# DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

# CALIBRATION PROCEDURE FOR SIGNAL GENERATOR SG-1144/U

Headquarters, Department of the Army, Washington, DC 12 February 2004

Distribution Statement A: Approved for public release; distribution is unlimited.

# REPORTING OF ERRORS AND RECOMMENDING IMPROVEMENTS

You can improve this manual. If you find any mistakes or if you know of a way to improve these procedures, please let us know. Mail your letter or DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to: Commander, US Army Aviation and Missile Command, AMSAM-MMC-MA-NP, Redstone Arsenal, AL 35898-5000. A reply will be furnished to you. You may also provide DA Form 2028 information to AMCOM via e-mail, fax, or the World Wide Web. Our fax number is DSN 788-6546 or Commercial 256-842-6546. Our e-mail address is 2028@redstone.army.mil. Instructions for sending an electronic 2028 may be found back ofthis For the World Wide manual. Web, https://amcom2028.redstone.army.mil.

			Paragraph	Page
SECTION	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		
		Preliminary instructions	6	4
		Equipment setup	7	4
		Frequency	8	4
		Output voltage and attenuation	9	8
		Frequency modulation	10	9
		Amplitude modulation	11	13
		Final procedure	12	14

<sup>\*</sup>This bulletin supersedes TB 9-6625-2077-35, 18 March 2003.

# SECTION I IDENTIFICATION AND DESCRIPTION

- 1. **Test Instrument Identification.** This bulletin provides instructions for the calibration of Signal Generator, SG-1144/U. TM 11-6625-2954-14&P was used as the prime data source in compiling these instructions. The equipment being calibrated will be referred to as the TI (test instrument) throughout this bulletin.
- **a. Model Variations**. On some models, the highest **TUNING RANGE** switch is designated (16-80 MHZ) instead of 16-90 MHz. This is shown in parenthesis throughout test.
- **b. Time and Technique**. The time required for this calibration is approximately 3 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 the 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

Table 1.	. Cambration Description
Test instrument parameters	Performance specifications
Frequency	Range: 50 kHz to 90 MHz (80 MHz)
	Accuracy: ±1% indication
Output voltage <sup>1</sup>	Range: $100 \text{ nV}$ to $1 \text{ V}$ into $50\Omega$ load
	Accuracy: $\pm 1$ dB, $1 \mu V$ to $1 V$
	$\pm 2$ dB, 100 nV to 1 $\mu$ V <sup>1</sup>
Frequency modulation:	
Internal tones	Range: 150, 400, and 1000 Hz
	Accuracy: $150 \pm 1$ Hz, $400 \pm 5$ Hz, $1$ kHz $\pm 50$ Hz
D	D OF EXITY OF SOLUTION
Deviation	Range: 0 to 75 kHz from 20 to 80 Mhz
	Accuracy: ±15% indication
Distortion	<4%
Amplitude modulation:	
Internal tones	Range 0 to 100% at 400 and 1000 Hz
	Accuracy: ±6%
Distortion	<1% at 0 to 50%
	<3% at 50 to 90%

 $<sup>^{1}</sup>$ Not checked below -110 dB (.707  $\mu$ V).

# 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 Set AN/GSM-286. Alternate items may be used by the calibrating activity. 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.
- **5.** Accessories Required. The accessories required for this calibration are common usage accessories issued as indicated in paragraph 4 above and are not listed in this calibration procedure.

Table 2. Minimum Specifications of Equipment Required

Table 2. Minimum Specifications of Equipment Required				
Minimum use	Manufacturer and model			
specification	(part number)			
	Boonton, Model 1120-S/10			
Range: -11 to 1 V dc	(MIS-35954/2)			
Accuracy: ±0.75%				
Range: 149 Hz to 100 kHz				
Accuracy: ±0.25%				
Capability: < 1%				
	Hewlett-Packard, Model 8902A			
	(8902A) w/sensor, Hewlett-			
Range: 247.5 kHz to 80.8 MHz	Packard, Model 11722A			
Accuracy: ±0.25%	(11722A)			
Range: 18.8 to 84.8%				
Accuracy: ±1.5%				
Range: 8.5 to 86.25 kHz				
Accuracy: ±3.75%				
Range: +11 to -112 dBm				
Accuracy: ±0.25 dB;				
-99 to +11 dBm				
±0.5 dB;				
-112 to 108 dBm				
Range: 50 to 100 kHz:	Hewlett-Packard Model 11048C			
	(11048C)			
	Minimum use specification  Range: -11 to 1 V dc Accuracy: ±0.75%  Range: 149 Hz to 100 kHz Accuracy: ±0.25%  Capability: < 1%  Range: 247.5 kHz to 80.8 MHz Accuracy: ±0.25%  Range: 18.8 to 84.8% Accuracy: ±1.5%  Range: 8.5 to 86.25 kHz Accuracy: ±3.75%  Range: +11 to -112 dBm Accuracy: ±0.25 dB; -99 to +11 dBm ±0.5 dB; -112 to 108 dBm			

