TMC SPECIFICATION

REV: Ø			NO. S 1182
COMPILED: BN	CHECKED:	APPD:	SHEET 1 OF 8
TITLE: 3/7/67 jb/			

TEST PROCEDURE FOR

SBT-1KPA1 AND SBT-1KPA2

TEST INSPECTION PROCEDURE

1. TEST EQUIPMENT REQUIRED:

   A. TMC Model PTE Spectrum Analyzer.

   B. Simpson Model 260 Voltohmeter or equivalent.

   C. H-P Model 410B VTVM or equivalent.

   D. 52 ohm Dummy Load, 1 KW.

   E. Square Wave Generator, Boonton Model 71 or equivalent.

2. PRELIMINARY SETUP FOR SIDE RACK:

   A. The side rack should be tested and accepted as per TMC Test Specification S 1181 Connections made as per CK1294.

   B. CHG- RF Gain to minimum (counterclockwise).

   C. HFS-2 None

   D. CMR

      1. CHANNEL PRIORITY set to 100 (4 channels).

      2. METER FUNCTION to A1.

      3. CARRIER SUPPRESSION to FULL.

      4. POWER to ON.

   E. AX560A

      1. STANDBY/OPERATE to STANDBY.

      2. TEST KEY to center position.

   F. AF108

      1. Connect a jumper from 4 to 5 on TB903, CHG VOX.

      2. Connect a jumper from 9 to 11 on TB903, TEST KEY, KEY TEST.

G. Connect the rack to 115/230 VAC power as required. SBT-1KPA1 through J909, SBT-1KPA2 directly to the AC strip. The fans should operate on the SBT-1KPA1.

3. PRELIMINARY SETUP FOR THE AMPLIFIER RACK:

A. The Amplifier rack should be connected as per CK1293 (SBT-1KPA1) or CK1295 (SBT-1KPA2). The individual units should be tested and accepted as per individual specifications.

B. SWRA-1K None

C. RFD-1B ALDC Switch S209 to EXT. ALDC to minimum.

D. PS-4B.

1. MAIN POWER to OFF.
2. TRANSMITTER VOLTAGES to STANDBY.
3. FINAL VOLTAGES to OFF.
4. PA OVERLOAD breakers to ON.
5. S100 to NORMAL.

E. PS-5A None

F. Interconnect the racks.

G. Connect jumpers.

1. AX198, E603, TERM. 1 and 2.
2. APP-4, E502, TERM. 5 and 6, 7 and 8.
3. Remove the jumper on APP-4, E502 TERM. 21 and 22.

H. Connect the 115/230 VAC (as required) to the racks. SBT-1KPA1 to J601 and SBT-1KPA2 directly to the APP-4 terminals.

I. Connect a RF output cable to the 1KW dummy load from J609, AX198 (SBT-1KPA1) or to J305, OUTPUT on the SWRA-1K (SBT-1KPA2). Connect the dummy load monitor to the PTE Input.

4. INSPECTION:

A. MECHANICAL INSPECTION

Give the rack a good visual inspection for obvious defects, check cabling to see that no strain exists when units are pulled out and tilted. Check slides for ease of operation, sliding in and out. All units should line up in the rack and no contact made between front panels.

B. PRELIMINARY ELECTRICAL INSPECTION

1. On the SBG rack, place the STANDBY switch to OPERATE. Power should be applied to all units after a 90 second delay.
2. Set the MAIN POWER switch on the APP-4 to ON. The red MAIN POWER Indicator should light.
3. Set the MAIN POWER switch on the PS-4 to ON. The green MAIN POWER Indicator should light. The fans in the RFD, PS-5 and the SBT-1KPA1 Rack should operate. Adjust the LINE VOLTAGE to 115V.
4. After a warmup time of approximately 5 minutes, set the TRANSMITTER VOLTAGES switch to ON. The red indicator should light.

5. Set the FINAL VOLTAGES Switch to ON. The red indicator should light and approximately 200 ma. of plate current should appear on the PA PLATE CURRENT meter on the RFD.
6. Place a voltmeter across TERM 3 and 4 of E502 on the APP-4. Meter should read 115 VAC. This is the transmitter antenna relay voltage and may vary $\pm$ 10%.
7. Set the TRANSMITTER VOLTAGES switch to STANDBY. Meter should read zero volts. FINAL VOLTAGES and TRANSMITTER VOLTAGES indicators should go out. Remove the meter.
8. Place a jumper on the APP-4 E502 TERM. 1 and 2. TRANSMITTER VOLTAGES and FINAL VOLTAGES indicators should light. This checks the Remote Transmitter Plate circuit.
9. Place an ohmmeter across TERM. 23 and 24 of E502 on the APP-4. It should read approximately 10 ohms. Place the ohmmeter across TERM. 24 and 25. It should read infinity. Remove the jumper between TERM. 1 and 2. TERM. 24 and 25 should read approximately 10 ohms. TERM. 23 and 24 should read infinity.(SBT-1KPA1 only.)

