[redacted]	TMC SPECIFICATION NO. S-638	D
[redacted] CHECKED	TITLE: KIT-113 - VSWR METERING - 10K	
APPROVED		

KIT-113

VSWR METERING - 10K

KIT NO.	IMPEDANCE	SECT. III, A ITEM NO. 38
KIT-113-50	50 ohms	NONE REQ.
KIT-113-70	70 ohms	PO-250

DATE 1/12/62 SHEET 1 OF 4	TMC SPECIFICATION NO. S-638	D
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I. EQUIPMENT AFFECTED:

A. GPT-10K Transmitting Set Radio

II. PURPOSE:

A. Modification of Existing GPT-10K's (Field) to Accept a Directional Coupler to Meter the Output Power and S.W.R.

III. MATERIALS SUPPLIED IN THE KIT:

A. Items

1.	One each A-2233	Coupler and Bracket Assembly
2.	One each A-2234	Decoupling Assembly
3.	One each LD-990/MS-2699	Plate, Output Switch
4.	One each LD-991/MS-2699	Plate, Calibrate Pot.
5.	One each MP-102-1	Knob, pointer
6.	One each MP-102-2	Knob
7.	One each MR-155	Meter, output, SWR (Sym. M1005)
8.	One each LD-1008/MS-2752	Plate, Pot. Mtg.
9.	One each RV-108	Pot., Dual. (Sym. R916A,B)
10.	One each SW-111	Switch, rotary (Sym. S907)
11.	One each CA-412-23-24.00	Cable, Output
12.	One each CA-653	Cable, Switch to Pot.
13.	One each CA-654	Cable, coupler to switch
14.	One each ID-266	Installation KIT-113
15.	One each	Stamp R1007
16.	One each	Stamp R1008
17.	One each	Stamp C1026
18.	One each	Stamp C1027
19.	One each	Stamp pad
20.	Two each NTH3732BN16	Nut, hexagon p/o SW-111, RV-108
21.	Two each LWI37MRN	Washer, lock, internal p/o SW-111, RV-108
22.	One each SCBP0832BN6	Screw, machine
23.	One each FW08HBN	Washer, flat
24.	One each LWS08MRN	Washer, lock, split
25.	One each NTH0832BN10	Nut, hexagon
26.	Four each SCOP0632BN8	Screw, machine
27.	Three each NTH0632BN8	Nut, hexagon
28.	Three each LWE06MRN	Washer, lock, external
29.	Five each SCBP0832BN10	Screw, machine
30.	Five each NTH0832BN10	Nut, hexagon
31.	Five each LWE08MRN	Washer, lock, external
32.	Five each FW08HBN	Washer, flat
33.	Five each CU-102-3	Clamp, cable
34.	One each	5/8 inch Greenlee
35.	One each	Drill bit, 11/64 inch
36.	One each	Drill bit, 3/8 inch
37.	One feet WL-100-7	Wire, Buss, Size 22
* 38.	One each PO-250	Adapter, 50 to 70 hms

* Ship Item 38 for KIT-113-70 only.

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IV. TOOLS REQUIRED:

A. To be Provided by Installing Activity

1. pliers, 6 inch longnose
2. pliers, 6 inch diagonal cutting
3. Screwdriver, five inch
4. Allen wrench, 8-32
5. Wrench, crescent, ten inch
6. Wrench, open end, 3/8-7/16
7. Wrench, open end, 1/2-9/16
8. Soldering iron, 75 watt
9. Hand drill, 3/8 inch chuck

V. DIASSEMBLY OF GPT-10K

Reference - ID-266

A. Remove rear door main frame, figure 1. (Save)
B. Remove front door main frame, figure 1. (Save)
C. Remove right side panel, figure 1. (Save)
D. Remove top panel, figure 1. (Save)
E. Remove outer shield, figure 1. (Save)
F. Remove inner shield, modify if required for DC-102, clearance figure 1.
G. Remove cover plate (if applicable) figure 1; discard.
H. Remove output bracket, figure 1 & 3 discard. Remove window panel, Figure 1 & Save.
I. Remove control panel shield, figure 1 & 3, and hold for modificati n per Step P.
J. Loosen meter panel, figure 1, and remove MR-126 (symbol M1004). Be sure to save the capacitor, C1011, that is across the meter, figures 1 & 2.
K. Remove the two capacitors, C1020 and C1019, the four jumpers, and the two feed-thrus mounted on the rear of the meter box; figure 2 & 3 (discard all except one jumper that will be used as a ground connection for the new meter).
L. Remove the unbalanced output cable if necessary. Figur 2 & 3.
M. Remove the two chokes, L916, L917, and associated stand- ffs and brackets; figure 2 & 3. Discard.
N. Remove the thermocouple, TC900 and associated jumpers (3); figure 3. Discard.

VI. MODIFICATION OF THE EQUIPMENT

O. Without removing main ontrol panel (figure 1), lay ut and drill holes A and B per drill plan NO. 1.

P. Control Panel Shi ld (Removed in Step I): Use the 5/8 Gre nlee punch supplied (Item 34) to put a slot in the shield as per drilling plan 2.

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VII. REASSEMBLY

Q. Attach the coupler and bracket assembly, A-2233 (Item 1) in the position from which MS-1605 (figure 1, Step H) was removed.

R. Insert MR-155 (Item 7) in place of MR-126 (Removed in Step J).

S. Install the output switch plate, LD-990/MS-2699 and the calibrate pot. plate, LD-991/MS-2699 on the control panel with the 6-32 hardware supplied (Items 26,27,28) per Figure 4. Be sure to put the output switch plate to the right and the calibrate pot. plate to the left. (NOTE: Us two screws, lockwashers and nuts to mount the calibrate pot plate, use ne screw, lockwasher and nut to mount the output switch plate in its 1 ft mtg. hole only. Save one screw).

