NAVSHIPS 91946

(See Page B)

INSTRUCTION BOOK

for

RADIO FREQUENCY MONITOR AN/URM-50

NATIONAL COMPANY, INC.
MALDEN 48, MASSACHUSETTS

BUREAU OF SHIPS NAVY DEPARTMENT

Contract: NObsr-52582

Approved by BuShips: 1 June 1953
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DEPARTMENT OF THE NAVY
BUREAU OF SHIPS
WASHINGTON 25, D. C.

IN REPLY REFER TO
Code 993-100
1 June 1953

From: Chief, Bureau of Ships
To: All Activities Concerned with the Installation, Operation and Maintenance of the Subject Equipment

Subj: Instruction Book for Radio Frequency Monitor AN/URM-50 NAVSHIPS 91946

1. This is the instruction book for the subject equipment and is in effect upon receipt.

2. When superseded by a later edition, this publication shall be destroyed.

3. Extracts from this publication may be made to facilitate the preparation of other Department of Defense Publications.

4. All Navy requests for NAVSHIPS Electronics publications should be directed to the nearest District Publications and Printing Office. When changes or revised books are distributed, notice will be included in the Bureau of Ships Journal and in the Index of Bureau of Ships General and Electronics Publications, NAVSHIPS 250-020.

H. N. WALLIN
Chief of Bureau

RECORD OF CORRECTIONS MADE

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INSTALLATION RECORD

Contract NObsr-52582 Dated 18 June 1951

Serial Number of equipment .....

Date of acceptance by the Navy .....

Date of delivery to contract destination .....

Date of completion of installation .....

Date placed in service .....

Blank spaces on this page shall be filled in at time of installation.

SAFETY NOTICE

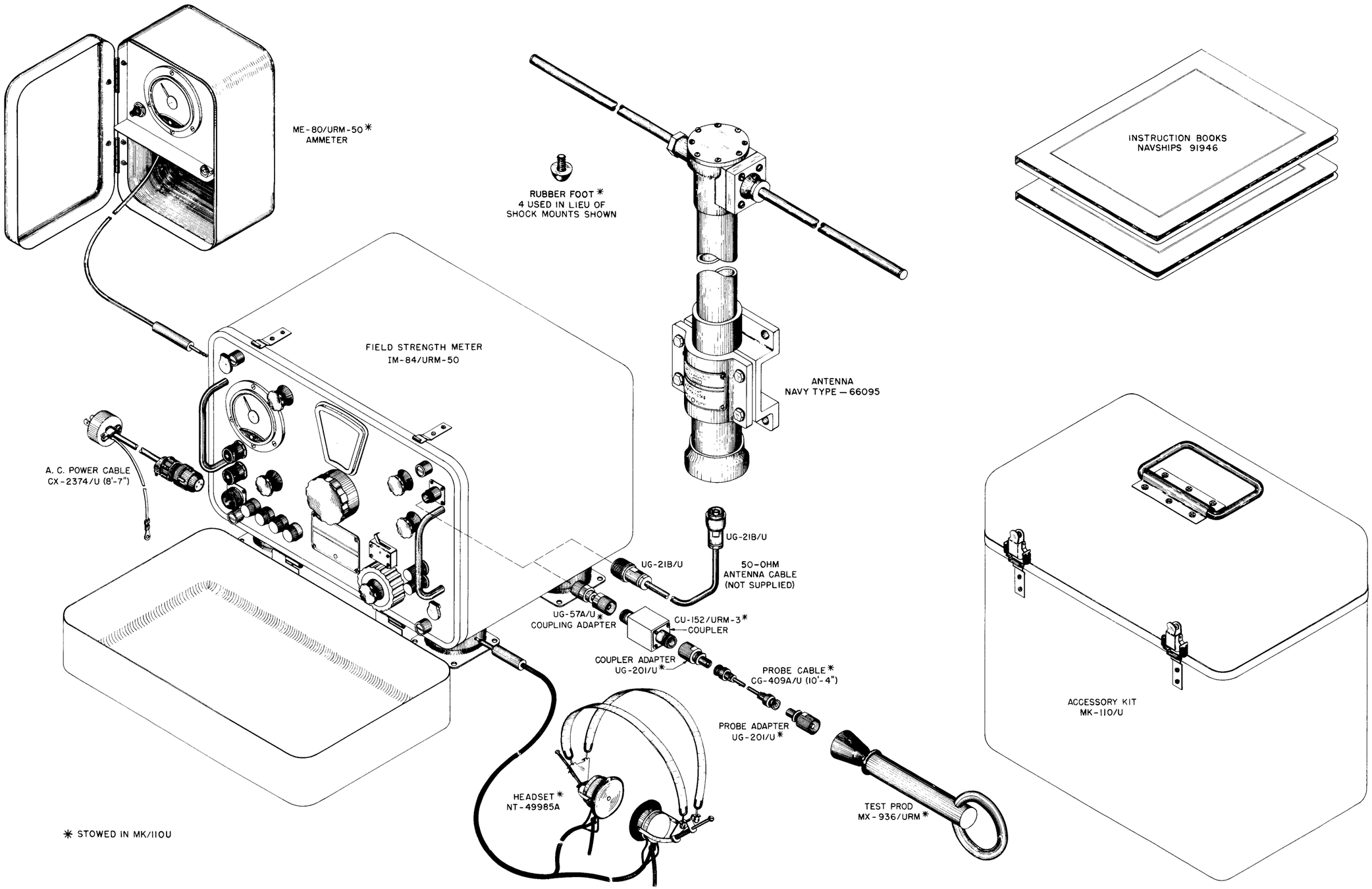
The attention of officers and operating personnel is directed to Chapter 67 of the Bureau of Ships Manual or superseding instructions on the subject of radio-safety precautions to be observed.

This equipment employs voltages which are dangerous and may be fatal if contacted by operating personnel. Extreme caution should be exercised when working with the equipment.

While every practicable safety precaution has been incorporated in this equipment the following rules must be strictly observed:

KEEP AWAY FROM LIVE CIRCUITS:

Operating personnel must at all times observe all safety regulations. Do not change tubes or make adjustments inside equipment with high voltage supply on. Under certain conditions dangerous potentials may exist in circuits with power controls in the off position due to charges retained by capacitors. To avoid casualties always remove power and discharge and ground circuits prior to touching them.



Figur 1-1. Radio Frequ ncy M nitor AN/URM-50

SECTION 1
GENERAL DESCRIPTION

1. PURPOSE AND BASIC PRINCIPLES.

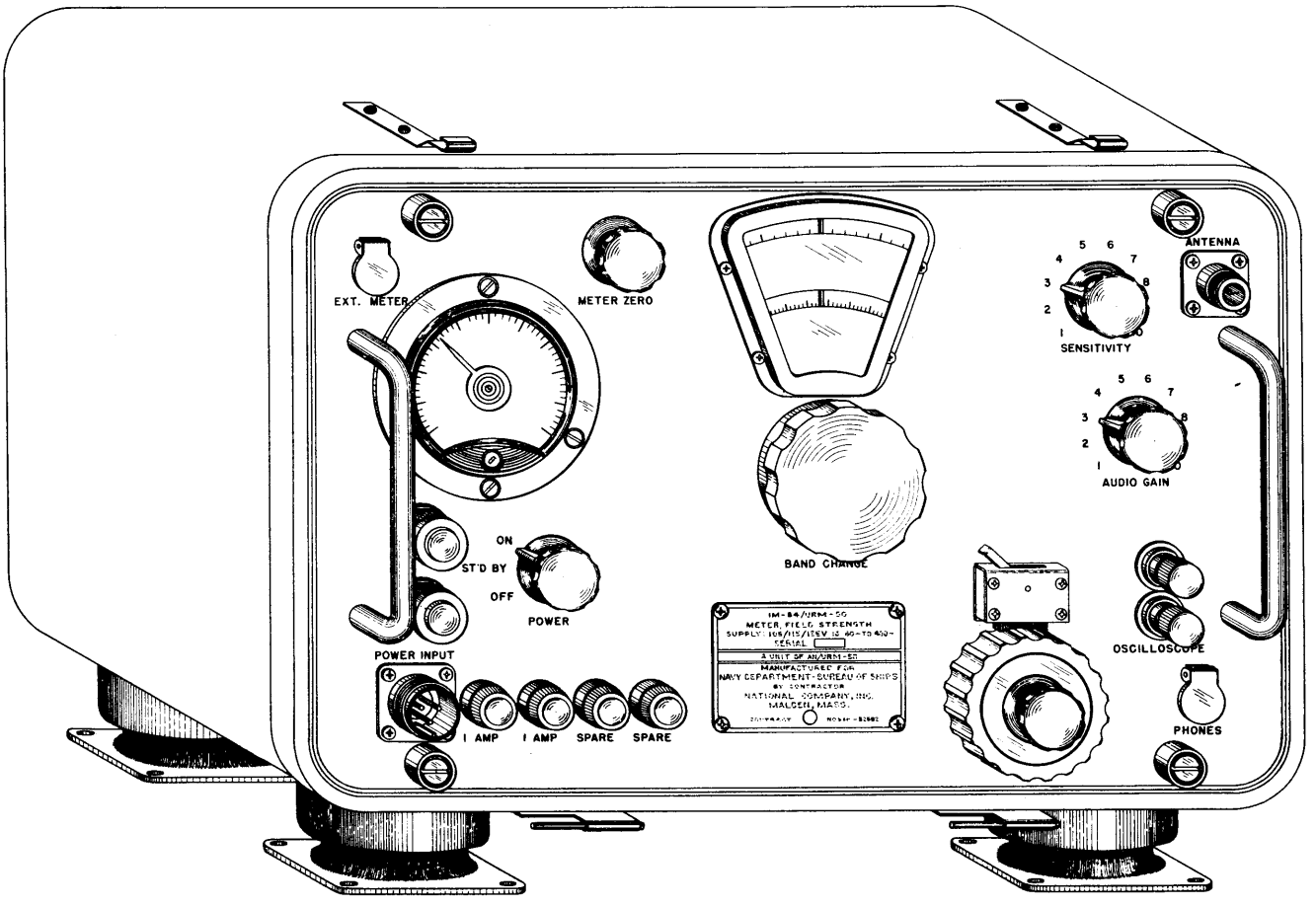
Radio Frequency Monitor AN/URM-50 is a directly calibrated, bandswitching device covering a frequency range from 0.3 to 400 megacycles in nine bands. Bandswitching is accomplished by means of a rotatable turret containing all the respective R.F. coils and their associated trimmer capacitors. The monitor is supplied with its own antenna. No direct connection is made between the monitor and the transmitter being checked. The signal is tuned and adjusted to the proper level and monitoring is possible aurally by means of headphones or visually by means of the front-panel mounted microammeter or the remote meter or by use of an oscilloscope. The equipment is designed to be drip-proof.

The primary purpose of the monitor is to enable operating personnel to check shipboard transmitter performance. Its secondary use is to aid in tuning up the transmitters. It is also possible to use the monitor for checking R.F. leakage in and around the transmitting equipment.

2. DESCRIPTION OF UNITS.

The Radio Frequency Monitor AN/URM-50 is composed of three basic units.

a. FIELD STRENGTH METER IM-84/URM-50.– The Field Strength Meter IM-84/URM-50 is a directly calibrated bandswitching relative intensity field



Figur 1–2. Fi ld Strength M t r IM-84/URM-50

strength meter. It is designed so that it may be bench-mounted with the shock mounts provided. The shock-mounts may be replaced by four rubber plug buttons contained in the accessory kit. This conversion facilitates portable operation while maintaining the drip-proof qualities of the instrument.

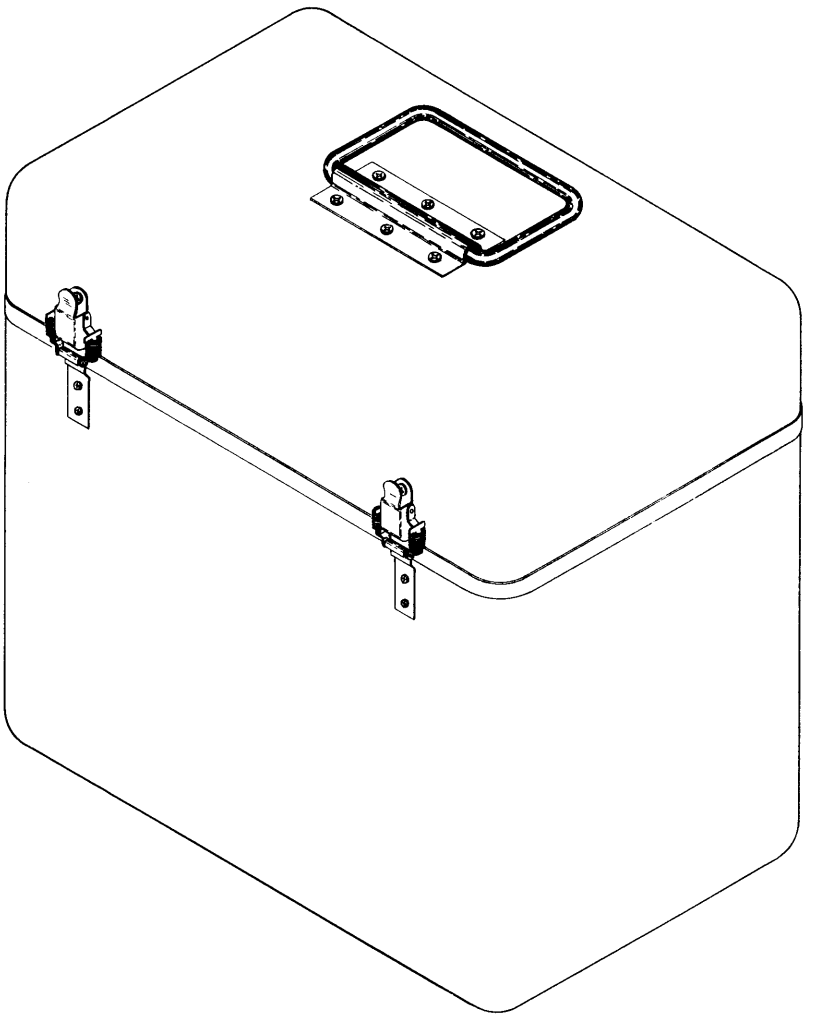
The field strength meter is designed to operate from an A.C. source of 115 volts, 60 to 400 cycles. single phase. The frequency range is covered by a nine-position turret assembly. The calibrated frequency ranges are as follows:

BAND	FREQUENCY RANGE IN MC.
1	0.3 to 0.65
2	0.65 to 1.3
3	1.3 to 2.8
4	2.8 to 6.5
5	6.5 to 15
6	15 to 34
7	34 to 75
8	75 to 180
9	180 to 400

The attenuator circuits permit level adjustment from maximum to approximately 110 db down in 15 db steps. The power supply is constructed in such a manner that it may be removed as a unit without disturbing any one of the monitor circuits or components. The headphones three Bristo wrenches, an alignment tool and power cord together with two Instruction Manuals are contained in the cabinet cover. The chassis assembly may be removed from its cabinet by loosening four captive screws at the corners of the front panel.

b. ACCESSORY KIT MK-110/U.–The Accessory Kit MK-110/U consists of a drip-proof portable cabinet containing the external meter with its cable, the R.F. probe with pad and cable, and the equipment spares. A rack is provided within the cabinet to hold the rubber buttons or the shock mounts of the field strength meter whichever is not in use.

c. ANTENNA NAVY TYPE -66095.–The Antenna (Navy type -66095) is designed for mounting on a mast or bulkhead. It consists of a horizontal dipole affixed to a short mast. The antenna presents a nominal impedance of 50 ohms at the type UG-58/U



Figur 1–3. Acc ssory Kit MK-110/U

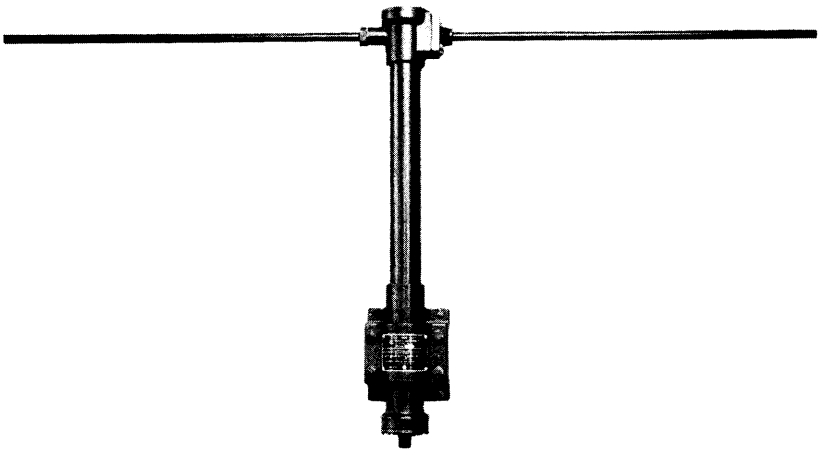


Figure 1–4. Antenna Navy type -66095

connector at the base of its mast and should be connected to the field strength meter through the proper type of 50 ohm coaxial cable.

3. REFERENCE DATA.

a. NOMENCLATURE.–Radio Frequency Monitor AN/URM-50.

b. CONTRACT NUMBER AND DATE.–NObsr-52582 dated 18 June 1951.

c. CONTRACTOR.–National Company, Inc., Malden, Massachusetts, U.S.A.

d. COGNIZANT NAVAL INSPECTOR.–Inspector of Naval Material, Boston 10, Massachusetts.

e. NUMBER OF PACKAGES INVOLVED PER COMPLETE SHIPMENT OF EQUIPMENT.

(1) One crate containing the Field Strength Meter IM-84/URM-50, the Accessory Kit MK-110/U and two instruction books.

(2) One crate containing the Antenna Navy Type -66095.

f. TOTAL CUBICAL CONTENTS.

(1) CRATED.

(a) Field Strength Meter IM-84/URM-50 and Accessory Kit MK-110/U.–11.04 cu. ft.

(b) Antenna Navy Type -66095–3.12 cu. ft.

g. TOTAL WEIGHT.

(1) CRATED.

(a) Field Strength Meter IM-84/URM-50 and Accessory Kit MK-110/U.–112 lbs.

(b) Antenna Navy Type -66095.–38 lbs.

(2) UNCRATED.

(a) Field Strength Meter IM-84/URM-50.–47 lbs.

(b) Accessory Kit MK-110/U.–20 lbs.

(c) Antenna Navy Type -66095.–18 lbs.

h. FREQUENCY RANGE.–0.3 to 400 megacycles.

i. TUNING BANDS.–Nine bands: 0.3 to 0.65 mc., 0.65 to 1.3 mc., 1.3 to 2.8 mc., 2.8 to 6.5 mc., 6.5 to 15 mc., 15 to 34 mc., 34 to 75 mc., 75 to 180 mc., and 180 to 400 mc.

j. FIELD STRENGTH RANGE.–50 microvolts to 30 volts.

k. ANTENNA IMPEDANCE.–50 ohms.

l. FIELD STRENGTH METER INPUT IMPEDANCE.–50 ohms.

m. HEADPHONE OUTPUT IMPEDANCE.–Minimum of 600 ohms.

n. OSCILLOSCOPE OUTPUT IMPEDANCE.–Approximately one megohm.

o. MOUNTING.–Shock mounted for use on top of a table or bench. Shock mounts may be removed for portable operation.

p. CHARACTERISTICS OF POWER SUPPLY.

(1) TYPE.–Self-contained full wave rectifier.

(2) A.C. VOLTAGE.–115 volts.

(3) FREQUENCY.–60 to 400 cycles.

(4) NUMBER OF PHASES.–Single Phase.

(5) POWER CONSUMPTION AND CURRENT DRAIN.–58 Watts, 58.5 VA, 0.51 Amps.

TABLE 1-1. EQUIPMENT SUPPLIED

QUANTITY PER EQUIPMENT	NAME OF UNIT	AN OR NAVSHIPS DESIGNATION	OVERALL DIMENSIONS			VOLUME CU. FT.	WEIGHT
			HEIGHT	WIDTH	DEPTH		
1	Field Strength Meter	IM-84/URM-50	15 45/64"	15 21/32"	11 27/32"	1.73	47 lbs.
1	Accessory Kit (packed)	MK-110/U	15 45/64"	15 21/32"	11 27/32"	1.73	20 lbs.
1	Ammeter	ME-80/URM-50	9 3/32"	6 3/32"	4 15/32"	0.15	3 3/4 lbs.
1	Headset	NT-49985A	-----	-----	-----	---	9 oz.
1	Coupling Adapter	UG-57A/U	-----	-----	-----	---	1 3/4 oz.
1	Coupler Adapter	UG-201/U	-----	-----	-----	---	1 3/4 oz.
1	Coupler	CU-152/URM-3	2 3/4"	1 1/8"	1 1/8"	.002	4 1/2 oz.
1	Probe Cable	CG-409A/U	10' 4"	-----	-----	---	6.5 oz.
1	Probe Adapter	UG-201/U	-----	-----	-----	---	1 oz.
1	Test Prod	MX-936/URM	10"	3 5/16"	1 1/4"	.025	1 lb. 1 oz.
4	Plug Buttons	----------	-----	-----	-----	---	1 oz.
1	Set Equipment Spares	----------	-----	-----	-----	---	3 lbs.
1	A.C. Power Cable	CX-2374/U	8' 7"	-----	-----	---	13 1/2 oz.
1	Antenna	Navy type -66095	47 1/16"	23 3/4"	3 15/32"	---	18 lbs.

TABLE 1-2. SHIPPING DATA

SHIPPING BOX NO.	CONTENTS		OVERALL DIMENSIONS			VOLUME CU. FT.	WEIGHT LBS.
	NAME	DESIGNATION	HEIGHT	WIDTH	DEPTH		
1	Field Strength Meter	IM-84/URM-50	30 1/2"	19 1/2"	19 7/8"	6.8	112
2	Accessory Kit Antenna	MK-110/U Navy Type -66095	32"	27 3/4"	6"	3.12	38

TABLE 1-3. ELECTRON TUBE COMPLEMENT

TUBE	QUANTITY	DESCRIPTION
5654	1	sharp cut-off pentode
6AU6WA	3	sharp cut-off pentode
5814	2	twin triode
6005	1	beam power amplifier
OB2WA	2	voltage regulator
5Y3WGTA	1	full-wave rectifier

SECTION 2
THEORY OF OPERATION

1. GENERAL THEORY AND DESCRIPTION.

The AN/URM-50 Radio Frequency Monitor is used on shipboard to provide a means of monitoring signals from any one of the shipboard transmitters. Headphones are provided for aural monitoring and visual indication of relative amplitude is obtained from the Carrier Level meter. When installed in a fixed position it picks up the transmitter signals by means of its own antenna system and needs only to be tuned to the desired signal.

Removed from the shock mounts the monitor may be carried about as a portable unit to serve as a relative field intensity meter. In conjunction with its R.F. probe and cable, the monitor becomes a sensitive R.F. signal tracer and may be used to locate leakage of R.F. voltages in and around the transmitting equipment.

Once the monitor is correctly tuned and adjusted, visual monitoring at a point remote from the unit is made possible by means of an external meter with a 25-foot extension cable.

Antenna Navy type -66095 supplied with the Monitor has provisions for either mast or bulkhead mounting. The antenna cable is not supplied with the equipment. The nominal impedance of the antenna is 50 ohms.

The R.F. Probe contained in the accessory cabinet consists of a coaxial loop together with ten feet of RG-58A/U coaxial cable (CG-409A/U (10'4"), a removable 20-1 pad (CU-152/URM-3) and the necessary connectors and adaptors. The probe may be connected with or without the pad to the antenna connector of the monitor and used to trace R.F. leaks in or around the transmitters or transmission lines.

2. GENERAL CIRCUIT DESCRIPTION.

See Figure 2-1 for a functional block diagram.

The R.F. Monitor AN/URM-50 is designed to provide a check on any modulated or unmodulated R.F. signal within a frequency range of 0.3 to 400 megacycles. Relative field strength is indicated on the panel meter and the quality of a modulated signal may be checked by means of the headphones. Terminals are provided for connection to an oscilloscope if visual evaluation of the signal is desired. Basically the Field Strength Meter consists of four functional subdivisions as follows:

R.F. Circuits – Input Attenuator, coil turret assembly, R.F. Amplifier and crystal detector.

Audio Circuits – A.F. amplifiers, phones and oscilloscope outputs.

Meter Circuits – Chopper, carrier amplifiers, audio oscillator and meter rectifier circuits.

Power Supply – Full wave rectifier and voltage regulator circuits.

The following tubes are employed in the Field Strength Meter.

V101	R.F. Amplifier	5654
V102	1st Audio Amplifier	6AU6WA
V103A	2nd Audio Amplifier	1/2 5814
V103B	Audio Output	1/2 5814
V104	Audio Oscillator	6005
V105	1st Carrier Amplifier	6AU6WA
V106	2nd Carrier Amplifier	6AU6WA
V107A	Meter Rectifier	1/2 5814
V107B	Carrier Amplifier-Limiter	1/2 5814
V108	Voltage Regulator	OB2WA
V109	Voltage Regulator	OB2WA
V110	Full Wave Rectifier	5Y3WGTA

3. CIRCUIT ANALYSIS.

The following paragraphs discuss in detail the circuitry of the R.F. Monitor AN/URM-50. In general the discussion follows the outline presented on Figure 2-1, the functional block diagram.

a. INPUT ATTENUATOR *(See Figure 2-2).*– The Monitor is used for checking modulated or unmodulated R.F. signals in the frequency range of 0.3 to 400 megacycles. The R.F. voltage from the antenna (or the test probe when used) comes into the input attenuator via antenna connector J106. This attenuator is made up of two switch sections S101A and S101B together with their associated resistors. It is operated by the same shaft as the chopper attenuator. In positions 1 through 6 the input attenuator functions to prevent overloading of the R.F. amplifier. In positions 7 through 10 it

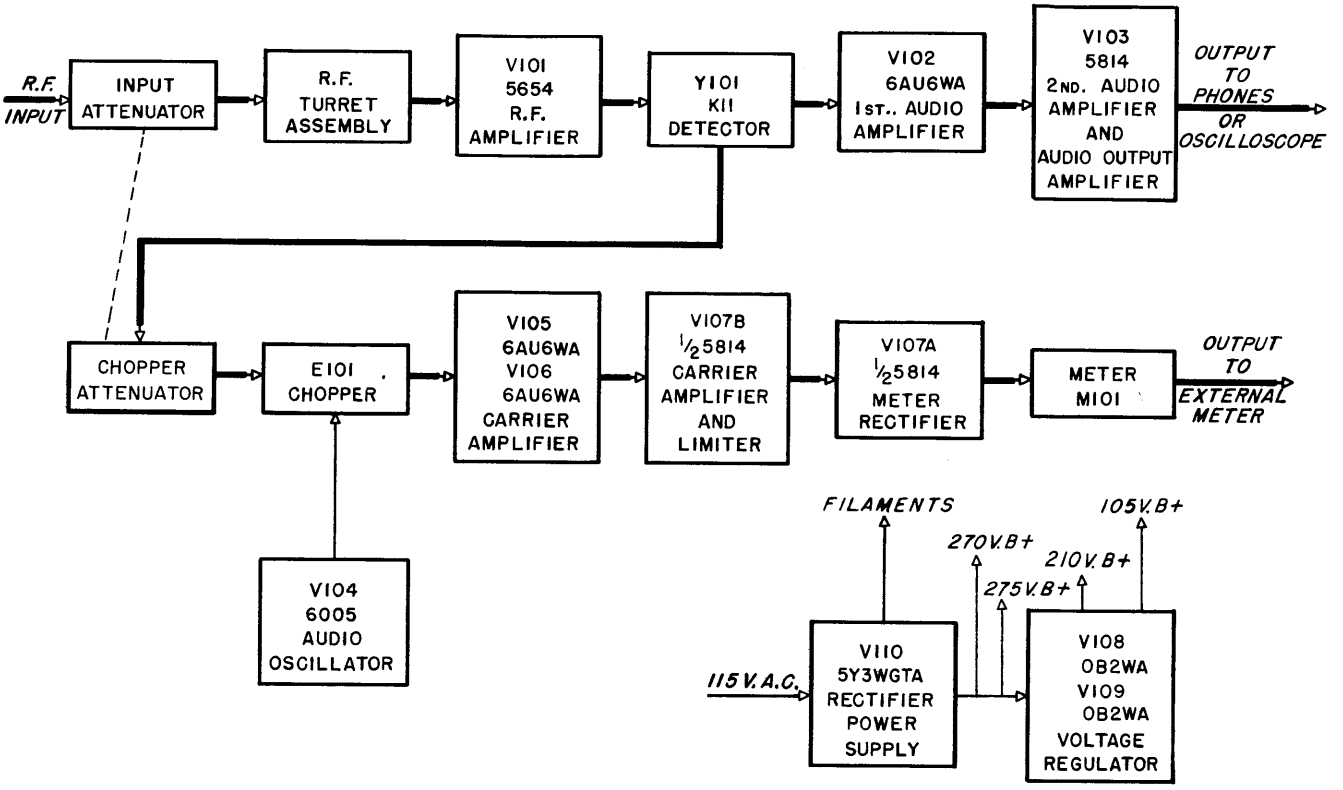


Figure 2–1. Functional Block Diagram

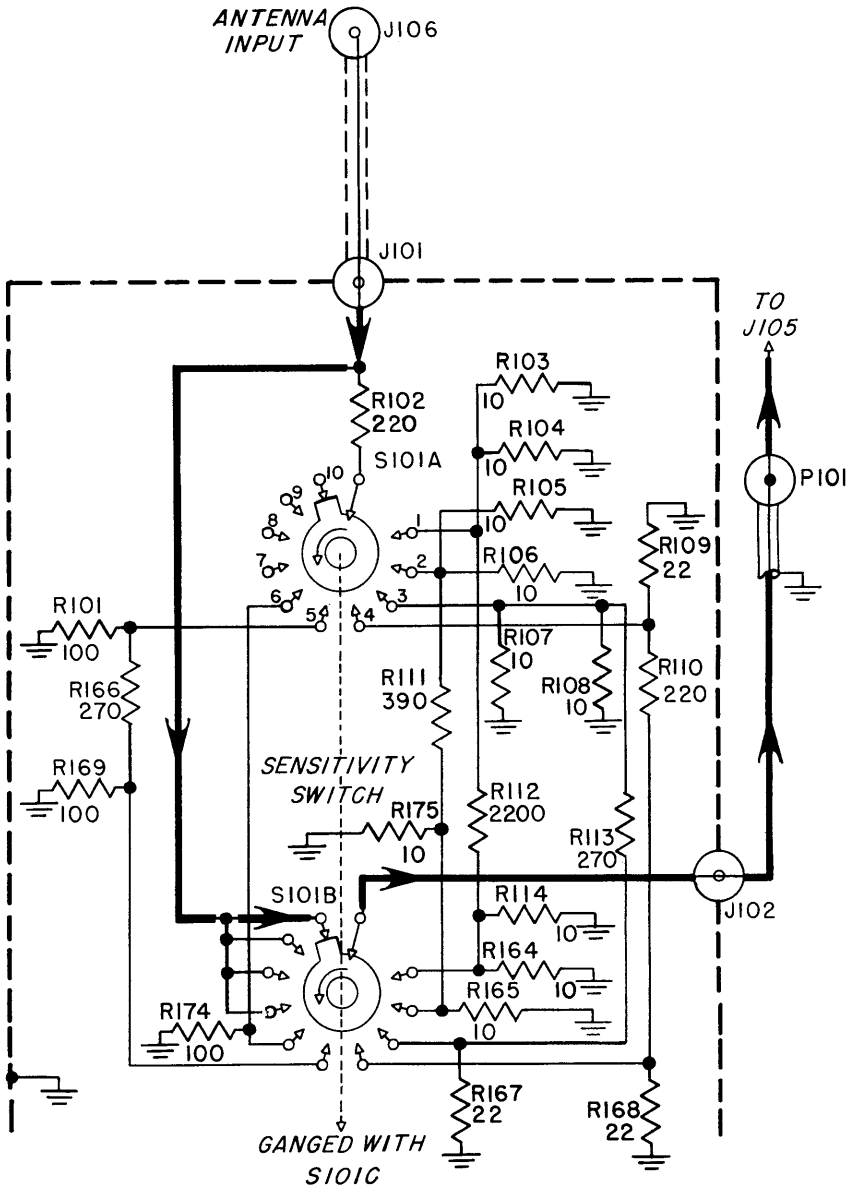


Figure 2–2. Input Attenuator, Simplified Schematic Diagram

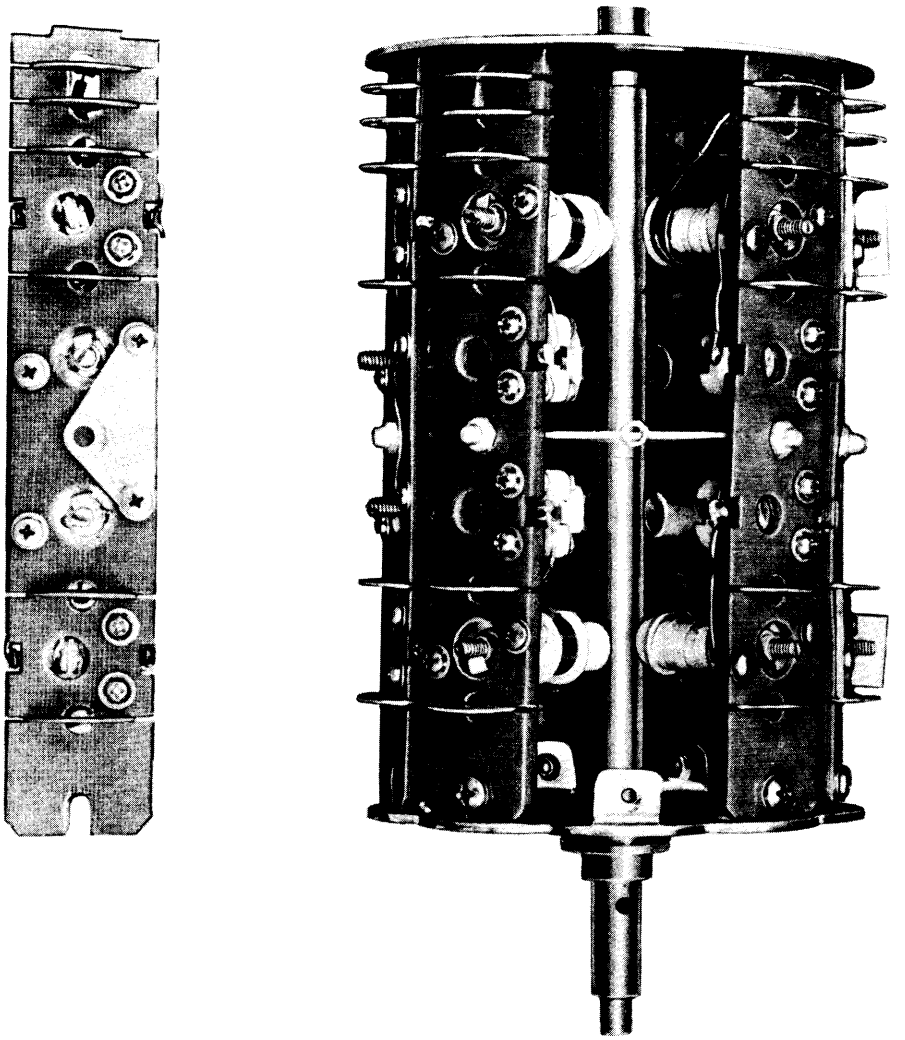


Figure 2–3. Turret Assembly, One Strip Removed

provides no attenuation.

b. R.F. TUNER ASSEMBLY.–The signal leaves the attenuator through connector adaptor J102 and is carried by coaxial cable to the R.F. tuner assembly through J105. The turret carries a series of nine removable tuner assemblies. See Figure 2-3. Each of these assemblies contains all the inductances and trimmers for one band. The turret, complete with nine tuner assemblies, covers the frequency range of 0.3 to 400 megacycles. Contact with the inductances is made by means of silver plated knife-blade contacts mounted on the removable tuner strips. These blades are engaged by silver plated self-wiping, spring clips on the tuning capacitor. The turret is operated from the front panel and the frequency band in use is indicated by a masking device which covers all of the tuning dial except the band being used. The four-section tuning capacitor C109 is part of the R.F. Tuner Assembly and tuning is accomplished by means of an anti-backlash gear drive operated from the front panel.

c. R.F. AMPLIFIER *(See Figure 2-4).*–A type 5654 sharp cut-off pentode is used as the R.F. Amplifier V101. From J105 the signal is coupled to one of the grid inductances (T101 through T108) or L101 depending upon the position of the Band Change control. This coupling is accomplished by means of inductor L115 for band 9 and the primary of the respective transformer for bands 1 through 8. For any of the first 8 bands inductor L115 appears as a short circuit due to its very low inductance. The secondaries of transformers T101 through T108 are tuned by tuning slugs and capacitors C101 thru C108. Bands 1 through 8 have their secondaries shunted by resistors R177 through R184, respectively, to equalize the gain of all bands. Bands 1 through 7 use iron slugs while band 8 uses a

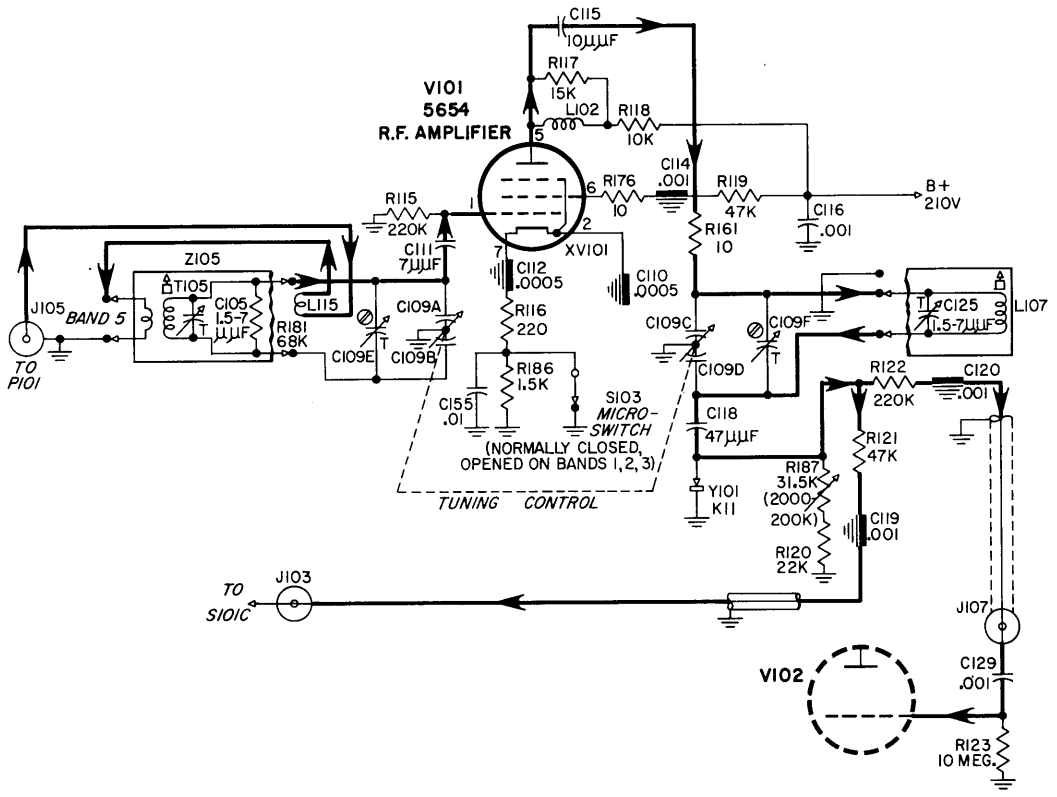


Figure 2–4. R.F. Amplifier Stage, Simplified Schematic Diagram

brass slug. The band 9 inductance L101 consists of a U-shaped brass channel. Tuning is accomplished by means of a movable vane.

The signal is capacitively coupled from the input transformer to the grid of V101 via capacitor C111. Resistor R115 serves as the grid resistor. Inductance L102 is used in the plate circuit to tune out the lead inductance and afford better stability on the high frequency bands. The plate of V101 is shunt fed with R117 and R118 as the plate resistors, L102 as the plate choke and C115 as the D.C. blocking capacitor. The L.C. tuned circuits for the plate are comprised of coils L103 through L111 and trimmer capacitors C121 through C128. The inductance of the coils is adjusted by means of powdered iron slugs for bands 1 through 7, by means of a brass slug for band 8 and a brass tuning vane for band nine. The screen dropping resistor R119 is bypassed by capacitor C114. Cathode bias is supplied by resistors R116 and R186. The microswitch S103 is connected across R186 so that the additional bias supplied by this resistor is shorted out when S103 is closed. Cutouts on the turret allow S103 to open on bands 1, 2 and 3 only so that the normally high gain of these low frequency ranges will be reduced to the same level as the higher frequency bands. The cathode is bypassed by capacitors C110 and C112.

d. CRYSTAL DETECTOR.–Germanium diode Y101, type K11, is used to rectify the R.F. voltage from the plate circuit of V101. The amplitude of the rectified voltage is stabilized, with respect to temperature changes, by means of resistor R120 in series with thermistor R187. The thermistor has a negative characteristic so that its resistance decreases with an increase in temperature. In this manner, compensation is provided for those components of the circuit whose characteristics are inherently positive. This rectified voltage is connected through the R.C. filter R121 and C119 to the detector attenuator network. From the crystal diode Y101 the rectified voltage is also fed through the filter composed of R122 and C120 and coupled to the grid of the first audio amplifier V102 by means of capacitor C129.

e. AUDIO AMPLIFIER *(See Figure 2–5).*–The three-stage audio amplifier is composed of a 6AU6WA sharp cut-off pentode V102 and a 5814 twin triode V103. The triode sections of V103 are connected in cascade. R123 is the grid resistor for V102 and R125 is the plate load resistor. R124 is the screen dropping resistor by-passed by capacitor C130. The signal is coupled to the grid of V103A by way of blocking capacitor C132 with the audio gain control potentiometer R126 serving as the grid resistor.

