Pro Tools

AVoption & AVoption|XL Guide

Version 5.0.1 for Macintosh

digidesign®

A division of **Avid**

contents

Introduction to Pro Tools AVoption and AVoption|XL

AVoption and AVoption XL combine the powerful audio post-production features of Pro Tools with integrated support for the import, capture, and playback of Avid video media.

AVoption Components

AVoption consists of software and two Avid video cards that you install in a Pro Tools audio system. The Digidesign audio hardware provides digital audio recording, editing, mixing, and processing. The Avid video hardware provides video capture and import, full screen video playback on an external PAL or NTSC monitor, video playback in an on-screen window, and professional quality video compression.

AVoption XL Components

AVoption XL consists of software, a PCI card that you install in a Pro Tools audio system, and an external I/O box that connects to the PCI card. The Digidesign audio hardware provides digital audio recording,

editing, mixing, and processing. The Avid video hardware provides video capture and import, full screen video playback on an external PAL or NTSC monitor, professional quality video compression, and the capability to record and play back uncompressed video.

AVoption Capabilities

AVoption lets you do the following:
- Import and capture NTSC and PAL video
- Play the Movie Track with near sample-accurate precision against audio tracks in a Pro Tools session
- Spot or Slip the video track to a new time code location, and spot audio to the video track
- View video edits and media boundaries in the Movie Track
- View the Movie Track as frames that represent video data
- Play video on an external NTSC or PAL monitor
- Play video in a floating window on your computer monitor

You can also do the following:

- Import MFM (Media File Manager format) or MSM (Media Stream Manager format) video files created on Avid systems, such as Media Composer, Xpress/Mac, and AudioVision into the Movie Track of a Pro Tools session
- Capture MSM format video media in the Movie Track of a Pro Tools session

AVoption XL Capabilities

AVoption XL lets you do the following:

- Import and capture NTSC and PAL video
- Play the Movie Track with near sample-accurate precision against audio tracks in a Pro Tools session
- Spot or Slip the video track to a new time code location, and spot audio to the video track
- View video edits and media boundaries in the Movie Track
- View the Movie Track as frames that represent video data
- Play video on an external NTSC or PAL monitor

You can also do the following:

- Import JFIF video media files from Windows or Macintosh based Avid systems such as MediaComposer, Symphony, and Xpress into the Movie Track of a Pro Tools session
- Capture JFIF format video media in the Movie Track of a Pro Tools session

FilmFrame

The FilmFrame™ option enables 24 FPS support in AVoption and AVoption XL. With FilmFrame installed, you can import and play back Avid Film Composer media files. For more information on FilmFrame, contact your Digidesign dealer or visit the Digidesign Web site.

chapter 2

AVoption Hardware Overview

AVoption hardware consists of two cards: an Avid Broadcast Video Board (ABVB), and a Janus Advanced JPEG Compression card. These cards connect with a ribbon cable.

AVoption Hardware Capabilities

AVoption hardware does the following:

- Receives composite or component video signal
- Digitizes incoming video
- Compresses digitized video using advanced JPEG compression
- Outputs composite and component video signals
- Connects to a second VGA monitor (optional) for computer screen display

Avid Video Resolutions (AVR)

The ABVB captures and plays back video media with JPEG compression technology, expressed as Avid Video Resolution (AVR) levels, in the MSM media format (Media Composer 7.x-compatible). AVoption can import both MSM video and MFM video, which is generated by AudioVision 4.x and Media Composer 6.x.

AVR levels dictate the amount of JPEG compression, which determines image quality and storage requirements for digitized video.

The following resolutions are available:

- Single-field – AVR 2s, AVR 3s, AVR 4s, AVR 6s, AVR 8s, AVR 9s
- Two-field – AVR 12, AVR 70, AVR 70B, AVR 71, AVR 75, AVR 75B, AVR 77
- Multicamera – AVR 2m, AVR 3m, AVR 4m, AVR 6m

✳ Lower numbered AVR levels require less hard drive space but provide lower resolution than higher numbered AVR levels.

The lowest resolution is AVR 2m, and the maximum resolution, AVR 77, is considered to be broadcast quality.

JPEG Compression and Storage

JPEG compression is not constant, but varies according to the complexity of the footage. For example, a medium shot of a talking head with a simple background would compress more and use less disk space than a panning shot of a stadium full of people.

The following tables list the approximate amount of video storage, in minutes per gigabyte, required for each AVR level.

Storage for AVR 2s – AVR 9s

AVR level	30/25 FPS Storage (Minutes/GB)	24 FPS Storage (Minutes/GB)
AVR 2s	40-74	50-93
AVR 3s	32-57	40-71
AVR 4s	19-40	24-50
AVR 6s	11-33	14-41
AVR 8s	5-13	6-16
AVR 9s	3-6	4-7

Storage for AVR 2m – AVR 6m

AVR level	30/25 FPS Storage (Minutes/GB)	24 FPS Storage (Minutes/GB)
AVR 2m	47-93	58-116
AVR 3m	25-45	35-60
AVR 4m	21-36	27-45
AVR 6m	14-30	18-38

Storage for AVR 12 and AVR 70 – AVR 77

AVR level	30/25 FPS Storage (Minutes/GB)
AVR 12	18-34
AVR 70 AVR 70B	5-11
AVR 71	4-11
AVR 75 AVR 75B	3-8
AVR 77	2-6

Required Hardware

To install and use AVoption, you must first install currently supported Pro Tools 24 or Pro Tools 24 MIX hardware. Other hardware required for AVoption is listed in this section, along with system requirements for AVoption.

Supported Computers

- Power Macintosh 9500
- Power Macintosh 9600
- Power Macintosh G3 (Blue & White)
- Power Macintosh G4

If you are using a Blue & White G3 or a G4, a qualified expansion chassis is required.

Older G3 Macintosh systems (beige) are not supported.

✳ See the Digidesign Web site for the latest CPU compatibility information.

Minimum System Requirements

Minimum Pro Tools AVoption System Requirements

Item	Minimum Requirement
Computer	Power Macintosh 9500 Power Macintosh 9600 Power Macintosh G3 (Blue & White) Power Macintosh G4
Pro Tools audio hardware	Pro Tools 24 Pro Tools 24 MIX Pro Tools 24 MIXplus
PCI Expansion Chassis (Blue & White G3)	Magma 13-Slot Magma 7-slot
SCSI accelerator	ATTO ExpressPCI Dual-Channel (Other SCSI accelerators may be approved. Check the Digidesign web site for the latest compatibility information.)
SCSI hard drives	at least 2 approved SCSI hard drives
Sync peripheral	Universal Slave Driver (USD)

Sync Hardware

Synchronization Peripheral

AVoption requires a Universal Slave Driver (USD).

Sync Source

For accurate synchronization during capture and playback, a house sync source or black burst generator is required.

Storage Hardware

SCSI Accelerators

To support the high transfer rates required by AVoption audio and video, the ATTO Express PCI Dual-Channel SCSI Accelerator (or other AVoption qualified SCSI accelerator) is required, with audio drives connected to one channel and video drives connected to the other channel.

SCSI Hard Drives

Using Two Hard Drives

For scenarios that do not require a high audio track count or a very long video segment, use two hard drives.

In this scenario, one drive is used to record, import, and play back audio data, and one drive is used to record, import, and play back the video.

Using More Than Two Hard Drives

To get the highest possible performance from your AVoption system, you should use more than two hard drives. In this scenario, you can use one, two, three, or four hard drives for audio data and one, two, or three hard drives for video data.

Audio AVoption can use multiple hard drives to store audio data. You should allocate audio tracks to different hard drives manually. "Round robin" disk allocation is not recommended in a system that includes video drives.

Video AVoption can capture a contiguous video track to multiple hard drives. This is useful if the length of your video session exceeds the 2 GB Mac OS file size limit, or the storage space available on a single drive. For example, 50 minutes of video material, using AVR 77 compression, requires between 9 GB and 25 GB of storage space. To store this much video, you need between one and three 9 GB hard drives. The video is automatically split by AVoption into several files of less than 2 GB on each disk.

