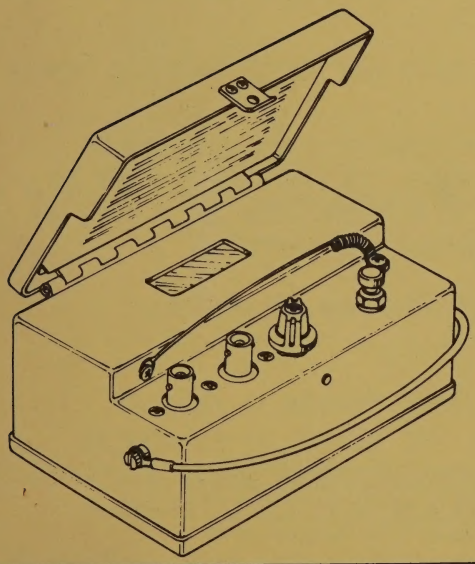
TM 11-6625-3015-14

ERATOR'S, ORGANIZATIONAL, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE MANUAL

RADIO TEST SET AN/PRM-34 (NSN 6625-01-094-5646)



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This copy is a reprint which includes current pages from Changes 1 through 3.

HEADQUARTERS, DEPARTMENT OF THE ARMY

DO NOT ATTEMPT INTERNAL SERVICE OR ADJUSTMENT UNLESS ANOTHER PERSON, CAPABLE OF RENDERING FIRST AID AND RESUSCITATION, IS PRESENT.



5 SAFETY STEPS TO FOLLOW IF SOMEONE IS THE VICTIM OF ELECTRICAL SHOCK

1. DO NOT TRY TO PULL OR GRAB THE INDIVIDUAL
2. IF POSSIBLE , TURN OFF THE ELECTRICAL POWER
3. IF YOU CANNOT TURN OFF THE ELECTRICAL POWER, PULL, PUSH, OR LIFT THE PERSON TO SAFETY USING A WOODEN POLE OR A ROPE OR SOME OTHER INSULATING MATERIAL
4. SEND FOR HELP AS SOON AS POSSIBLE
5. AFTER THE INJURED PERSON IS FREE OF CONTACT WITH THE SOURCE OF ELECTRICAL SHOCK, MOVE THE PERSON A SHORT DISTANCE AWAY AND IMMEDIATELY START ARTIFICIAL RESUSCITATION

DON'T TAKE CHANCES — GROUND THE EQUIPMENT

CHANGE

No. 3

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 15 June 1988

Operator's, Organizational Direct Support and General Support Maintenance Manual

RADIO TEST SET, AN/PRM-34 (NSN 6625-01-094-5646)

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3-3 and 3-4	3-3, 3-4 and 3-4.1/(3-4.2 blank)
5-15 and 5-16	5-15, 5-16 and 5-16.1/(5-16.2 blank)
5-21 and 5-22	5-21. 5-22 and 5-22.1/(5-22.2 blank)
5-27 and 5-28	5-27, 5-28 and 5-28.1/(5-28.2 blank)
5-43 and 5-44	5-43, 5-44 and 5-44.1/(5-44.2 blank)
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CARL E. VUONO
General, United States Army
Chief of Staff

Official:

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Brigadier General, United States Army
The Adjutant General

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Change No. 3

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WASHINGTON, DC, *1 January 1988*

OPERATOR'S, ORGANIZATIONAL, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE MANUAL RADIO TEST SET AN/PRM-34 (NSN 6625-01-094-5646)

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5-15 and 5-16	5-15 and 5-16
5-21 and 5-22	5-21 and 5-22
5-27 and 5-28	5-27 and 5-28
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OPERATOR'S, ORGANIZATIONAL, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE MANUAL RADIO TEST SET AN/PRM-34 (NSN 6625-01-094-5646)

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2-9 and 2-10	2-9 and 2-10
2-13 and 2-14	2-13 and 2-14
3-1 through 3-4	3-1 through 3-4
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5-17 and 5-18	5-17 and 5-18
5-25 and 5-26	5-25 and 5-26
5-29 through 5-54	5-29 through 5-46
B-5 through B-8	B-5 through B-7/(B-8 blank)
F-1 and F-2	F-1 and F-2
Index-1 through Index-6	Index-1 through Index-6

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WARNING

A lithium-sulfur dioxide (Li-SO2) battery used with the equipment contains pressurized sulfur dioxide (SO2) gas. The gas is toxic, and the battery MUST NOT be abused in any way which may cause the battery to rupture.

WARNING

DO NOT heat, short circuit, crush, puncture, mutilate, or disassemble batteries.

WARNING

DO NOT USE any battery which shows signs of damage, such as bulging, swelling, disfigurement, brown liquid in the plastic wrap, a swollen plastic wrap, etc.

WARNING

DO NOT test Li-SO2 batteries for capacity.

WARNING

DO NOT recharge Li-SO2 batteries.

WARNING

DO NOT use water to extinguish Li-SO2 battery fires if a Shock hazard exists due to high voltage electrical equipment in the immediate vicinity (i.e., greater than 30 volts, alternating current (ac) or direct current (dc)).

WARNING

If the battery compartment becomes hot to the touch, if you hear a hissing sound (i.e., battery venting), or smell irritating sulfur dioxide gas, IMMEDIATELY Turn Off the equipment. Remove the equipment to a well ventilated area or leave the area.

WARNING

DO NOT use a Halon type fire extinguisher on a lithium battery fire.

WARNING

In the event of a fire, near a lithium battery(ies), rapid cooling of the battery(ies) is important. Use a carbon dioxide (CO2) extinguisher. Control of the equipment fire, and cooling may prevent the battery from venting and potentially exposing lithium metal. In the event that lithium metal becomes involved in fire, the use of a graphite based Class D fire extinguisher is recommended, such as Lith-X or MET-L-X.

WARNING

DO NOT store lithium batteries with other hazardous materials and keep them away from open flame or heat.

WARNING

DO NOT attempt to operate test set if battery voltage under load is below four volts or if BIT indicates test set is defective.

WARNING

In the event that any battery abnormality (e.g. arcing, overheating) occurs during operation, turn unit MODE switch to OFF CHK and discontinue use.

WARNING

Adequate ventilation should be provided while using trichlorotrifluoroethane. Prolonged breathing of vapor should be avoided. The solvent should not be used near heat or open flame; the products of decomposition are toxic and irritating. Since trichlorotrifluoroethane dissolves natural oils, prolonged contact with skin should be avoided. When necessary, use gloves which the solvent cannot penetrate. If the solvent is taken internally, consult a physician immediately.

Technical Manual)
)
No. 11-6625-3015-14)

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 14 October 1983

OPERATOR'S. ORGANIZATIONAL, DIRECT SUPPORT, AND GENERAL SUPPORT MAINTENANCE MANUAL

RADIO TEST SET AN/PRM-34
(NSN 6625-01-094-5646)

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2, located in back of this manual direct to: Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN: AMSEL-ME-MP, Fort Monmouth, New Jersey - 07703-5000.

In either case a reply will be furnished direct to you.

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CHAPTER 1

INTRODUCTION

Section I. GENERAL INFORMATION

1-1. MULTIPLE CONFIGURATION COVERAGE. This technical manual covers two basic configurations of Radio Test Set AN/PRM-34. The first includes serial numbers 1 through 634, and the second includes serial numbers 635 and up.

a. Serial Numbers 1 through 634. The test set is slightly smaller and has sharp corners. The field strength circuit is neither repairable nor replaceable. There is no antenna adapter provided, and the transit case is larger.

b. Serial Numbers 635 and up. The test set has a slightly larger, yet lighter chassis. The field strength circuit consists of a removable circuit card assembly, having the circuit designation of 2A4. The transit case is smaller, and an adapter is included to connect the unit to an AN/PRC-68 antenna connector.

1-2. SCOPE. This technical manual covers the operation and maintenance of the Radio Test Set AN/PRM-34 (fig. 1-1). The AN/PRM-34 is recommended for use at the organizational level of maintenance for field testing of FM receiver-transmitters that operate in the 30 to 75 MHz (S.N. 635 and up, 30 to 80 MHz) frequency range. It is capable of testing receiver sensitivity and squelch circuits, transmitter forward and reverse power, frequency, and relative radiated field strength. The table of contents gives the order and contents of this manual. The index will help you to find specific items. Chapter 2 covers the operating instructions, Chapter 3 covers organizational maintenance, Chapter 4 covers direct support maintenance, and Chapter 5 covers general support maintenance.

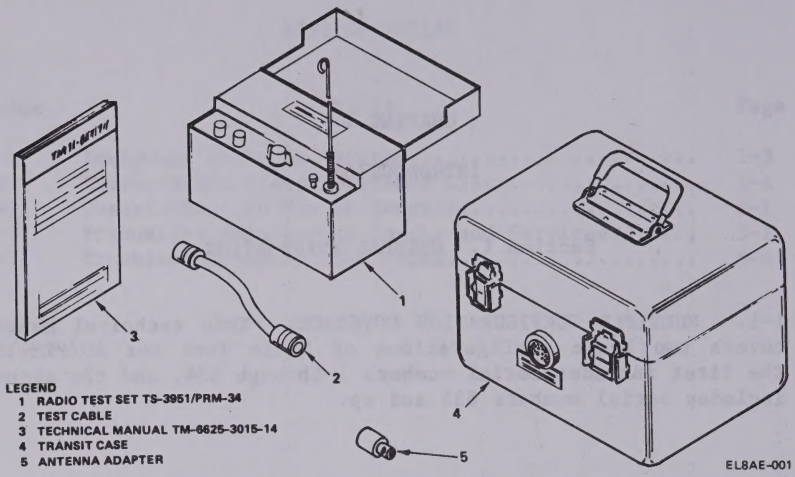


Figure 1-1. Radio Test Set AN/PRM-34

1-3. MAINTENANCE FORMS, RECORDS, AND REPORTS. Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA Pam 738-750 as contained in Maintenance Management Update.

1-4. CALIBRATION. Table 1-1 contains a list of equipment that must be calibrated before performing the maintenance procedures prescribed in this manual. Equipment should be calibrated using procedures prescribed in the designated manual.

1-5. HAND RECEIPT (-HR) MANUALS. This manual has a companion document with a TM number followed by "-HR" (which stands for Hand Receipt). The TM 11-6625-3015-14-HR consists of preprinted hand receipts (DA Form 2062) that list end item related equipment (i.e., COEI, BII, and AAL) you must account for. As an aid to property accountability, additional -HR manuals may be requisitioned from The US Army Adjutant General Publications Center, Baltimore, MD in accordance with procedures in Chapter 3, AR 310-2, and DA Pam 310-10-2.

Table 1-1. Equipment to be Calibrated

Equipment	Manufacturer's model no.	NSN	Manual
RF Signal Generator	HP 8640B	4931-01-085-4229	
Power Meter	HP 432A	6625-00-148-8069	
Digital Multimeter	TEK DM501A	6625-01-075-8583	
Spectrum Analyzer	TEK 492		
Frequency Counter	HP 5345A	4931-01-040-0121	

1-6. DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE. To prevent enemy use of this equipment, refer to TM 750-244-2 for destruction of Army materiel.

1-7. ADMINISTRATIVE STORAGE. Administrative storage of equipment issued to and used by Army activities will have preventive maintenance performed in accordance with the PMCS charts before storing. When removing the equipment from administrative storage the PMCS should be performed to assure operational readiness. Disassembly and repacking of equipment for shipment or limited storage are covered in paragraph 2-2.

1-8. OFFICIAL NOMENCLATURE, NAMES, AND DESIGNATIONS. Refer to Table 1-2 for information concerning reference designations, official nomenclature, and common names of portions of the AN/PRM-34.

Table 1-2. Nomenclature Cross-reference List

Reference designation	Official nomenclature	Common name
-	Radio Test Set AN/PRM-34	AN/PRM-34
2A1	Frequency Counter Circuit Card Assembly	2A1 module
2A2	Spectrum Generator Circuit Card Assembly	2A2 module
2A3	Power Detector Circuit Card Assembly	2A3 module
2A4	Test Set Subassembly (S.N. 1 through 634)	Subassembly
2A4	Field Strength Circuit Card Assembly (S.N. 635 and Up)	2A4 module
2A5	Chassis Subassembly (S.N. 635 and Up)	Subassembly

1-9. REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR's). If your AN/PRM-34 needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design. Put it on an SF 368 (Quality Deficiency Report). Mail it to Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN: AMSEL-ME-MP. Fort Monmouth, NJ 07703-5007. We'll send you a reply.

1-9.1. CONSOLIDATED INDEX OF ARMY PUBLICATIONS AND BLANK FORMS. Refer to the latest issue of DA Pam 310-1 to determine whether there are new editions, changes or additional publications pertaining to the equipment.

Section II. EQUIPMENT DESCRIPTION AND DATA

1-10. EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES. The AN/PRM-34 is a handheld, easy to use device for field testing of receiver-transmitters.

a. Characteristics. The AN/PRM-34 offers versatility of use.

(1) Connects between receiver-transmitter and antenna.

(2) Test receiver sensitivity.

(3) Tests receiver squelch circuitry.

(4) Measures transmitter output frequency.

(5) Measures transmitter output power (forward and reflected).

(6) Measures transmitter relative radiated field strength.

(7) May be used to adjust tuning inductor (L1) of AN/PRC-68.

b. Capabilities. The AN/PRM-34 is useful in performing tests on the following radio equipment:

Receiver-Transmitter	Part of Radio Set
RT-246( )/VRC	AN/VRC-12, -43, -44, -45
RT-524( )/VRC	AN/VRC-46, -47, -48, -49
R-442( )/VRC	AN/VRC-42, -44, -47, -48
RT-841/PRC-77	AN/VRC-64, AN/GRC-160, AN/PRC-77
RT-505/PRC-25	AN/VRC-53, AN/GRC-125, AN/PRC-25
RT-1113/PRC-68	AN/PRC-68

1-11. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS. The AN/PRM-34 consists of four (five, S.N. 635 and up) major components, as shown in figure 1-2.

a. Radio Test Set TS-3951/PRM-34 - the basic testing device used to evaluate transmitters and receiver-transmitters.

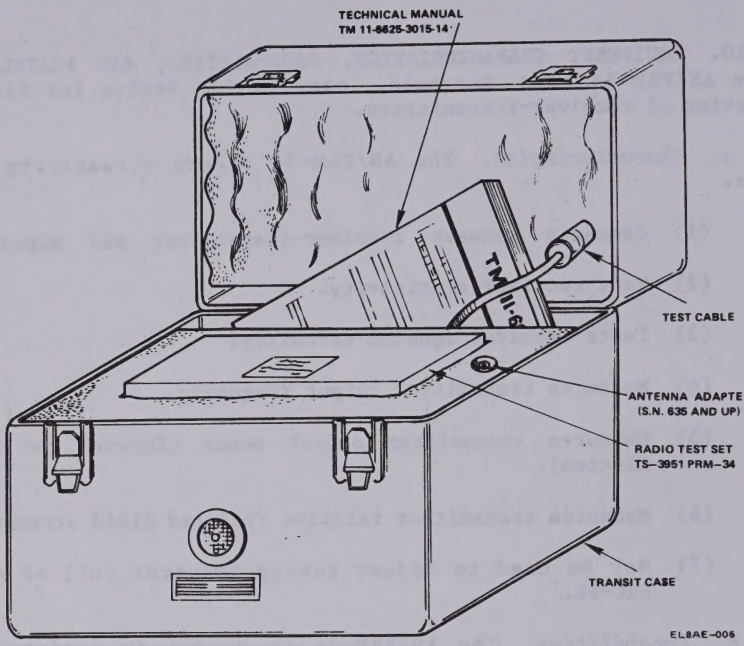


Figure 1-2. Location of Major Components

b. *Test Cable* - coaxial 50Ω cable terminated with UG-88G/U BNC male plugs for interconnection of the test set and radio equipment to be tested.

c. *Technical Manual TM 11-6625-3015-14* - includes basic information on operation, theory of operation, and maintenance.

d. *Transit Case* - affords protection against damage from shocks, moisture, etc. while not in use.

e. *Antenna Adapter (S.N. 635 and up)* - attaches to AN/PRC-68 antenna connector for testing.

1-12. EQUIPMENT DATA.

	S.N. 1 thru 634		S.N. 635 and up	
a. Transit Case.				
(1) Height cm./in. max.	31.75	12.5	16.51	6.5
(2) Width cm./in. max.	32.39	12.75	32.576	12.825
(3) Depth cm./in. max.	24.13	9.5	22.225	8.75
(4) Weight Kg./lb. max.	3.6	8.0	2.475	5.5
b. Test Set.				
(1) *Physical.*				
(a) Height cm./in. max.	8.415	3.313	9.525	3.75
(b) Width cm./in. max.	21.59	8.5	21.59	8.5
(c) Depth cm./in. max.	11.217	4.416	13.335	5.25
(d) Weight Kg./lb. max.	1.825	4.375	1.669	4.0
(2) *Electronic.*				
(a) Receive sensitivity	3 ±1 μV		3 ±1 μV	
(b) Receive squelch with audible tone	3 ±1 μV		3 ±1 μV	
(c) Transmit forward/reverse power accuracy	±20% (3-40 w)		±20% (1-2.0 w) +20,-27% (2.1-9.9 w) ±20% (10-50 w)	
(d) Transmit frequency	±2 kHz		±2 kHz	

(e) Temperature range	-20 to +50°C	-20 to +50°C

c. BA-5847/U Lithium/Sulphur Dioxide Battery.

(1) Height .....9.525 cm. (3.75 in.) max.

(2) Width.....6.477 cm. (2.55 in.) max.

(3) Depth.....3.81 cm. (1.5 in.) max.

(4) Weight.....280 Kg. (10 oz.) max.

