TB 9-4920-358-35

CHANGE 1

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

CALIBRATION PROCEDURE FOR TRANSPONDER SET, TEST SET AN/APM-378

Headquarters, Department of the Army, Washington, DC
18 March 2002

Approved for public release; distribution is unlimited.

TB 9-4920-358-35, 24 April 1995, is changed as follows:

1. Remove old pages and insert new pages as indicated below. New or changed material is indicated by a vertical bar in the margin of the page.

Remove Page(s)	Insert Page(s)
1 and 2	1 and 2
13 and 14	13 and 14

2. File this change sheet in front of the publication for reference purposes.

By Order of the Secretary of the Army:

ERIC K. SHINSEKI
General, United States Army
Chief of Staff

OFFICIAL:

JOEL B. HUDSON
Administrative Assistant to the Secretary of the Army

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REPORTING OF ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this publication. If you find any mistakes or if you know of a way to improve the procedure, please let us know. Mail your letter or DA Form 2028 to: Commander, U. S. Army Aviation and Missile Command, ATTN: AMSAM-MMC-MA-NP, Redstone Arsenal, AL 35898-5230. A reply will be furnished to you. You may also send in your comments electronically to our e-mail address: 2028@redstone.army.mil, or FAX 256-842-6546/DSN 788-6546. Instructions for sending an electronic 2028 may be found at the back of this procedure.

This bulletin supersedes TB 9-.4920-358-35, dated 21 November 1984, including all changes.

SECTION I
IDENTIFICATION AND DESCRIPTION

1. Test Instrument Identification. This bulletin provides instructions for the calibration of Transponder Test Set, AN/APM-378. TM 11-4920-296-14&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. None.

b. Time and Technique. The time required for this calibration is approximately 4 hours, using the microwave 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

Test instrument parameters	Performance specifications ±(percent of reading plus digits)
Receiver	Sensitivity: -6 dBm ±1 dB Bandwidth: 7.0 ±1 MHz (-3 dB points) Frequency: 1090 MHz ±0.5 MHz Interrogation rate: 257 ±5 Hz
Transmitter	Power: -6 dBm ±1 dB Frequency: 1030 ±0.2 MHz Pulse width: 0.7 to 0.9 µs Pulse spacing: MODE 1 — 3 ± 0.2 µs MODE 2 — 5 ± 0.2 µs MODE 3/A — 8 ± 0.2 µs MODE C — 21 ± 0.2 µs MODE Test — 6.5 ± 0.2 µs

Table 1. Calibration Description - Continued

Test instrument parameters	Performance specifications ±(percent of reading plus digits)
MODE 4	Pretrigger: Amplitude, at least 1.5 V, pulse width, 1.0 to 2.0 µs Interrogation video: Amplitude at least 2.4 V; minimum pulse width, approximately 0.5 µs
Receiver reference code, emergency and I/P	Proper ACCEPT/REJECT operation
Power supply	TP1 to chassis ground: 0.0 ±50 mV dc TP2 to TP1: +12.0 ±0.5 V dc TP3 to TP1: +5.0 ±0.25 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 Set AN/GSM-287. 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 **4** above, and are not listed in this calibration procedure. The following peculiar accessory is also required for this calibration: Circulator, P/N 7916840 (5985-01-217-0286).

Table 2. Minimum Specifications of Equipment Required

Common name	Minimum use specifications	Manufacturer and model (part number)
MULTIMETER	Range: 0 to 12 V dc Accuracy: ±1%	John Fluke, Model 8840A/AF/09 (AN/GSM-64D)
PEAK POWER METER	Range: 0 to -10 dBm Accuracy: ±0.25 dBm	Wavetek, Model 8502A (8502A) w/power detector, Wavetek, Model 16934 (16934)
PULSE GENERATOR	Operational	LeCroy, Model 9110 (9110) w/plug-in, LeCroy, Model 9215 (9215)
RADAR TEST SET	Input: Frequency: 1030 ±.05 MHz Power level: 0 to -10 dBm Received pulse range: 0 to 3907 ms Accuracy: ±3% Output: Frequency: 1080 to 1100 MHz Accuracy: ±0.01% Pulse source, range: 0 to 1 µs Power level: 0 to -10 dBm Oscilloscope: Timebase: .1 µs to 4 ms ±.01% Amplitude: 0 to 5 V dc ±3%	(AN/UPM-155)

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. Additional maintenance information is contained in the manufacturer's manual for this TI.

d. When indications specified in paragraphs **8** through **17** are not within tolerance, perform the power supply check prior to making adjustments. After adjustments are made, repeat paragraphs **8** through **17**. Do not perform power supply checks if all other parameters are within tolerance.

e. Unless otherwise specified, all control 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.

a. Remove front panel and chassis assembly from case.

b. Set switches as listed in (1) through (4) below.

