

Avid® Products

System Integration Guide

for the IBM® IntelliStation® Z Pro Type 6866-6AU (6AG)

Rev B, October 2001

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CHAPTER 1

Document Overview

This guide is relevant to the product integration of supported Avid® systems on the IBM® IntelliStation® Z Pro Type 6866-6AU (USA) and the Z Pro Type 6866-6AG (Europe) Professional Workstation (IBM 6866 system) only. As other platforms are qualified, they will either be added to this guide or explained in a separate document.

This chapter contains the following sections:

- Who Should Use This Guide
- About This Guide
- Differences Between IBM Systems
- Revision Changes
- Symbols and Conventions
- If You Need Help
- If You Have Documentation Comments
- Related Information
- How to Order Documentation

Who Should Use This Guide

This guide is intended for Avid Resellers. It describes the procedures necessary to make changes to an IBM 6866 system and how to integrate the needed hardware and application software to produce a fully Avid integrated system for the end user.

About This Guide

The guide is designed as a reference to answer the “How do I do that?” questions that come with any step involved in integrating the hardware and the application software into an Avid system.

This guide is *not* designed as:

- A Windows® 2000 troubleshooting guide
- An upgrade guide from the IBM 6889 system to the IBM 6866 system

This guide uses modular chapters that allow the user to find and use information easily.

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

- Chapter 1, “Document Overview,” provides information about the guide and how you would use it.
- Chapter 2, “System Overview,” explains the different Avid systems, types of board sets available, and what you need to do to fully integrate the board sets into an Avid system.
- Chapter 3, “Checking the Basic IBM 6866 System,” explains how you would check the IBM 6866 system as it is shipped by IBM.
- Chapter 4, “Installing Memory, the Avid Board Set, and the Fan Kit,” explains how you install memory, the Avid board set, and the fan kit in the system. As there are many configuration

possibilities, pay particular attention to the slot allocation tables for each Avid product configuration.

- Chapter 5, “Connecting the Remaining Avid Devices,” explains how you connect the remaining Avid devices to the system before you install the Avid application software.
- Chapter 6, “Changing System BIOS and Creating Windows 2000 Image,” explains what you need to do to make the proper changes to the BIOS and to create a Windows 2000 image on the system disk.
- Chapter 7, “Installing and Verifying Avid System Software,” explains how you install and verify the Avid software.
- Chapter 8, “Troubleshooting,” provides examples and solutions of possible problems you might see during the integration of the system.
- Appendix A, “Managing Disks on a Windows 2000 System,” provides a brief explanation of how you manage disks on a Windows 2000 operating system.
- Appendix B, “Regulatory and Safety Notices,” provides regulatory and safety notices for the system.



Do not use this guide to integrate another vendor platform. While much of the content is applicable to other platforms, there are specific steps that are not relevant to other systems.



This guide is not designed as a replacement for the Avid Certified Resellers class.

Differences Between IBM Systems

Table 1-1 lists the major differences between the old IBM IntelliStation 6866 system with skews (40U and 40G) and the new IBM IntelliStation 6866 system with skews (6AU and 6AG).

Table 1-1 Differences Between Skews

Old Skews (40U and 40G)	New Skews (6AU and 6AG)
AGP board is Matrox [®] 400 (board is removed during integration)	AGP board is Matrox 450 (board is removed during integration)
Processor speed 866 MHz	Processor speed 933 MHz
Internal system disk is 9 GB	Internal system disk is 18.2 GB
Operating system is Windows NT [®] (overwritten with Avid Setup and Product Recovery CD-ROM during integration)	Operating system is Windows 2000 (before Oct 2001 Windows 2000 was overwritten with the Windows NT operating system by the Avid Setup and Product Recovery CD-ROM during integration)

Revision Changes

Table 1-2 explains the differences between the *Avid Products System Integration Guide* (PN 0130-04829-01) Revision A and this new *Avid Products System Integration Guide* (PN 0130-04829-01) Revision B, the differences between the two Avid Product Recovery CD-ROMs, and the major Windows 2000 differences. There are differences in the way you do things between the Windows NT and Windows 2000 operating systems that are not detailed in the table, but these differences are explained as you go through this guide.

Table 1-2 Revision Differences

Revision A	Revision B
Stated support for multiple processor systems.	Multiple processor systems are <i>not</i> supported.
System used a parallel port dongle.	System uses a USB dongle.
The Avid Product Recovery CD-ROM allowed installation of one or two partitions and the Windows 2000 operating system.	The Avid Product Recovery CD-ROM allows installation of only one partition and the Windows 2000 operating system.
A new Avid hardware profile needed to be created.	The Avid hardware profile is already created when the Avid Product Recovery CD-ROM is used.
The paging file size needed to be changed to match the memory size.	The Windows 2000 operating system sets the paging file size automatically during installation. ^a
The Aspi32 driver needed to be installed from the IBM Diagnostic CD-ROM.	The Avid application installs the needed driver.
Explained how to install all Avid drivers.	The Avid Product Recovery CD-ROM installs all needed Avid drivers.
External connections 4, 5, and 6 in Table 2-4 were incorrect.	External connections 4, 5, and 6 in Table 2-4 are now correct.

a. If you upgrade memory after you install the Windows 2000 operating system, you need to change the paging file size.

Symbols and Conventions

Unless noted otherwise, the material in this document applies to the Windows 2000 operating system.

The system integration guide uses the following special symbols and conventions:

1. Numbered lists, when the order of the items is important.
 - a. Alphabetical lists, when the order of secondary items is important.
- Bulleted lists, when the order of the items is unimportant.
 - Indented dashed lists, when the order of secondary items is unimportant.
- One arrow indicates a single-step procedure. Multiple arrows in a list indicate that you perform one of the actions listed.

Courier Bold font identifies text that you type.

Look here in the margin for tips.

In the margin, you will find tips that help you perform tasks more easily and efficiently.



A note provides important related information, reminders, recommendations, and strong suggestions.



A caution means that a specific action you take could cause harm to your computer or cause you to lose data.



A warning describes an action that could cause you physical harm. Follow the guidelines in this guide or on the unit itself when handling electrical equipment.

If You Need Help

If you are having trouble using the system, you should:

1. Retry the action, carefully following the instructions given for that task in this guide.
2. Check the documentation that came with your hardware for maintenance or hardware-related issues.
3. Check the release notes supplied with your Avid application for information on accessing the Avid Web site and the Avid Knowledge Center.
4. For support services, call Avid Customer Support:
 - Broadcast products — call 800-NEWS-DNG (639-7364).
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Please include the title of the document, its part number, revision, and the specific section you are commenting on in all correspondence.

Related Information

The following documents provide more information about the hardware and software for your system:

- *User Guide IntelliStation Z Pro Type 6866 Professional Workstation*
- The Avid setup guide for your specific system
- The Avid site preparation guide for your specific system (online version)
- *Avid iS MediaDrive Setup and User's Guide*
- *Avid MediaDrive rS LVD Setup and User's Guide*
- *Avid MediaDock LVD Setup and User's Guide*
- The Avid release notes for your specific system
- *Avid Products Collaboration Guide*

This guide provides step-by-step instructions for transferring project files, audio files, and graphics and effects files between various Avid products.

The most recent update of the *Avid Products Collaboration Guide* is provided online. Check the release notes provided with your Avid application for information on accessing online documentation.

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CHAPTER 2

System Overview

Avid uses an IBM IntelliStation Z Pro Type 6866-6AU (6AG) system and different Avid board sets to provide different levels of editing systems. This chapter provides an overview of the IBM 6866 system used by Avid, and explains the types of board sets available, the supported disk controllers, and any basic configuration rules you need to understand to integrate an IBM 6866 system.

This chapter contains the following sections:

- System Integration Check List
- System Overview
- Product Overview

System Integration Check List

To integrate an IBM 6866 system you should use the integration check list provided in this section. The check list provides a step-by-step list of what is needed to complete the integration of the hardware.

Read the check list completely prior to actually starting the integration. Reading the check list will allow you to understand the flow of what you need to do when you fully integrate and create an Avid product using the IBM 6866 system.

To create an Avid system you need to follow the actions explained in Table 2-1.

Table 2-1 Hardware Integration Check List

Action	Explanation
Read the Document Overview.	Read the "Document Overview." This gives you an idea of what is in this document and how you should use it. See Chapter 1.
Understand the IBM 6866 system.	Read the "System Overview." This familiarizes you with the IBM 6866 system and some of the precautionary steps you might need to take when maintaining the system. See Chapter 2.
Understand the available Avid systems.	Read the "System Overview." This familiarizes you with the available Avid systems and optional PCI boards. See "Product Overview" on page 2-14 and "Avid Board Names" on page 2-15.
Check the kit contents.	Inventory the kit sent by Avid to determine if you received all the materials you need to continue. Check the packing slip against the materials received.

Table 2-1 Hardware Integration Check List (Continued)

Action	Explanation
Connect the basic system components.	You need to connect the equipment needed to turn the system on, configure the system software, and access the Windows 2000 operating system. This would include connecting at least the: • Keyboard and mouse • One monitor • Power cords See “Connecting the Basic System” on page 3-2 for more detailed information.
Perform the basic integration of the IBM 6866 system.	Now that you know that the basic IBM 6866 system is working as shipped by IBM, you should install memory, the Avid board set, and the Avid fan kit. Continue reading the Action section in this table for more information.
Add memory to the system.	“Installing Memory” on page 4-3 provides memory requirements. The <i>User Guide IntelliStation Z Pro Type 6866 Professional Workstation</i>, provided by IBM, explains how to add or exchange memory on the system.
Install the Avid board set.	You will need to turn off the system, remove at least one board (the AGP board), and install the Avid board set and all internal cables. Depending upon the system you ordered, you install the following boards: • Disk controllers • Digital media board or board set • 3D board • Meridien™ display controller See “Installing the Avid Board Set” on page 4-9 for more detailed information.
Add the fan kit.	Follow the instructions in “Removing and Installing the Fan” on page 4-22.
Attach the application key (dongle).	Attach the application key to the USB port at the rear of the system. See “Connecting the Application Key (Dongle)” on page 5-2.

Table 2-1 Hardware Integration Check List (Continued)

Action	Explanation
Connect the Meridien I/O box and audio device (888 I/O™).	Connect the Meridien I/O box to the system. See “Connecting the Meridien I/O Box” on page 5-3. Use the setup guide for your system to connect the audio device (888 I/O) to the Meridien I/O box.
Connect the monitors.	Connect the monitors to the Meridien display controller board. See “Connecting the Display Monitors” on page 5-4.
Connect the disk drives.	Connect the drives to the SCSI board or the Fibre Channel (F/C) board. The drive types and how they are configured depend on the customer order. See the setup guide for the specific drives you are using.
Connect all power cables.	Make sure the power cables are connected to each device, including disk drives.
Change the BIOS and install the Avid disk image.	Chapter 6, “Changing the System BIOS Settings” on page 6-3 explains how to change the BIOS and “Using the Avid Product Recovery CD-ROM” on page 6-7 explains how to create a new disk image that overrides the existing Windows 2000 disk image.
Install and verify the Avid software.	Chapter 7 explains: • How to install the Avid software. • How to verify the installation of all drivers.
Test the system.	Test the system to see if the integration went properly. See “Testing the System” on page 7-9.
Create a Windows 2000 emergency repair disk.	See “Creating a Windows 2000 Emergency Repair Disk” on page 7-10.

System Overview

The Avid Symphony™, Media Composer® and Film Composer®, and Avid Xpress® systems are built around the 933-MHz IBM IntelliStation Z Pro Type 6866-6AU (6AG) professional workstation (IBM 6866 system). The following sections explain some of the major portions of the IBM 6866 system.



The system speed might increase without notice. If any hardware or software changes are needed due to a speed increase, this guide will be updated.



This guide frequently refers to the User Guide IntelliStation Z Pro Type 6866 Professional Workstation as a location for instructions and general information. Keep the user guide handy at all times and pass it on to the customer.

Microprocessor Support

Avid ships their IBM 6866 systems with one microprocessor. There is no support for multiple processor systems.

Memory Support

The memory used by the IBM 6866 system has the following requirements:

- 2.5-V, 184-pin, Rambus® inline memory modules (RIMM).
- Error correcting code (ECC) or non-ECC dynamic random access memory (RDRAM).
- Memory modules are available in 64-MB, 128-MB, and 256-MB RIMMs for a maximum of 2 GB.



The memory modules must be installed in pairs of the same size.

- The memory modules are plugged into a memory card that can have four slots or eight slots depending upon the system. The current memory requirements for Avid systems are explained in Table 2-2.

Table 2-2 Memory Requirements

Avid System	Minimum Requirement	Recommended
Symphony or Symphony Universal	384 MB	384 MB
Media Composer and Film Composer	384 MB	384 MB
Avid Xpress	256 MB	256 MB
Media Station XL	384 MB	384 MB



See the User Guide IntelliStation Z Pro Type 6866 Professional Workstation for instructions on how to install the RIMM memory.

Control and Status Indicators

This section explains the function of each control and status indicator located on the front of the IBM 6866 system. Figure 2-1 shows the locations of the control and status indicators, while Table 2-3 describes the function of each control and status indicator.

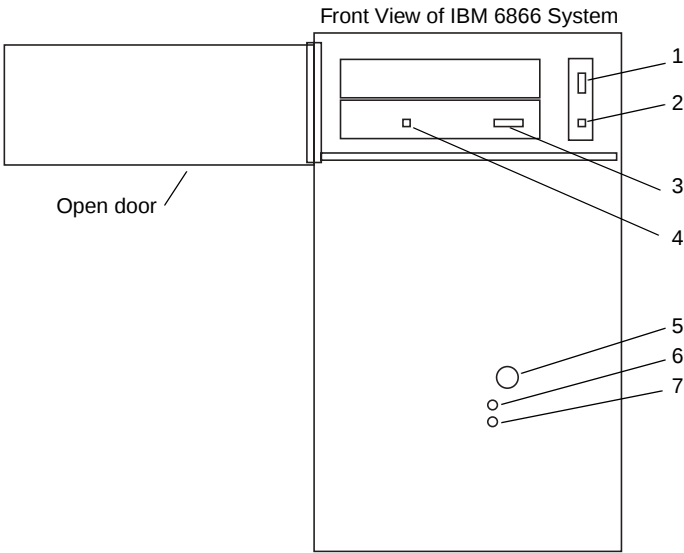


Figure 2-1 Control and Status Indicators

Table 2-3 Control and Status Indicators

Control/Status Indicator Number	Function
1	Floppy drive Eject button
2	Floppy drive light
3	CD-ROM drive Eject button
4	CD-ROM drive light
5	Power button ^a
6	Power-on light
7	Internal hard drive light in drive bay 9

a. When you press the Power button to turn off the system, you might have to wait 4 to 5 seconds before the computer turns off.

External Connections

This section explains the function of each connector located on the rear of the IBM 6866 system. Figure 2-2 shows the connections of the IBM 6866 system, while Table 2-4 describes the function of each connector.

