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## Technical Note #2 Non-selected Radio Monitoring/Muting and More Than Four Radios

This technical note discusses a possible way to use the NCS-3240 Multi-Switcher in a system that includes monitoring of non-selected radios with muting on PTT keying and use in stations with more than four radios.

### 1. Monitoring of non-selected radios with muting upon PTT keying.

Figure 1 shows a schematic of a “Mute Box” that could be built that would provide speaker output for all radios (regardless of selection by the Multi-Switcher). It has an input called “mute” that, when low, mutes all radio audio passing through the Mute Box.

Figure 2 shows a method of connecting the Mute Box to a Multi-Switcher. All radio speaker outputs pass thru the Mute Box. The mute function of the Mute Box is controlled by the PTT circuitry in the Multi-Switcher by using the foot-switch PTT In as a mute “output”.

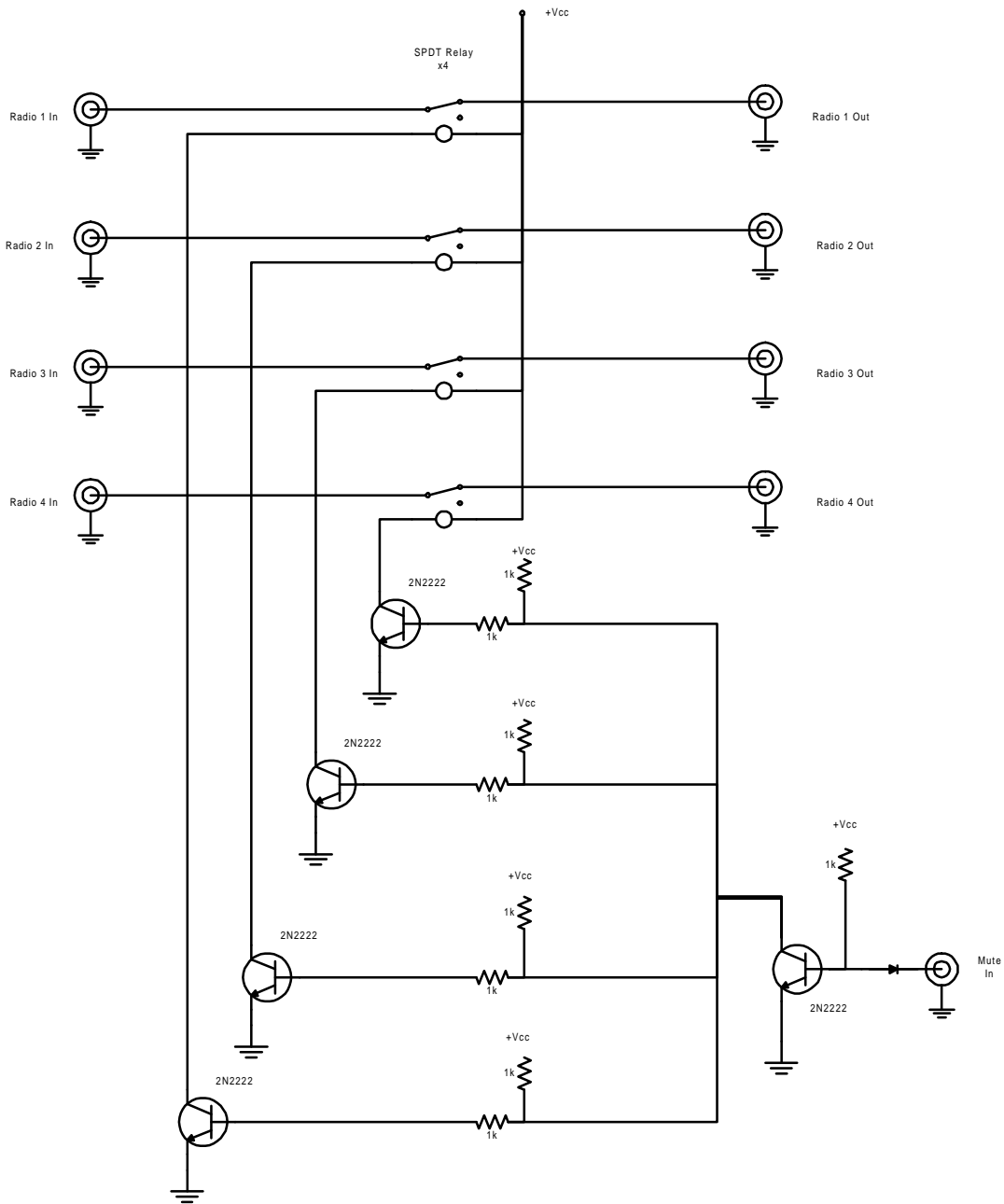
The Mute Box can be easily expanded to accommodate more than four radios by duplicating the circuitry for each channel as many times as needed.