(1) **MODE** switch to **2**.
(2) **REFERENCE CODE** switches to **7700**.
(3) **FUNCTION** switch to **SYSTEM**.
(4) **SYSTEM TYPE** switch to **SINGLE CHANNEL**.

c. Connect 115 V ac or 28 V dc power source to TI and set appropriate **POWER** switch to **ON**.

c. Connect 115 V ac or 28 V dc power source to TI and set appropriate **POWER** switch to **ON**.

d. Allow 30 second warm up, then set **TEST** switch to **ON**. **REJECT** lamp will light.

e. Set **FUNCTION** switch to **LAMP TEST** position. All front panel lamps will light.

f. Set **FUNCTION** switch to **SELF TEST** position.

g. Rotate **MODE** switch throughout all positions. **ACCEPT** lamp will light for each mode checked.

h. Set **MODE** switch to any position and set **TEST** switch to **MOM**. **ACCEPT** lamp will light.

i. Repeat **b** and **d** above. **REJECT** lamp will light.

j. Connect U3TP6 (fig. 1) to **EXT SIF IN** on radar test set.

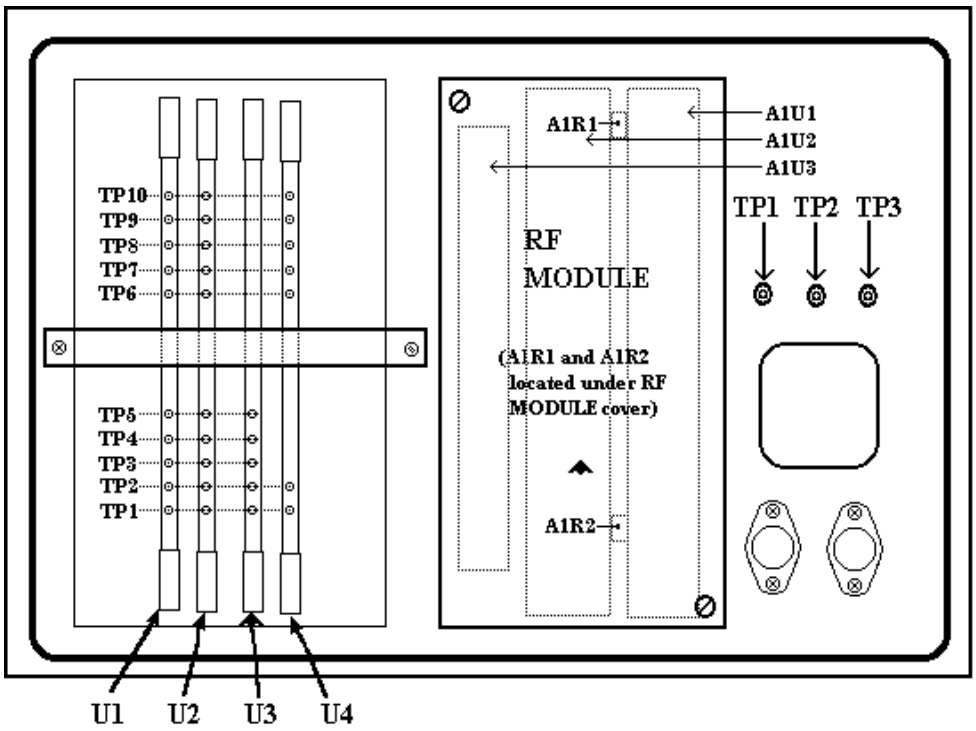


Figure 1. Test instrument - rear view.

NOTE

Only settings listed below are necessary for the measurement. Other settings do not affect the measurement.

k. Set radar test set **INTERROGATOR** menus as listed below:

(1) Menu 2 - **M1** through **MC** to **OFF**.

(2) Menu 3 - **M2** to **7700**, **F2** to **ON**, **RANGE DELAY** to **0** ms, **SIF2** to **OFF**.

(3) Menu 4 - **SIF** to **7700**, **DELAY** to **3** ms, **TRIG SOURCE** to **EXTERN+**.

(4) Menu 11 - **1ST REPLY** to **ON**, **MODULATION** to **ON**, all others **OFF**.

(5) Menu 14 - **PRF** to **257 PPS**, **0 TRIG** to **INTERNAL -0**?

(6) Menu 16 - **SOURCE** to **LOW POWER**, **RF** to **-0**.

NOTE

Store set up of menus as listed in **k**(1) through (6) above by pressing **FUNC 5** and choosing a memory location at 1 through 4.

l. **POWER MEASURE** (menu 16), select power then press up or down arrow to stop measurement.

8. Receiver Sensitivity

a. Performance Check

(1) Connect equipment as shown in figure 2.

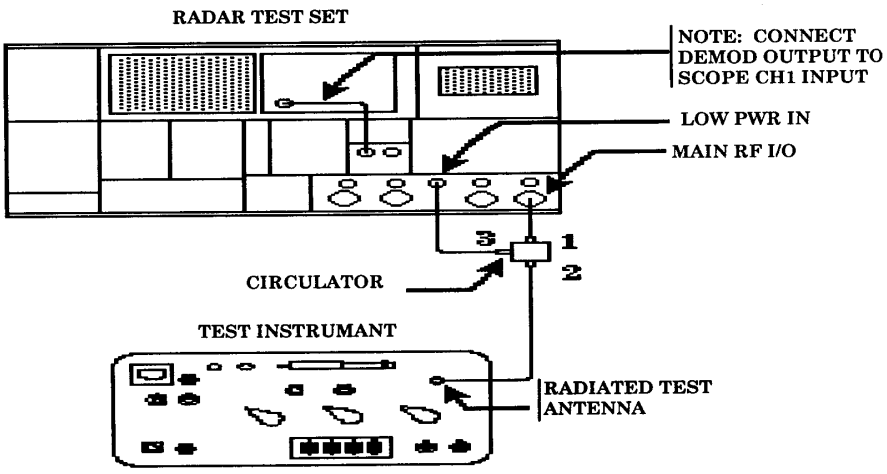


Figure 2. Receiver sensitivity - equipment setup.