Section III. PRINCIPLES OF OPERATION

1-13. FUNCTIONAL DESCRIPTION OF AN/PRM-34 TEST SET (fig. 1-3).

a. General. The test set provides six tests on receiver-transmitters. Two of the tests check the receiving section of a receiver-transmitter. These tests check the receiver sensitivity (ability to receive weak signals) and the 150 Hz tone squelch circuits. Both tests are performed with the MODE switch in the SENS SQ position. The other four tests measure the forward power, reverse (reflected) power, frequency, and relative radiated field strength of the transmitting section of a receiver-transmitter. These four tests are performed with the MODE switch in the FWD PWR, RVS PWR, FREQ, and FLD STR positions, respectively. A built-in-test (BIT) is provided for evaluation of the test set.

b. Receiver Tests. To test the receiver, the test set outputs a spectrum of frequencies from 30 to 75 (80, S.N. 635 and up) MHz spaced 5 MHz apart. This spectrum is modulated with 150 Hz and 900 Hz tones. When the test set MODE switch is in the SENS SQ position and the test set PUSH TO TEST button is pushed, the frequency spectrum is output from the RADIO connector to the antenna connector of the receiver under test. By putting the receiver in an unsquelched mode and setting the frequency of the receiver to 30, 35, 40, 45, 50, 55, 60, 65, 70 or 75 (80, S.N. 635 and up) MHz, the -97 dBm level of the spectrum should produce noticeable quieting in the handset as the test set PUSH TO TEST switch is pushed, and the 900 Hz tone should be heard. The squelch circuits are tested by placing the receiver in a squelched mode and setting the frequency of the

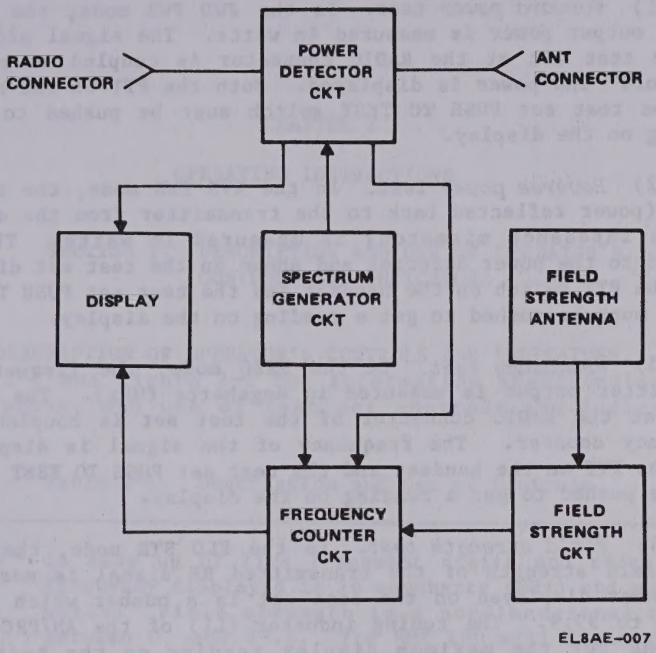


Figure 1-3. Test Set Block Diagram

receiver to 75 MHz. At that frequency the deviation due to the 150 Hz modulation in the test set output spectrum is sufficient to disable the receiver squelch circuits. The 900 Hz tone should be heard in the handset when the test set PUSH TO TEST switch is pushed. During these tests no connection is made to the ANT connector. This prevents picking up unwanted signals. The display remains off. The test set only outputs the spectrum when the test set PUSH TO TEST switch is pushed.

c. Transmitter Tests. To test a transmitter, the test set inputs an RF signal from the transmitter under test. Each of the four transmitter tests requires a different position of the MODE switch. Each test measures a different parameter of the RF transmit signal. In the FWD PWR, RVS PWR, and FREQ positions, the RF signal from the transmitter under test is input to the RADIO connector. A 50-ohm load is connected to the ANT connector to terminate the signal. In the FLD STR position, no connection is made to either connector. Field strength is measured through the FLD STR ANT (field strength antenna).

(1) *Forward power test.* In the FWD PWR mode, the transmitter output power is measured in watts. The signal picked up by the test set at the RADIO connector is coupled to a power detector. The power is displayed. Both the PTT on the handset and the test set PUSH TO TEST switch must be pushed to get a reading on the display.

(2) *Reverse power test.* In the RVS PWR mode, the reverse power (power reflected back to the transmitter from the antenna due to impedance mismatch) is measured in watts. This is coupled to the power detector and shown on the test set display. Both the PTT switch on the handset and the test set PUSH TO TEST switch must be pushed to get a reading on the display.

(3) *Frequency test.* In the FREQ mode, the frequency of transmitter output is measured in megahertz (MHz). The signal input at the RADIO connector of the test set is coupled to a frequency counter. The frequency of the signal is displayed. Both the PTT on the handset and the test set PUSH TO TEST switch must be pushed to get a reading on the display.

(4) *Field strength test.* In the FLD STR mode, the relative field strength of the transmitted RF signal is measured. The number displayed on the test set is a number which varies from 0 to 99.9. The tuning inductor (L1) of the AN/PRC-68 is adjusted for the maximum display reading on the test set. Because of an internal timer, the test set PUSH TO TEST switch may be released, and a 45 second delay allows sufficient time to adjust L1.

CHAPTER 2

OPERATING INSTRUCTIONS

Section I. DESCRIPTION AND USE OF OPERATOR'S CONTROLS AND INDICATORS

2-1. DESCRIPTION OF OPERATOR'S CONTROLS AND INDICATORS. Refer to table 2-1 and figure 2-1 for information about indication, description, and use of test set controls and indicators.

Table 2-1. Description and Use of Controls

Display - is made up of five 7-segment digits and three LEDs. Frequency displayed is in megahertz (MHz) and power in watts. Field strength is a nondimensional number between 0 and 99.9. The MHZ LED will light up when frequency is displayed. The WATTS LED will light up when power is displayed. The FLD STR LED will light up when field strength is measured.

RADIO - is a BNC connector which is used to connect the test set to the RF output of the receiver-transmitter under test.

ANT - is a BNC connector which is used to connect the test set to the vehicular or 50 ohm antenna or to a 50-ohm load.

MODE - is a six-position switch which is used to select the particular test required.

Position	Function
OFF CHK	Off Check is used during the built-in-test. When the MODE switch is in the OFF CHK position and the test set PUSH TO TEST switch is pushed, "1.000" or "01.000" will appear on the display if the test set is operational.

Table 2-1. Description and Use of Controls - Continued

Position	Function
SENS SQ	Sensitivity Squelch is used to test the sensitivity and squelch circuits of a receiver or receiver-transmitter. The display does not light up when the MODE switch is in this position.
FWD PWR	Forward Power is used to test the forward power of the RF output signal from a transmitter or receiver-transmitter. The power in watts will appear on the display when the test set PUSH TO TEST switch is pushed, and the WATTS LED will light up.
RVS PWR	Reverse (reflected) Power is used to test the impedance mismatch. The reverse power will appear on the display when the test set PUSH TO TEST switch is pushed, and the WATTS LED will light up.
FREQ	Frequency is used to measure the frequency of the RF output signal from a transmitter or receiver-transmitter. The frequency in megahertz (MHz) will appear on the display when the test set PUSH TO TEST switch is pushed, and the MHZ LED will light up.
FLD STR	Field Strength is used to measure the field strength of the RF output signal from a transmitter or receiver-transmitter. A nondimensional number will appear on the display when the test set PUSH TO TEST switch is pushed, and the FLD STR LED will light up. A timer circuit allows the operator to release the test set PUSH TO TEST switch and provides time to make transmitter adjustment.
PUSH TO TEST -	applies DC power to the test set internal circuitry from the battery.

Table 2-1. Description and Use of Controls - Continued

FLD STR ANT	- used during field strength test to measure relative radiated field strength of the RF output signal from a transmitter or receiver-transmitter.
Test Set Handle	- serves as a handle to transport the test set, and is also used to provide a ground connection during the FLD STR test.

Section II. OPERATION UNDER USUAL CONDITIONS

2-2. ASSEMBLY AND PREPARATION FOR USE. This paragraph includes procedures for unpacking, checking, assembling, servicing, and adjusting AN/PRM-34.

a. Service Upon Receipt.

(1) *Unpacking.* Refer to figure 2-2. The AN/PRM-34 is packaged in a corrugated carton encompassing the transit case. The TS-3951/PRM-34 test set is inside the transit case, along with this technical manual and the test cable.

(a) Open corrugated carton and remove unit.

(b) Remove protective moistureproof wrapping.

(c) Depress core of relief valve (on front of transit case) momentarily.

NOTE

Each component is enclosed in a protective plastic envelope for shipping.

(d) Open transit case and remove test set, test cable, and technical manual, removing protective envelope from each.

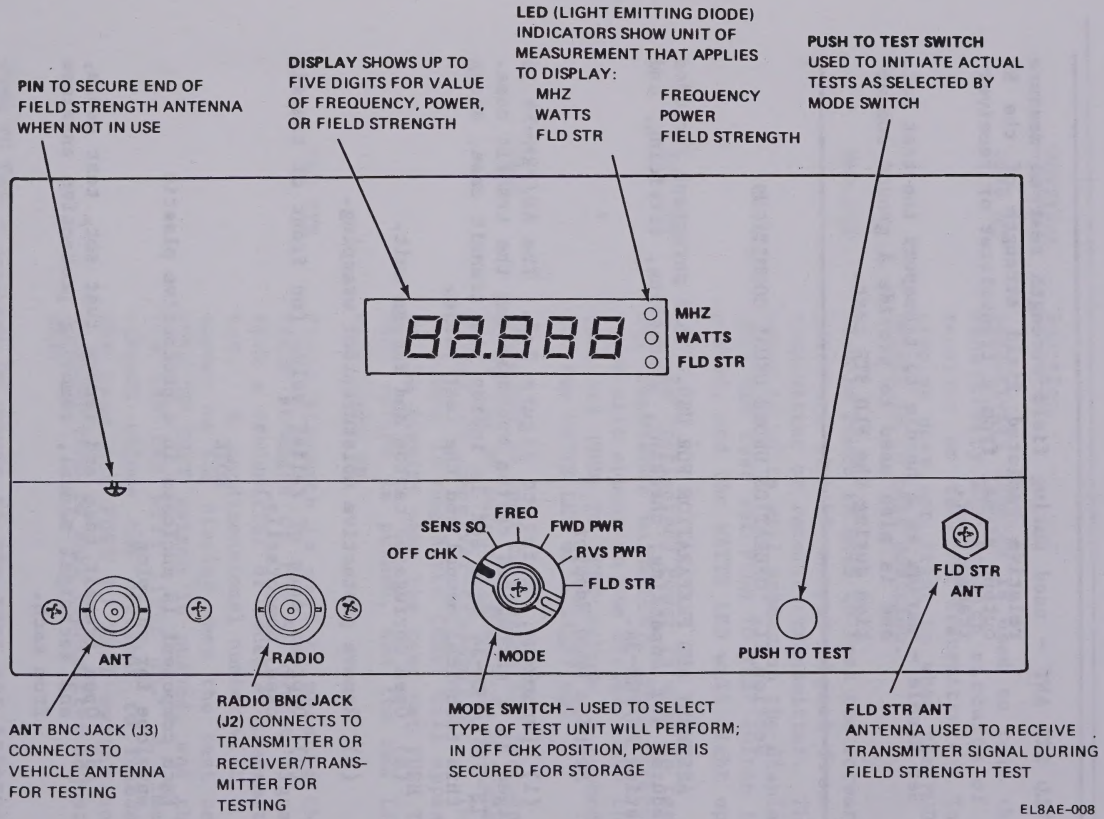


Figure 2-1. Controls, Indicators, and Connectors

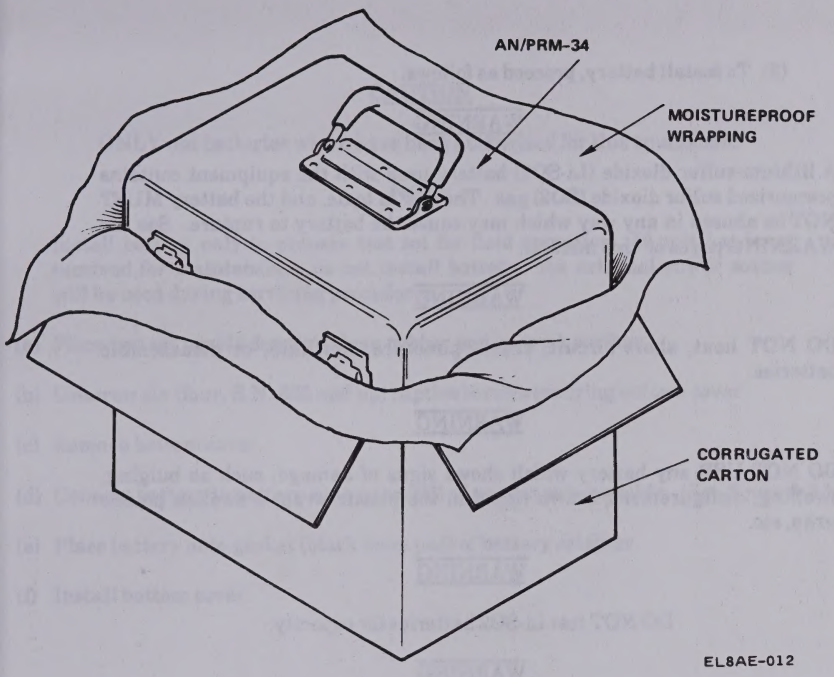


Figure 2-2. Unpacking AN/PRM-34

(2) *Checking unpacked equipment.*

(a) Inspect for possible shipping damage. Report any damage on SF 364 (Report of Discrepancy).

(b) Check contents with packing slip information to be sure shipment is complete. Report all discrepancies in accordance with TM 38-750.

(c) Check to be sure equipment has not been modified.

b. Assembly of Unpacked Equipment.

(1) The test set is not operable upon unpacking.

(2) The test set is shipped without battery. Installation of one lithium battery BA-5847/U (NSN 6135-01-090-5364) is required for operation.

(3) To install battery, proceed as follows:

WARNING

A lithium-sulfur dioxide (Li-SO2) battery used with the equipment contains pressurized sulfur dioxide (SO2) gas. The gas is toxic, and the battery MUST NOT be abused in any way which may cause the battery to rupture. See the WARNING pages of this manual.

WARNING

DO NOT heat, short circuit, crush, puncture, mutilate, or disassemble batteries.

WARNING

DO NOT USE any battery which shows signs of damage, such as bulging, swelling, disfigurement, brown liquid in the plastic wrap, a swollen plastic wrap, etc.

WARNING

DO NOT test Li-SO2 batteries for capacity.

WARNING

DO NOT recharge Li-SO2 batteries.

CAUTION

DO NOT dispose of lithium batteries with ordinary trash/refuse. Turn-in batteries to your local serving Defense Reutilization and Marketing Office.

CAUTION

ONLY use batteries which have been authorized for this equipment.

NOTE

Install battery only to prepare test set for field operation. If unit has been received for maintenance, do not install battery. An external power source will be used during servicing procedures.

(a) Place test set upside down on clean rubber pad on work surface.

(b) Unscrew six (four, S.N. 635 and up) captive screws securing bottom cover.

(c) Remove bottom cover.

(d) Connect battery to battery connector (P3) of test set subassembly. (See figure 5-3.)

(e) Place battery onto gasket (black foam pad) of battery retainer.

(f) Install bottom cover.

(g) Tighten six (four, S.N. 635 and up) screws to secure bottom cover.

c. Preliminary Servicing and Adjustment. Preliminary servicing consists of performing the built-in-test (BIT) (para 2-3c).

2-3. OPERATING PROCEDURES.

CAUTION

Prior to performing test set operational tests on the RT-524/VRC, the RT-246/VRC, or the R-442/VRC, it is absolutely necessary that the AN/VRC-12 unit under test be turned on and allowed at least 5 minutes to warmup.

a. General. The test set is a small, simple-to-operate unit for field functional testing of AN/VRC-12 series, AN/PRC-77, and AN/PRC-68 family receiver-transmitters. The test set connects between the transmitter RF output BNC connector and the coaxial feedline to the antenna or a 50-ohm load. It can check receiver sensitivity and tone squelch circuits, transmitter forward and reverse power, transmitter RF output frequency, and relative radiated field strength.

b. Test Set Turn On Procedure.

NOTE

No warmup time is required for the test set.

(1) For the BIT, make no connections to RADIO or ANT connectors, and leave MODE switch in OFF CHK Position.

(2) For test of communication equipment, make connections as indicated and turn MODE switch to position required.

c. Built-in-Test. Perform BIT by following instructions provided in figure 2-3.

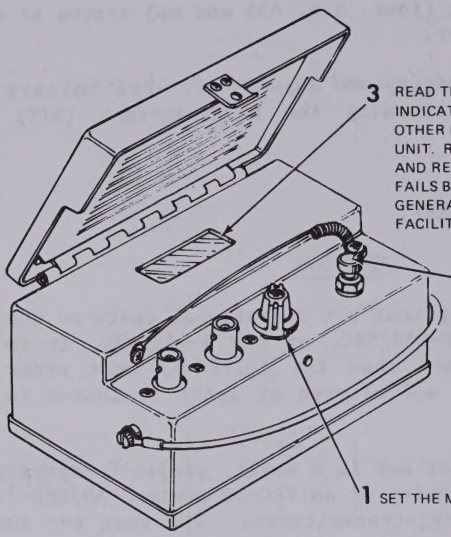


Figure 2-3. Built-in-Test Procedures

d. Receiver Sensitivity Squelch Test.

CAUTION

If AN/VRC-12 is to be tested, allow radio to warmup at least 5 minutes before starting test.

NOTE

To prevent reception of unwanted signals, do not connect antenna to test set.

(1) Make connections as indicated in figures 2-4, 2-5, or 2-6.

(2) Set test set MODE switch to SENS SQ.

(3) Set radio controls for unsquelched operation.