✳ See the Digidesign Web site for the latest AVoption compatibility information.

chapter 3

AVoption|XL Hardware Overview

AVoption XL consists of two hardware components: a Meridien Digital Media Board that installs in a PCI slot in your computer, and a Meridien I/O Box that connects to the card in your computer. A Video I/O Board, installed in the Meridien I/O Box, provides video inputs and outputs from your computer to the rest of your video equipment.

AVoption XL Hardware Capabilities

AVoption XL hardware does the following:
- Receives composite, component, S-video, or (optional) SDI video signal
- Digitizes incoming video
- Compresses digitized video using advanced JFIF compression
- Outputs composite, component, S-video, and (optional) SDI video signals
- Captures and plays back uncompressed video

JFIF Video Compression

The Meridien board captures and plays back video media in JPEG File Interchange Format (JFIF). JFIF compression levels provide variable levels of compression for your video project, depending on the recording input selected, except for 1:1, which is uncompressed. The available JFIF resolutions are:
- Single field – 15:1s, 4:1s, 2:1s
- Two fields – 20:1, 10:1, 3:1, 2:1, 1:1 (uncompressed)

✳ Higher JFIF compression ratios require less storage space but provide lower video resolution than lower compression ratios.

The lowest JFIF resolution is 15:1s, and the maximum resolution, 1:1, is uncompressed.

JFIF Compression and Storage

JFIF compression is variable. This means that JFIF compression levels vary slightly, depending on the video input selected.

✳ 1:1 (uncompressed) video storage levels are not approximate. The amount of data required to store 1:1 video is always the same, regardless of the video input used.

The following tables list the approximate amount of video storage, in megabytes per second, required for each JFIF compression level.

Storage for Single-Field JFIF

JFIF level	30/25 FPS Storage (MB/second) (approximate)	24 FPS Storage (MB/second) (approximate)
15:1s	.7	.6
4:1s	2.7	2.2
2:1s	5.5	4.4

Storage Required for Two-Field JFIF

JFIF level	30/25 FPS Storage (MB/second) (approximate, except 1:1)	24 FPS Storage (MB/second) (approximate, except 1:1)
20:1	1.1	.9
10:1	2.2	1.8
3:1	7.3	5.9
2:1	11	8.8
1:1	22	17.6

Required Hardware

To install and use AVoption XL, you must first install currently supported Pro Tools 24 or Pro Tools 24 MIX hardware. Other hardware required for AVoption XL is listed in this section, along with system requirements for AVoption XL.

Supported CPUs

- Power Macintosh 9600
- Power Macintosh G3 (Blue & White)
- Power Macintosh G4

Older G3 Macintosh systems (beige) are not supported.

✻ See the Digidesign Web site for the latest CPU compatibility information.

Minimum System Requirements

3:1 Video Compression or Higher

Minimum AVoption XL System Requirements

Item	Minimum Requirement
CPU	Power Macintosh 9600, Blue & White G3 or G4
PCI Expansion Chassis	Magma 13-Slot
SCSI accelerator	Qualified SCSI Accelerator (ATTO EPCI-DC or Digidesign SCSI 64)
SCSI hard drives	Qualified drives are required; see the Digidesign Web site for more information.
Sync peripheral	Universal Slave Driver (USD)

2:1 Video Compression or 1:1 Uncompressed

Minimum AVoption XL System Requirements

Item	Minimum Requirement
CPU	Power Macintosh 9600, Blue & White G3 or G4
PCI Expansion Chassis	Magma 13-Slot
SCSI accelerator (video)	Qualified SCSI Accelerator (ATTO EPCI-UL2D LVD Accelerator required for 2:1 or 1:1 video compression)
SCSI accelerator (audio)	Qualified SCSI Accelerator (ATTO EPCI-DC or Digidesign SCSI 64 required for 2:1 or 1:1 video compression)
SCSI hard drives	Qualified drives are required; see the Digidesign Web site for more information.
Striped hard drives	A 2-way stripe is required for 2:1 compressed video. A 4-way stripe is required for uncompressed (1:1) video.
Sync peripheral	Universal Slave Driver (USD)

Sync Hardware

Synchronization Peripheral

AVoption XL requires a Universal Slave Driver (USD).

Sync Source

For accurate synchronization during capture and playback, a house sync source or black burst generator is required.

Storage Hardware

SCSI Accelerators

To support the high transfer rates required by AVoption XL video, a qualified SCSI accelerator is required, with audio drives connected to one channel and video drives connected to the other channel. For 2:1 compression or 1:1 uncompressed video, 2 SCSI accelerators are required.

SCSI Hardware and Drives with Video Compression Level 3:1 or Higher

If you are using 3:1 video compression or higher at all times, then your system requires only a single dual channel SCSI accelerator, the ATTO EPCI-UL2D or EPCI-DC, or the Digidesign SCSI 64, with audio drives connected to one channel and video drives connected to another.

✻ Other SCSI accelerators may be qualified. Refer to the compatibility information on the Digidesign Web site for more information.

Using Two Hard Drives

For scenarios that do not require a high audio track count or a very long video segment, use two hard drives.

In this scenario, one drive is used to record, import, and play back audio data, and one drive is used to record, import, and play back the video.

Using More Than Two Hard Drives

To get the highest possible performance from your AVoption XL system, you should use more than two hard drives. In this scenario, you can use one, two, three, or four hard drives (volumes) for audio data and one, two, or three hard drives (volumes) for video data.

❋ Note that striped volumes appear to AVoption XL as a single volume.

Audio AVoption XL can store audio data to multiple hard drives. You should allocate audio tracks to different hard drives manually. "Round robin" disk allocation is not recommended in a system that includes video drives.

Both of these options are covered in detail in your *Pro Tools Reference Guide*.

Video AVoption XL can capture a contiguous video track to multiple hard disks. This is useful if the length of your video session exceeds the storage space available on a single drive. For example, 26 minutes of video material, using 3:1 compression, requires approximately 11.1 GB of storage space. To store this much video, you need two 9 GB hard drives.

SCSI Hardware and Drives with Video Compression Level 2:1 or 1:1

If you are using 2:1 or 1:1 video compression, your system requires two SCSI accelerators: the ATTO EPCI-UL2D LVD accelerator, and the ATTO EPCI-DC or Digidesign SCSI 64. In this scenario, video drives are connected to the EPCI-UL2D, and audio drives are connected to the EPCI-DC or SCSI 64.

Striped Drive Requirements

"Striped" drives are configured in such a way that multiple hard drives behave as if they are one hard drive. This makes higher data throughput possible. 4-way striped drives (4 drives acting as one) are required when capturing, importing, or playing uncompressed (1:1) video. 2-way striped drives (2 drives acting as one) are required when capturing, importing, or playing 2:1 compressed video.

2-way striped drives should be connected in pairs to the EPCI-UL2D accelerator, with 1 drive connected to each channel.

4-way striped drives should be connected in pairs to the EPCI-UL2D accelerator, with 2 drives connected to each channel.

Installing AVoption

This chapter discusses the installation and configuration of AVoption software and hardware.

Installing a New AVoption System

If you do not already have currently supported Pro Tools TDM hardware installed, you must install AVoption as a new system.

To install a new AVoption system:

1 Install Pro Tools software using the Pro Tools Installer CD-ROM. The first time you launch Pro Tools, you are prompted to enter your authorization code, which is included in your *TDM Software Installation Guide*.

2 Install AVoption software. See "Installing AVoption Software" on page 12.

3 Install Pro Tools and AVoption hardware.

• Determine the proper PCI slots for your installation. See "AVoption PCI Slot Configurations" on page 12.

• Install Pro Tools hardware using the instructions in your *TDM Hardware Installation Guide*.

• Install AVoption hardware. See "Installing AVoption Hardware" on page 12.

Installing AVoption as an Upgrade

If you have currently supported Pro Tools TDM hardware installed in your system, then you can install AVoption as an upgrade.

▲ You must have the latest version of Pro Tools (included on the Installer CD-ROM) installed before you install AVoption.

