Dolby®

UXO/650 Upgrade Kit

Cat. No. 791 Digital Crossover

For CP650 Cinema Processor

Installation Instructions

Issue 2 Part No. 91833

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1 Introduction

The Cat. No. 791 Digital Crossover Board adds two- or three-way screen-channel crossover capability to a Dolby® CP650 Digital Cinema Processor. If the crossover is operated in two-way mode, the CP650 can support installations with five screen channels (Left Extra, or Le, and Right Extra, or Re).

To use this optional board, your CP650 must be equipped with a Cat. No. 790 Dolby Digital Surround EX™ Decoder/Digital Input Board, which provides the required mounting connectors.

Other CP650 boards required are:

- Cat. No. 774A System Controller Board
- Cat. No. 772A Analog Board

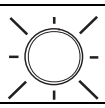
The non-A versions of these boards do not operate properly with the Cat. No. 791 installed.

The upgrade kit consists of:

- A Cat. No. 791 Digital Crossover Board
- Mounting hardware

Check CP650 Software Version

The CP650 operating system software must be version 2.1 or newer. With the CP650 operating normally, follow these steps:

	Press the left **menu** button multiple times until you reach **About this CP650.** **Note:** You can also press and hold the left menu button while rotating the front-panel fader knob clockwise to step through the menu items.
About this CP650: System v.2.1.x.x Cat.No.xyz installed Cat.No.xyz installed	**About this CP650** has three menu screens. The first screen displays the version number of the installed operating system software. If the version reads "2.0.x.x" (x = any number) or earlier, you must update the operating system software to version 2.1.x.x or newer.
	Press the illuminated format button to return to the top menu screen.

2 Handling PC Boards

This upgrade involves handling printed circuit boards. Many components are very sensitive to static electricity and can be destroyed if static charge on your body discharges through the component. You do not even have to touch the component to damage it. Before touching the components on the PC boards, ground yourself by rubbing the frame of the unit with each hand or wearing an earthing strap.

3 Installation Steps

1. Remove mains power from the CP650 by unplugging the rear-panel power cord.
2. Open the setup control panel access door.

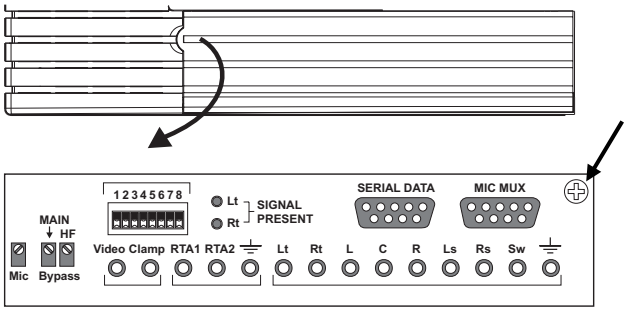


Figure 1 Setup Control Panel

3. Remove the front-panel mounting screw located in the upper right-hand corner of the setup control panel and carefully pull the front panel toward you to remove it.

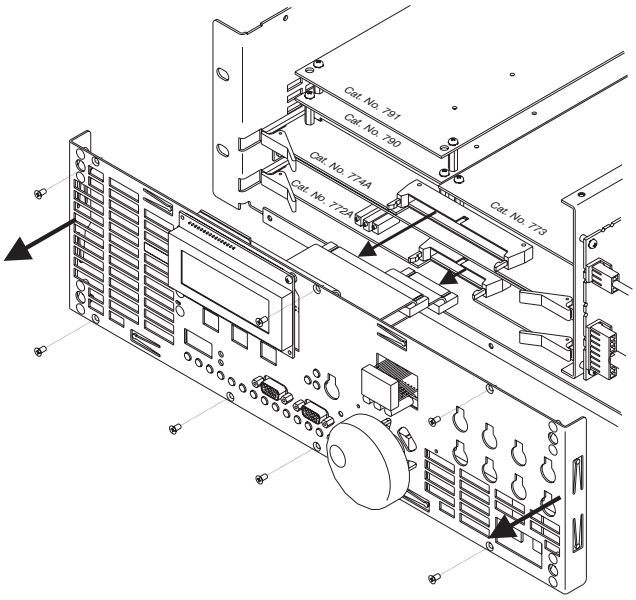


Figure 2 Remove Subpanel

4. Remove the seven subpanel mounting screws and carefully pull the subpanel toward you to remove it. Be sure to support the panel while you perform the next step.

5. Unplug the ribbon cables connected to the internal circuit boards.

6. Remove the upper circuit board (Cat. No. 774A) using the left and right board ejectors. Place the board on a flat surface (such as a platter disk). The board should be oriented with the ejectors closest to you.

