North Alabama Repeater Association

GE Master 2 Mobile Radio

Conversion to a Repeater Rev 1.0

W4XE 11/28/04

Preface

What we are going to cover:

- Conversion of GE Master 2 mobiles to full duplex for repeater backup and link radio usage

GE Master 2 Mobiles

We use the converted Mobiles as backups for the main repeaters. The radios are derated to 50% of normal power out for continuous duty repeater use and should have external fan cooling. The backup radios (146.94, 147.18, 145.33) are already tuned up, crystalled and full duplex converted. Just plug in the backup repeater controller (CAT-500) and 12 VDC 30A power supply and you are operational. Of course it takes a duplexer and antenna……

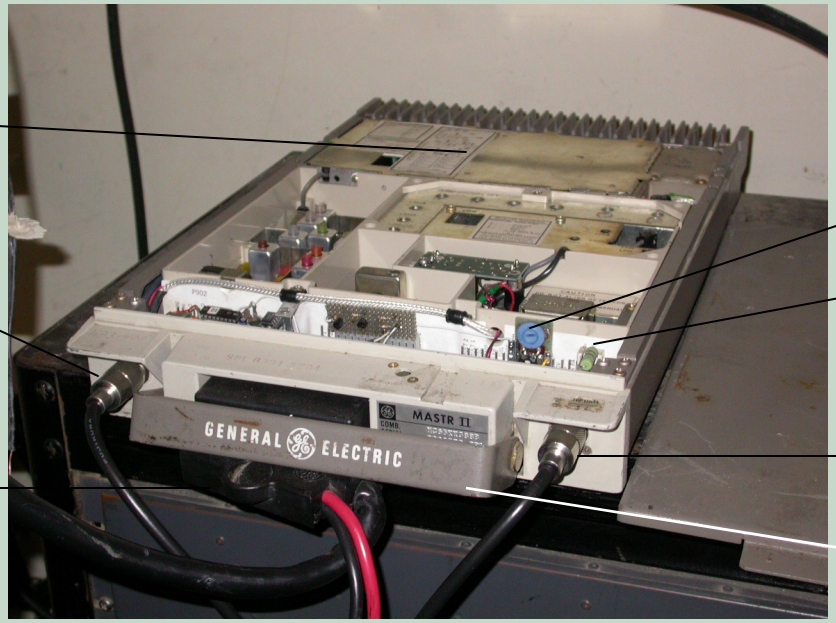
We also use these for link/voter radios as well. We start with a UHF mobile radio. The UHF RX is removed and a VHF receiver is inserted. This allows for a 146.34 receiver and a UHF link Transmitter in a compact package.

GE Master 2 Mobiles

There are two versions. The standard (shown on top) and the ‘E’ Extended series (shown on the bottom) that is double height.
The E-series allowed inclusion of a 2nd receiver. This may be removed and a ham Repeater controller and small mobile duplexer inserted.

GE Master 2 Mobile converted to full duplexer repeater.

This conversion shows an SO-239 in the key lock hole.
Connections are made through a cut control head cable.



PWR Adj pot under PA shield

RX cable

Power & Controller wiring

Volume/Squelch pots

8 ohm resistor (must load audio amp)

TX cable

Desirable ‘Brown’ Handled UHF unit

The GE M2 mobiles are 100% compatible with GE M2 Base/repeaters. The RX, TX, Audio/Sql and 40/75/110W PA’s assemblies are all swappable. The 2, 6, 10 mtr and 440 Mhz RX assemblies are identical and allow for cross-banding and remote voter receiver applications.