T. Mount the dual potentiometer, RV-108 (Item 9) and the potentiometer mounting plate, LD-1008/MS-2752 in the calibrate position with the 3/8 inch nut and lock washer (Items 20 & 21). Ref: Figure 4.

U. Mount the switch, SW-111 (Item 10) and the decoupling assembly, A-2234 (Item 2) in the output position with the 3/8 inch nut and lock washer (Items 20 & 21). Also use the 6-32 screw saved from step S t mount the front plate to the rivet nut in the decoupling assembly bracket. R f: Figure 4.

V. Put on the knobs, MP-102-1 and MP-102-2 (Items 5 & 6). Be sur to put the knob with the pointer on the output switch. REF: Figure 4.

W. Run the cable CA-654 (Item 13) from the coupler assembly, A-2233, to the switch, SW-111, using mounting hardware, Items 29,30,31,32,33. S lder the center conductor of the FWD RF cable to choke L918. Solder the center conductor of the RFL RF cable to the choke L919. Solder the center conductor of the shielded wire to the wiper of the switch and then s lder the three shields to ground.

X. Run the other end of the shielded wire in the cable, CA-654 to the Meter, MR-155. Connect the center conductor to the positive (+) side f the meter, MR-155, and the shield to the negative (-) side. Be sure to replace the capacitor, C1011, across the meter and the jumper from the negative (-) side of the meter to ground.

Y. Wire the potentiometer, RV-108, and the switch, SW-111 with the cable CA-653 according to the new schematic, figure 2.

Z. Solder in a jumper (Item 37) between the coil, L918 and the number (1) position of the switch.

AA. When hecking the circuit be sure that the arrow n the diode f the directional coupler that is metering the f rward power is pointed toward the output while the arrow f the ther di de is pointed towards the transmitter.

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AB . Using the stamps and stamp pad supplied, (Items 15,16,17,18, & 19) stamp the symbols R1007, R1008, C1026 and C1027 in an appropriate spot near lamp sockets which might have existing stamping now covered by new plates added.

AC . Replace the control panel shield and make sure that the grommet n the cable, CA-654 is put in the slot that was cut out; figure 4.

AD . Connect the antenna tuner for unbalanced operation and connect the output cable, CA-412-23-24.00 (Item 11) from E904 to the directional coupler.

AE . Replace inner-shield; figure 1.

AF . Replace outer-shield; figure 1.

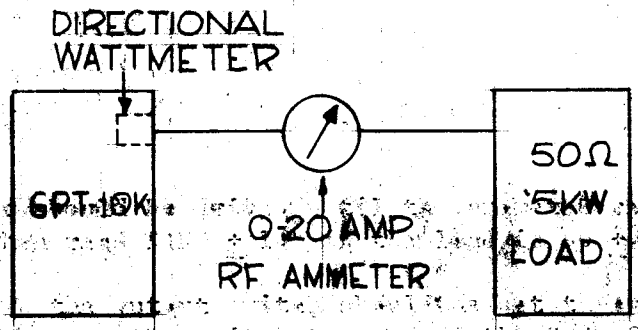
AG . Replace top panel; figure 1.

AH . Replace right side panel; figure 1.

AI . Replace front and rear doors; figure 1.

VIII . TEST PROCEDURE

To test the directional wattmeter after installation a 0-20 amp. RF ammeter and a 50 ohm 5KW load should be placed in series with it as per Figure below.



The transmitter should be driven until the ammeter reads 10 amps. The output meter should then read 5 KW ± 10% if the load is 50 ± 10 ohms.

To check the SWR the output switch should be set to calibrate and the meter calibrated. Then set the switch to SWR and the SWR of the output will be read directly. The accuracy can be checked by inserting a known SWR and comparing with the meter reading.

REVISION SHEET

THE TECHNICAL MATERIEL CORP.
MAMARONECK NEW YORK

S-638

MODEL KIT-113 PROJECT NO. _____

DATE	REV.	PAGE	EMN#	DESCRIPTION	CHK.	APP.
1/19/62	A	1	6251	Correct item 22, 1 ea. SCBP0832BN6, screw machine.	✓	
				Correct item 23, 1 ea. FW08HBN, washer flat.	✓	
				Correct item 24, one each LWS08MRN, washer, lock,split	✓	
				Correct item 25, 1 ea. NTH0832BN10, nut, hex.	✓	
				Add 4 ea., SCOP0632BN8, screw machine(26)	✓	
				Add 3 ea. NTH0632BN8, nut, hex. (27)	✓	
				Add 3 ea. LWE06MRN, washer, lock, ext. (28)	✓	
				Add 5 ea. SCBP0832BN10, screw, machine (29)	✓	
				Add 5 ea. NTH0832BN10, nut, hex. (30)	✓	
				Add 5 ea. LWE08MRN, washer, lock, ext. (31)	✓	
				Add 5 ea. FW08HBN, washer, flat (32)	✓	
				Add 5 ea. CU-102-3, clamp, cable (33)	✓	
				Chg. item 27 to 34. Chg. item 28 to 35. Chg. item 29 to 36.	✓	
11/29/62	B	1	7766	Sect. III, Item 7, Chg. MR-115 to MR-155		
1/3/64	C	----	10672	Revised Sheets 1,2,3,4 per EMN.		
2/20/64	D	TITLE	10915	Revised TITLE Sheet per EMN.		