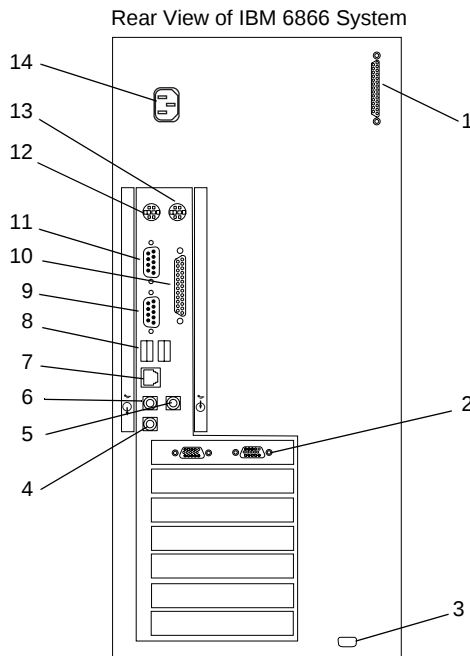


Figure 2-2 External Connections



The AGP slot (shown as number 2) is not used by Avid. Slot allocation is explained in “Installing the Avid Board Set” on page 4-9.

Table 2-4 External Connections

Connection Number	External Connector Function
1	External SCSI connector (channel B of internal 7899 Adaptec™ 160-MB Ultra3 SCSI controller)
2	AGP connector (board is removed by Avid and the slot is <i>not</i> used)
3	MIDI/joystick connection (the BIOS needs to change if you want to use MIDI)
4	Microphone In connection
5	Audio Line In connection
6	Line Out or headphone connection
7	Ethernet connection
8	Two USB ports (used for the new-style dongle)
9	Serial port 2 connection
10	Parallel port, used for application key (used for the old-style dongle)
11	Serial port 1 connection
12	Keyboard connection
13	Mouse connection
14	Power cord connection

Internal Drives and Drive Bays

The IBM 6866 system contains removable-media drives as well as an internal hard drive.

- **Removable drives** — a 1.44-MB, 3.5-inch floppy drive and an IDE CD-ROM
- **Internal hard drive** — an 18.2-GB SCSI (the drive size might change at any time without notice)

There are nine internal drive bays located in the IBM 6866 system. Access to drive bays 1 to 3 is through the front door, but you must remove the front panel for access to drive bays 4 to 9 (see Figure 2-3). “Internal Disk Controllers” on page 2-11 explains what type of device is recommended for each drive bay. The *User Guide IntelliStation Z Pro Type 6866 Professional Workstation* provides complete information and instructions for installing internal drives.

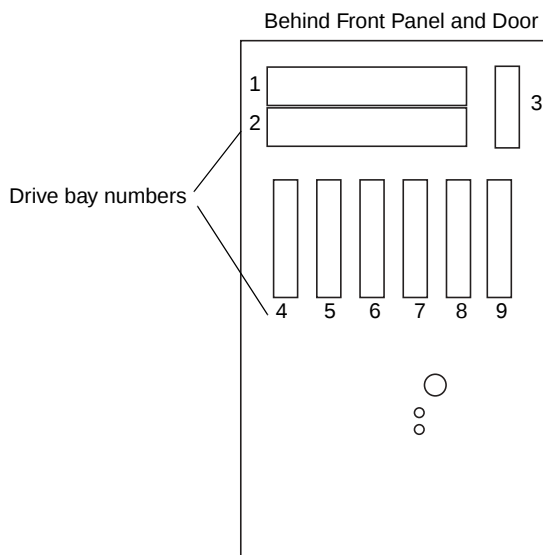


Figure 2-3 Internal Drive Bay Locations

Internal Disk Controllers

There are two internal disk controllers in the IBM 6866 system:

- A two-channel IDE controller. Both channels have the capability of having two devices connected, however, only one channel has a cable connected. The cable has two connectors, one connected to the CD-ROM in drive bay 2, and an empty connector that you could use to connect an IDE device in drive bay 1.
- A two-channel 7899 Adaptec 160-MB Ultra3 SCSI controller:
 - Channel A connects to the boot drive in drive bay 9, and also to a combination of 1.0-inch hard drives or 1.6-inch hard drives in drive bays 4 to 8 (see the *User Guide IntelliStation Z Pro Type 6866 Professional Workstation* for specific drive combinations). “Internal Drives and Drive Bays” on page 2-10 shows drive bay locations.
 - Channel B connects to the SCSI connector on the rear of the system. Channel B also provides a SCSI connection for drive bay 1 shown in Figure 2-3. Channel B can be used for storing media and connects up to a maximum of 15 SCSI devices, including the SCSI connector in drive bay 1.

Avid uses the power connector provided for one of the drive bays to power a fan needed to cool the Avid board set.



If you need to stripe across two channels to store media, you should not use any SCSI devices on channel B.



If you have a SCSI device connected to channel B in drive bay 1, and no other SCSI devices connected externally, you must place an active SCSI terminator on the external SCSI connector at the rear of the system.



Any SCSI device placed in drive bay 1 and used by SCSI channel B should be an Ultra3 or Ultra2 device. If you attach a single-ended fast and wide device to SCSI bus B, the speed of SCSI bus B is brought to that level. Avid does *not* recommend the use of a Jaz[®] type drive on this SCSI adapter.

Keyboard and Mouse

Avid replaces the standard IBM keyboard with a customized keyboard featuring labeled keycaps for the Windows 2000 products.

The three-button IBM mouse is the standard. Avid might or might not replace the standard mouse with a Microsoft® mouse for certain products, but whatever mouse is used, it must have a PS/2-style male connector to plug into the system.

Monitors

Avid systems support the following three monitors:

- The 21-inch Bin monitor displays the Windows 2000 operating system desktop.
- The 21-inch Edit monitor displays the Avid software editing environment.
- The third monitor (*Client monitor*) displays full-screen video playback and can be either an NTSC monitor or a PAL monitor. This monitor is optional.



Only one monitor is standard with the Avid Xpress system. The remaining two monitors can be purchased as options.

Avid systems also support monitors of other sizes. You can use most 17-inch multisync monitors in place of the 21-inch monitors, but both the Bin and Edit monitors must be the same size and model.

Service Packs

At this date Service Pack 1 ships with the system. If problems with specific Service Packs occur, this guide will be updated and posted to the Avid Web site.

System Cautions

There are three caution areas you should be aware of whenever you are working around the IBM 6866 system:



You should always use a grounding wrist strap when installing any option in the IBM 6866 system.



Whenever you open the cover of the IBM 6866 system to repair or replace an option, be aware that the presence of +5V standby power might result in damage to your hardware unless you unplug the electrical cord from the system before opening the cover.



If you lose power while flashing the POST/BIOS, the system might not power up properly. See the *User Guide IntelliStation Z Pro Type 6866 Professional Workstation* for instructions on recovery from a POST/BIOS update failure.

Product Overview

You need to have an understanding of the Avid product line and what boards and controllers are supported before you actually start the integration. This information is provided in the following sections:

- Avid Products
- Avid Board Names
- Boards in PCI Slots
- Boards in Meridien I/O Box
- Supported Avid Boards for Each Product Line
- Supported Storage Boards

Avid Products

This guide is relevant to product integration on the IBM IntelliStation Z Pro Type 6866-6AU (6AG) only, and is applicable to the Avid products listed in Table 2-5:

Table 2-5 Avid Product Revisions

Product	Revision
Symphony and Symphony Universal	3.5.3
MC9000 XL	10.5.3
MC1000 XL	10.5.3
MCOffline XL	10.5.3
Film Composer XL	10.5.3
Avid Xpress XL Elite	4.5.3
Avid Xpress XL Deluxe	4.5.3
Avid Xpress XL Plus	4.5.3
Media Station XL	1.0

Avid Board Names

The Avid board set supports video, audio, compression, effects, and improved data transfer to the hard drives. The boards are located in the internal PCI slots of the IBM 6866 system or in the Meridien I/O box (an Avid designed standalone box). Table 2-6 lists the board type and location. Explanations of each board (or board set) follow the table.

Table 2-6 Peripheral Board Location

Board Type	Location
Meridien III-U digital media board set or Meridien III digital media board set ^a or Meridien II digital media board set (for Avid Xpress only)	PCI slot
Meridien 3D DVE effects board (one of two) ^b	PCI slot
Meridien display controller board	PCI slot
Fibre Channel (F/C) controller board for standalone F/C (optional)	PCI slot
SCSI UL3D/160 dual-channel LVD board (optional)	PCI slot
Meridien video I/O board	Meridien I/O box
Meridien serial digital I/O board (attached to the video I/O board)	Meridien I/O box
Meridien eight-channel audio interface board	Meridien I/O box
Meridien two-channel audio I/O board	Meridien I/O box

- a. The board set contains a Meridien II digital media board and one of two daughter boards. The daughter board you have determines whether you have the -U version of the Meridien III board set. See “Meridien III-U Digital Media Board Set” on page 2-16 and “Meridien III Digital Media Board Set” on page 2-16 for more information.
- b. You can have one of two 3D DVE effects boards. See “Meridien 3D DVE Effects Board” on page 2-17 for more information.

Boards in PCI Slots

The following sections explain the functions of each peripheral board located in an internal PCI slot.

Meridien III-U Digital Media Board Set

The Meridien III-U digital media board set is a PCI board and a Meridien II-U daughter board that provides a PCI interface for direct memory access (DMA) on the system, Ultimatte® keying, Pan and Scan resizer, deep defocus, RT Multicam, compression and decompression functions, color correction circuitry, and the use of 24p controlled by the dongle. The board set also interfaces the 3D DVE effects board, and acts as an interface to the Meridien I/O box.

Flex Circuit

The new flexible (flex) circuit connects the Meridien III-U digital media board set to the 3D DVE effects board as an over-the-top connection. The flex circuit is not needed when you upgrade an existing Meridien II system to a Meridien III-U system in the IBM 6889 system (you can use the hard, over-the-top connector as you did with the Meridien II system).

Meridien III Digital Media Board Set

The Meridien III digital media board set is a PCI board and a Meridien III daughter board that provides a PCI interface for direct memory access (DMA) on the system, compression and decompression functions, color correction circuitry, and the use of 24p controlled by the dongle. The board set also interfaces the 3D DVE effects board, and acts as an interface to the Meridien I/O box.

Depending upon the system you order, the daughter board can also provide deep defocus and RT Multicam functions.

Flex Circuit

The new flexible (flex) circuit connects the Meridien III digital media board set to the 3D DVE effects board as an over-the-top connection. The flex circuit is not needed when you upgrade an existing Meridien II system to a Meridien III system in the IBM 6889 system (you can use the hard, over-the-top connector as you did with the Meridien II system).

Meridien II Digital Media Board Set

The Meridien II digital media board set is a Meridien II PCI board and a Meridien II daughter board that provides a PCI interface for direct memory access (DMA) on the system, specific Avid Xpress features, and compression and decompression functions, all of which are controlled by the dongle. The board set also interfaces the original 3D DVE effects board, and acts as an interface to the Meridien I/O box.

Flex Circuit

The new flexible (flex) circuit connects the Meridien II digital media board set to the original 3D DVE effects board as an over-the-top connection. The flex circuit is not needed when you upgrade an existing Meridien II system in the IBM 6889 system (you can use the hard, over-the-top connector as you did with the original Meridien II system).

Meridien 3D DVE Effects Board

The Meridien 3D DVE effects board provides 3D video effects to enhance video production. The board uses one PCI slot. There are two types of 3D DVE effects boards depending upon the system you order:

- Original Meridien 3D DVE effects board (Genie effects board).
- The new Meridien 3D DVE effects board set (Mercedes effects board).



The original Meridien 3D DVE effects board, Genie, was connected to an Avid designed daughter board when attached to the Meridien I board. This connection is no longer needed when you connect the Genie to the Meridien III or Meridien II board set.

Meridien Display Controller Board

The system uses the Meridien display controller board to connect the Bin and Edit monitors using one PCI board. You can distinguish between the older version of the display controller board and the new EDC4 display controller board by looking at the metal PCI bracket. The new EDC4 board has EDC4 labeled on the top of the metal PCI bracket.



The new display controller board *cannot* be interchanged with an older display controller board without updating the software driver. See “Installing the EDC Display Controller Driver” on page 6-13 for more information.

Fibre Channel Controller Board

This optional Emulex® LP850 F/C controller is used in standalone mode (or for Avid Unity™ MediaNet) to interface and control the F/C drives.

SCSI UL3D/160 Dual-Channel LVD Board

The optional UL3D board is used with all Avid rS MediaDrives and the Avid MediaDock™ LVD storage system.



If you attach any single-ended, fast and wide device to the UL3D board, that channel on the SCSI LVD controller changes to fast and wide mode.

Boards in Meridien I/O Box

The system uses different boards in the Meridien I/O box to support video and audio (see Figure 2-4). The following sections explain the functions of each peripheral board located in a Meridien I/O box.

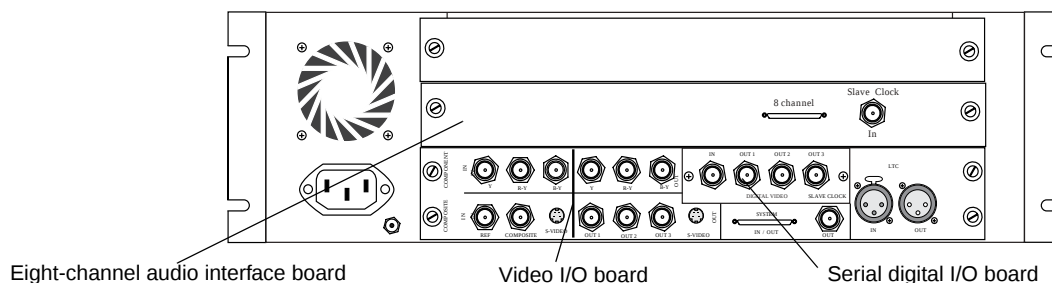


Figure 2-4 Meridien I/O Box

Meridien Video I/O Board

Each system uses a video I/O board. The video I/O board has the following features:

- Provides a parallel digital interface between the digital media board set and the analog I/O.
- Digitizes one channel of composite, component (Y, R-Y, B-Y), or S-Video.
- Converts digital output from the digital media board set to an analog output signal for composite (three outputs), component, and S-Video.
- Acts as a baseboard for the serial digital I/O (SDI) board.
- Provides a genlock capability to allow the video to be locked to an external source such as house sync or to a black burst generator (BBGen).
- Provides an audio slave clock to lock incoming audio to incoming video.

Meridien Serial Digital I/O Board

The SDI board provides physical inputs and outputs between the video I/O board and a serial digital device. The board also contains the circuitry for the Consumer Source button on the Video Input tool.

Audio Boards in the Meridien I/O Box

There are two different audio boards used to interface the IBM 6866 system to speakers and video decks depending upon the type of system you order. Both boards are standalone boards and are not attached to the video I/O board.

Eight-Channel Audio Interface Board

An eight-channel audio interface board (see Figure 2-4) links the system to a separate eight-channel audio I/O device (Digidesign® 888 I/O). The audio I/O device provides connections for up to eight channels of digital audio or eight channels of analog audio.

Two-Channel Audio I/O Board

A two-channel audio I/O board (see Figure 2-5), normally used with the Avid Xpress systems, provides connections for two channels of digital audio, two channels of analog audio, and a microphone input.

