



DVCPRO UPGRADE

Installation Manual

071-0516-02

MARCH 2000

PROFILE Family
VIDEO FILE SERVERS

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Grass Valley Group Product Support

You can get technical assistance, check on the status of problems, or report new problems by contacting our Product Support Group.

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General Safety Summary



WARNING: *These instructions are for use by qualified service personnel only. To avoid personal injury, do not perform any servicing unless you are qualified to do so. Refer to all safety summaries before performing service.*

Review the following safety precautions to avoid personal injury and prevent damage to this product or any products connected to it.

While using this product, you may need to access other parts of the system. Read the general safety summary in other system manuals for warnings and cautions related to operating the system.

Injury Precautions

- | | |
|---|--|
| Do Not Service Alone | Do not perform internal service or adjustment of this product unless another person capable of rendering first aid and resuscitation is present. |
| Disconnect Power | To avoid electric shock while servicing, disconnect the main power by means of the power cord. |
| Use Care When Servicing With Power On | Dangerous voltages or currents may exist in this product. Disconnect power and remove battery (if applicable) before removing protective panels, soldering, or replacing components. |
| Avoid Exposed Circuitry | To avoid injury while servicing, remove jewelry such as rings, watches, and other metallic objects. Do not touch exposed connections and components when power is present. |
| Do Not Operate Without Product Covers in Place | To avoid electric shock or fire hazard, do not operate this product with covers or panels removed. |

Do Not Operate in Wet/Damp Conditions

To avoid electric shock, do not operate this product in wet or damp conditions.

Do Not Operate in an Explosive Atmosphere

To avoid injury or fire hazard, do not operate this product in an explosive atmosphere.

Product Damage Precautions

Use the Proper Voltage Setting

Ensure that the line selector is in the proper position for the power source before applying power.

Provide Proper Ventilation

Prevent product overheating by providing proper ventilation.

Do Not Operate If You Suspect Product Failures

If you suspect there is damage to this product, have it inspected by qualified service personnel.

Safety Terms and Symbols

Terms in This Manual

These terms may appear in this manual:



WARNING: Warning statements identify conditions or practices that can result in personal injury or loss of life.



CAUTION: Caution statements identify conditions or practices that can result in damage to the equipment or other property.



General Safety Summary

Terms on the Product

These terms may appear on the product:

DANGER indicates a personal injury hazard immediately accessible as you read the marking.

WARNING indicates a personal injury hazard not immediately accessible as you read the marking.

CAUTION indicates a hazard to property, including the product.

Symbols on the Product

The following symbols may appear on the product:



DANGER high voltage



Protective ground (earth) terminal



ATTENTION – refer to manual

Certifications and Compliances

FCC Emission Control

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 and used in accordance with this installation 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 or her own expense. Changes or modifications not expressly approved by Grass Valley Group can affect emission compliance and could void the user's authority to operate this equipment.

Canadian EMC Notice of Compliance

This digital apparatus does not exceed the Class A limits for radio noise emissions from a digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

EN55022 Class A Warning

For products that comply with Class A. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.



Certification

Category	Standard
Safety	<i>Designed/tested for compliance with:</i> UL1950 – Safety of Information Technology Equipment, including Electrical Business Equipment (Third Edition, 1995) IEC 950 – Safety of Information Technology Equipment, including Electrical Business Equipment (Second edition, 1991) CAN/CSA C22.2, No. 950-95 – Safety of Information Technology Equipment, including Electrical Business Equipment EN60950 – Safety of Information Technology Equipment, including Electrical Business Equipment (includes Appendix ZB)

Before You Begin

NOTE: Profile System Software version 3.2 or higher must be installed before you install any DVCPRO boards. For more information, see “Upgrading Profile System Software” on page 12.

This installation manual explains how to install the DVCPRO boards in the PDR200 Video File Server. Included are procedures for installing the DVCPRO boards in both a DVCPRO-ready (Option DV) PDR200 and a non-DVCPRO-ready PDR200.

There are two DVCPRO upgrade kits for the PDR200 as shown in Table 1.

The PDFDV04 upgrade kit includes one DVCPRO CODEC board which features four DVCPRO 25 codecs. Each codec can be used for DVCPRO 25 record and playback. Each pair of DVCPRO 25 codecs can be used as a single DVCPRO 50 codec for DVCPRO 50 record and playback.

The PDFDV02 upgrade kit includes one DVCPRO CODEC board which features two DVCPRO 25 Codecs. Each codec can be used for DVCPRO 25 record and playback. The pair of DVCPRO 25 codecs can be used as a single DVCPRO 50 codec for DVCPRO 50 record and playback.

To install an additional two-codec DVCPRO CODEC board in a PDR400, you can use the instructions for installing boards in a DVCPRO-ready system. The PDFDV02 two-codec board must be installed in slot J12.

NOTE: Grass Valley Group supports a total of six DVCPRO 25 codecs in the Profile system. Grass Valley Group does not support the DVCPRO Boards in systems with MPEG boards installed.

Table 1. DVCPRO upgrade kit nomenclature

Kit Nomenclature	DVCPRO Board	Features
PDFDV04	DVCPRO Codec	4 DVCPRO 25 Codecs
PDFDV02	DVCPRO Codec	2 DVCPRO 25 Codecs



Installation Summary

The following lists the tasks for completing the DVCPRO upgrade. You may not have to perform all the tasks listed, depending on your unit's serial number and previous upgrades, if any, you have performed.

To install the DVCPRO upgrade you must:

1. Upgrade Profile system software to version 3.2 or higher.
2. Update Profile circuit board firmware.
3. Install additional Master and Slave EDR board memory if required.
4. Install the DVCPRO board and verify performance.
5. Update Windows NT 4.0 Emergency Repair Disk.

The following sections give more information on completing each of these tasks. The procedure starts on page 18.

Upgrading Profile System Software

The Profile system software installed in the PDR200 *must* be version 3.2 or higher to support the DVCPRO boards. This software should have been ordered and received along with this DVCPRO upgrade kit. To check the software version installed in your Profile system, open the VrdPanel application and choose **Help | About VdrPanel**. The software version is listed as the product version in the displayed window. If you do not have software version 3.2 or higher, contact your Grass Valley Group representative.

NOTE: Complete software upgrade instructions are located in the Profile System Software Release Notes included with your software kit. Be sure to thoroughly read the release notes before upgrading your Profile system software.

Updating Profile Circuit Board Firmware

After you install the correct version of Profile system software, you may need to update the firmware of some Profile circuit boards. Profile system software provides the software utilities for doing this. The procedures are described in the release notes and in the Profile Utilities chapter of the *Profile Family User Manual*.

Master and Slave EDR Memory Requirements

The DVCPRO upgrade requires 64-megabytes of memory on both the Master and the Slave Enhanced Disk Recorder (EDR) Boards. If you ordered your PDR200 recently, the Master and Slave EDR boards already have 64 megabytes of memory. If you have an earlier model (serial number B029999 or below), you must install additional memory if you have not done so already. To see the amount of memory you have on the Master and Slave EDR boards, check in the Profile Log for messages regarding memory size. To view the Profile Log, double click the Profile Log shortcut on the Windows NT 4.0 desktop. If your Profile system has been running for a long time, the text regarding memory size may have scrolled out of the Profile Log. In this case, you can reboot the Profile system and check the Profile Log again.

If your system does not have the required memory, you will need two service kits— one kit for the Master and one for the Slave—each with two 32-megabyte SIMMs.

If you normally operate with a large video file system (greater than 2500 clips as might be the case in commercial cache applications) Grass Valley Group recommends that you have 32 megabytes of local memory installed for the i960 real-time system (RTS) processor on the Master EDR board to enhance system performance. If you ordered your PDR200 recently, you already have 32 megabytes of i960 local memory installed. If you have an earlier model (serial number B039999 or below), you should install additional memory if you have not done so already. Check the Profile Log for messages regarding RTS memory size.

If your system does not have 32-megabytes of real time system (RTS) processor memory, you will need one kit for this upgrade, containing one 32-megabyte SIMM, replacing the existing 16-megabyte SIMM.

NOTE: You should have obtained service kits for these memory upgrades at the same time you received the DVCPRO upgrade kit. If you need to install these memory upgrades, do so before installing the DVCPRO boards. Refer to the procedures in the memory kits for specific instructions. If for some reason you have not obtained the kits, contact your Grass Valley Group representative.



Installing Additional Upgrade Kits

If you ordered both DVCPRO upgrade kits (PDFDV04 and PDFDV02), you can install them both at the same time using the procedures in this manual.

If you have ordered other upgrade kits, such as a video I/O board upgrade or the Audio Signal Processor Board (ASPB) upgrade, you can install them at the same time while the Profile chassis is open.

Kit Contents

The DVCPRO upgrade kit includes all the items listed in Table 2

Table 2. List of kit contents

Qty.	Item
1	DVCPRO Board (two or four codecs)
1	5 Slot PCI Interconnect
1	Board identification label strip
4	Sharcnet cable
4	Replacement tie wraps for bundling cables
1	Disposable ESD ground strap
5	Anti-static bags for board storage
1	This Installation Manual

Tools Required

Tools required to install the board are (not supplied in this kit):

- A Torx tool with T10 and T15 tips.

Electrostatic Precautions



CAUTION: All Profile system circuit boards have components that are highly sensitive to electrostatic discharge (ESD). To protect these components from damage and to maintain product reliability, take the following precautions when handling the circuit board:

- ***Handle all circuit boards in a static-protected area capable of controlling static charge on conductive materials, people, and nonconductive materials. Static-protected areas include nonstatic table tops and nonstatic floor mats.***
- ***While out of the chassis, place boards in the ESD static-shielded bags (provided with this kit) until you install them.***
- ***Wear ESD grounding straps when handling boards outside of their ESD static-shielded bags.***
- ***Handle the circuit boards only by the edges and avoid touching the printed wires on the back of the circuit board as much as possible.***



DVCPRO Operational Considerations

This section describes DVCPRO operational issues which you need to consider when placing your Profile system back into operation after completing the upgrade. These include:

- DVCPRO System Timing Considerations
- Restrictions When Using JPEG and DVCPRO

DVCPRO System Timing Considerations

The DVCPRO 25 codecs used in Profile systems are actually pairs of codecs. Because of this paired codec architecture, some restrictions apply to the DVCPRO codecs which require the following system timing limitations:

1. You must supply a Reference In signal to the Profile system.
2. All video signals that you want to record with a DVCPRO codec must be synchronous with the Reference In signal.
3. If you want to use the DVCPRO 25 codecs as independent codecs, all of your video inputs must be auto-timed to the Reference input. In Configuration Manager, select Enable Auto-Timing for each input. You must ensure that each input actually auto-times by checking that the Auto-Timed indicator in the Video Input dialog box is lit. Refer to “Using the Profile Configuration Manager” in the *Profile Family User Manual* for more information on Auto-Timing.
4. If you are unable to auto-time an input, or if you wish to use the DVCPRO codecs for BVW Insert/Edit operations, you may only use one of the codecs from each pair, DVCPRO25 #1, DVCPRO25 #3, and DVCPRO25 #5. Note that the second DVCPRO25 codec from each pair must not be used (DVCPRO25 #2, DVCPRO25 #4, and DVCPRO25 #6).

