DATE 8/11/60 SH. 1 OF 11 COMPILED BY NK	TMC SPECIFICATION NO. S- 10059 - AB	
	TITLE: FINAL TEST PROCEDURE FOR MODEL LMC-10	JOB
APPROVED		Dec.

FINAL TEST PROCEDURE

OF THE

ANTENNA MULTICOUPLER

MODEL LMC-10

DATE 8/11/60 SH. 2 OF 11 COMPILED BY N.K.	TMC SPECIFICATION NO. S- 10059	
APPROVED	TITLE: FINAL TEST PROCEDURE FOR MODEL LMC-10	JOB

I N D E X

DATE 8/11/60 SH. 3 OF 11 COMPILED BY N.K.	TMC SPECIFICATION NO. S - 10059	
	TITLE: FINAL TEST PROCEDURE FOR MODEL PS-7	JOB
APPROVED		Dwg.

TEST PROCEDURE FOR POWER SUPPLY PS-7

I. DC - TEST

1. Check solder points and make sure that all screws are tight.

2. Connect dummy load to J102 and switch power on.

3. Check all DC voltage levels according to the following table:

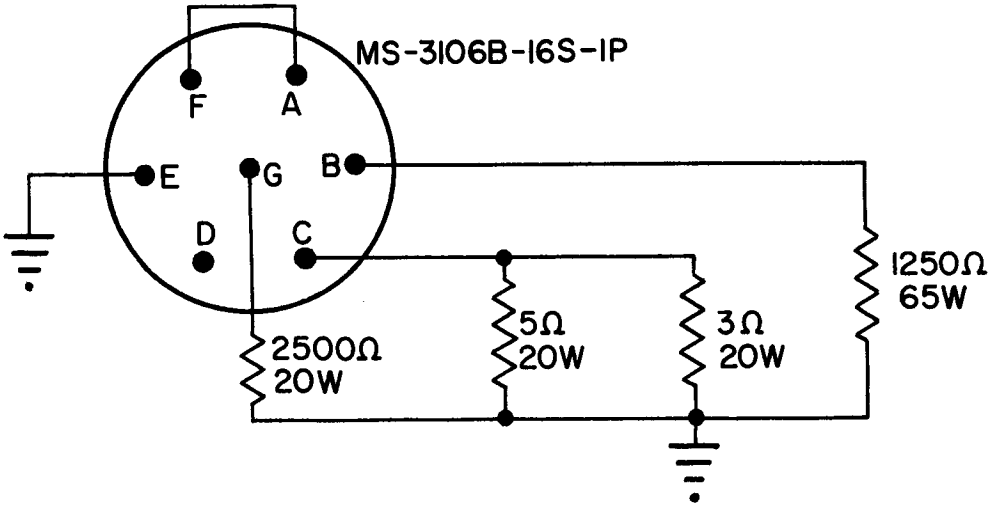
T101	
Terminal 6	Terminal 7
133	133

J101						
Pin A	Pin B	Pin C	Pin D	Pin E	Pin F	Pin G
110+	248	6.5*	5.0*	0	110+	140

1) +indicates line voltage

2) Voltages marked with an asterisk (*) are AC.

3) All AC voltages except pin A and pin F measured to ground with Hewlett-Packard Model 410B.



DATE 8/11/60 SH. 4 OF 11 COMPILED BY N.K.	TMC SPECIFICATION NO. S- 10059	
APPROVED	TITLE: FINAL TEST PROCEDURE FOR MODEL DA-101	JOB

