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DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

CALIBRATION PROCEDURE FOR MULTIMETER, ME-26D/U AND HEWLETT-PACKARD MODEL 410C

Headquarters, Department of the Army, Washington, DC
6 February 2009

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REPORTING OF ERRORS AND RECOMMENDING IMPROVEMENTS

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SECTION		Paragraph	Page
I.	IDENTIFICATION AND DESCRIPTION		
	Test instrument identification.....	1	2
	Forms, records, and reports	2	2
	Calibration description.....	3	2
II.	EQUIPMENT REQUIREMENTS		
	Equipment required.....	4	3
	Accessories required	5	3
III.	CALIBRATION PROCESS FOR MULTIMETER, ME-26D/U		
	Preliminary instructions	6	4
	Equipment setup.....	7	5
	Dc voltage	8	5
	Ac voltage	9	6
	Frequency response	10	7
	Resistance.....	11	9
	Final procedure	12	10

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SECTION		Paragraph	Page
	IV. CALIBRATION PROCESS FOR MULTIMETER, HEWLETT-PACKARD, MODEL 410C		
	Preliminary instructions	13	10
	Equipment setup.....	14	10
	Dc voltage	15	10
	Ac voltage	16	12
	Frequency response	17	13
	Resistance.....	18	14
	Dc current.....	19	15
	Final procedure	20	16

**SECTION I
IDENTIFICATION AND DESCRIPTION**

1. Test Instrument Identification. This bulletin provides instructions for the calibration of Multimeter, ME-26D/U and Hewlett-Packard, Model 410C. The manufacturers' manuals and TM 11-6625-200-15 were used as the prime data sources in compiling these instructions. The equipment being calibrated will be referred to as the TI (test instrument) throughout this bulletin.

a. Model Variations. Variations among models are described in text.

b. Time and Technique. The time required for this calibration is approximately 2 hours, using the dc and low frequency technique.

2. Forms, Records, and Reports

a. Forms, records, and reports required for calibration personnel at all levels are prescribed by TB 750-25.

b. Adjustments to be reported are designated (R) at the end of a sentence in which they appear. When adjustments are in tables the (R) follows the designated adjustment. Report only those adjustments made and designated with (R).

3. Calibration Description. TI parameters and performance specifications which pertain to this calibration are listed in table 1.

Table 1. Calibration Description

Test instrument parameters	Performance specifications
Multimeter ME-26D/U	
Dc voltage	Range: 0 to +1000 V ¹ Accuracy: ±3% FS
Ac voltage	Range: 0 to 300 V ² Accuracy: ±3% FS at 400 Hz
Frequency response	Referenced to 400 Hz: ±1 dB: 20 Hz to 300 MHz ±3 dB: 300 to 700 MHz

See footnotes at end of table.

Table 1. Calibration Description - Continued

Test instrument parameters	Performance specifications
Resistance	Range: 0 to 500 M Ω Accuracy at midscale: $\pm 1 \Omega$ on RX1 range $\pm 5\%$ on all other ranges
Hewlett-Packard, Model 410C	
Dc voltage	Range: 0 to +1500 V ³ Accuracy: $\pm 2\%$ FS
Ac voltage	Range: 0 to 300 V Accuracy: $\pm 3\%$ FS at 400 Hz
Frequency response	Referenced to 400 Hz: $\pm 10\%$: 20 to 100 Hz $\pm 2\%$: 100 Hz to 50 MHz $\pm 4\%$: 50 to 100 MHz ± 1.5 dB: 100 to 700 MHz
Resistance	Range: 0 to 500 M Ω Accuracy: 0 to midscale: $\pm 5\%$ of reading or: $\pm 2\%$ of midscale, whichever is greater $\pm 7\%$ from midscale to scale value of 2 $\pm 8\%$ from scale value of 2 to 3 $\pm 9\%$ from scale value of 3 to 5 $\pm 10\%$ from scale value of 5 to 10
Dc current	Range: 0 to +150 mA Accuracy: $\pm 3\%$ FS

¹Range extended to 30 kV with use of dc divider supplied with TI. Accuracy of dc divider is $\pm 5\%$.

²Range extended to 900 V with use of capacitive divider supplied with TI. Accuracy of capacitive divider is $\pm 1\%$.

³Not verified above 1000 V dc.

SECTION II EQUIPMENT REQUIREMENTS

4. Equipment Required. Table 2 identifies the specific equipment to be used in this calibration procedure. This equipment is issued with Secondary Transfer Calibration Standards Sets AN/GSM-286; AN/GSM-287; or AN/GSM-705. Alternate items may be used by the calibrating activity when the equipment listed in table 2 is not available. The items selected must be verified to perform satisfactorily prior to use and must bear evidence of current calibration. The equipment must meet or exceed the minimum use specifications listed in table 2. The accuracies listed in table 2 provide a four-to-one ratio between the standard and TI. Where the four-to-one ratio cannot be met, the actual accuracy of the equipment selected is shown in parenthesis.