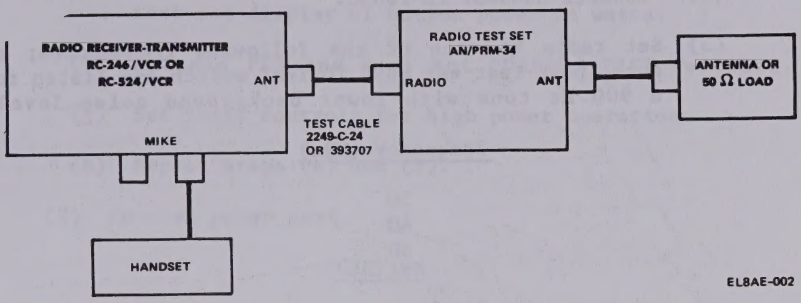


Figure 2-4. Test Set and AN/VRC-12 Interconnection Diagram

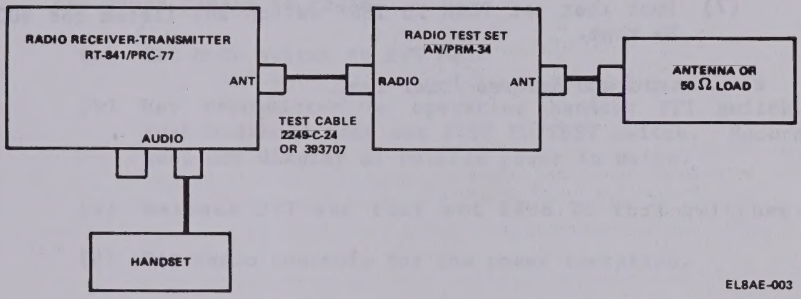


Figure 2-5. Test Set and AN/PRC-77 Interconnection Diagram

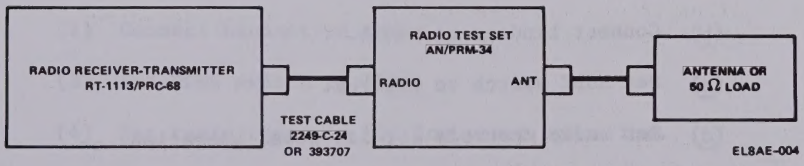


Figure 2-6. Test Set and AN/PRC-68 Interconnection Diagram

(4) Connect handset to radio.

(5) Set radio to each of the following frequencies; at each, push test set PUSH TO TEST switch and listen for a 900 Hz tone with lower background noise level:

Frequency (MHz)
30
40
60
75

(6) Set radio controls for squelched operation. Leave frequency at 75 MHz.

(7) Push test set PUSH TO TEST switch and listen for 900 Hz tone.

e. Forward and Reverse Power Test.

(1) *Forward power test.*

(a) Make connections as indicated in figure 2-4, 2-5, or 2-6.

(b) Connect handset to radio.

(c) Set MODE switch to FWD PWR.

(d) Set radio controls for low power operation.

CAUTION

Before keying transmitter, be sure AN/PRM-34 connections to radio and antenna (or 50Ω load) are secure. Absence of antenna or 50Ω load (or open connections) may cause damage to radio.

(e) Key transmitter by operating handset PTT switch. Push and hold test set PUSH TO TEST switch. Record test set display of output power in watts.

(f) Release PTT and test set PUSH TO TEST switches.

(g) Set radio controls for high power operation.

(h) Repeat steps (e) and (f).

(2) *Reverse power test.*

CAUTION

Before keying transmitter, be sure AN/PRM-34 connections to radio and antenna (or 50 Ω load) are secure. Absence of antenna or 50 Ω load (or open connections) may cause damage to radio.

(a) Set MODE switch to RVS PWR.

(b) Key transmitter by operating handset PTT switch. Push and hold test set PUSH TO TEST switch. Record test set display of reverse power in watts.

(c) Release PTT and test set PUSH TO TEST switches.

(d) Set radio controls for low power operation.

(e) Repeat steps (c) and (d).

f. *Frequency Test.*

(1) Make connections as indicated in figure 2-4, 2-5, or 2-6.

(2) Connect handset to radio.

(3) Set MODE switch to FREQ.

(4) Set radio controls for low power operation.

CAUTION

Before keying transmitter, be sure test set connections to radio and antenna (or 50 Ω load) are secure. Absence of antenna or 50 Ω load (or open connections) may cause damage to radio.

NOTE

Forward and reverse power test should be completed before performing frequency test. Low forward power or high reverse power of radio could result in inaccurate frequency display.

(5) Key transmitter by operating handset PTT switch. Push test set PUSH TO TEST switch. Compare test set display of output frequency with data in manual applicable to radio under test.

(6) Release PTT and test set PUSH TO TEST switches.

(7) Set radio controls for high power operation.

(8) Repeat steps (4) and (5).

g. Field Strength Test.

NOTE

Although the test set may be used to check field strength of AN/PRC-77 or AN/VRC-12 radios, the field strength test is intended only to aid in tuning of L1 of AN/PRC-68. Following procedures apply to testing AN/PRC-68 and may not apply to other radios.

(1) Make connections as indicated in figure 2-7.

(2) Release tip of field strength antenna (FLD STR ANT) from screw near ANT connector. Antenna should stand vertical.

CAUTION

Be sure antenna is properly installed on radio being tested to avoid transmitter damage.

NOTE

Make no connection to either BNC connector on test set.

(3) Remove thumbscrew from left side (nearest ANT connector) of test set to release handle.

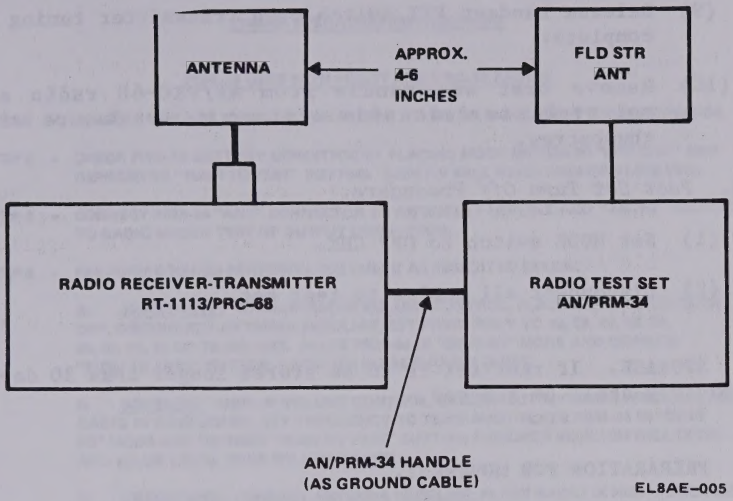


Figure 2-7. Test Set and AN/PRC-68 Field Strength Test Interconnection Diagram

(4) Secure handle to tapped hole near antenna of AN/PRC-68 using same thumbscrew, held captive to handle.

(5) Align test set field strength antenna parallel to and approximately 4 inches from radio antenna.

(6) Set MODE switch to FLD STR.

(7) Push and release test set PUSH TO TEST switch. Operate handset PTT to key transmitter.

NOTE

Field strength circuitry includes a delay (approx. 45 sec) before turning off, to allow technician to adjust transmitter.

NOTE

If display is "00.0", increase distance between field strength and radio antennas until display is less than the maximum indication of "99.9".

(8) Adjust L1 of AN/PRC-68 for peak reading on test set display.

(9) Release handset PTT switch when transmitter tuning is complete.

(10) Remove test set handle from AN/PRC-68 radio and reinstall to left side of test set. Secure with thumbscrew.

h. Test Set Turn Off Procedure.

(1) Set MODE switch to OFF CHK.

(2) Disconnect all cables to test set.

2-4. STORAGE. If test set is to be stored longer than 30 days, the battery shall be removed.

2-5. PREPARATION FOR MOVEMENT.

a. S.N. 1 through 634.

(1) Place manual and test cable into slot at rear of transit case padding.

(2) Place test set into cutout in padding.

(3) Secure transit case lid by closing and fastening two clamps at front.

b. S.N. 635 and Up.

(1) Place manual on top of test set.

(2) Place test cable on top of manual.

(3) Place antenna adapter into round cutout in padding.

(4) Secure transit case lid by closing and fastening two clamps at front.

2-6. INSTRUCTION PLATES. There are two instruction plates fastened inside the top cover of the test set.

a. The first plate is in view when top cover is open. Instructions on this plate are shown in figure 2-8.

PRM-34 OPERATING INSTRUCTIONS

PRM-34 USED WITH PRC-77 AND VRC-12 RADIOS

STEP 1 - ALLOW 5 MINUTES WARM-UP FOR RT-524, RT-246 OR R-442 PRIOR TO USING PRM-34.

STEP 2 - CHECK PRM-34 BATTERY CONDITION BY PLACING MODE SWITCH IN "OFF CHK" AND DEPRESSING "PUSH TO TEST" BUTTON. DISPLAY WILL READ 1.000 OR 01.000 MHZ.

STEP 3 - CONNECT PRM-34 "ANT" CONNECTOR TO ANTENNA FEEDLINE AND "RADIO" CONNECTOR TO RADIO UNDER TEST RF OUTPUT CONNECTOR.

STEP 4 - PERFORM DESIRED PERFORMANCE CHECK AS INDICATED BELOW.

A. SENSITIVITY: TURN UP RADIO VOLUME CONTROL, PLACE RADIO IN SQUELCH OFF, DISCONNECT ANTENNA FEEDLINE, SET FREQUENCY TO 30, 35, 40, 45, 50, 55, 60, 65, 70 OR 75.000 MHZ. PLACE PRM-34 IN "SENS SQ" MODE AND DEPRESS "PUSH TO TEST" BUTTON; RECEIVER NOISE SHOULD QUIET.

B. SQUELCH: TURN UP VOLUME CONTROL, DISCONNECT ANTENNA FEEDLINE, PLACE RADIO IN SQUELCH ON, SET FREQUENCY TO 75.000 MHZ. PLACE PRM-34 IN "SENS SQ" MODE AND DEPRESS "PUSH TO TEST" BUTTON; RECEIVER SQUELCH WILL OPEN AND A LOW LEVEL TONE WILL BE HEARD.

C. FREQUENCY: CONNECT ANTENNA FEEDLINE; PLACE RADIO IN HIGH POWER MODE; PLACE PRM-34 IN "FREQ" MODE; KEY RADIO; AFTER FIVE SECONDS, DEPRESS "PUSH TO TEST" BUTTON; AFTER THREE SECONDS, TRANSMIT FREQUENCY WILL BE DISPLAYED.

EL8AE-010

Figure 2-8. Instruction Plate Sheet 1 Instructions

b. Lift first plate for access to second plate. Instructions on this plate are shown in figure 2-9.

Section III. OPERATION UNDER UNUSUAL CONDITIONS

2-7. OPERATION UNDER EMERGENCY CONDITIONS.

a. Operation with Low Battery Voltage.

CAUTION

DO NOT attempt to operate test set if battery voltage under load is below four volts or if BIT indicates test set is defective.

b. Operation with Random Length Antenna.

(1) Test set may be used for field strength test if field strength antenna is bent or broken.

D. FORWARD POWER: MAKE SURE CONNECTIONS ARE AS INDICATED IN STEP 3 ABOVE. PLACE RADIO IN HIGH OR LOW POWER; PLACE PRM-34 IN "FWD PWR" MODE; KEY RADIO; AFTER FIVE SECONDS, DEPRESS "PUSH TO TEST" BUTTON; AFTER THREE SECONDS, TRANSMIT POWER FROM RADIO TO ANTENNA WILL BE DISPLAYED.

E. REFLECTED POWER: MAKE SURE CONNECTIONS ARE AS INDICATED IN STEP 3 ABOVE. PLACE RADIO IN HIGH OR LOW POWER; PLACE PRM-34 IN "RVS PWR" MODE; KEY RADIO; AFTER FIVE SECONDS, DEPRESS "PUSH TO TEST" BUTTON; AFTER THREE SECONDS, TRANSMIT POWER REFLECTED BACK FROM ANTENNA WILL BE DISPLAYED.

PRM-34 USED WITH PRC-68 RADIO

THE PRM-34 MAY BE USED IN THE FIELD STRENGTH MODE TO ADJUST THE PRC-68 ANTENNA COUPLER INDUCTOR (L1) FOR MAXIMUM RADIATED POWER. SEE APPROPRIATE PRC-68 INSTRUCTION MANUAL FOR PROPER ADJUSTMENT PROCEDURES. TO USE THE PRM-34 WITH THE PRC-68 FOR FIELD STRENGTH MEASUREMENTS FOLLOW THE STEPS BELOW.

STEP 1 - CHECK PRM-34 BATTERY CONDITION BY PLACING MODE SWITCH IN "OFF CHK" AND DEPRESSING "PUSH TO TEST" BUTTON. DISPLAY WILL READ 1.000 OR 01.000 MHZ.

STEP 2 - DISCONNECT LEFT END OF PRM-34 HANDLE. CONNECT TO TAPPED HOLE NEAR PRC-68 ANTENNA POST.

STEP 3 - RELEASE FIELD STRENGTH ANTENNA FROM HOLD DOWN SCREW. ANTENNA SHOULD STAND ROUGHLY VERTICAL, ABOUT FIVE INCHES FROM PRC-68 ANTENNA.

STEP 4 - PLACE PRM-34 MODE SWITCH IN "FLD STR" POSITION. DEPRESS AND RELEASE "PUSH TO TEST" BUTTON. PRM-34 WILL TURN ON AND OPERATE FOR APPROXIMATELY 40 SECONDS TO FREE HANDS FOR ADJUSTMENT OF PRC-68.

EL8AE-011

Figure 2-9. Instruction Plate Sheet 2 Instructions

(2) If field strength antenna is defective, reduced signal strength display will occur.

(3) Other functions of the test set will not be affected by an antenna defect.

2-8. OPERATION IN UNUSUAL WEATHER. Test set may be used in adverse weather conditions, such as rain and snow.

CHAPTER 3

OPERATOR AND ORGANIZATIONAL MAINTENANCE INSTRUCTIONS

Section I. REPAIR PARTS, SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT

3-1. COMMON TOOLS AND EQUIPMENT. For authorized tools and equipment, refer to Modified Table of Organization and Equipment (MTOE) applicable to your unit.

3-2. SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT. No special tools or support equipment are required.

3-3. REPAIR PARTS. Repair parts are listed and illustrated in the Repair Parts and Special Tools List (RPSTL), TM 11-6625-3015-24P.

Section II. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

3-4. GENERAL. To ensure that the test set is always ready for use, it must be inspected often so defects may be discovered and corrected before they result in serious damage or failure. The necessary preventive maintenance checks and services to be performed are listed in table 3-1. Defects noted during operation shall be listed prior to continuation of operation.

WARNING

If the battery compartment becomes hot to the touch, if you hear a hissing (i.e., battery venting), or smell irritating sulfur dioxide gas, IMMEDIATELY turn unit MODE switch to OFF CHECK. Remove the equipment to a well ventilated area or leave the area.

a. Before You Operate. Always keep in mind the CAUTIONS and WARNINGS. Perform your before (B) PMCS (table 3-1).

b. While You Operate. Always keep in mind the CAUTIONS and WARNINGS. Perform your during (D) PMCS.

Table 3-1. Preventive Maintenance Checks and Services

B - Before Operation D - During Operation
A - After Operation M - Monthly

Item no.	Interval B	D	A	M	Item to be inspected Procedure	Equipment is not ready/ Available if:
1				•	COEI Check to see that all components are available.	Any component missing.
2				•	Instruction Plates Check to see that instruction plates are complete and attached.	Plates missing or not readable.
3				•	Display Window Check to see that window is not cracked or severely scratched.	Display not readable.
4				•	ANT and RADIO Connectors Check to see that connectors are not bent or damaged.	Bent or damaged.
5				•	FLD STR ANT Check to see that antenna is not bent or broken.	Loose, bent, or broken.
6				•	Test Set Perform built-in-test (BIT). See figure 2-3 for BIT procedures.	Display other than "1.000" or "01.000."

b. While You Operate. Always keep in mind the CAUTIONS and WARNINGS. Perform your during (D) PMCS.

c. After You Operate. Be sure to perform your after (A) PMCS.

d. If Your Equipment Fails to Operate. Troubleshoot with proper equipment, Report any deficiencies using proper forms. See DA Pam 738-750.

Section III. TROUBLESHOOTING

3-5. GENERAL. Organization level troubleshooting is limited to running the built-in-test. Figure 2-3 shows the procedures for performing a built-in-test. If the proper result is not obtained, send the unit to a maintenance/repair site.

Section IV. MAINTENANCE PROCEDURES

3-6. GENERAL. Periodically check to see that knob, connectors, and antenna are in proper condition and that MODE switch is operative. During use, check for proper display indications (no fluctuations or missing digit segments) and secure connections. Operating receiver-transmitter with poor connections can damage transmitter.

3-7. CLEANING. Clean the AN/PRM-34 with a soft cloth. Do not use abrasive materials or cleansers to clean the painted surfaces or display window.

3-8. REPAIR. The only repair authorized at this level is replacement of the battery.

WARNING

A lithium-sulfur dioxide (Li-SO2) battery used with the equipment contains pressurized sulfur dioxide (SO2) gas. The gas is toxic, and the battery MUST NOT be abused in any way which may cause the battery to rupture. See the WARNING page of this manual.

WARNING

DO NOT heat, short circuit, crush, puncture, mutilate, or disassemble batteries.

WARNING

DO NOT USE any battery which shows signs of damage, such as bulging, swelling, disfigurement, brown liquid in the plastic wrap, a swollen plastic wrap, etc.

WARNING

DO NOT test Li-SO2 batteries for capacity.

WARNING

DO NOT recharge Li-SO2 batteries.

CAUTION

DO NOT dispose of lithium batteries with ordinary trash/refuse. Turn-in batteries to your local serving Defense Reutilization and Marketing Office.

CAUTION

ONLY use batteries which have been authorized for this equipment.

a. If test set fails BIT, replace the battery and perform BIT again.

b. If test set fails BIT with new battery installed, send the unit to a general support maintenance facility for troubleshooting and repair.

3-9. BATTERY REPLACEMENT. If BIT indicates a possibly defective battery, replace battery as follows.

a. Place test set face down on work surface.

b. Unscrew six (four, S.N. 635 and up) captive screws (3, fig. 5-3).

c. Remove bottom cover assembly (4).

d. Disconnect battery connector (P3).

e. Remove battery. (See paragraph 3-10 for disposition of old battery.)

f. Connect new battery to battery connector (P3).

g. Place battery into position in battery retainer (6).

h. Place bottom cover assembly (4) into position.

i. Secure the six (four, S.N. 635 and up) captive screws (3).

3-10. BATTERY DISPOSITION. Disposition of unserviceable lithium batteries must be through the local servicing Defense Reutilization and Marketing Office (DPMO). Coordinate disposition with your local Installation Environmental Office and DRMO.

