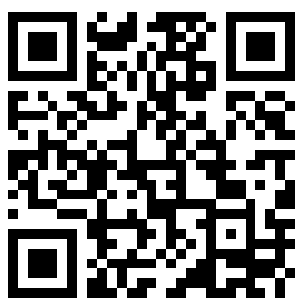


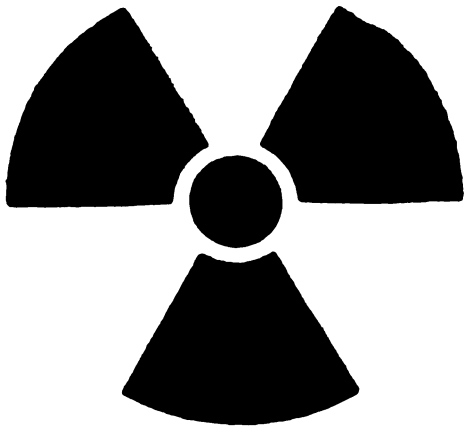
CHANGE
No. 1

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC, *30 August 1977*

CALIBRATION PROCEDURE FOR MAINTENANCE KIT MK-1035/ARC-131 (NSN 5821-00-935-0058)

TB 11-6625-1610-35/1, 24 November 1967, is changed as follows:
Title is changed as shown above.
Add Radiation Warning.

This copy is a reprint which includes current pages from Change 1.



STO-RW-2

Indicator ID-48 ·· Ra226 1.5uCi 6610-839-8638
Radiation Hazard Information: The following radiation hazard information must be read and understood by all personnel before operating or repairing Maintenance Kit MK-1035/ARC-131. Hazardous radioactive materials are present in the above listed component.

The components are potentially hazardous when broken. See qualified medical personnel and the local Radiological Protection Officer (RPO) immediately if you are exposed to or cut by broken components. First aid instructions are contained in TB 43-0122, and AR 755-15.
NEVER place radioactive components in your pocket.
Use extreme care NOT to break radioactive components while handling them.
NEVER remove radioactive components from cartons until you are ready to use them.
If any of these components are broken, notify the local RPO immediately. The RPO will survey the immediate area for radiological contamination and will supervise the removal of broken components. The above listed radioactive components *will not* be repaired or disassembled.
Disposal of broken, unserviceable, or unwanted radioactive components will be accomplished in accordance with the instructions in AR 755-15.

By Order of the Secretary of the Army:

BERNARD W. ROGERS
General, United States Army
Chief of Staff

Official:

PAUL T. SMITH
Major General, United States Army
The Adjutant General

Distribution:
To be distributed in accordance with DA Form 12-36A, Calibration requirements for MK-1035/ARC-131.

U.S. GOVERNMENT PRINTING OFFICE: 1977-765010/141

GPO 800-800

TB 11–6625–1610–35/1

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

CALIBRATION PROCEDURE FOR MAINTENANCE KIT MK–1035/ARC–131 5821–935–0058

Headquarters, Department of the Army, Washington D.C.
24 November 1967

Section I. GENERAL

1. Purpose and Scope. *a.* This bulletin provides information for the periodic calibration of Maintenance Kit MK–1035/ARC–131, 5821–935–0058 and is to be used by maintenance calibration personnel. Since calibration personnel are trained and qualified in the usage of calibration test and measuring equipment, detailed instructions concerning the operation and use of the standards are not contained in this bulletin.