5. Accessories Required. The accessories required for the calibration are common usage accessories, issued as indicated in paragraph 4 above and are not listed in this calibration procedure. The following peculiar accessory is also required for this calibration: Probe, T-connector, P/N 11042/455A (8899531).

Table 2. Minimum Specifications of Equipment Required

Common name	Minimum use specifications	Manufacturer and model (part number)
CALIBRATOR	Range: 0 to 315 V ac at 400 Hz 891 to 909 V ac at 10 kHz Accuracy: $\pm 0.75\%$ Range: 0.3 V ac; 20 Hz to 1 MHz Accuracy: $\pm 0.5\%$ Range: 0 to 1030 V dc Accuracy: $\pm 0.5\%$ Range: 0 to 150 MA dc Accuracy: $\pm 0.75\%$	Fluke, Model 5720A (5720A) (p/o MIS-35947); w/ amplifier, Fluke, Model 5725A/R (5725A/R)
MEASURING RECEIVER	Frequency range: 1 to 700 MHz Amplitude: 0.3 V Accuracy: $\pm 1.0\%$ 60 to 90 MHz $\pm 4.5\%$ 150 to 700 MHz	Measuring receiver system N5530S consisting of: Spectrum Analyzer, Agilent Model E4440A (E4440A), Power meter, Agilent Model E4419B (E4419B), and Sensor module, Agilent Model N5532A opt. 504 (504), 518 (518), 526 (526)
MULTIMETER	Range: 4.9 to 6.4 V ac 0 to 51.5 mV dc Accuracy: $\pm 0.75\%$	Hewlett Packard, Model 3458A (3458A)
SIGNAL GENERATOR	Frequency range: 1 to 700 MHz Amplitude: 0.3 V	(SG-1207/U)
RESISTANCE STANDARD NO. 1	Range: 0 to 1.1 M Ω Accuracy: $\pm 1.25\%$	Biddle-Grey, Model 71-631 (7910328)
RESISTANCE STANDARD NO. 2	Range: 0 to 10 M Ω Accuracy: $\pm 1.25\%$	Beckman, Model CR10M (8598965)

SECTION III CALIBRATION PROCESS FOR MULTIMETER, ME-26D/U

6. Preliminary Instructions

a. The instructions outlined in paragraphs 6 and 7 are preparatory to the calibration process. Personnel should become familiar with the applicable sections before beginning the calibration.

b. Items of equipment used in this procedure are referenced within the text by common name as listed in table 2.

c. Unless otherwise specified, verify the result of each test and, whenever the test requirement is not met, take corrective action before continuing with the calibration. Adjustments required to calibrate the TI are included in this procedure. Additional maintenance information is contained in the manufacturers' manuals and TM 11-6625-200-15 for this TI.

d. Unless otherwise specified, all controls and control settings refer to the TI.

7. Equipment Setup

WARNING

HIGH VOLTAGE is used or exposed during the performance of this calibration. DEATH ON CONTACT may result if personnel fail to observe safety precautions. REDUCE OUTPUT(S) to minimum after each set within the performance check where applicable.

NOTE

The **FUNCTION** and **SELECTOR** switches are functionally identical and will be referred to as the **SELECTOR** switch throughout this section.

- a. Remove protective cover from TI only when necessary to make adjustments. Replace cover after completing the adjustments.
- b. Connect TI to a 115 V ac source.
- c. Set **SELECTOR** switch to - and **RANGE** switch to **RX1 1V**. Allow at least 15 minutes for warm-up.
- d. Set **SELECTOR** switch to **OFF** and wait 30 seconds. If meter pointer does not indicate 0, adjust meter mechanical zero for a 0 indication.

8. Dc Voltage

a. Performance Check

- (1) Set **SELECTOR** switch to +.
- (2) Connect **DC** probe and **COMMON** lead together and adjust **ZERO ADJ** for 0 meter indication.
- (3) Connect **DC** probe and **COMMON** lead to calibrator **OUTPUT HI** and **LO**.
- (4) Adjust calibrator for a full scale indication on TI. If calibrator does not indicate between 0.970 and 1.030 V, perform **b** below.
- (5) Repeat technique of (4) above using settings and indications listed in table 3. Calibrator will indicate within limits specified.

