

TM 11-6625-496-45

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

FIELD (FOURTH ECHELON) AND DEPOT
MAINTENANCE MANUAL

TEST SET, RADIO AN/VRM-1

This copy is a reprint which includes pen and
ink Changes in force at the time of publication.

HEADQUARTERS, DEPARTMENT OF THE ARMY
3 JULY 1962

Technical Manual
 No. 11-6625-496-45



HEADQUARTERS,
 DEPARTMENT OF THE ARMY
 WASHINGTON 25, D. C., 3 July 1962

TEST SET, RADIO AN/VRM-1

	Paragraph	Page
CHAPTER 1. THEORY	1-27	2-16
CHAPTER 2. FOURTH ECHELON MAINTENANCE		
Section I. General troubleshooting techniques	28-30	17,18
II. Troubleshooting	31-34	18-21
III. Repair.	35-40	24-29
IV. Final adjustments	41-43	33
v. Fourth echelon testing procedures	44-52	37-54
CHAPTER 3. FIFTH ECHELON MAINTENANCE		
Section I. Troubleshooting and repair.	53-59	55-62
II. Fifth echelon testing procedures	60-67	65-68
APPENDIX REFERENCES †		69
INDEX		79

CHAPTER 1

THEORY

1. Scope

a. This manual covers field (fourth echelon) and depot maintenance for Test Set, Radio AN/VRM-1. It includes instructions appropriate to fourth and fifth echelon for troubleshooting, testing, aligning, and repairing the equipment. Detailed functions of the AN/VRM-1 are covered in this chapter.

b. The complete technical manual for this equipment includes TM 11-6625-496-12, TM 11-6625-496-20P. and TM 11-6625-45P.

c. Forward comments concerning this manual to the Commanding Officer, U. S. Army Signal Materiel Support Agency, ATTN: SIGMS-MPP-4, Fort Monmouth, N.J.

Note: For applicable forms and records, refer to paragraph 2, TM 11-6625-496-12.

d. Refer to DA Pamphlet 310-4 to determine what Changes to or revisions of this publication are current.

2. Block Diagram

(fig. 37)

Test Set, Radio AN/VRM-1 is a portable equipment for testing plug-in modules of Receiver, Radio R-442/VRC and Receiver-Transmitters, Radio RT-246/VRC and RT-524/VRC. Signal paths are shown in the block diagram and are discussed in a through c below. The complete circuit is shown in the overall schematic diagram (fig. 39).

a. *Selector Switch.* The setting of the 20-position selector switch, S7902, is determined by the type of test to be made. The routing of the voltages under test is determined by the selector switch position.

b. *Rf Signals.* The radiofrequency (rf) signals under test are amplified by the test probe rf amplifier and routed by S7902A to the 5.65-mc filter, to an appropriate attenuator network, or directly to S7902B and S7902C. The latter switch

sections apply the signal to one of three rf amplifiers: 11.5-megacycle (mc), 5.65-mc, or 47. O-mc. The amplified signals are rectified and applied through S7902D to the Schmitt trigger circuit (*e* below).

c. *Audio signals.* The audio signals from the test probe are routed by S7902B or S7902C either through an appropriate attenuator network or directly to the audio amplifier. The amplified signal is rectified and applied through S7902 D to the Schmitt trigger circuit (*e* below).

d. *Dc Voltages.* The dc voltages under test are routed either through an appropriate attenuator or directly to S7902B or S7902C. The latter switch sections apply the voltage to either the voltage divider or the voltage supply limits sensing circuit. The voltage supply limits sensing circuit senses whether the voltage under test is between minimum and maximum tolerances. The direct-current (dc) voltage from the voltage divider or voltage supply limits sensing circuit is connected through S7902D to the Schmitt trigger circuit (*e* below).

e. *Schmitt Trigger.* The Schmitt trigger circuit operates in conjunction with two indicator lamps. In the absence of a signal or when a signal is not within tolerances, the RED indicator lamp lights. When a signal is within tolerances, the GREEN indicator lamp lights.

f. *Power.* Power is supplied to the TS-1777/VRM-1 from a 26-volt dc power source, such as a vehicle electrical system. The power source is connected to a 16-volt dc regulator circuit and a line voltage sensing circuit. The output of the 16-volt dc regulator circuit is connected to the line voltage sensing circuit. When the power source voltage is above 22 volts dc (minimum limit), the output of the 16-volt dc regulator is switched by the line voltage sensing circuit to the indicator lamps, the Schmitt trigger circuit, the voltage supply limits sensing circuit, and