

DATE 6/17/58  
 SH. 1 OF 5  
 COMPILED BY

TMC SPECIFICATION NO. S-367 **A**

TITLE: TEST SPEC FOR ATS-70-50

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**1.0 MECHANICAL INSPECTION**

S445

- 1.1 Inspect all components for damage during installation.
- 1.2 Adjust R-301 so that the silver plated ends make good contact with the fingers on the end pieces.
- 1.3 See that both pig tail connections are securely soldered to the resistor and contact proper.
- 1.4 Adjust L-305 so that no part of the core is touching the case.

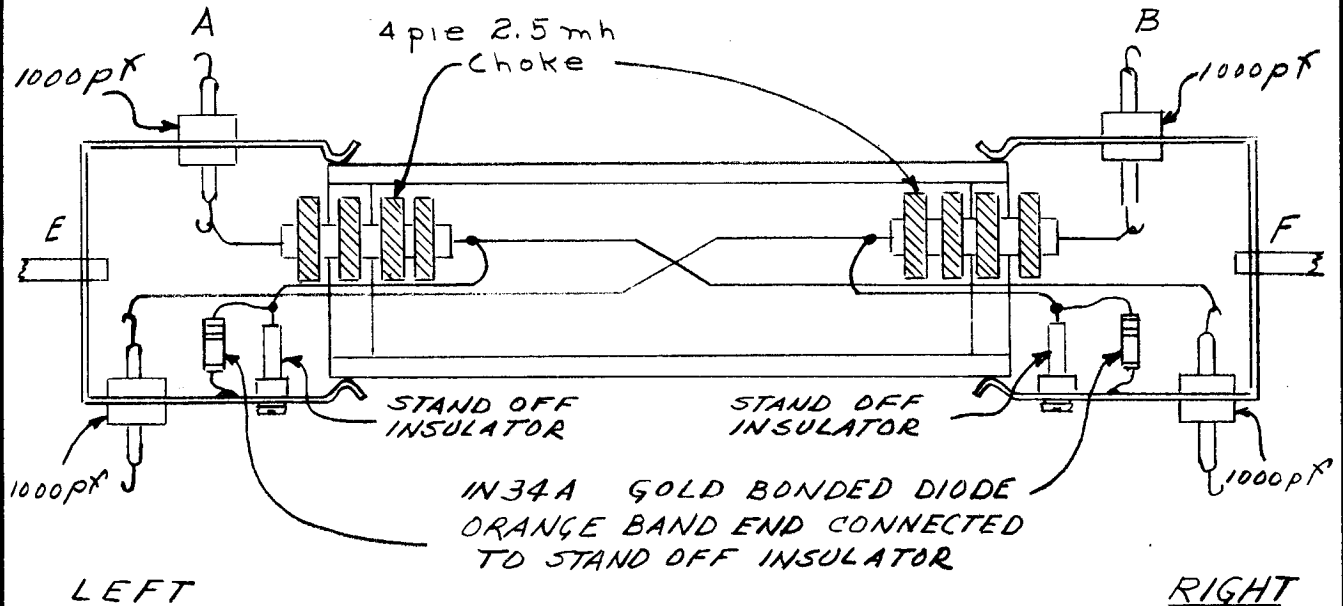
**2.0 ELECTRICAL INSPECTION**

*(Directional Coupler)*

**TEST PROCEDURE (ATS DIRECTIONAL COUPLER)**

Test	Checks	Connect Ohmmeter Leads to Terminals	Read - ohms
2.1	Right 2.5 mh choke	B and C	30 - 40
2.2	Left 2.5 mh choke	A and D	30 - 40
2.3	Right 1N34A	C and F Reverse Leads	5 - 15 100 K - 2M
2.4	Left 1N34A	D and E Reverse Leads	5 - 15 100 K - 2M
2.5	General Short Test	A, B, C or D to E or F Reverse Leads	5 - 15 100 K - 2M
2.6	0.6 ohm Resistor	E and F	0.6

**NOTE:** The directional coupler should be assembled as per sketch before testing.



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3.0 RF ALIGNMENT

CAUTION

THIS SECTION REQUIRES THE USE OF RF ENERGY FROM THE TRANSMITTER. FOLLOW INSTRUCTIONS CAREFULLY. EACH TIME THE PROCEDURE CALLS FOR XMTR POWER TO BE OFF USE THE FINAL PLATES SWITCH OR ITS EQUIVALENT.