Table 3. Dc Voltage and Tracking

Test instrument		Calibrator indications (V dc)	
RANGE switch settings	Indications	Min	Max
RX1 1V	0.6	0.570	0.630
RX10 3V	3.0	2.910	3.090
RX100 10V	1.0 ¹	9.70	10.30
RX1K 30V	3.0	29.10	30.90
RX100K 300V	3.0	291.0	309.0

See footnote at end of table.

Table 3. Dc Voltage and Tracking - Continued

Test instrument		Calibrator indications (V dc)	
RX1M 1000V	dc only	1.0	970.0 1030.0

¹After this check, and only if dc voltage divider is supplied with TI, set calibrator to 9.0 V. Record TI indication for use in (9) below.

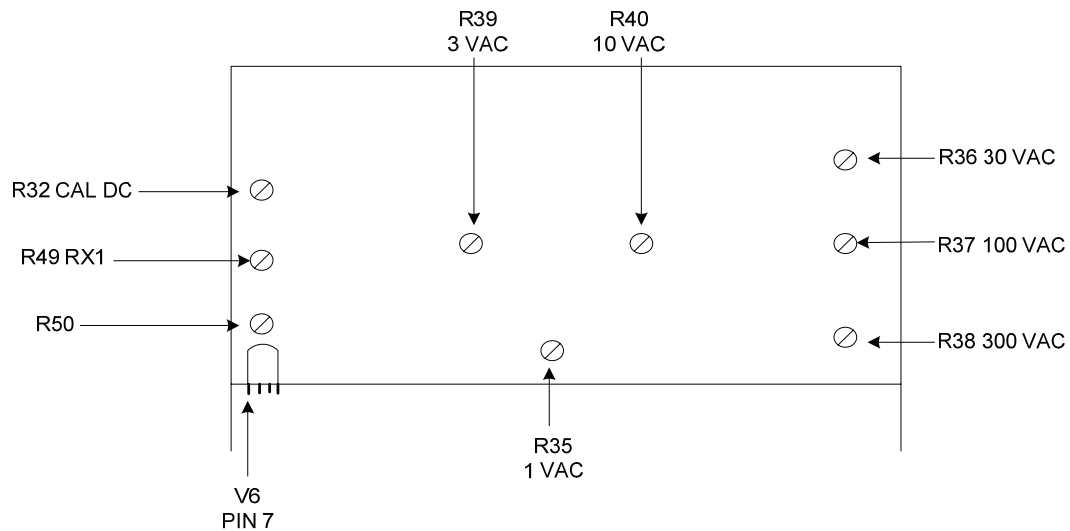
NOTE

Perform (6) through (9) below only if dc voltage divider is supplied with TI.

- (6) Set the **RANGE** switch to **RX100 10V**.
- (7) Connect dc voltage divider to **DC** probe. Connect dc voltage divider and **COMMON** lead together and adjust **ZERO ADJ** for 0 meter indication.
- (8) Connect dc voltage divider and **COMMON** lead to calibrator.
- (9) Adjust calibrator for TI indication recorded in table 3. Calibrator will indicate between 855.0 and 945.0 V.

b. Adjustments

- (1) Set calibrator to 1.000 V.
- (2) Adjust R32 **CAL DC** (fig. 1) for a 1 V indication on TI (R).



ME-26D/U

Figure 1. Adjustment locations - rear view.

9. Ac Voltage

a. Performance Check

- (1) Set **SELECTOR** switch to **AC** and **RANGE** switch to **RX1 1V**.

(2) Connect **AC PROBE** tip and ground clip lead together and adjust **AC ZERO** for 0 meter indication.

(3) Connect **AC PROBE** tip and ground clip lead to calibrator **OUTPUT HI** and **LO**.

(4) Set calibrator for a 1 V, 400 Hz output. Adjust calibrator amplitude for a full-scale indication on TI. If calibrator does not indicate between 0.970 and 1.030 V, perform **b** below.

(5) Repeat technique of (4) above using settings and indications listed in table 4. If calibrator does not indicate within specified limits, set calibrator to nominal value and perform adjustments listed in table 4 for a full-scale indication on TI.

Table 4. Ac Voltage and Adjustments

Test instrument		Calibrator indications (V ac)		Adjustments (fig. 1) (R)
RANGE switch settings	Indications	Min	Max	
RX10 3V	3	2.910	3.090	R39 3 VAC
RX100 10V	1 ¹	9.70	10.30	R40 10 VAC
RX1K 30V	3	29.10	30.90	R36 30 VAC
RX10K 100V	1	97.0	103.0	R37 100 VAC
RX100K 300V	3	291.0	309.0	R38 300 VAC

¹After this check, and only if capacitive voltage divider is supplied with TI, set calibrator for a 9 V, 10 kHz output. Record the TI indication for use in (9) below. Set calibrator frequency to 400 Hz for remaining ranges.