(2) Set radar test set oscilloscope time base to 1 mS/div, adjust time base to display 3 pulses.

(3) Measure PRF, using standard measurement techniques. PRF will be between 252 and 262 PPS (equal to a PRT of 3907 ±60 mS). Adjust radar test set main RF output to obtain an ACCEPT/REJECT threshold indication on TI (switch over point from reject to accept). Record radar test set output dBm reading.

NOTE

At menu 14 on radar test set, **0 TRIGGER** may have to be cycled from internal to external to obtain an **ACCEPT** light.

(4) Replace cable from circulator at radar test set MAIN RF I/O (fig. 2) connector with peak power meter sensor.

(5) On radar test set menu 11, set **CW** to **ON** and measure and record output at MAIN RF I/O (fig. 2) connector in terms of dBm.

(6) Reconnect cable from CIRCULATOR (fig. 2) to radar test set MAIN RF I/O (fig. 2) connector. Disconnect cable from TI and connect to peak power meter sensor.

(7) Measure and record the power output in terms of dBm. The difference between this reading and the reading recorded in (4) above is the hookup loss for the system.

(8) Add the value obtained in (5) above to the reading recorded in (7) above. If result is not -6 dBm ±1 dB, perform **b** below.

b. Adjustments

CAUTION

Use care to prevent the RF module from dropping out of TI when positioning and adjusting TI.

(1) Set TI **POWER** switch to **OFF** and remove the housing from the RF MODULE (fig. 1) as listed in (a) through (d) below.

(a) Disconnect the three RF cables from side of RF MODULE (fig. 1).

(b) Release the two hold-downs at opposite corners of module and gently lift RF MODULE (fig. 1) A1 from its connector.

(d) Replace RF MODULE (fig. 1) into its chassis assembly and reconnect the three RF cables.

(3) Set TI **POWER** switch to **ON.**

(4) Adjust radar test set main RF output, adding the cable loss (recorded in **8a**(7) above) to achieve -6 dBm output at the TI **ANTENNA** connector.

(5) Adjust A1R1 (fig. 1) until **ACCEPT/REJECT** indicator just changes from **REJECT** to **ACCEPT** (R).

9. Receiver Frequency and Bandwidth

a. Performance Check

(1) Set TI **SYSTEM TYPE** switch to **LOBING.**

(2) On radar test set, select menu 11 and set **CW** to **OFF**.

(3) On radar test set, select menu 10 and increase radar test set main output frequency until TI **REJECT** light comes on, then decrease frequency until TI **ACCEPT** light just lights. Record frequency.

(4) Decrease radar test set main output frequency until TI **REJECT** light comes on, then increase frequency until TI **ACCEPT** light just lights. Record frequency.

(5) Subtract lower frequency recorded in (4) above from upper frequency recorded in (3) above. Bandwidth will be between 6 and 8 MHz.

(6) Compute center frequency by adding the frequencies recorded in (3) and (4) above and dividing by 2. Center frequency will be between 1089.5 and 1090.5 MHz.

b. Adjustments. No adjustments can be made.

10. Receiver Reference Code, Emergency and I/P Function Operation

a. Performance Check

(1) Set TI **SYSTEM TYPE** switch to **SINGLE CHANNEL**.

(2) Set radar test set main output frequency to 1090 MHz in menu 10.

Table 3. Receiver Reference Code

Test instrument **REFERENCE CODE**	Radar test set **M2 REPLIES SIF REPLY CODE** (menu 3)	**REJECT** or **ACCEPT** conditions
7700	1111	REJECT
1111	1111	ACCEPT
1111	2222	REJECT
2222	2222	ACCEPT

Table 3. Receiver Reference Code - Continued

Test instrument **REFERENCE CODE**	Radar test set **M2 REPLIES SIF REPLY CODE** (menu 3)	**REJECT** or **ACCEPT** conditions
2222	3333	REJECT
3333	3333	ACCEPT
4444	3333	REJECT
4444	4444	ACCEPT
5555	4444	REJECT
5555	5555	ACCEPT
6666	5555	REJECT
6666	6666	ACCEPT
7777	6666	REJECT
7777	7777	ACCEPT

(3) Set TI **REFERENCE CODE** pushbuttons and radar test set **REPLIES SIF CODE** in turn to settings listed in table 3, and observe the correct **ACCEPT** or **REJECT** indications as listed.