CHAPTER 4

DIRECT SUPPORT MAINTENANCE INSTRUCTIONS

4-1. SCOPE. No direct support maintenance of the Radio Test Set AN/PRM-34 is authorized.

CHAPTER 5

GENERAL SUPPORT MAINTENANCE INSTRUCTIONS

Section I. GENERAL

5-1. SCOPE. This chapter indicates duties and procedures for general support maintenance, testing, troubleshooting, and alignment of the test set.

5-2. MAINTENANCE DUTIES. General support maintenance of the test set is limited to testing and alignment of modules, and removal and replacement of modules.

Section II. REPAIR PARTS, SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT

5-3. TOOLS AND EQUIPMENT. All tools and equipment required for general support maintenance are listed in the Maintenance Allocation Chart (appendix B).

5-4. SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT. Refer to Repair Parts and Special Tools List (RPSTL) (TM 11-6625-3015-24P) for information. One special tool is required, and details for local manufacture are contained in appendix F.

Cable - required to perform field strength circuit test. (See figure F-1.)

5-5. REPAIR PARTS. Repair parts are listed and illustrated in TM 11-6625-3015-24P.

Section III. THEORY OF OPERATION

5-6. FUNCTIONAL DESCRIPTION. Refer to paragraph 1-13 and figure 1-3 for functional description of test set.

Section IV. TROUBLESHOOTING

5-7. GENERAL. General support troubleshooting is limited to fault isolation to the modular level. An interconnection schematic diagram (fig. 5-1) is provided as an aid to troubleshooting.

NOTE

For performance of troubleshooting procedures, it is assumed that only one trouble source exists.

5-8. TROUBLESHOOTING PROCEDURES. General support troubleshooting procedures direct the technician to the most likely module to have failed.

5-9. MODULE REPLACEMENT. For replacement of any module, refer to paragraph 5-12 for disassembly procedures. Disassemble only to the extent necessary to replace module indicated defective.

5-10. SYMPTOM INDEX. Refer first to symptom index (table 5-1) for directions for entering troubleshooting logic tree. In some cases, one trouble source may create more than one symptom. Compare all symptoms and their logic tree entrance points. Read applicable flow chart sections. Suspect failure of module(s) common to all symptom references.

5-11. LOGIC TREE. Refer to logic tree (fig. 5-2). Follow directions depending on outcome or indication of last completed step. Perform orders until directed to stop.

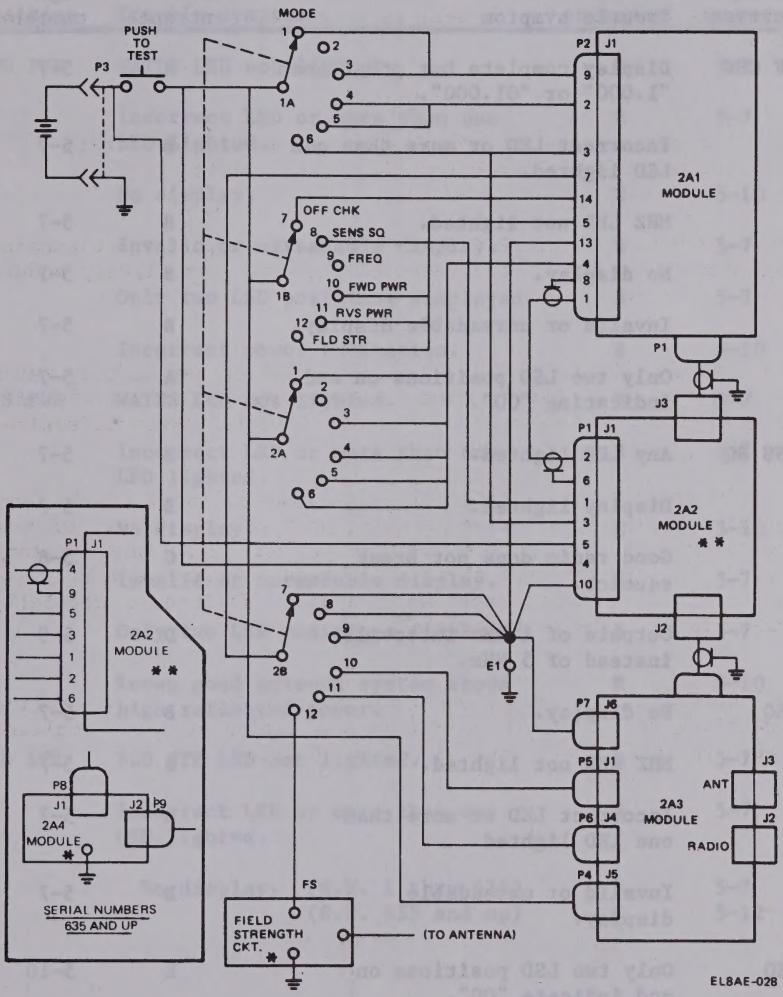


Figure 5-1. Interconnection Schematic Diagram

Table 5-1. Troubleshooting Symptom Index

MODE switch position	Trouble symptom	Logic tree entrance	Page number
OFF CHK	Display complete but other than "1.000" or "01.000".	A	5-7
	Incorrect LED or more than one LED lighted.	B	5-7
	MHZ LED not lighted.	B	5-7
	No display.	B	5-7
	Invalid or unreadable display.	B	5-7
	Only two LSD positions on and indicating "00".	A	5-7
SENS SQ	Any LED lighted.	B	5-7
	Display lighted.	B	5-7
	Good radio does not break squelch.	C	5-8
	Outputs of 1 MHz intervals instead of 5 MHz.	D	5-9
FREQ	No display.	B	5-7
	MHZ LED not lighted.	B	5-7
	Incorrect LED or more than one LED lighted.	B	5-7
	Invalid or unreadable display.	B	5-7
FREQ	Only two LSD positions on and indicate "00".	E	5-10
	Incorrect frequency displayed.	F	5-11

Table 5-1. Troubleshooting Symptom Index - Continued

MODE switch position	Trouble symptom	Logic tree entrance	Page number
FWD PWR	WATTS LED not lighted.	B	5-7
	Incorrect LED or more than one LED lighted.	B	5-7
	No display.	E	5-10
	Invalid or unreadable display.	B	5-7
	Only two LSD positions displayed.	B	5-7
	Incorrect power indication.	E	5-10
RVS PWR	WATTS LED not lighted.	B	5-7
	Incorrect LED or more than one LED lighted.	B	5-7
	No display.	E	5-10
	Invalid or unreadable display.	B	5-7
	Only two LSD positions displayed.	B	5-7
	Known good antenna system shows high reflected power.	E	5-10
FLD STR	FLD STR LED not lighted.	B	5-7
	Incorrect LED or more than one LED lighted.	B	5-7
	No display. (S.N. 1 thru 634)	B	5-7
	(S.N. 635 and up)	G	5-12

Table 5-1. Troubleshooting Symptom Index - Continued

MODE switch position	Trouble symptom	Logic tree entrance	Page number
FLD STR	Invalid or unreadable display.		
	(S.N. 1 thru 634)	B	5-7
	(S.N. 635 and up)	G	5-12
	Only two LSD positions displayed.		
	(S.N. 1 thru 634)	B	5-7
	(S.N. 634 and up)	G	5-12
	Display is "00000".		
	(S.N. 1 thru 634)	B	5-7
	(S.N. 634 and up)	G	5-12
	Display goes off before 30 seconds.	D	5-9
	Display remains on after 2 minutes.	D	5-9

NOTE

If display is "0" or is blank (any position of MODE switch), coaxial connectors to 2A2 module may be reversed. See figure 5-4 for proper connections.

NOTE

Check alignment before exchanging modules.

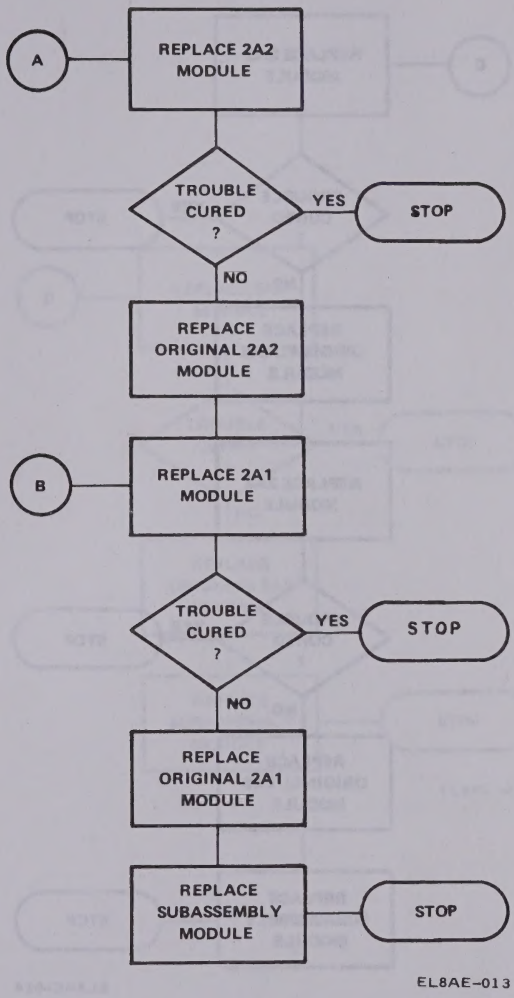


Figure 5-2. Troubleshooting Logic Tree (Sheet 1 of 6)

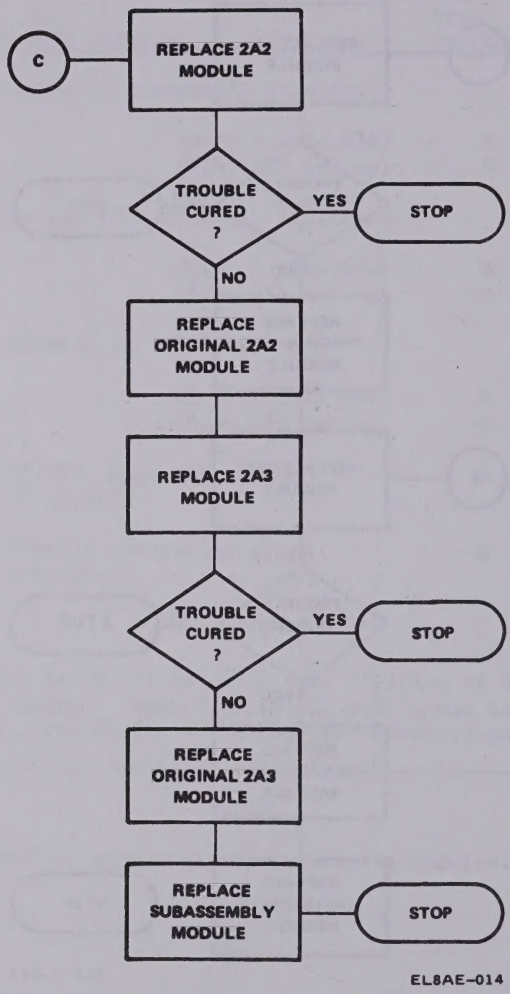


Figure 5-2. Troubleshooting Logic Tree (Sheet 2 of 6)

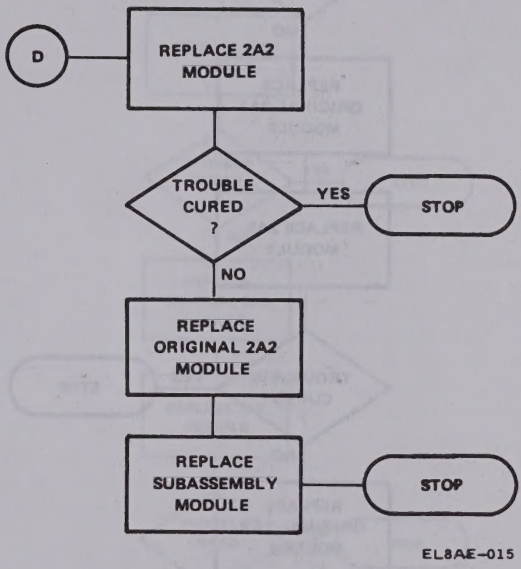


Figure 5-2. Troubleshooting Logic Tree (Sheet 3 of 6)

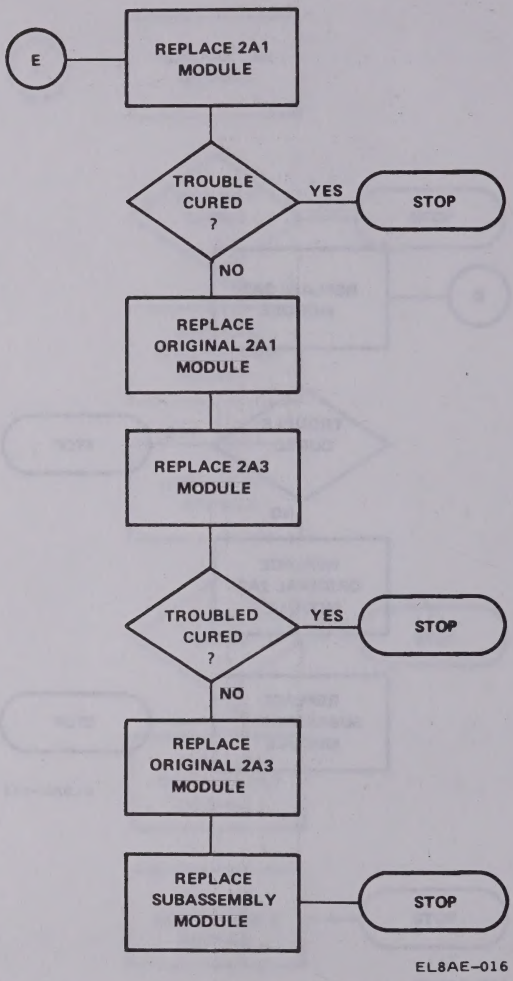


Figure 5-2. Troubleshooting Logic Tree (Sheet 4 of 6)

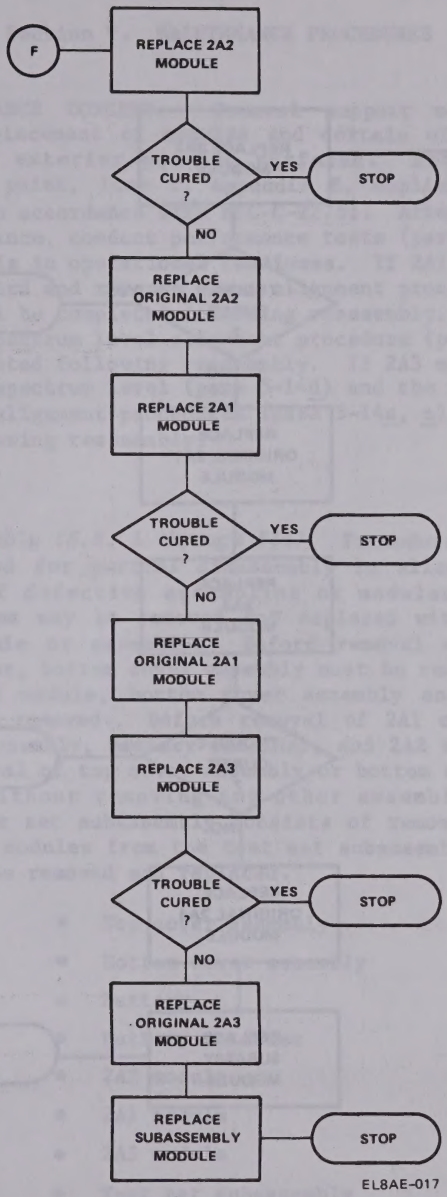


Figure 5-2. Troubleshooting Logic Tree (Sheet 5 of 6)

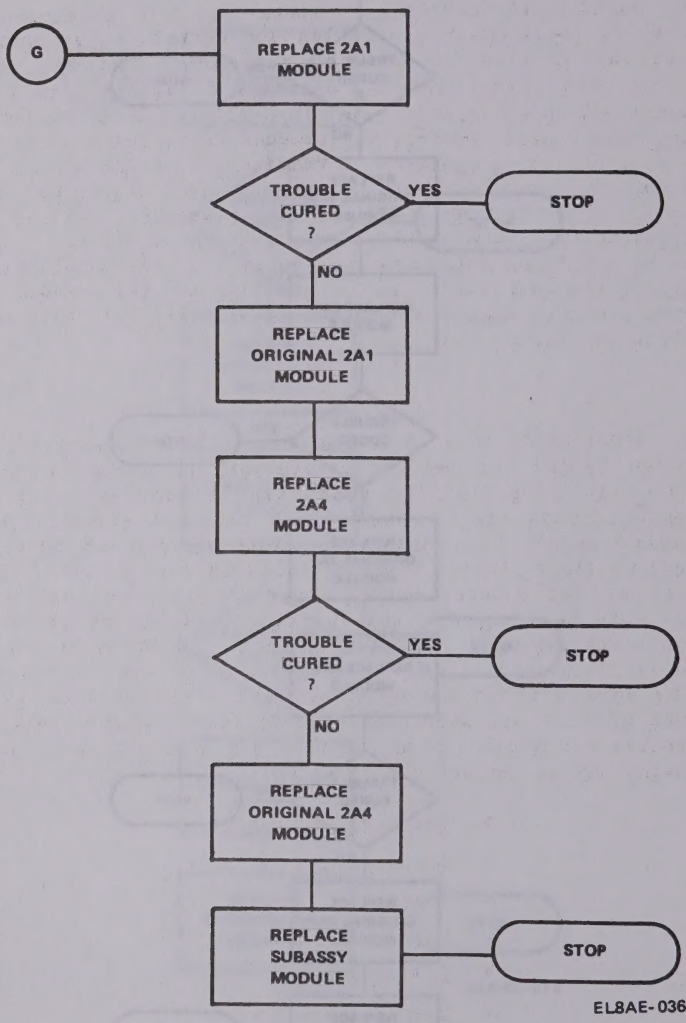


Figure 5-2. Troubleshooting Logic Tree (Sheet 6 of 6)

Section V. MAINTENANCE PROCEDURES

5-12. MAINTENANCE CONCEPT. General support maintenance is limited to replacement of modules and certain other parts and retouching of exterior painted surfaces. Retouch painted surfaces with paint, item 1, Appendix E, applied per Federal Standard 595 in accordance with MIL-C-22751. After completion of any maintenance, conduct performance tests (para 5-13) to be sure test set is in operational readiness. If 2A1 module is replaced, forward and reverse power alignment procedures (para 5-14a, c) shall be completed following reassembly. If 2A2 module is replaced, spectrum level alignment procedure (para 5-14d) shall be completed following reassembly. If 2A3 module is replaced, the spectrum level (para 5-14d) and the forward and reverse power alignment procedures (para 5-14a, c) shall be completed following reassembly.

a. Disassembly (S.N. 1 through 634). Procedures are limited to those needed for partial disassembly to allow removal and replacement of defective assemblies or modules. The field strength antenna may be removed and replaced without removing any other module or assembly. Before removal of battery or battery retainer, bottom cover assembly must be removed. Before removal of 2A2 module, bottom cover assembly and battery retainer must be removed. Before removal of 2A1 or 2A3 module; bottom cover assembly, battery retainer, and 2A2 module must be removed. Removal of top cover assembly or bottom cover assembly may be done without removing any other assembly or module. Removal of test set subassembly consists of removing all other assemblies and modules from the test set subassembly. Only the following may be removed and replaced.