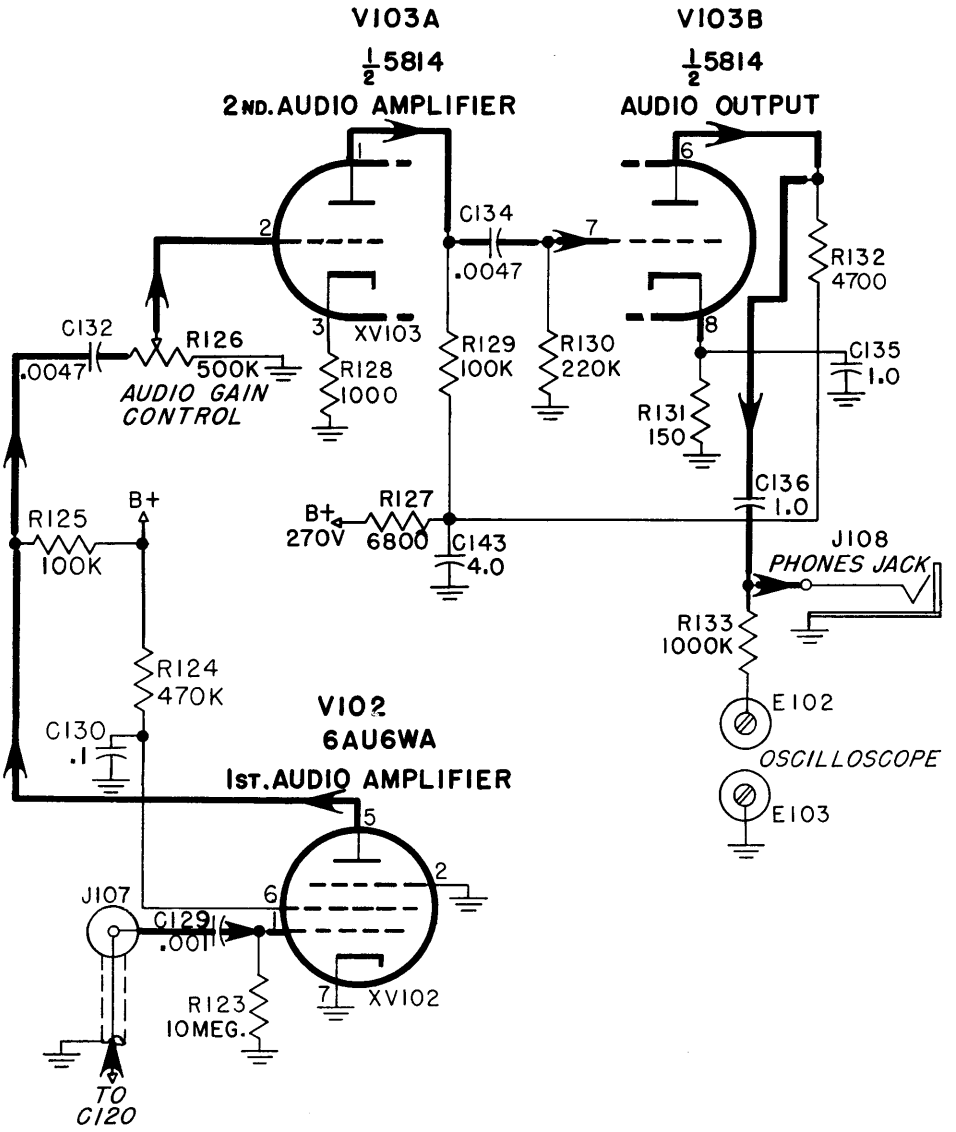


Figure 2–5. Audio Amplifier Stages, Simplified Schematic Diagram

The cathode of V103A is biased by resistor R128. No by-pass capacitor is used so that the stage may be slightly degenerative.

The output section of the tube (V103B) operates Class A due to the value of the cathode resistor R131 with C135 as the by-pass capacitor. The signal reaches the output grid via C134 with R129 acting as the V103A plate load and R130 the grid resistor for V103B. R132 serves as the plate load and the audio voltage is connected to Phones jack J108 via capacitor C136. Resistor R127 in conjunction with capacitor C143 acts as a B+ filter and, at the same time, drops the plate voltage for V103A and B to the correct value. A one-megohm resistor, R133, connected to the output side of C136 provides a high impedance point for connection to the oscilloscope terminal E102.

f. CHOPPER ATTENUATOR *(See Figure 2-6).*– The rectified R.F. voltage from the type K11 diode Y101 is connected through the filter R121 and C119 to the chopper attenuator composed of S101C and its associated resistors. Nine steps of attenuation are provided. In order to prevent amplifier overload a portion of the attenuation takes place at the input circuits preceding the R.F. amplifier. The remainder is accomplished by the section of the attenuator in the chopper input circuit. Both attenuator networks are actuated by a common shaft and the combination provides an input field strength range of from 50 microvolts to 30 volts of R.F.

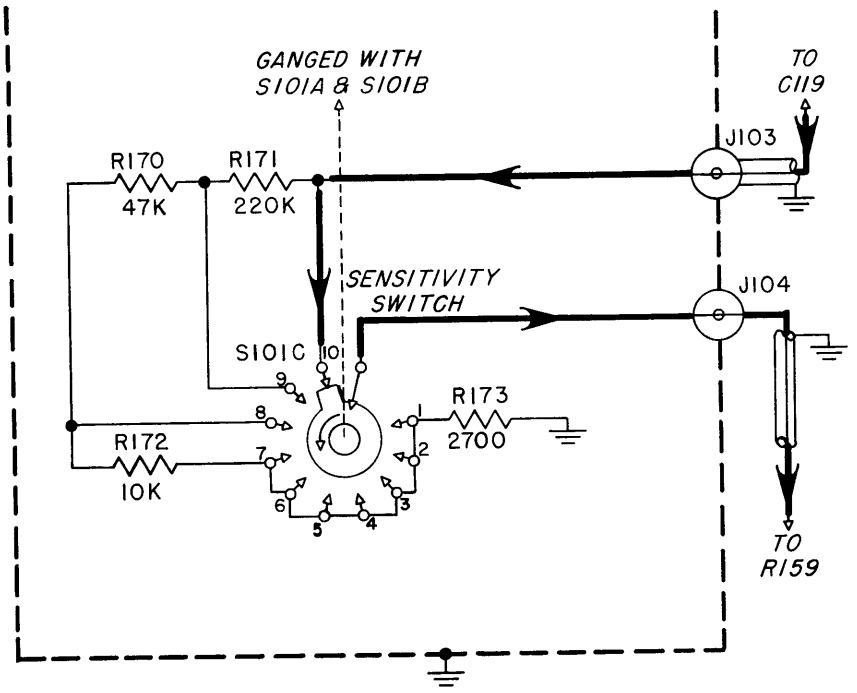


Figure 2–6. Chopper Attenuator Network, Simplified Schematic Diagram

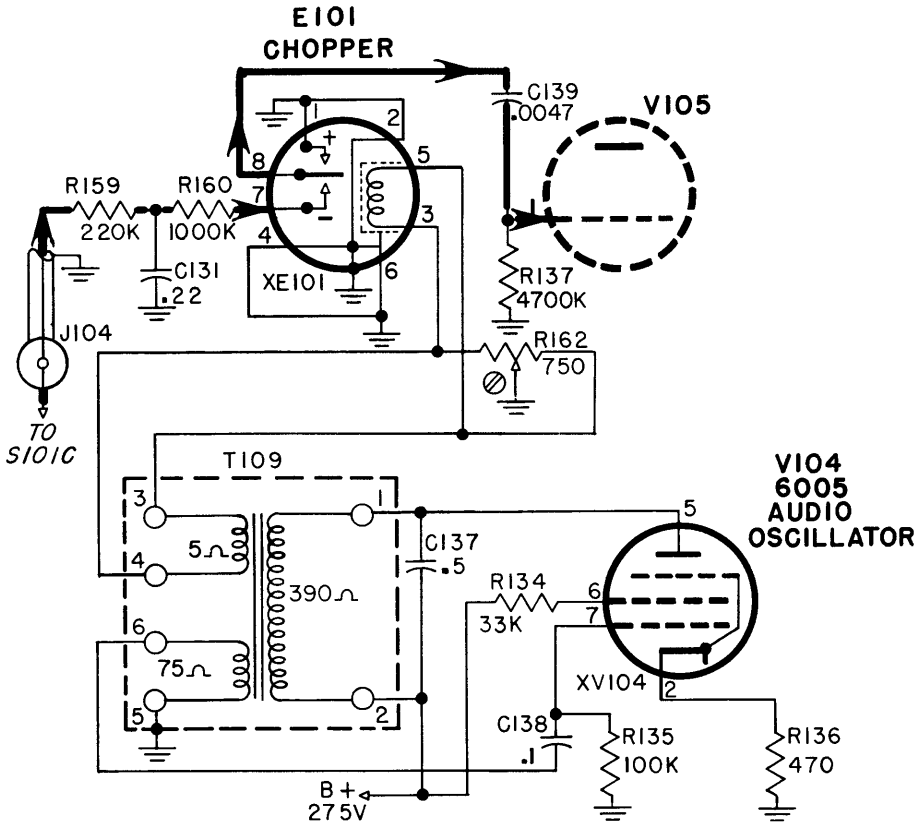


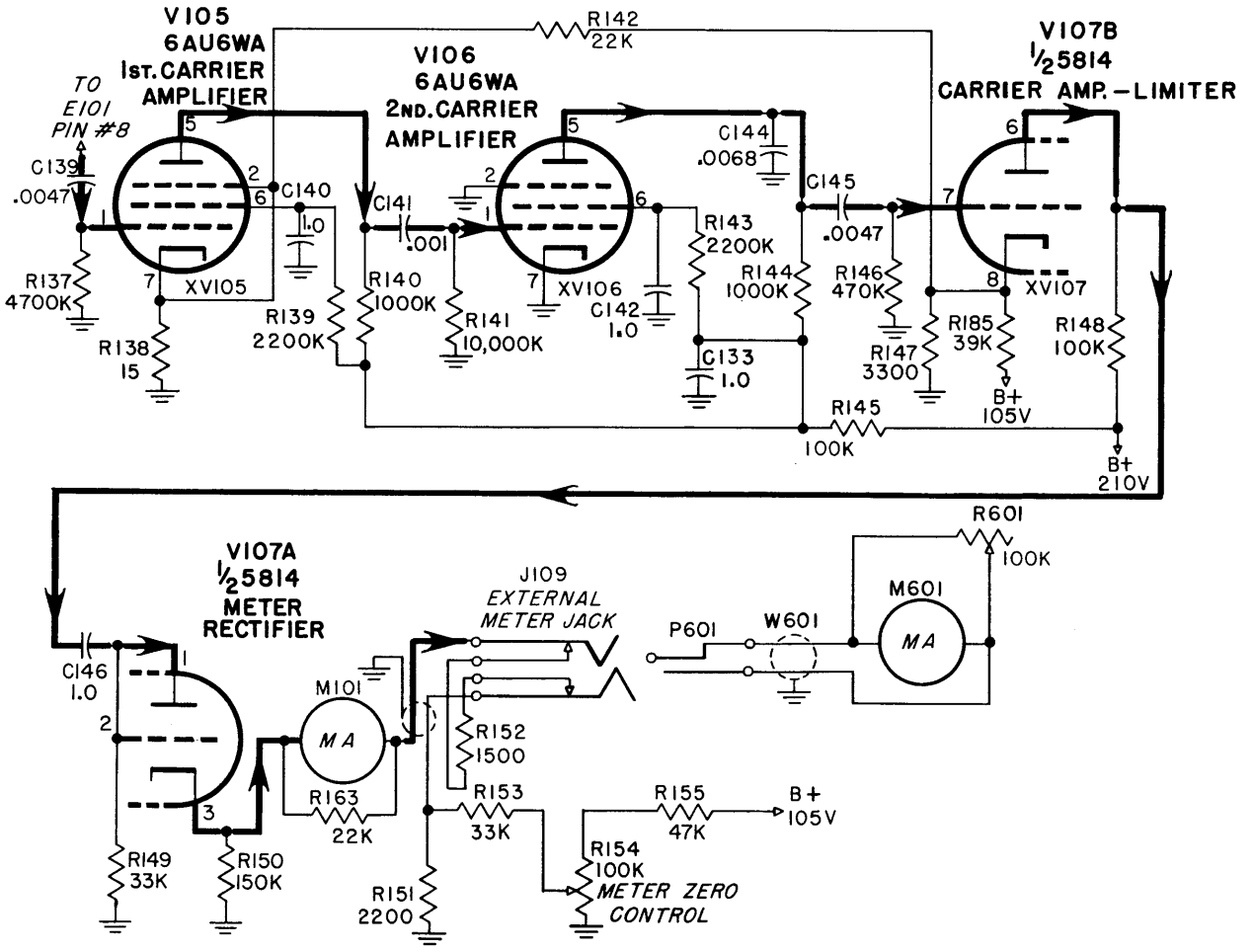
Figure 2–7. Chopper and Audio Oscillator, Simplified Schematic Diagram

signal.

g. CHOPPER AND AUDIO OSCILLATOR *(See Figure 2-7).*—The rectified voltage from the attenuator is further filtered by the resistive-capacitive network composed of R159, R160 and C131. The resultant D.C. voltage is connected to one side of the chopper E101. The chopper functions to change the rectified signal voltage to an A.C. signal with a frequency of 90 cycles per second. Essentially it consists of a metal reed mounted in the field of an actuating coil. A 90 C.P.S. voltage applied to the coil from the audio oscillator V104 develops the flux which drives the reed at a 90 cycle rate. At one end of its excursion the reed makes contact with chopper pin 7 which is connected to the rectified R.F. signal voltage. At the opposite end of the swing the reed contacts pin 1 which is grounded. Since the reed is connected to the control grid of carrier amplifier V105 the voltage at the grid is switched from signal potential to chassis potential at a 90 cycle rate. The exact frequency is not critical since the amplifier response is sufficiently flat over a wide band of frequencies in the vicinity of 90 cycles.

The audio oscillator operates in a conventional Hartley circuit. The primary of transformer T109 in conjunction with capacitor C137 determines the operating frequency. The secondary winding of T109 which terminates at pins 5 and 6 supplies the feedback voltage necessary to sustain oscillation. R135 is the grid bias resistor, R134 is the screen voltage dropping resistor and R136 is the cathode bias resistor. The oscillator output voltage appears across a third winding of T109, which, in turn, is connected to the activating coil of the chopper.

h. CARRIER AMPLIFIER *(See Figure 2-8).*—Since the grid of the first carrier amplifier V105 is connected to the vibrating reed of the chopper it is being swung between the rectified D.C. signal voltage at pin 7 of the chopper and pin 1 which is at chassis potential. The grid voltage, therefore, varies between the value of the signal voltage and chassis potential at a 90 cycle rate. Because of the polarity of the crystal diode Y101 the signal voltage is



Figur 2–8. Carri r Amplifi r, Simplifi d Sch matic Diagram

always negative with respect to the chassis. The contact potential of the tube creates sufficient bias to maintain Class A operation of this stage.

The 90-cycle voltage is coupled from the plate of V105 to the grid of the second carrier amplifier V106 via capacitor C141. R140 is the V105 plate load and R141 is the V106 grid bias resistor.

The signal is further amplified by V106 and coupled to the amplifier-limiter V107B by means of plate load R144, coupling capacitor C145 and grid resistor R146. C144 in the plate circuit of V106 serves to by-pass to ground any frequencies above a few hundred cycles. Cathode bias for V107B is developed across cathode resistor R147 and a portion of this voltage is fed back to the cathode of V105 through resistor R142. A small amount of positive voltage is supplied to V107B cathode through resistor R185 to establish a fixed minimum bias.

The plate load resistor R148 is of sufficiently high value to allow clipping to take place in the plate circuit of V107B. When a signal of amplitude high enough to cause damage to the meter reaches the grid of V107B the plate reaches saturation and no further increase in plate current is possible. In this manner the meter movement is protected against overload and burnout.

The signal voltage at the plate of V107B reaches the meter rectifier by means of capacitor C146 and the voltage drop developed across R149. The diode-connected half of the 5814 twin triode, V107A, rectifies the 90-cycle A.C. voltage and the resultant D.C. voltage is developed across the load resistor R150. The microammeter M101 reads the value of this direct current and, since this value is determined by the amplitude of the amplified and rectified R.F. carrier, the meter indicates the relative strength of the transmitted signal.

The potentiometer R154 serving as a variable voltage divider in conjunction with R151, R152, R153 and R155 supplies a small amount of positive D.C. voltage to the meter in opposition to the negative voltage developed by the signal. A small amount of thermal noise is inherent in any high gain amplifier and the bucking voltage is adjusted to give a zero reading on the meter in the absence of a signal.

i. AMMETER ME-80/URM-50.–Ammeter ME-80/URM-50 is packed in the accessory cabinet. This meter is equipped with a 25-foot cable. Adjustable resistor R601 allows the external meter to be adjusted so that both meter readings are equal. Meter Multiplier R152 in the Field Strength Meter chassis is automatically removed from the circuit when the external meter plug is inserted. This makes it possible to connect the external meter without affecting the panel meter reading.

j. POWER SUPPLY *(See Figure 2-9).*–All of the heater and plate voltages required by the Field Strength Meter are furnished by the built-in power supply. T110 is the power transformer which has a 115 volt, 60 to 400 cycle primary. Three secondaries are provided: a center-tapped 550-volt, 55 ma. high voltage winding, a five-volt, 2-amp. winding for the rectifier (V110) filament and a 6.3 volt, 3-amp. winding for the heaters of all the other tubes.

The rectifier tube is a type 5Y3WGTA full-wave, high vacuum type. Rectified voltage is taken from filament pin 8 and filtered by means of filter choke L112 and filter capacitors C147 and C148. Two OB2WA voltage regulator tubes V108 and V109 together with the dropping resistors R156 and R157 provide regulated potentials of 105 and 210 volts for stable operation of the R.F. amplifier and meter amplifier circuits.

The 115-volt A.C. power is connected to the power transformer primary through the Power Input connector J110, one section of S102, fuses F101 and F102 and the R.F. filter comprised of L113, L114 and C149 through C152. Filament indicator lamp I104 indicates when power is applied to the transformer. The other section of S102 connects the high voltage center tap of T110 to ground thus completing the B+ circuit. Plate indicator lamp I103 lights when this circuit is completed.

Variable resistor R158 is connected across the 6.3-volt heater winding with the movable contact grounded to balance the heater circuits. This is a non-operational control set at the factory to minimize the possibility of erroneous meter readings caused by unbalance in the heater circuits. Dial lamps I101 and I102 are energized from the heater winding and serve to illuminate the tuning dial.

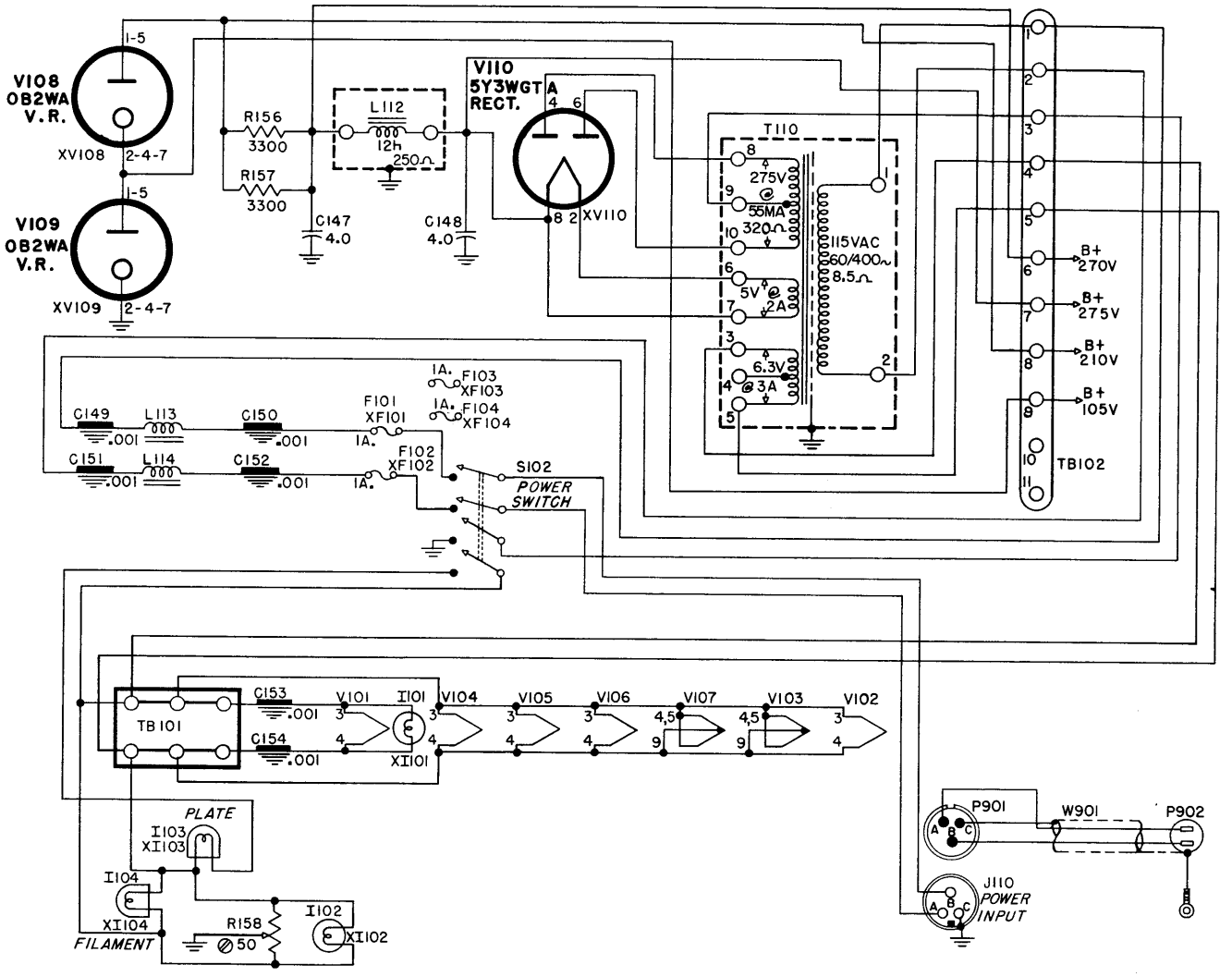


Figure 2–9. Power Supply, Simplified Schematic Diagram

SECTION 3
INSTALLATION

1. UNPACKING.

The Field Strength Meter, two Instruction Books and the Accessory Kit are contained in one crate and the Antenna in a second crate. Each crate is carefully packed for overseas shipment. Each unit is contained in a moisture-proof barrier carton having an 18 months supply of Silica Gel. Do not open the cartons until the equipment is being installed as the Silica Gel will saturate rapidly upon exposure to humid atmosphere. The recommended procedure to employ in unpacking the equipment is as follows:

Step 1. Place the packing crates so that the lettering "this side up" is uppermost.

Step 2. Cut the metal straps around the crates and remove the cover which is now uppermost. The cover is secured by nails and an ordinary nail puller or claw hammer may be employed.

Step 3. Remove sufficient filler material from the crates to permit access to the cartons and remove the units.

Step 4. Inspect all units for any damage incurred during shipment.

Step 5. The antenna is packed in a separate case and its unpacking will follow the procedure outlined above in steps 1 through 3.

Step 6. The packing crates and packing material should be saved in event the equipment has to be repacked and shipped at a later date.

2. INSTALLATION.

See Figure Nos. 3-1 and 3-2 for mounting and overall dimensions of the Field Strength Meter and Accessory Kit.

The IM-84/URM-50 Field Strength Meter is equipped with shock mounts for bench mounting. Its cover must be removed to permit the installation of incoming cables and ensuing operation. To remove the cover, release the two latch fasteners on the top of the cabinet, lower the cover to a horizontal position and slide to the left until the separable hinges are disengaged.

When portable operation is desired the shock mounts may be removed from the cabinet. Remove the chassis assembly from the cabinet according to Figure 3-3. Remove the four nuts and lockwashers which secure the shock mounts. Four rubber plug buttons O-135 (See Figure 1–1) are packed in the Accessory Kit. Fasten these to the Field Strength Meter cabinet through the mounting holes vacated by the shock mounts. This is necessary to preserve the drip-proof feature of the Field Strength Meter. The shock mounts may be left secured to the bench or stored in the rack provided for them in the cabinet of the Accessory Kit.

a. POSITION OF THE FIELD STRENGTH METER.–All external cable connections are made on the front panel so that no consideration need be given to space at the back and sides of the cabinet. Approximately two feet of access space is required in front of the unit to allow the removal of the cover and the removal of the chassis for servicing. Consideration should be given to the convenience of connecting incoming cables such as the antenna transmission line and A.C. line. The Accessory Kit should be stored in a suitable place convenient to the equipment.

b. ANTENNA INSTALLATION.–The antenna supplied as a part of the R.F. Monitor may be mounted directly on a mast or bulkhead of the vessel. The exact antenna location will vary in accordance with the type of vessel on which it is used. It is to be noted that existing antenna installations aboard the different vessels within a given type are varied and therefore the preferred location for the Antenna -66095 probably would not be the same for two vessels of one type. The following instructions and Figure 3–6 are not intended to be specific but rather general in scope and flexible in application. The best location is near the antennas of the VHF, UHF, and lower power transmitters. However, efforts should be made to minimize the effect of the monitor antenna on the transmitting antennas regarding mutual impedance and directivity. Preferred locations are within 100 feet of UHF antennas but not closer than 12 to 15 feet if on the same horizontal plane.

(1) The location of Antenna -66095 for the AN/URM -50 is not critical but should be installed within 100 feet of the UHF or low-powered transmitter antennas.

(2) Maintain line-of-sight clearance to the UHF antennas. Prevent shielding by ship's structures, such as platforms, masts, bracing, or other large metal assemblies.

(3) Keep the length of cable, RG-10/U, between the antenna and the AN/URM-50 to a minimum.

(4) Do not locate antenna within 6 feet of mast or other large metal assemblies.

(5) Keep spacing between monitor antenna and any part of antennas of high-power MF and HF transmitters greater than 8 feet.

(6) The preferred location of the monitor antenna on a destroyer, type DD, is illustrated in Figure 1 of drawing RAA10D7 532. This installation may be forward or aft of the mast or at an acute angle with the center line of the ship.

(7) The installation on the cruiser, Figure 2, is on the yardarm of the foremast 6 or 8 feet from the mast. If there are no UHF antennas on the stub mast atop the foremast, the monitor antenna may be installed similar to that of Figure 1.

(8) On the carrier, type CV, the preferred location is on the radar mast on the island. The antenna may be aft of the mast as shown in Figure 3 or may be forward if space is available.

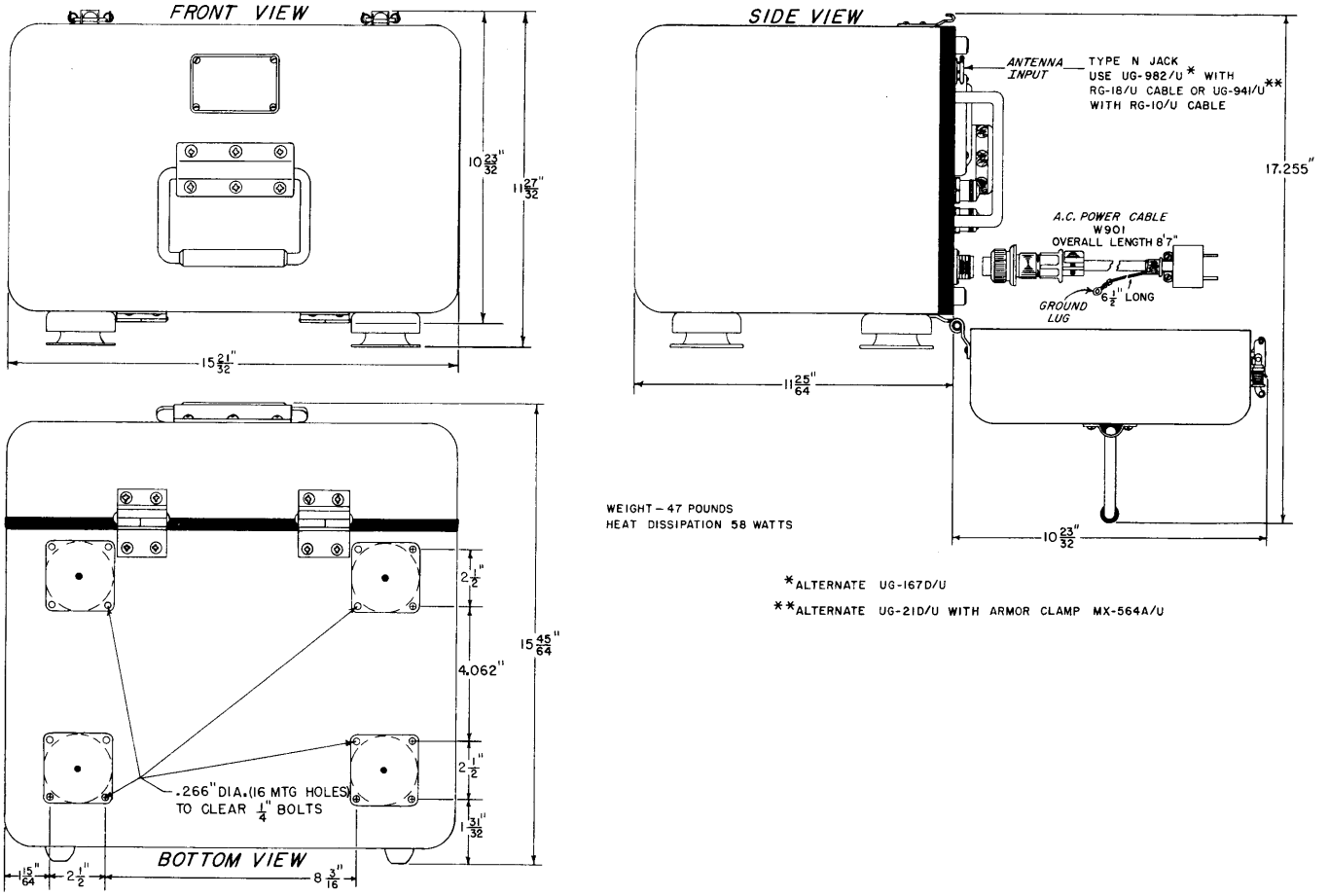
(9) The preferred location on communications ships, type AGC, is on the yardarm on the radar mast amidship. The antenna dipoles are 4 feet from the yardarm and 6 to 8 feet from the mast, (Figure 4).

The antenna mounting plate may be used as a template for laying out the four mounting holes required. The antenna mast may be adjusted approximately three inches vertically in its mounting bracket by loosening the four clamping bolts in the bracket. See Figure 3–4.

Connect the antenna to the Field Strength Meter by means of a 50-ohm cable to be supplied by the installing activity.

c. INTERCONNECTIONS.–All required connections to the Field Strength Meter are illustrated on Figure 3–5.

(1) ANTENNA CONNECTION.–The antenna transmission line should be terminated in a type N



Figur 3–1. Outlin Dim nsi nal Drawing, Field Str ngth M ter IM-84/URM-50

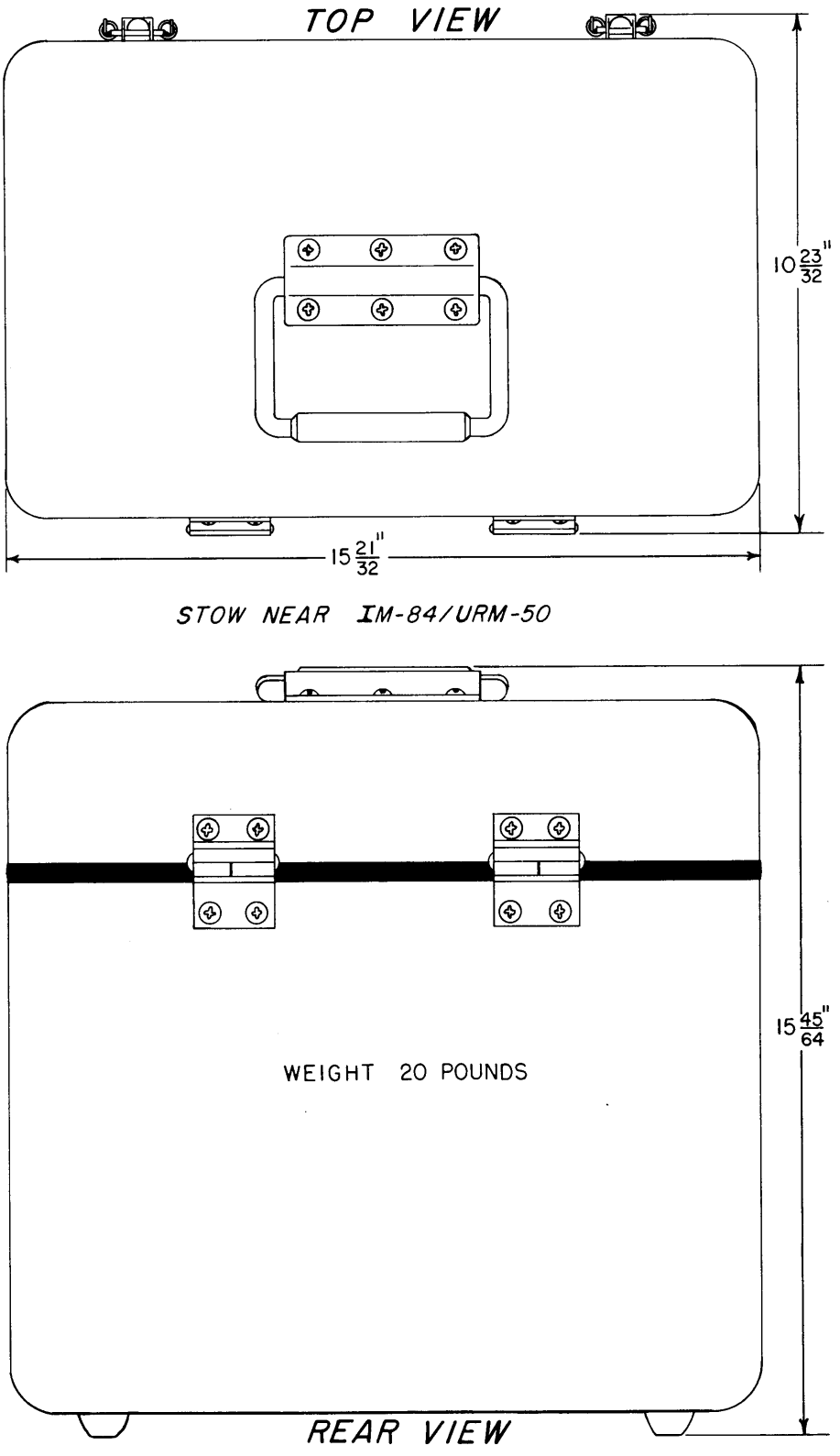
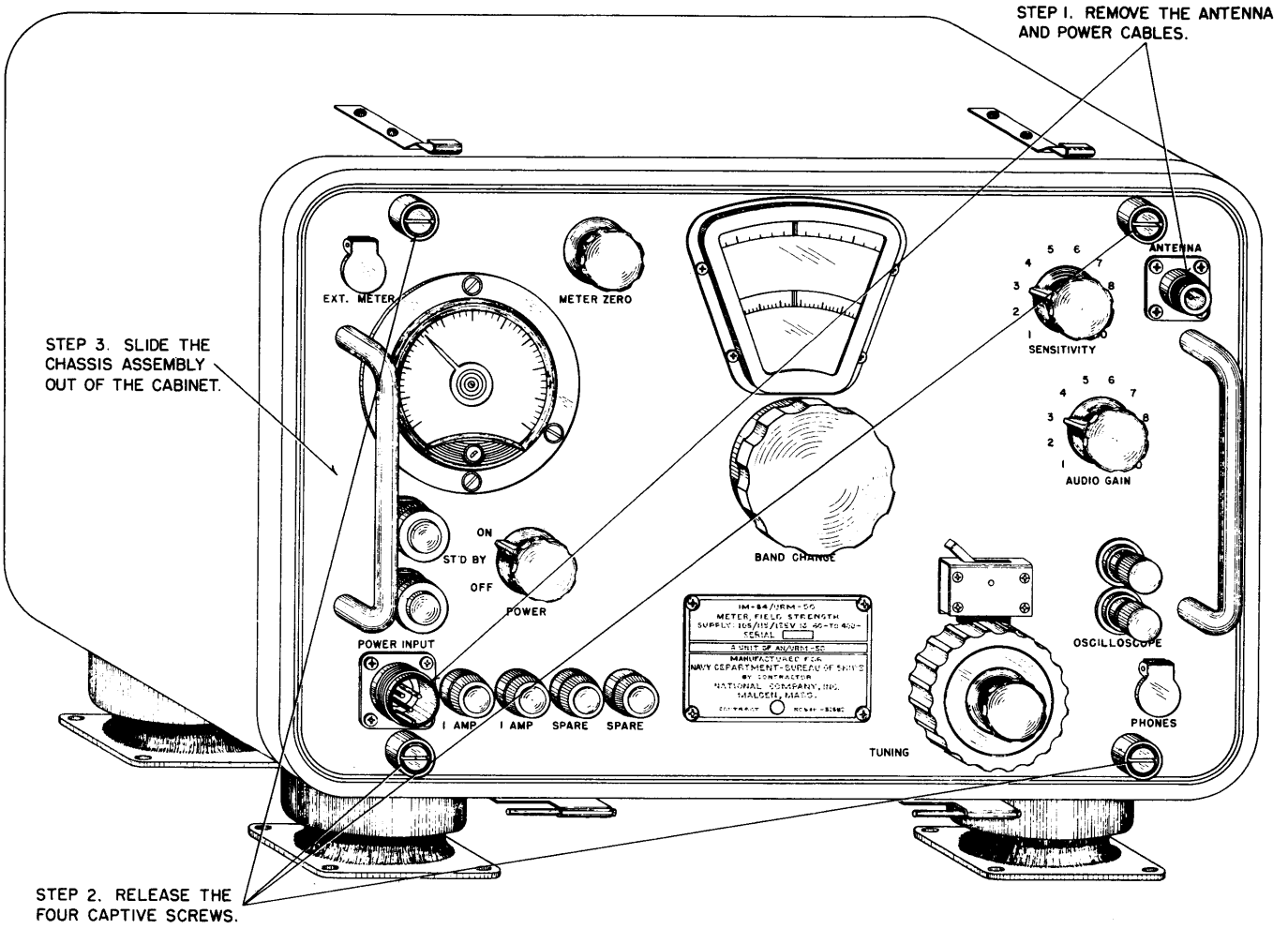


Figure 3-2. Outline Dimensional Drawing, Accessory Kit MK-110/U



Figur 3–3. Method of Removal of Chassis Assembly from Cabinet, Field Strength Meter IM-84/URM-50

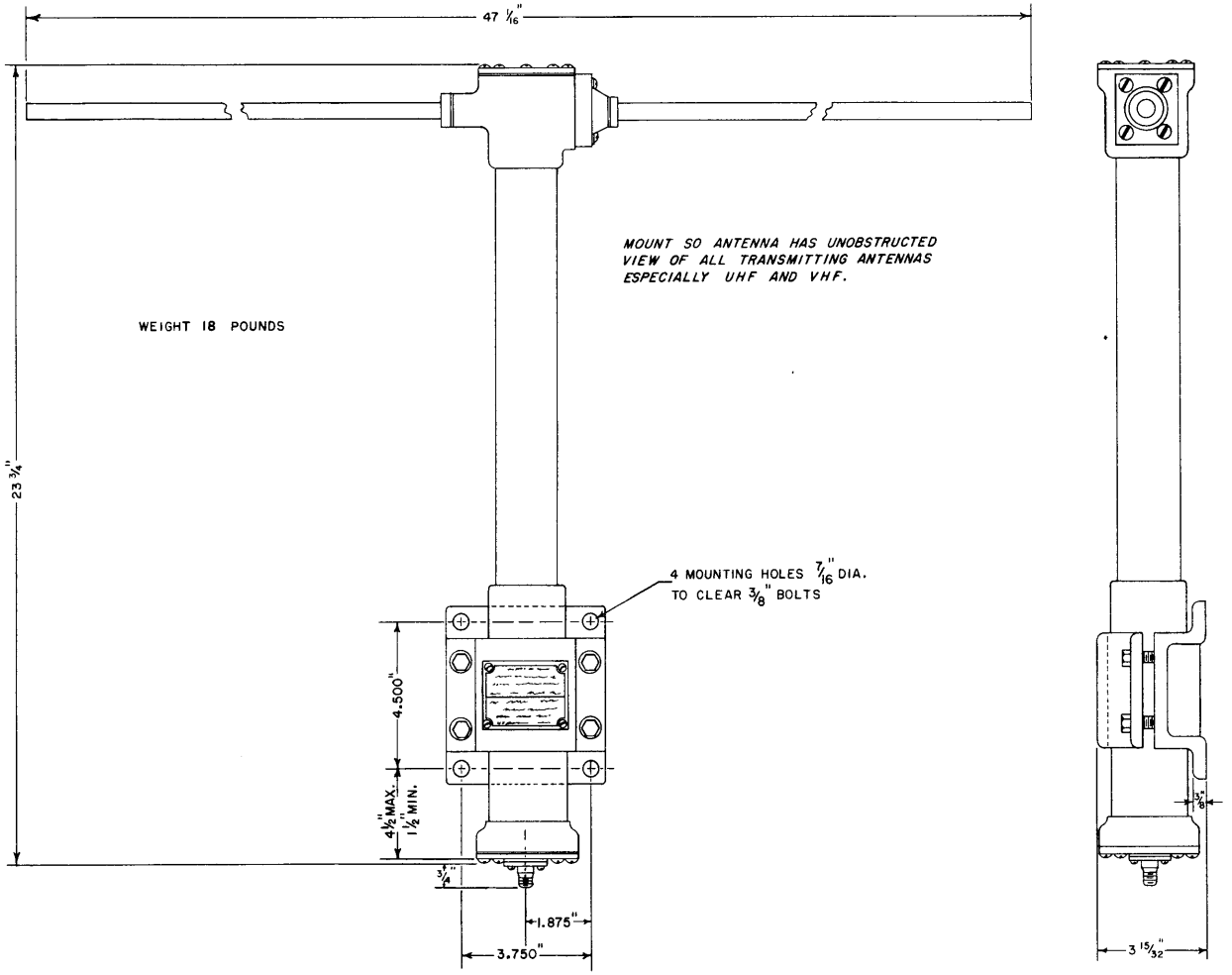


Figure 3–4. Outline Dimensional Drawing, Antenna Navy type -66095

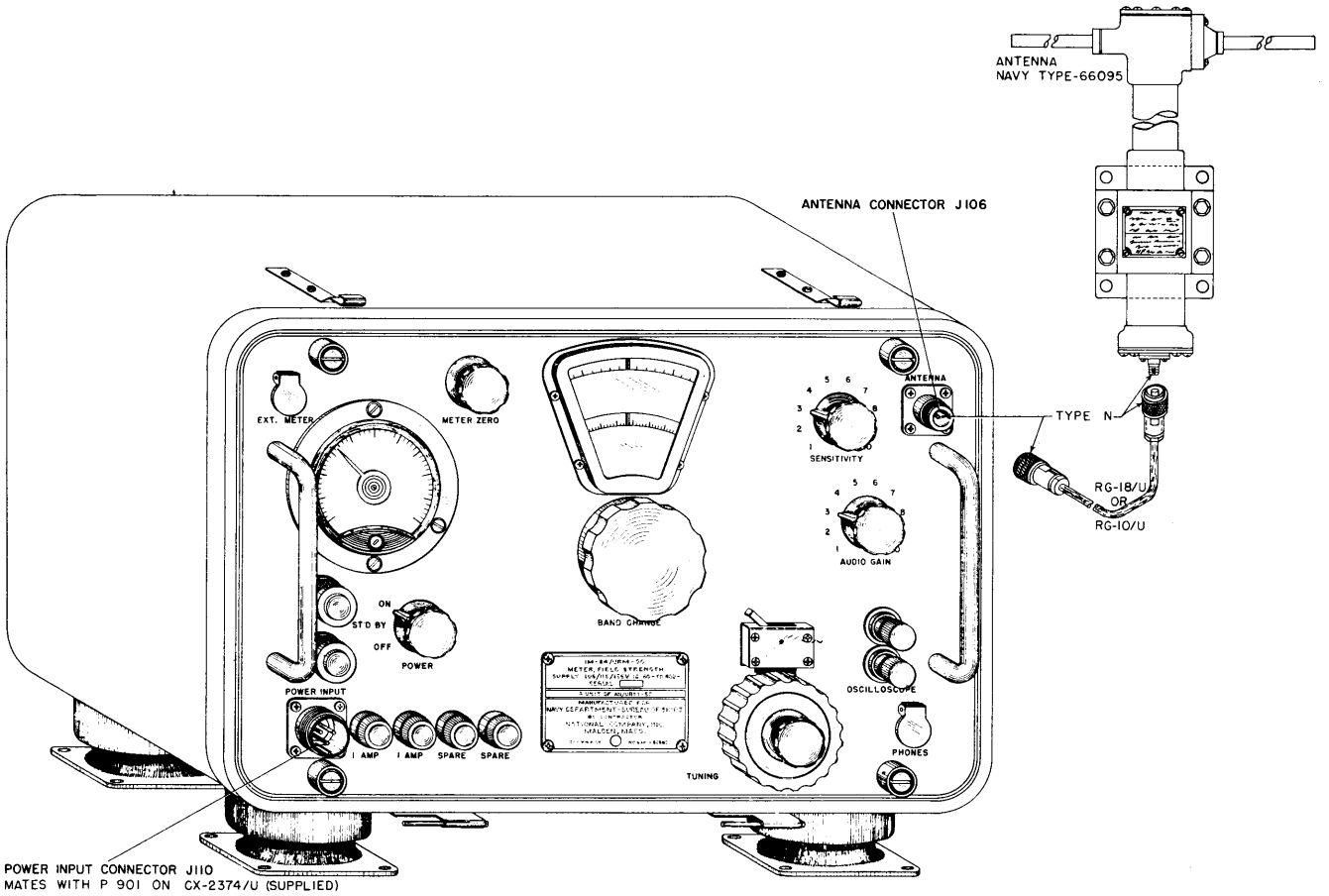


Figure 3–5. External Connections, Field Strength Meter IM-84/URM-50

plug connector to mate with the antenna input receptacle J106, a type UG-58/U (Type N) female connector, which is mounted at the upper right hand corner of the front panel of the Field Strength Meter IM-84/URM-50.