To install AVoption as an upgrade:

1 Install AVoption software. See "Installing AVoption Software" on page 12.

2 Install AVoption hardware. Determine the proper PCI slots for your installation using "AVoption PCI Slot Configurations" on page 12. You may be required to rearrange Pro Tools hardware that is already installed. See "Installing AVoption Hardware" on page 12 to install the AVoption hardware.

Installing AVoption Software

AVoption includes the following software:

• Pro Tools Installer CD-ROM

• AVoption Authorizer diskette

AVoption is copy protected with a key disk system. After you install the software from CD-ROM, the Authorizer diskette permits you to authorize and use a single copy of AVoption.

AVoption software is installed in a specific location in your System folder, and should not be moved or altered. The Authorizer diskette permits you to reclaim authorization from your hard drive if you wish to install AVoption on a different hard drive, or if you wish to re-initialize or format your drive.

To install AVoption software:

1 Insert the Pro Tools Installer CD-ROM in your CD-ROM drive.

2 Follow the installation instructions to install AVoption.

To authorize AVoption:

■ When prompted, insert the Authorizer diskette into your floppy drive.

Installing FilmFrame

FilmFrame is optional, and copy protected with a key disk system. If you purchase this option, you will receive a FilmFrame Authorizer diskette that permits you to authorize and use this option.

To authorize FilmFrame:

■ Insert the Authorizer diskette into your floppy drive, and authorize FilmFrame.

Installing AVoption Hardware

To install your AVoption hardware, first determine the PCI slots where you will install the hardware, using the following tables.

AVoption PCI Slot Configurations

The following slot configurations are recommended for video and audio hardware installations.

Power Macintosh 9500/9600

Power Macintosh 9500 PCI slots with AVoption

Slot	Card
1	Macintosh graphics accelerator
2	d24 or MIX Core card
3	MIX Farm or DSP Farm (if any)
4	SCSI accelerator
5	Janus Advanced JPEG card
6	ABVB card

Power Macintosh 9500/9600 PCI slots with Expansion Chassis (Magma or Bit3)

Slot	Card
CPU 1	Empty
CPU 2	Chassis Expander card (connects CPU to chassis)
CPU 3	Macintosh graphics accelerator
CPU 4	SCSI Accelerator
CPU 5	Janus Advanced JPEG card
CPU 6	ABVB card
Chassis Backplane Slot	Chassis Backplane card
Chassis 1	d24 or MIX Core
Chassis (remaining)	Remaining Digidesign cards to end of chassis (max. 10 including core)

Power Macintosh G3 (Blue & White)

The Blue & White G3 has only three PCI slots. If you use this CPU, you must use a Magma 7-Slot or 13-Slot Expansion Chassis.

▲ In the Magma 7-Slot chassis, the Janus Advanced JPEG card must be placed in the first slot, and the ABVB card must be placed in the second slot to avoid potential equipment damage.

Power Macintosh G3 (Blue & White) PCI slots with AVoption and a Magma 7-Slot Expansion Chassis

Slot	Card
CPU 1	PCI Expander card (connects CPU to chassis)
CPU 2	Empty
CPU 3	SCSI Accelerator
Chassis Backplane Slot	Chassis Backplane card
Chassis 1	Janus Advanced JPEG card
Chassis 2	ABVB card
Chassis 3	d24 or MIX Core
Chassis 4	Remaining Digidesign cards to end of chassis (max. 10 including core)
Chassis 5	
Chassis 6	
Chassis 7	

Slot	Card
CPU 1	PCI Expander card (connects CPU to chassis)
CPU 2	Empty
CPU 3	SCSI Accelerator
Chassis Backplane Slot	Chassis Backplane card
Chassis 1	ABVB card
Chassis 2	Janus Advanced JPEG card
Chassis 3	d24 or MIX core
Chassis 4	Remaining Digidesign cards to end of chassis (max. 10 including core)
Chassis 5	
Chassis 6	
Chassis 7	
Chassis 8	
Chassis 9	
Chassis 10	
Chassis 11	
Chassis 12	
Chassis 13	

Power Macintosh G4

The G4 has only three PCI slots. If you use this CPU, you must use a Magma 7-slot or 13-slot expansion chassis.

▲ In the Magma 7-Slot Expansion Chassis, the Janus Advanced JPEG card must be placed in the first slot, and the ABVB card must be placed in the second slot to avoid potential equipment damage.

Power Macintosh G4 PCI slots with AVoption and a Magma 7-Slot Expansion Chassis

Slot	Card
CPU 1	SCSI Accelerator card
CPU 2	PCI Expander card (connects CPU to chassis)
CPU 3	Empty
Chassis Backplane Slot	Chassis Backplane card
Chassis 1	Janus Advanced JPEG card
Chassis 2	ABVB card
Chassis 3	d24 or MIX Core
Chassis 4	Remaining Digidesign cards to end of chassis (max. 10 including core)
Chassis 5	
Chassis 6	
Chassis 7	

Slot	Card
CPU 1	SCSI Accelerator
CPU 2	PCI Expander card (connects CPU to chassis)
CPU 3	Empty
Chassis Backplane Slot	Chassis Backplane card
Chassis 1	ABVB card
Chassis 2	Janus Advanced JPEG card
Chassis 3	d24 or MIX core
Chassis 4	Remaining Digidesign cards to end of chassis (max. 10 including core)
Chassis 5	
Chassis 6	
Chassis 7	
Chassis 8	
Chassis 9	
Chassis 10	
Chassis 11	
Chassis 12	
Chassis 13	

Audio Hardware

Refer to your *TDM Hardware Installation Guide* for audio hardware installation information.

▲ You may be required to move hardware that is already installed to new PCI slot locations in your computer or expansion chassis, based on the information above.

Installing AVoption Video Hardware

To install AVoption video hardware:

1 Unplug and open your Macintosh computer or your Magma expansion chassis according to the instructions included with it.

2 Release any static electricity by touching the power supply of the CPU, or another grounded item.

3 Remove the ABVB card from the anti-static bag, being careful to handle it only by the edges.
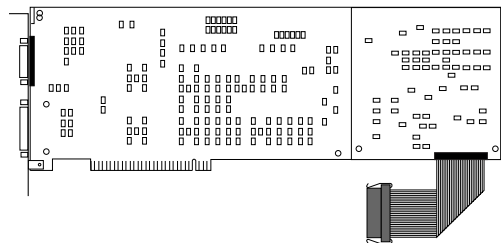
ABV Card and ribbon cable

4 Line up the ABVB card with the installation slot, and slide the card into place gently so the PCI connector is lined up with the PCI slot.

5 Press down firmly on the card with even pressure. The connector should click into place in the PCI slot.
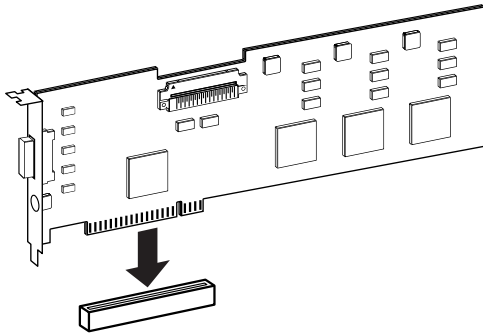
PCI Card alignment and installation

6 Repeat this process for the Janus Advanced JPEG card, making sure that you place it in the proper slot.
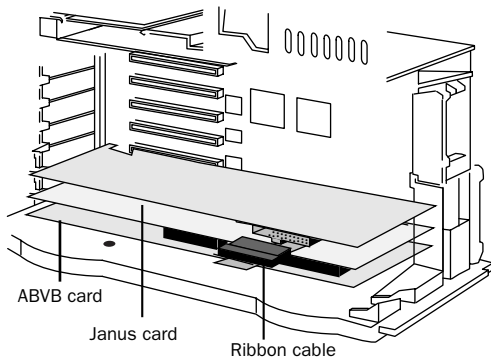
ABVB card and Janus Advanced JPEG card installed

7 Attach the ribbon cable from the ABVB board to the connector on top of the Janus Advanced JPEG card by aligning the cable end with the connector, and gently pressing it onto the card until it clicks into place.

