GRASS VALLEY GROUP

ANALOG COMPOSITE I/O

Installation Manual

PROFILE FAMILY
VIDEO FILE SERVERS

Revision Status

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Grass Valley Group Product Support

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General Safety Summary

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

Only qualified personnel should perform service procedures.

Injury Precautions

Use Proper Power Cord
To avoid fire hazard, use only the power cord specified for this product.

Ground the Product
This product is grounded through the grounding conductor of the power cord. To avoid electric shock, the grounding conductor must be connected to earth ground. Before making connections to the input or output terminals of the product, ensure that the product is properly grounded.

Do Not Operate Without Covers
To avoid electric shock or fire hazard, do not operate this product with covers or panels removed.

Use Proper Fuse
To avoid fire hazard, use only the fuse type and rating specified for this product.

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.

Avoid Exposed Circuitry
To avoid injury, remove jewelry such as rings, watches, and other metallic objects. Do not touch exposed connections and components when power is present.

Product Damage Precautions

Use Proper Power Source   Do not operate this product from a power source that applies more than the voltage specified.

Provide Proper Ventilation   To prevent product overheating, provide proper ventilation.

Do Not Operate With Suspected 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.

Terms on the Product   These terms may appear on the product:

DANGER indicates a personal injury hazard immediately accessible as one reads 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

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⚠   *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.*

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, disconnect the main power by means of the power cord. or, if provided, the power switch.

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.

To avoid electric shock, do not touch exposed connections

Certifications and Compliances

Canadian Certified Power Cords

Canadian approval includes the products and power cords appropriate for use in the North America power network. All other power cords supplied are approved for the country of use.

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 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. 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 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 préscrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

Canadian Certified AC Adapter

Canadian approval includes the AC adapters appropriate for use in the North America power network. All other AC adapters supplied are approved for the country of use.

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	*Designed/tested for compliance with:*
	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

Analog Composite I/O Installation

Introduction

Use these instructions to install the Analog Composite I/O (Input/Output) board into a Profile PDR 100 Video Disk Recorder or PDR 200 Video File Server. The Analog Composite I/O board accepts two composite analog video inputs, and provides two composite analog video outputs. The board is also equipped with an S-Video connector, which allows video input to the Profile system directly from a source such as a video cassette recorder. The board provides time base correction for any one input.

The instructions include procedures for opening the Profile chassis, removing existing boards, if necessary, to make room for the new board, installing the new board, closing the Profile chassis, and verifying that the board is correctly installed. There is also a board location guide that you can use to select a slot in the Profile chassis in which to install the board and audio clock cabling information.

You can install the board with the Profile chassis fully extended on the rack slides if the equipment rack is adequately mounted 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 it is necessary for you to remove the Profile chassis from the equipment rack to perform this installation, refer to the *Installation Manual* for instructions.

⚠ *WARNING: Unless the equipment 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 firmly anchored before extending the chassis on the rack slides.*

Analog Composite I/O Installation

System Requirements

The Profile System Software installed in the Profile system must be version 2.2 or higher. To check the software version installed in your Profile system, choose **Help | About VdrPanel**. The software version is listed in the Product Version field in the displayed window.

Kit Contents

In addition to these instructions, the Analog Composite I/O board kit includes:

• One Analog Composite I/O circuit board

• Two audio clock cables

• One stick-on identification sheet

• One packet of mesh gaskets (used for EMI suppression on BNC connectors)

Tools Required

To install the kit, the following tools are required, but not supplied as part of the kit:

• Torx screwdriver with T10 and T15 tips

• ESD grounding straps

Electrostatic Precautions

⚠ *CAUTION: This product contains components that are highly sensitive to electrostatic discharge. To protect these components from damage and to maintain product reliability, take the following precautions when handling the circuit boards:*

- Handle all circuit boards in a static-protected area capable of controlling static charge on conductive materials, people, and non-conductive materials. Static-protected areas include non-static table tops and non-static floor mats.

- Handle the circuit boards only by the edges. Avoid touching the printed wires on the back of the circuit board as much as possible.

- Leave the board in its static-shielded bag until you are ready to install the board.

Installation Procedures

The procedures that follow take you step-by-step through the installation of the Analog Composite I/O board. When you complete the physical installation, go on to the Verification Procedure to complete the installation.

Before you install the new board, prepare the Profile system for installation. Preparation involves extending the chassis, removing the top covers, removing the circuit board hold-downs, and moving currently installed boards as necessary to make room for the Analog Composite I/O board.

The installation procedures include a discussion on board locations. This discussion simplifies installing and, if necessary, moving boards around, and provides consistency when doing so. The procedures also include internal audio clock cabling information.

⚠ *WARNING: The Profile system is too heavy for one person to remove from the equipment rack. To avoid possible injury, get help when removing the Profile system from the rack.*

Removing the Chassis Covers

Figure 1 shows chassis cover screws for a PDR 200. On a PDR 100, the screws in the center of the top front cover may not be present. To remove the chassis covers:

NOTE: Take care not to lose these chassis screws. They are required to meet the EMI specifications for the Profile system.