Restrictions When Using JPEG and DVCPRO

After completing the DVCPRO upgrade, the JPEG Codecs on the Master and Slave Enhanced Disk Recorder boards remain available as resources for record/play channels or for transcoding clips between JPEG and DVCPRO. In some configurations, the operation of one of the JPEG codecs may be restricted as follows:

- When both JPEG #2 and DVCPRO25 #4 are used, they must both be connected to the same video input via the internal video crosspoint router, otherwise, the wrong video input may be recorded.

When you are using DVCPRO25 #4 and you need to configure a JPEG channel, use one of the other three JPEG codecs available to avoid any restrictions.



Removing the Profile Unit from the Rack

You can install the boards with the Profile chassis fully extended on the rack slides if the instrument rack is adequately anchored to prevent tipping, and if there is sufficient slack in the cables connected to the rear panel to allow the chassis to fully extend on the slides. If you decide to keep the chassis in the rack during the installation, it is a good idea to loosen any screws that need to be removed from the back of the Profile unit *before* sliding it forward on the racks. You will have to read the appropriate installation procedure first to determine which screws must be loosened.



WARNING: *Unless the instrument rack is adequately anchored, the rack could tip when the chassis is extended on the rack slides. To avoid possible injury, make sure the rack is secured firmly before extending the Profile chassis on the rack slides.*

If you cannot or do not want to install DVC PRO boards with the Profile chassis extended on the rack slides, use the following procedure to remove the unit from the instrument rack:

1. Remove all cables connected to the rear of the Profile unit. If you have not done so already, label all cables before removing them to make it easier to reconnect them later.
2. Loosen the front-panel retaining screw (❶ in Figure 1).
3. Grasp the handles and pull the chassis out (❷ in Figure 1) until the slides latch. This holds the Profile chassis firmly in position.



WARNING: *To avoid personal injury, at least two people must remove the Profile chassis from the rack—it is too heavy for one person to lift.*

4. With a person on each side of the unit, press in both track stop latch buttons (❸ in Figure 1) and carefully slide the Profile chassis free of the tracks (❹ in Figure 1).
5. Place the Profile unit on an ESD-protected work surface.

NOTE: *Now is probably a good time to clean the front filter of your Profile unit. With a strong vacuum, you can clean the filter through the front cover.*

Removing the Profile Unit from the Rack

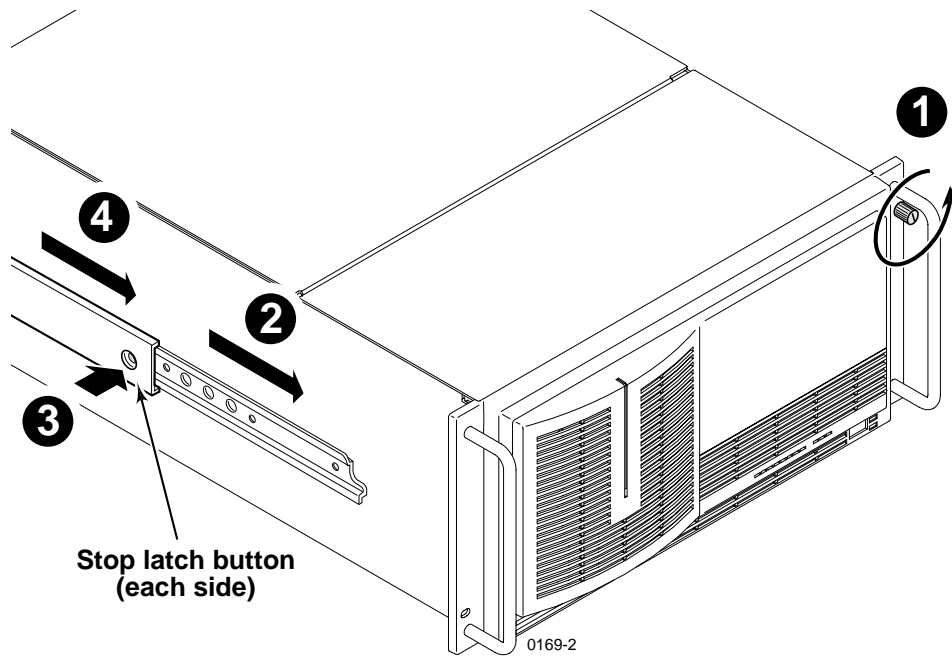


Figure 1. Removing the Profile unit from the instrument rack



Removing the Chassis Covers

To remove the chassis covers from the Profile unit:

NOTE: The front chassis cover must be removed first because it overlaps the rear cover.

1. Turn Profile system power off and remove the power cord.
2. Loosen the front panel retaining screw and pull the chassis out from the rack until the slide sections latch. If the rack is not anchored firmly, remove the chassis from the rack (see the instructions under “Removing the Profile Unit from the Rack” on page 18).
3. Use the Torx tool with the T10 tip to remove the top screws from the front chassis cover (❶ in Figure 2) and use the T15 tip to remove the pan-headed side screws. Set cover aside.

NOTE: Store the chassis screws in a container so that you do not lose them. They must all be reinstalled as they are required to meet the EMI specifications for the video file server.

4. Use the Torx tool with the T10 tip to remove the rear chassis cover (❷ in Figure 2). Set the cover aside.

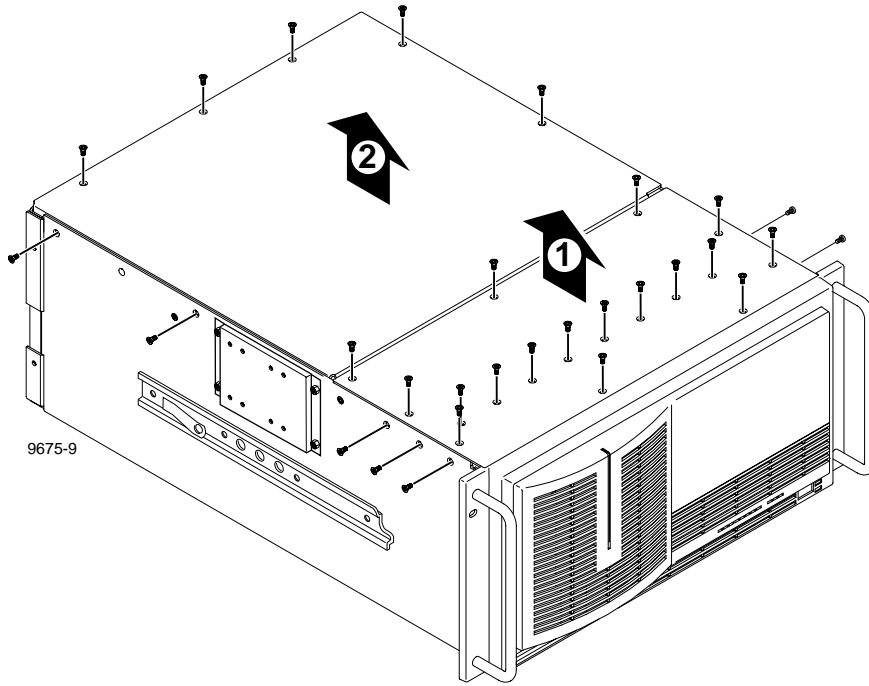


Figure 2. Removing the front and rear chassis covers



Removing the Board Hold-down Brackets

There are two hold-down brackets located in the circuit board area of the chassis that must be removed in order to install other boards.

To remove the board hold-down brackets:

1. Use the Torx tool with the T10 tip to remove the exterior screw (❶ in Figure 3) that secures the rear board hold-down bracket.
2. Lift the bracket (❷ in Figure 3) up and out of the chassis and set it aside.
3. Use the Torx tool with the T10 tip to remove the interior screw (❸ in Figure 3) that secures the front board hold-down bracket.
4. Lift the bracket (❹ in Figure 3) up and out of the chassis and set it aside.

NOTE: Now would be a good time to do the memory upgrades mentioned in “Master and Slave EDR Memory Requirements” on page 13.

Removing the Board Hold-down Brackets

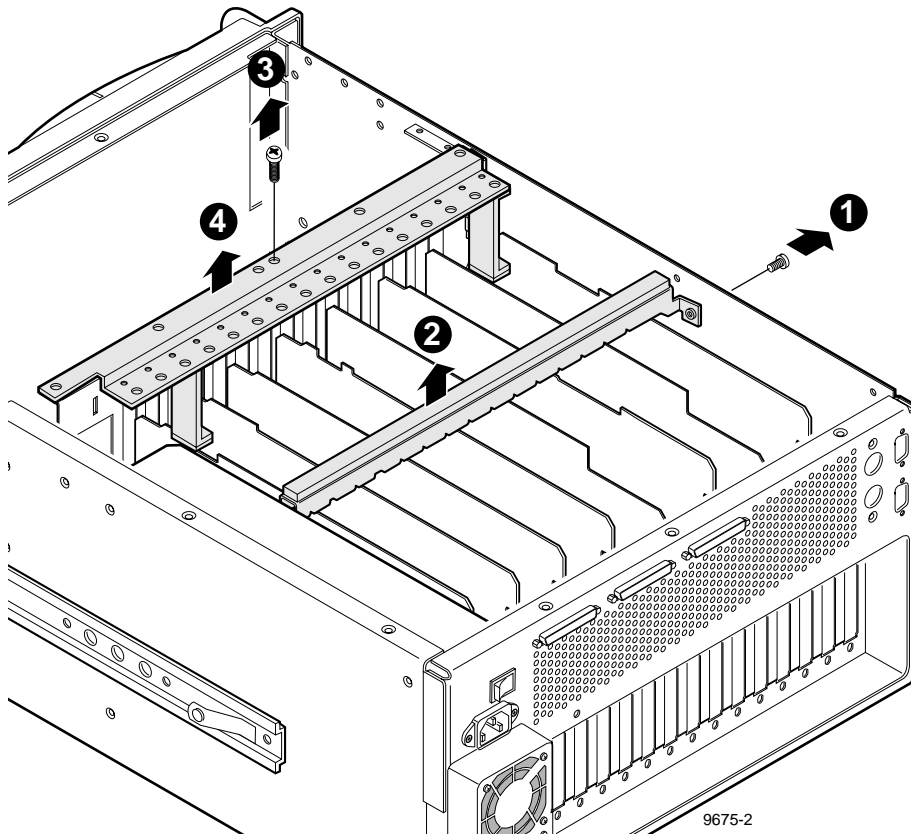


Figure 3. Removing the circuit board hold-down brackets



Installing the DVCPRO Boards

This section describes how to install the DVCPRO boards in the PDR200. In this procedure, you will be instructed to remove the three-slotted PCI Interconnect board and replace it with the five-slotted board provided in this upgrade kit. The center slot on the five-slotted PCI board must be aligned with the Master EDR board in slot J10. All other boards connecting to the PCI Interconnect board must be installed in the board slots shown in Table 3.