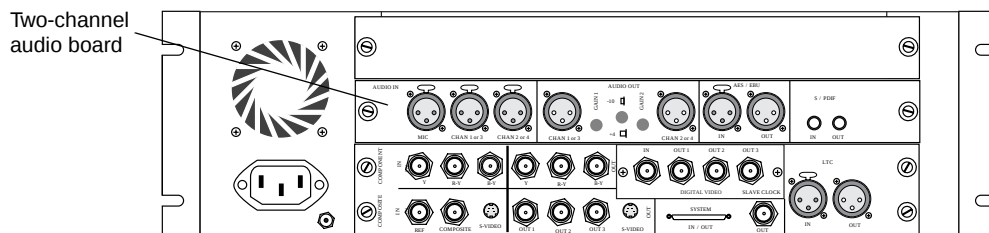


Figure 2-5 Meridien I/O Box - Two-Channel Audio I/O Board

Supported Avid Boards for Each Product Line

Table 2-7 provides a basic cross-reference between the Avid boards (storage not included) and the Avid product line that ships with the IBM 6866 system. It is possible that devices might change from being optional to being standard, so call your Avid representative for the latest configurations.

Table 2-7 Supported Avid Boards

Product	Board					
	Rev	Meridien III-U Board Set	Meridien III Board Set	Meridien II Board Set ^a	Genie	Mercedes
Symphony	3.5.3	X				X
Symphony Universal	3.5.3	X				X
MC9000 XL	10.5.3		X		X	
MC1000 XL	10.5.3		X		X	
MCOoffline XL	10.5.3		X		X	
Film Composer XL	10.5.3		X		X	
Avid Xpress XL Elite	4.5.3			X	X	
Avid Xpress XL Deluxe	4.5.3			X		
Avid Xpress XL Plus	4.5.3			X		
Media Station XL	1.0		X			

- a. The Meridien II board set will be used until Avid runs out of the Meridien II daughter boards; at that time the Meridien III board set will be used. Use of the Meridien III board set does not provide any additional editing functions.

Supported Storage Boards

There are three types of external storage options available for your Avid system:

- Standalone Fibre Channel (F / C)
- SCSI UL3D / 160 LVD board
- Avid Unity MediaNet



As drive size and drive speed improve, different F/C devices, MediaDrives, and LVD shuttles will be available for use. Contact your Avid Sales and Product information line at 800-949-2843 for more product information.

Standalone Fibre Channel

The standalone F / C system uses an Emulex controller board (see “Fibre Channel Controller Board” on page 2-18) and an F / C disk enclosure that contains up to 10 drives.



For striping information, see the latest version of the striping tables in the Documentation section of the Avid Customer Service Knowledge Center.

The following 7.2K rpm and 10K rpm F / C storage devices are supported:

- Shipping F / C devices:
 - MEDIAArray™ (XL series) 18 GB 10K rpm
 - MEDIAArray (XL series) 73 GB 10K rpm
- Nonshipping F / C devices:
 - MSDE 9 GB 7.2K rpm
 - MEDIAArray 18 GB 10K rpm (early versions)
 - MEDIAArray 50 GB 7.2K rpm

SCSI UL3D/160 Dual-Channel LVD Board

The system uses an optional UL3D board that supports up to 15 devices per channel. The system supports the following two types of SCSI storage:

- All rS LVD MediaDrives available in rack and stack enclosures.
- The MediaDock LVD storage system.

The following SCSI storage devices are supported:

- Shipping fixed-enclosure devices:
 - rS18™ / 160 MediaDrive LVD
 - rS36 / 160 MediaDrive LVD
 - rS73 / 160 MediaDrive LVD
- Nonshipping fixed-enclosure devices:
 - rS9™ LVD, rS18 LVD, and rS36 LVD
 - iS9™ Pro and iS18™ Pro (fast / wide)
 - rS9 Plus and rS18 Plus (fast / wide)
- Shipping MediaDock LVD devices:
 - iS18 / 160 MediaDrive LVD shuttle
 - iS36™ / 160 MediaDrive LVD shuttle
 - iS73 / 160 MediaDrive LVD shuttle
 - iS36 / 160 MediaDock SE shuttle packs
- Nonshipping MediaDock LVD and MediaDock devices:
 - iS9 Plus and iS18 Plus MediaDock LVD shuttles
 - iS18 and iS36 MediaDock LVD shuttles
 - iS9 Plus and iS18 Plus MediaDock Shuttle™ packs (fast / wide)
 - iS9 Pro and iS18 Pro MediaDock Shuttle packs (fast / wide)
 - iS18 and iS36 MediaDock SE shuttle packs



If you attach any single-ended, fast and wide device to the UL3D board, that channel on the SCSI LVD controller changes to fast and wide mode.

Avid Unity MediaNet

The Avid Unity MediaNet server and storage subsystem use F/C storage components to provide the shared storage environment for up to 24 MediaNet clients. MediaNet allows all 9 users to simultaneously read and write to the same shared storage workspace.

The following F/C storage devices are supported:

- Shipping F/C devices:
 - MEDIAArray (XL series) 18 GB 10K rpm
 - MEDIAArray (XL series) 73 GB 10K rpm
- Nonshipping F/C devices:
 - MSDE 9 GB 7.2K rpm
 - MEDIAArray 18 GB 10K rpm (early versions)
 - MEDIAArray 50 GB 7.2K rpm

For more information about Avid Unity MediaNet, see the documentation that ships with Avid's Workgroup solutions and Avid Unity MediaNet.

Networking

The Avid Product Recovery CD-ROM pre-enables DHCP networking for the user.



CHAPTER 3

Checking the Basic IBM 6866 System

Having read Chapter 2, you should now understand the type of IBM 6866 system that you ordered and the board sets that go with each system. You must now check the IBM 6866 system to make sure it functions properly *before* you start the integration procedure.



The new IBM 6866 system ships with the Windows 2000 operating system. As you boot the system for the first time, you are asked to complete the system build by answering questions about the system and its software. Answer the questions as if you were the customer, but remember that you will be replacing the Windows 2000 operating system when you use the Avid Setup and Product Recovery CD-ROM in later chapters.



The box used by IBM to ship the IBM 6866 system is not the same box used by IBM to ship the IBM 6889 system. The box that ships with the IBM 6866 system can be used more than once.

This chapter contains the following sections:

- Connecting the Basic System
- Checking the System

Connecting the Basic System

You need to connect and check the basic system before you place any Avid boards in the system (see Figure 3-1). This allows you to make sure the system you receive works *prior* to making any changes.

To connect the basic system:

1. Connect the keyboard to the keyboard port at the rear of the IBM 6866 system.
2. Connect the mouse to the mouse port at the rear of the IBM 6866 system.
3. Connect a single monitor to the number 1 connector on the AGP graphics board at the rear of the IBM 6866 system.
4. Connect all power cables.

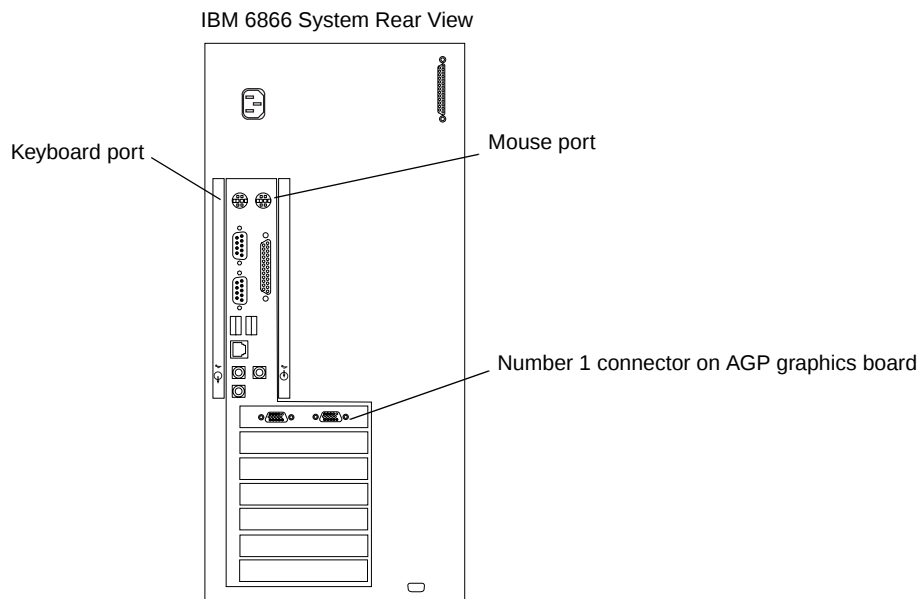


Figure 3-1 Basic System Connections

Checking the System

You should turn on the system and make sure there are no problems with the basic connections you made in “Connecting the Basic System” on page 3-2 before you add memory, Avid boards, or make any BIOS or configuration changes to the IBM 6866 system.

To make sure there are no problems:

1. Turn on the monitor and then the IBM 6866 system.
2. Complete the system build by answering any questions asked by the system during the boot procedure.
3. Log in to the system using the Administrator account with no password.
4. Once you reach the Windows 2000 desktop, you can assume that your IBM 6866 system is properly connected to the monitor, keyboard, and mouse, and you can continue with the integration.
5. Press Ctrl+Alt+Delete to log out of the system.
A Windows 2000 Security window opens.
6. Click Shut Down and then select the Shutdown option (*not* the Shutdown and Restart option).
7. Turn off the system when the monitor says it is safe to do so. You now know that your system works *before* you start to add boards and make system changes.



CHAPTER 4

Installing Memory, the Avid Board Set, and the Fan Kit

You should now install memory (if needed), the Avid board set, and the fan kit into the system. As there are many configuration possibilities, pay particular attention to the slot allocation tables for each Avid product configuration.

This chapter contains the following sections:

- Required Tools
- IBM 6866 System Slot and Memory Locations
- Installing Memory
- PCI Board Configuration
- Avid Board Configurations
- Installing the Avid Board Set
- Removing and Installing the Fan

Required Tools

You require some or all of the following tools to install boards or memory in the IBM 6866 system:

- A regular flat-blade screwdriver
- Antistatic protection
- A 3/16-inch nutdriver, optional, but it saves time

IBM 6866 System Slot and Memory Locations

The IBM 6866 system has seven slots; one AGP slot and six PCI slots. Figure 4-1 shows the slot locations of the IBM 6866 system as viewed with the left side of the system off. The memory board is above the AGP slot. Other connectors and sections of the system board are shown as a reference.

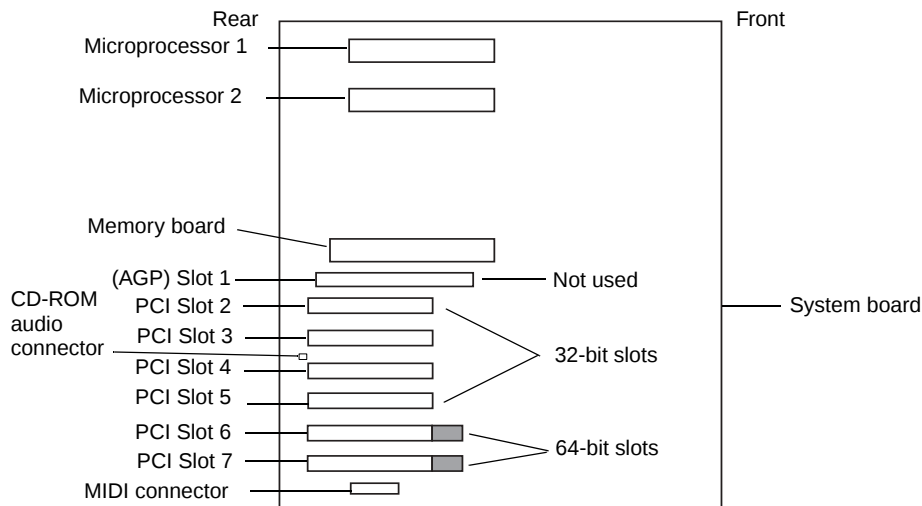


Figure 4-1 IBM 6866 System Slot Locations

Installing Memory

Before you start the installation of the memory you *must* make sure of the following:

- The system was turned off in a proper manner.
- The power cord is removed from the rear of the system.
- You read the *User Guide IntelliStation Z Pro Type 6866 Professional Workstation* for instructions that explain how to open the system and install the PCI boards.
- You use a proper antistatic grounding wrist strap during the installation.

Table 4-1 shows the memory required for each Avid system.

Table 4-1 Memory Requirements

Avid System	Minimum Requirement	Recommended
Symphony or Symphony Universal	384 MB	384 MB
Media Composer and Film Composer	384 MB	384 MB
Avid Xpress	256 MB	256 MB
Media Station XL	384 MB	384 MB



The Windows 2000 operating system automatically creates a paging file size that works properly with any Avid application when the system is first built. You only need to change the paging file size if you update the memory size after the Windows 2000 installation.

PCI Board Configuration

Slot configuration guidelines are mandatory due to PCI bus requirements, and interconnection requirements of the Meridien display controller board, Meridien digital media boards, and the 3D DVE effects combination boards. PCI boards must be installed into the system using configurations explained in this section.

Observe these points for successful installation:

- Figure 4-1 defines the slot numbers as assigned by IBM:
 - The AGP slot is slot 1 (this slot is *not used* by the Avid board set).
 - PCI slots are numbered slots 2 to 7.
- Slots 2 to 5 are 32-bit PCI slots.
- Slots 6 and 7 are 64-bit PCI slots.
- In general you should attempt to install the boards into the lower slots first (slot 7) and work your way up (this prevents you from scraping your knuckles).
- Care must be exercised when installing boards into PCI slots.
 - Never attempt to force the board into a slot.
 - Ensure that each board is seated properly in the PCI slot.
- When you place boards into either slot 3 or 4, be careful not to disturb the CD-ROM audio connection cable toward the rear of the system (could pinch the cable).
- If you install the network software and then place a board into a 64-bit slot area, this may result in the network driver ceasing to function. If this occurs, you will need to reinstall the network driver.
- Secure each board to the expansion bulkhead after installation.

Avid Board Configurations

The board configurations can be different depending upon what type of Avid system you order. The following sections explain the board configurations by Avid product.

Symphony or Symphony Universal Board Configurations

Table 4-2 defines the slots that the Avid board set must go into for any Symphony or Symphony Universal system. This table applies to local and shared-storage environments.

Table 4-2 Symphony or Symphony Universal Board Configurations

Slot Number/Type	Symphony or Symphony Universal System
1 / AGP	Remove the AGP board when you install the Avid board set
2 / PCI	Free slot (no SCSI or F / C controllers)
3 / PCI	ICE option
4 / PCI	Meridien display controller board
5 / PCI	Mercedes effects board
6 / PCI	Meridien III-U digital media board set
7 / PCI ^a	Free slot, SCSI LVD controller or F / C controller

a. If you need an F / C controller and a SCSI interface, you should use slot 7 for the F / C controller and the external SCSI connection at the rear of the system.

Avid Composer Board Configurations

Table 4-3 defines the slots that the Avid board set must go into for any Media Composer or Film Composer system. This table applies to local and shared-storage environments.

Table 4-3 Media Composer and Film Composer Board Configurations

Slot Number/Type	Media Composer or Film Composer System
1 / AGP	Remove the AGP board when you install the Avid board set
2 / PCI	Free slot (no SCSI or F / C controllers)
3 / PCI	ICE option
4 / PCI	Meridien display controller board
5 / PCI	Genie effects board
6 / PCI	Meridien III digital media board set
7 / PCI ^a	Free slot, SCSI LVD controller or F / C controller

- a. If you need an F / C controller and a SCSI interface, you should use slot 7 for the F / C controller and the external SCSI connection at the rear of the system.