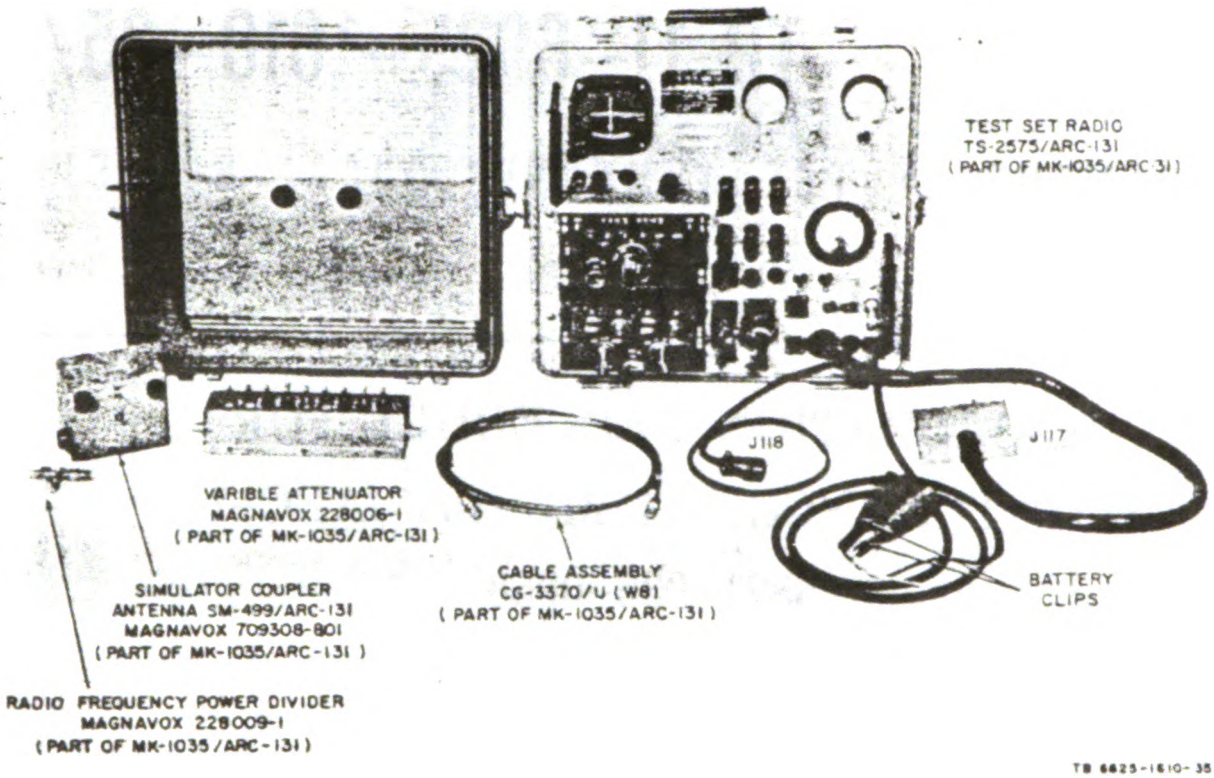


Figure 1. Maintenance Kit MK-1035/ARC-131

b. Integrated within this bulletin are illustrations showing the location of all controls and components utilized in this calibration procedure as well as diagrams showing equipment setups. Equipment ground connections are not necessarily shown in the diagrams.

2. Reporting of Technical Bulletin Improvements. Reporting of errors, omissions, and recommendations for improving this bulletin by the individual user, is encouraged. Reports should be submitted on DA Form 2028 (Recommended Changes to DA Publications) and forwarded direct to Commanding General, U.S. Army Electronics Command, ATTN: AMSEL-ME-NMP-AD, Fort Monmouth, N.J., 07703.

3. Description. Maintenance Kit MK-1035/ARC-131 is a portable equipment designed to enable bench operation and test of Radio Set AN/ARC-131. The maintenance kit provides interconnections with the external power source, auxiliary standard test equipment and the internal control, amplifying and monitoring circuits to enable operation, test, alignment, and repair of Radio Set AN/ARC-131 in direct, general support, or depot maintenance. Special cables, tools, and adapters are provided and stored within the maintenance kit. Additional data is listed in *a* through *c* below.

a. Identification.

Nomenclature	Maintenance Kit MK-1035/ARC-131
Federal stock number	5821-935-0058
Manufacturer	Magnavox Company
Manufacturer's model number	Part Number 709300-801
Size	12.67 in. x 14.62 in. x 14.12 in.
Weight	45 lbs
Reference	TM 11-6625-1610-12

b. Specifications.

Input Requirement	28 VDC
Internal Power Supply Operation	±2 VDC
Radio Frequency Power Amplifier Test	±10%
Homing System Performance	±.5 DB
Radio Frequency Load Performance	±.5 DB
Radio Frequency Power Divider Test	1 DB
Variable Attenuator Test	±1% or .05 DB whichever is greater

c. Program Data.

Time required for calibration	1 hour
Calibration level	Maintenance

4. General Instructions. *a. Frequency of Calibration.* The maximum time permitted between calibration checks for Maintenance Kit MK-1035/ARC-131 is contained in TB 11-6625-692-15/1.

b. Reporting Requirements. Report accomplishment of maintenance level calibrations only when required, as instructed in TB 11-6625-692-15/1.

c. Unit Under Test. The Maintenance Kit MK-1035/ARC-131, will hereafter be referred to as the "unit under test."

d. Removal. Do not remove the unit under test from its protective case unless necessitated by equipment connection and/or components to be adjusted which are not accessible from external parts provided on the unit under test.

5. Difference Among Models. None.

Section II. CALIBRATION

6. Equipment Required. Equipment required for calibration performance checks and adjustments is listed in table 1. When any of the equipment listed in table 1 is not available an equivalent calibrated item may be used.