NOTE

Perform (6) through (9) below only if capacitive voltage divider is supplied with TI.

(6) Set the **RANGE** switch to **R100 10V**.

(7) Connect capacitive voltage divider to **AC PROBE**. Connect capacitive voltage divider tip and ground clip lead together and adjust **AC ZERO** for 0 meter indication.

(8) Connect capacitive voltage divider and ground clip lead to calibrator **OUTPUT HI** and **LO**.

(9) Set calibrator for a 900 V, 10 kHz output. Adjust calibrator amplitude for TI indication recorded in table 4. Calibrator will indicate between 891.0 and 909.0 V.

b. Adjustments

(1) Connect multimeter **INPUT HI** to V6 PIN 7 (fig. 1) and **LO** ground. If multimeter does not indicate between 4.9 and 5.1 V ac (for **AC PROBE** diode 2-01C) or 6.2 and 6.4 V ac (for **AC PROBE** diode EA53), adjust R50 (fig. 1) for 5 V ac or 6.3 V ac as applicable (R).

(2) Set calibrator to 1.000 V.

(3) Adjust R35 1 VAC (fig. 1) for a 1 V indication on TI (R).

10. Frequency Response

a. Performance Check

(1) Set the **RANGE** switch to **RX1 1V**.

- (2) Connect **AC PROBE** tip and ground clip lead together and adjust **AC ZERO** for 0 indication on TI.
- (3) Connect TI **AC PROBE** tip and ground clip lead to calibrator **OUTPUT HI** and **LO**.
- (4) Set calibrator output frequency to 400 Hz and amplitude for a 0.3 V ac indication on TI.
- (5) Press calibrator **NEW REF** key.
- (6) Set calibrator frequency to 20 Hz. Using amplitude output adjustment controls, adjust calibrator amplitude for a 0.3 V ac indication on TI. Calibrator control display **Error** will indicate between -12.2% and $+10.87\%$ (± 1 dB).
- (7) Repeat (6) above at 1 kHz, 100 kHz and 1 MHz.
- (8) Adjust calibrator amplitude for a 0.00 ppm control display **Error** indication.
- (9) Set calibrator to **STANDBY** and disconnect from TI.

NOTE

If necessary, perform measuring receiver **ZERO** and **CALIBRATE**.

- (10) Connect measuring receiver sensor module input to calibrator **OUTPUT HI** and **LO**.
- (11) Set calibrator to **OPERATE**.
- (12) Set measuring receiver to measure RF power in dBm at 1 MHz. Record measuring receiver indication.
- (13) Set calibrator to **STANDBY** and disconnect from measuring receiver.
- (14) Connect equipment as shown in figure 2.

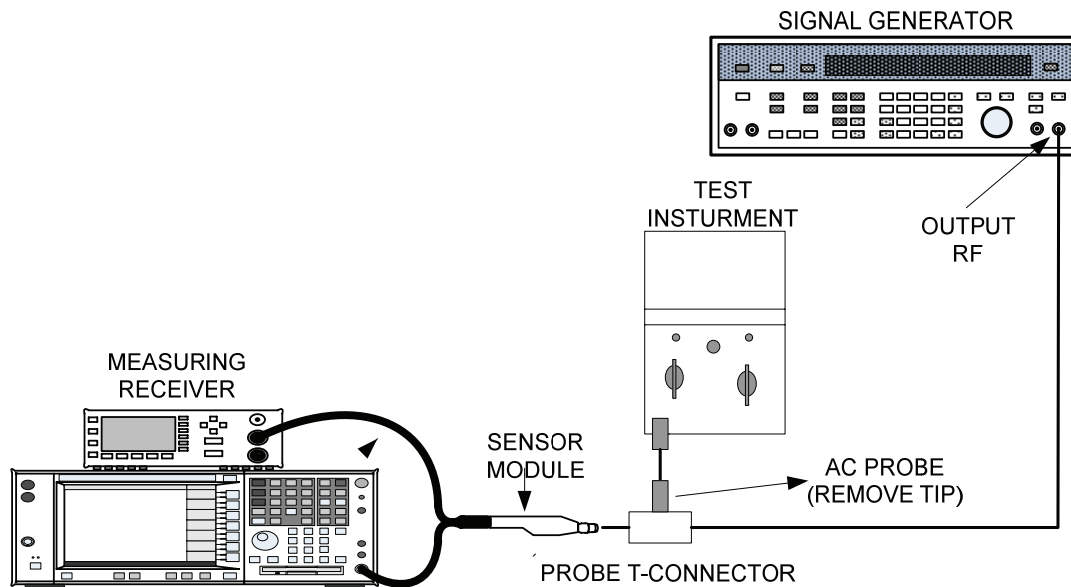


Figure 2. Frequency response setup.

