

KIT-175  
5821

DATE 22 April 1964		TMC SPECIFICATION NO. S - 821	B
SHEET 1 OF 3			
RRH COMPILED	<del>RRH</del> CHECKED	TITLE: MSR-5 MODIFICATION KIT KIT 175	
APPROVED <i>RH</i>			

A. PURPOSE

To provide instructions for modification of Sideband Adaptor, MSR-5 from an input of 455 kcs. to 500 KCS.

B. PARTS REQUIRED

<u>ITEM</u>	<u>QTY.</u>	<u>TMC PART NO.</u>	<u>DESCRIPTION</u>	<u>SYMBOL</u>
1.	1	TT122	1st Osc. Ass'y	Z3
2.	1	CR47A/U483.000KC	Xtal Unit, 483 kcs	Y1
3.	1	CR47A/U517.000KC	Xtal Unit, 517 kcs	Y2
4.	1	NP362-21	Identification Plate	
5.	1	CK734	Schematic Diagram	
6.	1	CM15F101J03	Capacitor, 100 pf	C37
7.	1	RC20GF101J	Resistor, 100 ohms	R72
8.	1	RC20GF104J	Resistor, 100K ohms	R47

C. INSTALLATION INSTRUCTIONS

1. Unsolder and remove First Oscillator Assembly, A1387, (Z3) and replace with TT122 (Item 1).
2. Remove crystal oven P0158-1 (HR1). Take out CR47/U-.4380P (Y1) and replace with CR47A/U483.000KC (item 2).
3. Remove CR47/U-.4720P (Y2) and replace it with CR47A/U517.000KC (item 3)
4. Replace crystal oven in socket XHR1.
5. Remove 150 pf mica capacitor CM15C151K (C37) and replace with 100 pf capacitor, CM15F101J03.
6. Insert 100 ohm resistor RC20GF101J (R68) in series with connection to Pin 6 of 1st Oscillator Tube V7.

DATE 22 April 1964  
SHEET 2 OF 3

TMC SPECIFICATION NO. S - 821

B

RRH  
COMPILED

CHECKED

TITLE: MSR-5 MODIFICATION KIT

KIT-175

APPROVED

7. Remove RC20GF823K, 82,000 ohm resistor (R47) from reactance modulator circuit and substitute RC20GF104J, 100,000 ohms (Item 8).

8. Affix identification plate, NP362-21 (Item 4) to the front panel.

D. TEST PROCEDURE

1. It is assumed that the MSR-5 was operating properly before conversion. The tests listed below are intended to verify correct installation of changes to the first oscillator circuitry.

2. Variable Oscillator Test

- a. Energize MSR-5 and allow crystal ovens to warm up (about 1/2 hour). Set MANUAL/XTAL switch to MANUAL.
- b. Set sideband switch for UPPER.
- c. Measure bias on Pin 1 of V7 with a-c vtvm. Value should be approximately -2 to -3v.
- d. Tune RF Signal Generator to 517 kcs and connect to Pin 7 of V3. Connect oscilloscope to Pin 5 of V3.
- e. Place reactance balance and bandsread controls in mid-position.
- f. Tune core of Z3 for zero beat indication on the oscilloscope.
- g. Switch sideband to LOWER.
- h. Measure bias on Pin 1 of V7 as in Step c, above.
- i. Set signal generator on 483 kcs and tune trimmer, C29, for zero beat indication on the oscilloscope.

3. Crystal Oscillator Test

- a. Turn MANUAL/XTAL switch to XTAL.
- b. Measure bias on Pin 1 of V7 should be between 5 and 5.5v for both UPPER and LOWER positions of sideband switch.

DATE 22 April 1964		TMC SPECIFICATION NO. S-821	B
SHEET 3 OF 3			
RRH COMPILED	CHECKED	TITLE: MSR-5 MODIFICATION KIT KIT-175	
APPROVED			

c. Switch sideband set for UPPER; tune signal generator for zero beat as indicated on oscilloscope. Should be 517 kcs.

d. With sideband set for LOWER; tune signal generator for zero beat as indicated on oscilloscope. Should be 483 kcs.

