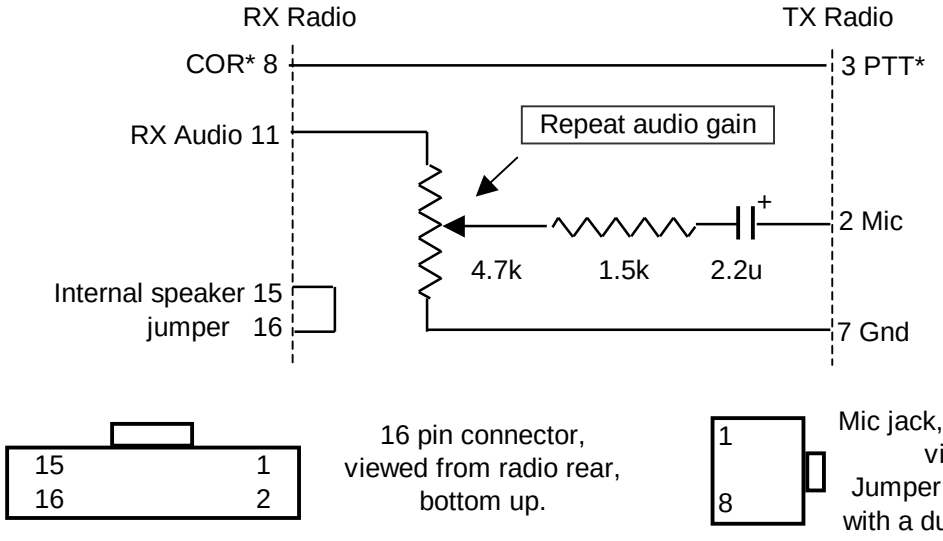
Simple repeater interface cable



16 pin connector diagram

The above diagram is identical to the relevant circuitry used in the Motorola RICK with respect to repeat audio. This cable is for use with 16 pin accessory connector radios. A cable for use with the MIC sockets instead, is shown below.

Pin numbers are for the 16 pin accessory connector as used on most Maxtrac and Radius mobiles. An internal jumper on the logic board should be placed on JU551B for squelched de-emphasized audio. The jumper is marked on the board.

For a bi-directional repeater, the identical circuit should be implemented in both directions.

If the accessory pins are programmable, then pin 8 (COR*) should be set for CSQ or CSQ with PL active low (*). Radios without programmable accessory pins default to COR* on pin 8.

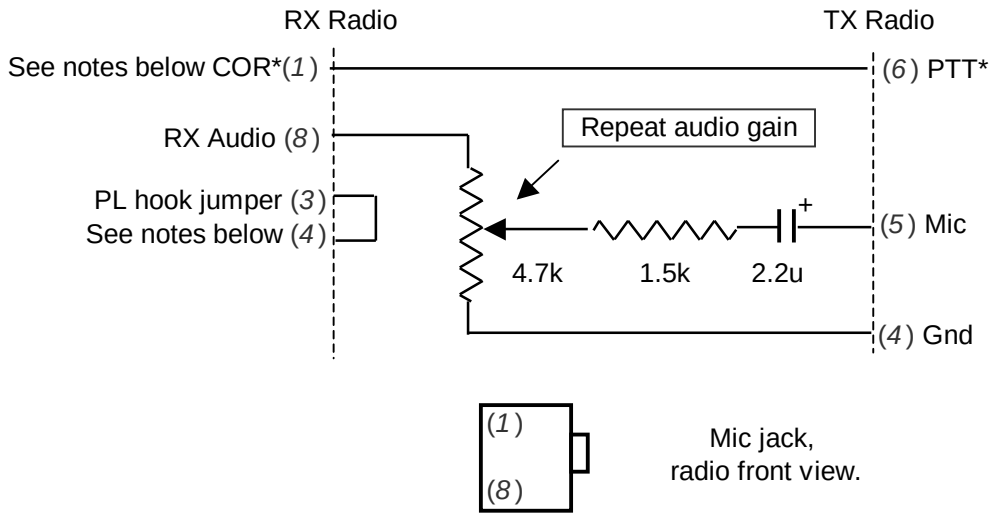
Pin 9 (emergency) should be disabled or programmed active low when no jumper is used between pin 7 and 9.

The repeat audio gain control in the cable should be adjusted for equal repeated audio compared to the input audio or 3 dB higher. Make this adjustment while not driving the audio into limiting. Like some place around half the maximum deviation.

The dummy plug with pin 3 jumpered to pin 4 should be inserted in the RX radio's MIC connector. This causes the radio speaker to open with correct PL only. This does not effect repeater operation; the repeater COR is only determined by the programmed settings. Pressing the MON button will not place the repeater in CSQ mode.

Make sure to set the time out timer in the TX radio to something reasonable.

Circuit component are not critical in value.



MIC connector cable diagram

This cable should not be used with GM300, M10 or M120 models. It is only intended for radios that do not have the 16 accessory connector.

Numbers in brackets are the equivalent signals at the front RJ45 MIC connector that appear on 16 pin accessory connectors with the exception of the COR* signal. When using the front MIC connector, the COR* signal has to be brought out to pin 1 of this connector. This signal is available in all models but not always in the same location because of differences in circuit board layout.

A good place to get COR* for the MIC cable is the collector of Q552, near the audio mute gate. Bring this point out to the logic board connector J8 pin 8 with a diode (diode cathode to collector of Q552). This pin should already be wired to pin 1 of the MIC connector in the control head.

Without the PL hook jumper, the radio will be in the CSQ RX mode. For cables using the MIC connectors, this jumper should be incorporated in the cable. Here the MON button will place the repeater in CSQ mode as opposed to the 16 pin version because COR* is taken from a different source.

Instead of crimping the RJ45 connectors, you could use a small Ethernet cable, cut it in two and place the components there.

The repeat audio adjustment is the same as for the 16 pin cable. Also make sure the time out timer is enabled.

Nand.