

DATE 6-10-59
 SH. 1 OF 5
 COMPILED BY
574

TMC SPECIFICATION NO. S 426 A

TITLE: TEST PROCEDURE FOR CU-2/ATS-50 (70)

APPROVED GNM

& MCU-2/ATS-50 (70)

SUPERSEDED
 DIRECTLY REPLACED BY S445

1.0 MECHANICAL INSPECTION:

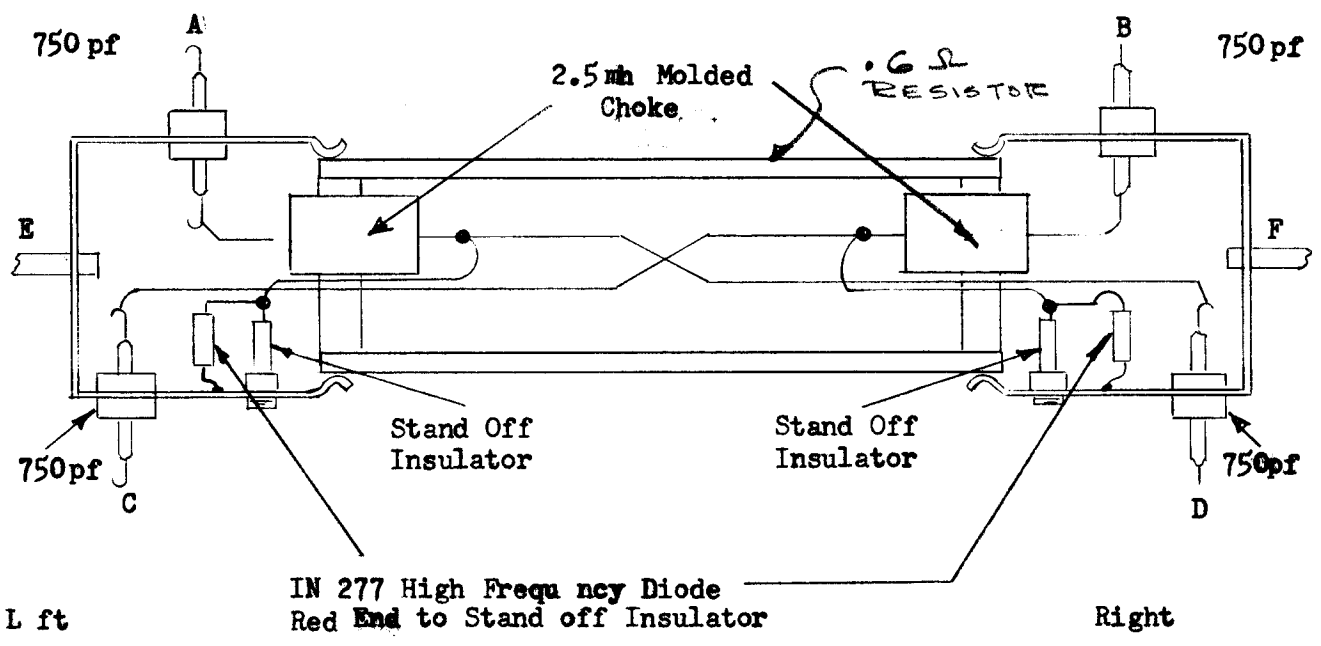
- 1.1. Inspect all components for damage during installation.
- 1.2 Adjust R-301 so that the silver plated ends make good contact with the fingers on the end pieces.
- 1.3 Adjust L-305 so that no part of the core is touching the case.

2.0 ELECTRICAL INSPECTION:

TEST PROCEDURE (ATS DIRECTIONAL COUPLER)

<u>TEST</u>	<u>CHECKS</u>	<u>CONNECT OHMMETER LEADS TO TERMINALS</u>	<u>READ - OHMS</u>
2.1	Right 2.5 mh choke	B and C	65 - 75
2.2	Left 2.5 mh choke	A and B	65 - 75
2.3	Right 1N277	C and F	90 - 110
		Reverse Leads	400K - 2M
2.4	Left 1N277	D and E	90 - 110
		Reverse Leads	400K - 2M
2.5	General Short Test	A, B, C or D to E or F	90 - 110
		Reverse Leads	400K - 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 R.F. 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 FINAL PLATES SWITCH OR ITS EQUIVALENT.

- 3.1 Have the following equipment available for use in this section:
 - Directional Coupler Unit, ATS-70-50CU-2
 - Monitor Control Unit, ATS-MCU-2
 - 70 Ω or 50 Ω , 1000 watt resistive load
 - XMTR GPT-750 or equivalent
- 3.2 Connect 50 Ω resistive load to J303 of the Directional Coupler Unit.
- 3.3 Complete system cabling following instructions outlined in Section 3, Installation and Operation. The Tuner Unit, ATS-70-50TU is not used.
- 3.4 Turn R103, 104, 105, and 102 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 (C308) of the DIRECTIONAL COUPLER UNIT (DCU) until the WATTS-REFLECTED (red scale) of M101 indicates minimum.
- 3.10 Turn XMTR final plates "OFF". REVERSE RF cables on the DCU by connecting the Dummy Load to J302 and the XMTR to J303.
- 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 (C307) on DCU until FORWARD-WATTS of M101 reads minimum.

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- 3.13 Turn XMTR final plates "OFF". Restore cable connections of DCU to normal operation positions (XMTR to J302, Load to J303).
- 3.14 Adjust R103, 104, 105 and 102 to maximum resistance (Fully CCW).
- 3.15 Connect RF VTVM across Dummy resistance load to J303 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 R102 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 J303.
- 3.19 Turn XMTR final plates "ON". Adjust output to again read 72.2 volts.
- 3.20 Adjust R105 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 ATS-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 R104 of the MCU until WATTS-REFLECTED scale of M101 indicates 1000.
- 3.28 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.

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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.

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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 Ω System _____

Date _____

Tested By _____