1. Turn Profile system power off and detach the power cord.

2. Loosen the front panel retaining screw and pull the chassis out of the rack until the slide stop latches engage.

3. Use the Torx tool with the T10 tip to remove the front chassis cover (❶ in Figure 1) which covers the fans and disk drives. The front cover must be removed first because it overlaps the rear cover.

4. Use the Torx tool with the T10 tip to remove the rear chassis cover (❷ in Figure 1) which covers the circuit boards.

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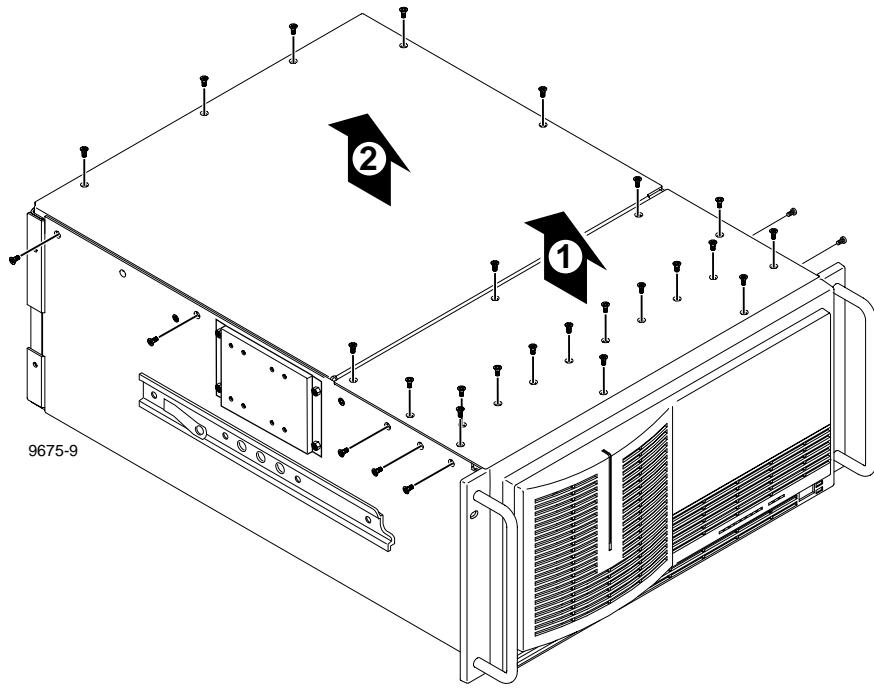
Figure 1. Removing the Top Covers

Removing Hold-downs

There are two hold-down brackets located in the circuit board area that must be removed in order to remove and replace circuit boards. Figure 2 shows these brackets.

To remove the hold-down brackets:

1. Use the Torx tool with the T10 tip to remove the screw (❶ in Figure 2) which secures the rear hold-down bracket.

2. Lift the hold-down bracket (❷ in Figure 2) up and out of the chassis and set it aside.

3. Use the Torx tool with the T10 tip to remove the screw (❸ in Figure 2) which secures the front hold-down bracket.

4. Lift the hold-down bracket (❹ in Figure 2) up and out of the chassis and set it aside.
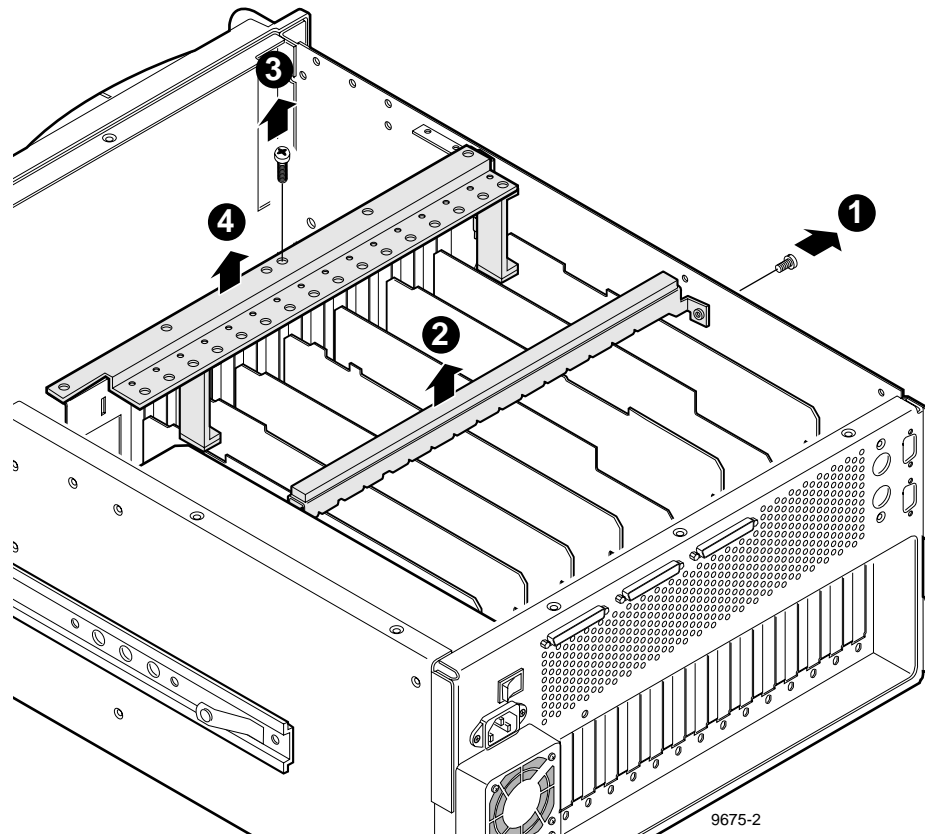
Figure 2. Removing the Circuit Board Hold-downs

Removing Circuit Boards

Installing the Analog Composite I/O board may require that you remove or reposition one or more currently installed boards to make room for the new board or to meet internal cabling constraints. When unplugging boards you may also find it necessary to remove the screw mounting an adjacent circuit board, and in the case of some short circuit boards, it might be necessary to remove an adjacent tall circuit board to ease removal of the shorter board.

Use the following procedure to unplug a circuit board from the motherboard.

NOTE: Make a note or diagram of cable connections prior to removal to facilitate reinstallation.

1. Remove all interior and rear panel cables from the circuit board that is to be removed.

2. Use the Torx tool with the T15 tip to remove the screw from the bracket inside the chassis (❶ in Figure 3) and the screw through the rear panel outside the chassis (❷ in Figure 3).

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

• Do not rock the circuit board in the EISA Bus connector — pull straight up to remove.

• Do not grasp or push on the rear-panel connectors when removing or installing a circuit board in a card slot.

3. 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 short 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 board.
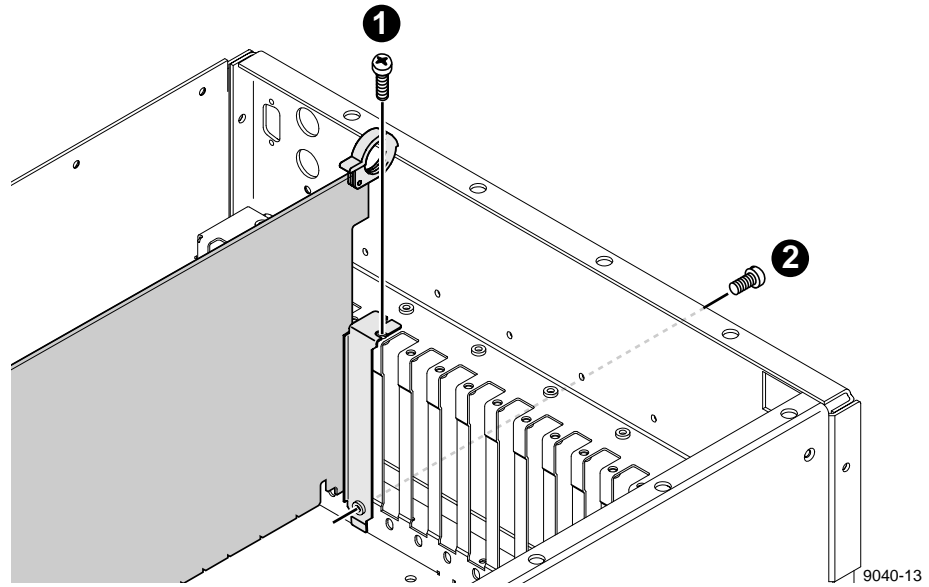
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Figure 3. Screw Locations for a Board Bracket

Board Location Guide

This board location guide identifies the inputs and outputs of each Profile board currently available for a PDR 100 or PDR 200, as well as the input and output connections on the Video Router connectors on the motherboard. Use this information when:

- you add a new circuit board to the Profile system and need to select a slot into which you can install it;

- you need to move boards around to meet requirements for new boards.

As you move boards around, remember that some circuit boards must occupy specific slots, while others can be installed in almost any slot as long as their I/O requirements are met.

This section provides a simple 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 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 on 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, and the slot(s) available that meets those needs.

Board I/O Requirements and Restrictions

Table 1 lists each of the boards which may be installed in the Profile system and the recommended slots, possible alternatives, and restrictions for each board.

Note that if more than one slot is recommended or possible for a board, those slots are listed in the order of preference.