(15) Set signal generator frequency to 1 MHz and adjust amplitude for a measuring receiver indication as close as possible to indication recorded in (12) above. Press measuring receiver **MEASUREMENT DISPLAY RATIO** key.

(16) Set signal generator frequency to 60 MHz.

(17) Enter signal generator frequency on measuring receiver using **DATA** keys.

(18) Adjust signal generator amplitude for a 0.3 V ac indication on TI. Measuring receiver will indicate within ± 1 dB.

(19) Repeat (16) through (18) above at 90, 150 and 250 MHz.

(20) Repeat technique of (16) through (18) above at 350, 550 and 700 MHz. Measuring receiver will indicate within ± 3 dB.

b. Adjustments. No adjustments can be made.

11. Resistance

a. Performance Check

(1) Set **SELECTOR** switch to **OHMS**.

(2) Adjust **OHMS ADJ** for ∞ meter indication.

(3) Short **OHMS** and **COMMON** leads together and adjust **ZERO ADJ** for 0 meter indication.

(4) Separate **OHMS** and **COMMON** leads.

(5) Repeat (2) through (4) above until no further adjustment is necessary.

(6) Connect **OHMS** and **COMMON** leads to resistance standard no. 1.

(7) Set resistance standard for a 10 Ω indication on TI. If resistance standard setting is not between 9 and 11 Ω , perform **b** below.

(8) Disconnect TI from resistance standard.

(9) Repeat technique of (2) through (8) above using settings and indications in table 5. Resistance standard settings will be within limits specified in table 5.

Table 5. Resistance

Test instrument		Resistance standard indications	
RANGE switch settings	Indications (OHMS scale)	Min	Max
RX10 3V	10	95 Ω	105 Ω
RX100 10V	10	950 Ω	1050 Ω
RX1K 30V	10	9.5 k Ω	10.5k Ω
RX10K 100V	10	95 k Ω	105 k Ω
RX100K 300V	10	0.95 M Ω	1.05 M Ω
RX1M 1000V dc only ¹	10	9.5 M Ω	10.5 M Ω

¹Connect resistance standard No. 2 in series with resistance standard No. 1.

b. Adjustments

(1) Remove **OHMS** lead from resistance standard and set **RANGE** switch to **RX10 3V**. Adjust **OHM ADJ** for ∞ meter indication.

(2) Set **RANGE** switch to **RX1 1V**. Adjust R49 **RX1** (fig. 1) for ∞ meter indication (R).

(3) Repeat a (2) through (7) above.

12. Final Procedure

- a. Deenergize and disconnect all equipment and reinstall protective cover on TI.
- b. Annotate and affix DA label/form in accordance with TB 750-25.

**SECTION IV
CALIBRATION PROCESS FOR
MULTIMETER, HEWLETT-PACKARD, MODEL 410C**

13. Preliminary Instructions

a. The instructions outlined in paragraphs **13** and **14** are preparatory to the calibration process. Personnel should become familiar with the applicable sections before beginning the calibration.

b. Items of equipment used in this procedure are referenced within the text by common name as listed in table 2.

c. Unless otherwise specified, verify the result of each test and, whenever the test requirement is not met, take corrective action before continuing with the calibration. Adjustments required to calibrate the TI are included in this procedure. Additional maintenance information is contained in the manufacturer's manual for this TI.

d. Unless otherwise specified, all controls and control settings refer to the TI.

14. Equipment Setup

WARNING

HIGH VOLTAGE is used or exposed during the performance of this calibration. DEATH ON CONTACT may result if personnel fail to observe safety precautions. REDUCE OUTPUT(S) to minimum after each step within the performance check where applicable.

a. Connect TI to 115 V ac source.

b. Energize TI and allow at least 20 minutes to warm-up and stabilize.

c. Deenergize TI and wait 30 seconds. If meter pointer does not indicate 0, adjust mechanical zero for 0 indication.

d. Energize TI.