Avid Xpress Board Configurations

Table 4-4 defines the slots that the Avid board set must go into for any Avid Xpress system. This table applies to local and shared-storage environments.

Table 4-4 Avid Xpress Board Configurations

Slot Number/Type	Avid Xpress System
1 / AGP	Remove the AGP board when you install the Avid board set
2 / PCI	Free slot (no SCSI or F / C controllers)
3 / PCI	ICE option
4 / PCI	Meridien display controller board
5 / PCI	Genie effects board
6 / PCI	Meridien II digital media board set ^a
7 / PCI ^b	Free slot, SCSI LVD controller or F / C controller

- a. Avid can change from the Meridien II board set to the Meridien III board set at any time. The only difference is the attached daughter board.
- b. If you need an F / C controller and a SCSI interface, you should use slot 7 for the F / C controller and the external SCSI connection at the rear of the system.

Media Station XL Board Configurations

Table 4-5 defines the slots that the Avid board set must go into for an Avid Media Station XL system. This table applies to local and shared-storage environments.



The Media Station XL uses the standard Media Composer configuration.

Table 4-5 Media Station XL Board Configurations

Slot Number/Type	Media Station XL System
1 / AGP	Remove the AGP board when you install the Avid board set
2 / PCI	Free slot (no SCSI or F / C controllers)
3 / PCI	Not used
4 / PCI	Meridien display controller board
5 / PCI	Not used
6 / PCI	Meridien III digital media board set
7 / PCI ^a	Free slot, SCSI LVD controller or F / C controller

- a. If you need an F / C controller and a SCSI interface, you should use slot 7 for the F / C controller and the external SCSI connection at the rear of the system.

Installing the Avid Board Set

This section describes the specifics for reliable hardware configuration of Avid products on the IBM 6866 system, and covers only those options that might be physically installed in PCI device slots.

There are no step-by-step procedures for the installation, but the sections are placed in the order you should follow to complete the installation.

The installation is explained in the following key sections:

- Before You Start the Installation
- Revision Levels
- Removing the AGP Graphics Board
- Installing the PCI Disk Controller
- Installing the Avid Boards



Avid now ships a new Meridien display controller board, EDC4. The new display controller board has EDC4 labeled on the top of the metal PCI bracket (see Figure 4-9). You can see the metal PCI bracket externally at the rear of the system. The previous display controller boards have no label and need a different driver than the EDC4. Drivers for the EDC4 and other display controller boards ship with the Avid software. Installing the correct software is explained in “Installing the EDC Display Controller Driver” on page 6-13.



Read all information carefully as the Avid hardware devices have interconnect dependencies that might affect installation of multiple boards. Remember to follow the appropriate electrostatic discharge guidelines when handling hardware.

Before You Start the Installation

If you did *not* install memory, before you start the installation of the Avid boards, you *must* make sure of the following:

- The system was turned off in a proper manner.
- The power cord is removed from the rear of the system.
- You read the *User Guide IntelliStation Z Pro Type 6866 Professional Workstation* for instructions that explain how to open the system and install the PCI boards.
- You use a proper antistatic grounding wrist strap during the installation.
- You know the revision levels of the software and hardware (see the release notes for your particular system).
- You determine the display controller board you have for use during the driver installation section of this guide.
- You determine the slot locations of each board for your specific system (see “Avid Board Configurations” on page 4-5).



The following sections are placed in the order that you might want to remove and install boards. In general, you should start putting boards in at slot 7 (if you have disk controllers) and work your way up the slot numbers.

Revision Levels

Table 4-6 shows the revision level of the storage drivers and BIOS needed for the IBM 6866 system at the first release of the product.

Table 4-6 Software Revision

Software	Revision
BIOS IBM Z Pro 6866	PFJT37A minimum
Windows 2000 Service Pack	1
UL2D	Driver PC V1.44uf0 (floppy disk is marked 1.45, but installs 1.44)
UL3D	Driver PC V1.63U
F/C (Emulex)	Driver V4-4.442a3; Firmware 3.03 a3

Removing the AGP Graphics Board

The AGP graphics board supplied with the IBM 6866 system *must* be removed when you install a Meridien display controller board. When you remove the AGP graphics board, you must install the Meridien display controller board *before* you turn on the system. Once the Avid Windows 2000 editing application is installed, the display controller board replaces the platform AGP graphics board and is used as the active graphics board.



The AGP graphics board should be kept accessible to the system for troubleshooting purposes. It should also be configured in the "original" configuration during the boot procedure.

Installing the PCI Disk Controller

This section describes installation and configuration requirements for the PCI disk controllers supported on the IBM 6866 system. The following devices are detailed:

- ATTO Technology ExpressPCI UL3D / 160 Dual-Channel LVD
- Emulex LP850 Fibre Channel

Using the slot allocation tables for each system as explained in “PCI Board Configuration” on page 4-4, install the disk controllers in the proper slots using the descriptions provided in the following sections.



The onboard 7899 Adaptec SCSI controller is also an Ultra3/160 controller. Drives on channel B of this controller can be used for storing digitized media for all configurations. Avid recommends that you do not stripe across the Ultra3/160 PCI controller and the onboard 7899 controller. See “Internal Disk Controllers” on page 2-11 for more 7899 controller information.

ATTO Technology ExpressPCI UL3D/160 Dual-Channel Controller

The ATTO Technology ExpressPCI UL3D / 160 is a dual-channel Ultra3 SCSI controller that supports Low-Voltage Differential (LVD) peripherals (see Figure 4-2). The controller is offered to customers as a means to use LVD devices in local storage environments.

- When used as primary storage, the UL3D / 160 controller is limited to PCI slot 7 in all configurations.
- This controller is a 64-bit capable board and must be installed in the same PCI bus as the digital media board set (normally it cannot be installed in PCI slots 2 to 5).



Figure 4-2 ATTO UL3D/160 LVD Board

Emulex LP850 Fibre Channel Controller

The Emulex LightPulse™ LP850 Fibre Channel controller is used for standalone F/C storage (see Figure 4-3). This is also the required controller to support the Avid Unity MediaNet storage environment.

- When used as primary media storage, the LP850 controller is limited to PCI slot 7 in all configurations.
- This controller is a 64-bit capable board and must be installed in the same PCI bus as the digital media board set (normally it cannot be installed in PCI slots 2 to 5).

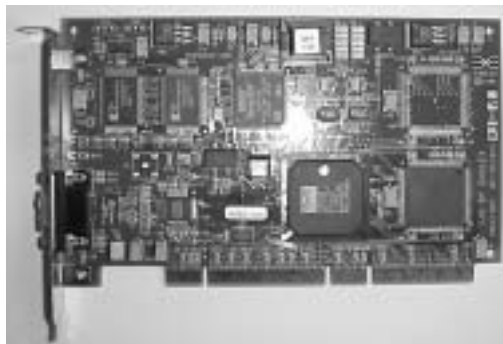


Figure 4-3 Emulex LP850 Fibre Channel Board

Installing the Avid Boards

Using the slot allocation tables for each system as explained in “PCI Board Configuration” on page 4-4, install the boards in the proper slots using the descriptions provided in the following sections.

Important

The *only difference* between the Meridien III-U board set and the Meridien III board set is the daughter board attached to the digital media board (see “Meridien III-U Digital Media Board Set” on page 2-16). The only difference you can see when the daughter boards are attached to the digital media board is the part numbers.

- Meridien III-U daughter board — PN 0030-03046-01
- Meridien III daughter board — PN 0030-03063-01

Since both board sets are installed the *same way*, this guide only explains the Meridien III-U board set. You can use the same instructions to install the Meridien III board set.

Inspecting the Meridien III-U Digital Media Board Set

Before installing the Meridien III-U (or Meridien III) board set in the system, you must ensure that the daughter board and the Meridien II board are securely fastened together (see Figure 4-4) using a connector, two cables, and five plastic standoffs (on the other side of the board set).

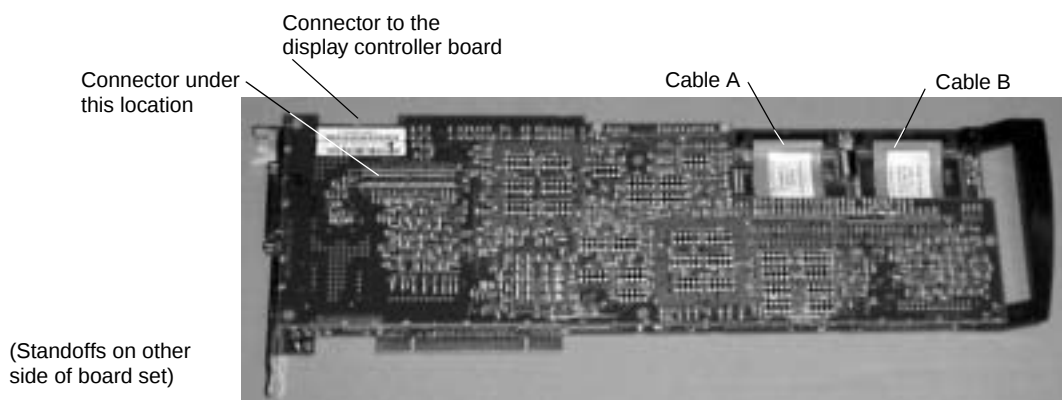


Figure 4-4 Avid Meridien III-U Digital Media Board Connections



Note the location of the connector for connecting the display controller board. The cabling is explained in “Installing the Meridien Display Controller Board” on page 4-21.

Installing the Flexible Over-the-Top Connector

Avid supplies a flexible over-the-top connector used to connect the Meridien digital media board set with one of the two 3D DVE effects boards (see Figure 4-5).



You can bend the over-the-top connector, but never put a crease in the connector when you bend it. Be very careful when installing and removing the connector.

Connector J3 connects to the Meridien digital media board set, while J1 and J2 connect to either the Mercedes 3D effects board or the Genie 3D effects board. Figure 4-7 shows the flexible over-the-top connector connecting the boards.

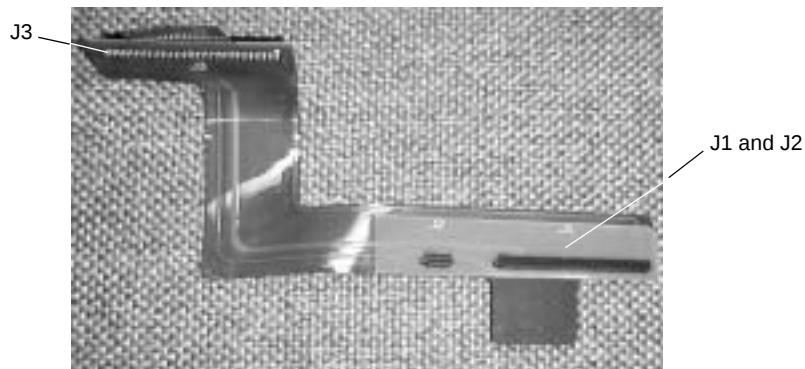


Figure 4-5 Flexible Over-the-Top Connector

Installing the Meridien III-U Digital Media Board Set

The Avid Meridien III-U digital media board set contains the Meridien II digital media board with attached Meridien III-U daughter board (see Figure 4-6). These boards use one slot and should be placed into the system as one board.

Install the completed Meridien III-U (or Meridien III) digital media board set into the recommended PCI slot reflected in the appropriate product board configuration table.

The device driver is installed when the Avid editing product is installed.

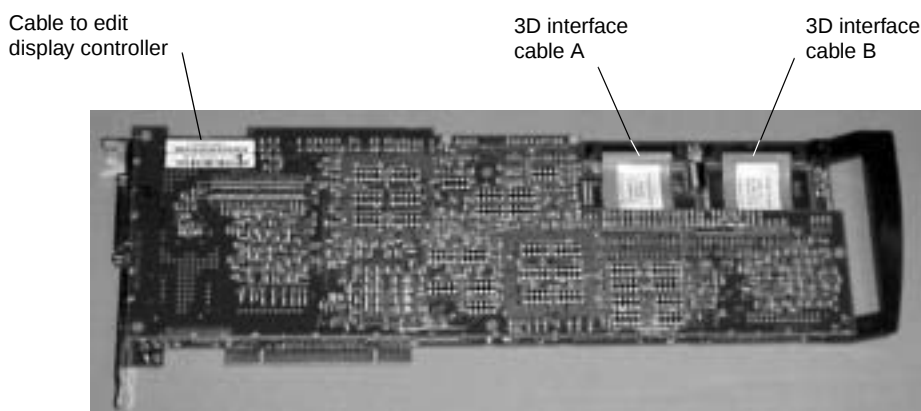


Figure 4-6 Avid Meridien III-U Digital Media Board Set



The Meridien III-U (or Meridien III) board set connects to the Meridien display controller board and to one of the two 3D DVE effects boards. The connection to the display controller board uses a cable, Avid PN 0070-00491-01, while the connection to the 3D DVE effects board uses a new flexible over-the-top connector, Avid PN 0030-03062-01.

Installing a Meridien 3D DVE Effects Board

If you have purchased a system that contains a 3D DVE effects board, you should install it now. Depending upon the system, the board will be either a Genie effects board or a Mercedes effects board. Both the Genie effects board and Mercedes effects board take up one PCI slot as shown in the tables in “Avid Board Configurations” on page 4-5.

Installing the Mercedes Effects Board

The Mercedes effects board is standard equipment on Symphony and Symphony Universal. Interconnection between the Mercedes effects board and the Meridien III-U digital media daughter board is accomplished with a newly designed flexible over-the-top connector.

To install the Mercedes effects board:

1. Ensure that the Meridien III-U digital media board set has been assembled and installed in the system (see Figure 4-4).
2. Install and secure the Mercedes effects board into the PCI slot recommended in the product board configuration tables.

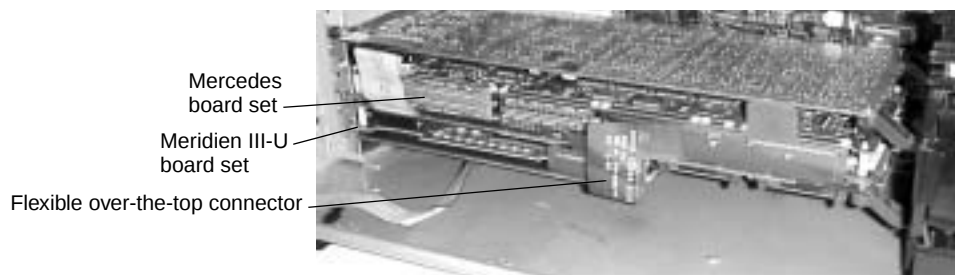


Figure 4-7 Mercedes and Meridien III-U Daughter Board

3. Orient the flexible over-the-top connector as shown in Figure 4-7, and then carefully seat the flexible over-the-top connector into the daughter board and Mercedes connectors. The device driver is installed when the Avid editing product is installed.

Installing the Genie Effects Board

The Genie effects board is available equipment on Avid Composer products systems and specific versions of Avid Xpress systems. Interconnection between the Genie effects board and the Meridien III digital media daughter board is accomplished with a newly designed flexible over-the-top connector.

