TMC SPECIFICATION

NO. S 1223

REV: Ø

COMPILED: E.P. CHECKED: E.P. APPD: D-B SM

SHEET OF

TITLE:

5/6/68 jb/

TEST PROCEDURE

LPA-2

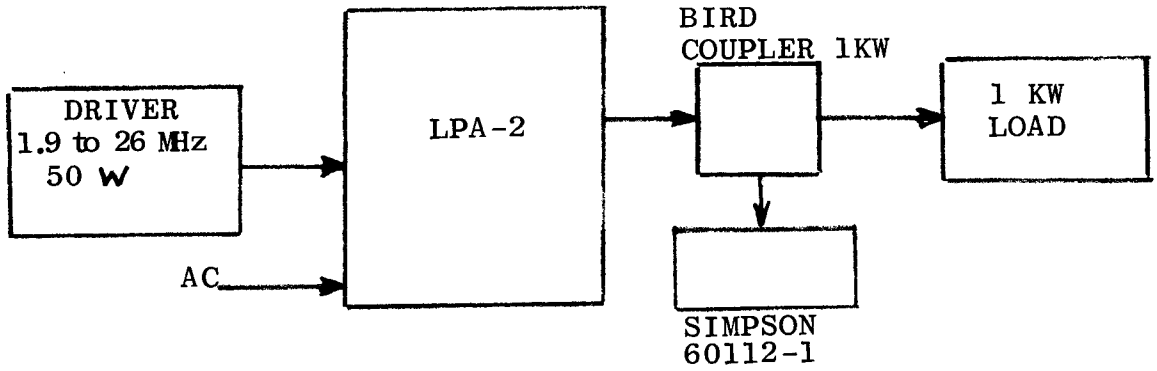


FIG. 1

Set up the test equipment as shown in Figure 1. The driver section must be capable of generating 50 watts average and 100 watts PEP at a frequency of between 1.9 MHz and 26 MHz.

Apply AC power to the test equipment. Adjust the test equipment to generate any frequency between 1.9 MHz and 26 MHz. Then reduce the RF output from test equipment to minimum.

The LPA-2 is considered safe from electric shock only when a competent operator observes the same caution to this equipment as is applied to any other high voltage device. When the top and bottom covers have been removed, the operator should be aware of not only the high voltage points, but also the location of the AC voltage and RF drive.

If the LPA-2 is being operated out of its cabinet, or rack, and without top or bottom covers, first close the interlock switches S103 and S104. Then place a wire jumper between pin 1 and pin 11 on J102.

Turn on AC switch S101. The filaments on V101 and V102 should light and the blowers B101 and B102 should start.

Adjust the channel selector S105 on the LPA-2 to the channel corresponding to the frequency of the test equipment. This should activate the Ledex solenoid in the bandswitch assembly S106. The bandswitch should turn to the band corresponding to the channel select switch. (S105)

Turn the "manual", "tune", "auto" switch S107 to "manual" position.

Turn on high voltage switch (S102). The red high voltage lamp (DS101) should light. The PA plate meter (M101) should read approximately 200 MA. This will indicate the presence of high voltage on the plates of V101 and V102. Check the operation of interlocks S103 and S104. By turning S103 or S104 on and off, the high voltage should also go on and off. The ledexes S105 and S106 and the blowers will operate with an interlock open, and the filaments of V101 and V102 will remain lit with only AC power applied. With AC switch "on", interlocks closed, high voltage switch"on", adjust RF drive for an indication of approximately 260 MA on PA plate meter (M101).

Adjust "tune" control for resonant peak on test meter (Simpson 60112-1). The RF output meter (M102) should also reach a resonant peak of approximately 1/2 to 3/4 scale. This resonant peak is used as the tuning aid. Increase the driver output until

the PA plate meter (M101) reads 400 MA. With a reading of 400 MA on the PA meter, the test meter (Simpson 60112-1) should read between 400 and 500 Watts.

Turn the high voltage switch (S102) to "off". The output test meter should now read between 15 and 50 watts. This is the RF input drive, and is also an indication that the RF switching relay (K103) is working.

Turn H.V. "ON". Check the d.c. voltage at J104 (ALDC out). The d.c. voltage should read between 0 and -15 volts when the ALDC pot (R122) is varied.