15. Dc Voltage

a. Performance Check

- (1) Set **FUNCTION** switch to **+DCV** and **RANGE** switch to **.5V**.
- (2) Connect **DCV** probe and **COM** lead together. If TI meter does not indicate 0, perform **b** (1) and (2) below.
- (3) Set **FUNCTION** switch to **-DCV**. If TI meter does not indicate 0, perform **b** (3) below.
- (4) Set **RANGE** switch to each range. Zero offset will not exceed ± 1 percent of full scale for any range.
- (5) Set **FUNCTION** switch to **+DCV** and repeat technique of (4) above.
- (6) Set **RANGE** switch to **.015V**.
- (7) Connect **DCV** probe and **COM** lead to calibrator **OUTPUT HI** and **LO**.
- (8) Adjust calibrator output for a full-scale indication on TI. If calibrator does not indicate between 0.01470 and 0.01530 V, perform **b** (4) and (5) below.
- (9) Repeat technique of (6) and (8) above using settings and indications listed in table 6. If calibrator does not indicate within limits specified, set calibrator to nominal value and perform adjustments listed in table 6 for full-scale indication on TI.

Table 6. Dc Voltage and Tracking

Test instrument		Calibrator indications (V)		Adjustments (fig 3) (R)
RANGE switch settings	Indications (V)	Min	Max	
0.05V	0.05	0.0490	0.0510	R18
0.15V	0.15	0.1470	0.1530	R18
0.5V	0.5	0.490	0.510	R30
1.5V	1.5	1.470	1.530	R30
5V	5.0	4.90	5.10	R30
5V	3.0	2.90	3.10	- - -
5V	1.0	0.90	1.10	- - -
15V	15.0	14.70	15.30	R30
50 V	50.0	49.0	51.0	R30
150V	150.0	147.0	153.0	R30
500V	500.0	490.0	510.0	R30
1500V	1000.0	970.0	1030.0	R30

NOTE

R18 affects all ranges and R30 affects ranges above 0.15 V. Because of interaction, adjustment of R18 and R30 (fig. 3) may have to be repeated until TI voltage indications are within specified limits.

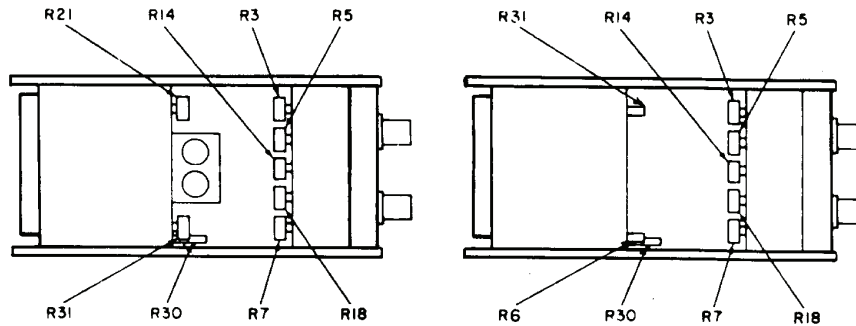


Figure 3. Adjustment locations - top view.

b. Adjustments

(1) Adjust R21 (fig. 3) fully ccw, then adjust approximately 20 degrees cw (only SN 0982A22438 and below) (R).

(2) Adjust **ZERO ADJ** (rear of TI) for 0 meter deflection (may not appear on TI below SN 550).

(3) Adjust **ZERO ADJ** to return meter pointer halfway back to 0. For SN 0982A22439 and above, adjust R6 (fig. 3) until TI meter indicates 0 with **FUNCTION** switch in both **+DCV** and **-DCV** positions.

(4) Set calibrator for a 15 mV output.

(5) Adjust R18 (fig. 3) for a 0.015 V indication on TI (R).

16. Ac Voltage

a. Performance Check

(1) Set TI controls as listed in (a) through (c) below:

(a) **FUNCTION** switch to **ACV**.

(b) **RANGE** switch to **.5V**.

(c) **AC ZERO** control to center of its rotation.

(2) Connect **AC PROBE** tip and ground clip lead together. If TI meter does not indicate 0, perform **b** (1) and (2) below.

(3) Connect **AC PROBE** tip and ground clip lead to calibrator **OUTPUT HI** and **LO**.

(4) Adjust calibrator frequency for 400 Hz and output for a full-scale indication on TI. If calibrator does not indicate between 0.4850 and 0.5150 V ac, perform **b** (3) and (4) below.

(5) Repeat technique of (4) above using settings and indications listed in table 7. If calibrator does not indicate within limits specified, set calibrator to nominal value and perform adjustments listed in table 7 for full-scale indication on TI.

Table 7. Ac Voltage

Test instrument		Calibrator indications (V ac)		Adjustments (fig. 3) (R)
RANGE switch settings	Indications (V ac)	Min	Max	
1.5 V	1.5	1.4550	1.5450	R5
5 V	5	4.850	5.150	R7
15 V	15	14.550	15.450	R14 ¹
50 V	50	48.50	51.50	R14
150 V	150	145.50	154.50	R14
500 V	300	285.0	315.0	R14

¹Adjust R14 to provide the best overall compromise for RANGE switch 15 to 500 V ac settings.

b. Adjustments

- (1) Adjust R31 (fig. 3) for 0 indication on TI (R).
- (2) Fine adjust **AC ZERO** control for 0 indication on TI.
- (3) Adjust calibrator for a 0.5 V indication.
- (4) Adjust R3 (fig. 3) for a 0.5 V indication on TI (R).