Table 1. Equipment Required for Calibration Performance Checks and Adjustments

A—Authorized equipment

Nomenclature	*Federal stock no.*
Signal Generator AN/USM-44A.	6625-539-9685
Multimeter TS-352B/U.	6625-553-0142
Voltmeter Electronic AN/URM-145.	6625-973-3986
Multimeter ME-26B/U.	6625-360-2493

B—Authorized accessories

Nomenclature	*Federal stock no.*	*Description*
Adaptor, Connector[1]	5935-683-7892	BNC "T", 2 Jacks, 1 Plug
Adaptor, Connector[1]	5935-280-1454	BNC Jack to BNC Jack
Adaptor, Connector[1]	5935-681-5013	BNC Plug to BNC Plug
Termination Coax[1]	5935-823-0487	NSN 50 ohm, BNC Male Connector.

[1] 2 each required

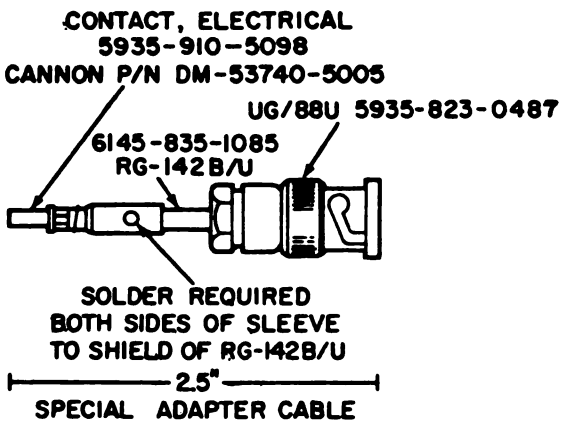


Figure 2. Fabricated special coaxial cable adaptor.

C—Additional equipment required

Nomenclature	*Federal stock No.*	*Description*
Power Supply	NSN	25-28VDC at 5 amperes
Resistor	5905-502-9098	50 ohm ± 10%, 200 watts (125 Watts min.).
Special Coaxial Cable Adapter	NSN	Fabricate per figure 2.

Note. It is recommended that the personnel familiarize themselves with the entire procedure prior to performing calibration.

7. Preliminary Procedures. Remove the cover from the unit under test and connect the +28 VDC power source cable to the power source.

Note: The following paragraphs are divided into subparagraph *a.* Performance Check, and subparagraph *b.* Adjustments. When the performance check is within tolerance, do not perform the corresponding adjustment. When the performance check is not within tolerance, perform the calibration procedure. When the performance check is not within tolerance and no adjustment is specified, the deficiency must be corrected before continuing with the procedure.

8. Voltage Regulation Test. *a. Performance Check.*

(1) Set the +28 VDC circuit breaker of unit under test to ON.

(2) Connect the ME–26B/U voltmeter to test point TP101 on the unit under test.

(3) The regulated voltage will be 23.5 to 24.5 VDC.

(4) Connect the equipment as shown in figure 3.

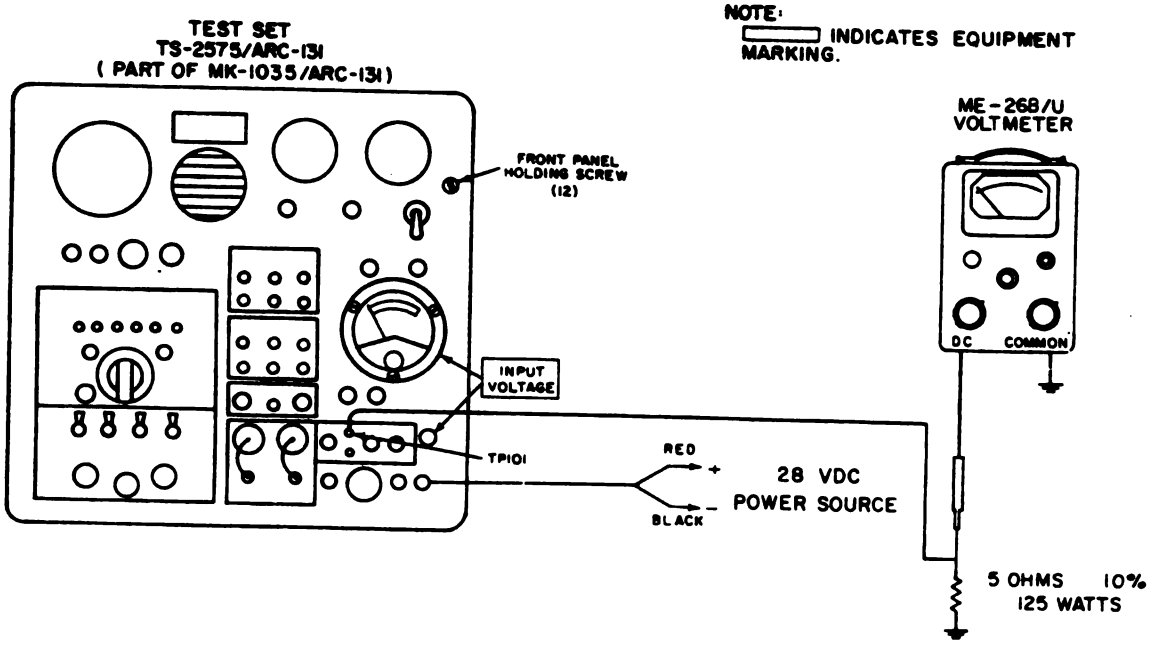


Figure 3. Voltage regulation test.