(2) A.C. POWER CONNECTION.—An eight-foot power cord CX-2374/U is supplied with the monitor. This cord is terminated at one end with a non-polarized two contact A.C. plug suitable for connection to a standard 115 volt A.C. receptacle. Attached to this plug is a lug for connection to a suitable ground source. The other end of the cord is terminated in a type AN connector (AN 3106B-14S-1S) (P901) which mates with the Power Input connector J110 at the lower left corner of the front panel.

(3) AUDIO OUTPUT CONNECTIONS.—A phones jack is mounted on the front panel to accept a standard JAN type PJ055B two-circuit phones plug on the headset supplied with the equipment. In addition, a pair of binding posts are front panel mounted for oscilloscope connections.

3. OVERALL PERFORMANCE TEST.

After installation has been completed as outlined in paragraph 2 of this section, an overall performance test of the AN/URM-50 Monitor is required before the monitor can be turned over to operating personnel.

Equipment required includes a Multimeter TS-352/U Series, an R.F. Signal Generator Set AN/URM-25 Series and an R.F. Signal Generator Set AN/URM-26 Series to cover the frequency range of 0.3 to 400 megacycles.

Proper functioning of the Field Strength Meter is indicated when an output signal of correct amplitude is obtained at the output for a specified input. This condition is determined in the following manner:

Step 1. Connect Signal Generator AN/URM-25 to the antenna input jack J106 using the Antenna Simulator SM-35/URM-25.

Step 2. Connect Multimeter TS-352/U Series to the Phones jack J108 with a 1/2 watt 680 ohm resistor (SNSN N16-R-49841-0971) in parallel with the Phones jack.

Step 3. On the field strength meter set the Band Change control at Band 2, the Sensitivity switch at 10, the Audio Gain control at 10 and the Tuning dial at 1 megacycle.

Step 4. On the signal generator set the frequency at 1 megacycle and the modulation at 30% at 400 cycles per second.

Step 5. Tune the field strength meter to exact resonance as indicated by maximum deflection on the Carrier Level meter. It may be necessary to retard the signal generator output while tuning to prevent off scale readings.

Step 6. Adjust the output of the signal generator to produce a reading of exactly 50 on the Carrier Level meter of the field strength meter.

Step 7. Proper functioning of the field strength meter is indicated by a reading of approximately 650 microvolts at the output of the signal generator and approximately 0.55 volts on the multimeter.

Step 8. Increase the output of the signal generator to give a full scale meter reading on the field strength meter.

Step 9. Set the Sensitivity switch of the field strength meter at 9.

Step 10. The reading on the field strength Carrier Level meter should drop to 1/5 of full scale. (Reading of 20 plus or minus 10 scale divisions).

Step 11. Repeat steps 8, 9 and 10 for the remaining 8 positions of the Sensitivity switch. If the attenuator is functioning properly each step of attenuation will be evidenced by an 80% decrease in the field strength meter reading.

The foregoing completes the performance test and if proper operation is indicated, the equipment can be turned over to operating personnel.

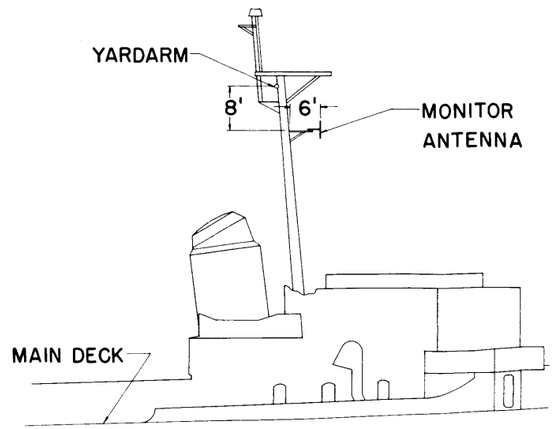


FIGURE 1 TYPICAL INSTALLATION, DESTROYER, DD

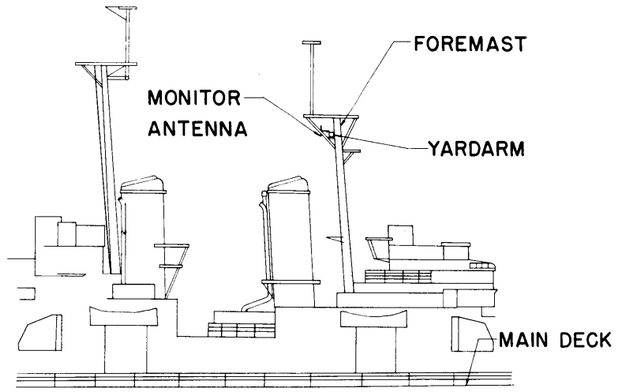


FIGURE 2 TYPICAL INSTALLATION, CRUISER, CA OR CL

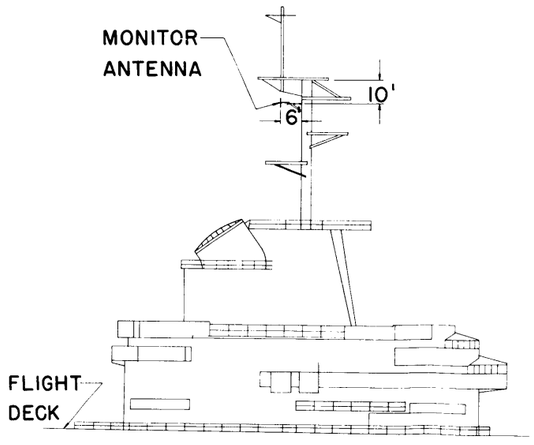


FIGURE 3 TYPICAL INSTALLATION, CARRIER, CV

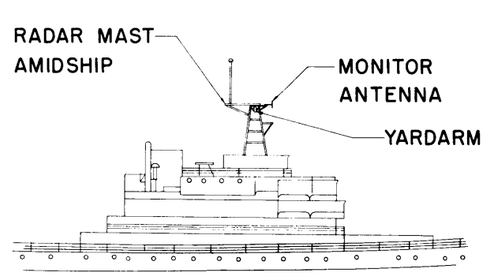


FIGURE 4 TYPICAL INSTALLATION COMMUNICATIONS SHIP, AGC

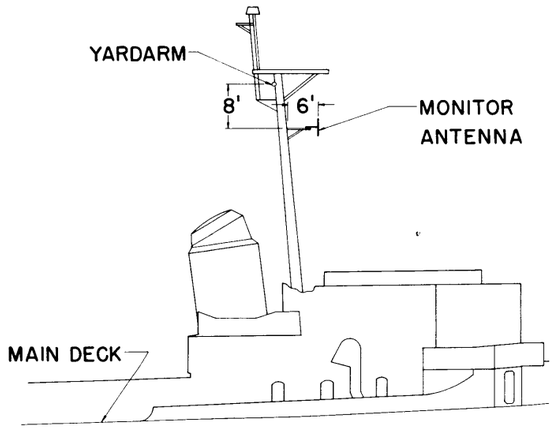


FIGURE 1 TYPICAL INSTALLATION, DESTROYER, DD

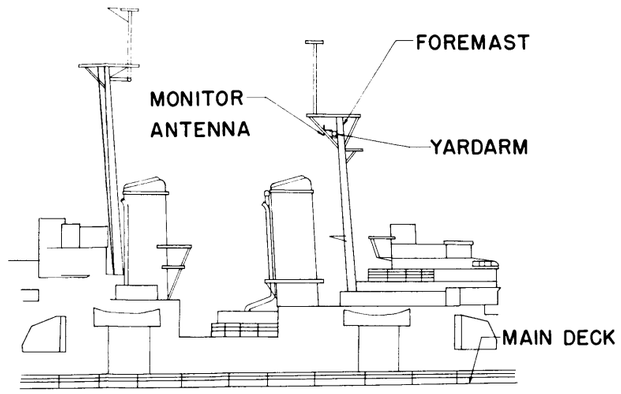


FIGURE 2 TYPICAL INSTALLATION, CRUISER, CA OR CL

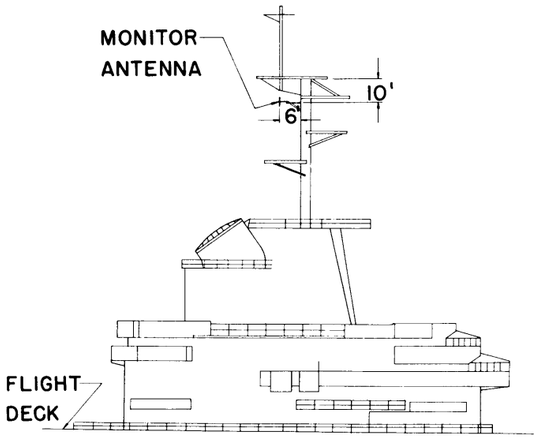


FIGURE 3 TYPICAL INSTALLATION, CARRIER, CV

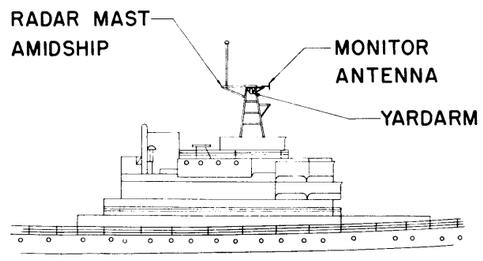


FIGURE 4 TYPICAL INSTALLATION COMMUNICATIONS SHIP, AGC

Figure 3–6. Ant nna Ins tallations

SECTION 4
OPERATION

1. INTRODUCTION.

R.F. Monitor AN/URM-50 is an electronic instrument designed to check and monitor shipboard radio transmitters. The relative field strength of the transmitted signals is indicated by either the Carrier Level meter on the front panel of the Field Strength Meter or the remote accessory meter. It is possible to listen to the signal by plugging the headphones into the Phones jack on the front panel and the modulation may be examined visually by connecting an oscilloscope to the binding posts provided on the front panel. The frequency measuring accuracy of the Monitor is within plus or minus 5% but it should not be relied upon as an exact frequency measuring instrument.

Operation of the monitor is accomplished entirely by means of front-panel mounted controls. By means of these controls the operator is able to turn the equipment on or off, set the frequency range, tune the signal, adjust the audio level, adjust the meter zero and provide proper signal attenuation to secure convenient meter readings.

The purpose of this section is to provide the operator with sufficient information for the efficient operation of the monitor. Operating information for the transmitting equipment with which the monitor is used must be obtained from the instruction manuals accompanying the respective transmitters.

2. CONTROLS.

Normal operation of the monitor is accomplished by means of front-panel mounted controls. This subsection is presented to familiarize the operator with the function of each operational control and device. All front-panel components of the monitor are located and identified on Figure 4–1.

a. BAND CHANGE CONTROL.–This control operates a nine-position turret for the selection of any one of the nine frequency bands covered by the monitor.

b. TUNING CONTROL.–This control functions to tune the monitor to any specific frequency within the band selected by the Band Change control. The tuning dial is calibrated in megacycles with a calibration accuracy of plus or minus 5%. Frequency increases with clockwise rotation of the control. An anti-backlash gear drive is employed with a ratio of 5:1. A dial lock is provided to prevent accidental dial movement.

c. METER ZERO CONTROL.–By means of this control the no-signal meter reading may be accurately set to exact zero on the scale. This makes it possible to obtain an exact comparison of two R.F. signals.

d. POWER SWITCH.–This control is a three position switch which turns on the filaments of the unit in the St'dby position and applies the plate voltage when turned to the On position.

e. SENSITIVITY SWITCH.–This control is a ten-position switch which provides 15 decibels of attenuation for each of nine positions with position number 10 providing zero attenuation.

f. AUDIO GAIN CONTROL.–This control is a panel operated potentiometer which provides a means of setting the audio level at the headphones to suit the operator. In addition, this control adjusts the signal level applied to the oscilloscope terminals.

3. OPERATING INSTRUCTIONS.

Detailed operating instructions are given in a step-by-step arrangement. Careful adherence to the indicated order and procedure will enable the operator to maintain comparative field strength and audio checks of the ship's transmitting equipment and to locate and evaluate stray R.F. fields in and about the transmitters and transmission lines.

a. OPERATING THE FIELD STRENGTH METER AS A MONITOR.- The following instructions are visually shown in brief on Figure 4–2.

Step 1. Set the Power switch at St'dby. Allow a warm-up period of 15 minutes before continuing.

Step 2. Set the Sensitivity switch at position 10 and the Audio Gain control at 3.

Step 3. Disconnect the antenna, set the Power switch at On and adjust the Meter Zero control to give a reading of exactly zero on the Carrier Level meter. Replace the antenna.

Step 4. Set the Band Change control at the band

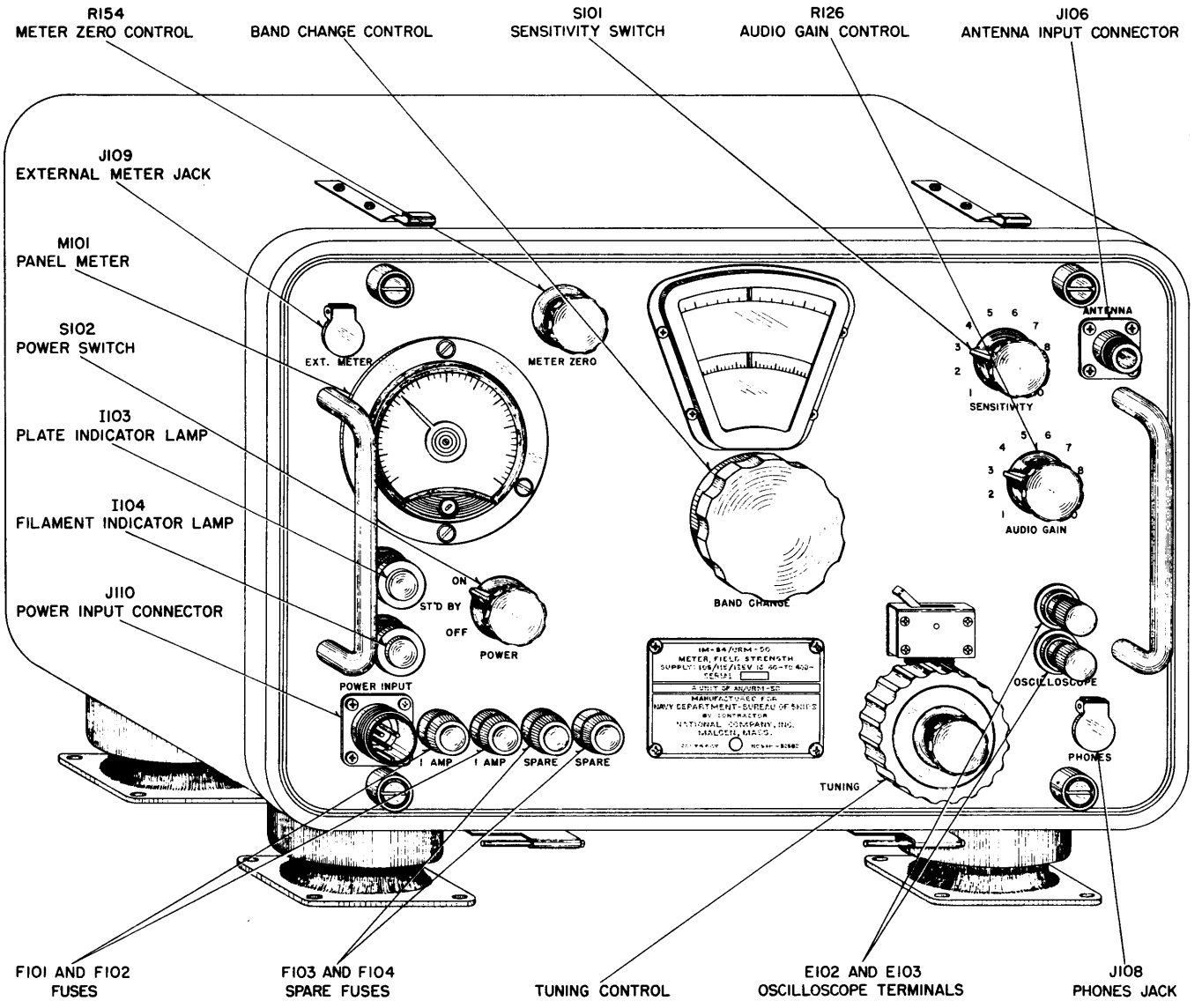


Figure 4–1. Front Panel Control Designations, Field Strength Meter IM-84/URM-50

which encompasses the frequency of the signal to be monitored.

Step 5. Tune to the desired signal by means of the Tuning control. When tuning in a signal pick the lowest setting of the Sensitivity switch which will give a suitable meter reading. Tune the monitor for maximum meter reading and then adjust the Sensitivity switch for a half-scale meter reading. This adjustment will avoid a false peak which can appear when the monitor is overloaded.

Step 6. The meter reading now indicates the relative signal strength of the transmitted carrier and if modulation is present it may be heard in the headphones. Adjust the Audio Gain control for the desired audio level.

Step 7. If remote indication is desired the external meter may be plugged into the jack marked Ext. Meter on the front panel. This will not affect the reading of the built-in meter and the readings of the two meters should be equal.

Step 8. The external meter may now be used at any point within the range of its extension cable.

Step 9. To check the signal with an oscilloscope, connect the scope to the binding posts provided on the front panel.

Step 10. Adjust the Audio Gain control to give the desired signal level at the Oscilloscope terminals.

Since the monitor indicates only relative field strength any one reading of the meter will merely indicate the presence of an R.F. signal. By making a

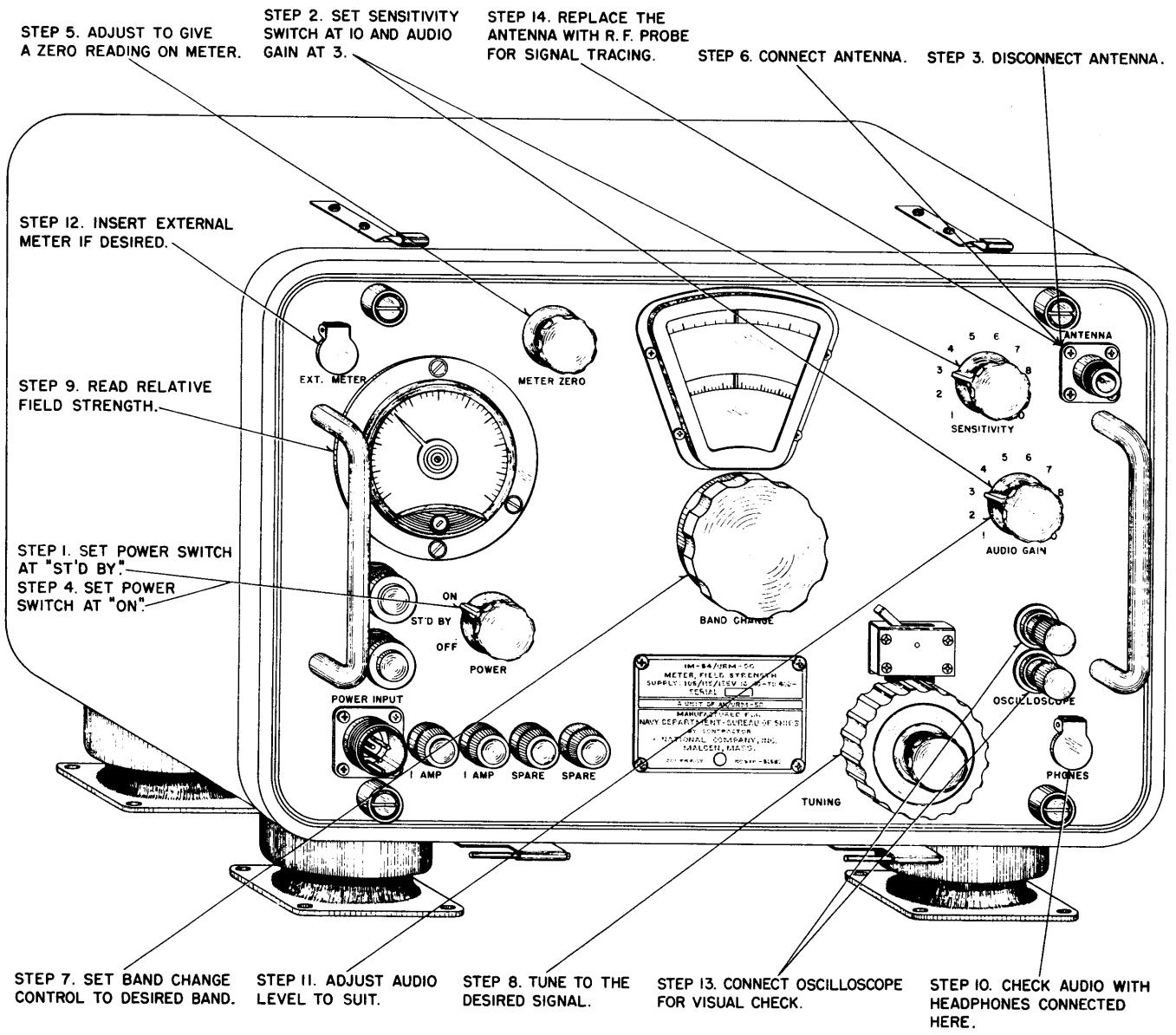


Figure 4–2. Operating Instructions, Field Strength Meter IM-84/URM-50

record of the meter reading, the frequency and the attenuator setting, future checks will give an accurate comparative indication of the strength and frequency of the signal.

b. OPERATING THE FIELD STRENGTH METER WITH THE R.F. PROBE.–The R.F. Probe is used with the Field Strength Meter to locate and evaluate R.F. signals other than those normally radiated by the transmitting antenna. This includes signals of undesired frequencies as well as the radiation of the signal frequency by feed lines and other unwanted sources.

Two different methods of operation may be used. In the first instance the frequency of the R.F. voltage is known but the source of radiation is unknown. Set up the equipment as follows:

Step 1. Disconnect the antenna from the Field Strength Meter.

Step 2. Connect the R.F. probe to the antenna input connector of the field strength meter using the cable provided with the probe and the Coupling Unit CU-152/URM-3.

Step 3. Set the Sensitivity switch at 10.

Step 4. Set the Band Change and Tuning controls to the frequency of the R.F. signal to be located.

Step 5. Place the probe in proximity with the suspected source of the R.F. energy.

CAUTION

If the probe is used in the vicinity of transmitting equipment, care must be exercised to avoid bodily contact with high voltage frequently found in the transmitting equipment.

Step 6. Adjust the Tuning control of the field strength meter for maximum meter deflection.

Step 7. Vary the setting of the Sensitivity switch to secure a half-scale reading on the meter.

Step 8. If the R.F. voltage to be measured is not of sufficient amplitude to produce a usable meter reading, remove the Coupling Unit CU-152/URM-3.

If the source of R.F. radiation is known but the frequency is unknown, place the probe at the source and repeat the foregoing procedure except that the entire frequency range of the Field Strength Meter must be scanned to determine the frequency of the R.F. energy.

When using the R.F. probe the sensitivity of the field strength meter is approximately 30 millivolts/meter to produce a 1/5 full scale meter reading at 3.5 mcs. When using the Coupling Unit CU-152/URM-3 the sensitivity of the system is approximately 300 millivolts/meter at 3.5 mcs.

SECTION 5
OPERATOR'S MAINTENANCE

1. ROUTINE CHECKS.

The following routine checks of normal operation of the AN/URM-50 Monitor are to be made at the beginning of each watch. The tests are to be made with the monitor operating under normal conditions. Careful routine check of the equipment very often prevents failure under conditions when maintenance personnel are not available. The following chart assumes that the Power switch is in the On position.

TABLE 5-1. ROUTINE CHECK CHART

WHAT TO CHECK	HOW TO CHECK	PRECAUTIONS
Pilot lamps	Observe lamps	No light or intermittent light indicates poor lamp, loose connection, faulty heater supply or faulty switch (S102).
Monitor Operation	Observe Carrier Level meter	With the monitor tuned to an R.F. signal a meter reading should be obtained at some setting of the Sensitivity switch. If modulation is present it should be heard in the headphones with the Audio Gain control at 5.
Meter Zero	Observe Carrier Level meter	With no signal input the meter should read zero with some setting of the Meter Zero control.
External Connection and Cables	Inspect firmness of all connections to the monitor. Check that cables have not been damaged.	Loose connections or damaged cables may result in faulty operation.

2. EMERGENCY MAINTENANCE.

Notic t Operators

Operators shall not perform any of the following emergency maintenance procedures without proper authorization.

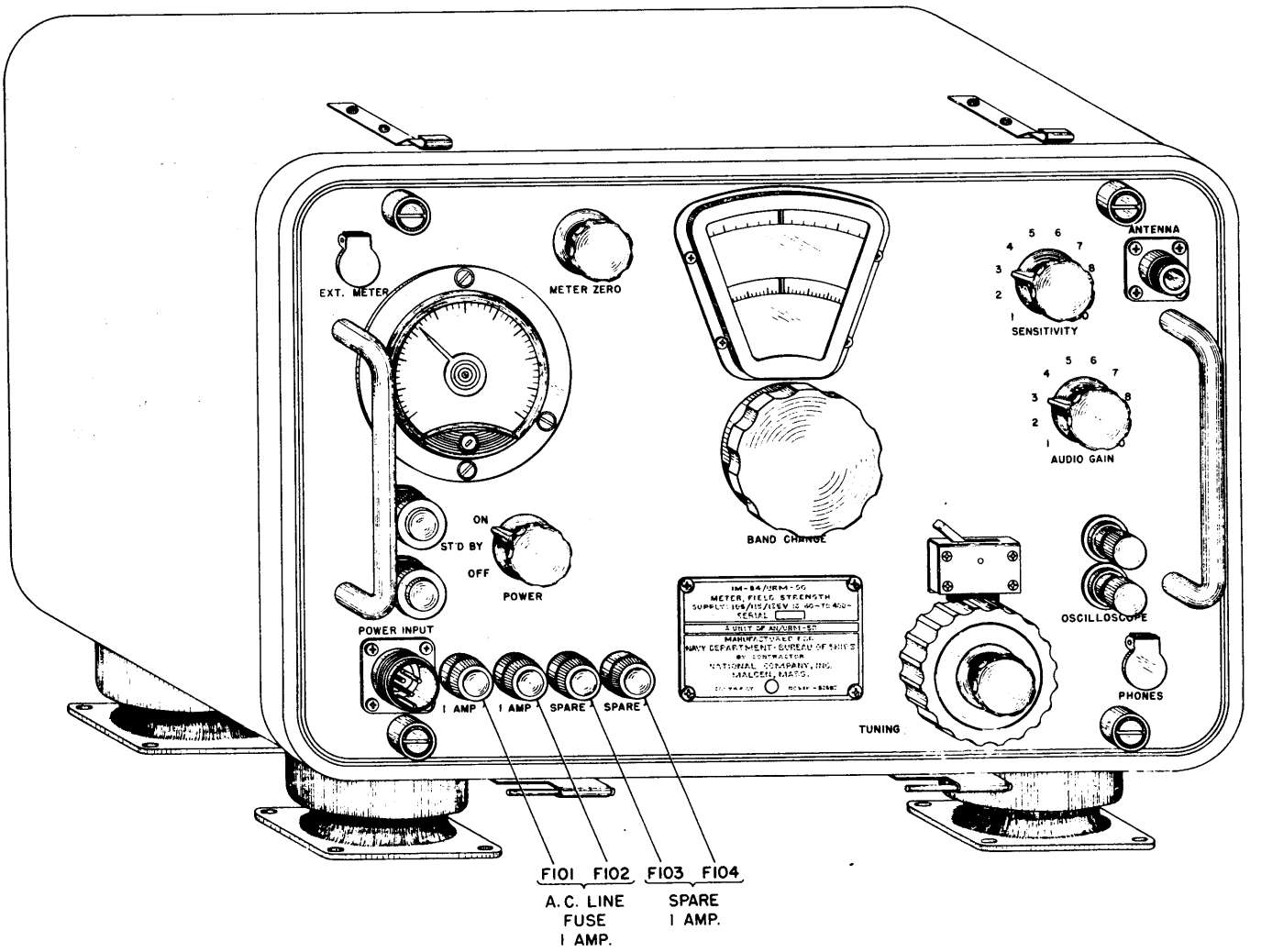
The maintenance procedures listed in the following paragraphs are for the guidance of the operating personnel during an emergency when maintenance personnel are not available.

CAUTION

Never replace a fuse with one of higher rating unless continued operation of the equipment is more important than probable damage. If a fuse burns out immediately after replacement, do not replace it a second time until the cause has been corrected.

a. FUSES. *(See Figure 5–1).*–If the field strength meter is inoperative and the pilot lights do not light check fuses F101 and F102 which are acc ssible from the front panel. One ampere fuses are required. Spare fuses are mounted on the front panel. Probabl cause of failure is a short circuit in the primary of the power transformer, the filament circuit or the B plus circuit.

b. ELECTRON TUBES.–All electron tubes employed in the AN/URM-50 Monitor are located and identified on Figure 5–2. If a particular tube is burned out, as observed visually by the absence of heater or filament glow, the tube can be replaced by the same type tube of proven quality. To gain access to the tubes it is necessary to remove the field strength meter from its cabinet. To do so first disconnect the antenna and the power cable. Release the four captive screws on the front panel and withdraw the unit from the cabinet. See Figure 3–3. The power cord may



Figur 5–1. Fus Locations, Fi ld Str ngth Meter IM-84/URM-50

be connected at this time to energize the unit so that the tubes may be visually inspected. The Power switch must be at Off whenever tubes are changed.

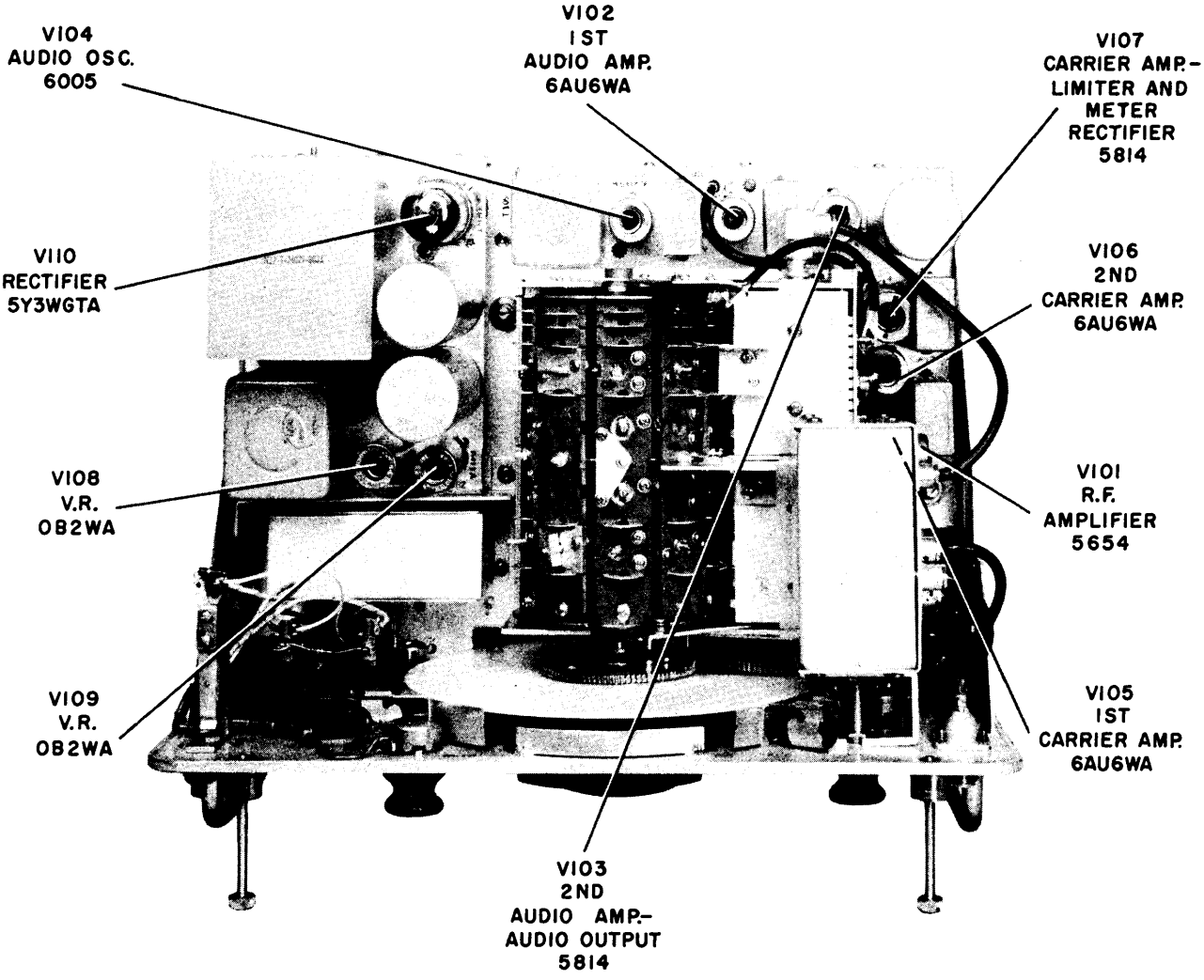


Figure 5–2. Tube Locations, Field Strength Meter IM-84/URM-50

SECTION 6
PREVENTIVE MAINTENANCE

1. ROUTINE MAINTENANCE CHECKS.

Preventive maintenance is a systematic series of checks performed at regular intervals on equipment to prevent major breakdowns and unwanted interruptions in service and to keep equipment operating at peak efficiency when needed.

The routine maintenance test schedule should be modified if the equipment is used under adverse operating conditions, but in general, the test schedule as arranged, in table 6–1 should prove adequate.

NOTE

The attention of maintenance personnel is invited to the requirements of Chapter 67 of the Bureau of Ships Manual, of the latest issue.

TABLE 6–1. ROUTINE MAINTENANCE CHECK CHART

WHAT TO CHECK	HOW TO CHECK	PRECAUTIONS
EACH WATCH		
Refer to Table 5–1 Operator's Routine Check Chart.		
MONTHLY		
1. Carrier amplifier sensitivity	Remove the chassis from the cabinet. See Figure 3–3. Apply one millivolt between pin 7 of the chopper and chassis (test point no. 1 Figure 7–4) using a 1 1/2 volt battery with a 100 ohm and a 150,000 ohm resistor as shown in Figure 6–1.	Approximately a half-scale meter reading should be obtained.
QUARTERLY		
1. Overall sensitivity	Check in accordance with paragraph 4.c.(6) of Section 7.	
2. General inspection	Withdraw the Field Strength Meter from its cabinet. a. Make a careful inspection of the interior to detect symptoms of trouble resulting from wear or overheating. b. Check for noisy or faulty components and/or connections.	Tap components and connections with a piece of insulating material while the field strength meter is adjusted for normal operation with a reading on the meter and an audible output.

