

Revision History			
Rev	Description	Date	Approved

**NOTE:**

This is a Factory Approved Modification. When performed correctly, this modification will not affect the warranty status of the NCS-3240. Proper incorporation of this modification is the responsibility of the user. Damage caused by improper modification to the NCS-3240 is not the responsibility of NCS and is not covered under warranty.

Approval	Signature	Date	 5364 Valley Mist Trace Norcross, GA 30092 770-814-0683 ncsradio@ncsradio.com	Title
Engineering				3240, Modification for External Control Output
Design				
Product				
Manufacturing				

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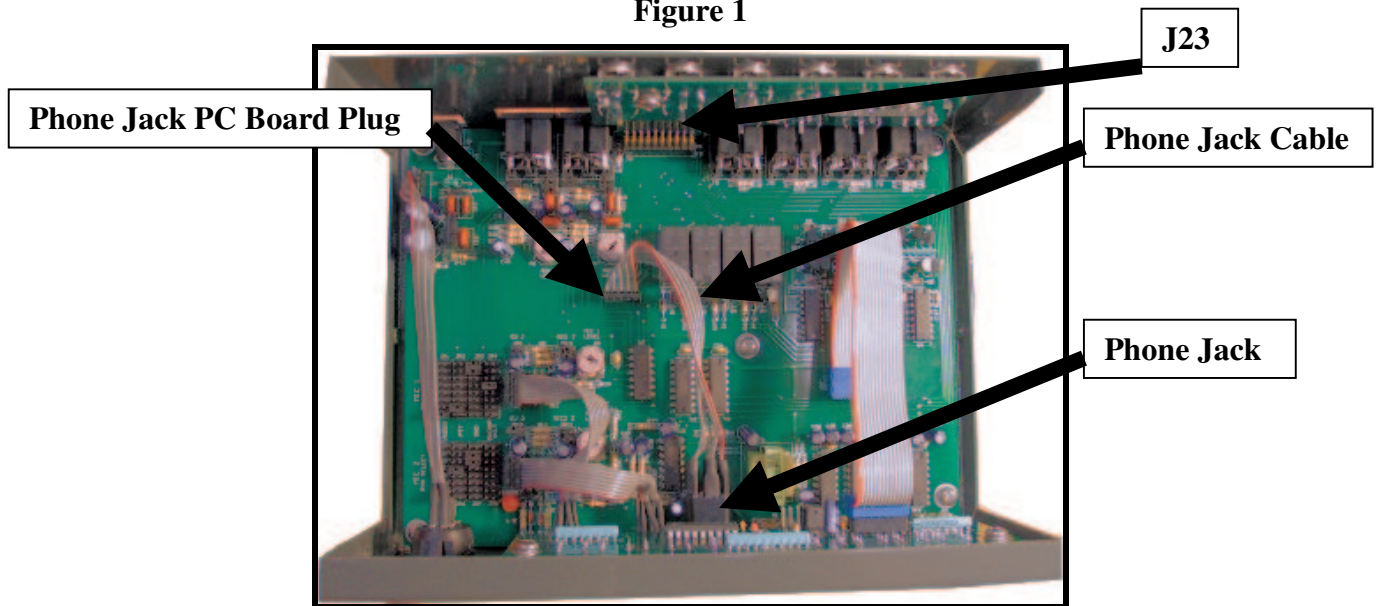
## 1.0 Purpose

This modification provides a dry contact relay output that is closed when a radio is selected. The output is obtained on the Left Audio input jack on the rear panel for the selected radio. **After this modification, the Left Audio channel is no longer available for use as an audio channel; only single channel (mono) audio switching using the Right Audio channel will be available.**

