

TMC SPECIFICATION

NO. S 1122

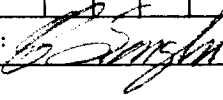
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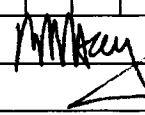
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OF 7

TITLE:

SPECIFICATIONS

FOR THE

KIT-305-3

TMC SPECIFICATION

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TITLE: SPECIFICATIONS FOR THE KIT-305-3

I. This modification affects all model TTR-10 (Receiver Part Only). It involves changes to the I.F. board A3189 to improve the gain stability, and AGC action.

II. LIST OF MATERIALS SUPPLIED:

| <u>ITEM NO.</u> | <u>SYMBOL</u> | <u>QTY</u> | <u>TMC PART NO.</u> | <u>DESCRIPTION</u> |
|-----------------|---------------|------------|---------------------|-------------------------|
| 1 | Z1601 | 1 | A4469 | IF ASSEMBLY |
| 2 | R1670 | 1 | RV111U103A | VAR. RESISTOR |
| 3 | R1603 | 1 | RC20GF103J | RESISTOR |
| 4 | R1669 | 1 | RV111U503A | RESISTOR, VARIABLE |
| 5 | | 1 | CK1218 | SCHEMATIC |
| 6 | C1603 | 1 | CM100-11 | CAPACITOR |
| 7 | R1602 | 1 | RC20GF101J | RESISTOR |
| 8 | | 1 | NP-362-71 | NAME PLATE |
| 9 | R1601 | 1 | RC20GF822J | RESISTOR |
| 10 | C1662 | 1 | CE105-200-15 | CAPACITOR, ELECTROLYTIC |
| 11 | R1671 | 1 | RC20GF562J | RESISTOR |

III. MODIFICATION INSTRUCTIONS

A. PREPARING THE UNIT FOR THE MODIFICATIONS:

1. Turn the power OFF.
2. Remove the top cover and the right side plate.
3. Loosen the screws on the IF board and remove T1601, C1603, R1603, R1601 and, if other than 100 ohms, R1602.

B. MODIFICATION ON THE A3189 BOARD:

1. Mount the 5.6K ohms resistor, Item 11, across diode CR1607.
Solder it.
2. Mount the variable resistor, Item 2, (R1670) in the two holes formerly occupied by R1634 and solder.
3. Mount the 8.2K ohms resistor, Item 9, in place of R1601 (if applicable) and solder.
4. Mount the 1600 pf. capacitor, Item 6, in place of C1603. Solder it.

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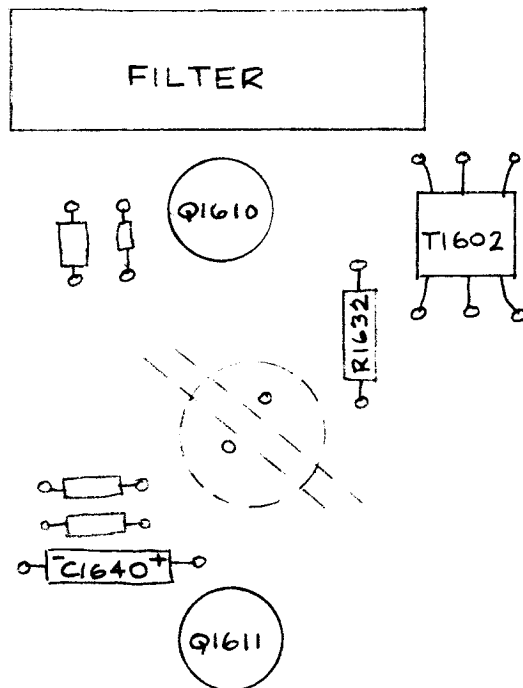
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5. Mount the assembly A4469, Item 1, in place of T1601 with the transistor, facing towards Q1602.