8 Close the computer or expansion chassis.

Installing the Digidesign SCSI 64 / ATTO EPCI-DC SCSI Accelerator Card
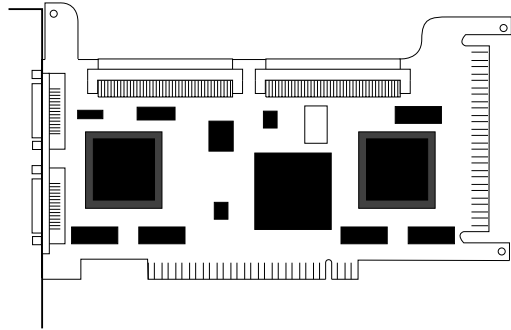
Digidesign SCSI64 / ATTO EPCI-DC SCSI Accelerator

To install the ATTO ExpressPCI Dual-Channel SCSI Accelerator:

1 Unplug and open your Macintosh computer or expansion chassis according to the instructions included with it.

2 Release any static electricity by touching the power supply, or another grounded item.

3 Remove the ATTO card from the anti-static bag, being careful to handle it only by the edges.

4 Line up the ATTO card with the installation slot, and slide the card into place gently so the PCI connector is aligned with the PCI slot.

5 Press down firmly on the card with even pressure. The connector should click into place in the PCI slot.

6 Fasten the card in place using the included screw to attach the card bracket to the computer mounting bracket.

Initializing Hard Drives

Refer to the information in the AVoption Release Bulletin and on the Digidesign Web site for the latest hard drive initialization information.

AVoption Video Connections

The ABVB Video Cable

AVoption includes a cable that provides nine coaxial video connections to connect video and sync components of your system to the ABVB card.
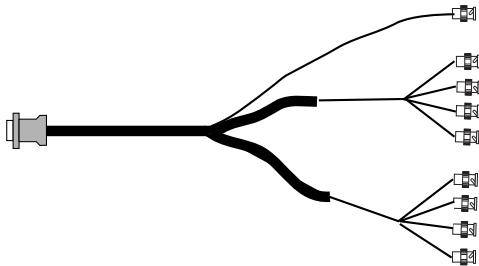
ABVB video connector cable

To connect the ABVB cable to the ABVB card:

1 Remove the ABVB cable from the protective plastic bag.

2 Connect the single connector end to the matching connector on the ABVB card.

3 Tighten the screws to lock the cable in place.

Video Connectors on the ABVB Cable

GL IN This "Gen Lock" connector is used to connect the ABVB card to an external reference video (black burst) source.

CV OUT This connector provides Composite Video out. You can use this output to connect an NTSC or PAL video monitor for video viewing. You can also connect this output to a composite input on your VTR.

✳ Many NTSC video monitors include outputs that recreate a video input signal. You can connect the CV OUT from the ABVB to an NTSC monitor, then connect an output from the monitor to your VTR to record from AVoption.

Y OUT, B-Y OUT, R-Y OUT These connectors provide Component (RGB) Video outputs. You can use these to connect a video reference monitor or VTR that has Component Video inputs.

CV IN This input is used to get Composite Video from an external source into AVoption. Connect this to your video source.

This connector can also be used in a video loop with the USD. The output of your VTR can be connected to the Video In connector on the USD, then the Video Out connector on the USD can be connected to this CV IN cable. You might use this connection to "window burn" with the USD.

Y IN, B-Y IN, R-Y IN These inputs are used to get Component Video signals from an external source into AVoption.

To connect a BNC connector:

■ Slide the end of the BNC connector over the matching BNC connection, and twist the BNC connector clockwise until it locks into place.
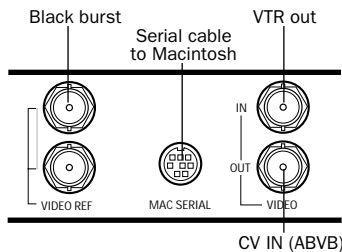
To remove a BNC connector:

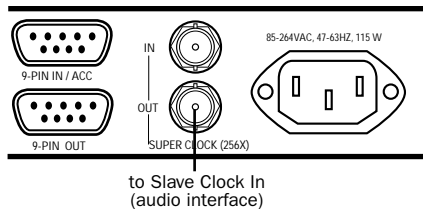■ Grip the BNC connector you wish to remove and twist it counter-clockwise until it comes loose.
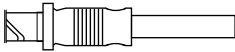
BNC connector

USD Connections

The following illustrations show USD connections. The *Universal Slave Driver User's Guide* provides more specific information about this peripheral.

USD video connections

USD connection to an audio interface

Connecting House Sync or Black Burst

In most AVoption setups, three black burst or "house sync" connections are required. These connections are:

• to VIDEO REF in on the USD

• to a video input on your VTR (a video reference input if available)

• to the GL IN connector from the ABVB cable

Read the documentation for your black burst generator for more information.

Connecting a VTR

A VTR can be used to provide video input and to record video output from AVoption. In most situations, there are three connections you need to make:

• connect a black burst or house sync output to a video input on your VTR (preferably a reference video input)

• connect the ABVB cable's CV IN and/or Component IN connectors to the corresponding output or outputs on your VTR

• connect the ABVB cable's CV OUT and/or Component OUT connectors to the corresponding inputs on your VTR

– or –

• connect the ABVB cable's CV OUT and/or Component OUT connectors to the corresponding input on an NTSC or PAL video monitor, then connect the outputs from this monitor to corresponding inputs on your VTR.

Connecting an External Video Reference Monitor

Connect an external NTSC or PAL video reference monitor using the ABVB cable's Composite or Component Video outputs.

Centralized Video Switching and Routing

Many professional facilities have centralized video switching and routing systems. These systems can be used to route AVoption's inputs and outputs to flexible input sources and output destinations.

Sample AVoption Setup Diagrams

Sample ABVB video setup

External video monitor

CV OUT (from ABVB)

VIDEO INPUT
CH A
CH B
CH C
SYNC

AUX INPUT
R / P
G / Y
B / P

REMOTE

POWER

Component video outputs (ABVB)

Video deck

Video in panel

AUDIO INPUT
CH-1   CH-2

VIDEO INPUT
Y
R-Y
B-Y

AUDIO OUTPUT
CH-1   CH-2   MONITOR

VIDEO OUTPUT
REF VIDEO
Y
R-Y
B-Y

ABVB cable

Video out panel

to Component Video inputs (ABVB)

Blackburst generator

GL IN (ABVB)

BB1   BB2   BB3

to Ref Video input on video deck

to USD / VSD

Video connections for component video, blackburst, and external monitor

chapter 5

Installing AVoption XL

This chapter discusses the installation and configuration of AVoption XL software and hardware.

Installing a New AVoption XL System

If you do not already have currently supported Pro Tools hardware installed, you must install AVoption XL as a new system.

To install a new AVoption XL system:

1 Install Pro Tools software using the Pro Tools Installer CD-ROM. The first time you launch Pro Tools, you are prompted to enter a serial number, which is included in your *TDM Software Installation Guide*.

2 Install AVoption XL software. See "Installing AVoption XL Software" on page 24.

3 Install Pro Tools and AVoption XL hardware.

• Determine the proper PCI slots for your installation. See "AVoption XL PCI Slot Configurations" on page 24.

• Install Pro Tools hardware using the instructions in your *Pro Tools Hardware Installation Guide*.

• Install AVoption XL hardware. See "Installing AVoption XL Hardware" on page 24.

Installing AVoption XL as an Upgrade

If you have currently supported Pro Tools TDM hardware installed in your system, then you can install AVoption XL as an upgrade.

▲ You must have the latest version of Pro Tools (included on the Installer CD-ROM) installed before you install AVoption XL.