To install the Genie effects board:

1. Ensure that the Meridien III digital media board set has been assembled and installed in the system in the same way as the Meridien III-U digital media board set (see Figure 4-4).
2. Install and secure the Genie effects board into the PCI slot recommended in the product board configuration tables.
3. Orient the flexible over-the-top connector in the same way as was done for the Mercedes effects board (see Figure 4-7), and then carefully seat the flexible over-the-top connector into the daughter board and Genie connectors. The device driver is installed when the Avid editing product is installed.

Removing the Flexible Over-the-Top Connector

Although the flexible over-the-top connector has tabs, you should not use the tabs alone to remove it from the digital media board set. Using your thumb and forefinger on both hands placed at the locations shown in Figure 4-8, gently pull the flexible over-the-top connector from the Mercedes or Genie effects board, and then from the Meridien digital media board set.

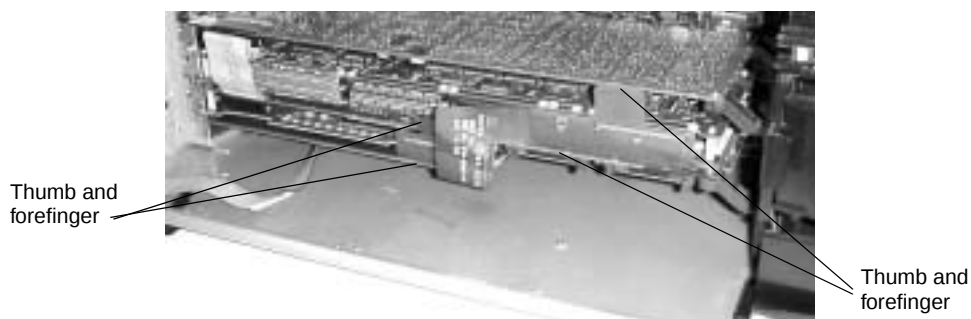


Figure 4-8 Removing the Flexible Over-the-Top Connector

Installing the Meridien Display Controller Board

The Meridien display controller board is a standard dual-head graphics adapter with a special DMA pixel engine required for Avid applications.



Avid now ships a new Meridien display controller board, EDC4. The new display controller board has EDC4 labeled on the top of the metal PCI bracket (see Figure 4-9). You can see the metal PCI bracket externally at the rear of the system. The previous display controller boards have no label and need a different driver than the EDC4. Drivers for the EDC4 and other display controller boards ship with the Avid software.



Remove the AGP graphics board from the system before installing the Meridien display controller board.

To install the Meridien display controller board:

1. Check the metal PCI bracket on the Meridien display controller board *before* you install it because you need to know which Meridien display controller board you have when you install the driver.
2. Install and secure the display controller board into the PCI slot recommended in the product board configuration tables.
3. Attach one end of the cable (explained in “Installing the Meridien III-U Digital Media Board Set” on page 4-17) to the display controller board cable header (see Figure 4-9), and the other end to the Meridien digital media board set. Each end of the cable is keyed to facilitate proper installation.



Be careful to properly align the cable ends into the connectors, and do not force the connections.

Cable header to
connect to Meridien
digital media board

PCI bracket

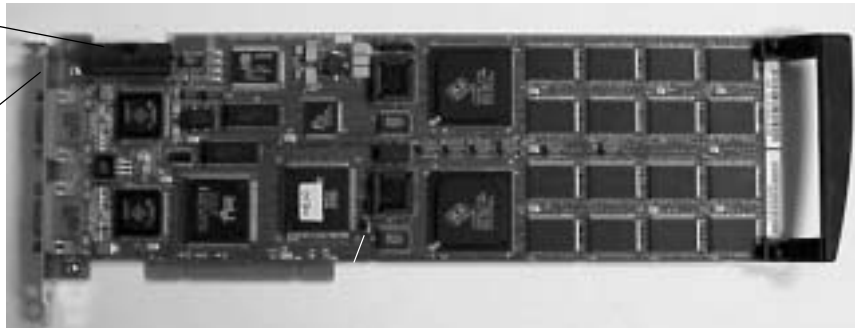


Figure 4-9 One of the Meridien Display Controllers

Removing and Installing the Fan

Although you will most likely be installing the fan instead of removing it, this section was written to include removal and installation in case you purchase a system already configured by Avid. If you are only installing the fan, see “Installing the Fan” on page 4-25.

This section explains how to remove and install the fan from the IBM 6866 system. Before you start to remove or install the fan, you *must* make sure of the following:

- The system was turned off in a proper manner.
- The power cord is removed from the rear of the system.

Removing the Fan

To remove the fan:

1. Press the Key-lock button on the left side of the front bezel, and using the indented portion of the side cover, slide the side cover toward the rear of the system (see Figure 4-10).

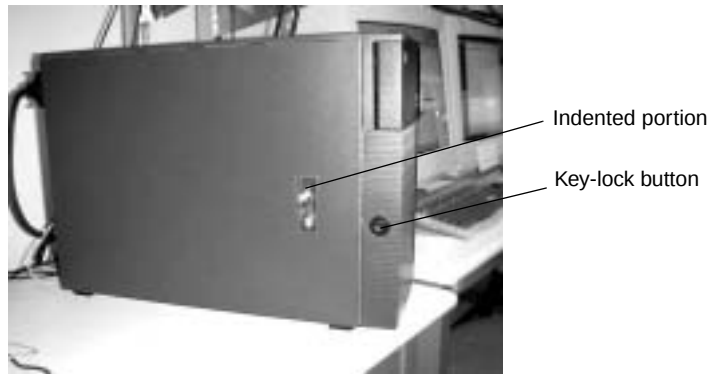


Figure 4-10 Removing the Side Cover

2. Lift the side cover from the system.
3. Lay the system on its right side.
4. Unplug the fan (see Figure 4-11).



Avid uses one of the six power plugs available for internal disks. This changes the maximum number of internal 1.0-inch disks from six to five.

5. Loosen (do not remove) the two wing nuts that hold the movable extension in place.



Figure 4-11 Fan in the System

6. Push the movable extension toward the rear of the system and remove the fan.

Installing the Fan

To install the fan:

1. Loosen the two wing nuts and make sure the movable extension is as far back as it can go as shown in Figure 4-12.
2. Place the two fan tabs, located at the rear of the fan, into the lowest holes of the rear airflow grate. There is an illustration on the fan that shows the actual insertion points for the tabs (see Figure 4-12).

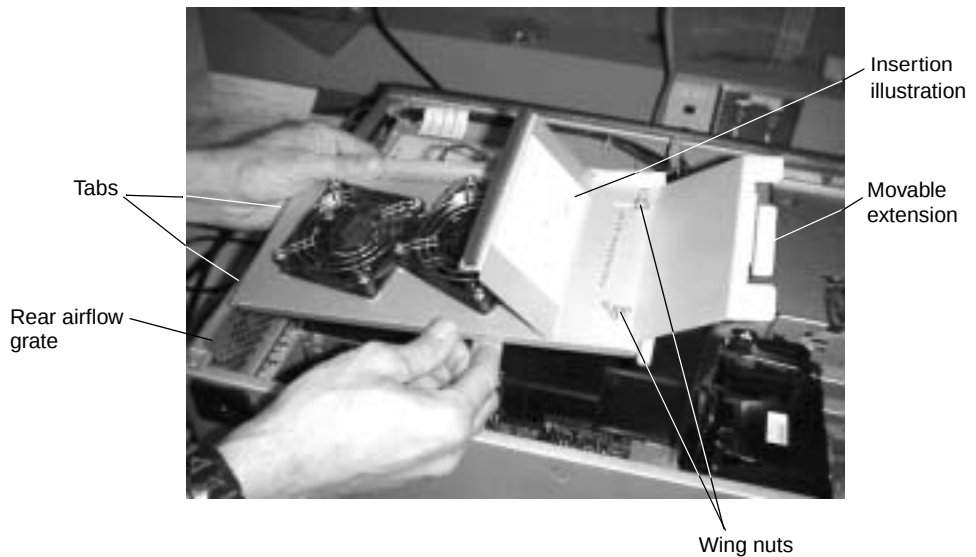


Figure 4-12 Fan Tab Location

3. Gently press the fan portion onto the board set.
4. While holding the fan portion in place so the tabs don't move, extend the movable extension toward the front of the system making sure the middle piece of the extension goes under the plastic while the two outer pieces go over the top (see Figure 4-13).

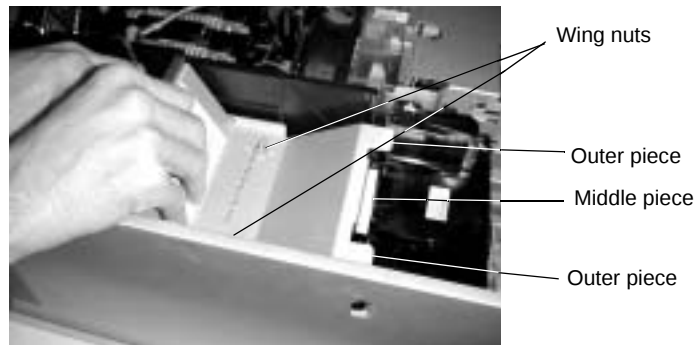


Figure 4-13 Extending the Fan

5. Check that the tabs are still in place and the extension is as far forward as possible, then tighten the two wing nuts.
6. Plug the power connector into one of the available disk drive power connectors in the system (see Figure 4-14).



Figure 4-14 Connecting the Fan Power

7. Replace the side cover.



CHAPTER 5

Connecting the Remaining Avid Devices

Your system should now have the Avid hardware board set installed. You now need to connect the remaining Avid devices to the system before you install the Avid software application.

This chapter explains what needs to be connected and either provides instructions on how to connect the device, or points you to the proper documentation for the information.

This chapter contains the following sections:

- Connecting the Application Key (Dongle)
- Connecting the Meridien I/O Box
- Connecting the 888 I/O and Speakers
- Connecting the Display Monitors
- Connecting Drives and Other Devices

Connecting the Application Key (Dongle)

The application key, commonly referred to as a dongle, allows the Avid software to run on your system. The application key connects to a USB port at the rear of the system. Figure 5-1 shows the USB dongle and the USB ports.

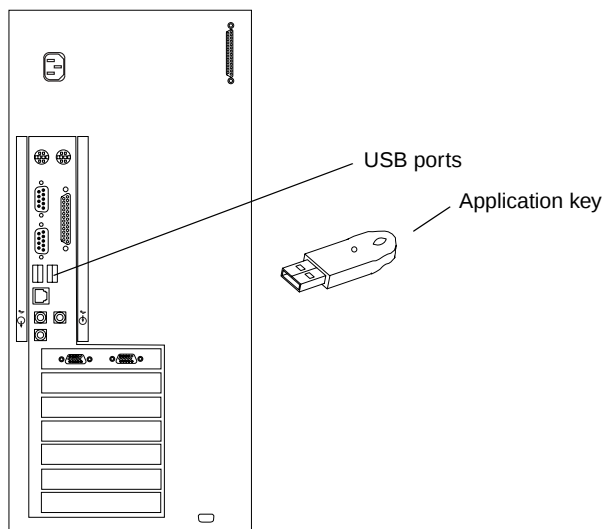


Figure 5-1 Application Key Connection



Be careful that you do not lose the application key. Your Avid software does not function without it. If you lose your application key, you must purchase another key from Avid.

Connecting the Meridien I/O Box

The Meridien I/O box is a standalone box that contains the audio and video I/O boards. You connect video equipment to the Meridien I/O box and audio equipment to the audio I/O device. The Meridien I/O box is connected to the PC by a 9.8-foot (3-meter) digital data cable.

To connect the Meridien I/O box to the IBM 6866 system:

1. Locate the 9.8-foot (3-meter) digital data cable in the hardware kit.
2. Connect one end of the digital data cable to the Meridien I/O box at the system interface connector shown in Figure 5-2.

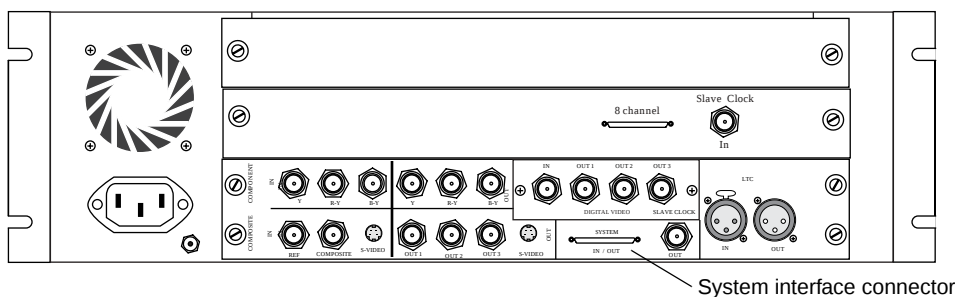


Figure 5-2 Meridien I/O Box to System Cable Connection

3. Connect the other end of the digital data cable to the connector labeled M (main) on the digital media board set (see Figure 5-3).

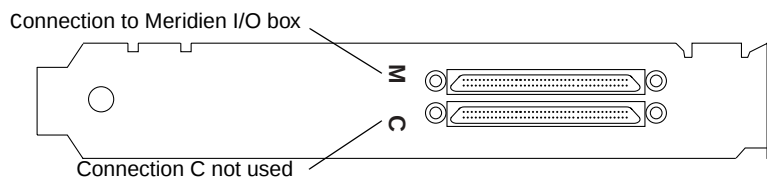


Figure 5-3 Digital Media Board Set to Meridien I/O Box Cable Connection

Connecting the 888 I/O and Speakers

If you have an eight-channel audio interface board, as shown in Figure 5-2, you must connect the audio device (888 I/O) to allow the sync signals to be present when you start the Avid software.

You should also connect the speakers to make sure the audio splitter and speakers function properly. The setup guide for your specific Avid system explains how to connect the 888 I/O and speakers to the Meridien I/O box.

Connecting the Display Monitors

The Meridien display controller supports two display monitors that should be the same size and vendor brand to minimize configuration difficulties. As of this writing, the recommended monitor size is 17 or 21 inches and should be autosynchronous or multisynchronous.

The IBM 6866 system comes with a high-resolution Bin monitor and a high-resolution Edit monitor. The Bin monitor displays the Windows 2000 operating system desktop, while the Edit monitor displays the Avid software editing environment.

The two monitor connections to the Meridien display controller board are designated BOOT for the Bin monitor and EDIT for the Edit monitor (see Figure 5-4). Arrange your monitors so the Bin monitor is on the left and make sure you set the monitors to the proper resolutions.



Figure 5-4 Display Controller Board

Connecting Drives and Other Devices

You should now connect the drives to your system. You might have a group of drives used just for testing, or you might set up the actual drives ordered by the customer. Either way, now is the time to connect them to the system.

Connect the other devices, such as decks or a V-LAN[®], to your system if you need to check them. The setup guide for your specific Avid system explains how to connect these devices.



CHAPTER 6

Changing System BIOS and Creating a Windows 2000 Image

When you turn on the IBM 6866 system, it can automatically detect if you have made some changes and then place you into the BIOS. This chapter explains what you need to do when you go into the BIOS and how to use the Avid Product Recovery CD-ROM to install the Windows 2000 image on the system disk. The Avid Product Recovery CD-ROM image contains most of the drivers needed by the Avid application.

