TM 11-6625-623-45

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

GS AND DEPOT MAINTENANCE MANUAL

MAINTENANCE KIT, ELECTRONIC EQUIPMENT MK-722/URC

HEADQUARTERS, DEPARTMENT OF THE ARMY

7 JUNE 1965

TECHNICAL MANUAL

No. 11-6625-623-45

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D. C. 20315, *7 June 1965*

MAINTENANCE KIT, ELECTRONIC EQUIPMENT MK-722/URC

CHAPTER 1
FUNCTIONING OF MAINTENANCE KIT, ELECTRONIC EQUIPMENT MK-722/URC

Section I. GENERAL

1-1. Scope of Manual

a. This manual covers general support and depot maintenance for Maintenance Kit, Electronic Equipment MK-722/URC. It includes instructions appropriate to general support and depot maintenance for troubleshooting, testing, aligning, and repairing the equipment, and replacing maintenance parts. It also lists tools, materials, and test equipment for general support and depot maintenance.

b. The purpose, operation, and interoperation of the various circuits (electrical and electromechanical) in the MK-722/URC are explained in paragraph 1-4 through 1-11. Familiarity with the equipment, how it works, and why it works the way it does are valuable tools in troubleshooting the equipment rapidly and effectively.

c. The complete technical manual for this equipment includes TM 11-6625-623-12.

NOTE

For applicable forms and records, see paragraph 1-3 TM 11-6625-623-12.

1.2. Indexes of Publications

a. Refer to the latest issue of DA Pam 310-4 to determine whether there are new additions, changes or additional publications pertaining to the equipment.

b. Refer to the latest issue of DA Pam 310-7 to determine whether there are modification work orders (MWO'S) pertaining to the equipment.

1-3. Reporting of Equipment Manual Improvements

Report of errors, omissions, and recommendations for improving this manual by the individual user is encouraged. Reports should be submitted on DA Form 2028 (Recommended Changes to Publications and Blank Forms) and forwarded direct to Commander, US Army Electronics Command, ATTN: AMSEL-MA-A, Fort Monmouth, NJ 07703.

Section II. FUNCTIONAL TEST SET BLOCK DIAGRAM ANALYSIS

1-4. Introduction

The function test set (main component of the MK-722/URC) is used in the testing and troubleshooting of the receiver-transmitter (a component of Radio Set AN/ARC-102). The function test set acts as an accurate voltage comparator which is used to set critical voltages in the receiver-transmitter. It is also used as a variable voltage source with three difference source impedances for test purposes.

1-5. Block Diagram Analysis

(fig. 1-1)

Block diagram analysis of the function test set is covered in *a* through *h* below. For complete circuit details, refer to the overall schematic diagram (fig. 4-11).

a. Input Power Circuit. The 115-volt, 400-cycles-per-second (cps) input power is applied to the function test set from an external source. The input power is applied through

isolating transformer T1 to the rectifier circuit consisting of diode CR1 capacitor Cl, and inductor L1.

b. Rectifier Circuit. The rectifier circuit takes the 115-volt, 400-cps input power, and rectifies and filters it to provide a direct current (de) input to the calibrated dc regulator circuit consisting of Zener diodes CR3 and CR4.

c. Dc Regulator circuit. The filtered dc putput of the rectifier circuit is applied to the dc regulator circuit which provides a constant level dc reference voltage to FUNCTION METER Ml.

d. FUNCTION SELECTOR Switch S1A. FUNCTION SELECTOR Switch S1A connects the proper reference voltage to FUNCTION METER Ml.

e. Input Jacks. Input jacks J1-KC STAB, J3-KC STAB, J4-KC STAB, J2-IF TRANS, and J2–FREQ DIVIDER are used to bring test signals from the receiver-transmitter to FUNCTION SELECTOR switch S1B.

f. FUNCTION SELECTOR Switch S1B. FUNCTION SELECTOR Switch SIB connects the proper input jack to FUNCTION METER Ml.

g. FUNCTION METER M1. FUNCTION METER M1 gives indications of differences between the reference voltage and the signal being checked.

h. Dummy Microphone Circuit. The dummy microphone circuit is used to connect audio tone inputs to the receiver-transmitter.

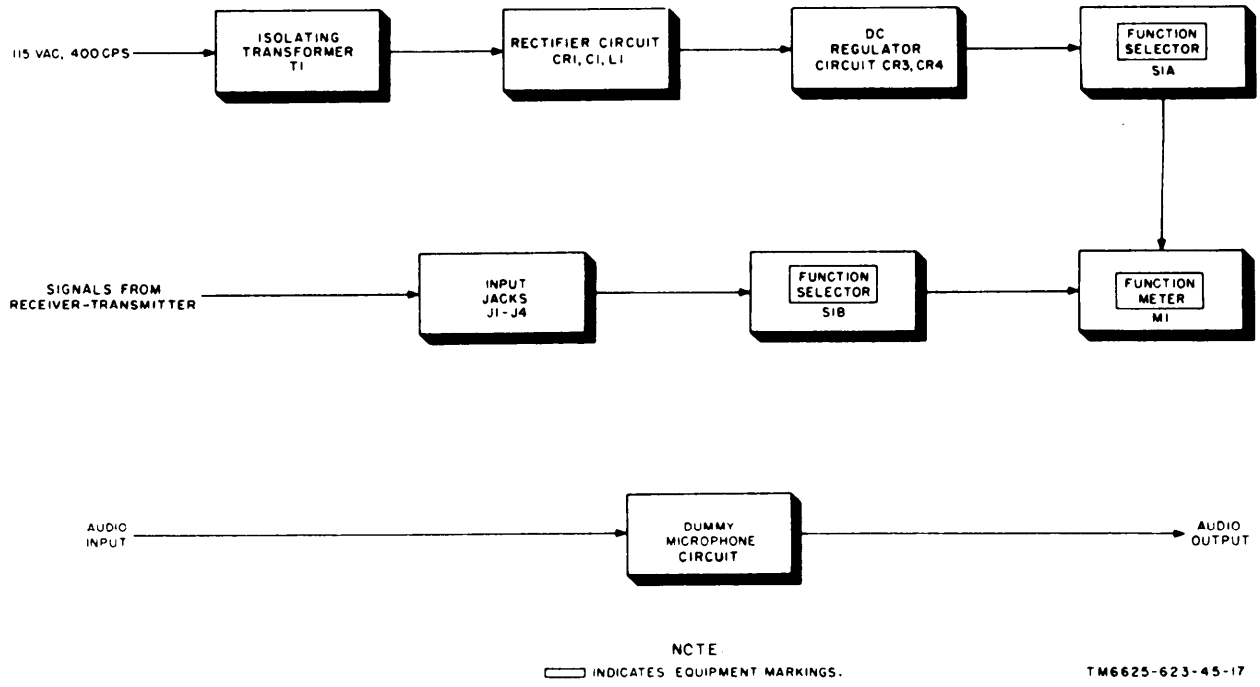

Figure 1-1. Function test set, block diagram.

Section III. CIRCUIT ANALYSIS

1-6. Input Power Circuit

(fig. 4–11)

The 115-volt, 400-cps voltage is applied through the power cable and connector J12, power switch S3A, and 1/4-ampere fuse F1 to the primary of isolating transformer T1. One pin of the secondary of transformer T1 is grounded. The other pin provides alternating current (ac) voltage to two branches. One