(4) Set radar test set menu 3 - **M1** through **MC REPLY CODES** to **7700**, **SIF2** to **OFF;** menu 11 - **1ST REPLY** to **ON**, **2ND REPLY** to **OFF;** and menu 14 - **0 TRIGGER** to **INTERNAL**.

(5) On radar test set, connect oscilloscope **CH1** to **1ST REPLY**, **CH2** to **DEMOD OUT**.

(6) Set oscilloscope time per div to 10 μs, and trigger source to **CH2**.

(7) Set TI and radar test set switches to settings listed in table 4, and observe the correct **ACCEPT** or **REJECT** indications as listed. Oscilloscope presentation will be as shown in figures 3 and 4; or **ACCEPT/REJECT** indication may not be valid.

Table 4. Emergency and I/P Function

Test instrument			Radar test set	**REJECT** or **ACCEPT** condition
FUNCTION	**MODE**	**REFERENCE CODE**	**REPLY SIGNAL** (menu 3)	
EMER[1]	1	7700	VAR EMG	ACCEPT
EMER	2	7700	VAR EMG	ACCEPT
EMER	3/A	7700	VAR EMG	ACCEPT
EMER	C	7700	VAR EMG	REJECT
EMER	C	7700	SIF	ACCEPT
EMER	3/A	7700	SIF	REJECT
EMER	2	7700	SIF	REJECT
EMER	1	7700	SIF	REJECT
I/P[2]	1	7777	ID of POS	REJECT or N/A
I/P	2	7777	ID of POS	ACCEPT

Table 4. Emergency and I/P Function

Test instrument			Radar test set **REPLY SIGNAL** (menu 3)	**REJECT** or **ACCEPT** condition
FUNCTION	**MODE**	**REFERENCE CODE**		
I/P	3/A	7777	ID of POS	ACCEPT
I/P	C	7777	ID of POS	ACCEPT
I/P	C	7777	SIF	ACCEPT
I/P	3/A	7777	SIF	REJECT
I/P	2	7777	SIF	REJECT
I/P	1	7777	SIF	REJECT

[1]Perform transmitter output power check if emergency mode 1 step produces a flickering of accept light

[2]Set radar test set menu 3 - **M1** through **MC REPLY CODES** to **7777**

Figure 3. Emergency mode 1 - oscilloscope display

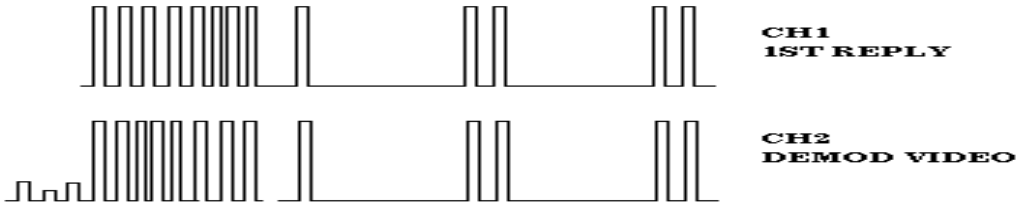


Figure 4. I/P mode 2 - oscilloscope display.

b. Adjustments. No adjustments can be made.

11. Transmitter Power

a. Performance Check

(1) Set switches as listed in (a) through (d) below:

(a) **MODE** switch to **2**.

(b) **REFERENCE CODE** switches to **7700**.

(c) **FUNCTION** switch to **FREQ/POWER**.

(d) **SYSTEM TYPE** switch to **SINGLE CHANNEL**.

(2) Connect power meter to TI **RADIATED TEST ANTENNA** connector.

(3) Measure pulse power output of TI. If measured output power is not between -5 and -7 dBm, perform **b** below.

b. Adjustments. Adjust A1R2 (fig. 1) until power meter indicates -6 dBm. Reinstall RF module cover (R).

12. Transmitter Frequency

a. Performance Check

NOTE

RF module cover must be in place for the following checks.

(1) Connect equipment as shown in figure 2.

(2) Set switches as listed in (a) through (d) below:

(a) **MODE** switch to **2**.

(b) **REFERENCE CODE** switches to **7700**.

(c) **FUNCTION** switch to **SYSTEM**.

(d) **SYSTEM TYPE** switch to **SINGLE CHANNEL.**

(3) Set radar test set **INTERROGATOR** menus as listed below:

(a) Menu 2 - **M1** through **MC** to **OFF**.

(b) Menu 3 - **M2** to **7700**, **F2** to **ON**, **RANGE DELAY** to **0** m**s**, **SIF2** to **OFF**.

(c) Menu 4 - **SIF** to **7700**, **DELAY** to **3** m**s**, **TRIG SOURCE** to **EXTERN+**.

(d) Menu 11 - **1ST REPLY** to **ON**, all others **OFF**.

(e) Menu 14 - **PRF** to **257 PPS**, **0 TRIG** to **INTERNAL ¾.**

(f) Menu 16 - **SOURCE** to **LOW POWER**, **RF** to **-0**.

(4) Menu 14 on radar test set may have to be cycled from **INTERNAL** to **EXTERNAL** to obtain an **ACCEPT** light on TI.

(5) At menu 16 on radar test set, highlight frequency and press **ENTER** to start a frequency measurement. This test may take several minutes.

