SBTM-350EA

TEST PROCEDURE

A. INTRODUCTION

The SBTM-350EA is a general purpose radio transmitter system providing USB, LSB, ISB, AM, FAX, FSK, 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 depending on customer request.

B. MAIN COMPONENTS

The SBTM-350EA consists of separate units integrated to form the transmitter syste, These components are:

1. Rack Assembly RAK-19G.
2. Auxiliary Power Panel APP-5.
3. Power Supply PSP-350.
4. Linear RF Amplifier RFA-1.
5. SME-6
6. Standing Wave Ratio Indicator SWR-1K.

C. TEST PROCEDURE

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

I. EQUIPMENT REQUIRED

1. 50 ohm dummy load, 500W dissipation.
2. AC power cable.
3. Test equipment rack - TMC Model PTE.
4. RF output cable, RG-8/U.
5. H.P. VTVM, Model 410B, or equivalent.
6. Test Chart, SBTM-350EA.
7. Voltmeter, Simpson 260 or equivalent, (VOM).

II. PROCEDURE

1. Install AC input power cable from J-701 of RAK-19 to AC line.
2. Set SME-6 controls as follows:

   RF Gain CCW

   LSB Gain CCW

   USB Gain CCW

   STANDBY / ON ON

   EXC ON / PTT / VOX PTT/VOX

   CARRIER SUPPR. FULL

   CHANNEL ONE

   MODE USB

   METER USB
3. Connect shielded lead from output of TTG mounted in test equipment rack PTE to CHANNEL 1 input terminals on E501. Adjust USB Gain control fro a reading of 2 on SME Meter.
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.

II. PROCEDURE

Connect H.P. VTVM across load.

6. Connect jumpers from terminals 5 & 6 and 7 & 8 on E501. This completes external interlock circuit.

7. Connect a jumper from terminal 21 to terminal 22 on E502. This completes the KEY LINE circuit to the SME.

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, HV LINE switch in OFF position.

10. 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.

11. Set PTT/EXC on switch SME to EXC ON. The TRANSMITTER PLATES & HV LINE OVERLOAD indicator lamps on PSP-350 should light.

12. Set SME for 2 tone output on USB on Channel #1.

13. Set SME OUTPUT control to zero.

14. Set HV LINE switch on PSP-350 to ON position. Red indicator should light and amber OVERLOAD indicator should go out.

15. Using the tuning chart, adjust the RFA-1 for 350W PEP at required frequencies (132 VRMS across 52 ohms).

16. Adjust RFA-1 to obtain 40 db third order distortion at 350W PEP.

17. Adjust RFA-1 to obtain 200W CW. (100 VRMS @ 52 ohms).

18. Place VOM across terminals 3 and 4 of E501. Meter should read 115 volts A-C. This is transmitter antenna relay voltage, and may vary ± 10%.

19. With voltmeter connected as above, set EXCITER on switch to PTT/VOX.

    a. Voltmeter should read zero volts.

    b. HV LINE and TRANSMITTER PLATES indicators on PSP-350 should go out.

20. Place a jumper across terminals 1 and 2 on E501. TRANSMITTER PLATES and HV LINE indicators should light. Remove jumper.

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

22. Tune transmitter on CW at 15 mcs 200 watts. SWR-1K should read 200 watts.

23. Check Test Key function on CW.

REVISION SHEET	THE TECHNICAL MATERIEL CORP. MAMARONECK NEW YORK	S 1261 LIST NO.

DATE	REV.	SHEET	EMN #	DESCRIPTION	APP.
12/29/69	Ø			ORIGINAL RELEASE FOR PRODUCTION	

TMC FORM MLR-1 2-65—AINS.

THE TECHNICAL MATERIEL CORPORATION
MAMARONECK, NEW YORK

TEST CHART SBTM EA

350 WATTS PEP							200 WATTS CW	
CHANNEL	FREQ.	DRIVER BAND	DRIVER TUNING	PA TUNING	PA LOADING	3RD ORDER DISTORTION	PA PLATE CURRANT	OUTPUT VOLTAGE
1.								
2.								
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								

NOTE: 350W, PEP IS 132 VRMS ACROSS 50 OHMS.
200W, CW, IS 100 VRMS ACROSS 50 OHMS.

	ACCEPT
1. AC POWER TO APP-5	_____
2. AC POWER TO PSP-350	_____
3. AC POWER TO SME	_____
4. PTT CIRCUIT	_____
5. INTERLOCK CIRCUIT	_____
6. KEY LINE	_____
7. CHANNEL 1 CIRCUIT	_____
8. CHANNEL 2 CIRCUIT	_____
9. REMOTE TRANS. PLATE	_____
10. 115V ANT. RELAY	_____
11. TEST KEY	_____

SBTM-350 EA SERIAL NO._____

SBTM-350 EA MFG. NO._____

SWR 1K MFG. NO._____

SME-6 MFG. NO._____

RFA MFG. NO._____

PSP-350 MFG. NO._____

DATE_____

TESTER_____