# SECTION III CALIBRATION PROCESS

# 6. Preliminary Instructions

- a. The instructions outlined in paragraphs 6 and 7 are preparatory to the calibration process. Personnel should become familiar with the entire bulletin 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 the procedure. Additional maintenance information is contained in TM 11-6625-2954-14&P
  - **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 step within the performance check where applicable.

- a. Connect the TI to a 115 V ac source.
- **b**. Set **POWER** switch to **ON** and allow at least 30 minutes for equipment to reach operating temperature.
- c. Set POWER switch to OFF and wait 30 seconds. If TI MODULATION and RF OUTPUT meters do not indicate 0, adjust to 0 using adjustment screw located below meter face.
  - d. Set **POWER** switch to **ON**.

#### 8. Frequency

# a. Performance Check

- (1) Set RF output switch to 0 dBm and MODULATION switch to CW.
- (2) Connect TI RF OUTPUT to audio analyzer INPUT HIGH using a 50  $\Omega$  feedthrough termination.

- (3) Set TUNING RANGE switch to 50-250 kHz and adjust TUNING COARSE and FINE controls for 50.00 kHz on FREQUENCY display.
- (4) Adjust RF OUTPUT LEVEL control for a 0 dBm indication on TI RF OUTPUT meter.
- (5) Verify that the audio analyzer indicates within the limits listed in table 3. If audio analyzer does not indicate within the limits specified perform **b** below.
- (6) Set TI to the next frequency listed in table 3, using the  $TUNING\ COARSE$  and  $FINE\ controls$ .
- (7) Adjust  ${\bf RF}$   ${\bf OUTPUT}$   ${\bf LEVEL}$  control for a 0 dBm indication on  ${\bf RF}$   ${\bf OUTPUT}$  meter.
- (8) Verify that the audio analyzer indicates within the limits listed in table 3. If audio analyzer does not indicate within the limits specified perform **b** below.

Table 3. Frequency Measurement Using Audio Analyzer

		Audio analyzer indications	
Test ins	trument	(kHz)	
TUNING RANGE	FREQUENCY		
control setting	display	Min	Max
$50\text{-}250~\mathrm{kHz}$	50   kHz	49.500	50.500
$50-250~\mathrm{kHz}$	100   kHz	99.000	101.000

- (9) Disconnect TI from audio analyzer **INPUT HIGH** and connect to measuring receiver power sensor without the  $50 \Omega$  feedthrough termination.
  - (10) Set TUNING RANGE switch to the first setting listed in table 4.
- (11) Adjust **TUNING COARSE** and **FINE** controls for a reading on the **FREQUENCY** display that is equal to the value listed in table 4.
- (12) Adjust RF OUTPUT LEVEL control for a  $\bf 0$  dBm indication on RF OUTPUT meter.
- (13) Verify that the measuring receiver indicates within the limits listed in table 4. If measuring receiver does not indicate within the limits specified perform **b** below.
- (14) Repeat technique of (10) through (13) above for settings and indications listed in table 4.

Table 4. Frequency Measurement Using Measuring Receiver

		Measuring receiver indications	
Test ins	trument	(MHz)	
TUNING RANGE	FREQUENCY		
control setting	display	Min	Max
$50-250~\mathrm{kHz}$	$250  ext{ kHz}$	0.24750	0.25250
$.25$ - $1.25~\mathrm{MHz}$	.300 MHz	0.29700	0.30300
$.25$ - $1.25~\mathrm{MHz}$	.500 MHz	0.49500	0.50500
$.25$ - $1.25~\mathrm{MHz}$	1.250 MHz	1.23750	1.26250
$1\text{-}5~\mathrm{MHz}$	2.000 MHz	1.98000	2.02000
$4\text{-}20~\mathrm{MHz}$	5.00 MHz	4.95000	5.05000
$16-90~\mathrm{MHz}$	80.00 MHz	79.20000	80.80000
(16-80 MHz)			

# b. Adjustments

- (1) Set **POWER** switch to **OFF**.
- (2) Remove cover from TI.
- (3) Remove assembly A3 and reconnect using extender board (fig. 1).

