
Ross Video Limited

Q/MD/X Frame Board Installation Guide



Live Production Technology™

Q/MD/X Frame Board Installation Guide

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Important Regulatory and Safety Notices to Service Personnel

Before using this product and any associated equipment, refer to the “**Important Safety Instructions**” listed in the front of your *Vision Engineering Manual* to avoid personnel injury and to prevent product damage.

Product may require specific equipment, and/or installation procedures to be carried out to satisfy certain regulatory compliance requirements. Notices have been included in this publication to call attention to these specific requirements.

General Handling Guidelines

- Careful handling, using proper ESD precautions, must be observed.
- Power down the system before PCB removal.



ESD Susceptibility — *Avoid handling the switcher circuit boards in high static environments such as carpeted areas, and when synthetic fiber clothing is worn. Touch the frame to dissipate static charge before removing boards from the frame, and exercise proper grounding precautions when working on circuit boards.*

Environmental Information

The equipment that you purchased required the extraction and use of natural resources for its production. It may contain hazardous substances that could impact health and the environment.

To avoid the potential release of those substances into the environment and to diminish the need for the extraction of natural resources, Ross Video encourages you to use the appropriate take-back systems. These systems will reuse or recycle most of the materials from your end-of-life equipment in an environmentally friendly and health conscious manner.

The crossed-out wheeled bin symbol invites you to use these systems.



If you need more information on the collection, reuse, and recycling systems, please contact your local or regional waste administration.

You can also contact Ross Video for more information on the environmental performances of our products.

Package Contents

The contents of a **Q/MD/X System Board** package depends on the options ordered, or boards that are being replaced. If any items are damaged, contact Ross Video Technical Support.

Front Frame Boards Locations

The location and number of boards that are installed in the frame depends on the number of MLEs, and Squeeze & Tease DVE channels you require per MLE-pair. Refer to the following table (**Table 1**), and the illustrations of the QMD-X/MD-X (**Figure 1**) and QMD/MD (**Figure 2**) frames for information on which slot each front frame board should be installed in.

Table 1 Front Frame Boards

Slot	QMD-X	MD-X	QMD	MD
Slot 0	Fan Board ^a	Fan Board	Fan Board	Fan Board
Slot 1			Video Processor Board	Video Processor Board
Slot 2			Squeeze & Tease Carrier	Squeeze & Tease Carrier
Slot 3		Squeeze & Tease Carrier	Video Processor Board	
Slot 4		Video Processor Board		
Slot 5	Crosspoint Board	Crosspoint Board		
Slot 6	Squeeze & Tease Carrier ^b			
Slot 7	Video Processor Board ^c			
Slot 8	Squeeze & Tease Carrier ^b	Squeeze & Tease Carrier		
Slot 9	Video Processor Board ^c	Video Processor Board		

- a. Fan Board of Issue 3 or higher only
- b. WARP Cards of Issue 1, Revision D or higher only
- c. Video Processor Board of Issue 1, Revision P, or higher only

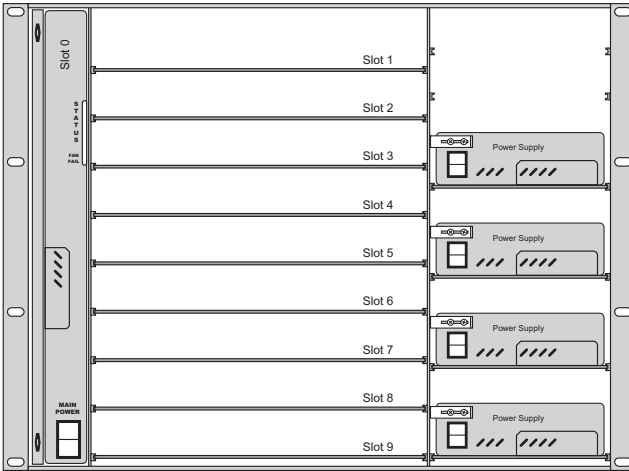


Figure 1 Board Slots in the Front of the Q/MD-X Frame

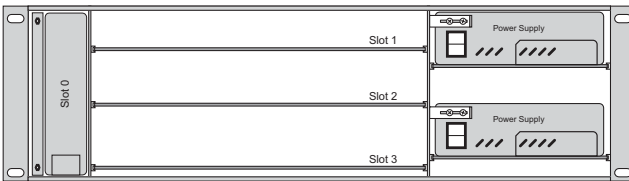


Figure 2 Board Slots in the Front of the Q/MD Frame

Rear Frame Boards Locations

The number of boards that are installed in the frame depends on the number of inputs and outputs you require. Refer to the following table (**Table 2**), and the illustrations of the QMD-X/MD-X (**Figure 3**) and QMD/MD (**Figure 4**) frames for information on which slot each rear frame board should be installed in.