Table 3. Board locations

Board	Required Board Slots
Slave EDR	J8
Fibre Channel (if installed)	J9
Master EDR	J10
DVCPRO CODEC (PDFDV04)	J11
DVCPRO CODEC (PDFDV02)	J12

If you have an Option DV (DVCPRO-ready) PDR200, the circuit boards are already in the required board slots. All you have to do is install the DVCPRO boards. Other PDR200 configurations require moving boards to other slot locations to free up the required slots. For this reason, there are three procedures in this section which give step by step instructions for all the possible PDR200 configurations.

Refer to Table 4 to determine which procedure you should follow, then proceed.

Table 4. Summary of board installation procedures

Procedure	Serial Number	Page
Installing Boards in an Option DV or PDR400 Unit (or PDR400 systems with one four-codec board)	B042553 or above (B010000 for PDR400)	26
Installing Boards in a non-Option DV Unit	B030000 or above	30
Installing Boards in an Early PDR200 Unit	B029999 or below	32



Installing Boards in an Option DV or PDR400 Unit

Follow these instructions to install the DVC PRO boards in a DVC PRO-ready PDR 200 (Option DV), or in a PDR400 system.

1. Remove the three-slotted (five-slotted in PDR400) PCI Interconnect board and remove all cables connected to Profile boards, such as SCSI, Sharcnet, or audio clock cables (look at Figure 9 on page 43 if you need help identifying the Sharcnet and audio clock cables). Label each cable before removing it and draw a simple diagram to make it easier to reconnect the cables later. Remove any cable tie wraps, if necessary.

NOTE: Be certain to label the SCSI cables before removing them so that you can reconnect them properly. If the A and C SCSI cables are reversed, the file system will appear to be corrupted.

2. Remove the board bracket for slot J11 if you are installing a four-codec DVC PRO CODEC board. If you are installing the two-codec DVC PRO CODEC board, remove the board bracket for J12.



CAUTION: Forcing the board into the slot may result in bent connectors on the mother board. Carefully follow the instructions in step 3 to avoid damaging hardware.

3. Install the four-codec DVC PRO CODEC board (PDFDV04) in slot J11. If you are installing a two-codec DVC PRO CODEC board (PDFDV02), install it in J12. To install the boards correctly:
 - Align the board with the connectors on the motherboard. Make sure that the board is in the board guide at the front edge.
 - With the extractor on the front end of the board in the up position, press down on the board firmly until it is seated.
 - As you push the board into the connectors, you will feel the board engage first one, then another set of contacts in the connector. The board is properly seated when the top of the rear mounting bracket is resting on the rear chassis wall shelf.
4. Use the Torx tool with the T15 tip to install the mounting screws in the top of the board bracket inside the chassis (❶ in Figure 4) and through the rear panel at the bottom of the board bracket (❷ in Figure 4).

Installing Boards in an Option DV or PDR400 Unit

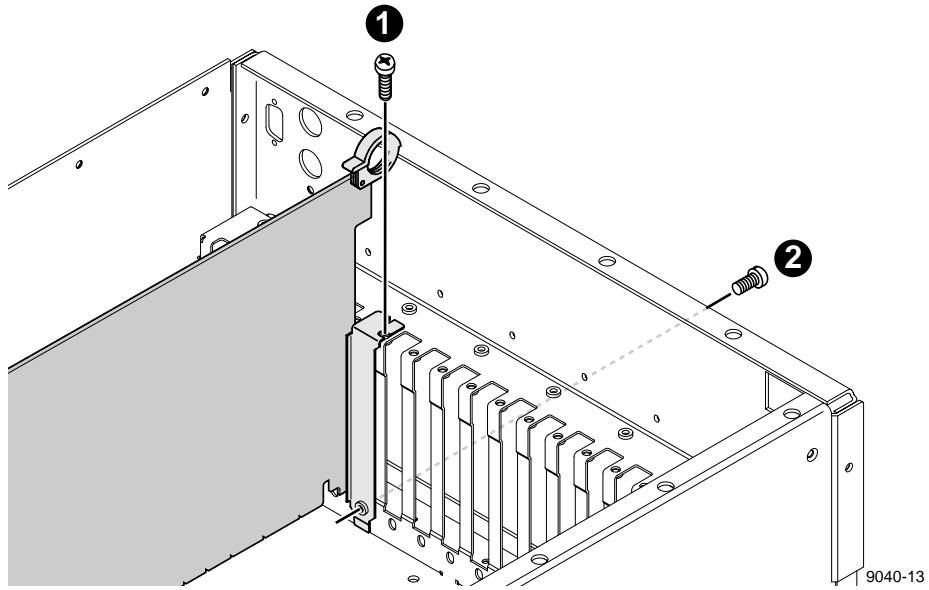


Figure 4. Screw locations for board mounting board bracket



DVCPRO Board Installation

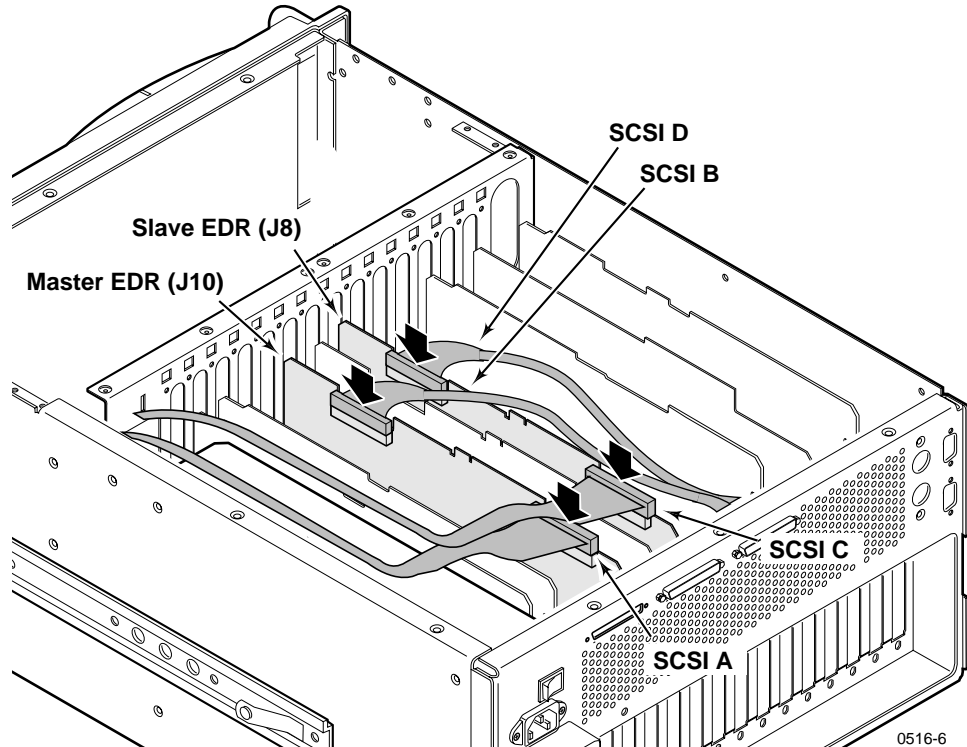


Figure 5. Reconnect the SCSI cables

5. Connect the SCSI cables, as shown in Figure 5.
6. Install the five-slotted PCI Interconnect board. This board is a high-speed bus used to move data between boards with PCI connectors. Align the center keys on the PCI Interconnect board with the keys on the Master EDR board in slot J10. Using appropriate pressure, press down firmly on the interconnect board to ensure that it is properly seated (see Figure 6).

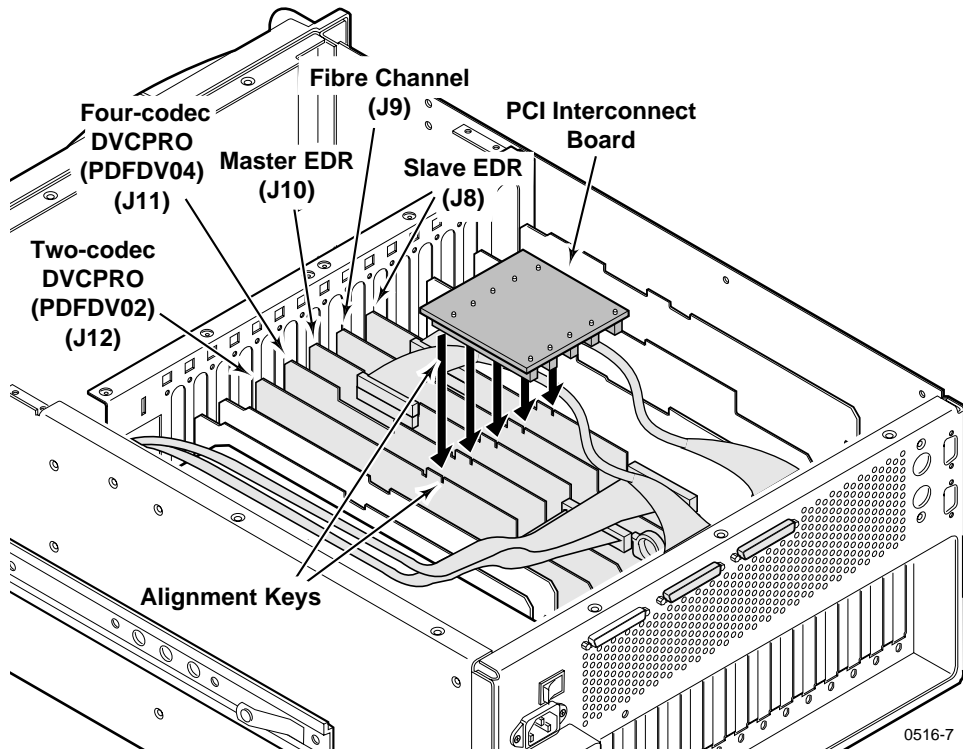


Figure 6. Installing the five-slotted PCI Interconnect board

7. If you plan to install additional video I/O or audio boards, do so now using the instructions provided with each field installation kit.
8. Connect the audio clock and Sharcnet cables according to the diagram you drew earlier or see “Connecting Audio Clock and Sharcnet Cables” on page 41.
9. Follow the reassembly instructions under the heading “Reassembling the Profile Chassis” on page 36.