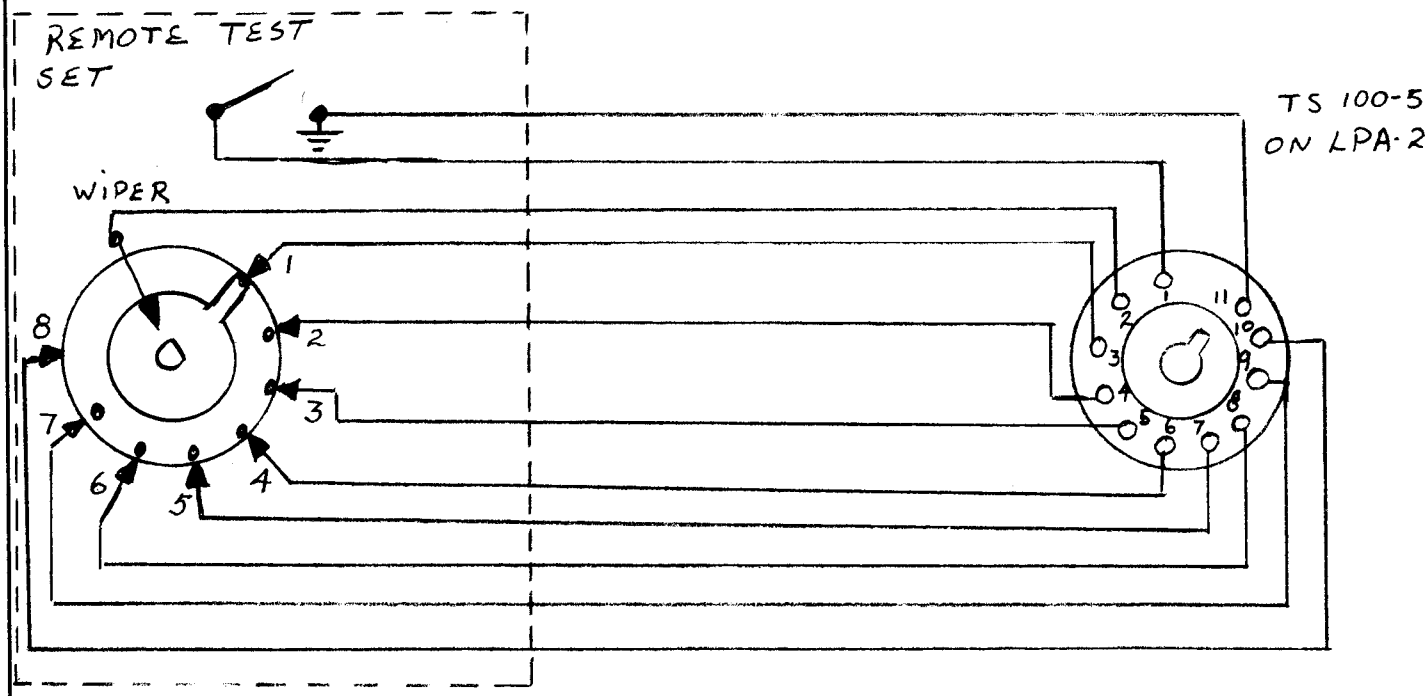
With H.V. switch "off" and "tune" control still set at resonance, adjust "manual", "tune", "auto" switch (S107) to "tune" position.

Select the pre-position pot (R105 to R112) corresponding with the channel in use. Using an alignment tool, adjust the pot until the green ready light comes "ON". Turn S107 to the "auto" position. The green ready light should remain "on". Turn S107 to "manual" position. Turn the "tune" control approximately 30^{o} clockwise or counterclockwise. Turn "S107" to "auto" position. This should activate the motor (MO101) which should turn the "tune" capacitor (C123) until the green ready light comes "on", then it should stop turning. Turn on the high voltage. The LPA-2 should still be at resonance, and putting out the same power as it was when it was tuned manually.

With this alignment procedure of the auto-tune circuit, each of the other seven channels should adjust to a selected frequency within their corresponding bands.

To check remote operation on LPA-2 use the test set-up as shown in Figure 2.

With AC switch on LPA-2 "on", turn the remote eight position rotary switch to each position. The channel select switch (S-105) should turn to the same position as the remote switch. As S105 turns the bandswitch S106 should also turn.



Alignment of R104

The LPA-2 is designed to auto tune within the top 180° half of the tuning capacitor C-123. To accomplish this, the resistance of potentiometer R104 must be adjusted in relation to the capacitance of C123.

This procedure should be followed when adjusting R104. First loosen the gear on the tune capacitor (GR205-13). Disengage it from the spring load gear on R104 (GR213-5). Spring load GR213-5 about 4 or 5 teeth and engage it again with the capacitor gear (205-13). With the capacitor gear still loose, adjust tune capacitor for maximum capacitance. Using an ohm meter, with one lead on ground and the other lead on the wiper of R-104, adjust R104 for 30 ohms.

Before tightening the capacitor gear, be sure to not move the position of R-104 and be sure the gear on R104 is still spring loaded. Then tighten the set screws on the capacitor gear.

Properly adjusted, the resistance of R104 should be increasing as the capacitance of tune capacitor (C123) is decreased.

A check list can be completed by the test technician to indicate the proper installation and operation of main circuits and components. The technician will make an indication in the last column for proper installation and operation.

COMPONENTS	SCHEMATIC DESIGNATION	CHECK
Fuse - 3A Fast Blo	F101	
Fuse - 2A Fast Blo	F103	
Fuse - 2A Slo Blo	F102	
Interlocks	S103 & S104	
Auto Tune Circuit		
Remote Circuit		
Automatic RF Switching	K103	
High Voltage Lamp	DS101	
Ready Light	DS102	
ALDC Pot	R122	

TYPICAL READINGS

Frequency	EP	IP	DRIVE
6 MHz	2600 VDC	340 MA	35 Watts

For reference purposes the operator can include readings on a chart such as the one below, for whichever frequencies are being used.

TEST CHART

Freq.	Drive	Ip	Output	Channel Number

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