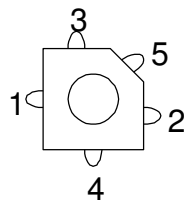
## 2.0 Modification Procedure

- 2.1 Remove the Multi-Switcher cover by removing the 3 screws on each side of the unit.
- 2.2 Unplug the Phone Jack PC Board Plug identified in Figure 1.
- 2.3 Remove the phone jack from the front panel using a nutdriver.
- 2.4 Unsolder the wires from pins 1 and 3 of the phone jack. See below for pin identification.
- 2.5 Solder these two wires together and insulate with electrical tape or heatshrink tubing.
- 2.6 Solder a short piece of insulated wire between pins 1 and 4.
- 2.7 Re-install the phone jack being sure to plug the PC Board connector in with the red wire toward the right-hand side of the unit.
- 2.8 Solder a short piece of wire between the center pin and one shell pin on J23 (Left Speaker Output). See Figure 2 for jack identification. Removal of the rear connector board is not necessary.
- 2.9 Replace the Multi-Switcher cover using the 6 screws removed in step 2.1.

Figure 1

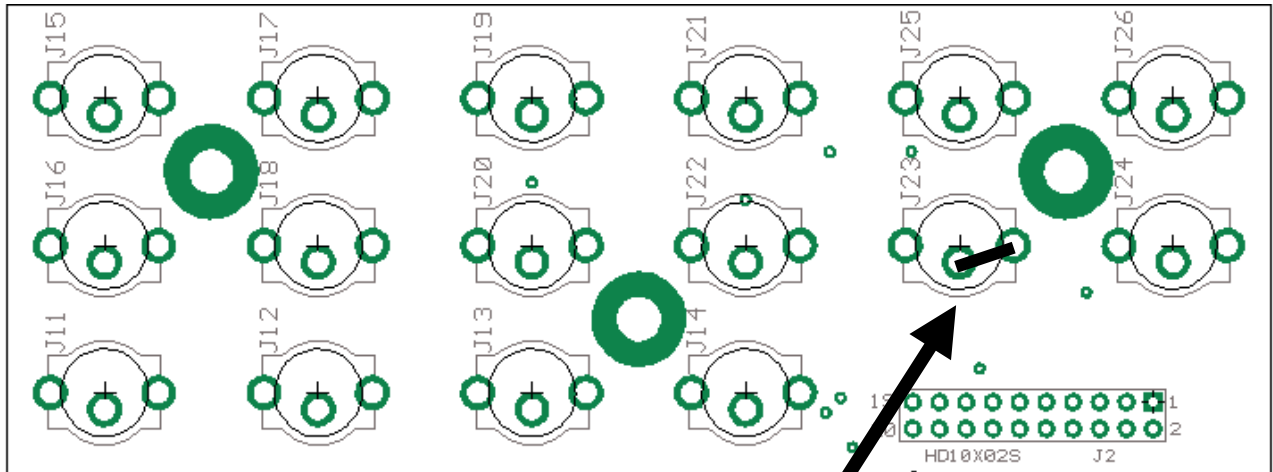


Rear View of Phone Jack



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Figure 2