TEST PROCEDURE FOR DISTRIBUTIVE AMPLIFIER
DA-101

I. DC - TEST

1. Check solder points and make sure that all screws are tight.

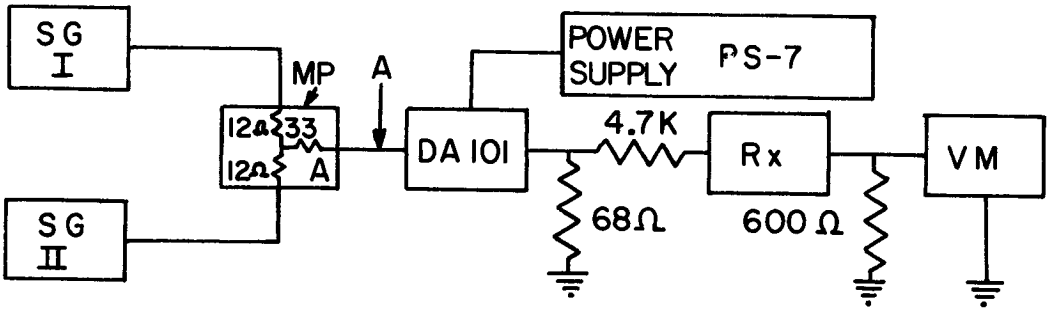
2. Check the DC voltage levels:

   a) Plate voltage of output stages 240V ± 5%.
   b) Plate voltage of preamplifier 150V ± 10%.
   c) Bias of output stages 8V ± 10%.

3. Disconnect jumper from preamplifier to line driver and load preamplifier with 68 ohms.

II. TEST OF PREAMPLIFIER

1) Adjustment of preamplifier for minimum cross-mod.

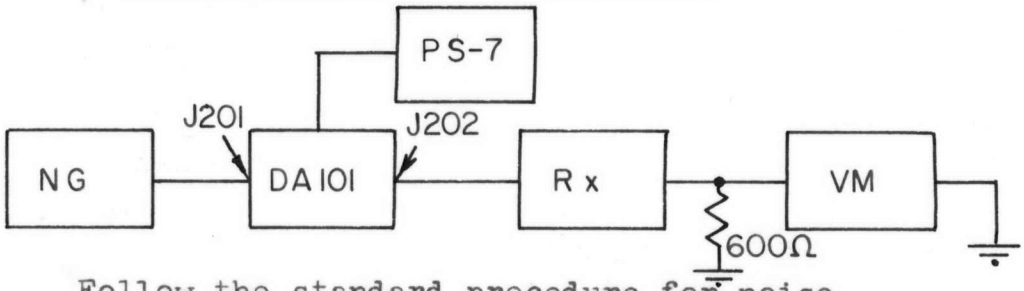


Inject two signals with a level of 250 mV each measured at the input jack J201 of the DA-101 (point A):

SG I = 1.1 Mc/s
SG II = 0.5 Mc/s 30% modulated at .4 kc/s

Connect the receiver to output of preamplifier and tune to 1.6 Mc/s and adjust the balance control R201 of the preamplifier for minimum cross-modulation. Lock R201. The cross-modulation should be ≤ - 60 db.

2) NOISE MEASUREMENT OF PREAMPLIFIER



Follow the standard procedure for noise measurement. (In accordance with Proceedings of IRE July 1953, paras. 10.1.2.2, 10.1.2.2.1, 10.1.4) The following table gives the maximum readings of the meter indication:

f (Mc/s)	I (mA)
.54	2.3
2.0	2.6

Disconnect load and connect jumper from preamplifier to line driver.

III. ADJUSTMENT OF DISTRIBUTION LINE

d) Adjustment of distribution lines DL201 and DL202.

1) Disconnect the antenna cable at J201.

2) Switch dynamic test switch in FILTER IN position.

3) Load outputs J204 to J213 with one capacitor each having a value of approximately 68 pfd.

4) Check all outputs with a VTVM, Hewlett Packard, Model 410B or equivalent. If the meter indicates the presence of a signal check for the output with the highest signal level.

Adjust all line trimmers C202, C203, C208, C209, C214, C215, C220, C221, C226, C227, C232, C233, C238, C239, C244, C245, C250, C251, C256, C257 for zero indication of the VTVM.