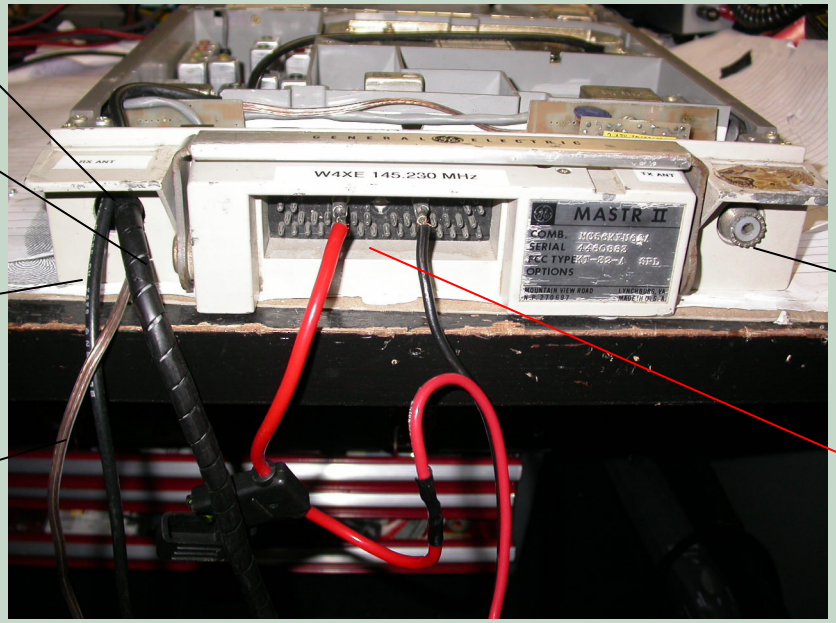
Front View of GE M2 Mobile

This conversion brings out the cables for RX & TX audio, cos, pl decode and PTT. The key lock is removed to give us an open hole

Spiral wrapped Cable goes to DB9 (to rptr cnltr)

Rx RF cable (Rg142) Goes to duplexer.

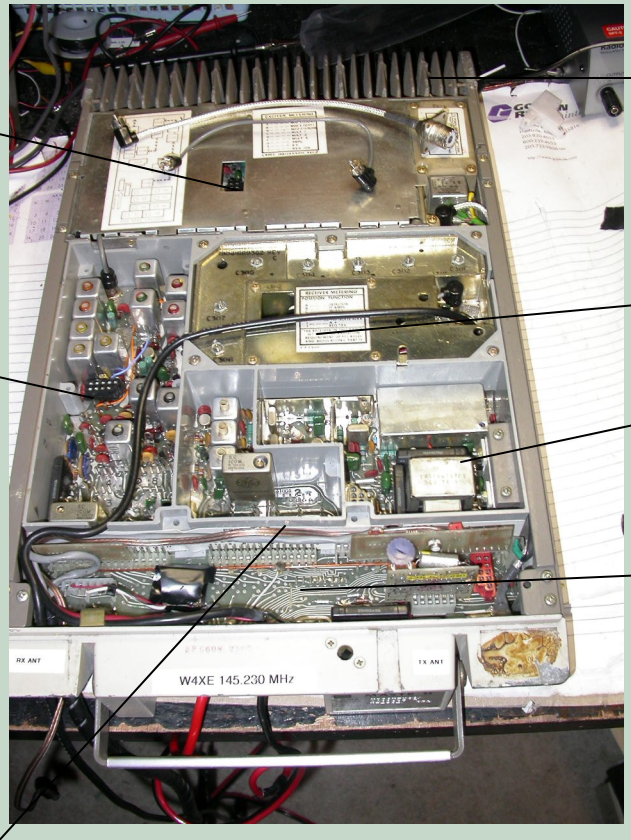
Sometimes I route out a cable w/rca jack for monitor spkr



Stock SO-239 is TX 110W output. Goes To Duplexer

Heavy 12VDC Red/Black power is fed into old Control head cable Area.