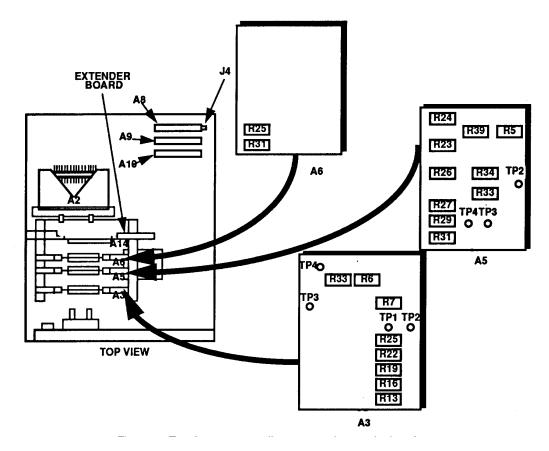


Figure 1. Test instrument – adjustment and test point locations.

- (4) Position controls as listed in (a) through (e) below:
  - (a) **POWER** switch to **ON**.
  - (b) **MODULATION** switch to **CW**.
  - (c) **RF OUTPUT** switch to **0 dBm**.
  - (d) TUNING RANGE switch to 16-90 MHz (16-80 MHz).
- (e) RF OUTPUT LEVEL control for 0 dB indication on TI RF OUTPUT meter.
- (5) Connect TI **RF OUTPUT** to measuring receiver power sensor and adjust **TUNING COARSE** and **FINE** control for an indication of 80.00000 MHz on measuring receiver.

- (6) Disconnect cable from J4 on assembly A8 (fig. 1) and adjust A3R7 (fig. 1) for an indication of 0.00 on **FREQUENCY** display (R).
  - (7) Reconnect cable to J4 (fig. 1).
- (8) Connect audio analyzer **INPUT HIGH** to A3TP2 and A3TP1 (common) (fig. 1). Do not connect to chassis ground.
- (9) Set audio analyzer to measure V dc and adjust A3R6 (fig. 1) for a -1.004 V dc indication on audio analyzer (R).
  - (10) Move positive lead to A3TP4 (fig. 1).
  - (11) Adjust A3R33 (fig. 1) for a 1.000 V dc indication on audio analyzer.
- (12) Repeat (5) above and adjust A3R25 (fig. 1) for 80.00 MHz on **FREQUENCY** display (R).
  - (13) Set TUNING RANGE switch to 4-20 MHz.
- (14) Adjust **COARSE** and **FINE TUNING** control for an indication of 20.00000 MHz on measuring receiver.
  - (15) Adjust A3R22 (fig. 1) for 20.00 MHz on FREQUENCY display (R).
  - (16) Set TUNING RANGE switch to 1-5 MHz.
- (17) Adjust **COARSE** and **FINE TUNING** controls for an indication of 5.00000 MHz on measuring receiver.
  - (18) Adjust A3R19 (fig. 1) for 5.000 MHz on **FREQUENCY** display (R).
  - (19) Set TUNING RANGE switch to .25-1.25MHz.
- (20) Adjust **COARSE** and **FINE TUNING** controls for an indication of 1.25000 MHz on measuring receiver.
  - (21) Adjust A3R16 (fig. 1) for 1.250 MHz on FREQUENCY display (R).
  - (22) Set TUNING RANGE switch to 50-250 kHz.
- (23) Adjust **COARSE** and **FINE TUNING** controls for an indication of 0.25000 MHz on measuring receiver.
  - (24) Adjust A3R13 (fig. 1) for 250.0 kHz on **FREQUENCY** display (R).
- (25) Set **POWER** switch to **OFF** and reinstall assembly A3 and extender board (fig. 1) in proper locations.
  - (26) Set **POWER** switch to **ON**.

# 9. Output Voltage and Attenuation

#### a. Performance Check

- (1) Connect the measuring receiver power sensor to **CALIBRATION RF POWER output**. Set measuring receiver to measure power and perform sense zero. After the sense zero operation completes, press the **CALIBRATION CALIBRATE** key.
- (2) Connect measuring receiver power sensor to TI **RF OUTPUT**, and set measuring receiver to measure frequency.
- (3) Set TUNING RANGE switch to 1-5 MHz and adjust TUNING COARSE and FINE controls as required for an indication of 3.000 MHz on FREQUENCY display.
- (4) Set measuring receiver to measure power. Set **RF OUTPUT** switch to +10.00 **dBm** and adjust **RF OUTPUT LEVEL** control to indicate 0 dB on **RF OUTPUT** meter.
- (5) Using measuring receiver and RF power measurement techniques; measured power will indicate within the limits specified in table 5 for the TI **RF OUTPUT** switch setting.

