

DATE 1/9/62

SHEET _____ OF _____

TMC SPECIFICATION NO. S-640

RK
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TITLE: TEST PROCEDURE, SBT-1KJ1

SJM
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TEST PROCEDURE FOR THE

SBT-1KJ1

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SHEET 1 OF 4

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I. INTRODUCTION

- A. The SBT-1KJ1 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 1KW PEP and 1KW CW.

II. MAIN COMPONENTS

- A. The SBT-1KJ1 consists of seven separate units integrated to form the transmitter system. These components are:
1. Rack Assembly RAK-10A-1
 2. Auxiliary Power Panel APP-4
 3. High-Voltage Power Supply P.S.-5
 4. Low Voltage Power Supply P.S.-4A
 5. Linear RF Amplifier RFD-1A
 6. Mode Selector SBE-3
 7. Variable Frequency Oscillator VOX-5

III. TEST PROCEDURE

- A. The test procedure for the SBT-1KJ1 system is outlined on the following pages. Before the system can be tested correctly, all components except the RAK-10 rack assembly must be tested and passed by the test department as per the specific test requirements for each unit. Sheet 4 of this test procedure is a check sheet and tuning chart on size 2. (S-524, sheet 4).

B. Equipment Required

1. 52 ohm dummy load, 1KW dissipation
2. AC power cable
3. Test equipment rack TMC model PTE
4. RF output cable, RFD to load, CA-512-4-15F
5. MWC24(7)S3, cable insulated shielded, 5 feet
6. CA-409 cable assembly, jumper six inches.
7. Test cable assembly #106
8. VTVM, HP 410B
9. Voltmeter, Simpson 260 or equivalent

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TEST CHART SBT-1KJ1

DATE SBT-1KJ1 Serial No. RFD-1A Serial No. P.S.-4A Serial No.
 TESTED BY RAK-10A Serial No. VOX-5 Serial No. P.S.-5 Serial No.
 SWR-1K Serial No. SBE-3 Serial No. APP-4 Serial No.

1KW PEP, SBS

1KW, 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		2-4	2-4														
5		4-8	4-8														
10		8-16	8-16														
20		16-32	16-22														
30		16-32	22-32														

- NOTE: 1. 1KW, PEP, IS 225 VRMS ACROSS 52 OHM LOAD
 2. 1KW, CW, IS 225 VRMS ACROSS 52 OHM LOAD
 3. 3rd. ORDER DISTORTION REQUIRED AT 30MCS + IS 35DB.

ITEMS	ACCEPT	REJECT
1. A.C. POWER TO APP-4	_____	_____
2. A.C. POWER TO PS-4	_____	_____
3. A.C. POWER TO SBE-2	_____	_____
4. A.C. POWER TO VOX-3	_____	_____
5. INTERLOCK CIRCUITS	_____	_____
6. KEY LINE CIRCUIT	_____	_____
7. CHANNEL 1 CIRCUIT	_____	_____
8. CHANNEL 2 CIRCUIT	_____	_____
9. REMOTE XMTR PLATE CIRCUIT	_____	_____
10. PUSH TO TALK CIRCUIT	_____	_____
11. RECEIVER MUTING	_____	_____
12. 115V ANTENNA RELAY	_____	_____
13. EXT. ALDC	_____	_____

REQ.	ITEM	PART NO.	DESCRIPTION	SYMBOL
THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK				
Sheet 4				
TEST PROCEDURE CHART, SBT-1KJ1				
TYPE & TEMPER		HEAT TREAT. SPEC.	DRAWN	CHECKED
			RK	
FINISH & SPEC. NO.		ELEC. DES. APP.	MECH. DES. APP.	FINAL APPROVAL

SYM	DESCRIPTION	DATE	CH. NO.	DRAFTS	CHECKER	ENG. APP.
UNLESS OTHERWISE SPECIFIED:						
DIMENSIONS ARE IN INCHES		SCALE:				
TOLERANCES ON FRACTIONS ± 1/64 DECIMALS ± .5 ANGLES ± 1/2°		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		
USED ON						

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21. Using the tuning chart, adjust the RFD-1A for 1KW PEP at 6 MCS.
NOTE: 1 KW is 225 VRMS across a 52 ohm load. (See Chart)
22. Adjust RFD-1A to obtain 40db third order distortion at 1KW PEP.
23. Adjust RFD-1A to obtain 1KW, CW. 1 KW is 225 VRMS @ 52 ohms. (See Chart)
24. Rotate ALDC knob on the RFD-1A. Output should **decrease**. Increasing drive to the RFD-1A should produce only a slight increase in output. Readjust the ALDC knob and drive signal to obtain 1KW.
25. 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 + 10%.
26. With voltmeter connected as in (22) above, set XMTR switch on SBE to OFF position.
 - a. Voltmeter should read zero volts.
 - b. ~~FINAL VOLTAGE~~ and ~~TRANSMITTER VOLTAGE~~ indicators on PS=4A should go out.
27. Place a jumper across terminals 1 and 2 on T601. ~~TRANSMITTER VOLTAGES~~ and ~~FINAL VOLTAGES~~ indicator should light. Remove jumper.
28. Place a jumper across terminals 9 and 10 on T601. ~~TRANSMITTER VOLTAGES~~ and ~~FINAL VOLTAGES~~ indicators should light. Remove jumper.
29. Turn all switches OFF. Remove AC input cable and test cable assembly.
30. This completes operations testing of system SBT-1KJ1.
31. Check cables, hardware and slides for ease of movement. Units should tilt without obstruction.
32. This completes testing of system SBT-1KJ1.