To install AVoption XL as an upgrade:

1 Install AVoption XL software. See "Installing AVoption XL Software" on page 24.

2 Install AVoption XL hardware. Determine the proper PCI slots for your installation using "AVoption XL PCI Slot Configurations" on page 24. You may be required to rearrange Pro Tools or other cards that are already installed. See "Installing AVoption XL Hardware" on page 24 to install the AVoption XL hardware.

Installing AVoption XL Software

AVoption XL includes the following software:

- Pro Tools Installer CD-ROM
- AVoption XL Authorizer floppy disk

AVoption XL is copy protected with a key disk system. After you install the software from CD-ROM, the Authorizer diskette permits you to authorize and use a single copy of AVoption XL.

AVoption XL software is installed in a specific location in your System folder, and should not be moved or altered. The Authorizer diskette permits you to reclaim authorization from your hard drive if you wish to install AVoption XL on a different hard drive, or if you wish to re-initialize or format your drive.

To install AVoption XL software:

1 Insert the Pro Tools Installer CD-ROM in your CD-ROM drive.

2 Follow the installation instructions to install AVoption XL.

To authorize AVoption XL:

■ When prompted, insert the Authorizer diskette into your floppy drive.

Installing FilmFrame

FilmFrame is optional, and copy protected with a key diskette system. If you purchase this option, you will receive a FilmFrame Authorizer diskette that permits you to authorize and use this option.

To authorize FilmFrame:

■ Insert the Authorizer diskette into your floppy drive, and authorize FilmFrame.

Installing AVoption XL Hardware

To install your AVoption XL hardware, first determine the PCI slots where you will install the hardware, using the following tables.

AVoption XL PCI Slot Configurations

The following slot configurations are recommended for video and audio hardware installations.

Power Macintosh G3 (Blue & White)

The Blue & White G3 has only three PCI slots. If you use this CPU, you must use a Magma 7-slot 13-slot expansion chassis.

Power Macintosh 9500/9600 PCI Slots with Expansion Chassis (Magma or Bit3)

Slot	Card
CPU 1	Video Accelerator
CPU 2	
CPU 3	
CPU 4	Audio SCSI Accelerator (ATTO EPCI-DC or Digidesign SCSI 64)
CPU 5	
CPU 6	
Chassis Backplane Slot	
Chassis 1	Video SCSI Accelerator (ATTO EPCI-UL2D LVD)
Chassis 2	
Chassis 3	
Chassis 4	Digital Media Board
Chassis 5	
Chassis 6	
Chassis 7	
Chassis 8	d24 or MIX core card
Chassis 9	Remaining Digidesign cards to end of chassis (max. 6 including core)
Chassis 10	
Chassis 11	
Chassis 12	
Chassis 13	

Power Macintosh G3 (Blue & White) PCI slots with AVoption XL and a Magma 13-Slot Magma Expansion Chassis

Slot	Card
CPU 1	Audio SCSI Accelerator (ATTO EPCI-DC or Digidesign SCSI 64)
CPU 2	PCI Expander Card (connects CPU to chassis)
CPU 3	
Chassis Backplane Slot	Chassis Backplane Card
Chassis 1	Video SCSI Accelerator (ATTO EPCI-UL2D LVD)
Chassis 2	
Chassis 3	
Chassis 4	Digital Media Board
Chassis 5	
Chassis 6	
Chassis 7	
Chassis 8	d24 or MIX core card
Chassis 9	Remaining Digidesign cards to end of chassis (max. 6 including core)
Chassis 10	
Chassis 11	
Chassis 12	
Chassis 13	

Power Macintosh G4

The G4 has only three PCI slots. If you use this CPU, you must use a Magma 13-Slot Expansion Chassis.

Power Macintosh G4 PCI slots with AVoption and a Magma 13-Slot Expansion Chassis

Slot	Card
CPU 1	Audio SCSI Accelerator (ATTO EPCI-DC or Digidesign SCSI 64)
CPU 2	PCI Expander card (connects CPU to chassis)
CPU 3	Empty
Chassis Backplane Slot	Chassis Backplane card
Chassis 1	Video SCSI Accelerator (ATTO EPCI-UL2D LVD)
Chassis 2	
Chassis 3	
Chassis 4	Digital Media Board
Chassis 5	
Chassis 6	
Chassis 7	
Chassis 8	d24 or MIX core
Chassis 9	Remaining Digidesign Cards to end of chassis
Chassis 10	
Chassis 11	
Chassis 12	
Chassis 13	

Audio Hardware

Refer to your *Pro Tools Hardware Installation Guide* for audio hardware installation information.

✳ You may be required to move hardware that is already installed to new PCI slot locations in your computer or expansion chassis, based on the information above.

Installing AVoption XL Video Hardware

To install AVoption XL video hardware:

1 Unplug and open your Magma Expansion Chassis according to the instructions included with it.

2 Release any static electricity by touching the power supply of the chassis, or another grounded item.

3 Remove the Digital Media Board from the anti-static bag, being careful to handle it only by the edges.

4 Line up the Digital Media Board with the installation slot, and slide the card into place gently so the PCI connector is lined up with the PCI slot.

5 Press down firmly on the card with even pressure. The connector should click into place in the PCI slot.
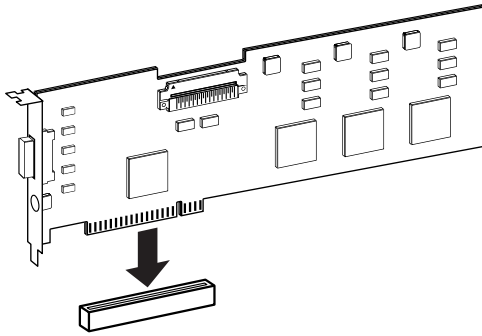
PCI Card alignment and installation

6 Close the computer or expansion chassis.

7 Attach the connector cable from the Digital Media Board (connector labeled M) to the Computer connector on the Meridien I/O Box.
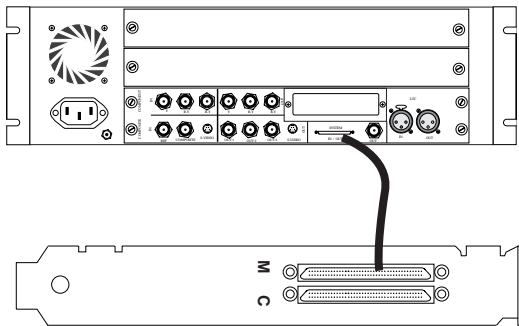
Connecting the Digital Media Board to the Breakout Box

Installing the ATTO EPCI-UL2D SCSI Accelerator
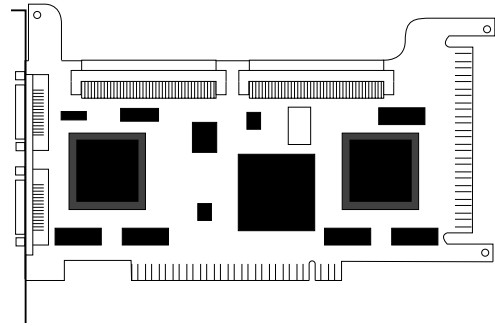
ATTO UL2D LVD SCSI Accelerator

To install the ATTO EPCI-UL2D SCSI Accelerator:

1 Unplug and open your expansion chassis according to the instructions included with it.

2 Release any static electricity by touching the power supply, or another grounded item.

3 Remove the ATTO card from the anti-static bag, being careful to handle it only by the edges.

4 Line up the ATTO card with the installation slot, and slide the card into place gently so the PCI connector is aligned with the PCI slot.

5 Press down firmly on the card with even pressure. The connector should click into place in the PCI slot.

6 Fasten the card in place using the included screw to attach the card bracket to the computer mounting bracket.

AVoption XL Video Connections

The following video I/O capabilities are available with the Meridien I/O Box:

- Inputs for composite, component (Y, R-Y, B-Y), S-Video, and (optional) SDI
- Outputs for composite, component (Y, R-Y, B-Y), S-Video, and (optional) SDI
- Video Ref input to allow the video to be locked to an external source such as house sync or a black burst generator.

▲ Only one video input source can be used at a time. See "Recording Video" on page 35 for more information.