Table 5. Attenuation Accuracy

RF OUTPUT	Measuring receiver indications	
switch	(dBm)	
setting	Min	Max
10	9.000	11.000

- (6) Set **RF OUTPUT** switch to the first value listed in table 6 and adjust **RF OUTPUT LEVEL** control to the value indicated for the **RF OUTPUT** switch setting on the TI **RF OUTPUT** meter.
- (7) Using standard tuned level measurement techniques, verify the measuring receiver indicates within the limits specified in table 6 for the TI **RF OUTPUT** switch setting.
- (8) Repeat technique of (6) and (7) above for remaining settings listed in table 6. Measuring receiver will be within limits specified.

Table 6. Attenuation Accuracy (Tuned Level)

RF OUTPUT switch	Measuring receiver indications (dbm)	
settings	Min	Max
0	-1.000	+1.000
-10	-9.000	-11.000
-20	-19.000	-21.000
-30	-29.000	-31.000
-401	-39.000	-41.000
-50	-49.000	-51.000

Table 6. Attenuation Accuracy (Tuned Level) - Continued

		,
RF OUTPUT	ind	ring receiver ications dBm)
settings	Min	Max
-60	-59.000	-61.000
-70	-69.000	-71.000
-801	-79.000	-81.000
-90	-89.000	-91.000
-100	-99.000	-101.000
-110	-108.000	-112.000

<sup>&</sup>lt;sup>1</sup> Press CALIBRATION CALIBRATE key if RCL indicator is on.

# b. Adjustments

- (1) Set **POWER** switch to **OFF**.
- (2) Remove assembly A6 and reconnect using extender board (fig. 1).
- (3) Set **POWER** switch to **ON**.
- (4) Set RF OUTPUT switch to 0 dBm.
- (5) Set measuring receiver controls to measure power and adjust **RF OUTPUT LEVEL** control for a +3.00 dBm indication on measuring receiver.
  - (6) Adjust A6R31 (fig. 1) for a +3.00 dBm indication on TI **RF OUTPUT** meter (R).
- (7) Adjust **RF OUTPUT LEVEL** control for a -7.00 dBm indication on measuring receiver.
  - (8) Adjust A6R25 (fig. 1) for a -7 dBm indication on TI **RF OUTPUT** meter (R).
- (9) Set **POWER** switch to **OFF** and reinstall assembly A6 and extender board (fig. 1) in proper locations.
  - (10) Set **POWER** switch to **ON**.

# 10. Frequency Modulation

# a. Performance Check

- (1) Position controls as listed in (a) through (d) below:
  - (a) RF OUTPUT switch to +10 dBm.
  - (b) TUNING RANGE switch to 16-90 MHz (16-80 MHz).
  - (c) MODULATION switch to FM 150 Hz.
  - (d) FM METER RANGE switch to 10 kHz.
- (2) Connect TI **RF OUTPUT** to measuring receiver power sensor, and connect measuring receiver **MODULATION OUTPUT/AUDIO INPUT** to audio analyzer **INPUT HIGH**.
- (3) Adjust **TUNING COARSE** and **FINE** controls for an indication of 20.00 MHz on **FREQUENCY** display.

- (4) Adjust **RF OUTPUT LEVEL** control for a 0 dBm indication on TI **RF OUTPUT** meter.
  - (5) Set measuring receiver to read FM deviation.
- (6) Adjust **MODULATION LEVEL** control for a 10 kHz indication on TI **MODULATION** meter.
- (7) Set measuring receiver controls to measure FM and audio analyzer controls to measure frequency. If audio analyzer does not indicate between the values listed in table 7 for the **MODULATION** switch setting, perform **b** below.