7. Set the two jumpers, located on the bottom board, Cat. No. 772A, to "yes." Slide the board partially out and set these jumpers as shown:

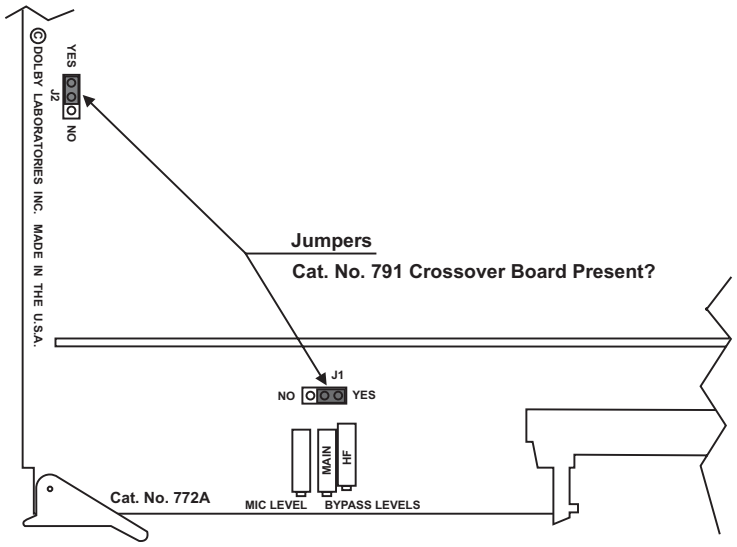


Figure 3 Cat. No. 772A Board Jumpers

8. If your CP650 is already equipped with a Cat. No. 790 board, remove the four screws that attach it to the Cat. No. 774A board, then unplug the Cat. No. 790.

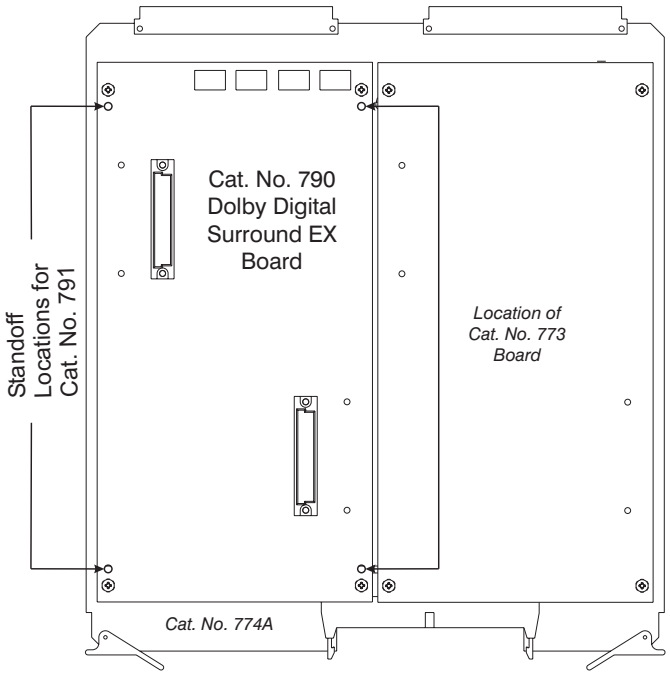


Figure 4 Standoff Locations for mounting the Cat. No. 791

9. Attach the four supplied standoffs to the Cat. No. 790 board using four of the eight screws supplied. Use the four holes that are closest to the middle of the board.

10. Reinstall the Cat. No. 790 board by aligning the two connectors as shown in Figure 4. Press down firmly on each side, making sure the connectors are fully seated. The board can be oriented only one way for the connectors to match.

11. Reinstall the four screws that secure the Cat. No. 790 board to the Cat. No. 774A board.

12. Remove the Cat. No. 791 Digital Crossover Board from its anti-static bag. The board contains a circuit in each high-frequency output channel (Left high, Right high, and Center high) to boost high frequencies. This allows the outputs to overcome the loss caused by placing the high-frequency drivers behind a perforated theatre screen. The circuit adds a maximum of 8 dB boost, starting at approximately 6 kHz. This boost, combined with the bulk treble and equalization adjustments, provides enough high-frequency gain to suit most applications. Since not all applications require this boost, jumpers are provided on the board to enable or disable it. The jumpers are preset at the factory to the **disable** setting.