Table 2 Rear Frame Boards

Slot	QMD-X	MD-X	QMD	MD
Slot A	Frame CPU Board	Frame CPU Board	Frame CPU Board	Frame CPU Board
Slot B			Video Output Board ^a .	Video Output Board ^a .
Slot C	Video Input Board	Video Input Board	Video Input/ Crosspoint Board	Video Input/ Crosspoint Board
Slot D	Video Input Board	Video Input Board	Video Input Board	Video Input Board
Slot E	Video Input Board	Video Input Board	Video Input Board or Video Output Board ^b .	
Slot F	Video Input Board	Video Input Board		
Slot G	Video Input Board	Video Input Board		
Slot H	Video Input Board	Video Input Board		
Slot I	Video Output Board	Video Output Board		
Slot J	Video Output Board	Video Output Board		
Slot K	Video Output Board ^a .	Video Output Board ^a .		
Slot L				
Slot M				

- a. Only a Multi-Definition Video Output Board (**4800AR-064**) can be installed in this slot to support the MultiDSK, Mix/DSK, or AuxKeys options.
- b. Only output BNCs **E9** through **E16** are available on a Video Output Board installed in **Slot E** of the QMD frame.

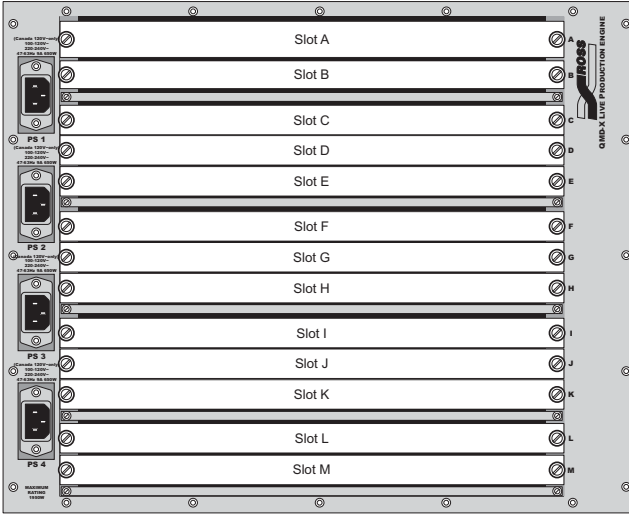


Figure 3 Board Slots in the Rear of the Q/MD-X Frame

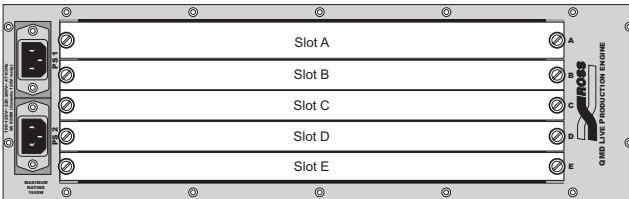


Figure 4 Board Slots in the Rear of the Q/MD Frame

Removing a Front Frame Board

To remove a front frame board, you must open the front door to the frame, identify the board you want to remove, and remove the board.



Warning Hazardous Voltage — *Hazardous voltages are present in the frame as long as any of the power supplies are connected to the AC power.*

Use the following procedure to remove a front frame board:

1. Back up any switcher setup configurations you have. Refer to your switcher manual for information on saving your setups.
2. Open the frame door to gain access to the front frame boards.
3. Locate the board you want to remove from the frame.
4. If a tie wrap has been used to secure the extractor tabs on the sides of the board, remove the tie wrap.
5. Locate the two locking tabs at either side of the board you want to remove.



Important — *If you remove a board that is providing a resource that is being used on-air, that resource will no longer be available when that board is removed.*

6. Grasp both locking tabs and rotate them towards you and out towards the outer sides of the frame. This unseats the board from the midplane.
7. Gently slide the board out of the frame and place it on a clean, flat, static-free surface.
8. Close the frame door when you are done removing boards from the frame.

This completes the procedure for removing a front frame board.

Installing a Front Frame Board

To install a front frame board, you must open the front door to the frame, identify the slot to install the board into, and install the board.