▲ The Meridien I/O Box can only output from either S-Video or Component outputs. You must set this option in your Movie Track. See "Setting S-Video or Component Output" on page 34 for instructions.

Meridien I/O Box

The following sections provide figures and tables that describe the function of the Meridien I/O Box video I/O.

Meridien I/O Box Front Panel Indicators

The front panel of the Meridien I/O box (see Figure 1) has six indicators and a power switch. When you turn on the Meridien I/O Box, the indicators turn on and off as it goes through a power-on self-test (POST). After the POST, the POWER indicator remains lit.

▲ Some indicators do not light, or do not indicate correctly, when used with AVoption XL (see illustration). To determine this information, use the indicators on your USD, or your Session Setup window.
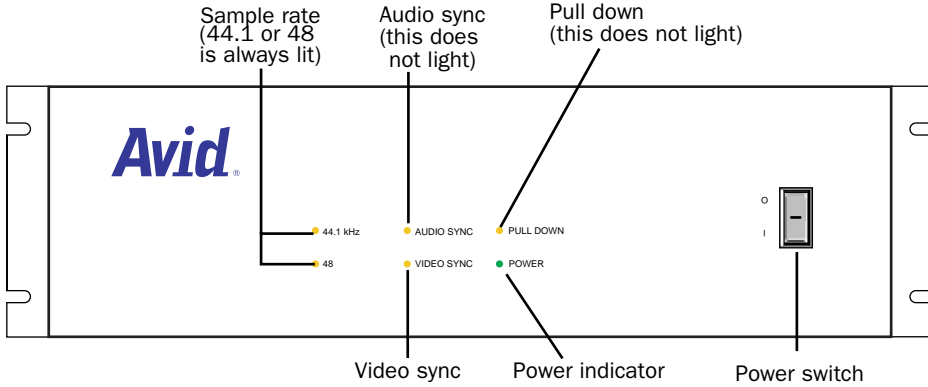
Figure 1. *Meridien I/O Box front panel*

Video I/O Connectors
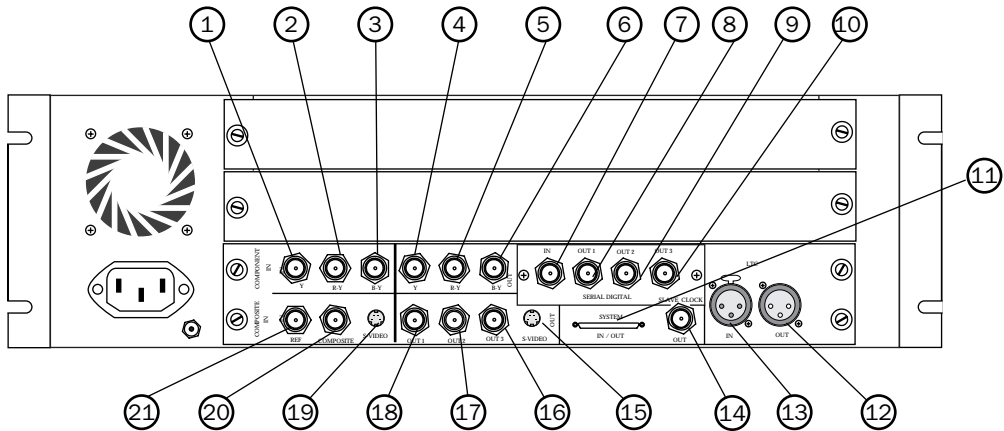
Figure 2. Meridien I/O Box rear panel showing video connectors

Table 1. Video I/O Board Identifiers

Number	Label	Function
1	COMPONENT Y IN	Video Y component input, BNC connector. Connects to analog video output of decks.
2	COMPONENT R-Y IN	Video R-Y component input, BNC connector. Connects to analog video output of decks.
3	COMPONENT B-Y IN	Video B-Y component input, BNC connector. Connects to analog video output of decks.
4	COMPONENT Y OUT	Video Y component (Betacam) output, BNC connector. Connects to analog video input of decks.
5	COMPONENT R-Y OUT	Video R-Y component (Betacam) output, BNC connector. Connects to analog video input of decks.
6	COMPONENT B-Y OUT	Video B-Y component (Betacam) output, BNC connector. Connects to analog video input of decks.
7	SDI IN (optional)	Serial digital input, BNC connector. Connects to a serial digital output from a digital video source.
8	SDI OUT1 (optional)	Serial digital output number 1, BNC connector. Connects to VTR input, a video monitor, or other serial digital device.
9	SDI OUT2 (optional)	Serial digital output number 2, BNC connector. Connects to VTR input, a video monitor, or other serial digital device.
10	SDI OUT3 (optional)	Serial digital output number 3, BNC connector. Connects to VTR input, a video monitor, or other serial digital device.
11	SYSTEM	Audio and video I/O connector from the system interface board.
12	LTC OUT	Sends LTC time code out (not used with AVoption XL).
13	LTC IN	Brings LTC time code in (not used with AVoption XL).
14	SLAVE CLOCK OUT	Clock output, BNC connector (not used with AVoption XL)
15	S-VIDEO OUT	Super-video output, 4-pin connector. Connects to analog video input of decks.
16	COMPOSITE OUT3	Composite video output, BNC connector. Connects to analog video input of decks or monitor.

Table 1. Video I/O Board Identifiers(Continued)

Number	Label	Function
17	COMPOSITE OUT2	Composite video output, BNC connector. Connects to analog video input of decks or monitor.
18	COMPOSITE OUT1	Composite video output, BNC connector. Connects to analog video input of decks or monitor.
19	S-VIDEO IN	Super-video input, 4-pin connector. Connects to analog video output of decks.
20	COMPOSITE IN	Composite video input, BNC connector. Connects to analog video output of decks.
21	Video Reference (REF)	Black burst or house sync input, BNC connector. Synchronizes the system with the global clock source provided by the house sync or black burst generator.

USD Connections

The following illustrations show USD connections. The *Universal Slave Driver User's Guide* provides more specific information about this peripheral.
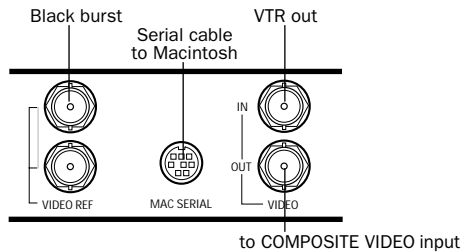
USD video connections
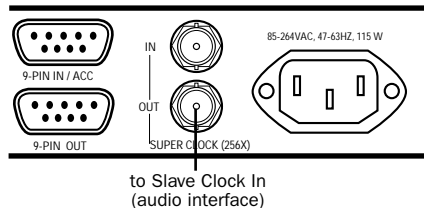
USD connection to an audio interface

Connecting House Sync or Black Burst

In most AVoption XL setups, three black burst or "house sync" connections are required. These connections are:

• to VIDEO REF in on the USD
• to a video input on your VTR (a video reference input if available)
• to the VIDEO REF connector on the Meridien I/O Box

Read the documentation for your black burst generator for more information.

Connecting a VTR

A VTR can be used to provide video input and to record video output from AVoption XL. In most situations, there are three connections you need to make:

• connect a black burst or house sync output to a video input on your VTR (preferably a reference video input)

- connect the Meridien I/O Box COMPOS-ITE IN, COMPONENT IN, S-VIDEO IN, or SDI IN connectors to the corresponding output or outputs on your VTR
- connect the Meridien I/O Box COMPOS-ITE OUT, COMPONENT OUT, S-VIDEO OUT, or SDI OUT connectors to the corresponding inputs on your VTR
  – or –
- connect the Meridien I/O Box COMPOS-ITE OUT or COMPONENT OUT connectors to the corresponding input on an NTSC or PAL video monitor, then connect the outputs from this monitor to corresponding inputs on your VTR.

▲ The Meridien I/O Box can only output from either S-Video or Component outputs. You must set this option in your Movie Track. See "Setting S-Video or Component Output" on page 34 for instructions.