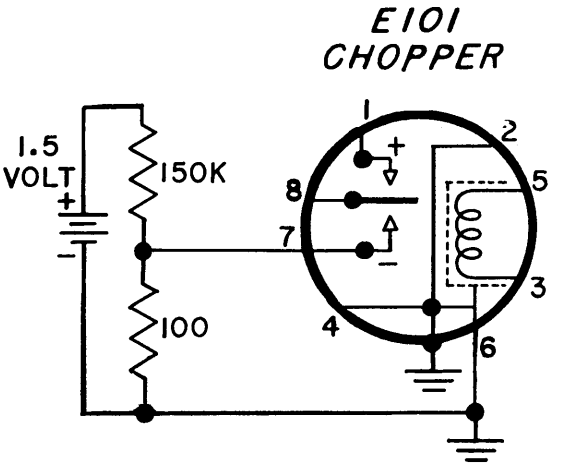


Figure 6–1. Carrier Amplifier Test Connections, Field Strength Meter IM-84/URM-50

2. LUBRICATION.

The AN/URM-50 Monitor is lubricated at the factory and requires no added lubrication for the life of the equipment.

FAILURE REPORTS

A FAILURE REPORT must be filled out for the failure of any part of the equipment whether caused by defective or worn parts, improper operation, or external influences. It should be made on Failure Report, form NAVSHIPS 383, which has been designed to simplify this requirement. The card must be filled out and forwarded to BUSHIPS. Full instructions are to be found on each card.

Use great care in filling the card out to make certain it carries adequate information. For example under "Circuit Symbol" use the proper circuit identification taken from the schematic drawings, such as T–803, in the case of a transformer, or R–207, for a resistor. Do not substitute brevity for clarity. Use the back of the card to completely describe the cause of failure and attach an extra piece of paper if necessary.

The purpose of this report is to inform BUSHIPS of the cause and rate of failures. The information is used by the Bureau in the design of future equipment and in the maintenance of adequate supplies to keep the present equipment going. The cards you send in, together with those from hundreds of other ships, furnish a store of information permitting the Bureau to keep in touch with the performance of the equipment of your ship and all other ships of the Navy.

This report is not a requisition. You must request the replacement of parts through your Officer-in-Charge in the usual manner.

Make certain you have a supply of Failure Report cards and envelopes on board. They may be obtained from the nearest District Printing and Publication Office.

Figure 7–1. Failure Report

SECTION 7
CORRECTIVE MAINTENANCE

1. FAILURE REPORTS.

A failure report must be filled out for the failure of any part of the equipment. It is to be sent through the proper channels according to the instructions given on the Failure Report form illustrated in Figure 7–1.

2. INTRODUCTION.

This section contains all the information necessary for the repair and adjustment of a mal-functioning AN/URM-50 Monitor. Maintenance personnel must be prepared to repair and adjust units that have failed in operation. The source of trouble must be located, the defect remedied and the equipment restored to an operating condition.

Contained in this section is a trouble shooting paragraph to serve as a guide to maintenance personnel in locating the source of trouble and its possible cause. Following this is a paragraph giving detailed instructions for all electrical alignment procedures and adjustments. Finally a paragraph is included for guidance when making mechanical repairs or adjustments.

3. THEORY OF LOCALIZATION.

The manner in which the monitor operates, or fails to operate, often gives unmistakeable indications of the source of trouble. For example, abnormal action of a control will in most cases indicate the specific stage or stages at fault.

Figure 7–2 is a trouble shooting chart which lists in a logical sequence a series of checks to be made to locate quickly the specific circuit causing faulty monitor operation. Probable sources of trouble are also given in the approximate order of the probability of their occurence. The trouble shooting chart does not list all possible troubles. It does, however, list those that are most likely to occur. In most cases, the use of the chart will localize a source of trouble sufficiently well to enable its precise location by voltage and resistance checks in the suspected area.

The systematic location and repair of faults can be summarized as follows:

(1) Determine the stage or stages at fault.

(2) Examine the stage in detail to determine what particular component or adjustment is causing the trouble.

(3) Replace or repair the defective component part or parts and/or adjust correctly.

(4) Make a thorough check of performance before placing the unit back into operational duty.

4. TROUBLE SHOOTING.

a. GENERAL.–The location of trouble in the monitor can be accomplished by making the series of checks outlined on the Trouble Shooting Chart, Figure 7–2. All of the checks outlined thereon are accomplished by aural or visual tests. Tubes should be checked in a tube tester such as Navy Model OZ series, Tube Tester TV-3/U series or equivalent or by replacement with tubes of proven quality. Specific stages and their components can be checked by performing voltage and resistance measurements as outlined on Figure 7–3. Constant reference to the schematic diagram, Figure 7–15 and the practical wiring diagram Figure 7–16, is required for efficient trouble shooting. A thorough inspection of the monitor and its external connections should be made before attempting any adjustments or repairs.

b. CIRCUIT CONSTANTS.–The value of all circuit components are indicated on the Parts List, Table 8–4, and on the schematic diagram Figure 7–15. Their actual locations are shown on Figures 7–17 through 7–21.

c. PERFORMANCE TESTS.–The following tests are used to check operation of the monitor section by section and finally by means of an overall sensitivity check. These tests should be made following any readjustments or repairs to assure proper functioning of the unit prior to its return to operational duty. The tests must be made in the order shown since the test of any specific section is based on the fact that prior sections have been checked and found to be functioning properly.

Units of test equipment required to perform these tests are as follows:

An R.F. signal generator such as R.F. Signal

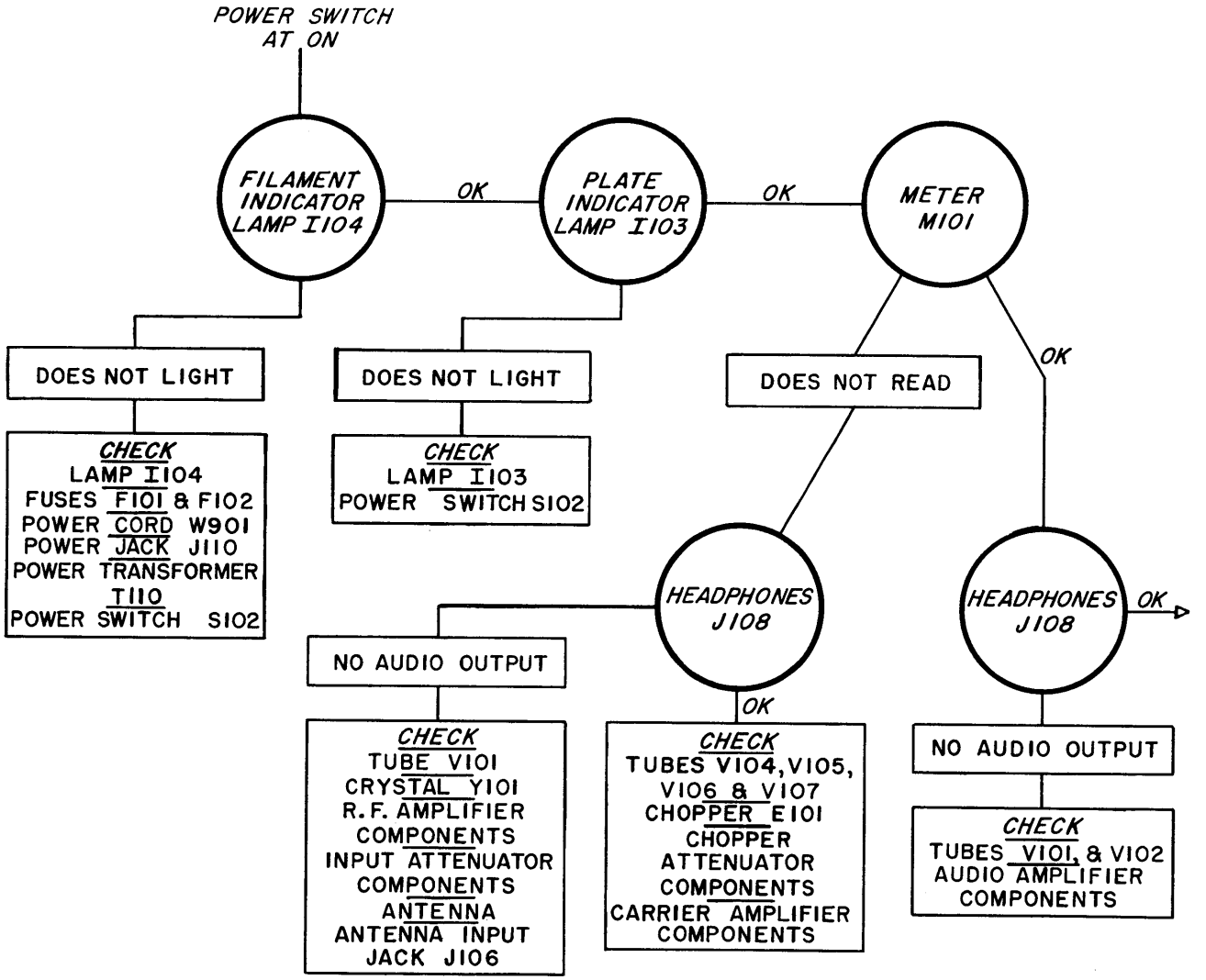


Figure 7–2. Trouble Shooting Chart

Generator Set AN/URM-25 Series to cover a frequency range of 300 kc. to 50 megacycles with an output of 0.1 volt and an attenuator calibrated in microvolts.

An R.F. signal generator such as R.F. Signal Generator Set AN/URM-26 Series to cover a frequency range of 30 to 400 megacycles with an output of 0.1 volt and an attenuator calibrated in microvolts.

An Audio Oscillator such as Audio Oscillator TS-382A/U or higher or equivalent.

An Oscilloscope such as Navy Model OBL, Oscilloscope OS-8/U or equivalent.

A Volt-Ohm-Milliameter such as Multimeter TS-352/U Series with a sensitivity of 20,000 ohms per volt D.C. and 1,000 ohms per volt A.C.

A D.C. voltage source of one millivolt consisting of a 1 1/2 volt battery with a 100 ohm (N16-R-49580-0971) and a 150,000 ohm (N16-R-50678-0971) resistor serving as a voltage divider.

(1) AUDIO AMPLIFIER PERFORMANCE TEST.– To check the performance of the audio amplifier proceed as follows:

Step 1. Remove the field strength meter from its cabinet following the procedure outlined on Figure 3–3.

Step 2. Reconnect the power cable and set the Power switch at St'dby. Allow a fifteen minute warm-up period then set the switch at On.

Step 3. Connect Audio Oscillator TS-382A/U between the grid (pin no. 7) of V103B and chassis using a 0.25 mfd. blocking capacitor. (Test point no. 2 Figure 7–4).

Step 4. Connect Multimeter TS-352/U with a 1/2 watt 680 ohm resistor (SNSN N16-R-49841-0971) in parallel to the Phones jack J108 (test point no. 3 Fi-

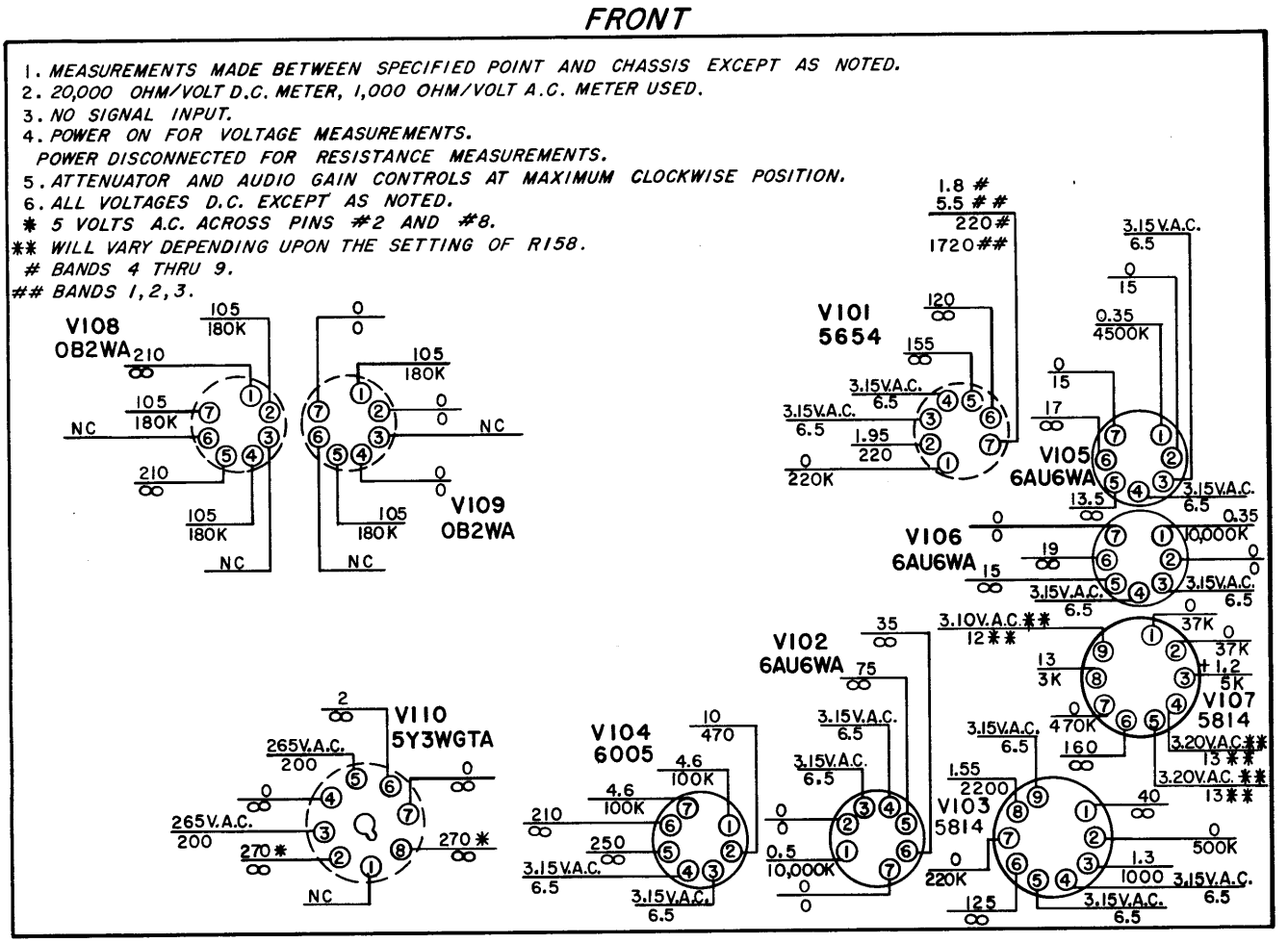


Figure 7–3. Voltage and Resistance Chart

gure 7–4).

Step 5. Set the Audio Gain control at its maximum clockwise position.

Step 6. Set the audio oscillator frequency at 400 cycles per second.

Step 7. Set the oscillator output to give a reading of 2 volts on the multimeter.

Step 8. An output of approximately 1.5 volts from the audio oscillator indicates that audio output stage V103B is functioning properly.

Step 9. Move the audio oscillator to connect between the input control grid, pin no. 2 of V103A and chassis (Test point no. 4, Figure 7–4).

Step 10. Set the oscillator output to produce a reading of 2 volts on the multimeter.

Step 11. An output level of approximately 0.14 volts from the oscillator indicates proper functioning of the audio amplifier stage, V103A.

Step 12. Move the audio oscillator to connect between the control grid of the 6AU6 (pin no. 1 of V102 and chassis) (Test point no. 5, Figure 7–4).

Step 13. Set the output of the audio oscillator to produce a reading of 2 volts on the multimeter.

Step 14. An output level of approximately 0.0014 volts from the oscillator indicates that audio amplifier stage V102 is functioning properly. This reading also indicates proper functioning of the entire audio amplifier system.

(2) CARRIER AMPLIFIER PERFORMANCE TEST.–The performance of the carrier amplifier is checked in the following manner:

Step 1. Connect Audio Oscillator TS-382A/U between the input of V107A (pin no. 1) and chassis using a 0.25 mfd blocking capacitor. (TP-6, Figure 7–4).

Step 2. Set the oscillator frequency at 90 cycles per second.

Step 3. Increase the oscillator output (approximately 10 volts) until a reading is obtained on the Carrier Level Meter. Failure to obtain a reading indicates that the meter rectifier circuit is defective.

Step 4. Move the audio oscillator to connect be-

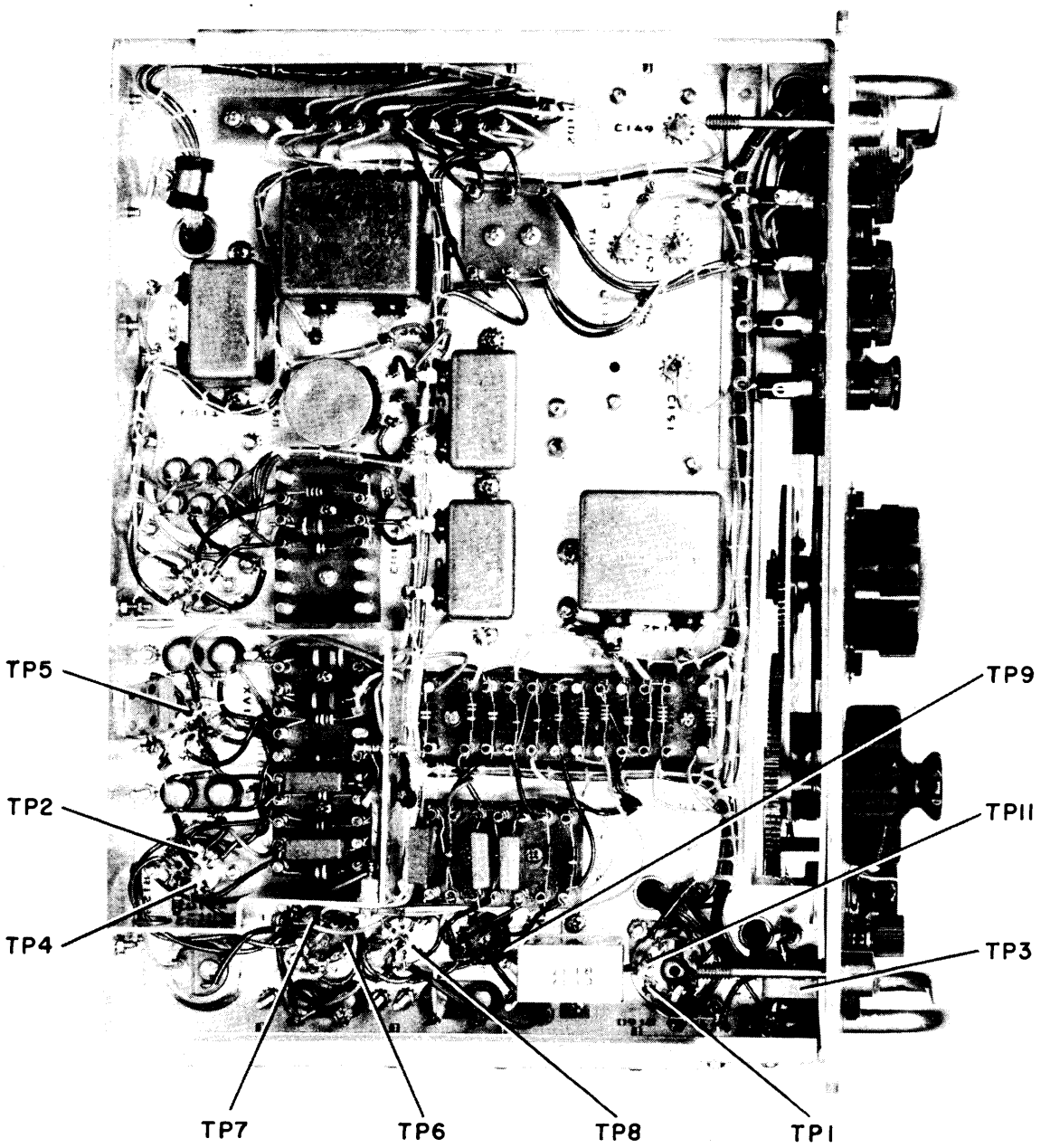


Figure 7–4. Test Point Locations, Bottom of Chassis, Field Strength Meter IM-84/URM-50

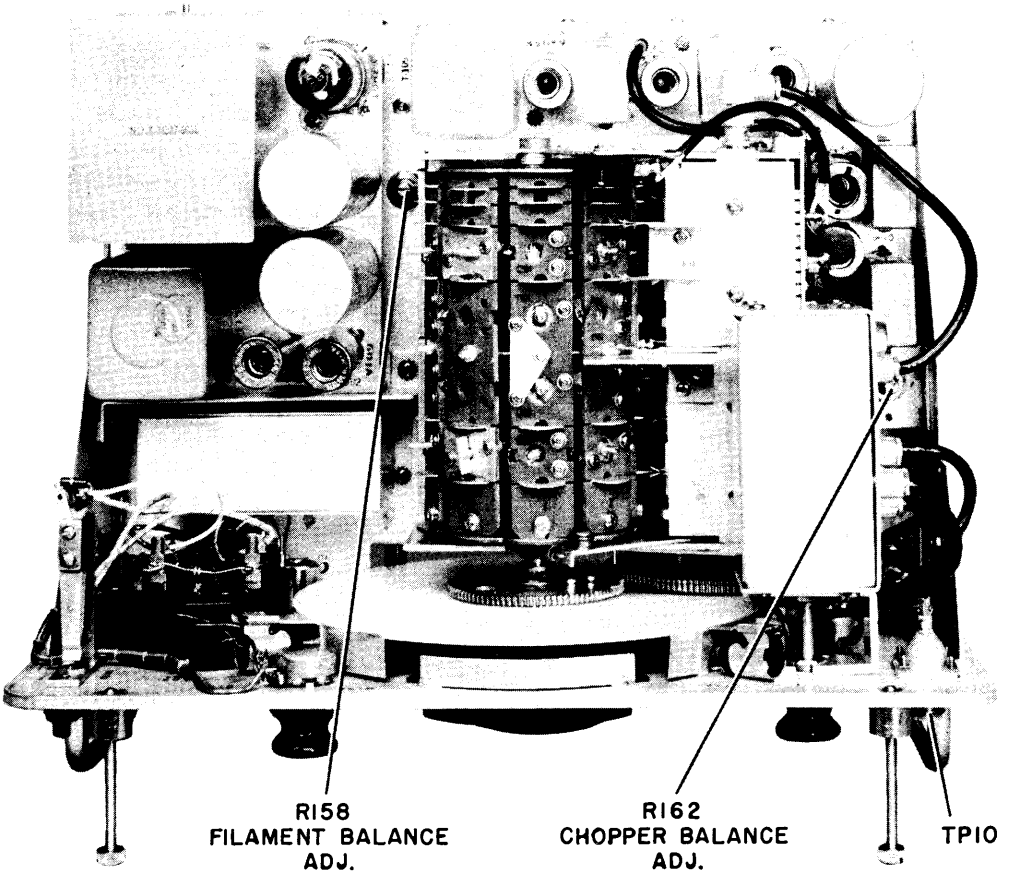


Figure 7–5. Adjustment Locations and Test Point Locations, Top of Chassis, Field Strength Mtr IM-84/URM-50

tween the grid of the 5814 (pin no. 7 of V107B) and chassis. (Test point no. 7, Figure 7–4).

Step 5. Set the output of the audio oscillator at 1000 millivolts (1 volt).

Step 6. The Carrier Level Meter should read approximately 40 to indicate proper functioning of the carrier-amplifier-limiter stage V107B.

Step 7. Move the audio oscillator to connect between pin 1 of V106 and chassis. (Test point no. 8, Figure 7–4).

Step 8. Adjust the output of the audio oscillator to 6 millivolts.

Step 9. A reading of 40 on the Carrier Level Meter indicates that the 2nd. carrier amplifier stage V106 is functioning properly.

Step 10. Move the audio oscillator to connect between pin no. 1 of V105 and chassis (Test point no. 9, Figure 7–4).

Step 11. Adjust the audio oscillator output to 0.45 millivolts.

Step 12. Proper functioning of the 1st carrier amplifier stage V105 is indicated by a reading of 40 on the Carrier Level Meter. This reading also indicates proper functioning of the entire carrier amplifier system.

(3) CHOPPER PERFORMANCE TEST.–To determine if the chopper is functioning properly proceed as follows:

Step 1. Prepare a source of one millivolt D.C. in accordance with Figure 6–1.

Step 2. Connect the one millivolt source between pin 7 of the chopper E101 and chassis (Test point no. 1, Figure 7–4). Polarity is unimportant.

Step 3. A properly functioning chopper will be indicated by a reading of approximately half scale on the Carrier Level Meter.

(4) AUDIO OSCILLATOR PERFORMANCE TEST. –The performance test of the audio oscillator V104 is performed as follows:

Step 1. Connect Multimeter TS-352/U Series between pins no. 3 and 5 of the chopper socket with the meter selector switch on the 10 volt A.C. scale.

Step 2. A reading of between 6.3 and 7 volts indicates proper output level of the audio oscillator.

(5) R.F. AMPLIFIER PERFORMANCE TEST.– Proper functioning of the R.F. amplifier may be determined by the following procedure:

Step 1. Remove the antenna connection from J106.

Step 2. Set the Sensitivity switch of the Field

Strength Meter at 10.

Step 3. Set the Band Change control at Band 1.

Step 4. Adjust the Meter Zero control to obtain a reading of zero on the Carrier Level meter.

Step 5. Connect R.F. Signal Generator Type AN/URM-25 to the antenna connector J106 (test point no. 10, Figure 7–5). To make this connection use the R.F. Cable Assembly CG-409A/U (7"), the R.F. Cable Assembly CG-409A/U (4'0") the Antenna Simulator SM-35/URM-25 and Coupler Adapter UG-201/U.

Step 6. Set the Mod. Selector of the signal generator at Off.

Step 7. Check the sensitivity of bands 1 through 6 setting the signal generator and the field strength meter at the frequencies shown on Table 7–1, the Sensitivity chart. Tune the field strength meter for exact resonance as indicated by maximum deflection of the Carrier Level meter. Proper functioning is indicated if the readings obtained agree with those of Table 7–1 within 20%.

Step 8. Remove the AN/URM-25 signal generator and connect the AN/URM-26 generator in its place.

Step 9. Check bands 7, 8 and 9 setting the frequency of the generator and the field strength meter in accordance with table 7–1 making certain to obtain exact resonance.

Step 10. Proper functioning is indicated if the readings obtained agree with those in Table 7–1 within 20%.

TABLE 7–1. SENSITIVITY CHART

BAND	FREQUENCY IN MC.	MICROVOLT INPUT FOR 1/2 SCALE READING (±10%)
1	0.45	960
2	0.95	640
3	2.0	800
4	4.5	800
5	10.5	1280
6	24.5	2240
7	50	5000
8	105	10500
9	300	10600

(5) EXTERNAL METER PERFORMANCE TEST.—To check the performance of the external meter it is only necessary to insert the external meter plug into the jack marked Ext. Meter on the front panel of the field strength meter. Tune the field strength meter to any signal that will give approximately half-scale reading on the meters. If the external meter is functioning properly the two readings will be equal.

(6) OVERALL PERFORMANCE AND SENSITIVITY TEST.—Proper functioning of the monitor is indicated when a signal of correct amplitude is obtained at the output for a specified input. This condition is determined in the following manner:

Step 1. Connect Signal Generator AN/URM-25 to the antenna input jack J106 using the Antenna Simulator SM-35/URM-25.

Step 2. Connect Multimeter TS-352/U Series to the Phones jack J108 with a 1/2 watt 680 ohm resistor (SNSN N16-R-49841-0971) in parallel with the Phones jack.

Step 3. On the field strength meter set the Band Change control at Band 2, the Sensitivity switch at 10, the Audio Gain control at 10, and the Tuning dial at 1 megacycle.

Step 4. On the signal generator set the frequency at 1 megacycle and the modulation at 30% at 400 cycles per second.

Step 5. Tune the field strength meter to exact resonance as indicated by maximum deflection on the Carrier Level meter. It may be necessary to decrease the signal generator output while tuning to prevent off-scale readings.

Step 6. Adjust the output of the signal generator to produce a reading of exactly 50 on the Carrier Level meter of the field strength meter.

Step 7. Proper functioning of the field strength meter is indicated by a reading of approximately 650 microvolts at the output of the signal generator and approximately 0.55 volts on the multimeter.

Step 8. Increase the output of the signal generator to give a full scale meter reading on the field strength meter.

Step 9. Set the Sensitivity switch of the field strength meter at 9.

Step 10. The Carrier Level meter on the field strength meter should drop to approximately 1/5 of full scale.

Step 11. Repeat steps 8, 9 and 10 for the remaining 8 positions of the attenuator. If the attenuator is functioning properly each step of attenuation will be evidenced by an 80% decrease in the Carrier Level meter reading.

Step 12. Set the Power switch at Off.

5. REPAIRS.

a. ELECTRICAL ADJUSTMENTS.—Applicable electrical adjustments for the IM-84/URM-50 Field Strength Meter consist of Chopper hum balancing adjustment and R.F. Amplifier alignment. It should be borne in mind that all these adjustments have been carefully made at the factory before shipment and readjustment and/or realignment should not be under-

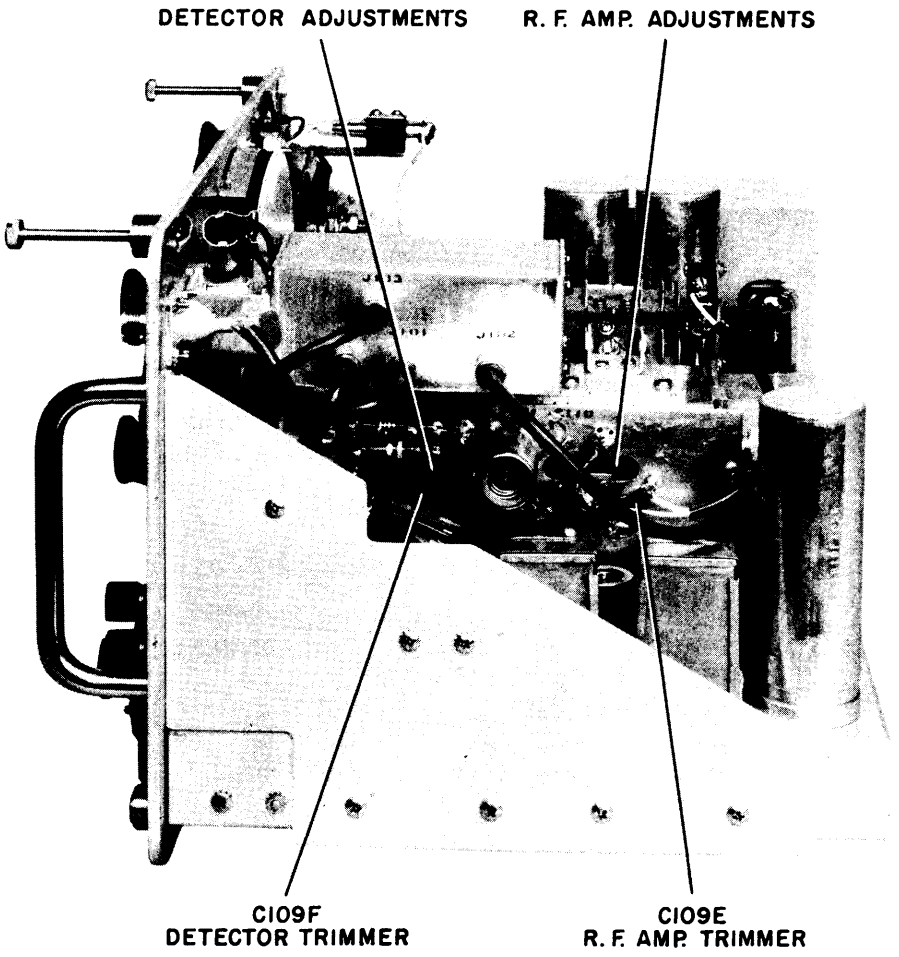


Figure 7–6. R.F. Alignment Adjustment Locations, Side View of Field Strength Meter IM-84/URM-50

taken unless there is ample evidence that it is required as determined by trouble shooting checks and/or performance tests.

NOTE

Should the 6AU6 first carrier amplifier (V105) become microphonic it will be evidenced by a substantial reading on the field strength meter under vibration with no signal input. The remedy is to replace the 6AU6 tube.

(1) CHOPPER HUM BALANCING ADJUSTMENT. –The two controls used for the chopper hum balancing adjustment are screwdriver adjusted. Both of these adjustments are accessible at the top of the chassis. See Figure 7–5 for the location of these controls. Proper adjustment is accomplished in the following manner:

Step 1. Set the Power switch of the field strength meter at St'dby. Allow a warm-up period of 15 minutes then set the switch at On.

Step 2. Set the Band Change control at band 1, the Sensitivity switch at 1 and the Audio Gain control at 1.

Step 3. Set the Meter Zero control at its maximum clockwise position.

Step 4. Make a temporary connection between pin 8 of the chopper (test point no. 11, Figure 7–4) and chassis. Use a short piece of bus or other convenient means so long as it makes for a short direct connection.

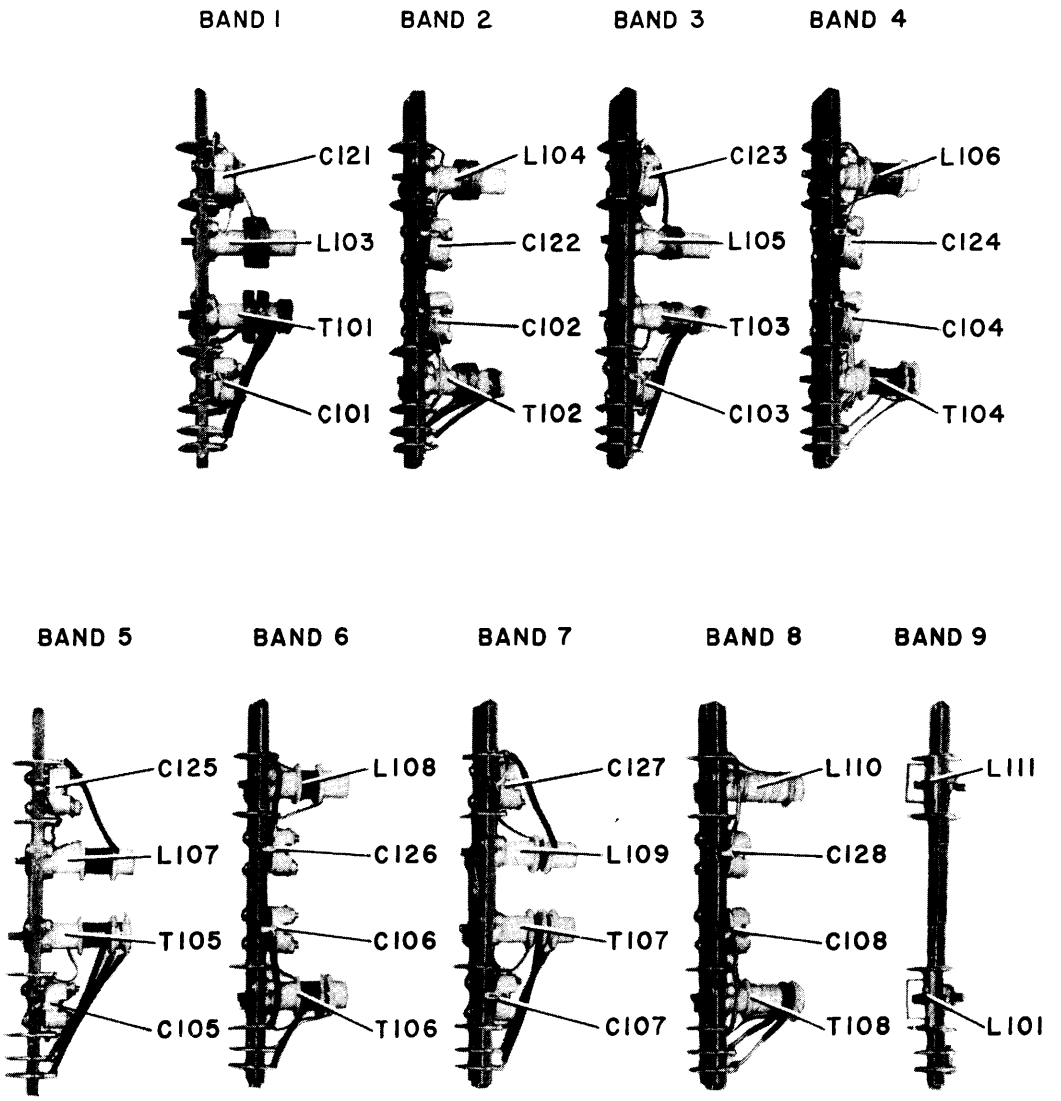
Step 5. Adjust the filament hum bucking control R158 for minimum reading of the Carrier Level meter.

Step 6. Remove the temporary connection made in step 4 and adjust the chopper hum bucking control R162 for minimum reading of the Carrier Level meter.

Step 7. Set the Meter Zero control to give a reading of zero on the Carrier Level meter.

Step 8. Set the Power Switch at Off.

(2) R.F. ALIGNMENT AND CALIBRATION.–R.F.



Figur 7–7. Alignment Adjustment Location, Turret Mounted Tuner Assemblie s Z101 through Z109

Alignment as described herein consists of adjustment of the grid and plate tuned circuits of the R.F. amplifier V101. In making the following adjustments the tuning controls of the signal generators and the field strength meter should be set with great care since these settings establish the calibration accuracy of the meter. All of the adjustments are made on the turret assembly and are located on Figures 7–6 and 7–7. The vane type adjustments are accessible from the top of the chassis. Trimmers C109E and C109F are accessible through the two round holes in the right side partition of the R.F. tuner assembly. All other adjustments are made through the two elongated cutouts in the aforementioned partition. An alignment tool is packed in the cover of the Field Strength Meter for use in making alignment adjustments. Correct R.F. alignment is achieved in the following manner:

Step 1. On the Field Strength Meter IM-84/URM-50 set the Sensitivity switch at 10, the Audio Gain control at 0 and the Band Change control at Band 9.

Step 2. Set the Power switch at St'dby. Allow a period of 15 minutes to bring the equipment to correct operating temperature and then set the switch at On.

Step 3. With the antenna disconnected adjust the Meter Zero control until a reading of exactly zero is obtained on the Carrier Level meter.

Step 4. For bands 9, 8 and 7 use R.F. Signal Generator AN/URM-26, for bands 6 through 1 use AN/URM-25. In both cases connect the generator to the Antenna connector J106 using the Antenna Simulator SM-36/URM-26.

Step 5. Starting with band 9 align the R.F. Amplifier adhering to the procedure outlined on Table 7–2 the Alignment Chart.

TABLE 7-2. ALIGNMENT CHART

Step	Set Band Change Control to Band:	Adjust Signal Generator To:	Set Field Strength Meter Dial At:	Adjust for Maximum Meter Deflection. Retard the Generator as necessary to maintain a useable meter reading.
1 2	9	190 mc. 400 mc.	190 mc. 400 mc.	L101, L111* C109E, C109F. Repeat steps 1 and 2 to obtain proper tracking.
1 2	8	80 mc. 175 mc.	80 mc. 175 mc.	T108, L110** C108, C128. Repeat steps 1 and 2 to obtain proper tracking.
1 2	7	36 mc. 74 mc.	36 mc. 74 mc.	T107, L109** C107, C127. Repeat steps 1 and 2 to obtain proper tracking.
1 2	6	16 mc. 33 mc.	16 mc. 33 mc.	T106, L108** C106, C126. Repeat steps 1 and 2 to obtain proper tracking.
1 2	5	7 mc. 14.5 mc.	7 mc. 14.5 mc.	T105, L107** C105, C125. Repeat steps 1 and 2 to obtain proper tracking.
1 2	4	3 mc. 6.4 mc.	3 mc. 6.4 mc.	T104, L106** C104, C124. Repeat steps 1 and 2 to obtain proper tracking.
1 2	3	1.4 mc. 2.7 mc.	1.4 mc. 2.7 mc.	T103, L105** C103, C123. Repeat steps 1 and 2 to obtain proper tracking.
1 2	2	0.68 mc. 1.26 mc.	0.68 mc. 1.26 mc.	T102, L104** C102, C122. Repeat steps 1 and 2 to obtain proper tracking.
1 2	1	0.32 mc. 0.62 mc.	0.32 mc. 0.62 mc.	T101, L103** C101, C121. Repeat steps 1 and 2 to obtain proper tracking.

*The inductance adjustments for the high frequency band (band 9) consist of metallic vanes mounted on the coil strips of the turret. Adjustment is accomplished by moving the vane with an insulated rod such as an alignment tool or a wooden pencil.

**The inductance adjustments for the remaining 8 bands are accomplished by tuning slugs which are reached through the cutouts in the right side partition of the R.F. Tuner Assembly.

Step 6. Set the Power switch of the field strength meter at Off.

b. MECHANICAL ADJUSTMENTS.–Tools required for the mechanical adjustments described herein consist of:

1. 9/16" socket wrench SNSN N41-W-2877-180.
2. 1/4" socket wrench SNSN N41-W-2877-110.
3. Medium Phillips screwdriver SNSN N41-S-1638-10.
4. No. 8 Bristo wrench SNSN N41-W-2460-10(supplied).
5. Needle nose pliers SNSN N41-P-1864.
6. Soldering iron and accessories.

(1) CONTROL KNOBS AND DIALS.–All control knobs are fastened to their respective shafts by No. 8–32 Bristo screws. To remove the knobs insert a No. 8 Bristo wrench into the ends of the screws, rotate a few turns counterclockwise until the knob turns freely on the shaft. The knob can then be lifted from the shaft.