Top View of GE Master 2 Mobile



40-110W
RF PA

PA Cooling Fins

Receiver (L shaped)

Exciter

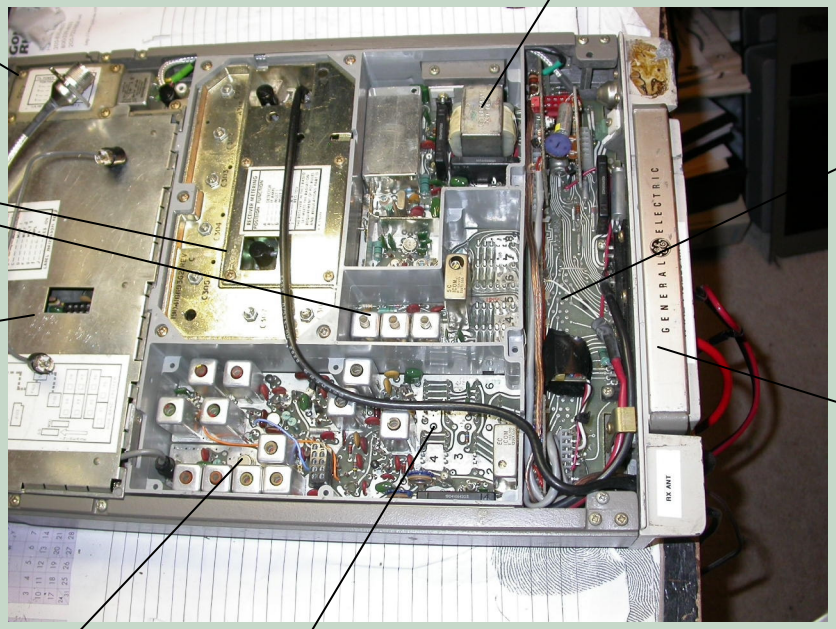
Audio/SQL board

'System Board'

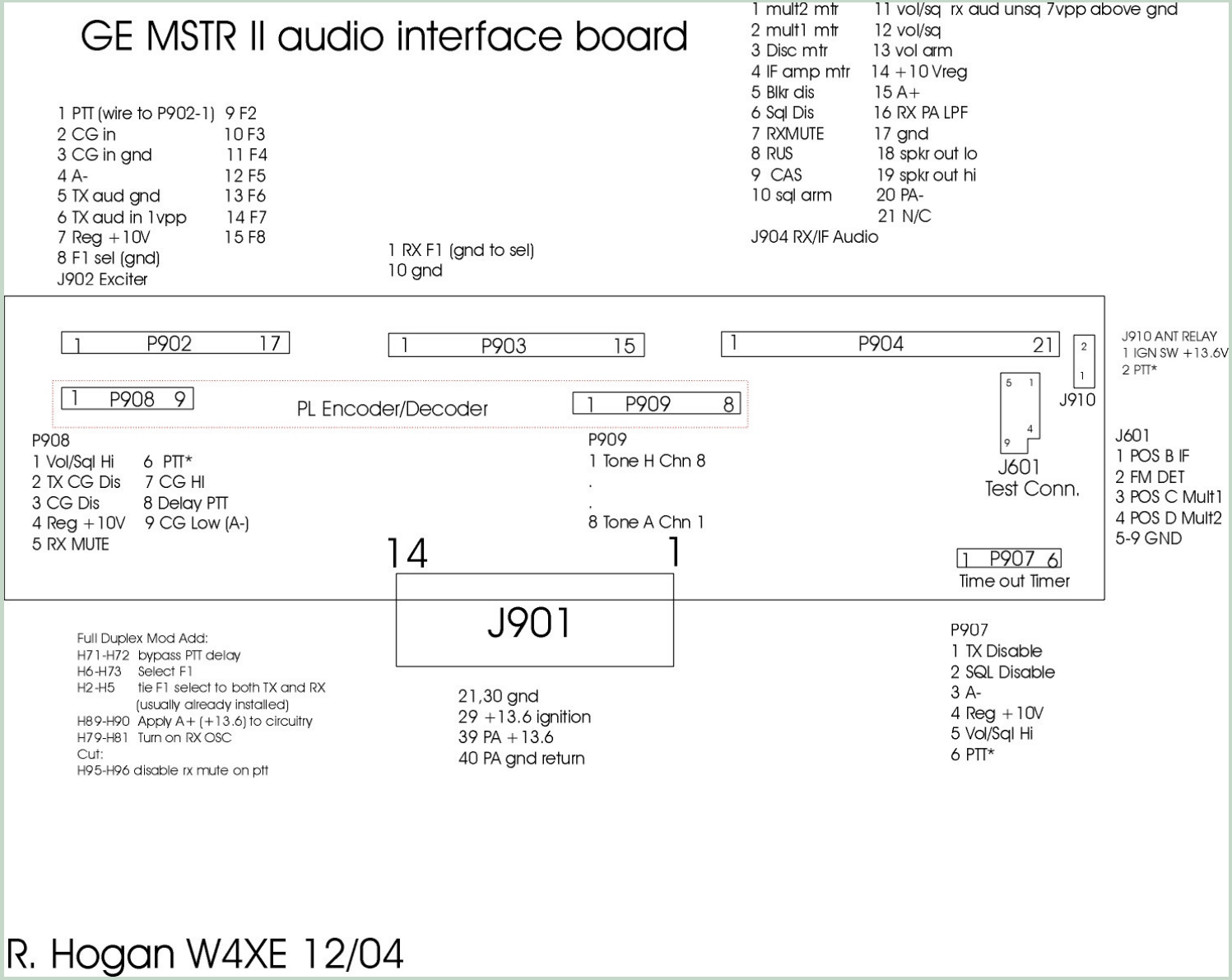
Connections for an external controller can be made on Sys board Molex connectors. A vol and sql pot must be added to replace the original front mount control head.