Table 7. Modulation Frequency

- 0.0-0 · · · 0.1-0.0-0 · · · · · · · · · · · · · ·				
Test instrument	Test instrument	Audio a	nalyzer	
MODULATION	MODULATION	indica	ations	
switch setting	meter indications	(H	(z)	
(Hz)	(kHz)	Min	Max	
150	10	149.000	151.000	
400	10	395.00	405.000	
1000	15	950.00	1050.00	

- (8) Set MODULATION switch to FM 400 Hz.
- (9) Repeat (4) and (5) above. If audio analyzer does not indicate between the values listed in table 7 for the **MODULATION** switch setting, perform **b** below.
  - (10) Set **MODULATION** switch to **FM 1 KHz**.
- (11) Repeat (4) and (5) above. If audio analyzer does not indicate between the values listed in table 7 for the **MODULATION** switch setting, perform **b** below.
- (12) Adjust **MODULATION LEVEL** control for 10 kHz indication on **MODULATION** meter. If measuring receiver deviation does not indicate between the values specified in table 8, perform **b** below.

Table 8. Deviation – 10 kHz FM Meter Range

Test instrument MODULATION meter indications	Measuring receiver indications (kHz)		
kHz	Min	Max	
10	8.5	11.5	

(13) Set **FM METER RANGE** switch to **75 kHz** and adjust **MODULATION LEVEL** control for indications listed in table 9. If peak deviation is not within limits specified in table 9, perform **b** below.

Table 9. Deviation – 75 kHz FM Meter Range

Test instrument	Measuring receiver	
MODULATION	indications	
meter indications	(kHz)	
(kHz)	Min	Max
25	21.25	28.75
50	42.5	57.5
75	63.75	86.25

- (14) Set MODULATION switch to FM 150 Hz and FM METER RANGE switch to 75 KHz.
- (15) Set **RF OUTPUT** switch to **0 dBm** and adjust **RF OUTPUT LEVEL** control for a 0 dBm indication on TI **RF OUTPUT** meter.
- (16) Adjust **MODULATION LEVEL** control for a 75 kHz indication on **MODULATION** meter.
  - (17) Set audio analyzer to measure distortion.

Table 10. Distortion

Table 10. Distortion		
Test instrument	Audio analyzer	
MODULATION	distortion	
switch setting	indication	
(Hz)	(%)	
150	< 4	
400	< 4	
1000	< 4	

- (18) Measure FM distortion at 150 Hz. If audio analyzer distortion indication is not less than 4.0 percent, perform  ${\bf b}$  below.
- (19) Repeat (15) through (17) above with **MODULATION** switch set at **FM 400 Hz** and **FM 1 KHz** listed in table 10.

# b. Adjustments

- (1) Set **POWER** switch to **OFF**. Remove assembly A5 and reconnect, using extender board (fig. 1).
  - (2) Position controls as listed in (a) through (h) below:
    - (a) **POWER** switch to **ON**.
    - (b) **MODULATION** switch to **CW**.
    - (c) **MODULATION LEVEL** control fully ccw.
    - (d) FM METER RANGE switch to 10 KHz.
    - (e) TUNING RANGE switch to 16-90 MHz (16-80 MHz).

- (f) **TUNING FINE** control to midrange.
- (g) TUNING COARSE control cw less one-half turn.
- (h) RF OUTPUT LEVEL control fully cw.
- (3) Set audio analyzer controls to measure dc volts and connect audio analyzer **INPUT HIGH** to A5TP2 and A5TP3 (common) (fig. 1).
  - (4) Adjust A5R5 (fig.1) for a -11.000 V dc indication on audio analyzer.
  - (5) Disconnect audio analyzer and set MODULATION switch to FM 150 Hz.
- (6) Set audio analyzer controls to measure frequency and connect audio analyzer **INPUT HIGH** to A5TP4 and A5TP3 (common) (fig. 1).
  - (7) Adjust A5R27 (fig. 1) for an indication of 150.000 Hz on audio analyzer (R).
- (8) Set **MODULATION** switch to **FM 400.00 Hz**. Adjust A5R29 (fig. 1) for an indication of 400.00 Hz on audio analyzer (R).
- (9) Set **MODULATION** switch to **FM 1 KHz**. Adjust A5R31 (fig. 1) for an indication of 1000.00 Hz on audio analyzer (R).
  - (10) Set audio analyzer controls to measure distortion.

#### NOTE

Do not adjust A5R33 (fig. 1) to full cw position. This action will cause the output of the internal oscillator to become zero volts.