Connecting an External Video Reference Monitor

Connect an external NTSC or PAL video reference monitor to a COMPOSITE, COMPONENT, S-VIDEO, or SDI output.

Centralized Video Switching and Routing

Many professional facilities have centralized video switching and routing systems. These systems can be used to route AVoption XL's inputs and outputs to flexible input sources and output destinations.

chapter 6

Recording or Importing the Movie Track

You can *capture* a video file by actually re-cording the video in through the inputs on your ABVB connector cable (AVoption) or the inputs on your Meridien I/O Box (AVoption XL), or *import* a file created in a compatible Avid video editing and compo-sition program.

The Movie Track

The Movie Track holds the movie you cap-ture or import into Pro Tools. A Pro Tools session with AVoption or AVoption XL can contain one Movie Track.
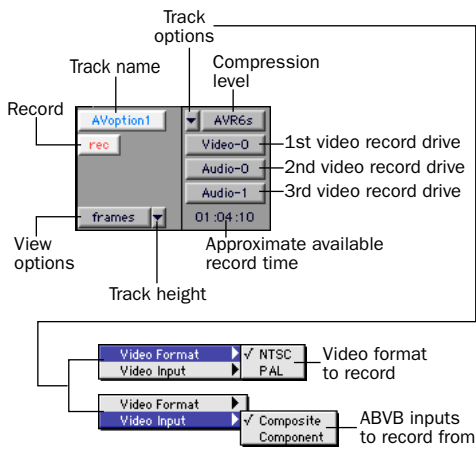
Figure 3. Movie Track controls (AVoption)
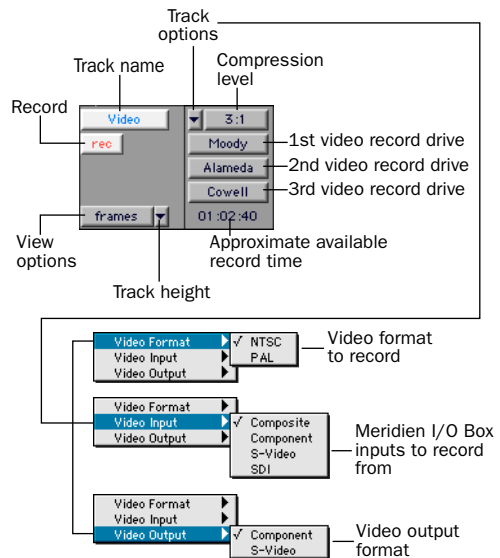
Figure 4. Movie Track controls (AVoption XL)

To create a new Movie Track:

■ Choose Movie > New Movie Track.

The new, empty track appears in the Edit window.

To name the Movie Track:

1 Double-click the Track Name button to open the Name and Comments dialog.

2 Type a name and click OK. You can also add comments here.

To delete the Movie Track:

1 Select the track by clicking on the Track Name button in the Edit window.

2 Choose File > Delete Selected Tracks.

To clear all video from the Movie Track:

■ Choose Movie > Clear Movie Track.

Setting S-Video or Component Output

(AVoption XL only)

The Meridien I/O Box can only output from either S-Video or Component outputs. This choice must be made in the software, and echoed in the physical connections you use to output signals.

To select component video outputs in AVoption XL:

1 On the Movie Track, click the Track Options pop-up. See Figure 4 on page 33.

2 Use the Video Output pop-up menu to select the outputs you would like to use: Component or S-Video.

Movie Track Options

The Movie Track can be viewed in frames or in blocks. Frames allow you to see an overview of the actual video content in a session. Blocks allow you to see where clips in the original project begin and end, and the names of clips.

Frames

In Frames mode, video data is displayed as pictures in the Movie Track. These pictures are computed based on the video image, and scale according to your track zoom settings and track height. They do not provide a frame-accurate reference, but allow you to easily find a scene or sequence in the Movie Track.

Movie Track in Frames mode

Frames do not display properly if you change zoom settings during playback. Black frames are drawn until playback is stopped. You should stop playback before changing zoom settings if you want to view frames.

Blocks

Blocks mode displays the Movie Track as blocks of compositional data. Blocks are outlined wherever clip boundaries existed before export from the original program. Names from the original clips are retained. For example, two clips edited together without any transitions or effects, and

named "House Ext" and "House Int," will appear as two blocks bordering each other with those names.

Movie Track in Blocks mode

In Blocks mode, you can place the cursor on the Movie Track, then press Tab move to the next video edit in the track.

To set the view for the Movie Track:

■ On the Movie Track, select "frames" or "blocks" from the View Options pop-up menu.

Recording Video

To set video recording options:

1 Create a new Movie Track. You can also use an existing Movie Track if it does not contain a movie.

2 Select a video format by clicking the Track options button (see Figure 3 and Figure 4), then selecting Video Format. You can select NTSC or PAL format.

3 Select the video input you are using by clicking the Record options button, then selecting Video Input. You can select Component or Composite input (AVoption and AVoption XL), or S-Video or SDI (AVoption XL only).

4 Set the compression level for the video capture from the Compression Level pop-up menu.
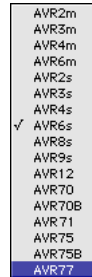
Setting the compression level (AVoption)
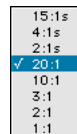
Setting the compression level (AVoption XL)

5 Select the target hard drive volumes for the video capture. Target volumes capture video in order, from the first (top) to the last (bottom). In the following illustration, Video-0 captures video first, followed by Audio-0, then Audio-1.

As you add or remove volumes from the track, the available record time is updated to reflect available disk space and compression settings. The time displayed is approximate.

Target volumes for video capture

To record video:

▲ Note that if there is already a movie on the Movie Track, the movie will be replaced, regardless of where you start recording.

1 Place your cursor at the point you want to start recording, or select a range of time for the recording. You can make this selection on a timeline or on a track. If you make this selection on a track, make sure that Edit and Timeline selections are linked.

2 Record enable the track by clicking the Record button.

3 Click Record in the Transport window to enable recording.

4 Start playing the video source.

5 Click Play in the Transport window to begin recording.

6 Click Stop in the Transport window to stop recording.

MachineControl

For far more accurate video recording, use MachineControl to remotely control your video source machine in synchronization with Pro Tools. MachineControl is optional software. Contact your dealer for more information.

Blocks mode is recommended when recording to the Movie Track with Machine-Control.

Exporting Files from Avid Programs

If you already have a project that was created on an Avid video authoring system, you can export it to an OMF file so the material can be imported into your AVoption or AVoption XL system. This exchange of data between systems is significantly faster and easier than other methods, such as laying-off to tape and re-digitizing. This section uses a Media Composer project as an example.

DigiTranslator

DigiTranslator is included with your AVoption or AVoption XL package. Use Digi-Translator to convert OMF files containing video and audio into Pro Tools session files. You can also use it to export audio material from Pro Tools sessions into OMF files for import into other systems. Refer to your DigiTranslator documentation for more details.

What AVoption and AVoption XL Import

AVoption and AVoption XL import only fully rendered (flattened) compositions, and will not play video effects or transitions that require special video hardware, or any areas of a sequence that require multiple, real-time video streams. If you import such a sequence, you will see black frames in place of these transitions.

What to Export

When you export from your Avid software, you have two choices. You can export the audio and video from a project, or you can export the video only.

Video and Audio

If your Media Composer project has video and audio in it, export both the video and the audio to the OMF file.

Video Only

If you have already started audio post production in Pro Tools and you want to replace the Movie Track with a more recent version, or your Avid project has no audio in it, export the video only. Then, if the video in your project changes, you can export video only, then import that video into AVoption or AVoption XL to stay current with the project.

Prepare for Export in Media Composer

To prepare a Media Composer project for OMF export and use with AVoption or AVoption XL:

◆ Make sure all media for the project is online.

◆ Render all effects in advance. OMF export does not automatically render effects during the process, so if you want to see them, you must render effects before you export.

Exporting from Media Composer

To export a file from Media Composer:

1 Select the material to export by doing one of the following:

◆ To select specific tracks in a clip or sequence, enable those tracks in the Track Selector panel, and disable all others.

