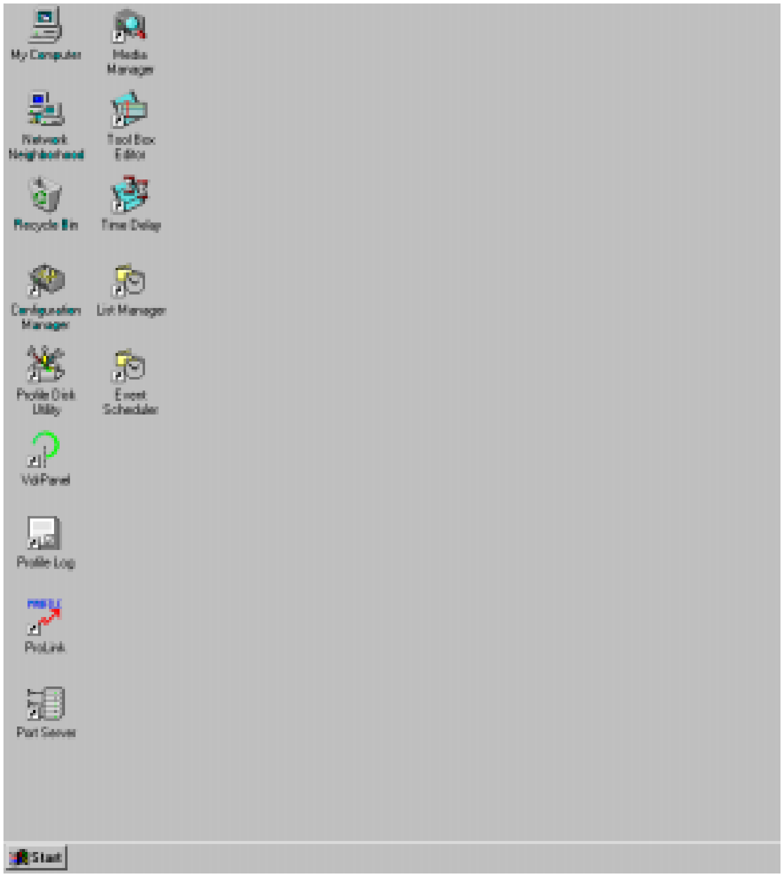


Figure 2. PDR Application shortcuts on the Windows NT 4.0 desktop

Starting an Application

To start a Profile application—VdrPanel in these examples—using Windows NT 4.0:

- Double-click the shortcut icon on the Windows NT desktop.

Or:

- Choose **Start | VdrPanel**.

Or:

- Choose **Start | Programs | PDR Applications | VdrPanel**.

To start a Profile application such as VdrPanel using Windows NT 3.51:

1. In Program Manager, double-click the PDR Applications program group icon.
2. Double-click the **VdrPanel** icon in the PDR Applications program group.

Viewing Help

To view the Help for an application:

- Choose **Help | Help Topics**.
- Click the **Help** button in a dialog box or a toolbar, if available.

To view version information (for VdrPanel in this example):

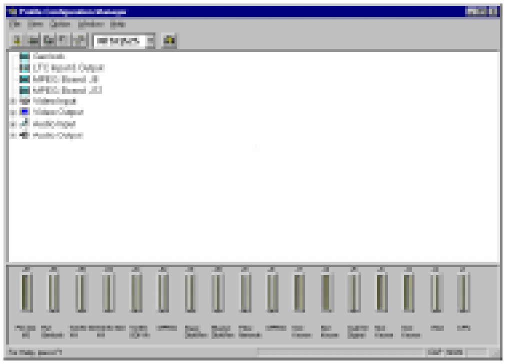
- Choose **Help | About VdrPanel**.

Closing an Application

To close Profile applications:

- Choose **File | Quit**, **File | Exit** or click the **Close** button.

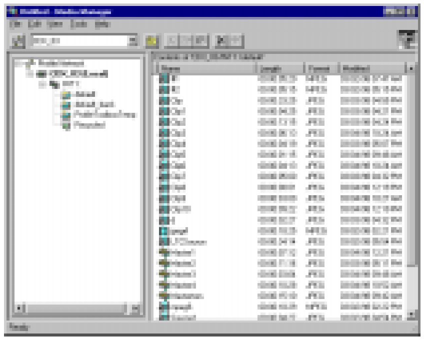
Profile Configuration Manager



The Profile Configuration Manager is a graphical user interface for configuring reference genlock, system timing, video and audio inputs and outputs. For more information, refer to Chapter 2, “Using the Profile Configuration Manager.”

NOTE: You must configure system resources with Configuration Manager before using your Profile disk recorder.

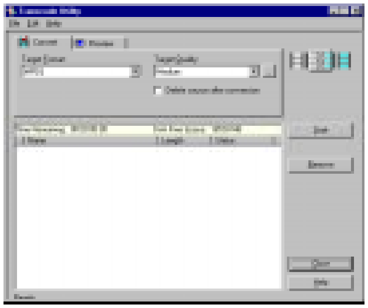
Media Manager



The Media Manager allows you to manage clips and masters on disk, transfer media between systems, and archive and restore clips on a library system. Refer to Chapter 3, “Using Media Manager.”

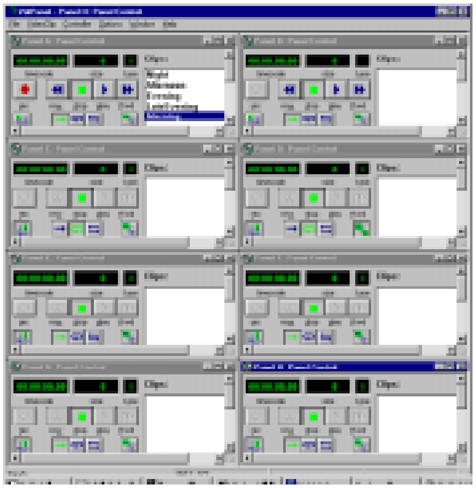
Transcode Utility

The Transcode Utility, which is started from Media Manager, converts motion JPEG media to MPEG or from MPEG to JPEG. You can also change the video quality of a clip. Refer also to Chapter 3, “Using Media Manager.”

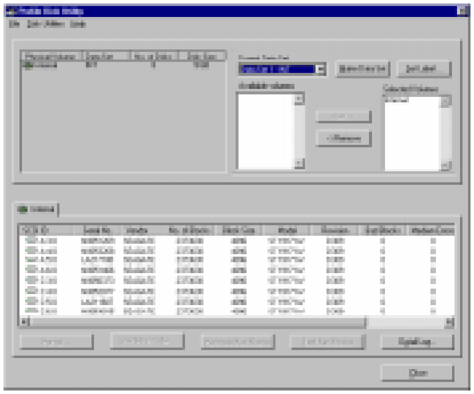


VdrPanel

VdrPanel enables you to capture and trim video and audio clips and then play them back. By default, VdrPanel starts automatically when you power-on your Profile system. For more information, refer to Chapter 4, “Using VdrPanel.”



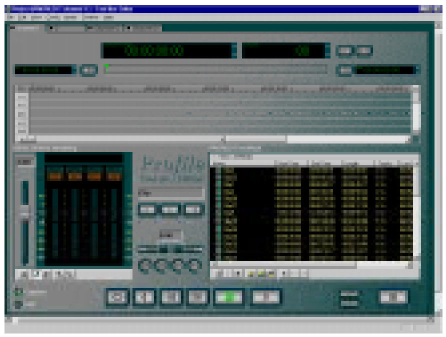
Profile Disk Utility



As shipped from the factory, Profile media disks come preformatted and with a file system already created. Profile Disk Utility allows you to create new file systems, reformat disks, and change disk labels. To find out more about how to use this utility, refer to Chapter 5, "Using the Profile Disk Utility."

NOTE: Locked versions of the following optional applications—Tool Box Editor, List Manager and TimeDelay—were shipped to you with version 2.4 system software. You can use the software for a limited time only. Unlocking this software for permanent use requires an additional purchase. Click* Purchase *in the timelock dialog box for information on how to purchase this software.

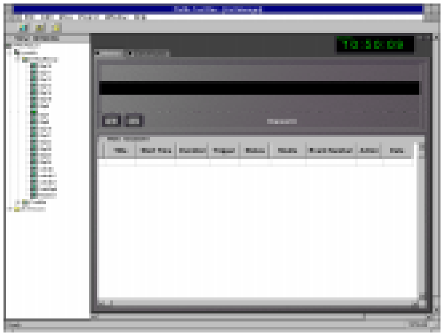
Tool Box Editor



The optional Tool Box Editor lets you create new media by logging and capturing video and audio clips while also providing an inexpensive, cuts-only editing system. Refer to Chapter 8, "Using the Tool Box Editor."

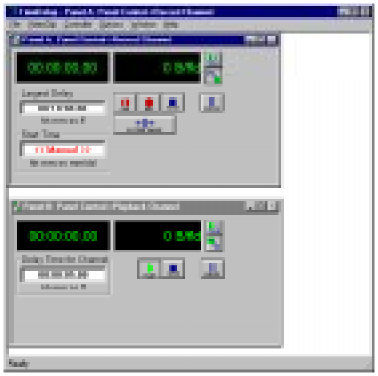
List Manager

The optional List Manager allows you to set up simple station automation. You can record incoming video at predetermined times, send incoming video directly to an output, or combine all of these functions to increase the automation level of you operations. Refer to Chapter 9, “Using the List Manager.”



TimeDelay

TimeDelay allows you to delay incoming video by an amount of time you specify. For more information, see Chapter 11, “Using TimeDelay.”



Profile Utilities

- **Profile Logs** allow you to view Profile system logs with the graphical log viewer, WinTail. This log viewer allows you to see the end of a log file. To learn more about how to view Profile logs, see Chapter 6, “Using Profile Utilities.”
- **ProLink** monitors Profile Protocol calls over RS-422 communication lines, allowing you to use a controller such as the PRC100 Control Panel to communicate with a Profile system. For more information on Profile Protocol, see the documentation that accompanies the Profile Software Development Kit.
- **PortSever** allows you to control a Profile unit remotely using Ethernet communications. For example, you can run PortServer on a remote Profile system so that you can control it over a LAN from another Profile or PC. PortServer is generally used in conjunction with Fibre Channel operations.
- **PDR Access Control** is a Windows NT service that prevents one application from crashing another application by mistake. Though largely transparent to users, the service prevents applications from accidentally reloading the video processor while in use, essentially providing a controlled gateway to the processor.
- **Update Firmware** reprograms components on boards in your PDR200 Video File Server, such as the Master Enhanced Disk Recorder (EDR) board. Updating the firmware in the selected components of these boards ensures that software and hardware will function together as expected.
- **Update Fibre Channel Microcode** updates the microcode on Fibre Channel boards.

Fibre Channel Support

You can use Fibre Channel video networking capabilities to move media from one Profile unit directly to another. With Media Manager, you can use the Fibre Channel connection to transfer media files between machines. Ethernet LAN is also required for transferring commands and status information. For more information, see Chapter 7, “Fibre Channel Video Networking.”

Chapter **2**

Using the Profile Configuration Manager

The Profile Configuration Manager provides an easy-to-use interface that streamlines the set up of reference genlock, video and audio inputs and outputs, system timing, and timecode for your Profile video disk recorder. The configuration tree allows you to open the specific configuration dialog boxes that control the settings. A graphic representation of the Profile rear panel at the bottom of the Configuration Manager window shows which boards are installed. The Configuration Manager window appears in Figure 3.

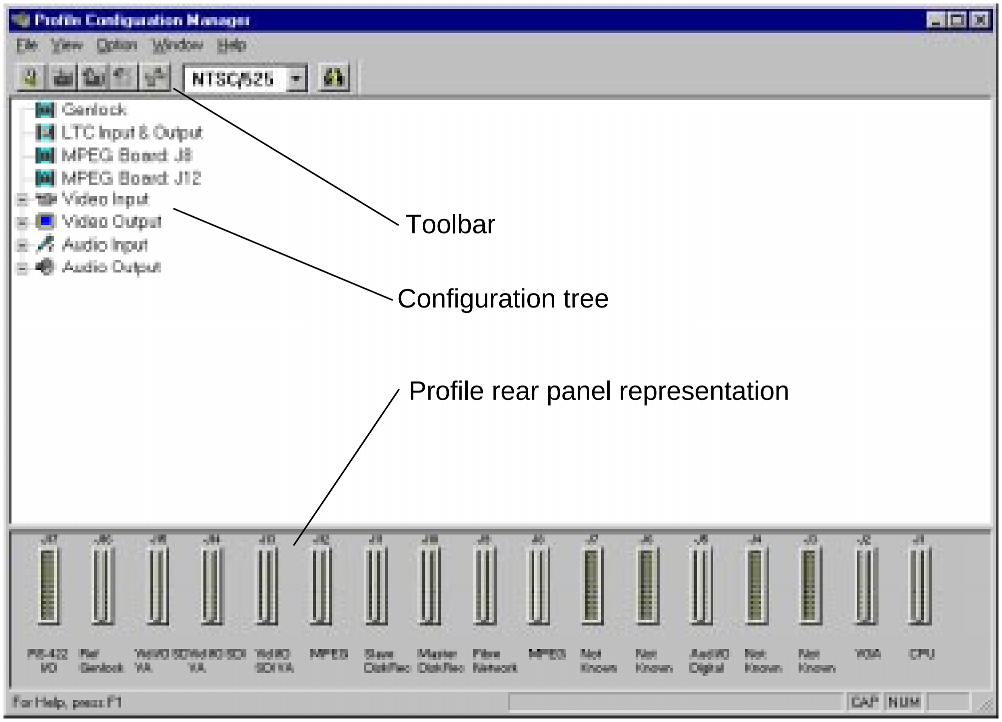


Figure 3. Profile Configuration Manager window

To select an item from the configuration tree:

- The configuration tree appears on the left side of the window. Clicking on an entry, such as **Video Input**, expands the list of choices. Clicking on an expanded list of choices, such as if you click on **Video Input** a second time, collapses the list of choices.
- A single click opens the specific dialog box, closing a previously opened box, if necessary. A double-click opens the specific dialog box but does not close any other open dialog boxes. To close all open dialog boxes at once, choose **Window | Close All**.

All changes in a dialog box take place immediately. The **Undo** button will undo changes from the time a dialog box was opened in the current tab of the dialog box. The **Undo** button is dimmed if there is nothing to undo. The **Help** button opens context-sensitive help related to the current dialog box.

By default, the toolbar and status bar are shown in the Configuration Manager window. To hide the toolbar or status bar:

- Choose **View | Toolbar** or **View | Status Bar**.

To view information about installed boards:

- Choose **Help | Installed Boards Information**.

Saving a Configuration File

It is possible to preserve a configuration for later use. You can save your current overall configuration in a file and then load it later. Configuration files have a *.cfg* extension. To save your current configuration in a file:

1. Choose **File | Save Current Configuration**. The Save As dialog box appears (Figure 4).

Figure 4. Save As dialog box for saving a configuration file

2. Enter a file name in the File Name box—*new.cfg* in this example.
3. Press Enter or click **Save**. The current configuration is saved.

Loading a Configuration File

To load a configuration file that has been saved previously:

1. Choose **File | Load Configuration File**. The Open dialog box appears (Figure 5).

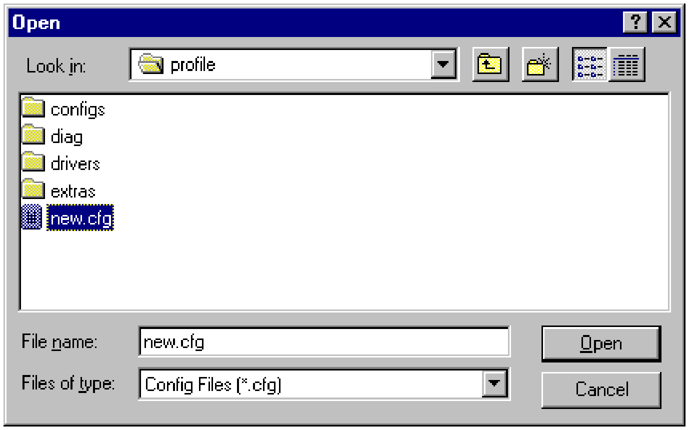


Figure 5. Open dialog box for loading a configuration file

2. A message box warns you that if you load a configuration file, all open windows are closed. Click **Yes** to continue.
3. Double-click a file name in the tree or type the name of the file in the File Name box—*new.cfg* in this example.
4. Press Enter or click **Open**. The file is loaded as the current configuration.

Setting Master Timecode

From the Master VITC Setting dialog box, you can conveniently view and change VITC settings for genlock and all available inputs and outputs. To set the master timecode (VITC) settings:

1. Choose **Options | Master Timecode** or click the **Master Timecode** button on the toolbar. The Master VITC Setting dialog box appears (Figure 6).

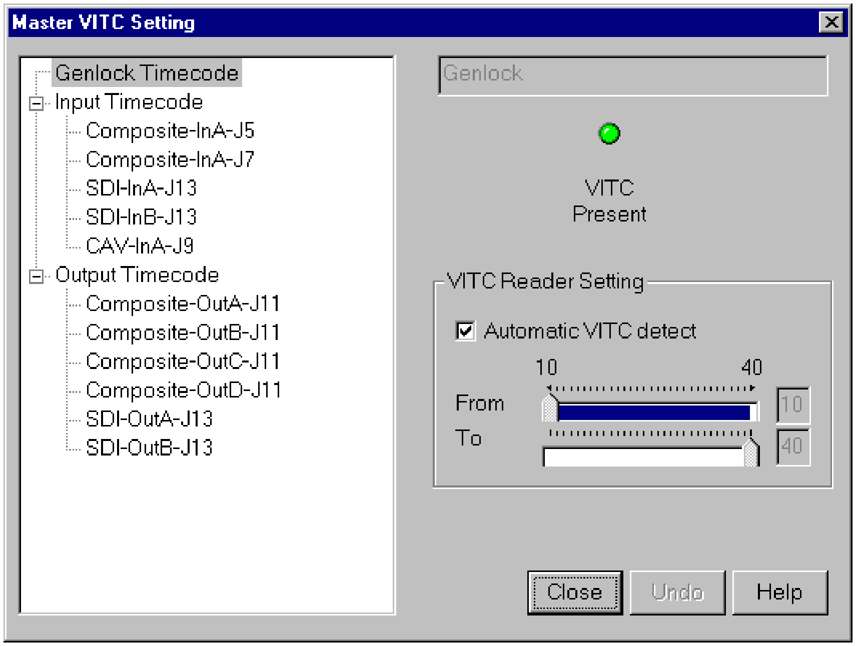


Figure 6. Master Timecode dialog box, genlock settings

2. The VITC Present status indicator should be on (green) if VITC is present. If VITC Present is not on, use one of the following options:

- Manual VITC detection (four-channel LTC version of the reference genlock board):
  - Verify Automatic VITC detect is not selected. If it is, click to toggle it.
  - Set VITC Reader Line1 to the expected location of the first Reader Line

and VITC Reader Line2 to the second expected Reader Line. If you only have one VITC line, enter the same value on both Reader lines.

- Check VITC Present. If it is still not on, use a waveform monitor to check the genlock signal to make sure that VITC exists on these lines.

• Automatic VITC detection only:

- Verify Automatic VITC detect is selected. If it is not, click to toggle it. The Search Lines are automatically established for NTSC/525 and PAL/625.
- Check VITC Present. If it is still not on, check the genlock signal to make sure that VITC exists and is within the expected range.

3. For each video input that should have VITC, select it from the list:

• For automatic VITC detection on analog composite and serial digital component signals:

- Verify Automatic VITC detect is selected. If it is not, click to toggle it.
- Set VITC Reader Line1 to the beginning of the search line. The minimum line number is 6 in PAL and 10 in NTSC.
- Check for VITC Present.

• For manual VITC detection on analog composite and serial digital component signals:

- Verify Automatic VITC detect is not selected. If it is, click to toggle it.
- Set VITC Reader Line1 and VITC Reader Line2 to the lines where VITC is located. If you only have one VITC line, enter the same value on both Reader lines.
- Check VITC Present. If it is still not on, double check your line numbers and try again.

4. For each video output that should have VITC, select it from the list:

• For analog composite on preexisting PDR100 and PDR200 units:

- Verify VITC Generator Enable is checked. If not, click to toggle it.
- Click on Vert. Interval to open the Vertical Interval Line Programming dialog box.

   - Select the desired VITC lines by checking in the VITC Enable column for the line. There is not a limit on the number of VITC lines.
   - Click **Close** to close the Vertical Interval Line Programming dialog box.
- For serial digital component:
   - From the Serial Digital Component Video Output dialog box, set the lines where you want VITC in VITC Generator Line1 and VITC Generator Line2.
   - Verify VITC Generator Enable is checked. If not, click to toggle it.

Setting the System Timing

A new, factory-default PDR200 is configured so that:

- All outputs are zero-timed to the external reference (house black).
- Each input can lock to and record any stable video input, whether or not the source is genlocked to an external reference.

NOTE: Serial digital inputs (525 lines) on a PDR100 must be timed manually.

To adjust system timing:

1. Choose **Options | System Timing** or click the **System Timing** button on the toolbar. The System Timing dialog box appears (see Figure 7 which shows an example of how the dialog box looks when the outputs are zero-timed by default).
   - The red line represents the external reference, and the yellow line represents reference genlock.
   - A hashed box represents a timing window or, in other words, the range of lines within which the timing is adjusted.
   - The external reference, represented at the top of the dialog box, shows a range from –16 to +16 lines. You can scroll past this range by dragging the pointer on this line in either direction with the mouse.
2. Click any button to the left of the internal reference (genlock) or video output signal name and the timing edit box appears in the bottom left of the System Timing dialog box (see Figure 8 which shows the dialog box when the outputs are E to E timed).
3. In the timing edit box, you can adjust the number of fields (genlock only) or lines, and also tune these settings with course or fine adjustments. You can enter a number directly or click an arrow to adjust a setting. The adjustments and ranges available vary, depending on the type of output you have.
4. Click **Close** to accept the settings, **Undo** to return to the previous settings, **Default** to return to the default settings.

NOTE: You must restart your unit for the new system timing setting to take effect.

You can also fine tune your system timing settings individually under Reference Genlock System Input Advanced Adjustment in the Reference Genlock dialog box. You can also tune individual output settings under Output Timing Adjustment in under Video Output.

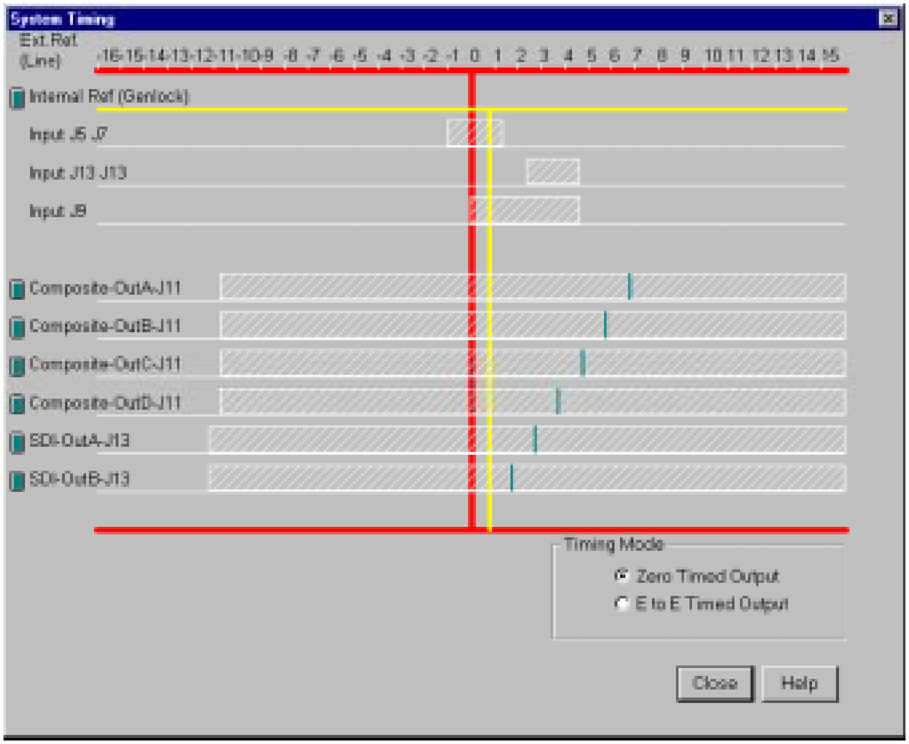


Figure 7. System Timing dialog box, zero-timed

E to E Timed Outputs

In some applications, you may want to precisely switch an output from a live video feed to playback of recorded material. Since the live input will be delayed as it passes through the Profile unit, you must set a corresponding delay on the playback. The E to E Timed Output option sets a 1*6-line delay* on all the system outputs, allowing a zero-timed input to be exactly timed with a play to air signal. To set all your Profile unit output for E to E operations:

1. Choose **Options | System Timing** or click the **System Timing** button on the toolbar. The System Timing dialog box appears.

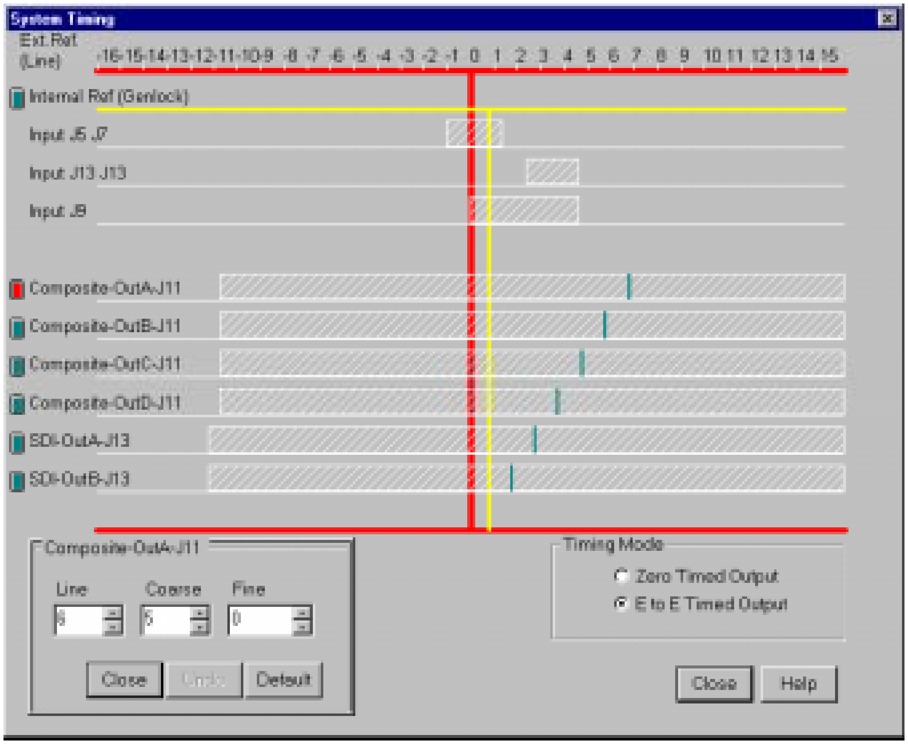


Figure 8. System Timing dialog box, E to E timed

2. Click **E to E Timed Output**.

3. Click **Close**.

Adjusting the Timing when Upgrading to 2.4

If you are upgrading an existing PDR100 to system software version 2.4, your system timing will be left in E to E mode and no changes will be made to your system timing. The only difference you will see is a numeric offset of 7 lines in the Line setting under Reference Genlock System Input Advanced Adjustment in the Reference Genlock dialog box and an offset of nine lines in the Vertical Line Delay under Output Timing Adjustment under Video Output.

Auto Timing

Auto-timing determines if the input is synchronized to the reference genlock signal. The disk recorder records time-base corrected video whether or not it is also locked to the reference. If auto-timing is enabled and the signal was able to be timed into the system, the **Auto Timed** indicator at the top of the video input dialog box is turned on.

If you want to use the disk recorder as a switcher and/or have the output video correctly timed when in E to E mode, the input video must be locked to the reference and properly timed to the disk recorder. To aid in the timing setup, all video inputs have auto-timing circuits which synchronize input video to the internal timing reference as long as the input video is within the auto-timing sync window (±2 lines for the latest analog composite boards, ±1 lines for all others). To get to the auto-timing window, input must be advanced 7 1/2 lines.

The auto-timing circuit is always trying to lock to the signal. If you try to auto time a signal outside of the window, the video signal appears to be broken-up as it cannot be timed into the system. If the input drifts out of range, it is retimed as soon as it drops back into range. The disk recorder can use untimed signals if auto-timing is not enabled, but they are not timed correctly and may cause jumping and skipping in E to E mode.

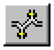
NOTE: If you select auto-timing for an input signal and it cannot auto time with the genlock reference signal, the input signal is not recorded accurately. If you must record an input that cannot lock, disable auto timing and then record. There may be problems if you are operating in E to E mode, but the clip plays back correctly timed.

If auto-timing is enabled, and the signal was able to be timed into the system, the Auto Timed indicator is turned on. Also, for serial digital component input, Line 1 can still be adjusted, but Line 2 is always equal to Line 1 + 14.

Setting Up Fibre Channel Networking

If you have a Fibre Channel board in your Profile unit and you are part of a Fibre Channel Profile network, you must configure the board with an IP (Internet Protocol) address and other optional settings. Configuration Manager allows you to do this with the Fibre Channel Networking command.

To configure your Fibre Channel board:



1. Choose **Options | Fibre Channel Networking** or click the **Fibre Channel Networking** button on the toolbar. The Fibre Channel dialog box appears (see Figure 9).

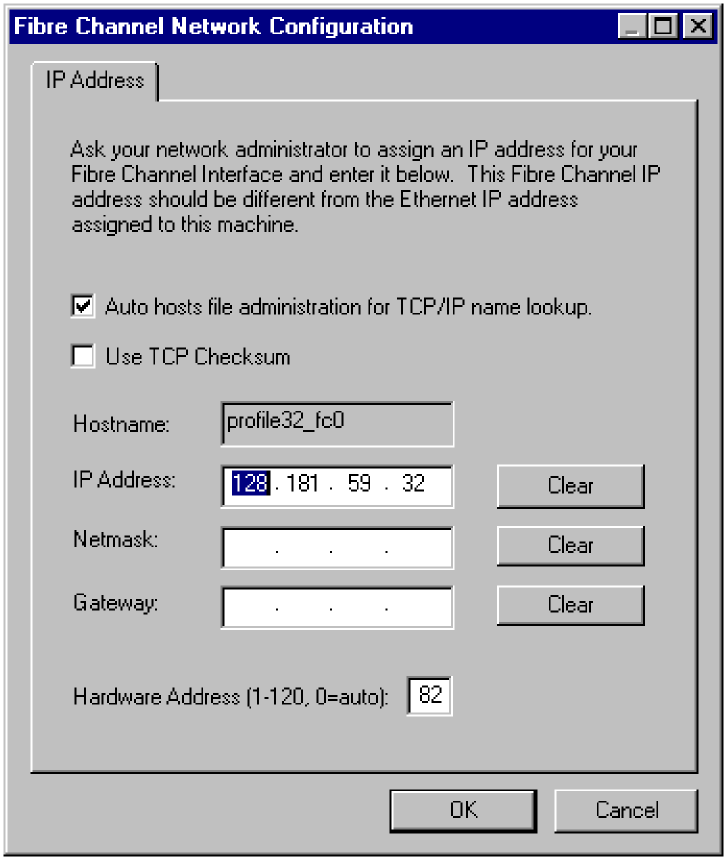


Figure 9. Fibre Channel Network Configuration dialog box

2. Click **Auto hosts administration for TCP/IP name lookup**. When selected, the PDR Network Configuration Service (**fcncs.exe**) automatically administers the file *c:\winnt\system32\drivers\etc\hosts.*
3. Click **Use TCP Checksum**. When selected, a checksum is used to aid in error checking.
4. The **Hostname** box shows the name of the Profile host with a unique Fibre Channel identifier appended to it—in this case, *_fc0*.
5. Enter dotted decimal IP address in the box provided. Contact your network administrator for an appropriate address. The IP address must be different than the Ethernet address for the machine. Click **Clear** to erase an entry.
6. Enter a netmask in the box provided. A netmask can help speed routing of network traffic. Click **Clear** to erase an entry. Based on the address you use for a netmask, there is an implicit netmask, but you can override this with a larger mask. For example, *255.0.0.0* can be overridden by *255.255.0.0* or *255.255.255.0*.
7. Enter a dotted decimal gateway address in the box provided. This is if you have a Profile VideoGateway attached to your network. Click **Clear** to erase an entry.
8. Enter an hardware address in the box provided, in the range 1 to 120. A hardware address of 0 (zero) will allow the address to be automatically configured. Every Fibre Channel node (board) on your Profile network must have a unique hardware address.
9. Click **OK**.

Setting the Reference Genlock

The Reference Genlock dialog box sets the genlock parameters for VITC reader settings and internal reference timing. At the top of the dialog box, the status indicators display the current status of the genlock input: Locked to External Reference, Internal Clock Locked and VITC Present. A green light indicates that a particular status is on. These indicators cannot be edited.

To change the reference genlock settings:

1. Click or double-click **Genlock** from the configuration tree and the Reference Genlock dialog box appears (see Figure 10).

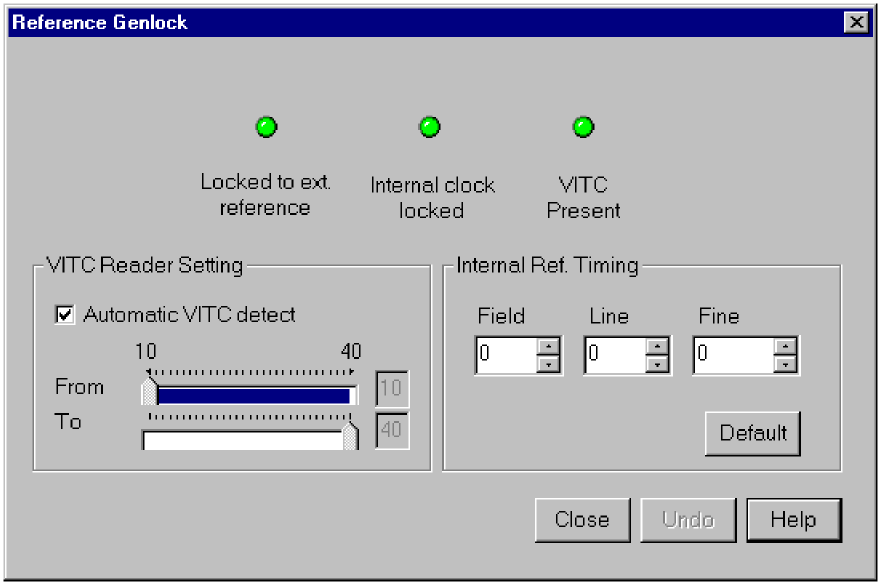


Figure 10. Reference Genlock dialog box

2. Click Automatic VITC Detect to have the Profile disk recorder use the range set in the **From** and **To** lines to look for the VITC (vertical interval timecode) signal. If the VITC signal is found, the VITC Present indicator is turned on. Otherwise, when you do not use Automatic VITC Detect, the disk recorder expects to find the VITC signals on VITC Reader Line 1 (default 10) or Line 2 (default 12).

3. Use the Field, Line, and Fine entries to adjust the internal timing relative to the reference input. Changing this setting affects *all* system timing, including all output timing and the input synchronized timing window. Click **Default** to return to the default timing values (0,0,0).

   NOTE: In order to properly time the disk recorder, the Internal Reference Timing should only be changed if the downstream timing requirements cannot be met using the video output Timing Adjustment (see "Video Output" on page 51). This should be done prior to setting individual output delay adjustments.

4. Click **Undo** to return all values in the dialog box as they were set at the time the dialog box appeared.

5. Click **Close** to accept the changes.

Changing LTC Input and Output Names

The LTC (longitudinal timecode) inputs and outputs dialog box allows you to rename the LTC inputs and outputs.

To change an LTC name:

1. Click or double click **LTC Input & Output** in the configuration tree and LTC Input & Output dialog box appears.

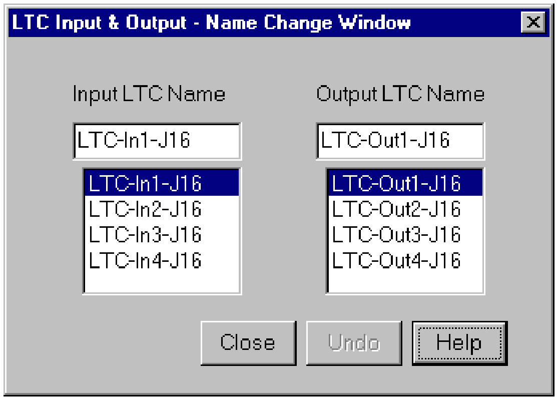


Figure 11. LTC Inputs & Outputs dialog box

1. Select an LTC input or output name.
2. Position the edit cursor within the appropriate edit box.
3. Enter the new name or portion of a name.
4. The new name appears in the name list.
5. Click **Undo** to return the name or names as they were at the time the dialog box appeared.
6. Click **Close** to accept the new LTC name or names.

Setting MPEG Input Timing

If you have MPEG board(s) installed in your Profile that is decoder-only and you are running in BVW [insert edit] mode (see “Setting up BVW [insert edit] Emulation” on page 150), you need to obtain a timing signal from a video I/O board to synchronize your output.

To select a timing input for the MPEG board:

1. Click or double-click **MPEG Board** from the configuration tree and the Input Timing Selection dialog box appears (see Figure 12).

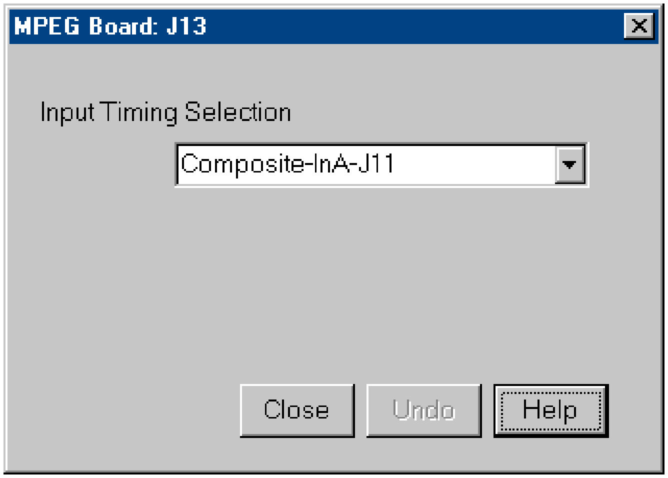


Figure 12. MPEG Input Timing dialog box

2. From the Input Timing box, select the board you want to get the timing signal from.
3. Click **Undo** to return to original input timing source.
4. Click **Close**.

Video Input

You may have analog composite, component analog (CAV), or serial digital component video inputs installed in your Profile system. The steps to configure video inputs follow.

Analog Composite Video Input

The indicators at the top of the dialog box show the current status of the analog composite video input. The indicators are **VITC Present**, **Input Locked**, and **Auto Timed** (also **Burst Present** for earlier analog composite cards). A green light indicates that a status is on. These are indicators and cannot be edited.

To configure analog composite video input:

1. Select **Video Input** from the configuration tree, and then click or double-click an analog composite input from the list, such as *Composite-InA-J5*. The Analog Composite Video Input dialog box appears (Figure 13 for current analog composite cards and Figure 14 for earlier cards).

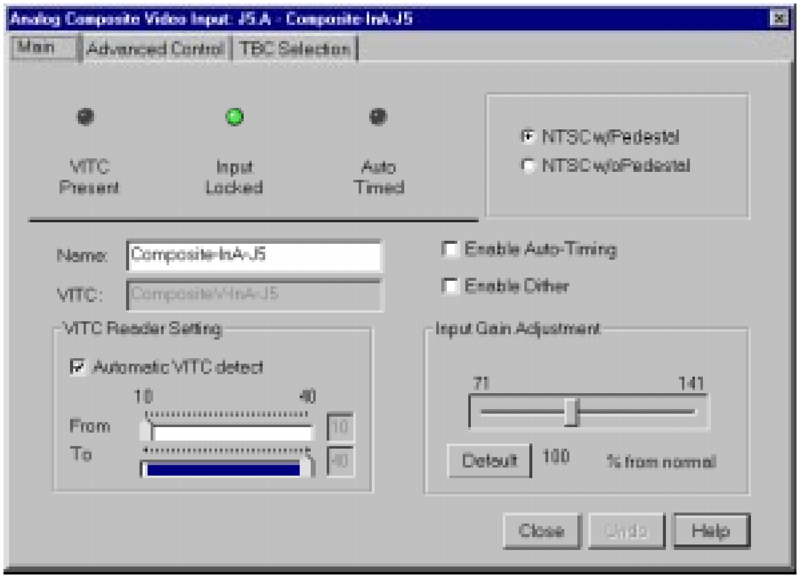


Figure 13. Analog Composite Video Input dialog box, Main tab (A)

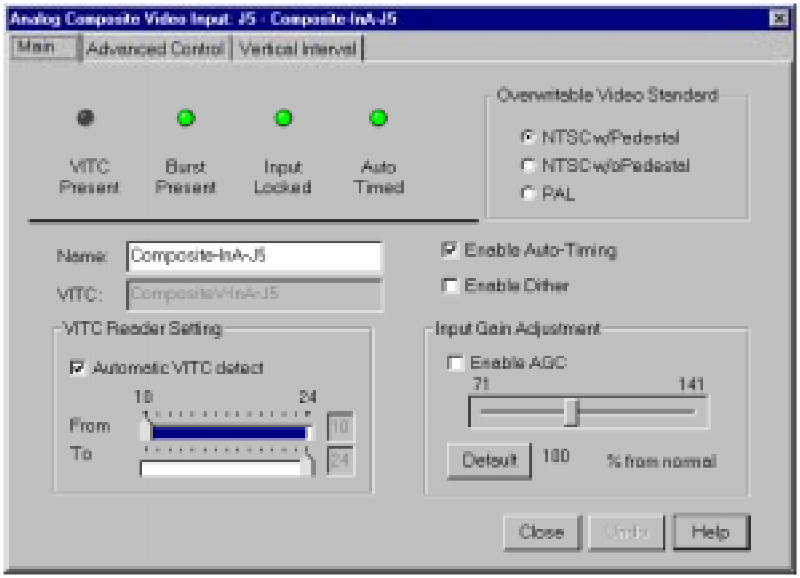


Figure 14. Analog Composite Video Input dialog box, Main tab (B)

2. If you prefer, enter a new name for the input signal in the **Name** box. For example, if the signal is a network feed, you could rename it to *Network_Feed*. The VITC name, the window title bar, and the configuration tree name change automatically as you enter the new name. Names can be up to 30 characters, and can include spaces. To return a renamed signal to the default, delete all the characters in the text field, and press Enter.

3. Select a video standard. Click either **NTSC with pedestal**, **NTSC without pedestal**, or **PAL** (PAL is available only with earlier cards). If you change the standard, restart all tools that use this channel. The board can accept only one input at a time.

4. If you use **Automatic VITC Detect**, the Profile unit uses the range set in the **From** and **To** lines to look for the VITC signals. If **Automatic VITC Detect** is not checked, the system expects to find the VITC signals on the VITC Reader Line 1 (default 10) or Line 2 (default 12). If the signal is found, the VITC Present status indicator is turned on.

   NOTE: Input must be auto timed to use automatic VITC detection.

5. If you want video input auto timed, click **Enable Auto-Timing**. Auto-timing determines if the input is synchronized to the reference genlock signal. The disk recorder records time-base corrected video whether or not it is also locked to the reference. If auto-timing is enabled, and the signal was able to be timed into the system, the **Auto Timed** indicator is turned on. For more information on auto timing, see "Auto Timing" on page 29.
6. Click **Enable Dithering** if the incoming signal is 10-bit resolution. This will produce the best quality result. The LSB artifacts on 10-bit video feeds are reduced. There is no effect if the incoming signal is 8-bit.
7. Click **Vertical Blanking** to enable vertical blanking. When enabled, for the 525 standard, lines 1 through 9 and 264 through 272 are blanked; for the 625 standard, lines 1 through 5, 311 through 317, 624, and 625 are blanked.
8. Adjust the input gain on the syncs to compensate for any losses in the input. You can adjust the gain manually or, with earlier cards, click **AGC** (Automatic Gain Control) which enables the internal quality monitoring circuit to automatically adjust the gain to keep the sync level constant. To adjust the gain manually, move the slider to the desired value. The range is from 71 to 141 percent (±3 dB) of the input signal. (For earlier cards, the range is from 45 to 142 percent (±3 dB) of the input signal for NTSC and 82 to 142 percent for PAL.) When you click **Default**, the Input Gain Adjustment resets to the default value (100 percent).
9. Click **Undo** to return the values in the dialog box to their original settings.
10. Click **Close** to accept all inputs.

Analog Composite Video Input Advanced Control

The Advanced Control tab allows you to select a decode mode, clamp speed, and other settings, depending on which analog composite card you have. To change advanced controls settings:

1. Click or double-click on the **Advanced Control** tab to view it (Figure 15 shows the dialog box for the most recent analog composite video cards while Figure 16 shows the dialog box for earlier cards).

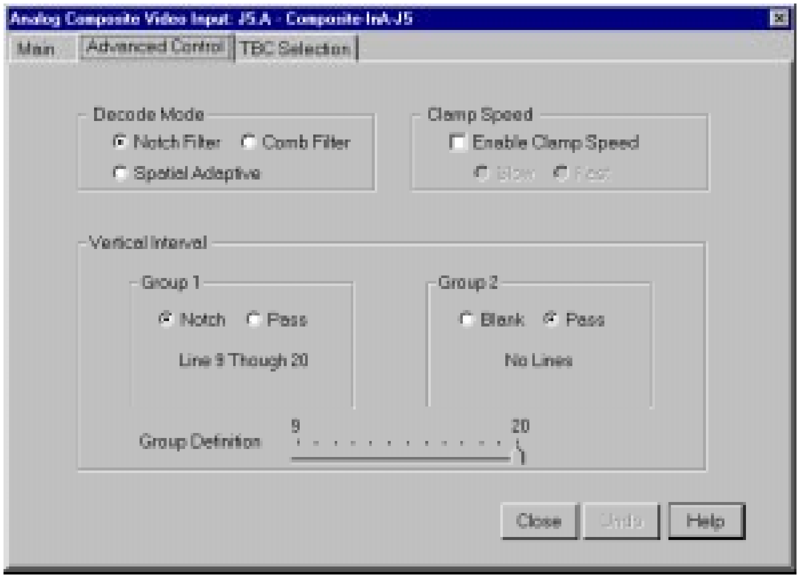


Figure 15. Analog Composite Video Input dialog box, Advanced Control tab (A)

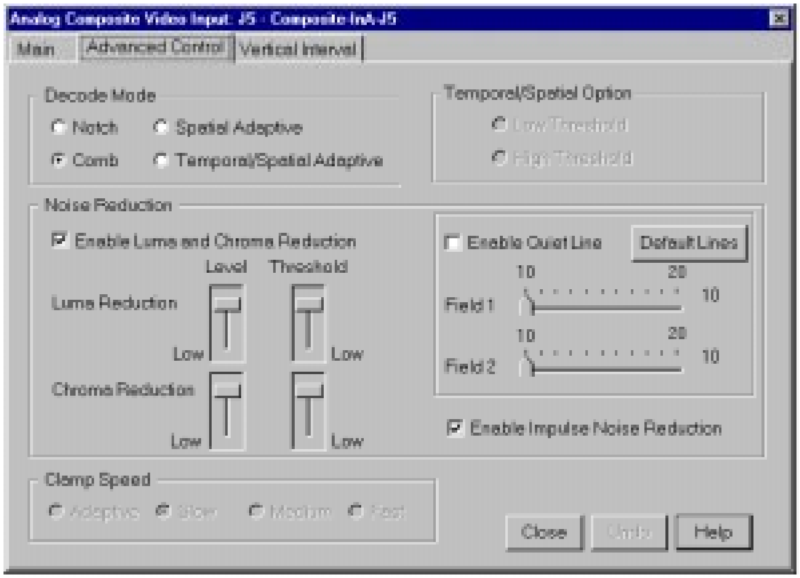


Figure 16. Analog Composite Video Input dialog box, Advanced Control tab (B)

2. Click a setting for decode mode. Decode mode determines how the chrominance and luminance information is separated for conversion for storage. There are three options for the current analog composite cards and four options for the earlier cards:

   - **Notch Filter.** Decode mode separates the chrominance by using a notch filter around the chrominance subcarrier. This leaves the high frequency luminance intertwined with the chrominance. A notch decoder readily determines horizontal lines are line-to-line luminance. Fine vertical lines can be more difficult.

   - **Comb Filter.** Decode mode tries to separate high frequency luminance from the chrominance using the same notch filter as the notch decoder, but also takes information from the next line. It uses this information to determine if high frequency is luminance or chrominance. A comb decoder readily determines finely spaced vertical lines are luminance. A lack of line-to-line phase alteration causes difficulty with fine horizontal lines.

- **Spatial Adaptive.** Decoding uses either the comb or notch decoder, on a pixel by pixel basis, depending on which gives the best results. For horizontal lines, notch is used; for vertical lines, comb is used.

NOTE: Spatial adaptive and temporal/spatial adaptive decoding uses the high or low threshold setting.

- **Temporal/Spatial Adaptive.** This is for earlier analog composite cards only. Decoding uses both the next line and the same line in the alternate field in the calculations. This decoder uses all of the properties of the Spatial Adaptive decoder, plus it uses Temporal (interfield changes) information. The phase change (or lack of) from field to field helps determine whether high frequency should be decoded as chrominance or luminance. The threshold determines the amount of motion allowed between alternate fields to still have the Temporal decoder recognize the pixel. High allows more motion than Low.

3. For the current analog composite card, click **Enable Clamp Speed** to enable it. Clamp speed sets the reaction to changing DC levels of the input signal. Speed can be either slow or fast. The fast clamp speed is more reactive to small DC variations. The slow speed ignores short-term DC level changes but gradually changes the clamping level to track the input.

   For clamp speed on earlier cards, click **Adaptive**, **Slow**, **Medium**, or **Fast** under the Clamp Speed group. **Fast** and **Slow** settings are the same for both the earlier and current cards, while **Medium** is a compromise between **Fast** and **Slow**. **Adaptive** uses the best clamp for the current video input. Clamp Speed also helps with white noise reduction. Adaptive is the best choice for white noise reduction. Do not use Adaptive for impulse noise, use Slow and the Impulse Noise Detection option from the Noise Reduction group.

   NOTE: If you set AGC (audio gain control) to automatic on the main screen, clamp speed cannot be selected.

4. For current analog composite cards, the Vertical Interval controls set how vertical interval signals are handled. Move the Group Definition slider to set how many lines are in Groups 1 and 2. In Group 1, Notch and Pass are available while Blank and Pass are available in Group 2:

   - **Notch** applies notch filtering to the vertical interval video line. This means that chrominance information and any luminance around the chroma subcarrier are removed.

- **Pass** indicates that the vertical video line is passed-through.
- **Blank** indicated that line the group are blank.

5. Under Noise Reduction (earlier analog composite cards only), the controls enable and set various noise reduction methods:
   - Click **Enable Luma and Chroma Reduction**. This applies the Level and Threshold settings to use a feedback noise reduction scheme on the decoded input signals after they have been separated into chrominance and luminance. The Level and Threshold sliders determine the amount of weight the feedback signal has in comparison to the input signal. The Threshold range takes into consideration the amount of motion in the picture. Use the sliders to adjust the ranges. Be sure Enable Luma and Chroma Reduction is checked for the reduction values to be applied.
   - Click **Enable Quiet Line**, if desired. This acts as a noise reference. If the Quiet line is noise-free, the rest of the signal should also be noise-free. This allows the decoder to not mistake noise for motion. If the Quiet Line is enabled, the line values for Field 1 and Field 2 are used. Use the sliders to set the line values for each field. Click on **Default Lines** to return to the default values.
   - **Enable Impulse Noise Reduction** automatically filters out noise spikes, such as amplifier crackling.

   NOTE: If reduction of impulse noise is selected, the disk recorder automatically switches the clamp speed to slow. It is recommended that you use the spatial adaptive decode option, although it does not automatically switch.

6. Click **Undo** to return the values in the dialog box to their original settings.
7. Click **Close** to accept all inputs.

Analog Composite Video Input Time Base Correction

The Time Base Correction tab is available only on the newer analog composite cards. To select the settings:

1. Click the **TBC Selection** tab (see Figure 17).

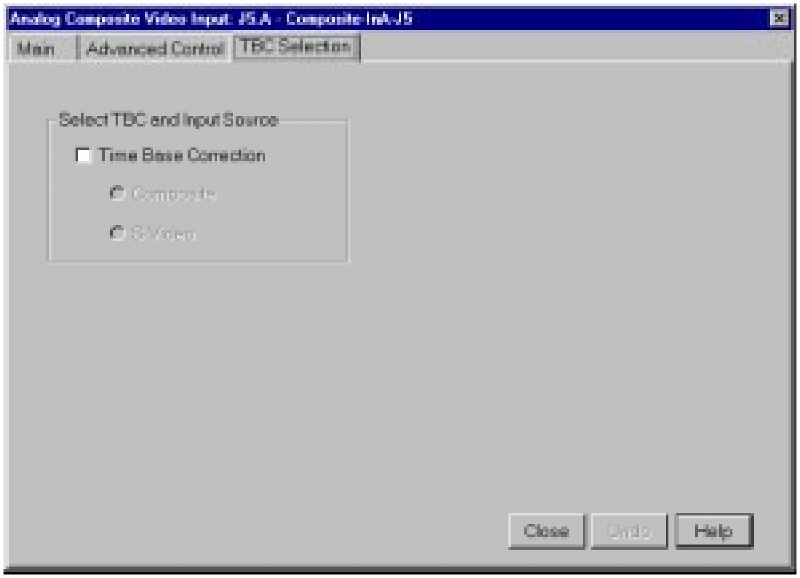


Figure 17. Analog Composite Video Input dialog box, Time Base Correction tab

2. When you select Time Base Correction, you can select either composite input or Super VHS (SVHS or S-video) input. There are two channels available for the most recent analog composite video input board. If Time Base Correction is selected in channel A, channel B is unselected, and vice versa.
3. Click **Undo** to return the values in the dialog box to their original settings.
4. Click **Close** to accept all inputs.

Analog Composite Video Input Vertical Interval

For earlier analog composite cards, the controls under the Vertical Interval tab sets how the vertical interval signals are handled. This tab is visible only if you have an older card in you Profile unit. For the most recent cards, the vertical interval settings are handled under the Advanced Control tab. There are different vertical interval line numbers in the dialog boxes, depending on your video standard—NTSC/525 or PAL/625. To change vertical interval settings:

1. Click or double-click on the **Vertical Interval** tab (see Figure 18).

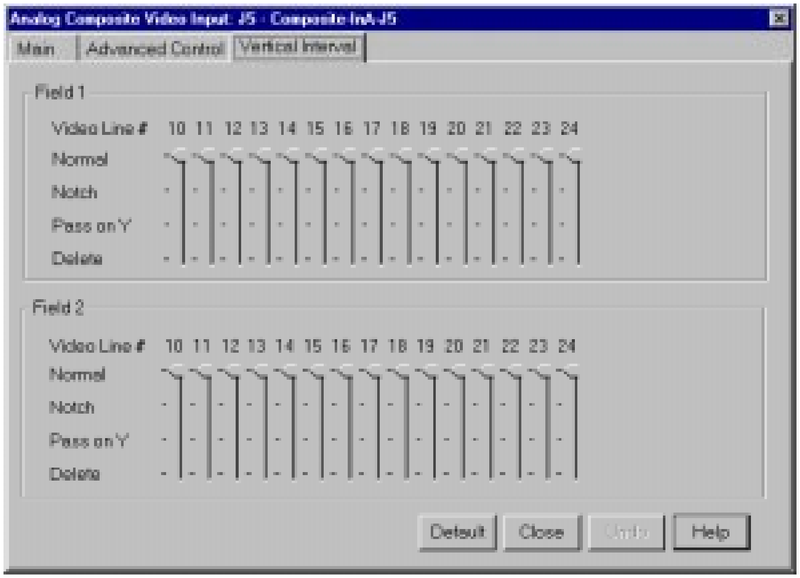


Figure 18. Analog Composite Video Input dialog box, Vertical Interval tab

2. Move the sliders for each individual line to select **Normal**, **Notch**, **Pass on Y**, or **Delete**.
   - **Normal** indicates the vertical interval video line is passed-through.
   - **Notch** applies notch filtering to the vertical interval video line (chrominance information and any luminance around the chroma subcarrier are removed).

- **Pass On Y** passes luminance information straight through. This is useful for VITC and closed-caption or data filtering.
- **Delete** removes the vertical interval video line and replaces it with black.

3. Click **Undo** to return the values in the dialog box to their original settings.
4. Click **Default** to return all values to their default values.
5. Click **Close** to accept all inputs.

Analog Component Video Input

You can configure analog component video input with the Analog Component Video Input dialog box. The current status indicators, shown at the top of the dialog box, are **Video Present**, **VITC Present**, and **Auto Timed**. The green light indicates that a particular status is on. These indicators cannot be edited.

To configure analog component video (CAV) input:

1. Select **Video Input** from the configuration tree, and then click or double-click an analog component input from the list, such as *CAV-InA-J9*. The Analog Component Video Input (CAV) dialog box (Figure 19).

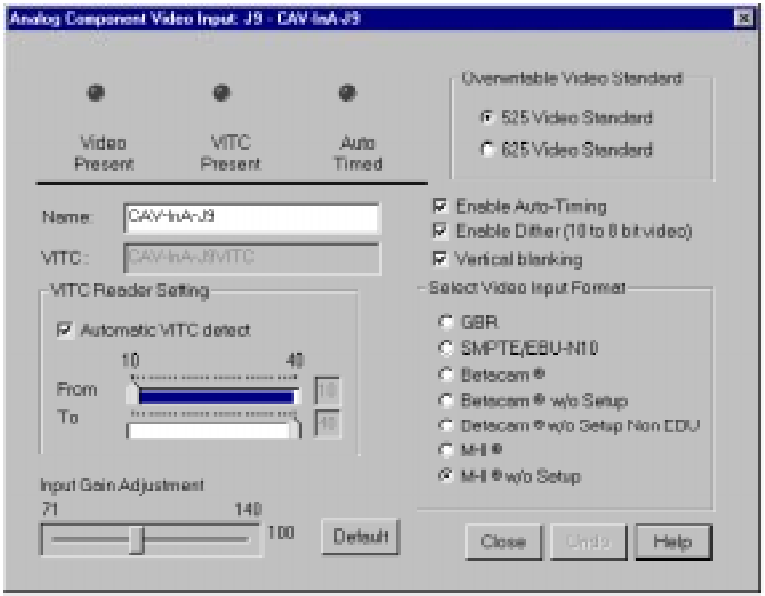


Figure 19. Component Analog Video Input dialog box (CAV**)**

2. If you prefer, enter the new name in the **Name** box. For example, if the signal is a Betacam input, you could rename it to *Betacam_1*. The VITC name, window title bar name, and the configuration tree name automatically change as you enter the new name. Names can be up to 30 characters, and can include spaces. To return a renamed signal to the default, delete all the characters in the text field, and press Enter.

3. Under **Overwritable Video Standard**, click either **525 Video Standard** or

625 Video Standard. If you change this standard, you must restart all tools that use this channel. The video input board can serve both standards, but the input can only accept one at a time.

4. Select a VITC reader setting. If you to use **Automatic VITC Detect**, the disk recorder uses the range set in the **From** and **To** lines to look for the VITC signals. If Automatic VITC detect is not used, the disk recorder expects to find the VITC signals on the VITC Reader Line 1 (default 10) or Line 2 (default 40). If the signal is found, the **VITC Present** indicator is turned on.

   NOTE: Input must be auto timed to use automatic VITC detection.

5. To change **Input Gain Adjustment**, move the slider to the desired value. The range is from 70 percent to 140 percent (3 dB) for the input signal for both 525 and 625. When you click on **Default**, the Input Gain Adjustment resets to the default value (100 percent).
6. If you want video input auto timed, click **Enable Auto-Timing**. Auto-timing determines if the input is synchronized to the reference genlock signal. The disk recorder records time-base corrected video whether or not it is also locked to the reference. If auto-timing is enabled, and the signal was able to be timed into the system, the **Auto Timed** indicator is turned on. For more information on auto timing, see “Auto Timing” on page 29.
7. Click **Enable Dithering** if the incoming signal is 10-bit resolution. This will produce the best quality result. The LSB artifacts on 10-bit video feeds are reduced. There is no effect if the incoming signal is 8-bit.
8. Click **Vertical Blanking** to enable vertical blanking. When enabled, for the 525 standard, lines 1 through 9 and 264 through 272 are blanked; for the 625 standard, lines 1 through 5, 311 through 317, 624, and 625 are blanked.
9. Click an appropriate format under **Select Video Input Format**.
10. Click **Undo** to return the values in the dialog box to their original settings.
11. Click **Close** to accept all inputs.

Serial Digital Component Video Input

You can configure serial digital component video input with the Serial Digital Component Video Input dialog box. The current status indicators, shown at the top of the dialog box, are **Video Present**, **VITC Present**, and **Auto Timed**. The green light indicates that a particular status is on. These indicators cannot be edited.

To configure serial digital component video input:

1. Select **Video Input** on the configuration tree, and then click or double-click a digital component input from the list, such as *SDI-InA-J13*. The Serial Digital Component Video Input dialog box appears (Figure 20).

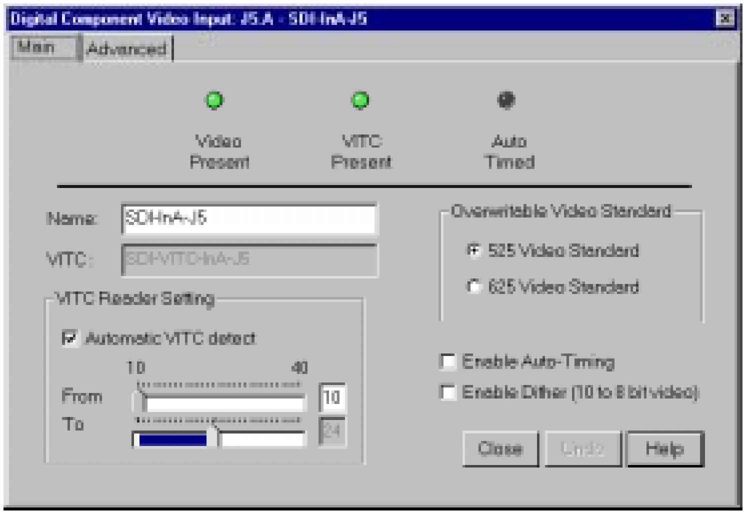


Figure 20. Serial Digital Component Video Input dialog box

2. If you prefer, enter the new signal name in the **Name** box. For example, if *SDI-InA-J13* is a dedicated satellite feed, you could rename it to *Satellite_1*. The VITC name, window title bar name, and the configuration tree name automatically change as you enter the new name. Names can be up to 30 characters, and can include spaces. To return a renamed signal to the default, delete all the characters in the text field, and press Enter.