- (11) Alternately adjust A5R33 and A5R34 (fig. 1) for minimum distortion, less than 1 percent (R).
  - (12) Disconnect the audio analyzer from equipment setup.
- (13) Set **MODULATION** switch to **FM EXT** and adjust A5R39 (fig. 1) for a 0 indication on TI **MODULATION** meter (R).
  - (14) Set MODULATION switch to FM 1 kHz.
  - (15) Connect **RF OUTPUT** to measuring receiver power sensor.
  - (16) Set measuring receiver to measure FM.
- (17) Adjust **MODULATION LEVEL** control for an indication of 10 kHz peak deviation on measuring receiver.
  - (18) Adjust A5R26 (fig. 1) for an indication of 10 kHz on **MODULATION** meter (R).
  - (19) Set FM METER RANGE switch to 75 kHz.
- (20) Adjust **MODULATION LEVEL** control for an indication of 75 kHz peak deviation on measuring receiver.
  - (21) Adjust A5R23 (fig. 1) for an indication of 75 kHz on TI **MODULATION** meter (R).

- (22) Set POWER switch to OFF and disconnect test equipment.
- (23) Reinstall assembly A5 and extender board (fig. 1) in proper locations.
- (24) Set **POWER** switch to **ON**.

# 11. Amplitude Modulation

#### a. Performance Check

- (1) Position controls as listed in (a) through (c) below:
  - (a) **RF OUTPUT** switch to +10 dBm.
  - (b) TUNING RANGE switch to 4-20 MHz.
  - (c) MODULATION switch to AM 1 kHz.
- (2) Connect TI **RF OUTPUT** to measuring receiver power sensor and set controls to measure AM. Connect measuring receiver **MODULATION OUTPUT/AUDIO INPUT** to audio analyzer **INPUT HIGH** and set controls to measure distortion.
- (3) Adjust **TUNING COARSE** and **FINE** controls for an indication of 10.00 MHz on **FREQUENCY** display.
- (4) Adjust  ${\bf RF}$  OUTPUT LEVEL control for a 0 dBm indication on TI  ${\bf RF}$  OUTPUT meter.
- (5) Adjust **MODULATION LEVEL** control for 20 percent modulation on TI **MODULATION** meter. If measuring receiver does not indicate between the values listed in table 11 for the **MODULATION LEVEL** setting, perform **b** below.
  - (6) Audio analyzer will indicate 1 percent distortion or less.
- (7) Repeat technique of (5) and (6) above for indications listed in table 11. If measuring receiver indications are not within limits specified, perform **b** below.

Table 11. Percent Modulation

	Signal generator		
Test instrument	Measuring receiver		Audio analyzer
modulation	indications		distortion indications
(%)	(%)		(%)
	Min	Max	
20	18.80	21.20	< 1
40	37.6	42.4	< 1
60	56.4	63.6	< 3
80	75.2	84.8	< 3
90	84.6	95.4	< 3

# b. Adjustments

- (1) Position controls as listed in (a) through (e) below:
  - (a) **MODULATION** switch to **AM 1 KHz**.

- (b) MODULATION LEVEL control fully ccw.
- (c) TUNING RANGE switch to 16-90 MHz (16-80 MHz).
- (d) RF OUTPUT LEVEL control fully ccw.
- (e) RF OUTPUT switch to +10dBm.
- (2) Adjust **TUNING COARSE** and **FINE** controls for an indication of 80.00 MHz on **FREQUENCY** display.
- (3) Adjust **RF OUTPUT LEVEL** control for a +3 dBm indication on TI **RF OUTPUT** meter.
- (4) Adjust **MODULATION LEVEL** control for an indication of 90 percent modulation on measuring receiver.
- (5) Adjust A5R24 (fig. 1) for an indication of 90 percent on TI  $\mathbf{MODULATION}$  meter (R).

# 12. 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:

PETER J. SCHOOMAKER

General, United States Army Chief of Staff

Jul B Hulson

JOEL B. HUDSON

Administrative Assistant to the

Secretary of the Army

0334401

# Distribution:

To be distributed in accordance with initial distribution number (IDN) 342220, requirements for calibration procedure TB-9-6625-2077-35.

# THESE ARE THE INSTRUCTIONS FOR SENDING 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@avma27.army.mil

To: 2028@redstone.army.mil Subject: DA Form 2028 1. **From**: Joe Smith

2. Unit: Home

Address: 4300 Park
 City: Hometown

5. St: MO6. Zip: 77777

7. **Date Sent**: 19-Oct-93

8. **Pub No**: TB 9-6625-xxxx-35

9. **Pub Title**: Calibration Procedure for ...

 $10. \ \textbf{Publication Date}:$ 

11. Change Number:

12. Submitted Rank: MSG
13. Sumitter Fname: Joe
14. Submitter Mname: T
15. Submitter Lname: Smith

16. Submitter Phone: (123) 123-1234

17. **Problem**: 118. 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.