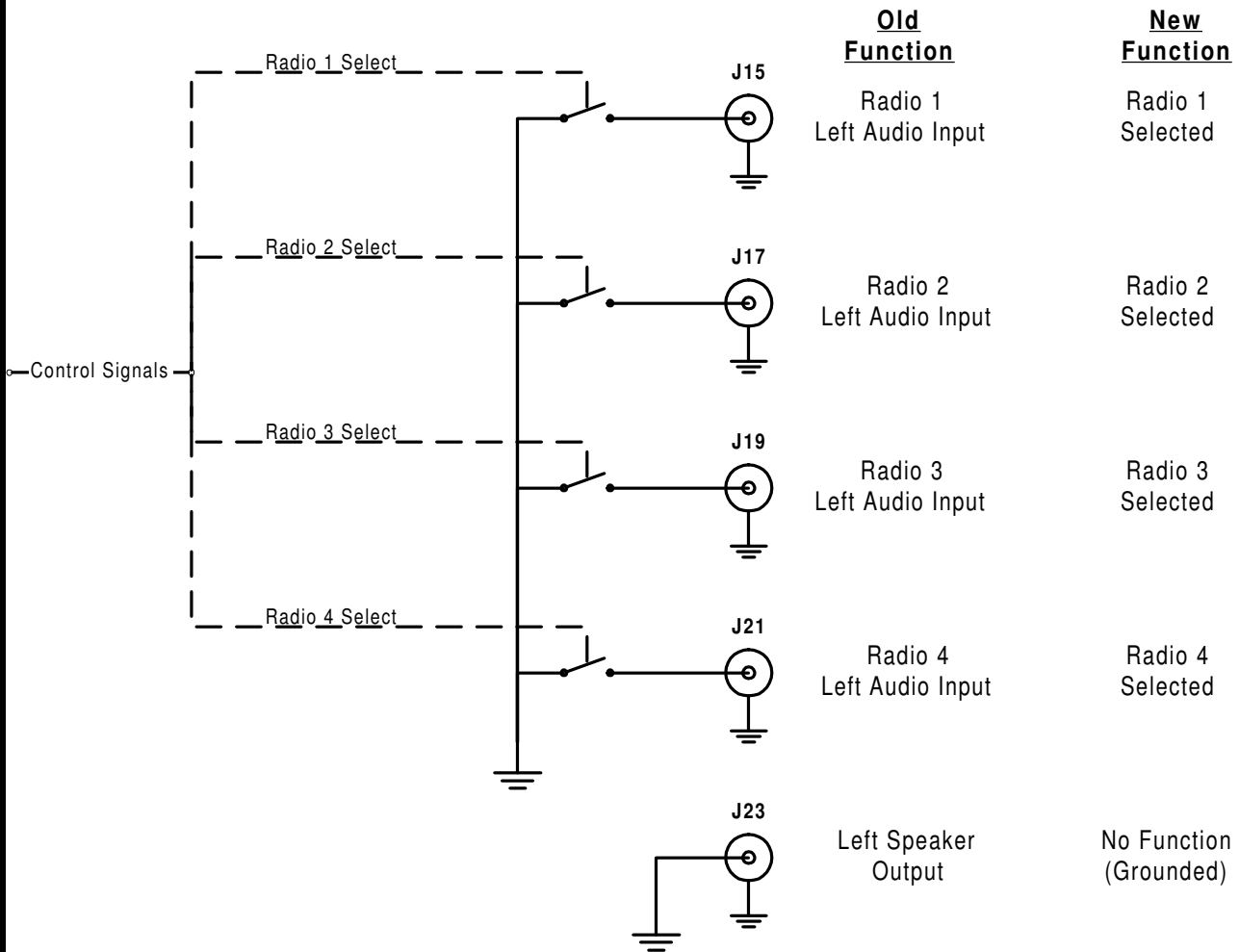
Add jumper wire on solder side of board here.  
NOTE: Connector side of board shown in this view. Put jumper on other side.

### 3.0 Operation

- 3.1 DO NOT USE ANY OF THE LEFT CHANNEL CONNECTIONS FOR AUDIO.
- 3.2 The front panel headphone jack now has Right Channel Audio on both channels so a stereo or mono headphone/headset can be used.
- 3.3 For any selected radio, the Left Audio Input (L) jack for that radio will be a closed contact. For unselected radios, the Left Audio Input (L) jack will be an open circuit.
- 3.4 These outputs can be used to drive relays or solid state (transistor, optoisolator, digital circuitry) switching circuits.
- 3.5 These outputs are not polarity sensitive.
- 3.6 Switching capacity on these outputs is limited to 2A @ 30VDC.
- 3.7 The schematic in Section 4.0 shows the new equivalent switching circuit.
- 3.8 **SINCE THESE CONTACTS SWITCH TO CHASSIS GROUND, VOLTAGES HIGHER THAN 30V MUST NOT BE USED DUE TO SAFETY CONCERNS.**

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## 4.0 Schematic



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