3. Under **Overwritable Video Standard**, click either **525 Video Standard** or **625 Video Standard**. If you change this standard, you must restart all tools that use this channel. The video input board can serve both standards, but the input can only accept one at a time.

4. Select a VITC reader setting. If you to use **Automatic VITC Detect**, the disk recorder uses the range set in the **From** and **To** lines to look for the VITC signals. If Automatic VITC detect is not used, the disk recorder expects to find the VITC signals on the VITC Reader Line 1 (default 10) or Line 2 (default 12). If the signal is found, the **VITC Present** indicator is turned on. Line 1 and Line 2 cannot be more than 14 lines apart.

   NOTE: Input must be auto timed to use automatic VITC detection.

5. If you want video input auto timed, click **Enable Auto-Timing**. Auto-timing determines if the input is synchronized to the reference genlock signal. The disk recorder records time-base corrected video whether or not it is also locked to the reference. If auto-timing is enabled, and the signal was able to be timed into the system, the **Auto Timed** indicator is turned on. For more information on auto timing, see “Auto Timing” on page 29.

6. Click **Enable Dithering** if the incoming signal is 10-bit resolution. This will produce the best quality result. The LSB artifacts on 10-bit video feeds are reduced. There is no effect if the incoming signal is 8-bit.

7. Click **Undo** to return the values in the dialog box to their original settings.

8. Click **Close** to accept all inputs.

Serial Digital Component Video Input Advanced

The Advanced tab allows you to determine whether the EDH (Error Detection and Handling) packet is present, which audio groups (1–4) are present, and which errors are present: Full Field (FF) CRC or Active Picture (AP) CRC, plus parity and checksum errors.

To reset EDH for serial digital video input:

1. Click the **Advanced** tab to view the Serial Digital Component Video Input Advanced settings.

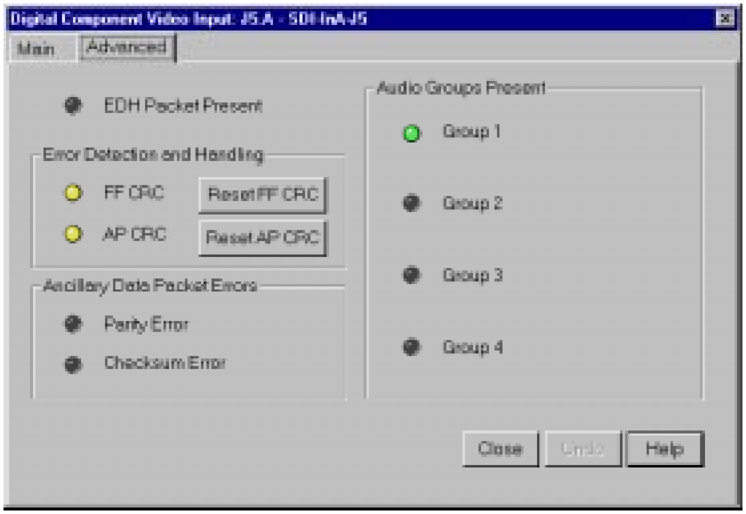


Figure 21. Serial Digital Component Video Input, Advanced

2. Click **Reset FF CRC** to reset Full Field errors or **Reset AP CRC** to reset Active Picture errors.
3. Click **Undo** to undo the resets.
4. Click **Close** to exit.

Video Output

You can configure either analog composite or serial digital component video output on your Profile system, depending on which boards are installed.

Analog Composite Video Output

To open the Analog Composite Video Output dialog box:

1. Select **Video Output** from the configuration tree and click or double-click an analog composite output from the list, such as *Composite-OutA-J11*. The Analog Composite Video Output dialog box appears (see Figure 22).

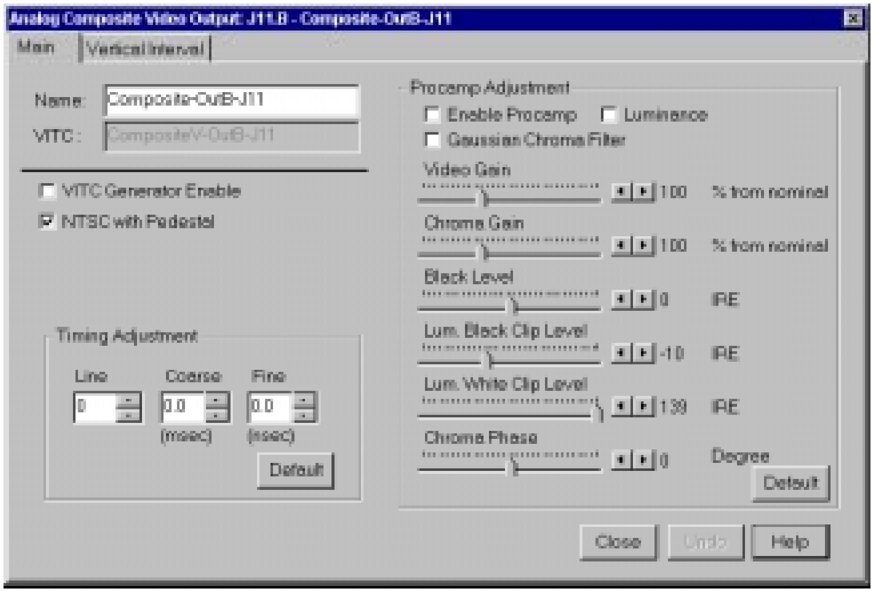


Figure 22. Analog Composite Video Output dialog box

2. Enter a new name in the **Name** box to change the signal name. For example, if this is a dedicated signal to a main switcher, rename it *Switcher_1*. The **VITC Name** automatically tracks the signal name and cannot be edited. Names can be up to 30 characters, and can include spaces. To return a renamed signal to the default, delete all the characters in the text field, and press Enter.

3. Click **VITC Generator Enable** to place VITC on specified lines in the vertical interval, as specified under **VITC Generator Settings** in analog composite video input.
4. Click **NTSC with Pedestal** to set the video output to NTSC with pedestal.
5. Under **Timing Adjustment**, you can adjust the timing of the output signal to compensate for any additional delays in your system. Any changes you make in this group take place immediately. You can delay at the following levels, to get the exact amount of delay required:
   - Vertical Line level (from –2 to +148 lines)
   - Coarse Horizontal level (from –100 to +100 ms)
   - Fine Horizontal level (from –100 to +100 ms)

   Use the **Line**, **Course**, or **Fine** boxes to set the timing adjustment amounts. When the timing adjustments are done with a waveform monitor, you can visually move the signal so that it matches the reference. Click **Default** to reset the values to 0, which is the point where the output signal timing is aligned with the reference genlock signal.
6. Under **Procamp Adjustment**, you can modify the output signal to compensate for any irregularities in the signal path. All changes take place immediately.
   - **Enable Procamp** must be checked before anything in this group can be adjusted. This enables you to setup the Procamp and then disable it without losing the setup.
   - **Luminance**(enabled) specifies only the luminance portion of the signal is output. The signal is black and white.
   - **Gaussian Chroma Filter** determines the type of filter used on the chrominance portion of the signal. If the Gaussian Chroma Filter is selected, the filter has a long slow roll-off to prevent ringing. If it is not selected, then a brickwall filter is used. Although this may introduce ringing into the signal, it maintains the integrity of the signal for multiple processing. Use the Gaussian Filter as a last step before transmission and if ringing suppression is required. Do not use this filter if you are doing multiple processes/passes on the signal or if the material is in component form.

The Procamp controls are adjusted with either the slider bars or arrow buttons. The corresponding numeric values are displayed in the text boxes.

- **Video Gain** raises or lowers the overall amplitude of the video signal. It has a range of 50 to 200 percent of nominal.
- **Chroma Gain** changes the amplitude of the chrominance portion of the signal to change the color intensity. It has a range of 50 to 200 percent of nominal.
- **Black Level** sets the voltage level of the reference black level. This is expressed in mV in the PAL video standard and in IRE units in NTSC. The range in the PAL standard is –140 to 140 mV. The range in the NTSC standard is –20 to +20 IRE.
- **Chroma Phase** sets the colors by varying the phase of the chrominance subcarrier. The range is –45 to +45.
- **Luminance Black Clip Level** is the point where the procamp clips the luminance portion of any video that drops below this level. For PAL, the range is –150 mV to 0 mV and –20 IRE to 7.5 IRE (or 0 IRE if pedestal is not selected) in the NTSC standard.
- **Luminance White Clip Level** follows the same logic, only it clips any luminance above the set threshold. Its range in the PAL standard is 700 to 909.5 mV and 100 to 139.5 IRE in the NTSC standard.
- **Default Procamp** resets the Procamp to the factory-defined levels.

7. Click **Undo** to return the values in the dialog box to their original settings.
8. Click **Close** to accept the changes.

Analog Composite Video Output Vertical Interval

The Vertical Interval tab brings up the analog composite video output vertical interval controls that determine how the vertical interval signals are handled:

1. Click the **Vertical Interval** tab to view the vertical interval controls. The vertical interval line numbers change depending on the selected video standard (see Figure 23).

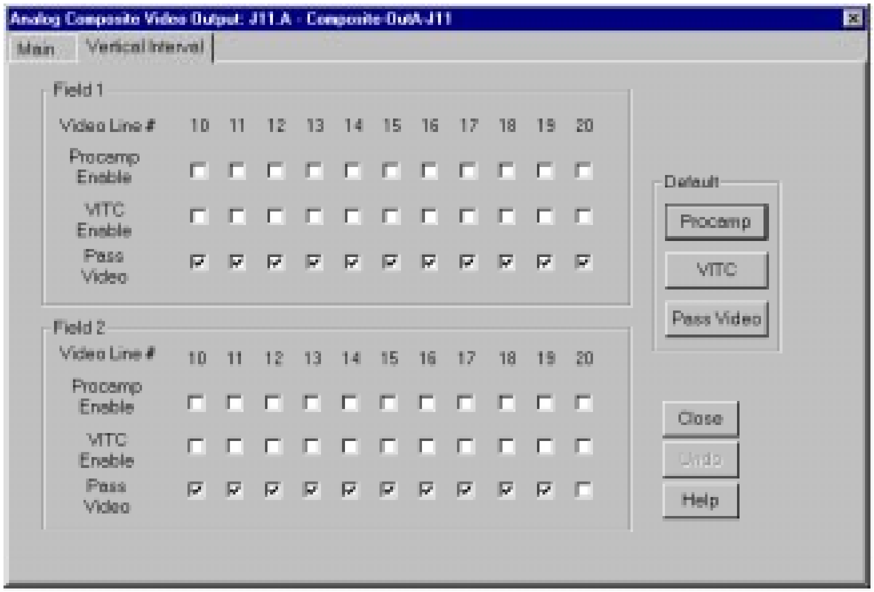


Figure 23. Analog Composite Video Input Vertical Interval tab

2. Click in the boxes for each line to enable Procamp (the settings are the same as the regular video), VITC (if VITC Generator Enable is selected), or to Pass Video through. All or none of the options can be selected for each line. The default buttons for Procamp, VITC, and Pass Video reset these specified values back to the factory presets.

   NOTE If the Pass Video box is not checked, the input video is replaced with black. Do not check Pass Video for VITC lines as Pass Video overrides VITC insertion.

3. Click **Undo** to return the values in the dialog box to their original settings.

4. Click **Close** to accept the changes.

Analog Composite Monitor Output

To open the Analog Composite Monitor Output dialog box:

1. Select **Video Output** from the configuration tree, and then click or double-click a monitor output from the list, such as *Monitor-Out-J12*. The Analog Composite Monitor Output dialog box appears (see Figure 24).

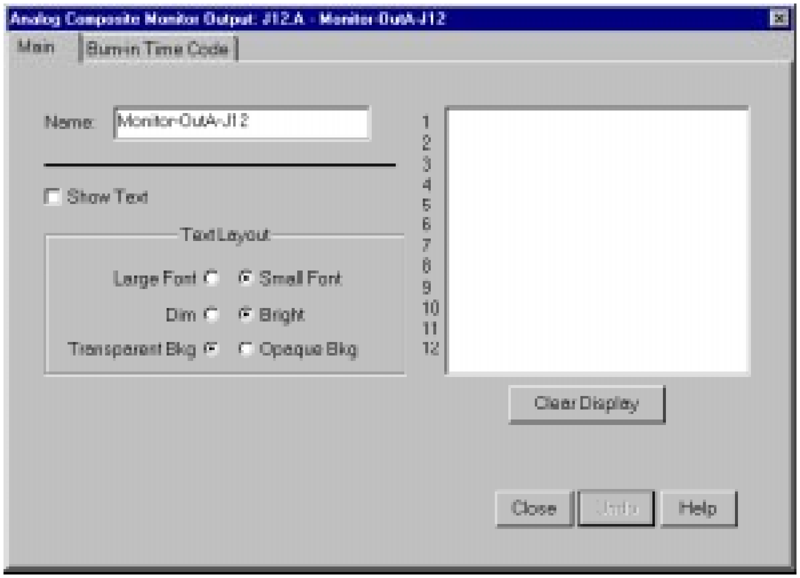


Figure 24. Analog Composite Monitor Output dialog box, Main tab

2. Enter a new name in the **Name** box to change the signal name. For example, you could rename it to *Monitor_1*. Names can be up to 30 characters, and can include spaces. To return a renamed signal to the default, delete all the characters in the text field, and press Enter.
3. Click **Show Text** to display text on an attached monitor. Displaying text on a monitor is good way to help identify where the output is coming from.
4. Under **Text Layout**, you can select either a small or large font, a dim or bright white character display, and a transparent or opaque background for the lettering. With the small font, you get twelve lines and twenty-four columns; with the large, you get six lines and thirteen columns.

5. To enter text, click in the text entry box and start typing where you want the text displayed on the monitor. Legal characters are: a-z A-Z 0-9 / ! ? + - = ( ) < > ‘ “ . , . Use _ (underbar) for transparent space.
6. To clear entire monitor, click **Clear Display**. Click the button again to display text once more. Under Windows NT 3.51, this button appears as a check box.
7. Click **Undo** to return the values in the dialog box to their original settings.
8. Click **Close** to accept the changes.

Analog Composite Monitor Output Burn-in Timecode

To display burn-in timecode:

1. Click the Burn-in Timecode tab to bring up the controls for displaying burn-in timecode on the monitor (see Figure 25).

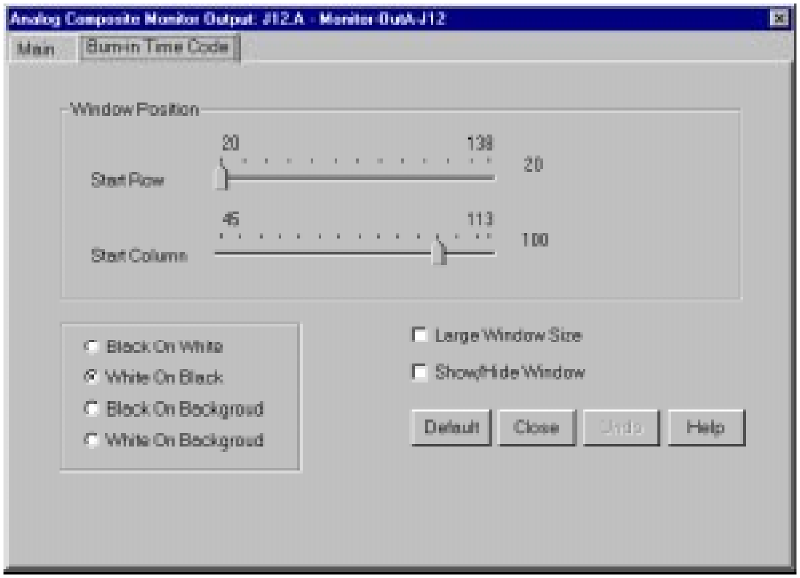


Figure 25. Analog Composite Monitor Output dialog box, Burn-in Timecode tab

2. To display timecode on an attached monitor, select **Show/Hide Window**.
3. To display a large timecode window, select **Large Window Size**.
4. Under **Window Position**, select the **Start Row** and **Start Column** for the timecode with the sliders. This determines where the timecode is displayed on the monitor screen. The current row and column are displayed on the right.
5. You can display the timecode in one of four formats. Click on **Black on White**, **White on Black**, **Black on Background**, or **White on Background**.
6. Click **Undo** to return the values in the dialog box to their original settings.
7. Click **Close** to accept the changes.

Serial Digital Component Video Output

To open the Serial Digital Component Video Output dialog box:

1. Select **Video Output** from the configuration tree, and then click or double-click a digital component output from the list, such as *SDI-OutA-J5*. The Serial Digital Component Video Output dialog box appears (see Figure 26).

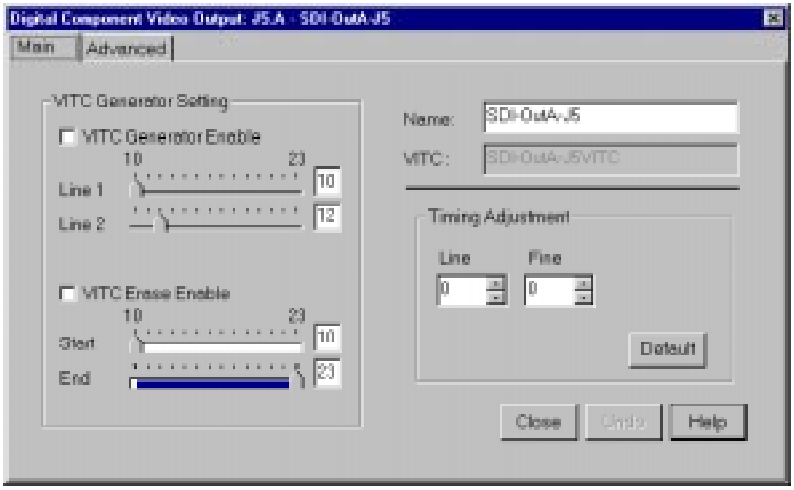


Figure 26. Serial Digital Component Video Output dialog box

2. Enter a new name in the **Name** box to change the signal name. For example, if the signal named *SDI-OutA-J13* is a dedicated signal to a main switcher, you could rename it to *Switcher_1*. The VITC name automatically tracks the signal name. Names can be up to 30 characters, and can include spaces. To return a renamed signal to the default, delete all the characters in the text field, and press Enter.

3. Under **VITC Generator Setting**, you can place VITC (vertical interval timecode) on specified lines and/or erase lines in the vertical interval.

   - If VITC Generator Enable is selected, VITC is placed on the lines given in VITC Generator Line 1 and 2. If you only want one line, use the same number for both.

- If **VITC Erase Enable** is selected, it removes any VITC that may have been recorded previously. Without enabling VITC erase, previous VITC may or may not be overwritten, so it is best to enable it. The range of lines is determined by the Start and End values.

4. Under **Timing Adjustment** you can set the timing of each output with respect to the reference genlock internal reference timing which, in turn, is set with respect to the external reference input (house black). With the reference genlock timing set to the factory default of 0, the outputs have an adjustment range of –2.5 lines to +148 lines of delay. The **Fine** delay is in pixels and the **Line** delay is in lines.
5. Click **Undo** to return the values in the dialog box to their original settings.
6. Click **Close** to accept the changes.

Serial Digital Component Video Output Advanced

To change error detection settings for serial digital video output:

1. Click the **Advanced** tab to view the Serial Digital Component Video Output Advanced settings (see Figure 27).

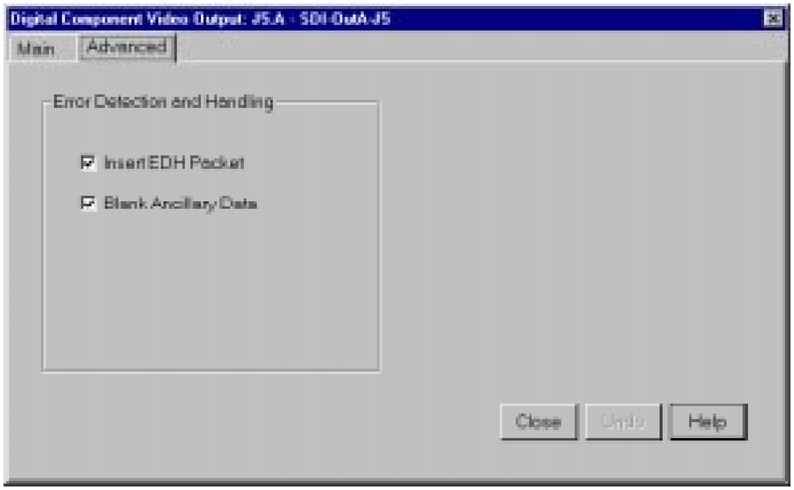


Figure 27. Serial Digital Video Output dialog box, Advanced tab

2. Click **Insert EDH Packets** to insert Full Frame CRC and Active Picture CRC into the video stream.
3. Click **Blank Ancillary Data** to insert ancillary data information into the video stream.
4. Click **Undo** to return the values in the dialog box to their original settings.
5. Click **Close** to accept the changes.

PDR100 Audio

The PDR100 supports both analog and serial digital embedded (625 only) audio inputs and outputs, depending on which boards are installed your the PDR100 system. Audio in the PDR100 is routed using the EISA bus with data flow controlled by a real time controller and the audio interface card.

The analog audio card is capable of converting four channels of analog audio to digital audio (and vice versa) using 16-bit/48kHz conversion. The input and output data flow to the card via the EISA bus, with sample clocks coming from a video interface card, such as the analog composite board or the SDI board. However, the analog audio card can only have one clock operating at a time. If the card is used as an input device, it must have the clock that originates on the video board associated with the audio.

Analog Audio Input

To open the Analog Audio Input dialog box:

1. Select **Audio Input** from the configuration tree, and then click or double-click an analog audio name from the list, such as *Analog-InA-J8*. The dialog box appears, as shown in Figure 28.

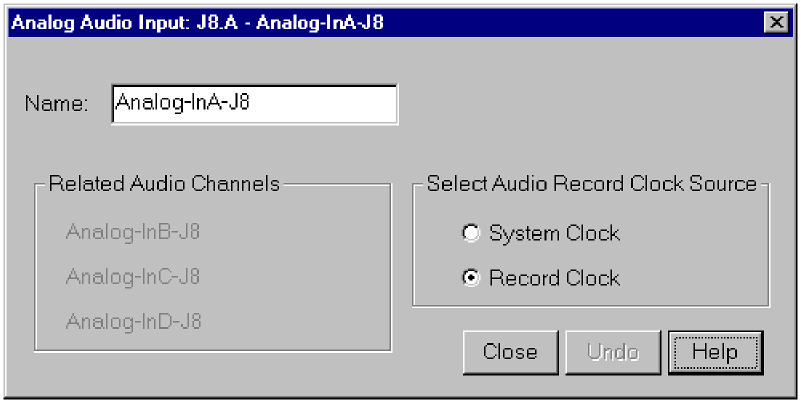


Figure 28. Analog Audio Input dialog box

2. Enter a new name in the **Name** box. For example, you could change the signal name from *Analog-InA-J8* to *Audio One*. Signal names can be up to 30 characters long, and can include spaces. The window title bar name and the configuration tree name automatically change as you enter the new name. To return a renamed signal to the default, delete all the characters in the text field, and press Enter.
3. Click**System Clock** or **Record Clock** to select the audio record clock source.
4. **Related Audio Channels**lists the audio channels that are related to the current signal name.
5. Click **Undo** to return the values in the dialog box as they were set at the time the dialog box appeared.
6. Click **Close** to accept the changes.

Digital Audio Input

To open the Digital Audio Input dialog box:

1. Select **Audio Input** from the configuration tree, and then click or double-click a digital audio name from the list, and the Digital Audio Input dialog box appears (see Figure 29).

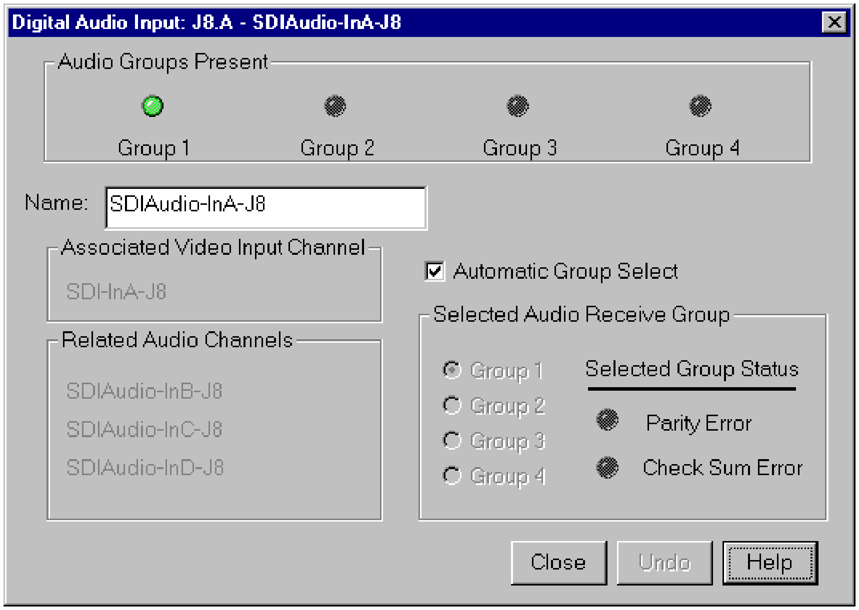


Figure 29. Digital Audio Input dialog box

2. **Audio Groups Present** shows four status indicators, one per audio group. The green light indicates that the particular status is on. These indicators cannot be edited.

3. Enter a new name in the **Name** box to change the signal name—*Audio_1*, for example. Names can be up to 30 characters, and can include spaces. The window title bar name and the configuration tree name automatically change as you enter the new name. To return a renamed signal to the default, delete all the characters in the text field, and press Enter.

4. **Associated Video Input Channel** lists the name of the digital component video input channel associated with the audio signal.

5. **Related Audio Channels** lists the audio channels that are related to the signal name.
6. Select an audio group. You can either click **Automatic Group Select** or click the button associated with the group (1–4) in the **Selected Audio Receive Group**.
7. **Selected Group Status** represents parity error and check sum error with a status indicator for each. The green light indicates an error condition. These indicators cannot be edited.
8. Click **Undo** to return the values in the dialog box as they were set at the time the dialog box appeared.
9. Click **Close** to accept the changes.

Analog Audio Output

To change the analog audio output signal name:

1. Select **Audio Output** from the configuration tree, and then click or double-click an analog audio name from the list.

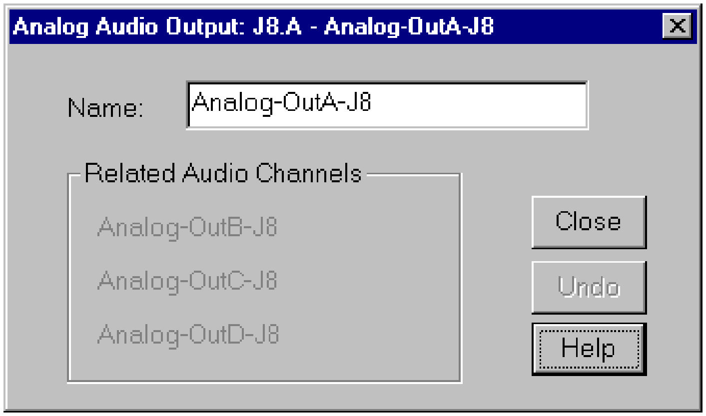


Figure 30. Analog Audio Output dialog box

2. Enter a new name in the **Name** box to change the signal name—*Audio_Out_1*, for example. Names can be up to 30 characters, and can include spaces. The window title bar name and the configuration tree name automatically change as you enter the new name. To return a renamed signal to the default, delete all the characters in the text field, and press Enter.
3. **Related Audio Channels** lists the audio channels that are related to the signal name.
4. Click **Undo** to return the signal name to its original name.
5. Click **Close**.

Digital Audio Output

To change the digital audio signal name and transmit group:

1. Select **Audio Output** from the configuration tree, and then click or double-click a digital audio name from the list.

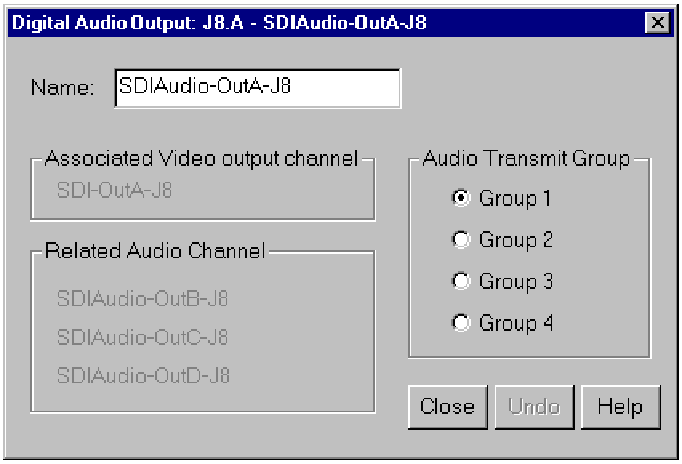


Figure 31. Digital Audio Output dialog box

2. Enter a new signal name in the **Name** box—*Audio_Out_1*, for example. Names can be up to 30 characters, and can include spaces. The window title bar name and the configuration tree name automatically change as you enter the new name. To return a renamed signal to the default, delete all the characters in the text field, and press Enter.
3. Click a group name (1–4) under**Audio Transmit Group** to change the audio transmit.
4. **Associate Video Output Channel** lists the name of the associated video output channel.
5. **Related Audio Channels**lists the audio channels that are related to the signal name.
6. Click **Undo** to return the signal name to its original name.
7. Click **Close**.

PDR200 Audio

The PDR200 audio architecture accepts and simultaneouly processes sixteen audio inputs and outputs at up to four simultaneous clock rates. Internally, all audio is processed in floating point at 48kHz with a selectable storage resolution of 16 or 20 bits. Inputs may be individually clocked in groups of four, and any clock group may be referenced to the system reference (house black) or any one of four video inputs. Output clocking is synchronous to system reference. Sample rate conversion is available for all inputs (30 to 50kHz), providing uniform storage at 48kHz.

The PDR200 can be configured to operate with analog, AES/EBU digital, or embedded (SMPTE 272M Level A) audio, depending on which options are installed in your system. All three audio formats are supported without external conversion equipment. Analog audio is only available with an optional PAC208 or PAC216 Analog/Digital Interface chassis. You can expand the number of XLR or BNC connectors for AES/EBU audio with an optional XLR216 or BNC216 Digital Interface chassis.You can choose an audio format for each video channel. For example, you could enable analog audio on one channel, embedded audio on another, and AES/EBU on the rest.

NOTE: Do not turn off sample rate conversion or use AES/EBU as a reference unless you are certain that all inputs and outputs are synchronous.

Analog Audio Input

In analog audio input, you can change audio channel names, check the channel overload status, or adjust line levels in decibels. Click **Undo** to cancel changes, or click **Help** for context-sensitive Help. To configure analog audio input:

1. Expand **Audio Input**, and then click one of the Analog Channels. The Analog Audio Input dialog box appears (Figure 32). The channel numbers on the left refer to the physical input connectors on the audio input box. **Ch. 01** refers to the first connector, and **Ch. 02** refers to the second connector, and so forth.

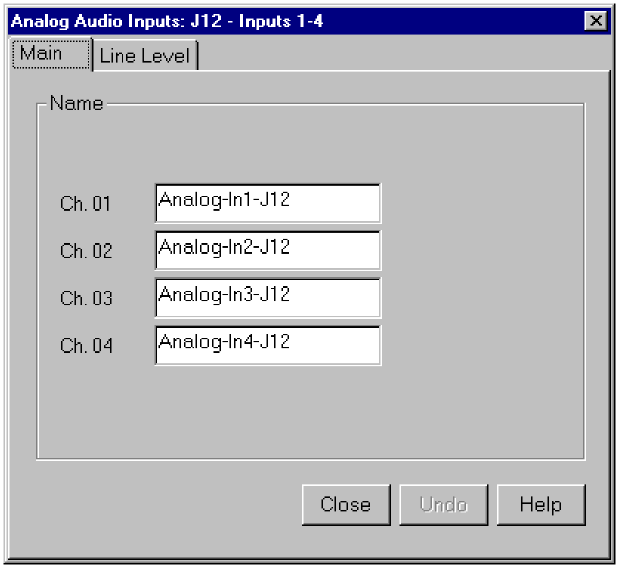


Figure 32. Analog Audio Input dialog box, Main tab

2. Click the Main tab, if it is not already visible.
3. Click in the box of the input channel whose name you want to change. A channel name can have up to 30 characters.
4. After you have changed the channel names, click **Close** or another tab.

To trim the line level or view overload status:

1. In the Analog Audio Input dialog box, click the Line Level tab (Figure 33).

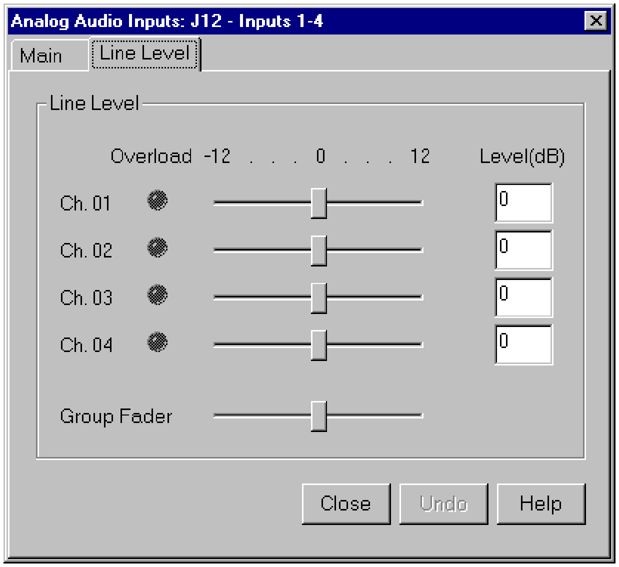


Figure 33. Analog Audio Input dialog box, Line Level tab

2. The line level range is –12 to +12 dB. If you trim the line level for an individual channel with the slider handle, the line level is incremented by 1 dB; clicking on either side of the slider handle increments the line level by 0.5 dB. The Level boxes show the current line level. If you enter a number directly into a Level box, the line level number is rounded to the nearest ±0.5 dB.

3. To adjust the trim for all channels at once, use the **Group Fader** slider. While the **Group Fader** moves all channels at once, it maintains the individual channel differences.

4. If a channel is overloaded, the Overload indicator is on. This means that the incoming audio is clipping.

5. After you have adjusted the line levels, click **Close** or another tab.

Digital Audio Input

In digital audio input, you can change channel names, check the status of channel errors, and change the setting of the sample rate converter. Click **Undo** if you want to cancel any changes, or click **Help** for context-sensitive Help.

To configure digital audio input:

1. Expand Audio Input, and then click one of the Digital Channels to bring up the Digital Audio Input dialog box (Figure 34). The channel numbers on the left refer to the physical input connectors on the audio input box. **Ch. 01** and **Ch. 02** refer to the channel pair on the first connector, and **Ch. 03** and **Ch. 04** refer to the pair on the second connector, and so forth.

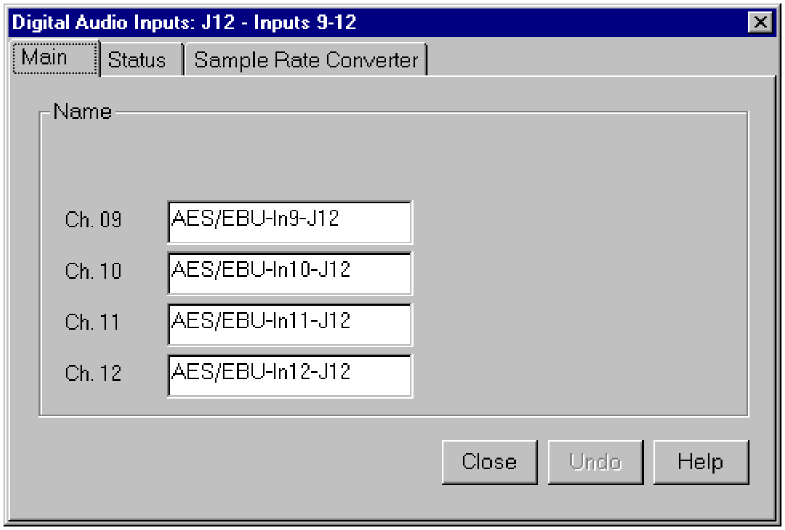


Figure 34. Digital Audio Input dialog box, Main tab

2. Click the Main tab, if it is not already visible.
3. Click in the box of the input channel whose name you want to change. A channel name can have up to 30 characters.
4. After you have changed the channel name or names, click **Close** or another tab.

To check the status of digital input channels:

1. In the Digital Audio Input dialog box, click the Status tab. Under Status Indicators, you see the error status of each channel. If a channel has an error, the indicator is on. See Table 2 for a description of each error indicator.

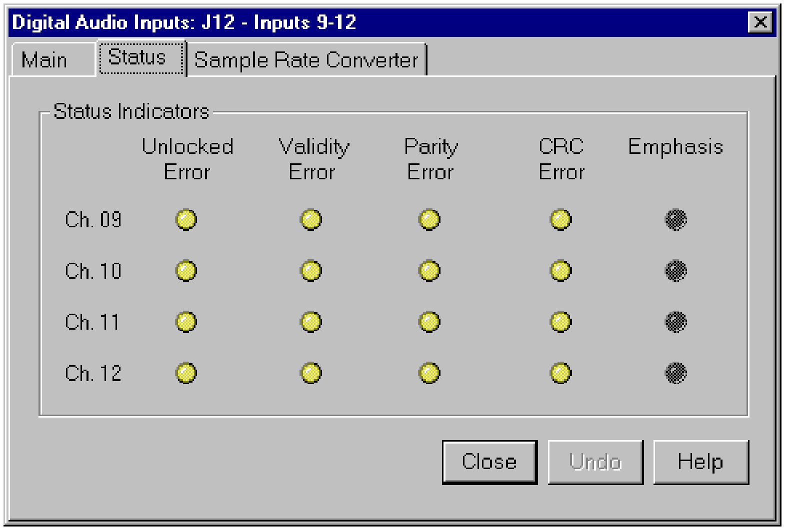


Figure 35. Digital Audio Input dialog box, Status tab

2. When you are done checking for errors, click **Close** or another tab.

Table 2. Digital audio input channel indicators

Indicator	**Description**
Unlocked Error	Receiver unlocked
Validity Error	AES receiver validity
Parity Error	Parity error
CRC Error	CRC subframe errors
Emphasis	Detected emphasis

If you want to bypass the sample rate converter:

1. In the Digital Audio Input dialog box, click the Sample Rate Converter tab (Figure 36). By default, the sample rate converter is enabled. The sample rate converter affects all four channel inputs.

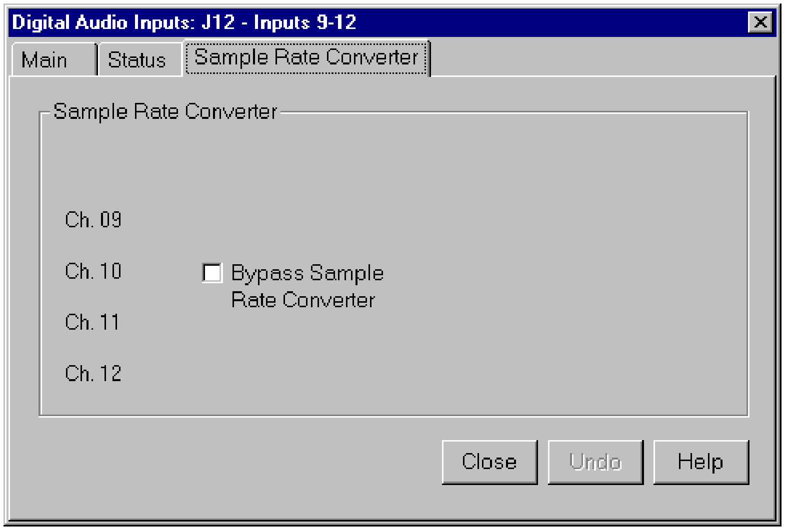


Figure 36. Digital Audio Input dialog box, Sample Rate Converter tab

2. Click **Bypass Sample Rate Converter**.

   NOTE: Do not bypass sample rate conversion unless you are certain that all inputs and outputs are synchronous.

3. After you have disabled the sample rate converter, click **Close** or another tab.

Analog Audio Output

In analog audio output, you can change audio channel names, change line modes for XLR connectors, or adjust individual or group line levels in decibels. Click **Undo** if you want to cancel any changes, or click **Help** for context-sensitive Help.

To configure analog audio output:

1. Expand **Audio Output**, and then click one of the Analog Channels to bring up the Analog Audio Output dialog box. The channel numbers on the left refer to the physical output connectors on the audio output box. **Ch. 01** refers to the first connector, and **Ch. 02** refers to the second connector, and so forth.

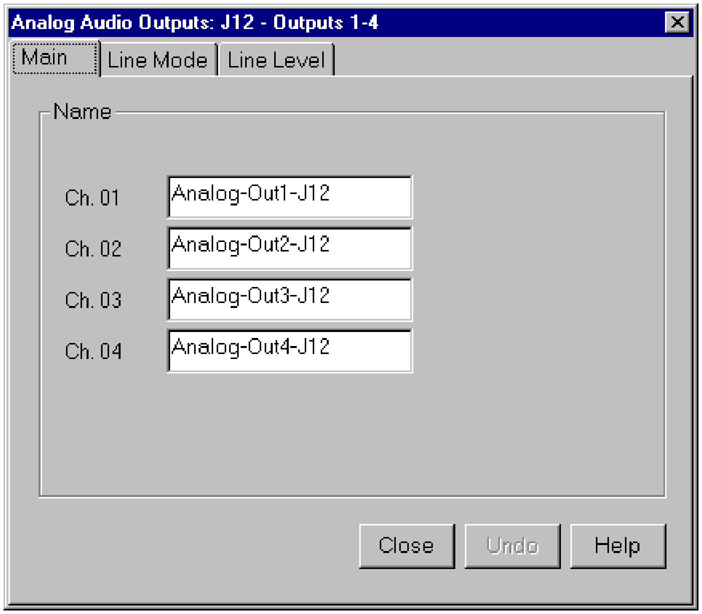


Figure 37. Analog Audio Output dialog box, Main tab

2. Click the Main tab, if it is not already visible.
3. Click in the box of the output channel whose name you want to change. A channel name can have up to 30 characters.
4. After you have changed channel name(s), click **Close** or another tab.

To change line modes for the XLR connectors:

1. In the Analog Audio Output dialog box, click the Line Mode tab (Figure 38).

Figure 38. Analog Audio Output dialog box, Line Mode tab

2. In the Line Mode box, you have three options: Balanced (default), unbalanced Pin 2 Low, or unbalanced Pin 3 Low. The illustrations of the XLR connectors to the left of the box give visual cues of the selected mode.

3. After choosing a line mode or modes, click **Close** or another tab.

To trim the line level:

1. In the Analog Audio Output dialog box, click the Line Level tab (Figure 39).

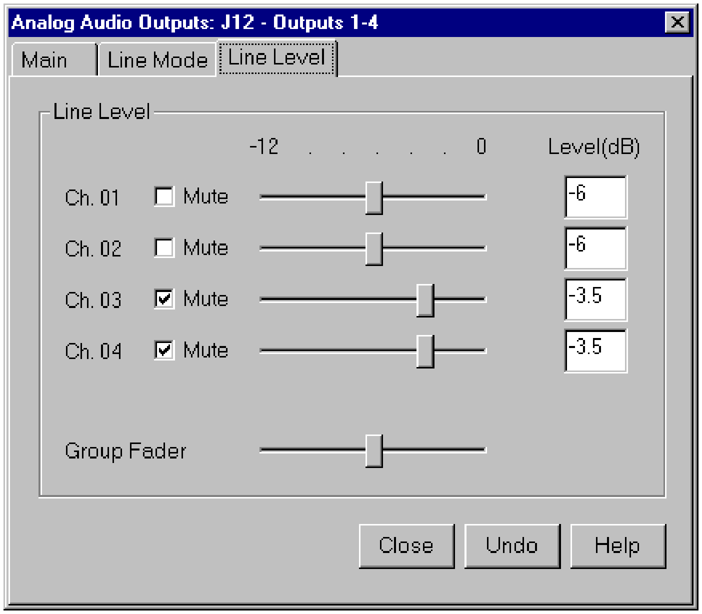


Figure 39. Analog Audio Outputs dialog box, Line Level tab

2. The line level range is –12 to 0 dB. If you trim the line level for an individual channel with the slider handle, the line level is incremented or decremented by 1 dB; clicking on either side of the slider handle changes the line level by 0.5 dB. The Level boxes show the current line level. If you enter a number directly into a Level box, the line level number is rounded to the nearest 0.5 dB.

3. To adjust the trim for all channels at once, use the **Group Fade**r slider. While the **Group Fader** moves all channels at once, it maintains the individual channel differences.

4. To mute a channel, click the mute button next to the channel name.

5. After you have adjusted the line levels, click **Close** or another tab.

Digital Audio Output

You can change the names of the digital audio channels. Click **Undo** if you want to cancel any changes. Click **Help** for context-sensitive Help on digital audio output.

To change a channel name:

1. Expand Audio Output, and then click one of the Digital Channels to bring up the Digital Audio Output dialog box (Figure 40). The channel numbers on the left refer to the physical output connectors on the audio output box. **Ch. 01** and **Ch. 02** refer to the channel pair on the first connector, and **Ch. 03** and **Ch. 04** refer to the pair on the second connector, and so forth.

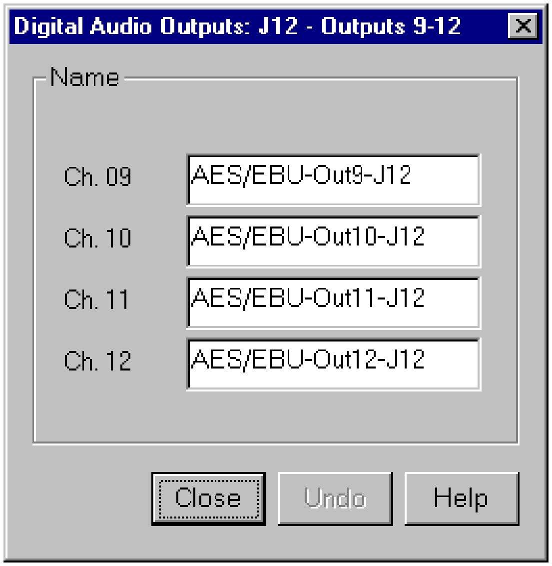


Figure 40. Digital Audio Output dialog box

2. Click in the box of the output channel whose name you want to change. A channel name can have up to 30 characters.
3. After you have changed the channel name or names, click **Close**.

Audio Configuration for the PDR200

The Audio Configuration dialog box shown in Figure 41 allows you to configure input and output channels, input clocking, audio quality and monitor channels.

Input and Output Mapping

The Input Mapping tab is used for mapping input sources to Profile channels, while the Output Mapping tab is used for mapping Profile channels to output destinations. For example, you can map Profile Audio Chassis (PAC) input sources and serial digital audio input sources. Figure 41 and Figure 42 illustrate a sample configuration: a Profile unit with an audio signal processing board, a PAC 208 chassis (with A/D and D/A convertors and connectors for eight channels), and two serial digital cards providing eight analog audio channels, eight digital audio channels, and four video channels with 16 embedded audio channels each.

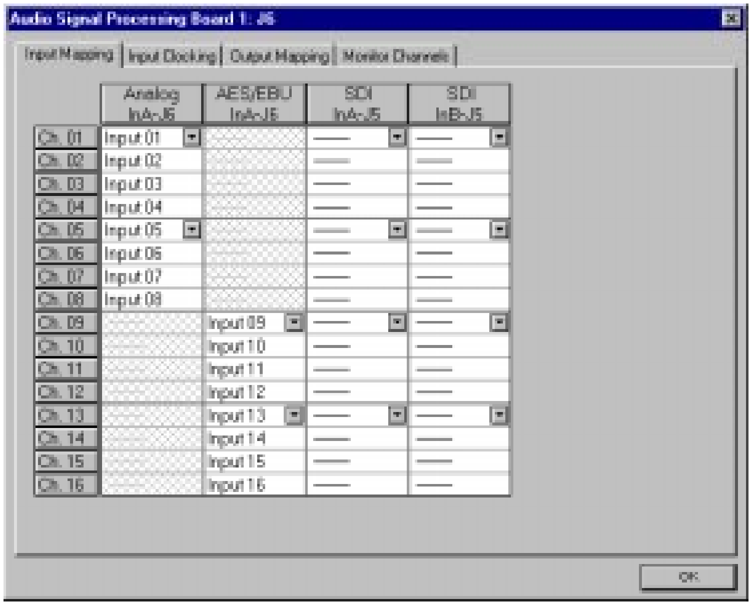


Figure 41. Audio Configuration dialog box, Input Mapping tab

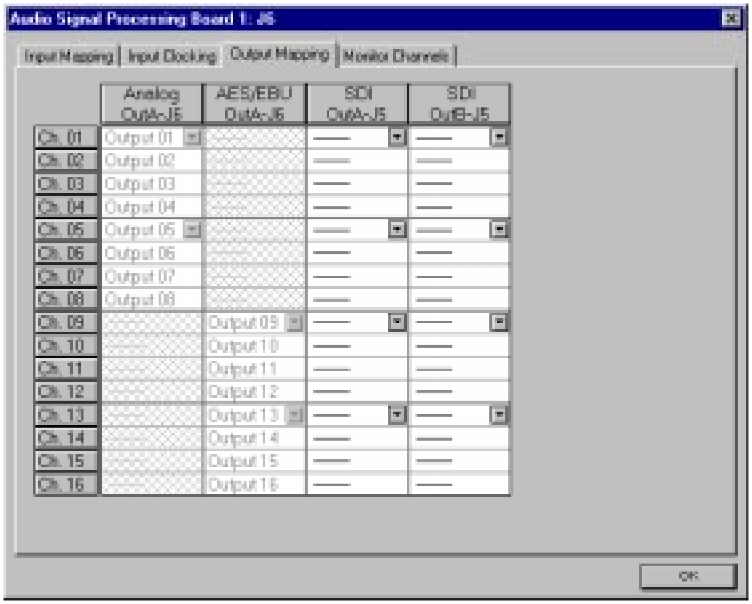


Figure 42. Audio Configuration dialog box, Output Mapping tab

The columns represent the sources to the sixteen channels on the input side and the destinations from the sixteen channels on the output side. The examples in Figure 41 and Figure 42 illustrate the system with a PAC 208 chassis allowing the selection of analog channels 1–8 and digital channels 9–16. A PAC 216 chassis, however, provides sixteen analog inputs and outputs or sixteen digital inputs and outputs. For the PAC 208, rows 9 through 16 of the analog channel column, and rows 1 through 8 of the AES/EBU channel column, are cross-hatched to indicate that these channels are not selectable. In Figure 42, in the column labeled AES/EBU, rows 9–16 appear dimmed, indicating that this audio type is always mapped and cannot be unmapped. Attempting to remap this section results in an error message.

The number of columns in the mapping grid depends on the number of possible input or output audio types that may be mapped to or from the disk recorder channels. The grid is used for selecting which of the possible input or output audio sources and destinations to map to the channels. Audio channels are mapped in groups of four channels only, and the four audio channels are always mapped to consecutive disk channels. For example, analog channels 1–4 (Input 01–Input 04) in the first column of Figure 41 are mapped to the first four disk recorder channels (Ch. 01–Ch. 04), while digital channels 9–12 (Input 09–Input 12) in Figure 42 are mapped to another four disk recorder channels (Ch. 09– Ch. 12).

In another example, channels 1–4 may be mapped to analog, channels 5–8 mapped to AES/EBU, and so forth. In addition, analog and AES/EBU audio types have an assigned one-to-one mapping to their respective channels, that is, input 1 always maps to channel 1, input 2 to channel 2, and so on.

Serial digital embedded audio contains sixteen audio channels grouped into four groups of four channels. Each group can be assigned to any group of four channels. For example, group 1 (Grp1) may be assigned to channels 1–4 (Ch1–Ch4), 5–8 (Ch5–Ch8), 9–12 (Ch9–Ch12), or 13–16 (Ch13–Ch16). However, a maximum of two of the four groups from a serial digital video source may be used simultaneously.

Input Mapping

The Input Mapping tab is used for mapping input channels to Profile disk channels. The channels must be mapped to an audio type (analog, SDI, or AES/EBU) at all times—there is no unmapped state for input mapping. However, channels may only be mapped to one audio type at a time. Analog and AES/EBU channels must always be mapped directly to the same physical channel numbers.

To map input channels:

1. Choose **Options | Audio Configuration Board 1** or **2** or click an ASPB Configuration button. The Audio Configuration dialog box appears (Figure 41).
2. Click the Input Mapping tab.
3. Click on a button in a column. This displays a list containing analog, AES/EBU, or SDI audio groups. Unavailable audio groups appear dimmed.
4. Click on the group of channels you want. Any single group of AES/EBU channels may be mapped to any group of disk channels.
5. Click **OK** to accept your changes or click another tab.

Output Mapping

The Output Mapping tab is used for mapping Profile disk channels to output destinations. If analog or AES/EBU audio types are present, they are always mapped to their associated channels. These audio types cannot be unmapped. Channels may be mapped to multiple audio types, but of these only one can be a serial digital embedded or SDI audio type.

To map output channels:

1. Choose **Options | Audio Configuration Board 1** or **2** or click an ASPB Configuration button. The Audio Configuration dialog box appears (Figure 42).
2. Click the Output Mapping tab.
3. Click on a button in a column. This displays a list containing analog, AES/EBU, or SDI audio groups. Unavailable audio groups appear dimmed.
4. Click on the group of channels you want. The audio channel may be mapped to any of the outputs in groups of four.
5. Click **OK** to accept your changes or click another tab.

Input Clocking

The Input Clocking tab is used for assigning video input clocking sources to input audio channels. The first column on the left side of the dialog box displays the disk recorder channel numbers. The last column shows the audio clock reference source selection (Figure 43).

You get one system reference by default from the Reference Genlock boards, and up to four video input references, depending on which video boards are installed in your Profile unit. Even if more than four video references are available, only the first four input clocking references are used. If you look at the bottom of the Configuration Manger window, you will see a graphic representation of the installed boards. A key to the board representations is shown in Table 3.

Table 3. Board representation key

Board Tag	Board Type	No. of Video References
Vid I/O SDI VA	Serial digital component video	2
Vid I CAV	Component analog video	1
Vid I Cmpst	Analog composite video	1

The video references shown in the Input Clocking tab—Video Input 1–4 — correspond to the actual video boards installed, from left to right, as represented at the bottom of the Configuration Manager window.

For example, a system that does not use all four available clock references might be configured like this. In this specific example, shown in Table 4, you have one analog composite board and one component analog board. The panel in the tab shows System, Video Input 1, and Video Input 2.

Table 4. Configuration example, two video input clocking sources

Board Tag	Board Type	Board Reference	Input Clock Reference
Vid I CAV	Component analog video	1	Video Input 1
Vid I Cmpst	Analog composite video	1	Video Input 2

In the next example, a system that uses all four available clock references might be configured with two serial digital component boards. In this specific example, shown in Table 5, the panel in the tab shows System, Video Input 1, Video Input 2, Video Input 3, and Video Input 4.

Table 5. Configuration example, four video input clocking sources

Board Tag	Board Type	Board Reference	Input Clock Reference
Vid I/O SDI VA	Serial digital component	1 and 2	Video Input 1, Video Input 2
Vid I/O SDI VA	Serial digital component	1 and 2	Video Input 3, Video Input 4

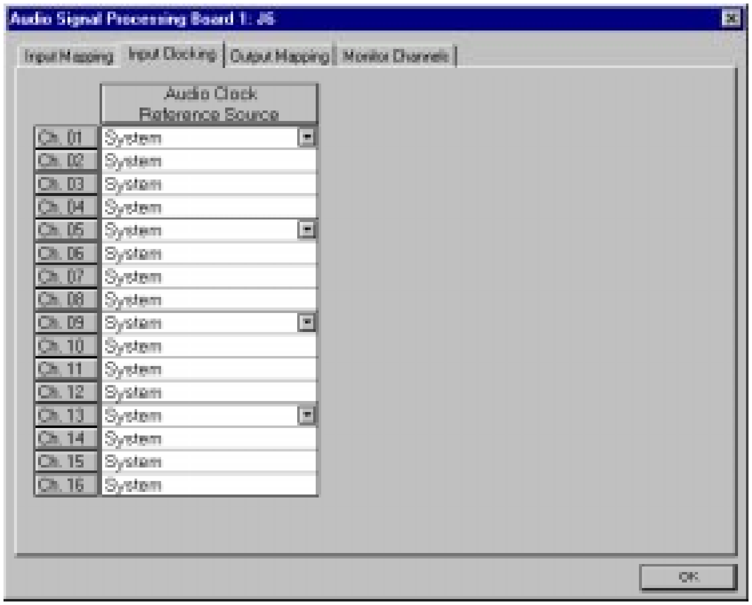


Figure 43. Audio Configuration dialog box, Input Clocking tab

To change the input clocking:

1. Choose **Options | Audio Configuration Board 1** or **2** or click an ASPB Configuration button**.** The Audio Configuration dialog box appears. Click the Input Clocking tab, if it isn't already displayed.
2. Click the button in the Audio Clock Reference Source column for the desired channels and select one of up to five choices: System (default) or Video Input. (The number of video inputs depends on the number of available video channels.) Selecting one of the video inputs sets the group of four channels to use the selected input as their audio clocking source.
3. Click **OK** to accept your changes or click another tab.

Audio Configuration Monitor Channels Tab

Finally, under the Monitor Channels tab, you can select recording and playback quality and adjust monitor channels.

1. Choose **Options | Audio Configuration Board 1** or **2** or click an ASPB Configuration button. The Audio Configuration dialog box appears (Figure 44).

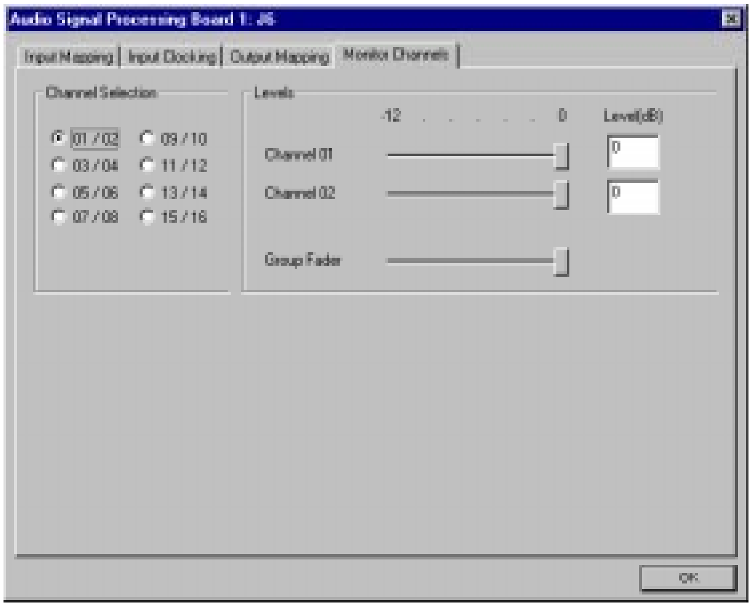


Figure 44. Audio Configuration dialog box, Monitor Channels tab

2. Click the Monitor Channels tab.
3. Under Monitor Channels, the Channel Selection box allows you to select which channels you want to monitor. Click next to a channel pair to select them. You can now adjust line levels for the pair.
4. The line level range is –12 to +0 dB. If you trim the line level for an individual channel with the slider handle, the line level is incremented by 1 dB; clicking on either side of the slider handle increments the line level by 0.5 dB. The **Level** boxes show the current line level. If you enter a number directly into a **Level** box, the line level number is rounded to the nearest ±0.5 dB.
5. To adjust the trim for all channels at once, use the **Group Fader** slider. While the **Group Fader** moves all channels at once, it maintains the individual channel differences.

   NOTE: If the audio interface box is not present, the Monitor group will not appear. If your system is configured with an XLR 216 digital-only chassis, channel selection is the only option available in the Monitor Channels group.

6. Click **OK** to accept your changes or click another tab.

System Audio Configuration

To set recording and playback quality, or audio scrubbing:

1. Choose **Options | Audio Configuration** or click the System Audio Configuration button. The System Audio Configuration dialog box appears (Figure 45).

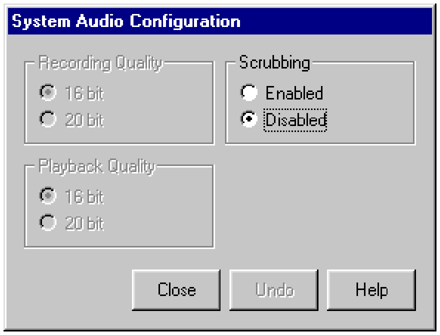


Figure 45. System Audio Configuration dialog box

2. By default, recording and playback are set to 16-bit quality. To change the audio quality, click the 20-bit button for either recording, playback or both. Audio is played back at its recorded resolution, even if the system is configured for 20-bit playback quality. If 16-bit quality is enabled, all audio will be played back at 16-bit, regardless of what quality it was recorded in.
3. Click **Enabled** under **Scrubbing** to turn audio scrubbing on, and click **Disabled** to turn it off. **Disabled** is the default.
4. Click **Undo** to return the settings in the dialog box
5. Click **Close** when finished.

Chapter **3**

Using Media Manager

The Profile Media Manager allows you to have access to digitally stored JPEG and MPEG media and provides tools for managing that media—such as explore, cut, copy, paste, and delete. Media may be stored locally on disk on your Profile unit, or it may be on a disk expansion unit, RAID system, or library system attached to your Profile unit. You can also transfer media stored on any Profile system on your Profile network via a Fibre Channel connection.