- Top cover assembly
- Bottom cover assembly
- Battery
- Battery retainer
- 2A2 module
- 2A1 module
- 2A3 module
- Test set subassembly
- Field strength antenna

NOTE

Do not attempt disassembly beyond removal procedures in this paragraph.

(1) *Removal of top cover assembly.* (See figure 5-3.)

(a) Remove four screws (1) from top section of hinge.

(b) Remove top cover assembly (2).

LEGEND, figure 5-3

1. Screw
2. Top Cover Assembly
3. Captive Screw
4. Bottom Cover Assembly
5. Screw
6. Battery Retainer
7. Screw
8. 2A2 Spectrum Generator
9. 2A1 Frequency Counter
10. Screw
11. 2A3 Power Detector Module
12. Screw
13. 2A4 Test Set Subassembly (S.N. 1 through 634)
    2A5 Chassis Subassembly (S.N. 635 and up)
14. Field Strength Antenna
15. 2A4 Field Strength Module (S.N. 635 and up)
16. Screw (S.N. 635 and up)

(2) *Removal of bottom cover assembly.* (See figure 5-3.)

(a) Unscrew six captive screws (3).

(b) Remove bottom cover assembly (4).

(3) *Removal of battery.* (See figure 5-3.)

(a) Remove bottom cover assembly (para (2) above).

(b) Disconnect battery connector (P3).

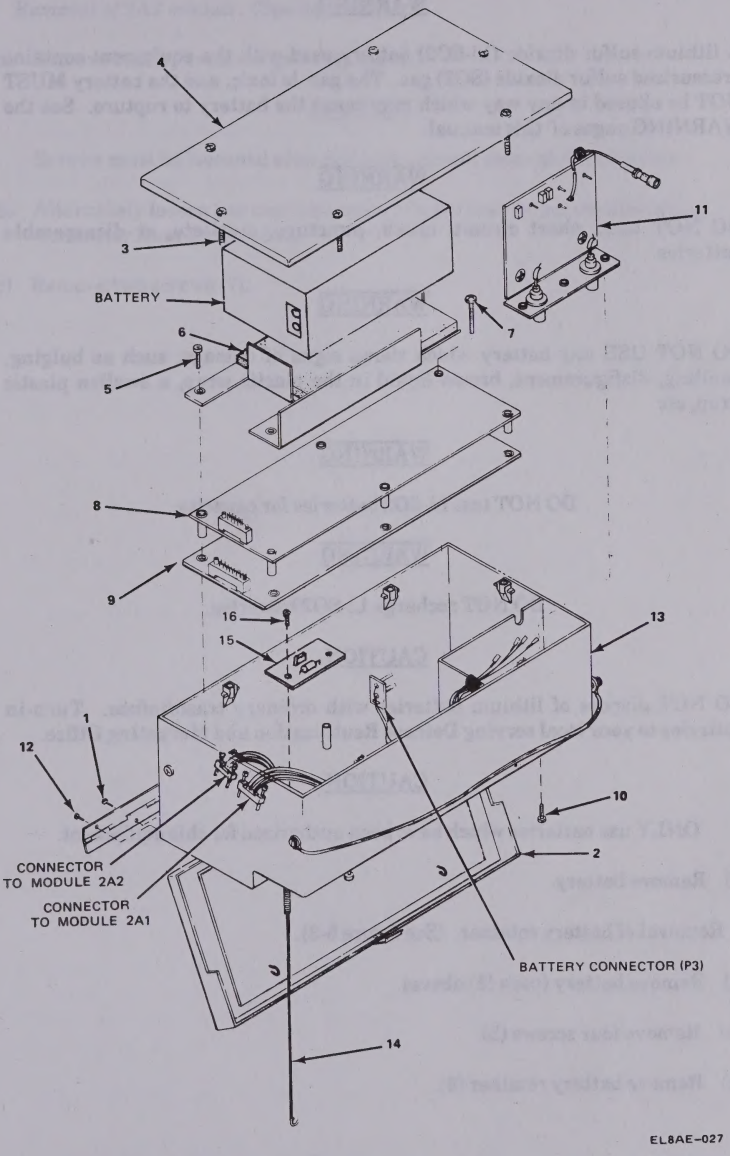


Figure 5-3. Radio Test Set TS-3951/PRM-34, Exploded View

WARNING

A lithium-sulfur dioxide (Li-SO2) battery used with the equipment contains pressurized sulfur dioxide (SO2) gas. The gas is toxic, and the battery MUST NOT be abused in any way which may cause the battery to rupture. See the WARNING pages of this manual.

WARNING

DO NOT heat, short circuit, crush, puncture, mutilate, or disassemble batteries.

WARNING

DO NOT USE any battery which shows signs of damage, such as bulging, swelling, disfigurement, brown liquid in the plastic wrap, a swollen plastic wrap, etc.

WARNING

DO NOT test Li-SO2 batteries for capacity.

WARNING

DO NOT recharge Li-SO2 batteries.

CAUTION

DO NOT dispose of lithium batteries with ordinary trash/refuse. Turn-in batteries to your local serving Defense Reutilization and Marketing Office.

CAUTION

ONLY use batteries which have been authorized for this equipment.

(c) Remove battery.

(4) Removal of battery retainer. (See figure 5-3).

(a) Remove battery (para (3) above).

(b) Remove four screws (5).

(c) Remove battery retainer (6).

(5) *Removal of 2A2 module.* (See figure 5-3.)

(a) Remove battery retainer (para (4) above.)

CAUTION

Screws must be loosened alternately to prevent damage to connector.

(b) Alternately loosen two captive screws two or three turns, disconnecting connector from 2A2 module.

(c) Remove two screws (7).

(d) Rotate unit so that end nearest ANT connector is facing you.

CAUTION

Standard precautionary static electricity techniques should be used when handling 2A1 or 2A2 module. These modules contain components sensitive to static electricity.

(e) Observe figure 5-4. Carefully lift 2A2 module (8), swinging it into position as shown in figure 5-4.

CAUTION

Coaxial connectors to 2A2 module are very delicate. Handle as little as necessary.

(f) Disconnect coaxial connectors from 2A2 module.

(g) Carefully remove 2A2 module (8).

(6) *Removal of 2A1 module.* (See figure 5-3.)

(a) Remove 2A2 module (para (5) above).

CAUTION

Screws must be loosened alternately to prevent damage to connector.

(b) Alternately loosen two captive screws which secure connector to 2A1 module (9) two or three turns.

(c) Disconnect connector.

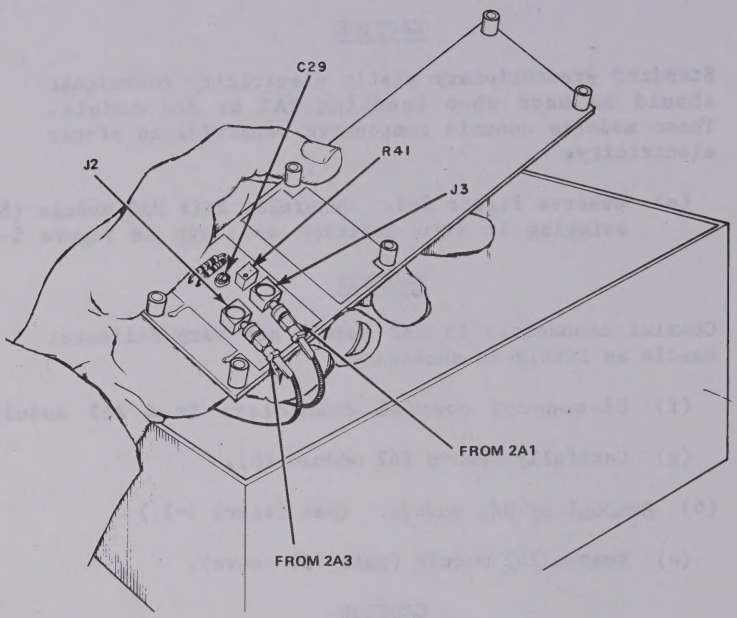
CAUTION

Standard precautionary static electricity techniques should be used when handling 2A1 or 2A2 module. These modules contain components sensitive to static electricity.

(d) Carefully remove 2A1 module (9).

(7) *Removal of 2A3 module.* (See figure 5-3.)

(a) Remove 2A2 module (para (5) above).



NOTE:

THIS FIGURE APPLIES ONLY TO S.N. 1 THROUGH 634. ON S.N. 635 AND UP, J2 AND J3 ARE DISCONNECTED BEFORE LIFTING 2A2 MODULE. SEE FIGURE 5-6 FOR LOCATIONS OF J2 AND J3 ON S.N. 635 AND UP.

EL8AE-020

Figure 5-4. Removing 2A2 Module

(b) Release coaxial cable grommet (see fig. 5-5) from test set subassembly (13).

(c) Use needlenose pliers to disconnect four wires from pin connectors on 2A3 module.

(d) Remove three screws (10).

(e) Being careful to avoid contacting standoff (see fig. 5-5), lift 2A3 module (11) from test set subassembly (13).

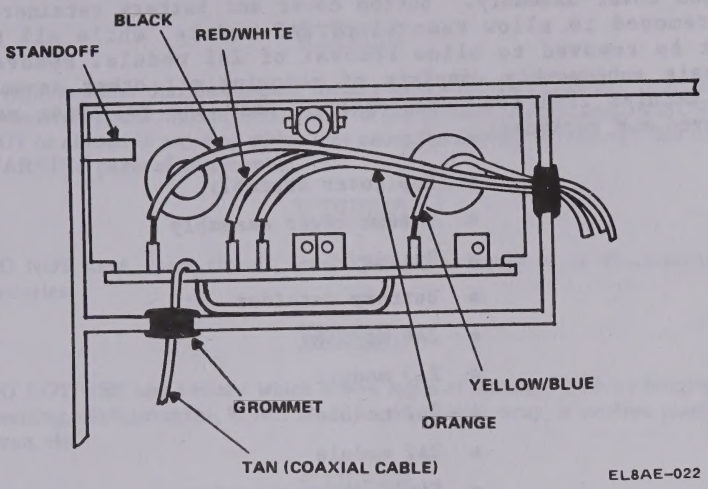


Figure 5-5. Connections to 2A3 Module

(8) *Removal of test set subassembly.* (See figure 5-3.)

(a) Remove three screws (12) from bottom section of hinge.

(b) Remove 2A1 module (para (6) above).

(c) Perform procedures (7)(b) through (e) above.

(d) Test set subassembly (13) is now removed from other parts.

(9) *Removal of field strength antenna.* (See figure 5-3.)

(a) Open top cover assembly (2).

(b) Remove screw attaching field strength antenna (14).

(c) Remove field strength antenna (14).

b. Disassembly (S.N. 635 and Up). Procedures are limited to those needed for partial disassembly to allow removal and replacement of defective assemblies or modules. The field strength antenna, top cover assembly, or bottom cover assembly may be removed and replaced without removing any other module or assembly. Removal of 2A3 or 2A4 module requires first removing

bottom cover assembly. Bottom cover and battery retainer must be removed to allow removal of 2A2 module, while all three must be removed to allow removal of 2A1 module. Removal of chassis subassembly consists of removing all other assemblies and modules from the subassembly. Only the following may be removed and replaced:

- Top cover assembly
- Bottom cover assembly
- Battery
- Battery retainer
- 2A4 module
- 2A3 module
- 2A2 module
- 2A1 module
- Field strength antenna
- 2A5 chassis subassembly

NOTE

Do not attempt disassembly beyond removal procedures in this paragraph.

(1) *Removal of top cover assembly.* (See figure 5-3.)

(a) Remove four screws (12) from bottom section of hinge.

(b) Remove top cover assembly (2).

(2) *Removal of bottom cover assembly.* (See figure 5-3.)

(a) Unscrew four captive screws (3).

(b) Remove bottom cover assembly (4).

(3) *Removal of battery.* (See figure 5-3.)

(a) Remove bottom cover assembly (para (2) above).

(b) Disconnect battery connector (P3).

WARNING

A lithium-sulfur dioxide (Li-SO2) battery used with the equipment contains pressurized sulfur dioxide (SO2) gas. The gas is toxic, and the battery MUST NOT be abused in any way which may cause the battery to rupture. See the WARNING pages of this manual.

WARNING

DO NOT heat, short circuit, crush, puncture, mutilate, or disassemble batteries.

WARNING

DO NOT USE any battery which shows signs of damage, such as bulging, swelling, disfigurement, brown liquid in the plastic wrap, a swollen plastic wrap, etc.

WARNING

DO NOT test Li-SO2 batteries for capacity.

WARNING

DO NOT recharge Li-SO2 batteries.

CAUTION

DO NOT dispose of lithium batteries with ordinary trash/refuse. Turn-in batteries to your local serving Defense Reutilization and Marketing Office.

CAUTION

ONLY use batteries which have been authorized for this equipment.

(c) Remove battery.

(4) *Removal of battery retainer.* (See figure 5-3.)

(a) Remove battery (para (3) above).

(b) Remove four screws (5).

(c) Remove battery retainer (6).

(5) *Removal of 2A4 module.* (See figure 5-3.)

(a) Remove battery (para (3) above).

(b) Disconnect wires from J1 and J2 of 2A4 module. (See figure 5-6.)

(6) *Removal of 2A3 module.* (See figure 5-3.)

(a) Remove battery (para (3) above).

(b) Disconnect coaxial lead from J2 on 2A2 module. (See figure 5-6.)

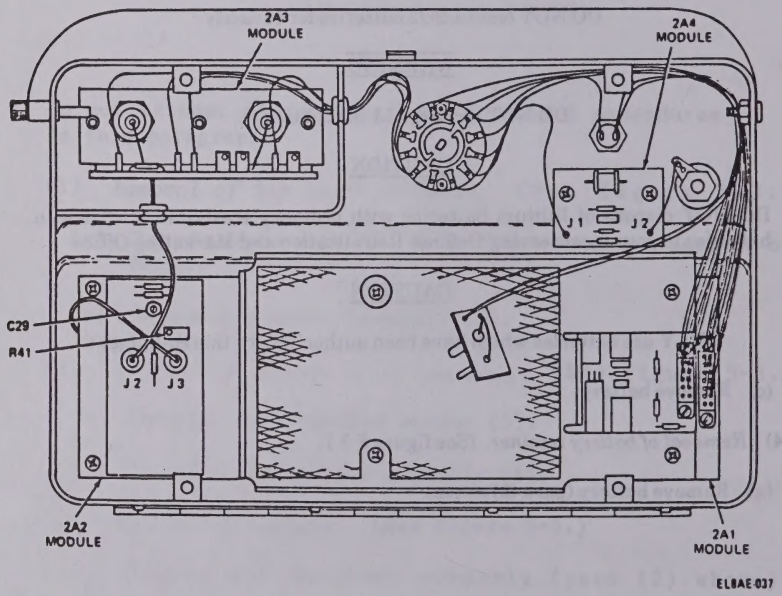


Figure 5-6. Test set (S.N. 635 and Up) Interior View from Bottom

(c) Release coaxial cable grommet (see fig. 5-5) from chassis subassembly (13, fig. 5-3).

(d) Use needlenose pliers to disconnect four wires from pin connectors on 2A3 module.

(e) Remove three screws (10).

(f) Be careful to avoid contacting standoff (see fig. 5-5), lift 2A3 module (11) from chassis subassembly (13, fig. 5-3).

(7) *Removal of 2A2 module.* (See figure 5-3.)

(a) Remove battery retainer (para (4) above).

CAUTION

Screws must be loosened alternately to prevent damage to connector.

(b) Alternately loosen two captive screws two or three turns, disconnecting connector from 2A2 module.

(c) Remove two screws (7).

CAUTIONS

Standard precautionary static electricity techniques should be used when handling 2A1 or 2A2 module. These modules contain components sensitive to static electricity.

Coaxial connectors to 2A2 module are very delicate. Handle as little as necessary.

(d) Disconnect coaxial connectors to 2A2 module J2 and J3 (see fig. 5-6) and carefully remove 2A2 module (8).

(8) *Removal of 2A1 module.*

(a) Remove 2A2 module (para (7) above).

CAUTION

Screws must be loosened alternately to prevent damage to connector.

(b) Alternately loosen two captive screws which secure connector to 2A1 module (9) two or three turns.

(c) Disconnect connector.

CAUTION

Standard precautionary static electricity techniques should be used when handling A1 or A2 module. These modules contain components sensitive to static electricity.

(d) Carefully remove 2A1 module (9).

(9) *Removal of field strength antenna.* (See figure 5-3.)

(a) Open top cover (2).

(b) Free tip of field strength antenna (14).

(c) Remove screw securing antenna.

(d) Remove antenna (14).

(10) *Removal of 2A5 chassis subassembly.*

(a) Remove top cover assembly (para (1) above).

(b) Remove field strength antenna (para (9) above).

(c) Remove 2A4 module (para (5) above).

(d) Remove 2A1 module (para (8) above).

(e) Perform steps (6)(c) thru (f) above.

c. Cleaning.