(2) REMOVAL OF THE FIELD STRENGTH METER FROM ITS CABINET.–To remove the field strength meter from the cabinet first disconnect the A.C. power cable and the antenna cable. Loosen the four captive screws in the front panel and withdraw the unit from the cabinet. See Figure 3–3.

(3) REMOVAL OF THE R.F. TUNER ASSEMBLY. –The R.F. tuner assembly may be removed from the main chassis as a unit by the following procedure: (See Figure 7–8 for locations of the points referred to in the following instructions).

Step 1. Remove the four no. 2 Phillips head screws which secure the dial bezel and remove the glass and bezel.

Step 2. Remove the pilot light assembly and the pointer indicator assembly which is fastened by means of the four no. 4 flat Phillips head screws through the front panel.

Step 3. Loosen the no. 8 Bristo set screws in the Band Change knob and its associated shaft extension. Remove the knob and the shaft extension.

Step 4. Take off any one of the coil strips from the turret by removing the Phillips head screw and the hex head center ground terminal.

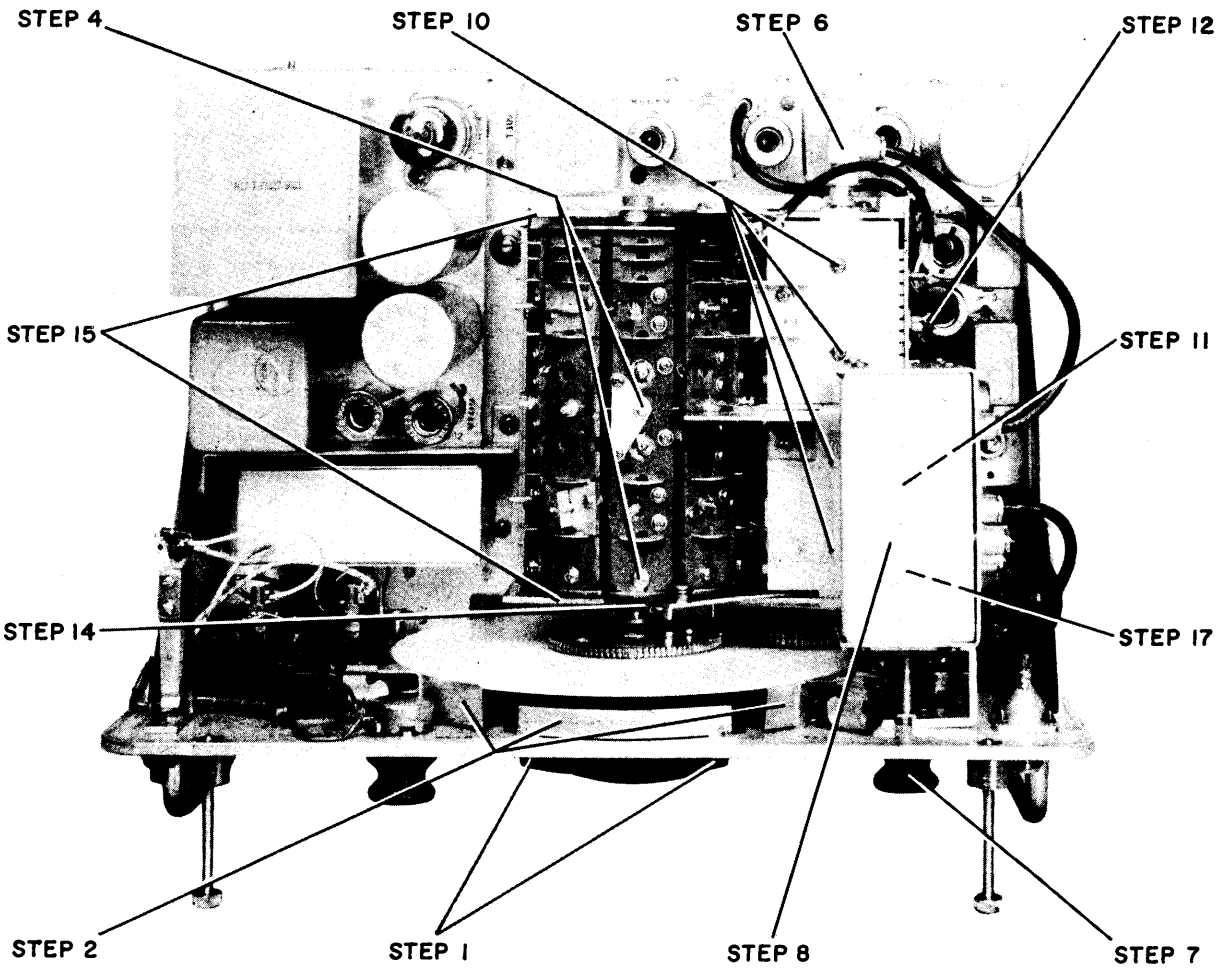


Figure 7–8. Location of Components Involved in the Removal of the R.F. Tuner Assembly

Step 5. Rotate the turret by hand until the opening exposes two no. 8 Phillips head screws on the left bottom side of the R.F. assembly. Remove these two screws.

Step 6. Disconnect P101 from J105.

Step 7. Loosen the two no. 8 Bristo screws in the Sensitivity switch knob and remove the knob.

Step 8. Remove the mounting nut and lock washer securing the attenuator assembly to the front panel.

Step 9. Remove the attenuator from the front panel and let it hang, by means of its leads, on the right side of the chassis.

Step 10. Remove the four no. 6 Phillips head screws from the tuning capacitor cover plate.

Step 11. Remove the two no. 8 Phillips head screws at the bottom right side of the tuner assembly.

Step 12. Unsolder the leads from the two lugs and five solder posts at the right side of the R.F. tuner assembly.

Step 13. Lift the assembly straight up and away from the main chassis.

Step 14. With a pair of long nose pliers release the coil spring on the detent arm at the front of the assembly.

Step 15. Release the spring clips on the front and back of the amplifier assembly.

Step 16. The R.F. assembly is replaced by adhering to the following instructions.

Step 17. Rotate the idler gear on the tuning capacitor shaft to its full clockwise position.

Step 18. Set the dial so that the zero mark on the logging scale is at the exact top center of the dial.

Step 19. Take up the slack in the anti-backlash gear on the turret shaft making sure that the zero setting made in Step 18 does not shift. Now drop the turret assembly into position, i.e. mesh the two gears.

Step 20. Replace the springs removed in Steps 14 and 15.

Step 21. Place the R.F. Tuner Assembly onto the chassis in its correct position.

Step 22. Replace the screws removed in Steps 5 and 11.

Step 23. Replace the Band Change knob and its shaft extension removed in Step 3.

Step 24. Replace the pilot light and pointer assemblies removed in Step 2.

Step 25. Replace the bezel and glass removed in Step 1.

Step 26. Make certain that the Tuning control knob is in its maximum counterclockwise position. The logging scale should now read zero. If it does not read zero, release the front clip spring, raise the front end of the turret assembly, remesh the gears to secure the zero dial reading. Replace the front clip spring.

Step 27. Resolder the leads removed in Step 12 and connect P101 to J105.

Step 28. Replace the tuning capacitor cover plate removed in Step 10 and the coil strip removed in Step 4.

Step 29. Replace the attenuator by securing it to the front panel and fasten the knob to the shaft.

(4) REMOVAL OF THE POWER SUPPLY.–The power supply is constructed as an assembly to allow removal if access to the underside is desired. To remove the power supply proceed as follows:

Step 1. Unsolder all of the leads from the power supply which terminate at terminal board TB102.

Step 2. Remove the two no. 6 Phillips head screws in the left hand gusset of the field strength meter.

Step 3. Remove the no. 8 Phillips head screw at the right front of the power supply.

Step 4. Remove the three no. 8 Phillips head screws on the back drop of the power supply chassis.

Step 5. Lift off the power supply.

Step 6. To replace the power supply follow the above procedure in reverse.

Step 7. To replace the field strength meter in its cabinet slide the unit into the cabinet and fasten the four captive screws securely. Connect the A.C. power cable and the antenna cable to their respective connectors.

(5) REMOVAL OF THE EXTERNAL METER.–Should it become necessary to replace the variable resistor R601 in the external meter release the three captive screws which secure the meter to the front panel of its case. Lift out the meter, The connections to the meter, the cable and the potentiometer become accessible through the meter mounting hole. Use a 9/16" socket wrench to remov the potentiometer retaining nut. Reinstall the resistor and the meter by the reverse procedure.

(6) ANTENNA, NAVY TYPE -66095.–Figure 7–9 shows the component locations for the antenna. Should repair become necessary requiring the disassembly of the antenna, reference to Figure 7–9 will serve as a guide to expedite repair.

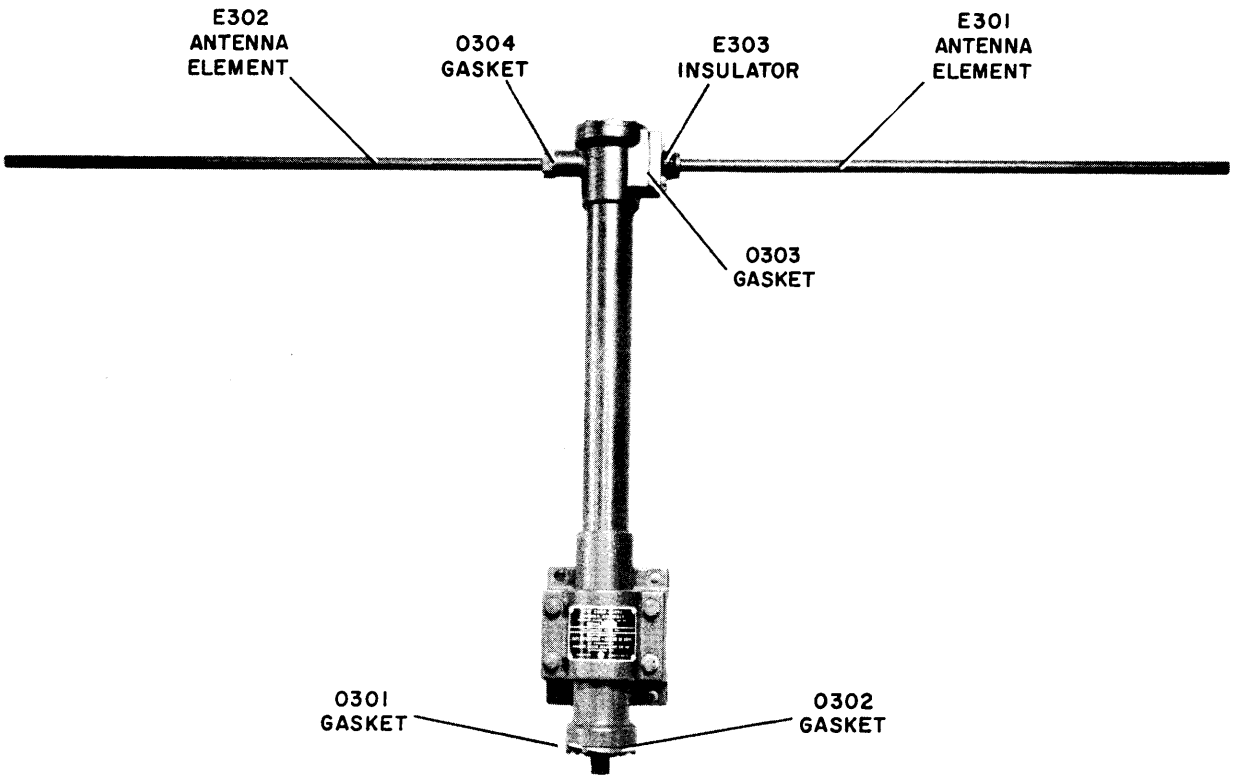


Figure 7–9. Antenna Navy type -66095, Component Locations

TABLE 7-3. TUBE OPERATING VOLTAGES AND CURRENTS

TUBE TYPE	FUNCTION	PLATE (E)	PLATE (MA)	SCREEN (E)	SCREEN (MA)	SUPP (E)	CATHODE (E)	GRID (E)	HEATER A.C.(E)
5654	R.F. Amplifier	150	6.3	135	2.02	1.84	1.8* 5.5**	0	6.3
6AU6WA	First Audio Amplifier	78	0.44	135	0.168	0	0	-0.9	6.3
1/2 5814	Second Audio Amplifier	43	1.34	----	-------	------	1.4	0	6.3
1/2 5814	Audio Output	125	10.6	-----	--------	------	1.6	0	----
6005	Audio Oscillator	260	20.6	230	1.7	10.5	10.5	-9.4	6.3
6AU6WA	First Carrier Amplifier	15	0.1	19	.045	0	0	-0.55	6.3
6AU6WA	Second Carrier Amplifier	20	.094	23	.0436	0	0	-0.6	6.3
1/2 5814	Carrier Amplifier-Limiter	145	0.6	-----	-----	-----	8.8	0	6.3
1/2 5814	Meter Rectifier	-4.2***	-----	-----	-----	-----	1.5***	-4.2***	
OB2WA	Voltage Regulator	210	18	-----	-----	-----	105	-----	----
OB2WA	Voltage Regulator	105	18	-----	-----	-----	0	-----	----
5Y3WGTA	Full Wave Rectifier	265 RMS	62.82	-----	-----	-----	270	-----	5

*Measured on Bands 4 through 9.
**Measured on Bands 1, 2, 3.
***Measured with a reading of 50 on the Carrier Level Meter.

TABLE 7-4. RATED TUBE CHARACTERISTICS

TUBE TYPE	FILAMENT VOLTAGE (V)	FILAMENT CURRENT (A)	PLATE VOLTAGE (V)	GRID BIAS (V)	SCREEN VOLTAGE (V)	PLATE CURRENT (MA)	SCREEN CURRENT (MA)	A.C. PLATE RESISTANCE (OHMS)	VOLTAGE AMPLIFICATION FACTOR (MU)	TRANSCONDUCTANCE (MICROMHOS)		EMISSION	
										NORMAL	MINIMUM	IS (MA)	TEST VOLT.
5654	6.3	0.175	120	-2	120	7.5	2.5	340,000	----	5000	3500	----	-----
6AU6WA	6.3	0.3	250	-1	150	10.8	4.3	2,000,000	-----	5200	4150	60	20
5814	6.3	0.35	300	-8.5	-----	10.5	---	7,700	17	3100	2500	----	----
6005	6.3	0.45	250	-12.5	250	45	6	52,000	----	4100	3000	100	30
OB2WA	----	-----	108	------	------	5-30	---	---------	----	------	------	-----	-----
5Y3WGTA	5	2	350*	------	------	400*	---	---------	----	------	------	-----	-----

*Per plate

TABLE 7-5. WINDING DATA CHART

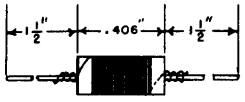
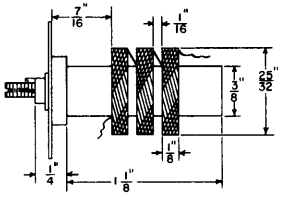
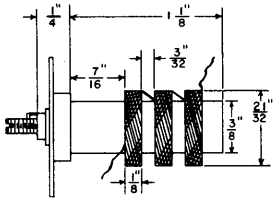
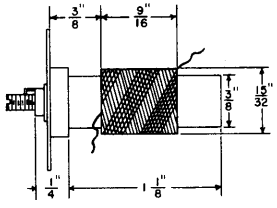
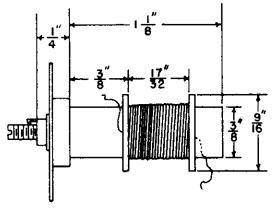
SYMBOL DESIG.	NAT. PT. NO.	DIAGRAM	WINDING	WIRE SIZE	TURNS	D.C. RES. IN OHMS	IMPED-ANCE RATIO	HIPOT A.C. VOLTS	REMARKS
L102	SB:1098		Single	30E	26				Inductance: 1 microhenry
L103	SB:1050		Single 3 pie universal wound	10/44 Litz	645	25			Inductance: 2.86 millihenrys at 1 kc. Self-resonant freq: 1.8 mc
L104	SB:1052		Single 3 pie universal wound	15/44 Litz	330	8.3			Inductance: 0.662 millihenrys at 1 kc. Self-resonant Freq: 5.0 mc.
L105	SB:1054		Single pie universal wound	10/44 Litz	155	4.9			Inductance: 0.134 millihenrys at 1 kc. Self-resonant Freq: 8.0 mc.
L106	SB:1056		Single Solenoid wound	34 copper baked synthetic r sin covered	61 1/2	1.83			Inductance: 45 microhenrys at 2.5 mc. Freq range with 70 mmf fixed capacitor: 2.55 to 3.5 mc. Self-resonant Freq: 23.75 mc.

TABLE 7-5. WINDING DATA CHART (CONT'D)

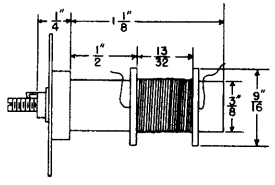
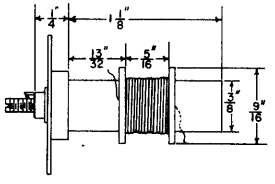
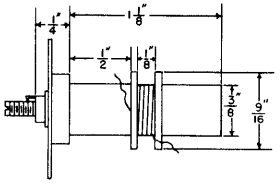
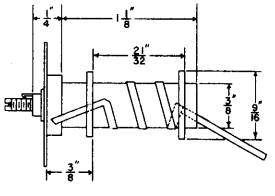
SYMBOL DESIG.	NAT. PT. NO.	DIAGRAM	WINDING	WIRE SIZE	TURNS	D.C. RES. IN OHMS	IMPED-ANCE RATIO	HIPOT A.C. VOLTS	REMARKS
L107	SB:1058		Single solenoid wound	30 copper baked synthetic resin covered	32	0.42			Inductance: 9.8 microhenrys at 7.9 mc Freq range with 70 mmf: 5.5 to 6.9 mc Self-resonant Freq: 40 mc
L108	SB:1060		Single solenoid wound	30 copper baked synthetic resin covered	12 1/2	Less than 0.5			Inductance: 1.67 microhenrys at 7.9 mc Freq range with 70 mmf fixed capacitor: 12.5 to 15.6 mc Self-resonant Freq: 78 mc
L109	SB:1062		Single layer	24 copper baked synthetic resin covered	3 3/4	Less than 0.5			Inductance: 0.388 microhenrys at 25 mc Freq range with 70 mmf fixed capacitor: 29.4 to 33.5 mc Self-resonant Freq: 340 mc
L110	SA:9699		Single layer	0.125" wd x 0.005" thk silver plated copper inductor strap	2 1/2	Less than 0.5			Inductance: 0.0842 microhenrys at 110 mc Self-resonant Freq 400 mc

TABLE 7-5. WINDING DATA CHART (CONT'D)

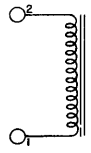
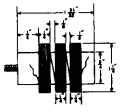
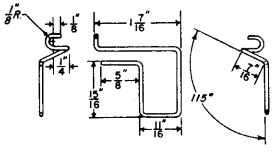
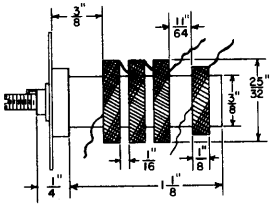
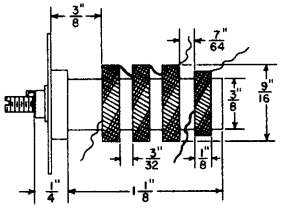
SYMBOL DESIG.	NAT. PT. NO.	DIAGRAM	WINDING	WIRE SIZE	TURNS	D.C. RES. IN OHMS	IMPED-ANCE RATIO	HIPOT A.C. VOLTS	REMARKS
L112	R392-1		Single			250		1780	Inductance: 12 henrys nominal 55 ma DC rating 40° max temperature rise, hermetically sealed metal case
L113 L114	SA:9068		Single 3 pie wound			0.71			Inductance: 600 microhenrys at 1000 cps
L115	R731-1		Single	12 hand drawn copper	Partial				
T101	SB:1051		Primary	30 copper	60	0.92			Inductance: 49 microhenrys at 1 kc
			Secondary	10/44 Litz	645	25.0			Inductance:2.83 millihenrys at 1 kc wax impregnated and fungus proofed
T102	SB:1053		Primary	30 copper	18	0.27			Inductance: 5 microhenrys at 1 kc
			Secondary	15/44 Litz	330	8.3			Inductance: 0.64 millihenrys at 1 kc

TABLE 7-5. WINDING DATA CHART (CONT'D)

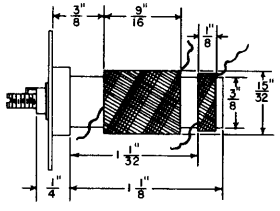
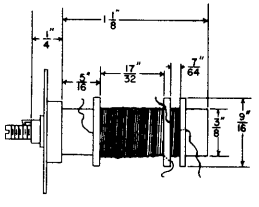
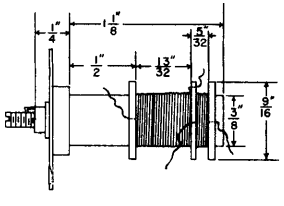
SYMBOL DESIG.	NAT. PT. NO.	DIAGRAM	WINDING	WIRE SIZE	TURNS	D.C. RES. IN OHMS	IMPED-ANCE RATIO	HIPOT A.C. VOLTS	REMARKS
T102 (cont'd)									wax impregnated and fungus proofed
T103	SB:1055		Primary	30 copper	15	0.267			Inductance: 3 microhenrys at 1 kc
			Secondary	10/44 Litz	155	4.9			Inductance 134.5 microhenrys at 1 kc wax impregnated and fungus proofed
T104	SB:1057		Primary	30 copper	8 3/4	0.166			Inductance: 1.12 microhenrys at 7.9 mc
			Secondary	34 copper	61 1/2	1.83			Inductance: 23.7 microhenrys at 2.5 mc Freq range with 70 mmf fixed capacitor: 2.56 to 3.03 mc fungus proofed
T105	SB:1059		Primary	30 copper	3 3/4	0.12			Inductance: 0.448 microhenrys at 25 mc
			Secondary	30 copper	32	0.42			Inductance: 7.5 microhenrys at 7.9 mc Freq range with 70 mmf fixed capacitor: 5.4 to 6.9 mc fungus proofed

TABLE 7-5. WINDING DATA CHART (CONT'D)

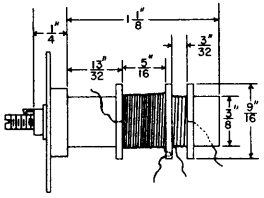
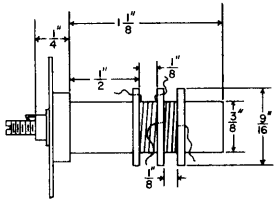
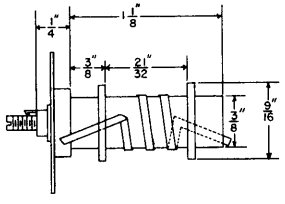
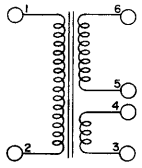
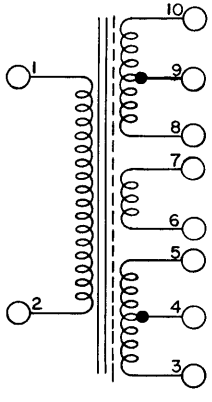
SYMBOL DESIG.	NAT. PT. NO.	DIAGRAM	WINDING	WIRE SIZE	TURNS	D.C. RES. IN OHMS	IMPED-ANCE RATIO	HIPOT A.C. VOLTS	REMARKS
T106	SB:1061		Primary	30 copper	5 3/4	Less than 0.5			Inductance: 0.66 microhenrys at 25 mc
			Secondary	24 copper	12 1/2	Less than 0.5			Inductance: 1.34 microhenrys at 7.9 mc Freq range with 70 mmf fixed capacitor; 12.55 to 15.8 mc fungus proofed
T107	SB:1063		Primary	30 copper	5 3/4	Less than 0.5			Inductance: 0.66 microhenrys at 25 mc
			Secondary	24 copper	3 3/4	Less than 0.5			Inductance: 0.317 microhenrys at 25 mc Freq range with 70 mmf fixed capacitor: 29.0 to 33.5 mc fungus proofed
T108	SB:1064		Primary	18 bus	1 3/4	Less than 0.5			
			Secondary	0.125" wd x 0.005" thk silver plated copper strap	2 1/2	Less than 0.5			Inductance: 0.0884 microhenry at 110 mc Freq range with 25 mmf fixed capacitor: 108 to 113 mc fungus proofed

TABLE 7-5. WINDING DATA CHART (CONT'D)

SYMBOL DESIG.	NAT. PT. NO.	DIAGRAM	WINDING	WIRE SIZE	TURNS	D.C. RES. IN OHMS	IMPEDANCE RATIO	HIPOT A.C.VOLTS	REMARKS
T109	R395-1		Primary No. 1 secondary No. 2 secondary			390 75 5	10,000 to 500 and 50		1 watt max operating level. 4.47 to 1 turns ratio primary to no. 1 secondary. 14.15 to 1 turns ratio primary to no. 2 secondary. Designed to operate at 90 cps ±10 cps. Min Q: 3.8 at 90 cps measured by tuned circuit impedance method with 22 ma of DC in primary and 50 ohm winding loaded. Max temperature rise 40°C.
T110	R391-1		Primary No. 1 secondary No. 2 secondary No. 3 secondary						Voltage rating: 115 vac at 60 to 400 cycles, single phase Output: 275 v RMS at 55 ma center tapped Output: 5 v RMS at 2 amps Output: 6.3 v RMS at 3 amps center tapped. Internally shielded. Hermetically sealed metal case. Max temperature rise 40°C.

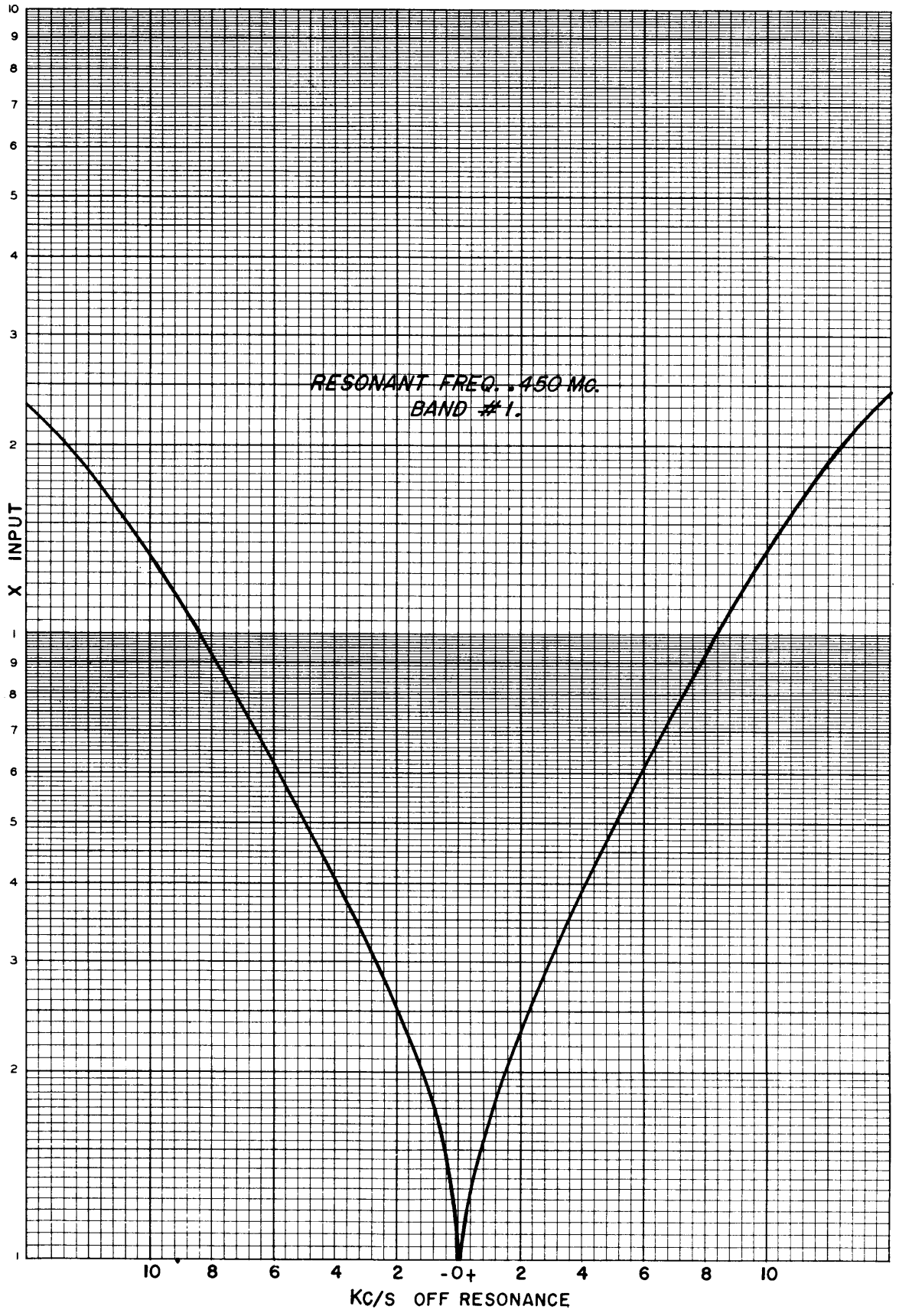


Figure 7-10. Selectivity Characteristic, Band 1, Field Strength Meter IM-84/URM-50

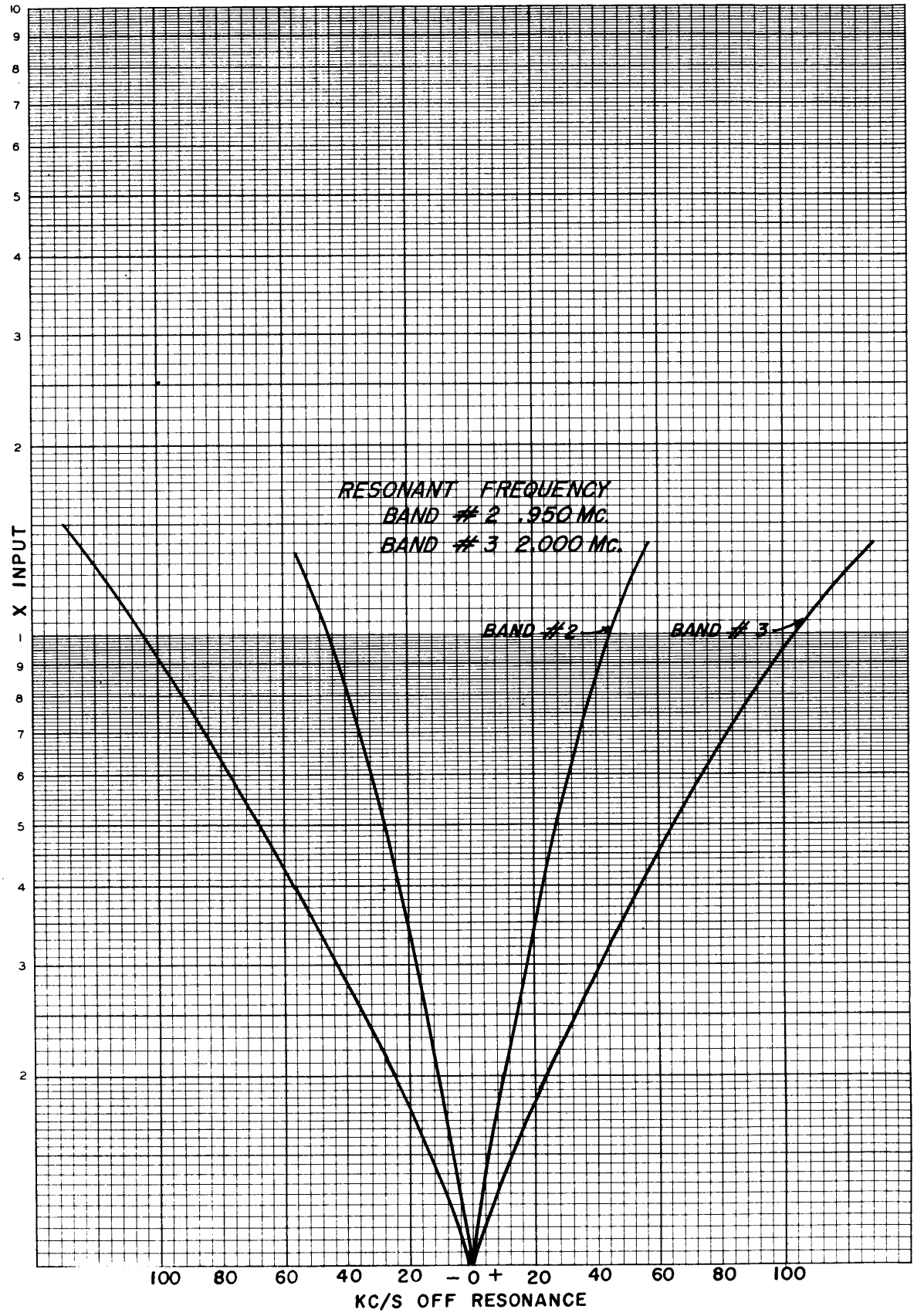


Figure 7–11. Selectivity Characteristic, Bands 2 and 3, Field Strength Meter IM-84/URM-50

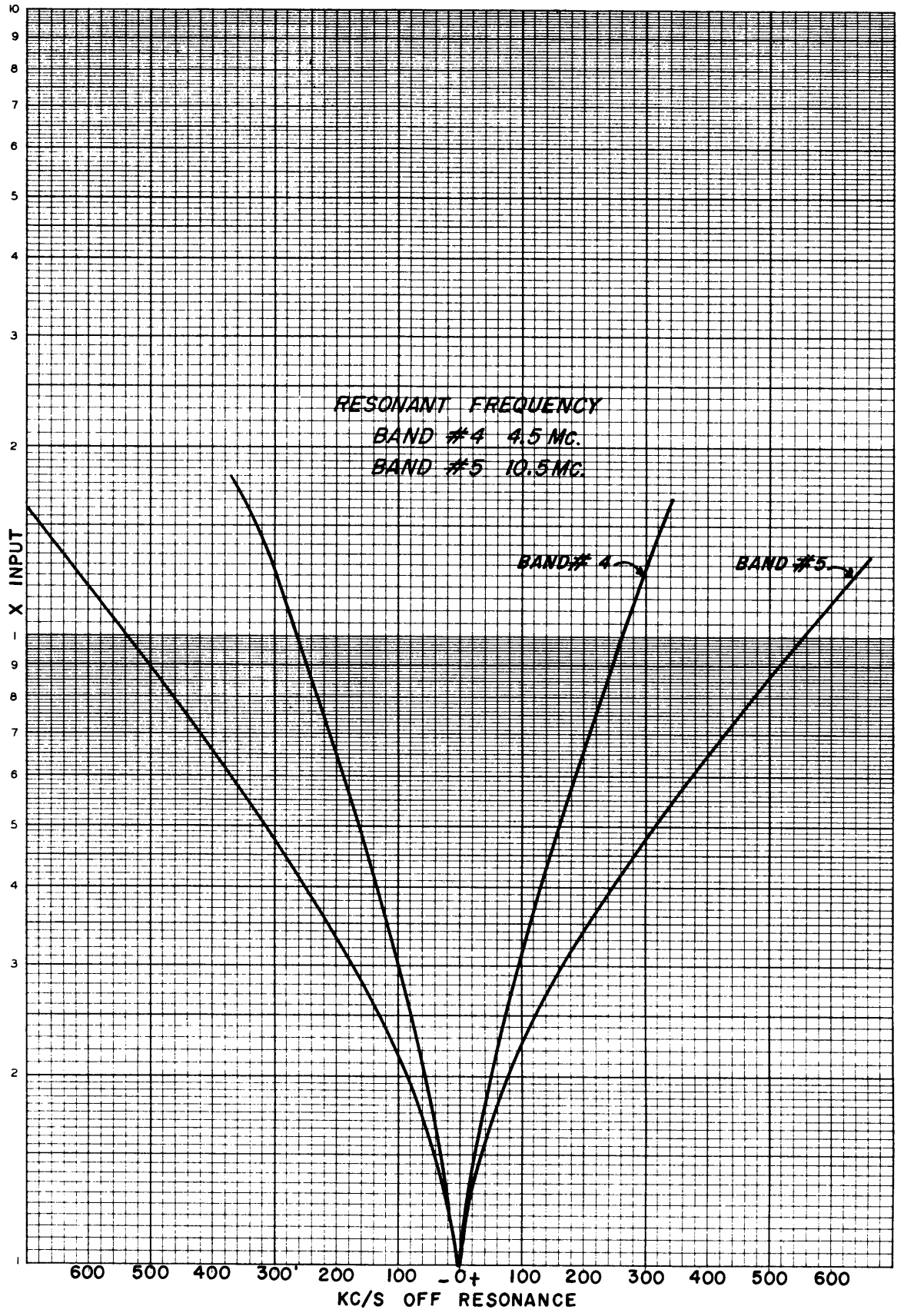


Figure 7-12. Sensitivity Characteristic, Bands 4 and 5, Field Strength Meter IM-84/URM-50

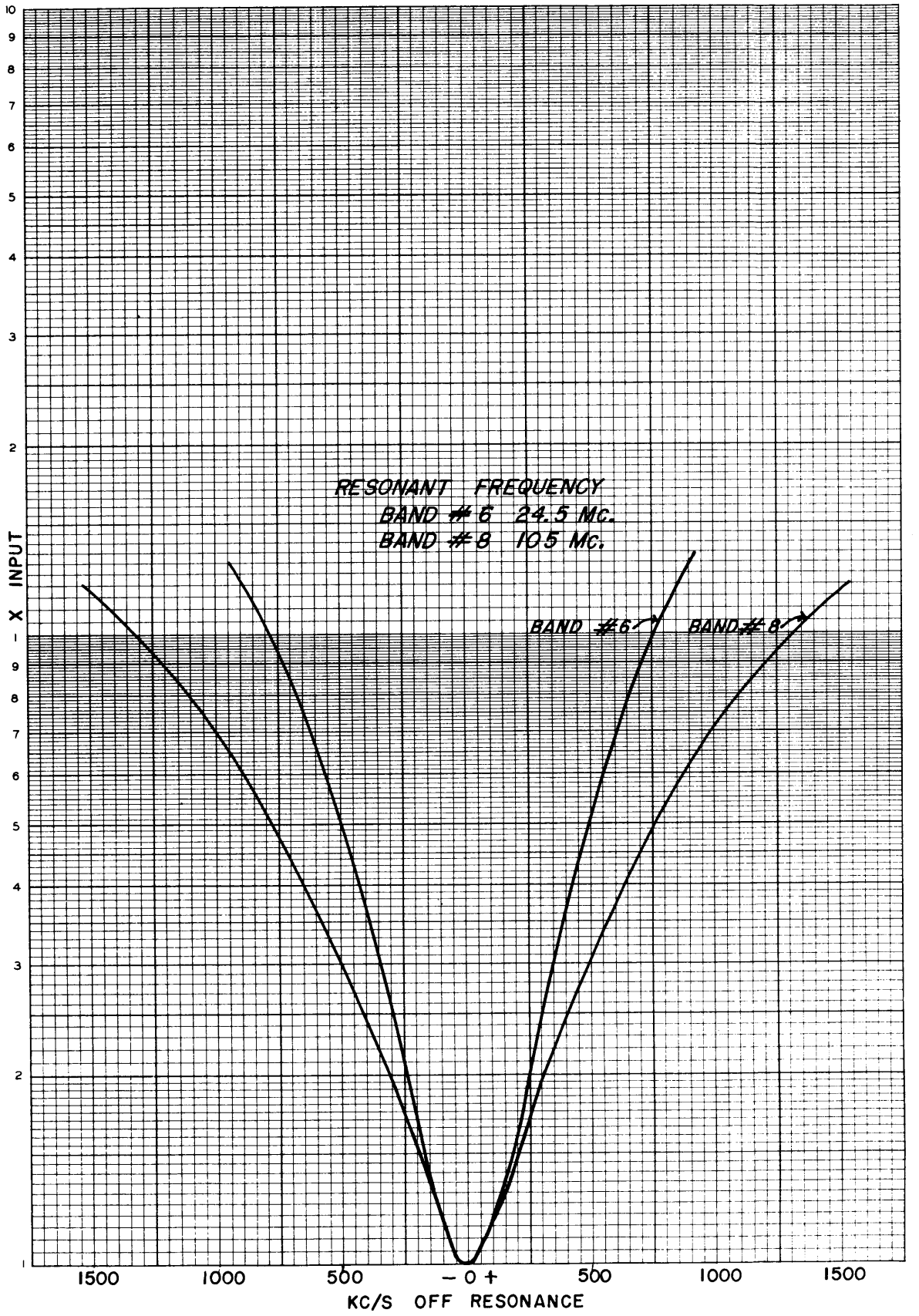


Figure 7-13. Selectivity Characteristic, Bands 6 and 8, Field Strength Meter IM-84/URM-50