Digital video and audio media may be stored in volumes. A volume is a disk set or file system on one of the following machines:

- PDR100 Professional Video Disk Recorder
- PDR200 Video File Server
- PRS200/A or PRS250 Profile RAID Storage system
- PDX103 Profile Disk Expansion Chassis
- PDX208 Profile Disk Expansion Chassis

Video and audio clips can also be stored on digital tape cartridges in the PLS20 and PLS200 Profile Library Systems.

With Media Manager, you view media in a tree structure. On disk, media may consist of video and audio clips and masters. Clips and masters are organized into bins that are kept on a volume. A bin is a container for clips and masters, similar to a directory on a computer. A clip refers to segments or portions of a media file or a media file in its entirety. A master is an edited sequence of clips. On a cartridge in a library system, media consists only of clips, not masters. Cartridges are divided into one or more partitions.

NOTE: Profile system software version 2.4 supports Media Manager version 1.1.5.

Starting and Exiting the Media Manager

To start the Media Manager application with Windows NT:

- Double-click the Media Manager shortcut icon.

Or:

- Choose **Start | PDR Applications | Media Manager**.

The Media Manger window appears (see Figure 46). The tree pane is on the left and the contents pane is on the right. What appears in the contents pane depends on what you select in the tree pane. For example, if you select the volume icon **INT:** in the tree pane, the Recycled and default bins appear in the contents pane. If you select a bin, the masters and clips in that bin appear in the contents pane. Masters and clips will only appear in the contents pane.

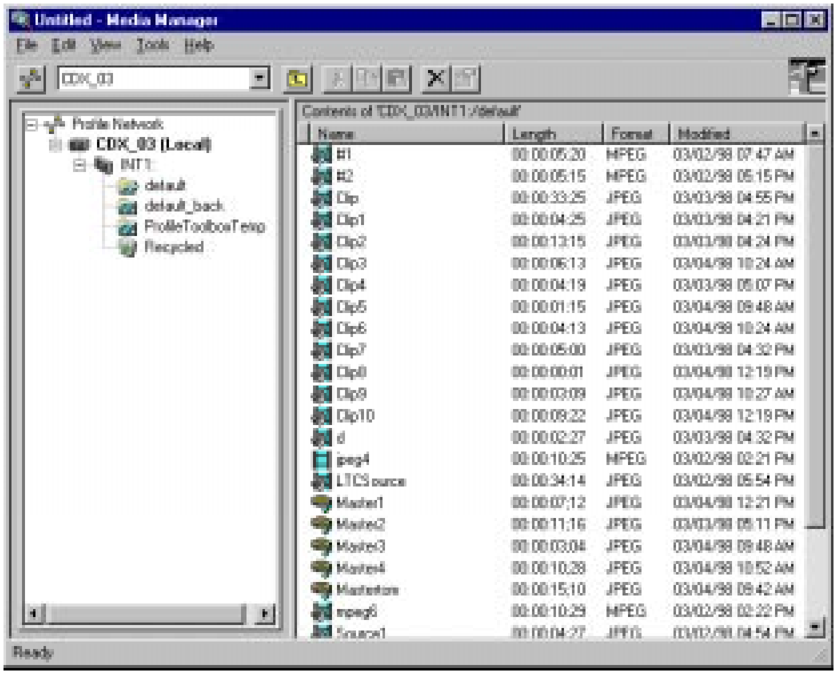


Figure 46. Media Manager window

Whenever you start the Media Manager, a Hardware Communication Monitor is also started, if it is not already running. This program makes calls to the disk recorder, keeps track of the Profile host file (*profile.hst*) which lists Profile systems on the network, as well as remoting activities.

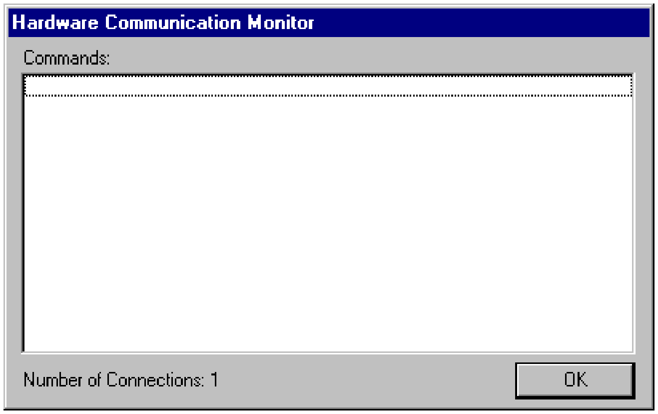


Figure 47. Hardware Communication Monitor message box

To exit the Media Manager:

1. Choose **File | Exit**.

A message box is displayed, asking you to confirm that you really want to exit the Media Manager application. Click on the **Yes** button to confirm the exit or the **No** button to cancel the quit command.

Starting Other Applications from the Tools Menu

You can start other tools and applications from Media Manager's **Tools** menu:

- Choose **Tools | Transfer Monitor** to start the Transfer Monitor tool. See "Viewing the Transfer Monitor" on 135.
- Choose **Tools | Media Manager** to start another instance of the Media Manager.
- Choose **Tools | Tool Box Editor** to start the optional Tool Box Editor, if available. See Chapter 8, "Using the Tool Box Editor" on 211.
- Choose **Tools | List Manager** to start the optional List Manager, if available. Chapter 9, "Using the List Manager" on 239.
- Choose **Tools | Transcode** to start the Transcode Utility. This utility converts media between different compression formats, such as from JPEG to MPEG. See "Using the Transcode Utility" on 109.

When an application is started from the Media Manager, it initially connects to the machine that was selected in the Media Manager's machine list box. If the application is not installed, an error occurs.

Viewing and Hiding the Toolbar and Status Bar

By default, the toolbar is visible. To hide it:

- Choose **View | Toolbar**.

To make it visible again, choose **View | Toolbar** again.

By default, the status bar is visible. To hide it:

- Choose **View | Status Bar**.

To make it visible again, choose **View | Status Bar** again.

To refresh the tree and contents panes:

- Choose **View | Refresh** or press **F5**.

Viewing Help and Software Version Information

To view Help topics on Media Manager:

- Choose **Help | Media Manager Help Topics.**

To view program and software version information and copyright:

- Choose **Help | About Media Manager.**

Connecting to a Remote Machine

You can connect from your local machine to any remote Profile machine. You can also connect remotely from any PC running Windows NT 4.0. A local Profile machine refers to a Profile system to which you are directly attached. A remote Profile machine refers to a Profile system that is connected to your local system via an Ethernet local area network (LAN).

The Hardware Communication Monitor makes calls to the disk recorder, manages the contents of the Profile host file (*profile.hst*), owns connections to the machines listed in the host file, and passes on change notifications received from each of these machines when other applications—such as other instances of Media Manager—are running simultaneously.

While Hardware Communication is initializing, Media Manager shows the Hardware Communication Monitor message box (see Figure 47). If you click the **OK** button, this message box is minimized.

To connect to a remote Profile machine on your Profile network:

1. Choose **Add/Remove Machine** from the **File** menu or from the shortcut menu with a right-click on a machine, volume, or network icon in the tree pane. You can also click the **Add/Remove Machine** button on the toolbar. The Add/Remove Machine dialog box appears. The label *Local* appears after the name of the local Profile machine.

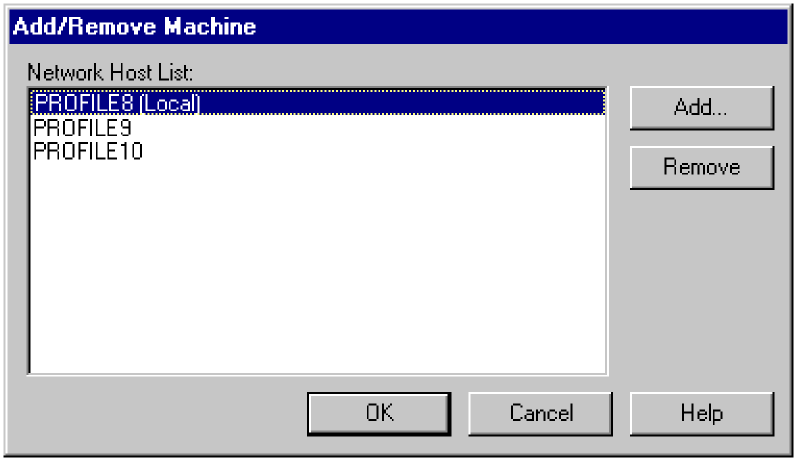


Figure 48. Add/Remove Machine dialog box

2. To add a remote Profile machine to the network host list, click **Add**. The Add Network Host dialog box appears.

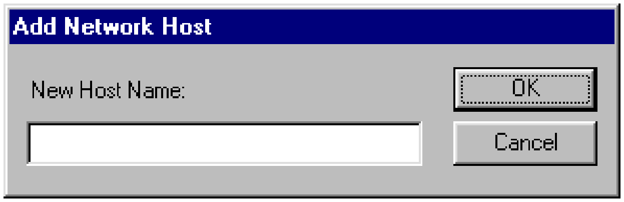


Figure 49. Add Network Host dialog box

3. Enter the name of the machine in the New Host Name box. This can be the host name or the machine's IP address (such as 128.161.37.138).
4. Click **OK**. The new host name is added to the network host list. You can click the **Add** button again to add as many machine names as you want.
5. Click **OK** again. The connection status message box appears to show the progress of new connections.

To remove a Profile machine from the network host list:

1. Choose **Add/Remove Machine** from the **File** menu or from the shortcut menu with a right-click on a machine, volume, or network icon in the tree pane. You can also click the **Add/Remove Machine** button on the toolbar. The Add/Remove Machine dialog box appears.
2. Select the name of the machine you want to remove in Network Host List box.
3. Click **Remove**.
4. Click **OK**.

Viewing the Media Hierarchy

The Media Manager window is divided into two main sections: the tree and contents panes. Clips and masters appear in the contents pane. Items are listed alphabetically.

In the tree pane, you can expand or collapse the tree hierarchy by clicking on the + (plus) or – (minus) control buttons, as shown in Figure 50. If you click on a + button, the tree hierarchy is expanded or opened so you can see the branch. For example, under a volume, you see bins. Clicking on the – button collapses or closes the associated branch of the tree, hiding the bins under the volume.

To explore the contents of an item, select the icon representing it and then choose **Explore** from the shortcut menu which is displayed with a right-click. If present, clips and masters are displayed in the contents pane. In this pane, you see information about the media:

- The name of the clip or master.
- The length of the media in the form **00:00:00:00** (Hours:Minutes:Seconds:Frames).
- The compression format of the media: **JPEG** or **MPEG**.
- The date and time the media was last modified, in the format: **12/2/94 9:40 PM** (Month/Day/Year Hours:Minutes AM/PM).

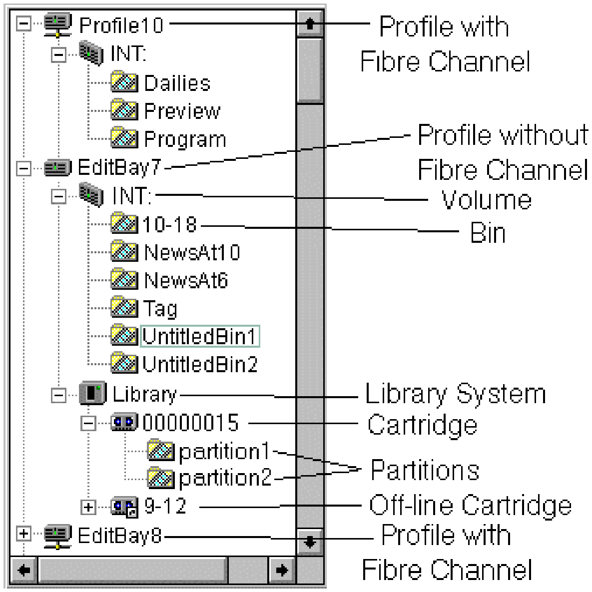


Figure 50. The Media Manager tree pane

The icons shown in tree pane are explained in more detail here:

 The Profile network icon is the root for all other items in the tree pane.

 First icons in the tree pane are for Profile machines, and each is labeled with a name. A Profile can be a local machine or one connected via Ethernet alone.

 A Profile machine connected via Ethernet and Fibre Channel.

 An unconnected machine icon appears if no connection could be made. This icon cannot be expanded.

 A non-Profile server that recognizes Media Manager connection requests. Media may be copied to this server from other machines on the Fibre Channel network.

 The next icon is the volume. A machine's storage is divided into one or more volumes. The volume icon represents a physical set of disks—either an internal disk set, and external expansion box (such as the PDX208), or a RAID disk array (PRS200).

 Below a volume icon are bin icons. This is a closed bin.

 An open bin.

 A Recycle bin appears below each volume.

 A master.

 A locked master.

 Clips and archived clips with audio and video.

 Locked clips and archived clips with audio and video.

 Clips and archived clips with no audio.

 Locked clips and archived clips with no audio.

 Clips and archived clips with audio only (no video).

 Locked clips and archived clips with audio only (no video).

 This icon is used when Media Manager does not recognize an item in the Profile clip database.

 The library system icon appears after volume icons. The library icon will only appear on machines connected to a Profile library system.

 The cartridge icon appears below the library icon.

 A cartridge that is out of the library.

 A cleaning cartridge icon may appear anywhere in the list of cartridges.

 An unformatted cartridge.

 An unformatted, out-of-library cartridge.

 Cartridges that are in an unknown state.

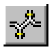
 This is an unknown, out-of-library cartridge.

 The partition icons appear under cartridge icons. This is a closed partition.

 This is an open partition icon.

Toolbar

The Media Manager toolbar provides one-button access to commands:

 **Add/Remove Machine**: Opens the Add/Remove Machine dialog box.

 **Select Current Machine** box: Expands the machine item in the tree.

 **Up One Level**: Goes to the folder one level up.

 **Cut**: Removes the selected items and copies them onto the clipboard. Use **Paste** to put them in the new location.

 **Copy**: Copies the selected items to the clipboard. Use **Paste** to put them in the new location.

 **Paste**: Inserts the items you have copied or cut into the selected location.

 **Delete**: Deletes the selected items.

 **Properties**: Displays the properties of the selected item.

Copying Media

To copy one or more clips or masters:

1. In the contents pane, select a clip or master. To extend the selection, press Shift-Up Arrow or Shift-Down Arrow. Choose **Edit | Select All** or Ctrl-A to select all the media in the contents pane.
2. Choose **Copy** from the **Edit** menu or from the shortcut menu with a right-click. You can also click the **Copy** button on the toolbar.
3. Select the location where you want to paste the item. This can be another bin or anywhere in the contents pane when a bin is selected. The selected location may even be in another Media Manager window. If both the source and the destination locations reside on machines connected to the Fibre Channel network, you may copy between machines.
4. Choose **Paste** from the **Edit** menu, or from the shortcut menu with a right-click. You can also click the **Paste** button on the toolbar. The media may be pasted into the same bin it was copied from. In this case the media is automatically renamed. Media Manager automatically suggests a new name that does not conflict with any other item at the selected location. The new name is based on the old name with the addition of a number: *source* becomes *source1*.

   NOTE: It is possible to play clips or masters with VdrPanel or Tool Box Editor while they are being copied over Fibre Channel.

Moving Media

To move a clip or master to another bin:

1. In the contents pane, select a clip or master. To extend the selection, press Shift-Up Arrow or Shift-Down Arrow. Choose **Edit | Select All** or Ctrl-A to select all the media in the contents pane.
2. Choose **Cut** from the **Edit** menu or from the shortcut menu with a right-click. You can also click the **Cut** button on the toolbar.
3. Select the location where you want to paste the media. This can be another bin or anywhere in the contents pane when a bin is selected. The selected location may even be in another Media Manager window. If both the source and the destination locations reside on machines connected to the Fibre Channel network, you may copy between machines.

4. Choose **Paste** from the **Edit** menu, or from the shortcut menu with a right-click. You can also click the **Paste** button on the toolbar. Pasting media into the same bin has no effect.

To move a clip or master using drag and drop:

1. In the contents window, select one or more clips or masters.
2. Drag the selection and drop it at the appropriate location. This can be a bin or anywhere in the contents pane when a bin is selected. The selected location may even be in another Media Manager window. The tree pane will automatically scroll when dragging a bin to the very top or bottom of the tree.

If the **Ctrl** key is held down when the item is dropped, it is copied to the new location, not moved. Dragging a clip or a master to a different machine or volume always results in a copy—the original clip is not deleted.

When copying or moving clips to a new location, if a clip or master with the same name already appears at that location, you will be prompted to change the name or cancel the operation, as shown in Figure 51.

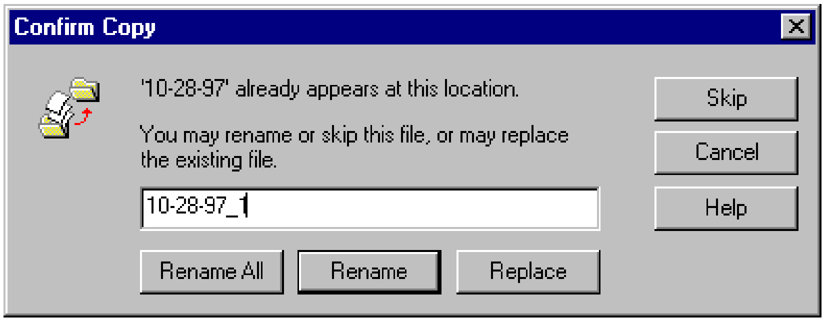


Figure 51. Confirm Copy dialog box

Duplicating Media

To *duplicate* media means that you copy a clip or master and the underlying media files that the clip or master reference. A normal copy operation does not copy the associated media files, only references to those media files.

> ***NOTE: You can play clips or masters with VdrPanel or Tool Box Editor while duplicating media. This is only practical for longer media.***

To duplicate a clip or master:

1. In the contents pane, select the clip or master you want to duplicate.
2. Choose **Duplicate** from the **Edit** menu or from the shortcut menu with a right-click. The Duplicate operation always automatically renames the new clip.

Creating, Renaming and Deleting Bins

A bin can have a name up to 32 characters long. Spaces are legal characters, but count for two characters. Colons (:) and slashes (/) are illegal. Tildes (~) are only illegal as a first character in a bin name.

To create a new bin:

1. In the tree pane, select the machine or volume where you want to create the new bin. When a volume icon is selected, the new bin is added to that volume. When a machine icon is selected, a new bin is created in the first volume in that machine.
2. Choose **New Bin** on the **File** menu or from the shortcut menu with a right-click.
3. A new bin called **NewBin** is placed in the tree. The bin name is highlighted so you can change it. Accept the new bin name by pressing Enter.

To rename a bin:

1. Select the bin in either the tree or contents pane.
2. Choose **Rename** on the **File** menu or from the shortcut menu with a right-click. You can also select the bin a second time.
3. The name of the bin is highlighted. Type a new name for the bin and press Enter.

NOTE: Renaming a bin involves modifying the path of every clip or master in the bin, to reflect the new name. If a clip or master cannot be renamed because it is locked or in use, you end up with two bins: one with the old name and one with the new one. The clip that could not be modified will still be in the bin with the old name.

To delete a bin:

1. Select the bin or bins in either the tree or contents pane.
2. Press **Delete**, **Backspace**, choose **Edit | Delete** or with a right-click, choose **Delete** from the shortcut menu. Press **Shift-Delete** to skip the **Recycle** bin and delete the bin or bins immediately.
3. The bin icon disappears from the tree and the contents of the bin are moved to the **Recycle** bin.

NOTE: Deleting a bin involves deleting every clip or master currently in the bin. If a clip or master cannot be deleted because it is locked or in use, the bin will not be deleted either—it will only contain those clips or masters that could not be deleted. The rest go to the* Recycle *bin or are deleted directly.

Renaming Clips and Masters

A clip or master can have a name up to 32 characters long. Spaces are legal characters, but count for two characters. Colons (:) and slashes (/) are illegal in clip and master names. Tildes (~) are only illegal as first characters.

To rename a clip or master:

1. Select the clip or master in the contents pane.
2. Choose **Rename** on the **File** menu or with a right-click. You can also select the item a second time.
3. The name of the clip or master is highlighted. Type a new name for the clip or master and press Enter.

Deleting Clips and Masters

When a clip or master is deleted, it is just moved to the **Recycle** bin. It is permanently deleted when the **Recycle** bin is emptied.

To delete a clip or master:

1. Select the clip or master in the contents pane.
2. Press **Delete**, **Backspace**, or choose **Delete** on the **File** menu or from the shortcut menu with the right-click. Press **Shift-Delete** to skip the **Recycle** bin and delete the material immediately.
3. The clip or master icon disappears from the tree and is moved to the **Recycle** bin.

Emptying the Recycle Bin

When a clip or master is deleted, it is moved to the **Recycle** bin and is permanently deleted when the **Recycle** bin is emptied. If an item of the same name is in the **Recycle** bin, the new item is automatically renamed.

To empty the **Recycle** bin:

1. Select the bin labeled Recycled in the tree pane.
2. Choose **Empty Recycle Bin** with a right-click or from the **File** menu.

To always delete media immediately, avoiding the **Recycle** bin:

1. Select the bin labeled **Recycled** in the tree pane.
2. Choose **Properties** with the right-click or from the **File** menu. The Recycle Bin Properties dialog box appears (see Figure 52).
3. Click the **Options** box.
4. Click **OK**.

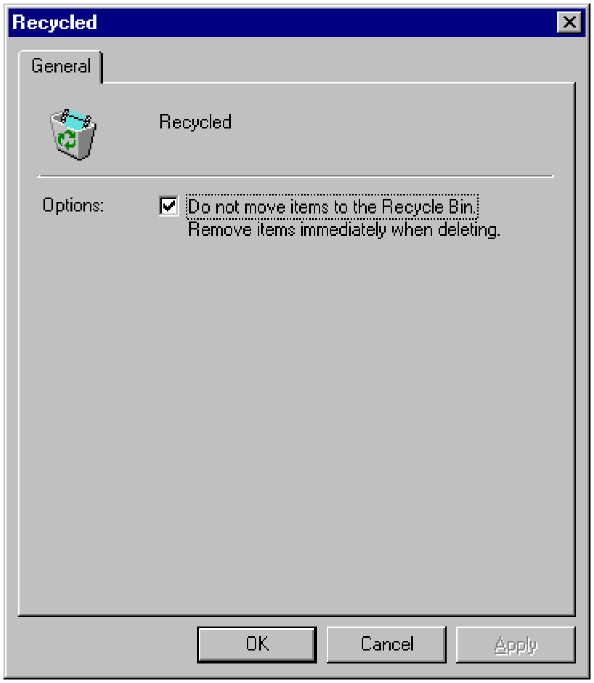


Figure 52. Recycle Bin properties dialog box

Viewing Properties

Media Manager lets you view the properties of a volume, media properties for clips and masters, and properties for a library system (see “Viewing Library, Cartridge and Archived Clip Properties” on 129).

To view volume properties:

1. Select a volume in the tree pane.

2. Choose **Properties** from the **File** menu or from the shortcut menu with a right-click. You can also click the **Properties** button on the toolbar. The Properties dialog box for volumes appears (see Figure 53).

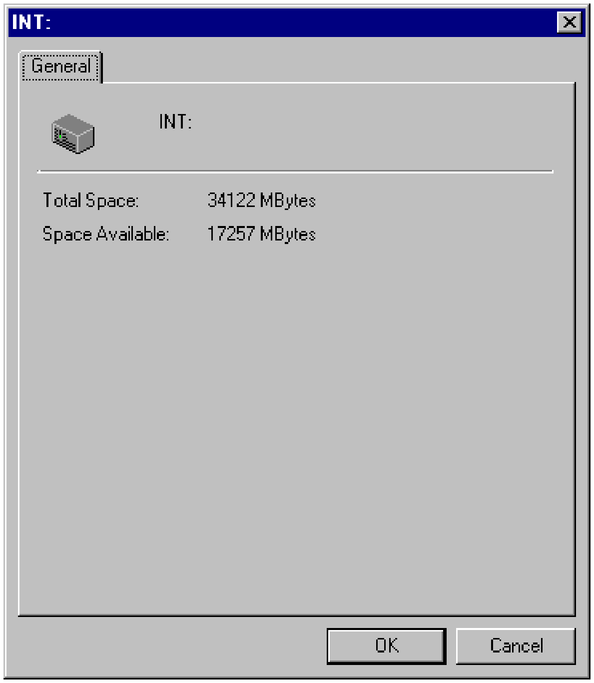


Figure 53. Properties dialog box for volumes

To view media properties:

1. Select a clip or master in the contents bin.

2. Choose **Properties** from the **File** menu or from the shortcut menu with a right-click. You can also click the **Properties** button on the toolbar. The Properties dialog box for clips or masters appears (see Figure 54).

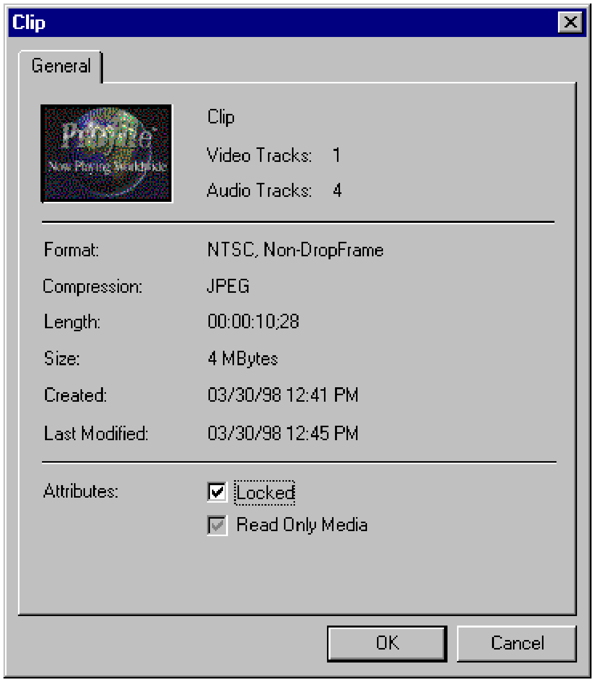


Figure 54. Properties dialog box for clips or masters

3. Click the **Locked** box to make the media locked under Media Manager. If the **Read Only Media** box is checked, it means that the media is protected under VdrPanel. See “Setting Clip Protection” on 174. Clips and masters with the locked attribute cannot be renamed, deleted, or modified in any way.

In this dialog box, you can view:

- A preview frame of the clip or master to help identify it.
- The name of the clip or master.
- How many tracks the clip or master uses for both audio and video.
- The video format, either NTSC or PAL. NTSC clips are recorded with either drop-frame or non-drop-frame timecode.
- The compression format, either JPEG or MPEG.
- The length of the clip or master. The length is shown in timecode format: **00:00:00:00** (Hours:Minutes:Seconds:Frames).
- The size of the media in megabytes (MBytes).
- The date and time that the media was created and the date and time it was last changed. The date and time the media was created or last changed is shown in the format: **12/2/94 9:40 PM** (Month/Day/Year Hours:Minutes AM/PM).
- The **Locked** attribute, which you can change by clicking the **Locked** box, means that you can't do anything to the media. If the **Read Only Media** box is checked, it means that the media cannot be deleted or rerecorded, but you can change marks. Clips and masters with the locked attribute cannot be renamed, deleted, or modified in any way.

Finding Clips and Masters

You can locate clips and masters anywhere on the Profile network. If you select the Profile Network icon, you will search all machines and libraries on the network. If you select a machine, your search will be limited to that machine's volumes and attached library. If you select a cartridge in a library, your search includes all partitions in the cartridge.

1. Select the item where you want to begin your search in either the tree or contents panes.
2. Choose **Find** on the **Edit** menu or from the shortcut menu with a right-click. The Find dialog box appears (see Figure 55).

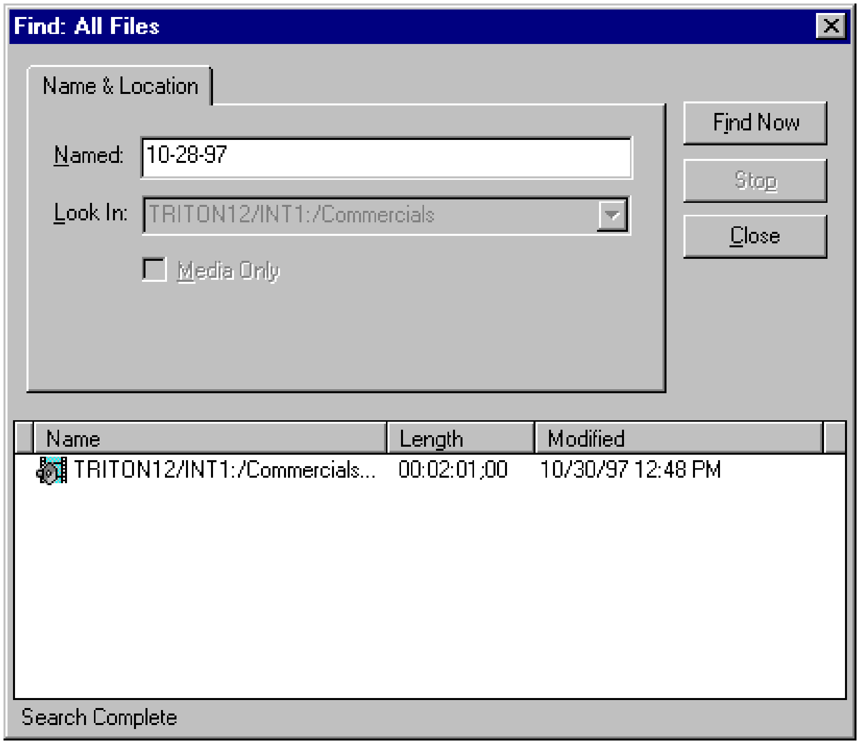


Figure 55. Find dialog box

3. Enter the name of the clip or master in the Named box—in this example, *10-28-97*. The Look In box indicates where the search will begin.

NOTE: Wildcards are not supported.

4. Click **Find Now**. Click **Stop** to abort the search. When a match is found, the result is displayed in the box at the bottom of the **Find** dialog box, as shown in Figure 55.
5. If you double-click an item in the list of found items, the tree pane is expanded and the item is selected in the contents pane.
6. You can copy an item from the found list by holding the **Control** key and dragging the item to the desired location, or you can move it by dragging it without the **Control** key.
7. Click **Close** when you have completed your search.

Using the Transcode Utility

If you have added MPEG encoders or decoders to your Profile disk recorder, you may have media recorded in motion JPEG compression format that you want to convert to MPEG. The Transcode Utility is a tool that makes format conversions easy. The Transcode Utility converts media files—clips and masters—in four ways:

- From JPEG to JPEG using a different video quality
- From JPEG to MPEG
- From MPEG to MPEG using a different video quality
- From MPEG to JPEG

NOTE: Converting a low-quality video clip to a higher quality (higher bit rate) will not improve the video quality of the clip, though it will consume more disk space.

The Transcode Utility is started from the **Tools** menu in Media Manager.

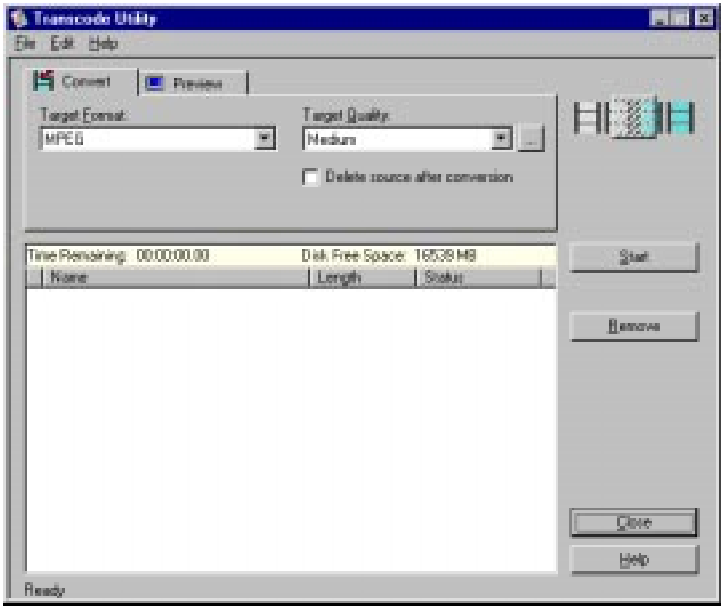


Figure 56. Transcode Utility window

To convert clips or masters:

1. Start the Media Manager application by either double-clicking the Media Manager shortcut icon on the Windows NT 4.0 desktop or by choosing **Start | Programs | PDR Applications | Media Manager**.
2. Select one or more clips or masters that you want to transcode in Media Manager's contents pane.
3. In Media Manager, choose **Tools | Transcode**. The Transcode Utility dialog box appears with the selected media in the transcode list.
4. You may add more clips or masters to the transcode list by dragging them from Media Manager and dropping them on the list. You can also transfer media using **Copy** and **Paste** commands.
5. In the **Convert** tab, select the target format, either MPEG or JPEG.
6. In the Video Quality box, select a video quality if you want something other than the default (Medium). The higher the quality, the more disk space is used. See more information in Table 6
7. To change a custom quality setting, click the button next to the Video Quality list box, and the Custom Video Quality Settings dialog box appears. Select either **Custom1** or **Custom2** in the Video Quality list box. When selected, you can change the name of a custom setting. For JPEG (see Figure 57), select a video quality with the slider (see range in Table 6). For MPEG (see Figure 58), move the diamond on the grid or click the High, Medium, Low, or Draft button—the corresponding bit rate and picture structure is show on the right side of the dialog box. Click **Undo** to undo changes and **OK** when done.

NOTE: You can edit I-frame clips only. To make a clip I-frame, set the group of pictures structure by dragging the diamond to the far left side of the grid.

Table 6. Video quality (compression)

Quality Settings	Compression in Mbps
Draft	4
Low	8
Medium (default)	15
High	24
Custom 1	4–44
Custom 2	4–44

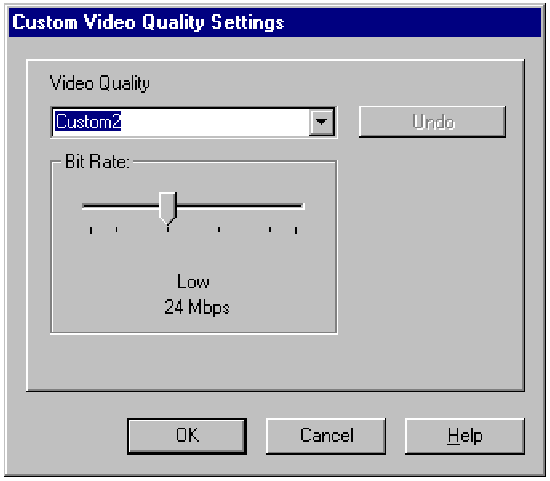


Figure 57. Custom Video Quality Settings dialog box, JPEG

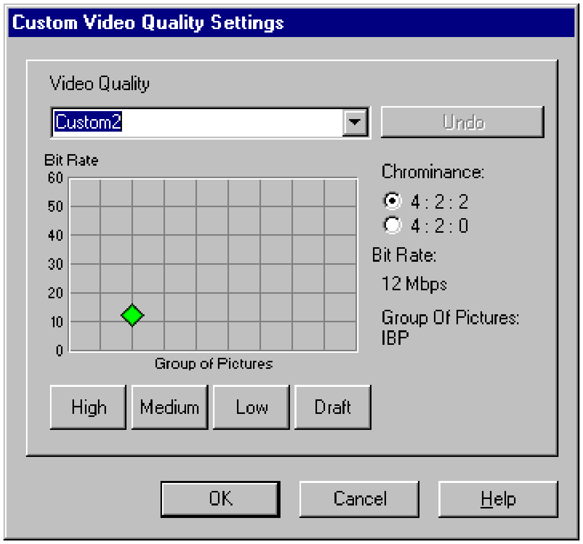


Figure 58. Custom Video Quality Settings dialog box, MPEG

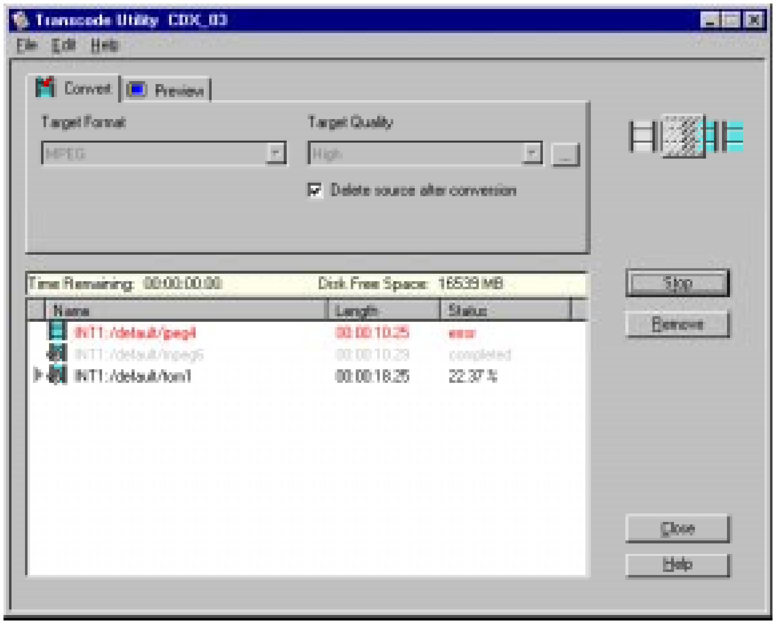


Figure 59. Transcode Utility dialog box, Convert tab

8. In the **Preview** tab, select a video output for the source clip or master from the Source Video Output box. This allows you to watch the source media play out on the monitor during the conversion.

9. From the Target Video Output box, select a video output for the target clip or master. This allows you to compare video quality by watching the target media play out on a monitor during the conversion, with a few seconds delay from the source media.

10. If there is media in the list that you have decided not to convert, select it in the media pane, then click **Remove**.

11. If you want to delete the original clip or master automatically after it is converted, click **Delete source after conversion**. This will save disk space.

NOTE: A deleted clip or master cannot be restored.

12. Click **Start**. The conversion starts with the first clip or master in the list and continues to the last. If the media are not deleted (see step 11), the source clips and masters are moved to a backup bin. For example, if the source media is in the **default** bin, the original source is moved to a bin called **default_bak** (bin basename plus **_bak**). You can stop the conversion process at any time by clicking **Stop**. Start the process again by clicking **Restart**.

    NOTE: An error occurs (listed in the Status column) when a clip is the wrong video standard, already present in the _bak bin, or cannot not be opened, among other faults.

13. Click **Close** or choose **File | Exit**.

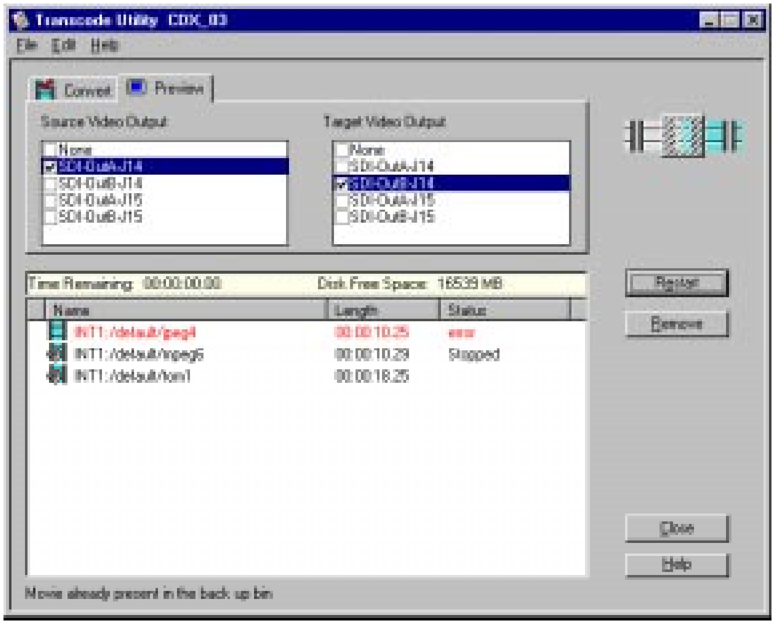


Figure 60. Transcode Utility dialog box, Preview tab

Using a Library System

Media Manager supports both the PLS 20 and the PLS 200 library systems. The PLS 20 Profile Library System is a stand-alone drive for reading and writing to individual magnetic tape cartridges. The PLS 200 Profile Library System is a robotic library that stores up to 80 magnetic tape cartridges. The PLS 200 is a cost-effective mechanism for spot or news storage and management, plus a solution and method for the long-term archival of material. Storage is only limited by the number of tape cartridges available. A fully loaded, 80-cartridge library has the capacity to store approximately 130 hours of program material.

Archiving a Clip

To archive a clip means to copy it from disk to a cartridge in the library system. Clips are always copied into the library when archived: they are never moved.

NOTE: Clips can only be archived if they reside on a machine that is connected directly to a library system. Also, only JPEG clips can be archived at this time.

To archive a clip using a copy command:

1. In the contents pane, select the clip you want to archive. To extend the selection, press Shift-Up Arrow or Shift-Down Arrow. Choose **Edit | Select All** or Ctrl-A to select all the media in the contents pane.
2. Choose **Copy** on the **Edit** menu or from the shortcut menu with a right-click. You can also click the **Copy** button on the toolbar.
3. In the tree pane, select the partition icon where you want to archive the clip.
4. Choose **Paste** on the **Edit** menu or from the shortcut menu with a right-click. You can also click the **Paste** button on the toolbar.

If there is a clip with the same name in the partition where you want to archive it, you are prompted to change the name or cancel the operation. Also, a clip can only be added to a partition if there is enough space for it.

To archive a clip using drag and drop:

1. In the tree pane, click the cartridge icon where you want to archive a clip. This expands the tree pane to reveal the partition icon or icons.
2. Click on the bin where you want to copy a clip from. The clip icons from the bin appear in the contents pane.
3. In the contents pane, select the clip icon for the clip you want to archive, hold the left mouse button, and drag it to the partition icon in the tree pane where you want to archive the clip.
4. If you want to check on the progress of an archive operation, click on the Profile logo or choose **Tools | Transfer Monitor** to view the Transfer Monitor.

Restoring a Clip

To restore an archived clip means to copy it from a partition in a cartridge in the library system to disk. Clips are always copied out of the library when restored: they are never moved.

NOTE: An archived clip can only be restored to the machine that is connected directly to the library system.

To restore an archived clip using the copy method:

1. In the tree pane, click the cartridge icon you want to restore a clip from. This expands the tree pane to reveal the partition icon or icons.
2. Click the partition in the tree pane that you want to restore from to reveal the clips in the contents pane.
3. In the contents pane, select the archived clip you want to restore. To extend the selection, press Shift-Up Arrow or Shift-Down Arrow. Choose **Edit | Select All** or Ctrl-A to select all the media in the contents pane.
4. Choose **Copy** on the **Edit** menu or from the shortcut menu with the right-click. You can also click the **Copy** button on the toolbar.
5. Select the location where you want to restore the archived clip. This can be a bin or anywhere in the contents pane when a bin is selected. The selected location may also be in another Media Manager window.
6. Choose **Paste** on the **Edit** menu or from the shortcut menu with a right-click. You can also click the **Paste** button on the toolbar.

If there is a clip with the same name in the bin where you want to restore it, you are prompted to change the name or cancel the operation.

To restore a clip using the drag and drop method:

1. In the tree pane, click the cartridge icon you want to restore a clip from. This expands the tree pane to reveal the partition icon or icons.
2. Click the partition in the tree pane that you want to restore from to reveal the clips in the contents pane.
3. In the contents pane, click on the clip icon or icons you want to restore, hold the left mouse button, and drag it to the bin icon in the tree pane where you want to restore the clip. The bin must be on the Profile system that your library system is attached to.
4. If you want to check on the progress of a restore operation, click on the Profile logo or choose **Tools | Transfer Monitor** to view the Transfer Monitor.

Renaming an Archived Clip

A clip can have a name up to 32 characters long. Spaces are legal characters, but count for two characters. Colons (:) and slashes (/) are illegal in clip names. Tildes (~) are only illegal as a first character in a clip name.

To rename an archived clip:

1. In the tree pane, select the library, cartridge, and partition where the archived clip is stored.
2. In the contents pane, select the archived clip you want to rename.
3. Choose **Rename** from the **File** menu or from the shortcut menu with a right-click. You can also select the clip’s name a second time.
4. Type the new name and press Enter.

   NOTE: The renaming operation does not take permanent effect until after an update operation (see “Updating and Inventorying Cartridges” on 123).

Deleting an Archived Clip

To delete an archived clip:

1. In the tree pane, select the library, cartridge, and partition where the archived clip is stored.
2. In the contents pane, select the archived clip or clips you want to delete.
3. Press the **Delete** or **Backspace** key, or choose **Delete** from the **File** menu or from the shortcut menu with a right-click.

When an archived clip is deleted, it is not moved to the **Recycle** bin. It is removed from the library database's record of archived clips. Also, since tape is not a random access medium, the storage space is not reclaimed as it is on the disk drives, and the space cannot be reused until all clips in a partition have been deleted.

NOTE: The delete operation does not take effect until after an Inventory operation (see "Updating and Inventorying Cartridges" on 123).

Importing a Cartridge

To *import* a cartridge is to insert or add it into the library system:

1. In the tree pane, select the library icon. If you have a stand-alone drive, you must insert the cartridge you are importing into the drive.
2. Choose **Import** from the **File** menu or from the shortcut menu with a right-click. The Import Cartridge dialog box appears (see Figure 61). If you have more than one PLS 20 systems connected simultaneously, you must enter a drive number when prompted.

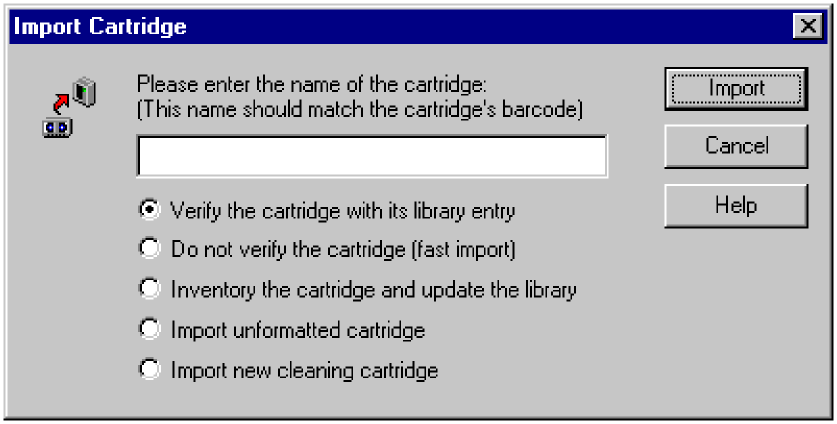


Figure 61. Import Cartridge dialog box

3. Enter a unique label name (number) for the cartridge. This name must match the barcode on the cartridge—for example, **00000015**. If the label is not unique or matches a label already in the library, the cartridge is rejected.
4. Click a button to tell Media Manager how you want to import the cartridge:
   - If you want to verify the contents of the cartridge, click **Verify the cartridge with its library entry**. If the label (barcode) matches the one in the library and the directory entries match, the cartridge is imported. If the label matches but the directory entries do not, the cartridge is rejected. If the library system can find no record of the barcode label, the cartridge is stored as an unknown cartridge.

- For a fast import with no verification of the cartridge's contents, click **Do not verify the cartridge (fast import)**. As long as the label matches one in the library, the cartridge goes directly into an available slot. If the library system can find no record of the barcode label, the cartridge is stored as an unknown cartridge.
- To inventory the cartridge, click **Inventory the cartridge and update the library**. The cartridge is loaded into a transport and its contents are inventoried. The database is updated if it did not match what was inventoried.
- To import an unformatted cartridge, click **Import unformatted cartridge**. The cartridge is put into the first available slot and appears in the media tree with an unformatted cartridge icon.
- To import a new cleaning cartridge, click **Import new cleaning cartridge**. The library system cannot differentiate between a cleaning cartridge and an ordinary cartridge. It must be told when a cleaning cartridge is imported. If you provide a unique tape label, the cleaning cartridge is stored in a cleaning cartridge bin.

5. Click **Import**.
6. A prompt appears requesting that you physically insert the cartridge into the library. Once the robot is in position and you insert the cartridge, press any button on the library's control panel.
7. The Importing Cartridge dialog box remains on the screen until the robot puts the cartridge in the available slot. Since this is done in the background, click **OK** at any time.

When the robot retracts with the imported cartridge, it scans the cartridges's barcode. If the barcode does not match the name that was entered for the import, it is rejected.

Exporting a Cartridge

To *export* a cartridge is to eject or remove it from the library system:

1. In the tree pane, select the icon for the cartridge you want to export.
2. Choose **Export Cartridge** from the **File** menu, or from the shortcut menu with a right-click, and the Export Cartridge dialog box appears. By default, the cartridge location is *Out of library*.

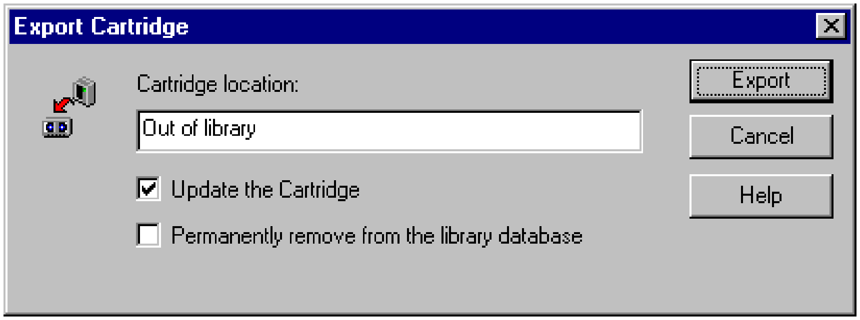


Figure 62. Export Cartridge dialog box

3. Select the appropriate box:
   - If you select **Update the cartridge**, the cartridge is loaded into a transport and its directory is updated to reflect clip name changes or deletions. Then the cartridge is ejected.
   - If you select **Permanently remove from the library database**, all references to the cartridge are deleted from the library database, then the cartridge is ejected.
   - If you select both boxes, the cartridge is loaded into a transport and its directory is updated to reflect clip name changes or deletions. This information is saved on the cartridge. Then all references to the cartridge are deleted from the library database and the cartridge is ejected.

4. Click **Export**.
5. A prompt appears requesting that you physically remove the cartridge from the library. Once the robot is in position and you remove the cartridge, press any button on the library's control panel.
6. The Exporting Cartridge dialog box remains on the screen until the robot ejects the cartridge. Since this is done in the background, click **OK** at any time. If you are using a PLS20, you must manually remove the cartridge from the drive.

Updating and Inventorying Cartridges

Deleting and renaming archived clips from the Media Manager interface simply updates the library database—not the cartridge directory. This is why delete and rename operations are so fast: the cartridge is not loaded into a transport. Once a clip is deleted or renamed, the library database and the cartridge's physical directory are out of synch.

The update and inventory operations allow you to resynchronize the cartridge directory and library database. The update operation rewrites the cartridge directory with the library database's record of what should be on that cartridge. The inventory operation reads the cartridge directory and rewrites the library database's entry for that cartridge.

To update one or more cartridges:

1. In the media tree or contents pane, select one or more cartridge icons.
2. On the **File** menu, or from the shortcut menu with a right-click, click **Update**. Since the update takes several minutes to complete, you are asked to confirm the operation, as shown in Figure 63.

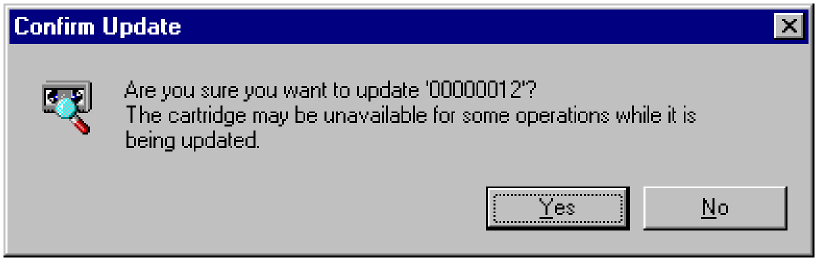


Figure 63. Confirm Update dialog box

3. Click **Yes** to update the cartridge or cartridges.

To inventory one or more cartridges:

1. In the tree or contents pane, select one or more cartridge icons.
2. Choose **Inventory** from the **File** menu or from the shortcut menu with a right-click. Since the inventory takes several minutes to complete, you are asked to confirm the operation, as shown in Figure 64.

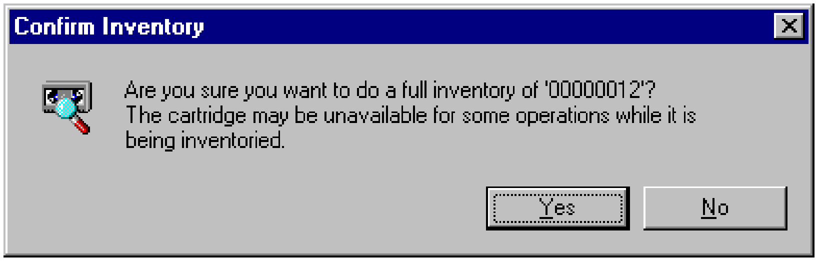


Figure 64. Confirm Inventory dialog box

3. Click **Yes** to inventory the cartridge.

Inventorying the Library

There are times when the contents of the library system do not match the record of those contents in the library database. This usually occurs when the cartridges have been added or removed by hand without appropriate inventories, which is not recommended. The inventory operation rescans the barcodes of the cartridges in the library and updates the database to the actual library contents.

To inventory the contents of the library:

1. Select a library icon in the tree pane.
2. Choose **Inventory** from the **File** menu or from the shortcut menu with a right-click. Since this operation may take several minutes, Media Manager asks you to confirm that you want to inventory the entire library.

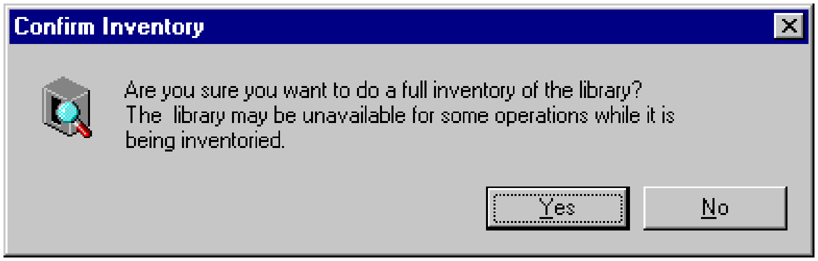


Figure 65. Confirm Inventory dialog box

3. Click **Yes** to inventory the entire library.

The inventory operation, like all library operations, is processed in the background. This allows you to continue working with the Media Manager while the operation is being performed. The Transfer Monitor tool is used to view background transactions. To view the Transfer Monitor, click the Profile logo or choose **Tools | Transfer Monitor**.

Formatting Cartridges

When you format one or more cartridges, all storage space is reallocated and the cartridge is prepared to accept new data.

To format one or more cartridges:

1. Select the cartridge icon or icons in the tree pane
2. Choose **Format** from the **File** menu or from the shortcut menu with a right-click. The Format dialog box appears (see Figure 66). The Name field shows the name or names of the cartridges to be formatted. If more than one cartridge is selected, the number of cartridges is shown (see Figure 67).

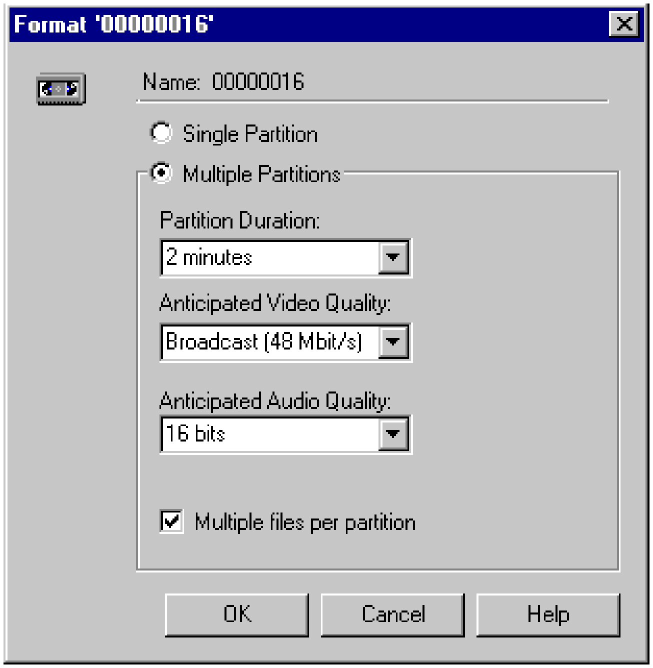


Figure 66. Format Cartridge dialog box

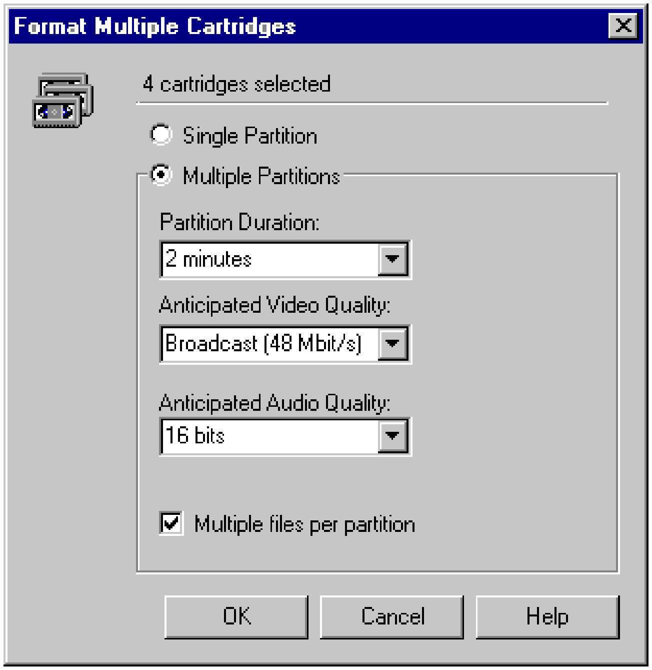


Figure 67. Format Cartridge dialog box

3. Click **Single Partition** or **Multiple Partitions**. With a **Single Partition**, the cartridge or cartridges will have one partition when formatted and all clips are archived to the same partition. With **Multiple Partitions**, the cartridge or cartridges will have two or more partitions, depending on other settings. You do not actually set the duration of clips, or video and audio quality: you simply approximate based on how you anticipate using the cartridges. You cannot set the number of partitions directly. If you choose **Multiple Partitions**:

   - To set the anticipated length (time duration) of clips under the partitions, select the number of seconds or minutes in the Partition Duration box. Selecting Custom opens the Custom Duration box. In the Custom box, enter the duration of seconds in the range 1 to 9999.

- To set the anticipated quality of the video that you will use with these cartridges, select a video quality from the Anticipated Video Quality box. If you anticipate using higher video quality, you will use more tape to store media. This causes the format operation to create larger and fewer partitions.
- To set the anticipated audio resolution that you plan to use with these cartridges, select either 16 bits or 20 bits from the Anticipated Audio Quality box. Different audio qualities affect the amount of tape used and therefore the number of partitions that will be created.
- To allow more than one file (clips) under a partition, click Multiple files per partition. If unselected, only a single clip may be archived per partition.

4. Click **OK**.

Viewing Library, Cartridge and Archived Clip Properties

To view the properties for the library:

1. Select the library icon in the tree pane.

2. Choose **Properties** from the **File** menu or from the shortcut menu with a right-click. You can also click the **Properties** button on the toolbar. The library properties dialog box appears.

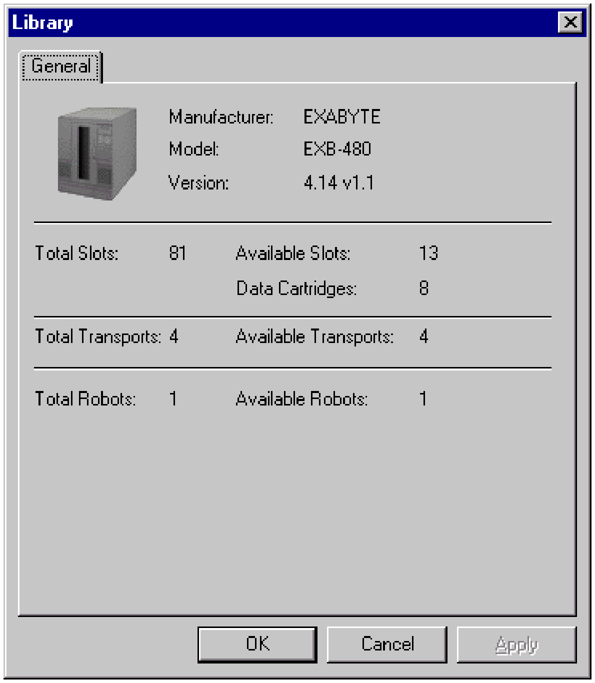


Figure 68. Properties dialog box for the library

3. Click **OK** when you are done viewing the library properties.

To view the properties for a cartridge:

1. Select a cartridge icon in the tree pane.

2. Choose **Properties** from the **File** menu or from the shortcut menu with a right-click. You can also click the **Properties** button on the toolbar. The cartridge properties dialog box appears.

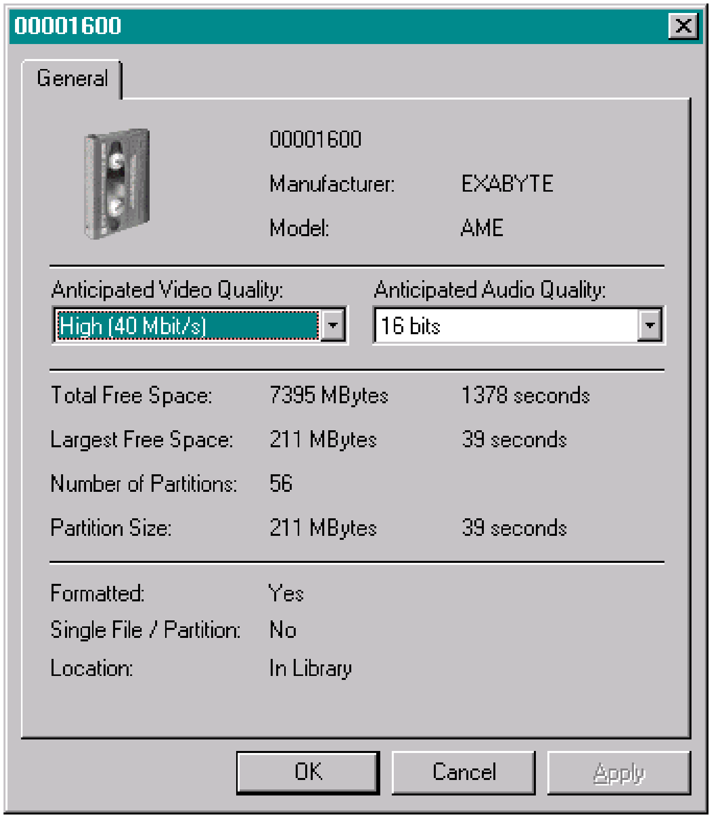


Figure 69. Properties dialog box for a cartridge

2.Click **OK** when you are done viewing the cartridge properties.

