

DATE <u>2-10-61</u>	TMC SPECIFICATION NO. S-542	REV.
SH. <u>1</u> OF <u>5</u>		<u>A</u>
COMPILED BY	TITLE: TEST PROCEDURE, SBT-350R & S	JOB 1084E

APPROVED

NOTE: THIS SPEC IS APPLICABLE TO THE SBT-350R AND S, THE ONLY DIFFERENCE BEING THE SBT-350R USES THE SBE-2 AND THE SBT-350S USES THE SBE-3.

A. INTRODUCTION

The SBT-350R is a general purpose radio transmitter system providing SSB, ISB, DSB, AM and CW operation throughout a frequency range of 2 to 32 MC. The rated power output of this unit is 350 WATTS PEP and 200 WATTS CW.

B. MAIN COMPONENTS

The SBT-350R consists of separate units integrated to form the transmitter system. These components are:

1. rack assembly RAK-19A.
2. auxiliary power panel APP-5.
3. power supply P.S.P.-350
4. linear RF amplifier RFA-1.
5. mode selector SBE-2.
6. variable frequency oscillator VOX.
7. standing wave ratio indicator SWR-1K.

C. TEST PROCEDURE

The test procedure for the SBT-350R system is outlined on the following pages. Before the system can be tested correctly, all components except the RAK-19A rack assembly must be tested and passed by the test department as per the specific test requirements for each unit.

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I. EQUIPMENT REQUIRED

1. 52 Ω dummy load, 500W dissipation.
2. AC power cable.
3. Test equipment rack TMC model PTE.
4. RF output cable, RG-8/U.
5. MWC24(7)S3, cable insulated shielded, 5 ft..
6. CA-409 cable assembly, jumper 6 in.
7. H.P. VTVM, Model 410B, or equivalent.
8. Test cable assembly #106.
9. Test Chart, SBT-350A (S542 page 5 (2 size dw'g.))
10. Voltmeter, Simpson 260 or equivalent.

II. PROCEDURE-

1. Install AC input power cable from J701 of RAK-19 to AC line.
2. Connect Fanning strips of test cable assembly to E502 on rear of APP-5 chassis.
3. Connect shielded lead from output of TTG mounted in test equipment rack PTE to CHANNEL 1 and CHANNEL 2 input terminals on test cable assembly.
4. Connect dummy load MONITOR OUTPUT to SIGNAL INPUT jack of PTE analyzer.
5. Connect cable from OUTPUT jack of RFA to dummy load input.
6. Connect jumper from terminal 5 on test cable terminal board T601 to terminal 8. This completes external interlock circuit.
7. Connect a jumper from terminal 21, T602 to terminal 22. This completes the KEY LINE circuit to the SBE.
8. Set MAIN POWER switch on APP-5 to ON position. The red MAIN POWER indicator lamp should light, and rack blowers should start running.
9. Set MAIN LINE switch on PSP-350 to ON position. The MAIN POWER indicator lamp should light and RFA-1 blower should start running.
NOTE: PSP-350 TRANSMITTER PLATES switch should be in STANDBY-REMOTE position; H.V. LINE switch in OFF position.
10. Turn on POWER switch on SBE. The red lamp on power supply and OVEN lamp should light.

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PROCEDURE CONT'D.