17. Frequency Response

a. Performance Check

- (1) Set **RANGE** switch to **.5V**.
- (2) Connect **AC PROBE** tip and ground clip lead together and adjust **AC ZERO** for 0 indication on TI.
- (3) Connect **AC PROBE** tip and ground clip lead to calibrator **OUTPUT HI** and **LO**.
- (4) Set calibrator output frequency to 400 Hz and amplitude for a 0.3 V ac indication on TI.
- (5) Press calibrator **NEW REF** key.
- (6) Set calibrator frequency to 20 Hz. Using amplitude output adjustment controls adjust calibrator amplitude for a 0.3 V ac indication on TI. Calibrator control display **Error** will indicate within $\pm 10\%$.
- (7) Repeat (6) above at 90 Hz.
- (8) Repeat technique of (6) above at 1 kHz, 100 kHz and 1 MHz. Calibrator control display **Error** will indicate within $\pm 2\%$.
- (9) Adjust calibrator amplitude for a 0.00 ppm control display **Error** indication. Set calibrator to **STANDBY** and disconnect from TI.

NOTE

If necessary, perform measuring receiver **ZERO** and **CALIBRATE**.

- (10) Connect measuring receiver sensor module input to calibrator **OUTPUT HI** and **LO**.
- (11) Set calibrator to **OPERATE**.

- (12) Set measuring receiver to measure RF power in dBm at 1 MHz. Record measuring receiver indication.
- (13) Set calibrator to **STANDBY** and disconnect from measuring receiver.
- (14) Connect equipment as shown in figure 4.

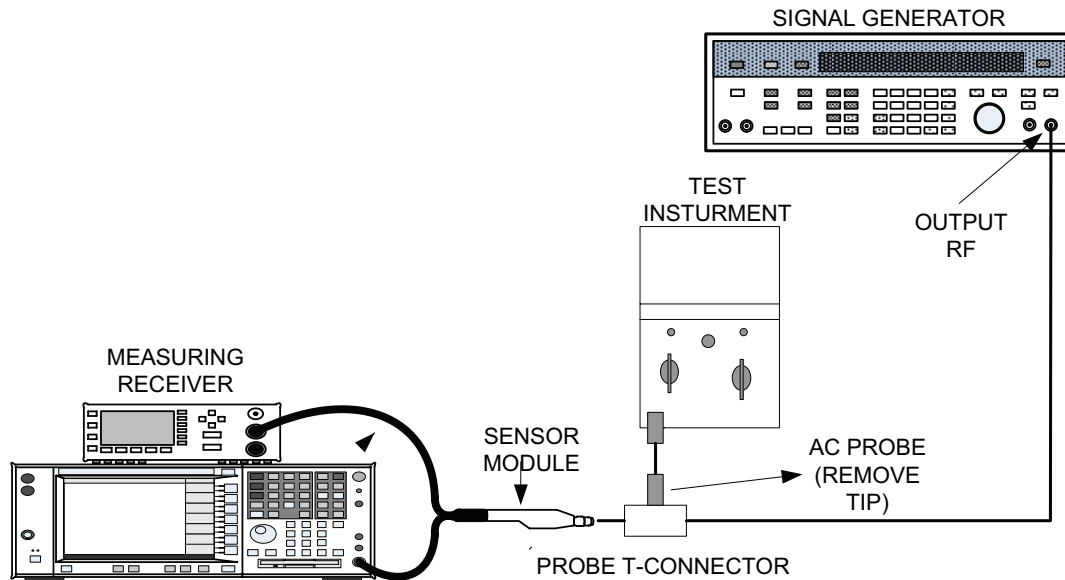


Figure 4. Frequency response - setup.

- (15) Set signal generator frequency to 1 MHz and adjust amplitude for a measuring receiver indication as close as possible to indication recorded in (12) above. Press measuring receiver **MEASUREMENT DISPLAY RATIO** key.
- (16) Set signal generator frequency to 60 MHz.
- (17) Enter signal generator frequency on measuring receiver using **DATA** keys.
- (18) Adjust signal generator amplitude for a 0.3 V ac indication on TI. Measuring receiver will indicate within ± 0.35 dB ($\pm 4\%$).
- (19) Repeat (16) through (18) above at 90 MHz.
- (20) Repeat technique of (16) through (18) above at 250, 500 and 700 MHz. Measuring receiver will indicate within ± 1.5 dB.

b. Adjustments. No adjustments can be made.