To view the properties for a archived clip on a cartridge:

1. Select a clip icon in the contents pane.

2. Choose **Properties** from the **File** menu or from the shortcut menu with a right-click. You can also click the **Properties** button on the toolbar. The clip properties dialog box appears.

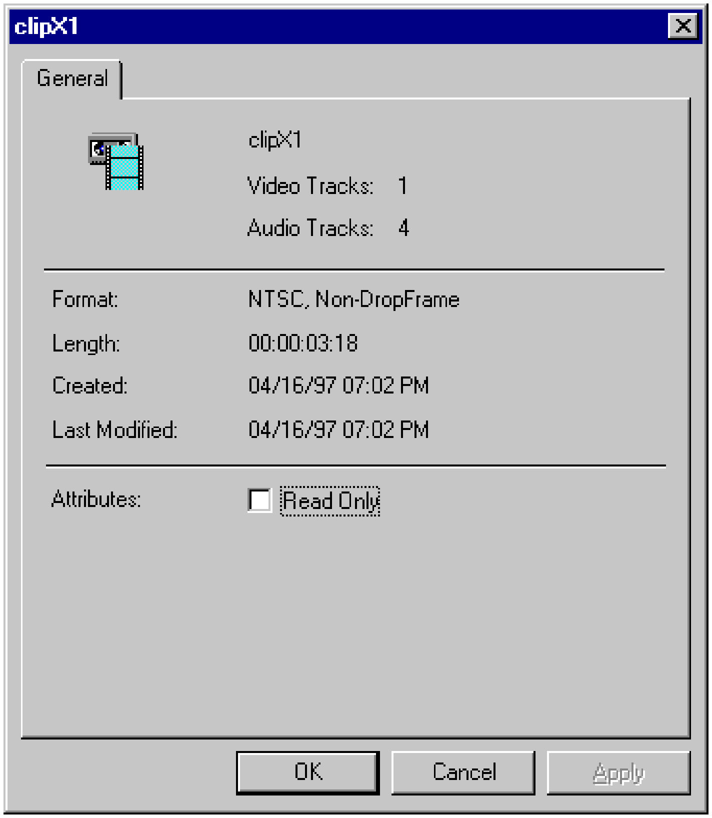


Figure 70. Properties dialog box for an archived clip

3. Click **Read-only** if you want to prevent modifying, renaming, or deleting the clip.

4. Click **OK** when you are done viewing the clip properties.

Viewing Tape Transport Status

To view the status of the tape transports in the library:

1. Choose **Tape Transport Status** from the **File** menu or from the shortcut menu with a right-click. The Tape Transport Status dialog box appears.

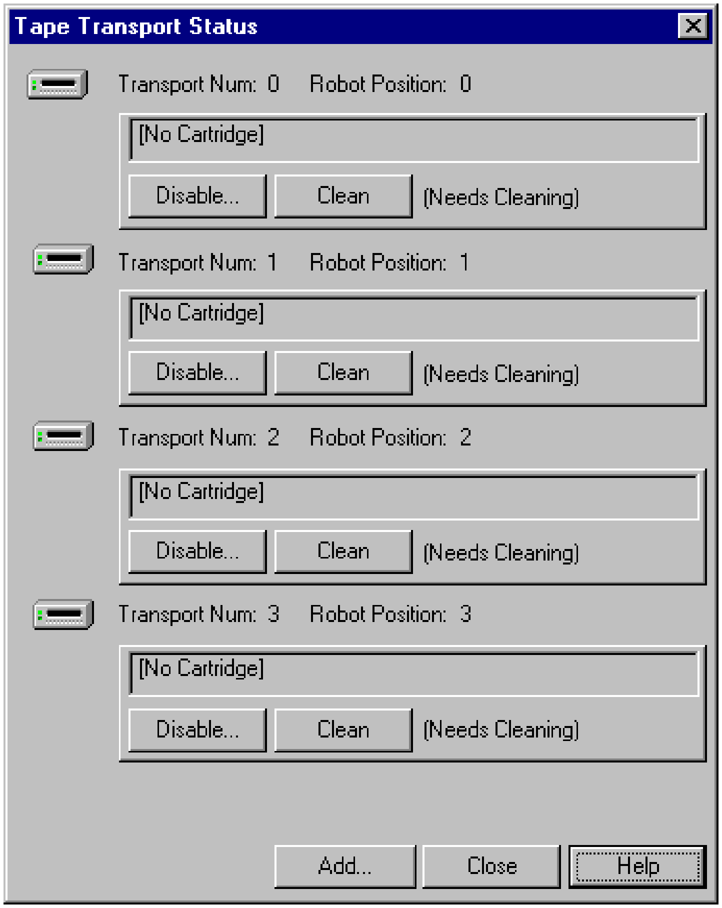
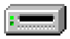


Figure 71. Tape Transport Status dialog box

The labels in the dialog box are explained here:

Transport Icon

A transport icon is shown for each active transport in the library. The order of transports in this dialog does not necessarily reflect the order they appear in the library system.

Transport Number
This is the logical identifier for the transport. It is a number from 0–255.

Robot Position
This is the physical transport identifier. It is a number from 0–3.

Cartridge Name
A cartridge name is shown if one is currently loaded into the transport.

Disable
Removes a transport from service. Click Add to re-enable the transport.

Clean
Loads a cleaning cartridge and cleans the transport

Cleaning Message
The message **Needs Cleaning** appears when the transport is due for cleaning.

Add
Adds a transport to the list of available transports.

Close
Close the Tape Transport Status dialog.

Help
Opens the help topic on the Tape Transport Status dialog.

To add a transport to the list of active transports:

1. In the tree pane, select the appropriate library icon.
2. Choose **Tape Transport Status** from the **File** menu, or from the shortcut menu with a right-click.
3. Click the **Add** button. The Add Tape Transport dialog box appears, as shown in Figure 72.

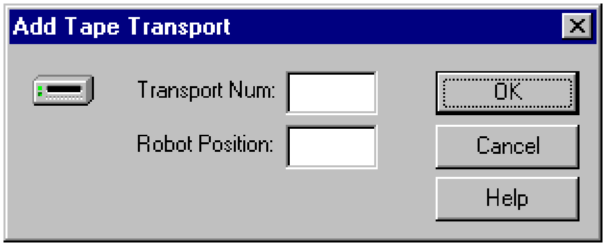


Figure 72. Add Tape Transport dialog box

4. Enter the logical transport number (0–255).
5. Enter the physical robot position (0–3).
6. Click **OK**.
7. Click **Close** when you are done viewing the transport status.

To remove a tape transport from service:

- Click the appropriate **Disable** button.

To clean a tape transport:

- Click the appropriate **Clean** button. A tape transport does not need cleaning until the “Needs Cleaning” message appears beside the **Clean** button. The library system will find the first available cleaning cartridge in the system and use it to clean the selected transport. If the library system is unable to find the cleaning cartridge—that is, there is no cleaning cartridge in the library—you will get a message stating that no cleaning cartridge was found.

Viewing the Transfer Monitor

When clips are copied to a different machine, the media that is referenced by those clips is also copied. This is made possible by using a combination of Ethernet and Fibre Channel networks. Ethernet is used for lower-speed database transfers and queries. The high speed Fibre Channel network is used for transferring the actual media between machines.

Copying media is done in the background to allow you to continue with your work. Adding to and restoring from an archive also is done in the background. Since this may result in more than one transfer occurring at the same time, the Transfer Monitor is used to keep track of these background tasks. Each time a media transfer is started, a new entry appears in the Transfer Monitor.

The Transfer Monitor can be opened at any time. It consists of two tabs: the Network tab which shows all copies over Fibre Channel and Duplicates in progress; and the Library tab which shows any ongoing library transactions.

To track background operations with the Transfer Monitor:

- Choose **Tools | Transfer Monitor** or click the Profile logo on the toolbar. The Transfer Monitor dialog box appears.

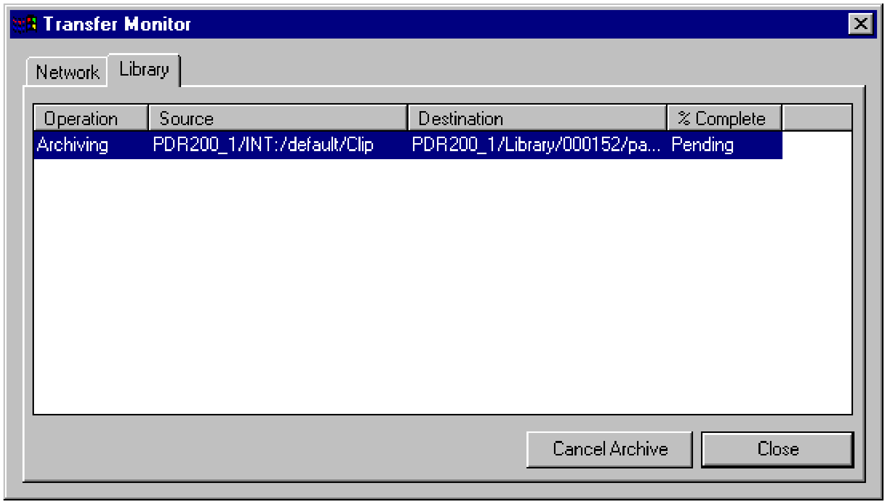


Figure 73. Transfer Monitor dialog box

The Profile logo on the Media Manager toolbar is animated whenever there is an item in the Transfer Monitor, whether the Transfer Monitor is open or not.

The **Network** tab divides entries into four columns: source, destination, percent complete, and average megabytes per second. When copying, source and destination paths are constructed using the *machine/volume/bin/clip* names. A destination clip name may be different from the source clip name if the clip was renamed when pasted or moved to the new location (which has to be done when a clip with the same name already appears at the new location).

The **Library** tab divides entries into four columns: operation, source, destination, and percent complete. Library operations that occur in the background include archive, restore, inventory, update, format, delete, import, clean, and export. The destination column is only filled in for the archive and restore operations. The percent complete column will show *Pending* while a cartridge is being loaded into a transport and cued to the correct tape position.

To interrupt a transfer do the following:

1. Click the Network or Library tab depending on the type of transfer you wish to interrupt.
2. Select the transaction you wish to interrupt.
3. Click the **Cancel Transaction** button. (This button is unavailable unless the transaction is highlighted.)

The label for this button is context specific. If an archive transaction was selected, the button is labeled **Cancel Archive**. If a network copy was selected, the button is labeled **Cancel Transfer**.

NOTE: Only network, library archive, and library restore transactions can be cancelled.

Occasionally an error will occur while a transfer is in progress. The destination machine may have unexpectedly run out of storage, the network connection may have gone down, there may have been trouble reading an archive library cartridge. An error is indicated by a change in the Profile logo.

In the Transfer Monitor, entries that could not complete due to error are displayed in red and their percent complete shows *Error*. When the entry is selected, a short description of the error is shown at the bottom of the window. To remove the entry, select it and then click the **Remove** button.

Chapter **4**

Using VdrPanel

Storing media on a Profile disk recorder rather than on tape opens the door to almost instant access to digital video and audio material. Media is available to all of Profile's channels at once, so you can play a video and audio clip on more than one channel at the same time. Since each of the channels is independent, playback can start at a different time and place in a clip. One of the best features of the Profile system is that you can start playing material while it's still being recorded.

The basic element of digitally stored video and audio is the *clip*. A clip is a reference to video, audio, and timecode material recorded in media files on the Profile media disks. A clip has a beginning and an end, and, when first recorded, the beginning and end correspond to the first and last frames stored in the media file, but a clip may refer to the entire media file or just part of it. When you delete a clip, the media file that the clip refers to remains on disk if at least one other clip refers to it—only the reference to the media file is deleted, not the media itself.

You can mark in and out points in a clip. These marks change the effective beginning and end points of a clip, while not removing the associated material from the media file. On the other hand, you can trim media to remove material from either end of a clip, which also removes the information from the media file. Trimmed material is permanently removed from disk and is no longer available for use.

The default tool for creating and playing clips on the Profile system is VdrPanel. VdrPanel provides you with a VTR-like interface—complete with transport controls—to directly manage media operations. Once created with VdrPanel, clips are available for use with optional Profile applications, such as Tool Box Editor or the List Manager.

VdrPanel allows you to configure any or all of your channels for operation through a controller connected to an RS-422 serial port. These controllers either comply with Profile Protocol, such as the optional PRC100 Profile Remote Control unit, or with Louth, Odetics, BVW, or BVW [insert edit] protocols.

Before using VdrPanel to capture clips, you must complete a few steps:

1. You must decide whether you want to use the Windows NT interface (called *Panel Control*) to capture and play clips, or if you want to use an external device to control your Profile system. To select a controller, see “Selecting a Controller” on page 140.
2. You need to configure the playback and record JPEG and MPEG channels, audio channels and the VITC timecodes for your selected controller. To configure the controller, see “Configuring a Controller” on page 144.
3. You must set video crosspoints or connections. This means that you can select video inputs, codecs, and outputs. You can also choose to bypass codecs. See “Selecting Video Crosspoints” on page 153.
4. You can select timecode panel display, which timecode generators to use, select drop-frame timecode, and also set timecode crosspoints—inputs, generators, and outputs. See “Setting Timecode” on page 155.

For information on how to start and close VdrPanel, see “Starting and Closing Profile Applications” on page 11.

The VdrPanel window is shown in Figure 74. By default, the VdrPanel window appears automatically at power-up, unless you log in manually. You display all available panels in the VdrPanel window—up to eight with MPEG. Each panel is dedicated to one video channel.

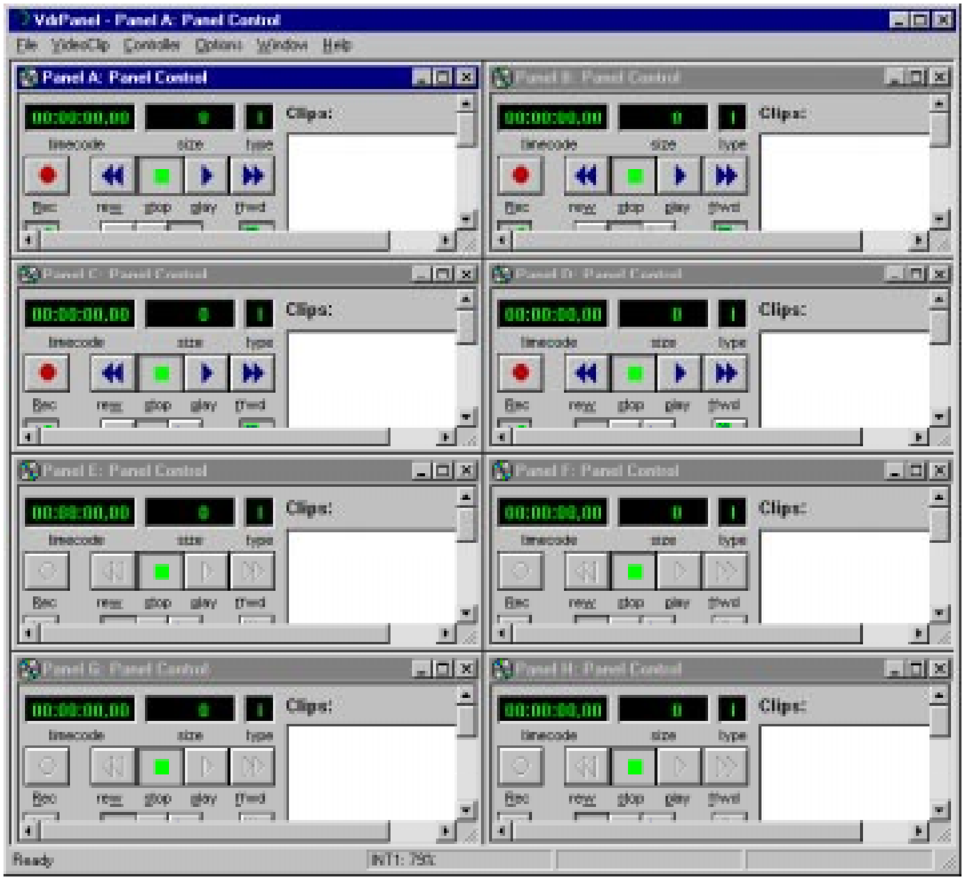


Figure 74. VdrPanel window

Selecting a Controller

Before you can use a video channel, you must first configure it to use a controller. The default controller is Panel Control. Panel Control specifies control from the Windows NT user interface and no communication port selection or additional configuration is necessary.

Other controller choices allow you to select serial control protocols and require an external device and additional setup, such as selection of an serial communications port or specifying clip length for BVW-type controllers. The **Comm Port** dialog box appears automatically the first time you select a Louth, Odetics, or BVW controller (see “Selecting a Communications Port” on page 142).

> ***NOTE: The* Controller | Manage Archive *menu command is available under special circumstances in Louth Automation. Contact your Tektronix representative for more information.***

To select a controller:

1. Click a panel to make it active.
2. Choose **Controller | Select** to open the Controller Setup dialog box (Figure 75).
3. Select the controller for the channel, such as **Louth Automation**.
4. Click **OK**.

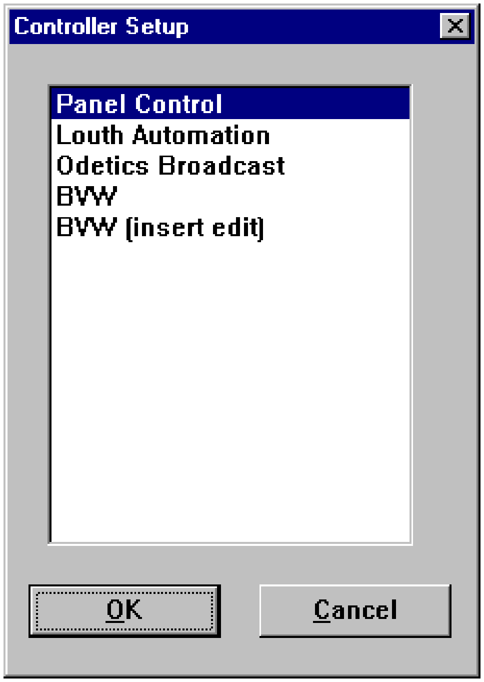


Figure 75. Controller Setup dialog box

Selecting a Communications Port

To select a serial communications port for an external controller:

1. Click a panel to make it active.

   NOTE: Other than for Panel Control, the **Comm Port** ***dialog box appears automatically the first time you select a controller.***

2. Choose **Controller | Comm Port** to open the Controller Setup dialog box. An example of this dialog box is shown in Figure 76.

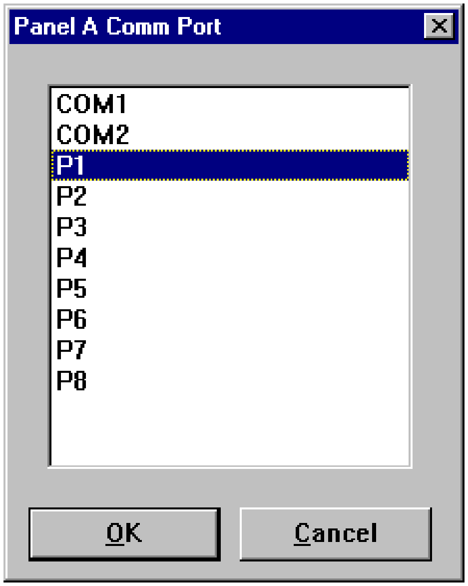


Figure 76. Comm Port dialog box

NOTE: Ports P1 through P8 are available on the RS-422 Connector Panel. COM1 and COM2 are available on the unit's back panel (RS-232 DB-9 connectors). Any P ports used by VdrPanel should have the DIP switches set to **Device** ***(DIP switch must be down).***

3. Select a serial communications port, such as **P1**.
4. Click **OK**.

Selecting Clip Length (BVW Only)

If you have chosen a BVW controller, you can specify clip length by setting mark in and mark out points:

> ***NOTE: The Set Clip Marks (clip length) dialog box shown here will not appear unless the panel controller is a BVW controller. This is not the same as setting clip length while in Loop or Bounce mode.***

1. Click a panel to make it active.
2. Choose **Controller | Clip Length**. The Set Clip Marks dialog box appears (Figure 77).

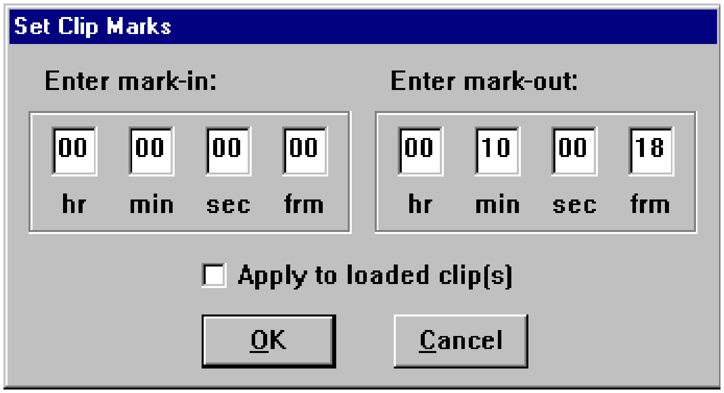


Figure 77. Set Clip Marks dialog box

3. Enter the mark-in and mark-out points by specifying the hour, minute, second, and frame settings. This applies to future clips only, unless you perform step 4.
4. Click **Apply to Loaded Clip(s)** if you want the mark-in and mark-out points to apply to existing clips as well as future clips.
5. Click **OK**.

Configuring a Controller

You can configure the playback and record JPEG or MPEG channels, audio channels and the VITC timecodes for the selected controller.

1. Click the panel to make it active.
2. Choose **Controller | Configure** to open the Profile Options dialog box for the selected panel. Figure 78 illustrates the standard Profile options with an example configuration selected; Figure 79 illustrates the Profile Options dialog box for BVW [insert-edit], also with appropriate selections shown.
3. Click on the appropriate video, audio, and timecode resources for your selected controller. Use the scroll bars, if necessary, to see more resources.

   NOTE: Recording format depends on the selected video resource, either JPEG or MPEG Rec.

4. Click **OK**.

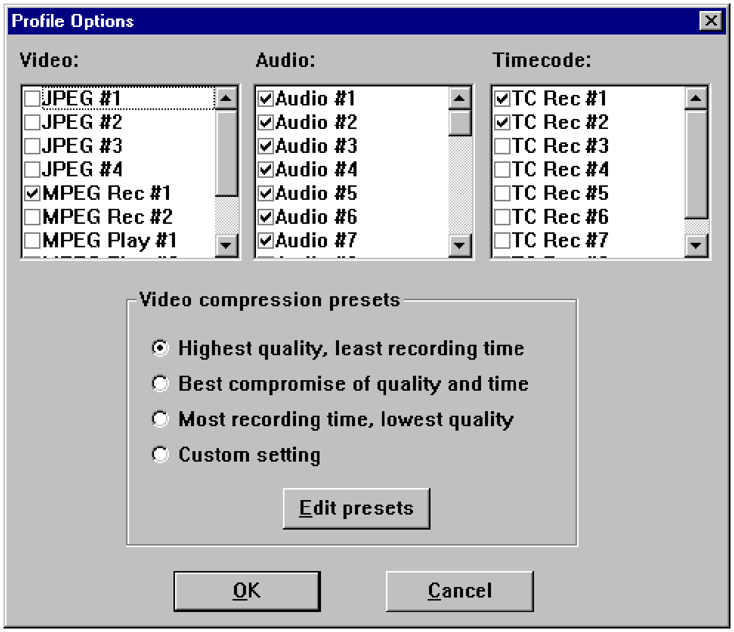


Figure 78. Profile Options dialog box

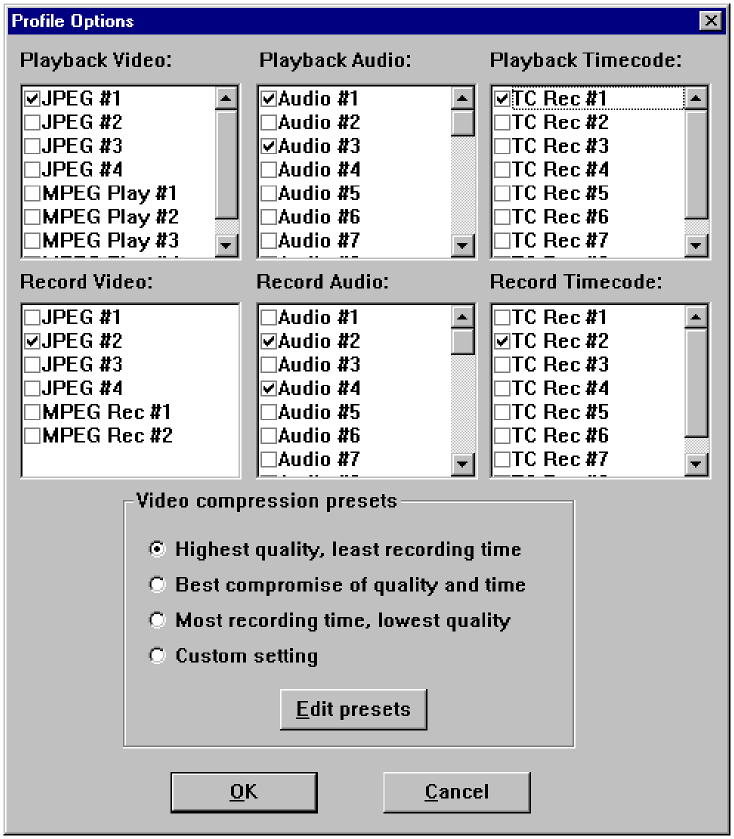


Figure 79. Profile Options dialog box (BVW [insert-edit] only)

Setting Compression Presets

The Profile Options dialog box lets you select a video compression preset and edit the preset values.

1. Click the desired compression preset. The options range from highest quality, which uses the most disk space and records less material, to the lowest quality, which uses much less disk space and records more material. A custom setting is also available.
2. Edit the preset values. Refer to Table 7 for the JPEG factory-set preset values and to Table 8 for the MPEG values. To change the values, click **Edit Presets** to open the Edit Compression Presets dialog box shown in Figure 80. You can change the values of the presets, if desired. Select the preset in the **Preset Name** box, change the values under **JPEG** or **MPEG**, and then click **OK**.

Table 7. Factory set values for JPEG compression presets

Preset Name	525/60 Standard			625/50 Standard		
	Min Lum Q	Max Chroma Q	Bytes/Field	Min Lum Q	Max Chroma Q	Bytes/Field
Highest quality	0.75	60.00	100000	0.75	100.00	120000
Best compromise	0.75	60.00	75000	0.75	100.00	90000
Most recording time	0.75	60.00	50000	0.75	100.00	60000
Custom setting	5.00	5.00		5.00	5.00	

3. For JPEG settings:
   - **Min Lum Q** sets the minimum compression that can be applied to luminance in a field to meet the target data rate, typically 0.75, which is also the lowest rate.
   - **Max Chroma Q** sets the maximum compression that can be applied to chrominance in a video field to meet the target data rate (typically 60).
   - **Fixed Q** sets a fixed picture quality and ignores variation in field size. Use this mode for critical multigeneration work. When **Fixed Q** is selected, the other fields become fixed as **Lum Q** (fixed luminance compression) and **Chroma Q** (fixed chrominance Q). Useful starting values for **Fixed Q** and **Chroma Q** are 5.00. Verify that there is sufficient available data rate headroom before using **Fixed Q** mode. The **Bytes per Field** target attempts to meet the Lum and Chroma goals. With **Fixed Q** mode, **Bytes per Field** can increase beyond the system bandwidth, causing interference with other channels.
   - **Bytes per Field** is the target compression rate. Not every field requires the target rate, it is simply the average rate the disk recorder tries. The higher the rate, the better the picture detail. The actual **Bytes per Field** depends on the picture complexity, **Min Lum Q**, and **Max Chroma Q**. The algorithm dynamically changes **Min Lum Q** and **Max Chroma Q** to make the field size meet the target unless **Fixed Q** is selected.

Table 8. Factory set values for MPEG compression presets

Preset Name	Bit Rate (Mb/sec)	P Pictures per GOP	B Pictures per I/P	Chrom	Open GOP
Highest quality	24	5	2	4:2:2	No
Best compromise	15	5	2	4:2:2	No
Most recording time	4	5	2	4:2:0	No
Custom setting	4–44	2	2	4:2:0	Yes

4. For MPEG settings:
   - Select **4:2:2** or **4:2:0** chroma sampling.
   - **# P per GOP** is the number of P pictures (predictive pictures) in a group of pictures (GOP).
   - **# B per I/P** is the number of B pictures (bidirectionally predictive pictures) for every I-frame or P picture. B pictures improve compression efficiency.

   NOTE: Placing zeros in both* # P per GOP *and* # B per I/P *boxes forces pictures to be I-frame only.

   - **Open GOP** is a group of pictures that has a B picture as its last picture type for the next I-frame, such as IBBPBBPBBI, and so on. An Open GOP depends on the next GOP's anchor to define its last B picture.
   - **First encoded line** is the number of first encoded line of video. Lines in a 525 system are in the range 21–260; 625 lines are in the range 7–310.
   - **Last encoded line** is the number of the last encoded line of video.
   - Bit rate in megabits per second. The higher the bit rate, the higher the video quality, though more disk space is used. In other words, the higher the video quality, the fewer hours of video you can store on disk.
5. Click **OK**.

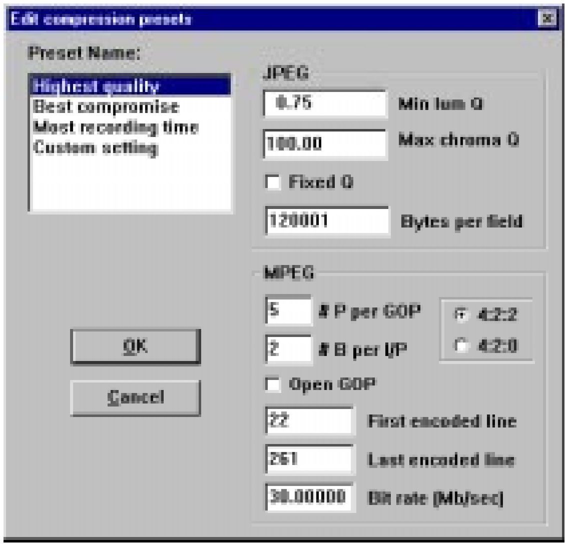


Figure 80. Edit Compression Presets dialog box

Setting up BVW [insert edit] Emulation

This procedure sets up a panel to emulate a Betacam. Refer to the manual for your hardware controller device to set up Super-Edits or BVEs.

NOTE: This procedure requires access to two control ports. Close a panel to free a control port for use with the BVW [insert edit] panel.

1. Click within a BVW [insert edit] panel to select the panel. Refer to “Selecting a Controller” on page 140 if you have not already selected BVW [insert edit] as the controller for this panel.

   NOTE: If you do not select BVW [insert edit] for the panel, insert edit operations are not properly executed. The channel can be used as a source deck, or be acceptable for remote control systems, such as the Ash-Vale slow-motion controller, that do not use EditOn commands.

2. Choose **Controller | Configure** to open Profile Options (see Figure 78 on page 145).
3. Select two unused video codecs: one for **Playback Video**, and one for **Record Video**. For example, use **JPEG #3** for **Playback Video**, and **JPEG #4** for **Record Video**. Use **Controller | Configure** with the other panels to assure the codecs are not in use.
4. Select two pairs of audio channels. For example, select **Chan #9** and **Chan #11** for the **Playback Audio** and **Chan #10** and **Chan #12** for the **Record Audio**. Audio channel pair selection must follow these rules:
   - The playback/record audio channel pair must be sequentially numbered. For example, **Chan #1** and **Chan #2** or **Chan #14** and **Chan #15**.
   - The playback/record pair must be with the same channel group. Channels are grouped as sets of four: **Chan #1** through **#4**, **Chan #5** through **#8**, **Chan #9** through **#12**, and **Chan #13** through **16**.
   - The playback is assigned to the first selected codec in the pair, record is assigned to the second selected codec in the pair. For example, playback assigned to **Chan #14** and record assigned to **Chan #15**.

   NOTE: There must be two audio channels assigned for each audio track to be recorded.

5. Select two pairs of timecode. For example, select **TCREC #5** and **TCREC #7** for the **Playback Timecode** and **TCREC #6** and **TCREC #8** for the **Record Timecode**.
6. If any other selections are highlighted, click to deselect them.
7. Select the video compression to be applied; see “Setting Compression Presets” on page 146 for more information on video compression and the presets.
8. Click **OK**.
9. Choose **Controller | Comm Port** to open the Communication Port dialog box (see Figure 76 on page 142).
10. Select the RS-422 communication port to be used for the edit controller—for example, **P3**. The **Port** name is the same as the name on the RS-422 breakout box.
11. Click **OK**.
12. Verify the external connections:
    - Source audio channels are connected to the inputs for the audio channels assigned as the **Record Audio**.
    - Audio outputs from the disk recorder are connected to the audio channels assigned as the **Playback Audio**.
    - Edit controller is connected to the assigned **Port**. Refer to the device’s installation manual.
    - DIP switch on the breakout box is set to Device for the RS-422 Port. Refer to the breakout box installation manual.

NOTE: Insert edits for MPEG clips using the BVW or BVW [insert edit] controllers are not possible unless the clip is I-frame only. An inset edit is accomplished by over-recording previously recorded portions of video or audio material.

Setting Louth Modes

If you use Louth Automation, you can set a panel to Louth modes. Normally, when a clip is cued, a freeze or confidence frame appears on the monitor instead of a regular video input feed. In Louth switcher mode, you do not see a confidence frame: you see video input from the feed until you play the clip. When the clip is done playing, you immediately see the regular video input again.

Without Louth end mode, you may see a few fields of a following clip, even if you don't intend to play it. Louth end mode, when used with Louth switcher mode, ensures that playback stops at the current clip.

NOTE: Louth menu commands are available only when the panel controller is set to Louth Automation.

To set a panel to Louth switcher mode:

1. Click the panel to activate it. The panel controller must be Louth Automation. For information on how to set the controller to Louth Automation, see "Selecting a Controller" on page 140.
2. Choose **Options | Louth Switcher Mode**. A check mark appears next to Louth Switcher Mode in the Options menu to show that it is activated.
3. To return the panel to normal mode, choose **Options | Louth Switcher Mode** again.

To set a panel to Louth end mode:

1. Click the panel to activate it. The panel controller must be Louth Automation. For information on how to set the controller to Louth Automation, see "Selecting a Controller" on page 140.
2. Choose **Options | Louth End Mode**. A check mark appears next to Louth End Mode in the Options menu to show that it is activated.
3. To return the panel to normal mode, choose **Options | Louth End Mode** again.

Selecting Video Crosspoints

A video crosspoint shows the connection between a video input and output, with a JPEG codec, MPEG encoder, or MPEG decoder between.

- Video inputs (top-left corner) represent video input connectors on the back panel. For example, video inputs can be connected to JPEG codecs or MPEG encoders for recording onto disk, or connected to video output for display.
- Video outputs (top-right corner) represent video output connectors on the back panel. For example, video outputs can be connected to JPEG codecs or MPEG decoders for playback of recorded material from disk or to video inputs.

To specify video crosspoints:

1. In VdrPanel, choose **Window | Video Crosspoint** to open the dialog box. The green boxes indicate current connections. For example, a green box at the intersection of a **SDI-InA-J14** serial digital video board in slot J14 and a **Panel A: MPEG Rec #1** encoder connects the video signal from the back panel input labeled **Video I/O Serial Digital Component IN A** to an MPEG encoder.

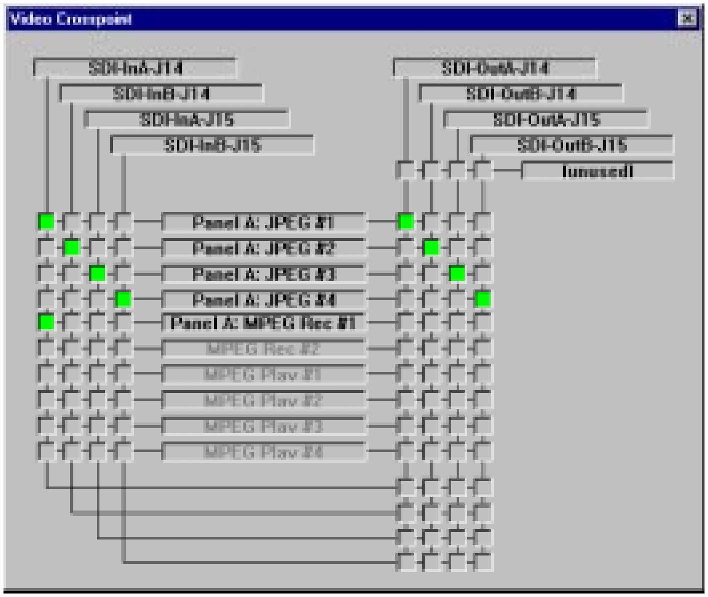


Figure 81. Video Crosspoint dialog box

2. To assign a crosspoint, click in the intersection boxes between a video signal and a JPEG codec, MPEG encoder, or MPEG decoder. The selection boxes turn green. You can also select a video signal, and while holding down the left mouse button, stretch a line to the desired resource.

   NOTE: Verify that you have the appropriate BNC connections on the rear panel.

3. Click the **Close** button.

Setting Timecode

You can set timecode crosspoints, select drop-frame timecode, or select timecode panel display and generators.

Selecting How to Display Timecode on a Panel

The Timecode Setup dialog box enables you to set the timecode display and the timecode source on a channel to the values required for your application.

1. Click in a panel to select it.
2. Choose **Options | Select Timecode** to open the Timecode Setup dialog box. The Timecode Setup dialog box is divided into two groups: **Display on Panel** and **Timecode Generator Settings**.

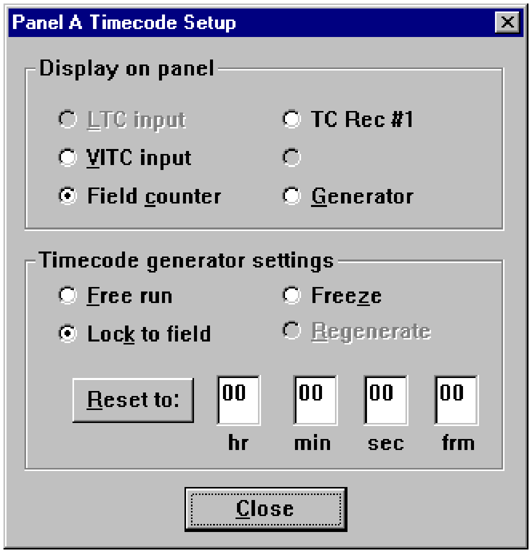


Figure 82. Timecode Setup dialog box

3. Select the timecode to be displayed on the panel from the **Display on Panel** group:
   - **LTC Input** is a separate signal input via the genlock card.
   - **VITC Input** is the timecode from the VITC input signal.

- **Compute from Field Number** calculates the timecode directly from the field number of the recorded video. New clips start at 00:00:00:00.
- **TC Rec #** displays the recorded timecode.
- **Generator** displays the timecode from the generator for the channel.

4. Set up the timecode generator used by the panel with the **Timecode Generator Settings** group:
   - **Free Run** causes the timecode generator to continue to advance regardless of the current play or record mode of the panel.
   - **Freeze** locks the timecode at the current value. The value does not advance with time nor with changes in the play or record mode of the panel.
   - **Lock to Field Number** causes the generator to output a timecode locked to the current clip's timecode. When the panel is in stop, the value freezes. When the panel is in play or record, the timecode advances normally. During rewind or reverse shuttle, the timecode runs backward.
   - **Regenerate** pertains to BVW controllers only. When the timecode position is changed to a new portion of the clip, and a record operation includes recorded timecode tracks (which happens with assemble edits from BVE and other controllers), the timecode generator is initialized to match the timecode read from the timecode track (VITC or LTC) before the record occurs.
   - The **Reset To** button resets the timecode to the value entered in the box. The generator can be set to this value when **Free Run**, **Freeze**, or **Lock to Field Number** is selected.
5. Click **Close**.

Setting Timecode Crosspoints

The Timecode Crosspoint dialog box controls the connections of timecode signals within the Profile system.

- Timecode inputs (top-left corner) represent either LTC input connectors on the back panel or VITC input signals. Timecode inputs can be connected to timecode recorders for recording onto disk.
- Timecode generators (below timecode inputs) represent timecode generators used by the panels. Timecode generators can be connected to timecode recorders for recording onto disk or to timecode outputs.
- Timecode outputs (top-right corner) represent either LTC output connectors on the back panel, or VITC output signals. Timecode outputs can be connected to timecode recorders for playback of recorded material from disk, to timecode inputs, or to timecode generators.

1. Select **Window | Timecode Crosspoint** to open the Timecode Crosspoint dialog box. The green boxes indicate the current connections. For example, a green box at the intersection of **TCRec#1** and **GenlockVITC-InA-J16** indicates the timecode signal from the back panel input is recorded by timecode recorder #1.

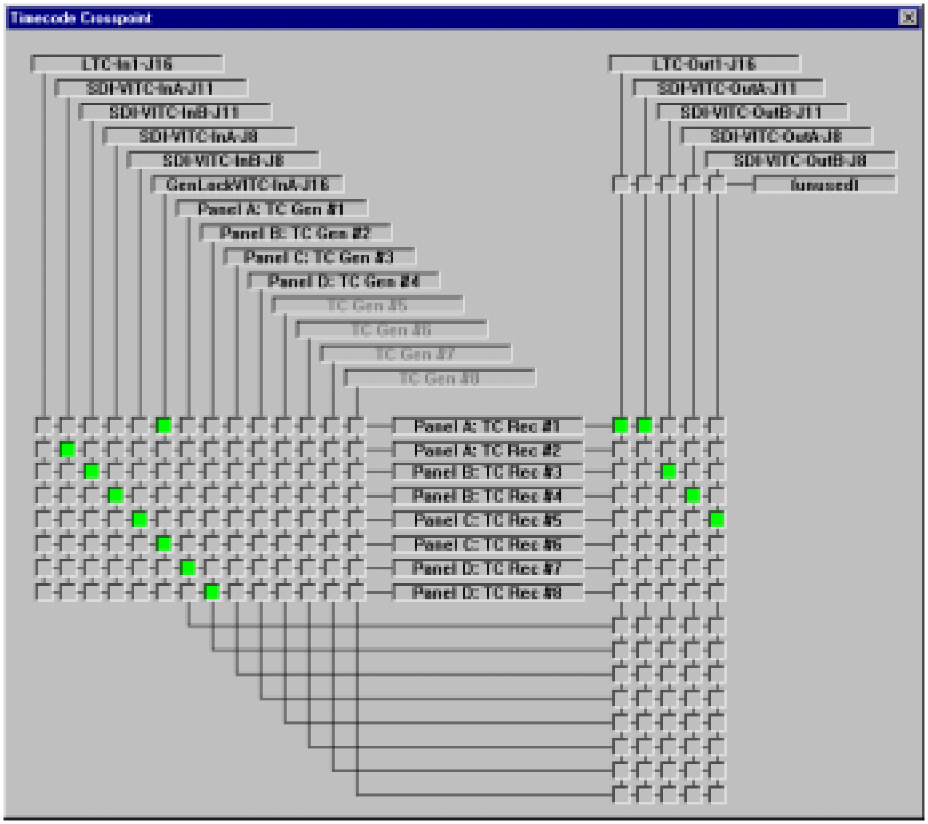


Figure 83. Timecode Crosspoint dialog box

2. To assign a crosspoint, click in the intersection between the signal and the recorder channel. The selections turn green.

   NOTE: A timecode recorder must be used by a panel to be available as a timecode output.

3. Click the **Close** button.

   NOTE: To release a timecode output for use by another application, click the box at the intersection of the output with the* unused *box.

Setting Drop-Frame Timecode

In NTSC and 525/60, you don't actually get 30 frames per second; the real number is about 29.97 fps. Timecode usually assumes 30 fps. To account for the discrepancy, drop-frame timecode skips or drops two timecode values at the beginning of every minute except every tenth minute. This allows timecode to exactly match a real-time clock on 525/60 systems. This correction is not needed on PAL or 625/50 systems because the frame rate is exactly 50 fps.

To set drop-frame timecode:

- Choose **Options | Drop-Frame** or **Options | Non-Drop-Frame**.

  NOTE: This setting applies to all open panels (channels).

Panel Basics

In the VdrPanel application, you can display up to eight Panel dialog boxes at a time, one for each video channel. Each Panel dialog box has independent controls. A close-up view of a Panel dialog box is shown in Figure 84. A description of each Panel function follows.

> ***NOTE: If the panels are stacked, choose*** **Window | Tile Panels.**

The VdrPanel interface follows the same conventions as other Windows NT applications: the control menu box, title bar, menu bar, minimize and maximize buttons, mouse and keyboard all perform as expected. Refer to specific operating information about these items in the Windows NT manuals.

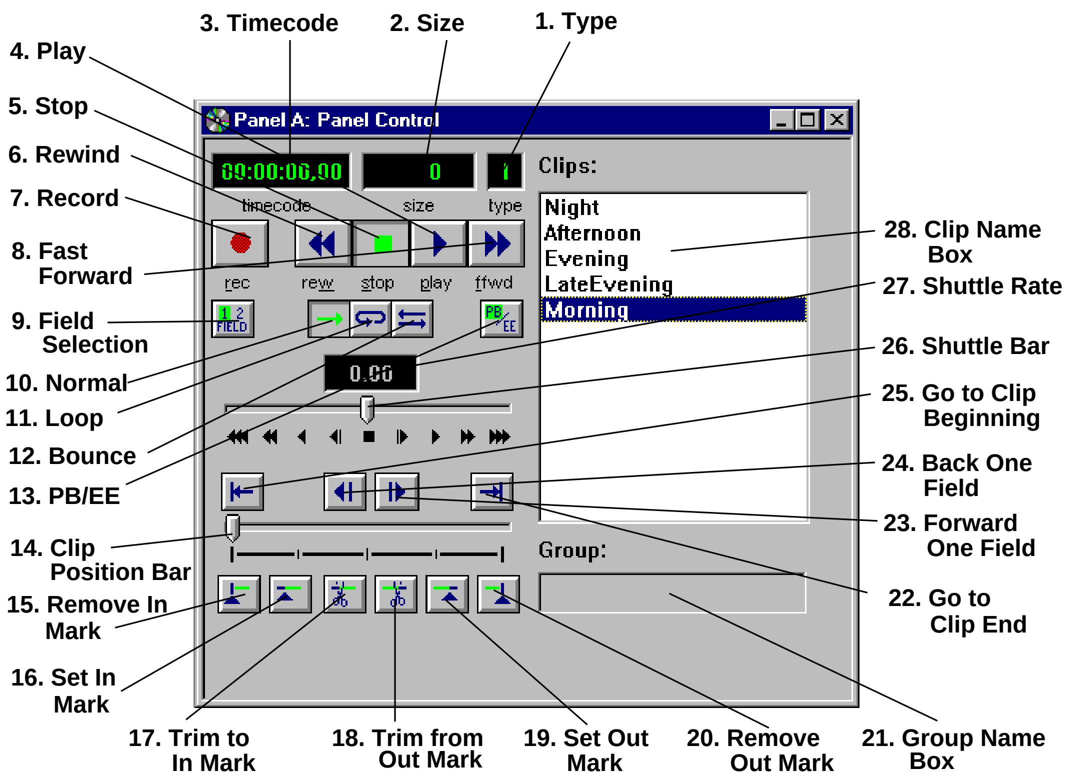


Figure 84. Panel dialog box

1. The **Type** box shows the type of pictures: **I** for I-frame, **B** for Bidirectional, and **P** for Predictive. **B** and **P** apply only to MPEG pictures. An I-frame picture or Intra-picture is analogous in JPEG and MPEG and so applies to both.
2. The **Size** box shows the number of bytes stored for the current field. The more detailed the picture, the higher the number of bytes. Target compression rate is set in the Edit Presets dialog box accessed from **Controller | Configure.** See “Configuring a Controller” on page 144.
3. The **Timecode** box is the current timecode of the selected clip. To configure timecode, refer to “Setting Timecode” on page 155. For example, when you use slow motion replays from several camera angles, the timecode can free run or freeze. Clicking on the **Timecode** box moves a clip to a specific timecode. If there is no recorded timecode, VdrPanel displays a timecode calculated from the current position (00:00:00:00 or above).
4. The **Play** button runs the selected clip at normal speed. If there are multiple clips in the clip list, **Play** starts with the first selected clip and proceeds through the list. **Normal**, **Loop**, and **Bounce** modes determine how the clip or clip list is played.
5. The **Stop** button halts the current **Play**, shuttle, or **Record** function.
6. The **Rewind** button shuttles the clip backwards to the beginning (the first available field or in mark) of the selected clip. Use **Go To Clip Beginning** or enter a timecode value in the **Timecode** box to move directly to the beginning without shuttling.
7. **The Record** button starts storing the incoming video as JPEG or MPEG streams and audio under the selected clip name. If no clip is selected, a default clip name (pound sign [#] followed by a number) is assigned. (See “Defining a New Clip” on page 168.) The record process continues until the disk decoder runs out of storage space or you click another command button, such as **Stop**. Recording does not start unless there is a video signal assigned to the selected panel and there is disk storage available.
8. The **Fast Forward** button shuttles the clip forward to the end. Use **Go to Clip End** or enter a value in the Timecode box to move directly to the end of the clip without shuttling.
9. The **Field Selection** button selects a one-field or two-field display during still mode. One-field display eliminates temporal artifacts, while two-field display provides the best vertical resolution.

10. The **Normal** normal plays the selected clip or clip list to the end, freezing on the last field of the clip or of the last clip in the list.
11. The **Loop** button plays the selected clip or clip list continuously, looping back to the beginning of the clip when the clip ends, or in the case of a clip list, looping back to the first clip in the list when the last clip ends. If you create a clip while in **Loop** mode, you are asked to enter a clip length in the form 00:00:00:00 (Hours:Minutes:Seconds:Frames). The **Record** operation will automatically stop at the specified timecode, thus protecting disk storage space.
12. The **Bounce** button plays the selected clip or clip list continuously, until at the end of the clip, it plays the clip in reverse, or in the case of a clip list, it plays to the end of the clip list, then reverses the sequence, playing all the clips in reverse order. If you create a clip while in **Bounce** mode, you are asked to enter a clip length in the form 00:00:00:00 (Hours:Minutes:Seconds:Frames). The **Record** operation will automatically stop at the specified timecode, thus protecting disk storage space.
13. The **PB/EE (Playback/E to E)** button determines the action during **Stop** or **Record**. If you select **Playback**, the recorded image is displayed as a still during **Stop**, and audio is silenced. If **E to E** is selected, the input signal is routed through to the display during **Stop** or **Record**.
14. The **Clip Position Bar** displays the relative position of the current frame within the current clip. For example, if the **Clip Position Bar** is to the far left, the frame is at the beginning of the clip; if it is at the far right, the frame is at the end.
15. The **Remove In Mark** button removes the in mark and restores the clip to its first available field.
16. The **Set In Mark** button sets the in mark for the current clip at the current timecode. When the clip is played, it starts at the in mark instead of the clip beginning; however, the portion before the in mark is not lost. Use **Remove In Mark** to remove the in mark. The in mark only affects this instance of the clip. If the clip repeats in the clip list or is used by another panel, this in mark is not automatically present.
17. The **Trim to In Mark** button removes the portion of the current clip preceding the in mark. This action affects all copies of this clip on all panels. The trimmed material is not retrievable. A warning message and verification prompt are displayed before the material is trimmed.

18. The **Trim from Out Mark** button removes the portion of the current clip following the out mark. This action affects all copies of this clip on all panels. The trimmed material is not retrievable. A warning message and verification prompt are displayed before the material is trimmed.
19. The **Set Out Mark** button sets an out mark for the current clip at the current timecode. When the clip is played, it ends at the out mark; however, the portion after the out mark is not lost. Use **Remove Out Mark** to remove out mark. An out mark only affects this instance of the clip. If the clip repeats in the clip list or is used by another panel, the out mark is not automatically present.
20. The **Remove Out Mark** button removes the out mark and restores the clip to its last available field.
21. The **Group Name** box lists the name of the current clip list.
22. The **Go to Clip End** button jumps to the end of the current clip.
23. The **Forward One Field** button moves the current clip position forward one field.
24. The **Back One Field** button moves the current clip position backward one field.
25. The **Go to Clip Beginning** button jumps to the beginning of the current clip.
26. The **Shuttle Bar** sets the **Shuttle Rate**. Use the mouse to drag the pointer to the desired **Shuttle Rate** (displayed in the **Shuttle Rate** box). When you click on the shuttle bar, the disk recorder enters shuttle mode.
27. The **Shuttle Rate** box displays the current shuttle rate. This number ranges from –16.00 to +16.00, with the positive numbers indicating forward motion, negative numbers reverse, and 0.00 still. This number can be set by clicking on the **Shuttle Rate** to open the Shuttle Rate dialog box, or by dragging the **Shuttle Bar** to the desired position. If **Shuttle Rate** is set faster than the maximum rate for the controller, the maximum rate is displayed.
28. The **Clip Name** box lists the names of the clips in the current clip list.

The functions on the Panel dialog box can be accessed directly by clicking on the appropriate button with the mouse or by using the shortcut keys shown in Table 9. For example, pressing **Shift + R** starts recording in the active panel.

Table 9. VdrPanel shortcut keys

Shortcut Key	Function	Shortcut Key	Function
Shift + R	Record	**Ctrl** + →	Forward 100 Fields
w	Rewind	**Ctrl** + ←	Back 100 Fields
s	Stop	**j** or ↓	Jog controls
p or ↑	Play	**e**	Go to Clip End
f	Fast Forward	**h**	Shuttle controls
spacebar	Stop	**t**	Go to Clip Beginning
Ctrl + A thru **H**	Activate panel **A** thru **H**	**i**	Set Mark In
→	Forward 1 Field	**o**	Set Mark Out (not zero)
←	Back 1 Field	**c**	Trim to Mark In
Shift + →	Forward 10 Fields	**u**	Trim to Mark Out
Shift + ←	Back 10 Fields	**F1**	Start Help

Opening a Panel

If none of the panels are visible, here are the steps to open a panel:

1. Choose **Window | Open Panel**. The Open a Panel dialog box appears (Figure 85).

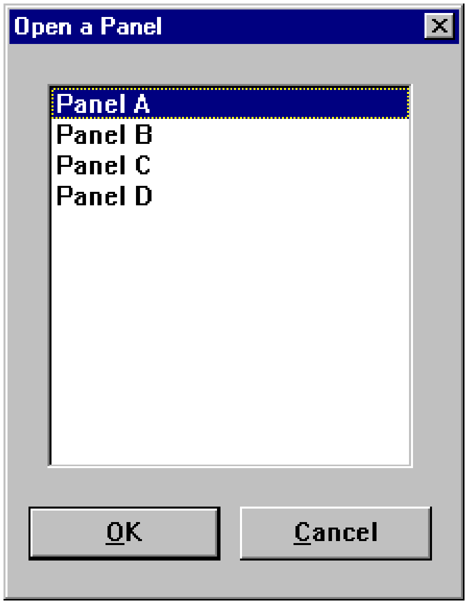


Figure 85. Open Panel dialog box

2. Select the panel you want to display, Panel A through D. Only panels that are not currently open appear in the dialog box.
3. Click **OK**.

Making a Panel Active

To make a panel active, such as Panel A, do either of the following:

- Click anywhere inside Panel A, if open.

Or:

- Choose **Window | 1 Panel A: Panel Control**.

Arranging Panels and Icons

If a panel is obscured by another panel, you can arrange the panels so that they are all completely visible. To arrange the panels in this way:

- Choose **Window | Tile Panels**.

If you have minimized the panels, you can arrange the icons with:

- Choose **Window | Arrange Icons**.

Viewing Record Capacity

The Record Capacity dialog box shows the amount of recording time remaining on the current media disk volume according to the current compression presets. To view the recording capacity:

1. Click a panel to make it active.
2. Choose **Window | Record Capacity**. A message box appears (Figure 86). In this instance, the message box shows the internal disks labeled *INT:*. The recording time remaining is represented in *Hours:Minutes:Seconds*. For more information on compression presets, see “Setting Compression Presets” on page 146.

Figure 86. Message box showing record capacity

3. Click **Close**.

Viewing an Audio Monitor for a Panel

The Audio Monitor allows you to monitor the level of an audio signal for a panel. To view a panel's audio monitor:

1. Click a panel to make it active.
2. Choose **Window | Audio Monitor**. The Audio dialog box appears, as shown in Figure 87. There are only two channels in this example, but up to 32 channels are possible if the necessary boards are installed.

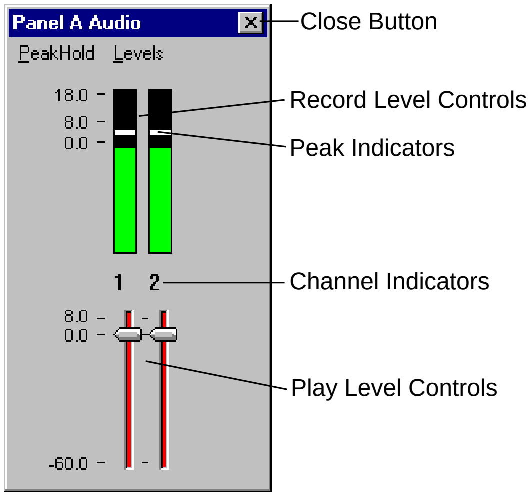


Figure 87. Audio Monitor dialog box

3. To turn peak hold on or off, choose **PeakHold | On** or **PeakHold | Off**. By default, peak hold is on. The peak indicators, the white bars in record level controls, indicates the audio peak you are currently recording.
4. To show the record level controls, choose **Levels | Show Record Level Controls**. To show play level controls, choose **Levels | Show Play Level Controls**. To hide the level controls, choose **Levels | Hide Level Controls**.
5. To work the record and play level controls independently, choose **Levels | Independent Controls**. To gang the controls, choose **Levels | Ganged Controls**.
6. Click **Close** ( ).

Using Clips

With VdrPanel, you can define, rename and delete a clip. You can load an existing clip or group of clips.

Defining a New Clip

There are two methods for defining clips:

- You can create and name an empty clip, then record to it (Name Clip First).
- You can start recording with an empty clip list, then rename the recorded clip to a meaningful name (Record Clip First).

Either method creates and stores a named clip. Use whichever method is most convenient for you. You can choose **VideoClip | Rename Clip** at any time to change a clip name.

Name Clips First

To define a clip by first naming the clip:

1. Click in a panel to select it.
2. Select **VideoClip | New Clip** to open the New Clip dialog box (Figure 88).
3. Select a drive from the **Drive** list. The number of drives available depends on your hardware.
4. Enter a clip name, up to 32 characters long. Spaces and uppercase characters are acceptable; however, uppercase and lowercase characters will not distinguish clip names.
5. Click **OK**. The new clip is added to the clip list for the selected channel.
6. If the **Loop** or **Bounce** buttons are pressed in the panel, a dialog appears asking you to specify the loop or bounce duration in the form *00:00:00:00.*
7. Click the **Record** button (in the selected Panel dialog box) to begin recording. The timecode and compression rate fields are updated.

   NOTE: A video input signal must be present on the selected channel for recording to start.

8. Click **Stop** to stop recording.

Figure 88. New Clip dialog box

Record Clips First

To define a clip by recording and then naming the clip:

1. Click a panel to select it.
2. If any clips are listed in the **Clips** box, choose **VideoClip | Eject All Clips** to clear the clip list.
3. Click the **Record** button in the selected Panel dialog box to begin recording. A clip named **#1** (or other number for a unique clip name) appears in the clip list for the panel.
4. If you are in **Loop** or **Bounce** mode, the clip is limited in size to either 1,000 fields or to the last clip length specified in the Loop/Bounce Length dialog box.
5. Click **Stop** to stop recording.

   If you repeat these steps to record additional clips, they are named sequentially—one higher than the previous clip. For example, **#2**, **#3**, and so forth.
6. Choose **VideoClip | Rename Clip** to open the Rename Video Clip dialog box (see “Renaming a Clip” on page 173).
7. Click on the clip to be renamed (such as **#1**).
8. Enter the new name in the **To** field. Spaces and uppercase characters are acceptable; however, uppercase and lowercase characters will not distiguish clip names.
9. Click **OK**.

Loading and Playing a Clip

To load and play a clip:

1. Click in a panel to select it.
2. If the clip is already loaded, select it from the Clips box and go to step 7.
3. If the clip is not loaded, choose **VideoClip | Load Clip** to open the Load Clip dialog box.
4. If the clip you want to load is on a different drive, select a different disk drive in the **Drive** box.
5. Select the clip to load—*Richter* in this example (see Figure 89).
6. Click **OK**.
7. Click the **Play** button in the selected Panel dialog box to begin playing the clip.
8. The **Normal**, **Loop**, and **Bounce** modes determine how play back occurs:
   - **Normal** mode plays the selected clip or clip list to the end, freezing on the last field of the clip or of the last clip in the list.
   - **Loop** plays the selected clip or clip list continuously, looping back to the beginning of the clip when the clip ends, or in the case of a clip list, looping back to the first clip in the list when the last clip ends.
   - **Bounce** mode plays the selected clip or clip list continuously, until at the end of the clip, it plays the clip in reverse, or in the case of a clip list, it plays to the end of the clip list, then reverses the sequence, playing all the clips in reverse order.