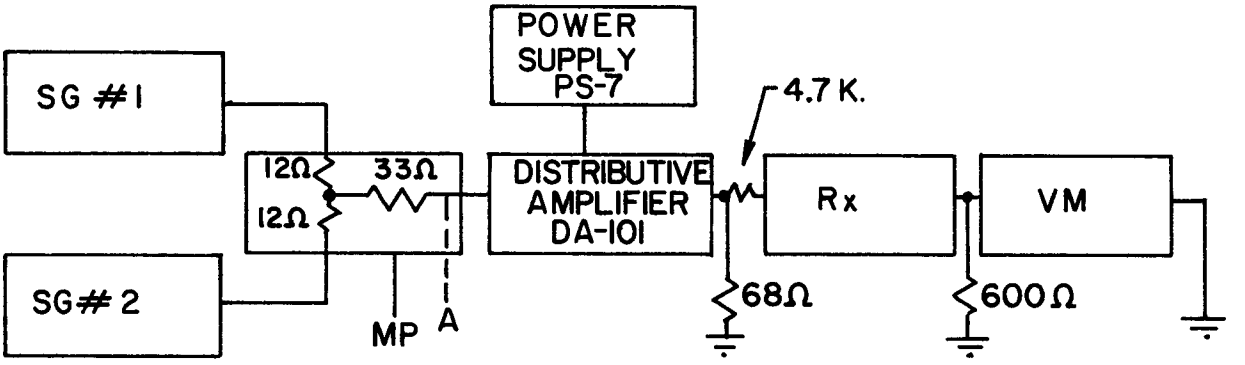
CAUTION: When adjusting the trimmers do not turn more than 180° at a time. Make sure, that the physical position of the trimmers is always approximately the same.

5) Check all outputs for zero indication and, if necessary, repeat steps 4 and 5.

6) Disconnect load capacitors one at a time and recheck each time all outputs for presence of signal.

IV. FINAL TEST

1. Measurement and adjustment of cross-modulation



(a) Inject two signals with a level of 250 mV each, measured at the input jack - (point A)

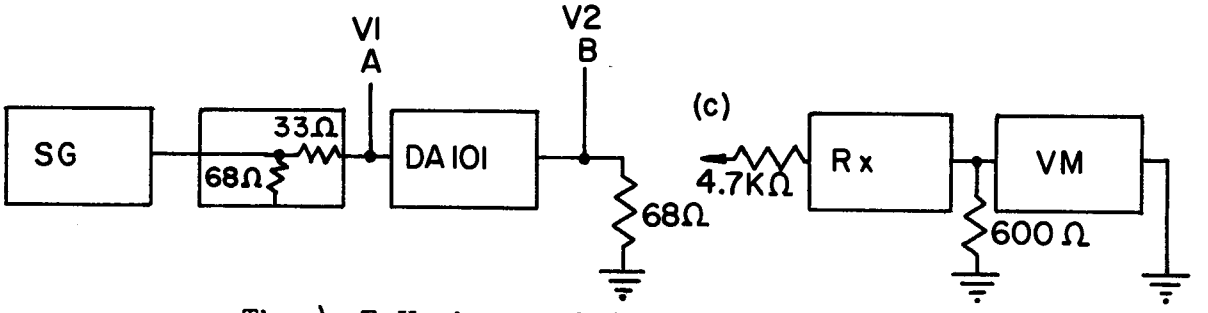
Set SG #1 to 1.1 Mc/s
Set SG #2 to 0.5 Mc/s 30% modulated with .4 kc/s.

(b) Tune the receiver to 1.6 Mc/s and adjust trimmers of distribution lines for minimum output indication. Make measurements at the output jack with the worst cross-modulation. The attenuation should be less than - 50 db.