(5) The regulated voltage will remain between 22 to 26 VDC with line inputs of 25 to 29 VDC.

b. Adjustments.

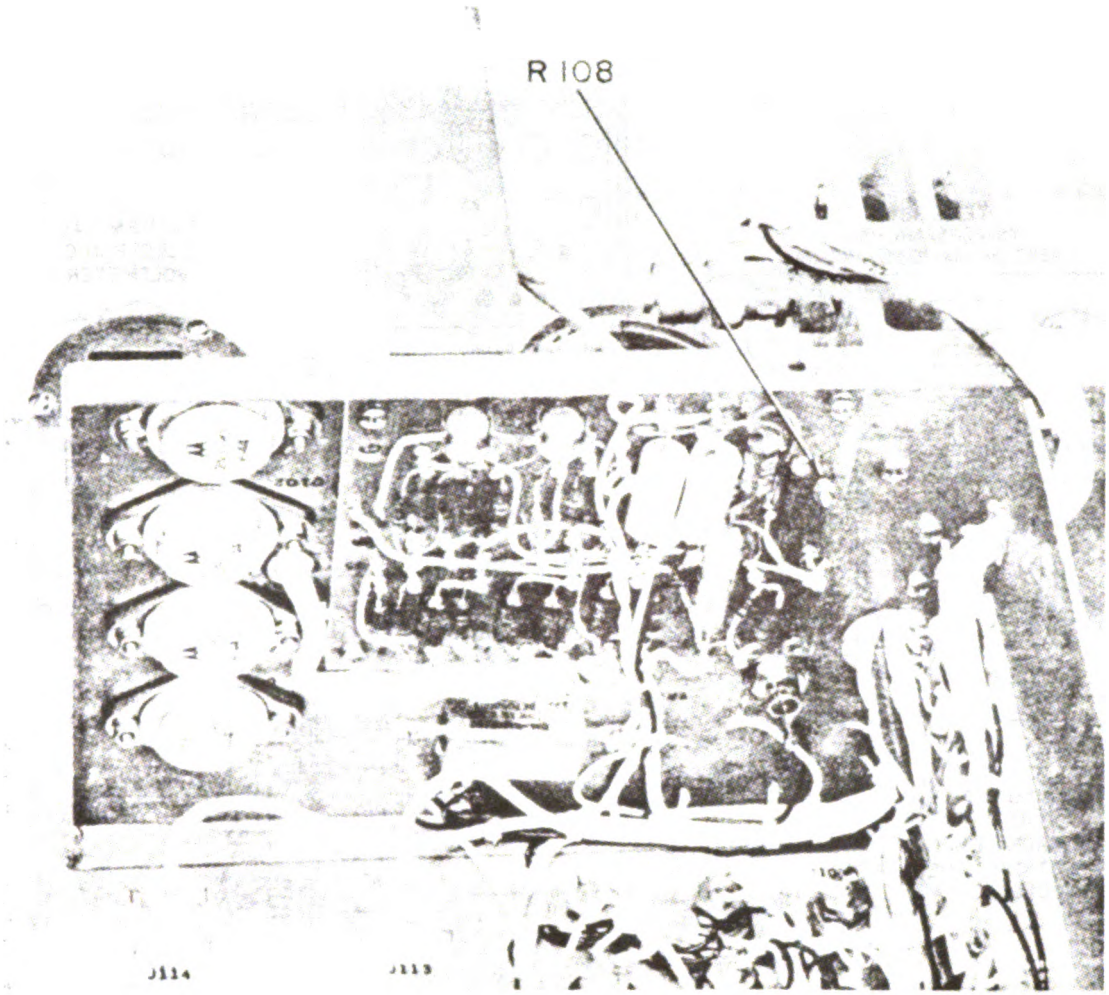
(1) Remove the 12 front panel holding screws. Then remove the front panel.

(2) Adjust potentiometer R108 (fig. 4) for a regulated voltage of 24.0 VDC (with no external load) as measured at TP–101 on the front panel.

9. Input Line Meter Test. *a. Performance Check.*

(1) Connect the ME–26B/U voltmeter to pin B of connector J129.

(2) With an input voltage of 28 VDC the input line meter will indicate 25 to 30 VDC.



TB 6625-1610-35-4

Figure 4. Voltage regulator adjustment.

b. Adjustments. No adjustments can be made.