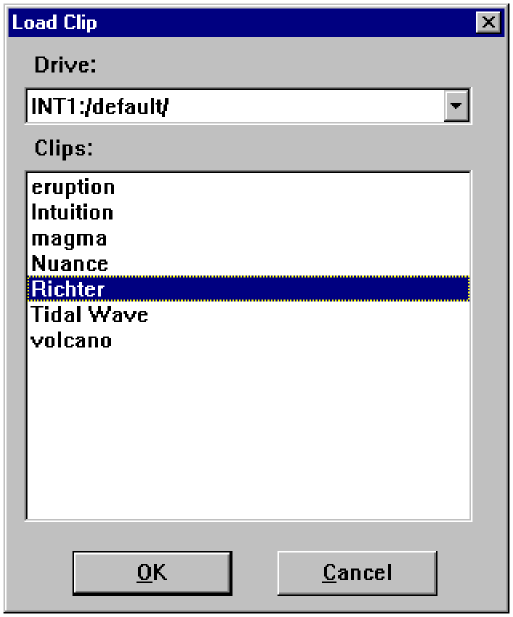


Figure 89. Load Clip dialog box

Renaming a Clip

To rename a clip:

1. Choose **VideoClip | Rename Clip**. The Rename Video Clip dialog box appears.

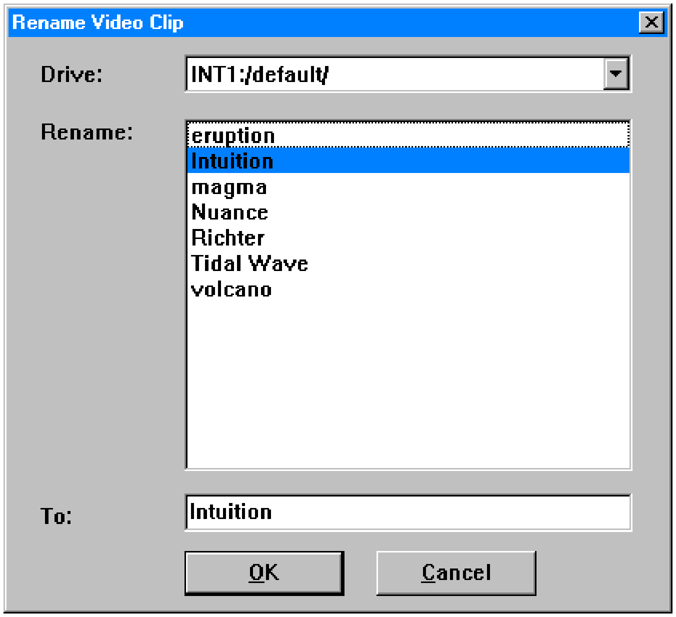


Figure 90. Rename Video Clip dialog box

2. If the clip you want to rename is in a different list, select it from the Drive box.
3. Select a clip from the Rename box. The clip name appears in the To box.
4. Edit the current name or delete the name and enter a new one. Clip names can have up to 32 characters. Spaces and uppercase characters are acceptable; however, uppercase and lowercase characters will not distiguish clip names.
5. Click **OK**.

Setting Clip Protection

To set clip read-only protection:

1. Choose **VideoClip | Set Clip Protection** and the Set Clip Protection dialog box appears.

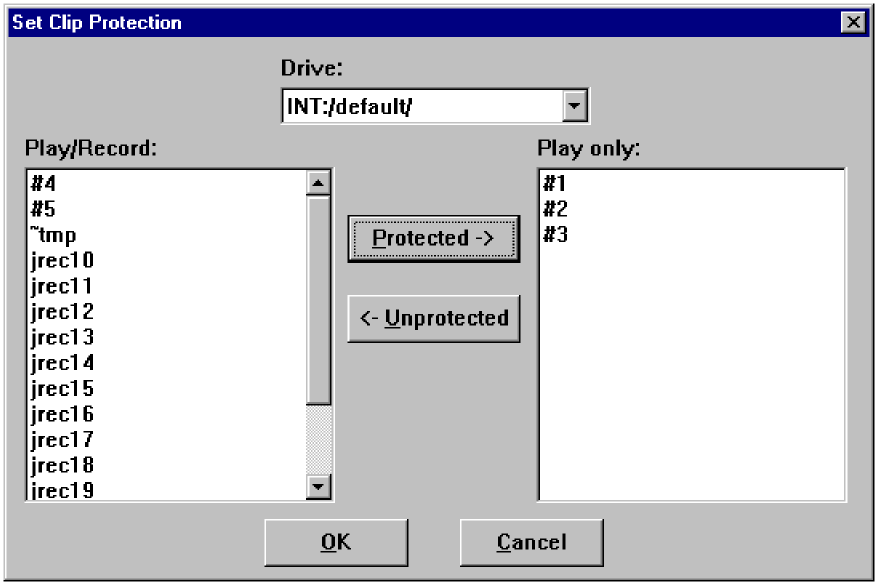


Figure 91. Set Clip Protection dialog box

2. If the clip you want to protect is in a different list, select it from the Drive box.
3. To protect a clip, select a clip in the Play/Record box and then click **Protected**. The clip is now protected as read-only.
4. To unprotect or unlock a clip, select a clip in the Read Only box and then click **Unprotected**. The clip is no longer protected.
5. Click **OK**.

Striping a Clip

Striping timecode with VdrPanel allows you to complete a striping process faster than real time. For example, on a traditional VTR, it might take you an hour to stripe a one-hour clip. But with VdrPanel, you can stripe a one-hour clip in a matter of minutes.

To stripe timecode on a previously recorded clip:

1. Choose **VideoClip | Stripe Clip** and the Stripe Timecode dialog box appears.

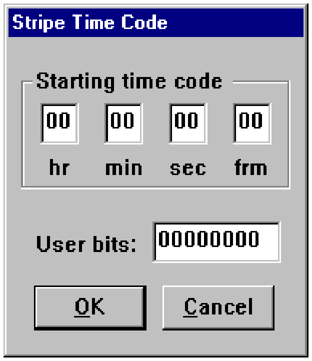


Figure 92. Stripe Timecode dialog box

2. Enter the timecode you want to start the clip with, in the form *00:00:00:00*.
3. Enter up to eight digits to mark the clip with user bits.
4. Click **OK** when complete.

Setting Long or Short Clip Names

Long clip names display the full path name of the clip, for example, *INT1:\default\clipname*. Short clip names display only the clip name. Clip names are shown in Clip Name box in a **Panel**.

To set the clip name to short or long clip name:

- Choose **Options | Display Short Name** or **Options | Display Long Name**.

  NOTE: This setting only applies to the current panel. Each panel can have a different setting for clip name length.

Ejecting All Clips

To eject all clips:

1. Choose **VideoClip | Eject All Clips**.
2. All clips in the **Clips** box in the **Panel** are ejected immediately.

Deleting a Clip

To delete a clip:

1. Choose **VideoClip | Delete Clip** to open the Delete Clip dialog box.

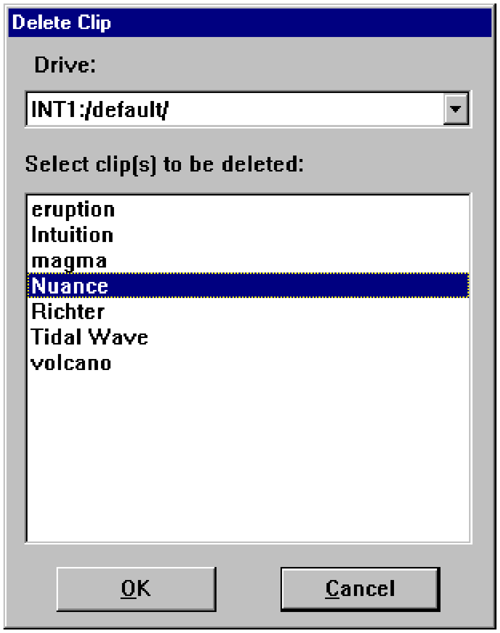


Figure 93. Delete Clip dialog box

2. If the clip you want to delete is on a different drive, select it in the **Drive** box.
3. Select the clip or clips you want to delete.
4. Click **OK** when complete. A message box appears telling you which file is being deleted.

Clip Lists

You can save and organize clips into lists (also called groups). You can load a saved group of clips. You can also save an existing group of clips under a different name. You can also create and later edit a list of clips.

Saving a Group of Clips in a Clip List

A clip list can be saved and loaded later. To save a clip list as a group:

1. Click within the specific Panel dialog box to select the panel where the clip list is currently displayed.
2. Choose **File | Save Group of Clips** and the current list of clips, as shown in the **Clips** box, is saved in the current group (*.grp*). If the clips have not been saved in a group previously, the Save Group of Clips dialog box appears.

Figure 94. Save Group of Clips dialog box

3. If you have not already saved the group, choose **File | Save Group of Clips As.** The **Save As** command enables you assign a different name to an already named group of clips, preserving the contents of the original group. The saved group can be loaded at any time with **VideoClip | Load Group**.

Playing a Clip List

To play a list of clips:

1. Click within the specific Panel dialog box to select the panel.
2. Choose **VideoClip | Load Group** if the clip list you want to play is not currently loaded.

Figure 95. Load Group of Clips dialog box

3. Select the group and click **OK**. In this example, the group is *Seismic.grp*.
4. Click on the first clip in the clip list.
5. Click **Play** to start playing the clip list.

Editing a Clip List

To edit a clip list (group of clips):

1. Click a panel to select it.
2. Choose **Video Clip | Load Group** if the clip list to be edited was previously saved as a group. Select the group and click **OK.**
3. Choose **VideoClip | Edit Clip List** to open the Edit Clip List dialog box.

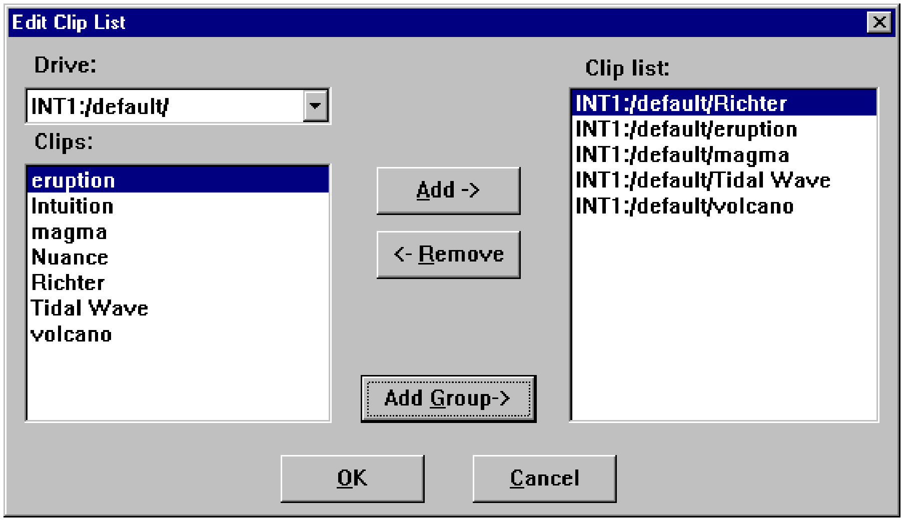


Figure 96. Edit Clip List dialog box

4. To add a clip to the current list loaded in step 1, select a clip in the Clips box and then click **Add**. It is added to the Clip List box (with a long clip name).
5. To remove a clip from the current list, select a clip from the **Clip List** box, and click **Remove** to remove the clip from the list. This does not delete the clip from disk—it simply removes a reference from the clip list.
6. To edit a different group, click **Add Group** to bring up the Load Group of Clips dialog box.
7. Click **OK** when complete.

Setting In and Out Marks in Clips

You can set a temporary beginning and ending to a clip by marking an in point, an out point or both. The video and audio data is not lost, however: it simply is not used when the clip is played. For example, if you set a mark-in point five seconds into a clip, it plays at the five second mark instead of at the beginning, but if you remove a mark-in, it returns the beginning of the clip to the actual clip start.

NOTE: Setting in and out marks applies to Panel Control only. It is* not *recommended for other protocols.

Setting Marks

To set a new in mark and out mark in a clip:

1. Click a panel to select it.
2. Create a clip, load a clip, or load a clip list and then select a clip from the list. The **Clip Position Bar** is all the way to the left and the **Timecode** is 00:00:00:00.
3. Use the transport controls, drag the **Clip Position Bar**, or click on the **Timecode** display to enter a timecode to locate the frame where you want to set the in mark.
4. Click **Set In Mark**. The **Timecode** display remains the same, but the **Clip Position Bar** jumps to the far left, indicating the mark-in point on the clip.
5. Use the transport controls, drag the **Clip Position Bar**, or click on the **Timecode** display to enter a timecode to locate the frame where you want to set the out mark.
6. Click **Set Out Mark**. The **Timecode** display remains the same, but the **Clip Position Bar** jumps to the far right, indicating the mark-out point of the clip.
7. Drag the **Clip Position Bar** to the beginning of the clip.
8. Click **Play**. The clip starts at the in mark and stops at the out mark.

Removing Marks

To remove in and out marks from a clip:

1. Select a clip containing marks.
2. Click **Remove In Mark** to remove a mark-in point and reset the clip beginning to the actual start of the clip.
3. Click **Remove Out Mark** to remove the mark-out point and reset the clip ending to the actual end of the clip.

Setting Field Dominance for Marks

You can set field dominance so that a clip's mark-in and mark-out points occur at field 1 or field 2 of a given frame. By default, the field dominance is set so that either field 1 or field 2 can be a mark-in or mark-out point. To change field dominance:

1. Choose **Options | Field Dominance**. The Field Dominance dialog box appears (Figure 97).

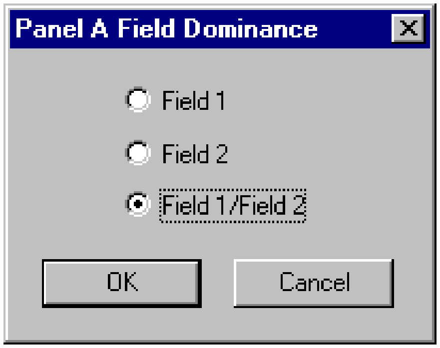


Figure 97. Field Dominance dialog box

2. Click **Field 1** or **Field 2**.
3. Click **OK**. The change takes effect immediately.

NOTE: Field dominance applies to JPEG only and the latest field dominance setting applies to all open panels.

Chapter 5

Using the Profile Disk Utility

The Profile Disk Utility allows you to create new file systems on a Profile disk set (volume), format disks, set a new disk label, load the latest microcode from the disk manufacturer, or browse through the SCSI log. A Profile volume may consist of the internal disks in a PDR 100 or PDR 200, or it may be the external disks in a PDX 103 Disk Expansion Unit, PDX 208 Disk Expansion Unit, or a PRS 200 RAID Storage System.

After starting the application, the Profile Disk Utility window appears. Most of the disk utility functions can be performed from this dialog box, as shown in Figure 98.

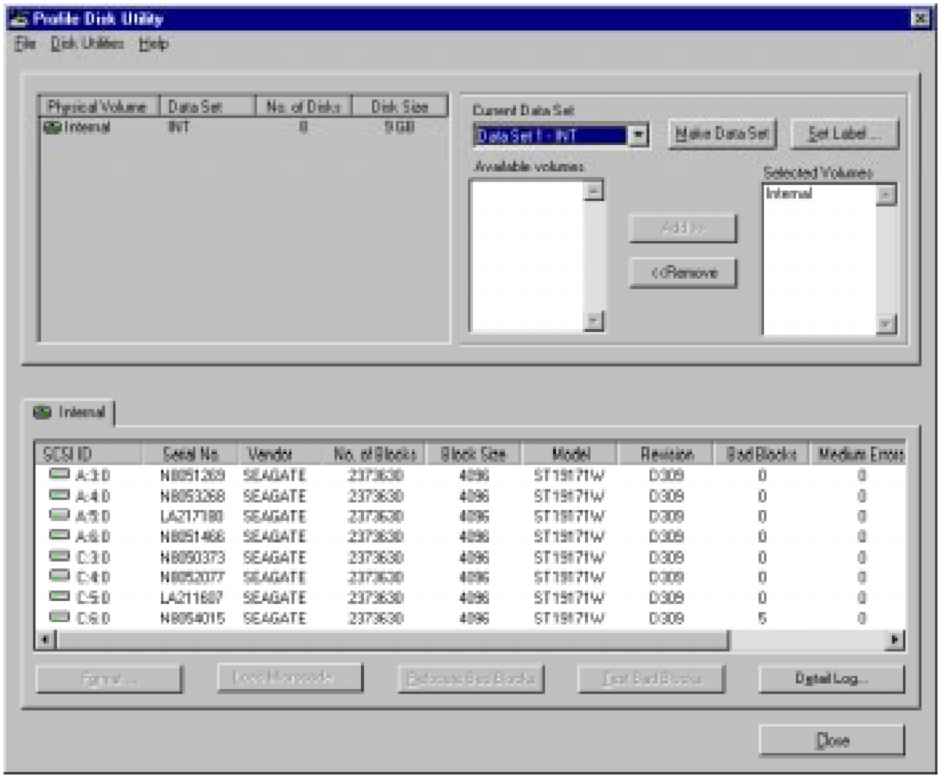


Figure 98. Profile Disk Utility window

NOTE: If you use the PDX103 Disk Expansion Unit with a PDR200, the 9 gigabyte hard drives in the PDR200 are limited to the storage size of the 4 gigabyte hard drives in the PDX103.

Creating a File System

A file system is created for all media disks before a Profile disk recorder is shipped from the factory. You can set up a file system any time you need to build or rebuild your system.

NOTE: If you are upgrading a PDR100 to version 2.1 of system software from version 1.4.XX or earlier, you must rebuild your file system.

Information on the disks is shown in the upper-left panel of the Profile Disk Utility window—information such as physical volumes, data sets, number of disks, and disk size. Additional information is shown in the lower pane: SCSI IDs of each disk, serial numbers, vendor names, number of blocks, block sizes, model numbers, revision numbers, bad blocks, medium errors, read errors, and write errors.

A *volume* consists of a set of physical disks, such as an array of eight internal disks in a Profile disk recorder or in a PDX 208 Disk Expansion Chassis. A *data set* is a group of disks that can consist of one or more volumes. The data set name is the name that appears in VdrPanel. Media is striped across all disks in the data set.

To create a file system:

1. Select a data set from the **Current Data Set** box. For example, *Data Set 1 - int*.
2. Select the volumes to be included in the data set from the **Available Volumes** list and click **Add**. To remove volumes from the data set, select volumes from the **Selected Volumes** list and click **Remove.**
3. Choose **File | Make Data Set** or click **Make Data Set**.

Setting a Disk Label

To set a disk label:

1. Choose **File | Set Label** or click **Set Label**. The Set Label dialog box appears.

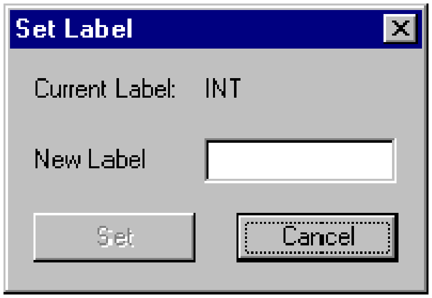


Figure 99. Set Label dialog box

2. Enter the new label name in the **New Label** box.The label name can have up to seven characters.
3. Click **Set** when complete.

Formatting a Disk Volume

Formatting disks organizes them so the Profile system can write data to and read data from them in an orderly way. All media disks come preformatted from the factory.

>>> ***WARNING: Formatting disks removes* all *media and other data from the disks. Format disks only when absolutely necessary.***

To format a disk:

1. Select the desired physical volume with the tab in the lower pane.
2. Select the desired disks.
3. Choose **Disk Utilities | Format Disk(s)** or click **Format**. The Format Disk(s) dialog box appears. If disks are non-Seagate, you can select a block size. The estimated time remaining to format the disk or disks is displayed.
4. Click **Format** on the dialog box to continue formatting the disks.

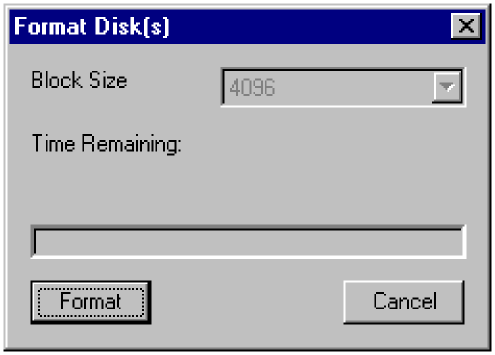


Figure 100. Format Disk(s) dialog box

Loading Microcode

To load microcode for your hard disks:

1. In the lower pane, select the drive or drives where you want to load microcode.
2. Choose **Disk Utilities | Load Microcode** or click the **Load Microcode** button to open this dialog box.

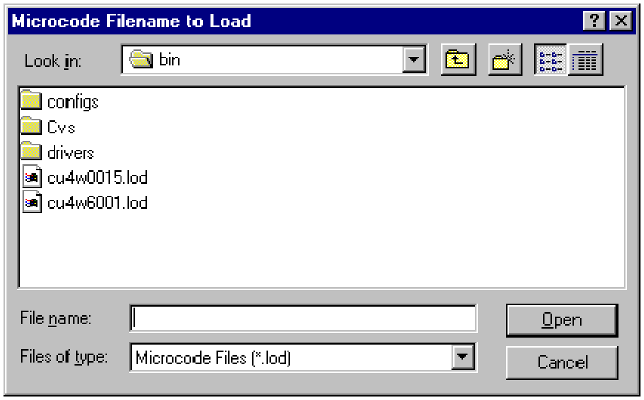


Figure 101. Microcode Filename to Load dialog box

3. Double-click on a filename or enter the name of the microcode (.*lod*) file in the Filename box and click **Open** to load the microcode (see Table 10).

NOTE: Before loading microcode, check what make of drive you have in the Vendor field of the lower pane in the Disk Utility window.

Table 10. Microcode update files

File Name	Disk Type
cu4w6001.lod	Seagate 4-gigabyte disk drives
cu9w6004.lod	Seagate 9-gigabyte drives
c9lp5724.lod	Seagate low profile 9-gigabyte drives
ibm9G_51.lod	IBM 9-gigabyte drives

Relocating and Testing Bad Blocks

The reason why bad block errors are reported is usually not because the physical block (cluster) is damaged. Often the reason is because when the system attempts to read a media file and for any reason it cannot read a block, it does not retry but simply repeats the last field and moves on to the next block.

NOTE: The following tests are nondestructive.

Testing bad blocks determines whether a bad block error is really a physical problem with the disk or just a nonrepeatable read error that can be ignored. If the error is nonrepeatable, the block may be removed from the bad blocks list. Otherwise, the block will be reallocated.

To test bad blocks:

- Choose **Disk Utilities | Test Bad Blocks** or click **Test Bad Blocks**.

To relocate bad blocks:

- Choose **Disk Utilities | Relocate Bad Blocks** or click **Relocate Bad Blocks**.

  NOTE: You must read the detail log (SCSI log) to view the results of these tests. See "The Detail Log" on 189.

The Detail Log

The detail log (*scsi.log*) records the history of everything that happens on a disk and helps you track problems with disks. For example, when you relocate or test bad blocks, you must read the detail log to see the results.

To open and read the detail log:

1. Choose **Disk Utilities | Detail Log** or click **Detail Log**. The Detail Log dialog box appears.
2. Click **Close** when done checking the log information.

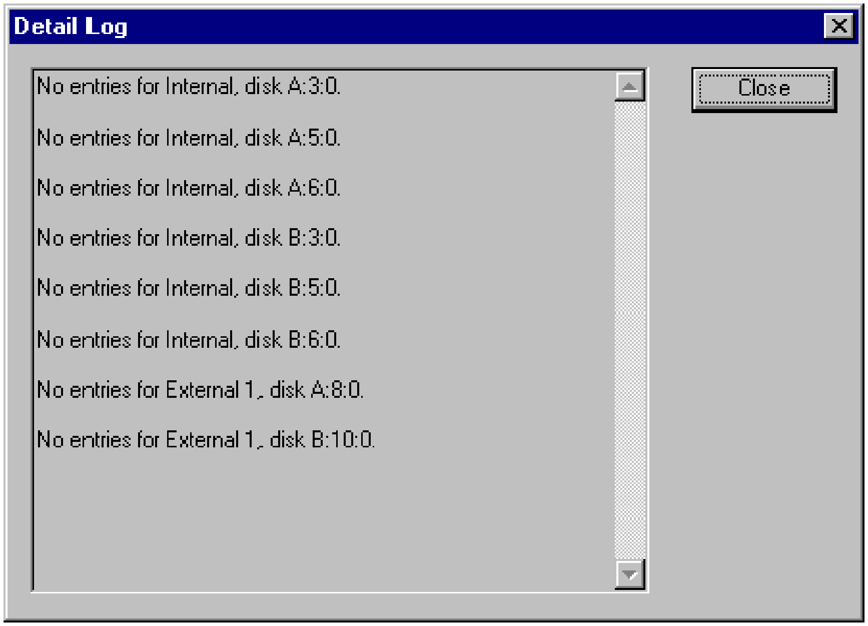


Figure 102. Detail Log dialog box

NOTE:* Scsi.log *is a binary file; you cannot view it with WinTail. See "Viewing Profile Logs" on 191 for information about viewing other Profile logs.

Chapter **6**

Using Profile Utilities

This chapter shows you how to read Profile logs with WinTail, monitor an RS-422 port with ProLink, access a Profile system from a remote PC with PortServer, and how to manually stop and start the PDR Access Control service.

Viewing Profile Logs

You can view Profile system logs with the graphical log viewer WinTail. This log viewer allows you to see the end of a log file. To view any of the Profile system log files:

1. Double-click on the Profile Log shortcut icon on the Windows NT desktop or choose **Start | PDR Applications | Profile Log**. By default, the WinTail application views *profile.log*. WinTail automatically checks log files for updates every two seconds.

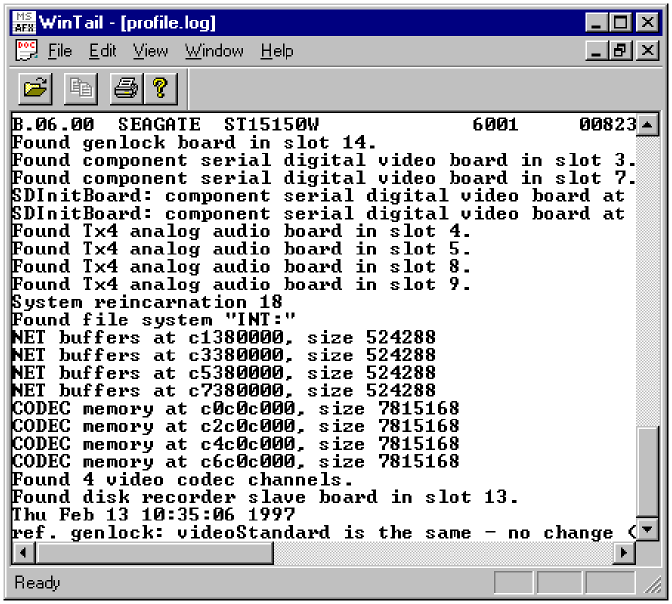


Figure 103. WinTail window

2. To view other logs, choose **File | Open**.

   ***NOTE: Because it is a binary file, you cannot view* scsi.log *with WinTail. See "The Detail Log" on page 189 for instructions on how to view* scsi.log.**

You can view three sets of logs:

1. The PDR Access Control service records messages from the real-time processor into *profile.log*. As installed, the WinTail application reads this log file by default.
2. VdrPanel logs all RS-422 protocol messages for supported third-party protocols. Logging occurs to files *VdrPanel[ABCD].000* and *VdrPanel[ABCD].001* in the directory where VdrPanel is run. Logging has a timing resolution of 10 msec. Use a dedicated RS-422 logger for better resolution and accuracy.

   Logging for each panel may be turned off by setting the value **MsgLogger** to **0** in these registry keys with the Windows NT registry editor **regedit**:

```
HKEY_LOCAL_MACHINE
  /SYSTEM
    /CurrentControlSet
      /Services
       /VtrService
          /Chan[ABCD]
```

   NOTE: Logger does not log duplicate replies for* BVW, BVW [insert edit] and Odetics *for 61.0c CurrentTimeSense for Timer1, LTC, and VITC, and 61.0c StatusSense, nor for Louth for 30.05 PortStatusRequest and 30.10 SystemStatusRequest.

3. VdrPort logs record all messages passed between Windows NT and the real time processor. The following information is logged:
   - Direction:

     > indicates NT-to-video-processor
     < indicates video-processor-to-NT
   - VDR port number (0–3)
   - Tick count (msec since Windows NT booted)
   - Message

The start of the VdrPort log file contains the date and time (*year/month/day hours:min:sec.msec*), and the equivalent tick count. Events are logged to two files: *VdrPortLog.000* and *VdrPortLog.001*.

ProLink

ProLink monitors Profile Protocol calls over RS-422 communication lines, allowing you to use a device such as the PRC100 Control Panel or other third-party device to communicate with a Profile system. The PRC100 is a discrete control panel that provides conventional VTR-type control of Profile systems. Simply double-click the ProLink shortcut icon on the desktop to start it (or choose **Start | PDR Applications | ProLink**), then select the port that your device is connected to (P1 through P8).

PortServer

PortSever allows you to control a Profile unit remotely using Ethernet communications. For example, you can run PortServer on a remote Profile system so that you can access it from a local Profile using your LAN. Simply double-click the PortServer shortcut icon on the desktop to start it (or choose **Start | PDR Applications | PortServer**). The PortServer interface is shown in Figure 104.

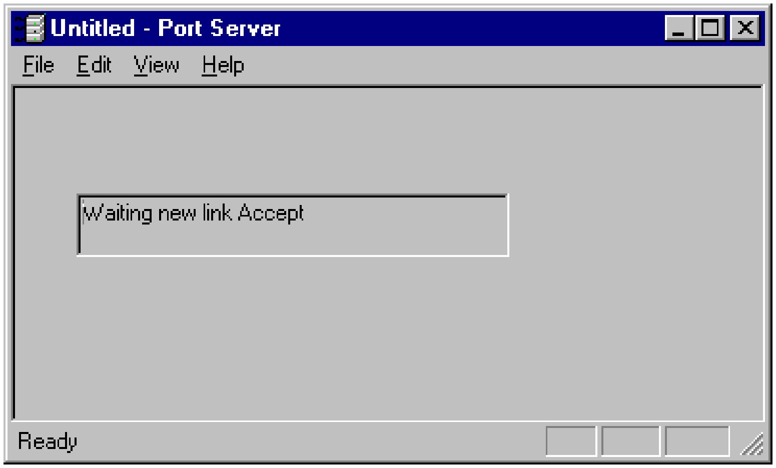


Figure 104. PortServer window

PDR Access Control

PDR Access Control is a Windows NT service that prevents one application from crashing another user's application by mistake. Though largely transparent to users, the service prevents applications from accidentally reloading the video processor while in use, essentially providing a controlled gateway to the processor. Applications attempting to load different video processor code than what is currently running are denied access and terminated; however, applications attempting to load the same code are given access to proceed.

The *c:\profile\profile.log* file tracks all messages from the video processor. The state of the video processor is periodically checked. If the processor does not respond, an administrator alert is generated. The event is logged to the Windows NT Event log. The Event log can be viewed with the Event Viewer application.

PDR Access Control is automatically installed and started as part of the installation process and is restarted every time the system is rebooted. This procedure is provided in the unlikely event that you need to start the service manually.

1. Log in as *administrator.*
2. Double-click **My Computer** on the desktop.
3. Double-click the **Control Panel** icon.
4. Double-click the **Services** icon. The Services dialog box appears (Figure 105).

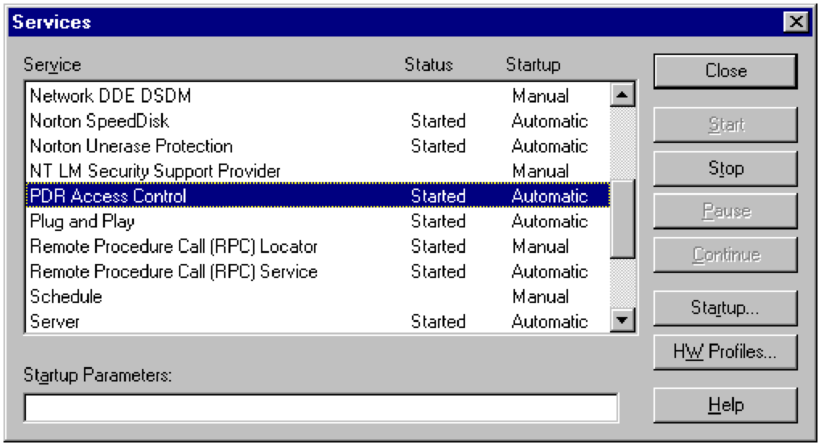


Figure 105. Services dialog box

5. Select **PDR Access Control** from the list of services. You may have to scroll the list box.
6. Click **Start** to start the service. By default, the service is automatically restarted whenever the system is rebooted. It is unlikely that you will ever need to start the service manually.
7. Click on **Stop** to stop the service, if desired.
8. Click **Close** to close the Services dialog box.

>>> ***CAUTION: If the start-up option is changed from Automatic, the Profile applications are not able to run unless the service is started manually each time the system is rebooted.***

Updating Firmware

From time to time, it becomes necessary to reprogram components on boards in your Profile disk recorder or video file server. For example, when you install MPEG boards in a PDR200, you must upgrade components on the Master Enhanced Disk Recorder (EDR) board. Updating the firmware in the selected components of these boards ensures that software and hardware will function together as expected.

To successfully update the EDR board, it must be Revision 2 or higher. You can determine the revision level of the boards by consulting the Profile log. For information on reading logs, see “Viewing Profile Logs” on page 191.

NOTE: This procedure applies if: 1) You are field-installing MPEG boards in a system that is not MPEG-ready; or 2) You are field-installing an EDR board. Systems with these boards installed in the factory (serial number B030000 and higher) are already updated.

The reprogramming is based on references in the file *c:\profile\edr_isp.all*. Do not alter this file in any way as it may lead to incorrect programming of parts.

To update firmware:

1. Close any applications that may be running on the system.
2. At a command line, type **vdrsvc -stop** and then press Enter. This stops the PDR Access Service.
3. Choose **Start | Programs | PDR Debug Tools | Update EDR Firmware** or double-click the **Update EDR Firmware** icon. A window appears.
4. The program warns you to shutdown any applications that may be running and to stop the PDR Access Service. If you have already done so, as instructed in steps 1 and 2, type **Y**. Otherwise, type **N**, and return to step 1.

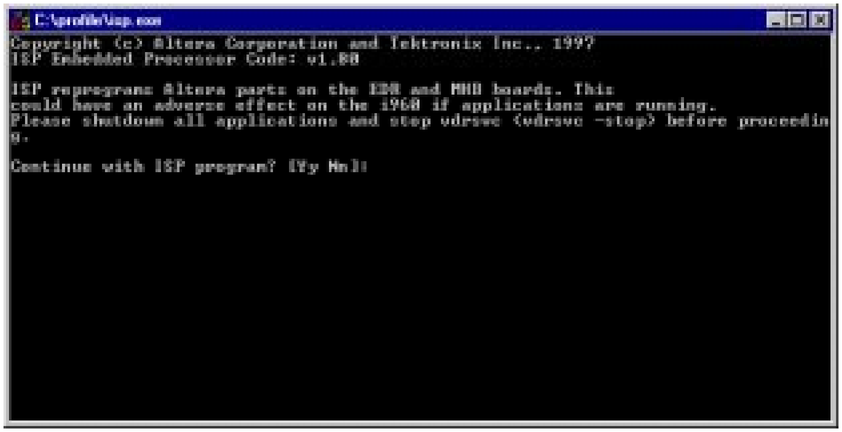


Figure 106. Update Firmware window

5. The update procedure steps through the reprogramming of the components, giving progress information as it proceeds. It retries up to three times to reprogram parts in the event of verification errors. After reprogramming all parts, a summary is provided that describes what has been done.
6. If parts have failed to program, power down the Profile unit completely, power it up again, and then run the program again; otherwise, just restart the Profile.
7. After the program runs successfully, restart your disk recorder so the changes can take effect.

Updating Fibre Channel Microcode

From time to time, it becomes necessary to reprogram microcode on your Fibre Channel board. Updating the microcode ensures that software and hardware will properly function together.

To update microcode:

1. Close any applications that may be running on the system.
2. At a command line, type **vdrsvc -start** and then press Enter. This starts the PDR Access Service if it is not already started.
3. Choose **Start | Programs | PDR Debug Tools | Update FC Microcode**. A window appears.
4. The program asks if you want to continue. Type **Y**.
5. The program now reads the new image of the microcode from *c:\profile\etc\gfcucode.img*. The program automatically copies the old microcode to the file *c:\profile\etc\gfcucode.old*.
6. Restart the disk recorder in order for the microcode update to take effect.

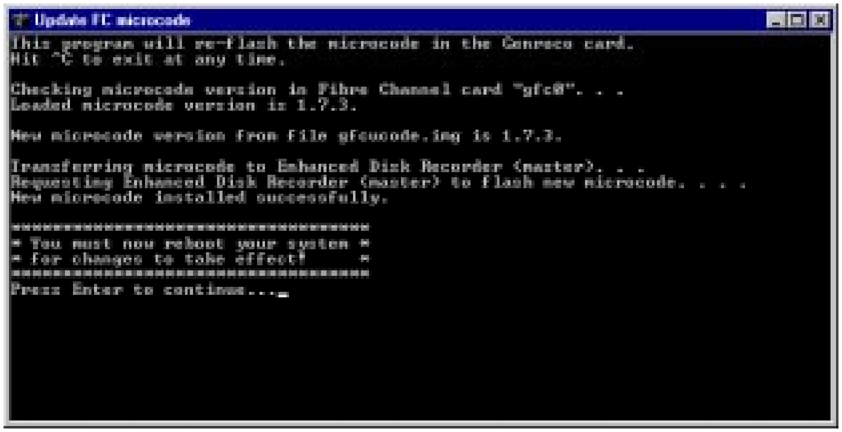


Figure 107. The Update FC Microcode window

Chapter 7

Fibre Channel Video Networking

With Fibre Channel, you can copy and move media between a network of Profile systems at faster than real time. To transfer data across Fibre Channel, the Profile system needs both the Ethernet and Fibre Channel networks to communicate. The Ethernet local area network (LAN) carries commands between Profile disk recorders and the Fibre Channel connections send raw video data. Both networks use TCP/IP (Transfer Control Protocol/Internet Protocol). Because of this communication scheme, you must set up separate IP addresses for each network. In the example that follows, you will connect two Profile units together, configure them and run Fibre Channel transfers between them.

NOTE: To communicate across the network, all Fibre Channel machines should have Profile system software version 2.4 installed.

You must first configure your network, whether your Profile unit came from the factory with a Fibre Channel card installed or whether you have installed Fibre Channel as an F-kit (field installation kit). Configuring your system for the Fibre Channel also requires that you first configure your Ethernet LAN. See the *PDR200 Installation Manual* or the *Profile Family Local Area Network Installation Manual* for more information.

NOTE: Even an isolated Profile machine with a Fibre Channel card that is not connected to a network must be given an IP address. Follow the instructions for entering an IP address under "Fibre Channel IP Address Set Up" on page 202.

Setting Up Hardware for Fibre Channel

First, you set up the Ethernet LAN. The LAN card uses a twisted pair network scheme and so must be connected via a standard 10BaseT Ethernet hub. You *cannot* plug one LAN card directly into another. You can put Profile disk recorders onto your site's computer network if you want, just as long as you are aware that it uses TCP/IP.

Next, you set up the Fibre Channel network. Unlike the Ethernet LAN, the Fibre Channel network will permit two machine to be plugged directly into each other. More than two machines, however, requires a Fibre Channel hub.

NOTE: The cable which connects individual machines to the Fibre Channel hub is the same cable that connects two machines together. This cable comes with the Fibre Channel card.

The pinout for a 9-pin D type connector to 9-pin D type connector is as follows:

- Pin 1 to 5 and pin 5 to 1
- Pin 6 to 9 and pin 9 to 6

Setting Up Software for Fibre Channel

A common mistake is to set the IP address of the Fibre Channel board to the same IP address as the Ethernet network. This is wrong; they must be separate networks.

Each Profile unit has a computer name, often the serial number of the unit. But some people like to change it to something more meaningful, such as **PROFILE1** or **PROFILE2**. For Fibre Channel, you must set up two IP addresses for each Profile, one for the Ethernet card and the other for the Fibre Channel board. Here are some made-up IP addresses for two Profiles units:

Computer Name: **PROFILE1**
Ethernet Address: **192.168.99.1**
FC Address: **192.168.100.1**

Computer Name: **PROFILE2**
Ethernet Address: **192.168.99.2**
FC Address: **192.168.100.2**

You can use the these addresses if you want, but if your Ethernet boards are connected to your company computer network, check with your system administrator for the correct IP addresses to use.

Ethernet IP Address Set Up

To set the TCP/IP address for the Ethernet network:

1. Login as **administrator**
2. Choose **Start | Settings | Control Panel** or double-click the **My Computer** icon on the Windows NT 4.0 desktop, then click **Control Panel**.
3. Double-click the **Network** icon.
4. Click **TCP/IP**, then **Properties**.
5. Click **Specify IP Address**. For **PROFILE1** set the address, for example, to **192.168.99.1**
6. Click **OK.**

Fibre Channel IP Address Set Up

You can set up your Fibre Channel network in one of two ways:

1. Through the Fibre Channel dialog box in the Configuration Manager graphical user interface. For instructions on how to do this, refer to “Setting Up Fibre Channel Networking” on page 30.
2. With **fcconfig**. To set up Fibre Channel with **fcconfig**:

1. Open a MS-DOS command window and type **fcconfig** followed by Enter. The following information is displayed:

```
Fibre Channel Network Configuration:
FC IP Address ....................... : not set
Hardware Address .................... : 0
TCP checksums ....................... : Enabled
Auto host table administration ...... : Enabled
```

   You need to set the IP address, the IP subnet mask, the hardware address and turn *off* TCP checksums and auto host table administration. By turning off TCP checksums, you maximize bandwidth, but you will not be able to detect the loss of packets. You turn auto host table administration table if you do not intend to use **fcncs** (see “The PDR Network Configuration Service” on page 209).

2. Type **fcconfig /?** followed by Enter. The following is displayed:

```
usage: fcconfig [options]
options:
     -i   <fc_ip_address> (dotted decimal)
     -g   <gateway> (dotted decimal)
     -n   <subnet_mask> (dotted decimal)
     -a   <hardware_address> (1-120, 0 for autoconfig)
     -t   <on | off> - enable/disable tcp checksums
     -hta <on | off> - enable/disable auto host table admin
```

3. For **PROFILE1** in this example, type the following:

NOTE: Do not reboot when prompted.

```
192.168.100.1 followed by Enter
FC IP address set to 100.100.100.1
Reboot computer for settings to take effect!
```

```
fcconfig -g 255.255.255.0 followed by Enter
Gateway set to 255.255.255.0
Reboot computer for settings to take effect!
```

NOTE: Based on the address you use for a subnetmask, there is an implicit subnetmask, but you can override this with a larger mask. For example, 255.0.0.0 can be overridden by 255.255.0.0 or 255.255.255.0.

```
fcconfig -a 1 followed by Enter
Address set to 1
Reboot computer for settings to take effect!
```

NOTE: The hardware address can be any number between 1 and 120. In these examples, use 1 for PROFILE1 and 2 for PROFILE2. No two hardware addresses should be the same on the network.

```
fcconfig -t off followed by Enter
TCP/IP checksums are now disabled.
Reboot computer for settings to take effect!
```

```
fcconfig -hta off followed by Enter
Auto host table administration set to off.
Reboot computer for settings to take effect!
```

4. Now type **fcconfig** again followed by Enter:

```
Fibre Channel Network Configuration:
FC IP Address ....................: 192.168.100.1
Hardware Address ................: 1
TCP checksums ....................: Disabled
Auto host table administration ...: Disabled
```

Editing the Hosts File

The next step is to edit the file *c:\winnt\system32\drivers\etc\hosts*. This file tells the Profile system what IP address is associated with what Profile unit. If you enter in all the Profile units' IP addresses that are on your network, then the same file can be copied onto all the other Profile units. This saves you editing each Profile's individual *hosts* file. You can also use a DNS server for name lookup, however instructions for using such a server are outside the scope of this manual.

An alternative to editing the hosts file is to use the PDR Network Configuration service (**fcncs)** to automatically update and maintain the *hosts* file. For more information on **fcncs**, see "The PDR Network Configuration Service" on page 209. If you want to use **fcncs** to automatically update your hosts file, you must enable auto host table administration by entering the command **fcconfig -hta on** followed by Enter. Your *c:\winnt\system32\drivers\etc\hosts* file will now be automatically administered by **fcncs**.

To update your *hosts* file manually:

1. Open the file in Notepad. The format is simple. First type the Ethernet IP address, followed by the machine name, such as **PROFILE1**. On the next line, type the IP address of the Fibre Channel board in that Profile unit, then the machine name again and add the characters **_fc0**. Here is an example:

```
192.168.99.1       PROFILE1
192.168.100.1      PROFILE1_fc0
192.168.99.2       PROFILE2
192.168.100.2      PROFILE2_fc0
```

2. Add these lines to the *hosts* file and remove any other lines which might conflict with them. All lines beginning with a # are comments and can be ignored. The *hosts* file will look something like this:

```
# Copyright (c) 1993-1995 Microsoft Corp.
#
# This is a sample HOSTS file used by Microsoft TCP/IP for Windows NT.
#
# This file contains the mappings of IP addresses to host names. Each
# entry should be kept on an individual line. The IP address should
# be placed in the first column followed by the corresponding host name.
# The IP address and the host name should be separated by at least one
# space.
#
# Additionally, comments (such as these) may be inserted on individual
# lines or following the machine name denoted by a '#' symbol.
#
# For example:
#
#      102.54.94.97  rhino.acme.com      # source server
#       38.25.63.10  x.acme.com          # x client host

192.168.99.1       PROFILE1
192.168.100.1      PROFILE1_fc0
192.168.99.2       PROFILE2
192.168.100.2      PROFILE2_fc0
```

3. Save the file in Notepad and exit.
4. Reboot your Profile unit.
5. Copy the new *hosts* file onto the other machine to save you editing it again.

Testing the Fibre Channel Network

Once both Profile machines are back up and running:

1. Double-click on the Port Server icon. This starts the Fibre Channel communication tool. It must always be running on any machine where you are using Fibre Channel. If you want, you can place Port Server in StartUp folder and set it to run minimized. Make sure its running on the other Profile machine, too.

2. After configuring all machines, verify name resolution using **fcping** by typing:

   fcping PROFILE1_fc0

   If this command returns:

   Host PROFILE1_fc0 is up

   You have successfully resolved the name **PROFILE1_fc0** to the IP address **192.168.100.1**. Keep in mind that although this verifies name resolution, it *does not* test Fibre Channel connectivity.

   If, however, the **fcping** command returns:

   Host PROFILE1_fc0 appears unreachable

   The Fibre Channel IP address could not resolve properly. You may want to reboot to ensure that any changes have taken effect or check your spelling.

3. Now start the Media Manager by double-clicking its icon. You only need to run Media Manager when you want to manually copy clips from one machine to another, but the Port Server needs to be run at all times on all machines connected to the Fibre Channel network or they won't be seen by Media Manager. For information on how to use Media Manager, see Chapter 3, "Using Media Manager," on page 87.

You will not automatically see the other machine on the network. For example, if you are running Media Manager on **PROFILE1** you will only see **PROFILE1**.

1. Choose **File | Add/Remove Machine**. The Add/Remove Machine dialog box appears. The *Local* label follows the name of the current machine, **PROFILE1**.
2. Click on the computer name for the other Profile machine you want, for example, **PROFILE2**.
3. Click **Add**.
4. Click **OK**.

For more information on connecting to remote Profile machines, see "Connecting to a Remote Machine" on page 92.

You can now copy or move media from one machine to another. In addition, you can play a clip or master with VdrPanel or Tool Box Editor while the media is being moved or copied to another machine.

The Listnames and Copymovie Commands

The **listnames** command line utility provides a way to list media on a remote Profile without using Media Manager. Valid arguments are datasets or volumes, groups or lists, and media. Dataset names are case sensitive. That means that **INT:** and **int:** would be considered different datasets.

The two arguments for **listnames** are:

- **-l start_arg** list media based on a starting argument **start_arg**, such as **INT:** If not specified, the utility will list all valid datasets (volumes)
- **-r remote_machine** lists media of a remote machine, such as **PROFILE1**. If not specified, the utility searches local machine only

This example lists all the valid datasets (volumes) on the remote machine **PROFILE1**:

listnames -r PROFILE1

This one lists all groups (clip lists) in **INT:** on **PROFILE1:**

listnames -r PROFILE1 -l INT: [or just ***//***]

The final examples lists all movies in **INT:/default** on **Profile5**:

listnames -r PROFILE1 -l INT:/default/

The **copymovie** utility copies media between two Profiles using the Fibre Channel network. The parameters to this utility are case-sensitive. The command is issued in the form:

copymovie srcMachine srcName destMachine destName

There are four arguments:

- **srcMachine** for the Profile machine where the source media is located (use an asterisk [*] to specify the local machine)
- **srcName** for the source name of the media
- **destMachine** for the Profile machine where you want copy to go (use an asterisk [*] to specify the local machine)
- **destName** is the name of the destination media

This example copies media called **INT:/default/movie1** from **PROFILE1** to **PROFILE2**, where it will be named **INT:/default/movie2**.

copymovie Profile3 INT:/default/movie1 Profile4 INT:/default/movie2

This example copies media called **INT:/default/movie1** from **PROFILE1** to the local Profile where the command was run, where it is named **INT:/default/movie7**.

copymovie PROFILE1 INT:/default/movie1 * INT:/default/movie7

The PDR Network Configuration Service

The PDR Network Configuration service (**fcncs**) collects information about other PDRs on the network via multicast, and maintains a local table of the information. It also will update the *c:\winnt\system32\drivers\etc\hosts* file if the **fcconfig -hta** option is set to **on**, and only if it is set to **on**.

This service has the following standard command line options:

fcncs -install installs the service on the system. The service starts automatically when installed.

fcncs -remove removes the service from the system.

fcncs -start starts the service.

fcncs -stop stops the service.

Chapter **8**

Using the Tool Box Editor

NOTE: A time-locked version of this optional software was shipped to you with version 2.4 system software. Unlocking this software requires an additional purchase. Click Purchase in the timelock dialog box for information on how to purchase this software.

Storing media on a Profile system rather than on tape opens the door to almost instant access to video and audio material. Media is available to all of Profile's channels at once, so you can play a video on more than one channel at the same time. Since each of the channels (up to four) is independent, playback can start at a different time and place in a clip. One of the best features of the Profile system is that you can start playing material while it's still being recorded.

The basic element of digitally stored video and audio is the *clip*. A clip is a reference to video, audio, and timecode material recorded in media files on Profile disks. A clip has a beginning and an end, and, when first recorded, the beginning and end correspond to the first and last frames stored in the media file. A clip may refer to the entire media file or just part of it. When you delete a clip, the media file that the clip referred to remains on disk—only the reference to the media file is deleted, not the media itself.

The Tool Box Editor is a graphical user interface that lets you create digital media by capturing JPEG video and audio clips while also providing an inexpensive, cuts-only editing system. It lets you log video and audio material from a variety of sources, such as a satellite feed, live camera, VTR, CD player, or microphone. You can assemble material on disk and then send it back out to tape, broadcast, or archive.

After launching the Tool Box Editor (see Figure 108), the first step you must take is to acquire resources—such as codecs and audio channels—with the Resource Manager. Then you can capture a new clip or play an existing one. Other common tasks include creating new masters, playing masters, creating subclips, trimming clips, and deleting media.

NOTE: Profile system software version 2.4 supports Tool Box Editor version 1.1.5. This version does not support MPEG.

Starting and Exiting the Tool Box Editor

To start the Tool Box Editor:

- Double-click the Tool Box Editor shortcut icon on the desktop.
- Choose **Start | PDR Applications | Tool Box Editor.**

NOTE: The Tool Box Editor may be restarted at any time. Multiple instances are allowed.

Figure 108. Tool Box Editor window

You can start the Tool Box Editor from a command line, provided that *c:\profile* is in the path, by typing:

tbxedit.exe

You can also specify a project file name when you start the Tool Box Editor from a command line:

tbxedit.exe myproject.tbx

You can start Tool Box Editor while also connecting to a named Profile unit on the network:

tbxedit.exe -m profile7

NOTE: You cannot specify both a project file and a remote Profile machine in a command line at the same time.

Whenever you start the Tool Box Editor, a Hardware Communication Monitor is also started, if it is not already running. This program keeps track of the Profile host file (*profile.hst*) which lists Profile systems on the network, as well as remoting activities.

Figure 109. Hardware Communication message box

The Hardware Communication Monitor tries to connect to a machine in the project file (see “Project Files” on page 214). If there is no project file present, you will automatically connect to the local machine. Otherwise, you will go to the Connect to Machine dialog box (see Figure 110).

To exit the Tool Box Editor:

- Choose **File | Close.**

A message box is displayed, asking you to confirm that you really want to exit the application. Click on the **Yes** button to confirm the exit or the **No** button to cancel the quit command.

Configuring Resources

You must configure video, audio, and timecode resources before using Tool Box Editor. You configure resources with Resource Manager. To start this tool:

- Choose **Project | Configure**.

For instructions on using Resource Manager, see “Using Resource Manager with Tool Box Editor” on page 269.

Project Files

You can save your work environment into a project file (*.tbx*). A project file stores allocated resources and the current bin. Saving your environment eases the transition of set-ups between users. A descriptive project title is displayed in the title bar of the Tool Box application, including the current machine name and channel.

A project file contains the following information for the last Profile machine connected to:

- What the last machine was.
- The Resource Manager configuration.
- The current bin.

If you connect to a new remote Profile machine during a session, the default settings for that Profile machine (saved by Resource Manager) are used for that machine. If no defaults have been saved, factory defaults are used.

To save the current work environment in a project file in the current working directory:

- Choose **File | Save**.

To open an existing project file:

- Choose **File | Open**.

You can also specify a project file name when you start the Tool Box Editor from a command line:

tbxedit.exe myproject.tbx

To create a new project file:

- Choose **File | New.**

You are asked to save the current project file (if necessary) and then if you are connected to a local machine, the Tool Box Editor caches media and is set up using a default configuration. If you are connected remotely, you are also asked which machine to connect to in the Connect to Machine dialog box.

To save an existing project file under a different name:

- Choose **File | Save As.**

Connecting to a Remote Profile Machine

You can connect from your local machine to any remote Profile machine in your network. A local Profile machine refers to a Profile system to which you are directly attached. A remote Profile machine refers to a Profile system that is connected to your local system via an Ethernet local area network (LAN).

To connect to a remote Profile machine:

1. Choose **File | Remote Machine**. The Connect to Machine dialog box appears. The label *Local* appears after the name of the local Profile machine.

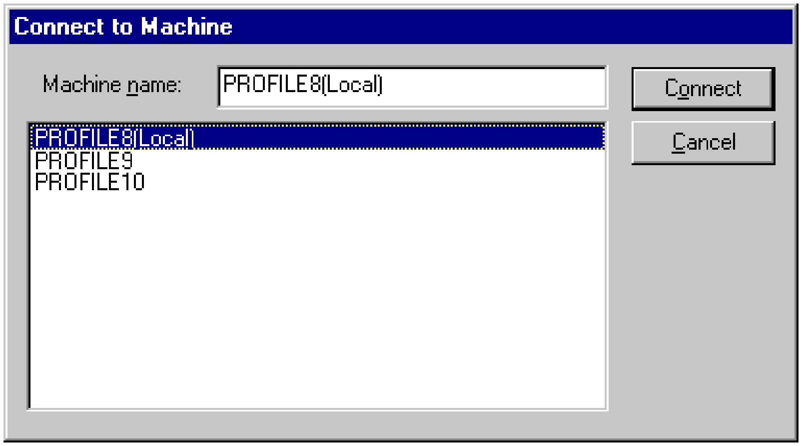


Figure 110. Remote Machine dialog box

To connect a Profile machine from the network host list:

1. Select the name of the machine in list box.
2. Click **Connect**.
3. The Connecting to Machine dialog box is displayed. If the connection is unsuccessful, you are given the opportunity to retry the connection or to cancel the operation.

NOTE: To add a Profile machine to the network host list, see "Connecting to a Remote Machine" on page 92.

Selecting a Current Bin

After you have acquired resources and chosen operational settings, you are ready to start editing. First, let's discuss some basics.

With the Tool Box Editor, you edit media such as clips and masters. The capture timeline lets you capture video and audio clips while the edit timeline allows you to edit a sequence clips into a master.

A bin is simply a collection of masters and clips. The current bin is the set of media displayed in the current bin display. (See Figure 111) By default, the current bin is the first or top bin displayed in Media Manager.

The current bin display helps you focus on and work with a set of clips and masters. Above the display, the column headers are shown. Click on the column header bar by pointing the mouse pointer at the header and pressing the left mouse button. The media files are then sorted according the criteria of the columns.

You can also view (sort) media in the current display in several other ways—showing all media at once (default), clips only, or masters only.

To select a view, simply click on the view bar above the contents pane and choose a menu item. You can also customize how you sort the media by name, type, or date—or all three at once. Selecting and sorting views is useful when you have a lot of media on disk.

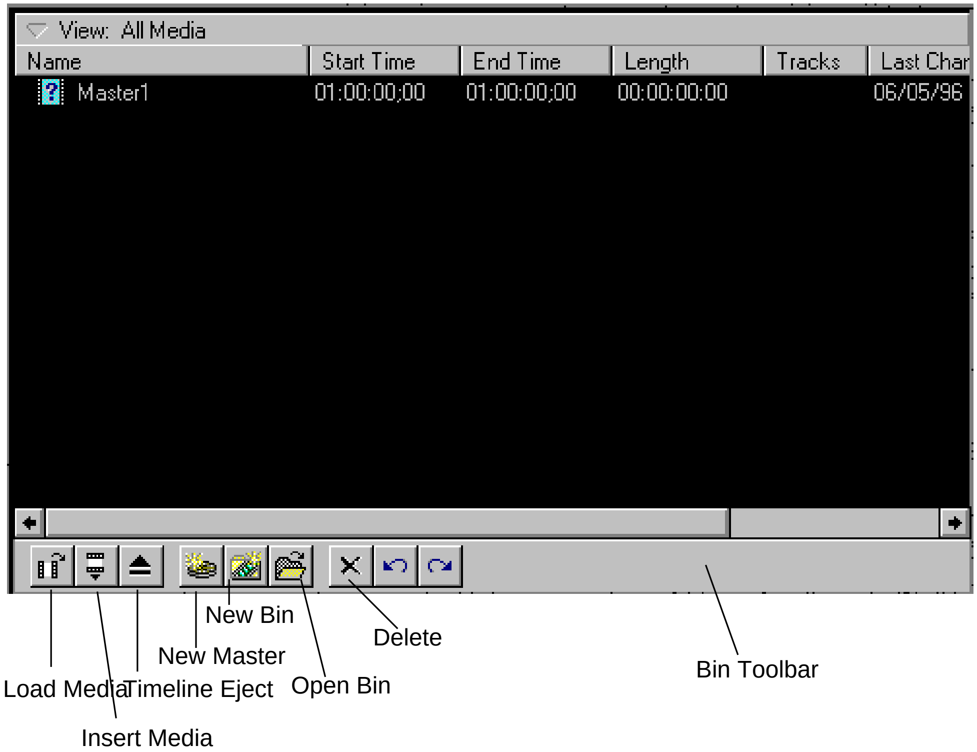


Figure 111. Current bin display

Below the current display is a set of buttons (from left to right):

- **Load Media**: Loads a selected master onto the edit timeline or a selected clip onto the capture timeline.
- **Insert Media**: Inserts a selected clip into the currently loaded master on the edit timeline near the location of the current timeline cursor.
- **Timeline Eject**: Ejects media from the active timeline.
- **Create New Master**: Creates a new, empty master, ready to receive clips.
- **New Bin**: Creates a new bin within a volume and displays it in the current bin display.
- **Open Bin**: Opens an existing bin and displays it on the current bin display.
- **Delete**: Deletes selected media.

Opening a Bin

To open or change the current bin:

1. Click the **Open Bin** button.
2. Enter the name in the text box or select the desired bin from the list box and press **OK**.
3. The selected bin is loaded into the current bin display.

Creating a New Bin

You will often want to create a new bin to store and organize new media. To create a new bin:

1. Click the **New Bin** button below the current bin display and the new bin dialog box is displayed.
2. Enter the name of new bin in the text box, or accept the default name.
3. Click **OK** to accept the new bin name.

The new bin automatically appears in the current bin display.

Record Time Remaining

Below the edit timeline (lower-left) is the record time remaining, in the form **00:00** (Hours:Minutes). This indicates the amount of storage remaining in the current Profile volume. The amount varies based on the current video quality. Generally, the higher the quality of video, the more disk space is used, thus leaving less time remaining.

Renaming Media

To rename a clip or master:

1. Select the clip or master in the current bin.
2. Choose **Rename** from the **Media** menu or from the shortcut menu with a right-click. You can also select the bin or master again in the current bin.
3. Type a new name, then press Enter.

Viewing Media Properties

You can view the media properties for clips and masters. To view these properties:

1. Select a clip or master in the current bin.
2. Choose **Properties** from the **Media** menu or from the shortcut menu with a right-click. You can also double-click the clip or master in the current bin. The Properties dialog box appears (see Figure 112).

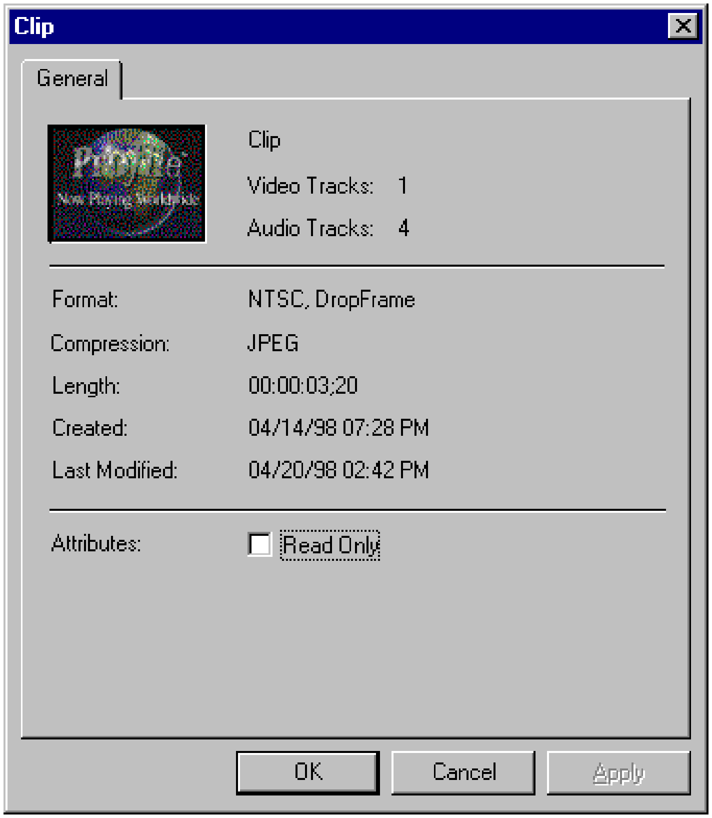


Figure 112. Properties dialog box

In this dialog box, you can view:

- A preview frame of the clip or master to help identify it.
- The name of the clip or master.
- How many tracks the clip or master uses for both audio and video.
- The media format, either NTSC or PAL. NTSC clips are recorded with either drop-frame or non-drop-frame timecode.
- The length of the clip or master. The length is shown in timecode format: **00:00:00:00** (Hours:Minutes:Seconds:Frames).
- The date and time that the media was created and the date and time it was last changed. The date and time the media was created or last changed is shown in the form: **12/2/94 9:40 PM**
- The read-only attribute, which you can change by clicking the Read Only box. Clips and masters with the read-only attribute cannot be renamed, deleted, or modified in any way.