Table 1. Board I/O Requirements and Restrictions

Board	Video Router connection requirements		Slot Recommended		Other Possible Slots	Restrictions
	Inputs	Outputs	PDR 100	PDR 200		
CPU	none	n/a	J1	J1	none	
VGA	n/a	n/a	J2	J2	none	
LAN	n/a	n/a	J3	J3	none	
SCSI	n/a	n/a	J4	J4	none	
RefGen	n/a	n/a	J16	J16	none	
RS422	n/a	n/a	J17	J17	none	
FibreChannel	n/a	n/a	J15	J8	J5-J15	Must be adjacent to Master EDR
Master EDR	2	2	J14	J9	J5-J15	Must be adjacent to Slave EDR and (if installed) Fibre Channel
Slave EDR	2	2	J13	J10	J5-J15	Must be adjacent to Master EDR
Master DR	2	2	J14	n/a	J5-J15	Must be in adjacent to Slave DR
Slave DR	2	2	J15	n/a	J5-J15	Must be adjacent to Master DR
Serial Digital I/O	2	2	J11	J14, J15	J11, J5, J7	Can't go in J5 if Mix Effects is in J6 or in J8 if Mix Effects is in J7
Decoder	None	None	J8	J5	J7, J11	Must be adjacent to Analog Composite In
Analog Composite In	None	1	J9	J6	J8, J12	Must be adjacent to Decoder
Analog Composite I/O	2	2	J11	J14, J15	J11, J5, J7	Can't go in J5 if Mix Effects is in J6 or in J8 if Mix Effects is in J7
Mix Effects	6	2	J7	J7	J6	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)
4 Ch. Analog Out	4	None	J6	J6	J12, J7, J11	Only J6, J7, J11, and J12 have 3 (or more) inputs. If in J11 or J12, board must be able get a shared input (the 4th) from an adjacent slot (J10 or J13)
Analog Composite Monitor	4	None	J12	J12	J6, J7, J11	Only J6, J7, J11, and J12 have 3 (or more) inputs. If in J11 or J12, board must be able get a shared input (the 4th) from an adjacent slot (J10 or J13)
Audio Signal Processing Bd (ASPB)	None	None	J13	J13	J5-J15	
CAV In	None	1	J5	J5	J5-J15	
Audio I/O	None	None	J5-J15	J5-J15	J5-J15	

Video Router I/O Connections

Now let's look at the Video Router connections available at slots J5-J15. Table 2 is a board location chart with the Video Router input and output connections. In the table:

- The Slots column lists each slot on the motherboard connected to the Video Router.

- The Board column is where you enter the boards currently installed and the name of the board you want to install.

- The Inputs column identifies data input connections to the slots (boards) from the Video Router. The numbers in the blocks correspond to the order input connections are assigned at the Video Router connector.

- The Outputs column identifies data output connections from the slots (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 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 blocks between slots J8 and J9, slots J10 and J11, and slots J12 and J13 indicate shared output connections.

Table 2. Board Location Chart

Slot	Board	Inputs	Outputs
J5		1 2	1 2 3
J6		6 5 4 3 2 1	2 1
J7		1 2 3 4 5 6	1 2
J8		2 1	1 2 3 4
J9		1 2	4 3 2 1
J10		1 2	1 2 3 4
J11		4 3 2 1	4 3 2 1
J12		1 2 3 4 2	1 2 3 4
J13		1	4 3 2 1
J14		1 2	1 2 3
J15		1 2	1 2 3

Selecting a Location

Here's how to use the tables to select a location for a board.

1. In the Board Location Chart, Table 2, enter the board name and, referring to Board I/O Requirements and Restrictions, Table 1, 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 the Board I/O Requirements and Restrictions, Table 1, 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 the Board Location Chart, Table 2, 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 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 which meets the I/O requirements of the board you want to install, you will have to move boards around. You can use the Board I/O Requirements and Restrictions table and the Board Location Chart to experiment with various board locations before deciding on one.

The following examples demonstrate how to use the Board I/O Requirements and Restrictions, Table 1, and the Board Location Chart, Table 2.

Example 1

This example shows how to use the Board I/O Requirements and Restrictions, Table 1, and the Board Location Chart, Table 2, to install an Analog Composite I/O board into a 4-channel PDR 200 with Fibre Channel and Mix Effects.

1. Fill in the Board Location Chart with the information for all the boards currently installed in the system.

   a. For the Mix Effects in slot J7, which requires six inputs and two outputs:

      - Put check marks in the five J7 Input blocks, 1-5.
      - Put a check mark in the J8 shared Input Block.
      - Put check marks in the J7 Output blocks 1 and 2.

   b. For the Fibre Channel in slot J8 - no Video Router I/O requirements

   c. For the Master EDR in slot J9, which requires two inputs and two outputs, put check marks in the J9 Input blocks 1 and 2 and in the J9 Output blocks 1 and 2.

   d. For the Slave EDR in slot J10, which requires two inputs and two outputs, put check marks in the J10 Input blocks 1 and 2 and in the J10 Output blocks 1 and 2.

   e. For the ASPB in slot J13 - no Video Router I/O requirements

   f. For the Serial Digital I/O in slots J14 and J15, which both require two inputs and two outputs, put check marks in both J14 and J15 Input blocks 1 and 2 and in J14 and J15 Output blocks 1 and 2.

2. From the Board I/O Requirements and Restrictions table, note that the Analog Composite I/O board requires two inputs and two outputs and that the first recommended slot is J14, the second recommended slot is J15, with J11, J5, and, J7 as other possible slots.

3. Looking at your Board Location Chart, you see that:

   - The first recommended slot, J14, is occupied.
   - The second recommended slot, J15, is also occupied.
   - The first other possible slot, J11 is open.

4. On your Board Location Chart, put Xs in the J11 Input blocks 1 and 2 and the Output blocks 1 and 2.

5. Write **Analog Composite I/O** in the Boards column for slot J11 and install the board.

Your Board Location Chart would then look similar to Table 3: Example 1.