Note: Mobiles take one 5C and one EC channel element for tx and rx.

Another view of GE Master 2 mobile radio drawer



GE Master 2 System Interface Board



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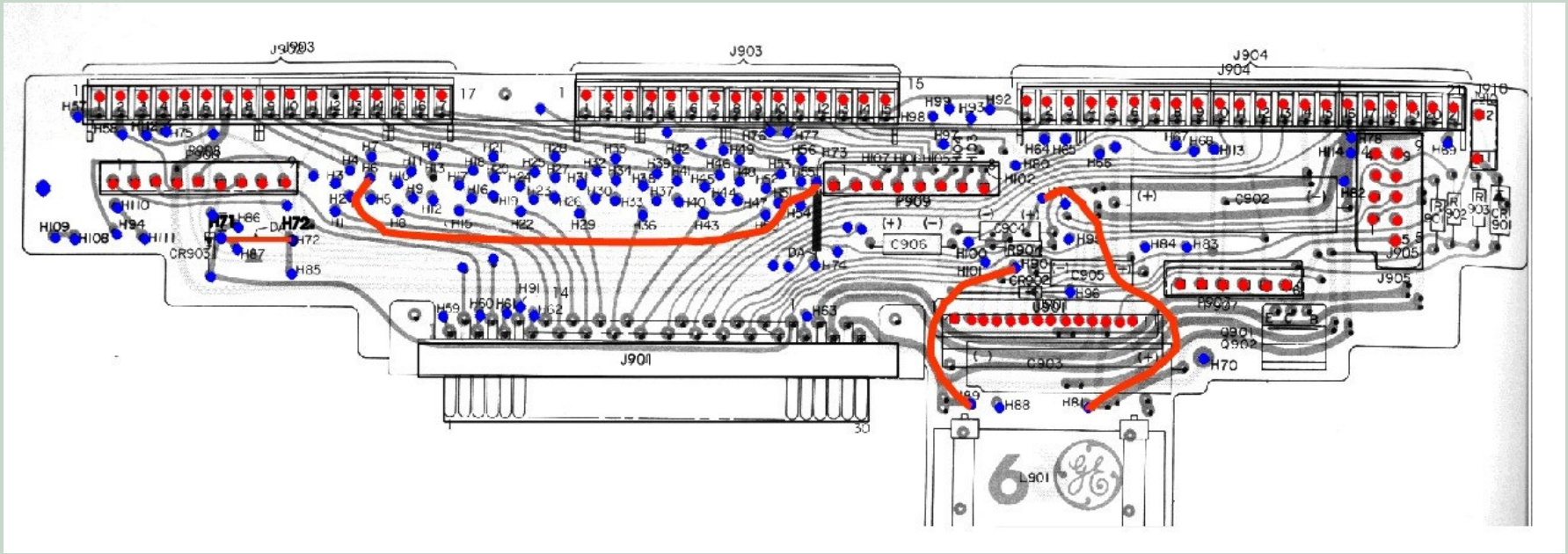