Deleting Media

When the amount of remaining disk storage begins to get low (the time remaining is displayed below the edit timeline), you can free space by deleting unused media.

1. Select media from the current bin display. You can select either clips or masters; you can also select several clips or masters at a time.
2. Choose **Delete** from the **Media** menu or from the shortcut menu with a right-click. Press the **Delete** key or the **Delete** button on the bin toolbar.
3. A dialog box asks you to confirm that you want to delete the selection. If you click on **Yes**, the media is deleted; if you click on **No**, the operation is cancelled.
4. When media is deleted, it is moved to the Recycle bin until the Recycle bin is emptied.

NOTE: If a clip is locked, you cannot delete it. When a clip is deleted, its source material is not deleted if any other clips or masters reference that material. Only after the last clip is deleted is any disk storage freed.

Emptying the Recycle Bin

When a clip or master is deleted, it is moved to the **Recycle** bin and is permanently deleted when the **Recycle** bin is emptied. If an item of the same name is in the **Recycle** bin, the new item is automatically renamed.

To empty the **Recycle** bin:

- Choose **File | Empty Recycle Bin**.

NOTE: If the Recycle bin contains no deleted media, the Empty Recycle Bin menu item is dimmed.

The Capture Timeline

The capture timeline allows you to capture and trim clips. You can set the current time position and adjust mark in or mark out points. Click on the **Capture** button below the audio controls to activate the Capture timeline without changing the current time position.

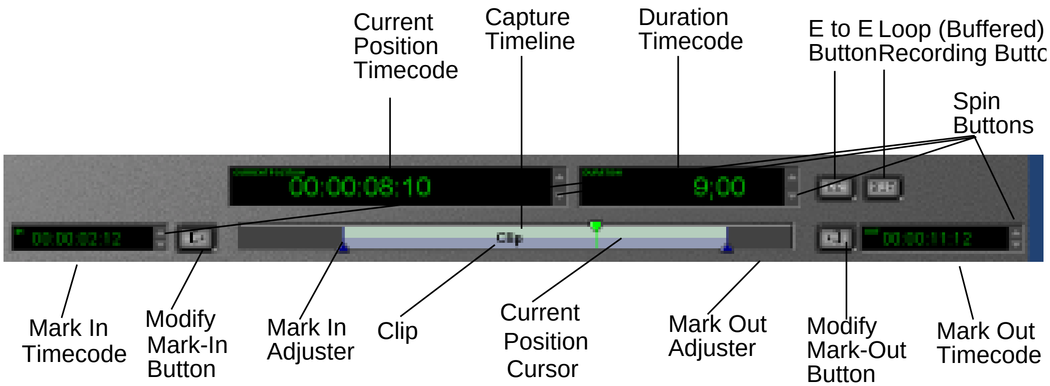


Figure 113. Capture timeline

When recording a clip on the capture timeline, you see the clip name and its record status. With normal recording, you see a **Recording** label. With loop recording, you see a **Buffer Recording** label. If a clip is being recorded on another channel simultaneously, the **Mark-in** and **Mark-out** buttons are disabled and the **Read Only** label is displayed.

The Tool Box Editor displays four timecode indicators: current position, duration, mark-in, and mark-out. The timecode indicators display hours, minutes, seconds, and frames in the form **00:00:00:00**. The duration displays the minimum number of digits. Drop-frame timecode is indicated by a semicolon (;) before the frame number.

Each part of the timecode—frames, seconds, etc.—can be selected by a click of the left mouse button and then changed separately. To the right of each indicator are the spin buttons with an arrow pointing up or down. Click on the up arrow and the time is increased, or decrease it by clicking the down arrow.

When a clip is loaded onto the capture timeline, the current position timecode indicator shows the frame-accurate cursor position in the clip. To move the current position cursor, click anywhere on the capture timeline. The updated timecode is displayed in the indicator as you move the cursor.

To adjust a clip's mark in or out point, move the current position cursor to the desired location and then click on the **Modify Mark-In** or **Modify Mark-Out** button. The mark in and mark out timecode indicators are displayed on either side of the capture timeline. The mark in and mark out markers on the capture timeline indicate where these marks lie on the clip. To move the mark in or mark out, grab the mark in or mark out marker on the capture timeline by clicking on it with the left mouse button and holding the button down while you move it.

To bring up the timecode entry window, click in a timecode indicator and then press + (plus sign), – (minus sign) on the keypad or = (equal sign) on the keyboard. To add to a timecode, click inside a timecode indicator, press + and the timecode entry window appears. Enter the desired value in the form **00:00:00:00** and press Enter. (Only numbers need to be typed.) The value is added to the timecode.

To subtract from a timecode, click inside a timecode indicator press – and the timecode entry window appears. Enter the desired value in the form **00:00:00:00** and press Enter. The value is subtracted from the timecode. To change the value of the timecode, click inside a timecode indicator press = and the timecode entry window appears. Enter the desired value in the form **00:00:00:00** and press Enter. The value is changed to the desired timecode. If an entry in the timecode entry window is out of bounds, it is ignored.

Figure 114. Timecode entry window

The **E to E** (Electronics to Electronics) button is to the right of the duration timecode indicator. By default, E to E is off. If you click on this button, E to E is activated. When E to E is off, the monitor shows the active timeline's current position. When it is on and no clips are playing or recording, the Profile channel's live video input bypasses the codec and is directly connected to the outputs.

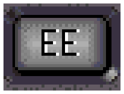


Figure 115. E to E button

Capturing a New Clip

Now you are ready to capture or record a JPEG new clip.

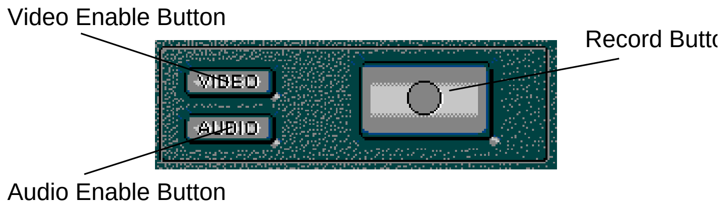


Figure 116. Record buttons

1. First, you need to enable video and/or audio for recording. To enable inputs for recording, you can click on video or audio buttons. The buttons are lit when activated.
2. All acquired audio channels may be used when recording new clips. However, you need to select a set of audio channels. To select a set of audio channels for recording:

- Click the **Audio Enable** button.
- Enable audio channels by clicking on the channel selection button above the appropriate audio meter. (See Figure 123)

3. Enter the new clip name in the Clip Name text box, or simply accept the default. The default name automatically increments to a unique name. With a right-click in the text box, you can choose from several editing commands.

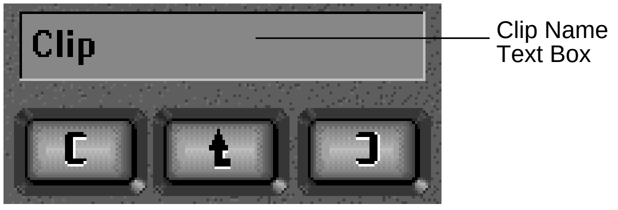


Figure 117. Clip Name text box

4. Click on the **Record** button. You can also choose **Record** from the **Media** menu or from the shortcut menu with a right-click.
5. When you are done recording, click on the **Stop** button. (See Figure 118)

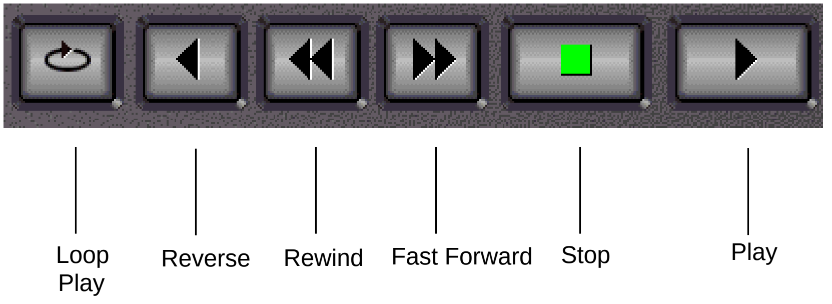


Figure 118. Transport controls

The transport controls are:

- **Loop Play:** Plays the active timeline at normal speed. When the end of the media is reached, play begins again at the beginning of the media.
- **Reverse:** Plays the active timeline in reverse.
- **Rewind:** Rewinds the active timeline or returns the current position to the beginning of the clip.
- **Play:** Plays the active timeline at normal speed.
- **Fast Forward:** Fast forwards the active timeline.
- **Stop:** Stops play on the active timeline.

Loop Recording

You can also loop record material. To loop record material, you set up a record buffer that will allow you to record for a length of time. When you reach the end of the record buffer, the current position moves back to the beginning of the buffer and previously recorded material is overwritten. The steps for loop recording are as follows:

1. Choose **Config | Record Buffer** and the Record Buffer dialog box appears. The maximum record time reflects time allocated to all activated buffers and time allocated to the channel and available record time on Profile.

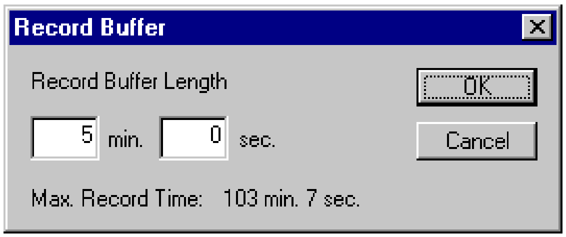


Figure 119. Record Buffer dialog box

2. Enter the length of the record buffer and click OK.

3. Click BUF in the upper-right corner of the screen to activate this feature. When activated, the button is lit.

4. Follow the steps in “Capturing a New Clip” on page 223.

Playing a Clip

Now that you have recorded a JPEG clip, you can play it back:

1. Select a clip in the current bin.
2. Choose **Load** from the **Media** menu or from the shortcut menu with a right-click. You can also click on the **Load** button on the current bin toolbar. The clip is loaded onto the capture timeline.
3. Click on the **Play** button.

You can also drag and drop a clip onto the capture timeline. To drag and drop a clip:

1. Select a clip by clicking the left mouse button while the mouse pointer is over the desired clip and hold the button down.
2. Drag the clip to the capture timeline and release the mouse button.

Trimming a Clip

Trimming a clip means changing the mark-in and/or mark-out points so that the clip duration becomes shorter. To trim a clip:

1. Select the clip you want to trim in the current bin.
2. Load the clip onto the capture timeline.
3. Do one of the following:

- Drag the mark-in or mark-out cursors to a new position on the timeline (see the mark-in and mark-out cursors in Figure 113 on page 221).
- Drag the current time cursor to a new location and click on the **Modify Mark-in** button or **Modify Mark-out** button. The current position is taken as the new mark position.
- Adjust the in and out marks by entering the new timecodes in the boxes provided (see the timecode entry boxes in n Figure 113 on page 221).

Even when trimmed, media remains on disk. Choose **Media | Cleanup** to remove excess media permanently from a trimmed clip. The trimmed portions are removed from disk, thus freeing space for more clips.

> ***NOTE:* Media | Cleanup *works only if no subclips have ben created from a clip. If subclips have been created, or if the clip is referenced by a master,* Cleanup *will fail.***

Creating a Subclip

A subclip is a portion of an existing clip. Subclips can help you order your material when creating masters. The buttons that allow you to create subclips are the **Create Mark-in** and **Create Mark-out** buttons. With the **Create Mark-in** button, you mark where you want to start the subclip; with the **Create Mark-out** button, you specify where you want to end the subclip.

In addition, you can set user marks as points of interest that you can jump to at a later time.

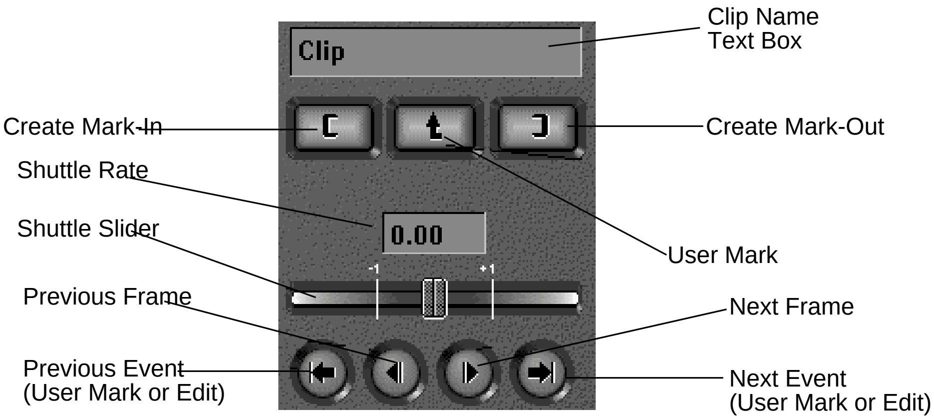


Figure 120. Create and User Mark buttons, plus event and frame controls

To create a subclip:

1. Select the clip in the current bin from which you want to create a subclip.
2. Choose **Load** from the **Media** menu or from the shortcut menu with a right click. You can also click the **Load** button on the current bin display toolbar. The clip is loaded onto the capture timeline.
3. Enter a name for the subclip in the Clip Name text box. This is optional as a default name is automatically generated.
4. Move the current position cursor to the desired starting location.
5. Click on the **Create Mark-in** button.
6. Move the current position cursor to the desired ending location.
7. Click on the **Create Mark-out** button. The subclip is added to the current bin.

User Marks

You can insert a user mark into a clip so that you can easily jump to that mark later in the editing process. You insert the mark by placing the current position cursor and then clicking on the **User Mark** button. A user mark is inserted at the current time cursor position. You can jump to user marks by clicking on the **Previous Event** and **Next Event** buttons.

To remove the current user mark:

1. With the clip loaded on the capture timeline, locate the exact frame where the user mark is located using the event and frame controls.
2. Choose **Media | Remove Current User Mark**.

To remove *all* user marks:

1. Load the clip onto the capture timeline.
2. Choose **Media | Remove All User Marks**.

Event and Frame Controls

The event and frame controls let you navigate the active timeline in forward or reverse direction (see Figure 120). The **Previous Frame** and **Next Frame** buttons display the last or next frame. The **Previous Event** and **Next Event** buttons move the current position to the next user mark, mark-in, or mark-out points.

Shuttle Controls

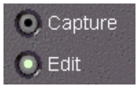
The shuttle rate slider sets the play speed in the range –16 to +16. The play speed increases as you move the slider to the right and decreases you as you move the slider to the left. You can also adjust the play speed with the shuttle rate input box. Simply type in the rate in the range –16 to +16 and press Enter. The selected clip begins playing automatically whenever you adjust the shuttle rate.

Creating Subclips on the Fly

To create a subclip on the fly, either while recording a new clip or by playing an existing clip:

1. To start recording, choose **Record** from the **Media** menu or from the shortcut menu with a right-click. You can also click the **Record** button. A new clip appears in the current bin display whose duration grows longer with each new frame recorded.
2. To play an existing clip, select a clip in the current bin display, choose **Load** from the **Media** menu or from the shortcut menu with a right-click. You can also click the **Load** button on the current bin toolbar. Then click the **Play** button.
3. Enter a new subclip name in the clip name field or accept the default name.
4. To create a clip on the fly, click **Create Mark-in**. This starts the new clip. A new clip name appears in the current bin display with a duration of only one frame.
5. Click **Create Mark-out**. The new clip's duration is updated.
6. Repeat steps 2–4.
7. Click the **Stop** button when done.

The Edit Timeline



The edit timeline lets you edit masters and their tracks of video and audio (up to sixteen tracks of audio). The current frame is indicated by the placement of the current position (time) cursor. The horizontal scroll bar allows you to scroll through time, and the vertical scroll bar allows you to scroll through tracks. Select the **Edit** button beneath the audio controls to activate the edit timeline without changing the current time position.

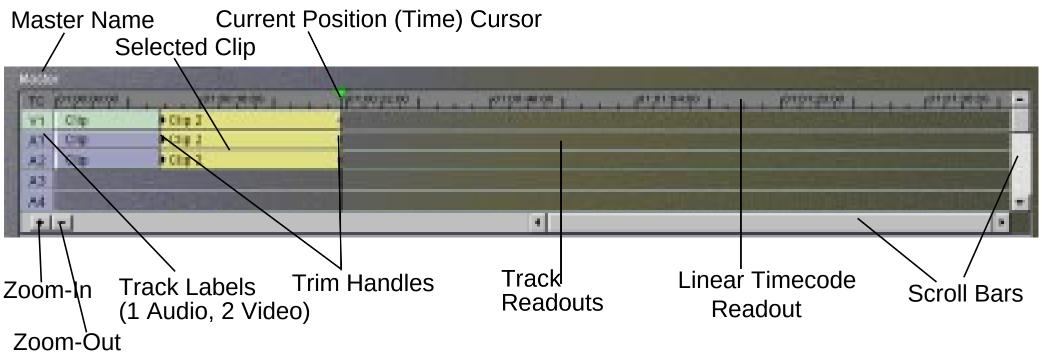


Figure 121. Edit timeline

Beneath the edit timeline is a toolbar displaying these buttons:

- **Zoom-in:** Zooms in the track scale.
- **Zoom-out:** Zooms out the track scale.

You can insert clips at the edit closest to the current time position by choosing **Insert** from the **Media** menu or from the shortcut menu with a right-click, or by clicking **Insert Media** on the current bin toolbar.

After you have inserted material onto the edit timeline, you can trim source material. You can trim clips directly with trim handles. To make the trim handles appear, select the clip while it is on the edit timeline (see Figure 122). You can drag the trim handles to the left or right to make the clips shorter or longer, to the limit of the beginning and ending of the source material.

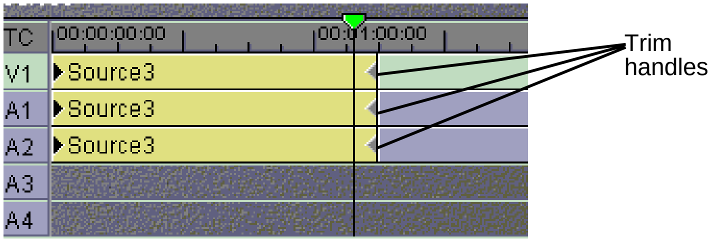


Figure 122. Trim handles on the edit timeline

As you trim a clip, the current channel output plays source material from the trim position rather than the current time position. Timecode for the trim position is shown at the bottom of the timeline, with the amount of time added or removed from the clip below that.

A few keyboard shortcuts are available for trimming:

- Select trim handle head: **Ctrl-h**
- Select trim handle tail: **Ctrl-t**
- Trim left 10 frames: **Shift-z**
- Trim left 1 frame: **z**
- Trim right 1 frame: **x**
- Trim right 10 frames: **Shift-x**

Creating a New Master

A master is a sequence of clips. To create a new master:

1. Click on the **New Master** button on the current bin toolbar. The New Master dialog box appears. (You can also drag clips to the empty edit timeline from the current bin.)
2. Enter the name of the new master in the New Master text box, or simply accept the default. The default name is always unique.
3. Click on the **OK** button. The name of the new, empty master appears above the edit timeline.

Adding Media to a Master

A newly created master is empty. You can assemble a master by inserting clips or even other masters into it:

1. Click in the edit timeline to make it active.
1. Select a clip or master in the current bin.
2. Choose **Insert** from the **Media** menu or from the shortcut menu with a right-click. You can also click the **Insert Media** button on the current bin toolbar.
3. The media is loaded onto the edit timeline.

You can also drag and drop a clip or master onto the edit timeline. To drag and drop media to the edit timeline:

1. Select a master or clip in the current bin by pressing the left mouse button while the mouse pointer is over the desired clip and hold the button down.
2. Drag the master to the edit timeline and release the mouse button.
3. Each is inserted into the new master at the closest cursor location. After insertion, the time cursor automatically moves to the last frame of the new material.

Playing a Master

Now that you have created a new master, you can play it or any other master using the edit timeline:

1. Select the master you want to play in the current bin.
2. Choose **Load** from the **Media** menu or from the shortcut menu with a right-click. You can also click on the **Load** button on the current bin toolbar. The master is loaded onto the edit timeline and the timeline is made active.
3. Click on the **Play** button.

You can also drag and drop a master onto the empty edit timeline. To drag and drop a master:

1. Select a master by pressing the left mouse button while the mouse pointer is over the desired clip and hold the button down.
2. Drag the master to the edit timeline and release the left mouse button.

NOTE: Masters cannot be loaded onto the capture timeline.

Using the Audio Controls

The Tool Box Editor lets you gain access to up to 32 channels of audio. Each audio channel consists of an audio channel record selector button and an audio metering section. The audio metering section contains an input indicator, an overload indicator and, from left to right, tick marks to indicate decibel levels, an input gain level indicator, an audio level bar meter, and an output gain level indicator.

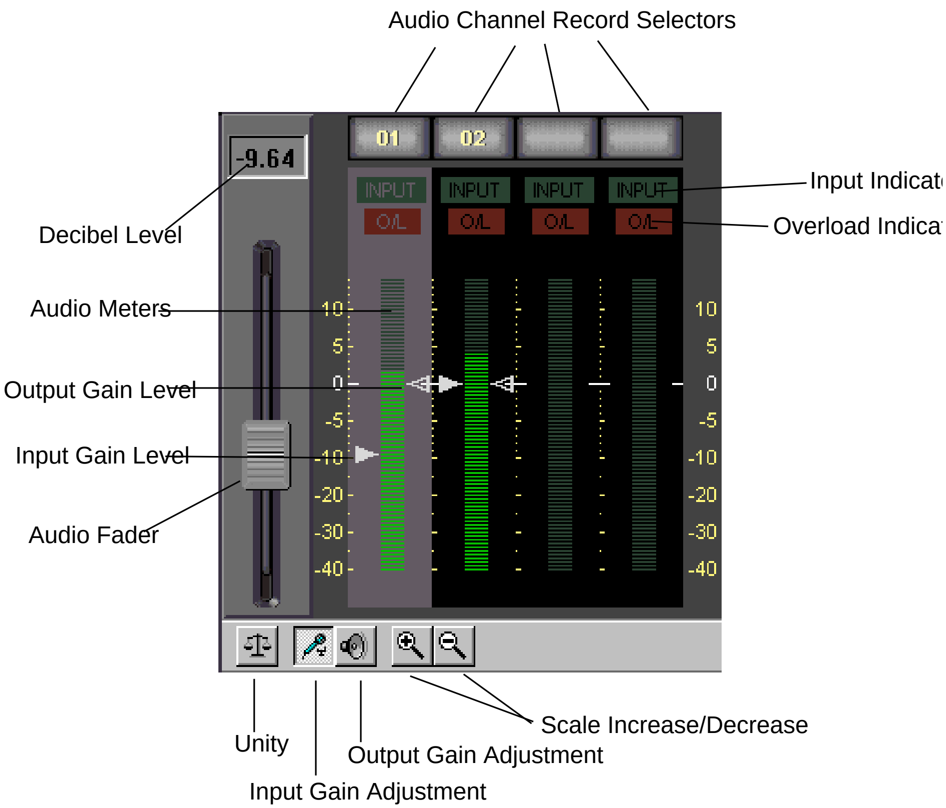


Figure 123. Audio controls

The overload indicator lights if the audio level is above the highest level of the meter. The input gain level, audio level, and output gain level use the same metering scale. The metering scale is a +4.0 dB meter scale (+0 corresponds to +4.0 dB) and ranges from +14 dB to –40 dB. (+18 dB to –56 dB full scale).

At the top of the four audio meters are the audio channel record selector buttons. Valid audio channels for the current channel will have record selector buttons containing a channel number. To enable a channel for recording, place the mouse pointer over the record selector button and click on it with the left mouse button.

The audio fader lets you adjust the audio input and output levels of the currently selected channel. If more than one audio channel is selected for gain adjustment, the fader level reflects the highest gain level of the selected audio channels. The decibel level window above the fader also displays the fader's current decibel level.

The input and output gain levels of each channel may be adjusted also. To select an audio channel for gain adjustment, place the mouse pointer over any part of the channel's meter section. Click the left button to select the channel. The meter section is highlighted.

Below the audio gain displays is the audio control toolbar which has the following buttons:

- **Unity:** Sets all audio levels to the unity level (0 dB[+4.0]). To set unity, the audio meter must be selected and the input or output gain adjustment button must be selected.
- **Input gain adjustment mode:** This button activates the input level arrow (left side) for fader adjustments.
- **Output gain adjustment mode:** This button activates the output level arrow (right side) for fader adjustments.
- **Scale adjustment increase/decrease:** These buttons zoom in or zoom out on the audio display scale in the range of +6 to –6 dB.

Tool Box Editor Keyboard Shortcuts

The Tool Box Editor automatically programs a number of keyboard shortcuts.

Table 11. Tool Box Editor Keyboard Shortcuts

Shortcut Key	Command
F1	Activate Channel 1
F2	Activate Channel 2
F3	Activate Channel 3
F4	Activate Channel 4
F9	Select video
F11	Select audio
F12	EE toggle
j	Reverse Play
h	Rewind
;	Fast Forward
l	Play
n	Record
SPACE **or** k	Stop
i	Create Mark-In
o	Create Mark-Out
q	Modify Mark-In
w	Modify Mark-Out
u	User Mark
, (comma)	Previous Frame (left)
. (period)	Next Frame (right)
Left Arrow	Previous Frame (left)
Shift Left Arrow	Jump Back 10 Frames
Right Arrow	Next Frame (right)
Shift Right Arrow	Jump Forward 10 Frames
a	Previous Event
s	Next Event
Ctrl-H	Select trim handle head
Ctrl-T	Select trim handle tail

Table 11. Tool Box Editor Keyboard Shortcuts

Shortcut Key	Command
x	Trim left 1 frame
z	Trim right 1 frame
Shift-z	Trim left 10 frames
Shift-x	Trim right 10 frames
1	Give focus to current position timecode
2	Give focus to Duration timecode
3	Give focus to Mark-in timecode
4	Give focus to Mark-out timecode
7	Give focus to Fader Level
8	Give focus to Shuttle Rate
9	Give focus to New Clip Name
Ctrl-M	Media Manager
Ctrl-N	New Project File
Ctrl-O	Open Project File
Ctrl-S	Save Project File

Chapter **9**

Using the List Manager

NOTE: A time-locked version of this optional software was shipped to you with version 2.4 system software. Unlocking this software requires an additional purchase. Click Purchase in the timelock dialog box for information on how to purchase this software.

The Profile List Manager lets you automate your use of the Profile video disk recorder. You'll probably want to use List Manager to schedule playback of JPEG clips or masters created in the Tool Box Editor on designated outputs. List Manager also lets you record incoming video at predetermined times, send incoming video directly to an output. You can also set up times to switch a live connection, transfer media between Profile systems connected via Fibre Channel, or even archive a clip on a library unit. You can combine these functions to increase the automation level of your station operations. (See Figure 124.)

NOTE: Profile system software version 2.4 supports List Manager version 1.1.5. This version does not support MPEG.

List Manager Overview

List Manager lets you schedule playback, record, switch, transfer, and archive events. A playback event lets you play a JPEG clip or master at a designated time, while a record event allows you to record material at a given time.

A switch event schedules a live connection, that is, input and output are connected directly in E to E mode at a predetermined. A transfer event schedules the copying of media from one Profile video disk recorder to another Profile unit on the network (requires Ethernet and Fibre Channel connections). An archive event copies media to or from a Profile library system, such as the PLS200 or PLS20.

All of these capabilities are available on all Profile channels. For example, if you have four video channels, you might choose to dedicate two channels to recording incoming material, one for on-air playback, and the other for preview.

Each event can be scheduled to occur at an exact time, on demand, or it can follow other events. You can override or stop a list at any time.

List Manager provides you with two ways of scheduling lists:

- **Monitor.** You can drag and drop events into the list in Monitor view to schedule them immediately. Monitor displays the Master List, which is the name of the list that is controlling activities on your Profile. The Event Scheduler Engine always reads the Master List, and will perform the events you see in the Monitor view at their appointed times unless you delete events. The Master List can’t be saved for future use.

- **Edit Window.** You can build several lists in the Edit window to use at a later date or to store for repeated use. Lists you build in the Edit window are not scheduled immediately. When you choose the Schedule List command from the Edit menu, the list is integrated into the Master list and its events are performed with other events which were already on the Master List.

List Manager validates the master list to make sure that you haven't scheduled conflicting events using the same Profile resources. You can then schedule the list and let List Manager control your Profile. You can follow the operation of a list by using the Monitor view on any or all of your Profle's channels.

Starting List Manager

To start the List Manager in Windows NT 4.0:

- Double-click the List Manager shortcut icon on the desktop.

Or:

- Choose **Start | Programs | PDR Applications | List Manager**.

List Manager uses a software “engine,” called the Event Scheduler Engine, to schedule your lists. This low-level software starts automatically when you start the List Manager. It runs behind the scenes and does all the actual work of playing and recording clips at the appointed times, even if List Manager isn’t running.

When you start List Manager for the first time, your screen should look similar to the one shown in Figure 124.

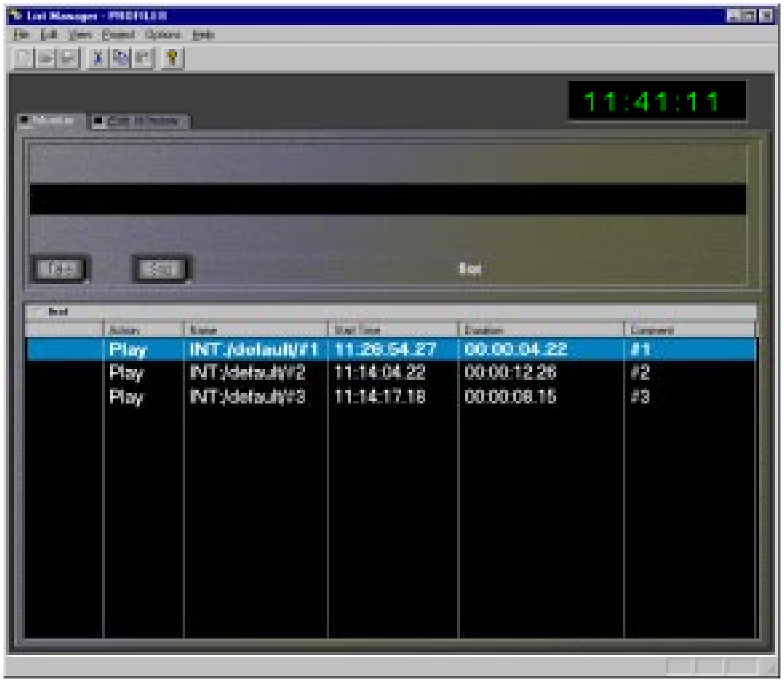


Figure 124. List Manager window

The scheduler engine will run for the rest of that Windows NT session. If you need to stop the engine for any reason, click the minimized Event Scheduler Engine icon, then type *exit* on the command line and press Enter.

The engine needs system resources such as JPEG codecs and video outputs to operate. System resources used by the engine are not available to other applications, whether or not a list is scheduled. If you try to start an application that requires the resources being used by the engine, you’ll be warned that those resources are not available.

Whenever you start the List Manager, a Hardware Communication Monitor is also started, if it is not already running. This program makes calls to the disk recorder, keeps track of the Profile host file (*profile.hst*) which lists Profile systems on the network, as well as remoting activities.

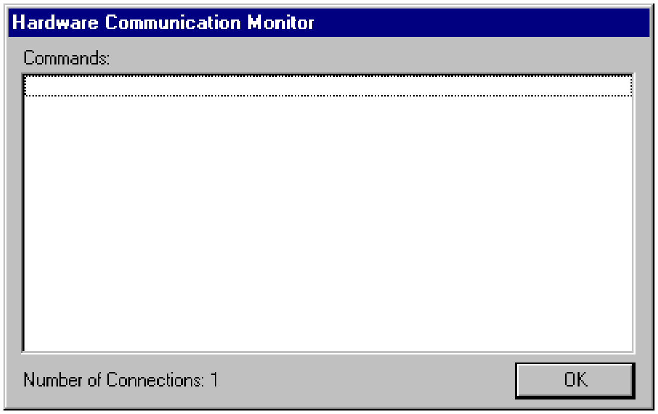


Figure 125. Hardware Communication Monitor message box

You can free up those resources for use by other applications by choosing **Project | Configure** in List Manager, then setting the desired resources to None.

The Toolbar and Status Bar

By default, both the toolbar and the status bar are visible in the List Manager, as shown by the check mark (3). To hide the toolbar and or status bar:

- Choose **View | Toolbar** or **View | Status Bar**.

Viewing Help

To view Help topics:

- Choose **Help | Help Topics**.

Closing List Manager

To close List Manager:

- Choose **File | Exit**.

Configuring Resources

You must configure video, audio, and timecode resources before using List Manager. You configure resources with Resource Manager. To start this tool:

- Choose **Project | Configure**.

For instructions on using Resource Manager, see “Using Resource Manager with List Manager” on page 276.

Connecting to a Remote Profile Machine

You can connect from your local machine to any remote Profile machine in your network. A local Profile machine refers to a Profile system to which you are directly attached. A remote Profile machine refers to a Profile system that is connected to your local system via an Ethernet local area network (LAN).

To connect to a remote Profile machine:

1. Choose **File | Remote Machine**. The Connect to Machine dialog box appears. The label *Local* appears after the name of the local Profile machine.

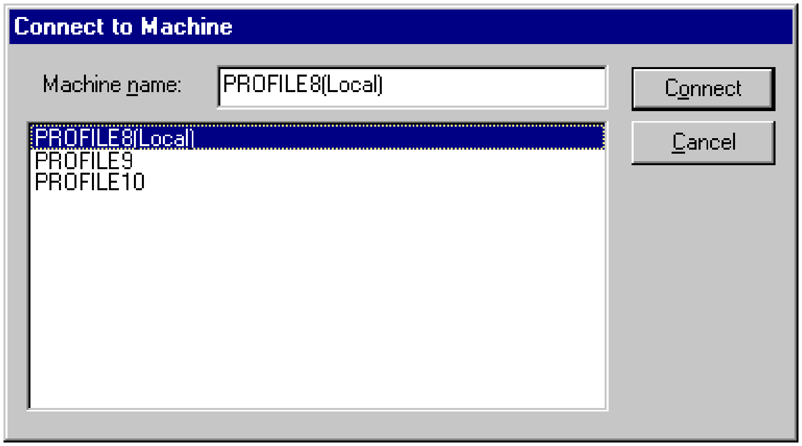


Figure 126. Remote Machine dialog box

To connect a Profile machine from the network host list:

1. Select the name of the machine in list box.
2. Click **Connect**.
3. The Connecting to Machine dialog box is displayed. If the connection is unsuccessful, you are given the opportunity to retry the connection or to cancel the operation.

NOTE: To add a Profile machine to the network host list, see "Connecting to a Remote Machine" on page 92.

Building a Playback List

List Manager lets you use a simple graphical interface to build lists that automate your operations. You can drag media from the Media Manager into your list, then define things like when to play the material, and what channel and output to use.

Adding Media for Playback

Creating a playback list is the simplest of all List Manager operations. To build a playback-only list:

1. Click the **Monitor** tab. This shows you a view of the Master List, the list that the Event Scheduler Engine is currently running. The first time you use List Manager, this list should be empty.
2. Scroll through the Media Manager tree to locate the first clip or master that you wish to include in your list.
3. Drag the material into the List Manager window and drop it at the desired location in the list.
4. Change the event settings to meet your needs. The settings are described in “Changing Event Settings” on page 248.
5. Continue adding clips or masters by dragging them onto the list. List Manager will perform the events at the scheduled time.
6. You can add clips or masters between two existing events by dropping an event on the line separating the two events. The item is inserted below the event.

After adding a few events, your list should look similar to the one shown in Figure 127.

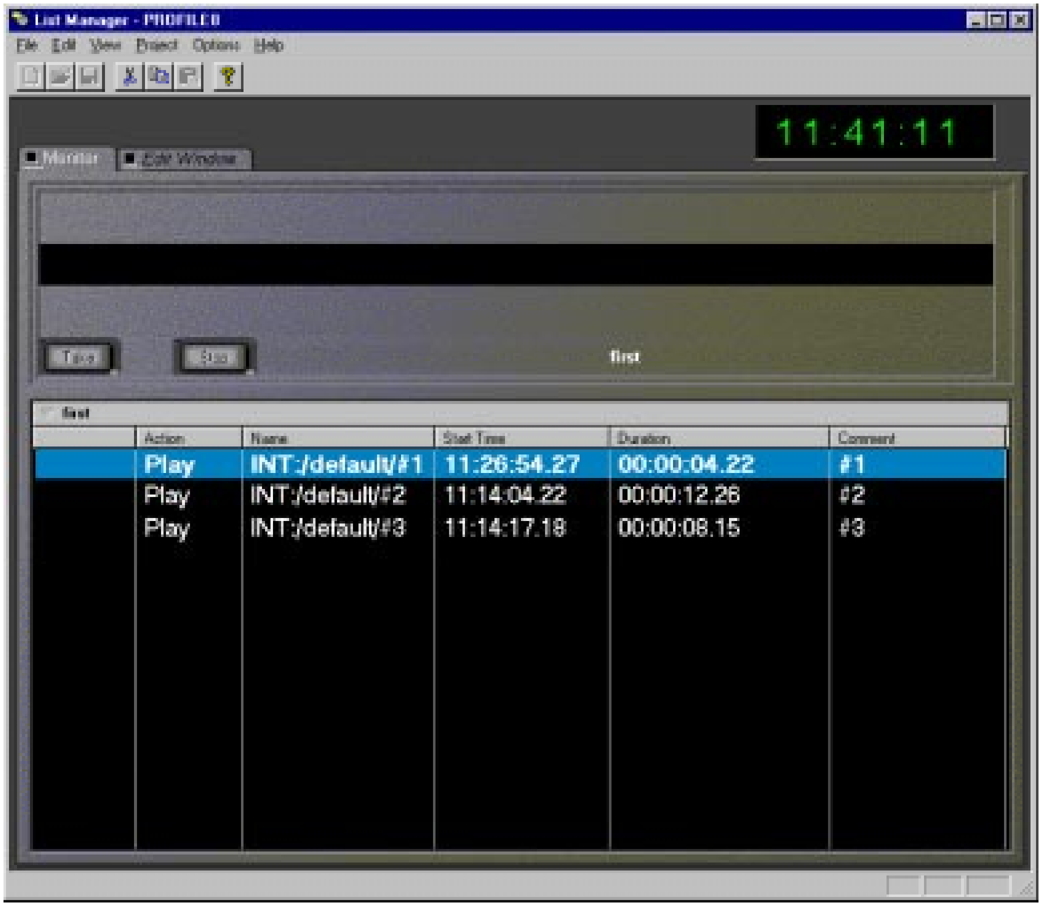


Figure 127. A basic playback list

Changing Event Settings

List Manager establishes default settings for each event as you drop material into the window. You can customize the event by changing the settings in each cell. The type of setting is identified at the top of each column. You can move from event to event in the list with the up and down arrow keys. You can change which columns are displayed with **View | Columns**. (See “Customizing Your List Display” on page 264).

By default, the list displays five columns:

- **Status.** This cell displays the current status of the event. The word *status* does not appear in the header. The Status column is active only in the master list (in the Monitor view). If there is a conflict between an event and any other event in the current list or another event on the Master list, the Status cell displays *Error*. You can identify the conflict by right-clicking on the cell and reading the error message in the Event Property dialog box. Table 12 shows all the event status indicators.

Table 12. Event status indicators

Status	Color	Description
Play	Green	The event is currently being performed.
Record	White	The audio and video from the specified input is currently being recorded as the Destination clip name.
Done	White	The event has been performed. Events with the Done status are listed in the *eventsch.log* file for billing or record-keeping purposes.
Error	Red	The signal is in conflict with another event, or the material is not available.
Stop	White	The event is stopped.
Cued	Yellow	Approximately five seconds before Start Time, the required resources are prepared for instant playback or recording.
Take	White	Event is in a schedule state.

- **Name.** This cell identifies the clip or master name of the clip being played or recorded.
- **Start Time.** You can enter the time at which you wish to play the specified material. Enter the time in standard timecode format (HH:MM:SS:FF). If the time entered consists of one or two digits not separated by colons, List Manager displays the entry as a number of seconds, not frames. For example, if the time entered is 25, List Manager displays 00:00:25:00. (Leading zeros are ignored—that is, 0025 is interpreted as 00:00:25:00.)
- **Duration.** The duration of the playback event is set by the duration of the media. If you change the duration to one shorter than the media's duration, List Manager will play the material from the mark in point for the specified duration. If you enter a longer duration, List Manager plays the material from the mark in point to the last mark out point, then freezes on the last frame for the rest of the duration.
- **Comment.** The Comment cell displays the name of the master or clip which you dragged into the window. You can change this to a title more meaningful to you. However, this will not change what clip or master is used, nor will it change its name.

The other optional columns are:

- **Action.** When you drag material into the List Manager window, Action is set to Play. The possible actions are: Play, Record, Switch, Transfer, and Archive. These options are described in later sections of this chapter.
- **Event Number.** Events are numbered as they are added to the current list. The event number can't be changed because it provides a unique identifier for this event in the current list. The event number does not determine the playback order.
- **Parent.** A parent event may have a child event, that is, one of type Follow that plays the event immediately after the preceding event in the list. Currently, there is one-to-one relationship only between parent and child events.

- **Type.** The event types are:
  - The Absolute event type plays the material at the time specified in the Start Time. An Absolute event is always displayed in bold face in the list.
  - The Follow event type plays the event immediately after the preceding event in the list. A Follow event is always displayed in regular face in the list.
  - The Approx event type is queued but will not play unless you select the event from the list and then issue a Take command. An Approx event is always displayed in bold face in the list.
- **Date.** Enter the date on which you wish the event to take place. Dates must be in the format used in your current Windows NT session, usually MM/DD/YYYY. The current date is entered by default.

The following four settings are for transfer events only:

- **Source Media.** The name of the source media.
- **Source Profile.** The name of the Profile unit where the media is stored.
- **Destination Media.** The name of the destination media.
- **Destination Profile.** The name of the Profile unit where the media will be copied.

Five settings apply to archive events only:

- **Media.** The name of the media (clip) that is to be archived or restored.
- **Path.** The name of the directory path for the media.
- **Action.** Click either **Archive** or **Restore**.
- **Cartridge.** Enter the barcode number for the cartridge—**00000015**, for example. This is an optional setting.
- **Partition.** Enter the partition number where the media is archived. This also is an optional setting.

Monitoring a List as it Runs

Events you enter in the Monitor view are performed at their appointed times. The current House Time is displayed at the top of the window. You can monitor the progress of events on each channel in the channel panels. Each panel shows:

- **Air Time.** The timecode of the current frame of material.
- **Duration.** The duration of the current material.
- **Time Till Next Event.** This clock counts down the time until the next scheduled event.

The current event is highlighted in green for easy identification; a cued event, it is highlighted in yellow.

Validating a List

The master list is validated automatically every few minutes. You should manually check any other list to make sure that you haven't scheduled conflicting events using the same Profile resources. To validate a list:

- Choose **Validate List** from the **Options** menu or from the shortcut menu with a right-click.

If a conflict arises, the word *Error* appears in the Status (left-most) column next to an invalid event. Three errors are at the root:

1. The media does not exit. As a solution, bring in the correct media or verify that the name is correct.
2. There is a conflict for a channel resource. For example, a channel resource would generate an error if it is scheduled for use at the same time by two or more events. To solve this problem, change the events so that they don't attempt to use the resource at the same time.
3. The media is not long enough, that is, the media is shorter than the duration of the event. To fix this, shorten the duration of the event to match the media.

Scheduling Recording Operations

You can schedule recording operations to take place automatically at predetermined times. For example, you may want to record a satellite feed during off-hours. Scheduling a recording operation is just as simple as a playback.

1. Open the list to which you wish to add the recording event.
2. Choose **Edit | New Event | Record** to open the New Record Event dialog box as shown in Figure 128

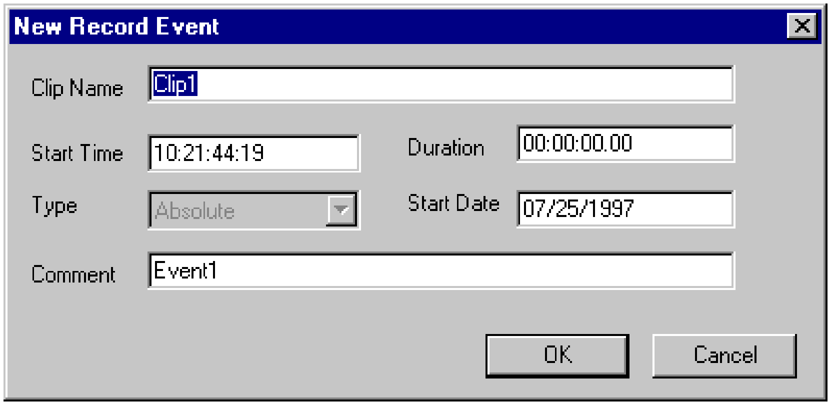


Figure 128. Creating a record event

3. In the New Record Event dialog box, enter all the event information as described in “Changing Event Settings” on page 248. The clip is stored in the default bin and has the name you enter in the Comment box.
4. Click **OK**.

Note: Be sure to leave at least five seconds delay between the scheduled start of a record operation and the scheduled start of a playback of the same clip. This ensures that the material is ready to play.

Using a Live Feed

To further automate station operation, you can integrate live feeds into your lists. For example, you may want to broadcast a live event, inserting stored commercials at appropriate times.

1. Open the list that you want to add a live event to.
2. Choose **Edit | New Event | Switch** and the New Switch Event dialog box appears, as shown in Figure 129.

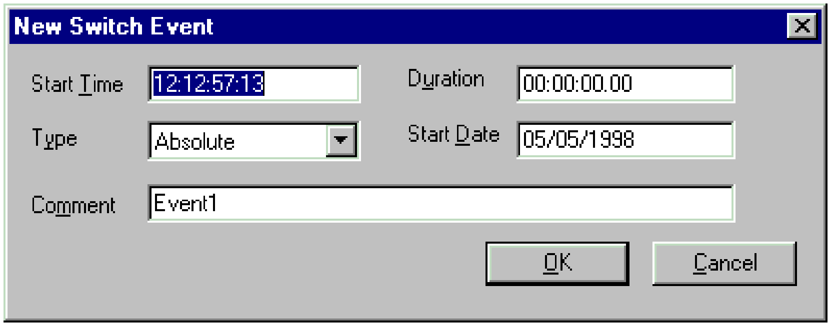


Figure 129. New Switch Event dialog box

3. In the New Switch Event dialog box, enter all the event information as described in “Changing Event Settings” on page 248. This will set the cross-point switch for the channel so that your video input is routed directly to the output. In a PDR100, audio inputs are **not** routed to audio outputs for switch events; however, they are routed to audio outputs in the PDR200.
4. Click **OK**.

Scheduling a Transfer Event

You can schedule transfer events in your lists. A transfer event schedules the copying of media from one Profile video disk recorder to another Profile unit on the network (requires Ethernet and Fibre Channel connections). Only one Transfer event may be scheduled at one time.

1. Open the list to which you wish to add the live event.
2. Choose **Edit | New Event | Transfer** and the New Transfer Event dialog box appears, as shown in Figure 130.

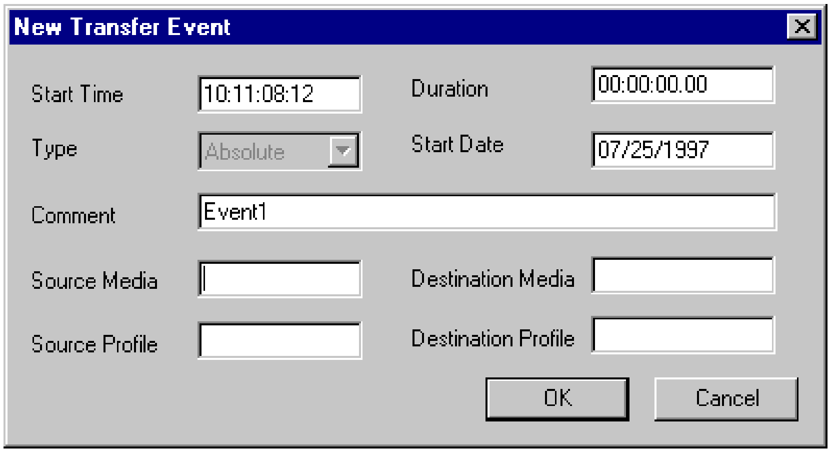


Figure 130. New Transfer Event dialog box

3. In the New Transfer Event dialog box, enter all the event information as described in “Changing Event Settings” on page 248.
4. Click **OK**.

Scheduling an Archive Event

You can schedule archive events in your lists. An archive event copies media to or from a Profile library system, such as the PLS200. The PLS200 must be attached to a Profile system running the Event Scheduler engine.

1. Open the list to which you wish to add the live event.
2. Choose **Edit | New Event | Archive** and the New Archive Event dialog box appears, as shown in Figure 131.

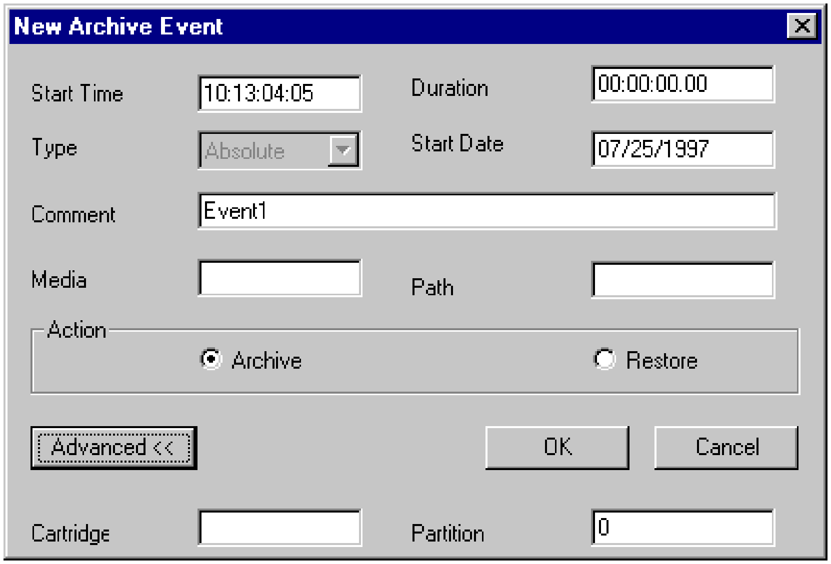


Figure 131. New Transfer Event dialog box

3. In the New Archive Event dialog box, enter all the event information as described in “Changing Event Settings” on page 248.
4. Click **OK**.

Editing Event Lists

You can reorganize your event lists at any time. While you can change the settings for each event in a list, sometimes you'll want to change the order of events, or add, replace, or delete events from the list. The following sections describe how to organize your lists to meet your needs.

Changing the Order of Events

You may want to change the order of events in your list. There are two ways to do this:

- If an event's type is set to Absolute, you must:
  - Change the Start Time of the event so that it starts at the desired time.
- If an event's type is set to Follow, you can:
  - Select the event by clicking on the event in the left-most column of the window, then drag the event to its new position to the list. You can move several events by using the standard Windows operations to select a range of events (Shift-click to select a range or extend it), then drag the selection.

Inserting Events

To insert an event in a list from a Media Manager window:

1. Select a clip or master in the Media Manager contents pane.
2. Drag the material to the List Manager window.
3. Drop the material in the list where you want to place the new event. The new material is dropped below the highlighted event.

To insert an event elsewhere in a list:

1. Select the event that you want to insert elsewhere.
2. Drag the desired event and drop it on the event. The event is placed below the selected event.

Removing Events From a List

The Master List grows as you add events. You may want to reduce the size of the Master List by deleting events that have been performed and whose status is now Done. To remove unwanted events from a list:

1. Select the unwanted event. You can select several events by using the standard Windows operations to select more than one event (Ctrl-click to add an event to the selection, Shift-click to select a range of events).
2. Delete the event or events using **Ctrl-X**, or **Edit | Cut**, or the **Delete** key. You can also choose **Delete** from the shortcut menu with a right-click.
3. Click **Yes** to confirm that you want to delete the event.

Using the Edit Window

You can use the Edit window to build lists in exactly the same way as you did in the Monitor view. The lists you build in the Edit window will not be scheduled until you choose the **Edit | Schedule List** command from the Edit menu.

The Edit window allows you to create and store lists that you want to reuse. By saving your lists, you can use them on a daily or weekly basis without having to rebuild the list each time. For example, you may want to use this for inserting commercials in network feeds.

Creating a New List

To create a new list:

1. Choose **File | New** and the New List dialog box appears.

Figure 132. New List dialog box

2. Enter a name for the list. Click **OK** to save the new list.

Saving a List

You must save a list to your system's hard disk if you want to use it at a later date. To save the list:

1. Choose **File | Save As**.
2. Enter a different name for the list. Click **OK** to save the list.

Reusing a List

There are two ways to reuse a list that you created earlier:

1. In the Edit window, choose **File | Open** and select the desired list. When the list opens, choose **Edit | Schedule List** to integrate the list into the Master List.
2. In the Monitor view, drag the list from a Media Manager window to the Master List. The dragged events are added to the bottom of the Master List. Make sure you select the appropriate channel before dragging in the list, then change the Channel settings to match.

In either case, List Manager checks for conflicts with events already in the Master List. If it finds any conflicts, such as events using the same channel or output at the same time, it will report these errors so that you can take corrective action. The word *Error* will appear in the status cell of the event causing the conflict. Right-click on the event, choose Event Property (Alt-Enter), and read the error information in the Event Properties dialog box. You can also double-click the event to get properties.

Closing a List

To close a list:

- Choose **File | Close List**.

Exporting a List

To export a list into an ASCII text file (.*lst*):

1. Click the Edit window tab.
2. Choose **File | Export**. A dialog box appears.
3. Enter the a name of the file you want to save in the File Name box.
4. Click **OK**. The .*lst* extension is added to the file name automatically.

List File ASCII Text Format

The file format for an ASCII text list file follows these rules:

- A line beginning with pound sign (#) is treated as a comment.
- Each event is saved on a single line in the text file.
- Individual fields of an event are separated by a comma (,).
- White spaces are allowed before and after field delimiters.
- Fields are case insensitive.

The format for each event is: Action, Clip Name, Start Time, Duration, Type, Start Date, Comment [, other required fields depending on the action].

There are several other rules for list files saved as text:

- The first event in the list file has to be an absolute event, otherwise it is an error.
- A follow event will be on the line following the parent event in the list file.
- Each event can have only one follow event.
- Empty lines will be ignored while parsing.
- An error occurs if all the fields for a particular type of event are not present.
- If an error is detected in any event while parsing the list file, the event list will not be created for that file.
- The date field will be of the format **mm/dd/yyyy.**
- Time field (both start time and the duration) will be in the format Hour:Min:Sec:Frames or Hour:Min:Sec.Frames.
- Allowed event actions are: Play, Record, Switch, Archive or Transfer.
- For play and record events, the Clip Name, Start Time, Start Date, Duration, Comment will be saved in the list text file.
- For a switch event, Start Time, Start Date, Duration, Comment will be stored in the list text file.

- For Transfer event source Profile (Machine Name or IP address), destination Profile (Machine Name or IP address), source media and the destination media will be stored in the text file.
- For Archive event Cart Label, Clip Name, Partition Number and the Option (Keep/Delete clip after archiving) will be saved.

Here is a sample list file in ASCII text format:

```
# Play event.
# The format is Action, Clip Name, Start Time, Duration, Type,
# Start Date, Comment
Play, INT:/Default/River Rafting, 05:10:20:00, 00:01:30:00,
Absolute, 02/02/1997, River Rafting
# Record event.
# The format is Action, Clip Name, Start Time, Duration, Type,
# Start Date, Comment
Record, INT:/Default/Pepsi commercial, 05:10:20:00,
00:01:30:00, Absolute, 02/02/1997, Commercial1
# Switch event.
# The format is Action, Start Time, Duration, Type, Start Date,
# Comment
Switch, 05:10:20:00, 00:01:30:00 Absolute, 02/02/1997, Coke
# Archive event.
# The format is Action, Start Time, Duration, Type, Start Date,
# Comment, Clip, Name, Cart Label, Path, Partition Number
Archive, 05:10:20:00, 00:01:30:00, Absolute, 02/02/1997, Ad1,
Surf Soap, Label1, INT:/Default, 1
# Transfer event.
# The format is Action, Start Time, Duration, Type, Start Date,
# Source Profile, Destination Profile, Source Media,
# Destination Media, Comment
Transfer, 05:10:20:00, 00:01:30:00, Absolute, 02/02/1997,
Profile1, Profile2, Soap, Surf Soap Ad, New Surf Ad
```

Importing a List

You can import a list that has been previously exported to an ASCII text file (*.lst*). To import a file:

1. Click the Edit window tab.
2. Choose **File | Import**. An Open dialog box appears, displaying files of type *.lst* in the path *c:\profile*.
3. Select the name of the file you want to import. Double-click the file name or click **OK**.

Deleting an Entire List

To remove an entire list:

- Choose **Edit | Delete List**.

Overriding Events in a List

Not every operation in your environment can be predicted to the second. In some instances, you'll want to be able to interrupt an event as it's playing, or stop a list completely. List Manager provides you with the tools you need to meet these challenges.

Taking an Event

As your list performs, you may want to manually choose a particular event and start playing it immediately. For example, you may have inserted a very long Switch event to use a live feed, but you now want to run a commercial. List Manager lets you immediately use any event in your list.

1. Schedule your list normally.
2. Monitor the list by clicking the **Monitor** tab. Make sure you can see the channel which will perform the event you wish to take.
3. Highlight the event that you will want to use immediately.
4. Click the **Take** button. The event will begin five seconds later.
5. The list will continue running all the events which would normally be performed after the Take event. It will not return to the event that was interrupted, unless you highlight that event and use the **Take** button again.

   NOTE: An Approx event type is not a scheduled event. You must take an event of type Approx to run it.

Stopping an Event

List Manager provides a way to stop a event at any time. You can use the Stop button to interrupt the event on the current channel. To stop an event:

1. Locate the event which is currently being performed (highlighted in green) and select the event.
2. Click the **Stop** button to stop the event.
3. After a few seconds, the event will stop and the video output will display black.
4. The event will remained stopped until:
   - An Absolute event reaches its appointed time.
   - You highlight an event and click the **Take** button.

Customizing Your List Display

You may find that the default list display does not meet your needs. For example, you may have long input names that are not visible because the Source column is not wide enough. If you never use List Manager to schedule Record events, you might not want to see the Source column at all.

You can change fonts, text color, and highlight color in a list display. To change a font:

1. Choose **View | Font** and the Font dialog box appears (Figure 133).

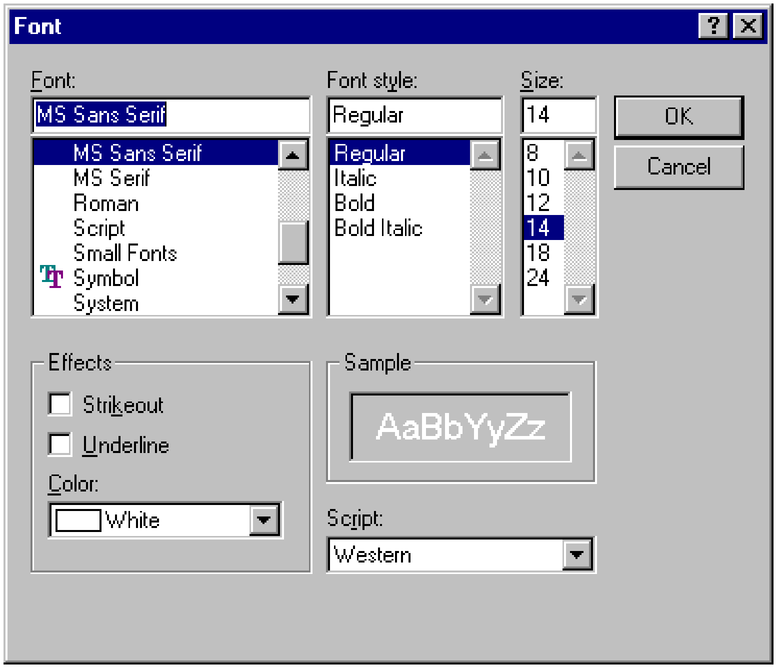


Figure 133. Font dialog box

2. Enter your changes. You can change the font, font style, font size, and color. You can also underline and strike out the text.
3. Click **OK**.

NOTE: Absolute events are always shown in bold face and Follow events are displayed in regular face.

