

DATE January 18, 1963

SHEET 1 OF 6

TMC SPECIFICATION NO. S-543

J. Steen
COMPILED

N.P.
CHECKED

TITLE:

APPROVED

BP

TEST PROCEDURE, SBT-350 T & U

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NOTE: THIS SPEC IS APPLICABLE TO THE SBT-350 T AND U. THE ONLY DIFFERENCE BEING THE SBT-350 T USED THE SBE-2 AND THE SBT-350 U USES THE SBE-3.

A. INTRODUCTION

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

1. Rack Assembly RAK-19 .
2. Auxiliary Power Panel APP-5.
3. Power Supply PSP-350.
4. Linear RF Amplifier RFA-1.
5. Mode Selector SBE-2.
6. Variable Frequency Oscillator VOX.
7. Antenna Tuning System ATS-2.

C. TEST PROCEDURE

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

NOTE: ON ATS-2, OVERLOAD RELAY, K103, MUST BE RESET TO CUTOFF TRANSMITTER AT 400 WATTS BY ADJUSTING R121.

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I. EQUIPMENT REQUIRED

1. 52 ohm dummy load, 500 W 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 Chart, SBT-350 T.
9. Test cable assembly #106.
10. Voltmeter, Simpson 260 or equivalent, (VOM)
11. Square wave generator, Boonton Model 71.
12. Test receiver (GPR-90 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 CU-2 to dummy load input. Connect H.P. VTVM across dummy load.
6. Connect jumper from terminal 5 on test cable terminal board T601 to terminal 8. This completes external interlock circuits.
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.

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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; HV LINE switch in OFF position.
10. Turn on POWER switch on SBE. The red lamp on power supply and OVEN lamp should light.
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 on 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 the 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 the 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 40 db third order distortion at 350W PEP.
22. Adjust RFA-1 to obtain 200W CW. (100 VRMS @ 52 ohms.)
23. Place VOM across terminals 3 and 4 of T601 on test cable. Meter should read 115 volts AC. This is transmitter antenna relay voltage, and may vary +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.

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25. Place jumper across terminals 1 and 2 on T601. TRANSMITTER PLATES and HV LINE indicators should light. Remove jumper.
26. Place a jumper across terminals 9 and 10 on T601. TRANSMITTER VOLTAGES, FINAL VOLTAGES and EXCITER ON indicators should light. Remove jumper.
27. Place an ohmmeter across terminals 24 and 25 on T602. The ohmmeter should read 10 ohms +20% between 24 and 25, ∞ between 23 and 24.

Place a jumper across terminals 9 and 10 to key the unit. An ohmmeter connected between 23 and 24 should read 10 ohms +20% between 24 and 25 should read ∞.
28. Reduce transmitter output to zero.
29. Turn off all power switches and reduce all gain controls to zero. Remove AG connections to line.
30. Check cables, hardware and slides for ease of movement. Units should tilt without obstruction.
31. This completes testing of system SBT-350 T.

THE CONTENTS OF THIS DRAWING ARE THE EXCLUSIVE PROPERTY OF THE TECHNICAL MATERIEL CORP. ITS UNAUTHORIZED USE OR REPR DUCTION IN WHOLE OR IN PART IS STRICTLY FORBIDDEN.

TEST CHART SBT-350 T & U

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DATE: SBT-350 T Ser. No. _____ TU Ser. No. _____ PSP-350 5 Ser. No. _____
 TEST BY: SBT-350^{OF} U Ser. No. _____ RFA Ser. No. _____ App-5 Ser. No. _____
 AFS-2 Ser. No. _____ VOX Ser. No. _____
 CU Ser. No. _____ SBE-2 Ser. No. _____
 MCU Ser. No. _____ SBE-3 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	MA, PA SCREEN	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. 350 W, PEP, IS 132 VRMS ACROSS 52 OHM LOAD.
 2. 200 W, CW, IS 100 VRMS ACROSS 52 OHM 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. 115 V Antenna Relay	_____	_____

REQ.	ITEM	PART NO.	DESCRIPTION	SYMBOL
			THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK	
STOCK SIZE			Sheet 6 of 6	
MATERIAL			Test Procedure Chart, SBT-350T	
TYPE & TEMPER		HEAT TREAT. SPEC.	DRAWN	CHECKED
FINISH & SPEC. NO.		ELEC. DES. APP.	MECH. DES. APP.	FINAL APPROVAL

SYM	DESCRIPTION	DATE	CH. NO.	DRAFTS	CHECKER	ENG. APP.
UNLESS OTHERWISE SPECIFIED:		SCALE:				
DIMENSIONS ARE IN INCHES		MAXIMUM ALLOWABLE TOLERANCES HAVE BEEN DETERMINED AND ANY DEVIATIONS WILL BE CAUSE FOR REJECTION.				
TOLERANCES ON FRACTIONS ± 1/64 DECIMALS ± .005 ANGLES ± 1/2°		REMOVE ALL BURRS AND SHARP EDGES				

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