(1) Remove sand, dust, loose dirt, and moisture from exterior surfaces with clean, soft cloth.

(2) Clean exterior surfaces of other foreign matter by using soft cloth dampened with mild soap and water.

WARNING

Adequate ventilation should be provided while using TRICHLOROTRIFLUOROETHANE. Prolonged breathing of vapor should be avoided. The solvent should not be used near heat or open flame; the products of decomposition are toxic and irritating. Since trichlorotrifluoroethane dissolves natural oils, prolonged contact with skin should be avoided. When necessary, use gloves which the solvent cannot penetrate. If the solvent is taken internally, consult a physician immediately.

(3) Remove grease and other stubborn deposits using soft cloth dampened (not wet) with TRICHLOROTRIFLUOROETHANE, item 2, appendix E.

d. Inspection. Inspect modules and parts as indicated by the following list:

Assembly/part	Possible defects
Display window	Cracks, scratches
Circuit card assemblies	Cracks, loose components, signs of overheating
Gaskets	Loose, broken
Antenna	Loose, broken, deformed
Knob	Loose, cracked
Circuit card connectors	Loose, cracked
Coaxial connectors	Loose, foreign objects

e. Reassembly (S.N. 1 through 634). These procedures provide instructions for reassembling the test set from various states of partial disassembly as required for removal of defective modules or assemblies. (See para a above.) Procedures are provided to cover reassembly following removal of the following:

- Field strength antenna
- Test set subassembly
- 2A3 module
- 2A1 module
- 2A2 module
- Battery retainer
- Battery
- Bottom cover assembly
- Top cover assembly

NOTES

If 2A1 module is replaced, forward and reverse power alignment procedures (para 5-14a, c) shall be completed following reassembly.

If 2A2 module is replaced, spectrum level alignment procedure (para 5-14d) shall be completed following reassembly.

If 2A3 module is replaced, the spectrum level alignment (para 5-14d) and the forward and reverse power alignment procedures (para 5-14a, c) shall be completed following reassembly.

(1) *Field strength antenna.* (See figure 5-3.)

(a) Position antenna (14).

(b) Secure with screw.

(2) *Test set subassembly.* (See figure 5-3.)

(a) Replace 2A3 module as in paragraphs (3)(a) through (d) below.

(b) Replace 2A1 module as in paragraph (4) below).

(3) *2A3 module.* (See figure 5-3.)

CAUTION

Avoid contacting standoff (fig. 5-5) when installing 2A3 module.

(a) Place 2A3 module (11) into position.

(b) Secure with three screws (10).

NOTE

If grommet is missing, install grommet, part no. MS 35489-1S, by cutting and placing over coaxial cable. (See figure 5-5.)

(c) Insert grommet on coaxial cable of 2A3 module into notch in test set subassembly.

(d) Connect four wires to pin connectors on 2A3 module observing color coding as shown in figure 5-5.

(e) Replace 2A2 module as in paragraph (5) below.

(4) *2A1 module.* (See figure 5-3.)

CAUTION

Tighten two screws alternately to avoid damage to connector.

(a) Attach connector to 2A1 module and secure with two captive screws.

CAUTION

Be sure coaxial cable extends upward (toward bottom of unit) from end of 2A1 module when installed.

(b) Place 2A1 module (9) into position.

(c) Replace 2A2 module as in paragraph (5) below.

(5) *2A2 module.* (See figure 5-3.)

CAUTION

Tighten two screws alternately to avoid damage to connector.

(a) Attach connector to 2A2 module and secure with two captive screws.

(b) Position 2A2 module (8) as shown in figure 5-4.

CAUTION

Make coaxial connections by hand. Cables and connectors are very delicate. Do not handle more than necessary. Do not use pliers to make connections. Push until detent is reached.

(c) Connect coaxial cables from 2A1 and 2A3 modules to J3 and J2 as shown in figure 5-4.

(d) Place 2A2 module (8) into position.

(e) Install two screws (7) but do not tighten.

(f) Replace battery retainer as in paragraph (6) below.

(6) *Battery retainer.* (See figure 5-3.)

(a) Place battery retainer (6) into position.

(b) Secure with four screws (5).

(c) Tighten two screws (7) if previously removed.

(d) Replace battery as in paragraph (7) below.

(7) *Battery.* (See figure 5-3.)

WARNING

A lithium-sulfur dioxide (Li-SO2) battery used with the equipment contains pressurized sulfur dioxide (SO2) gas. The gas is toxic, and the battery MUST NOT be abused in any way which may cause the battery to rupture. See the WARNING pages of this manual.

WARNING

DO NOT heat, short circuit, crush, puncture, mutilate, or disassemble batteries.

WARNING

DO NOT USE any battery which shows signs of damage, such as bulging, swelling, disfigurement, brown liquid in the plastic wrap, a swollen plastic wrap, etc.

WARNING

DO NOT test Li-SO2 batteries for capacity.

WARNING

DO NOT recharge Li-SO2 batteries.

CAUTION

DO NOT dispose of lithium batteries with ordinary trash/refuse. Turn-in batteries to your local serving Defense Reutilization and Marketing Office.

CAUTION

ONLY use batteries which have been authorized for this equipment.

(a) Connect battery to battery connector (P3).

(b) Place battery into position.

(c) Replace bottom cover assembly as in paragraph (8) below.

8) *Bottom cover assembly.* (See figure 5-3.)

(a) Place bottom cover assembly (4) into position.

(b) Secure with six captive screws (3).

(9) *Top cover assembly.* (See figure 5-3.)

(a) Place top cover assembly (2) into position.

(b) Secure with four screws (1) through top section of hinge.

Reassembly (S.N. 635 and Up). These procedures provide instructions for eassembling the test set from various states of partial disassembly as required for emoval of defective modules.

or assemblies (para b). Procedures are provided to cover reassembly following removal of the following:

- 2A5 test set subassembly
- Field strength antenna
- 2A1 module
- 2A2 module
- 2A3 module
- 2A4 module
- Battery retainer
- Battery
- Bottom cover assembly
- Top cover assembly

NOTES

If 2A1 module is replaced, forward and reverse power alignment procedures (para 5-14a, c) shall be completed after reassembly.

If 2A2 module is replaced, spectrum level alignment procedure (para 5-14d) shall be completed following reassembly.

If 2A3 module is replaced, the spectrum level alignment (para 5-14d) and the forward and reverse power alignment procedures (para 5-14a, c) shall be completed following reassembly.

(1) *2A5 chassis subassembly.* (See figure 5-3.)

(a) Position 2A1 module (9) and 2A2 module (8). Insert two screws (7) and screw in only a few turns.

(b) Position battery retainer (6) and secure with four screws (5). Tighten screws (7).

(c) Position 2A3 module (11) and secure with three screws (10).

(d) Connect four wires to pin connectors on 2A3 module observing color coding as shown in figure 5-5.

(e) Connect coaxial cable from 2A1 module (9) to J3 on 2A2 module (8). Connect coaxial cable from 2A3 module (11) to J2 of 2A2 module (8).

(f) Insert grommet into slot between 2A3 module (11) and 2A2 module (8).

(g) Position 2A4 module (15) and secure with two screws (16).

(h) Connect orange/black wire from rotary switch to J1 on 2A4 module and white wire to J2 on 2A4 module.

CAUTION

Alternate screwing each screw two or three turns to avoid damage to connectors.

(i) Connect connectors of wiring harness to 2A1 module (9) and 2A2 module (8).

(j) Position field strength antenna (14) and secure with one screw.

(k) Position top cover assembly (2) and secure with four screws (12).

(l) Connect P3 to battery. Position battery in battery retainer (6).

(m) Position bottom cover assembly (4) and secure with four captive screws (3).

(2) *Field strength antenna.* (See figure 5-3.) Perform step (j) above.

(3) *2A1 module.* (See figure 5-3.) Perform steps (a), (b), (e), (f), (i), (l), and (m) above.

(4) *2A2 module.* (See figure 5-3.)

(a) Position 2A2 module (8). Insert two screws (7) and screw in only a few turns.

(b) Perform steps (b), (e), and (f) above.

CAUTION

Alternate screwing each screw two or three turns to avoid damage to connectors.

(c) Connect wiring harness connector to 2A2 module (8).

(d) Perform steps (l) and (m) above.

(5) 2A3 module. (See figure 5-3.)

(a) Perform steps (1)(c) through (f) above.

(b) Perform steps (1)(l) and (m) above.

(6) 2A4 module. (See figure 5-3.) Perform steps (1)(g), (h), (l), and (m) above.

(7) Battery retainer. (See figure 5-3.) Perform steps (1)(b), (l), and (m) above.

(8) Battery. Perform steps (1)(l) and (m).

(9) Bottom cover assembly. (See figure 5-3.) Perform step (1)(m) above.

(10) Top cover assembly. (See figure 5-3.) Perform step (1)(k) above.

5-13. PERFORMANCE TESTS. Prior to returning the AN/PRM-34 to service after maintenance, perform the following performance tests to be sure the radio test set is in operational readiness. If the unit fails forward or reverse power measurement, RF spectrum or frequency tests, perform alignment procedures before troubleshooting.

a. Performance Test Preparation.

(1) Obtain required test equipment listed in the Maintenance Allocation Chart (MAC), appendix B.

(2) Disassemble test set and remove battery by following 5-12(a)(3) for S.N. 1-634 or 5-12(b)(3) for S.N. 635 and up.

WARNING

DO NOT USE any battery which shows signs of damage, such as bulging, swelling, disfigurement, brown liquid in the plastic wrap, a swollen plastic wrap, etc.

DO NOT use a Halon type fire extinguisher on a lithium battery fire.

In the event of a fire, near a lithium battery(ies), rapid cooling of the battery(ies) is important. Use a carbon dioxide (CO2) extinguisher. Control of the equipment fire, and cooling, may prevent the battery from venting and potentially exposing lithium metal. In the event that lithium metal becomes involved in fire, the use of a graphite based Class D fire extinguisher is recommended, such as Lith-X or MET-L-X.

DO NOT store lithium batteries with other hazardous materials and keep them away form open flame or heat.

DO NOT use water to extinguish Li-SO2 battery fires if a Shock hazard exists due to high voltage electrical equipment in the immediate vicinity (i.e., greater than 30 volts, alternating current (ac) or direct current (dc).

(3) Set DC power supply to provide 5.5 volts and connect to battery connector P3 (fig. 5-6) for all performance tests.

b. Built-in Test (BIT) and Under Voltage Test.

(1) Connect test set and support equipment as shown in figure 5-7.

(2) Set MODE switch to OFF CHK.

(3) Push test set PUSH TO TEST switch.

(4) Test set display should read "1.000" or "01.000", which indicates unit is operable.

(5) Any other reading indicates a faulty unit. If test set fails BIT refer to troubleshooting (para 5-7).

(6) Push and hold test set PUSH TO TEST switch.

(7) Slowly reduce DC power supply voltage.

(8) Test set display will change from "1.000" or "01.000" to any other number at 4.7 ±0.2 volts, indicating low voltage. If this does not occur refer to troubleshooting (para 5-7).

(9) When the power supply voltage drops below 4.5 volts, the test set display will become blank.

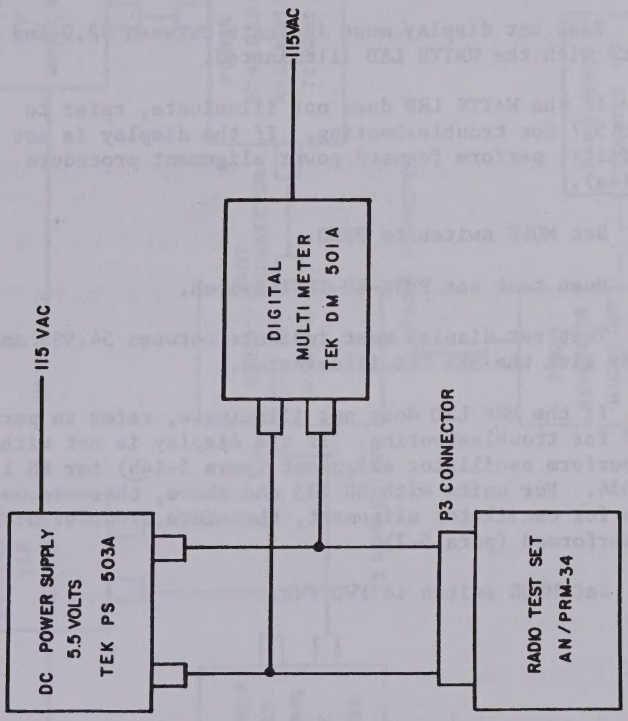


Figure 5-7. Built-In Test and Undervoltage Test Setup.

c. Forward Power, Frequency and Reverse Power Tests.

(1) Connect test set and support equipment as shown in figure 5-8.

(2) Set MODE switch to FWD PWR.

(3) Adjust power generator frequency to 55 MHz.

(4) Set power generator to provide power meter indication of 40.0 watts.

(5) Push test set PUSH TO TEST switch.

(6) Test set display must indicate between 32.0 and 48.0 watts with the WATTS LED illuminated.

(7) If the WATTS LED does not illuminate, refer to paragraph 5-7 for troubleshooting. If the display is not within limits, perform forward power alignment procedure (para 5-14a).

(8) Set MODE switch to FREQ.

(9) Push test set PUSH TO TEST switch.

(10) Test set display must indicate between 54.998 and 55.002 MHz with the MHz LED illuminated.

(11) If the MHz LED does not illuminate, refer to paragraph 5-7 for troubleshooting. If the display is not within limits, perform oscillator alignment (para 5-14b) for SN 1 through 634. For units with SN 635 and above, there is no provision for oscillator alignment, therefore troubleshooting must be performed (para 5-7).

(12) Set MODE switch to FWD PWR.

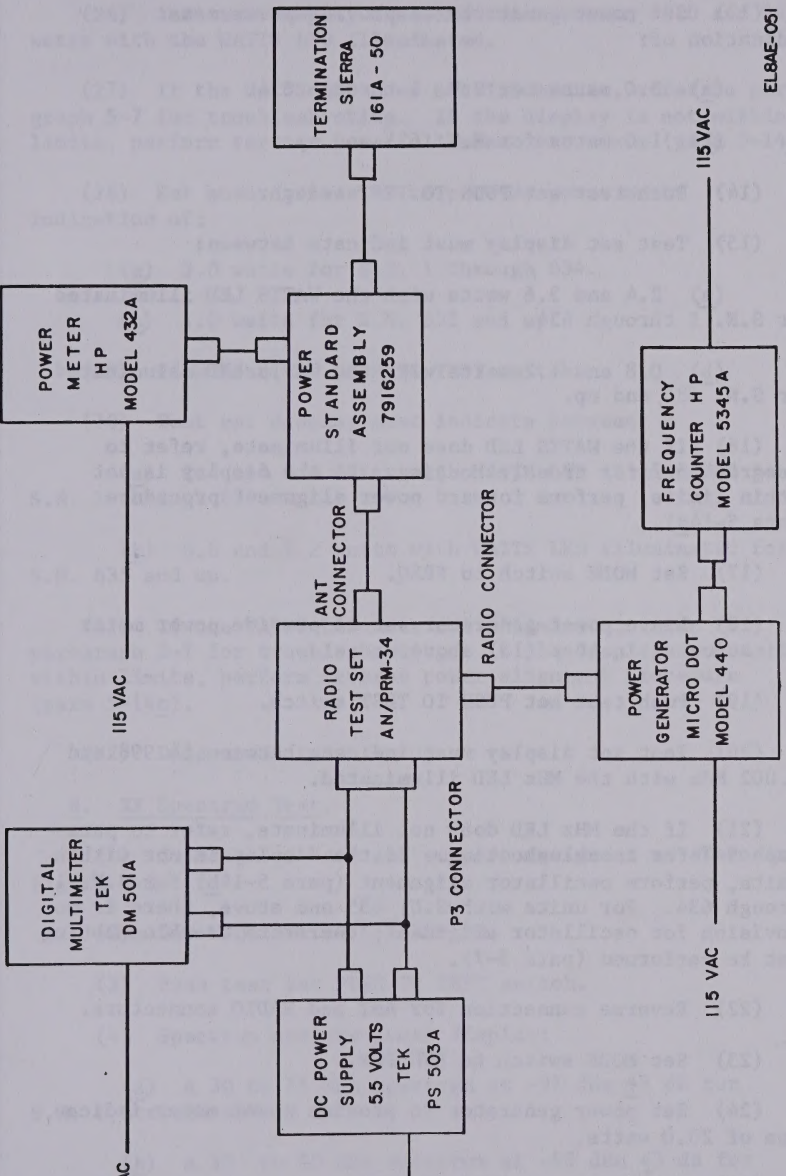


Figure 5-8. Forward Power, Frequency and Reverse Power Tests Setups.

(13) Set power generator to provide power meter indication of:

(a) 3.0 watts for S.N. 1 through 634.

(b) 1.0 watts for S.N. 635 and up.

(14) Push test set PUSH TO TEST switch.

(15) Test set display must indicate between:

(a) 2.4 and 3.6 watts with the WATTS LED illuminated for S.N. 1 through 634.

(b) 0.8 and 1.2 watts with the WATTS LED illuminated for S.N. 635 and up.

(16) If the WATTS LED does not illuminate, refer to paragraph 5-7 for troubleshooting. If the display is not within limits, perform forward power alignment procedure (para 5-14a).

(17) Set MODE switch to FREQ.

(18) Leave power generator set to provide power meter indication as in step (13) above.

(19) Push test set PUSH TO TEST switch.

(20) Test set display must indicate between 54.998 and 55.002 MHz with the MHz LED illuminated.

(21) If the MHz LED does not illuminate, refer to paragraph 5-7 for troubleshooting. If the display is not within limits, perform oscillator alignment (para 5-14b) for S.N. 1 through 634. For units with S.N. 635 and above, there is no provision for oscillator alignment, therefore troubleshooting must be performed (para 5-7).

(22) Reverse connection for ANT and RADIO connectors.

(23) Set MODE switch to RVS PWR.

(24) Set power generator to provide power meter indication of 20.0 watts.

(25) Push test set PUSH TO TEST switch.

(26) Test set display must indicate between 16.0 and 24.0 watts with the WATTS LED illuminated.