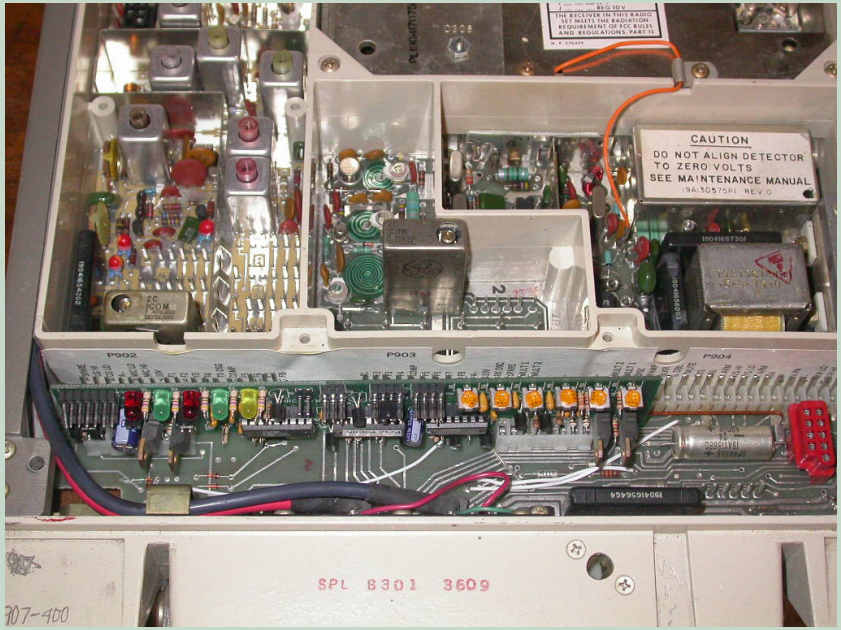
GE Master 2 Full Duplex Mod



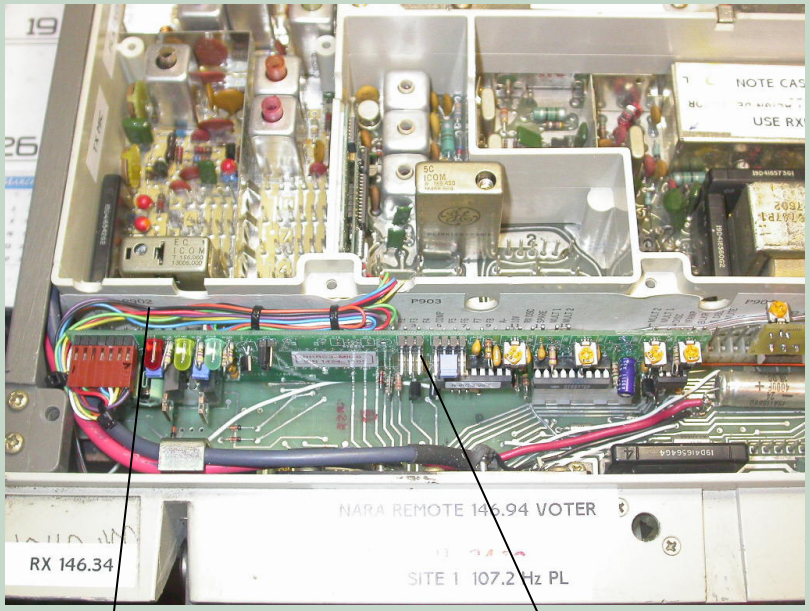
Only four added wires and one cut necessary to modify a simplex mobile radio into a full duplex repeater.