WARNING: To avoid personal injury from electrical shock and/or damage to disk drives, do not apply power until all covers are in place and secured.



Installing Boards in a non-Option DV Unit

A non-Option DV PDR200 (with serial number B030000 or above) already has the Master EDR board in the correct slot J10 (see Table 3 on page 24), but the Slave EDR board must be moved from J11 to J8. It is possible that you have an analog composite or serial digital component I/O boards installed in slots J8. It is also possible that you have a board in the slot required by the two-coded DVCPRO CODEC board, slot J12. These boards must be moved to perform the upgrade.

To install DVCPRO boards in a non-Option DV PDR200:

1. Remove the three-slotted PCI Interconnect board and remove all cables connected to Profile boards, such as SCSI, Sharcnet, or audio clock cables (look at Figure 9 on page 43 if you need help identifying the Sharcnet and audio clock cables). Label each cable before removing it and draw a simple diagram to make it easier to reconnect the cables later. Remove any cable tie wraps, if necessary.

NOTE: *Be certain to label the SCSI cables before removing them so that you can reconnect them properly. If the A and C SCSI cables are reversed, the file system will appear to be corrupted.*

2. If there is a board installed in slot J8, remove the board. For complete instructions on removing circuit boards, see “Removing Circuit Boards” on page 32.



CAUTION: *Forcing the board into the slot may result in bent connectors on the mother board. Carefully follow the instructions in step 3 to avoid damaging hardware.*

3. Remove the Slave EDR board from slot J11 and install it in slot J8. To install the board correctly:
 - Align the board with the connectors on the motherboard. Make sure that the board is in the board guide at the front edge.
 - With the extractor on the front end of the board in the up position, press down on the board firmly until it is seated.
 - As you push the board into the connectors, you will feel the board engage first one, then another set of contacts in the connector. The board is properly seated when the top of the rear mounting bracket is resting on the rear chassis wall shelf.

4. Install the DVCPRO boards as follows:
 - a. If you have a four-codec DVCPRO CODEC board (PDFDV04 kit) install it in slot J11.
 - b. If you have a two-codec DVCPRO CODEC board (PDFDV02 kit) install it in slot J12. If you already have a board in slot J12, remove it to install the DVCPRO CODEC board.
5. Reinstall any video I/O or audio boards that you had to remove to make room for other boards. (For information on appropriate slots for video and audio boards, see “Board Location Guide” on page 53.)
6. Install the board bracket screws. Use the Torx tool with the T15 tip to install the mounting screws in the top of the board bracket inside the chassis (❶ in Figure 4 on page 27) and through the rear panel at the bottom of the board bracket (❷ in Figure 4 on page 27).
7. Connect the SCSI cables, as shown in Figure 5 on page 28.
8. Install the five-slotted PCI Interconnect board. This board is a high-speed bus used to move data between boards with PCI connectors. Align the center keys on the PCI Interconnect board with the keys on the Master EDR board in slot J10. Using appropriate pressure, press down firmly on the interconnect board to ensure that it is properly seated (see Figure 6 on page 29).
9. Connect the audio clock and Sharcnet cables according to the diagram you drew earlier or see “Connecting Audio Clock and Sharcnet Cables” on page 41.
10. Follow the reassembly instructions under the heading “Reassembling the Profile Chassis” on page 36.



CAUTION: To avoid personal injury from electrical shock and/or damage to disk drives, do not apply power until all covers are in place and secured.



Installing Boards in an Early PDR200 Unit

If you have an early PDR200 (serial number B029999 or below), you can install DVC PRO boards by following this procedure. It may be necessary to remove some or *all* of the boards in slots J5 through J15 in order to follow the recommendations for DVC PRO installation. In doing so, you may lose some slots otherwise used for video I/O boards. To reinstall EDR and Fibre Channel boards, follow the slot order shown in Table 3 on page 24. Table 3 also shows where the DVC PRO boards must go.

For further guidance on board placement, refer to “Board Location Guide” on page 53. Follow the instructions under “Selecting a Board Location” on page 56. Also, it will be helpful to make a copy of Table 9 on page 55 to chart the placement of boards in their proper slots.

Removing Circuit Boards

Use the following procedure to remove one or more circuit boards—as many as necessary—from the motherboard, in order to make room installing DVC PRO boards:

1. Remove the three-slotted PCI Interconnect board and remove all cables connected to Profile boards, such as SCSI, Sharcnet, or audio clock cables (look at Figure 9 on page 43 if you need help identifying the Sharcnet and audio clock cables). Label each cable before removing it and draw a simple diagram to make it easier to reconnect the cables later.

NOTE: Be certain to label the SCSI cables before removing them so that you can reconnect them properly. If the A and C SCSI cables are reversed, the file system will appear to be corrupted.

2. It may be necessary to remove the top board bracket screw that mounts any *adjacent* circuit boards to allow more give so board removal is easier (refer to Figure 4 on page 27 for the location of the top screw). Use the Torx tool with the T15 tip to do so.
3. Use the Torx tool with the T15 tip to remove the screws from the top of the board bracket inside the chassis (❶ in Figure 4 on page 27) and the screw through bottom of the board bracket through the rear panel outside the chassis (❷ in Figure 4 on page 27).



CAUTION: *To avoid damage to the circuit board when removing or installing it:*

- *Do not rock the circuit board from side to side in the EISA bus connector — pull straight up to remove.*
 - *Do not grasp or push on the rear-panel connectors when removing or installing circuit boards in the card slots.*
4. Extract the circuit board:
 - If the circuit board is tall, use the extraction lever on the front of the board and the extraction ring at the back of the board to lift the circuit board free of the connectors on the motherboard.
 - For shorter circuit boards, carefully grasp the board and lift upward to free the circuit board from the motherboard connectors. You might need to remove an adjacent tall board to get enough room for a safe hold on the shorter board.
 5. You may also need to remove board brackets for empty slots to prepare for the installation of new or moved boards. If this is necessary, refer to step 3.
 6. Place removed boards in the supplied antistatic bags. Fold the bags over to protect the boards from any ESD exposure.



Reinstalling the Boards

Now that you have removed the boards from the chassis, you are ready to reinstall them, along with DVC PRO boards. See Table 3 on page 24 for placement of Master and Slave EDR, Fibre Channel, and DVC PRO boards. For information on placing other boards, refer to “Board Location Guide” on page 53.



CAUTION: *Forcing a board into the slot may result in bent connectors on the mother board. Read the following instructions to avoid damaging hardware.*

To install the boards correctly:

- Align the boards with the connectors on the motherboard. Make sure the board is in the board guide at the front edge.
- With the extractor on the front end of the board in the up position, press down on the board firmly until it is seated.
- As you push the board into the connectors, you will feel the board engage first one, then a second set of contacts in the connector. The board is properly seated when the top of the rear mounting bracket is resting on the rear chassis wall shelf.

1. Install the DVC PRO boards as follows:

- a. If you have a four-codec DVC PRO CODEC board (PDFDV04 kit) install it in slot J11.
- b. If you have a two-codec DVC PRO CODEC board (PDFDV02 kit) install it in slot J12. If you already have a board in slot J12, remove it to install the DVC PRO CODEC board.

Reinstall the video I/O and audio boards that you had to move out to make room for the DVC PRO boards. (For information on placing other boards, refer to “Board Location Guide” on page 53.)

2. Install the board bracket screws. Use the Torx tool with the T15 tip to install the mounting screws in the top of the board bracket inside the chassis (❶ in Figure 4 on page 27) and through the rear panel at the bottom of the board

bracket (❷ in Figure 4 on page 27).

3. Connect the SCSI cables, as shown in Figure 5 on page 28.

4. Install the five-slotted PCI Interconnect board. This board is a high-speed bus used to move data between boards with PCI connectors. Align the center keys on the PCI Interconnect board with the keys on the Master EDR board in slot J10. Using appropriate pressure, press down firmly on the interconnect board to ensure that it is properly seated (see Figure 6 on page 29).
5. Connect the audio clock and Sharcnet cables according to the diagram you drew earlier or see “Connecting Audio Clock and Sharcnet Cables” on page 41.
6. Follow the reassembly instructions under the heading “Reassembling the Profile Chassis” on page 36.



WARNING: To avoid personal injury from electrical shock and/or damage to disk drives, do not apply power until all covers are in place and secured.



Reassembling the Profile Chassis

To reassemble the Profile chassis:

1. Apply stick-on labels on the Profile chassis rear panel to help identify all new board locations (see Figure 7).
2. Bundle any loose cables with the tie wraps provided.
3. Use the Torx tool with the T10 tip to reinstall the rear board hold-down bracket (see Figure 3 on page 23). Make sure that boards in the chassis fit into the grooves in the bracket.



CAUTION: To prevent damage to an Analog Composite Monitor board, do not install a short board extension on the front hold-down bracket at the Monitor board location.

4. If necessary, move or remove any short board extensions on the front board hold-down bracket. Then use the Torx tool with the T10 tip to reinstall the bracket (see Figure 3 on page 23).
5. Use the Torx tool with the T10 tip to reinstall the rear chassis cover with the screws previously removed.

NOTE: When reinstalling rear and front chassis covers, start all the screws before tightening them. This ensures that the screw threads are properly aligned, and will help avoid stripping threads or breaking screws.

6. Use the Torx tool with the T10 and T15 tips to reinstall the front chassis cover with the screws previously removed.
7. Reinstall the Profile chassis in the rack and reconnect as labeled all external cables previously removed.
8. Apply power to the Profile system and check the presence of the DVC PRO board with the procedure under “Verifying Installation” on page 38.

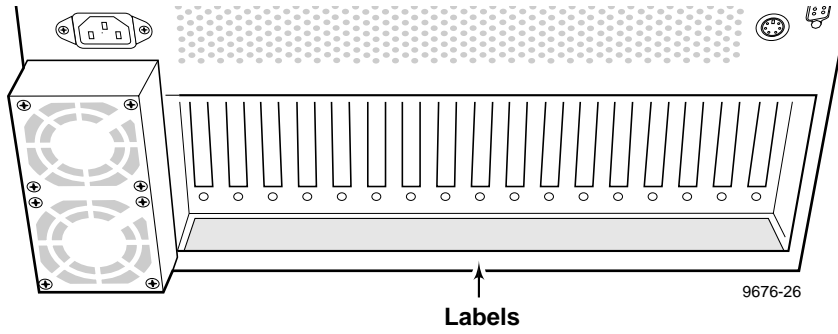


Figure 7. Stick-on label location



Verifying Installation

Verifying installation consists of:

- Using Configuration Manager to Verify Installation
- Performing Functional Tests

Using Configuration Manager to Verify Installation

You can use the Configuration Manager to verify the proper initialization of the DVCPRO CODEC boards by looking at the bottom of the Configuration Manager window to ensure DVCPRO boards appear in the slots where they are installed (J11 and J12).

