DATE 12-19-60 SH. 1 OF 5 COMPILED BY	TMC SPECIFICATION NO. S -525	
	TITLE: TEST PROCEDURE, SBT-1KA, SBTKA-6 & SBT-1KL	JOB
APPROVED RKL		

NOTE: THIS SPEC IS APPLICABLE TO THE SBT-1KA, SBTKA-6 & SBT-1KL, THE DIFFERENCE BEING THE SBT-1KA USES THE SBE-2 AND THE SBT-1KL USES THE SBE-3., SBTKA6 USES SBE-8.

A. INTRODUCTION THE SBT-1KA 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.

B. MAIN COMPONENTS

The SBT-1KA consists of eight separate units integrated to form the transmitter system. These components are:

1. rack assembly RAK-9.
2. auxiliary power panel APP-4.
3. hi-voltage power supply P.S.-5.
4. low voltage power supply P.S.-4.
5. linear RF amplifier RFD-1.
6. mode selector SBE-2. (SBE-8 used with SBT1KA-6).
7. variable frequency oscillator VOX-5.
8. standing wave ratio indicator SWR-1K.

C. TEST PROCEDURE

The test procedure for the SBT-1KA system is outlined on the following pages. Before the system can be tested correctly, all components except the RAK-9 rack assembly must be tested and passed by the test department as per the specific test requirements for each unit.

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APPROVED Ron Kok		

I. EQUIPMENT REQUIRED-

1. 52 Ω dummy load, IKW dissipation.
2. AC power cable.
3. Test equipment rack TMC model PTE.
4. RF output cable. RG-8/U. Or RG-11/U
5. DELETED.
6. DELETED.
7. H.P. VTVM, Model 410B, or equivalent.
8. DELETED.
9. Test Chart, SBT-1KA (S525 page 5(2 size Dw'g.)).
10. Volmeter, Simpson 260 or equivalent.

II. PROCEDURE-

1. Install AC input power cable from J601 of RAK-9 to AC line.
2. DELETED.
3. Connect shielded lead from output of TTG mounted in test equipment rack PTE to CHANNEL 1 and CHANNEL 2 input terminals on APP-4.
4. Connect dummy load MONITOR OUTPUT to SIGNAL INPUT jack of PTE analizer.
5. Connect cable from J609 jack of AX-198 to dummy load input.
6. Connect jumper from terminal 5 on E501 to terminal 8. This completes external interlock circuit.
7. Connect a jumper from terminal 21, E502 to terminal 22. This completes the KEY LINE circuit to the SBE.
8. Set MAIN POWER switch on APP-4 to ON position. The red MAIN POWER indicator lamp should light.
9. Set MAIN POWER switch on PS-4 to ON position. The green MAIN POWER indicator lamp should light and RFD-1 blower and PS-5 fan should start running. NOTE: PS-4 TRANSMITTER VOLTAGES switch should be in STANDBY position; FINAL VOLTAGES switch in OFF position and OVERLOAD breakers in ON position. Adjust line voltage to 115 volts, rack fan should start running.
10. Turn on POWER switch on SBE. The red lamp on power supply and OVEN lamp should light.

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 VOLTAGES switch to ON position. The red indicator lamp should light. Set TRANSMITTER VOLTAGES switch to STANDBY position.

13. Set XMTR switch on SBE to ON position. The TRANSMITTER VOLTAGES red indicator lamp on PS-4 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 FINAL VOLTAGES switch on PS-4 to ON position. Red indicator should light.

20. Using the tuning chart, adjust the RFD-1 for 1KW PEP at required frequency. (225 VRMS across 52 ohms.)

21. Adjust RFD-1 to obtain 40db third order distortion at 1KW PEP.

22. Adjust RFD-1 to obtain 1KW CW.
(225 VRMS @ 52 ohms.)

23. Place voltmeter across terminals 3 and 4 of E501 Meter should read 115 volts A.C. 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. FINAL VOLTAGE and TRANSMITTER VOLTAGE indicators on P.S.-4 should go out.

25. Place a jumper across terminals 1 and 2 on E501. TRANSMITTER VOLTAGES and FINAL VOLTAGES indicator should light. Remove jumper.

26. Place a jumper across terminals 9 and 10 on E501. TRANSMITTER VOLTAGES, FINAL VOLTAGES and EXCITER ON Indicators should light. Remove jumper.

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APPROVED Ron Kohl		

PRECEDURE CONT'D.

27. Place an ohmmeter across terminals 24 and 25 on E502. The ohmmeter should read $10\Omega \pm$ 10% between 24 and 25 and ∞ between 23 and 24.

28. Place a jumper across terminals 9 and 10 one E501 to key unit. An ohmmeter connected between 23 and 24 should read 10 $\pm$ 20% between 24 and 25 should read ∞.

29. Turn all switches OFF. Remove AC input cable and test cable assembly.

30. This completes operational testing of system SBT-1KA

31. Check cables, hardware and slides for ease of movement. Units should tilt without obstruction.

32. This completes testing of system SBT-1KA

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DATE

TEST BY

SBT1KA-6 Ser. no.
SBT-1KA ser. no.
or
SBT-1KL ser. no.

SWR-1K ser. no.

TEST CHART SBT-1kA

SBE-8 Ser. no.
RFD ser. no.
VOX-5 ser. no.
SBE-2 ser. no.
or
SBE-3 ser. no.

P.S.-4 ser. no.
P.S.-5 ser. no.
APP-4 ser. no.

	1KW PEP, SSB											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																	
5																	
10																	
20																	
30																	

NOTE: 1. 1KW,PEP, IS 225 VRMS ACROSS 52 Ω LOAD.

2. 1KW, CW, is 225 VRMS ACROSS 52 Ω 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-8		
4. A.C. POWER TO VOX-5		
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		

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

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES N
FRACTIONS ± 1/64 DECIMALS ± .005 ANGLES ± 1/2°

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
	USED ON			

REQ.	ITEM	PART NO.	DESCRIPTION	SYMBOL
			THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK	
STOCK SIZE			S-525, SHEET 5	
MATERIAL			TEST PROCEFURE CHART, SBT1KA	
TYPE & TEMPER		HEAT TREAT. SPEC.	DRAWN	CHECKER / FINAL APPROVAL
FINISH & SPEC. NO.			ELEC. DES. APP.	MECH. DES. APP. / S-525 SHEET 5 of 5

TMC FORM NO. 109

DEFIANCE NO. 1020 26852

REVISION SHEET

THE TECHNICAL MATERIEL CORP.
MAMARONECK NEW YORK

S-525
LIST NO.

DATE	REV.	SHEET	EMN #	DESCRIPTION	APP.
11/20/67	Ø		18599		

TMC FORM MLR-1 2-65—AINS.