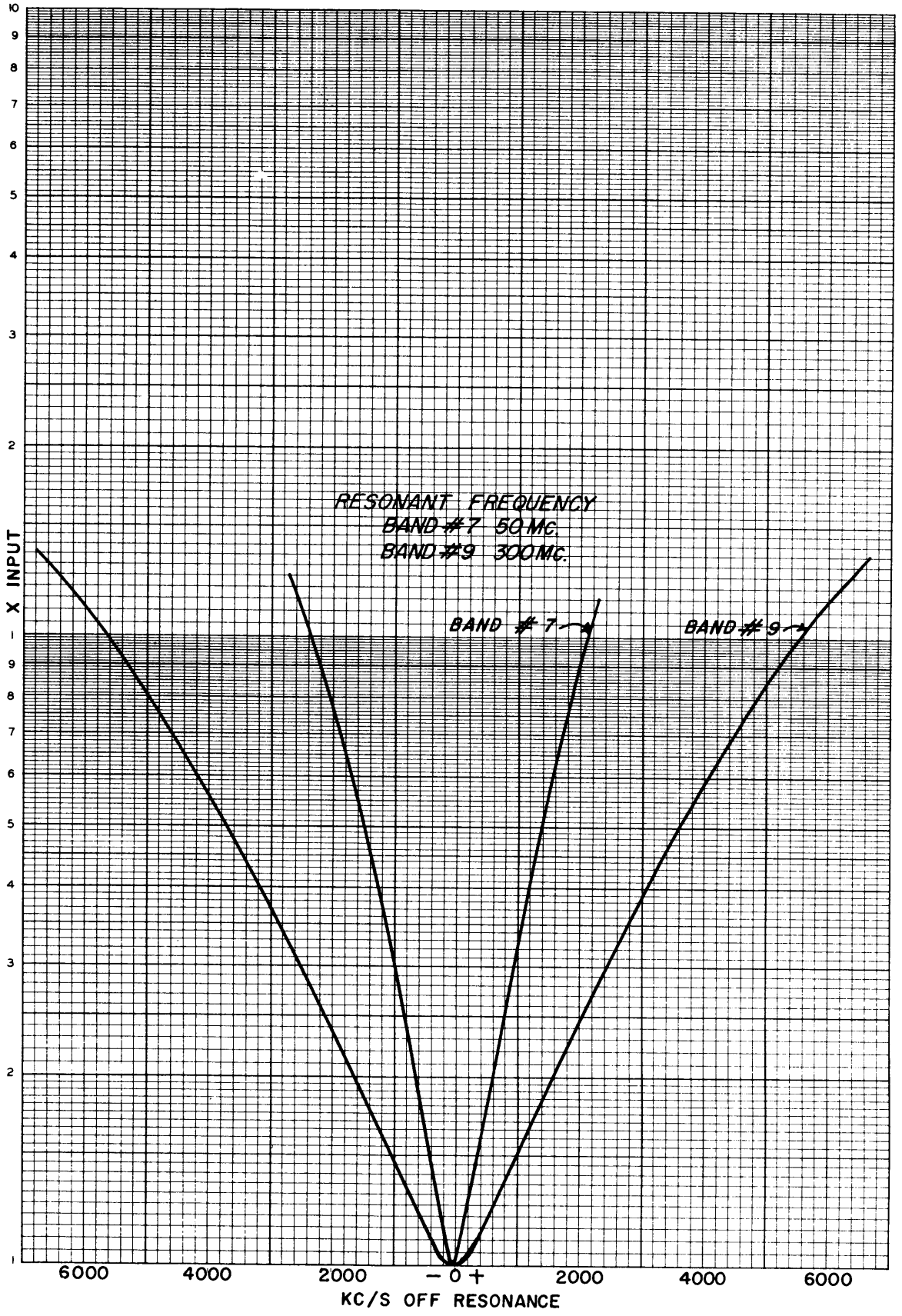


Figure 7–14. Sensitivity Characteristic, Bands 7 and 9, Field Strength Meter IM-84/URM-50

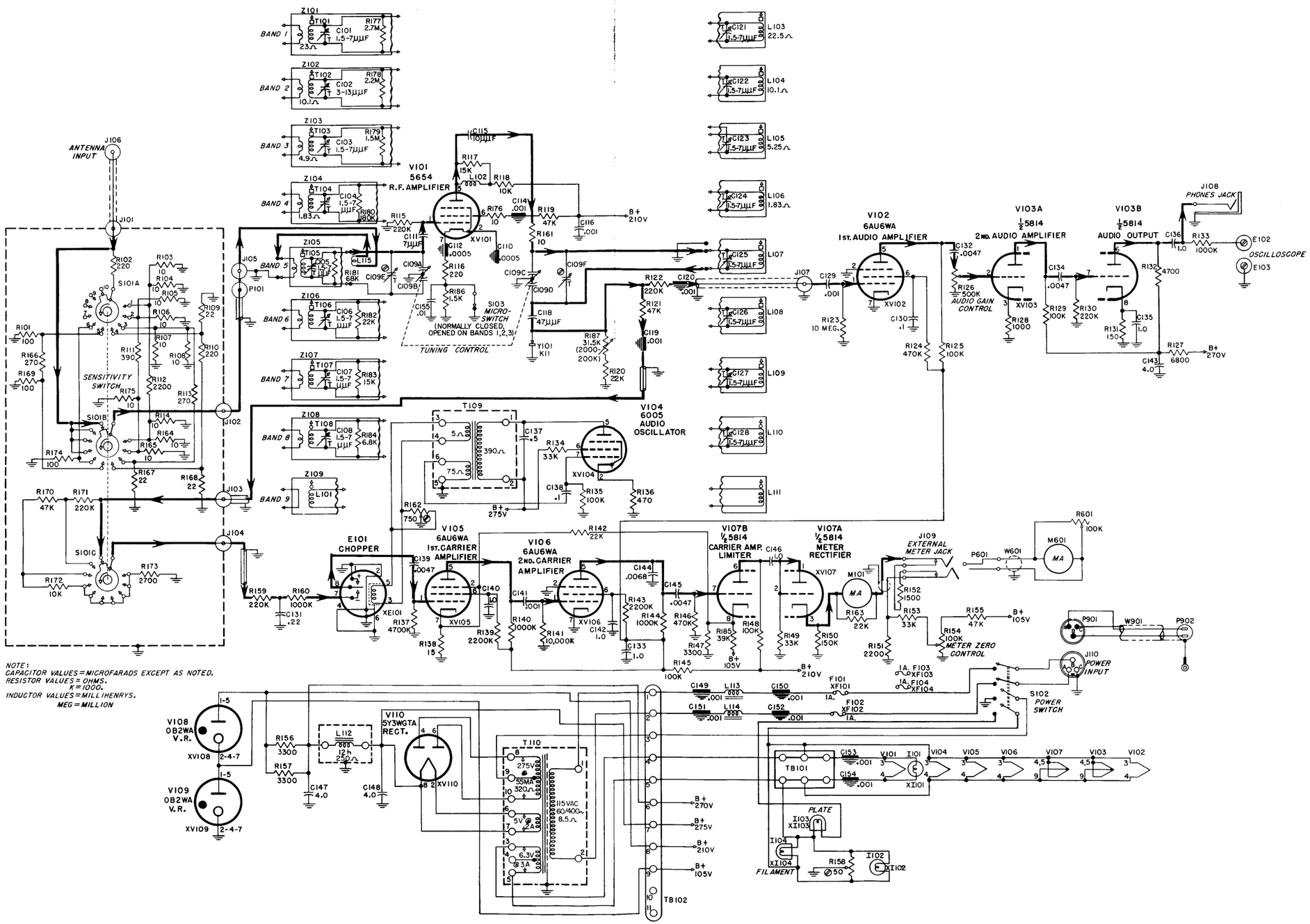


Figure 7–15. Schematic Diagram, Field Strength Meter IM-84/URM-50

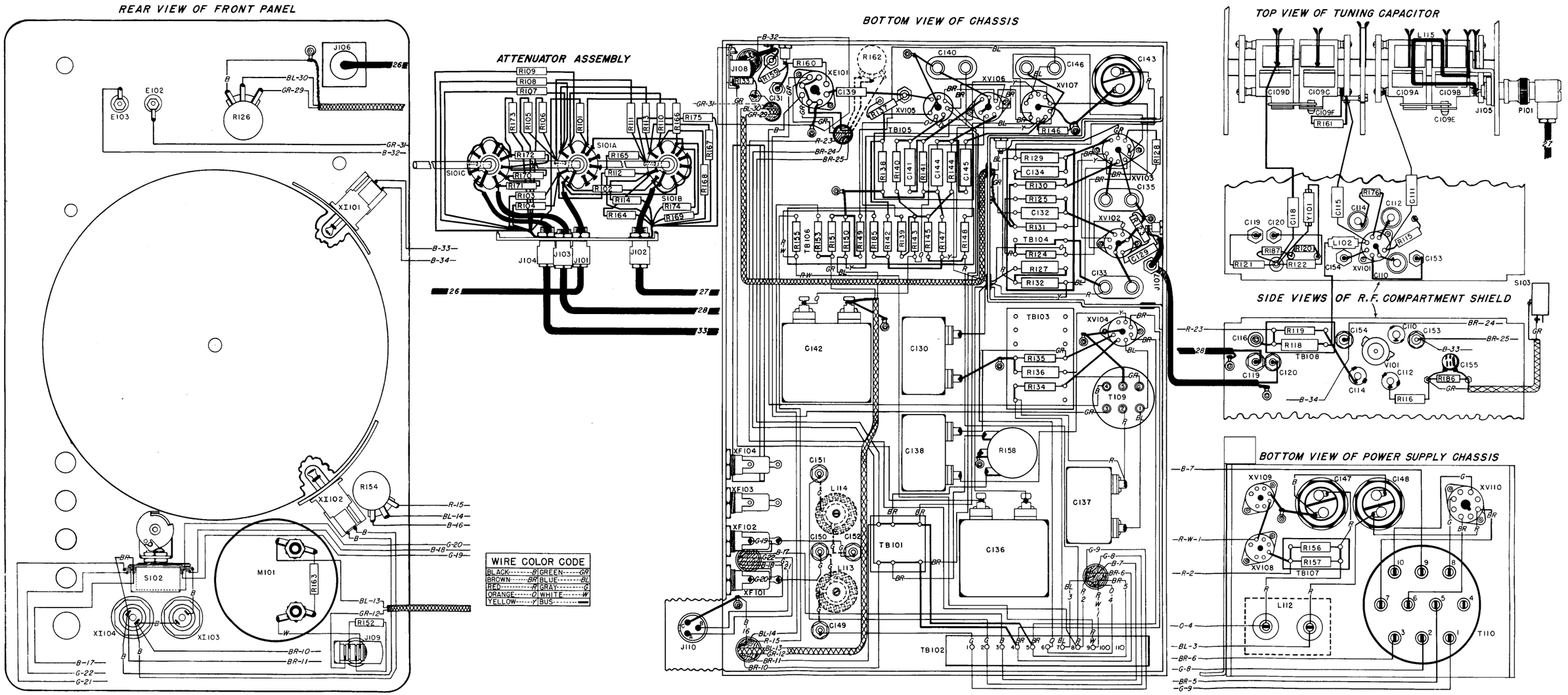


Figure 7–16. Practical Wiring Diagram, Field Strength Meter IM-84/URM-50

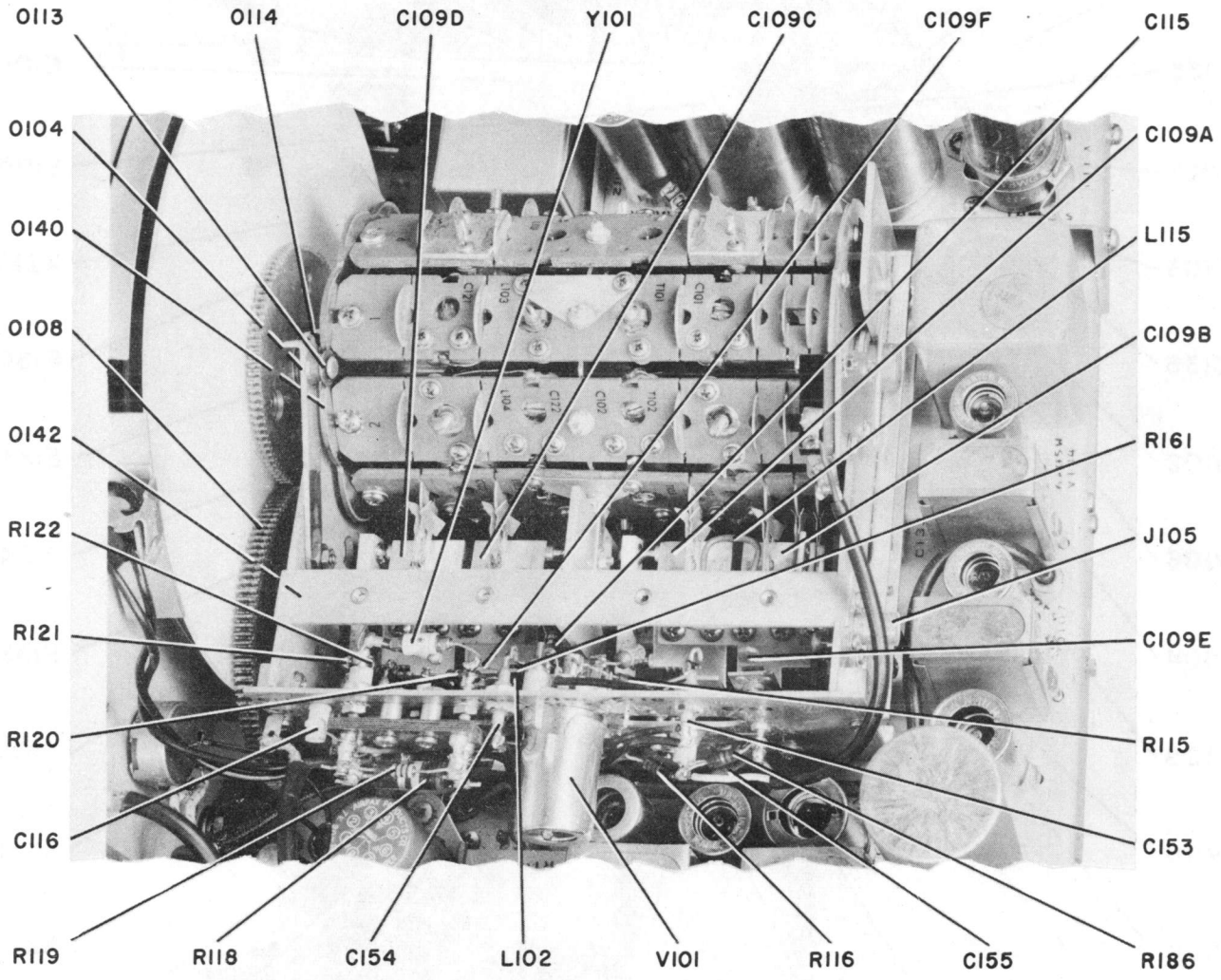


Figure 7–17. Component Locations, Top View of R.F. Tuner Assembly with Tuning Capacitor Cover Plate Removed

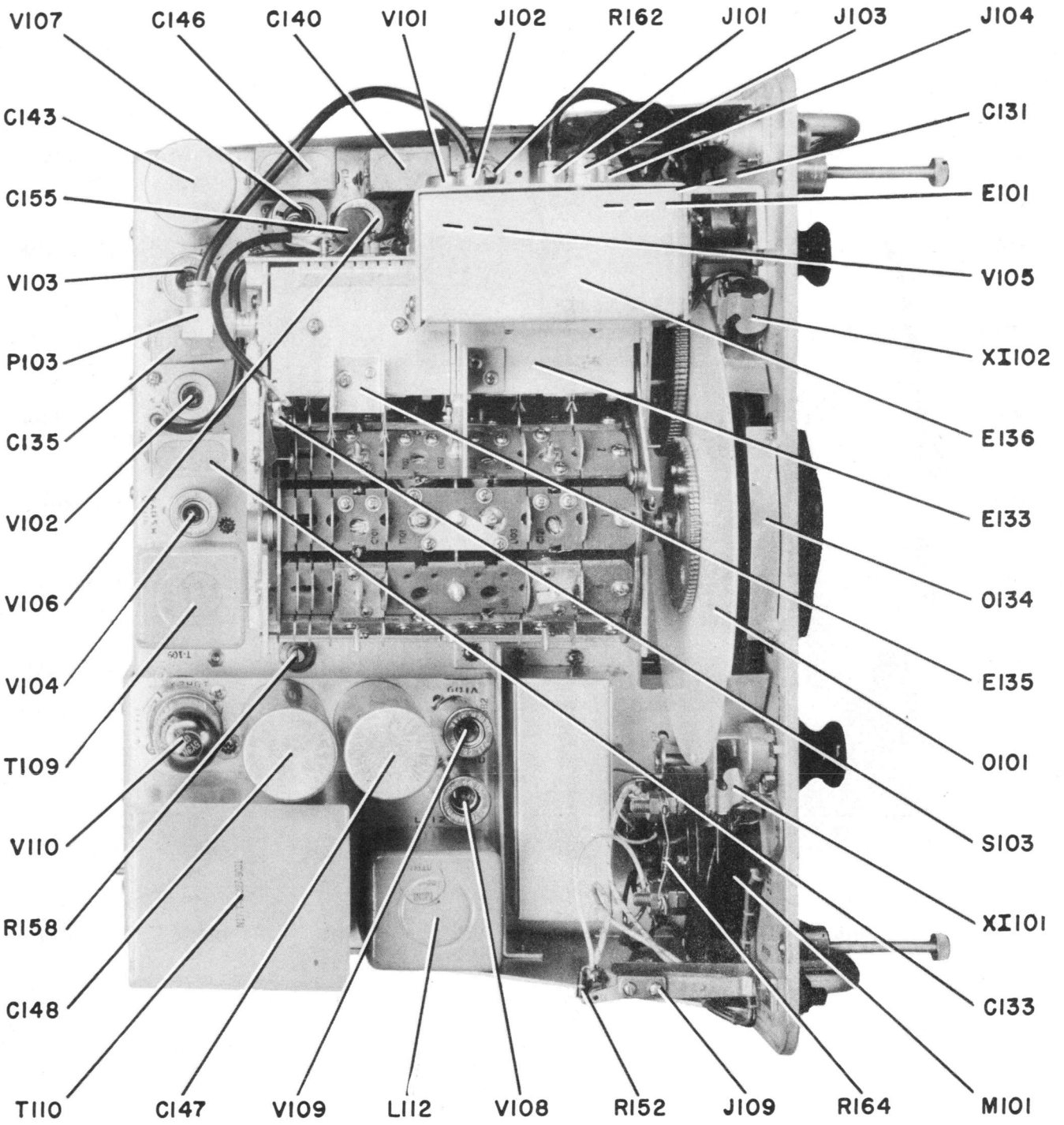


Figure 7–18. Component Locations, Top View of Chassis, Field Strength Meter IM-84/URM-50

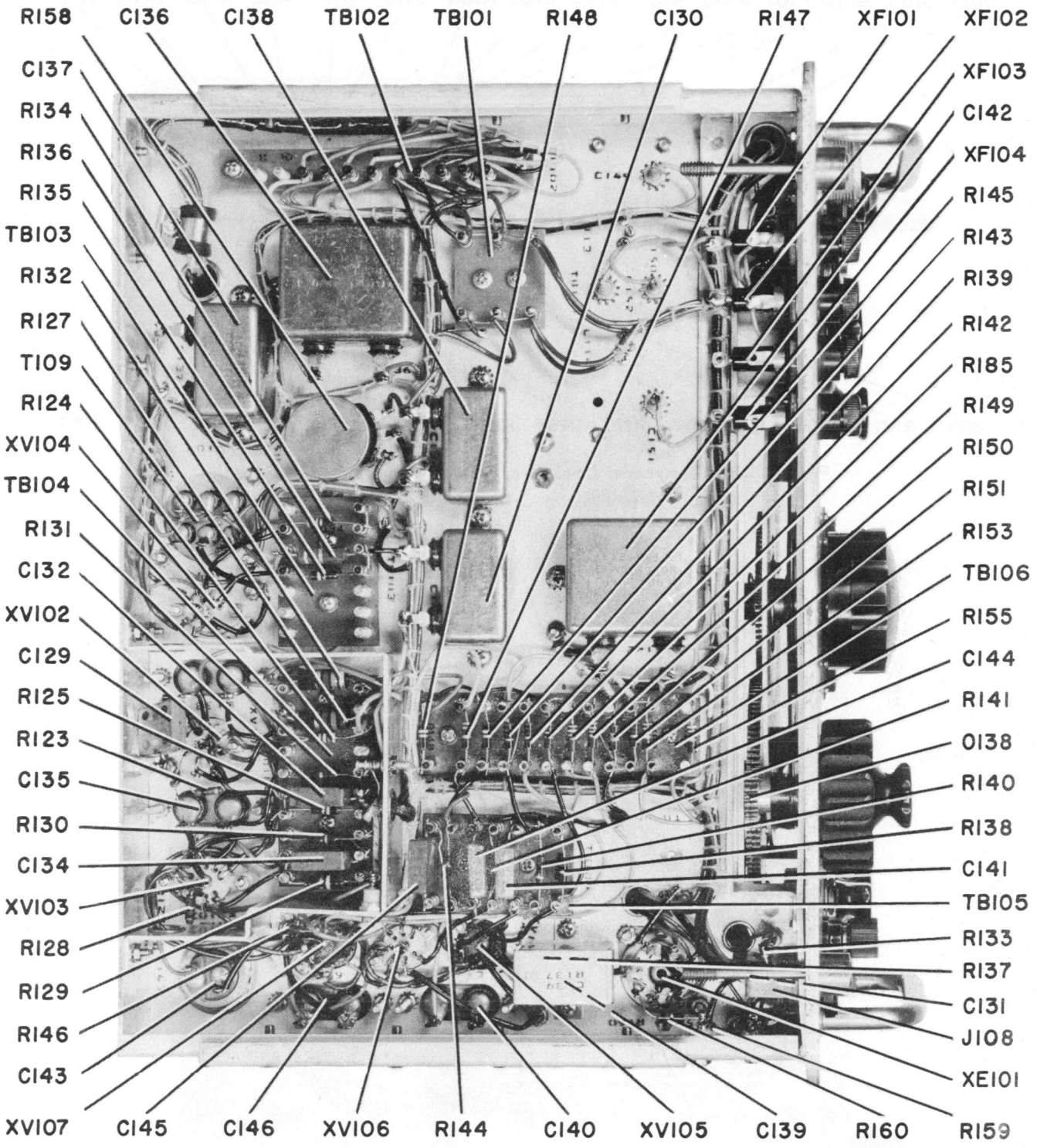


Figure 7–19. Component Locations, Bottom View of Chassis, Field Strength Meter IM-84/URM-50

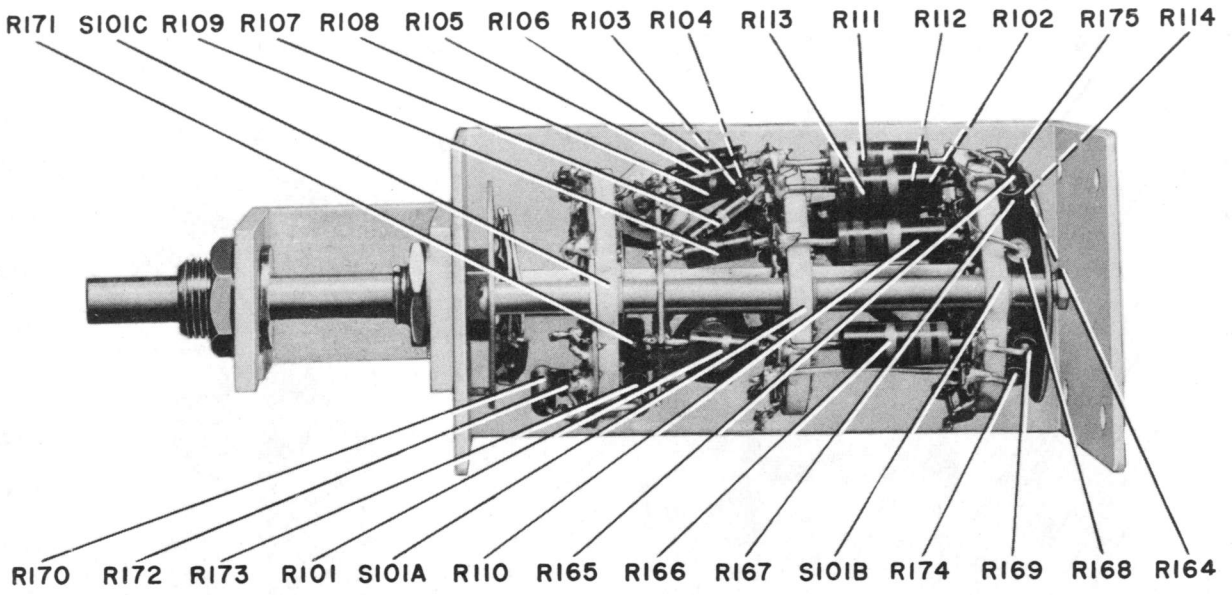


Figure 7–20. Component Locations, Interior of Attenuator Assembly

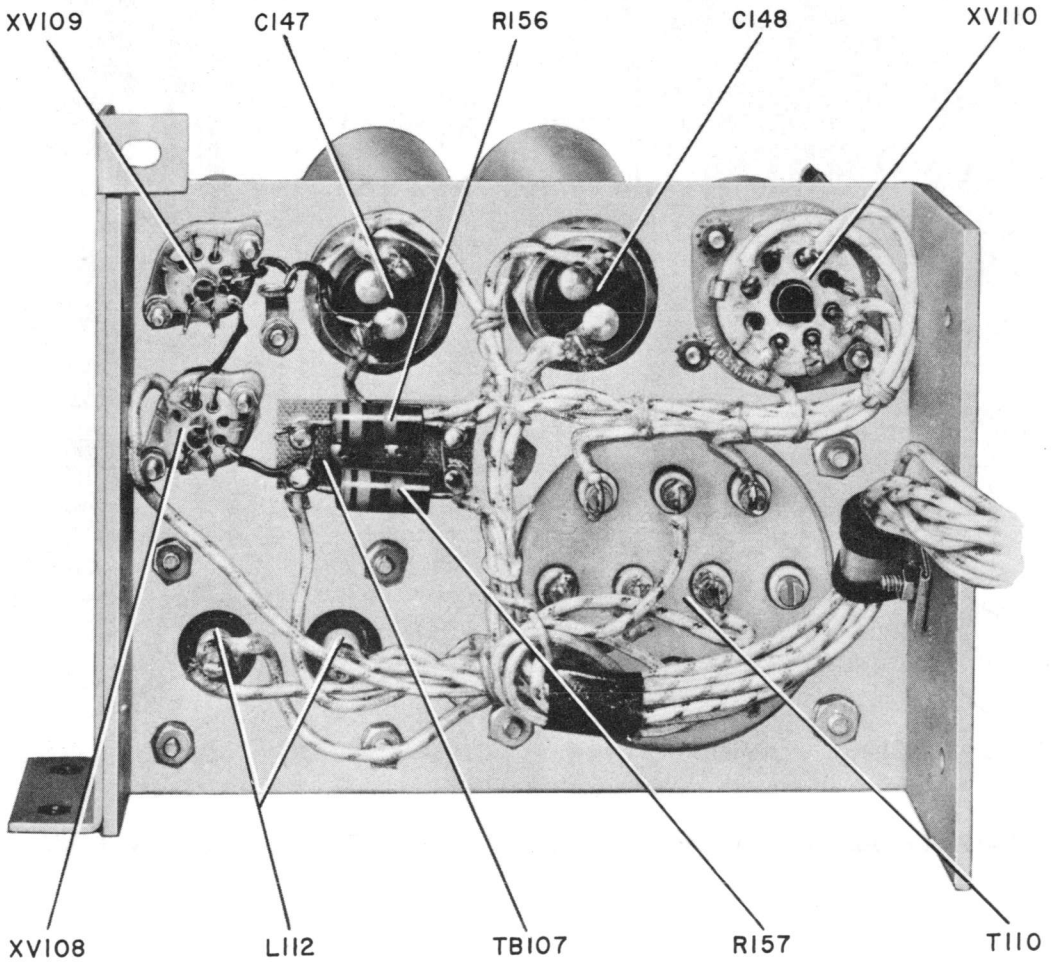


Figure 7–21. Component Locations, Bottom of Chassis, Power Supply Assembly

TABLE 8-1. WEIGHTS AND DIMENSIONS OF SPARE PARTS BOXES

EQUIPMENT SPARES*				
OVERALL DIMENSIONS				
HEIGHT	WIDTH	DEPTH	VOLUME	WEIGHT
15 45/64"	15 21/32"	10 23/32"	1.73 cu. ft.	20 lbs.

TABLE 8-2. SHIPPING WEIGHTS AND DIMENSIONS OF REPAIR PARTS BOXES

EQUIPMENT SPARES					
SHIPPING BOX NO.	OVERALL DIMENSIONS			VOLUME	WEIGHT
	HEIGHT	WIDTH	DEPTH		
Packed in same crate as IM-84/URM-50.					

* Spares contained in Accessory Kit MK-110/U (Data shown for entire case).

TABLE 8–3. LIST OF MAJOR UNITS

SYMBOL GROUP	QUANTITY	NAME OF MAJOR UNITS	STANDARD NAVY STOCK NUMBER	DESIGNATION
--------	1	Radio Frequency Monitor	+ F16-M-46251-1024	AN/URM-50
101 to 199	1	Field Strength Meter	+ F17-M-23308-4118	IM-84/URM-50
201 to 299	1	Accessory Kit	+ F16-T-20243-5953	MK-110/U
301 to 399	1	Antenna	+ N16-A-48586-531	NT-66095
401 to 499	1	RF Probe	+	MX-936/URM
501 to 599	1	Coupler	+ N16-A-96057-2601	CU-152/URM-3
601 to 699	1	Ammeter	+ F16-I-56471-1003	ME-80/URM-50
701 to 799		Accessories	--------	--------
801 to 899	1	Cord	+	CG-409A/U (10' 4")
901 to 999	1	Cable Assembly	+ N17-C-48632-4241	CX-2374/U (8' 7")
1001 to 1099	1	Headset	+ N17-H-52025-2091	NT-49985-A

+ This unit should not be replac d unless r pair is b y nd th capacity of the using activity. If replac m nt is r quir d, th it m must b turned into the activity from which th replacem nt is r ceiv d.

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR R. F. MONITOR AN/URM-50

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
	--- F16-M-46251-1024 ---	Monitor, Radio Frequency: frequency range 300 kc to 400 mc; one monitoring channel within frequency range; manual method of channel selection; meter indicator; meter accuracy plus or minus 2%; operating power requirements AC 115 v, 60 to 400 cycles, single phase; provided with phones jack suitable for audio frequency monitoring; includes Field Strength Meter AN type IM-84/URM-50, Accessory Kit AN type MK-110/U, Dipole Antenna Navy type 66095; Accessory Kit includes external meter, test probe, cables and operating spares; Field Strength Meter case 15 21/32" lg x 11 27/32" wd x15 45/64"h o/a; Accessory Kit 15 21/32" lg x 10 23/32" wd x15 45/64" ho/a; National Company part/dwg ER:339; Mfr code 1, type ER:339	

TABLE 8-4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
101-199	--- F17-M-23308-4118 ---	Meter, Field Strength: 300 kc to 400 mc frequency range; one monitoring channel in frequency range; manual method of channel selection; meter indicator accuracy ±2%; operating power requirements 115 v AC, 60 to 400 cycles, single phase; 15 21/32" lg x 11 27/32" wd x 15 45/64"h o/a; table mtg; contains phone jack output suitable for AF monitoring; provided with four vibration mounts and four rubber bumpers (mtg feet); one carrying handle on cover; cover removable; AN type IM-84/URM-50; National Company part/dwg BM:567, R788; Mfr code 1, type R788	Field Strength Meter
	STRUCTURAL PARTS		
A101	Assemble from component part	Cover: aluminum w/light gray enamel finish; 15 21/32" lg x 9 27/32" wd x 3 1/4" h excluding hardware; mts by hinges and hasps; contains hinged panel for holding instruction manual, clips for holding power cable and bracket for holding headset; AN type CW-303/URM-50; National Company part/dwg SA:9970; Mfr code 1, type SA:9970; includes 0118, 0120, 0121	Cvr for Field Strength Meter
A102	Shop manufacture locally.	Case: aluminum w/light gray enamel finish; 15 21/32" lg x 9 27/32" wd x 11 53/64" h excluding hardware; holes provided for mtg four shock mounts on bottom and four rubber mounting feet on one side; National Company part/dwg SA:9044; Mfr code 1, type SA:9044	Case for Field Strength Meter
	CAPACITORS		
C101	--- N16-C-63900-6761 ---	Capacitor, variable: ceramic dielectric; rotary type; single section; zero temp coef; 1.5 to 7.0 mmf; 500 vdcw; 27/32" lg x 41/64" h x 13/32" thk excl term; one solder lug term on each end; two 0.120" diam mtg holes in base spaced 7/16" c to c; screwdriver slot adjustment; ceramic base; JAN-C-81 spec; JAN type CV11A070; National Company part/dwg K277-2; Mfr code 83 part of Z101	Z101 tuning
C102	--- N16-C-63965-2800 ---	Capacitor, variable: ceramic dielectric; rotary type; single section; temp coef -300 PPM; 3.0 to 13.0 mmf; 500 vdcw; 27/32" lg x 41/64" h x 13/32" thk excl term; one solder lug term on each end; two 0.120" diam mtg holes in base spaced 7/16" c to c; screwdriver slot adjustment; ceramic base; JAN-C-81 spec;	Z102 tuning

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		CAPACITORS (CONT'D)	
C102 (cont'd)		JAN type CV11B130; National Company part/dwg K277-6; Mfr code 83 part of Z102	
C103		Same as C101 except part of Z103	Z103 tuning
C104		Same as C101 except part of Z104	Z104 tuning
C105		Same as C101 except part of Z105	Z105 tuning
C106		Same as C101 except part of Z106	Z106 tuning
C107		Same as C101 except part of Z107	Z107 tuning
C108		Same as C101 except part of Z108	Z108 tuning
C109	--- N16-C-63461-1051 ---	Capacitor, variable: air dielectric; plate meshing type; four sections; min 6.0 mmf, max 154.0 mmf per section; each section straight line frequency tuning characteristic; 750 v AC peak voltage; 6 3/4" lg x 6 1/2" wd x 3 31/32" h; 1/4" diam shaft extends 3/4" beyond front bearing; gear driven adjustment; 240° CW rotation; base not insulated; eight contact brush type term; mts by four 3/16" diam holes on bottom on 5.125" x 5.500" mtg/c; 18 brass silver plated w/water dip lacquer plates per section; includes two vane type trimmers; National Company part/dwg SA:9050; Mfr code 1, type SA:9050	Main tuning capacitor
C109A		Part of C109	V101 grid tuning
C109B		Part of C109	V101 grid tuning
C109C		Part of C109	V101 plate tuning
C109D		Part of C109	V101 plate tuning
C109E		Part of C109	Trimmer
C109F		Part of C109	Trimmer
C110	--- N16-C-30172-4329 ---	Capacitor, fixed: mica dielectric; case style no. 7, MBCA ref dwg group 1; 500 mmf, ±20%; 500 vdcw; temp coef -20 ±100 PPM; ceramic insulated body; case 0.450" diam x 0.070" thk; 2 solder lug term 9/32" h, one on each side; three mtg tabs on one side	V101 cathode bypass

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS / SIGNAL CORPS / STANDARD NAVY / AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		CAPACITORS (CONT'D)	
C110 (cont'd)		0.01" thk x 5/32" h spaced 120° apart on 3/16" rad; National Company part/dwg R724-3; Mfr code 83	
C111	--- N16-C-15755-9168 ---	Capacitor, fixed: ceramic dielectric; case style no. 2. MBCA ref dwg group 1; 7 mmf, ±0.5 mmf; 500 vdcw; insulated; 0.562" lg x 0.250" diam; 2 axial wire lead term 1 1/4" lg; term mtd; JAN-C-20 spec; JAN type CC21CH070D; National Company part/dwg H872-34; Mfr code 83	V101 grid
C112		Same as C110	V101 cathode bypass
C113		Not used	
C114	--- N16-C-31095-6291 ---	Capacitor, fixed: mica dielectric; case style no. 7, MBCA ref dwg group 1, 1,000 mmf, ±20%; 500 vdcw; temp coef -20 ±100 PPM; ceramic insulated body; case 0.450" diam x 0.070" thk; 2 solder lug term 9/32" h; one on each side; 3 mtg tabs on one side 0.01" thk x 5/32" h spaced 120° apart on 3/16" rad; National Company part/dwg R724-1; Mfr code 63	V101 screen bypass
C115	--- N16-C-15916-1367 ---	Capacitor, fixed: ceramic dielectric; case style no. 2, MBCA ref dwg group 1, 10 mmf, ±5%; 500 vdcw; insulated; 0.562" lg x 0.250" diam; 2 axial wire lead term 1 1/4" lg; term mtd; JAN-C-20 spec; JAN type CC21CK100D; National Company part/dwg H872-25; Mfr code 1395	V101 plate coupling
C116	--- N16-C-18657-8630 ---	Capacitor, fixed: ceramic dielectric; 1,000 mmf; ±20%; 350 vdcw; any temp coef; case style no. 3, MBCA ref dwg group 1; 13/32" lg x 13/64" diam w/0.242" shoulder at one end; one radial wire lead at other end; mts by 5/32" d hole tapped for 2-56 thd on shouldered end; National Company part/dwg K668-1;Mfr code 83	V101 B+ filter
C117		Not used	
C118	--- N16-C-16541-7014 ---	Capacitor, fixed: ceramic dielectric; case style no. 2, MBCA ref dwg group 1; 47 mmf ±10%; 500 vdcw; insulated; 0.562" lg x 0.250" diam; 2 axial wire lead term 1 1/4" lg; term mtd; JAN-C-20 spec; JAN type CC21SL470K; National Company part/dwg H872-5; Mfr code 1395	V101 plate to V102 grid coupling
C119	--- N16-C-18657-8801 ---	Capacitor, fixed: ceramic dielectric; case style no. 4, MBCA ref dwg group 1; 1,000 mmf, ±200 mmf; 500 vdcw; no specified t mp coef; ceramic insulation; 5/8" lg x 5/16" diam; two axial rigid wire lead term 3/16" lg; feedthru method of mtg; mtg bushing	Y101 filt r

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		CAPACITORS (CONT'D)	
C119 (cont'd)		11/32" lg, no. 12-28 thd; National Company part/dwg K713-1; Mfr code 83	
C120		Same as C119	Y101 filter
C121		Same as C101; part of Z101	L103 tuning
C122		Same as C101; except part of Z102	L104 tuning
C123		Same as C101; except part of Z103	L105 tuning
C124		Same as C101; except part of Z104	L106 tuning
C125		Same as C101; except part of Z105	L107 tuning
C126		Same as C101; except part of Z106	L108 tuning
C127		Same as C101; except part of Z107	L109 tuning
C128		Same as C101; except part of Z108	L110 tuning
C129	--- N16-C-31090-4164 ---	Capacitor, fixed: mica dielectric; case style no. 22, MBCA ref dwg group 1; 1,000 mmf, ±10%; 500 vdcw; molded bakelite case; 53/64" lg x 53/64" wd x 9/32" thk; two axial wire terms 1 1/8" lg; term mtd; JAN-C-5 spec; JAN type CM30B102K; National Company part/dwg H640-2; Mfr code 14	V102 grid coupling
C130	--- N16-C-45777-3122	Capacitor, fixed: paper dielectric; 1 section; case style no. 42 MBCA ref dwg group 1; 0.1 mfd; -10 +20%; 600 vdcw; hermetically sealed metal case; 1.812" lg x 1" wd x 1" thk; two solder term on one side 0.750" lg spaced 1.062" c to c; no internal ground connection; JAN-C-25 spec; JAN type CP53B1EF104V; National Company part/dwg F858-21; Mfr code 14	V102 screen bypass
C131	--- N16-C-46200-9902	Capacitor, fixed: paper dielectric; 1 section; case style no 15, MBCA ref dwg group 1; 220,000 mmf ±20%; 100 vdcw; hermetically sealed metal can; 1 7/16" lg x 0.400" diam; 1 axial wire lead case is ground connection; oil impregnated; mts by 5/16"-24 thd bushing 3/8" lg w/lockwasher and hex nut; JAN-C-25 spec; National Company part/dwg R378-1; Mfr code 12	Chopper bypass
C132	--- N16-C-32646-6940 ---	Capacitor, fixed: mica dielectirc; case style no. 22, MBCA ref dwg group 1; 4,700 mmf, ±10%; 500 vdcw; molded bakelite case; 53/64" lg x 53/64" wd x 11/32" thk; 2 axial wir term 1 1/8" lg ; term mtd; JAN-C-5 sp c; JAN typ CM35B472K; National Company part/dwg H377-7; Mfr code 14	V102 to V103A coupling