(6) Radar test set frequency measurement will indicate TI output frequency between 1029.8 and 1030.2 MHz.

b. Adjustments. No adjustments can be made.

13. Transmitter Pulse

a. Performance Check

(1) Connect equipment as shown in figure 2.

(2) Set switches as listed in (a) through (d) below:

(a) **MODE** switch to **2**.

(b) **REFERENCE CODE** switches to **7700**.

(c) **FUNCTION** switch to **FREQ/POWER**.

(d) **SYSTEM TYPE** switch to **SINGLE CHANNEL**.

(3) Set TI **MODE** switch to each of its positions and adjust oscilloscope to observe presence of complete interrogation pulse trains (see figure 5), making sure that TI **ACCEPT** light is lit in each mode.

(4) Set TI **MODE** switch to **1**.

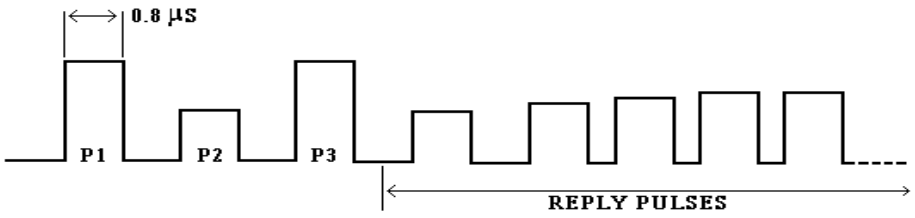


Figure 5. Pulse train (example).

(5) Set oscilloscope for a convenient display of the first 3 pulses of the interrogation pulse train.

(6) Measure the pulse width of P1 and P3 pulses. Pulse width will be between 0.7 and 0.9 µs. Measure pulse spacing between P1 and P3 pulses. Spacing will be between 2.8 and 3.2 µs.

(7) Hold TI **SLS** switch in the **MOM** position and measure the pulse width of the P2 pulse. Pulse width will be between 0.7 and 0.9 µs.

(8) Hold TI **SLS** switch in the **MOM** position and measure the spacing between the leading edges of P1 and P2 pulses. Spacing will be between 1.85 and 2.15 µs.

(9) Set TI **MODE** switch to **2** and measure the spacing between the leading edges of P1 and P3 pulses. Spacing will be between 4.8 and 5.2 µs.

(10) Set TI **MODE** switch to **3/A** and measure the spacing between the leading edges of P1 and P3 pulses. Spacing will be between 7.8 and 8.2 µs.

(11) Set TI **MODE** switch to **TEST** and measure the spacing between the leading edges of P1 and P3 pulses. Spacing will be between 6.3 and 6.7 µs.

(12) Set TI **MODE** switch to **C** and measure the spacing between the leading edges of P1 and P3 pulses. Spacing will be between 20.8 and 21.2 µs.

b. Adjustments. No adjustments can be made.

14. MODE 4 Pretrigger

a. Performance Check

(1) Connect equipment as shown in figure 6.

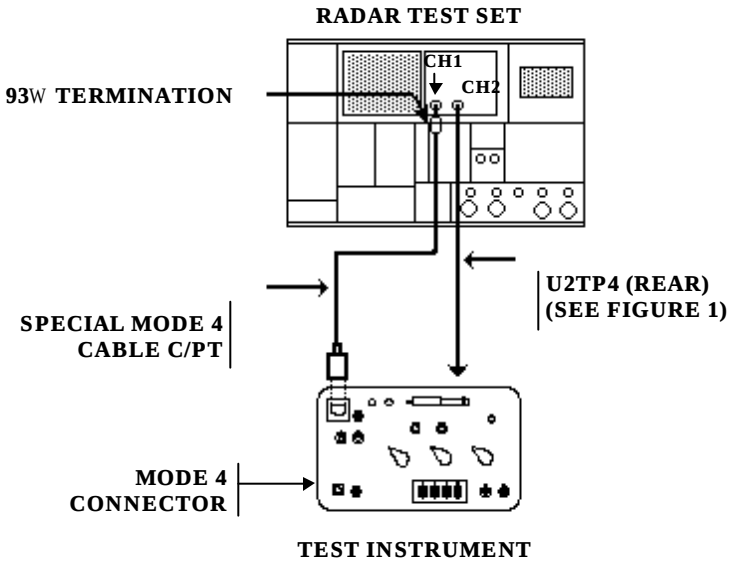


Figure 6. MODE 4 pretrigger – equipment setup.

NOTE

If special MODE 4 cable is not available, refer to table 5 and figure 7 for connection of suitable coaxial test leads.

