

TMC SPECIFICATION

NO. S 1193

REV: 0

COMPILED: BN

CHECKED: *[Signature]*

APPD: *[Signature]*

SHEET 1 OF 9

TITLE:

5/18/67 /jb

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[Handwritten date: 5/22/67]

TEST PROCEDURE
GPT-10KSB8
AUXILIARY FRAME

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tested as a system for proper interconnection and proper terminations of inputs and outputs.

1. Mechanical Inspection - Give the rack a good visual inspection. Check cabling to see that no strain exists when units are pulled out and tilted. Check slides for ease of operation.
2. Preliminary Electrical Inspection - Circuit breaker , CB3000, applies 220 VAC to the primary circuit of T3000. This is a regulated stepdown transformer whose output is 110 VAC. When turning on CB3000, front fan B3000 must operate. Removal of F3000 must stop the fan. Turn all power switches to ON. After approximately 30 minutes of operation, the SBE and TIS ovens must cycle.
3. Pre-set the following controls:
 - A. SBE
 - a. MF XTAL SW - AS REQUIRED
 - b. LSB - OFF
 - c. XMTR ON-OFF - OFF
 - d. EXCITER ON-OFF-OFF
 - e. USB -OFF
 - f. CARRIER INSERT-0
 - g. OUTPUT -0

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I. INTRODUCTION

The GPT-10KSB8 is a general purpose transmitter providing SSB, ISB, DSB, CW, MCW and FS operation throughout a frequency of 2 to 28 Mcs.

II. MAIN COMPONENTS

The transmitter consists of the following units:

- | | |
|---------------|--------------------------|
| 1. GPT-10K(8) | Power Amplifier |
| 2. SWCU-1 | SWR Control Unit |
| 3. APP-1 | Auxiliary Power Panel |
| 4. SBE-10 | Side Band Exciter |
| 5. TIS-3A | Tone Intelligence System |
| 6. MCP-3 | Monitor Control Panel |

III. TEST EQUIPMENT

1. Spectrum Analyzer TMC Model PTE or equivalent.
2. Test Crystals - SBE
3. Voltmeter Simpson Model 260 or equivalent.
4. Square Wave Generator Boonton Model 71
5. Radio Receiver, TMC Model GPR-90 or equivalent.
6. Dummy Load, 70 ohm, 2W

IV. TEST PROCEDURE

All units in the auxiliary frame must be tested to meet individual specifications. After installation all units must be

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B. MCP

- a. SBE VMO IN EXT.
- b. VOX RF OUT N/A
- c. ANALYZER MON. SBE
- d. MODE SBE-SSB
- e. CHANNEL 1 LINE IN
- f. CHANNEL 2 LINE IN

In this configuration the MCP controls function in the following way:

SBE VMO IN - Connects the SBE VMO Input to the center shield EXT. VMO J3004. All other positions are inactive.

VOX RF OUT - Inactive

ANALYZER MONITOR - Connects the PA, 1PA and SBE monitor circuits to the center shield assembly EXT MON OUTPUT J3005.

MODE - Connects the TIS and SBE for various modes of keying. The SBE KEY line should be shorted except in SBE-CW position.

CH. 1 and CH. 2 - Connect the audio lines from the TIS to the SBE.

C. TIS

- a. EXCITER CH. 1 LINE
- b. EXCITER CH. 2 LINE

- 4. Connect the audio output of the TTG (P/O PTE) to the AUDIO

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- INPUT jacks of the SWCU. This connects the audio to LINE 1.
5. On the SBE, set LSB to CH. 1. Set METER SW to LSB. Advance the LSB GAIN. The meter must read output.
 6. Set LSB to OFF, USB to CH. 1, METER SW. to USB. The meter must read output.
 7. By setting the CH. 1 switch off LINE on the MCP and TIS, the meter reading should drop to 0.
 8. Connect the audio output to LINE 2. Repeat Steps 5,6 and 7 using LINE 2 and CH. 2. This tests the audio lines.
 9. Connect the dummy load to EXCITER OUTPUT, J3001. Connect the PTE input to EXT. MON. OUTPUT, J3005.
 10. Tune the SBE to a test frequency. MCP Mode Sw. in SBE-SSB. Check distortion products and carrier rejection. Distortion products should be down at least 40 db. Carrier should be down 50 db. Check to see that the SBE output is at least 1 Watt over the entire range.
 11. Tune the SBE to a test frequency. Set the XMTR and EXCITER switches to OFF and STANDBY. By jumping the PTT Terminal (E3001-21) to ground the SBE should provide output. XMTR ON-OFF terminal (E3002-25) should read ground and unground with the PTT grounded and ungrounded. It should also read ground and unground with the operation of the XMIT ON-OFF switch.
 12. The SQUELCH terminal (E3002-26) should read approximately 5K ohms to ground.