C. INTERMODULATION DISTORTION TEST

1. Connect the output of the TTG to Channel A1 on TB902 of the AF108 with a shielded pair.
2. Set the TEST KEY on the AX560A to the lock position and tune the SBG-3 system to 2 Mc.

3. Set the TRANSMITTER VOLTAGES switch to ON and tune the amplifier to 1 KW PEP output. 1 KW is equal to 225 VRMS across a 52 ohm load.
4. Set the PTE to check for third order distortion products. The distortion must be a minimum of 40 db down. Record the results.
5. On the CMR, set the Channel A1 PRIORITY CONTROL to 0. Set the CARRIER SUPPRESSION to 0.
6. Tune the amplifier to 1 KW CW. (225 VRMS across 52 ohms). Record the results.
7. Repeat steps 2, 3, 4, 5 and 6 for all test frequencies. Record the results.

D. PUSH TO TALK TEST

1. Leave the transmitter set up for CW operation, 1 KW output. CARRIER SUPPRESSION to 0. CHANNEL A1 PRIORITY TO 0. Set the TRANSMITTER VOLTAGES to STANDBY. TEST KEY to normal (center) position.
2. On the APP-4, connect a jumper between TERM. 21 and 22.
3. On the PS-4B, set S100 to PTT.
4. On the AF108, connect a jumper between TERM. 9 and 10, TEST KEY, PTT TEST, on TB903.
5. Set the TRANSMITTER VOLTAGES switch to ON. There should be NO PA PLATE CURRENT METER reading.
6. Activate the TEST KEY. There should be full power

output. Reduce the SBG-3 output by turning the CHG GAIN control counterclockwise. With no DRIVE to the amplifier there should be approximately 200 ma. PA PLATE CURRENT.

7. Release the TEST KEY. There should be NO reading on the PA PLATE CURRENT METER. Activate the TEST KEY. Set the CHG Gain control for 1 KW output. Activate the TEST KEY several times. The transmitter should go from full output to no current condition.
8. Leave the transmitter set for 1 KW output. Set the TEST KEY to normal. Set the TRANSMITTER VOLTAGES Switch to STANDBY.

E. VOLTAGE KEYING TEST.

1. Set S100 on the PS4B to CW position.
2. Connect the output of the square wave generator to TERM. 27 and 29 of the APP-4. Note the polarity.
3. Set the generator for 50 Volts, 50 Cycle operation.
4. Set the TRANSMITTER VOLTAGES Switch to ON. With 50 Volts applied to the KEY LINE the transmitter should be operating at 1 KW output. Remove the 50 Volt keying voltage. There should be no PA PLATE CURRENT. Repeat several times.

F. ALDC CHECK

1. With the transmitter set as above, keyed with 1 KW output check the operation of the ALDC circuit by turning the ALDC control clockwise. This should reduce the output.

TMC FORM SPEC 1

1 KW PEP SSB

FREQ. MC.	DRIVER BAND	1st AMP TUNE	PA GRID TUNE	PA TUNING	PA LOADING	PA LOADING SWITCH	MA, PA PLATE CURRENT	MA, PA SCREEN CURRENT	3rd ORDER DISTORTION -db
2.0000									
5.0000									
10.0000									
20.0000									
30.0000									

1 KW CW

FREQ. MC.	MA, PA PLATE CURRENT	MA, PA SCREEN CURRENT	FORWARD POWER WATTS	REFLECTED POWER WATTS	ACTUAL POWER WATTS	REMARKS
2.0000						
5.0000						
10.0000						
20.0000						
30.0000						

NOTE: 1. 1 KW, PEP, IS 225 VRMS ACROSS 52 OHMS. (HP410B)
2. 1 KW, CW, IS 22 VRMS ACROSS 52 OHMS.
3. 3rd ORDER DISTORTION AT 30-32 MCS. IS 35 db.

ACCEPT

TESTER _____

INSPECTOR _____

FINAL APPROVAL _____

DATE _____

MECHANICAL _____

PRELIMINARY ELECTRICAL _____

PTT _____

VOLTAGE KEYING _____

ALDC _____

SERIAL NUMBER _____

TITLE: TEST PROCEDURE FOR SBT-1KPA1 AND SBT-1KPA2

COMPILED: BN

CHECKED:

APPD:

REV:

TMC SPECIFICATION

NO. s 1182

SHEET 8 OF 8

2M 9-65-AINS.

REVISION SHEET

THE TECHNICAL MATERIEL CORP.
MAMARONECK NEW YORK

S 1182
LIST NO.

DATE	REV.	SHEET	EMN #	DESCRIPTION	APP.
3/30/67	Ø			ORIGINAL RELEASE FOR PRODUCTION	

TMC FORM MLR-1 2-65—AINS.