Use the following procedure to install a front frame board:

1. With the frame door open, locate the slot into which you are going to install the frame board.
2. Inspect the **Power Connector Blades** on the edge of the board (**Figure 5**) to ensure that they are not bent or damaged.

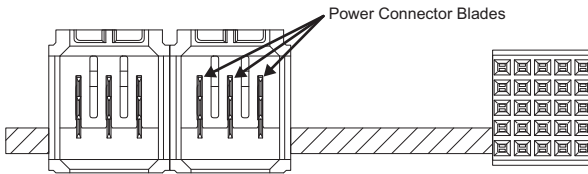


Figure 5 Power Connector Blade Inspection



Important — If the blades in the power connectors are bent or damaged, contact Ross Video Technical Support. Do not attempt to install a damaged board.

3. Align the board with the guide rails and push the board into the slot. When the board stops sliding freely, push firmly to seat the board, and secure it with the ejector tabs.



Important — If there is significant resistance when seating the board, remove the board from the frame and inspect the connectors for bent pins or other damage to the connectors.

4. The switcher upgrades the board you have installed, if required.
5. Locate the two small holes on the front edge of the board, near the extractor tabs. If you wish, you can further secure the board by threading tie wraps through these holes and fastening them around the extractor tabs.
6. Close the frame door when you are done installing boards into the frame.

This completes the procedure for installing a front frame board.

Removing a Rear Frame Board

To remove a rear frame board, you must identify the board you want to remove, label and remove all cables connected to the board, loosen the locking screws on either end of the board, and remove the board.

Use the following procedure to remove a rear frame board:

1. Locate the board you want to remove from the frame.
2. Label and remove any cables connected to the board so that they can be easily connected again.
3. Unscrew the **Locking Screws** located at either end of the rear panel of the board you want to remove (**Figure 6**).

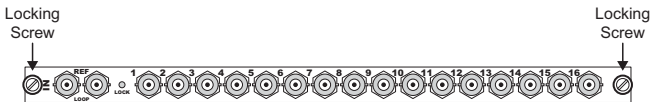


Figure 6 Locking Screws on Rear Frame Board



Operating Tip — If there is resistance when removing the board, it may be necessary to unscrew the **Locking Screws** on the board, or blank rear panel, above or below the board you want to remove.

4. Gently slide the board out of the frame and place it on a clean, flat, static-free surface.
5. If you are not installing a new board into the now empty slot, install a blank rear plate into the slot.
6. Ensure that all the **Locking Screws** have been tightened.

This completes the procedure for removing a rear frame board.

Installing a Rear Frame Board

To install a board into the rear of the frame, you must remove any existing board or blank plate and install the new board into the slot.

Use the following procedure to install a rear frame board:

1. Locate the slot for the board you want to install in the frame.
2. Inspect the **Power Connector Blades** on your board (**Figure 7**) to ensure that they are not bent or damaged.

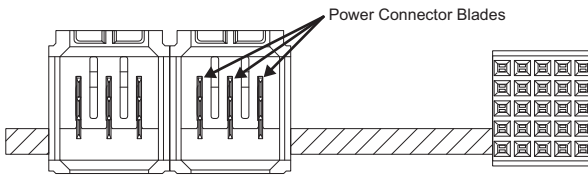


Figure 7 Power Connector Blade Inspection



Important — *If the blades in the power connectors are bent or damaged, contact Ross Video Technical Support. Do not attempt to install a damaged board.*

3. Align the new board with the guide rails and slide the board into the frame until the board stops sliding freely.
4. Unscrew the **Locking Screws** located at either end of the rear panel of the board, or blank spacer, above or below the new board you are installing.
5. Pull the board you just unscrewed the **Locking Screws** from out of the frame about $\frac{1}{4}$ " (6mm).
6. Push firmly and evenly on each side of the new board to seat it.



Important — *DO NOT use the **Locking Screws** to seat or force the board into the slot. If you have trouble seating the new board, contact Ross Video Technical Support.*

7. Seat the board above or below the new board, and screw in the **Locking Screws** on both boards.
8. The switcher upgrades the new board you have installed, if required.
9. Reconnect the cables to the board.

This completes the procedure for installing a rear frame board.

Notes

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Contact Us

Contact our friendly and professional support representatives for the following:

- Name and address of your local dealer
- Product information and pricing
- Technical support
- Upcoming trade show information

PHONE	General Business Office and Technical Support	613 • 652 • 4886
	After Hours Emergency	613 • 349 • 0006
	Fax	613 • 652 • 4425
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	Technical Support	techsupport@rossvideo.com
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