10. Radio Frequency Amplifier Test. *a. Performance Check.*

(1) Set +28.0 VDC circuit breaker of unit under test to OFF.

(2) Connect a TS–352B/U multimeter between pins C and D of connector J116.

(3) Set the AGC switch to ON. The TS–352B/U multimeter will indicate 0.

(4) Move the TS–352B/U multimeter lead from D to A of J116.

(5) Set the AGC switch to OFF. The TS–352B/U multimeter will indicate between 558 and 684 ohms.

b. Adjustments. No adjustments can be made.

11. Homing System Performance Test. *a. Performance Check.*

(1) Connect the equipment as shown in figure 5.

(2) Turn LEFT and RIGHT HOMER ATTEN to 0 (zero) position.

(3) Set RF signal generator to 0.3 VRMS at 60.0 MC indicated on the AN/URM–145 electronic voltmeter.

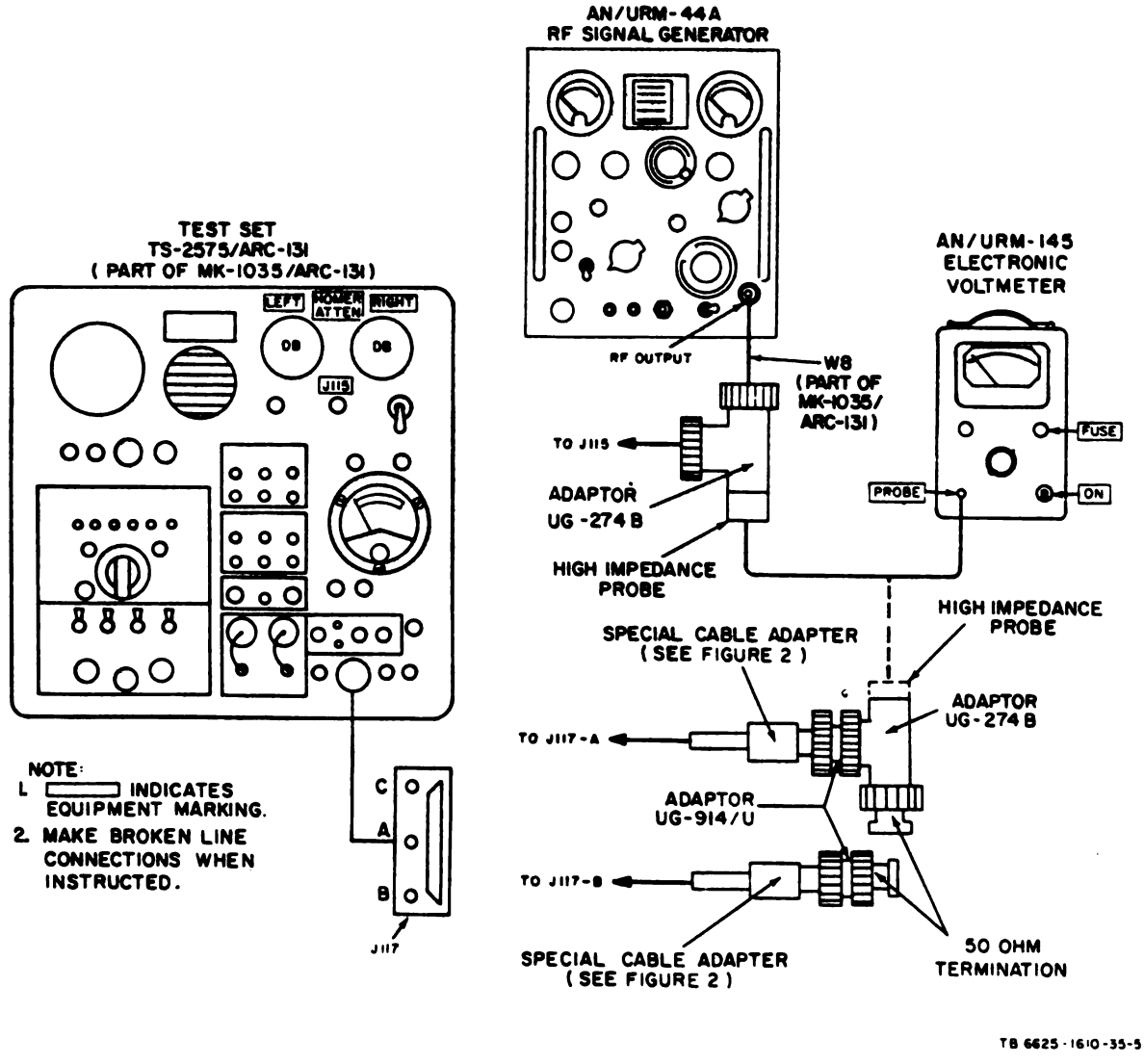


Figure 5. Homing system performance test.