Table 5. Mode 4 Connector Pin Out

MODE 4 cable	MODE 4 connector	
	Signal pin	Ground pin
C/PT	C	D
C/SL	c	d
E	E	F
J	J	K

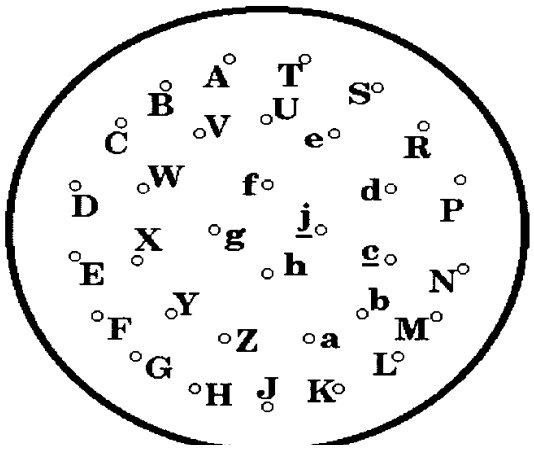


Figure 7. MODE 4 connector pin out.

(2) Position TI controls as listed in (a) through (d) below.

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

(b) **SYSTEM TYPE** switch to **SINGLE CHANNEL**.

(c) **MODE** switch to **4**.

(d) **TEST** switch to **ON**.

(3) Trigger oscilloscope from channel 1 and set time per division to 1 µS.

(4) Measure amplitude of MODE 4 pretrigger pulse. Amplitude will be at least 1.5 V.

(5) Measure pulse width of MODE 4 pretrigger pulse. Pulse width will be between 1.0 and 2.0 µS.

b. Adjustments. No adjustments can be made.

15. MODE 4 Interrogation Video

a. Performance Check

(1) Connect equipment as shown in figure 8.

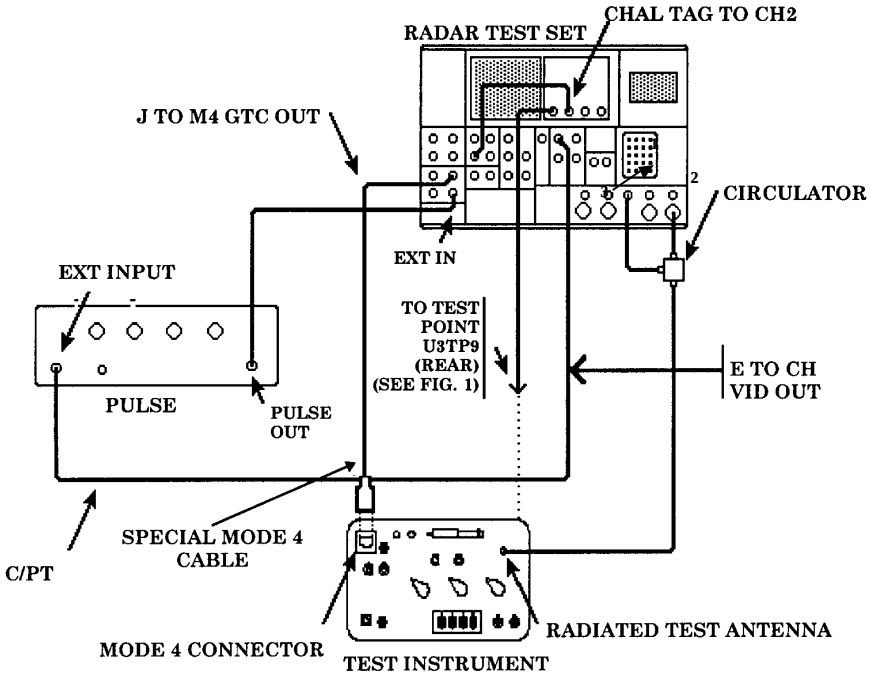


Figure 8. MODE 4 interrogation video - equipment setup.

(2) Position pulse generator controls to settings listed in (**a**) through (**f**) below.

(a) **SLOPE** to **POS**.

(b) **AMPLITUDE** at least 5 V but no more than 10 V.

(c) **WIDTH** to **1**µ**- 10**µ

(d) **WIDTH** control to **>1**µ £ **2**µ.

(e) **EXT INPUT LEVEL** to **> 0 < 1 V**.

(f) **PERIOD** to ³ **0.5** ms.

(3) Position radar test set controls to settings listed in (a) through (f) below.

(a) **REPLY SIGNAL** to **M4-3** (menu 3) and (menu 4).

(b) **M4**: **WORD C**, **S1** through **S4** to **ON**, and **S5** to **OFF** (menu 2).

(c) **M1** through **MC OFF**, **RANGE DELAY 1** m**s**, **CHAL SOURCE** = **INTERNAL**, **F2 OFF** (menu 3).

(d) **MIXED VIDEO** = **3.0V** (menu 5).

(4) Connect radar test set oscilloscope **CH1** input to **A3TP(9)** on rear of TI.

(5) Measure pulse as observed on oscilloscope **CH2**. There will be 37 pulses with the 5th pulse missing. Amplitude will be greater than 2.4 V and pulse width will be approximately 0.5 µs.

(6) Connect oscilloscope **CH1** to TI U2TP8 (fig. 1). Set time base to 1 µs/div.

(7) Four modulation pulses must be seen. The low level must be 0.3 V or less and the high level must be 2.4 V or greater. The pulse width must be between 0.3 and 0.7 µs.

b. Adjustments. No adjustments can be made.

16 MODE 4 SLS Pulse

a. Performance Check

NOTE

If special MODE 4 cable is not available, refer to table 5 and figure 7 for connection of suitable coaxial test leads.