Table 3: Example 1 - Installing an Analog Composite I/O Board

Slot	Board	Inputs	Outputs
J5		1	1
			2
		2	3
J6		6	
		5	
		4	2
		3	
		2	
		1	1
J7	Mix Effects	1 ✓	1
		2 ✓	✓
		3 ✓	
		4 ✓	2
		5 ✓	✓
		6 ✓	
J8	Fibre Channel	2	1
			2
		1	3 4
J9	Master Enhanced Disk Recorder	1 ✓	4 3
		2 ✓	✓ 2
			✓ 1
J10	Slave Enhanced Disk Recorder	1 ✓	1 ✓
			2 ✓
		2 ✓	3 4
J11	Analog Composite I/O	4	4 3
		3	
		X 2	X 2
		X 1	X 1
J12		1	1
		2	2
		3	3 4
		4 2	4 3
J13	ASPB		2
		1	1
J14	Serial Digital I/O	1 ✓	1 ✓
		2 ✓	2 ✓
			3
J15	Serial Digital I/O	1 ✓	1 ✓
		2 ✓	2 ✓
			3

Example 2

If you next want to install an Analog Composite Monitor board:

1. From the Board I/O Requirements and Restrictions table, note that the Analog Composite Monitor board requires four inputs and no outputs and that the first recommended slot is J12 with slots J6, J7, and J11 as other possibilities.

2. Looking at your Board Location Chart, you see that slot J12 is open and although it only has 3 Inputs, the 4th Input can be the input shared with J13 because the ASPB is not using it.

3. On your Board Location Chart, put Xs in the 1, 2, and 3 J12 Input blocks and in the J13 shared Input block.

4. Write Analog Composite Monitor in the Board column for slot J12 and install the board.

Your Board Location Chart would then look similar to Table 4: Example 2.

Table 4: Example 2 - Installing an Analog Composite Monitor Board

Slot	Board	Inputs	Outputs
J5		1 2	1 2 3
J6		6 5 4 3 2 1	2 1
J7	Mix Effects	1 ✓ 2 ✓ 3 ✓ 4 ✓ 5 ✓ 6 ✓	1 ✓ 2 ✓
J8	Fibre Channel	2 1	1 2 3 4
J9	Master Enhanced Disk Recorder	1 ✓ 2 ✓	4 3 ✓ 2 ✓ 1
J10	Slave Enhanced Disk Recorder	1 ✓ 2 ✓	1 ✓ 2 ✓ 3 4
J11	Analog Composite I/O	4 3 **X** 2 **X** 1	4 3 **X** 2 **X** 1
J12	Analog Composite Monitor	1 **X** 2 **X** 3 **X** 4 **X** 2	1 2 3 4 4 3
J13	ASPB	1	2 1
J14	Serial Digital I/O	1 ✓ 2 ✓	1 ✓ 2 ✓ 3
J15	Serial Digital I/O	1 ✓ 2 ✓	1 ✓ 2 ✓ 3

Audio Clock Cabling

This section provides some general rules about audio clock cabling when either an ASPB or an Audio I/O board is installed. Audio clock signals from the appropriate video board synchronize the audio to the video during Record. Internal cabling between connectors on the top of the video boards and connectors on the top of the audio boards provide the clock signals to the audio boards.

ASPB Audio Clock Cabling

The ASPB provides for input of four audio clock signals to audio banks Audio 1-Audio 4, where each bank consists of four audio channels. Audio clock signals from video boards are prioritized by the slot locations of the video boards, going from slot J5 to slot J15. ASPB Audio 1-Audio 4 connectors begin closest to the rear panel and go toward the front.

In general, the video board in the lowest numbered slot must provide the audio clock signal to the Audio 1 bank, the video board in the next lowest numbered slot must provide the audio clock signal to the Audio 2 bank, etc. For example, if you have video boards in slots J5 and J11, the audio clock signal from the one in J5 must be connected to Audio 1 on the ASPB and the audio clock signal from the video board in slot J11 must be connected to Audio 2 on the ASPB.

Figures 4 and 5 show examples of internal audio clock cabling with the ASPB. In Figure 4, Analog Composite I/O boards, installed in slots J14 and J15, are the only video boards. The audio clock cable connections are:

• Channel A of the board in slot J14 to Audio 1 on the ASPB in slot J13

• Channel B of the board in slot J14 to Audio 2 on the ASPB in slot J13

• Channel A of the board in slot J15 to Audio 3 on the ASPB in slot J13

• Channel B of the board in slot J15 to Audio 4 on the ASPB in slot J13

Note that Figure 4 is an example with video boards only in slots J14 and J15. If you have other video boards in lower numbered slots, you will have to determine how you want to set your system up. You will have to remove any unused clock cables and you may have to move boards around to accommodate your setup.
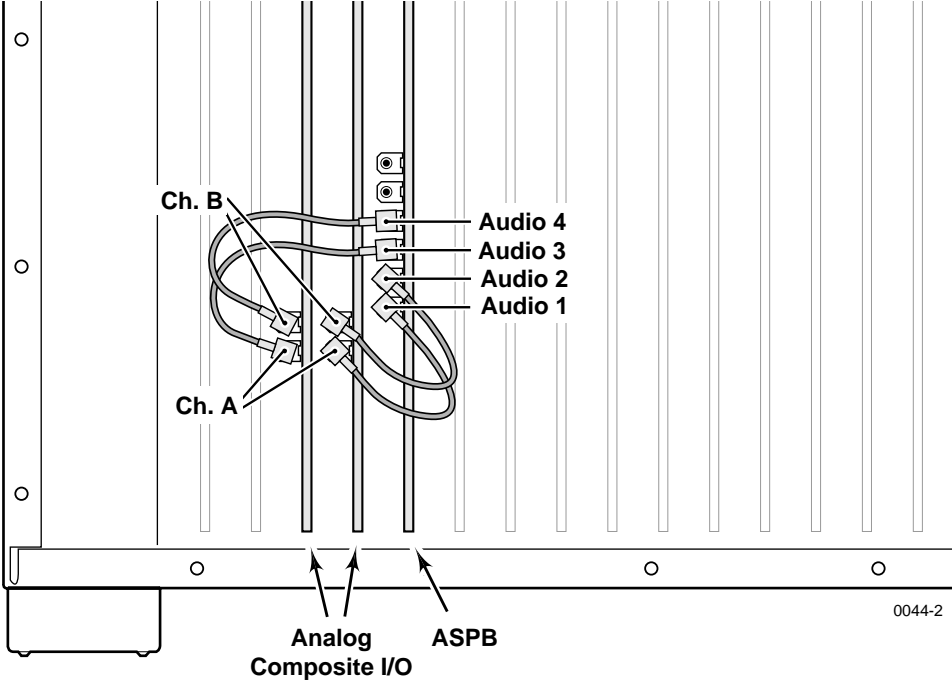
Figure 4. Example of Audio Clock Cabling in a PDR 204A

In Figure 5, the Analog Composite I/O board installed in slot J11 makes it the first video board, going from J5 to J15, and the Serial Digital I/O board becomes the second video board. You would have to move the Serial Digital I/O audio clock cables from the ASPB Audio 1 and Audio 2 connectors to, respectively, the Audio 3 and Audio 4 connectors. Audio clock cable connections are then:

• Analog Composite I/O Channel A to ASPB Audio 1

• Analog Composite I/O Channel B to ASPB Audio 2

• Serial Digital I/O Channel 1 to ASPB Audio 3

• Serial Digital I/O Channel 2 to ASPB Audio 4

Bear in mind that the ASPB only provides for input of four audio clock signals and note the following:

a. Figure 5 is an example of a 2-channel PDR 200 with one Serial Digital I/O board.

b. If you have a 4-channel PDR 200 with two Serial Digital I/O boards, all four ASPB audio clock inputs will be connected.

c. If you then want to install an Analog Composite I/O board, you will have more audio clock signals than you have connections on the ASPB (two from the Analog Composite I/O board and four from the two Serial Digital I/O boards).

  You will have to determine how you want to set your system up, that is, what you want as the video sources of the audio clocks for the Audio 1-Audio 4 banks of audio channels. You will have to remove any unused audio clock cables and you may have to move boards around to accommodate your desired system setup.
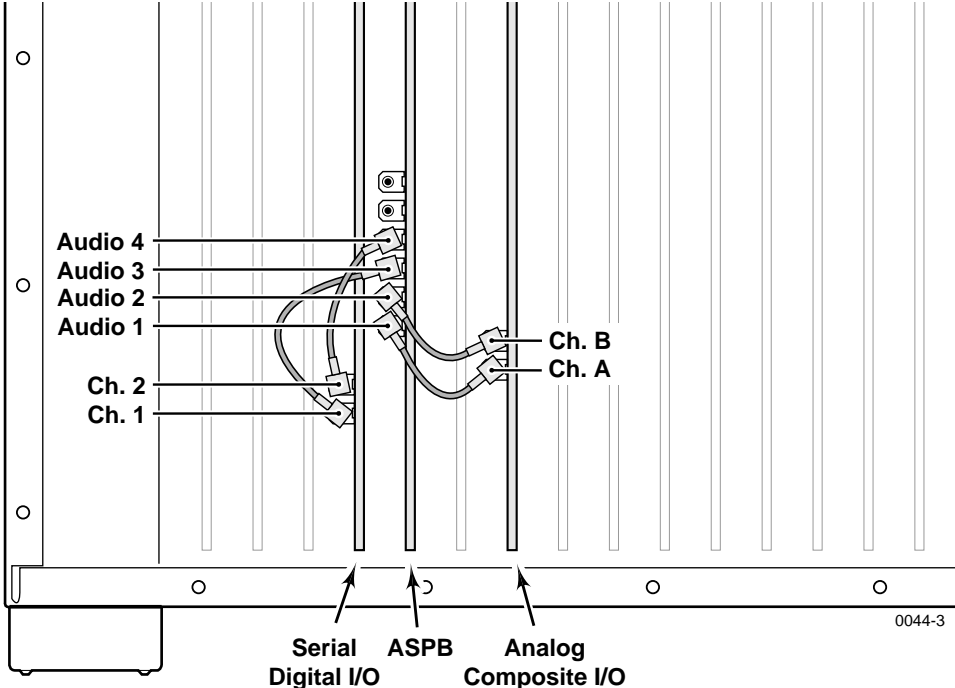
Audio 4
Audio 3
Audio 2
Audio 1

