

DATE 12-1-64

SHEET 1 of 7

TMC SPECIFICATION NO. S183

E

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TITLE:

QA-1

APPROVED

Complete Instructions For The Production Testing
Of Model RSM-3

DATE <u>12-1-64</u>		TMC SPECIFICATION NO. S 183	E
SHEET <u>2 of 7</u>			
RBY COMPILED	CHECKED	TITLE: PRODUCTION TESTING FOR RSM-3	
QA-1 APPROVED			

Table of Contents

1. Purpose and Description	Page 3
2. Test Equipment Required	Page 3 & 4
3. General Instrument Layout	Page 4
4. Initial Rapid Checks	Page 5
5. Test Instructions	Page 5
6. Test Sequence and Procedure	Page 5 & 6
7. Test Report Sheet	Page 6

DATE 12-1-64

SHEET 3 of 7

TMC SPECIFICATION NO. S 183

E

RBY
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TITLE: PRODUCTION TESTING OF RSM-3

QA-1 APPROVED

1. (a). Purpose:

The Model RSM-3 is a component used in the transmit portion of the RCR system. Upon receiving the output of the remote control units (RSC) and the filter units (RSF) it mixes, amplifies and transmits the composite signal on a 600 ohm line or to a transmitter of a VHF link.

(b). Description:

The primary function of the RSM-3 is accomplished in the input network to the amplifier. This network being linear does not effect the character of the individual or composite tones. The amplifier which follows also must not introduce distortion. This is done by the use of balanced push-pull input and output circuits with a means of adjusting for any unbalance due to balanced or unbalanced output. The resultant output signal is monitored by the use of a db meter which gives a visual means of checking the output level. Since the amplifier has a constant gain the output level can be adjusted by the use of an input control mounted on the front panel.

2. Test Equipment Required:

- (a). 1 Audio Signal Generator: Hewlett Packard 200 CD or Equivalent.
- (b). 2 V.T.V.M. (audio type) : Ballantine Model 310A or Equivalent.

DATE 12-1-64

SHEET 4 of 7

TMC SPECIFICATION NO. S 183

E

RBY
COMPILED

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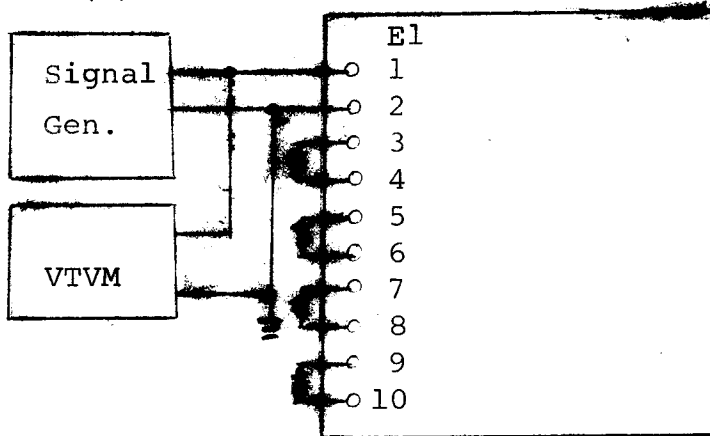
TITLE: PRODUCTION TESTING OF RSM-3

QA-1 APPROVED

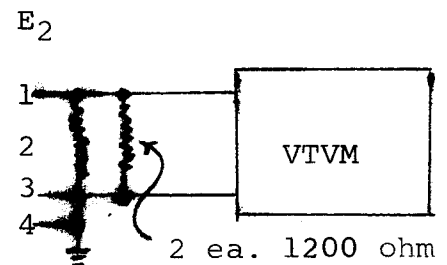
- (c). 1- V.T.V.M. (D.C. type) : Hewlett Packard 410B or Equivalent.
 - (d). 4- 680 ohm \pm 10 % 1 watt composition resistors
 - (e). 2- 1200 ohm \pm 5 % 1 watt composition resistors
 - (f). 1- Distortion Analyzer: Hewlett Packard Model 330C
 - 1- TF-133 Transformer (used in RSM-3)
 - 1- 22K ohm \pm 5 % $\frac{1}{2}$ watt resistor
- (or)
- (g). 1- Distortion Meter: Barker & Williamson

3. Instrument Layout:

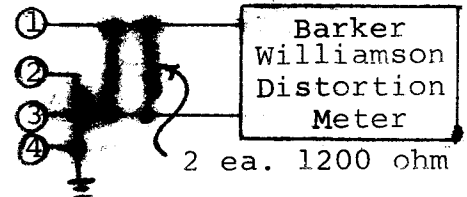
(a).