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		CAPACITORS (CONT'D)	
C133	--- N16-C-48841-9598 ---	Capacitor, fixed: paper dielectric; 1 section; case style no. 44, MBCA ref dwg group 1; 1.0 mfd, ±20%; 600 vdcw; hermetically sealed metal case; 2 1/2" h x 1 5/16" wd x 49/64" thk; 2 solder lug term on bottom spaced 5/8" c to c; no internal ground connection; requires separate mtg strap; JAN-C-25 spec; JAN type CP61B1DF105V; National Company part/dwg L895-2; Mfr code 14	V106 B+ filter
C134		Same as C132	V103A plate to V103B grid coupling
C135		Same as C133	V103B cathode bypass
C136	--- N16-C-48841-9635 ---	Capacitor, fixed: paper dielectric; single section; case style no. 42 MBCA ref dwg group 1; 1.0 mf, -10 +20%; 600 vdcw; hermetically sealed metal case; 2" lg x 1 3/4" wd x 1" thk; two solder lug term on one side 0.750" lg spaced 1.062" c to c; no internal ground connection; JAN-C-25 spec; JAN type CP53B1-EF105V; National Company part/dwg F858-20; Mfr code 14	V103B output coupling
C137	--- N16-C-47297-3175 ---	Capacitor, fixed: paper dielectric; single section; case style no. 42, MBCA ref dwg group 1; 0.5 mf, -10 +20%; 600 vdcw; hermetically sealed metal case; 1.812" lg x 1" wd x 1" thk; two solder lug term on one side 0.750" lg spaced 1.062" c to c; no internal ground connection; JAN-C-25 spec; JAN type CP53B1-EF504V; National Company part/dwg F858-23; Mfr code 14	T109 tuning
C138		Same as C130	V104 grid blocking
C139		Same as C132	E101 to V105 coupling
C140		Same as C133	V105 screen bypass
C141		Same as C129	V105 plate to V106 grid coupling
C142		Same as C136	V106 screen bypass

TABLE 8-4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		CAPACITORS (CONT'D)	
C143	--- N16-C-49958-5175 ---	Capacitor, fixed: paper dielectric; single section; case style no. 15, MBCA ref dwg group 1; 4 mfd; -10 +20%; 600 vdcw; hermetically sealed metal case; 4 1/2" lg x 1 1/2" diam excl term; two type B solder lug term on porcelain pillars at one end; term 7/8" h spaced 5/16" apart; oil impregnated per JAN-C-25 spec; no internal ground connections; mts by 3/4"-16 thd, single hole mtg bushing; National Company part/dwg H641-1; Mfr code 14	V103 plate decoupling filter
C144	--- N16-C-33068-5823 ---	Capacitor, fixed: mica dielectric; case style no. 22, MBCA ref dwg group 1; 6,800 mmf ±10%; 500 vdcw; molded bakelite case, 53/64" sq x 11/32" thk; 2 axial wire leads, JAN-C-5 spec; JAN type CM35B682K; National Company part/dwg H377-25; Mfr code 14	V106 plate bypass
C145		Same as C132	V106 plate to V107B grid coupling
C146		Same as C133	V107B to V107A coupling
C147		Same as C143	Power supply output filter
C148		Same as C143	Power supply input filter
C149		Same as C119	A.C. line filter
C150		Same as C119	A.C. line filter
C151		Same as C119	A.C. line filter
C152		Same as C119	A.C. line filter
C153		Same as C119	V101 heater supply filter
C154		Same as C119	V101 heater supply filter
C155		Capacitor, fixed: ceramic dielectric; 10,000 mmf +100% -20%; 500 vdcw; insulated; 5/32" lg x 3/4" diam; 2 wire lead term; term mtd; MIL-C-11015A spec; MIL typ CK6Y103Z	V101 cathode bypass

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		MISCELLANEOUS ELECTRICAL PARTS	
E101	--- N17-V-49179-5166 ---	Inverter, Vibrator: DC-AC chopper; 10-500 CPS; coil operates on 6 v AC; plugs into 8 contact tube socket; cylindrical shape; 2 1/8" h excl pins x 1" diam w/1 1/6" diam x 3/16" h shoulder on bottom; pins numbered 1 through 8; metal shield can	Chopper

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		MISCELLANEOUS ELECTRICAL PARTS (CONT'D)	
E101 (cont'd)		National Company part/dwg R769-1; Mfr code 1392, type A-1300	
E102	--- N16-S-34557-8351 ---	Shield, electron tube: brass, bright nickel plated w/cad plated phos bronze spring; round w/2 locking detents; single 1/2" diam ventilating hole on top; two twist locking detents; bayonet mtd; 0.810" diam x 1 21/32" h inside dimensions; 0.850" diam x 1.676" h outside body dimensions; 0.960" diam o/a; National Company part/dwg SA:3387; Mfr code 1, type SA:3387	V102 upper shi ld
E103	--- ---	Shield, electron tube: cad plated steel w/cad plated steel spring; cylindrical shape; 13/16" diam x 1 3/4" h o/a; bayonet mtd by two twist locking detents; plated in accordance with AN-QQ-S-91 spec; National Company part/dwg H836-2; Mfr code 128	V105 upper shield
E104		Same as E102	V106 upp r shi ld
E105	--- N16-S-34576-6514 ---	Shield, electron tube: copper or brass, nickel plated; cylindrical shape; 1 15/16" lg x 0.065" diam; bayonet mtd; includes non-magnetic spring; JAN type TS103U02	V107 shield
E106	--- N16-S-34658-2580	Shield, electron tube: brass, bright nickel plated; cad plated phos bronze spring; round w/2 locking detents; single 1/2,, diam ventilating hole in top; two twist locking detents; bayonet mtd; 0.950" diam x 1 23/32" h inside dimensions; 0.990" diam x 1.738" h outside body dimensions; 1.10" diam o/a; National Company part/dwg SA:4987; Mfr code 1, type SA:4987	V103 upp r shield
E107	--- N16-S-34599-7750 ---	Shield, electron tube: brass, bright nickel plated; cad plated phos bronze spring; round w/2 locking detents; bayonet mtd; 0.810" diam x 2 5/32" h inside dimensions; 0.850" diam x 2.176" outside body dimensions; 0.960" diam o/a; National Company part/dwg SA:3386; Mfr code 1, type SA:3386	V104 upp r shi ld
E108		Same as E107	V108 upper shield
E109		Same as E107	V109 upper shi ld
E110	--- N16-S-34516-2337 ---	Shield, electron tube: brass, bright nickel plated; cad plated phos bronze spring; round w/2 l cking detents; singl 1/2" diam ventilating h le on top; two twist l cking detents; bay net mtd; 0.810" diam x 1 9/32" h insid dim nsi ns; 0.850" diam	V101 upper shi ld

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		MISCELLANEOUS ELECTRICAL PARTS (CONT'D)	
E110 (cont'd)		x 1.301" h outside body dimensions; 0.960" diam o/a; National Company part/dwg SA:3848; Mfr code 1, type SA:3848	
E111		Base, shield: brass, nickel plated; round hollow cylinder shape; 0.750" ID x 19/32" h excl spade bolts; mts by two no. 4-40 tapped spade bolts on 7/8" c; National Company part/dwg SA:3847; Mfr code 1, type SA:3847	V101 lower shield
E112		Same as E111	V102 lower shield
E113		Same as E111	V104 lower shield
E114		Not used	
E115		Same as E111	V106 lower shield
E116		Not used	
E117		Same as E111	V108 lower shield
E118		Same as E111	V109 lower shield
E119	--- N16-B-151921-132 ---	Base, shield: brass, nickel plated; round hollow cylinder shape; approx 0.940" diam x 19/32" h OD excl spade bolts; mts by two no. 4-40 tapped spade bolts 13/16" lg on 1.125" c; National Company part/dwg SA:4989; Mfr code 1, type SA:4989	V103 lower shield
E120	Shop manufacture locally.	Plate, Electrical Shield: under chassis audio components shield; 2-S 1/4 hard aluminum 0.062" thk; irregular U shape; 4 5/16" lg x 5 1/4" wd x 1 5/16" d o/a; mtg flange at closed end 3 9/16" lg x 9/16" wd w/2 elongated mtg holes 9/32" lg x 5/32" wd spaced 2.625" c to c; at open end sides are bent outward to form flanges 9/16" wd w/4 6-32 captive type nuts on 0.750" x 4.750" mtg/c; National Company part/dwg SA:9040; Mfr code 1, type SA:9040	Under chassis audio components shield

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS / SIGNAL CORPS / STANDARD NAVY / AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		MISCELLANEOUS ELECTRICAL PARTS (CONT'D)	
E121	Shop manufacture locally.	Plate, Electrical Shield: 52-S 1/4 hard aluminum 0.031" thk; rectangular box shape; 1 5/8" lg x 1 15/32" wd x 29/32" h; one tab centrally located at bottom of each end 3/8" sq w/5/32" diam mtg hole spaced 1.187" c to c; National Company part/dwg SA:9039; Mfr code 1, type SA:9039	V105 grid input shield
E122	Shop manufacture locally.	Shield, Filter: 52-S 1/4 hard aluminum 0.031" thk; rectangular box shape; 4 1/16" lg x 1 9/16" wd x 2 1/4" h excl flanges; 2 flanges on bottom at each end 1/2" lg x 5/16" wd; two 0.156" diam mtg holes on each flange on 4.437" x 1.00" mtg/c; National Company part/dwg SA:9961; Mfr code 1, type SA:9961	AC lin filt r shield
E123	--- N17-T-28218-3901 ---	Insulator, standoff: grade L-5 ceramic silicone impregnated, JAN I-10 spec; voltage breakdown 3,300 v; round post shape; 25/32" h x 5/16" diam o/a; no. 6-32 thd stud 0.25" lg at one end; brass silver plated stud term at other end; National Company part/dwg Q977-1; Mfr code 298	Ti points (6)
E124	--- N17-P-69135-8101 ---	Post, binding: bakelite cap and base; 7/8" h above mtg surface; 19/32" diam OD; mtg stud 3/4" lg x 0.135" diam w/no. 8-32 thd; max wire hole diam 3/32"; National Company part/dwg R798-1; Mfr code 356	Conn cting p ints f r s-cill scope (2)
E125	--- ---	Shell, electrical connector: soft brass w/silver plate; round funnel shape; 0.75" lg x 1.0 sq o/a; 1" sq flange w/four 1/8" diam mtg holes on 23/32" x 23/32" mtg/c; cable opening 0.140" diam; National Company part/dwg S083-1; Mfr code 128	Antenna c n-n ct r shield
E126	--- N16-K-700410-656 ---	Knob: direct drive; round, brass w/black paint finish; 1/4" diam shaft hole; mts on shaft w/8-32 set screw; no markings; 2 1/4" diam by 3/4" thk o/a; through shaft hole; front face of knob has recess 1 3/4" diam by 9/32" d; rear face of knob has recess 2" diam by 0.168" d; 2 planet gears on each face 15/16" c to c either side and on center line w/shaft hole; on rear face 2 gears rigidly attached to free turning stainless steel shafts; on front face 1 gear rigidly attached to shaft and other gear attached w/torsion spring to permit spring loading on sun gear which is part of vernier knob assembly; National Company part/dwg SA:9994; Mfr code 1, type SA:9994; includes 0136, 0137, 0138	Main tuning contr l (direct driv)
E127	--- N16-K-700371-381	Knob Assembly: vernier drive; round; black bakelite; 0.1875" diam shaft hole, rotates freely on shaft, held captive by dog-	Main tuning vernier c ntrol

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		MISCELLANEOUS ELECTRICAL PARTS (CONT'D)	
E127 (c nt'd)	---	screw which rides in groove in shaft; no markings; knob is 1 1/16" diam x 15/16" thk o/a; cad plated brass insert; 3/4" d shaft hole; pinion gear w/18 teeth, 0.375" pitch diam, pressed into insert holding skirt secure; National Company part/dwg SA:9995; Mfr code 1, type SA:9995; includes O139	
E128	--- N16-K-700310-912 ---	Knob: round; black bakelite; 0.252" diam shaft hole 15/32" d w/two 8-32 set screws 90° apart; cad plated brass insert; arrow marking; 1 1/16" diam x 5/8" h o/a; 8 notches on circumference; National Company part/dwg SA:7530; Mfr code 1, type SA:7530	Power switch knob
E129		Same as E128	Sensitivity switch
E130		Same as E128	Audio control knob
E131	--- N16-K-700418-726 ---	Knob: round bakelite; black; designed to accomodate 0.248" diam round shaft w/2 flats; 9/16" d shaft hole; mts on shaft by two 8-32 set screws spaced 90° apart; brass insert; no markings; 2 3/8" diam x 1 7/32" thk o/a; 10 flutes; three 4-40 x 5/16" d holes on 3/4" rad spaced 135° x 135° deg x 90° apart; National Company part/dwg SA:9974; Mfr code 1, type SA:9974	Turret band changing knob
E132	--- N16-K-700311-127 ---	Knob: round; black bakelite; 0.252" diam shaft hole 1/2" d w/ two 8-32 tapped holes for set screws 90° apart; cad plated brass insert; no markings; 1 1/16" diam x 5/8" thk o/a; 8 notches on circumference; National Company part/dwg SA:8269; Mfr code 1, type SA:8269	Meter zero control knob
E133	Shop manufacture locally.	Plate, Electrical Shield: tuning assembly shield; 1/2 hard brass cad plated; rectangular shape; 5 15/16" lg x 2 1/8" wd x 1/16" thk; four elongated mtg holes 0.281" lg x 0.125" wd spaced 1.375" c to c; five 0.128" holes along one edge for mtg grounding brush; National Company part/dwg R721-1; Mfr code 1, type R721-1	Tuning assembly shield
E134	Shop manufacture locally.	Brush, electrical, grounding: silver plated beryllium copper; rectangular plate w/0.140" wd finger contacts on one side; 5 1/16" lg x 7/16" wd x 0.005" thk; five 0.128" diam mtg holes on 1.187" mtg/c 5/32" from straight side; National Company part/dwg P120-10; Mfr code 929	Tuning assembly shield grounding brush

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		MISCELLANEOUS ELECTRICAL PARTS (CONT'D)	
E135	--- N17-C-77146-8760 ---	Contact, Electrical: 0.047" thk cad plated brass bracket; silver plated phos bronze contacts; 1 5/16" lg x 31/32" wd x 1/2" h o/a; mts by two elongated holes 0.281" lg x 0.156" wd spaced 0.250" c to c; 2 brush type contacts, one on each side of U shaped bracket slanting downward on 23° angle; National Company part/dwg SA:9695; Mfr code 1, type SA:9695	Ant nna shorting contact mtd n tuning capacit r fram
E136	Shop manufacture locally.	Shield, Attenuator: aluminum, U shape; 3 31/64" lg x 1 3/4" wd x 2.00" h; mts by bent-in flanges, one on each side at each end, each 7/16" wd; 2 mtg holes in each flange 0.203" diam spaced 1.375" c to c; National Company part/dwg R763-1; Mfr code 1, type R763-1	Attenuator shi ld
E137	--- N17-C-73370-9017 ---	Contact, Electrical: 0.013" phos bronze w/silver inlay at contact points; silver plate w/water dip lacquer finish; double blade wiper type contact; 15/16" lg x 5/8" wd x 3/4" d o/a; consists of 2 halves riveted together w/90° outward bend at base of each half; mts by two 0.203" lg x 0.156" wd slots on base; National Company part/dwg SA:9061; Mfr code 1, type SA:9061	Terminal contacts f r main tuning capacitor
E138	Shop manufacture locally.	Contact, Electrical: brass; silver plated w/water dip lacquer finish; "E" shape with semi-circular back; 11/16" wd x 3/4" h x 0.032" thk o/a; mts on terminal board by bending inward the two outer tabs around edges of slots; center tab projects thru slot in terminal board to provide means of electrical connection; National Company part/dwg R422-1; Mfr code 1, type R422-1; part of Z101, Z102, Z103, Z104, Z105, Z106, Z107, Z108, Z109	Electrical c ntacts on band changing turr t
		FUSES	
F101	--- G17-F-16302-80 ---	Fuse, cartridge: 1 amp; 250 v; instantaneous;ferrule type term; glass enclosed body; one time; element visible through glass; 1 1/4" lg x 1/4" diam; National Company part/dwg F135-3; Mfr code 324	AC line fus
F102		Same as F101	AC lin fus
F103		Same as F101	Spar

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		FUSES (CONT'D)	
F104		Same as F101	Spare
		HARDWARE	
H101	For replacement use N41-W-2460	Wrench, for Bristo setscrew; distance across splines 0.076"; approx 1 59/64" lg x 47/64" wd; steel; 90 deg offset; National Company part/dwg J301-3	Wrench for no. 6 Bristo setscrew
H102	--- N41-W-2460-10 ---	Wrench: for Bristo setscrew; distance across splines 0.094"; approx 2 1/16" lg x 51/64" wd; steel; 90 deg offset; National Company part/dwg J301-4	Wrench for no. 8 Bristo setscr w
H103		Tool, Alignment: bakelite rod 6" lg x 9/32" dia o/a; 3/16" wd x 1/32" thk metal nib screwdriver tip at both ends, one end protrudes, other end recessed; National Company part/dwg T238-1	Alignment tool
H104		Wrench: for Bristo setscrew; distance across splines 0.110"; approx 2.204" lg x 0.843" wd; steel; 90 deg offset; National Company part/dwg J301-5	Wrench for no. 10 and no. 12 setscrew
		LAMPS	
I101	--- G17-L-6297 ---	Lamp, Incandescent: 6-8 v, 1.2 W; 0.15 amp; miniature bayonet base; clear bulb; 1 1/8" h x 3/8" diam o/a; tungsten filament; National Company part/dwg F136-6; Mfr code 18	Dial lamp
I102		Same as I101	Dial lamp
I103		Same as I101	Plate indicator lamp
I104		Same as I101	Filament indicator lamp
		JACKS	
J101		Adapter, connector: coax cable terminator; for use with RG-55/U and RG-58/U cable; silver plated brass; 13/16" lg x 7/16" across flats; National Company part/dwg P587-1; Mfr code 1396	R.F. attenuator input
J102		Same as J101	R.F. attenuator output
J103		Same as J101	Chopper attenuator input

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		JACKS (CONT'D)	
J104		Same as J101	Chopper attenuator output
J105	--- N17-C-73108-1269 ---	Connector, receptacle: one round female contact;straight type; 1 1/16" lg x 3/8" diam w/11/16" square mtg flange; 52 ohms impedance; round brass silver plated body; plated to withstand 200 hour salt spray test; BNC type connector; four 3/56 tapped mtg holes on flange on 0.500" mtg/c; for use with RG-58/U, RG-59/U, RG-62/U and RG-71/U cable; JAN type UG-158/U connector; National Company part/dwg L648-1; Mfr code 1396	Turret RF input

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		JACKS (CONT'D)	
J106	--- N17-C-73108-5905 ---	Connector, receptacle: one round female contact; straight type; 1.0" lg x 1.0" wd x 1 3/32" h o/a; silver plated brass cylindrical body w/square base; low loss mica insert; four 0.125" diam mtg holes on 23/32" x 23/32" mtg/c; JAN type UG-58/U; National Company part/dwg H553-1; Mfr code 1396	Ant nna input
J107		Same as J101	1st audio input
J108	--- N17-J-39248-4418 ---	Jack, telephone: for two conductor plug w/1 7/32" lg x 1/4" diam shank; 1 5/16" lg x 15/16" wd x 49/64" h o/a; requires 13/32" diam mtg hole; mtg accessories consist of one hexagon nut and one washer; type JJ-034 per JAN-J-641 spec; type number stamped on side; National Company part/dwg L567-1; Mfr code 5	Phones jack
J109	--- N17-J-39409-8522 ---	Jack, telephone: for three conductor plug; w/1 1/16" lg x 3/16" diam shank; 3 1/8" lg x 5/8" wd x 1 1/8" h o/a; requires 13/32" diam mtg hole; mtg accessories consist of one hexagon nut and one washer; type JJ-083; type number stamped on bottom, Navy type 49578; National Company part/dwg R682-1; Mfr code 5	External meter jack
J110	--- N17-C-72604-1516 ---	Connector, receptacle: three round male contacts, polarized; straight type; 1 3/16" lg x 1 3/16" wd x 1 3/16" d; square aluminum base and cylindrical body, sand blast w/clear lacquer finish; molded phenolic insert; 23/32" max diam cable opening; four mtg holes 0.120" diam on 29/32" x 29/32" mtg/c; JAN type AN3102-14S-7P; National Company part/dwg H551-1; Mfr code 339	P wer input receptacl
		INDUCTORS	
L101	--- N16-C-76181-1036 ---	Coil, Radio Frequency: inductor plate; 0.064" thk silver plated brass; 1.00" lg x 0.812" wd; 3/16" diam clearance hole in exact center for mtg vane type trimmer; unshielded; two 5/32" diam mtg holes located 0.406" either side of center hole and on a center line extending longitudinal 16 1/2° from the center; vane type trimmer adjustable by applying pressure on vane with insulated aligning tool; trimmer not a part of this item but is mtd on it; National Company part/dwg R425-1; Mfr c d 1, type R425-1; part f Z109	Z109 induct r plate

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		INDUCTORS (CONT'D)	
L102	Shop manufacture locally.	Suppressor, parasitic: resistor and coil type; 26 turns no. 30 copper enamel wire on a 15,000 ohms 1/2 W resistor; 1 microhenry inductance; 0.406" lg x 0.1868" diam; uncased; term mtd; one wire lead term at each end; includes R117; National Company part/dwg SB:1098; Mfr code 1, type SB:1098	V101 parasitic suppressor
L103	--- N16-C-76574-6723 ---	Coil, Radio Frequency: inductance 2.86 mh at 1 kc; DC resistance 25 ohms ±15%; 645 turns 10/44 Litz wire, copper, single nylon or silk covered; single winding, 3 pie universal wound; untapped; unshielded; ceramic form; powdered iron core; coil dim excluding term, mtg attachments and tuning devices 5/16" lg by approx 25/32" diam; overall coil dim 1 1/8" lg x 3/8" diam; adjustable iron core; screwdriver adjustment located at bottom; 2 wire pigtail type term, one at bottom and one at top of winding; mts by two 1/8" diam holes on base 13/16" c to c; fungus proofed; self-resonant freq 1.8 mc; National Company part/dwg SB:1050; Mfr code 1, type SB:1050; part of Z101	Band no. 1 detector coil
L104	--- N16-C-76717-2126 ---	Coil, Radio Frequency: inductance 0.662 mh at 1 kc; DC resistance 8.3 ohms ±15%; 330 turns 15/44 Litz wire, copper single nylon or silk covered; single winding, 3 pie universal wound; untapped; unshielded; ceramic form; powdered iron core; coil dim excluding term, mtg attachments and tuning devices, 1 1/8" lg by approx 19/32" diam; overall coil form dim 1 1/8" x 3/8" diam; adjustable iron core; screwdriver adjustment located at bottom; 2 wire pigtail type terminations, one at bottom and one at top of winding; mts by two 1/8" diam holes on base, 13/16" c to c; fungus proofed; self-resonant freq 5.0 mc; National Company part/dwg SB:1052; Mfr code 1, type SB:1052; part of Z102	Band no. 2 detector coil
L105	--- N16-C-76675-1361 ---	Coil, Radio Frequency: inductance 0.134 mh at 1 kc; DC resistance 4.9 ohms ±15%; 155 turns 10/44 Litz wire; copper, single silk or nylon covered; single winding; single pie universal wound; untapped; unshielded; ceramic form, powdered iron core; coil dim excluding term, mtg attachments and tuning devices 1 1/8" lg by approx 15/32" diam; overall coil form dim 1 1/8" x 3/8" diam; adjustable iron core; screwdriver adjustment at bottom; mts by two 1/8" diam holes on base 13/16" c to c; fungus proofed; self-resonant freq 8.0 mc; National Company part/dwg SB:1054;Mfr	Band no. 3 detector coil

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		INDUCTORS (CONT'D)	
L105 (cont'd)		code 1, type SB:1054; part of Z103	
L106	--- N16-C-76647-1001 ---	Coil, Radio Frequency: inductance 45 microhenries at 2.5 mc; DC resistance 1.83 ohms ±2%; 61 1/2 turns no. 34 copper wire; baked synthetic resin covered; single winding, solenoid wound; untapped; unshielded; ceramic form; powdered iron core; coil dim excluding term, mtg attachments and tuning devices 1 1/8" lg by 9/16" diam; overall coil form dim 1 1/8" lg by 3/8" diam; adjustable iron core; screwdriver adjustment located at bottom; 2 wire pigtail type terminations, one at bottom and one at top of winding; mts by two 1/8" diam holes on base 13/16" c to c; fungus proofed; freq range w/70 mmf fixed capacitor 2.55 to 3.5 mc; self-resonant freq 23.75 mc; National Company part/dwg SB:1056; Mfr code 1, type SB:1056; part of Z104	Band no. 4 detector coil
L107	--- N16-C-76613-8201 ---	Coil, Radio Frequency: inductance 9.8 microhenries at 7.9 mc; DC resistance 0.42 ohms ±2%; 32 turns no. 30 copper wire; baked synthetic resin covered; single winding; solenoid wound; untapped; unshielded; ceramic form powdered iron core; coil dim excluding term, mtg attachments and tuning devices 1 1/8" lg x 9/16" diam; overall coil form dim 1 1/8" lg x 3/8" diam; adjustable iron core, screwdriver adjustment located at bottom; 2 wire pigtail type terminations, one at bottom and one at top of winding; mts by two 1/8" diam holes on base 13/16" c to c; fungus proofed; freq range w/70 mmf fixed capacitor 5.5 to 6.9 mc; self-resonant freq 40.0 mc; National Company part/dwg SB:1058; Mfr code 1, type SB:1058; part of Z105	Band no. 5 detector coil
L108	--- N16-C-76547-4241 ---	Coil, Radio Frequency: inductance 1.67 microhenries at 7.9 mc; DC resistance less than 0.5 ohm; 12 1/2 turns no. 30 copper wire, baked synthetic resin covered; single winding, solenoid wound; untapped; unshielded; ceramic form; powdered iron core; coil dim excluding term, mtg attachments and tuning devices 1 1/8" lg x 9/16" diam; overall coil form dim 1 1/8" lg x 3/8" diam; adjustable iron core, screwdriver adjustment at bottom; 2 wire pigtail type terminations, one at bottom and one at top of winding; mts by two 1/8" diam holes on base 13/16" c to c; fungus proofed; freq range w/70 mmf fixed capacitor 12.5 to 15.6 mc; self-resonant freq 78 mc; National Company part/dwg SB:1060; Mfr code 1, type SB:1060; part of Z106	Band no. 6 detector coil

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		INDUCTORS (CONT'D)	
L109	--- N16-C-76520-7088 ---	Coil, Radio Frequency: inductance 0.388 microhenries at 25 mc; DC resistance less than 0.5 ohms; 3 3/4 turns no. 24 copper wire, baked synthetic resin covered; single winding, single layer wound; untapped, unshielded; ceramic form; powdered iron core; coil dim excluding term, mtg attachments and tuning devices 1 1/8" lg x 9/16" diam; overall coil form dim 1 1/8" lg x 3/8" diam; adjustable iron core; screwdriver adjustment at bottom; 2 wire pigtail type terminations, one at bottom and one at top of winding; mts by two 1/8" diam holes on base 13/16" c to c; fungus proofed; freq range w/70 mmf fixed capacitor 29.4 to 33.5 mc; self-resonant freq 340 mc; National Company part/dwg SB:1062; Mfr code 1, type SB:1062; part of Z107	Band no. 7 detector coil
L110	--- N16-C-76515-7315 ---	Coil, Radio Frequency: inductance 0.0842 microhenries at 110 mc; DC resistance less than 0.5 ohms; 2 1/2 turns of 0.125" wd x 0.005" thk silver plated copper inductor strap; single winding; single layer wound; untapped; unshielded; ceramic form; silver plated brass core; coil dim excluding term, mtg attachments and tuning devices 1 1/8" lg x 9/16" diam; overall coil form dim 1 1/8" lg x 3/8" diam; adjustable silver plated brass core; screwdriver adjustment at bottom; ends of strap winding brought out for leads at top and bottom; mts by two 1/8" diam holes on base 13/16" c to c; fungus proofed; self-resonant freq 400 mc; National Company part/dwg SA:9699; Mfr code 1, type SA:9699; part of Z108	Band no. 8 detector coil
L111		Same as L101	Band no. 9 detector inductor
L112	--- N16-R-29267-6538 ---	Reactor: filter choke; single section; 12 henries nominal inductance; 55 ma DC rating; 250 ohms nominal DC resistance; 1780 v RMS test voltage; hermetically sealed metal case; 2 1/4" lg x 2 1/16" wd x 2 7/8" h; mts by four 6-32 thd studs on 1 1/16" x 1 7/16" mtg/c; 2 solder post type term on bottom; max temp rise 40°; item per MIL-T-27 spec; grade 1; National Company part/dwg R392-1; Mfr code 458	Power supply filter
L113	--- N16-C-76699-4093 ---	Choke, Radio Frequency: AC line radio frequency filter choke; irregular cylindrical shape; 1 1/4" diam x 1 31/32" h; 2 solder lug term, one at top and one at bottom; one winding, 3 pie wound; National Company part/dwg SA:9068; Mfr code 1, type SA:9068	AC line filter

TABLE 8-4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		INDUCTORS (CONT'D)	
L114		Same as L113	AC line filter
L115		Coil, Radio Frequency: partial turn no. 12 hard drawn copper wire; 1 winding; single layer wound; untapped; unshielded; 15/16" lg x 11/16" wd excluding ends brought out for term; mts by soldering to lugs; National Company part/dwg R731-1; Mfr code 1, type R731-1	UHF link
		METERS	
M101	--- N17-M-32373-3043 ---	Ammeter: (special scale); panel mtd; DC microammeter w/0-200 microammeter movement; marked "CARRIER LEVEL" on face of dial; inscribed 0 to 100 in units of 10 clockwise on 240° arc; 100 graduations; round molded textolite case; flange 3.5" diam x 0.165" thk; 2.75" body diam; 1 5/8" body depth excl term; +2% accuracy at full scale reading; 2000 ohms +10% resistance across term; 200 microamperes required for full scale deflection; calibrated for magnetic or non-magnetic panels; shielded case; black scale markings on white background; self-contained; three 0.150" diam mtg holes on flange spaced 120° apart on 1.580" rad; 2 screw stud term 11/16" lg; National Company part/dwg R363-1; Mfr code 908; Mfr dwg A739	Carrier level indicator
		MECHANICAL PARTS	
0101	--- N16-S-177101-813 ---	Dial scale: frequency; assembly includes calibrated dial w/10 circular scales which read from right to left, each extending over a 300° arc; band no. 1 inscribed in units of 20 kc from 0.30 to 0.65 mc graduated in increments of 5 kc; band no. 2 inscribed in units of 20 kc from 0.64 to 1.3 mc graduated in increments of 10 kc; band no. 3 inscribed in units of 50 kc from 1.3 to 2.8 mc graduated in increments of 10 kc; band no. 4 inscribed in units of 200 kc from 2.8 to 6.5 mc graduated in increments of 40 kc; band no. 5 inscribed in units of 500 kc from 6.5 to 15 mc graduated in increments of 100 kc; band no. 6 inscribed in units of 500 kc from 15 to 34 mc graduated in increments of 100 kc; band no. 7 inscribed in units of 2.0 mc from 34 to 75 mc graduated in increments of 500 kc; band no. 8 inscribed in units of 5.0 mc from 75 to 180 mc graduated in increments of 1.0 mc;	Calibrated tuning dial

TABLE 8-4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS: SIGNAL CORPS / STANDARD NAVY / AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		MECHANICAL PARTS (CONT'D)	
0101 (cont'd)		band no. 9 inscribed in units of 10 mc from 180 to 400 mc graduated in increments of 2.0 mc; logging scale inscribed in units of 5 from 0 to 100 graduated in 100 divisions; round disk shape aluminum 8.00" diam x 0.064" thk; white face w/black inscriptions; center hole 1 5/8" diam; 3 mtg holes 0.128" diam csk to 0.156" diam on 1.00" rad equally spaced 120° apart; includes dial drive gear riveted to back of disk; spur gear; brass, cad plated; straight teeth; 92 teeth; 32 pitch; 2.875" pitch diam; pressure angle 14 1/2°; 2.937" OD; 0.750" bore; 0.064" thk; straight face; 3 csk holes 0.225" diam x 82° equally spaced on 0.562" rad for mtg hub; 2 rivet and 1 stud hole 0.128" diam on 1.00" rad each on a radial line with each of other 3 holes, for mtg gear to disk; stud projects 11/64" from gear face; cad plated brass hub 0.750" diam x 0.437" thk w/0.375" wd x 0.125" thk flange 0.140" from end; 3 mtg holes 0.140" diam on 0.562" rad; National Company part/dwg SB:1080; Mfr code 1, type SB:1080	
0102	--- N16-M-16001-1009 ---	Mask, dial: round disk shape; 0.047" thk cad plated steel; 7 7/16" diam o/a; face and edges painted dull black w/white lettering and clear lacquer finish on front face; contains 9 cutouts concentric with the center, each 15/64" wd and extending through adjacent 40° sectors; cutout at 1 5/8" rad marked "BAND 1, 0.3-0.65 MC"; cutout at 2 3/32" rad marked "BAND 2, 0.65-1.3 MC"; cutout at 2 9/16" rad marked "BAND 3, 1.3-2.8 MC"; cutout at 1 55/64" rad marked "BAND 4, 2.8-6.5 MC"; cutout at 2 51/64" rad marked "BAND 5, 6.5-15 MC"; cutout at 3 17/64" rad marked "BAND 6, 15-34 MC"; cutout at 2 21/64" rad marked "BAND 7, 34-75 MC"; cutout at 3 1/32" rad marked "BAND 8, 75-180 MC"; cutout at 7 31/64" rad marked "BAND 9, 180-400 MC"; brass hub 5/8" diam extends 0.7655" from disk face w/0.359" diam shaft hole; 1/8" diam through hole 1/8" from end for securing hub to turret shaft with roll pin; groove 0.039" wd x 0.013" d for retaining ring located 0.227" from end; National Company part/dwg SB:1082; Mfr code 1, type SB:1082	Tuning dial mask
0103	Shop manufacture locally.	Pin, Spring: 0.028" thk stainless steel; 0.625" lg x 0.133" OD ± 0.002"; National Company part/dwg R704-5; Mfr code 91	Secures dial mask to turret shaft
0104	Shop manufacture locally.	Mounting: consists of steel shaft 7 15/16" lg x 0.375" diam w/ extension 0.875" lg x 0.358" diam w/0.125" diam through hole located 0.188" from larger diam of shaft; second extension 0.312" lg x 0.248" diam w/0.280" lg x 0.031" d flat at nd; 0.064" thk	Rotor for band changing turret

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		MECHANICAL PARTS (CONT'D)	
0104 (cont'd)		brass index plate 4.00" diam o/a w/9 equally spaced (40°) scallops on 0.750" rad around periphery and located 1.724" from flatted end of shaft and containing 9 equally spaced tabs 1/2" wd extending 3/8" from inside of face of plate w/one no. 6-32 tapped hole in each tab centrally located 3/16" from plate face; one 0.047" thk steel plate 3.460" diam o/a w/9 equally spaced (40°) sides, located near center of shaft 2.812" from first plate; extrusions at center of each flat tapped 6-32; third plate 0.047" thk steel 4.00" diam located 2.828" from center plate; 9 rectangular cutouts 1/4" lg x 9/64" wd equally spaced around 1.625" rad; three plates brazed to the shaft w/ tabs on first plate, sides of second plate and slots of third plate parallel to each other; all parts cad plated; National Company part/dwg SB:1077; Mfr code 1, type SB:1077	
0105	--- N77-S-25103-7580 ---	Bearing, Sleeve: oilite bronze; 1/2" lg x 0.564" diam w/0.750" diam x 0.062" wd shoulder at one end; shaft hole 0.3755"diam; National Company part/dwg R703-1; Mfr code 1397	Turr t shaft b aring (2)
0106	--- N16-G-432730-506 ---	Gear, spur: dial spring gear; cad plated brass; straight teeth; 92 teeth; 32 pitch; 2.875" pitch diam; 14 1/2° pressure angle; 2.937" OD; 0.750" bore; 0.064" thk; no hub; three 3/8" diam holes located on 1.00" rad from center 120° apart; 3/16" diam stud projects 11/64" from gear face 30° clockwise from one hole on 1.00" rad from center; National Company part/dwg SB:1081; Mfr code 1, type SB:1081	Tuning dial spring g ar
0107	--- N16-G-433210-161 ---	Gear, spur: capacitor drive gear; cad plated brass; straight teeth; 116 teeth; 32 pitch; 3.625" pitch diam; pressure angle 14 1/2°; 3.687" OD; 0.125" thk; straight face; 3/16" diam stud for tension spring located on 1.00" rad from center projects 27/64" from face; stainless steel hub extends 15/32" from face of gear in same direction as stud; 0.250" bore; max hub diam 0.498"; hub rotates freely on 0.250" diam shaft and held in place by a snap-ring; National Company part/dwg SB:1084; Mfr code 1, type SB:1084	Tuning capaci- t r drive gear
0108	--- N16-G-433210-452 ---	Gear, spur: capacitor drive spring gear; cad plated brass; straight teeth; 116 teeth; 32 pitch; 3.625" pitch diam; pressure angle 14 1/2° ; 3.687" OD; 0.064" thk; straight face; 0.500" bore; no hub; 3/8" diam clearance hole located on 1.00" rad from center; 3/16" diam stud for tension spring located on 1.00" rad fr m center 30 cl ckwise fr m clearanc hole and pr j cts 11/64" from fac of gear; Nati nal Company part/dwg	Tuning capaci- tor drive spring g ar

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		MECHANICAL PARTS (CONT'D)	
0108 (cont'd)		SB:1085; Mfr code 1, type SB:1085	
0109	Shop manufacture locally.	Shaft, extension: steel; 1 3/32" lg; 0.248" diam w/0.437" lg x 1/2" diam shoulder at one end; shouldered end has axial hole for connecting shaft 25/64" d x 0.250" diam; two 8-32 tapped holes for set-screws spaced 90° apart; National Company part/dwg R700-1; Mfr code 1398	Turret shaft extension
0110	--- N16-B-300001-182 ---	Frame, Window, Tuning Dial: 0.020" thk brass w/dull black finish; semi-pie shape w/top rounded on 4 5/16" rad and bottom flatted 1.268" from apex; 3.082" wd x 3 7/16" lg x 0.183" thk o/a; mtg flange 1/16" wd at top and bottom and 0.183" wd along sides; four 0.093" diam mtg holes, two on each side spaced 1.375" apart; opening extends 40° from 1 5/8" to 4.00" rad; National Company part/dwg R767-1; Mfr code 1, type R767-1	Tuning dial window frame
0111	Shop manufacture locally.	Gasket: black neoprene channel gasket; 9 3/8" lg x 13/64" wd x 11/64" h w/1/8" wd x 1/8" d channel; National Company part/dwg R768-1; Mfr code 236	Tuning dial window frame gasket
0112	Shop manufacture locally.	Window: dial window; 1/8" thk shatter proof glass; pie shaped; 2 23/32" h; rounded top w/bottom flatted near apex; face of glass covers 40° area; National Company part/dwg R766-1; Mfr code 135	Tuning dial window
0113	Shop manufacture locally.	Arm: index locking arm; consists of 0.0598" thk cad plated steel arm w/3/16" lg 90° bend at one end and stainless steel roller riveted to opposite side from bend; other end rounded on 3/16" rad w/mtg hole 0.218" diam; assembly 2 21/32" lg x 13/32" wd x 1/2" thk o/a; National Company part/dwg SB:1087; Mfr code 1, type SB:1087	Turret index locking arm
0114	Shop manufacture locally.	Spring, helical: index arm tension spring; 0.047" spring wire, cad plated; 1 5/32" lg x 1/4" diam o/a; approx 18 turns; hook type term; National Company part/dwg R717-1; Mfr code 1334	Supplies tension for turret ind x locking arm
0115	--- ---	Handle, separable: 3/8" diam cad plated brass rod; consists of two halves; both irregular U shaped; female half has one end bent on 1/4" rad 2 5/8" lg; other end bent on 1/4" rad 1 3/8" lg; long side has axial 1/8" d hole tapped 1/4"-20 for attaching threaded male half; 2 5/8" lg x 3 5/16" h; male half has one end	Field Strength Meter case carrying handl

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		MECHANICAL PARTS (CONT'D)	
0115 (cont'd)		bent on 1/4" rad 3 3/16" lg; other end bent on 1/4" rad 1 3/8" lg; end of long side has 1/4"-20 thd 9/16" lg; 3 3/16" lg x 3 5/16" h; includes 0115A and B; for reference only	
0115A	Shop manufacture locally.	Handle, half: female half; cad plated brass rod 3/8" diam; irregular U shape; one end bent on 1/4" rad 2 5/8" lg; other end bent on 1/4" rad 1 3/8" lg; long side has axial 1/8" d hole tapped 1/4"-20 for attaching male half; 2 5/8" wd x 3 5/16" lg o/a; National Company part/dwg R694-1; Mfr code 1399 part of 0115	
0115B	Shop manufacture locally.	Handle, half: male half; cad plated brass rod 3/8" diam; irregular U shape; one end bent on 1/4" rad 3 3/16" lg; other end bent on 1/4" rad 1 3/8" lg; end of long side has 1/4"-20 thd 9/16" lg; 3 3/16" lg x 3 5/16" h o/a; National Company part/dwg R695-1; Mfr code 1399 part of 0115	
0116	Shop manufacture locally.	Sleeve, handle: tubular shape black neoprene; 3 7/8" lg x 5/8" OD x 3/8" ID; National Company part/dwg R696-2; Mfr code 334	Sleeve for case carrying handle
0117	Shop manufacture locally.	Retainer, handle: 1/4 hard brass 0.045" thk; bright cad plated; 4.00" lg x 1 25/32" wd x 15/32" h o/a; longitudinal channel down the center 15/32" h on 13/64" rad; 6 mtg holes 0.203" diam in two rows on 1.500" x 1.156" mtg/c; National Company part/dwg R382-1; Mfr code 1, type R382-1	Retainer for case carrying handl
0118	Shop manufacture locally.	Bail, Cover, Case: 1/4" diam cad plated brass rod; bent to a broad U shape; 5.875" lg x 2.00" wd o/a; one 7/16" d axial mtg hole at each end tapped 6-32 NC-2; National Company part/dwg R685-1; Mfr code 1, type R685-1; part of A101	For storing headset in front cover
0119	Shop manufacture locally.	Rubber channel: extruded synthetic rubber 45-55 shore durometer hardness; black; tensile strength 1,200 PSI, elongated 400%; permanent set 60%; 29/64" wd x 0.179" thk w/slot 1/4" d at one edge and 5/32" d at other edge; rectangular hole 3/32" x 5/64" throughout its length 1/16" from bottom of slot; suitable for use in an ambient of -20 deg C to +50 deg C; National-Company part/dwg R617-1; Mfr code 236	Cabin gasket

