

Title: **RMX 2450 Turn-off Mute**
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Description

The mute circuit of the RMX2450 amplifier engages immediately when the amp is turned off and holds for about two to three seconds. However, it releases before the large reservoir capacitors fully discharge. As a result, the amplifier may pass distorted audio signal from inputs to outputs for a short time, during which the clip LEDs will glow.

This bulletin describes a procedure for updating the mute circuit that will extend muting until the capacitors inside the amplifier fully discharge.

Symptoms

About 2 to 3 seconds after the amplifier is turned off, both channels' clip indicators light, and distorted audio may appear in the speakers.

Instructions

Tools and materials required:

- Soldering iron with fine tip (recommended range 25 to 60 W)
- Rosin-core solder (60/40 or 63/37 eutectic type)
- Long-nose pliers
- #1 and #2 Philips screwdrivers
- Small diagonal cutters
- Desoldering equipment or solder braid
- RMX mute module (QSC part # SG-000103-AC)

Test equipment required:

- Two 8- or 4-ohm speakers
- Pink noise generator or any audio signals such as music, speech, etc.

Procedure: Installing mute module on RMX2450 amplifier

1. Disconnect the amplifier from AC and wait at least 10 minutes for internal voltages to bleed down. Remove the top cover.
2. Disconnect J204 and J257.
3. Of the two channel modules, remove the one closest to the power transformer; it is fastened to the chassis with six screws on the circuit board and two on the heat sink, under the amp.
4. Remove D9 from the solder side of the circuit board.
5. Unsolder and lift the cathode lead of D13 from the circuit board. Do the same with the anode lead of D8. With solder braid or desoldering equipment, clear the solder from the open holes. See Figure 1.
6. From the solder side of the board, insert the two pins of the small RMX mute module (Figure 2) into these holes. Pin 1 of the module's J1 goes into the hole at D13's cathode and pin 5 into the hole at D8's anode. Solder the pins to hold the module in place.
7. On the component side of the board, match the freed diode leads with the protruding pins of the mute module and solder them together. See Figure 3.
 Also solder the end of the module's ground wire to the negative side of C8, on the solder side of the board.
8. Check your work, then reinstall the channel module.

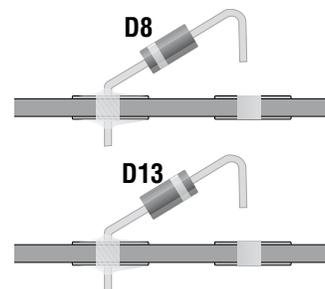


Figure 1. Lift the anode end of D8 and the cathode end of D13 from the circuit board. Leave the open holes clear so the mute module can be inserted from below.

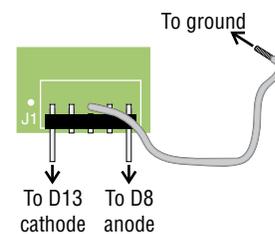


Figure 2. The mute module.

Procedure: Testing

NOTE: In order to avoid shorting any of the board's traces to the chassis standoffs, make sure the module is in place with all screws tightened and cables secure before proceeding with this test

9. Turn the gain controls of both amp channels fully counterclockwise.
10. Connect the output of each channel to a speaker. Apply an audio signal to both inputs.
11. Plug the AC connector into an outlet with the proper working voltage, and then turn the amplifier on.
12. Gradually turn up the gain to a low but comfortable listening level.
13. Turn the amplifier off, then watch the clip indicators and listen to the speakers for three minutes. If the speakers produce no noise and the clip indicators don't glow, the update has been done properly.

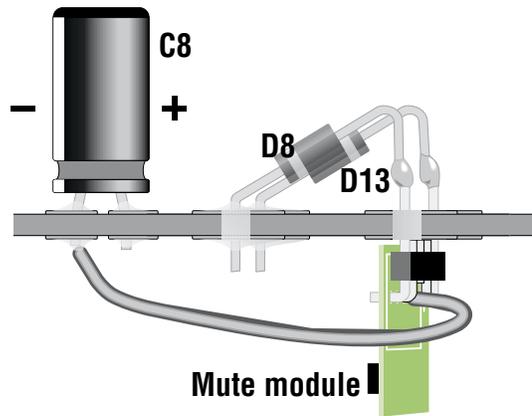


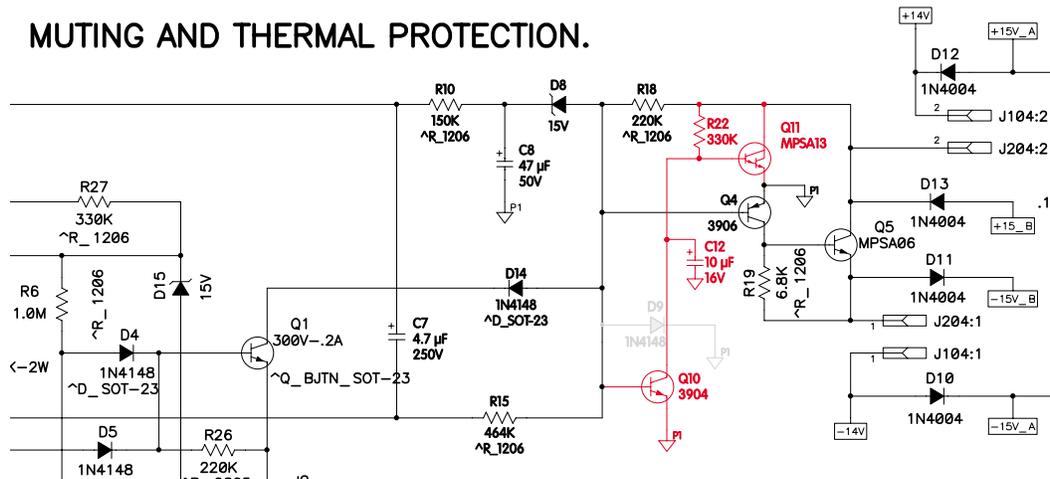
Figure 3. Mounting the mute module to the board.

Procedure: Finishing the repair

14. Turn the amplifier off and disconnect all cables.
15. Re-install the top cover. The amplifier can be returned to use.

MUTING AND THERMAL PROTECTION.

Figure 4. This section of the schematic shows the changes made by this modification: D9 is removed, and Q10, Q11, and R22 are added.



Contact information

If you need any further information regarding this service procedure, please contact QSC Technical Services at the addresses or numbers below.

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