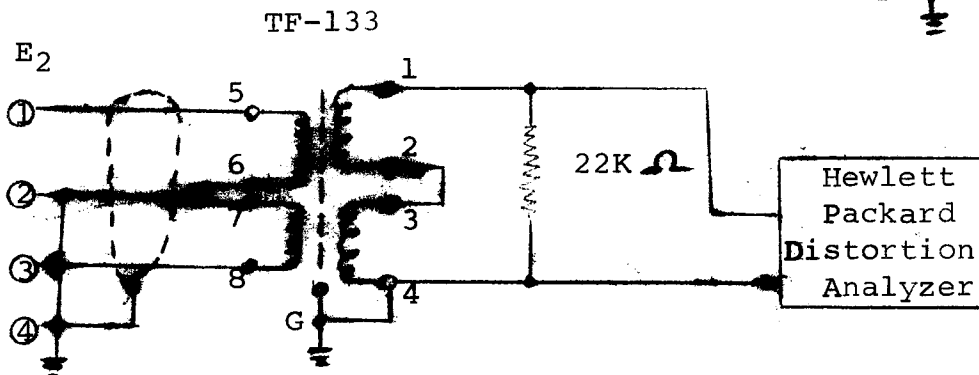
(b).



(d).



(c).



DATE <u>12-1-64</u>		TMC SPECIFICATION NO. S 183	E
SHEET <u>5 of 7</u>			
RBY COMPILED	CHECKED	TITLE: PRODUCTION TESTING OF RSM-3	
QA-1 APPROVED			

4. Initial Rapid Checks:

- (a) Set and maintain the line voltage at 115 volts throughout the entire test.
- (b) Observe if pilot light is on.
- (c) Make quick check of B+ at pin 5 of XV4 to determine if power supply is wired correctly. (Should be +210 volts \pm 5 volts.)

5. Test Instructions:

- (a) Proceed as outlined in Test Sequence and Procedure (part 6 to follow.)
- (b) Fill in blanks on Test Data Sheet, rejecting those units which do not meet the following specifications.
- (c) Sign Data Sheet and submit it to your supervisor.

6. Test Sequence and Procedure:

Test 1. Power Check.

Using a V.T.V.M. check B+ on each end of R22.

B+ before R22: 250 to 280 volts

B+ after R22: 205 to 215 volts

Test 2. Amplifier Check (unbalanced output).

- (a). Set up as shown in part 3(a) and 3 (b).
- (b). Set balance control near its midpoint.
- (c). Rotate Output Level control (front panel) fully clockwise.
- (d). Increase signal generator output to give .78 volts or \emptyset DBM on the output AC V.T.V.M. at 1000 cps.
- (e). Measure input voltage across 1 & 2 of E1. Acceptable reading: .02 to .1 volts. Record results on Test Data Sheet.

DATE <u>12-1-64</u>		TMC SPECIFICATION NO. S 183	E
SHEET <u>6 of 7</u>			
RBY COMPILED	CHECKED	TITLE: PRODUCTION TESTING FOR RSM-3	
QA-1 APPROVED			

Test 3. Meter Check

- (a). With RSM-3 level meter reading \emptyset DBM, the output AC VTVM across points 1 & 3 of E2 shall read between .755VAC and .790VAC. Record results on Test Data Sheet.

Test 4. Distortion Test. (Balanced Output).

- (a). Set up as shown in part 3(a).
- (b). Set up as shown in part 3(c) or 3(d).
- (c). Check distortion at 1000 cps with level meter reading \emptyset DBM, control R7 fully clockwise.
- (d). Adjust balance control to give minimum distortion figure. Record results on Test Data Sheet if acceptable. Acceptable total measured distortion will be .8% or less.
- (e). Lock R13.
- (f). Connect Distortion Meter to Signal Generator. (If using Hewlett Packard Model 330C Distortion Analyzer, disconnect signal generator from RSM-3 input and connect generator to TF-133 primary - pins 5 and 8.)
- (g). Decrease RSM-3 output by rotating Output Level control counter clockwise.
- (h). Increase generator output sufficiently to operate Distortion Meter.
- (i). Read Distortion Figure and record.
- (j). The two figures (d & i) should be within .2% of each other. If not, a readjustment of the balance control is necessary. If the Distortion Figure is still poor, a check of the tubes is required.

Test 5. Control Check.

- (a). Turning Output Level control counterclockwise should decrease reading on level meter.

DATE 12-1-64
SHEET 7 of 7

TMC SPECIFICATION NO. S 183

E

RBY
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CHECKED

TITLE: PRODUCTION TESTING FOR RSM-3

QA-1 APPROVED

Test Report Sheet

Model RSM-3

Mfg. No. _____ Serial No. _____

Line Voltage ----- _____ VAC

Test I. Power Check----- _____ VAC

Test II. Amplifier Check (unbalanced output)
input for .78VAC or ØDBM output. _____ VAC

Test III. Meter Check
Output voltage for ØDBM meter reading. _____ VAC

Test IV. Distortion Check (balanced output)

1000CPS @ ØDB output _____ %

1000CPS @ input _____ %

Test V. Control Check ----- _____

Tester _____

Date _____

