TR-130

DATE [illegible]
SH. 1 OF 6
COMPILED BY
APPROVED

TMC SPECIFICATION NO. S 10161

TITLE: BROAD BAND RF TRANSFORMER TR-130

JOB

TEST PROCEDURE:

This test shall consist of 3 parts.

(1) VSWR of 70 ohm output.
(2) Insertion loss and frequency response.
(3) Balance.

TEST EQUIPMENT:

(1) Telonic sweep generator model HD7.

(2) Tecktronix scope with 5 mv/cm plug in.

(3) Various lengths of 50 and 70 ohm coax as required.

(4) One TR090 transformer bearing identification prototype.

(5) A TR-130 test jig consisting of 200 and 700 ohm balanced loads.

(6) Telonic Rho-Tector VSWR bridge with 1.0 and 1.5 loads.

(7) Miscellaneous items:
  (a) 68 ohm resistor
  (b) two short clip leads
  (c) 47 ohm resistor
  (d) RF demodulator probe

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DATE 12-9-67
SH. 2 OF 6
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TMC SPECIFICATION NO. S[illegible]

TITLE: BROAD BAND RF TRANSFORMER TR-120

JOB

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TEST 1
VSWR

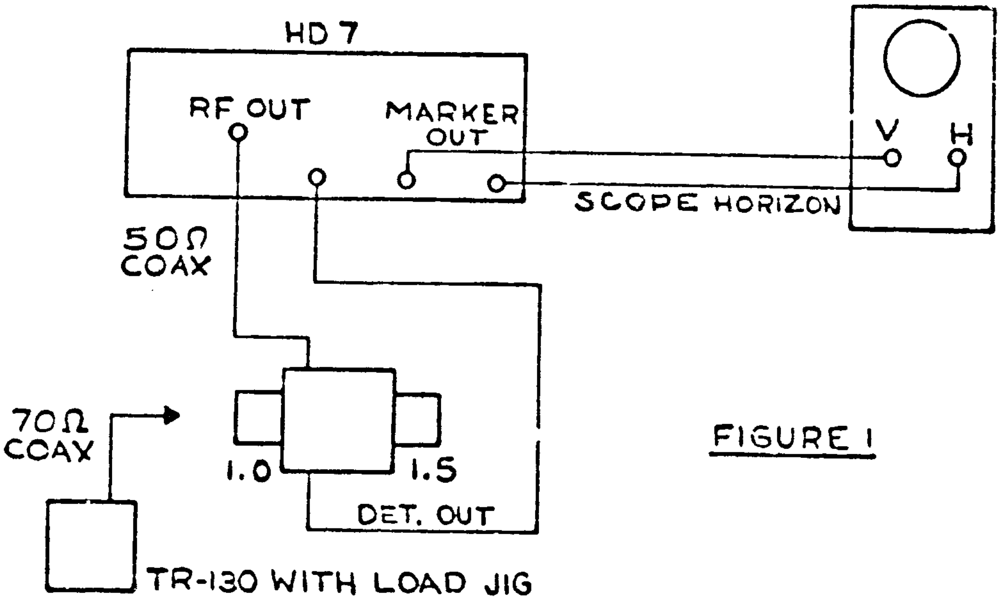

FIGURE 1

(1) Calibration. Set up equipment as shown in Figure 1.

(2) With a 1.0 and a 1.5 load on the VSWR bridge calibrate the scope for a convenient deflection (1 cm is suggested). Sweep should be continuous from 2 to 30 megs.

(3) Replace the 1.0 load with a UHF to BNC connector. Using a short length of 70 ohm coax connect the bridge to the input of the TR-130.

(4) Record the maximum VSWR on test data sheet for both 200 and 600 ohm tests.

(5) Maximum VSWR should be 1.5 to 1.

CAUTION: VSWR increases after potting. If VSWR is 1.35 or worse the chances of rejection after potting increase.

INSERTION LOSS AND FREQUENCY RESPONSE.