Ch. B
Ch. A

Ch. 2
Ch. 1

0044-3

Serial   ASPB   Analog
Digital I/O   Composite I/O

Figure 5. Example of Audio Clock Cabling in a PDR 202D

Audio I/O Audio Clock Cabling

Figure 6 shows an example of an Analog Composite I/O board installation in a
PDR 100 with two Audio I/O boards instead of an ASPB. In the Figure 6, audio clock
cable connections are from:

- Analog Composite I/O Channel A to the RECORD connector on the Audio I/O
  board in the lowest numbered slot from slot J5 to slot J15.

- Analog Composite I/O Channel B to the RECORD connector on the Audio I/O
  board in the next lowest slot.

- PLAY connectors on both Audio I/O boards to any of the system clocks on the
  RefGen board, or to any board which has system clock connectors (such as the
  Analog Composite Output board).

Figure 6 is an example only. If you have other video boards installed, you will have
to determine which video source you want to use for the audio clock signals and
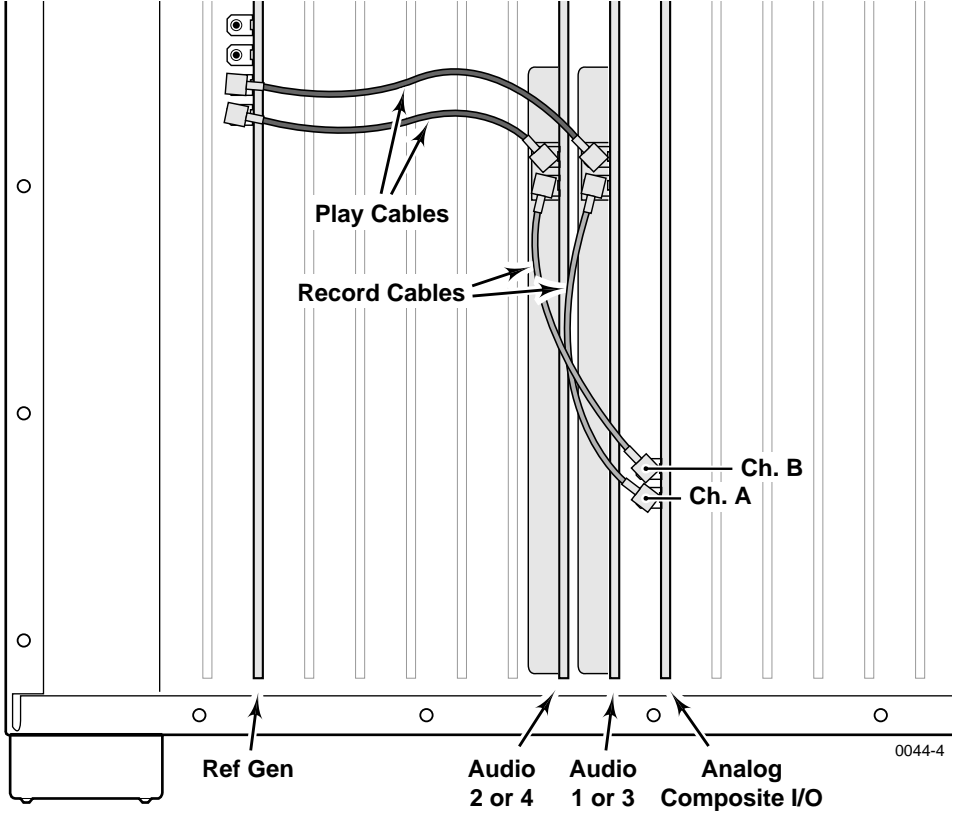make Audio I/o board connection adjustments accordingly.

Figure 6. Example of Audio Clock Cabling With an Audio I/O Board

Installing the Analog Composite I/O Board

Refer to the "Board Location Guide" beginning on page 10 and install the Analog Composite board as follows:

1. If necessary, remove the slot cover where you want to install the board.

2. Align the board with the connectors on the motherboard. Make sure the extractor on the front end of the board is in the up position, then press down on the board firmly until the board 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.