Make cross-modulation measurements at the following frequencies: - (always measuring the worst jack)

A	B	ORDER	RESULT	ATTENUATION
1.1 Mc/s	0.5 Mc/s	a+b	1.6 Mc/s	≥ 50
		2a-b	1.7 Mc/s	≥ 50
		a-b	.6 Mc/s	≥ 50
		a-2b	.1 Mc/s	≥ 50
0.325 Mc/s	.23 Mc/s	a+b	0.555 Mc/s	≥ 50
		2a+b	.88 Mc/s	≥ 50
		2a-b	.42 Mc/s	≥ 50
		a+2b	.785 Mc/s	≥ 50
		2a+2b	1.11 Mc/s	≥ 50

2. Gain Measurements



The 4.7 K ohm resistor is to prevent any serious change in the DA-101 termination when the detector is connected.

a) Connect point C to point A. Inject a signal of 100 uV (30% modulation) and calibrate receiver.

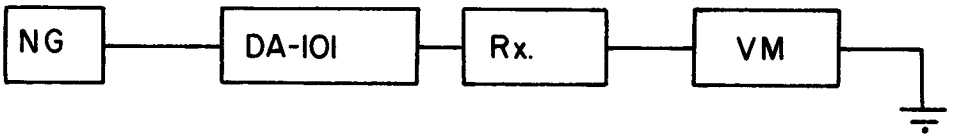
b) Connect point C to Point B and read just signal generator to give same receiver output level as in step (a). The following readings are to be obtained at an output jack loaded with a 68 ohm non-reactive resistor.

FREQUENCY	V1	V2	GAIN	ATTENUATION
0.1	100	65 ± 15	4 ± 2 db	
0.5	100	65 ± 15	4 ± 2 db	
1.0	100	65 ± 15	4 ± 2 db	
1.5	100	65 ± 15	4 ± 2 db	
2.0	100	65 ± 15	4 ± 2 db	
2.5	100	≧ 30K	4	≦ -50 db
7.0	100	≧ 30K		≦ -50 db
1.8	100	65 ± 15	4 ± 2 db	

ALL MEASUREMENTS WITH FILTER "IN"

Gain in db: $20 \log 10 \frac{V1}{V2}$

3. Noise Measurement



Follow the standard procedure for noise measurement in accordance with proceedings of IRE, July 1953, paras. 10.1.2.2, 10.1.2.2.1, 10.1.4.

FILTER "IN"

f (Mc/s)	Corrected DA-101 Noise	Max. Ind. mA
.5	≤ 7 db	3.6
1.0	≤ 7 db	3.6
1.5	≤ 7 db	3.6
2.0	≤ 8 db	4.5

4. Back to Front Attenuation (See Figure 1 attached)

Follow the standard procedure for back to front measurement. The following results should be obtained:

f (Mc/s)	Attenuation db	Gen. sett.
0.1	≥ 70.0	(≥300K)
2.0	≥ 60.0	(≥100K)

5. Jack to Jack Attenuation (See Figure 1 attached)

Follow standard procedure of jack to jack measurement. The following results should be obtained.

	J_1		J_3	
f (Mc/s)	0.1	2.0	0.1	2.0
J_2	>60	>45	>60	>45
	>100K	>17.8K	>100K	>17.8K

6. Input Impedance

f (Mc/s)	V S W R	
	Input Filter In	Input Filter Out
0.4	≦ 1.8	≦ 1.8
1.5	≦ 1.8	≦ 1.8
2.0	≦ 1.8	≦ 1.8

TMC SPECIFICATION NO. S - 10059

TITLE: FINAL TEST PROCEDURE FOR MODEL DA-101 JOB

FIGURE 1

Calibrate receiver/wattmeter by connecting points A and B with signal generator attenuator set for 100 microvolts. Interpose DA-101 between points A and B. For jack to jack attenuation C, D are output jacks. For back to front attenuation C is an output and D the antenna jack. Adjust signal generator attenuator to regain wattmeter reading;

$$\text{Attn} \_\_\_\_\_ 20 \log_{10} \frac{V \text{ reset}}{V \text{ Cal.}}$$

Where V Cal. is the 100 microvolt level and V reset is the attenuator reading necessary to regain wattmeter reading.