### 2. Controlling more than 4 radios with Multi-Switchers.

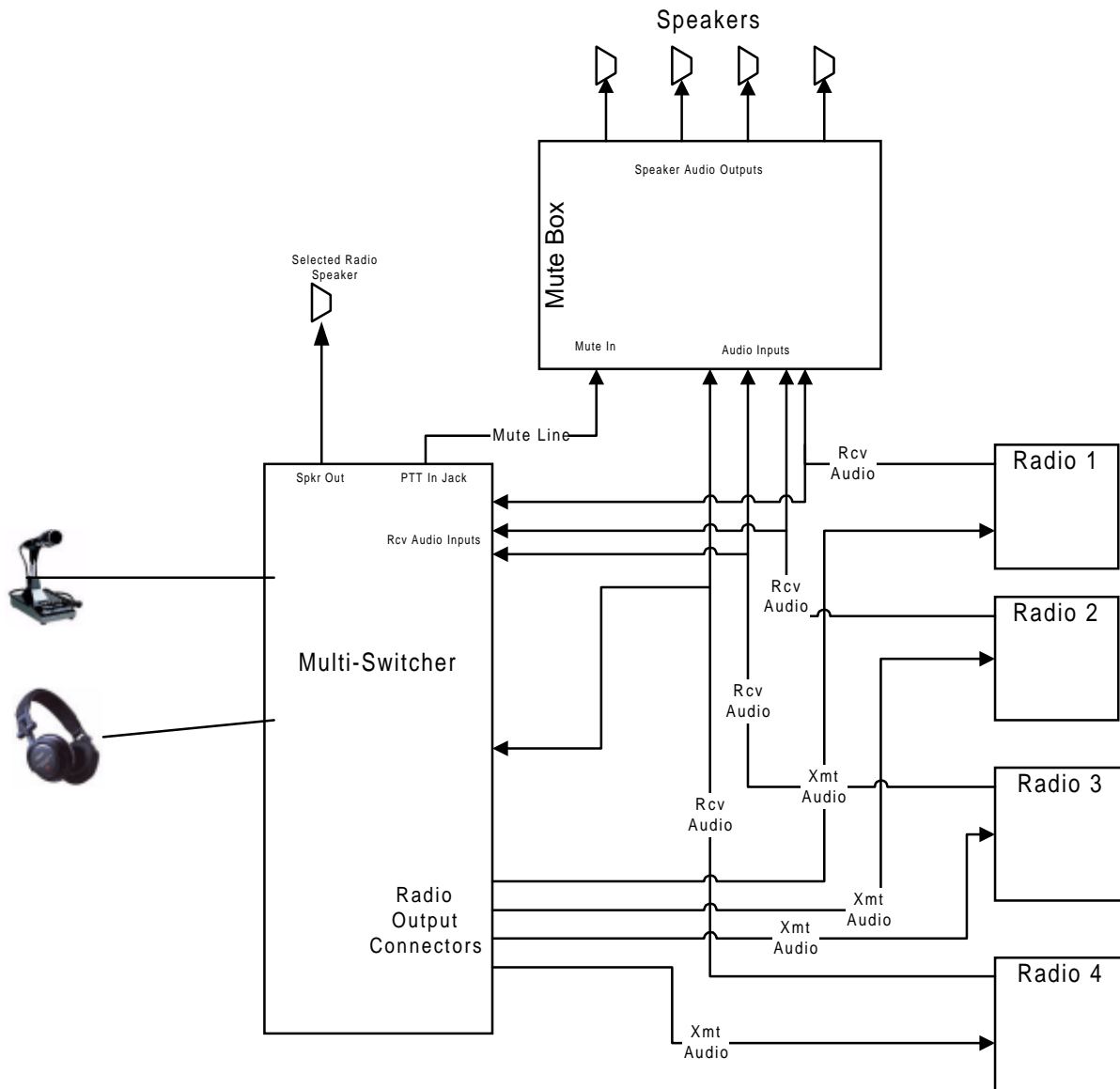
The Multi-Switcher is designed to handle up to four radios. For stations with more than four radios, two approaches are possible.

- Two or more Multi-Switchers can be used independently, each connected to multiple radios and each with its own microphone, keyer, headset, speaker etc.
- Two or more Multi-Switchers can be cascaded as shown in Figure 3. This approach allows the operator to use a single set of equipment, (mic, headset, keyer, etc.) with more than 4 radios. This hasn't actually been tried but should work due to the flexible design of the Multi-Switcher. No modifications to the Multi-Switchers should be needed; correct jumper settings and cable wiring should be able to adapt the Multi-Switcher to this cascaded arrangement.

**Figure 1  
Mute Box Schematic**



**Figure 2  
Application Using Mute Box**



**Figure 3**  
**Use of 2 Multi-Switchers**