(27) If the WATTS LED does not illuminate, refer to paragraph 5-7 for troubleshooting. If the display is not within limits, perform reverse power alignment procedure (para 5-14c).

(28) Set power generator to provide power meter indication of:

(a) 3.0 watts for S.N. 1 through 634.

(b) 1.0 watts for S.N. 635 and up.

(29) Push test set PUSH TO TEST switch.

(30) Test set display must indicate between:

(a) 2.4 and 3.6 watts with WATTS LED illuminated for S.N. 1 through 634.

(b) 0.8 and 1.2 watts with WATTS LED illuminated for S.N. 635 and up.

(31) If the WATTS LED does not illuminate, refer to paragraph 5-7 for troubleshooting. If the display is not within limits, perform reverse power alignment procedure (para 5-14c).

(32) Disconnect test set up.

d. RF Spectrum Test.

(1) Connect test set and support equipment as shown in figure 5-9.

(2) Set MODE switch to SENS SQ.

(3) Push test set PUSH TO TEST switch.

(4) Spectrum analyzer must display:

(a) A 30 to 75 MHz spectrum at -97 dBm ±3 dB for S.N. 1 through 634.

(b) A 30 to 80 MHz spectrum at -98 dBm ±3 dB for S.N. 635 and above.

(5) If unit fails RF spectrum test, perform alignment procedures (para 5-14d) prior to troubleshooting (para 5-7).

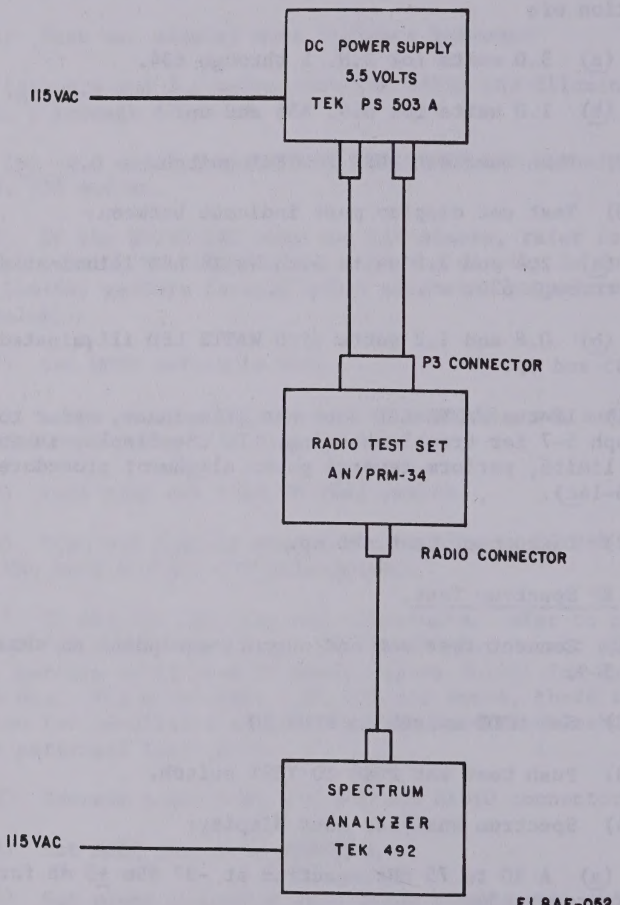


Figure 5-9. RF Spectrum Test Setup.

e. Field Strength Test.

(1) Connect test set and support equipment as shown in figure 5-10.

(2) Set test set MODE switch to FLD STR.

(3) Release top of antenna.

(4) Set signal generator to 50 MHz at +4 dBm.

(5) Connect shielded alligator clip of cable (fig. F-1) to case of test set, or outer portion of RADIO or ANT connector.

(6) Connect center cable alligator clip to antenna immediately above the coiled spring.

(7) Push test set PUSH TO TEST switch.

(8) Test set display must indicate between "0" and "100" with the FLD STR LED illuminated. The display should remain on for approximately 45 seconds.

(9) If these conditions are not met, refer to paragraph 5-7 for troubleshooting.

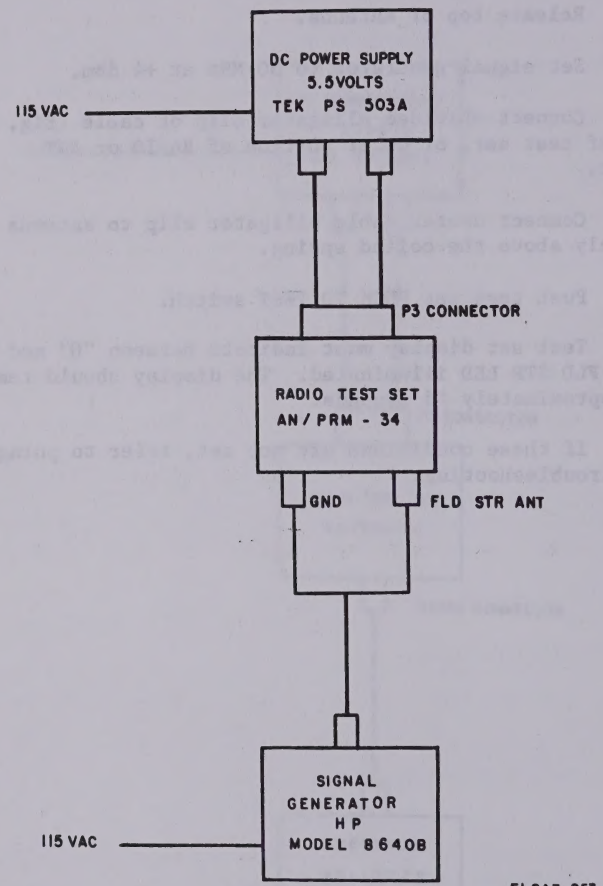


Figure 5-10. Field Strength Test Setup.

5-14. TEST SET ALIGNMENT PROCEDURES.

a. Forward Power Alignment Procedure.

(1) Leave test set and support equipment connected as in figure 5-8, with controls set as in the forward power test.

(2) Place test set on end to allow adjusting of potentiometers (fig. 5-11).

(3) Set power generator to provide power meter indication of 40.0 watts.

(4) Push test set PUSH TO TEST switch and adjust R9 for a display reading of 40.0 watts.

(5) Set power generator to provide power meter indication of:

(a) 3.0 watts for S.N. 1 through 634.

(b) 1.0 watt for S.N. 635 and up.

(6) Push test set PUSH TO TEST switch and adjust:

(a) R9 for a display reading of 3.0 watts for S.N. 1 through 634.

(b) R7 for a display reading of 1.0 watt for S.N. 635 and up.

(7) If the test set cannot be aligned, refer to paragraph 5-7 for troubleshooting.

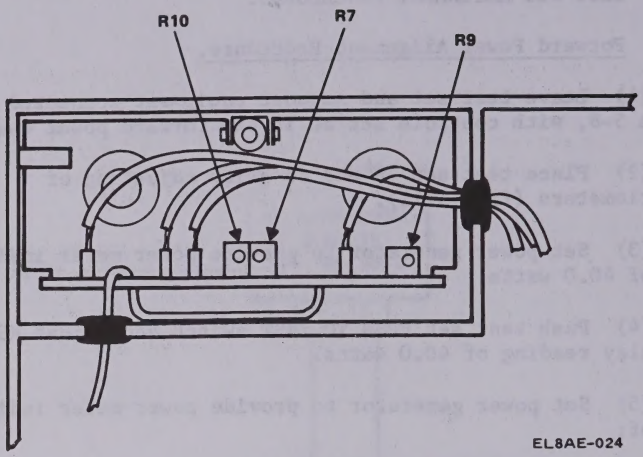


Figure 5-11. Potentiometer Locations, Power Detector Module (2A3).

b. Oscillator Alignment Procedure.

NOTE

For test sets with S.N. 635 and above, there is no provision for oscillator alignment, therefore trouble-shooting must be performed (para 5-7).

(1) Leave test set and support equipment connected as in figure 5-8, with MODE switch set to FREQ, but disconnect 5.5 Vdc power supply from connector P3.

(2) Ensure power generator is set to a frequency of 55 MHz, then disconnect frequency counter.

(3) Remove battery retainer (para 5-12a(4)).

(4) Remove two screws attaching 2A1 and 2A2 modules.

(5) Without disconnecting any connections, carefully lift 2A1 and 2A2 modules from test set.

(6) Place an insulating material between 2A1 module, 2A2 module and test set chassis to avoid damage due to any short circuits when power is applied.

NOTE

R41 raises and lowers the overall level while C29 primarily raises and lowers the level of the higher frequencies.

(d) Push and hold test set PUSH TO TEST switch. A 5 MHz spectrum will appear on the A2 to bring the levels of all the spectrum outputs between -55 and -61 dBm on the analyzer display over a frequency range of 30 to 80 MHz.

5-13. FINAL PERFORMANCE CHECK. Following any maintenance and before returning the AN/PRM-34 to service, perform the following procedures in the order presented below to be sure test set is in operational readiness. If unit fails any part of final performance check, refer to troubleshooting (section IV). If unit fails RF spectrum or power measurement, perform alignment procedures before troubleshooting.

a. Performance Test Preparation.

NOTE

Refer to Maintenance Allocation Chart (MAC) (appendix B) for details regarding required test equipment.

(1) Obtain test equipment listed in MAC.

NOTE

DC power supply connections and setting will be used for all test of performance check.

(2) Set DC power supply to provide 5.5 ±0.5V.

WARNING

A lithium-sulfur dioxide (Li-SO2) battery used with the equipment contains pressurized sulfur dioxide (SO2) gas. The gas is toxic, and the battery MUST NOT be abused in any way which may cause the battery to rupture. See the WARNING pages of this manual.

WARNING

DO NOT heat, short circuit, crush, puncture, mutilate, or disassemble batteries.

WARNING

DO NOT USE any battery which shows signs of damage, such as bulging, swelling, disfigurement, brown liquid in the plastic wrap, a swollen plastic wrap, etc.

WARNING

DO NOT test Li-SO2 batteries for capacity.

WARNING

DO NOT recharge Li-SO2 batteries.

CAUTION

DO NOT dispose of lithium batteries with ordinary trash/refuse. Turn-in batteries to your local serving Defense Reutilization and Marketing Office.

CAUTION

ONLY use batteries which have been authorized for this equipment.

(3) Remove bottom cover and battery (if installed).

(4) Connect DC power supply to battery connector (P3).

(5) Connect 8000 μ F 50V capacitor across DC power supply leads as close to test set as possible.

b. BIT. Perform BIT (para 2-3c).

c. *RF Spectrum Test.*

(1) Connect input of 20 dB/40 dB amplifier (set to 40 dB) to RADIO connector. (See figure 5-9.)

(2) Connect amplifier output to spectrum analyzer input.

(3) Set spectrum analyzer LOG REF LEVEL and INPUT ATTENUATION controls to zero.

(4) Set MODE switch top SENS SQ

(5) Push test set PUSH TO TEST switch.

(6) (S.N. 1 through 634) Spectrum analyzer should display a 30 to 75 MHz spectrum at -57 dBm ±3 dB.

(S.N. 635 and Up) Spectrum analyzer should display a 30 to 75 MHz spectrum at -57 dBm ±3 dB.

(7) Disconnect test equipment.

d. Tone Modulation Test.

(1) Connect radio interference measuring set input to RADIO connector. (See figure 5-11.)

c. Reverse Power Alignment Procedure.

(1) Leave test set and support equipment connected as in figure 5-8, with controls set as in the reverse power test, but reverse connections for ANT and RADIO connectors.

(2) Place test set on end to allow adjusting of potentiometers (fig. 5-11).

(3) Set power generator to provide power meter indication of 20.0 watts.

(4) Push test set PUSH TO TEST switch and adjust R10 for a display reading of 20.0 watts.

(5) Set power generator to provide power meter indication of:

(a) 3.0 watts for S.N. 1 through 634.

(b) 1.0 watt for S.N. 635 and up.

(6) Push test set PUSH TO TEST switch and adjust R10 for a display reading of:

(a) 3.0 watts for S.N. 1 through 634.

(b) 1.0 watt for S.N. 635 and up.

(7) If the test set cannot be aligned, refer to paragraph 5-7 for troubleshooting.

d. RF Spectrum Level Alignment Procedure.

(1) Leave test set and support equipment connected as in figure 5-9, with MODE switch set to SENS SQ, but disconnect 5.5 Vdc power supply from connector P3.

(2) Partially disassemble test set by following paragraph 5-12a(5), steps (a), (c), (d) and (e) for test sets with S.N. 1 through 99. For test sets with S.N. 100 and above, all alignment adjustments can be performed without removing 2A2 module.

(3) Locate C29 and R41 on 2A2 module. See figure 5-4 for S.N. 1 through 99 and figure 5-6 for S.N. 100 and above.

(4) Reconnect 5.5 Vdc power supply to connector P3.

(5) Push and hold test set PUSH TO TEST switch. Set spectrum analyzer to display a 50 MHz spectrum output with a center frequency of 55 MHz to allow viewing of all spectrum outputs between:

(a) 30 MHz and 75 MHz for S.N. 1 through 634.

(b) 30 MHz and 80 MHz for S.N. 635 and above.

(6) Using a small alignment tool, adjust C29 and R41 so that all displayed spectrum outputs are between:

(a) -94 and -100 dBm for S.N. 1 through 634.

(b) -95 and -101 dBm for S.N. 635 and above.

R41 adjusts the spectrum level outputs of all frequencies, and C29 adjusts primarily the higher frequencies.

(7) Release test set PUSH TO TEST switch.

(8) If the test set cannot be aligned to meet the requirements of this procedure, refer to troubleshooting (para 5-7).

APPENDIX A

REFERENCES

DA Pam 25-30	Consolidated Index of Army Publications and Blank Forms.
DA Pam 738-750	The Army Maintenance Management System (TAMMS).
SC 5180-91-CL-R13	Tool Kit, Electronic Equipment TK-101/G (NSN 5180-00-064-5178).
TB 43-180	Calibration Requirements for the Maintenance of Army Materiel.
TM 11-5820-398-12	Operator's and Organizational Maintenance Manual (Including Repair Parts and Special Tool Lists): Radio Set, AN/PRC-25 (NSN 5820-00-857-0759) (Including Receiver-Transmitter, Radio, RT-505/PRC-25 (5820-00-857-0934).
TM 11-5820-401-10-1	Operator's Manual: Radio Sets AN/VRC-12 (NSN 5820-00-223-7412), AN/VRC-43 (5820-00-223-7415), AN/VRC-44 (5820-00-223-7417), AN/VRC-45 (5820-00-223-7418), AN/VRC-46 (5820-00-223-7433), AN/VRC-47 (5820-00-223-7434), AN/VRC-48 (5820-00-223-7435) and AN/VRC-49 (5820-00-223-7437) (Used with an Intercom System).
TM 11-5820-401-10-2	Operator's Manual: Radio Sets AN/VRC-12 (NSN 5820-00-223-7412), AN/VRC-43 (5820-00-223-7415), AN/VRC-44 (5820-00-223-7417), AN/VRC-45 (5820-00-223-7418), AN/VRC-46 (5820-00-223-7433), AN/VRC-47 (5820-00-223-7434), AN/VRC-48 (5820-00-223-7435) and AN/VRC-49 (5820-00-223-7437) (Used with an Intercom System).

TM 11-5820-401-12	Operator's and Organizational Maintenance Manual: AN/VRC-12 (5820-00-223-7412), AN/VRC-43 (5820-00-223-7415), AN/VRC-44 (5820-00-223-7417), AN/VRC-45 (5820-00-223-7418), AN/VRC-46 (5820-00-223-7433), AN/VRC-47 (5820-00-223-7434), AN/VRC-48 (5820-00-223-7435), AN/VRC-49 (5820-00-223-7437), AN/VRC-54 (5820-00-223-7567), AN/VRC-55 (5820-00-402-2265); Mounting MT-1029/VRC (5820-00-893-1323) and Mounting MT-1898/VRC (5820-00-897-1324); Antenna AT-912/VRC (5820-00-897-6357); Control, Frequency Selector C-2742/VRC (5820-00-892-3343), and Control, Radio Set C-2299/VRC (5820-00-892-3340).
TM 11-5820-498-12	Operator's and Organizational Maintenance Manual: Radio Sets, AN/VRC-53 (NSN 5820-00-223-7467), AN/VRC-64 (5820-00-223-7475), AN/GRC-125 (5820-00-223-7411) and AN/GRC-160 (5820-00-223-7473) and Amplifier Power Supply Groups OA-3633/GRC and OA-3633A/GRC (5820-00-973-3383).
TM 11-5820-667-12	Operator's and Organizational Maintenance Manual: Radio Set AN/PRC-77 (NSN 5820-00-930-3724) (Including Receiver-Transmitter, Radio RT-841/PRC-77 (5820-00-930-3725).
TM 11-6625-2718-14&P	Operator's, Organizational, Direct Support, and General Support Maintenance Manual, Including Repair Parts and Special Tools List for Test Set, Radio Frequency Power AN/URM-182 (NSN 6625-00-148-9371).
TM 11-6625-2718-14-1	Operator's, Organizational, Director Support, and General Support Maintenance Manual: Test Set, Radio Frequency, Power AN/URM-182A (NSN 6625-01-062-3599).
TM 11-6625-3015-24P	Repair Parts and Special Tools List, Radio Test Set AN/PRM-34 (To be published.)
TM 750-244-2	Procedures for Destruction of Electronics Materiel to Prevent Enemy Use (Electronics Command).

TM 11-6625-3015-24P	Repair Parts and Special Tools List, Radio Test Set AN/PRM-34 (To be published).
TM 38-750	The Army Maintenance Management System (TAMMS).
TM 750-244-2	Procedures for Destruction of Electronics Materiel to Prevent Enemy Use (Electronics Command).

APPENDIX B

MAINTENANCE ALLOCATION CHART

Section I. INTRODUCTION

B-1. GENERAL.

a. This section provides a general explanation of all maintenance and repair functions authorized at various maintenance categories.

b. The Maintenance Allocation Chart (MAC) in Section II designates overall responsibility for the performance of maintenance functions on the identified end item or component. The implementation of the maintenance functions upon the end item or component will be consistent with the assigned maintenance functions.

c. Section III lists the special tools and test equipment required for each maintenance function as referenced from Section II.

d. Section IV contains supplemental instructions and explanatory notes for a particular maintenance function.