◆ To export part of a clip or sequence, mark IN and OUT points to export the marked range from a bin or monitor, and select Use Marks in the Export Settings dialog box. If you mark an IN and no OUT point, the system exports from the IN mark to the end of the clip or sequence.

◆ To export the entire clip or sequence, deselect the options Use Enabled Tracks and Use Marks in the Export Settings dialog box, and make sure the topmost track in the project is monitored.

◆ If using different drives to transport the project, consolidate the project.

2 Choose File > Export.
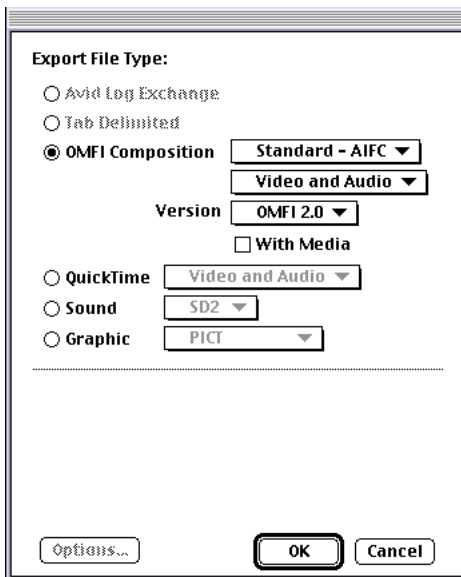
Export File Type dialog in Media Composer

◆ Under Export File type, select OMFI composition.

◆ If importing video and audio into an AVoption session, select Standard-AIFC and Video and Audio options.

◆ If importing video only into AVoption, select Video Only.

◆ Usually, you should export an OMF file that only refers to the audio and video files that already exist on the hard drives. For this reason, it is recommended that you do not export With Media.

3 Set the Version to OMFI 2.0.

4 When you finish setting export options, click OK.

Importing Files into AVoption and AVoption XL

Once you have an OMF file for your project, you are ready to import it. If your OMF file is Video Only you can simply import it as the Movie Track in AVoption or AVoption XL. If your OMF file has Video and Audio, you can use OMF Tool to create a Pro Tools session from the audio files, then import the Movie Track separately.

You can use DigiTranslator to translate video and audio simultaneously. See your DigiTranslator documentation for details.

To create a Pro Tools session with OMF Tool:

1 Launch OMF Tool, and choose OMF Tool > Convert OMF to Pro Tools.

2 Select the OMF composition file.

3 Name the Pro Tools session, and choose Pro Tools 4 as the version to save.

4 Set all other options based on your session requirements, and click Save when you are done. The resulting file is a Pro Tools session. OMF Tool ignores the video information.

To open your session with AVoption or AVoption XL:

1 Choose File > Open Session.

2 Find the Pro Tools session created by OMF Tool, select it, and click Open.

To import a video into the Movie Track:

1 With a session open, choose Movie > Import Movie.

2 Select the OMF file created by the Video Only or Video and Audio export, and click OK.

chapter 7

Playing the Movie Track

Video plays back automatically when you play a session that includes a Movie Track. There are several different options for viewing and synchronizing the video and audio tracks.

Movie Online

When the Movie is online, the Movie Track plays along with the audio session. The Movie's frame location is updated every time you place your cursor in a new location, and the Movie track is scrubbed along with the audio tracks. The Movie is also updated whenever you drag or nudge an audio region or an automation breakpoint. The Movie is online by default.

Online Edit and Selection Behavior

When Pro Tools is in Grid mode or set for Loop Playback, and the Movie is online, Pro Tools will always place your cursor or Edit selection on legal frame boundaries. If you make a selection that is outside of frame boundaries, or you place your cursor outside a frame boundary, Pro Tools will warn you with a dialog and move your selection boundaries or cursor to the nearest frame.

To prevent this, take the Movie offline, go out of Grid mode, or disable Loop Playback if you are editing audio that does not require placement at the beginning of a video frame.

Movie Offline

If you temporarily do not wish to view the Movie or have the Movie frame location updated, you can take the movie Offline.

This is useful if you are working with audio and do not need to see the video.

To put the Movie online:
■ Select Movie > Movie Online.

To take the Movie offline:
■ Deselect Movie > Movie Online.

Playback Viewing Options

Video can be viewed on a separate NTSC or PAL video monitor. Video can also be viewed in an on-screen window (AVoption only).

Using a Playback Monitor with AVoption

The ABVB video cable includes video outputs to connect an NTSC or PAL video monitor. You can connect a monitor that has component or composite video inputs.

The video card will display full-screen video on the playback monitor.

To connect a playback monitor:

■ Connect the composite output or the component outputs from the ABVB cable to the proper input or inputs on the back of your video monitor.

Using a Playback Monitor with AVoption XL

The Meridien I/O Box includes video outputs to connect an NTSC or PAL video monitor. You can connect a monitor that has component, composite, S-Video, or SDI video inputs.

The video card will display full-screen video on the playback monitor.

▲ The Meridien I/O Box can only output from either S-Video or Component outputs. You must set this option in your Movie Track. See "Setting S-Video or Component Output" on page 34 for instructions.

To connect a playback monitor:

■ Connect a composite output, the component outputs, the S-Video output, or and SDI output from the Meridien I/O Box to the proper input or inputs on the back of your video monitor.

Window Playback

(AVoption Only)

Select Windows > Show Movie Window to view the Movie Track in a window on your computer screen. This window will display the video in real time. You can resize or move this window around your screen when playback is stopped.

The Movie window will give you the best performance when it is displayed on a monitor connected to the ABVB VGA monitor output. With a monitor connected to your Macintosh graphics accelerator, performance will not be optimal, and may not work at all.

Movie window (AVoption only)

▲ You cannot view the video input signal in a window. In order to view video input, you must connect an external monitor to the Composite or Component outputs of the ABVB card.

If the Movie window is partially blocked by another window on your screen, playback will slow or "stutter" as your computer's CPU attempts to display the video.

Movie window size and position are saved with your session.

To show the Movie Window:

■ Select Windows > Show Movie Window.

To resize the Movie Window:

■ When playback is stopped, click the lower right corner of the Movie window and drag to shrink or enlarge the window.

Movie Aspect Ratio

(AVoption Only)

You can set the Movie window to automatically snap to one of two window aspect ratios (4x3 or 16x9), or to allow unconstrained resizing.

By constraining the aspect ratio, you can see a more accurate on-screen representation of the final video. Use 4:3 for video destined for television, and use 16:9 for wide screen film-format viewing.

To set the Movie window aspect ratio:

1 Select Movie > Show Movie Window.

2 Select Movie > Movie Window Aspect Ratio.

3 Choose 4:3, 16:9, or unconstrained as the aspect ratio.

Spotting the Movie Track

You can spot the entire Movie Track to a new SMPTE frame location. Although AVoption and AVoption XL retain the names and positions of different "clips" when you import a Movie Track, you cannot spot separate video clips. When you spot the Movie Track, the whole track or sequence is moved to the new frame location you specify.

To spot the Movie Track to a new frame location:

1 Set the Main Timebase display to Time Code using the pop-up menu.
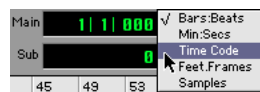
2 Enable Spot mode by clicking the Spot button.

3 Select the Movie on the Movie Track with the Grabber tool.

4 In the Spot dialog, specify a new SMPTE frame number for the start of the Movie Track. In this dialog, you can press "+" or "-" on the numeric keypad, enter a number, and press the Enter key to add or subtract that number of frames from the currently selected time field.

5 Click OK when you are done.

Video Editing With AVoption or AVoption XL

AVoption and AVoption XL do not support video editing.

You cannot use the Cut, Copy, and Paste commands with the Movie Track. You can, however, Spot the Movie to a new location.

▲ You cannot import or capture multiple video files to a Movie Track. Once a Movie Track contains video, importing or capturing new video will replace the entire track, regardless of the original and new Movie locations.

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