This chapter contains the following sections:

- Process Overview
- Changing the System BIOS Settings
- Avid Product Recovery CD-ROM Overview
- Using the Avid Product Recovery CD-ROM
- Installing the EDC Display Controller Driver
- Setting Your Screen Resolution
- Restoring the Original Boot Sequence
- Setting the Proper Paging File

Process Overview

Once you know the system is working as shipped, and you have added the memory, the Avid boards, and the fan kit, you need to make the proper changes to the BIOS and create a Windows 2000 image with an Avid configuration on the system disk.



This guide only explains the specific changes in the BIOS that Avid needs to run its software. Leave the remaining default BIOS settings as shipped.

You will need to enter the BIOS and perform the following functions:

- Change MIDI settings if needed.
- Change the boot sequence.
- Insert the Avid Setup and Product Recovery CD-ROM into the CD-ROM drive.
- Exit and save the system BIOS settings.



By going into the BIOS and saving the information, you are also saving the changes the system detected when you added memory and the display controller board.

Once you have exited and saved the BIOS, you must restart the system, place the Avid Setup and Product Recovery CD-ROM into the CD-ROM drive, and then reapply the Windows 2000 system with the Avid configuration.



You should disconnect all external drives from the system prior to continuing with this procedure so you do not lose data. You should only have the original internal drives connected.

Changing the System BIOS Settings

This section explains how to change the system BIOS settings for the IBM 6866 system for use with the Avid software application.



In general, whenever you make changes to the system BIOS settings, never select the “Set to Default” option. This might remove the necessary BIOS changes you make that Avid needs to run its software.

You cannot manually enter the system BIOS unless you turn on the system using the Power button and then press F1 at the IBM logo.

You can automatically enter the system BIOS if the system sees a different video board (amount of memory has changed on the video board) or if it senses that the amount of main memory has changed from the previous time power was applied.

If you haven't changed the memory or added a different video board, you must manually enter the system BIOS. To make sure you get to the system BIOS, the instructions explain how to manually enter the system BIOS.



You would normally press F1 when the “Press F1” message appears on the screen. However, the processor speed might cause the F1 message to go by very quickly or not at all. You should start pressing F1 right after you turn on the system.



Once you enter the system BIOS, how you move, select, and exit are explained at the bottom of the screen.

To enable MIDI devices and change the boot sequence:

1. Turn on the system using the Power button and press F1.

You are placed into the system BIOS at the Configuration / Setup menu (Main menu) after the execution of the SCSI BIOS because you pressed F1 or the system automatically placed you there.

2. If you need to enable the MIDI port, continue to step 3. If you do not need to enable the MIDI port, go to step 8.

3. Press the Down Arrow key to reach the Devices and I/O Ports menu selection and press Enter.

The Devices and I/O Ports menu appears.

4. Press the Down Arrow key to reach the Audio Setup menu selection and press Enter.

The Audio Setup menu appears.

5. Press the Down Arrow key to reach the MIDI port selection.
6. Enable the MIDI selection by pressing the Left Arrow or Right Arrow keys until you see IRQ5. If you see a yellow asterisk next to the IRQ selection, this means there is some type of hardware conflict and the IRQ cannot be used.



To enable the MIDI function, you must do more than just change the system BIOS setting that enables the MIDI devices. A change in the MultiMedia Control Panel setting must occur. These changes are performed when you create the Windows 2000 image from the Avid Setup and Product Recovery CD-ROM.

7. Press the Esc key to return to the Main menu.
8. Press the Down Arrow key to reach the Start Options menu selection and press Enter.

The Start Options menu appears.

9. You are automatically placed at the Startup Sequence selection. Press Enter.
10. Press the arrow keys to select the following startup devices under the Primary Startup Sequence section:
 - First startup — Diskette (floppy) drive 0
 - Second startup — CD-ROM
 - Third startup — Hard disk 0

11. Press the Esc key to return to the Main menu.



Make sure there is no floppy disk in the floppy drive.

12. Press the Down Arrow key to reach Exit Setup and press Enter.



Never turn off the system while the BIOS is being updated; your system might not restart (reboot) correctly. If this occurs, see the *User Guide IntelliStation Z Pro Type 6866 Professional Workstation* to recover from a BIOS update failure.

13. Save and exit the system BIOS settings as explained on the screen.

After the BIOS settings are written, the system starts to reboot from the beginning.

14. As the system starts to reboot, turn off the system using the Power button.

Avid Product Recovery CD-ROM Overview

The Avid Product Recovery CD-ROM contains an image of the Windows 2000 operating system with the drivers needed by the Avid software application already installed.

To be sure that your system is capable of using the Avid Product Recovery CD-ROM, look on the bezel under the front door of your system (see Figure 6-1) and locate the Windows 2000 Microsoft 25-digit Product Key.



Do not confuse the Windows 2000 25-digit Product Key with the Windows NT 20-digit Product Key.

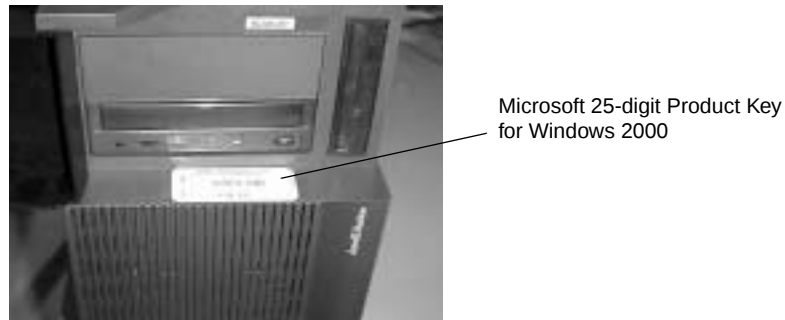


Figure 6-1 Microsoft Product Key

The Avid Product Recovery CD-ROM is bootable and installs:

- A Windows 2000 startable image that includes configuration changes to Windows 2000 settings made by Avid.
- The drivers needed by the Avid application software.

After you install the Windows 2000 operating system and the drivers for the Avid application, the Avid Product Recovery CD-ROM allows you to update the Flash and NVRAM firmware on your ATTO UL3D SCSI board.



You should always read the appropriate release notes before you install the Avid Product Recovery CD-ROM. You might need to perform functions not explained in this guide.

Your Windows 2000 system disk ships with one 18-GB partition. The Avid Product Recovery CD-ROM re-creates the Windows 2000 operating system on one partition the size of your system disk.

Using the Avid Product Recovery CD-ROM

This section explains how to use the Avid Product Recovery CD-ROM to install the Windows 2000 operating system on your IBM 6866 system.



This document and associated CD-ROM are for use only with the IBM IntelliStation Z Pro Type 6866 (IBM 6866, 6AU and 6AG) system that was originally built with the Windows 2000 system.

Installation Options

The Avid Product Recovery CD-ROM was created by Avid and does not contain the same information as the product recovery CD-ROM supplied by IBM.

When you install the Windows 2000 image and drivers for the Avid application software, a PC DOS 7.1 screen appears with the following two options:

1 — Perform an Avid Windows 2000 Setup or Product Recovery for the IBM 6866-6AU.

This option formats the entire disk drive, and places the Windows 2000 operating system and the drivers for the Avid application software on an 18-GB FAT 32 partition.

2 — Exit from the process without doing any recovery.

Installation Considerations

If you select 1, the entire contents of the C partitions will be destroyed and one large partition will be created.

If needed, you should back up the data on the system disk prior to using the Avid Product Recovery CD-ROM.



Data being overwritten includes registry information that describes your disk configuration. The Avid Product Recovery CD-ROM restores the disk registry as it was when shipped. If you are using stripe drives from a Windows NT system, it is important to create a disk configuration floppy disk from the Windows NT system.

Installing Windows 2000 from the Avid Product Recovery CD-ROM



It is important that you read this section completely prior to installing the system.



You will be warned two times during the following procedure that you are about to destroy the data on all or parts of your system drive.

To install the Windows 2000 operating system:

1. If you haven't already done so:
 - Turn off the system.
 - Turn off all external drives.
2. Turn on the system and then quickly place the Avid Product Recovery CD-ROM into the CD-ROM drive.

The system finds the SCSI controllers and internal drives, and then boots from the CD-ROM.

The PC DOS 7.1 Startup Utility appears.

3. Select one of the following options (if you select 2, you abort the installation):

- ▶ 1 — Perform an Avid Windows 2000 Setup or Product Recovery for the IBM 6866-6AU.
- ▶ 2 — Exit Avid System Recovery tool.

Press Enter. If you select 2, the procedure stops here.

4. A message appears, asking you to make sure you have the Microsoft Product Key that contains the 25-digit product code (see “Avid Product Recovery CD-ROM Overview” on page 6-5).

If you find the Product Key, press any character on the keyboard.

5. Read the first warning that appears, telling you that you are about to destroy data on your disk. If you want to continue, then press Y (no need to press Enter).
6. Read the second warning that appears, telling you that you are about to destroy data on your disk. If you want to continue, then press Y (no need to press Enter).

A Symantic Ghost window opens, and the selected installation starts. As the installation progresses, the completion percentage is displayed in the window. The installation should take from 3 to 6 minutes.

After the installation is complete, the ATTO Pro Flash Utility appears, asking if you want to confirm and update the Flash.

7. Do one of the following:
 - ▶ If you do not have an ATTO UL3D SCSI board in the system, type **N** and then go to step 9.
 - ▶ If you have an ATTO UL3D SCSI board in the system, type **Y** to confirm the Flash update, and then press Enter.
8. When the Flash is updated, the ATTO Utility asks if you want to confirm and update the NVRAM.

Type **Y**, and then press Enter

When the NVRAM is updated, the ATTO / Utility appears.

9. A screen appears asking you to remove the Avid Product Recovery CD-ROM and press Ctrl+Alt+Delete.

There is also a message that says “Hit any key to continue.” If you “hit” any key you are placed back to the same screen. This action forces you to take out the Avid Product Recovery CD-ROM and press Ctrl+Alt+Delete before continuing.

10. Turn off the system.
11. Turn on the external drives.

Booting the Windows 2000 Operating System

To boot the Windows 2000 operating system:

1. Turn on the system.
2. As the system boots, you will be asked questions about the system. Follow the instructions on the screen and provide information to complete the installation, such as:
 - Regional settings.
 - Name and organization.
 - Product Key (25-digit code on the Microsoft Product Key).
 - Computer name (do not enter a password for the administrator account).
 - Date and time.
 - Networking setup for your particular site. You need network administrative privileges if you add the system to the network.
3. If you are connected to a network, complete the Network Identification Wizard.

The setup is complete.

The New Hardware Wizard

The first time you log in to the system after using the Avid Product Recovery CD-ROM, you might see a Welcome to Found New Hardware Wizard (depending on the hardware configuration).

If you see a Welcome to Found New Hardware Wizard, use the following procedure to step through the wizard and disable the hardware. The Windows 2000 operating system found the Avid boards and cannot find a driver for them. You need to disable the hardware to stop the wizard from appearing each time you boot the system.

To disable the hardware for the wizard:

1. Click Next in the Welcome to Found New Hardware Wizard.

The Install Hardware Devices Driver window opens.

2. Select “Search for a suitable driver for my device,” and then click Next.

The Locate Driver Files dialog box appears.

3. Click Next.

The Driver Files Search Results window opens.

4. Select “Disable the device,” and then click Finish.



If the Windows 2000 system finds stripe sets and asks if you want to reformat them because they don't have the correct signature, DO NOT REFORMAT. Let them exist as they are for now.

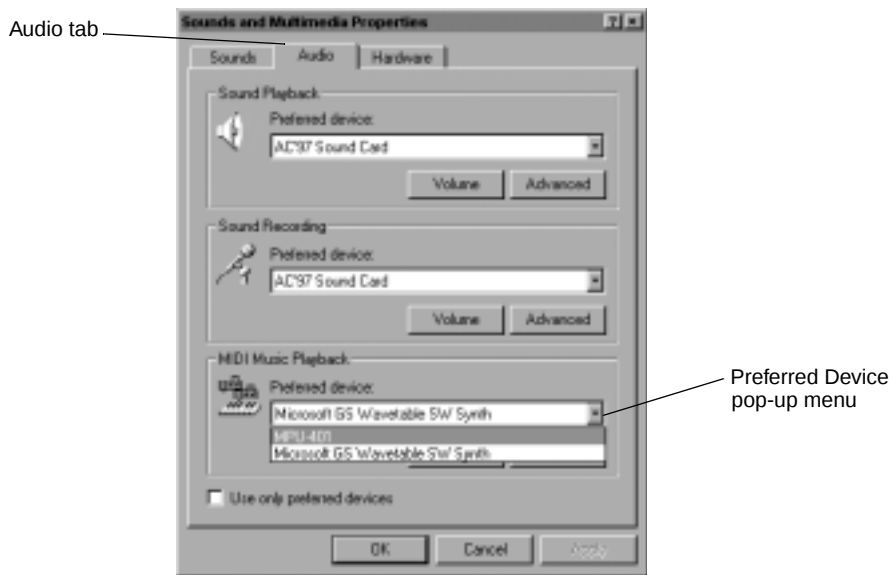
Enabling the MIDI Device

You have partially enabled the MIDI device if you have enabled MIDI in the BIOS. However, to finish enabling the MIDI function you must manually enable the device in the MultiMedia Control Panel.

To manually enable the MIDI device:

1. Click Start, point to Settings, and then select Control Panel.
2. Double-click Sounds and Multimedia.

The Sounds and Multimedia Properties window opens.



3. Click the Audio tab.
4. Choose MPU-401 from the Preferred Device pop-up menu.
5. Click Apply, and then click OK.

The MIDI device is now enabled.

Installing the EDC Display Controller Driver

The EDC was assigned a driver for each display head when you installed the Avid Product Recovery CD-ROM. You shouldn't need to install the EDC driver, but if you ever need to install the EDC driver at a later date, use the following procedure.



Your system was shipped with the EDC4 driver. Installing the EDC3 driver can cause display problems.

To install the Avid display controller driver:

1. Place the Avid application CD-ROM (not the Avid Product Recovery CD-ROM) into the CD-ROM drive.
2. Right-click the My Computer icon and select Manage.
The Computer Management window opens.
3. Click Device Manager.
4. Expand the Display Adapters section by clicking the + sign.
5. Double-click one of the Number Nine Visual Technologies Revolution 3D devices (note that Technologies is plural; it changes to Technology after you install the Avid driver).

A dialog box appears.

6. Click the Driver tab.
7. Click the Update Driver button.

The Update Device Driver Wizard appears.

8. Click Next.

A dialog box appears.

9. Select "Display a list of known drivers for this device so I can choose a specific driver," and then click Next.

A dialog box appears.

10. Click the Have Disk button.

A dialog box appears.

11. Click the Browse button and browse to:

My Computer \ *CD-ROM drive letter* \ Upgradedrivers
 \ Displaydrivers

12. Select Rev4D(.inf) and then click Open.
13. Click OK.
14. Under models, select “Number Nine Visual Technology Revolution 4,” and then click the Next button.
15. Select Device Drive Installation and click Next.

The Update Driver Warning dialog box appears.

16. Click Yes.
17. Click Next.

The Digital Signature Not Found dialog box appears.

18. Click Yes.
19. Click Finish.
20. Click Close.
21. Click No to restart the system.
22. Repeat steps 5 to 20 for the remaining display head, and then Click Yes to restart the system.
23. When the system reboots and you log in, set your new screen resolutions.