18. Resistance

a. Performance Check

- (1) Set **FUNCTION** switch to **OHMS** and **RANGE** switch to **RX10M**.
- (2) Adjust **OHMS ADJ** (rear of TI) for ∞ meter indication.
- (3) Connect **DCA OHMS** and **COM** leads together and adjust **ZERO ADJ** (rear of TI) for 0 meter indication.

- (4) Separate **DCA OHMS** and **COM** leads.
- (5) Repeat (2) through (4) above until no further adjustments are necessary.
- (6) Connect **DCA OHMS** and **COM** leads to resistance standard No. 1.
- (7) Set **RANGE** switch to **RX10**.
- (8) Adjust resistance standard for 1 Ω indication on TI. Resistance standard will indicate between 9.5 Ω and 10.5 Ω.
- (9) Repeat technique of (7) and (8) above using settings listed in table 8. Resistance standard indications will be within limits specified.

Table 8. Resistance

Test instrument		Resistance standard indications	
RANGE switch settings	Indications (OHMS scale)	Min	Max
RX100	1	95 Ω	105 Ω
RX1K	1	950 Ω	1050 Ω
R10K	1	9.5 kΩ	10.5 kΩ
RX100K	1	95 kΩ	105 kΩ
RX1M	1	0.95 MΩ	1.05 MΩ
RX10M ¹	1	9.5 MΩ	10.5 MΩ

¹Connect resistance standard no. 1 in series with resistance standard no. 2.

b. Adjustments. No adjustments can be made.

19. Dc Current

a. Performance Check

- (1) Set **FUNCTION** switch to **+DCA** and **RANGE** switch to **150 MA**.
- (2) Connect **DCA OHMS** and **COM** leads to calibrator **OUTPUT HI** and **LO**.
- (3) Adjust calibrator for a full scale indication on TI. Calibrator will indicate within limits specified in table 9.
- (4) Repeat technique of (3) above using settings and indications listed in table 9.

Table 9. Dc Current

Test instrument		Calibrator indications	
RANGE switch settings	Indications	Min	Max
150 mA	150	145.5 mA	154.5 mA
50 mA	50	48.5 mA	51.5 mA
15 mA	15	14.55 mA	15.45 mA
5 mA	5	4.85 mA	5.15 mA
1.5 mA	1.5	1.455 mA	1.545 mA
0.5 mA	0.5	0.485 mA	0.515 mA
150 uA	150	145.5 uA	154.5 uA
50 uA	50	48.5 uA	51.5 uA
15 uA	15	14.55 uA	15.45 uA
5 uA	5	4.85 uA	5.15 uA
1.5 uA	1.5	1.455 uA	1.545 uA

b. Adjustments. No adjustments can be made.

20. Final Procedure

a. Deenergize and disconnect all equipment.

b. Annotate and affix DA label/form in accordance with TB 750-25.

By Order of the Secretary of the Army:

Official:



JOYCE E. MORROW
*Administrative Assistant to the
Secretary of the Army*

GEORGE W. CASEY, JR.
*General, United States Army
Chief of Staff*

0835106

Distribution:

To be distributed in accordance with the initial distribution number (IDN) 342236, requirements for calibration procedure TB 9-6625-2114-24.

Instructions for Submitting an Electronic 2028

The following format must be used if submitting an electronic 2028. The subject line must be exactly the same and all fields must be included; however, only the following fields are mandatory: 1, 3, 4, 5, 6, 7, 8, 9, 10, 13, 15, 16, 17, and 27.

From: "Whomever" whomever@redstone.army.mil
To: <2028@redstone.army.mil

Subject: DA Form 2028

1. **From:** Joe Smith
2. **Unit:** home
3. **Address:** 4300 Park
4. **City:** Hometown
5. **St:** MO
6. **Zip:** 77777
7. **Date Sent:** 19-OCT -93
8. **Pub no:** 55-2840-229-23
9. **Pub Title:** TM
10. **Publication Date:** 04-JUL-85
11. **Change Number:** 7
12. **Submitter Rank:** MSG
13. **Submitter FName:** Joe
14. **Submitter MName:** T
15. **Submitter LName:** Smith
16. **Submitter Phone:** 123-123-1234
17. **Problem:** 1
18. **Page:** 2
19. **Paragraph:** 3
20. **Line:** 4
21. **NSN:** 5
22. **Reference:** 6
23. **Figure:** 7
24. **Table:** 8
25. **Item:** 9
26. **Total:** 123
27. **Text**

This is the text for the problem below line 27.