To check for recognition and initialization of the DVCPRO boards in a PDR 200:

1. From the Windows NT 4.0 desktop, open the Configuration Manager window by choosing **Start | Programs | PDR Applications | Configuration Manager**.
2. Check the bottom of the window for the presence of the DVCPRO boards as shown in Figure 8.
3. Choose **File | Exit**.

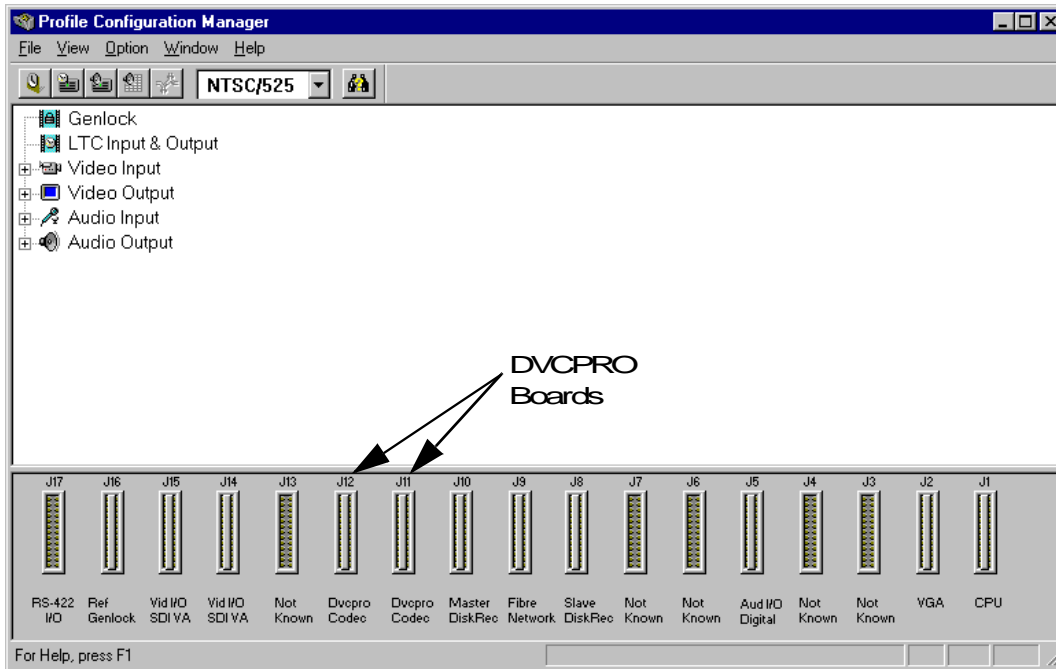


Figure 8. Configuration Manager showing DVCPRO boards

Performing Functional Tests

After verifying installation using Configuration Manager, you should perform functional tests depending on your application, before placing the Profile system back into operation. For instance you can:

- Use VdrPanel or Tool Box Editor to verify that you can configure DVCPRO video, audio, and timecode resources, and then record and play on all available channels. This will help detect any problems with the DVCPRO board for video, or Sharcnet and Audio Clock cabling for audio. For information on configuring VdrPanel or Tool Box Editor, as well as recording and playing clips, see the appropriate chapters in the *Profile Family User Manual*.
- Use Media Manager to convert media with the Transcode Utility and to perform media transfers over Fibre Channel, if a Fibre Channel board is installed. For information on the Transcode Utility and copying or moving media over Fibre Channel, see the chapter on Media Manager in the *Profile Family User Manual*.



Updating an Emergency Repair Disk

Whenever you upgrade your software or change your system configuration, Grass Valley Group strongly recommends that you update the emergency repair disk shipped with your Profile system. This will allow you to restore system configuration in the event the operating system has a major problem.

To update your emergency repair disk, you need the 3.5-inch floppy disk labeled *Emergency Repair Disk* that was shipped with your Profile system, or any blank 3.5-inch floppy disk properly labeled.

NOTE: The emergency repair disk is Profile system specific. Make sure that the emergency repair disk is clearly marked with the unit's serial number.

To update the Emergency Repair Disk:

1. From the Start menu, choose the **RUN** command.
2. Enter **rdisk /s** in the Run dialog box, then press the Enter key or click **OK**. The Saving Configuration progress bar appears.
3. When the Setup dialog box appears, click **Yes** to create an emergency repair disk.
4. Insert your existing emergency repair disk or a blank 3.5-inch floppy disk in the Profile system floppy drive and click **OK**. The Formatting Disk progress bar appears.
5. When the operation is complete, remove the emergency repair disk from the Profile system and store it in a safe location.

This completes the DVCPRO upgrade installation procedure.

Connecting Audio Clock and Sharcnet Cables

This section describes how to connect coaxial audio clock cables and Sharcnet ribbon cables between the Audio Signal Processing Boards (ASPB) and the video I/O boards. It includes four cabling examples that cover most DVCPRO configurations for the PDR200. If after looking at the cabling examples you still have a question about how to connect ASPB cabling in your system, refer to “Detailed Explanation Of ASPB Cabling” on page 50. General guidelines are given there to help you connect cables as required. After you have connected all the ASPB cables, return to the installation procedure you were following.

Read the following paragraphs which give a brief functional description of the cables connected to the ASPB, then proceed by looking at the cabling examples.

- **Audio Clock Cables** - These cables connect the ASPB to the video input boards. The ASPB uses the clock signals from the video boards as a reference to synchronize audio sampling to non-synchronous video feeds.
- **Sharcnet Ribbon Cables to Serial Digital Video I/O boards** - The Sharcnet ribbon cables carry the embedded audio signals to and from the ASPB.
- **Sharcnet Cables Between ASPBs** - If two ASPBs are installed in a unit, they must be connected together using these Sharcnet ribbon cables.



ASPB Audio Clock and Sharcnet Cabling Examples

This section shows four ASPB cabling examples that cover most DVC PRO configurations for the PDR200. Find the example that matches your system and use it to reconnect the ASPB cabling. Even though some board locations may be different than yours, the cabling rules remain the same.

Two Serial Digital I/O Boards and One ASPB

The example in Table 5 and Figure 9 shows audio clock and Sharcnet cabling for a PDR204D having two Serial Digital I/O boards and one ASPB.

Table 5. Cabling for two Serial Digital I/O boards and one ASPB

Cable Type	Serial Digital I/O Slot	Serial Digital I/O Connection	ASPB1 Connection (J5)
Sharcnet	J14	Sharcnet In	Sharcnet Out 1
Sharcnet	J14	Sharcnet Out	Sharcnet In 1
Sharcnet	J15	Sharcnet In	Sharcnet Out 2
Sharcnet	J15	Sharcnet Out	Sharcnet In 2
Audio clock	J14	Channel A	Audio 1
Audio clock	J14	Channel B	Audio 2
Audio clock	J15	Channel A	Audio 3
Audio clock	J15	Channel B	Audio 4

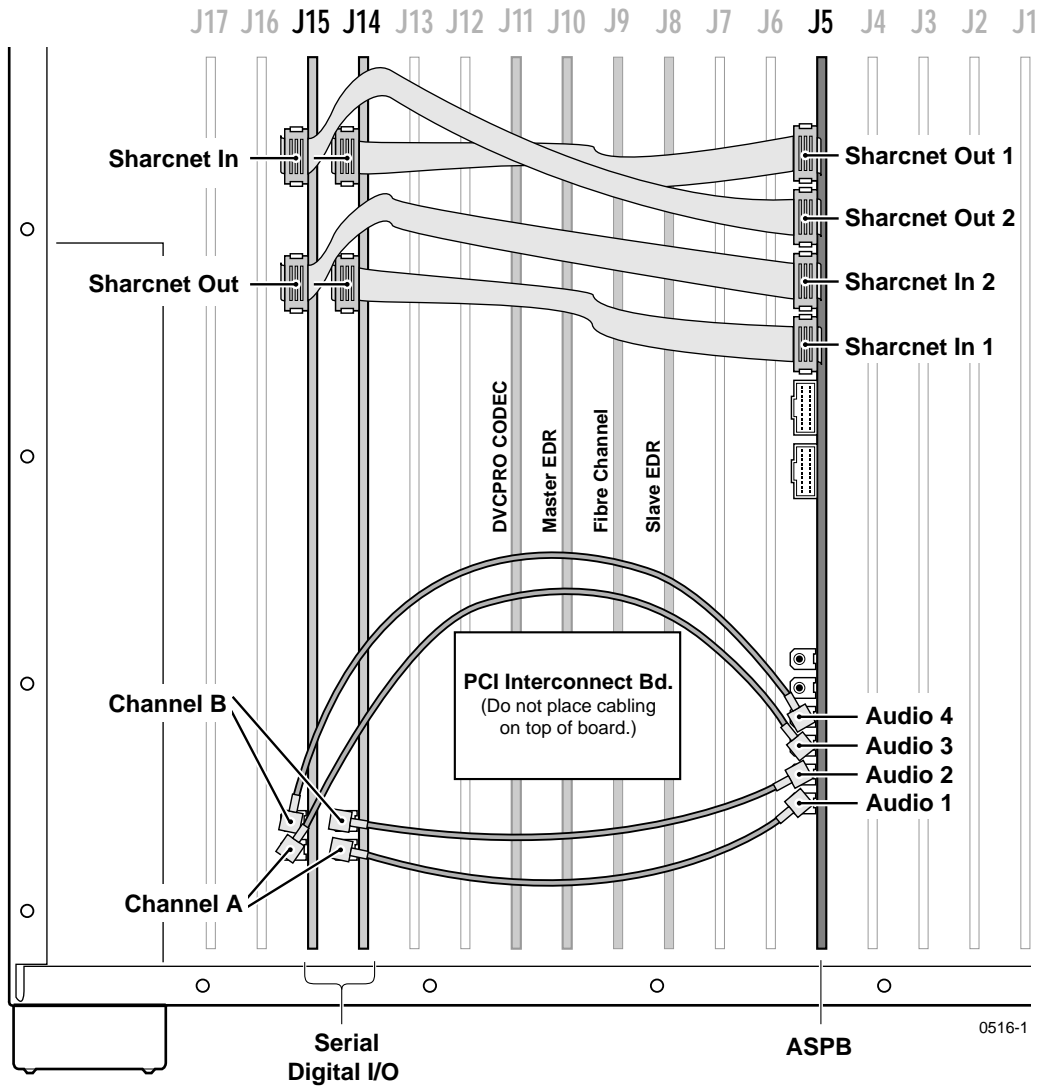


Figure 9. ASPB cabling with two Serial Digital I/O boards and one ASPB



Three Serial Digital I/O Boards and Two ASPBs

The example in Table 6 and Figure 10 shows audio clock and Sharcnet cabling for a PDR204D having three Serial Digital I/O boards and two ASPBs.