NHRC-4 installed in GE Master 2 UHF mobile radio



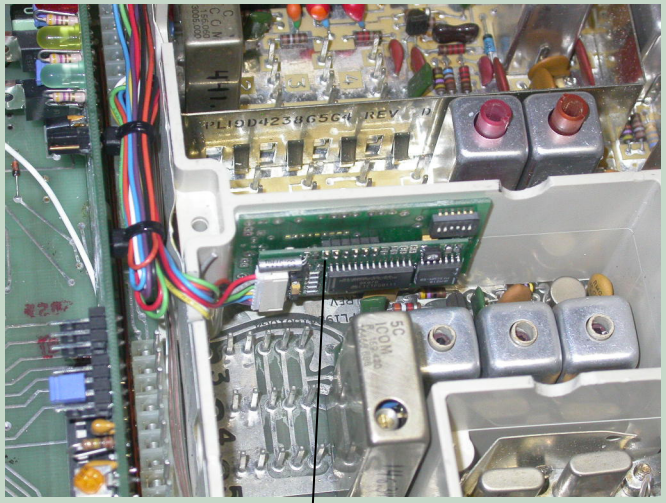
Compact drop-in controller for remote voter site or backup repeater. Mobile is modified for full duplex operation.

GE M2 mobile converted to a Repeater. Plug in NHRC-3M2 and TS-64 PL deck



Controller to TS64 cable

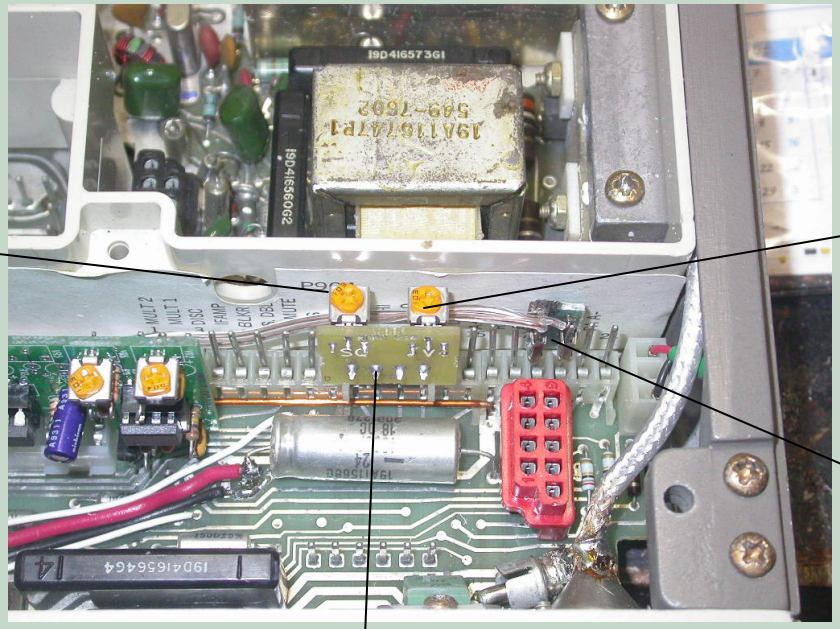
NHRC3M2



TS-64 mounted to side of housing

Volume / Squelch board

Squelch Pot



Volume Pot

Connector for
Remote speaker
or load resistor

Since the radio does not have the original control head, you Must provide a volume and squelch pot. NHRC makes a nice plug in board.