- 3.1 Have the following equipment available for use in this section:
- Directional Coupler Unit, ATS-70-50CU
  - Monitor Control Unit, ATS-MCU
  - × -- ~~70 ohm~~ or 50 ohm, 1000 watt Resistive Load
  - XMTR GPT-750 or equivalent
- 3.2 Connect 50 ohms resistive load to J302 of the Directional Coupler Unit.
- 3.3 Complete system cabling following instructions outlined in Section III, Installation and Operation. The Tuner Unit, ATS-70-50TU is not used.
- 3.4 Turn R103,104,105,106 and R107 of the Monitor Control Unit (MCU) to minimum resistance (fully CW).
- 3.5 If pointers of VSWR METER (M101) do not rest on "0" adjust them to "0" by turning screwheads at pointer hubs slowly.
- 3.6 Turn POWER switch to X1 position.
- 3.7 With XMTR final plates OFF tune to output frequency of 6.0 mc.
- 3.8 With XMTR output level at minimum turn final plates ON and slowly increase DRIVE until M101 indicates FORWARD-WATTS (black scale) is 100. A maximum transmitter power of 15 W is required.
- 3.9 Adjust the NULL capacitor (C302) of the DIRECTIONAL COUPLER UNIT (DCU) until the WATTS-REFLECTED (red scale) of M101 indicates minimum (usually zero).
- 3.10 Turn XMTR final plates OFF. REVERSE RF cables on the DCU by connecting the Dummy load to J301 and the XMTR to J302.

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- 3.11 Turn XMTR final plates ON. Increase power until WATTS-REFLECTED scale of M101 reads 100. A maximum transmitter power of 15 W is required.
- 3.12 Adjust the EQUALIZER capacitor (C305) on DCU until FORWARD-WATTS of M101 reads minimum.
- 3.13 Turn XMTR final plates OFF. Restore cable connections of DCU to normal operation positions (XMTR to J301, Load to J-302).
- 3.14 Adjust R103,104,105,106 and R107 to maximum resistance (Fully CW).
- 3.15 Connect RF VTVM across Dummy resistance load to J302 of the DCU.
- 3.16 Turn XMTR final plates ON and adjust its output level until RF VTVM indicates 72.2 volts.
- 3.17 Adjust R104 of the MCU until WATTS-FORWARD scale of M101 reads 100.
- 3.18 Turn XMTR final plates OFF. Reverse RF connections to DCU as before so that the XMTR connects to J302.
- 3.19 Turn XMTR final plates ON. Adjust output to again read 72.2 volts.
- 3.20 Adjust R106 of the MCU until WATTS-REFLECTED of M101 reads 100.
- 3.21 Turn XMTR final plates OFF. Restore RF cable and load of DCU to their normal operating positions.
- 3.22 Turn POWER switch of MCU to X10 position.
- 3.23 Turn XMTR final plates On and adjust its output level to 224 volts (1000 Watts for WATS-50) as read on the RF VTVM across the Dummy load.
- 3.24 Adjust R103 of the MCU until FORWARD-POWER scale of M101 reads 1000 (100 x 10).
- 3.25 Turn XMTR final plates OFF. Reverse connections to the DCU as before.
- 3.26 Turn XMTR final plates ON and check 224 volts output level on RF VTVM.
- 3.27 Adjust R105 of the MCU until WATTS-REFLECTED scale of M101 indicates 1000.
- 3.28 Reduce XMTR power level until RF VTVM indicates 22 volts.

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3.29 Turn POWER switch of the MCU to the X1 position.

3.30 Hold REFLECTED POWER switch of the MCU in the - 10 position while adjusting R107 for a full scale reading of 10 (100 - 10) on the WATTS-REFLECTED scale of M101.

3.31 Turn XMTR OFF. Restore connections to the DCU to their normal operating positions.

4.0 POWER TEST

4.1 Adjust the transmitter output for 1000 W at 6 Mc for five minutes. Turn power off and inspect to see if any components are overheating.

5.0 DIRECTIONAL COUPLER DATA

5.1 Refer to S-370 ATS system voltage charts

6.0 CALIBRATION OF 70 OHM SYSTEM

6.1 Repeat steps 3.2 to 3.31 using a 70 ohm Dummy load and 86.7 volts for 100 Watts, 270 volts for 1000 Watts, 27 volts for 10 Watts.

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TEST DATA SHEET

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ATS-70-50CU

Serial No. \_\_\_\_\_

1.0 Mechanical Inspection \_\_\_\_\_

2.0 Electrical Inspection \_\_\_\_\_

3.0 RF alignment \_\_\_\_\_

4.0 Power Test \_\_\_\_\_

5.0 Directional Coupler Data \_\_\_\_\_

6.0 Calibration of 70 Ohm System \_\_\_\_\_

DATE \_\_\_\_\_

TESTED BY \_\_\_\_\_