3. Use the Torx tool with the T15 tip to install the mounting screws in the top of the bracket inside the chassis (❶ in Figure 7) and through the rear panel at the bottom of the bracket (❷ in Figure 7).
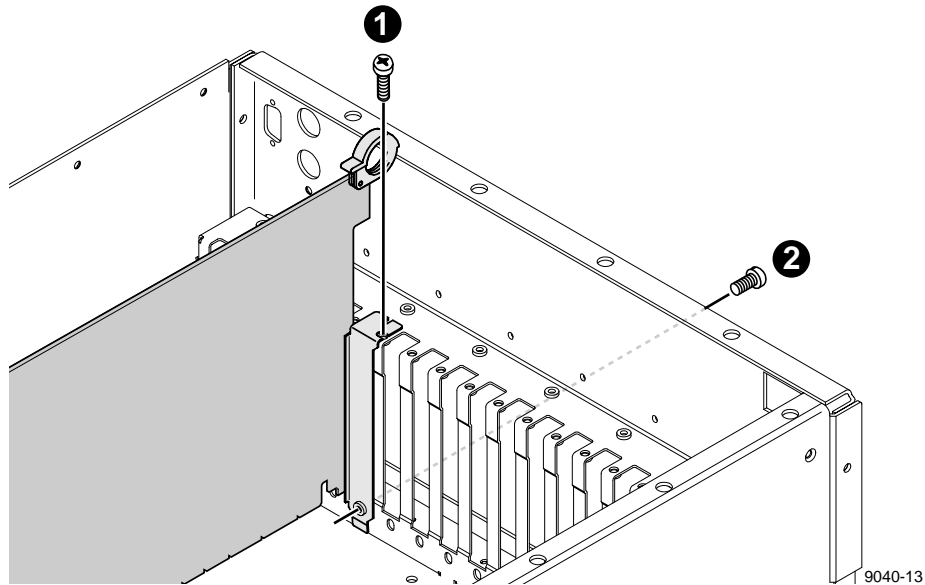

Figure 7. Screw Locations for Board Mounting Bracket

4. Install the blank circuit board brackets (if necessary) in the empty board slots on the rear panel.

5. Refer to "Audio Clock Cabling" beginning on page 20 and connect audio clock cables from the Analog Composite I/O board to the appropriate clock connectors on the ASPB or the RECORD connectors on the Audio I/O boards.

6. Use the Torx tool with the T10 tip to reinstall the rear board hold-down bracket (see Figure 2, page 7).

CAUTION: To prevent damage to the Monitor board, a short board extension on the front hold-down bracket must not be installed at the Monitor board location.

7. If necessary, reconfigure the front board hold-down, moving or removing short board extensions.

8. Use the Torx tool with the T10 tip to reinstall the front board hold-down bracket (see Figure 2, page 7).

9. Use the Torx tool with the T10 tip to reinstall the rear top cover and then the front top cover.

10. Apply the stick-on labels at the appropriate location in the Profile chassis rear panel to identify the location of the Analog Composite I/O board and any board you repositioned.

11. Reinstall the Profile chassis in the rack and reconnect all cables previously removed. Before attaching cables to the BNC connectors, install the mesh washers as shown in Figure 8.
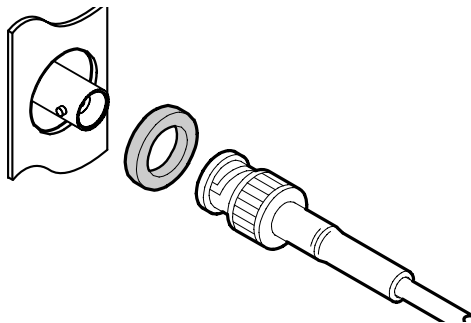
Figure 8. Installing Mesh Washers

12. Install mesh washers (Figure 8) and connect analog composite input and output cables to the Analog Composite I/O board. See Figure 9 for an example.

    Note that the S-video In connector allows you to connect an S-video device to the Analog Composite I/O board. However, the S-video device takes the place of one of the inputs (either In A or In B). Time Base Correction is possible on only one input at a time.
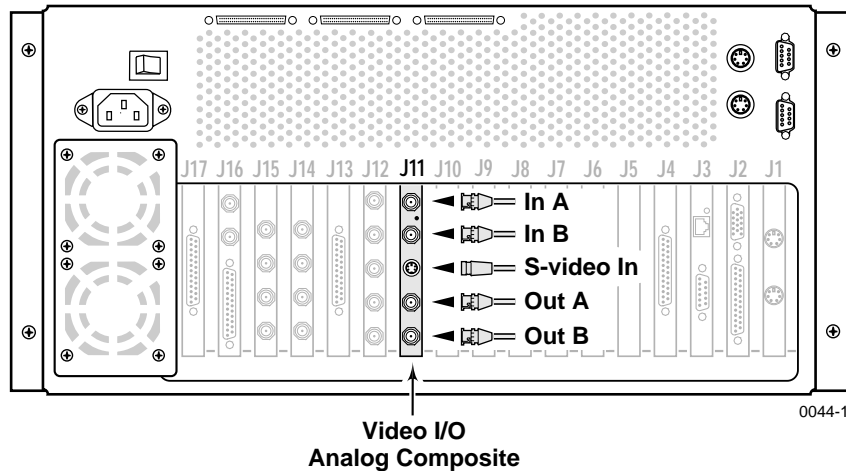

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**Video I/O
Analog Composite**

Figure 9. Analog Composite I/O Cable Connections Example

13. Apply power to the Profile system and start the *Profile Configuration Manager* application. Check the graphic representation of the Profile rear panel. It should indicate the presence of the Analog Composite I/O board in the slot where you installed the board.

14. Configure the system for the Analog Composite I/O board as instructed in the *Profile Family User Manual*.