

TMC SPECIFICATION

NO. S 1178

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SHEET

1

OF 7

TITLE:

typed by vita 3/23/67

TEST PROCEDURE

FOR THE

SBT-350-WAX-1

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A. INTRODUCTION

The SBT-350-WAX-1 is a general purpose transmitter for use as a hi-speed simplex transmit/receive sideband system for voice, CW, PSK and FAX operation. The rated power output of this unit is 350 WATTS PEP and 200 WATTS CW. The electronic TR switch is rated above the power ratings of the transmitter. A detector is provided to sample the radio frequency output and produce a negative voltage, used for squelching a receiver during the transmit mode of operation.

B. MAIN COMPONENTS

- | | |
|-------------|-------------------------------|
| 1. RAK-19K | Rack Assembly |
| 2. APP-5 | Auxiliary Power Panel |
| 3. PSP-350C | Power Supply |
| 4. RFA-1C | Linear RF Amplifier |
| 5. MCU-2A | Monitor Control Unit |
| 6. VOX-5 | Variable Frequency Oscillator |
| 7. SBE-8 | Sideband Exciter |
| 8. AX-650-2 | TR Mating Assembly |

C. EQUIPMENT REQUIRED

1. 52 OHM Dummy Load, 500 W Dissipation
2. AC Power Cable
3. Test Equipment Rack - TMC Model PTE
4. HP VTVM

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C. EQUIPMENT REQUIRED-Continued

5. VOM, Simpson 260
6. Square Wave Generator
7. Receiver, GPR-90, or equivalent
8. RF Output

D. TEST PROCEDURE

The test procedure for the SBT-350-WAX-1 system is outlined on the following pages. Before the system can be tested correctly, all major components must be tested and passed by the specific test requirements for each unit.

CAUTION

EXTREMELY HAZARDOUS VOLTAGES EXIST.

REMOVE ALL POWER FOR MAINTENANCE.

1. Install AC input power cable of RAK-19 to AC line.
2. Connect two tone generator of PTE to Channel 1 on the rear of APP-5.
3. Connect dummy load to the output of the transmitter.
4. Connect monitor jack of dummy load of RF input of PTE. Connect HP VTVM across load.
5. Place Main Power Switch on APP-5 to ON position. The RED Main Power Indicator Lamp should light and Rack Blowers should start running.
6. Place Main Line Switch on PSP-350 to ON position. The Main Power Indicator Lamp should light and RFA-1 Blower should start running.

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NOTE: PSP-350 Transmitter Plate Switch should be in STANDBY-REMOTE position, Final Voltage Switch in OFF position and Overload Breakers in ON position.

7. Turn ON the Power Switch on the SBE. The RED Lamp on Power Supply and Oven Lamp should light.
8. Place Power Switch on VOX to ON position. The RED Main Power Lamp, Inner Oven and Outer Oven Light should light.
9. After a warm-up of approximately 5 minutes, set the Transmitter Voltage Switch to the ON position. The RED Indicator Lamp should light. Set the Transmitter Voltage Switch to the STANDBY position.
10. Place the Transmitter Switch on the SBE to the ON position. The Transmitter Plates and HV Line Overload Indicator Lamp on PSP-350 should light.
11. Turn VOX Meter to HFO position.
12. Place VOX HFO Switch to ON position.
13. Set VOX Master Oscillator Frequency. (Refer to Test Data Sheet.)
14. With SBE, Mid-Frequency Crystal Switch in the VMO position, adjust the SBE for two tone test at required output frequency.
15. Place SBE output control to zero.
16. Set HV Line Switch on PSP-350 to ON position. RED Indicator should light and AMBER Overload Indicator should go out.
17. Using the tuning chart, adjust the RFA-1 for 350 PEP at required frequency (132 VRMS across 52 OHMS)

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TITLE: TEST PROCEDURE FOR THE SBT-350-WAX-1

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18. Adjust RFA-1 to obtain 40DB third order distortion at 350W PEP.
19. Adjust RFA-1 to obtain 200W CW. (100 VRMS @ 52 OHMS)
20. Place VOM across Terminals 3 and 4 of T-601. Meter should read 115 Volt AC. This is transmitter antenna Relay Voltage, and may vary +10%.
21. With Voltmeter connected as in Step 20 (above), set Transmitter Switch and Exciter on SBE to OFF position.
 - a. Voltmeter should read zero volts.
 - b. HV Line and Transmitter Plates Indicators on PSP-350 should go out.
22. Place a jumper across Terminals 1 and 2 on T-601. Transmitter Plates and HV Line Indicators should light. Remove jumper.
23. Place a jumper across Terminals 9 and 10 on T-601. Transmitter Voltages, Final Voltages and Exciter ON, indicators should light. Remove jumper.
24. Place an OHM Meter across Terminals 24 and 25 on T-602. The OHM Meter should read 10 OHMS +20% between 24 and 25, and infinity between 23 and 24.

Place a jumper across Terminals 9 and 10 to key the unit. An OHM Meter connected between 23 and 24 should read 10 OHMS +20%, and between 24 and 25 should read infinity.
25. Set up the Test Receiver to Receive Test Frequency BFO to the ON position.
26. Adjust SBT-350-WAS-1 System for approximately 200 Watt CW at Test Frequency. Using USB, Channel 1 or Channel 2.

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TITLE: TEST PROCEDURE FOR THE SBT-350-WAX-1

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27. A keyed 1KC tone should be heard on the receiver.
28. Tune the transmitter to 200W CW with VTVM. Measure the squelch output on the bottom of AX-650-2 by varying R2001, you should read a minus voltage (0-20V DC +20%)
29. Reduce transmitter output to zero.
30. Turn OFF all Power Switches and reduce all gain controls to zero. Remove AC connection to line.
31. Check cables, hardware and slides for ease of movement.
Units should tilt without obstruction.
32. This completes testing of system SBT-350-WAX-1.

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TITLE: TEST CHART SBT 350/WAX-1

typed by Stan Brice 4/11/67

SBT-350/WAX-1 SER NO _____ RFA SER NO _____
 MCU-2A SER NO _____ VOX-5 SER NO _____
 SBE-8 SER NO _____
 PSP-350 SER NO _____
 APP-5 SER NO _____
 AX650-2 SER NO _____

350 WATTS PEP, SSB

FREQ MC	VOX SETTING	SBE BAND	DRIVER BAND	1st AMPL TUNE	PA BANDSWITCH	PA TUNING	PA LOADING	MA, PA PLATE CURRENT	3rd ORDER DISTORTION -Db
4									
8									
12									
20									
28									

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

<u>ITEM</u>	<u>ACCEPT</u>	<u>REJECT</u>
1. A.C. POWER TO APP-5	_____	_____
2. A.C. POWER TO PSP-350	_____	_____
3. A.C. POWER TO SBE-8	_____	_____
4. INTERLOCK CIRCUITS	_____	_____
5. KEY LINE CIRCUIT	_____	_____
6. CHANNEL 1 CIRCUIT	_____	_____
7. CHANNEL 2 CIRCUIT	_____	_____
8. REMOTE XMTR PLATE CIRCUIT	_____	_____
9. T.R. SWITCH	_____	_____
10. SQUELCH VOLTAGE \pm 20%	_____	_____
11. CW OPERATION	_____	_____

DATE _____

TEST BY _____