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13. Tune the SBE to a test freq. Set the MCP MODE SWITCH to SBE-CW. Put a jumper across CONT. KEY SBE and GND. (E3002-23,24). The SBE should provide output.
14. Turn the LEVEL ADJ. knob on the TIS-3 maximum clockwise.
15. Set the SHIFT CPS indicator to 850.
16. Turn the FUNCTION selector switch to the CW position.
17. Turn the CENTER FREQUENCY CPS selector switch to the 2000 position.
18. Turn the TEST selector switch to the LINE position.
19. Turn the KEY MODE selector switch to the 50V position.
20. Set the MULTIPLY by frequency selector on the SQUARE WAVE GENERATOR to 1 position.
21. Turn the CYCLES frequency selector maximum counterclockwise and observe fluctuating meter reading.
22. Turn the control knob under the PEAK VOLTS meter maximum counter-clockwise.
23. Set the small OUTPUT selector switch to the 50 position.
24. Connect a piece of 2 conductor shielded cable from the two uppermost S.W. output terminals on the Square Wave Generator to E3000 so that the upper S.W. terminal is connected to E3000-5 and the center S.W. terminal is connected to E3000-6.
25. Set the MCP Mode Switch to TIS-CW.
26. Set the EXCITER switches CHANNEL 1 and CHANNEL 2 to the FSK FAX CW position.

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27. Increase the LEVEL ADJ. knob for a fluctuating meter indication approximately one third full scale reading.
28. Adjust the LSB section of the SBE for an indication of a fluctuating input on both CHANNEL 1 and CHANNEL 2.
29. Adjust the USB section of the SBE for an indication of a fluctuating input on both CHANNEL 1 and CHANNEL 2. Adjust USB GAIN control for approximately one third scale deflection.
30. Tune the SBE for full output at a test frequency using USB, CHANNEL 1 or 2.
31. Set up test receiver to receive test frequency, BFO on.
32. A keyed 1 KC tone should be heard in the receiver.
33. Turn FUNCTION selector switch on TIS-3 to the FSK position.
34. A varying tone above and below the center frequency should be heard.
35. Vary the CENTER FREQ. CPS selector between 2550 and 1900 and listen for changes in pitch of varying tone. Set switch back to 2000.
36. Vary the SHIFT CPS indicator to a lower value and note a narrower shift above and below the center frequency.
37. Change the small OUTPUT selector on the SQUARE WAVE GENERATOR to the 10 position.
38. Disconnect the wires from E3000-5 and 6 and connect them to E3000-3 and 4. This connects the generator to the FAX input. Set the MCP Mode Switch to TIS-FAX.

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39. Set the FUNCTION selector switch on the TIS-3 to the FAX position.
40. A varying tone should be heard in the receiver.
41. Reverse the output leads at the SQUARE WAVE GENERATOR and note a change in frequency of output tone of receiver.
42. Reduce the SBE output to 0.
43. Check all fuses for proper values and check the connections for proper terminations.
44. Continue with the 10K test using TMC Specification S-540 Section 3.

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TEST	PARA	ACCEPT
1. MECHANICAL	1	_____
2. PRELIMINARY ELECTRICAL	2	_____
3. AUDIO LINES	4-8	_____
4. SBE DISTORTION	9-10	_____
5. SBE CARRIER REJECTION	10	_____
6. SBE 1W OUTPUT	10	_____
7. SBE PTT	11	_____
8. SBE SQUELCH	12	_____
9. SBE CW	13	_____
10. TIS CW	14-32	_____
11. TIS FSK	33-36	_____
12. TIS FAX	37-41	_____
13. FUSES	43	_____

SERIAL NO. _____

TESTER _____

DATE _____

APPROVAL _____

REMARKS:

