*TB11-6625-721-35

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

CALIBRATION PROCEDURE FOR RADIO TEST SET TS-777 /URD-4

Headquarters, Department of the Army, Washington, D.C.
13 May 1975

SECTION I GENERAL

1. Purpose and Scope

a. This bulletin provides information for the periodic calibration of Radio Test Set TS-777/URD-4 (fig. 1) and is used by maintenance calibration personnel. Since maintenance calibration personnel are trained and qualified in the use of test and measuring equipment, detailed instructions concerning the operation and use of these equipments are not contained in this bulletin.

b. This bulletin contains an illustration that lo-cates all controls and components utilized in this calibration **procedure.**

2. Reporting of Technical Bulletin Improvements

The reporting of errors, omissions, and recommendations for improving this publication by the individual user is encouraged. Reports should be submitted on DA Form 2028 (Recommended Changes to Publications and Blank Forms) direct to Commander, US Army Electronics Command, ATTN: Monmouth, NJ 07703.

*This bulletin supersedes TB 11-6625-721-35/1, 31 July 1969.

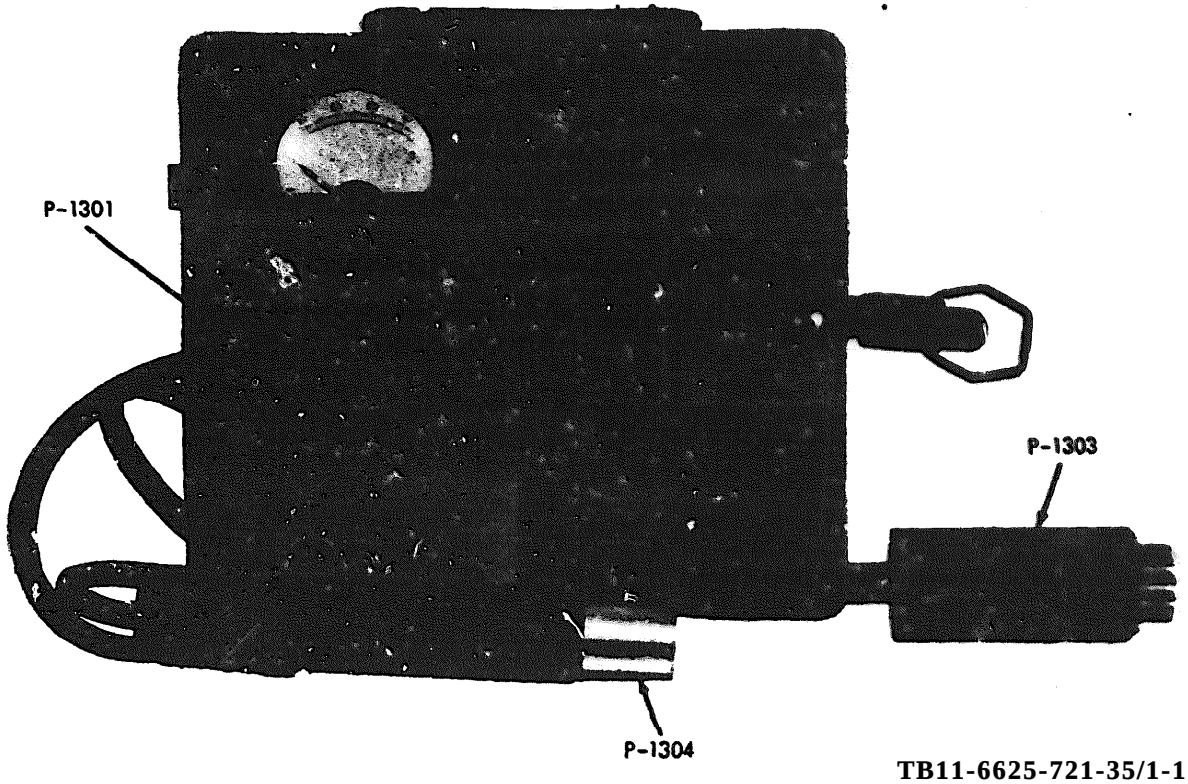

Figure 1. Radio Test Set TS-777/URD-4—front panel view.

3. Description

Radio Test Set TS-777/URD-4 is used to make voltage and current measurements and to check crystal operation of Direction Finder Set AN/URD-4. Additional data is listed in a through c below.

a. Identification.

Nomenclature	RADIO TEST SET TS-777/URD-4.
Federal stock number	**6625-635-4316.**
Line item number	**P/0 G13547.**
Size	***6.5 x 8 x 3.5* in.**
Weight	**4 lb.**
Reference	TM 11-526-15.

b. Specifications.

Input power requirement.	**None.**
Meter (basic) :	
Range	**100 pa.**
Accuracy	***+2% of* full scale.**
Measuring circuit range and accuracy :	
***Dc* volts**	**0–3, 0–15, 0–100 volt at 10,000 ohms/volt ±10%; 0–300 volts at 5000 ohm/volt ±4%.**
Audio measurement.	**100 milliwatts at midscale.**

c. Program Data.

Time required for calibration	**1 hour.**
Calibration level	**Maintenance.**

4. General Instructions

a. Calibration Reporting. **During the performance of this procedure, annotate DA Form 2416 (Calibration Data Card) in accordance with TM 38–750.**

b. Frequency of Calibration. **The maximum time permitted between calibration checks for the Radio Test Set TS–777/URD–4 is contained in TB 43–180.**

c. Unit Under Test. **Radio Test Set TS–777/URD–4 will be referred to as "unit under test."**

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

5. Differences Among Models

None.

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 Calibration Equipment

Nomenclature	Federal stock No.
AUDIO OSCILLATOR TS-421 ( ) U	5625-669-0228
METER TEST SET TS-682/GSM-1	6625-669-0747
MULTIMETER TS-352( )/U	6625-242-5023

B-Authorized Accessories

Nomenclature	Federal stock No.	Description
ADAPTER	5935-987-5922	BNC jack to double banana plug-
RADIO FREQUENCY CABLE ASSEMBLY.	4931-072-0780	BNC plug with alligator clips.
TEST LEAD SET CX-1331/U.	6625-395-9313	49-in-long test leads.

NOTE

Be familiar with the entire procedure prior to performing calibration.

7. **Preliminary Procedure**

a. Remove unit under test from protective cover.

b. **Place unit under test in a vertical position.**

NOTE

The following paragraphs are divided into subparagraph a, performance check and subparagraph b, adjustments. When the performance check is not within tolerance and no adjustment is specfied, the deficiency must be corrected before continuing with the procedure.

8. Meter Accuracy

a. Performance Check.

(1) Turn selector switch on unit under test to position 1.

(2) Observing correct polarity, connect 200-p amp dc output of Meter Test Set TS-682/GSM-1 to terminals on back of meter of unit under test, using Test Lead Set CX-1331/U.

(3) Adjust meter test set for indications on meter of unit under test as listed in table 2.

(4) Indications on meter test set should be within limits specified in table 2.

Table 2. Meter Accuracy

Unit under test indication (μ amperes)	Meter test set indications (μ amperes)	
	Min	Max
100	98	102
60	58	62
30	28	32

b. Adjustments. No **adjustments can be made.**

9. **Dc Volts, 0-3, and 0–100 Ranges**

a. Performance Check.

(1) Connect dc volts output of meter test set to pins 1 (-) and 2 (+) of connector P-1303 (fig. 1) on unit under test. Turn selector switch on unit under test to position 2.

(2) Press and hold sensitivity switch on unit under test and adjust output of meter test set for indication of 100 on meter of unit under test.

(3) Indication on meter test set should be between 2.7 and 3.3 volts dc.

(4) Release sensitivity switch on unit under test and adjust output of meter test set for indication of 100 on meter of unit under test.

(5) Indication on meter test set should be between 90 and 110 volts dc.

b. Adjustments. **No adjustments can be made.**

10. Dc Volts, 0-15 Range

a. Performance Check.

(1) Connect DC Volts output of meter test set to pins 8 (+) and 11 (-) on connector P1303 of unit under test.

(2) Turn selector switch on unit under test to 11.

(3) Adjust output of meter test set for indication of 100 on meter of unit under test.

(4) Indication on meter test set should be between 13.5 and 16.5 volts de.

b. Adjustments. **No adjustments can be made.**

11. Dc Volts, 0-300 Range

a. Performance Check.

(1) Connect dc volts output of meter test set to pins 8 (−) and 3 (+) of connector P1303 on unit under test.

(2) Turn selector switch on unit under test to 3.

(3) Adjust output of meter test set for indication of 100 on meter of unit under test.

(4) Indication on meter test set should be between 288 and 312 volts dc.

b. Adjustments. No adjustments can be made.

12. Audio Measurement

a. Performance Check.

(1) Connect output of Audio Oscillator TS–421 ( )/U between pins 10 and 11 of connector P1303 of unit under test using Radio Frequency Cable Assembly 4931–072–0780 and Adapter 5935–937–5922.

(2) Turn selector switch on unit under test to 10.

(3) Position controls of audio oscillator as listed in (*a*) through (*e*) below.

(*a*) LOAD switch to ON.

(*b*) FREQUENCY control to 1000 cps.

(*c*) IMPEDANCE switch to 600 ohms.

(*d*) OUTPUT ATTENUATOR switches to 0 DB.

(*e*) AMPLITUDE control for full-scale (100) indication on meter of unit under test.

(4) Indication on OUTPUT LEVEL meter of audio oscillator should be between 25.5 and 26.5 DB.

b. Adjustments. No adjustments can be made.

13. 7-Pin Probe

a. Performance Check.

(1) Connect Multimeter TS–352/U between pin 1 of plug P1304 (fig. 1) and tip of plug P–1301 (fig. 1) on 7-pin probe of unit under test.

(2) Resistance indication on multimeter should be between 6000 and 8000 ohms or between 60,000 and 80,000 ohms.

(3) Reverse test lead connections to 7-pin probe of unit under test. Resistance indication should be within alternate limits, as specified in (2) above.

b. Adjustments. No adjustments can be made.

14. Final Procedure

a. Deenergize and disconnect all test equipment and install unit under test in protective cover.

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 Limited Use) tag.

By Order *of the* **Secretary** *of the Army:*

FRED C. WEYAND
General, United States Army
Chief of Staff

Official:

VERNE L. BOWERS
Major *General, United States Army*
The Adjutant General

Distribution:

To be distributed in accordance with DA Form 12-34A, (qty rqr block no. 75) Requirements for Calibration procedures Publications.

DEPARTMENT OF THE ARMY
US ARMY AG PUBLICATIONS CENTER
1655 WOODSON ROAD
ST. LOUIS, MISSOURI 63114

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE $300

POSTAGE AND FEES PAID
DEPARTMENT OF THE ARMY
DOD 314

END

7-18-83

DATE

DEPARTMENT OF THE ARMY

MICROFORM
TEST TARGET