11. Turn on POWER switch on VOX. The red MAIN POWER lamp and INNER OVEN and OUTER OVEN lamps should light.
12. After a warm-up time of approximately 5 minutes, set the TRANSMITTER PLATES switch to ON position. The indicator lamp should light. The HV LINE OVERLOAD indicator should also light. Set TRANSMITTER PLATES switch to STANDBY-REMOTE position.
13. Set XMTR switch on SBE to ON position. The TRANSMITTER PLATES & HV LINE OVERLOAD indicator lamps on PSP-350 should light.
14. Turn VOX METER switch to HFO position.
15. Set VOX HFO switch to ON position.
16. Set VOX MASTER OSCILLATOR FREQUENCY as required.
17. With SBE MF XTAL SW in the VMO position, adjust the SBE for two tone test at req. output frequency using the TTG supplied with the PTE test equipment rack.
18. Set SBE OUTPUT control to zero.
19. Set HV LINE switch on PSP-350 to ON position. Red indicator should light and amber OVERLOAD indicator should go out.
20. Using the tuning chart, adjust the RFA-1 for 350W PEP at required frequency (132 VRMS across 52 ohms.)
21. Adjust RFA-1 to obtain 40db third order distortion at 350W PEP.
22. Adjust RFA-1 to obtain 200W CW. (100 VRMS @ 52 ohms.)
23. Place voltmeter across terminals 3 and 4 of T601 on test cable. Meter should read 115 volts A.C. This is transmitter antenna relay voltage, and may vary $\pm 10\%$.
24. With voltmeter connected as in (23) above, set XMTR switch and EXCITER switch on SBE to OFF position.
 - a. Voltmeter should read zero volts.
 - b. HV LINE and TRANSMITTER PLATES indicators on PSP-350 should go out.
25. Place a jumper across terminals 1 and 2 on T601. TRANSMITTER PLATES and HV LINE indicators should light. Remove jumper.

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PROCEDURE CONT'D.

26. Turn all switches OFF. Remove AC input cable and test cable assembly.
27. This completes operational testing of system SBT-350R.
28. Check cables, hardware and slides for ease of movement. Units should tilt without obstruction.
29. This completes testing of system SBT-350R.

TEST CHART SBT-350R & S

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DATE _____
TEST BY _____
SBT-350R ser. no. _____
or
SBT-350S ser. no. _____
SWR-1K ser. no. _____

RFA ser. no. _____
VOX- ser. no. _____
SBE-2 ser. no. _____
SBE-3 ser. no. _____
PSP-350 ser. no. _____
APP-5 ser. no. _____

350 WATTS PEP, SSB

200 WATTS, CW

FREQ MC	VOX SETTING	SBE BAND	DRIVER BAND	1st AMPL. TUNE	PA GRID TUNE	PA TUNING	PA LOADING	PA LOADING SWITCH	MA, PA PLATE CURRENT	MA, PA SCREEN CURRENT	3rd ORDER DISTORTION -DB	MA, PA PLATE CURRENT	MA, PA SCREEN CURRENT	FORWARD POWER WATTS	REFLECTED POWER WATTS	ACTUAL POWER WATTS	REMARKS
2																	
5																	
10																	
20																	
30																	

NOTE: 1. 350W, PEP, IS 132 VRMS ACROSS 52 Ω LOAD.
2. 200W CW, IS 100 VRMS ACROSS 52 Ω LOAD.

ITEMS	ACCEPT	REJECT
1. A.C. POWER TO APP-5	_____	_____
2. A.C. POWER TO PSP-350	_____	_____
3. A.C. POWER TO SBE-	_____	_____
4. A.C. POWER TO VOX-	_____	_____
5. INTERLOCK CIRCUITS	_____	_____
6. KEY LINE CIRCUIT	_____	_____
7. CHANNEL 1 CIRCUIT	_____	_____
8. CHANNEL 2 CIRCUIT	_____	_____
9. REMOTE XMTR PLATE CIRCUIT	_____	_____
10. 115V ANTENNA RELAY	_____	_____

SYM	DESCRIPTION	DATE	CH. NO.	DRAFTS	CHECKER	ENG. APP.

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES ON FRACTIONS $\pm 1/64$ DECIMALS $\pm .005$ ANGLES $\pm 1/20^\circ$
SCALE: MAXIMUM ALLOWABLE TOLERANCES HAVE BEEN DETERMINED AND ANY DEVIATIONS WILL BE CAUSE FOR REJECTION. REMOVE ALL BURRS AND SHARP EDGES

REQ. PER UNIT	MODEL	SECTION	ASS'Y. NO.	DATE

REQ. ITEM	PART NO.	DESCRIPTION	SYMBOL
		THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK	
STOCK SIZE		S-542, SHEET 5	
MATERIAL		TEST PROCEDURE CHART, SBT-350R,S	
		S-542 <i>RK</i>	
TYPE & TEMPER	HEAT TREAT. SPEC.	DRAWN	CHECKER
		<i>RK</i>	
FINISH & SPEC. NO.		ELEC. DES. APP.	MECH. DES. APP.

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