6. With a #56 drill, make two holes next to R1632 (10K ohms) approximately $\frac{1}{4}$ " center to center. (See Fig. 1)

**FIG. 1**

7. Connect a 50K potentiometer, Item 4, in holes drilled in step 6 and connect between the emitter of Q1601 and any point in the AGC line.

8. Mount the 100 ohm resistor, Item 7, in place of R1602. (Note: this step is not necessary if R1602 was found to be 100 ohms. See step 3.)

9. Connect positive side of 200 pf. capacitor, C1662, Item 10, to positive terminal of C1640, on the under side of IF printed circuit board and the negative terminal of C1662 to ground of filter. Solder.

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10. RECEIVER IF ALIGNMENT

a. Test Equipment Required:

1. HP Model 606A RF signal generator or equivalent.
2. HP Model 524G frequency counter or equivalent.
3. HP Model 410 VTVM or equivalent.
4. Ballantine Model 314 A.C. VTVM or equivalent.

B. Procedure:

1. Set the RCVR sideband switch to LSB and remove the 1.5 mc crystal Y1603.
2. Connect the Ballantine between the base of Q1602 and GND.
3. Connect the HP 606A RF GENERATOR between Terminals 1 and 2 on the RCVR IF board with the generator's output control at zero.
4. Set potentiometer R1612 on the RCVR IF board maximum counter-clockwise.
5. Set the generator frequency at 1.75 mc using the frequency counter, and increase the generator output to approximately 1.0 mv. The Ballantine should indicate some voltage present at the base of Q1602.
6. Adjust C1602 for a peak indication on the Ballantine meter. Peak reading should be 10 mv minimum.
7. Reduce generator output to zero and remove meter.
8. Replace the 1.5 mc crystal, Y1603.
9. Connect the Ballantine across terminals 10 and 11 on the RCVR IF board.
10. Set the HP 606A RF GENERATOR to 1.75 mc +1KC as indicated on the frequency counter.

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11. Check that the SQUELCH control is maximum counter-clockwise.
12. Increase the SIGNAL GENERATOR output for an indication on the Ballantine. Use the 10 mv scale on the meter.
13. Adjust C1655 and C1656 for a peak indication on the meter. Do not allow the meter reading to exceed 10 mv.
14. Set R1554 and R1555 maximum clockwise.
15. Set the SIGNAL GENERATOR output at 260 microvolts and adjust R1612 for a reading of 10 mv on the Ballantine. Remove meter.
16. Connect the Ballantine across terminals 3 and 1 on TB1501. The meter should read .78V with the VOLUME control maximum clockwise. Re-adjust R1612 to obtain this reading if necessary.
17. Set the VOLUME control maximum counter-clockwise and the SQUELCH control maximum clockwise.
18. Slowly rotate the VOLUME control clockwise. A 1 KC note should be heard through the speaker.
19. Remove HP 606A R.F. GENERATOR from terminal 1 and 2 of IF board, and connect generator to antenna BNC.
20. Insert an R.F. TTRR head, one which has already been tuned, and set the 606A to the TTRR head's receiving frequency.
21. Set 606A GENERATOR output to 1 mv and adjust R1670 (10K VAR. RESISTOR) to read approximately +1.65 V.P.C. on terminal 9 (AGC line terminal) of IF board. Use Simpson 260 or HP 410B to measure the AGC voltage.

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Ballantine should indicate .7V, slight adjustment of R1670 may be necessary to obtain .7V.

22. Increase 606A GENERATOR output voltage to 100 mv. Adjust R1669 to give you approximately 1.0 volt on the Ballantine V.T.U.M.

23. Return 606A GENERATOR voltage back to 1 mv and observe Ballantine meter indication. If meter indicates less than .7V readjust R1670 to give you optimum condition. It may be necessary to adjust back and forth between R1670 and R1669 until a satisfactory condition of AGC is obtained.

24. Remove the SIGNAL GENERATOR input connections.

25. Affix adhesive name plate, Item 8, to rear apron of TTR10.

