

Repeater Examples

The two examples that follow will probably cover the majority of the applications for the R*I*C*K. The step by step outlines and the printouts from the Radio Service Software (RSS) should allow the service technician to easily get a Radius "2-mobile" repeater "up and running".

Two configurations are discussed in this "example" section:

1. a cross band, bi-directional repeater
2. a single band, unidirectional repeater

Refer to the "Glossary" at the end of this manual for the definitions of any unfamiliar terms.

WARNING

The Radius "2-mobile" repeater is an **INTERMITTENT** duty repeater only. Extended periods of transmitter keying will result in a steady decrease of the output power. No harm to the radio will occur.

It is assumed that a Radio Interface Box (RIB) is connected to an IBM PC or equivalent and the RSS "MAIN MENU" is on the screen. If there are any questions concerning the RSS during the course of programming the radios, please refer to the "Radio Service Software Manual for Radius M100/M200 Mobile Radios", Motorola P/N 6880900Z20. The "ENTER" key on your keyboard may be marked with an arrow.

Cross Band, Bi-Directional Repeater

The following section describes the programming information for the radios used to assemble a cross band, bi-directional repeater. Each radio will receive and transmit on a single frequency in its respective band of operation. The configuration uses two Radius M200 series radios.

The particular application is similar to a PAC*RT system. A Fire Department desires local coverage at emergency scenes. The normal dispatch frequency for the Fire Department is 154.310 MHz (high-band VHF). The Department wishes to use 453.9875 MHz for the local coverage by UHF portable radios. The Time Out Timers of both of the radios will be set for 60 seconds. No signaling systems will be programmed into the radios. Normal receiver audio and transmitter microphone audio will be used for both radios.

- A) **The "receiver" radio:** Let's define the "receiver" radio as the normal mobile radio used in the

emergency squad. The mobile radio is a 40 Watt VHF M216. Mode 1 will be programmed to receive and transmit on 154.310 MHz. Carrier squelch (CSQ) operation should be programmed to allow monitoring the highband frequency from the UHF portable radios.

- 1) Connect the radio to the RIB and a suitable power supply. Turn on the power supply.
- 2) Press the F3 "GET SAVE" key to bring up the "GET / SAVE MENU".
- 3) Press the F2 "READ CODEPLUG" key.
- 4) When the computer has finished reading the codeplug, press the F10 "EXIT" key.
- 5) Press the F4 "CHANGE VIEW" key to bring up the "CHANGE/VIEW CODEPLUG MENU".
- 6) Press the F2 "RADIO WIDE" key.
- 7) Key in the desired "TIME OUT TIMER" time in seconds (060 for our example). Press the "ENTER" key.
- 8) Repeatedly press the "TAB" key until the "ACC. EXTERNAL" area is highlighted.
- 9) Repeatedly press the up arrow key to scroll through the accessories until "GENERAL I/O" appears. Press the "ENTER" key.
- 10) Press the F9 "OTHER ACCESSORY" key to view the "ACCESSORY CONNECTOR CONFIGURATION" screen.
- 11) It is a good idea to inhibit the radio for a short time after power-up; use the down arrow key to scroll the values in the "POWER-UP DELAY:" highlight until "4.301" appears. Press the "ENTER" key.
- 12) Repeatedly press the "TAB" key until the "FUNCTION #" column for "PIN NUMBER" 8 is highlighted.
- 13) Press the up arrow key to set the "FUNCTION #" to "01". Verify that a "NULL" function with an "OUTPUT" direction is present. Press the "ENTER" key. If a "LOW" active level description is present proceed to step 14. If the active level is "HIGH", then press the "TAB" key until the "HIGH" is highlighted under the "ACTIVE LEVEL" column. Press the up arrow to toggle to the "LOW" condition. Press the "ENTER" key.
- 14) Repeatedly press the "TAB" key until the "FUNCTION #" for "PIN NUMBER" 14 is highlighted.