(1) Connect equipment as shown in figure 9.

(2) Set oscilloscope to display pulses on **CH1** and **CH2** inputs.

(3) Measure pulse width of first pulse on **CH1**. Pulse width will be between 0.3 and 0.6 µs.

(4) Position base lines of **CH1** and **CH2** on top of each other. **CH1** pulse will fit inside **CH2** pulse when both channels are coincident.

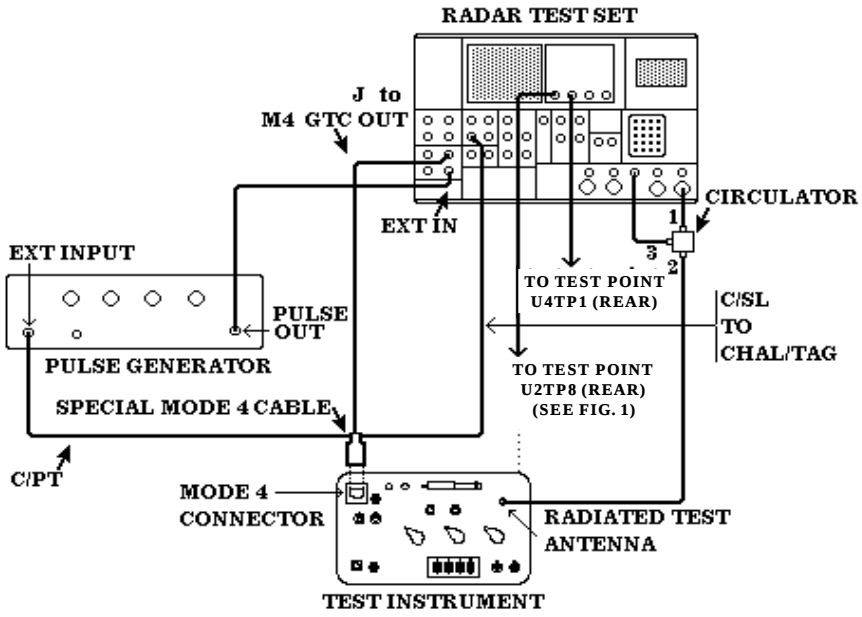


Figure 9. MODE 4 SLS pulse setup.

b. Adjustments. No adjustments can be made.

17. MODE 4 System Accept/Reject

a. Performance Check

(1) Connect equipment as shown in figure 10.

(2) Connect radar test set oscilloscope CH2 to IFF VIDEO OUT 1ST REPLY (fig. 10) on radar test set.

(3) Disconnect C/SL cable from CHAL/TAG (fig. 9), and connect E cable to CH VID OUT (fig. 10) on radar test set.

(4) Adjust radar test set **MAIN OUTPUT LEVEL** control to **0 dBm** and increase **2ND REPLY** delay (menu 4) to approximately 5 μs. Observe that TI **ACCEPT** light is on.

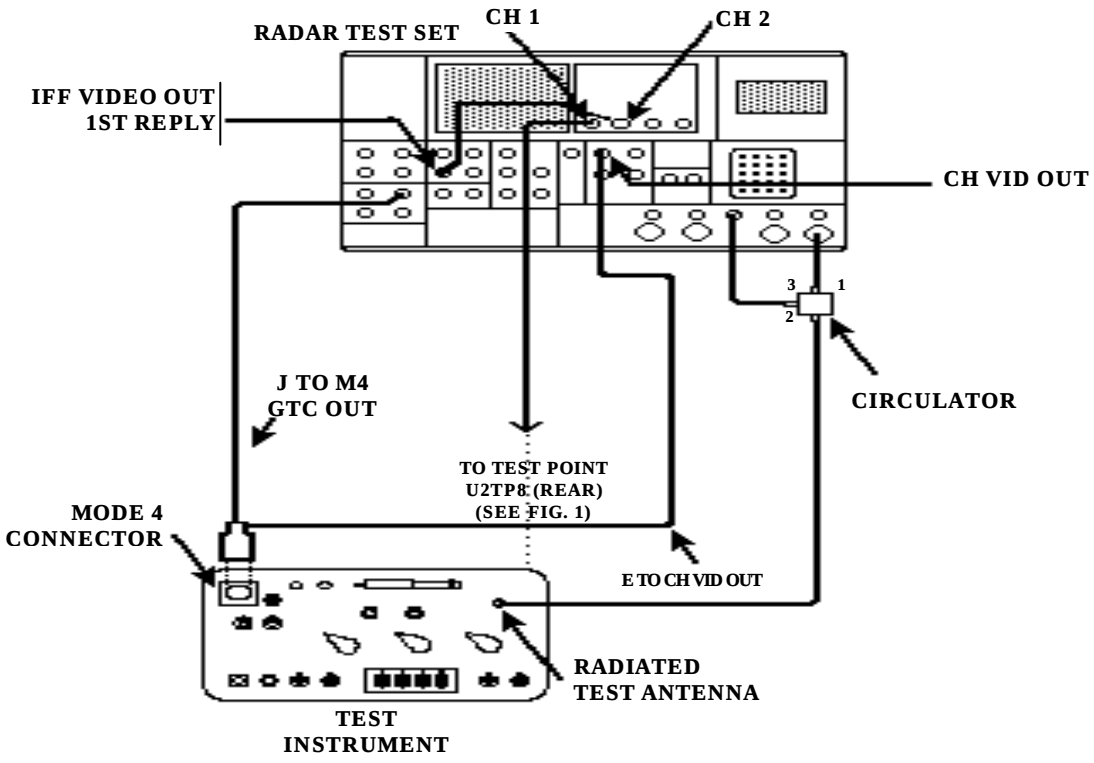


Figure 10. MODE 4 system accept/reject setup.