Setting Your Screen Resolution

You installed the proper screen resolution when you installed the Avid Product Recovery CD-ROM, and you don't need to change it. However, the following procedure explains how to change the resolution if needed. Avid recommends using a Desktop Area of 1024 x 768 pixels for each monitor and a Refresh Frequency of 75 Hz as your screen resolution.

To change the resolution in your monitor display properties:

1. Right-click the desktop and select Properties.
The Display Properties dialog box appears.
2. Click the Settings tab.
Two numbers (1 and 2) appear, representing two monitors.
3. Click either 1 or 2.
4. In the Screen Area, drag the slider to the proper resolution and frequency (normally, 1024 x 768).
5. Under Colors, select True Colors (32 bit), click Apply, click OK, click Yes, and then click OK.
6. Click the Advanced button in the Screen Area.
7. Click the Monitor tab.
8. Choose 75 Hertz from the Refresh Frequency pop-up menu.
9. Click OK.
10. Click Apply, click OK, click Yes, and then click OK.
11. Select and activate the second monitor, select "Extend my Windows desktop to this monitor," and then click Apply.
12. Repeat steps 3 to 10 for the remaining number in the Display Properties dialog box.
13. Close the Display Properties dialog box.

Restoring the Original Boot Sequence

The following procedure explains how to restore the original boot sequence. This is not critical, but you might want to do it to bring the state of the system back to normal.

To restore the original boot sequence:

1. Press Ctrl+Alt+Delete, click Shut Down, and then select the Shutdown option (not the Shutdown and Restart option).

Turn off the system and leave it off for at least 5 seconds.

2. Turn on the system using the Power button and press F1 when asked for at the IBM logo.

You are placed into the system BIOS at the Configuration / Setup menu (Main menu) after the execution of the SCSI BIOS.

3. Press the Down Arrow key to reach the Start Options menu selection and press Enter.

The Start Options menu appears.

4. You are automatically placed at the Startup Sequence selection. Press Enter.

5. Press the arrow keys to select the following startup devices under the Primary Startup Sequence section:

- First startup — Diskette (floppy) drive 0
- Second startup — Hard disk 0
- Third startup — CD-ROM

6. Press the Esc key to return to the Main menu.

7. Press the Down Arrow key to reach Exit Setup and press Enter.

8. Save and exit the system BIOS settings as explained on the screen.

You continue with the boot sequence.

9. During the boot procedure of the Windows 2000 operating system, select the Avid hardware profile.

10. Log in to the system.
11. When asked for a password press Enter.



Your system might perform a checkdisk during the boot procedure. If it does, let it finish as it will not harm the system.

Setting the Proper Paging File

When you install the Windows 2000 operating system from the Avid Product Recovery CD-ROM, the paging file is correct for 384 MB of memory. If you add more memory you need to change the paging file.

The paging file should be at least 1.5 x memory size.

To change the paging file size according to the memory size:

1. Log in as System Administrator to your local computer.
2. Click the Start button, point to Settings, and then select Control Panel.

The Control Panel window opens.

3. Double-click the System icon.
4. Click the Advance tab.
5. Click Performance Options.

The Performance Options dialog box appears.

6. Click Change in the Virtual Memory area.

The Virtual Memory dialog box appears.

7. Select the appropriate partition in the Drive list.
8. Change the initial and maximum paging file size under the selected disk partition.



The minimum and maximum paging file should be the same size.

9. Click Set.
10. Click OK to close all open dialog boxes and windows.
11. Restart the system to allow the paging file to take effect.



CHAPTER 7

Installing and Verifying Avid System Software

The proper Avid hardware board set and Windows 2000 operating system is now installed. You now need to install and verify the Avid software, and prepare the system for the customer.

This chapter contains the following sections:

- Installation Overview
- Installing the Avid System Software
- Installing Disk Controller Drivers
- Verifying Software Installation
- Testing the System
- Testing the Avid Software
- Creating a Windows 2000 Emergency Repair Disk
- Uninstalling the Avid Application
- Antivirus Applications

Installation Overview

The Windows 2000 operating system is now installed. You now need to do the following:

- Install the Avid system software — Find the application CD-ROM for your system (not the Avid Product Recovery CD-ROM).
- Install, and activate if needed, the following software:
 - Install the necessary device drivers for your SCSI and F/C disk boards. Find the floppy disks that contain the drivers for your disk boards.
 - Install and activate the display controller board driver.
- Verify that all drivers were installed and started by the system.
- Test the system.
- Test the Avid software.
- Create a Windows 2000 Emergency Repair Disk (ERD)
- Uninstall the Avid application.
- Understand antivirus applications.

Installing the Avid System Software

Use the release notes for your specific system to install the Avid system software. Note the recommendations that suggest:

- That you do *not* restart the system when asked
- That you close the Install Wizard window when complete



It is very important that you use the release notes and the CD-ROM that ships with your specific system to install the Avid system software. The release notes tell you how to install the Avid system software, and also explain any last minute details relating to problems or new procedures that you must follow during the installation of the Avid system software.

Installing Disk Controller Drivers

The Avid Product Recovery CD-ROM installs the device drivers needed for the Avid supported disk controllers. If for any reason the drivers are not installed properly, this section explains how to install the drivers from the Avid application CD-ROM.

Install or check the device drivers for all installed disk controllers. The drivers were shipped on the Avid application CD-ROM and on a floppy disk with each controller ordered. You can use the driver on the Avid application CD-ROM or the floppy disk. The example uses the Avid application CD-ROM instead of the driver located on a Windows 2000 CD-ROM. The installation procedures are for the following disk controllers:

- ATTO Technology ExpressPCI UL3D / 160 dual-channel — Express driver
- Emulex LP850 Fibre Channel — LP6NDS35 driver



If you need to know the current version of a storage driver, call Avid Customer Support.

During its first boot, the Windows 2000 operating system finds the ATTO SCSI and Emulex controller board hardware (disk hardware), but no drivers are found for the disk hardware. This causes the Windows 2000 operating system to place the disk hardware in the Other Devices category. The following list gives you an overview of where drivers are located and general information about them.

- The ATTO SCSI driver, ATTO Express PCI, is located on the Avid application CD-ROM.
- The F/C driver, Emulex 6000/7000/8000/9000 PCI F/C, is located on the Avid application CD-ROM.
- If your SCSI controller is dual channel, you need to install the SCSI driver twice, once for each channel.
- The SCSI driver asks you to restart after you install it, but the F/C driver doesn't.

Installing the ATTO Express PCI Driver

To install the ATTO Express PCI driver for the UL3D controller board:

1. Right-click the My Computer icon and select Manage.
The Computer Management window opens.
2. Click Device Manager.
3. Expand the Other Devices section by clicking the + sign.

A SCSI controller is displayed twice, once for each channel of the dual-channel SCSI controller.

4. Right-click one channel of the device shown, and select Properties.

The SCSI Controller Properties window opens.

5. Click the Driver tab.

6. Click the Update Driver button.

The Upgrade Device Driver Wizard appears.

7. Click Next.

A dialog box appears.

8. Select "Search for a suitable driver for my device," and then click Next.

A dialog box appears.

9. Insert the Avid application CD-ROM into the CD-ROM drive.

10. Select "Specify a location," and then click Next.

A dialog box appears.

11. Click the Browse button, and browse to:

My Computer \ *CD-ROM drive letter* \ Upgradedrivers
 \ ATTO SCSI Drivers

12. Select Express.inf, and then click Open.

13. Click OK in the Upgrade Device Driver Wizard.

14. Click Next.

The Digital Signature Not Found dialog box appears.

15. Click Yes.

The software installs (which might take a minute).

16. Click Finish, and then close the Express PCI Adapter window.

17. Repeat steps 4 to 16 for the other SCSI channel.

18. After you install the drivers for both channels, remove the Avid application CD-ROM from the CD-ROM drive, and then restart the system.

Installing the Emulex F/C Driver



If you are using a Fibre Channel (F/C) controller as standalone disk storage, use the instructions in this document to install the F/C driver. If you are using a Fibre Channel controller in conjunction with Avid Unity MediaNet, do not use the instructions in this document to install the F/C driver. See the instructions in the Avid Unity MediaNet Windows Client Setup Guide to install the new driver.

The F/C drives should be attached and turned on before you install the Emulex driver.

To install the F/C driver, Emulex 6000/7000/8000/9000 PCI F/C:

1. Right-click the My Computer icon and select Manage.
The Computer Management window opens.
2. Click Device Manager.
3. Expand the Other Devices section by clicking the + sign.
A type of F/C controller is displayed.
4. Right-click the F/C controller and select Properties.
The F/C Controller Properties window opens.
5. Click the Driver tab.
6. Click the Update Driver button.
The Upgrade Device Driver Wizard appears.
7. Click Next.
A dialog box appears.
8. Select “Search for a suitable driver for my device,” and then click Next.
A dialog box appears.
9. Insert the Avid application CD-ROM into the CD-ROM drive.
10. Select “Specify a location,” and then click Next.

11. Click the Browse button, and browse to:
My Computer\CD-ROM drive letter\Upgradedrivers
 \Emulex F/C Driver
12. Select OEMSETUP.inf, and then click Open.
13. Click OK in the Upgrade Device Driver Wizard.
14. Click Next.

The Digital Signature Not Found dialog box appears.

15. Click Yes.

The software installs (which might take a minute).

16. Click Finish, and then close the Emulex Properties window.
17. You might see a Welcome to Found New Hardware Wizard (depending upon the hardware configuration) or a dialog box stating that the system is installing a utility. If not, continue to step 18.

Use the following procedure to step through the wizard and disable the hardware. The utility is not needed and this stops the wizard from appearing each time you boot the system.

To disable the hardware for the wizard:

- a. Click Next in the Welcome to Found New Hardware Wizard.
The Install Hardware Devices Driver window opens.
 - b. Select “Search for a suitable driver for my device,” and then click Next.
The Locate Driver Files dialog box appears.
 - c. Click Next.
The Driver Files Search Results window opens.
 - d. Select “Disable the device,” and then click Finish.
18. After you install the drivers for the Emulex controller, remove the Avid application CD-ROM from the CD-ROM drive, and then restart the system.

Verifying Software Installation

You should verify that all the newly installed drivers installed properly.

To verify that the software was installed and running properly:

1. Right-click the My Computer icon and select Manage.

The Computer Management window opens.

2. Expand the System Information section by clicking the + sign.
3. Expand the Software Environment section by clicking the + sign.
4. Click the Drivers folder.

The Name, Description, Type, State, and Status of the drivers on the system is displayed in the right panel of the Computer Management window.

5. Looking under the Description section, search for the needed Avid drivers and make sure they are Running and that the status is OK:
 - APMEditDMA
 - APMPHxNTDriver
 - Microsoft MIDI-401 UART driver
 - Genie adapter (you will only see this if you have a 3D effects board)
 - Sentinel® (dongle driver)

Testing the System

Testing the Avid system involves running tests on the Avid board set, running StorEx on drives attached to the system, and if possible, starting the Avid software and performing some basic operations to see if the drives function properly.

Running Avid System Test Pro

The Avid setup guide that ships with the system contains a section that explains how to run Avid System Test Pro (AST) to test the Avid board set. You should restart the system prior to running AST. Help is also available for AST.

Running Avid StorEx

The Avid setup guide that ships with the system contains a section that explains how to run Avid StorEx. If your disk drives need to be formatted and partitioned, see the setup guide that ships with your Avid system.

Testing the Avid Software

Depending upon how familiar you are with the Avid software, you should restart the system and attempt to do the following:

- Click the Start button, point to Programs, and then select Avid.
- Digitize a portion of media.
- Construct a simple sequence.
- Create a title.
- Create and test a 3D effect if you have a 3D effects board set.

Creating a Windows 2000 Emergency Repair Disk

The Windows 2000 Emergency Repair Disk (ERD) is vital to the successful restoration of a user's system in the event of a damaged operating system component. The ERD should be updated anytime a change to the operating system occurs. This can happen whenever hardware is added or applications are installed. The ERD is also used to replace missing or damaged system files, restore damaged or incorrect registry information, or rebuild the system startup environment.



The ERD is used in conjunction with the Product Recovery CD-ROM provided by IBM. Use the Product Recovery CD-ROM to select the Repair function. This explains how to create the needed floppy disks to use with the ERD you create.

The ERD *does not* restore applications or device drivers. Instead, it holds copies of the user environment, software associations, passwords, and information about the system configuration.



The ERD is not a replacement for regular backups. It provides enough recovery to restore a system to a bootable state only.

To create an ERD:

1. Turn on the system and log in to an account with administrative privileges.
2. Click the Start button, point to Programs, point to Accessories, point to System Tools, and then select Backup.

The Backup window opens.

3. Click the Emergency Repair Disk icon.

A dialog box appears.

4. Select the "Also backup the registry to the repair directory" option.
5. Insert a blank, formatted floppy disk into drive A.

6. Click OK.
7. When the process is complete, click OK
8. Remove the floppy disk, label it, date it, and store it in a safe, dry, static-free location.

Uninstalling the Avid Application

When an Avid system is ordered directly from Avid, Avid removes the software application prior to shipment. This allows the customer to install the application and accept the software agreement. However, as a reseller you might deliver the system "ready to go."

To *individually* uninstall the Avid software applications without removing the needed drivers:

1. Open the Control Panel and double-click the Add/Remove Programs icon.
2. Find and select Symphony (or Media Composer or Xpress).
3. Click the Change/Remove button and click Yes when asked if you want to remove Symphony (or Media Composer or Xpress), and follow the instructions on the screen.
4. You should click No to any shared file statements that are sent to the screen.
5. Repeat steps 1 to 4 for the Avid Codec and for AvidADI.

Antivirus Applications

When you deliver the system to a customer you should explain how antivirus programs containing autoscanning features can interfere with the operation of an Avid application such as Avid Symphony, Avid Media Composer, or Avid Xpress.

For example, some antivirus programs can be configured to run in the background and scan *all* files for viruses whenever they are opened, copied, or moved. Since virus scanning is a processor- and disk-intensive activity, it can interfere with digitizing and playing real-time effects in an Avid application.

Avid recommends that you do not scan *all* files or schedule any background task like virus scanning when you are using an Avid application.

File deletion protection utilities also consume system resources and could interfere with the proper operation of an Avid application. These utilities automatically back up any files that are deleted, even temporary files created and deleted by the Avid application. This consumes a large amount of disk space.



CHAPTER 8

Troubleshooting

This section describes problems you might encounter when integrating the IBM 6866 platform, and some possible explanations and / or fixes for these problems.



The User Guide IntelliStation Z Pro Type 6866 Professional Workstation provides a troubleshooting chapter for problems that can occur during power-up self-test (POST) or during the boot procedure. You should take advantage of this document.