You can change the text color another way besides the Font dialog box, as well as the text highlight (background) color. The Color dialog box allows you a much broader range of colors than the Font dialog box. The change the text's color or highlight color:

1. Choose **View | Color | Text** or **View | Color | Highlight** and the Color dialog box appears (Figure 134).

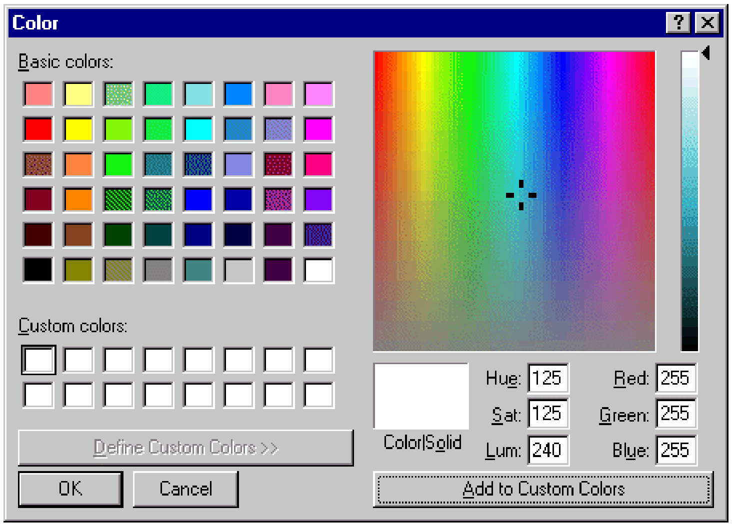


Figure 134. Color dialog box, with custom color controls shown

2. To select a preset color, click one of the basic 48 colors and then **OK**.
3. To create a custom color, move the cursor in the rainbow window until you find the color you want, then click **Add to Custom Colors**. The color is added to the array of custom color boxes.
4. To select a custom color, click on one of the custom color boxes that contains a custom color, then click **OK**.

You can change which columns to display, the size of the columns and order of the columns in the list display. You display up to 10 columns in a list. By default, the Name, Start Time, Duration, and Comment columns are displayed. You can add columns for Action, Event Number, Parent Event, Type, and Date. You can also make a column as wide or as narrow as you want, or make it disappear completely. You can move one or several columns to the left or right to arrange them in an order that you find more convenient.

To add a column to a list display:

1. Choose **View | Columns** and Columns dialog box (Figure 135).

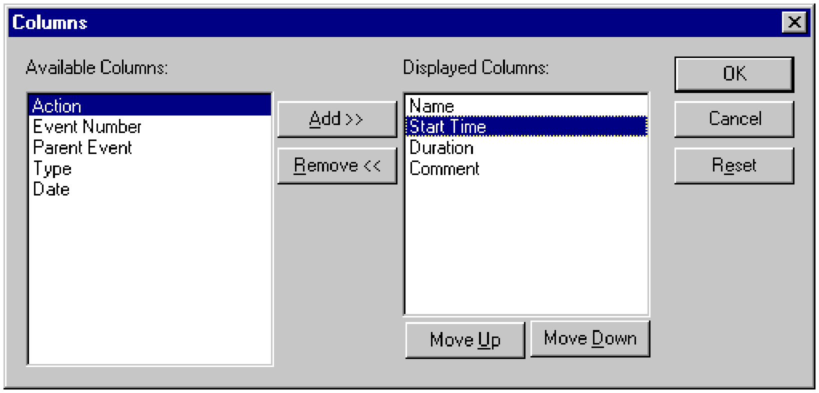


Figure 135. Columns dialog box

2. Click on a column label in the Available Columns box.
3. Click **Add**. The column label moves to the Displayed Columns box.
4. To change the order of the columns, click a column label in the Displayed Columns box, then click **Move Up** or **Move Down**.
5. To return the columns to their original settings, click **Reset**.
6. Click **OK** when done.

To adjust the size of a column:

1. Position the mouse pointer over the right border of the column title of the column you wish to adjust. The pointer changes to a sizing shape.
2. Drag the border to the right to widen the column, to the left to make the column narrower.
3. Drop the border at the desired column width.
4. Drag the right border completely to the left to reduce the column width to nothing, removing the column from the display. To make the column visible again, double-click on the border you dragged.

To change column order:

1. Select the column you wish to move by clicking on its title. You can select more than one column by clicking in one column title, then dragging the mouse pointer through the adjacent titles you wish to select.
2. Drag the selected column or columns to the desired destination.

Using the Event Log

As events are performed in the Master List, a record of those operations is kept in a file called *c:\profile\evntsch.log*. You can extract information from this log file for record-keeping, billing, or any other purpose where accurate records are required.

The information in the log file is stored as ASCII text in tabular form, separated by commas. You can use a text editor to read the file, but be careful not to save any changes you may make. You can see an example of a section of a log file in Figure 136.

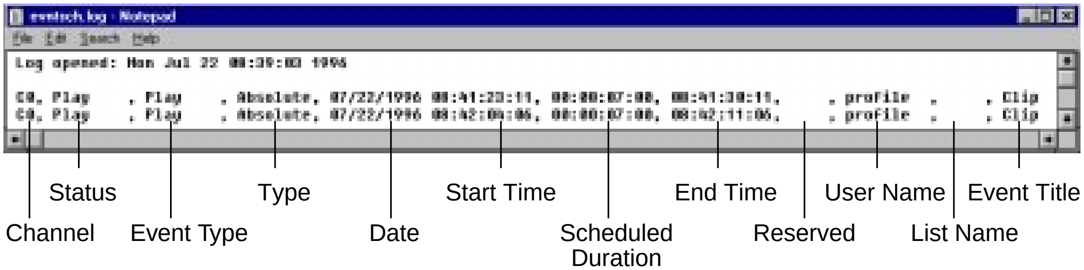


Figure 136. An example of a log file

The Scheduled Duration field shows the value entered in the Master List. It does not show the actual duration of the event. The times shown in the Start Time and End Time fields are actual times which can be used to calculate the event duration.

The List Name field shows the name of the original list containing that event, which subsequently was Scheduled and became part of the Master List

When the log file reaches about four megabytes in length, the information in the file is moved to a new file called *evntsch1.log* and kept as an archive. This ensures that *evntsch.log* always contains current information, but keeps its size manageable. Subsequent archived information will be stored in *evntsch2.log*, *evntsch3.log*, and so on.

Chapter **10**

Using the Resource Manager

The Resource Manager lets you acquire system resources and configure operational settings for up to four Profile channel. Channel resources are used by the Tool Box Editor, List Manager, VdrPanel, and the PRC100.

Using Resource Manager with Tool Box Editor

The Resource Manager lets you acquire system resources and configure operational settings for up to four Profile channels used by the Tool Box Editor.

To manage Profile resources used by Tool Box Editor:

- Choose **Project | Configure** and the Resource Manager dialog box appears.

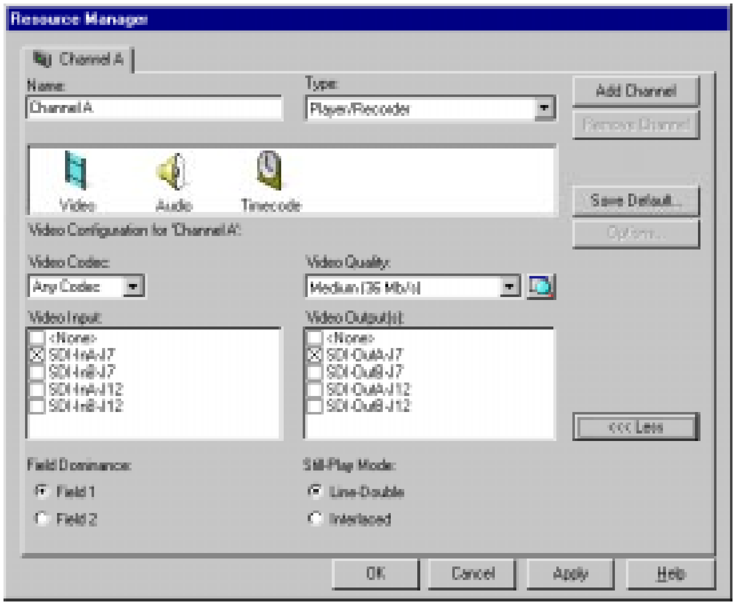


Figure 137. Resource Manager dialog box

Channel resources include:

- Video inputs and outputs
- Video codecs
- Audio channels
- Timecode sources (inputs and outputs)
- Timecode codecs

Operational settings include:

- Video compression quality
- Drop-frame and nondrop-frame timecode
- Field dominance
- Still-play mode
- Timecode generator settings

Whenever you make a change in this dialog box, you can click **Apply**. The changes are applied without leaving the dialog box.

To preserve a configuration as the default, use the **Save Default** button to save your current channel configuration as the default. Different defaults can be saved for each Profile machine in your network.

Acquiring Resources

The Resource Manager is available when the Tool Box Editor is running, unless media is loaded on a timeline. To bring up the Resource Manager dialog box:

- Choose **Config | Resources**.

Acquiring Profile Channels

First, you must acquire one or more Profile channels. The single channel tab labeled *Channel A* is the default. You can change the name of the channel by entering a new name in the Name text box. Channel names can have up to 32 characters, but a shorter name is recommended for readability.

Depending on your system, you can configure up to four channels; however, some systems only have two channels (ports). To add a channel, click the **Add Channel** button. To remove a channel, click the **Remove Channel** button. One channel is always visible.

If no resources are selected for a channel, the channel tab icon is dimmed. If no port is available, a red X appears in the channel tab.

If a resource such as a video input is available, the box next to its name is not checked and its name is *not* dimmed. If it is in use, its name is dimmed. If it is in conflict, that is, in use by another application or channel, its name is red. If it has been acquired, the box next to its name is checked.

NOTE: The default channel type is a JPEG player/recorder. This is the only choice available at this time.

The channel tabs in Tool Box Editor also show results from changes you make in Resource Manager, as shown in Figure 138.

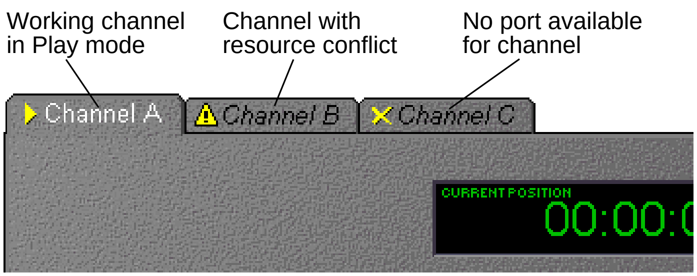


Figure 138. Channel tabs in Tool Box Editor

Configuring Video Resources

To configure video resources:

1. Choose the category of resources you want to allocate: Video, Audio, or Timecode. Video is the default. To configure another resource, click on the appropriate icon.
2. Choose a video codec. By default, a channel is allocated one logical codec (Any Codec). If you have selected the Any Codec option, this means that the first codec available is chosen from among the four physical codecs on the Profile. You can also choose a specific, physical codec (Codec 1–4) or no codec at all.
3. In descending order, the choices for video quality (compression) are High, Medium, Nominal, Draft, and two custom settings, Custom 1 and Custom 2. Medium is the default. The higher the quality, the more disk space is used. To change the video quality, choose another setting from the Video Quality box.

To change a custom setting, click the button next to the Video Quality box, and the Custom Video Quality Settings dialog box appears.

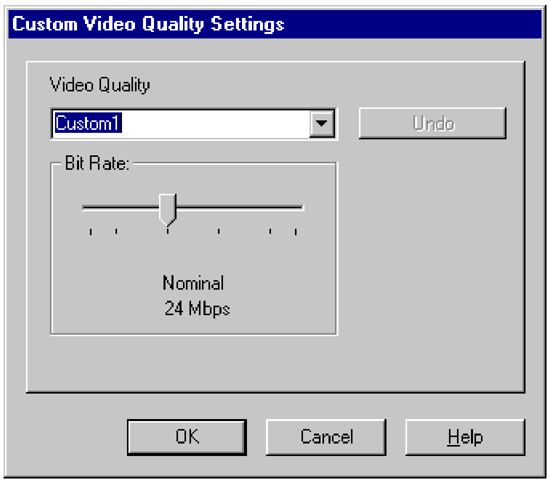


Figure 139. Custom Video Quality Settings dialog box

Select either Custom 1 or Custom 2 in the Video Quality box. With the slider, select a video quality. Click OK when done.

4. Choose a video input from the Video Input check boxes. The default is the first video input. The number and names of video inputs are determined by the system configuration created with Configuration Manager. You can choose only one video input at a time per channel.
5. Now choose a video output. The default is the first video output. The number and names of video outputs are determined by the system configuration created with Configuration Manager. You can choose one or more video outputs at a time. Each output corresponds to one of the video output connectors on the back of the Profile. Once allocated, other Profile channels cannot share assigned video outputs.
6. Click on the **More** button to set field dominance and still-play mode:

- Field dominance determines which field is the mark-in or mark-out point for the frame. The default is Field 1. To set it to Field 2, click on the button.
- Still-play mode determines whether your still frames are interlaced or line-doubled. Line-double is the default. With interlaced, you may get some flicker in still display. Line double reduces flicker.

Configuring Audio Resources

Click on the Audio icon to select audio channels. The default is the first two audio channels (Channels 1 and 2). To choose audio channels, click on the check box for the desired channels (1–16). Once allocated, other Profile channels cannot share the assigned audio channels. For example, if Channel A has all 16 audio channels, these audio channels cannot be shared with Channels B, C or D.

Configuring Timecode Resources

When you click the Timecode icon, the Resource Manager dialog box changes (see Figure 140).

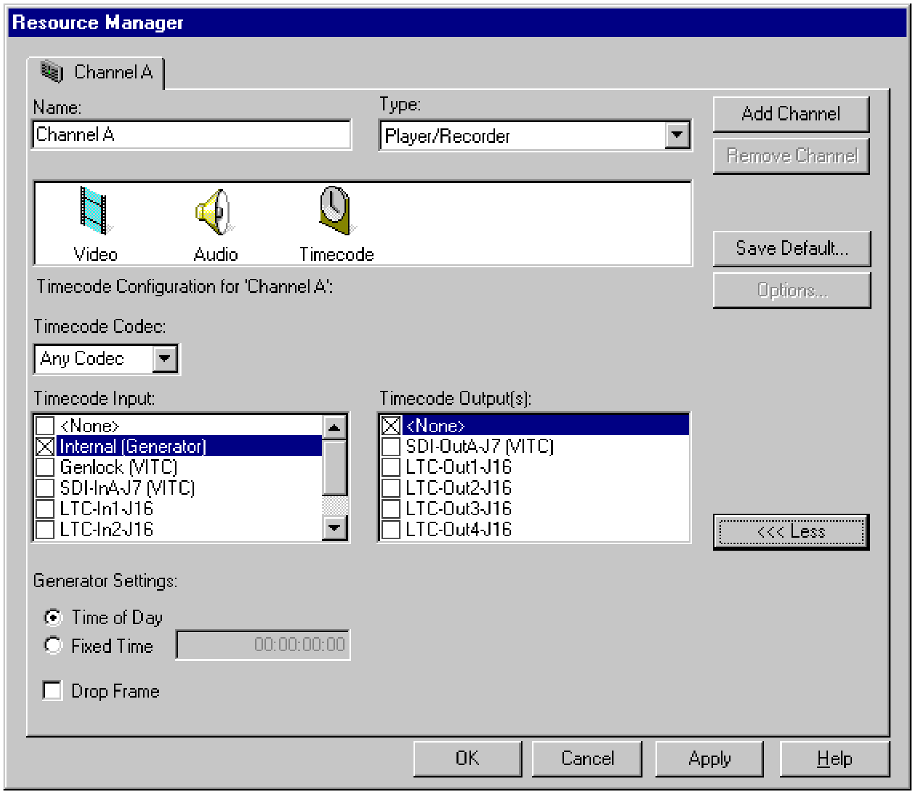


Figure 140. Resource Manager dialog box, Timecode

1. Click on the Timecode icon to choose a timecode codec input and output. The default timecode input is internal generator. You can record timecode from an internal generator, genlock VITC, LTC inputs, or VITC from a Profile channel video input.

2. Choose a timecode codec. By default, a channel is allocated one logical codec (Any Codec). If you have selected the Any Codec option, this means that the first codec available is chosen from among the physical timecode codecs. You can also choose a specific, physical codec (Codec 1–8) or no codec at all (None).

3. If you select internal generator, click the **More** button see the generator settings. The **More** button is dimmed unless you select internal generator.

4. When using an internal timecode generator, you can start timecode using the NT clock or with a fixed time. Click **Time of Day** to use the NT clock, or, click **Fixed Time**. With fixed time, you can use the default of **00:00:00:00** (Hours:Minutes:Seconds:Frames) or set a new fixed starting time. This setting takes effect when the **Record** button is pushed.

5. To choose drop frame, click on the **Drop Frame** button while configuring timecode. To compensate for the 29.97 frame rate in NTSC, drop-frame timecode synchronizes the rate with elapsed time. Drop-frame timecode drops two frames per minute, except on the tenth minute. PAL has a constant rate of 25 frames per second and never requires drop-frame timecode.

6. The system default automatically provides you with one timecode input (Internal Generator), a codec (Any Codec), and no timecode output (None). To preserve a different configuration, use the **Save Default** button to save your current channel configuration as the default. Different defaults can be saved for each machine in your network.

Using Resource Manager with List Manager

Before you can use List Manager, you must allocate Profile resources such as video inputs and outputs for its use. These resources are assigned to channels for use by List Manager. Once the resources are allocated to List Manager, they are unavailable for other applications such as the Tool Box Editor. You must manage Profile resources to ensure that each application is able to use the required resources when it needs them.

To manage Profile resources used by List Manager:

- Choose **Project | Configure** and the Resource Manager dialog box appears (see Figure 137).

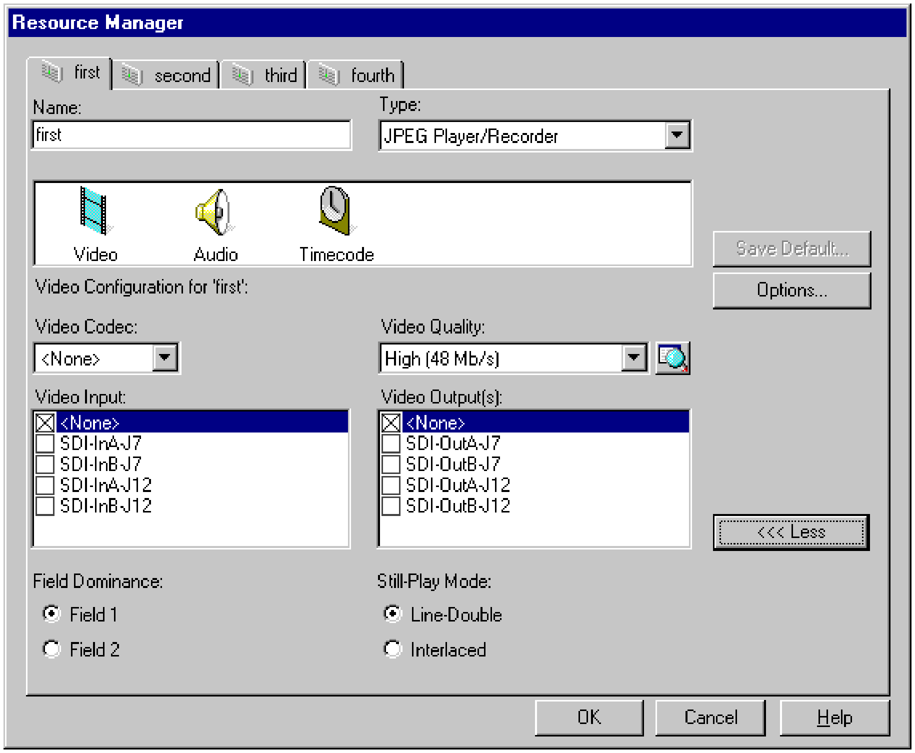


Figure 141. Resource Manager dialog box

The Resource Manager lets you acquire system resources and configure operational settings for up to four Profile channels. Channel resources are used by the List Manager, the Tool Box Editor, and VdrPanel.

Channel resources include:

- Video inputs and outputs
- Video codecs
- Audio channels
- Timecode sources (inputs and outputs)
- Timecode codecs

Operational settings include:

- Video quality (compression)
- Drop-frame and nondrop-frame timecode
- Field dominance
- Still-play mode
- Timecode generator settings

To preserve a configuration as the default, use the Save Default button to save your current channel configuration as the default. Different defaults can be saved for each Profile machine in your network.

Acquiring Profile Channels

First, you must acquire one or more Profile channels. The single channel tab labeled *first channel* is the default. You can change the name of the channel by entering a new name in the Name text box. Channel names can have up to 32 characters, but a shorter name is recommended for readability.

If no resources are selected for a channel, the channel tab icon is dimmed. A resource is in conflict if it is in use by another channel or application.

If a resource such as a video input is available, the box next to its name is not checked and its name is *not* dimmed. If it is in use, its name is dimmed. If it is in conflict, that is, in use by another application or channel, its name is red. If it has been acquired, the box next to its name is checked.

NOTE: The default channel type is a JPEG player/recorder. This is the only choice available at this time.

Configuring Video Resources

To configure video resources:

1. Choose the category of resources you want to allocate: Video, Audio, or Timecode. Video is the default. To configure another resource, click on the appropriate icon.
2. Choose a video codec. The default is none. If you select the Any Codec option, this means that the first available codec is chosen from among the four physical codecs on the Profile. You can also choose a specific, physical codec (Codec 1–4) or no codec at all.
3. In descending order, the choices for video quality (compression) are High, Medium, Nominal, Draft, and two custom settings, Custom 1 and 2. Medium is the default. The higher the quality, the more disk space is used. To change the video quality, choose another setting from the Video Quality box.

To change a custom setting, click the button next to the Video Quality box, and the Custom Video Quality Settings dialog box appears.

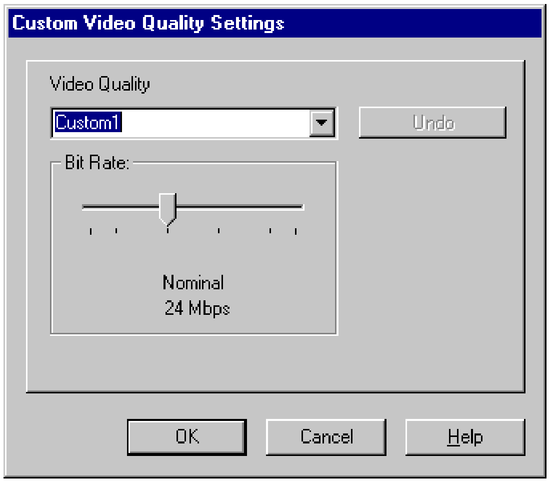


Figure 142. Custom Video Quality Settings dialog box

Select either Custom 1 or Custom 2 in the Video Quality box. With the slider, select a video quality. Click **OK** when done.

4. Choose a video input from the Video Input check boxes. The default is none. The number and names of video inputs are determined by the system configuration created with Configuration Manager. You can choose only one video input at a time per channel.
5. Now choose a video output. The default is none. The number and names of video outputs are determined by the system configuration created with Configuration Manager. You can choose one or more video outputs at a time. Each output corresponds to one of the video output connectors on the back of the Profile. Once allocated, other Profile channels cannot share assigned video outputs.
6. Click on the **More** button to set field dominance and still-play mode:

- Field dominance determines which field is the mark-in or mark-out point for the frame. The default is Field 1. To set it to Field 2, click on the button.
- Still-play mode determines whether your still frames are interlaced or line-doubled. Line-double is the default. With interlaced, you may get some flicker in still display. Line double reduces flicker.

Configuring Audio Resources

Click on the Audio icon to select audio channels. The default is none. To choose audio channels, click on the check box for the desired channels (1–16). Once allocated, other Profile channels cannot share the assigned audio channels. For example, if Channel A has all 16 audio channels, these audio channels cannot be shared with Channels B, C or D.

NOTE: The List Manager does not use timecode resources. If you request a timecode resource in List Manager, the request is ignored and the selection is reset to* none *the next time you display the Resource Manager dialog box.

Using the PRC100 Configuration Tool

The PRC100 Configuration Tool allows you to configure system resources for the PRC100 Control Panel. In the past, configuring these resources was accomplished by directly editing ASCII configuration files: *vtr1.cfg*, *vtr2.cfg*, *vtr3.cfg* and *vtr4.cfg*. The PRC100 Configuration Tool provides a graphical user interface for writing data to these files.

NOTE: The PRC100 Configuration Tool is unsupported software. Use at your own risk. There is no MPEG support in this version.

A PRC100 controls four video channels using Profile native protocol over a single RS-422 connection. The ProLink program monitors this RS-422 connection and executes instructions based on serial communications. ProLink acquires and releases resources according to the resource configuration in the four ASCII configuration files.

To configure your PRC100:

1. Double-click the PRC100 Configuration Tool icon on the Windows NT desktop. The Resource Manager dialog box appears (see Figure 143).

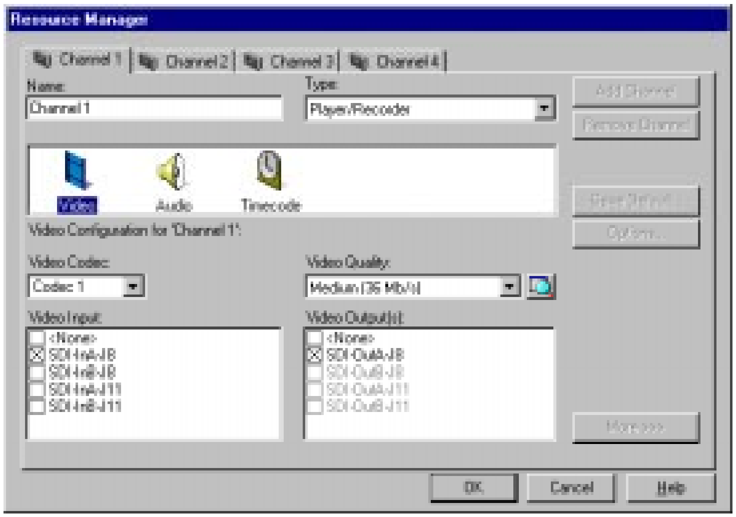


Figure 143. Resource Manager for PRC100 Configuration Tool

2. Select a channel by clicking a channel tab. Up to four channel tabs are displayed, depending on which channels are available. You cannot add or remove channels.

3. If desired, change the name of the channel by typing a new name in the **Name** box. The name, which can be up to 256 characters long, is automatically updated in the channel tab.

4. Select a channel type. At this time, a JPEG player/recorder channel is the only valid channel type.

Configuring Video Resources

To configure video resources:

1. Click the Video icon.

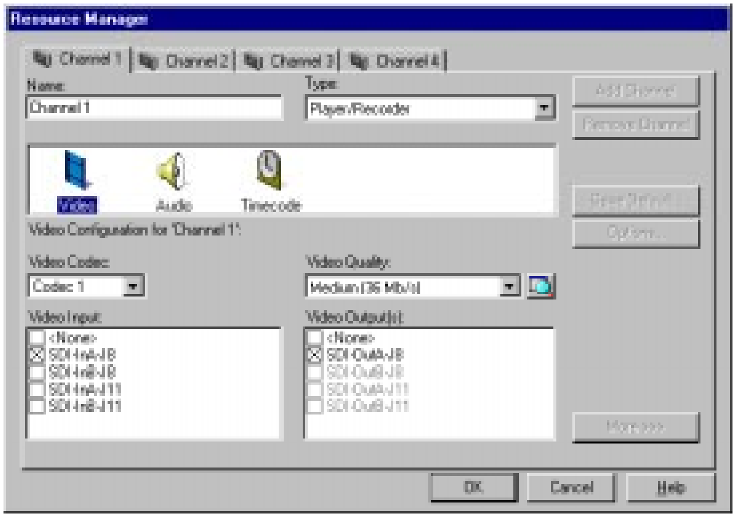


Figure 144. Configuring video resources

2. Select a video codec. You can choose a specific codec number or Any Codec. With the Any Codec option, the software will select a specific codec from those available. You may select only one codec per channel.

3. Select a video input by clicking an empty box in the **Video Input** box. You may select only one video input or None. The type of input that is available

depends on what video input boards are installed in your Profile unit: analog composite, component analog, or serial digital component.

4. Select a video output by clicking an empty box in the **Video Output** box. You may select one or more video outputs. A video output appears dimmed if it is in use or red if it is in conflict with another channel. The type of output that is available depends on what video input boards are installed in your Profile unit: analog composite or serial digital component.

5. Select a video quality setting from the **Video Quality** box. In descending order, the choices for video quality (compression) are **High**, **Medium**, **Nominal**, and **Draft**, plus two custom settings, **Custom 1** and **Custom 2**. **Medium** is the default. The higher the quality, the more disk space is used.

6. To change a custom setting, click the button next to the **Video Quality** box, and the Custom Video Quality Settings dialog box appears.

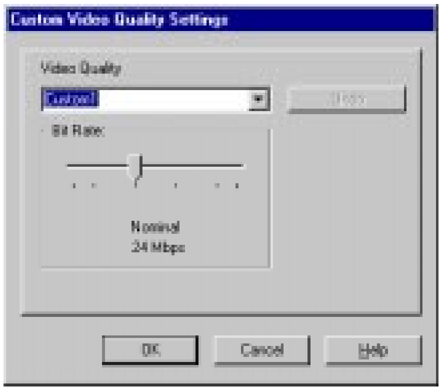


Figure 145. Custom Video Quality Settings dialog box

Select either Custom 1 or Custom 2 in the **Video Quality** box. You can change the name by entering a new name in the **Video Quality** box. With the slider, select a bit rate. Click **Undo** to return the setting to its previous state. Click **OK** when done.

Configuring Audio Resources

To configure audio resources:

1. To change audio settings, click the Audio icon.

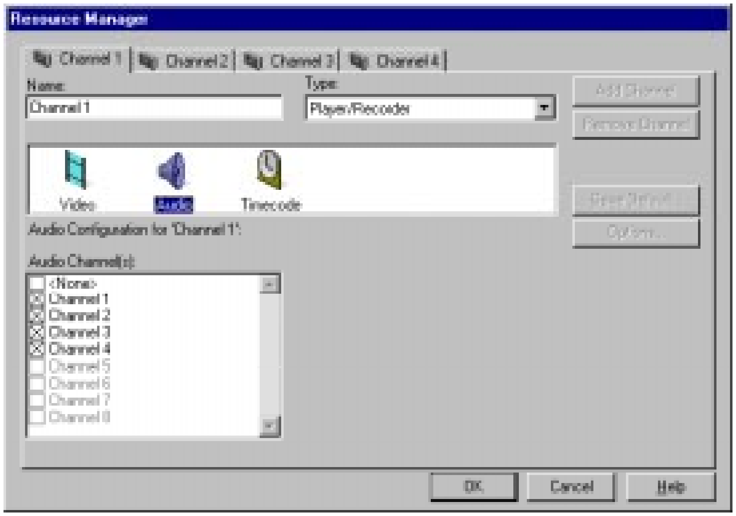


Figure 146. Configuring audio resources

2. Select audio channels—up to 16—in the **Audio Channels** box. Click the box next to the channel name. A dimmed channel name means the channel is in use and a red channel name means that the channel is in conflict.

Configuring Timecode Resources

To configure timecode resources:

1. Click the Timecode icon.

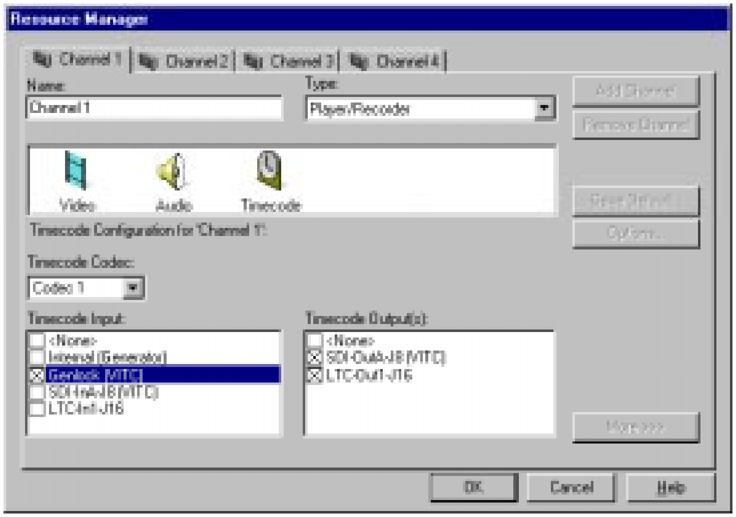


Figure 147. Configuring timecode resources

2. Select a timecode codec. You can choose a specific codec number or Any Codec. With the Any Codec option, the software will select a specific codec from those available. You may select only one codec per channel.

3. Select a timecode input source from the **Timecode Input** box. Input sources include an internal generator, VITC from the reference genlock board, VITC from the serial digital component board, an LTC input, or None. You may select only one timecode input source at a time.

4. If you select an internal generator, you can click the **More** button to see two additional options. You can enter a fixed start time for the internal generator by clicking **Fixed Time** and entering a start time in the format **00:00:00:00** (Hours:Minutes:Seconds:Frames). You can also click Drop Frame to get drop-frame timecode. For a definition of drop-frame timecode, see “Drop-frame” on page 339. Click **Less** to hide the extra options again.

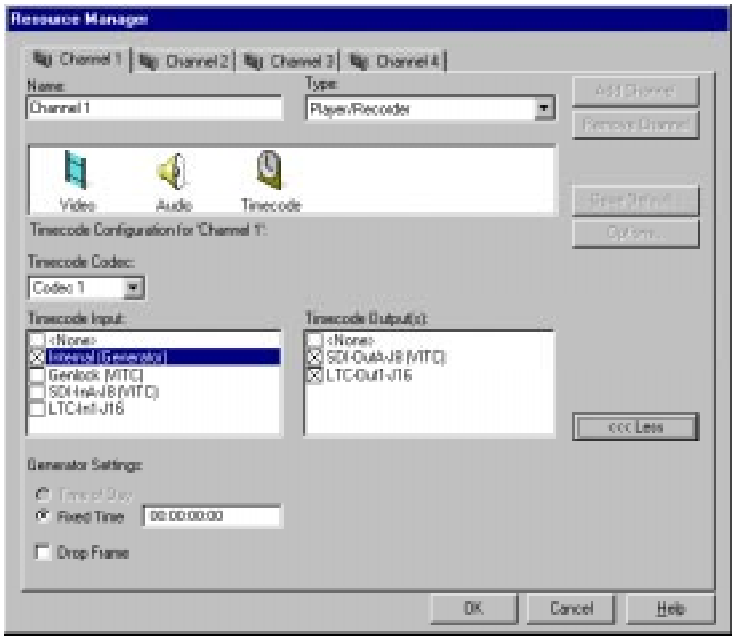


Figure 148. Configuring timecode internal generator resources

5. Select a timecode output from the **Timecode Output** box. Outputs include VITC from the serial digital component board, an LTC output, or None. A timecode appears dimmed if it is in use or red if it is in conflict with another channel.

6. Click **OK** when finished. The settings are saved to the appropriate configuration file. (Clicking **Cancel** disregards all changes.)

PRC100 Configuration Tool Constraints

The video and timecode configuration for each channel can only have one input source and one codec. However, multiple outputs are allowed. If the user wishes to have multiple input sources or codecs, they can use the old brute force method of hand-editing the *vtr[1-4].cfg* files. These changes will be lost the next time the PRC100 Configuration Tool is run and exited by clicking **OK**.

The audio configuration allows the user to choose which audio channels they wish to use, but does not allow them to specify the inputs, outputs, and codecs explicitly. For example, if the user specifies audio channel 2, then they will automatically be assigned audio input 2 and output 2. This is due to the Resource Manager's backward compatibility.

The scheduled and default connections for the video and timecode resources are set based on the resources you choose. The input has a default connection to both the codec and the outputs, and the codec has a scheduled connection to the outputs.

If ProLink and the PRC100 Configuration Tool are running simultaneously, the resources currently allocated by ProLink will appear as conflicts in the PRC100 Configuration Tool, as will resources allocated to other applications using Profile resources. The PRC100 Configuration Tool only knows that the resources are in use, not which application is using them. A resource may still be requested in the PRC100 Configuration Tool even if it is currently in use by another application.

Chapter **11**

Using TimeDelay

NOTE: A time-locked version of this optional software was shipped to you with version 2.4 system software. Unlocking this software requires an additional purchase. Click* Purchase *in the timelock dialog box for information on how to purchase this software.

TimeDelay enables a Profile disk recorder to record incoming video and delay the playback a user-specified amount of time. Figure 149 illustrates the conceptual model for TimeDelay. Video enters the system at timecode 00:00:00:00. Record begins at a given time (according to the clock on the NT server) or is manually started. Playback is started based on the specified delay time for the playback channel. When the record channel reaches the specified delay time, playback begins. You can also start playback manually.

The maximum delay length for the Largest Delay field depends on the current available disk capacity of the disk recorder. Once the Largest Delay has been reached, playback occurs in a continuous loop.

If the censor channel is used, it can edit recorded clips that have not yet been played back. Referring to Figure 149, this means the censor channel would be positioned within the specified delay time limits.

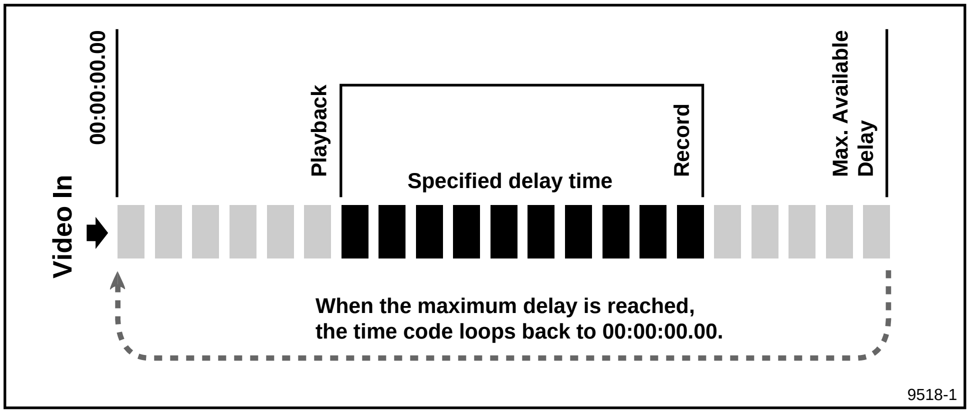


Figure 149. TimeDelay conceptual model

TimeDelay can be run in several different configurations:

- One record/playback pair. Video is recorded on the record channel (assigned to Panel A) and played back on the playback channel (assigned to Panel B) according to the time delay specified.
- Two record/playback pairs. Video is recorded on the record channel (assigned to Panel A) and played back on the playback channel (assigned to Panel B) according to the time delay specified on Panel B. A second video stream is recorded on the record channel (assigned to Panel C) and played back on the playback channel (assigned to Panel D) according to the time delay specified on Panel D. This configuration requires a disk recorder with four channels.
- One record/playback pair with a censor panel. Video is recorded on the record channel (assigned to Panel A). Within the delay time, the video can be edited with the censor panel on Panel C. The edited clip is played back on the playback channel (assigned to Panel B) according to the time delay specified on Panel B. This configuration requires a disk recorder with four channels.
- One record/playback pair with one or two additional playback panels. Video is recorded on the record channel (assigned to Panel A) and played back on one or more of the playback channels: Panel B, Panel C, and Panel D. The delay is set on each of the playback panels. This configuration requires a disk recorder with four channels.

NOTE: Profile system software version 2.4 supports TimeDelay version 1.1.5. This release does not support MPEG.

Getting Started with TimeDelay

NOTE: Close VdrPanel if it is running. TimeDelay and VdrPanel use some of the same resources. Running both applications simultaneously is not recommended.

To start the TimeDelay application:

1. Double click on the TimeDelay shortcut icon on the desktop to start the application. Figure 150 illustrates the TimeDelay panels. TimeDelay starts in the same panel configuration as it was last saved.

NOTE: TimeDelay uses the standard Windows NT interface. For help with Windows NT interaction, refer to Microsoft NT manuals.

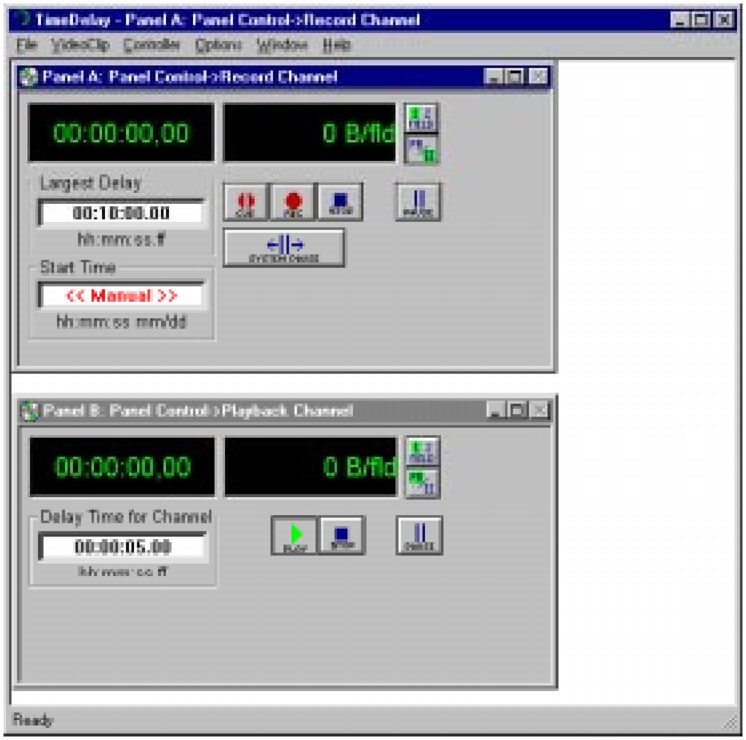


Figure 150. TimeDelay window with record/playback pair

Record Panel Controls

Figure 151 illustrates the controls on a Record panel.

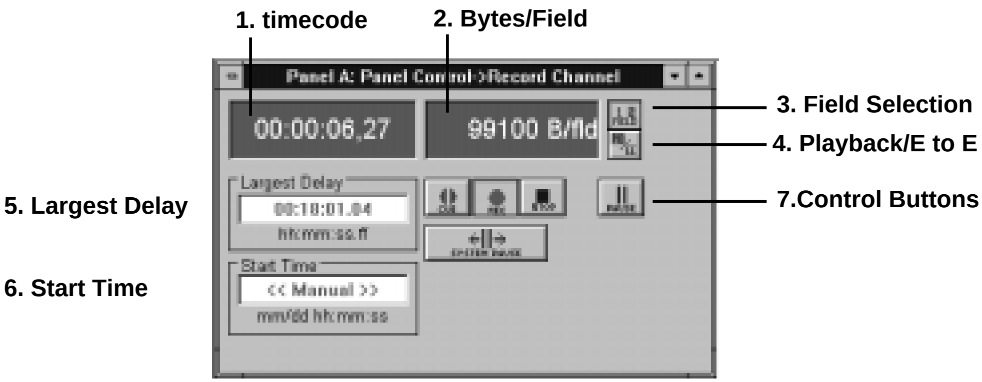
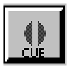


Figure 151. Record panel controls

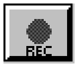
1. **Timecode** displays the current timecode of the clip being recorded.
2. **Bytes/Field** displays the current compression rate applied to the frames in the clip. The target compression rate is set through **Controller | Configure**. If this number does not change when **Rec** is clicked, no video signal is present. Verify the cables and connections are correct on the disk recorder. Verify the Video Crosspoints are set correctly. Refer toSee “Setting up the Signal Routing” on page 300.
3. **Field Selection** toggles between one field or two fields when playing back still frames. For one field, each line in field is duplicated to form a frame.
4. **Playback or E to E** toggles between **Playback** (viewing the video input after it is recorded) and **E to E** (viewing the video input directly).

5. **Largest Delay** displays the maximum amount of delay time configured for this panel. The default value (displayed in red) shows the maximum amount available on the disk recorder. A user-specified value appears in black.
6. **Start Time** sets the start time for the clip, entered as the month, day, and time (based on the clock in the NT computer). If << *Manual* >> is displayed, the **Rec** button must be clicked to start recording.
7. Control buttons for the record channel are shown here:

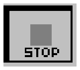


Cue places the system in record standby mode.

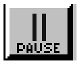
With **Cue**, the system starts recording nearly instantaneously when **Rec** is clicked or the **Start Time** is reached. Otherwise, there is an up to five second delay before recording begins.



Record begins recording the video input stream.

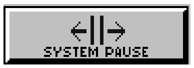


Stop stops recording the video input stream on the record channel, and stops playback on all of the channels using the record channel.



Pause pauses the record channel without affecting the current playback operation of the associated playback channels.
Click on **Pause** to toggle it off and resume recording.

NOTE: If the record channel is paused longer than the delay time for the playback channel, the playback channel can catch up or even pass the recorder. If there is material stored in the clip it could be replayed.



System Pause pauses all channels on the system. Click on **System Pause** to resume panel operations.

Playback Panel Controls

Figure 152 illustrates the playback panel controls.

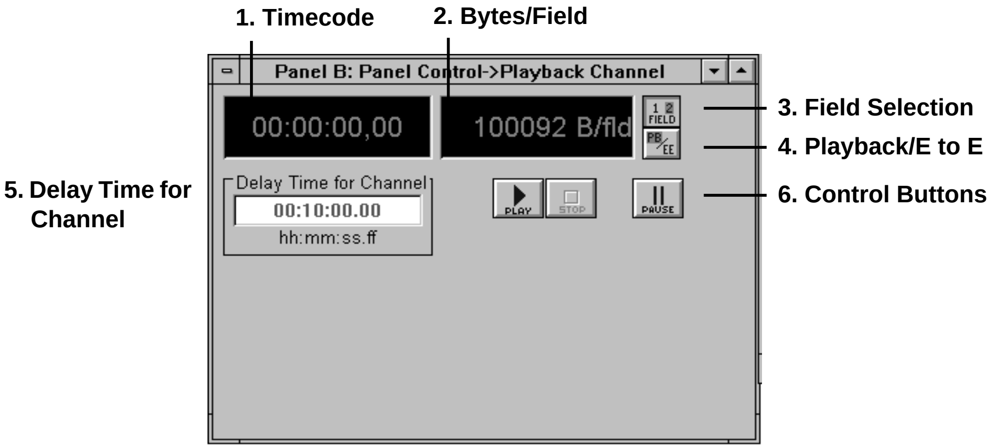
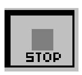


Figure 152. Playback panel controls**.**

The playback channel controls are explained here:

1. **Timecode** displays the current timecode of the clip being played.
2. **Bytes/Field** displays the compression rate applied to the frames. The target compression rate is set through **Controller | Configure**.
3. **Field Selection** toggles between one field or two fields when playing back still frames. For one field, each line in field is duplicated to form a frame.
4. **Playback or E to E** toggles between **Playback** (showing a still frame if the panel is stopped) and **E to E** (loops the input signal through to the output while the panel is stopped).
5. **Delay Time for Channel** sets the amount of time to delay playback of the recorded video from the record channel. Playback channel delay times cannot exceed the Largest Delay time specified on the record channel.
6. Control buttons for the playback channel are:

Play starts playback on the channel.



Stop stops playback on the channel.

Pause pauses the playback channel. Click on **Pause** to toggle it off, recalculate the new delay time, and resume playback.

NOTE: If playback is paused longer than the Largest Delay time, the record channel can loop around and overtake the playback.

Censor Panel Controls

Figure 153 illustrates the controls on a censor panel.

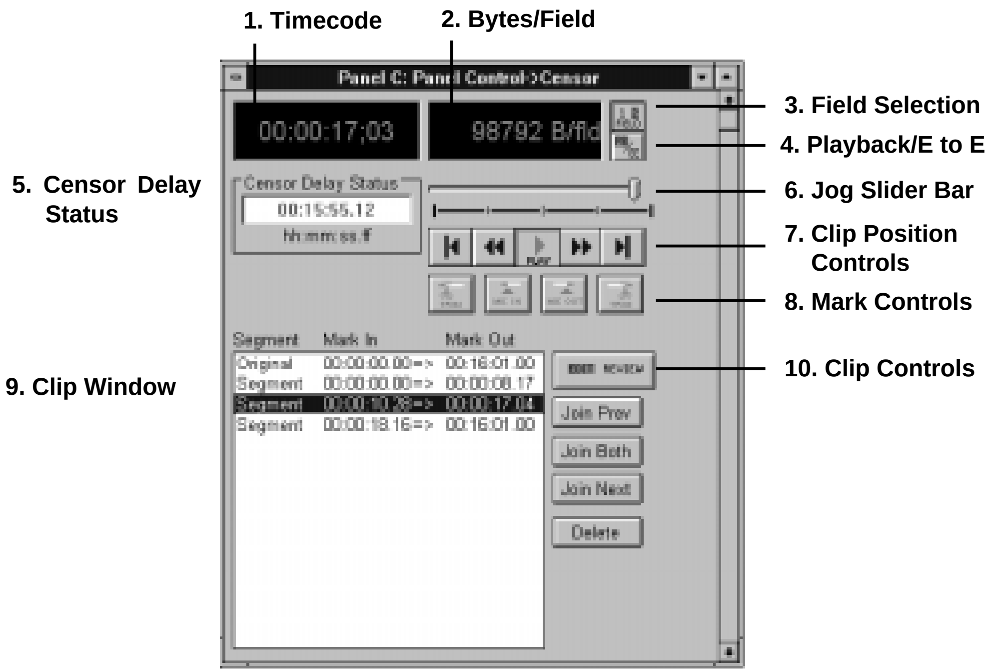
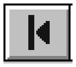


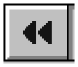
Figure 153. Censor panel controls

Censor panel controls are described here:

1. **Timecode** displays the current timecode of the clip.
2. **Bytes/Field** displays the current compression rate applied to the clip. The target compression rate is set through **Controller | Configure**.

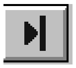
3. **Field Selection** toggles between one field or two fields when playing back still frames. For one field, each line in field is duplicated to form a frame.
4. **Playback or E to E** toggles between **Playback** (showing a still frame if the panel is stopped) and **E to E** (loops the input signal through to the output while the panel is stopped).
5. **Censor Delay Status** sets the delay time for the censor channel.
6. **Jog Slider Bar** indicates the current position relative to the entire clip. Click and drag the bar to change the position within a clip, or use the **Clip Position Controls**.
7. **Clip Position Controls** control the current clip position:


Start Clip jumps to the start of the clip.

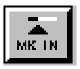

Jog Backward moves the clip back one frame.

Play plays the clip from the current position.


Jog Forward advances the clip one frame.

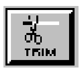

End Clip jumps to the end of the clip.

8. **Mark Controls** place in marks and out marks, and trim clip information.

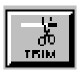


Set In Mark adds an in mark at the current clip position. Use the Jog Slider bar or Jog controls to set the desired clip position.

Set Out Mark adds an out mark at the current clip position. Use the Jog Slider bar or Jog controls to set the desired clip position.



Trim to In Mark modifies the previously set in mark. Use the Jog Slider bar or Jog controls to set the desired clip position.



Trim to Out Mark modifies the previously set out mark. Use the Jog Slider bar or Jog controls to set the desired clip position.

9. **Clip Window** displays the in marks, and out marks of the segments in the current clip. As the segments are played back, they are removed from the clip window.

10. **Clip Controls** perform operations on the available segments shown in the clip window:

Edit/Review toggles the viewing mode. **Edit** enables the Clip Control. **Review** continuously plays the segments.

Join Prev joins the current segment with the previous segment.

Join Both joins the current segment with the previous and *Next* segment.

Join Next joins the current segment with the next segment.

Delete deletes the current segment.

NOTE: The Join buttons are used to add censored material back into the playback stream.

Exiting TimeDelay

To exit TimeDelay:

- Choose **File | Quit**.

Configuring the Panels

Click anywhere within the specific Panel dialog box to select the panel. The title bar is highlighted when a panel is selected. The following options are available from the Controller menu:

- **Select** sets up the panel as **Panel Control** or **Remote Control**.
- **Configure** sets the playback and record JPEG channels, audio channels and the VITC timecodes.
- **Comm Port** assigns the communications port to use if remote control is selected.

Selecting a Controller

To select a controller:

1. Click anywhere within the specific Panel dialog box to select the panel.
2. Select **Controller | Select** to access a Controller Setup dialog box.

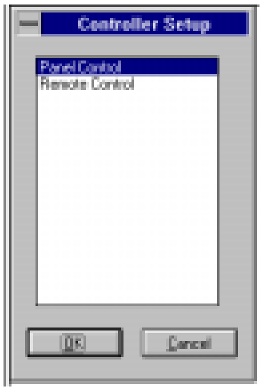


Figure 154. Controller Setup dialog box

3. Select the type of control for the channel and click **OK**.
   - **Panel Control** specifies control from the Windows NT user interface. No communication port selection or configuration is necessary.
   - **Remote Control** specifies control via the RS-422 interface. This option requires the additional configuration and communication port set up.

Selecting a Communications Port for Remote Control

To select a communications port:

1. Click anywhere within the specific Panel dialog box to select the panel.

   NOTE: The Communication Port dialog box is accessed automatically the first time Remote Control is selected.

2. Select **Controller | Comm Port** to access a Controller Setup dialog box. An example of this dialog box is illustrated in Figure 155.

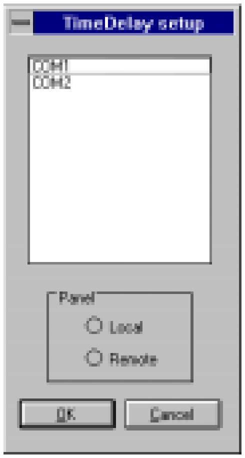


Figure 155. Communication Port dialog box

   NOTE: COM1 and COM2 are available on the disk recorder back panel (RS-232 DB-9 connectors). Ports P1 through P8 are available on the RS-422 breakout panel. Any P ports used by VdrPanel should have the DIP switches set to Device. Refer to your disk recorder's installation manual for details.

3. Select the communications port and click **OK**.

Configuring a Controller

This command sets the playback and record JPEG channels, audio channels and the VITC timecodes for the selected controller.

1. Click anywhere within the specific Panel dialog box to select the panel.
2. Choose **Controller | Configure** to access the Profile Options dialog box for the selected panel. Figure 156 illustrates the standard Profile Options dialog box.

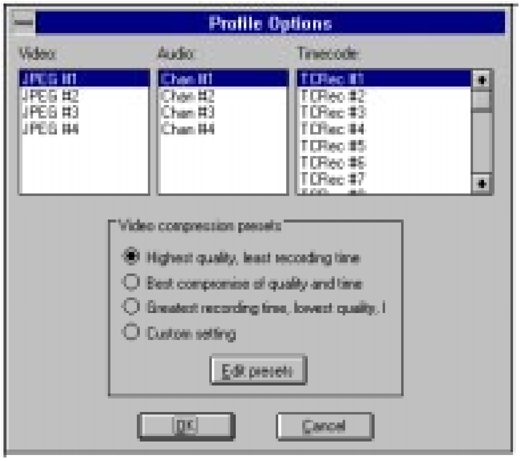


Figure 156. Profile Options (controller configuration) dialog box

3. Click on the appropriate options for your selected controller. Use the scroll bars to see more options if necessary. Typically, you assign four audio and four timecode channels to each JPEG channel.
4. Select a video compression preset. The options range from highest quality (but use the most recording time) to lowest quality (using the minimum of recording time). Custom setting (using the current presets) is also available.
5. Edit the preset values if necessary. Refer to Table 13 for the factory set Preset values. If you need to change the values, click **Edit resets** to access the Edit Compression Presets dialog box illustrated in Figure 157. Click **OK**.

Table 13. Factory set values of the compression presets

Preset Name	525/60 Standard			625/50 Standard		
	Lum	**Chroma**	**Byte Rate**	**Lum**	**Chroma**	**Byte Rate**
Highest	0.75	60.00	100000	0.75	100.00	120000
Best	0.75	60.00	75000	0.75	100.00	90000
Lowest	0.75	60.00	50000	0.75	100.00	60000
Custom	5.00	5.00		5.00	5.00	

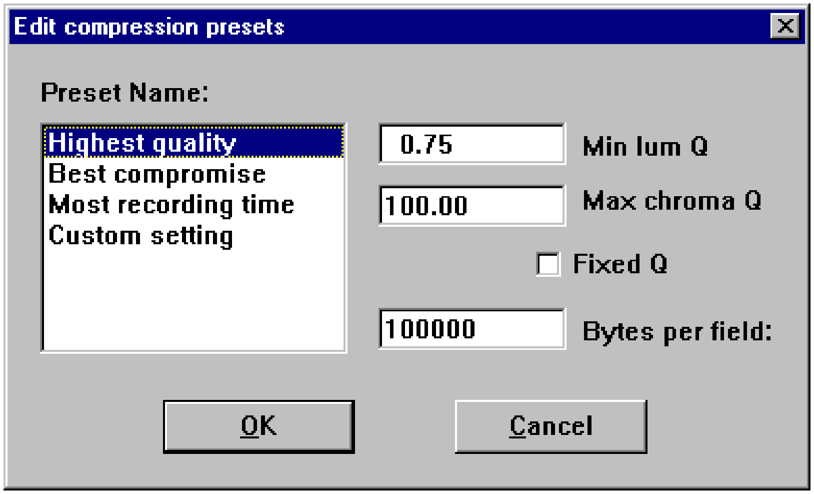


Figure 157. Edit Compression Presets dialog box

- **Min Lum Q** sets the minimum compression that can be applied to luminance in a field to meet the target data rate (typically 0.75). The lowest rate is 0.75.
- **Max Chroma** sets the maximum compression that can be applied to chrominance in a video field to meet the target data rate (typically 60).
- **Fixed Q** sets a fixed picture quality and ignores variation in field size. Use this mode for critical multi-generation work. When **Fixed Q** is selected, the other fields become fixed as **Lum Q** (fixed luminance compression) and **Chroma Q** (fixed chrominance Q). Useful starting values for **Fixed Q** and **Chroma Q** are 5.00. Verify there is sufficient available data rate headroom before using **Fixed Q** mode. The **bytes/field** target attempts to

meet the Lum and Chroma goals. With **Fixed Q** mode, **bytes/field** can increase beyond the system bandwidth, causing interference with other channels.

- **Bytes per Field** is the target compression rate. Not every field requires the target rate, it is simply the average rate the Disk Recorder tries. The higher the rate, the better the picture detail. The actual **bytes/field** depends on the picture complexity, **Min Lum Q**, and **Max Chroma**. The algorithm dynamically changes **Min Lum Q** and **Max Chroma** to make the field size meet the target unless **Fixed Q** is selected.

6. Click **OK** when all options are set.

Setting up the Signal Routing

Signal routing determines which physical input and output connections are used by a panel. A crosspoint method is used to assign the physical connections to the TimeDelay software panels.

Signal routing must be set up to obtain video input and output.

NOTE: The Controller for each channel must be set up before assigning the crosspoints. Follow the instructions for "Configuring a Controller" on page 298.

There are three steps:

- Setting video crosspoints.
- Setting up timecode.
- Assigning timecode crosspoints.

Assigning Video Crosspoints

Video crosspoints allow you to assign the video signal connections within the disk recorder.

- Video inputs (upper left) represent video input connectors on the back panel. Video inputs can be connected to JPEG codecs for recording onto disk, or connected to video output for display.
- Video outputs (upper right) represent video output connectors on the back panel. Video outputs can be connected to JPEG codecs for playback of recorded material from disk or direct to video inputs.

1. Select **Window| Video Crosspoint** to access the dialog box. The green boxes indicate current connections. For example, a green box at the intersection of *DComponentVideo1InA* and *JPEG# 1* connects the video signal from the back panel input labeled *IN A* to JPEG video codec #1.

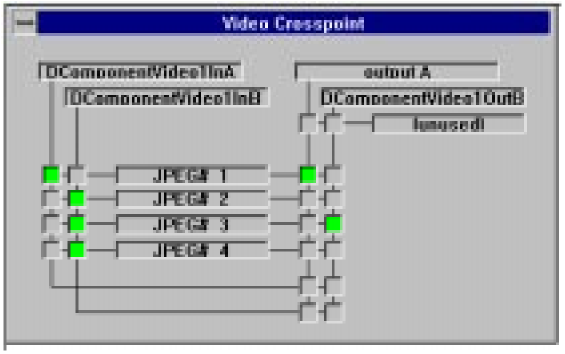


Figure 158. Video crosspoint dialog box

1. Assign each input to a JPEG channel by clicking in the intersection between the video signal and the JPEG channel. The selections turn green.

   NOTE: Verify that you have the appropriate video signals connected to the appropriate BNC on the rear panel.

1. Assign each output either to a JPEG channel for recording or direct to output. The direct crosspoints are those connected to the inputs by the line running beneath the JPEG selections.
1. Select **Close** from the control menu box in the upper-left corner of the panel, or press Alt-F4.

   NOTE: To release an output for use by another application, click the box at the intersection of the output with the* [unused] *box.

Setting up Timecode

The Set Timecode dialog box enables you to set the timecode display and the source on a channel to the values required for your application.

1. Click anywhere within the specific Panel dialog box to select the panel.
2. Select **Options | Select Timecode** to access the Timecode Setup dialog box. The Timecode Setup dialog box is divided into two groups: **Display on Panel** and **Timecode Generator Settings**.

Figure 159. Timecode Setup dialog box

3. Select the timecode to be displayed on the panel from the **Display on Panel** group:
   - **LTC Input** is a separate signal input to the disk recorder via the genlock card.
   - **VITC Input** is the timecode from the VITC input signal. It may be part of the video signal being recorded.
   - **Compute from Field Number** calculates the timecode directly from the field number of the recorded video. New clips start at 00:00:00:00.
   - **TC Rec #** displays the recorded timecode.
   - **Generator** displays the timecode from the generator for the channel.

4. Set up the timecode generator used by the panel with the **Timecode Generator Settings** group:
   - **Free Run** causes the timecode generator to continue to advance regardless of the current play or record mode of the panel.
   - **Freeze** locks the timecode at the current value. The value does not advance with time or changes in the play or record mode of the panel.
   - **Lock to Field Number** causes the generator to output a timecode locked to the current position of the panel. When the panel is in stop, the value freezes. When the panel is in play or record, the timecode advances normally. During Rewind or reverse Shuttle, the timecode runs backward.
   - The **Reset To** button resets the timecode to the value entered in the box. The generator can be set to this value when Free Run, Freeze, or Lock to Field Number is selected.
5. Click **Close** when complete.

Assigning Timecode Crosspoints

The Timecode Crosspoint dialog box controls the connections of timecode signals within the disk recorder.

- Timecode inputs (top-left corner) represent either LTC input connectors on the back panel or VITC input signals (carried in the vertical interval of the associated video signal on a video input connector). timecode inputs can be connected to timecode recorders for recording onto disk.
- Timecode generators (below timecode inputs) represent timecode generators used by the panels. timecode generators can be connected to timecode recorders for recording onto disk or to timecode outputs.
- Timecode outputs (top-right corner) represent either LTC output connectors on the back panel, or VITC output signals (inserted into the vertical interval of the associated video signal on a video output connector). timecode outputs can be connected to timecode recorders for playback of recorded material from disk, to timecode inputs, or to timecode generators.