B-2. MAINTENANCE FUNCTIONS. Except for ammunition MAC, maintenance functions will be limited to and defined as follows:

a. Inspect. To determine the serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination.

b. Test. To verify serviceability by measuring the mechanical or electrical characteristics of an item and comparing those characteristics with prescribed standards.

c. Service. Operations required periodically to keep an item in proper operating condition, i.e., to clean (includes decontaminate, when required), to preserve, to drain, to paint, or to replenish fuel, lubricants, chemical fluids, or gases.

d. Adjust. To maintain, within prescribed limits, by bringing into proper or exact position, or by setting the operating characteristics to specified parameters.

e. Aline. To adjust specified variable elements of an item to bring about optimum or desired performance.

f. Calibrate. To determine and cause corrections to be made or to be adjusted on instruments or test, measuring, and diagnostic equipments used in precision measurement. Consists of comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.

g. Install. The act of emplacing, seating, or fixing into position an item, part, or module (component or assembly) in a manner to allow the proper functioning of an equipment or system.

h. Replace. The act of substituting a serviceable like type part, subassembly, or module (component or assembly) for an unserviceable counterpart.

i. Repair. The application of maintenance services[1] or other maintenance actions[2] to restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module (component or assembly), end item, or system.

j. Overhaul. That maintenance effort (service/action) necessary to restore an item to a completely serviceable/operational condition as prescribed by maintenance standards in appropriate technical publications (i.e., DMWR). Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to like new condition.

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[1]Services - inspect, test, service, adjust, aline, calibrate, or replace.

[2]Actions - welding, grinding, riveting, straightening, facing, remachining, or resurfacing.

k. Rebuild. Consists of those services/actions necessary for the restoration of unserviceable equipment to a like new condition in accordance with original manufacturing standards. Rebuild is the highest degree of materiel maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those age measurements (hours/miles, etc.) considered in classifying Army equipments/components.

B-3. EXPLANATION OF COLUMNS IN THE MAC, SECTION II.

a. Column 1, Group Number. Column 1 lists functional group code numbers, the purpose of which is to identify components, assemblies, subassemblies, and modules with the next higher assembly.

b. Column 2, Component/Assembly. Column 2 contains the names of components, assemblies, subassemblies, and modules for which maintenance is authorized.

c. Column 3, Maintenance Function. Column 3 lists the functions to be performed on the item listed in Column 2. (For detailed explanation of these functions, see paragraph B-2.)

d. Column 4, Maintenance Category. Column 4 specifies, by the listing of a work time figure in the appropriate subcolumn(s), the category of maintenance authorized to perform the function listed in Column 3. This figure represents the active time required to perform that maintenance function at the indicated category of maintenance. If the number of complexity of the tasks within the listed maintenance function vary at different maintenance categories, appropriate work time figures will be shown for each category. The work time figure represents the average time required to restore an item (assembly, subassembly, component, module, end item, or system) to a serviceable condition under typical field operating conditions. This time includes preparation time, troubleshooting time, and quality assurance/quality control time in addition to the time required to perform the specific tasks identified for the maintenance functions authorized in the maintenance allocation chart. The symbol designations for the various maintenance categories are as follows:

C.....Operator or crew
O.....Organizational maintenance
F.....Direct support maintenance
H.....General support maintenance
D.....Depot maintenance

e. Column 5, Tools and Equipment. Column 5 specifies, by code, those common tool sets (not individual tools) and special tools, TMDE, and support equipment required to perform the designated function.

f. Column 6, Remarks. This column shall, when applicable, contain a letter code, in alphabetic order, which shall be keyed to the remarks contained in Section IV.

B-4. EXPLANATION OF COLUMNS IN TOOL AND TEST EQUIPMENT REQUIREMENTS, SECTION III.

a. Column 1, Reference Code. The tool and test equipment reference code correlates with a code used in the MAC, Section II, Column 5.

b. Column 2, Maintenance Category. The lowest category of maintenance authorized to use the tool or test equipment.

c. Column 3, Nomenclature. Name or identification of the tool or test equipment.

d. Column 4, National Stock Number. The National stock number of the tool or test equipment.

e. Column 5, Tool Number. The manufacturer's part number.

B-5. EXPLANATION OF COLUMNS IN REMARKS, SECTION IV.

a. Column 1, Reference Code. The code recorded in column 6, Section II.

b. Column 2, Remarks. This column lists information pertinent to the maintenance function being performed as indicated in the MAC, Section II.

SECTION II. MAINTENANCE ALLOCATION CHART
FOR

RADIO TEST SET AN/PRM-34

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY					(5) TOOLS AND EQUIPMENT	(6) REMARKS
			C	O	F	H	D		
00	RADIO TEST SET AN/PRM-34	INSPECT		0.01					A
		REPAIR		0.01					B
01	TEST SET, RADIO TS-3951/PRM-34	INSPECT		0.01					
		SERVICE		0.03				10	
		TEST		0.01					C
		TEST				0.75		1-10	
		REPAIR		0.13				10	D,E
		REPAIR				0.47		10	F,G,H
		ALIGN				0.17		1-8, 10	
		CALIBRATE				2.0			I

SECTION III. TOOL AND TEST EQUIPMENT REQUIREMENTS
FOR

AN/PRM-34

TOOL OR TEST EQUIPMENT REF CODE	MAINTENANCE CATEGORY	NOMENCLATURE	NATIONAL/ NATO STOCK NUMBER	TOOL NUMBER
1	H	DC POWER SUPPLY	6695-01-076-8966	TEK PS503A
2	H	DIGITAL MULTIMETER	6625-01-075-8583	TEK DM501A
3	H	TERMINATION	4931-01-030-1454	SIERRA 161A-50
4	H	POWER GENERATOR	4931-01-128-1443	MICRO DOT 440
5	H	POWER METER	6625-00-148-8069	HP 432A
6	H	POWER STANDARD ASSEMBLY	6695-01-088-2146	7916259
7	H	FREQUENCY COUNTER	4931-01-040-0121	HP 5354A
8	H	SPECTRUM ANALYZER		TEK 492
9	H	SIGNAL GENERATOR	4931-01-085-4229	HP 8640B
10	O,H	TOOL KIT	4931-01-073-3845	JTK171 LAL

SECTION IV. REMARKS

REFERENCE CODE	REMARKS
A	INSPECTION TO INCLUDE INSIDE GASKET ON TRANSIT CASE FOR POSSIBLE LEAKS.
B	REPAIR BY REPLACEMENT OF TRANSIT CASE, TEST SET RADIO, COAX CABLE OR BNC ADAPTER.
C	TEST USING BUILT-IN-TEST PROCEDURE.
D	REPAIR BY TIGHTENING OF KNOB, REPLACEMENT OF BATTERY.
E	DISPOSE OF REPLACED LITHIUM-SULFER DIOXIDE BATTERIES BY TURNING INTO LOCAL PROPERTY DISPOSAL OFFICER.
F	REPAIR TEST SET BY REPLACEMENT OF NEXT LOWER INDENTURED ASSEMBLIES.
G	FOR TEST SETS #1-634, IF THE SPECTRUM GENERATOR BOARD (2A2) AND/OR THE TEST SET SUBASSEMBLY (2A4) ARE FAULTY DO NOT ATTEMPT TO REPAIR THE TEST SET. THE TEST SET SHOULD BE RETURNED TO THE USER WHO, IN TURN, WILL RETURN THE UNIT THROUGH NORMAL SUPPLY CHANNELS FOR DISPOSAL AND REQUISITION A NEW SET.
H	BEFORE DISPOSING OF AN INDICATED BAD MODULE, PERFORM THE FOLLOWING TEST: PLACE THE SUSPECTED FAULTY MODULE INTO A KNOWN GOOD TEST SET AND ENSURE THAT THE SET MALFUNCTIONS AS EXPECTED.
I	CALIBRATE UNIT IN ACCORDANCE WITH TB 9-6625-2051-35 ENTITLED "CALIBRATION PROCEDURE FOR RADIO TEST SET AN/PRM-34".

APPENDIX C

COMPONENTS OF END ITEM AND BASIC ISSUE ITEMS LISTS

Section I. INTRODUCTION

C-1. SCOPE. This appendix lists components of end item and basic issue items for the AN/PRM-34 to help you inventory items required for safe and efficient operation.

C-2. GENERAL. The Components of End Item and Basic Issue Items Lists are divided into the following sections:

a. *Section II, Components of End Item.* This listing is for informational purposes only, and is not authority to requisition replacements. These items are part of the end item, but are removed and separately packaged for transportation or shipment. As part of the end item, these items must be with the end item whenever it is issued or transferred between property accounts. Illustrations are furnished to assist you in identifying the items.

b. *Section III, Basic Issue Items.* This section is not applicable to the AN/PRM-34.

C-3. EXPLANATION OF COLUMNS. The following provides an explanation of columns found in the tabular listings:

a. *Column (1) - Illustration Number (Illus Number).* This column indicates the number of the illustration in which the item is shown.

b. *Column (2) - National Stock Number.* Indicates the National stock number assigned to the item and will be used for requisitioning purposes.

c. *Column (3) - Description.* Indicates the Federal item name and, if required, a minimum description to identify and locate the item. The last line for each item indicates the FSCM (in parentheses) followed by the part number. If item needed

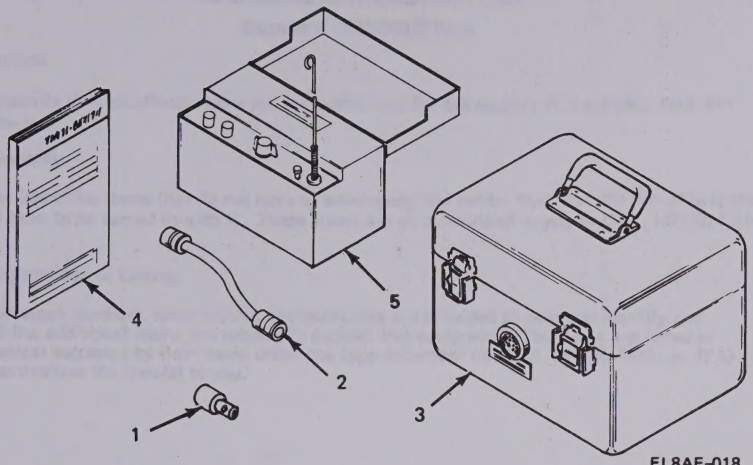
differs for different models of this equipment, the model is shown under the "Usable On" heading in this column. These codes are identified as:

Code	Used On
A	S.N. 1 thru 634
B	S.N. 635 and up

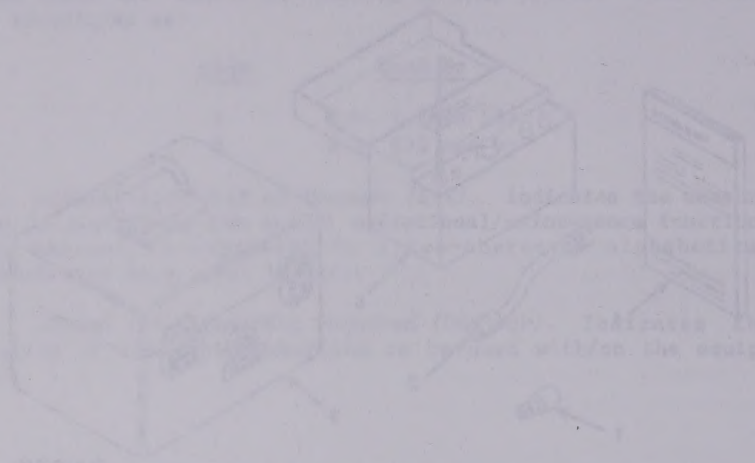
d. Column (4) - Unit of Measure (U/M). Indicates the measure used in performing the actual operational/maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e.g., ea, in, pr).

e. Column (5) - Quantity required (Qty rqr). Indicates the quantity of the item authorized to be used with/on the equipment.

Section II. COMPONENTS OF END ITEM



(1) Illus Number	(2) National Stock Number	(3) Description FSCM and Part Number	Usable On Code	(4) U/M	(5) Qty rqr
1	5985-01-097-7337	Adapter, Antenna	B	Ea	1
2		Cable, Test (05276) 2249-C-24	A	Ea	1
2		Cable, Test (80045) 393707	B	Ea	1
3		Case, Transit (80045) 384858	A	Ea	1
3		Case, Transit (80045) 393662-1	B	Ea	1
4		Manual, Technical TM 11-6625-3015-14		Ea	1
5		Test Set, Radio (80045) TS-3951/ PRM-34		Ea	1



APPENDIX D
ADDITIONAL AUTHORIZATION LIST
Section I. INTRODUCTION

1. Scope.

This appendix lists additional items you are authorized for the support of the Radio Test Set AN/PRM-34.

2. General.

This list identifies items that do not have to accompany the Radio Test Set AN/PRM-34 and that do not have to be turned in with it. These items are all authorized to you by CTA, MTOE, TDA, or JTA.

3. Explanation of Listing.

National stock numbers, descriptions, and quantities are provided to help you identify and request the additional items you require to support this equipment. The items are listed in alphabetical sequence by item name under the type document (ie, CTA, MTOE, TDA, or JTA) which authorizes the item(s) to you.

Section II. ADDITIONAL AUTHORIZATION LIST

(1) National Stock Number	(2) Description FSCM & Part Number	Usable on Code	(3) U/M	(4) Qty Auth
6135-01-090-5364	Battery, Lithium (80058) BA-5847/U		EA	1

APPENDIX E

EXPENDABLE SUPPLIES AND MATERIALS LIST

Section I. INTRODUCTION

E-1. SCOPE. This appendix lists expendable supplies and materials you will need to operate and maintain the AN/PRM-34. These items are authorized to you by CTA 50-970, Expendable Items (Except Medical, Class V, Repair Parts, and Heraldic Items).

E-2. EXPLANATION OF COLUMNS.

a. Column 1 - Item Number. This number is assigned to the entry in the listing and is referenced in the narrative instructions to identify the material (e.g., "Use cleaning compound, item 5, App. D").

b. Column 2 - Level. This column identifies the lowest level of maintenance that requires the listed item.

C - Operator/Crew
O - Organizational Maintenance
F - Direct Support Maintenance
H - General Support Maintenance

c. Column 3 - National Stock Number. This is the national stock number assigned to the item: use it to request or requisition the item.

d. Column 4 - Description. Indicates the federal item name and, if required, a description to identify the item. The last line for each item indicates the part number followed by the Federal Supply Code for Manufacturer (FSCM) in parentheses, if applicable.

e. Column 5 - Unit Of Measure (U/M). Indicates the measure used in performing the actual maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e.g., ea, in, pr). If the unit of measure differs from the unit of issue, requisition the lowest unit of issue that will satisfy your requirements.

Section II. SUPPLIES AND MATERIALS LIST

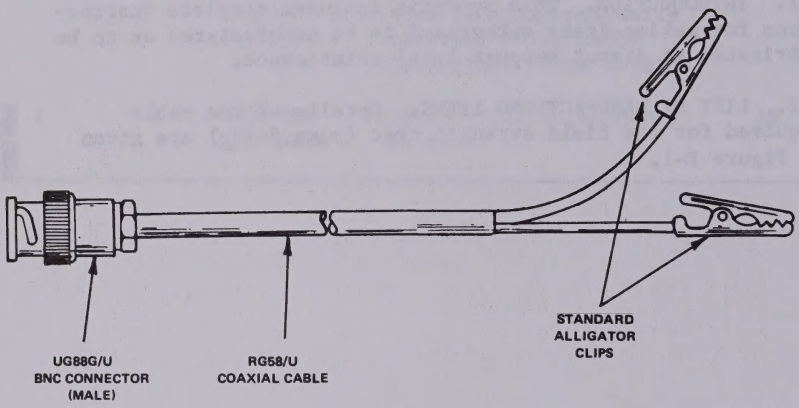
(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) DESCRIPTION	(5) U/M
1	H		Paint, MIL-C-22750 class I type II epoxy-polyamide coating, color 24087 (semigloss olive drab)	AR
2	H	6850-00-105-3084	Trichlorotrifluoroethane, 16 oz.	AR

APPENDIX F

ILLUSTRATED LIST OF MANUFACTURED ITEMS

F-1. INTRODUCTION. This appendix includes complete instructions for making items authorized to be manufactured or to be fabricated at direct support level maintenance.

F-2. LIST OF MANUFACTURED ITEMS. Details of the cable required for the field strength test (para 5-13e) are given in figure F-1.



NOTE

THIS CABLE IS REQUIRED TO APPLY OUTPUT OF VARIABLE ATTENUATOR DIRECTLY TO AN/PRM-34 FIELD STRENGTH ANTENNA (FLD STR ANT) DURING FIELD STRENGTH TEST.

EL8AE-025

Figure F-1. Field Strength Test Cable.

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PUBLICATION NUMBER	PUBLICATION DATE	PUBLICATION TITLE
TM 11-5840-340-12	23 Jan 74	Radar Set AN/PRC-76

BE EXACT PIN-POINT WHERE IT IS				IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:
PAGE NO	PARA-GRAPH	FIGURE NO	TABLE NO	
2-25	2-28			Recommend that the installation antenna alignment procedure be changed throughout to specify a 2° IFF antenna lag rather than 1°. REASON: Experience has shown that with only a 1° lag, the antenna servo system is too sensitive to wind gusting in excess of 25 knots, and has a tendency to rapidly accelerate and decelerate as it hunts, causing strain to the drive train. Hunting is minimized by adjusting the lag to 2° without degradation of operation.
3-10	3-3		3-1	Item 5, Function column. Change "2 db" to "3db." REASON: The adjustment procedure the the TRANS POWER FAULT indicator calls for a 3 db (500 watts) adjustment to light the TRANS POWER FAULT indicator.
5-6	5-8			Add new step f.1 to read, "Replace cover plate removed in step e.1, above." REASON: To replace the cover plate.
		F03		Zone C 3. On J1-2, change "+24 VDC to "+5 VDC." REASON: This is the output line of the 5 VDC power supply. +24 VDC is the input voltage.

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