TMC SPECIFICATION

NO. S 1196	
REV:	
COMPILED: BN	CHECKED: [signature]
APPD: [signature]	SHEET 1 OF 8
TITLE:	

5/16/67 /jb

TEST PROCEDURE

GPT-1KC1

I. INTRODUCTION

The GPT-1KC1 is a general purpose 1 KW transmitter providing AM, MCW, CW and FS (with external excitation) operation throughout a frequency range of 2 to 32 Mcs.

II. MAIN COMPONENTS

The GPT-1KC1 consists of eight separate units integrated to form the transmitter system. These components are:

1. Rack Assembly RAK 9F2
2. SWR Indicator SWR-1K
3. Linear Power Amplifier RFD-1B
4. Variable Frequency Oscillator VOX-5
5. Mid and Low Voltage Power Supply PS-4B
6. Auxiliary Power Panel APP-4
7. High Voltage Power Supply PS-5B
8. General Purpose Exciter GPE-1A

III. TEST EQUIPMENT

1. Dummy Load, 1 KW, 50 ohm
2. Spectrum Analyzer, PTE
3. VTVM, HP Model 410B or equivalent
4. Voltmeter, Simpson Model 260 or equivalent
5. Microphone, TMC Model MK102-4 or equivalent
6. Square Wave Generator, Boonton Model 71.

IV. TEST PROCEDURE

1. Turn all power switches to OFF or STANDBY.
2. Connect AC power to the rack.
3. Connect a shielded lead from the output of the TTG (P/O PTE) to the Channel 1 input on the APP-4.
4. Connect a RF cable from J609 (AX198) to the dummy load.
5. Connect the dummy load Monitor Output to SIGNAL INPUT jack of the PTE.
6. Connect a jumper on Term. 5 & 6, 7 & 8 of the APP-4 (EXTERNAL INTERLOCKS). Connect a jumper between Terminals 22 and 21 (KEY LINE).
7. Set S100 on the PS-4B to NORMAL, TRANSMITTER VOLTAGES to STANDBY, FINAL VOLTAGES to OFF, OVERLOAD breakers to ON.
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-4B to ON position. The green MAIN POWER indicator lamp should light and RFD-1B blower and PS-5B fan should start running. Adjust line voltage to 115 volts, rack fan should start running.
10. Turn on power switch on the GPE. The red POWER lamp should light.

11. Turn on power switch on the VOX. The red MAIN POWER lamp and the INNER OVEN and OUTER OVEN lamps should light. After a short period the oven lights should cycle.

12. After a warm-up period of approximately five minutes, set the TRANSMITTER VOLTAGES switch to ON. The red indicator lamp should light.

13. Open all interlock switches and jumpers in succession. The red TRANSMITTER VOLTAGES indicator must go out.

14. Set TRANSMITTER VOLTAGES to STANDBY.

15. Set the GPE EMISSION switch to KEY. (CW and MCW). The TRANSMITTER VOLTAGES should come on.

16. Set the EMISSION switch to AM (CARB and DYN). Connect a jumper on the APP-4 between TERM 9 and 10.(PTT) The TRANSMITTER VOLTAGES should come on. Remove the jumper. Insert the microphone into the GPE. The PTT switch should provide the same results.

17. Insert a single tone into the GPE from the TTG (P/O PTE) Set the EMISSION switch to EXT. Adjust the MODULATION to 90%. Using the VOX, adjust the GPE to provide output. Reduce the output to 0.

18. Set the TRANSMITTER VOLTAGES to ON. Set the FINAL VOLTAGES switch to ON. The red indicator should light.

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

20. Adjust the RFD to obtain at least 40 db down, third order distortion.

21. Turn the output down to 0. Set the EMISSION switch to CW. Adjust the RFD output for 1 KW CW at the required frequency.