(4) Measure the output voltage at J117–A by making the broken line connection shown in figure 5. The electronic voltmeter will indicate between 0.28 and 0.3 VRMS.

(5) Turn the RIGHT HOMER ATTEN to the 6 DB setting. The electronic voltmeter will indicate between 0.14 and 0.161 VRMS.

(6) Reconnect the equipment to the solid line test setup as shown in figure 5. except interchange the special cable adaptors attached to J117–A and B.

(7) Turn the RIGHT HOMER ATTEN to 0 (zero) position.

(8) Set RF signal generator to 0.3 VRMS at 60.0 MC as indicated on the AN/URM–145 voltmeter.

(9) Measure the output voltage at J117–B by making the broken line connection to

the coaxial T now connected to J117–B. The electronic voltmeter will indicate between 0.28 and 0.3 VRMS.

(10) Turn the LEFT HOMER ATTEN to the 6 DB setting. The electronic voltmeter will indicate between 0.14 and 0.161 VRMS.

b. Adjustments. No adjustments can be made.

12. Radio Frequency Load Test. *a. Performance Check.*

(1) Connect the equipment as shown in figure 6.

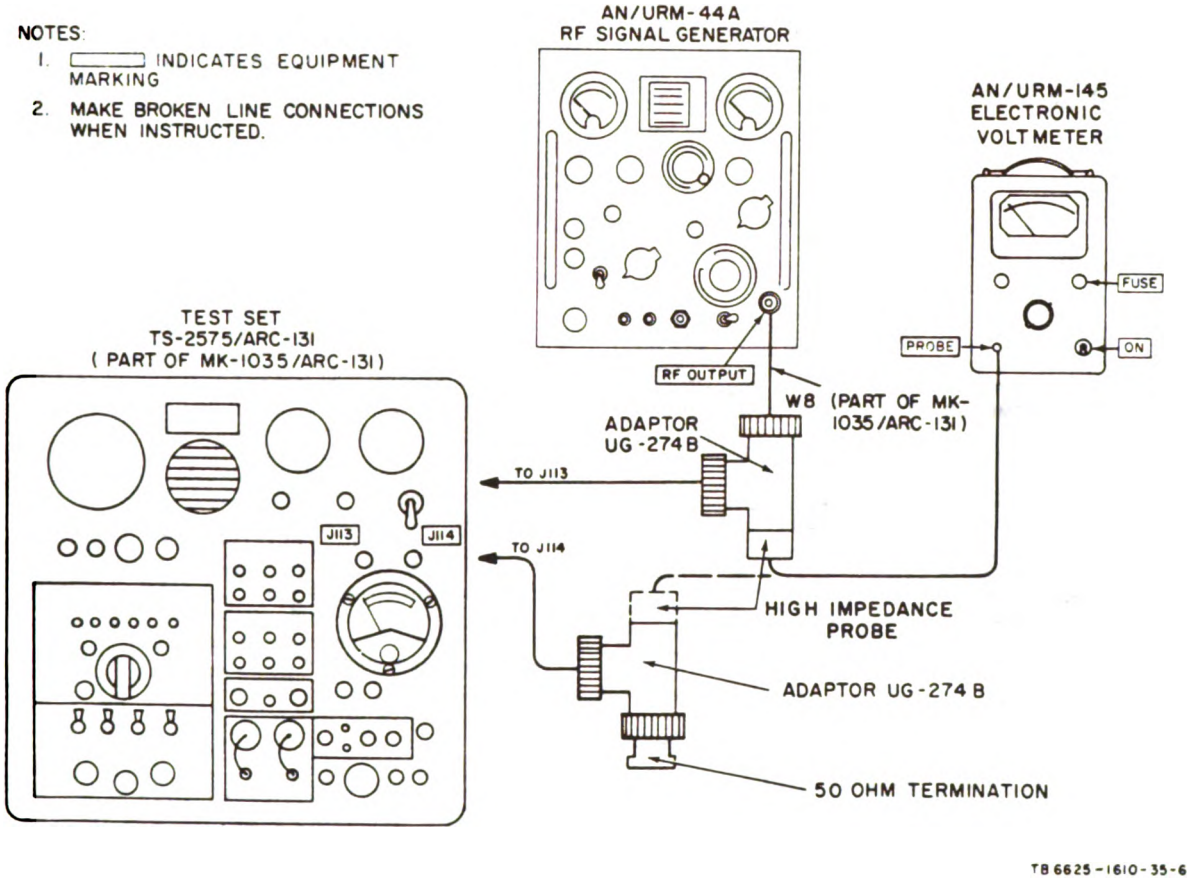


Figure 6. Radio frequency load test.

(2) Set the RF signal generator to 0.3 VRMS at 60.0 MC as indicated by the AN/URM–145 voltmeter.

(3) Measure the output voltage at J114 by making the broken line connection shown by figure 6. The electronic voltmeter will indicate between 0.027 and 0.033 VRMS.

b. Adjustments. No adjustments can be made.

13. Antenna Coupler Simulator Test. *a. Performance Check.*

(1) Connect the Antenna Coupler Simulator SM–499/ARC–131 to connector J118 of the unit under test and set the +28 VDC CIRCUIT BREAKER to ON.

(2) Turn the OFF–TR–RETRAN–HOME Switch on the Radio Set Control C–7088/ARC–131 to the T/R position.

(3) Turn the ten's and unit's frequency digits of Radio Set Control C–7088/ARC–131 on the unit under test from 30 to 49 and observe that the frequency dial read–outs agree with the digits selected at Control C–7088/ARC–131 and the red light should glow for each of the digits selected.

(4) Rotate the ten's and unit's frequency digits of Radio Set Control C–7088/ARC–131 on the unit under test from 50 to 69 and observe that the frequency dial read–outs agree with the digits selected at control C–7088/ARC–131 and the green light should glow for each of the digits selected. When the digit controls at Control C–7088/ARC–131 are rotated from 70 to 75 the dial at the Antenna Simulator Coupler SM–499/ARC–131 should remain at 69 and the green light should remain glowing.

b. Adjustments. No adjustments can be made.

14. Radio Frequency Power Divider Test.

a. Performance Check.

(1) Connect the equipment as shown in figure 7.

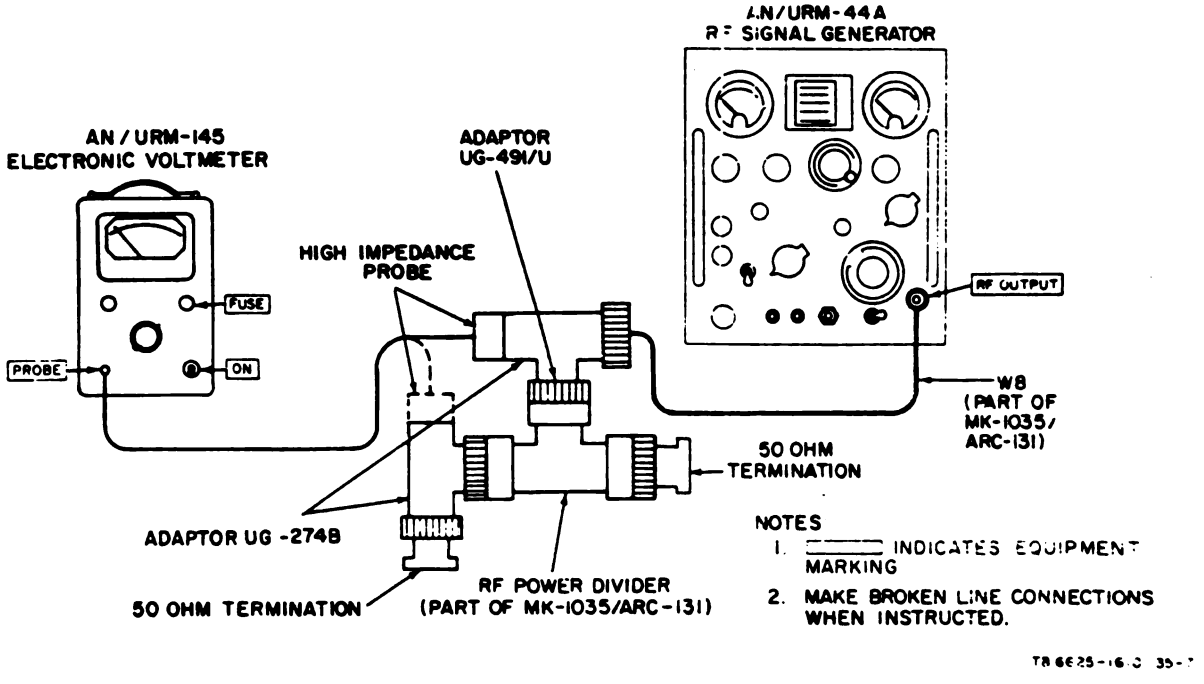


Figure 7. Radio frequency power divider test.

(2) Set RF Signal Generator to 0.25 VRMS at 60 MC as indicated by the electronic voltmeter.

(3) Make the broken line connection as shown in figure 7. The electronic voltmeter will indicate between 0.118 and 0.133 VRMS.

(4) Interchange the electronic voltmeter and 50–ohm termination connections to the power divider. The electronic voltmeter will indicate between 0.118 and 0.133 VRMS.

b. Adjustments. No adjustments can be made.

15. Variable Attenuator Test. *a. Performance Check.*

(1) Set all switches on variable attenuator to down position.

(2) Connect the equipment as shown in figure 8.

(3) Apply 0.5 VRMS at 50.0 MC as indicated by the electronic voltmeter.

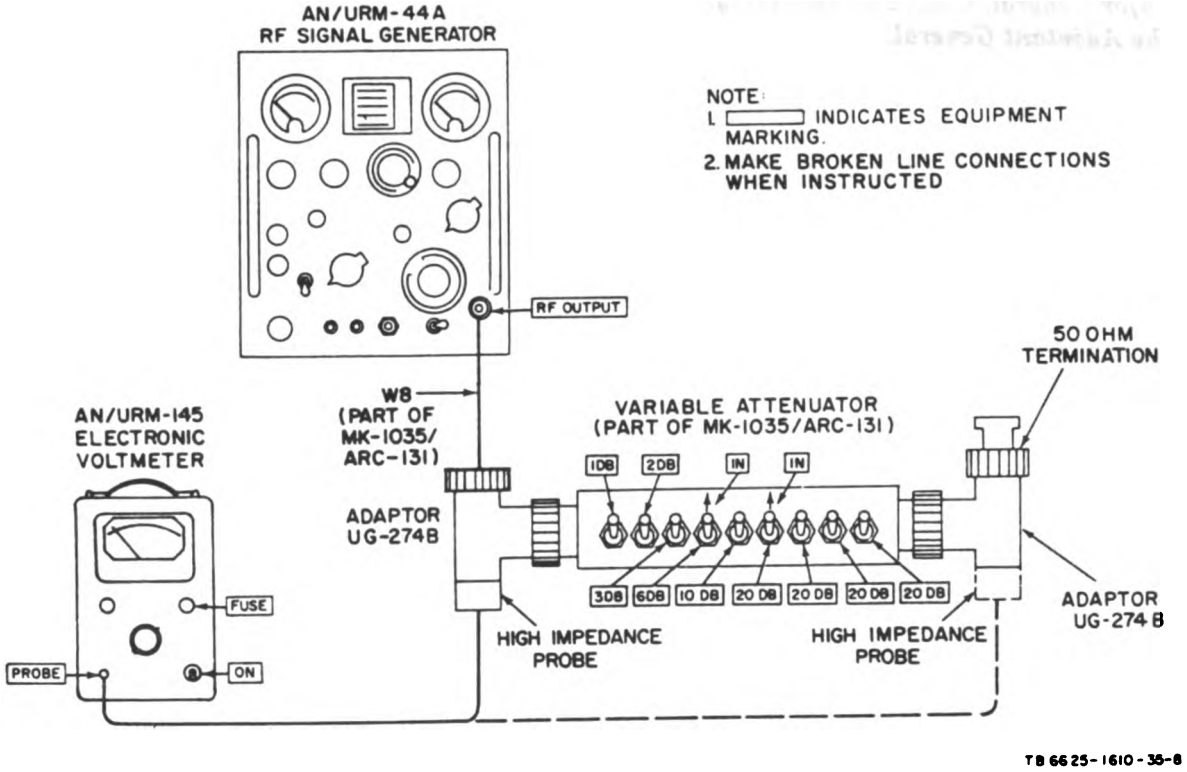


Figure 8. Variable attenuator test.

(4) Make the broken line connection as shown by figure 8. The electronic voltmeter will indicate between 0.456 and 0.500 VRMS.

(5) With the input voltage remaining at 0.5 VRMS, set the variable attenuator switches as indicated in table 2. The electronic voltmeter will indicate as specified.

Table 2. Variable Attenuator Test

Unit Under Test Switch IN	*Electronic Voltmeter Indication*
1 DB	.435 to .456
2 DB	.388 to .407
3 DB	.346 to .362
6 DB	.242 to .260
10 DB	.149 to .168
20 DB	.047 to .058
20 DB	.047 to .058
20 DB	.047 to .058
20 DB	.047 to .058

b. Adjustments. No adjustments can be made.

16. Final Procedure. *a.* Deenergize and disconnect all test equipment and install the unit under test in its protective case.

b. In accordance with TM 38–750, annotate and affix calibration DA label 80 (U.S. Army Calibration System). When the unit under test cannot be adjusted to within tolerance, annotate and affix DA Form 2417 (Unserviceable Test Instrument or Standard) (red tag).

By Order of the Secretary of the Army:

HAROLD K. JOHNSON,
General, United States Army,
Chief of Staff.

Official:

KENNETH G. WICKHAM,
Major General, United States Army,
The Adjutant General.

Distribution:

To be distributed in accordance with DA Form 12-36 (Unclas) requirements for Direct and General Support maintenance, All Rotor and Fixed Wing aircraft.

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