This chapter contains the following sections:

- A Troubleshooting Toolbox
- Display Monitor Colors or Resolution Incorrect
- Second Display Monitor Not Enabled
- Stripe Sets Cannot Be Seen on System

A Troubleshooting Toolbox

To troubleshoot the system effectively you should consider creating a “toolbox” of useful software, utilities, and tools that you carry with you when installing or troubleshooting Avid’s Windows 2000 editing systems. An Avid Windows 2000 toolbox should consist of:

- *User Guide IntelliStation Z Pro Type 6866 Professional Workstation*
- IBM Product Recovery CD-ROM
- Avid Setup and Product Recovery CD-ROM
- System-specific Emergency Repair Disk
- Windows 2000 Professional CD-ROM (or whatever the version used on your system)
- Avid software CD-ROM
- Disk controller drivers:
 - Emulex Fibre Channel board driver
 - ATTO dual-channel and single-channel drivers
- System-specific Windows NT disk configuration floppy disk if needed
- Saved project and settings floppy disk
- Wrist strap
- Flat-head and Phillips screwdrivers

Display Monitor Colors or Resolution Incorrect

Problem	Text and graphics appear in 640 x 480 resolution with 16 colors only.
Explanation/Fix	Windows 2000 booted in base video (VGA) mode, either by user selection, or because no display driver is installed. This is common when the proper display controller board driver has not been installed and started. Refer to “Installing the EDC Display Controller Driver” on page 6-13 to learn how to properly install the driver.

Second Display Monitor Not Enabled

Problem	Only the primary display monitor is enabled after booting Windows 2000.
Explanation/Fix	Listed below are some possible causes / fixes for the problem: • Ensure the second monitor has power applied. • Ensure the cabling between the monitor and the display controller is secure and there are no bent pins. • Try swapping cables between the primary and secondary monitors to see if the problem follows the cable. • Open the Avid EDC Control Panel, click the Display tab, and ensure that the Multiboard radio button is selected.

Stripe Sets Cannot Be Seen on System

Problem

A stripe set brought from a Windows NT system cannot be seen by the Windows 2000 operating system.

Explanation/Fix

Listed below are some possible causes / fixes for the problem:

- You have not imported the disk configuration floppy disk.
- The SCSI IDs of the Windows NT stripe set are the same as the SCSI IDs of the Windows 2000 system. Make sure all SCSI IDs on the SCSI bus are different.



APPENDIX A

Managing Disks on a Windows 2000 System

Managing disks on a Windows 2000 operating system differs from managing disks on a Windows NT operating system. This appendix provides a brief explanation of how you manage disks on a Windows 2000 operating system

This appendix contains the following sections:

- Disk Drives on the Windows 2000 Operating System
- Transferring Disk Drives from a Windows NT System

Disk Drives on the Windows 2000 Operating System

The Windows 2000 operating system creates and looks at disk drives differently than the Windows NT operating system. The Windows NT operating system used only one type of disk drive, basic. The Windows 2000 operating system defines two types of disk drive:

- **Basic** — Disk drives allow disks to be divided into partitions. This type of drive is normally used for standalone disk drives in the Windows 2000 operating system. This is also the same type of disk supported by the Windows NT operating system and used by Windows NT for standalone disks *and* stripe sets.
- **Dynamic** — Disk drives allow disks to be divided into volumes. Disk drives *must* be dynamic if you want to stripe, mirror, or use disk drives in the RAID style. Avid supports the use of dynamic disk drives when you need to create a stripe volume on your Windows 2000 system. Dynamic disks are “upgraded” from Basic disks. See “Windows 2000 Help for Disk Drive Information” on page A-2 for information on creating and using dynamic disks.



When you transfer a stripe set from a Windows NT system to a Windows 2000 system, the Windows 2000 system does not redefine the stripe set as dynamic. It writes special information to the drive set that can be read by a Windows 2000 system as a stripe set, but retains the needed basic drive type to allow you to bring the stripe set back to a Windows NT system if needed. However, if you create a new stripe set on a Windows 2000 system, it cannot be brought directly to a Windows NT system.

Windows 2000 Help for Disk Drive Information



If you want to use the Windows 2000 Help system to understand more about disk drives, click the Help icon in the toolbar of the Computer Management window. This is an easier way to access disk drive information than navigating through the top-level Help directories.

Overview of Partitioning Basic Drives

Your operating system allows you to create multiple partitions on a single basic drive as a way to manage projects and files.

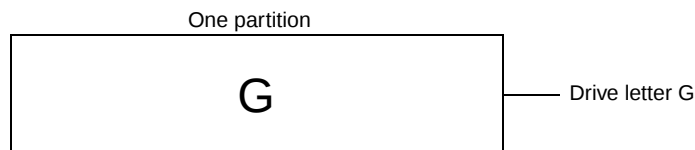


Once you have a basic drive you can upgrade it to a dynamic drive.

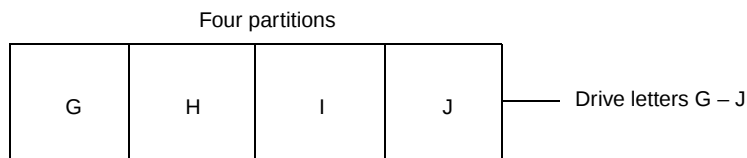
Avid supports drive partitioning in two ways:

The letters G to J are used as examples only.

- You can partition your drive as one primary partition, represented by a drive letter.



- You can have up to four primary partitions per drive. Each partition is assigned a drive letter and cannot be further subdivided.



The Computer Management window has a text pane that describes each partition as a “Volume laid out as a partition” (see “Checking the Disk Configuration” on page A-5). For information regarding disk usage in the Windows operating system, click the Help icon in the toolbar of the Computer Management window.

Supported File Systems

The Windows 2000 operating system supports three types of file system:

- Two types of File Allocation Table (FAT): FAT 16 and FAT 32. FAT is used primarily when backward compatibility is needed on operating systems such as MS-DOS® or other Windows versions. The new FAT 32 file system is no longer limited to a 2-GB partition size.
- New Technology File System (NTFS). NTFS affords the user security, compression, and other file-recovery features. Drives employing NTFS support partitions of any size.



You must use an NTFS file system on any partition used to store media.



One of your internal disk drives (normally designated drive C) has a partition that contains the operating system. This drive might be labeled System or Boot. You should not reformat this partition unless you need to rebuild your system disk drive.



If you have stripe sets connected to an ATTO or Emulex controller board in your Windows NT system, you *must* transfer the stripe sets using the disk configuration floppy disk and import the information to the Windows 2000 system (see “Transferring Disk Drives from a Windows NT System” on page A-7).

Checking the Disk Configuration

You might not have the same partitions and disk configuration shown in the following procedure. However, examples in the procedure will help you understand the new software used by the Windows 2000 operating system to display disk configurations.

To use the Disk Management tool to check your disk configuration in the Windows 2000 system:

1. Start your system and log in to an account with administrative privileges.

A shortcut for steps 3 to 5 is: from the desktop, right-click the My Computer icon and select Manage.

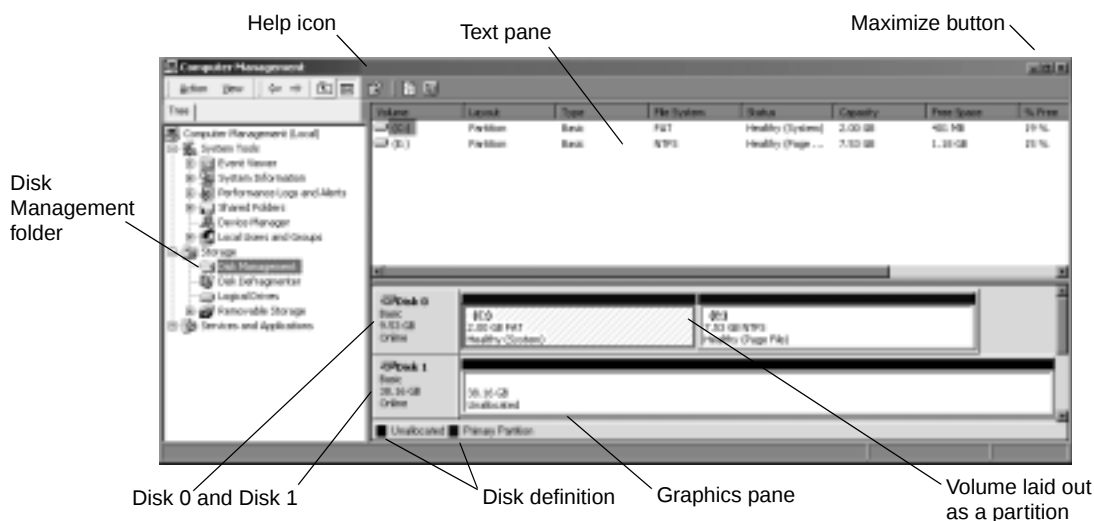
2. Click the Start button, point to Settings, and then select Control Panel.

The Control Panel window opens.

3. Double-click Administrative Tools.

4. Double-click Computer Management.

The Computer Management window opens.



5. Select the Disk Management folder. If the size of the window is small, you might want to click the Maximize button in the upper right corner of the window.
6. Look at Disk 0 and Disk 1 in the Graphics pane.

The graphical information in the Graphics pane is shown in text format in the Text pane.

The Text pane defines each section of Disk 0 as a volume with an assigned letter (commonly referred to as a partition). The Graphics pane shows Partition C on Disk 0 with a blue stripe across the top, defining it as a Primary partition and as a 2-GB FAT file system. The partition also shows the status of the partition as Healthy and that it is the System (or Boot) disk drive.

The remaining section of your Disk 0 might not be partitioned. You should partition all unallocated disk drives or unallocated portions of disk drives.

The remaining portion of Disk 0 contains:

- A Primary partition labeled E
- An NTFS file system
- A Healthy partition with a Page File on the partition

Disk 1 has a black stripe across the top, defining it as an Unallocated partition with no file system. Since the disk is unallocated (not partitioned), there is no status.

Any unallocated space should be partitioned and formatted for use.

Transferring Disk Drives from a Windows NT System

The following list provides an overview of how to transfer disk drives from an existing Windows NT system to a Windows 2000 system using the disk configuration floppy disk. The sections that follow the bulleted list provide step-by-step procedures.

- Create a disk configuration floppy disk that contains the registry information about the disk drives while you are still running the Windows NT operating system.
- Make sure both systems are properly shut down and you move the disk drives to the Windows 2000 system.
- The SCSI IDs must remain the same on the Windows 2000 system as they were on the Windows NT system. You should change SCSI IDs on the existing drives of the Windows 2000 system to accommodate the new stripe set.
- Import the disk configuration floppy disk containing the registry information into the Windows 2000 system.

Creating a Disk Configuration Floppy Disk from Windows NT

The following instructions explain how to create the disk configuration floppy disk from a Windows NT system.

To create a disk configuration floppy disk from the Windows NT system:

1. Find a formatted floppy disk.
2. Click the Start button, point to Programs, point to Administrative Tools, and then select Disk Administrator.

The Disk Administrator window opens.

3. Place the formatted floppy disk in the system.

4. From the Partition menu, choose Configuration, and then choose Save from the submenu.

The Insert Disk dialog box appears.

5. Click OK.

The stripe set disk configuration is placed on the floppy disk so you can transfer it to the Windows 2000 system.

6. Write down the following information about the drive that contains the Windows NT operating system for later use:
 - Disk number — for example, 0
 - Drive letter — for example, C
 - Partition size — for example, 2047 MB
7. Close the Disk Administrator window.

Moving the Stripe Set to the Windows 2000 System

If you need to move the disk drives from the Windows NT system to the Windows 2000 system, consider the following:

- Always turn off the system first, and then the drives.
- Make sure you have installed the latest drivers for the disk controller board on the Windows 2000 system before you move the stripe set.
- Determine the drive numbering (SCSI IDs) of the disk drives on the Windows NT system and maintain the same SCSI IDs on the Windows 2000 system. You might need to change the SCSI IDs of existing drives on the Windows 2000 system.
- Make sure there are no SCSI ID conflicts.
- Make sure the termination is set properly after you move the stripe set.
- Have all disk drives properly connected and turned on prior to turning on the Windows 2000 system.

Importing the Disk Configuration into the Windows 2000 System

Once your drivers have been properly installed in the Windows 2000 system, import the stripe set disk configuration from the Windows NT system into the Windows 2000 system.

To import the stripe set disk configuration:

1. Turn on the Windows 2000 system and log in to an account with administrative privileges.

A shortcut for steps 3 to 5 is: from the desktop, right-click the My Computer icon and select Manage.

2. Click the Start button, point to Settings, and then select Control Panel.

The Control Panel window opens.

3. Double-click Administrative Tools.

4. Double-click Computer Management.

The Computer Management window opens.



5. Select the Disk Management folder. If the size of the window is small, you might want to click the Maximize button in the upper right corner of the window.

For more information, see “Creating a Disk Configuration Floppy Disk from Windows NT” on page A-7.

6. Insert the disk configuration floppy disk into the floppy drive.
7. Choose Restore Basic Disk Configuration from the Action menu.

The Restore Disk Configuration dialog box appears.

8. Select the disk number that is associated with the floppy drive, and then click OK.
9. A Confirm dialog box appears, stating that a reboot is required after the operation.
10. Click Yes.
11. Remove the floppy disk prior to rebooting the system.



For more disk drive information, see “Disk Drives on the Windows 2000 Operating System” on page A-2.



APPENDIX B

Regulatory and Safety Notices

FCC Notice

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Canadian ICES-003

This Class A digital apparatus meets all requirements of the Canadian Interference Causing Equipment Regulations.

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

European Union Notice



Declaration of Conformity
(According to ISO/IEC Guide 22 and EN 45014)

Application of Council Directives: 73/23/EEC, 89/336/EEC.

Standards to which Conformity is Declared: EN60950:1992 + A1 + A2 + A3 + A4 + A11
CISPR 22:1985 / EN55022:1988 Class A
EN55024:1998 / EN61000 — 3-2, 4-2, 4-3, 4-4, 4-5, 4-6, 4-8, 4-11

Manufacturer's Name: Avid Technology, Inc.
1925 Andover Street
Tewksbury, MA 01876, USA

European Contact: Nearest Avid Sales and Service Office or
Avid Technology International B.V.
Sandyford Business Center
Unit 3,
Dublin 18, Ireland

Type of Equipment: Information Technology Equipment

Product Name: Products for the Windows NT or Windows 2000 Operating System: Media Composer, Film Composer, Avid Xpress, Avid Xpress DV, Avid Unity, Avid | DS, NewsCutter, NewsCutter XP, NewsCutter DV, Symphony
Products for the Macintosh Operating System: Media Composer, Film Composer, Avid Xpress, Avid Unity
Products for the UNIX Operating System: AirPlay, VideoSPACE

Base Model Numbers: None

Product Options: All

Year of Manufacture: 2001

(1) Products for the Windows NT or Windows 2000 Operating System: products were tested in a typical Media Composer, Film Composer, Avid Xpress, Avid Xpress DV, Avid Unity, Avid | DS, NewsCutter, NewsCutter XP, NewsCutter DV, or Symphony configuration.

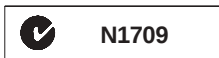
(2) Products for the Macintosh Operating System: products were tested in a typical Media Composer, Film Composer, Avid Xpress, or Avid Unity configuration.

(3) Products for the UNIX Operating System: products were tested in an AirPlay or VideoSPACE configuration.

I, the undersigned, hereby declare that the equipment specified above conforms to the above Directives and Standards.

George R. Smith, Director of Hardware Engineering.

Australia and New Zealand EMC Regulations



John Kells, Australian Operations Manager
Avid Technology (Australia)
Unit B
5 Skyline Place
French Forest NSW 2086
Australia
Phone: 61-2-8977-4800

Taiwan EMC Regulations

Taiwan EMC Regulations BSMI Class A EMC Warning

警告使用者：

這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。



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