

TWO FREQUENCY
LOCAL CONTROL (FRONT PANEL)
FOR MODIFICATION OF FM 50A VHF RECEIVER-TRANSMITTER
(FOR UNITS WITH SERIAL NOS. 1101 AND UP ONLY)

FACTORY INSTALLED OPTION PART NO. PL 53130-G1
FIELD INSTALLATION PART NO. PL 53130-G2

INSTALLATION AND SERVICE INSTRUCTIONS



MARKETING & DISTRIBUTION
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The following installation and service instructions for modification of the basic FM 50A units with serial nos. 1101 and up, were primarily prepared for field installation of the kit. Units with serial nos. below 1101 cannot accept this kit due to major relocation of basic components.

INSTALLATION

Follow the step-by-step procedure below to install the two frequency local control kit into the basic FM 50A VHF receiver-transmitter.

- (1) Remove end of L121 (3 HY) and black wire from terminal strip near crystal socket. Remove other end of black wire from C191 on terminal board. Remove end of 1000 ohm R175 resistor and ground at crystal socket.
- (2) Remove terminal strip situated near crystal socket.
- (3) Remove R104 (330 ohms) and white wire from L103 and crystal socket and discard.
- (4) Remove winding and slug from coil L103. Retain form and lugs for tie point.
- (5) Disconnect from ground pins 8 and 6 of Y101. (crystal oven socket).
- (6) Remove black wire from #4 of Y101 to #9 of V113.
 - (a) Remove black wire from C183 to #9 of V113.
- (7) Disconnect C182 (10 mmf) across C183 crystal trimmer.
- (8) Remove the hex head screws from the foot of the terminal board.
 - (a) Lift terminal board gently from chassis and move closer toward V113. This is done to gain as much room as possible.
 - (b) The 8 pin crystal socket should have lugs bent down after performing steps nos. 2, 3, 4, 5, to allow as much room as possible for installation of the 2 frequency switch assembly.
- (9) Install switch assembly in the unit. It will fit if properly maneuvered.
- (10) Connect black wire to one side of C183 (this side is connected to pin #8 of V113A).
- (11) Connect green wire to the other side of C183.
- (12) The orange wire is connected to pin #9 of V113A.

- (13) The yellow wire is connected to pin #4 of Y101.
- (14) Connect blue wire to pin #6 of Y101.
- (15) Connect red wire to pin #8 of Y101.
- (16) Black wire is connected to pin #2 of Y101.
- (17) A white wire is connected to one end of C103 (270 mmf) which is connected to one terminal of the old L103 coil form.
- (18) Connect a .01 mf capacitor from pin #1 to pin #7 of Y101.
- (19) Replace end of L121 (step 1) to C191 on terminal board.
- (20) Replace the terminal board hold-down screws. (step 8).

SERVICE

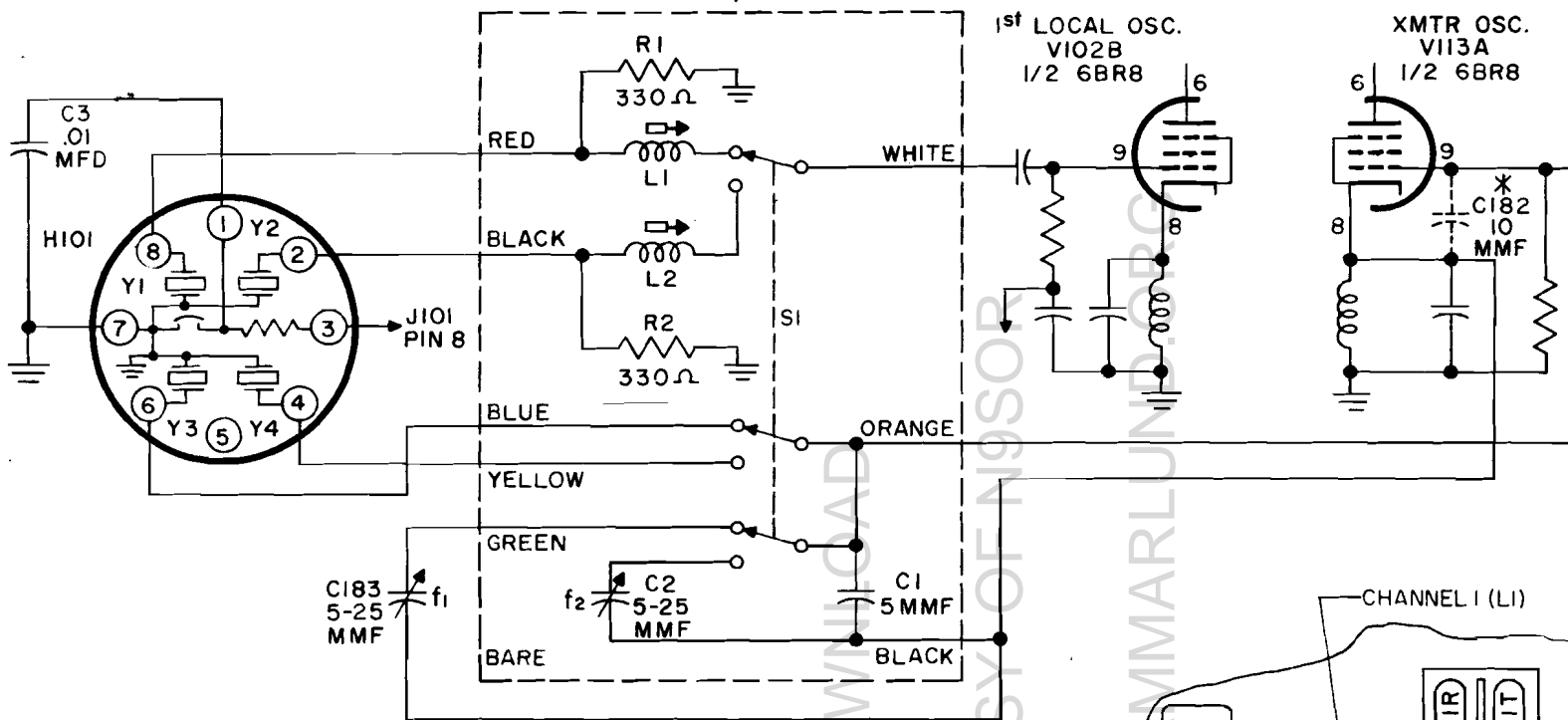
Channel Frequency Separation

It must be noted that selection of crystals must be such that maximum activity occurs as the oscillator is adjusted to on channel frequency. The original crystal oven can no longer be used, however the original crystal can be used in new oven for one of the channels.

Since the R. F. amplifier is highly selective, a frequency difference of not more than 750 KC between channels is recommended. Any frequency spread greater than this will decrease the sensitivity of the receiver beyond the specifications. Under certain conditions somewhat greater spread may be had by employing "compromise" tuning.

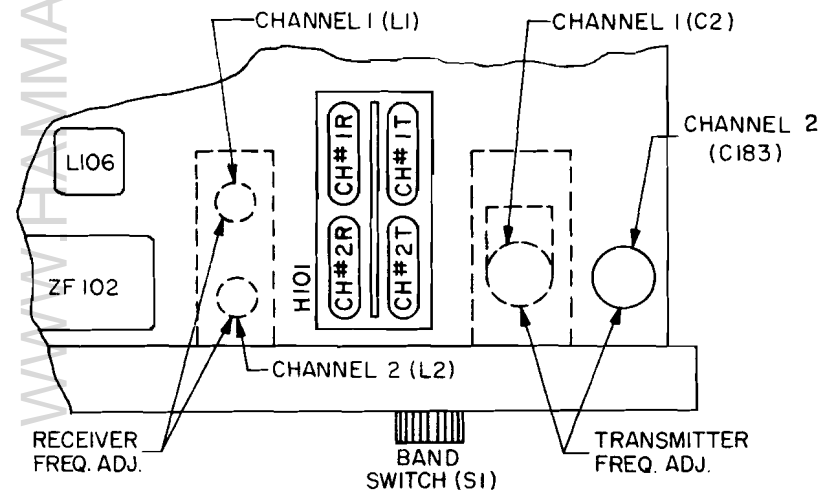
With reference to the transmitter a greater frequency separation is inadvisable as the final amplifier, while operating at maximum efficiency on one frequency will be off resonance on another, causing the tube to draw excessive plate current with the end result of shorter tube life. 750 KC frequency spread is maximum normally allowable.

It is recommended that alignment be made at the lowest operating frequency. This procedure offers less degradation to the operation of the equipment at the higher frequency than a reverse procedure if alignment at the higher frequency was initially made.



NOTES:

1. ALL RESISTOR ARE 1/2 W $\pm 10\%$ UNLESS OTHERWISE SPECIFIED.
2. * REMOVE & DISCARD.
3. THIS KIT CAN BE USED ONLY WITH FM50A UNITS WITH SERIAL NO'S 1101 AND UP.



2 FREQUENCY LOCAL CONTROL