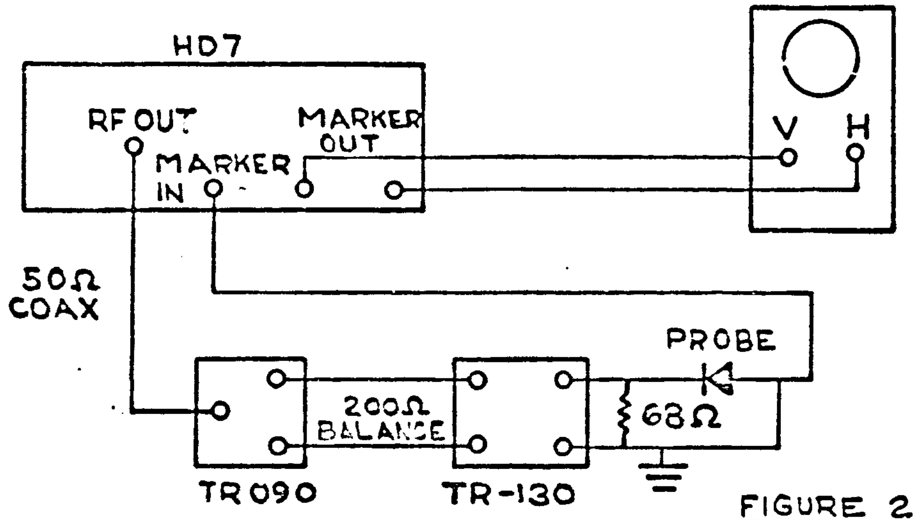

FIGURE 2

(1) Calibration. Feed the RF output into a 47 ohm resistor. Using the demodulator probe obtain a flat trace. Set the gain controls on the scope so that this trace is 0.85 of full scope face (3.4 cm).

DO NOT CHANGE THESE SETTINGS.

(2) Set up equipment as shown in Figure 2. A deflection of 4 cm on the scope face corresponding to zero power loss. Using this reference as 0 dB compute the loss of the two transformers.

(3) The losses of the TR090 have been determined. These are recorded in appendix. Compute the loss of the transformer at 2, 10, 20 and 30 megahertz.

(4) Maximum loss of TR-130 shall be 3 dB.

(5) Repeat the above for 700 ohm test.

BALANCE:

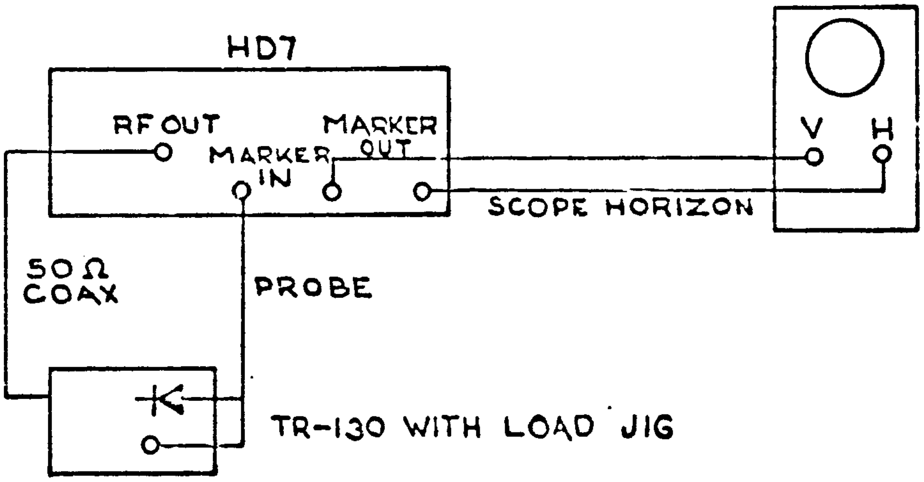

FIGURE 3

(1) Feed the output of the sweep generator to the input of the TR-130 under test.

(2) Terminate the TR-130 in the load jig. Use the 200 ohm side of the load jig.

(3) Using the RF probe measure the output on one side of the 200 ohm output. Set this to a convient output level and record output at 2, 10, 20 and 30 megahertz.

(4) Without changing generator or scope settings record the output on the other side of the 200 ohm output at 2, 10, 20 and 30 megacycles.

(5) The ratio of output 1 to output 2 shall not be greater than 1.225 to 1.0 or less than .815 to 1.0. This corresponds to a balance of ±10%.

(6) Reduce the scope sensitivity and repeat the above procedure for the 700 ohm output.

(7) Make sure in the above tests that the generator ground and the detector probe are connected to a common point, preferably the end of the ground braid near the end.

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TEST DATA SHEET

Manufacturing #______________ TR__________

	Ohm Test		Ohm Test	
	Before Potting	After Potting	Before Potting	After Potting
VSWR. 2 to 30 MHz Maximum VSWR 1.5 to 1				
Insertion loss and frequency Response at 2, 10, 20 & 30 MHz Maximum loss 3 dB				
Balance at 2, 10, 20 & 30 MHz Maximum imbalance .815 to 1				

NOTE: ✓ INDICATES WITHIN PRESCRIBED LIMITS.

APPENDIX:

Measured losses TR090 (in dB) -

Freq.	600 ohm	200 ohm
2	.3	.35
5	.25	.40
10	.1	.50
15	.05	.65
20	.2	.85
25	.8	1.2
30	1.4	1.1

REVISION SHEET

TMC (Canada) LTD.
OTTAWA, ONT.

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MODEL *TP-130* PROJECT NO. *064/67*

DATE	REV.	PAGE	ITEM	DESCRIPTION	REMARKS	CHK.	APP.