(5) Move cable from U2TP8 (fig. 1) to U3TP9 and measure pulse width of GTC gate. Pulse width will be between 56 and 86 µs. Observe 3-pulse reply on **CH2**.

(6) Adjust radar test set menu 3 **RANGE DELAY** to shift **CH1** three-pulse reply out of GTC gate (**CH1** display on oscilloscope). Observe that TI **REJECT** light goes on.

b. Adjustments. No adjustments can be made.

18. Power Supply

a. Performance Check

NOTE

Do not perform power supply check if all other parameters are within tolerance.

(1) Connect multimeter - (negative) lead to TI TP1 (fig. 1) and + (positive) lead to chassis. Multimeter indication will be between -50 and +50 mV.

(2) Move multimeter + (positive) lead to TI TP3 (fig. 1). Multimeter indication will be between 4.75 and 5.25 Vdc.

(3) Move multimeter + (positive) lead to TI TP2 (fig. 1). Multimeter indication will be between 11.5 and 12.5 Vdc.

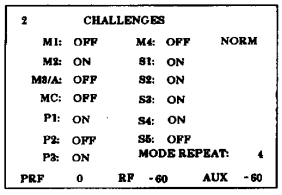
b. Adjustments. No adjustments can be made.

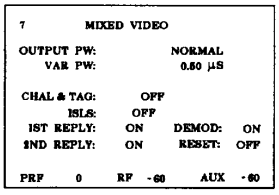
19. Final Procedure

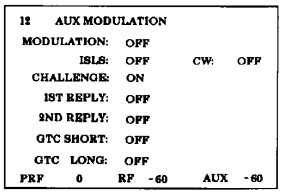
a. Deenergize and disconnect all equipment and reinstall protective covers on TI.

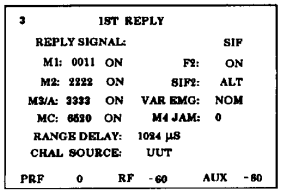
b. Annotate and affix DA label/form in accordance with TB 750-25.

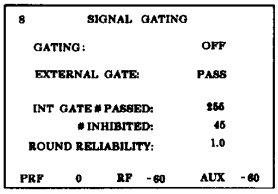
APPENDIX A
RADAR TEST SET MENUS

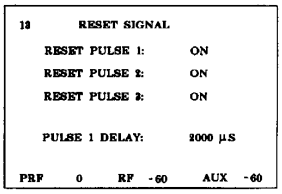


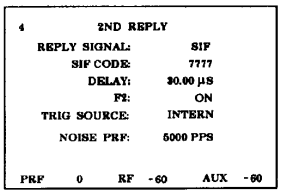


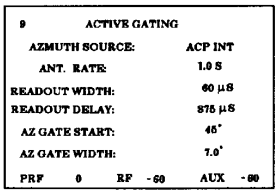


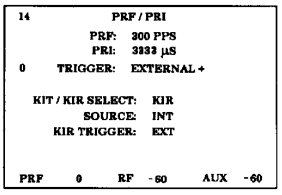


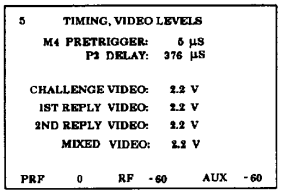


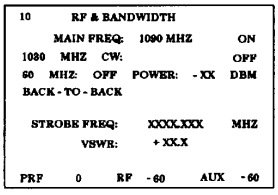


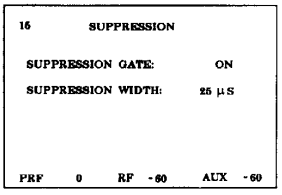


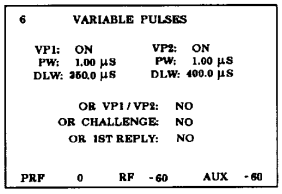


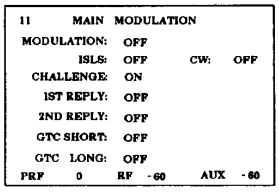


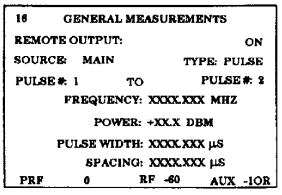












By Order of the Secretary of the Army:

GORDON R. SULLIVAN
General, United States Army
Chief of Staff

Official:

JOEL B. HUDSON
Acting Administrative Assistant to the
Secretary of the Army
00099

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