22. Connect a voltmeter to TERM 3 and 4 on the APP. The meter should read 115 VAC. This is the antenna relay voltage and may vary 10%. Set the TRANSMITTER VOLTAGES to STANDBY. The voltmeter should read 0.

23. Place a jumper across TERM 1 and 2 on the APP. The TRANSMITTER VOLTAGES should come on.

24. Place an ohmmeter across TERM 24 and 25 on the APP-4. The meter should read ∞ . TERM 23 and 24 should read short.

25. Remove the jumper on TERM 1 and 2. TERM 23 and 24 should read ∞ . TERM 24 and 25 should read short.

26. Set up the transmitter for 1 KW CW. Set S100, (PS-4) to PTT. Shorting TERM 10 and 11 of E701 (PS-4) should provide output out of the GPE and RFD. Removing the jumper should cause the GPE to lose output and the RFD plate current to fall to 0 with FINAL VOLTAGES ON.

27. Set the MULTIPLY by frequency selector on the SQUARE WAVE GENERATOR to 1 position.

28. Turn the CYCLES frequency selector maximum counterclockwise and observe fluctuating meter reading.

29. Turn the control knob under the PEAK VOLTS meter maximum counter-clockwise.
30. Set the small OUTPUT selector switch to the 50 position.
31. Connect a piece of 2 conductor shielded cable from the two uppermost S.W. output terminals on the SQUARE WAVE GENERATOR to the APP-4 so that the upper S.W. output terminal is connected to terminal 27 and the other S.W. output terminal connected to terminal 29.
32. Set S100 to CW. Turning the Square Wave Generator ON and OFF should cause the GPE output and PA plate current to go on and off.
33. Turn off all power switches and reduce all gain controls to zero. Remove AC connections to line.
34. Check cables, hardware and slides for ease of movement. Units should tilt without obstruction.
35. This completes testing of system GPT-1KC1.

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TITLE: TEST PROCEDURE SBT-1KC1

	TEST	PARA.	ACCEPT
1.	Main Power APP-4	8	
2.	Main Power PS-4B	9	
3.	Main Power GPE	10	
4.	Main Power VOX	11	
5.	Transmitter Voltages	12	
6.	Interlocks	13	
7.	GPE Key	15	
8.	GPE AM	16	
9.	Final Voltages	18	
10.	Antenna Voltages	22	
11.	Remote Transmitter Voltages	23	
12.	Receiver Muting	24-25	
13.	PS-4 PTT	26	
14.	PS-4 CW	27-32	
15.	Mechanical	34	

APPROVED _____ TESTER _____

DATE _____

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TEST CHART GPT-1KC1

DATE _____ GPT-1KC1 Ser. No. _____ VOX-5 Ser. No. _____

TEST BY _____ SWR-1K Ser. No. _____ GPE-1A Ser. No. _____

RFD Ser. No. _____

1 KW PEP, SSB

FREQ. MC	VOX SETTING	SBE BAND	DRIVER BAND	1st. AMP TUNE	PA GRID TUNE	PA TUNING	PA LOADING	PA LOAD SW	MA,PA PLATE CURRENT	MA,PA SCREEN CURRENT	3rd ORD. DIST. -DB
2											
5											
10											
20											
30											

1 KW, CW

FREQ. MC	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. 1 KW, PEP IS 225 VRMS ACROSS 52 LOAD.
2. 1 KW, CW IS 225 VRMS ACROSS 52 LOAD.
3. 3rd ORDER DISTORTION REQUIRED AT 30 MCS IS 35 DB.

2M 9-65-AINS.

TMC FORM SPEC 1

REVISION SHEET	THE TECHNICAL MATERIEL CORP. MAMARONECK NEW YORK	S 1196 LIST NO.

DATE	REV.	SHEET	EMN #	DESCRIPTION	APP.
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TMC FORM MLR-1 2-65—AINS.

REVISION SHEET	THE TECHNICAL MATERIEL CORP. MAMARONECK NEW YORK	S 1196 LIST NO.

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