Table 6. Cabling for three Serial Digital I/O boards and two ASPBs

Cable Type	Serial Digital I/O Slot	Serial Digital I/O Connection	ASPB 1 Connection (J5)	ASPB 2 Connection (J7)
Sharcnet	N/A	N/A	Sharcnet Expansion 2	Sharcnet Expansion 1
Sharcnet	N/A	N/A	Sharcnet Expansion 1	Sharcnet Expansion 2
Sharcnet	J13	Sharcnet In	Sharcnet Out 1	N/A
Sharcnet	J13	Sharcnet Out	Sharcnet In 1	N/A
Sharcnet	J14	Sharcnet In	Sharcnet Out 2	N/A
Sharcnet	J14	Sharcnet Out	Sharcnet In 2	N/A
Sharcnet	J15	Sharcnet In	N/A	Sharcnet Out 1
Sharcnet	J15	Sharcnet Out	N/A	Sharcnet In 1
Audio clock	J13	Channel A	Audio 1	N/A
Audio clock	J13	Channel B	Audio 2	N/A
Audio clock	J14	Channel A	Audio 3	N/A
Audio clock	J14	Channel B	Audio 4	N/A
Audio clock	J15	Channel A	N/A	Audio 1
Audio clock	J15	Channel B	N/A	Audio 2

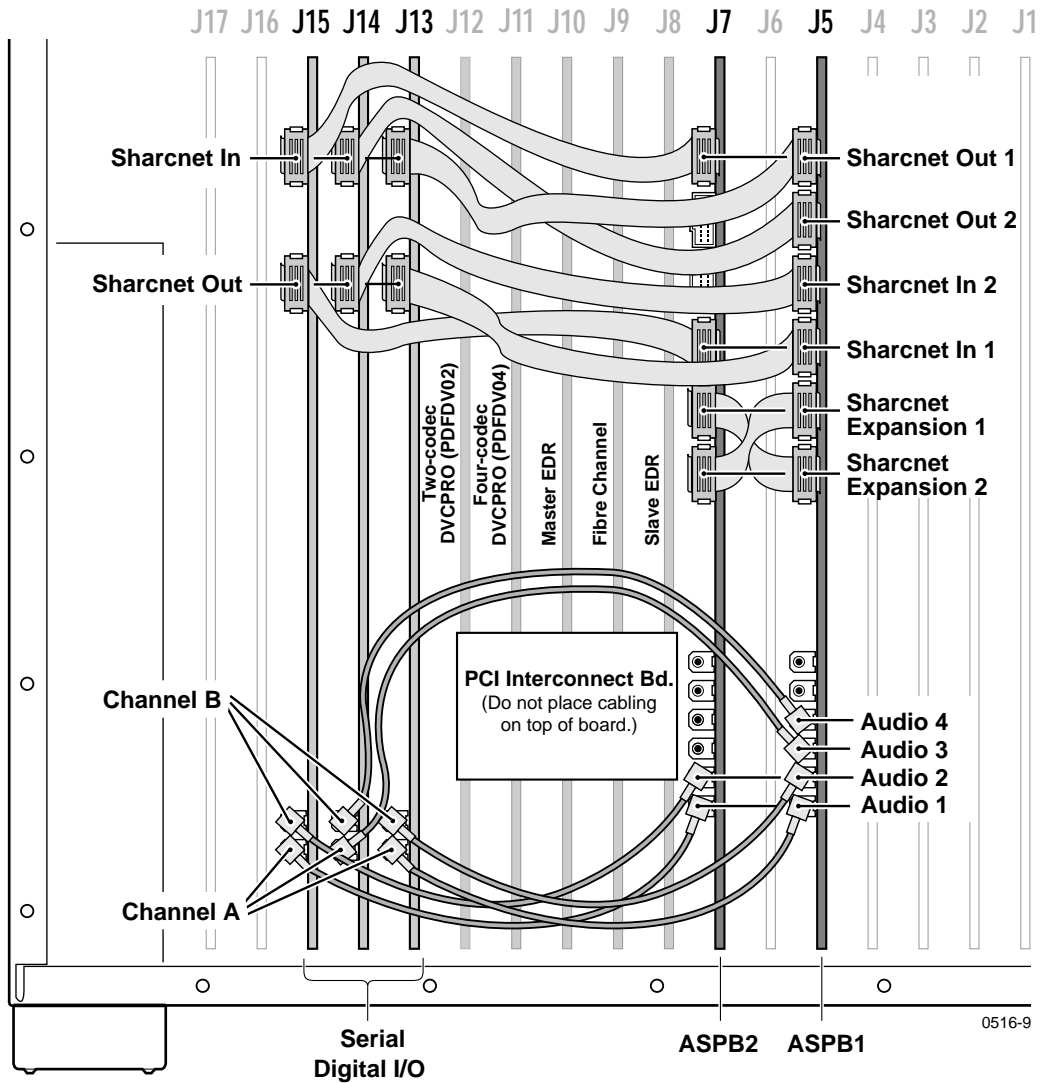


Figure 10. ASPB cabling with three Serial Digital I/O boards and two ASPBs



Two Analog Composite I/O Boards and One ASPB

The example in Table 7 and Figure 11 shows audio clock cabling for a PDR204A having two Analog Composite I/O boards and one ASPB.

Table 7. Cabling for two Analog Composite I/O boards and one ASPB

Cable Type	Analog Composite I/O Board Slot	Analog Composite I/O Board Connection	ASPB1 Connection (J5)
Audio clock	J14	Channel A	Audio 1
Audio clock	J14	Channel B	Audio 2
Audio clock	J15	Channel A	Audio 3
Audio clock	J15	Channel B	Audio 4

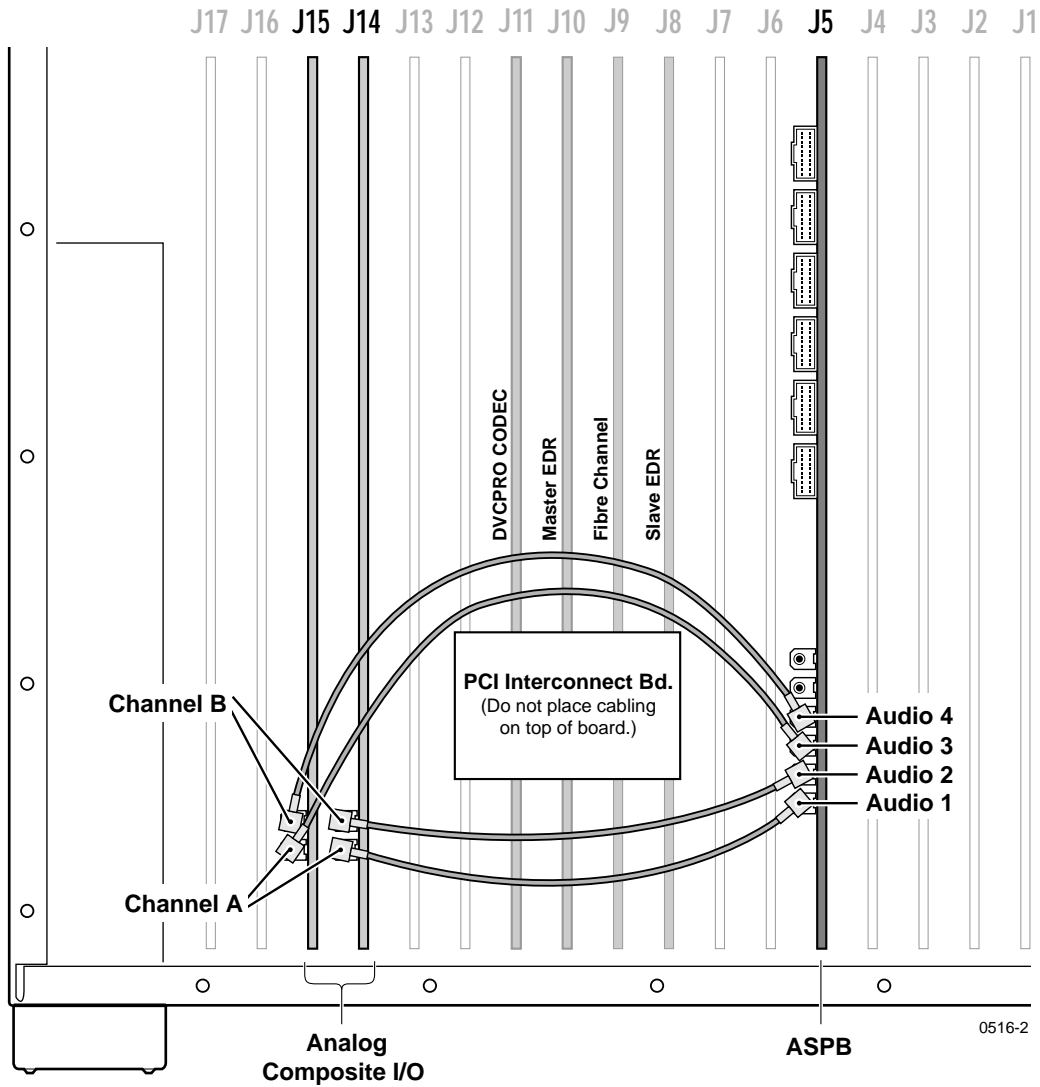


Figure 11. ASPB cabling with two Analog Composite I/O boards and one ASPB



Three Analog I/O Boards and Two ASPBs

The example in Table 8 and Figure 12 shows audio clock cabling for a PDR204A having three Analog Composite I/O boards and two ASPBs.

Table 8. Cabling for three Serial Digital I/O boards and two ASPBs

Cable Type	Analog Composite I/O Board Slot	Analog Composite I/O Board Connection	ASPB 1 Connection (J5)	ASPB 2 Connection (J7)
Sharcnet	N/A	N/A	Sharcnet Expansion 2	Sharcnet Expansion 1
Sharcnet	N/A	N/A	Sharcnet Expansion 1	Sharcnet Expansion 2
Audio clock	J13	Channel A	Audio 1	N/A
Audio clock	J13	Channel B	Audio 2	N/A
Audio clock	J14	Channel A	Audio 3	N/A
Audio clock	J14	Channel B	Audio 4	N/A
Audio clock	J15	Channel A	N/A	Audio 1
Audio clock	J15	Channel B	N/A	Audio 2

ASPB Audio Clock and Sharcnet Cabling Examples

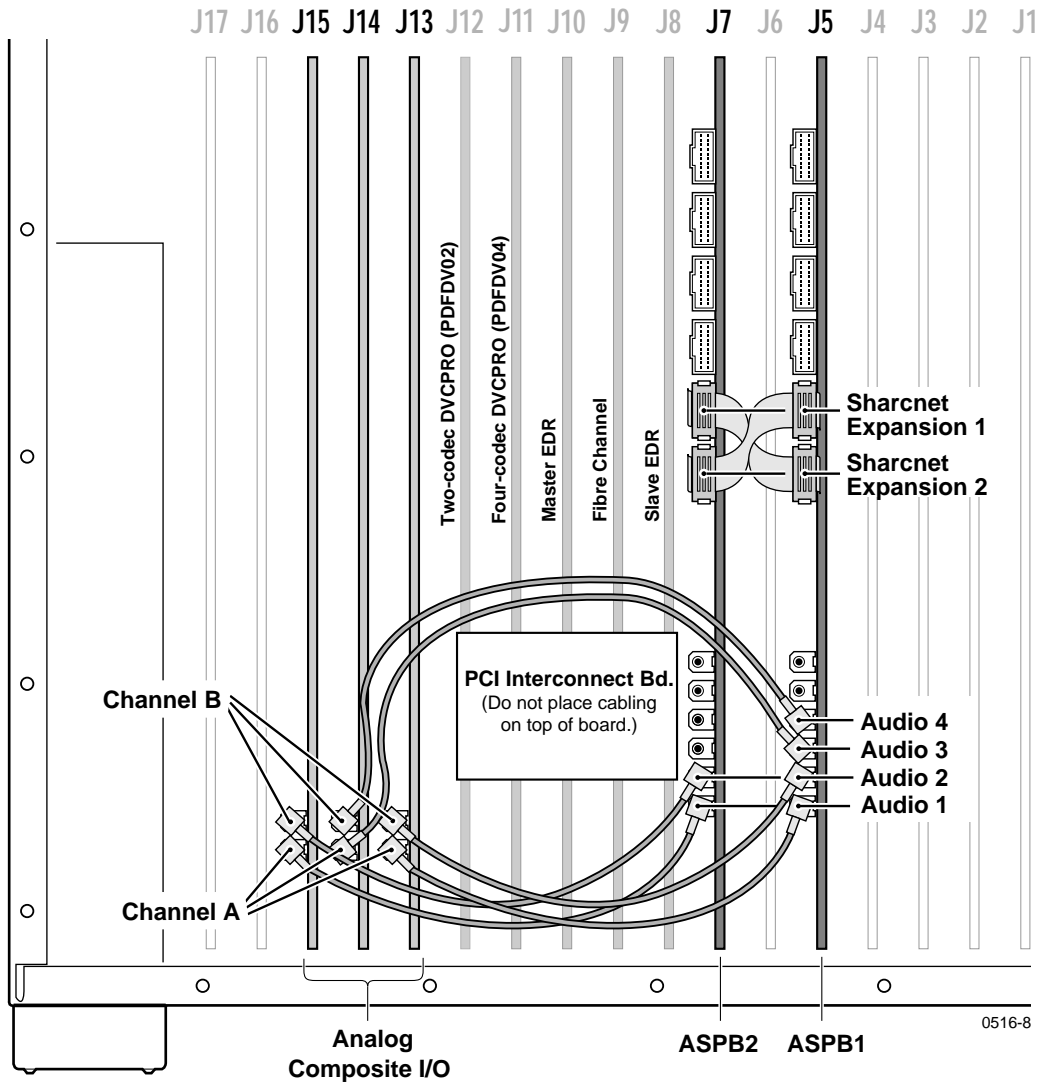


Figure 12. ASPB cabling with three Analog Composite I/O boards and two ASPBs



Detailed Explanation Of ASPB Cabling

If you are following one of the cabling examples, this section is for reference only. Read this information if you have questions about the ASPB cabling.

Audio Clock Cabling

When the Profile system records, audio sampling must be referenced to the video signal, otherwise audio artifacts will occur. The ASPB hardware and Profile software allows the you to select the appropriate audio sample reference for recording as follows:

- When recording synchronous video feeds, use “system clock” derived from house reference and supplied to the ASPB through its motherboard connector.
- When recording non-synchronous video feeds, use the reference signal supplied by the video input card over an Audio Clock coaxial cable connected to the ASPB.

Each ASPB has four audio clock input connectors for attaching an audio clock reference. These connectors are attached by coaxial cable to the video input boards. The cables carry a 27MHz reference signal derived from the video input to the ASPB. This signal is used as a reference for the audio phase lock loops. (See Figure 13.)

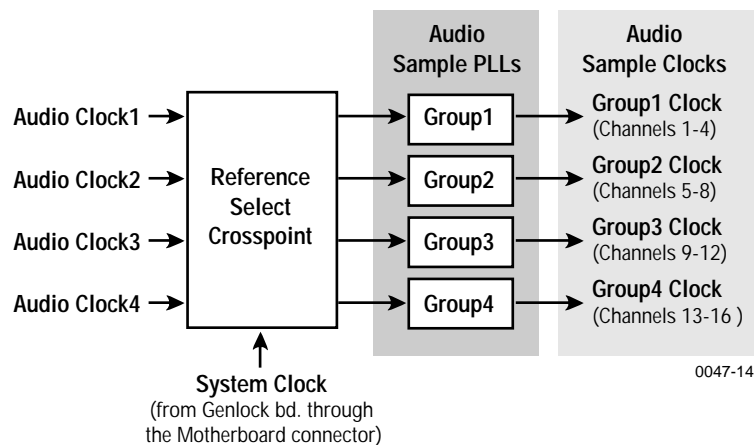


Figure 13. Audio clock groups and reference selection

A single ASPB supports 16 audio channels. These 16 channels are divided into four audio groups with four audio channels in each group. Group 1 consists of channels 1 to 4. Group 2 consists of channels 5 to 8, and so on up to Group 4.

There is a phase lock loop and audio sample clock for each audio group 1 through 4 as seen in Figure 13. You can also see in Figure 13 how the Reference Select Crosspoint allows selection of the reference to the Audio Sample Phase Lock Loops. Profile software allows the user to select the appropriate reference for the Audio Sample Phase Lock Loops, either “system clock” derived from house reference or one of the four audio clocks derived from video inputs.

When the potential for recording non-synchronous video feeds exists, it becomes important to select the correct video reference and to have the coaxial audio clock cables connected properly.

Here are the audio clock cabling guidelines.

- Profile software recognizes and numbers video inputs beginning with Channel A of the board in the lowest numbered motherboard slot.
- When two ASPBs are installed, ASPB1 is the ASPB in the lower number board slot and ASPB2 is in the higher numbered slot.
- Profile software refers to the four ASPB audio clock references as “Video Input 1” through “Video Input 4”.
- ASPB1 audio clocks 1 through 4 should be connected to video inputs 1 through 4.
- ASPB2 audio clocks 1 through 4 should be connected to video inputs 4 through 8, if installed.
- Audio clock references connected to ASPB1 cannot be used by ASPB2. The opposite is also true, references attached to ASPB2 cannot be used by ASPB1.

NOTE: Do not connect any audio clock cables to the connectors on the four channel Composite Analog Video Output board. These are system clock connectors and are not used because the ASPB receives system clock through its motherboard connector.



If your Profile unit has one ASPB, you can connect only four audio clock references to it. If your Profile unit has two ASPBs installed, a total of eight audio clocks can be connected.

In practice, if your Profile unit has more video inputs than the number of ASPB clock inputs, you should connect audio clocks from video inputs that might record video that is not genlocked to your house reference.

Any video inputs that are not supplying a record clock to the ASPB should be locked to your house reference, if audio is to be associated with those inputs. Otherwise, audio clock errors could occur during recording.

For more information on audio input clocking refer the Audio Configuration information in the *Profile Family User Manual*.

Sharcnet Cabling

Serial digital I/O boards (SDI boards) with Sharcnet connectors have embedded audio capability. These SDI boards extract audio from incoming video, route it to the ASPB, and receive audio output from the ASPB to be embedded in the serial digital stream. Sharcnet cables are used to route the audio between the ASPB and SDI boards.

On both the ASPB and SDI board there are Sharcnet In and a Sharcnet Out connectors. These are shown in Figure 9 on page 43. In general, ASPB Sharcnet Outs are connected to SDI Sharcnet Ins, and ASPB Sharcnet Ins are connected to SDI Sharcnet Outs. Simple enough, but connection order is important.

Here are the guidelines for making the Sharcnet connections:

- Beginning with the ASPB in the lowest numbered slot (ASPB1), Sharcnet In1/Out1 are connected to Sharcnet Out /In of the serial digital video board in the lowest numbered slot.
- Next, Sharcnet In2/Out2 are connected to Sharcnet Out/ In of the serial digital video board in the next higher numbered slot.
- The pattern above continues for ASPB2 if two ASPBs are installed.
- The Exact number of Sharcnet cables will vary depending on how many serial digital video I/O boards are installed.
- When two ASPBs are installed, Sharcnet Expansion 1 connectors on each board are connected the Sharcnet Expansion 2 connectors on the other.

Board Location Guide

This board location guide is provided to help you install the DVCPRO boards in a PDR 200 Video File Server that is *not* an Option DV, that is, *not* shipped from the factory as DVCPRO ready. The board layout for an Option DV PDR 200 eases DVCPRO board installation, but other systems may require that you move existing boards to accommodate the DVCPRO boards. This guide will help you do that.

If you move any circuit boards, remember that some boards must occupy specific slots, while others can be installed in almost any slot as long as their I/O requirements are met (see Table 10 on page 57). The board location guide identifies the video router inputs and outputs of each Profile board currently available, as well as the input and output connections on the video router connectors on the motherboard.

This guide provides a general approach to board location. It explains the relationship between the motherboard and video router connectors and provides tables, charts and examples to assist you in installing boards.

Video Router to Motherboard Relationship

The video router provides and controls video data to twelve connectors on the motherboard. These video data connectors are aligned with the main motherboard connectors for slots J5 through J16. Since the Reference Genlock (Ref Gen) board must occupy J16 to provide the necessary system clocks, this discussion excludes J16.

When choosing a slot for a board, the major constraint for a slot is how the board connects to the video router. Not all boards require the same number of video I/O connections, and not all video data connectors provide the same number of video I/O connections. Therefore, you must know how many input and output connections the board needs, if any, and the slots available that meet those needs.

Table 10 on page 57 lists each of the boards which may be installed in the Profile system and the recommended slots, possible alternatives, and restrictions for each board. If more than one slot is recommended or possible for a board, those slots are listed in the order of preference.



Video Router I/O Connections

Now let's look at the video router connections available at slots J5–J15. Table 9 shows a board location worksheet that shows the video router input and output connections. The worksheet is blank except for the 5 board slots reserved for the boards that are connected by the PCI Interconnect board. In this chart:

- The **Slot** column lists each slot on the motherboard connected to the video router.
- The **Board** column is where you write the boards currently installed and the name of the board you want to install.
- The **Input** column identifies input connections available *to* the installed boards *from* the video router. The numbers in the blocks correspond to the order input connections are assigned at the video router connector.
- The **Output** column identifies output connections available *from* the installed boards *to* the video router. The numbers in the blocks correspond to the order output connections are assigned at the video router connector.
- The shaded blocks in the diagram indicate video router connections shared between slots. A shared connection is available to either slot, but not both at the same time. For instance:
 - The shaded input blocks between slots J5 and J6, slots J7 and J8, slots J10 and J11, and slots J12 and J13 indicate shared input connections.
 - The shaded output blocks between slots J8 and J9, slots J10 and J11, and slots J12 and J13 indicate shared output connections.

Table 9. Board location chart

Slot	Board	Input ^a	Output ^a
J5		1	1
		2	2
J6		2	3
		6	2
		5	
		4	
		3	1
		2	
J7		1	1
		2	
		3	
		4	2
		5	
		6	
J8	Slave Enhanced Disk Recorder	2 ✓	1 ✓
		1 ✓	2 ✓
			3 4
J9	Fibre Channel (if installed)	1	4 3
		2	2
			1
J10	Master Enhanced Disk Recorder	1 ✓	1 ✓
			2 ✓
		2 ✓	3 4
J11	DVCPRO CODEC (PDFDV04) ^b	4 ✓	4 ✓ 3 ✓
		3 ✓	2 ✓
		2 ✓	
		1 ✓	1 ✓
J12	DVCPRO CODEC (PDFDV02)	1 ✓	1 ✓
		2 ✓	2 ✓
		3	
		4	3 4
J13		2	4 3
		1	2
J14			1
			2
		2	3
J15		1	1
			2
		2	3

a. Shaded areas indicate router points shared between board slots; ✓ indicates which input or output is used by the board.

b. If JPEG #2 and DVCPRO25 #4 are used, they must both be connected to the same video input via the internal video crosspoint router, otherwise, the wrong video input may be recorded. To avoid this restriction, use one of the other three JPEG codecs available in the system.



Selecting a Board Location

Here's how to use the tables to select a location for a board. Make a copy of Table 9 to use as a template for recording information for board placement.

1. Write the board name in Table 9 and, referring to Table 10, put a check mark (✓) in each input and output block used by each board currently installed in your Profile system. Start with the **1** block for each board.
2. Look in Table 10 to see the input and output requirements and both the recommended slot and alternative slots for the board you want to install.
3. Look in Table 10 for a slot with the required video router connections available. Starting with the **1** block, put an **X** in each block that corresponds to an input and output requirement for the newly added board. If the recommended slot is occupied, or there are not enough input or output blocks available, look at the alternative slots.
4. If all input and output requirements for the board match the available ones for the slot, write the board name in the **Board** column for the slot and install the board.

***NOTE:** If you can't find an open slot with the I/O connections which meets the I/O requirements of the board you want to install, you will have to move existing boards. You can use Table 9 and Table 10 to experiment with various board locations before deciding on one.*

Selecting a Board Location

Table 10. Board I/O requirements and restrictions for a PDR200 with DVCPRO boards

Board	Video Router Connection Requirements		Recommended Slots	Other Possible Slots	Comments
	Inputs	Outputs			
CPU	n/a	n/a	J1	None	Reserved for PC card only. PC/VGA/LAN combination board in S/N B050000 and Up.
VGA	n/a	n/a	J2	None	ISA only. Parallel port in S/N B050000 and Up
LAN	n/a	n/a	J3	None	EISA connection only. May be empty in S/N B050000 and Up.
SCSI	n/a	n/a	J4	None	EISA connection only
RefGen	n/a	n/a	J16	None	Reference genlock
RS-422	n/a	n/a	J17	None	EISA only
Master EDR	2	2	J10	None	Must be adjacent to Fibre Channel (if installed). 5 slot PCI Interconnect required.
Slave EDR	2	2	J8	None	Must be adjacent to Fibre Channel (if installed). 5 slot PCI Interconnect required.
Fibre Channel	None	None	J9	None	Must be adjacent to Master EDR in slot J10. 5 slot PCI Interconnect required.
DVCPRO CODEC (4-codec)	4	4	J11	None	Must be adjacent to Master EDR board in slot J10. 5 slot PCI Interconnect required.
DVCPRO CODEC (2-codec)	2	2	J12	None	Must be in slot J12. 5 slot PCI Interconnect required.
Analog Composite In	None	1	J6, J15	J5-15	Any open slot if board in adjacent slot does not use the same shared router points. Must be adjacent to the Analog Composite Decoder.
Analog Composite Decoder	None	None	J5, J14	J4-15	Must be adjacent to Analog Composite In. May be installed in J4 since it does not require any router connections.
Analog Composite I/O	2	2	J13, J14, J15	J5-J15	Any open slot if board in adjacent slot does not use the same shared router points.
Four Channel Analog Out	4	None	J6, J7	J6, J7	Only J6 and J7 have 4 inputs and are available in a DVCPRO PDR200.
Analog Composite Monitor Out	4	None	J6, J7	J6, J7	Only J6 and J7 have 4 inputs and are available in a DVCPRO PDR200.
Serial Digital I/O	2	2	J14, J15	J6, J7, J13	Cables must be able to reach ASPBs
CAV In	None	1	J6	J5-15	Any open slot if board in adjacent slot does not use the same shared router points.
Mix Effects	6	2	J6	J7	Only J6 and J7 have 5 inputs; board must be able to get a shared input (the 6th) from an adjacent slot (J5 or J8)
Audio Signal Processing Board (ASPB)	None	None	J5 (1st) J7 (2nd)	J5-J15	Any open slot since it requires no video router connections. Cables must be able to reach video boards or additional ASPB. Second ASPB necessary for 32 channels of audio.



Troubleshooting

If you experience a problem while performing the upgrade procedure or with Profile system operation after all the installation steps are completed, first check all external connections to make sure they are properly made, then refer to the troubleshooting aid which follows.

Troubleshooting Aid

This troubleshooting aid provides corrective action for some common problems encountered when performing this upgrade procedure. Search Table 11 for the problem you are experiencing, then try the recommended action. Table 11 is continued on several pages. If all else fails, contact Grass Valley Group Support. Grass Valley Group Support contact information is located on page 5 of this manual.

Table 11. PDR200 DVCPRO upgrade procedure troubleshooting table

Problem	Possible Cause	Action
BIOS Boot Error Message: "EISA configuration error."	1. EISA configuration in System CPU board CMOS is corrupted or an EISA board was added, removed or moved.	1. Make sure the LAN, VGA, and Buslogic SCSI adapter boards are in the slots specified in Table 10 on page 57. Run the Load CMOS utility as follows: Choose Start Programs Profile Debug Tools Load CMOS . Press Enter to continue. Shut down and restart Windows NT.
Windows NT Error Message: "At least one service or driver failed during startup."	1. A driver or service was not installed properly or there may be a hardware problem.	1. Open the Windows NT Event Viewer application for more information. Refer to your Windows NT documentation or Windows NT Help for more information on using the Event Viewer.
Windows NT Warning message: "Real Time Processor Not Available - PDR Access Control Service not responding" and "Real-Time Processor Failure - No Media File Systems"	1. Media file system appears corrupted because the SCSI disk cables are not connected or not connected properly. 2. SCSI disk system failure.	1. This error message will occur if there is a hardware problem in the SCSI disk system. If using external storage chassis, check SCSI terminators and try checking or reversing the external SCSI cables. Remove the unit covers and verify all SCSI cabling is connected properly (refer to Figure 5 on page 28). Verify that SCSI cable A is connected to the Master disk recorder board and the SCSI cable C is connected to the Slave disk recorder board. 2. Contact Grass Valley Group Support.

Table 11. PDR200 DVCPRO upgrade procedure troubleshooting table (Continued)

Problem	Possible Cause	Action
VdrPanel will not start.	1. Corrupt PdrMovie data base after creating a new file system.	1. Open Windows NT Explorer. Delete <i>c:\pdrmovie_db</i> directory, then shut down and restart Windows NT. Try starting VdrPanel again. The database will be regenerated when VdrPanel is started again.
Distorted audio.	1. Audio clock cables connected incorrectly. 2. Wrong audio clock reference source selection.	1. Check audio clock cabling using your diagrams or by referring to "Connecting Audio Clock and Sharcnet Cables" on page 41. 2. Refer to "Using the Profile Configuration Manager" in the <i>Profile Family User Manual</i> .
Embedded audio signal is missing or does not match the video.	1. Incorrect input or output audio mapping. 2. Sharcnet cables connected incorrectly.	1. Refer to the PDR200 Audio section of "Using the Profile Configuration Manager" in the <i>Profile Family User Manual</i> . 2. Check sharcnet cabling using your diagrams or by referring to "Connecting Audio Clock and Sharcnet Cables" on page 41.
Distorted video input.	1. Video router <i>Output</i> point conflict. 2. Hardware fault	1. Verify the board is not using a video router <i>Output</i> point shared with another board in an adjacent slot. Refer to "Video Router I/O Connections" on page 54. 2. Contact Grass Valley Group support.
No video output from one or two channels of a video board.	1. Incorrect video router configuration. 2. Not enough router <i>Input</i> point connections in the slot for this board. 3. Hardware fault.	1. Verify video router crosspoints. Refer to the appropriate sections of the Profile Family User Manual for the application you are using. 2. Verify the board slot has enough video router <i>Input</i> points to support the video board. Refer to "Video Router I/O Connections" on page 54. 3. Contact Grass Valley Group support.
Video channel displays the wrong video in E to E and playback.	1. Incorrect video router configuration. 2. Video router <i>Input</i> point conflict.	1. Verify video router crosspoints. Refer to the appropriate sections of the Profile Family User Manual for the application you are using. 2. Verify the board is not using a video router <i>Input</i> point shared with another board in an adjacent slot. Refer to "Video Router I/O Connections" on page 54.
Video channel displays the wrong video in playback, but looks fine in E to E.	1. Video router <i>Input</i> point conflict.	1. Refer to "Restrictions When Using JPEG and DVCPRO" on page 17.



DVCPRO Board Installation

Table 11. PDR200 DVCPRO upgrade procedure troubleshooting table (Continued)

Problem	Possible Cause	Action
Initializing Real-time Processor" message stays on screen and Profile applications won't run.	<ol style="list-style-type: none">1. i960 real-time processor failed to initialize because no media file system could be found.2. i960 real-time processor failed to initialize.	<ol style="list-style-type: none">1. See portions of this table regarding Real-time Processor - No media file systems found.2. This message sometimes appears while Profile system software is starting up. If the message remains longer than one or two minutes and no other messages are displayed, contact Grass Valley Group Support.
DVCPRO Boards do not appear in bottom of Configuration Manager window.	<ol style="list-style-type: none">1. Wrong version of Profile System Software installed.2. Hardware fault.	<ol style="list-style-type: none">1. Install Profile System Software 3.1.2. Contact Grass Valley Group Support.