1. Choose **Window | Timecode Crosspoint** to access the Timecode Crosspoint dialog box. The green boxes indicate the current connections. For example, a green box at the intersection of *TCRec#1* and *LTC1In1* indicates the timecode signal from the back panel input *LTC1In1* is recorded by timecode recorder #1.

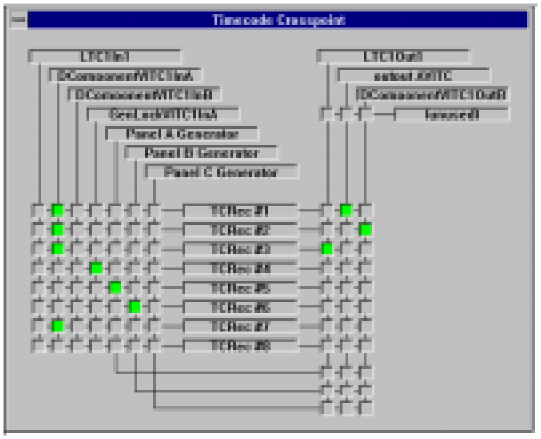


Figure 160. Timecode crosspoint dialog box

2. To assign a crosspoint, click in the intersection between the signal and the recorder channel. The selections turn green.

   NOTE: A timecode recorder must be used by a panel to be available as a timecode output.

3. Select **Close** from the *Control Menu Box* in the upper-left corner of the panel, or press Alt-F4.

   NOTE: To release a timecode output for use by another application, click the box at the intersection of the output with the unused ***box.***

Setting a Delay Time

To set a delay time:

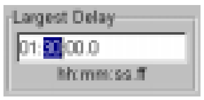
1. Select the record panel. You can use **Window | Record Capacity** to verify the maximum amount of delay time available on the system.

   NOTE: If you have two Record Pairs (File | New Record Pair) remember that Panel A and Panel B form one pair, and Panel C and Panel D form the other pair. The combined Largest Delay values for Panel A and Panel C cannot exceed the maximum available time.

2. Click in the **Largest Delay** box.

   NOTE: As a precaution, add extra time to the largest delay value, in case you need to censor or pause the playback channel. For example, if you want a 1 hour and 30 minute delay, enter 01:35:00.00.

When the editing cursor appears, enter the time as *hh:mm:ss.ff* (hours:minutes:seconds.frame). Press Enter with no value to insert the default delay time (record capacity is the default delay). The minimum delay time is 5 minutes (00:05:00.00).



You can use the mouse or arrow keys to highlight the information to be changed, and then type the new value, or use Delete or Backspace to erase any existing information before typing the new value.

When the information is correct, press Enter.

3. Select the playback panel.
4. Click in the Delay Time for Channel box. This value is the delay between when recording starts and when playback starts.
5. Enter the amount of delay (*hh:mm:ss.ff*) for the playback channel. Editing is performed the same as on the record panel. The minimum delay is 5 seconds (00:00:05.00). The default delay time for the playback channel is 5 seconds less than the **Largest Delay** set for the record channel.

NOTE: You can open up to three Playback channels (on a four-channel disk recorder) with File | New Channel. Each channel can be delayed a different amount of time. Repeat steps 3. through 5. for each Playback panel.

Starting Video Recording

There are two methods to begin recording:

- *Manual* is performed by an operator clicking the **Rec** button.
- *Automatic* is performed if a time is entered in the Start Time box and the system is Cued.

Manual Recording

1. Click on **Cue** to prepare the system for recording. This step is not necessary. Cueing the system eliminates the five second delay that occurs when you click **Rec**.

   The timecode and bytes/field displays change color. Timecode starts at 00:00:00.00, the bytes/field display should be rapidly changing, indicating the JPEG codec is receiving and compressing a video stream. If bytes/field is 0, verify the cables and connections are correct on the disk recorder. Verify the Video Crosspoints are set correctly. See “Setting up the Signal Routing” on page 300.

2. Click **Rec** in the record panel. The timecode counter should start counting. A still frame appears on the playback channel.
3. At the **Delay Time** specified on the playback channel, playback begins. Once playback is complete, click **Stop** to end the recording.

Automatic Recording

1. Select the record panel.
2. Click in the Start Time box. This value is the time to automatically start recording on the channel. For example, if you want to start recording at 2:00 pm, enter the hours as 14:00.
3. Enter start time as *mm/dd hh:mm:ss* (*month/date hours:minutes:seconds*), using a 24 hour clock. For example, to start recording on November 20 at 5:20 pm, enter the time as: **11/20 17:20:00**
4. Click on **Cue** to prepare the system.

5. Playback begins at the **Delay Time** specified. Once playback is complete, click **Stop** (on the record panel) to end the recording.

   NOTE: After recording, remove or update the start time.

Changing Playback Delay Time

Once playback begins, the **Delay Time for Channel** value cannot be edited directly. There are two methods to add more playback delay time:

Pausing the Playback Panel

1. Click on **Pause** in the playback panel to freeze the video. TimeDelay increases the delay time by the amount of time playback is paused.
2. Click **Pause** again to continue playback.

Changing the Timecode

1. Click within the timecode display counter in the playback panel. This accesses the Go to Timecode dialog box.

   NOTE: When using this feature, the jump to the new timecode may not be clean. There may be some momentary still video.

2. Click in the Enter Timecode box. The Go To Timecode dialog box is displayed.

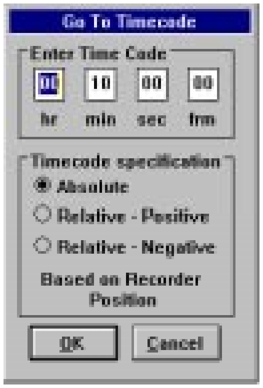


Figure 161. Go To Timecode dialog box

3. Enter a timecode value. Use the mouse or tab to move between the fields.

4. Select a **Timecode Specification:**

   - **Absolute** moves the Playback channel to the specified timecode, and computes a new **Delay Time for Channel** value relative to the record channel. Be sure to select a value lower than the current record channel timecode. Otherwise, you move playback ahead of record. Leave a minimum of five seconds delay.

   - **Relative - Positive** is not typically used, as it moves the playback channel ahead of the record channel.

   - **Relative - Negative** moves the playback channel to the record timecode minus the **Enter Timecode** value. This value is used as the new **Delay Time for Channel**.

Locking the System

When a time delay is set, the system can be locked to prevent accidental changes or playback interruptions.

1. Choose **File | Lockout Panel**. The Panel Lockout dialog box appears.

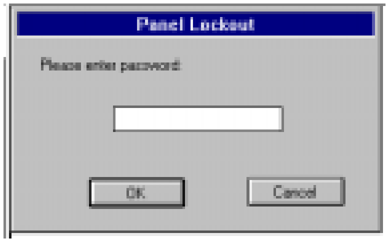


Figure 162. Panel Lockout dialog box

2. Enter a password in the box.

3. Click **OK**. This locks the system.

To unlock the system, enter the password and click **OK**.

Recording a New Clip

This sets the clip used by the recorder. If you select an existing clip, it reuses it. The default clip name for Panel A is *#TIMEDELAY#0#*, the default clip name for Panel C is *#TIMEDELAY#2#*.

1. Select a record panel.
2. Choose **VideoClip | New Clip** to access the New Clip dialog box (Figure 163).

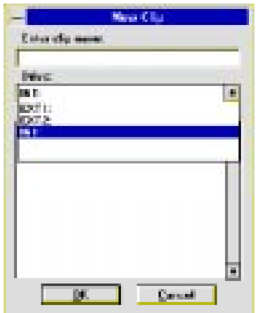


Figure 163. New Clip dialog box

3. Enter a meaningful clip name (such as *11-20delay.1*).
4. Select a drive from the **Drive** list. The number of drives available depends on your hardware.
5. Click **OK**.
6. Click the **Record** button to begin recording. The timecode and compression rate fields are updated.

   NOTE: A video input signal must be present on the selected Channel for recording to start.

7. Click **Stop** to stop recording.

Renaming a Clip

To rename a clip:

1. Choose **VideoClip | Rename Clip**. The Rename Video Clip dialog box appears.
2. Click on the clip to be renamed (such as *#TIMEDELAY#0#*).
3. Enter the new name in the **To** field.
4. Click **OK**.

Deleting a Clip

To delete a clip:

1. Choose **VideoClip | Delete Clip** to open the Delete Clip dialog box.
2. If the clip you want to delete is on a different drive, select it in the **Drive** box.
3. Select the clip or clips you want to delete.
4. Click **OK** when complete. A message box appears telling you which file is being deleted.

Using Drop-Frame Timecode

In NTSC, you don't actually get 30 frames per second (fps); the real number is about 29.97 fps. Timecode usually assumes 30 fps. To account for the discrepancy, drop-frame timecode skips or drops two timecode values at the beginning of every minute except every tenth minute. This allows timecode to exactly match a real-time clock on 525/60 systems. This correction is not needed on 625/50 systems because the frame rate is exactly 50 fps.

To set drop-frame timecode:

- Choose **Options | Drop-Frame** or **Options | Non-Drop-Frame**.

Auto Restore

Auto restore mode automatically restores operations to their state previous to a hardware or software crash. To invoke auto restore:

- Choose **Options | Auto Restore**.

Auto Shuttle

Auto shuttle sychronizes the play back play speed with the Record panel. To set auto shuttle to on:

- Choose **Options | Auto Shuttle Control**.

Starting the Censor Channel

The Censor channel enables you to mark and review video segments between the time they are recorded and the time they are played back. Basic editing can be performed on the segments.

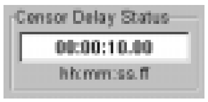
The Censor channel always appears on Panel C. Panel D is disabled when the Censor channel is opened. The Censor channel window is longer than the other panels. You may have to increase the panel length to see all of the options.

To start the censor channel:

1. Choose **File | New Censor Channel**.
2. Click in Censor Delay Status box if you want to increase the delay time between the record channel and the censor channel. Five seconds is the default (and minimum) delay time.

When the editing cursor appears, enter the time as *hh:mm:ss.ff* (hours:minutes:seconds.frame). Press enter with no specified time to use the default value. The minimum delay time is 5 seconds (00:00:05.00).

You can use the mouse or arrow keys to highlight the information to be changed, and then type the new value, or use Delete or Backspace to erase any existing information before typing the new value.



When the information is correct, press Enter.

Understanding Segments

Segments are the portions of information to be played. The original clip is the uncensored material available to be marked. When you set an out mark, you are indicating information to be edited out of the segment, when you set an in mark, you indicate information to be included in the segment.

For example, Figure 164 illustrates the *original* clip and three marked segments.

Figure 164. Segments in the clip window

- The *Original* clip is 00:16:01.00 in length.

  NOTE: The Trim operations are not valid for the original clip. The Mark operations are not valid for the segments.

- The first segment includes everything from the start of the clip to the frame at 00:00:08.17. All of these frames are included in the playback.
- The frames between 00:00:08.17 and 00:00:10.28 have been censored. They are not included in the playback. Likewise, the frames between 00:00:17.04 and 00:00:18.16.
- The **Join** buttons are used to reinsert censored material back into the playback stream. For example, if Join Prev was clicked for Segment 2, the material between 00:00:08.17 and 00:00:10.28 would be reinserted. Segment 1 would change to reflect 00:00:00.00 ⇒ 00:00:17.04, the former Mark Out for Segment 2.

Marking Segments

To make a segment:

1. Start recording. On the censor channel, a clip name *Original* is added to the clip window (Figure 165). The starting timecode is 00:00:00.00 and the ending timecode is set to the **Largest Delay** value.

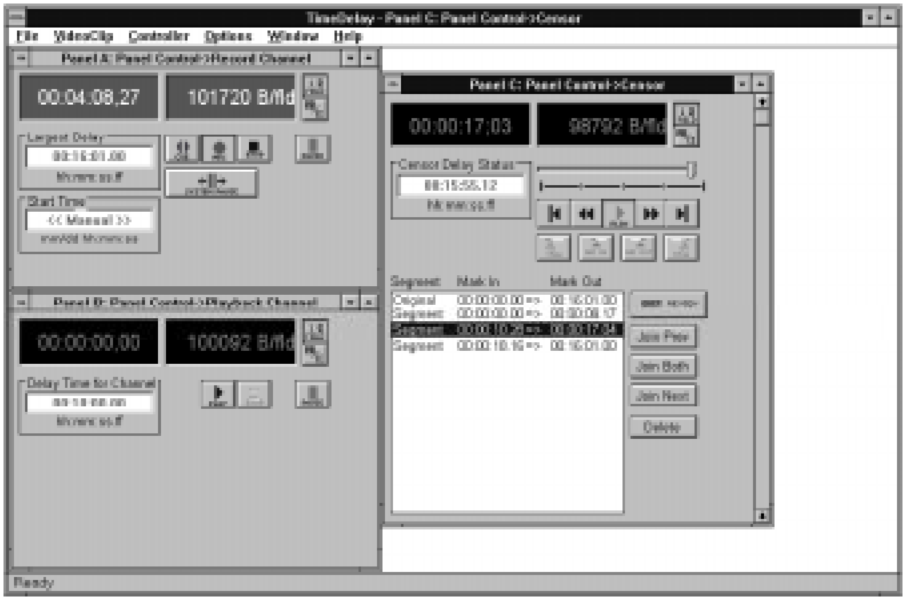


Figure 165. Censor channel

2. Watch the video input on Panel A and note reference points to facilitate marking segments when they appear on the censor channel after the **Censor Delay Status** time.
3. When the reference point is reached on the censor, click **Set Out Mark**.
   - **Set In Mark** is activated
4. To end the current censor segment, click **Set In Mark** at the next reference point.
   - **Set In Mark** is inactivated
   - a new segment is added in the clip window (starting at the **Set In Mark** timecode)
5. Continue marking segments as needed.

Reviewing Segments

Segments can be played back for review.

1. Click on a segment in the clip window. The segment plays from start to finish. The Jog Slider bar moves along the clip.
2. For review of all segments, click **Review**.

Editing Segments

Basic editing capabilities are available for the segments (not the original clip):

- Trimming segments
- Deleting segments
- Combining segments

NOTE: When you return to the original clip, the timecode display reflects the playback at the time you began editing. The Censor Delay time increases so you do not miss reviewing any of the information. Use the Jog slider to move to the appropriate time.

Marking and Trimming Segments

To mark or trim segments:

1. Click on a segment in the clip window.
2. Use **Start Clip, End Clip, Play, Jog Backward, Jog Forward,** or the **Jog Slider** bar to locate the edit points.
3. From the original clip, use **Set In Mark** and **Set Out Mark** to set beginning or ending points to create segments.
4. From a segment, use the **Trim to In Mark** and **Trim to Out Mark** buttons to modify the in and out marks for the segment.

Deleting Segments

To delete a segment:

1. Click on a segment in the clip window.
2. Click **Delete**.

Combining Segments

To combine segments:

1. Click on a segment in the clip window.
2. Click on a combining option:
   - **Join Prev** combines the selected segment with the **Previous** segment. The starting timecode of the **Previous** segment becomes the start, the ending timecode of the selected segment becomes the end.
   - **Join Both** combines the selected segment with the **Previous** and **Next** segments. The starting timecode of the **Previous** segment becomes the start, the ending timecode of the **Next** segment becomes the end.
   - **Join Next** combines the selected segment with the **Next** segment. The starting timecode of the selected segment becomes the start, the ending timecode of the **Next** segment becomes the end.

NOTE: The Join buttons are used to add censored material back into the playback stream.

Closing the Censor Channel

Select **Close** from the control menu in the upper-left corner of the panel, or press Alt-F4.

Using Remote Control

The TimeDelay protocol commands provide TimeDelay control from a remote application via an RS-422 connection to the disk recorder. The panel must be set up for remote control. See “Selecting a Controller” on page 296.

Packet Format

The Controller sends a packet containing a command to TimeDelay and receives a packet containing one of the following:

- An **ACK**, or acknowledgment.
- A **NAK**, or negative acknowledgment.
- A TimeDelay response.

ACK, NAK and TimeDelay responses are detailed later, in the section, **Commands Returned from TimeDelay**.

TimeDelay commands use the same packet format as VTR Emulation protocol:

CMD1	Data Count	CMD2	Data_1		Data_n	Checksum

Byte	Contents
CMD1/DataCount	CMD1 is in high-order four bits of the byte and identifies the category of command. DataCount is in low-order four bits and specifies how many Data bytes follow.
CMD2	CMD2 identifies a command within the group identified by CMD1.
Data_1-Data_n	Data_1 through Data_n contain the arguments for the command. Each command may have a unique set of Data_n arguments.
Checksum	The sum of the contents of the bytes in the packet from CMD1/DataCount to Data_n, inclusive. This checksum is used to verify correct transmission of the packet.

Arguments

Most of the TimeDelay Protocol commands require a panel argument. This argument is coded in the packet as a single byte whose value is ASCII and takes on one of the following values:

A Panel A
B Panel B
C Panel C
D Panel D

Some of the commands require a *timecode* argument. This argument is coded in the packet as a four-byte BCD sequence of:***frames seconds minutes hours***

In text and on screen displays timecode always appears as ***hh:mm:ss:ff*** where:

hh hours (on a 24-hour clock)
mm minutes
ss seconds
ff frames

Several of the commands require an *on/off* argument. This argument is coded in the packet as a single byte whose value is ASCII:

1 **ON**
0 **OFF**

Commands

Capacity

Capacity *drive*

Requests the remaining recording time available for the specified file partition.

Packet format: 51 30 dr cs

where: dr = *drive*
cs = checksum

Censor

Censor

Opens a Censor Channel.

UI equivalent: **File | New Censor Channel**

Packet format: 60 33 cs

where: cs = checksum

ClipSelect

ClipSelect *panel* *segment#*

Moves selection highlight bar to the specified segment in the censor channel. Ignored for record and playback channels.

UI equivalent: Clicking on one of the names displayed in the censor channel's list of segments.

Packet format: 42 36 pa sn cs

where: pa = *panel*
sn = *segment#* (one-byte numeric value)
cs = checksum

Close

Close *panel*

Closes a record, playback or censor channel. If one of a record/playback pair is closed, both are closed (unless it is the only pair active).

UI equivalent: Choosing **Close** from the control menu.

Packet format: 61 35 pa cs

where: pa = panel
cs = checksum

Cue

Cue *panel*

Prepares the Record Channel for recording. Valid for Record Channel only; ignored for Playback and Censor Channels.

UI equivalent:	Clicking on the **CUE** button.
Packet format:	31 32 pa cs
where:	pa = *panel* cs = checksum

Drive

Drive *drive*

Specifies the disk partition where the recorded material is to be recorded.

UI equivalent:	Changing the drive in the New Clip or Rename Clip dialog boxes.
Packet format:	41 30 dr cs
where:	dr = *drive* (one-byte ASCII numeric digit: *0*, *1*, etc.) cs = checksum

EE

EE *panel* *on/off*

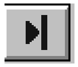
Switches between end-to-end (EE on) and playback (EE off) modes.

UI equivalent:	Clicking on the **PB/EE** button.
Packet format:	42 34 pa oo cs
where:	pa = *panel* oo = *on/off* cs = checksum

EndClip

EndClip ***panel***

Position to end of clip. Valid for censor channel only; ignored for record and playback channels.

UI equivalent: Clicking on the  button.

Packet format: 41 38 pa cs

where: pa = *panel*
cs = checksum

Frame

Frame *panel on/off*

Switches between play-by-frame (Frame on) and play-by-field (Frame off) modes.

UI equivalent: Clicking on the **1 / 2 FIELD** button.

Packet format: 42 35 pa oo cs

where: pa = *panel*
oo = *on/off*
cs = checksum

GotoTimecode

GotoTimecode *panel type timecode*

Sets the timecode value in the timecode box in the record, playback or censor channel.

UI equivalent: Clicking in the timecode box and changing the value there.

Packet format: 46 33 pa ty ff ss mm hh cs

where: pa = *panel*

ty = *type* (a four-bit bitmap with the following bit assignments)
bit 0: 0 = Cancel.
1 = Perform operation.
bit 1: 0 = Set timecode for just this panel.
1 = Set timecode for all panels.
bit2: 0 = Timecode value is absolute.
1 = Timecode value is relative.
bit3: 0 = Timecode value is positive.
1 = Timecode value is negative (only valid for relative timecodes).

ff ss mm hh = *timecode*
cs = checksum

Jog

Jog *panel #fields*

Positions the current clip *#fields* forward (if positive) or backward (if negative) from the current position. Valid for censor channel only; ignored for record and playback channels.

UI equivalent: Manipulating the jog slider in the censor channel.

Packet format: 21 39 pa nf cs

where: pa = *panel*
nf = *#fields* (signed one-byte numeric value)
cs = checksum

JoinBoth

JoinBoth *panel*

Combines the selected segment with both the previous and next segments in the list of segments. Valid for censor channel only; ignored for record and playback channels.

UI equivalent: Clicking on the **Join Both** button.

Packet format: 41 42 pa cs

where: pa = *panel*
cs = checksum

JoinDelete

JoinDelete *panel*

Deletes the selected segment from the list of segments. Valid for censor channel only; ignored for record and playback channels.

UI equivalent:	Clicking on the **Delete** button.
Packet format:	41 44 pa cs
where:	pa = *panel* cs = checksum

JoinNext

JoinNext *panel*

Combines the selected segment with the next segment in the list of segments. Valid for censor channel only; ignored for record and playback channels.

UI equivalent:	Clicking on the **Join Next** button.
Packet format:	41 43 pa cs
where:	pa = *panel* cs = checksum

JoinPrevious

JoinPrevious *panel*

Combines the selected segment with the previous one in the list of segments. Valid for censor channel only; ignored for record and playback channels.

UI equivalent:	Clicking on the **Join Prev** button.
Packet format:	41 41 pa cs
where:	pa = *panel* cs = checksum

Lockout

Lockout

The first time this command is sent, it activates the Lockout dialog box in the TimeDelay UI, which prevents using the UI. The next time the command is sent, it removes the dialog box, thereby removing the lock.

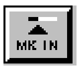
UI equivalent:	**File | Lockout Panel**
Packet format:	60 36 cs
where:	cs = checksum

NOTE: *No password is required for remote control, however, the command to disengage the lock must be sent from the same port as the original lockout command.*

MarkIn

MarkIn *panel*

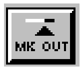
Sets the in point for the current clip. Valid for censor channel only; ignored for record and playback channels.

UI equivalent:	Clicking on the  button.
Packet format:	31 36 pa cs
where:	pa = *panel* cs = checksum

MarkOut

MarkOut *panel*

Sets the out point for the current clip. Valid for censor channel only; ignored for record and playback channels.

UI equivalent: Clicking on the 

button.

Packet format: 31 37 pa cs

where: pa = *panel*
cs = checksum

NewChannel

NewChannel

Opens a new playback channel.

UI equivalent: **File | New Channel**

Packet format: 60 31 cs

where: cs = checksum

Pause

Pause *panel on/off*

For record channel, Pause *on* pauses recording until a Pause *off* command is sent. For playback channel, Pause *on* pauses playback until a Pause *off* command is sent. Ignored for censor channel.

UI equivalent: Clicking on the **PAUSE** button.

Packet format: 42 31 pa oo cs

where: pa = *panel*
oo = *on/off*
cs = checksum

Play

Play *panel*

Starts playing the video/audio recorded by the associated record channel. Valid for playback and censor channels only; ignored for record channel.

UI equivalent:	Clicking on the **PLAY** button.
Packet format:	31 35 pa cs
where:	pa = *panel* cs = checksum

Record

Record *panel*

Starts recording. Valid for record channel only; ignored for playback and censor channels.

UI equivalent:	Clicking on the **Rec** button.
Packet format:	31 33 pa cs
where:	pa = *panel* cs = checksum

RecordPair

RecordPair

Opens a new record/playback pair of channels.

UI equivalent:	**File | New Record Pair**
Packet format:	60 32 cs
where:	cs = checksum

Rename

Rename *name*

Renames the clip currently being used by the record panel.

UI equivalent:	**VideoClip | Rename Clip**
Packet format:	6x 30 fn...fn cs
where:	x = byte count for filename fn...fn = filename characters

SegmentReview

SegmentReview

Toggles between Edit and Segment Review in the censor channel. Valid only for censor channel; ignored for record and playback channels.

UI equivalent:	Clicking on the **Edit/Review** button.
Packet format:	60 34 cs
where:	cs = checksum

SetTime

SetTime *panel timecode*

For record channel, sets the **Largest Delay** value to *timecode*. For playback channel, sets the **Delay Time for Channel** value to *timecode*. For censor channel, sets the **Censor Delay Status** value to *timecode*.

UI equivalent:	Typing in a new time.
Packet format:	35 31 pa ff ss mm hh cs
where:	pa = *panel* ff ss mm hh = *timecode* cs = checksum

Stop

Stop *panel*

For record channel, stops recording. For playback channel, stops playing. Ignored for censor channel.

UI equivalent:	Clicking on the **STOP** button.
Packet format:	31 34 pa cs
where:	pa = *panel* cs = checksum

SysPause

SysPause *panel on/off*

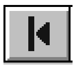
Pauses both record and playback channels at their current timecodes. *panel* must be a recorder channel; otherwise the command is ignored.

UI equivalent:	Clicking on the **System Pause** button.
Packet format:	41 32 pa oo cs
where:	pa = *panel* oo = *on/off* cs = checksum

StartClip

StartClip *panel*

Position to start of clip. Valid for censor channel only; ignored for record and playback channels.

UI equivalent:	Clicking on the  button.
Packet format:	41 37 pa cs
where:	pa = *panel* cs = checksum

Status

Status

Requests status information for all channels.

Packet format: 50 31 cs

where: cs = checksum

TimeSet

TimeSet *panel*

Requests current time delay setting for specified panel.

Packet format: 51 32 pa cs

where: pa = *panel*
cs = checksum

Timecode

Timecode *panel*

Requests current timecode for specified panel.

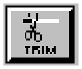
Packet format: 51 33 pa cs

where: pa = *panel*
cs = checksum

TrimIn

TrimIn *panel*

Modifies the previously set MarkIn for the current clip. Valid for censor channel only; ignored for record and playback channels.

UI equivalent: Clicking on the  button.

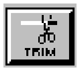
Packet format: 31 38 pa cs

where: pa = *panel*
cs = checksum

TrimOut

TrimOut *panel*

Modifies the previously set MarkOut for the current clip. Valid for censor channel only; ignored for record and playback channels.

UI equivalent:	Clicking on the  button.
Packet format:	31 39 pa cs
where:	pa = *panel* cs = checksum

System Control Returns

ACK

ACK

Acknowledgment.

Packet format:	20 41 cs
where:	cs = checksum

NAK

NAK; {Time Out, Frame Error, Overrun, Parity Error, Checksum Error, Undefined Command}

Negative acknowledgment. Any or all errors may be returned.

Packet format:	21 4E er cs
where:	er = error bits (one-byte value) cs = checksum

The error bits are defined as:

bit0:	Undefined command
bit1:	(Unused)
bit2:	Checksum error
bit3:	(Unused)
bit4:	Parity error
bit5:	Overrun
bit6:	Frame error
bit7:	Timeout

Status Responses

CapacityData

CapacityData

Response to a **Capacity** command. Returns the approximate remaining record time available for the file partition specified in the **Capacity** command.

Packet format:	74 30 ff ss mm hh cs
where:	ff ss mm hh = remaining recording time cs = checksum

StatusData

StatusData *statusA statusB statusC statusD*

Response to a **Status** command. Returns a status byte for each of the four possible channels. Each status byte consists of two parts: a two-bit state indicator (bit 0 and bit1) and a six-bit status bitmap (bit3 through bit7).

bit0/bit1:	0 = channel is reset. 1 = channel is set. 2 = channel is cued. 3 = channel is active.
bit2:	0 = is not paused. 1 = is paused.
bit3:	0 = EE is not set. 1 = EE is set.
bit4:	0 = Fields is set to 1. 1 = Fields is set to 2.
bit5:	0 = video is not valid. 1 = video is valid.
bit6:	0 = is not Recorder Channel 1 = is Recorder Channel
bit7:	0 = channel is not configured. 1 = channel is configured.
Packet format:	74 31 sA sB sC sD cs
where:	sA = status byte for panel A sB = status byte for panel B sC = status byte for panel C sD = status byte for panel D cs = checksum

TimeSetData

TimeSetData *panel* *timecode*

For record channel, returns the panel identifier and the **Largest Delay** value. For playback channel, returns the panel identifier and the **Delay Time for Channel** value.

Packet format:	74 32 ff ss mm hh cs
where:	ff ss mm hh = the time set in the display cs = checksum

TimecodeData

TimecodeData ***panel*** ***timecode***

Returns timecode of the panel.

Packet format:	74 33 ff ss mm hh cs
where:	ff ss mm hh = the current timecode cs = checksum

Glossary

Access Time

The time it takes to find and retrieve digital information, generally from hard disk storage.

AES/EBU

Acronym for Audio Engineering Society/European Broadcasting Union, an industry standard for the transmission of serial digital audio information. The standard specifies the physical attributes of the link, as well as how the information is transmitted along it.

A to D

Analog-to-digital converter. An electronic component that converts incoming analog signals into its digital representation.

Analog video

Video represented as a continuously variable electrical signal. Consumer TV and domestic VCRs are analog video devices. Analog video can be converted to digital format to be stored and manipulated by computer or other digital devices.

Archive library

The archive library is an automated tape storage device used to supplement a machine's disk storage. The library consists of digital tape cartridges and, in some cases, robot that moves cartridges to and from tape transports.

ASPB

Audio signal processing board. An audio board on the PDR200 that provides 16 channels of analog, embedded digital, and AES/EBU digital audio. You can install up to two ASPBs in a PDR200 for 32 channels of audio.

Assemble record mode

Video and all audio tracks assigned to a machine are recorded simultaneously, along with timecode, and any previous contents are overwritten. Traditionally this mode is used when appending to a master tape that has not had black, timecode, and control track previously recorded before editing.

Audio I/O

The audio path through the Profile video disk recorder, especially the crosspoint circuitry that routes the audio within the Profile system.

Bit rate

The rate at which video streams in megabits per second (Mb/sec). The bit rate is a reflection of quality—the higher the bit rate, the higher the quality of video. However, video data stored at a high bit rate consumes more disk storage space than data stored at a lower rate. Bit rates can be as low as 6 Mb/sec and as high as 54 Mb/sec. The default video quality bit rate is 24 Mb/sec, which is broadcast quality.

BNC

Connector used in professional A/V components. The BNC connection provides optimum shielding between the video input signal lines to provide the best possible performance. BNC was recently adopted as an alternate AES signal connector.

B Picture

A B picture is a bidirectionally predictive picture used in MPEG video compression. MPEG uses motion prediction to increase efficiency, that is, it reduces data by not duplicating pixels that do not change from frame to frame. A B picture relies on data from both forward and backward motion vectors to determine how a future frame will be composed. *See* GOP, I-frame, P Picture.

Button (on the display)

A small display box that has a raised appearance and contains text. Generally, clicking on a button activates a function or performs some action. *See* Clicking.

Button (on the mouse)

The two or three buttons on the top of the mouse.

Capture

Generally, the act of storing digital audio and video in memory or on a disk. The process may involve converting an analog signal to a digital one. Some compression of the digital data may be involved.

Cartridge tape

A tape used in the library that stores video and audio in digital form.

CD-ROM

Compact Disc-Read-Only Memory, the preferred medium for multimedia storage because of its large capacity, high quality, ease of use, and low cost.

Chroma

A term that describes the saturation or vividness of a color. A chroma of 0 describes a neutral, gray color. Chroma ranges to the most vivid color a screen or printer generates for a specific hue and value. *See* Hue.

Cleaning cartridge

A special tape cartridge that cleans tape transports on demand.

Clicking

Quickly pressing and releasing the left mouse button (usually) without moving the pointer.

Clip

A clip is a reference to recorded video or audio tracks from a single source, and may include timecode. If a clip includes both video and audio, they must be synchronous. A reference to several clips edited together is called a master. Deleting a clip will delete its associated material only if that material is not used by another clip or master.

CODEC

CODEC is an acronym for Coder/Decoder, the link between JPEG component parallel digital video and the SCSI-2 channel. The CODEC compresses the video data to a rate that is commensurate with the available disk bandwidth. Conversely, the CODEC decompresses the video data coming from the SCSI-2 channel back to 8-bit component parallel digital video.

The Profile video disk recorder translates digital video data between CCIR 601 digital component and compressed motion JPEG for storage on hard disk.

Command line

The line that you type to invoke a program or initiate an action. A command line usually contains the application program name, along with optional arguments known as command-line options.

Composite video

A single video signal composed of combined luminance and chrominance information.

Component video

Typically the transmission or storage of video as a separate luminance and chrominance information, such as Y, B–Y, R–Y.

Compression, video

A technique for reducing the amount of space needed to store images or sequences of images. JPEG, Motion-JPEG (M-JPEG) and MPEG are examples of video compression techniques.

Data cartridge

A digital tape cartridge that is capable of storing media in large quantities.

dB

Decibel. In theory, the minimum change in sound intensity that the human ear can distinguish; also, a relative unit used to compare the strength of acoustic signals.

Default

A value that is automatically assigned or used in the absence of any other input. For example, a new Profile system shipped from the factory is zero-timed by default while E to E mode is the nondefault setting.

Dialog box

A box displayed in a computer application’s graphical user interface where you choose options and enter information. Use the mouse or keyboard to move from field to field, click on buttons and position the text insertion point. Enter information with the keyboard.

Digital

In digital audio/video systems, sounds and images are converted into a series of binary values (ones and zeros).

D to A

Digital-to-analog converter. A device used to convert digital signals into an analog form. For example, compact disc players use D to A convertors to convert the digital information on the CD into analog audio suitable for amplification.

Disk expansion unit

A product (PDX103 and PDX208) that adds disk storage to a Profile video disk recorder.

Disk Utility

The Profile Disk Utility tool is used to maintain Profile hard drives. This includes formatting and labeling disk volumes, eliminating bad blocks, and updating hard drives with new microcode.

Display

A device that receives video output from a display adapter such as VGA card and displays the video output on a screen.

Dragging

Pressing and holding down the left mouse button while moving the pointer. The mouse pointer must be over an object such as a file.

Drop-frame

In NTSC, you don't actually get 30 frames per second; the real number is about 29.97 fps. Timecode usually assumes 30 fps. To account for the discrepancy, drop-frame timecode skips or drops two timecode values at the beginning of every minute except every tenth minute. This allows timecode to exactly match a real-time clock on 525/60 systems. This correction is not needed on 625/50 systems because the frame rate is exactly 50 fps.

E to E (EE)

Electronics to Electronics mode routes audio and video input directly to output.

Edit

The process of creating or refining a sequence of media (clips) in a specific order.

EDL

An Edit Decision List is a list of events that include the source to be recorded, and where to record it. In addition, an EDL can include information about transitions (cuts, dissolves, wipes), transition durations, effects, etc.

Factory default

The value assigned to a parameter as delivered from the factory. *See* Default.

Field

A part of the total number of lines that represent a video image, scanned in two passes. For example, an NTSC 525-line frame is divided into 262.5-line fields. *See* Frame.

Firmware

Software instructions that are permanently stored in the memory of a computer and are not lost when you turn the power off.

fps

The abbreviation for frames per second, the standard way of measuring the speed of video playback. Thirty fps is considered real-time playback in NTSC, 25 fps in PAL. 24 fps is standard for film and is considered animation speed playback. In the range of 12 to 15 fps, the human eye can detect the difference between one frame and the next; visually this appears as a jerky motion, or flicker.

Frame

The standard unit of measure for film and video. One frame represents one complete still image, divided into two fields.

Frequency response

The frequency range which an electronic component can accurately reproduce. Humans (some) can hear from 20 Hz to 20,000 Hz (20 KHz). An ideal audio component would have a frequency response, totally flat and without any deviation, from 20 Hz to 20 KHz. Frequency response specifications are measured in decibels (dB), based on how closely an output's response resembles that of the input.

Genlock

This term defines the relationship between video paths. Two video signals that are exactly synchronized are said to be genlocked.

GUI

A Graphical User Interface (GUI) provides a visual way to interact with computer software. GUIs allow people to control an application by using a pointing device such as a mouse to perform operations. The usual alternative to a GUI is a command-line interface, which requires people to type in application-specific commands following precise rules of syntax. GUIs are considered easier to use than command-line interfaces.

Group

In audio terms, this provides the ability to group tracks to perform functions across several tracks at the same time, such as gain, mute, etc.

GOP

A Group of Pictures (GOP) is part of the video compression scheme used by MPEG. MPEG uses motion prediction to increase efficiency, that is, it reduces data by not duplicating pixels that do not change from frame to frame. It does so by relying on a GOP. A GOP is composed of I-frames, B pictures, and P pictures. *See* B Picture, I-frame, P Picture.

Hard disk

Computer systems use hard disks as permanent storage devices. Information is magnetically recorded on spinning platters for quick access.

Hardware

The physical parts of a system, such as a computer, display monitor, or keyboard.

Help

Profile software applications come with on-line help manuals that include examples, demonstrations, and reference information about using the application. The manual, and the Help window it is displayed in, follow the Microsoft standard.

Hertz (Hz)

Hertz is the unit of frequency named after the physicist Heinrich Hertz (1857–1894). One hertz (Hz) is equal to 1 cycle/second.

Hue

A term that describes a color family (for example, red or yellow). Hue is a polar coordinate—that is, it moves in a circular motion around the color spectrum—and ranges from 0 to 360, with 0 being red. Hue is measured in degrees. *See* Chroma.

I-frame

MPEG uses motion prediction to increase efficiency, that is, it reduces data by not duplicating pixels that do not change from frame to frame. It does so by relying on a GOP. A GOP is composed of I-frames, B pictures, and P pictures. An I-frame (or I picture) is analogous to a JPEG frame in that it is a self-contained picture. It does not use motion vectors as do the B picture and P picture. *See* B Picture, P Picture.

Input device

A device that allows you to send information to a software application. Typical input devices include keyboards, mice, tablets, and trackballs. *See* Pointer and Pointing Device.

Insert record mode

In insert record mode, audio and video material can be recorded independently. New material can replace existing material anywhere in the program. Insert record mode requires timecode on the destination.

Interface

A common connection that is used for sending or accepting information and control between programs and machines.

Keyboard

An alphanumeric input device that allows communication with software applications.

Library system

The Profile Library System (PLS200) is a robotic tape library that provides affordable mass storage for the Profile video disk recorder.

LTC

Longitudinal Time Code is typically an analog audio track or a dedicated address channel on a tape. LTC can't be read in still mode, and may not be reliable during low-speed shuttle operations.

Media files

Audio, video, and timecode sources that have been captured by the Profile disk recorder are considered media. Media is stored on disk as media files. Audio and video clips do not contain media, but instead reference positions in a media file.

Memory

A component of a computer system used for virtually instantaneous temporary storage and retrieval of information (data) or instructions (programs). Information in memory is volatile, and is lost when the computer is shut down. Storing information on a permanent storage device such as a hard disk or a tape allows for retrieval during another work session.

Menu

A list of commands or functions that you select with a pointer. A menu is normally displayed in a small window.

Monitor

Two-channel audio output of selected machine tracks. Generally, audio systems or video displays used in a studio environment to control quality. Also, a video display device, without audio capabilities.

Mouse

An input device that, when moved across a flat surface, causes the pointer to move across a screen. The mouse usually has buttons that you press to send signals. These signals, in turn, accomplish certain functions. The representation of the mouse on the screen is called the pointer. *See* Pointer.

MPEG

MPEG (Moving Picture Experts Group) is a set of standards used for compressing digital video and audio. MPEG uses compression methods that maintain high quality while requiring smaller bandwidths to transport video and audio streams.

NTSC

The standard composite color format used in North America and Japan that was developed by the National Television Standards Committee.

Off-line cartridge

The archive library has immediate access of up to 80 cartridges. However the library database can contain information about any number of cartridges. A cartridge is considered off-line when it has been ejected from the library storage device, but remains in the library database.

PAL

The Phase Alternate Line standard is used to encode color information in Western European composite video.

Partitions

To give the archive tape transports some degree of random access, a data cartridge is divided into an number of partitions. Media may be added to a partition until that partition is full. Deleting media from one partition does not affect any other partition.

Parameter

A variable that is given a specific value. This value is passed to a program before execution.

Pixel

The smallest part of a display memory that can be addressed.

Playback

Playback is the act of playing a clip, track or master loaded on a machine at any rate.

Pointer

The pointer allows you to make selections in menus, to size and position windows and icons, and to select the window where you want to send the input. The window manager, such as Windows NT, determines the shape of the pointer. *See* Pointing Device.

Pointing device

Typically a mouse, tablet, or some other device with effective dimensional motion. *See* Pointer.

Port

A physical connection (such as a multi-pin connector or coaxial connector) and its associated firmware, that permits one computing device to communicate data and control information with another computing or peripheral device.

P Picture

A P picture is a predictive picture used in MPEG video compression. MPEG uses motion prediction to increase efficiency, that is, it reduces data by not duplicating pixels that do not change from frame to frame. A P picture relies on data from forward-moving motion vectors to determine how a future frame will be composed. *See* B Picture, GOP, I-frame.

Protocol

A set of rules that allows computers to transfer information across a network to other computers.

Read-only memory (ROM)

Memory that is not erased when power is turned off. It is also called firmware. The firmware in a computing device allows it to boot without being connected to a host computer.

Real-time

Generally considered to be 30 fps in NTSC, 25 fps in PAL, 24 fps for film. In computer terms, processing information as it becomes available, rather than storing for processing at a later time.

Resource

A resource is a Profile input, JPEG codec, or output. You allocate resources for exclusive use by any application, such as Tool Box Editor, List Manager, and VDRPanel. You should free up (deallocate) unneeded Profile resources whenever possible to that they can be used by other applications.

RGB

An additive method of combining percentages of red, green, and blue primary colors to form other colors.

ROM

See Read-Only Memory.

RS-232-C

A standard serial communications interface for data communications, commonly used for communications between a computer and modem, or to control automated devices which don’t have a conventional computer operating system.

RS-422

A standard serial communications interface for data communications, similar to RS-232-C, but good for longer distance cabling. It is typically used for communications in a broadcast or post-production environment between devices such as VTRs, mixers, and controllers.

SCSI Channel (Small Computer System Interface)

The interface between the Profile processor and the disk array or library system. It is fast and wide and provides for speeds up to 20 Mbytes/second on a 16-bit bus.

SDI

An acronym for Serial Digital Interface, a standard for transmitting CCIR 601 digital video over a pair of conductors (coaxial cable).

SECAM

France and Russia use the *Séquence Couleur À Mémoire* standard color format.

Serial port

Usually, the standard RS-232-C of a personal computer. Attach a serial cable to communicate with a peripheral device such as a modem or printer.

S/N Ratio

The Signal-to-Noise Ratio, measured in decibels, is the ratio between the maximum signal level and the noise level with no signal present. The higher the value, the better the sound reproduction.

Source

In Profile operations, a source is any signal (video, audio, or timecode) presented to the machine inputs. A VTR output, a satellite downlink, a camera output, and a facility router output are all examples of sources.

Status bar

The status bar at the bottom of most windows provides status information, short explanations of commands and errors.

Tape

See Cartridge Tape.

Text insertion point

The I-shaped pointer which appears in a text input area. Clicking the mouse in a text input area causes the text cursor to appear in that area. Whatever information you type on the keyboard appears in the text input area displaying the text cursor.

Tool Tips

A tool tip is a small pop-up window that displays a single line of text describing the purpose of a control in a window. A tool tip is hidden most of the time, appearing only when the user puts the cursor on a tool and leaves it there for approximately one-half second. The tool tip appears near the cursor and disappears when the user clicks a mouse button or moves the pointer off of the tool.

Tracks

Clips and masters are made up of individual tracks. A clip may consist of any combination of a video track, timecode track, and up to 16 audio tracks. A master may consist of any combination of a timecode track, 0-4 video tracks, and 0-16 audio tracks.

Trimming

Shortening an originally recorded media file to a desired duration using the In and Out marks. Material beyond the In and Out points is removed from the volume unless it is used in another clip or master.

Video interface

The link to or from the internal video router and the external video signal. An example is a composite analog input channel. This path takes a composite analog video signal and converts it to 8-bit component parallel digital and places it on the video router. Another example is the component serial digital output. This path takes component parallel digital video from the video router and converts to serial digital component format.

Video disk recorder/ server

A device such as the PDR200 Video File Server that stores audio and video as digital information on disks.

VITC

Vertical Interval Time Code is encoded into the video lines at the start of field. VITC can be read during still frames, but becomes unreliable at frame rates faster than normal play speed, such as fast shuttle operations.

Video router

The video path through a system. The crosspoint circuitry that routes the video within the Profile video disk recorder is a router.

Volume

A volume is a logical set of disks, such as the disks in a PDR100 or a PDR200, which are used as a grouping of disks for the storage of audio and video information. Volumes may also consist of a PDX103 or PDX208 Disk Expansion unit, or a PRS200 or PRS250 Profile RAID System.

Index

Numerics

4:2:0 148
4:2:2 148

A

A to D 335
Absolute event type 250, 256
Access Control 194
Access Time 335
ACK 331
Actions in List Manager 249
Adding a Profile machine 92
Adjusting column width 267
Advanced 39, 50
AES/EBU 67, 335
Air time in Monitor view 251
Analog Audio Input
  PDR100 62
  PDR200 68
Analog audio interfaces 3
Analog Audio Output
  PDR100 65
  PDR200 73
Analog Component 46
Analog Composite Video Input
  Advanced Control 39
  Vertical Interval 44
Analog Composite Video Output 51
Analog video 335
API 8
Application programming interface 8
Archive event 255
Archive library 335
Archived clip properties 129
Archiving a clip 115
ASPB 335
Assemble record mode 335
Audio
  channels 234, 270, 273, 277, 279, 283
  Configuration 77
  controls 234
  gain levels 234
  I/O 336
  input mapping 77
  meters 234
  monitor in VdrPanel 167
  output mapping 80
  PDR100 3, 61
  PDR200 3, 67
Auto restore 311
Auto shuttle 312
Automatic recording 307
Auto-Timing 29

B

B picture 2, 148, 336
Back One Field 163
Bad blocks 188
Betacam 150
Bin 87
  cleaning up 226
  creating a new 100
  deleting 101
  renaming 100
Bit rate 148, 336

Black Level 53
Blocks 188
BNC 216 Digital Interface chassis 67
BNC connections 154, 336
Boards, information on 20
Bounce 162
Building a list 246
Burn-in timecode 56
BVW 140
BVW [insert edit] 150
BVW clip length 143
Bytes per Field 147, 300
Bytes/Field display 290, 292, 293

C

Camera 211
Capacity 318
CapacityData 332
Capture 336
Capture timeline 221
Capturing clips 211
Cartridge properties 129
Cartridge Tape 337
CCIR 601 4
CD player 211
CD-ROM 337
Censor 319
Censor channel 312
Censor Delay Status 294
Censor panel controls 293
Changing playback delay 308
Changing timecode 308
Channels 269, 277
Channels, audio 234, 270, 273, 277, 279
Checksums 202
Chroma 337
Chroma Gain 53
Chroma Phase 53
Chroma Reduction 42
Chroma sampling 148
Cleaning Cartridge 337
Cleanup Media 226
Clip 337
  capture 223
  capturing 211
  clip list 178
  define 168
  delete 102, 176, 311
  drag and drop 226
  edit a list 180
  eject 170, 176
  group 178
  load 171
  lock 174
  long names 176
  new 168
  play 171, 226
  protect 174
  record 223, 310
  renaming 101, 173
  short names 176
  striping 175
  subclip 227
  trimming 226
  unlock 174
Clip length (BVW) 143
Clip list 178
Clip marks 143

Clip Name Box 163
Clip Position Bar 162
Clip Window 295
ClipSelect 319
Close 319
Closing an application 12
Closing panels 316
Cluster 188
CODEC 3, 150, 153, 270, 277, 337
Collapsing the media tree 94
Column width 267
COM1 and COM2 142
Comb 40
Combining segments 316
Command Line 338
Comment column 249
Communications port 142
Component video 338
Composite video 338
Compression 3, 147, 338
Compression rate 300
Compression, video 272, 278, 282
Compute from field number 302
Configuration files 21
Configuration Manager 13, 19
Configuration tree 20
Controller 140, 143
    Comm Port 297
    configuring 298
    Select 296
Controls, audio 234
Copying media in Media Manager 98
copymovie 208
Create Mark-In button 228
Create Mark-Out button 228
Crosspoints
    timecode 157, 304
    video 153
Ctrl key xix
Cue 291, 320

D

D to A 339
Data cartridge 338
Data set 184
Date 250
dB 235, 338
Decibels 235
Decoders, MPEG 3
Default 338
Default Procamp 53
Defining clips 168
Delay time
    setting 306
    setting censor 312
Delay Time for Channel 292
Delete 295
Delete, vertical interval 45
Deleting an archived clip 118
Deleting clips 176, 311
Deleting media in Media Manager 102
Deleting segments 315
Desktop, Windows NT 11
Detail log file 189
Dialog box 338
Digital Audio Input
    PDR100 63
    PDR200 70

Digital audio interfaces 3
Digital Audio Output
PDR100 66
PDR200 76
Disk drives 3
Disk Expansion Unit 339
Disk label 185
Disk Utility 15, 183, 339
Display 339
Dominance, field 182
Double-clicking xix
Drive 320
Drop-frame 339
Drop-frame timecode 159, 222, 270, 274, 277, 285, 311
Duplicating media in Media Manager 100
Duration 249
Duration in Monitor view 251

E

E to E 26, 29, 162, 339
E to E button 223, 290, 292, 294
E to E timed outputs 28
Edit
Delete 257
New Event 252
Edit Compression Presets 299
Edit presets 146, 298
Edit timeline 230
Edit view in List Manager 241
Edit Window 258
Edit/Review 295
Editing a clip list 180
Editing lists 256
Editing segments 315
Editor, Tool Box 137
EDL 340
EE 320
EISA 4
EISA bus 61
Ejecting clips 170, 176
Emptying the Recycle Bin 221
Emptying the Recycle Bin in Media Manager 102
Enable Impulse Noise Reduction 42
Enable Luma 42
Enable Procamp 52
Enable Quiet Line 42
Encoders, MPEG 3
End Clip 294
EndClip 321
Entry window, timecode 222
Ethernet 3, 17, 193, 199
Event
Archive 255
Date 250
Duration 249
Play 246
Record 252
removing 257
settings 248
Start Time 249
Switch 253
taking 263
Transfer 254
Event log 194
Event Number column 249

Event order 256
Event Scheduler Engine
  definition 242
  Master List 246
  stopping 243
Event Viewer application 194
Events, inserting 256
Expanding the media tree 94
Explore in Media Manager 94
Exporting a cartridge 121

F

Factory default 340
Fast Forward 161, 225
fast forward 225
fcconfig 202
fcncs 209
fcping 206
Fibre Channel 17, 87, 199
Fibre Channel IP Address 202
Field 340
Field dominance 182, 270, 273, 277, 279
Field Selection 161, 290, 292, 294
File
  Open 259
  Save 258
File systems 184
Finding Clips and Masters 107
Finding media in Media Manager 107
Firmware 196, 340
Fixed Q 147, 299
Fixed Time 285
Follow 256
Formatting cartridges 126
Forward One Field 163
fps 340
Frame 321, 340
Free Run timecode 156, 303
Freeze timecode 156, 303
Frequency response 340

G

Gain levels 234
Gaussian Chroma Filter 52
Generator, timecode 156
Genlock 341
Go to Clip Beginning 163
Go to Clip End 163
Go To Timecode dialog box 308
GOP 1, 148, 341
GotoTimecode 321
Graphical user interface 341
Group 341
Group Fader 69, 84
Group Name Box 163
GUI 341

H

Hard disk 341
Hardware Communication Monitor 89, 213, 243
Help 342
Help files xviii, 12
Hertz (Hz) 342
House Time 251
Hue 342

I

I-frame 2, 148, 342
Importing a cartridge 119
In marks 162, 181
Input Clocking 80
Input device 342
Input mapping 77
Insert edit, BVW 150
Insert Media 217
Insert record mode 342
Inserting events 256
Installed boards information 20
Intel i960 real-time processor 4
Intel Pentium 4
Internal Reference Timing 33
Internal storage 3
Inventorying a cartridge 123
Inventorying the library 125
IP address 200
ISA 4

J

Jog 322
Jog Backward 294
Jog Forward 294
Jog Slider Bar 294
Join Next 295
JoinBoth 295, 322
JoinDelete 323
JoinNext 323
JoinPrev 295
JoinPrevious 324
JPEG 115, 153, 211, 240
JPEG channel assignment 301
JPEG CODECs 3

K

Keyboard 343
Keys, shortcut 164

L

Labeling a disk 185
LAN 17, 193, 200
Largest Delay 291
Library properties 129
Library system 343
Line formats 3
Line level 69
List
  building 246
  editing 256
  event order 256
  inserting events 256
  opening 259
  saving 258
  validate 251
List Manager 16, 137, 239
  Edit view 241
  engine, *See* Event Scheduler Engine 242
  live events 253
  Monitor 240
  monitoring a list 251
  recording 252
listnames 207
Live events 253
Load Media 217
Loading clips 171

Loading microcode 187
Lock to Field Number 156
Lock to Field Number, timecode 303
Locking clips 174
Locking the system 309
Lockout 324
Log file 191
Logging in 10
Logs 191
Long clip names 176
Loop 162
Loop mode 225
Louth 8, 140
LTC 34, 155, 157, 274, 343
LTC input 302
Luminance Black Clip Level 53
Luminance Only 52
Luminance White Clip Level 53

M

Mainframe bandwidth 3
Manual conventions xix
Manual recording 307
Manually logging in 10
MarkIn 324
Marking and trimming segments 315
Marking segments 314
MarkOut 325
Marks 143, 162, 163, 181
Marks, setting and trimming 294
Master
- adding media to 232
- creating 232
- delete 102
- playing 233
- renaming 101

Master List 246
Master timecode 23
Master VITC 23
Max Chroma 147, 299
Media
- cleaning up trimmed clips 226
- sorting 216

Media files 343
- sorting 216

Media Manager 13, 87
Media properties 104, 219
Memory 343
Menu xix, 343
Meters, audio 234
Microcode 187, 198
Microphone 211
Min Lum Q 147, 299
Modify Mark-In button 222
Modify Mark-Out button 222
Monitor 343
- selecting 246

Monitor Channels 84
Monitor output 55
Monitoring a list 251
Mouse 344
Moving media in Media Manager 98
MPEG 1, 3, 109, 148, 211, 239, 344
Multiple playback channels 307
Multiple record pairs 306

N

NAK 331

Name column 249
Networking, video 199
New Bin 217
New Censor Channel 312
New clips 168
NewChannel 325
Normal 162
Normal, vertical interval 44
Notch 40, 44
NTSC 344

O

Odetics 8, 140
Off-line cartridge 344
Open Bin 217
Opening a list 259
Out marks 163, 181
Output mapping 80
Overload status 69

P

P picture 2, 148, 345
P1 through P8 142
Packet format 317
PAL 106, 220, 344
Panel
- Back One Field 163
- basics 160
- Bounce 162
- Clip Name Box 163
- Clip Position Bar 162
- closing 316
- Fast Forward 161
- Field Selection 161
- Forward One Field 163
- Go to Clip Beginning 163
- Go to Clip End 163
- Group Name Box 163
- Loop 162
- making active 165
- Normal 162
- PB/EE 162
- Play 161
- Playback 162
- Record 161
- Remove In Mark 162
- Remove Out Mark 163
- Rewind 161
- Set In Mark 162
- Set Out Mark 163
- Shuttle Bar 163
- Shuttle Rate 162, 163
- Stop 161
- tiling 166
- Timecode 161
- Trim from Out Mark 163
- Trim to In Mark 162

Panel control 140, 296
Panel Lockout dialog box 309
Parameter 344
Parent Event column 249
Partitions 344
Pass On Y 45
Pause 291, 293, 325
PB button 290, 292, 294
PB/EE 162
PDR Access Control 194
PDR Network Configuration Service 209

PDR100 Audio 61
PDR100 Profile Video Disk Recorder 87
PDR200 Audio 67
PDR200 Installation Manual xviii
PDX103 Disk Expansion Unit Installation Manual xviii
PDX103 Profile Disk Expansion unit 87
PDX208 Disk Expansion Chassis 87, 184
PDX208 Disk Expansion Chassis Instruction Manual xviii
Peak hold 167
Physical volumes 184
Pixel 344
Play 161, 225, 292, 294, 326
Playback 162, 345
 multiple channels 307
Playback delay, changing 308
Playback or E to E 290, 292, 294
Playback panel controls 292
Playing clips 171
PLS20 and PLS200 Profile Library Systems 87
PLS20 Library System Manual xviii
PLS20 Profile Library System 115
PLS200 Library System Manual xviii
PLS200 Profile Library System 115
Pointer 345
Pointing device 345
Port 142, 345
PortSever 193
Powering on 10
PRC100 Configuration Tool 280
PRC100 Profile Control Panel 137, 193
PRC100 Profile Control Panel User Manual xviii
Presets 146
Profile Configuration Manager 13, 19
Profile Disk Utility 15, 183
Profile logs 17, 191
Profile Protocol 8, 17, 137, 193
Profile System Version 2.4 Release Notes xviii
profile.log 191
Project menu 270
ProLink 193
Properties 104, 129, 219
Protecting clips 174
Protocol 345
PRS200/A Profile RAID Storage system 87
PRS200/A RAID Storage Instruction Manual xviii
PRS250 Profile RAID Storage system 87
PRS250 RAID Storage Instruction Manual xviii

Q

Quality, video 270, 272, 277, 278, 282

R

RAID 87
Read-only memory 345
Real-time 346
Record 161, 168, 252, 291, 326
Record Capacity 166, 306
Record Event 252

Record pairs 306
Record panel controls 290
Recording 307
Recording a clip 310
RecordPair 326
Recycle Bin 221
Reference Genlock 32
Reference signals 3
Regedit registry editor 192
Regenerate timecode 156
Relocating a bad block 188
Remote Commands
  packet format 317
Remote panel control 296
Remote Profile machine 92
Remove In Mark 162
Remove Out Mark 163
Removing a Profile machine 92
Rename 327
Renaming an archived clip 117
Renaming clips 173, 311
Renaming media in Media Manager 101
Resource Manager with List Manager 276
Resource Manager with Tool Box Editor 269
Resources 346
  freeing 243
Restoring an archived clip 116
Reverse 225
Reviewing segments 315
Rewind 161, 225
RGB 346
Right-click xix
ROM 345, 346
Router, video 348
RS-232-C 346
RS-422 3, 193, 280, 346
RS-422 protocol 192

S

S/N Ratio 347
Satellite feed 211
Save Default button 270, 275, 277
Save Group of Clips 178
Saving a list 258
SCSI 346
  IDs 184
  log file 189
SDI 346
SECAM 347
SegmentReview 327
Segments 313
  combining 316
  deleting 315
  editing 315
  marking 314
  reviewing 315
Select timecode 155
Serial Digital Component Video Input 48
Serial Digital Component Video Output 58
Serial port 142, 347
Service, PDR Access Control 194
Set delay time 306
Set In Mark 162, 294
Set Out Mark 163, 294

SetTime 327
Setting censor delay 312
Settings
  event 248
Short clip names 176
Shortcut keys 164
Shuttle Bar 163
Shuttle Rate 162, 163
Signal routing 300
Size box 161
SMPTE 272M Level A 67
Software Development Kit 8, 17
Sorting
  media files 216
Sorting media 216
Source 347
Spatial Adaptive 41
Start Clip 294
Start Time 249, 291
StartClip 328
Starting an application 12
Status bar 20, 347
Status column 248
StatusData 332
Still-play mode 273, 279
Stop 161, 225, 291, 292, 328
Striping a clip 175
Subclip 227
Subnet mask 202
Switch event 253
SysPause 328
System Pause 291
System timing 26
System timing (E to E) 26
System, locking 309

T

Take button 263
Target compression rate 147, 300
TC Recorder 156, 302
TCP/IP 200
TCREC 151
TekCfg 8
TekPdr 8
TekRem 8
TekVdr 8
TekVfs 8
TekVme 8
TekXfr 8
Temporal/Spatial Adaptive 41
Testing a bad block 188
Text insertion point 347
Time base correction 43
Time Till Next Event in Monitor view 251
Timecode 155, 161, 329
  changing 308
  crosspoint 157, 304
  display 161, 292, 293
  drop-frame 159, 222, 270, 274, 277, 285, 311
  entry window 222
  free run 156, 303
  freeze 156, 303
  in TimeDelay 290
  internal generator 274, 302
  lock to field number 156, 303
  setting 302

sources 270, 277
Timecode crosspoint 304
TimecodeData 333
TimeDelay 16
configurations 288
locking 309
Remote Control 317
starting 289
Timeline Eject 217
Timeline, capture 221
Timeline, edit 230
TimeSet 329
TimeSetData 333
Timing Adjustment 59
Tool Box Editor 15, 137, 211, 269
exiting 212
launching 212
Tool Tips 347
Toolbar 20
Tracks 348
Transcode Utility 109
Transfer Event 254
Transfer Monitor 135
Transport controls 225
cue 225
fast forward 225
loop play 225
mode 225
play 225
reverse 225
rewind 225
stop 225
Transport status 132
Tree hierarchy 94
Trigger
Follow 256
Trim from Out Mark 163
Trim to In Mark 162, 294
Trim to Out Mark 294
TrimIn 329
Trimming 348
TrimOut 330
Type box 161

U

Undo button 20
Unity, audio 235
Unlocking clips 174
Unlocking the system 309
Update Fibre Channel Microcode 17, 198
Update Firmware 17, 196
Updating a cartridge 123
User mark 227
Using 191, 287

V

Validating a list 251
VdrPanel 14, 137
VdrPort logs 192
Vertical Interval 44, 54
Video
channels 3
crosspoints 153, 301
Gain 53
input 3, 270, 272, 277, 278, 281
output 270, 277
quality 270, 272, 277, 278, 282

Video disk recorder/server 348
Video interface 348
Video network 3, 199
Video router 348
Viewing columns 248
VITC 23, 144, 155, 274, 348
  erase 59
  Generator Setting 58
  input 302
  reader setting 32
Volume 87, 96, 184, 348
VTR 1, 211

W

Window
  Open Panel 150
  Timecode Crosspoint 157, 304
  Video Crosspoint 153, 301
Windows NT 3.51 12
Windows NT 4.0 12
Windows NT desktop 11
WinTail 17, 189, 191

X

XLR 216 Digital Interface chassis 67

Z

Zooming the edit timeline 230