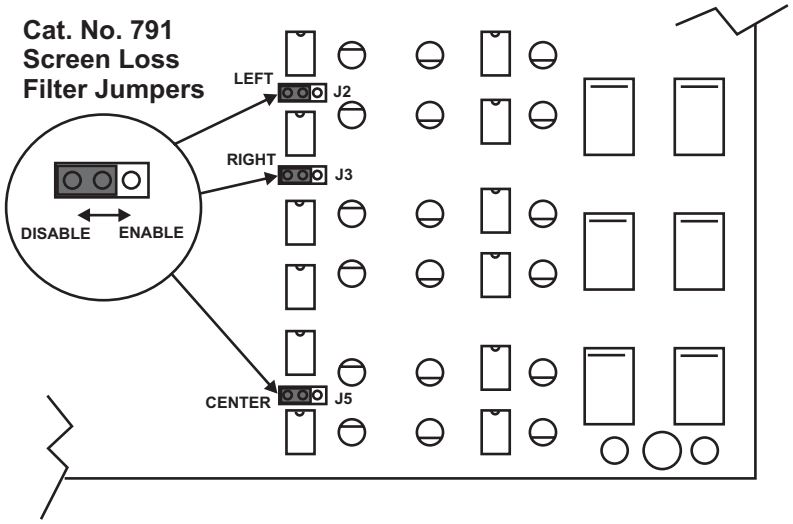


Figure 5 Cat. No. 791 Board Jumpers for Screen Loss HF Boost

13. Plug the board into the two connectors on the top of the Cat. No. 790. Press down firmly on each side, making sure the connectors are fully seated. The board can be oriented only one way for the connectors to match. Install the four supplied screws to secure the Cat. No. 791 board.

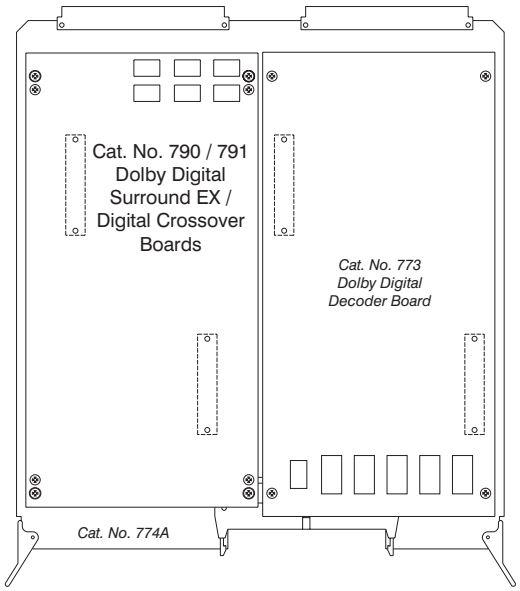


Figure 6 Installed Cat. No. 791 Board

14. Reinstall the assembly into the CP650. Push the board in firmly.

15. Reinstall the two ribbon cables, inner panel, and front panel.

4 Connections and Alignment

With the Cat. No. 791 board installed, the CP650 outputs to the mid- and high-frequency channels appear at the **Option I/O** connector on the rear panel of the CP650. The low-frequency output channels appear on the **Main Audio Output** connector.

If you wish to use the Le and Re channels, the crossover must be configured to Two-Way mode, and the Le and Re channels are available on the left mid and right mid output channels, respectively.

See the *CP650 Installation Manual*, issue 4 or higher, for connection details and crossover setup steps.

Table 1 Option Card I/O Connector Pinout with Cat. Nos. 790 and 791 Installed

Pin	Signal with Cat. No. 790 Installed	Additional Outputs with Cat. No. 791 Crossover Installed
1	S/PDIF 1 (L/R) Input +	
2	S/PDIF 2 (C/SW) Input +	
3	Back Surround Left –	
4	n.c.*	Center mid +
5	n.c.	Center high +
6	Back Surround Right –	
7	Chassis Gnd (for digital inputs) See Note	
8	n.c.	Right high +
9	n.c.	Right mid + [Right Extra +**]
10	Left Surround –	
11	Right Surround –	
12	n.c.	Left high –
13	S/PDIF 3 (Ls/Rs) Input +	
14	n.c.	Left mid + [Left Extra +**]
15	n.c.	Left mid – [Left Extra –**]
16	Back Surround Left +	
17	n.c.	Center high –
18	n.c.	Center mid –
19	Back Surround Right +	
20	n.c.	Right high –
21	S/PDIF 4 (Bsl/Bsr) Input +	
22	n.c.	Right mid – [Right Extra –**]
23	Left Surround +	
24	Right Surround +	
25	n.c.	Left high +

*** No connection.**

**** Available only when system is configured as a two-way crossover and Le/Re mode is enabled.**

Note: The screen (shield) of all analog output connections must be connected to the shell of the D-connector.