TABLE 8-4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		MECHANICAL PARTS (CONT'D)	
0120	Shop manufacture locally.	Clip, Electrical: 0.032" grade A spring tempered phos bronze; nickel plated finish; 31/32" lg x 55/64" wd x 3/8" h; mts by single 0.156" diam hole; 5/16" normal jaw opening located at 45° angle from base; National Company part/dwg R686-1; Mfr code 77 part of A101	Clamps for holding coiled power cable in cabinet cover (4)
0121	Shop manufacture locally.	Clip, electrical: no. 418 merculoy; nickel plated finish; 0.430" lg x 0.335" wd x 0.270" h; mts by single 0.160" diam hole in base; 0.250" normal jaw opening; National Company part/dwg R691-1; Mfr code 324 part of A101	Locking devic for instruction book compartment cover (2)
0122	Shop manufacture locally.	Catch, Luggage: bright cad plated brass per AN-P-61 spec; 1 15/16" lg x 1 5/16" wd x 1/2" thk in locked position; coil spring locking; mts by two 0.156" diam holes spaced 0.437" c to c; National Company part/dwg R388-1; Mfr code 1343	Cover fasten rs (2)
0123	Shop manufacture locally.	Catch, fastener: 0.047" thk bright cad plated brass per AN-P-61 spec; 2.147" lg x 9/16" wd x 0.367" h o/a; 45° offset and 0.070" rad return bend at one end; National Company part/dwg R387-1; Mfr code 1, type R387-1	Catch for cover fasteners (2)
0124	--- N17-M-75368-5902 ---	Mount, Vibration: steel and rubber parts; metal parts zinc plated, zinc chromate primer w/gray enamel finish; holds item by means of 3/8-16 tapped center hole; four 0.266" diam mtg holes in base on 2.500" x 2.500" mtg/c; 3" sq x 1 1/2" h o/a; 40-80 lb load rating (Military); stamped C-2060-T6 on top; National Company part/dwg J265-4; Mfr code 398	Vibration mounts on Field Strength Meter case (4)
0125	--- ---	Hinge, Separable: 0.047" thk brass bright cad plated per AN-P-61 spec; consists of male and female halves; male half 1 5/8" lg x 1 3/8" wd x 3/8" thk o/a; non-removable pin 13/16" lg; female half 1 5/8" lg x 1 3/8" wd x 3/8" thk o/a; no pin; each half mts by two 0.156" diam holes on 1.00" mtg/c; includes 0125A and 8; for reference only	Cover hinge on Field Strength Meter case
0125A	Shop manufacture locally.	Hinge, Separable, Male Half: 0.047" thk brass cad plated per AN-P-61 spec to withstand 200 hr salt spray test; 1 5/8" lg x 1 3/8" wd x 3/8" thk o/a; non-removable pin 13/16" lg; mts by two 0.156" diam holes on 1.00 mtg/c; National Company part/dwg SA:9041; Mfr code 1, type SA:9041; part of 0125	

TABLE 8-4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS / SIGNAL CORPS / STANDARD NAVY / AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		MECHANICAL PARTS (CONT'D)	
0125B	Shop manufacture locally.	Hinge, Separable, Female Half: 0.047" thk brass cad plated per AN-P-61 spec to withstand 200 hr salt spray test; 1 5/8" lg x 1 3/8" wd x 3/8" thk o/a; no pin; mts by two 0.156" diam holes on 1.00" mtg/c; National Company part/dwg R383-2; Mfr code 1, type R383-2; part of 0125	
0126	--- ---	Hinge, Separable: 0.047" thk brass bright cad plated per AN-P-61 spec; consists of male and female halves; male half 1 5/8" lg x 1 3/8" wd x 3/8" thk o/a; non-removable pin 11/16" lg; female half 1 5/8" lg x 1 3/8" wd x 3/8" thk o/a; no pin; each half mts by two 0.156" diam holes on 1.00" mtg/c;includes 0126A and B; for reference only	Covering Field Strength Meter cas
0126A	Shop manufacture locally.	Hinge, Separable, Male Half: 0.047" thk brass cad plated per AN-P-61 spec to withstand 200 hr salt spray test; 1 5/8" lg x 1 3/8" wd x 3/8" thk o/a; non-removable pin 11/16" lg; mts by two 0.156" diam holes on 1.00" mtg/c; National Company part/dwg SA:9978; Mfr code 1, type SA:9978; part of 0126	
0126B		Same as 0125B except part of 0126	
0127	Shop manufacture locally.	Bail, Panel: 3/8" diam brass rod w/nickel plated finish; 4 5/8" lg x 1 5/8" wd x 3/8" OD thk; one 1/2" d axial mtg hole at each end tapped 1/4-20; National Company part/dwg R380-1; Mfr code 1399	Panel handles on Field Strength Mtr (2)
0128	Shop manufacture locally.	Cover, jack: steel w/dull black finish; keyhole shape; 1 1/32" lg x 13/16" wd x 9/16" thk o/a; mts on jack bushing by 0.386" diam hole; cover held in closed position by steel tension spring; National Company part/dwg Q628-1; Mfr code 416	Phones jack cvr
0129		Same as 0128	External mtr jack cver
0130	Shop manufacture locally.	Gasket: meter gasket; 3/32" thk sponge neoprene; 3 7/16" OD; 2 13/16" ID; 3 holes 0.171" diam located 120° apart; National Company part/dwg R775-1; Mfr code 1400	Meter gasket
0131	--- N16-M-60911-4456 ---	Mounting, Capacitor: non-magnetic; 1 45/64" nom lg x 49/64" max wd x 2 1/2" max h; two no. 6-32 spade bolts 1/2" lg 1 9/16" between/c; for capacitors 1 45/64" lg x 49/64" wd x	Capacitor clamp (4)

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS / STANDARD NAVY / AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		MECHANICAL PARTS (CONT'D)	
0131 (cont'd)		2 1/2" max h excl term; U shape; JAN-C-25 spec; JAN type CP06SA5; National Company part/dwg L896-2; Mfr code 14	
0132	Shop manufacture locally.	Screw, Externally Relieved Body: slot drive; knurled thumb head; type 303 stainless steel; 1/4"-20 thd; 2 7/16" lg o/a; 1/2" lg threaded portion; 3/16" thk head; 7/16" diam x 3/16" lg shoulder; National Company part/dwg Q860-2; Mfr code 1398	Front panel fastener screws (4)
0133	Shop manufacture locally.	Bracket, Resistor: 0.062" 52-S 1/4 hard aluminum; L shaped; 1 5/16" lg x 1 3/8" wd x 9/16" h; resistor mtg hole 0.390" diam; mts by two 6-32 captive nuts spaced 0.750" c to c; National Company part/dwg SA:9046; Mfr code 1, type SA:9046	R162 mounting bracket
0134	Shop manufacture l cally.	Pointer, Indicator: consists of pointer brace, 0.031" thk cad plated brass trip curved on 4.00" rad, 3 1/2" lg x 7/16" wd w/1 mtg tab on side at each end 3/8" lg x 1/4" wd w/one 0.156" diam mtg hole in each; brass pointer 2 1/2" lg x 0.078" wd x 0.032" thk w/black finish; silver soldered to brace center and opposite side from tabs; 3 1/2" lg x 2 1/2" wd x 7/16" h o/a; two 5/32" diam mtg holes 3 1/16" c to c; mts on rear of front panel by means of mtg tabs; National Company part/dwg SA:9696; Mfr code 1, type SA:9696	Tuning dial indicator
0135	Shop manufacture l cally.	Bumper: consists of cad plated steel stud 5/8" lg w/3/8-16 thd and rubber (neoprene) head 1.00" diam at bottom w/rounded taper to 1/2" diam at top; screwdriver slot at top of stud w/access hole in rubber head; 1 1/8" h x 1.00" diam o/a; National Company part/dwg R371-1; Mfr code 236	Mounting feet for Field Strength Meter Case (4)
0136		Shaft: tuning mechanism drive shaft; B1112 C.R. steel; 2 5/32" lg by 0.248" diam o/a; shaft is 0.248" for length of 1.469"; remaining length is 0.186" diam; 1/2" lg by 1/32" d flat on 0.248" diam end of shaft; groove for retaining ring 0.028" wd by 0.010" d located 1 17/32" from flatted end; second flat 5/16" lg on opposite end of 0.248" diam; groove to accomodate dog-screw on 0.186" diam, 0.093" lg by 0.046" d, located 0.469" from shoulder of 0.248" diam; 1/64" by 45° chamfer at both ends of shaft; National Company part/dwg R901-2; Mfr code 1, type R901-2; Part of E126; for reference only	Tuning mechanism drive shaft

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REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		MECHANICAL PARTS (CONT'D)	
0137		Gear: internal gear; cad plated brass; straight teeth; 72 teeth; 48 pitch; 1.500" pitch diam; 1.875" diam by 0.562" thk o/a w/0.2505" bore; straight face; panel mtd by 0.375" lg bushing w/0.435"-27 thd and secured by washer and hex nut; National Company part/dwg R902-1; Mfr code 662 part of E126; for reference only	Part f tuning mechanism
0138		Gear, spur: cad plated brass; straight teeth; 23 teeth; diametral pitch 32; pitch diam 0.718"; 25/32" OD; 0.251" bore; 3/8" thk o/a; straight face; hub formed by 1/2" OD by 3/16" lg extrusion; setscrew mtd by no. 6-32 tapped hole in hub; National Company part/dwg R697-1; Mfr code 662 part of E126; for reference only	Tuning m chanism drive gear
0139	Shop manufacture locally.	Screw, Machine: slotted head; stainless steel; no. 8-32 thd; 0.2255" lg; threaded portion 0.093" lg; head 1/16" thk by 0.218" diam; dog 0.070" lg by 0.062" diam extends from center of threaded portion; National Company part/dwg R913-1; Mfr code 1398 part of E127	Holds v rni r tuning knob captive permitting it t turn fre ly
0140	Shop manufacture locally.	Spring, Loop Type: 0.062" diam spring wire; cad plated; 2.572" lg x 0.312" wd o/a; one end has return loop made for free fit over 5/32" diam pin; 90° angle bend in same direction of loop on 0.095" rad at other end 2 1/8" from loop center w/ straight portion 1/4" lg; second 90° angle w/sharp corner bent perpendicular to first angle w/straight portion 1/4" lg; National Company part/dwg R713-2; Mfr code 1, type R713-2	S cur s rotor bushing t fram
0141	Shop manufacture locally.	Clamp, hub: C.R. steel, cad plated; one set screw employed; 1" lg by 5/8" wd by 1/4" thk; designed to hold 0.375" diam hub; National Company part/dwg R712-2; Mfr code 1, type R712-2	S cures capacitor drive gear to shaft
0142	Shop manufacture locally.	Spring: loop type; for split gear loading; 0.062" stainless steel wire; 1.962" lg by 0.874" wd o/a; terminals bent on 0.070" rad; National Company part/dwg P159-2; Mfr code 24	L ading spring for tuning gear
0143	--- N16-C-300442-625 ---	Clamp, Tube: stainless steel; approx 2 9/16" lg by 1 7/16" wd by 17/32" h when open; mtg bracket w/single mtg hole for no. 6-32 screw located 60° from loop 115° from hinge on 27/32" rad;w/holding spurs; National Company part/dwg F892-7; Mfr code 296, type 926B-2	V110 clamp

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		MECHANICAL PARTS (CONT'D)	
0144	--- ---	Plate, dial lock mounting: bright cad plated brass; 1 5/16" lg x 13/16" wd x 1/16" thk o/a; mts by four 0.109" diam holes located on 1.062" x 0.468" mtg/c; one 0.093" diam hole on vertical center line spaced 0.249" from bottom; two top corners rounded on 1/8" rad; National Company part/dwg S518-1; Mfr code 1, type S518-1	Mtg plate for dial lock assembly
0145	--- ---	Cover plate, dial lock; 1/16" thk bright cad plated brass; L shape; 1 5/16" lg x 13/16" wd x 13/32" d o/a; 90° angle w/two legs 13/16" x 13/32"; mts by four 0.109" diam holes CSK to 0.199" diam x 82° located on 1.062" x 0.468" mtg/c in longest leg; one 0.093" diam hole located on vertical center line in longest leg 0.311" from bottom; cutout in shorter leg 13/16" lg x 1/8" wd located 5/32" from bend and centrally located laterally; National Company part/dwg S520-1; Mfr code 1, type S520-1	Dial lock cover plate
0146	--- ---	Cam dial lock: 302 stainless steel; lobe shape cam w/max eccentricity of 1/4" w/7/8" lg lever arm set at 45° to center line of cam peak; 0.0937" diam hole for cam pin 1/4" from peak edge and centered in 5/16" diam lobe; end of lever arm bent 90° x 7/32"; 1 1/8" lg x 13/32" wd x 7/32" d o/a; National Company part/dwg S521-1; Mfr code 1, type S521-1	Dial lock cam
0147	--- ---	Spring, dial lock: beryllium copper; 1 1/8" lg x 1/4" wd x 0.020" thk o/a; National Company part/dwg S522-1; Mfr code 1, type S522-1	Dial lock spring
0148	--- ---	Pin, pivot: 302 stainless steel rod; 3/8" lg x 0.092" diam; National Company part/dwg S524-1; Mfr code 1, type S524-1	Pivot pin for dial lock cam
0149	--- ---	Washer: bright cad plated brass; 1/4" OD x 0.093" ID x 0.093" thk o/a; National Company part/dwg S525-1; Mfr code 1, type S525-1	Dial lock washer
0150	--- ---	Spacer, spring retaining: bright cad plated brass; modified rectangular shape; 3/4" lg x 1/4" wd x 5/16" thk o/a; two 0.109" diam mtg holes on horizontal center line spaced 0.468" c to c; 3/32" wd x 3/16" d cutout located 25/32" from squared end; 45° x 1/16" d chamfer at lower right hand corner of cutout; corner of spacer located diemetrically opposite cutout chamfer rounded to 1/8" rad; National Company part/dwg S519-1; Mfr code 1, type S519-1	Dial lock spring retainer

TABLE 8-4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS / SIGNAL CORPS / STANDARD NAVY / AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		MECHANICAL PARTS (CONT'D)	
0151		Same as 0150	Dial lock spring retainer
0152	--- ---	Shoe, dial locking: 45 durometer neoprene; 1 1/8" lg x 7/16" h x 1/4" thk o/a; body of shoe 3/4" lg x 3/8" h w/3/16" lg x 1/16" h extension each side of bottom; top of body concaved to 1 1/8" rad in a plane parallel to 3/4" dim; National Company part/dwg S523-1; Mfr code 1, type S523-1	Dial locking shoe
0153	--- ---	Plate, rear, dial lock mounting: cad plated 1/4 hard brass; rectangular shape; 1 7/16" lg x 27/32" wd x 0.062" thk o/a; four 3-48 NC-2B tapped holes on 0.468" x 1.062" centers; National Company part/dwg S526-1; Mfr code 1, type S526-1	Dial lock support on back of front panel
0154	--- N17-A-25801-1017 ---	Adapter, switch actuator: roller leaf type actuation; non-adjustable; 15 oz max operating force; 1/16" max pre-travel; 1/32" min over-travel; 0.016" max movement differential; approx 1 1/32" lg x 1" h x 13/16" thk; mts on switch by two 4-40 x 5/8" round head machine screws; National Company part/dwg V057-1; Mfr code 990, type JV-5	S103 actuator
0155	Shop manufacture locally	Spring: loop type; for split gear loading; 0.050" stainless steel wire; 1.962" lg x 0.874" wd o/a; terminals bent on 0.070" rad; National Company part/dwg P159-1; Mfr code 24	Loading spring for turret driven gear
		PLUGS	
P101	--- ---	Connector, plug: one round male contact; angle type, 90°; 1 1/4" lg x 15/16" wd x 5/8" diam o/a; round body; brass silver plated; National Company part/dwg T078-1; Mfr: Industrial Products Co; type P8525	R.F. attenuator output connector
		RESISTORS	
R101	--- N16-R-49580-0811 ---	Resistor, fixed: composition; body style no. 14, MBCA ref dwg group 2; 100 ohms, ±10%; 1/2 W; F characteristic; 0.406" lg x 0.175" diam; 2 axial wire leads; JAN-R-11 spec; JAN type RC20BF101K; National Company part/dwg M828-42; Mfr code 273	Part of RF attenuator
R102	--- N16-R-49662-506 ---	Resistor, fixed: composition; body style no. 14, MBCA ref dwg group 2; 220 ohms, ±10%; 2W; F characteristic; 0.750" lg x 0.370" diam; 2 axial wire leads; JAN-R-11 spec; JAN type RC-42BF221K; National Company part/dwg R722-10 Mfr code 273	Part of RF attenuator
R103	---	Resistor, fixed: composition; body style n . 14, MBCA ref dwg	Part of RF

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		RESISTORS (CONT'D)	
R103 (cont'd)	N16-R-49238-0811 ---	group 2; 10 ohms, ±10%; 1/2 W; F characteristic; 0.406" lg x 0.175" diam; 2 axial wire lead; JAN-R-11 spec; JAN type RC-20BF100K; National Company part/dwg M828-44; Mfr code 273	attenuator
R104		Same as R103	Part of RF attenuator
R105		Same as R103	Patt of RF attenuator
R106		Same as R103	Part of RF attenuator
R107		Same as R103	Part of RF attenuator
R108		Same as R103	Part of RF attenuator
R109	--- N16-R-49318-0431 ---	Resistor, fixed: composition; body style no. 14, MBCA ref dwg group 2; 22 ohms, ±5%; 1/2 W; F characteristic; 0.406" lg x 0.175" diam; 2 axial wire leads; JAN-R-11 spec; JAN type RC-20BF220J; National Company part/dwg M828-52; Mfr code 273	Part of RF attenuator
R110	--- N16-R-49662-0231 ---	Resistor, fixed: composition; body style no. 14, MBCA ref dwg group 2; 220 ohms, ±10%; 1 W; F characteristic; 0.750" lg x 0.280" diam; 2 axial wire leads; JAN-R-11 spec; JAN type RC-30BF221K; National Company part/dwg H370-46; Mfr code 273	Part of RF attenuator
R111	--- N16-R-49732-0751 ---	Resistor, fixed: composition; body style no. 14, MBCA ref dwg group 2; 390 ohms, ±5%; 1 W; F characteristic; 0.750" lg x 0.280" diam; 2 axial wire leads; JAN-R-11 spec; JAN type RC-30BF391J; National Company part/dwg H370-76; Mfr code 273	Part of RF attenuator
R112	--- N16-R-50011-0751 ---	Resistor, fixed: composition; body style no. 14, MBCA ref dwg group 2; 2200 ohms, ±5%; 1 W; F characteristic; 0.750" lg x 0.280" diam; 2 axial wire leads; JAN-R-11 spec; JAN type RC-30BF222J; National Company part/dwg H370-54; Mfr code 273	Part of RF attenuator
R113	--- N16-R-49687-0751 ---	Resistor, fixed: composition; body style no. 14, MBCA ref dwg group 2; 270 ohms; ±5%; 1 W; F characteristic; 0.750" lg x 0.280" diam; 2 axial wire leads; JAN-R-11 spec; JAN type RC-30BF271J; National Company part/dwg H370-71; Mfr code 273	Part of RF attenuator
R114		Same as R103	Part of RF attenuator
R115	---	Resistor, fixed: composition; body style no. 14, MBCA ref dwg	V101 grid

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		RESISTORS (CONT'D)	
R115 (cont'd)	N16-R-50714-0811 ---	group 2; 220,000 ohms, ±10%; 1/2 W; F characteristic; 0.406" lg x 0.175" diam; 2 axial wire leads; JAN-R-11 spec; JAN type RC20BF224K; National Company part/dwg M828-16; Mfr code 273	
R116	--- N16-R-49661-0811 ---	Resistor, fixed: composition; body style no. 14, MBCA ref dwg group 2; 220 ohms, ±10%; 1/2 W; F characteristic; 0.406" lg x 0.175" diam; 2 axial wire leads; JAN-R-11 spec; JAN type RC-20BF221K; National Company part/dwg M828-2; Mfr code 273	V101 cathode

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS / SIGNAL CORPS / STANDARD NAVY / AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		RESISTORS (CONT'D)	
R117	--- N16-R-50336-0811 ---	Resistor, fixed: composition; body style no. 14, MBCA ref dwg group 2; 15,000 ohms, ±10%; 1/2 W; F characteristic; 0.406" lg x 0.175" diam; 2 axial wire leads; JAN-R-11 spec; JAN type RC20BF153K; National Company part/dwg M828-10; Mfr code 273; part of L102	Part of V101 parasitic suppress r
R118	--- N16-R-50283-0529 ---	Resistor, fixed: composition; body style no. 14, MBCA ref dwg group 2; 10,000 ohms, ±10%; 2 W; F characteristic; 0.750" lg x 0.370" diam; 2 axial wire leads; JAN-R-11 spec; JAN type RC-42BF103K; National Company part/dwg R722-39; Mfr code 273	V102 plate dropping
R119	--- N16-R-50480-0811 ---	Resistor, fixed: composition; body style no. 14, MBCA ref dwg group 2; 47,000 ohms, ±10%; 1/2 W; F characteristic; 0.406" lg x 0.175" diam; 2 axial wire leads; JAN-R-11 spec; JAN type RC-20BF473K; National Company part/dwg M828-13; Mfr code 273	V101 scr en dropping
R120	--- N16-R-50372-0811 ---	Resistor, fixed: composition; body style no. 14, MBCA ref dwg group 2; 22,000 ohms ±10%; 1/2 W; F characteristic; 0.406" lg x 0.175" diam; 2 axial wire leads; JAN-R-11 spec; JAN type RC-20BF223K; National Company part/dwg M828-41; Mfr code 273	Y101 diode load
R121		Same as R119	Y101 output filter
R122		Same as R115	Y101 output filter
R123	--- N16-R-51326-0811 ---	Resistor, fixed: composition; body style no. 14, MBCA ref dwg group 2; 10 megohms, ±10%; 1/2 W; F characteristic; 0.406" lg x 0.175" diam; 2 axial wire leads; JAN-R-11 spec; JAN type RC-20BF106K; National Company part/dwg M828-99; Mfr code 273	V102 grid
R124	--- N16-R-50822-0811 ---	Resistor, fixed: composition; body style no. 14, MBCA ref dwg group 2; 470,000 ohms, ±10%; 1/2 W; F characteristic; 0.406" lg x 0.175" diam; 2 axial wire leads; JAN-R-11 spec; JAN type RC-20BF474K; National Company part/dwg M828-19; Mfr code 273	V102 screen dropping
R125	--- N16-R-50633-0811 ---	Resistor, fixed: composition; body style no. 14, MBCA ref dwg group 2; 100,000 ohms, ±10%; 1/2 W; F characteristic; 0.406" lg x 0.175" diam; 2 axial wire leads; JAN-R-11 spec; JAN type RC-20BF104K; National Company part/dwg M828-30; Mfr code 273	V102 plate
R126	--- N16-R-88180-7510 ---	Resistor, variable: composition; 1 section; 500,000 ohms ±20%; 1/8 W, std C taper, MBCA ref dwg group 3; 3 solder lug term; enclosed bakelite case; 31/32" diam x 7/8" lg FMS; ins contact arm; no off position; mts by bushing 3/8" diam-32 NEF-2	Audio gain control

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS — SIGNAL CORPS / STANDARD NAVY / AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		RESISTORS (CONT'D)	
R126 (cont'd)		thd, 3/8" lg; non-turn device on 7/16" rad at 9 o'clock; JAN-R-94 spec; JAN type RV2AURD504D; National Company part/dwg M364-34; Mfr code 307	
R127	--- N16-R-50202-516 ---	Resistor, fixed: composition; body style no. 14, MBCA ref dwg group 2; 6,800 ohms, ±10%; 2 W; F characteristic; 0.750" lg x 0.370" diam; 2 axial wire leads; JAN-R-11 spec; JAN type RC-42BF682K; National Company part/dwg R722-36; Mfr code 307	V103 B+ filter
R128	--- N16-R-49922-0811 ---	Resistor, fixed: composition; body style no. 14, MBCA ref dwg group 2; 1,000 ohms, ±10%; 1/2 W; F characteristic; 0.406" lg x 0.175" diam; 2 axial wire leads; JAN-R-11 spec; JAN type RC20BF102K; National Company part/dwg M828-7; Mfr code 273	V103A cathode
R129	--- N16-R-50634-0231 ---	Resistor, fixed: composition; body style no. 14, MBCA ref dwg group 2, 100,000 ohms, ±10%; 1 W; F characteristic; 0.750" lg x 0.280" diam; 2 axial wire leads; JAN-R-11 spec; JAN type RC30BF104K; National Company part/dwg H370-28; Mfr code 273	V103A plate dropping
R130		Same as R115	V103B grid
R131	--- N16-R-49625-0811 ---	Resistor, fixed: composition; body style no. 14, MBCA ref dwg group 2; 150 ohms, ±10%; 1/2 W; F characteristic; 0.406" lg x 0.175" diam; 2 axial wire leads; JAN-R-11 spec; JAN type RC-20BF151K; National Company part/dwg M828-1; Mfr code 273	V103B cathode
R132	--- N16-R-50130-469 ---	Resistor, fixed: composition; body style no. 14, MBCA ref dwg group 2; 4,700 ohms, ±10%; 2 W; F characteristic; 0.750" lg x 0.370" diam; 2 axial wire leads; JAN-R-11 spec; JAN type RC42BF472K; National Company part/dwg R722-32; Mfr code 273	V103B plate load
R133	--- N16-R-50975-0811 ---	Resistor, fixed: composition; body style no. 14, MBCA ref dwg group 2; 1 megohm, ±10%; 1/2 W; F characteristic; 0.406" lg x 0.175" diam; 2 axial wire leads; JAN-R-11 spec; JAN type RC-20BF105K; National Company part/dwg M828-31; Mfr code 273	Oscilloscope isolating
R134	--- N16-R-50417-0811 ---	Resistor, fixed: composition; body style no. 14, MBCA ref dwg group 2; 33,000 ohms, ±10%; 1/2 W; F characteristic; 0.406" lg x 0.175" diam; 2 axial wire leads; JAN-R-11 spec; JAN type RC-20BF333K; National Company part/dwg M828-34; Mfr code 273	V104 screen dropping
R135		Same as R125	V104 grid

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS / SIGNAL CORPS / STANDARD NAVY / AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		RESISTORS (CONT'D)	
R136	--- N16-R-49770-0231 ---	Resistor, fixed: composition; body style no. 14, MBCA ref dwg group 2; 470 ohms, ±10%; 1 W; F characteristic; 0.750" lg x 0.280" diam; 2 axial wire leads; JAN-R-11 spec; JAN type RC-30BF471K; National Company part/dwg H370-6; Mfr code 63	V104 cath de
R137	--- N16-R-51173-0811 ---	Resistor, fixed: composition; body style no. 14, MBCA ref dwg group 2; 4.7 megohms ±10%; 1/2 W; F characteristic; 0.406" lg x 0.175" diam; 2 axial wire leads; JAN-R-11 spec; JAN type RC20BF475K; National Company part/dwg M828-100; Mfr code 273	V105 grid
R138	--- N16-R-49283-0811 ---	Resistor, fixed: composition; body style no. 14, MBCA ref dwg group 2; 15 ohms, ±10%; 1/2 W; F characteristic; 0.406" lg x 0.175" diam; 2 axial wire leads; JAN-R-11 spec; JAN type RC-20BF150K; National Company part/dwg M828-135; Mfr code 273	V105 cathod
R139	--- N16-R-51065-0811 ---	Resistor, fixed: composition; body style no. 14, MBCA ref dwg group 2; 2.2 megohm, ±10%; 1/2 W; F characteristic; 0.406" lg x 0.175" diam; 2 axial wire leads; JAN-R-11 spec; JAN type RC20BF225K; National Company part/dwg M828-35; Mfr code 273	V105 screen dr pping
R140		Same as R133	V105 plate dropping
R141		Same as R123	V106 grid
R142		Same as R120	V107B to V105 f edback
R143		Same as R139	V106 scr en dr pping
R144		Same as R133	V106 plate dr pping
R145		Same as R125	V105, V106 B+ dropping
R146		Same as R124	V107B grid

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		RESISTORS (CONT'D)	
R147	--- N16-R-50066-0811 ---	Resistor, fixed: composition; body style no. 14, MBCA ref dwg group 2; 3,300 ohms, ±10%; 1/2 W; F characteristic; 0.406" lg x 0.175" diam; 2 axial wire leads; JAN-R-11 spec; JAN type RC-20BF332K; National Company part/dwg M828-60; Mfr code 273	V107B cathode
R148		Same as R125	V107B plate dropping
R149		Same as R134	V107A diode load
R150	--- N16-R-50678-0811 ---	Resistor, fixed: composition; body style no. 14, MBCA ref dwg group 2; 150,000 ohms, ±10%; 1/2 W; F characteristic; 0.406" lg x 0.175" diam; 2 axial wire leads; JAN-R-11 spec; JAN type RC20BF154K; National Company part/dwg M828-15; Mfr code 273	Part of meter balancing network
R151	--- N16-R-50012-0811 ---	Resistor, fixed: composition; body style no. 14, MBCA ref dwg group 2; 2,200 ohms, ±10%; 1/2 W; F characteristic; 0.406" lg x 0.175" diam; 2 axial wire leads; JAN-R-11 spec; JAN type RC-20BF222K; National Company part/dwg M828-38; Mfr code 273	Part of meter balancing network
R152	--- N16-R-49967-0811 ---	Resistor, fixed: composition; body style no. 14, MBCA ref dwg group 2; 1,500 ohms, ±10%; 1/2 W; F characteristic; 0.406" lg x 0.175" diam; 2 axial wire leads; JAN-R-11 spec; JAN type RC-20BF152K; National Company part/dwg M828-47; Mfr code 273	Meter equalizing
R153		Same as R134	Part of meter balancing network
R154	--- N16-R-88010-9632 ---	Resistor, variable: composition; 1 section; 100,000 ohms, ±20%; 1/4 W; std A taper MBCA ref dwg group 3; 3 solder lug term; enclosed bakelite case; 31/32" diam x 33/64" d; round metal shaft 0.250" diam x 7/8" lg FMS; ins contact arm; no off position; mts by bushing 3/8" diam-32NEF-2 thd 3/8" lg; non-turn device on 7/16" rad at 9 o'clock; JAN-R-94 spec; JAN type RV-2ATRD104B; National Company part/dwg M364-42; Mfr code 307	Meter zero control
R155		Same as R119	Series dropping for meter balancing network

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		RESISTORS (CONT'D)	
R156	--- N16-R-50067-501 ---	Resistor, fixed: composition; body style no. 14, MBCA ref dwg group 2; 3,300 ohms, ±10%; 2 W; F characteristic; 0.750" lg x 0.370" diam; 2 axial wire leads; JAN-R-11 spec; JAN type RC-42BF332K; National Company part/dwg R722-28; Mfr code 273	V108 B+ dropping
R157		Same as R156	V108 B+ dropping
R158	--- N16-R-89956-7032 ---	Resistor, variable: wire wound; 1 section; 50 ohms, ±10%; 2 W; std A taper, MBCA ref dwg group 3; 3 solder lug term; enclosed bakelite case; 1.28"diam x 0.62" d; round metal shaft w/screwdriver slot in end 0.047" wd x 0.063" d; shaft diam 0.250" x 0.875" lg FMS; ins contact arm; no off position; mts by bushing w/3/8-32 thd, 0.375" lg; non-turn device on 0.531" rad at 9 o'clock; no switch; JAN-R-19 spec; JAN type RA20A1SD500AK; National Company part/dwg H345-22; Mfr code 307	Filament hum balancing
R159		Same as R115	Chopper input filter
R160		Same as R133	Chopper input filter
R161		Same as R103	V101 parasitic suppressor
R162	--- N16-R-90 656-6505 ---	Resistor, variable: wire wound; 1 section; 750 ohms; ±10%; 2 W; std A taper, MBCA ref dwg group 3; 3 solder lug term; enclosed bakelite case; 1.128"diam x 0.62" d; round metal shaft w/screwdriver slot in end 0.047" wd x 0.063" d; shaft diam 0.250" x 0.875" lg FMS; ins contact arm; no off position; mts by bushing w/3/8-32 thd; 0.375" lg; non-turn device on 0.531" rad at 9 o'clock; no switch; JAN-R-19 spec; JAN type RA20A1-SD751AK; National Company part/dwg H345-23; Mfr code 307	Chopper hum balancing
R163		Same as R120	M101 shunt
R164		Same as R103	Part of RF attenuator
R165		Same as R103	Part of RF attenuator

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		RESISTORS (CONT'D)	
R166		Same as R113	Part of RF attenuator
R167		Same as R109	Part of RF attenuator
R168		Same as R109	Part of RF attenuator
R169		Same as R101	Part of RF attenuator
R170	--- N16-R-50479-0431 ---	Resistor, fixed: composition: body style no. 14, MBCA ref dwg group 2; 47,000 ohms, ±5%; 1/2 W; F characteristic; 0.406" lg x 0.175" diam; 2 axial wire leads; JAN-R-11 spec; JAN type RC-20BF473J; National Company part/dwg M828-130; Mfr code 273	Part of chopp r attenuator
R171		Same as R115	Part of chopp r attenuator
R172	--- N16-R-50281-0431 ---	Resistor, fixed: composition; body style no. 14, MBCA ref dwg group 2; 10,000 ohms, ±5%; 1/2 W; F characteristic; 0.406" lg x 0.175" diam; 2 axial wire leads; JAN-R-11 spec; JAN type RC-20BF103J; National Company part/dwg M828-92; Mfr code 273	Part of chopper attenuator
R173	--- N16-R-50038-0431	Resistor, fixed: composition; body style no. 14, MBCA ref dwg group 2; 2,700 ohms, ±5%; 1/2 W; F characteristic; 0.406" lg x 0.175" diam; 2 axial wire leads; JAN-R-11 spec; JAN type RC-20BF272J; National Company part/dwg M828-106; Mfr code 273	Part of chopper attenuator
R174		Same as R101	Part of RF attenuator
R175		Same as R103	Part of RF attenuator
R176		Same as R103	V101 screen filter
R177	--- N16-R-51092-0811 ---	Resistor, fixed: composition; body style no. 14, MBCA ref dwg group 2; 2.7 megohms ±10%; 1/2 W; F characteristic; 0.406" lg x 0.175" diam; 2 axial wire leads; JAN-R-11 spec; JAN type RC20BF275K; National Company part/dwg M828-145; Mfr code 273; part of Z101	T101 load

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		RESISTORS (CONT'D)	
R178		Same as R139 except part of Z102	T102 load
R179	--- N16-R-51020-0811 ---	Resistor, fixed: composition; body style no. 14, MBCA ref dwg group 2; 1.5 megohms ±10%; 1/2 W; F characteristic; 0.406" lg x 0.175" diam; 2 axial wire leads; JAN-R-11 spec; JAN type RC-20BF155K; National Company part/dwg M828-22; Mfr code 273; part of Z103	T103 l ad
R180	--- N16-R-50696-0811	Resistor, fixed: composition; body style no. 14, MBCA ref dwg group 2; 180,000 ohms ±10%; 1/2 W; F characteristic; 0.406" lg x 0.175" diam; 2 axial wire leads; JAN-R-11 spec; JAN type RC-20BF184K; National Company part/dwg M828-39; Mfr code 273; part of Z104	T104 load
R181	--- N16-R-50552-0811 ---	Resistor, fixed: composition; body style no. 14, MBCA ref dwg group 2; 68,000 ohms ±10%; 1/2 W; F characteristic; 0.406" lg x 0.175" diam; 2 axial wire leads; JAN-R-11 spec; JAN type RC20BF683K; National Company part/dwg M828-74; Mfr code 273; part of Z105	T105 load
R182		Same as R120 except part of Z106	T106 l ad
R183		Same as R117 except part of Z107	T107 load
R184	--- N16-R-50201-0811 ---	Resistor, fixed: composition; body style no. 14, MBCA ref dwg group 2; 6,800 ohms ±10%; 1/2 W; F characteristic; 0.406" lg x 0.175" diam; 2 axial wire leads; JAN-R-11 spec; JAN type RC-20BF682K; National Company part/dwg M828-40; Mfr code 273; part of Z108	T108 l ad
R185	--- N16-R-50444-0811 ---	Resistor, fixed: composition; body style no. 14, MBCA ref dwg group 2; 39,000 ohms ±10%; 1/2 W; F characteristic; 0.406" lg x 0.175" diam; 2 axial wire leads; JAN-R-11 spec; JAN type RC20BF393K; National Company part/dwg M828-123; Mfr code 273	V107B cathode
R186		Same as R152	V101 cathode
R187	--- N16-R-99999-0916 ---	Resistor, thermal: nominal value 31,500 ohms; resistance value versus current value: 700 ohms at 0.034 amp, 1,000 ohms at 0.255 amp, 2,000 ohms at 0.0155 amp, 3,000 ohms at 0.0115 amp, 5,000 ohms at 0.0072 amp, 7,000 ohms at 0.00525 amp, 10,000 ohms t 0.004 amp and 20,000 ohms at 0.0016 amp; resistance value v rsus temperature value: 214 ohms at 200°C, 567 ohms	Y101 diode temp rature compensating load

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS / STANDARD NAVY / AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		RESISTORS (CONT'D)	
R187 (cont'd)		at 150°C, 2,142 ohms at 100°C, 11,340 ohms at 50°C; 0.125 ma nominal operating current; 40 v max operating voltage; 37 v working range; designed for AC and DC; 0.9" lg x 0.112" diam; one wire lead at each end; term mtd; National Company part/dwg V059-1; Mfr code 274; ROD type, Grade 1, Order No. R113	
		SWITCHES	
S101	Assemble from component parts	Switch, Rotary: 3 sections; 10 positions; non-pile-up type; 3 poles; 10 throws; min voltage breakdown 1500 v AC; brass silver	Sensitivity switch

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS / SIGNAL CORPS / STANDARD NAVY / AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		SWITCHES (CONT'D)	
S101 (cont'd)	---	plated contacts; ceramic sections; 3 3/8" lg x 1 3/8" wd x 1 9/16" h; mts by 3/8"-32 thd bushing 3/8" lg; flatted type shaft 2 3/16" lg x 0.248" diam w/flats 3/8" lg; solder lug term; National Company part/dwg R765-1; Mfr code 602 includes S101A, S101B, S101C, S101D	
S101A	--- N17-S-91700-2823 ---	Switch Section, Rotary: ceramic wafer; 1 3/8" diam x 1/8" thk excl term; 12 brass silver plated solder lug term; mts by two 1/8" diam holes on 1 1/4" mtg/c; National Company part/dwg R765-2; Mfr code 602 part of S101	RF attenuator section of Sensitivity switch
S101B		Same as S101A	RF attenuator section of Sensitivity switch
S101C		Same as S101A	Chopper attenuator section of Sensitivity switch
S101D	--- N17-D-200001-161 ---	Detent, Switch: 10 positions; non-adjustable stop; 1 9/16" lg x 1 3/16" wd x 13/64" thk o/a; mts by two 1/8" diam holes on 1 1/4" mtg/c; National Company part/dwg R765-3; Mfr code 602 part of S101	Sensitivity switch detent mechanism
S102	Assemble from component parts.	Switch assembly: consists of 2 double-pole single-throw toggle switches mtd on an irregular U shaped bracket; bracket panel mtd by a 15/32"-32 thd bushing 3/8" lg; 1/4" diam round shaft 1 5/8" lg o/a extends 3/8" beyond bushing for mtg knob; other end of shaft has 7/8" diam disk w/cutout 3/32" d along 70° of periphery which serves as shaft stop; two 1/2" lg pins located 20° apart at outer edge extend from opposite sides of disk surface approx 180° from cutout; pins actuate slotted handles for toggle switches; each switch rated 250 v AC at 3 amp; two solder lug term at each end; bakelite case 1 1/4" lg x 11/16" wd x 5/8" h excluding term bushing and handle; 15/32"-32 thd bushing 3/8" lg; complete assembly 2 5/16" lg x 1 3/4" wd x 1 7/8" h o/a; National Company part/dwg R390-1; Mfr code 3 includes S102A and B	AC power switch

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		SWITCHES (CONT'D)	
S102A	--- N17-S-73663-3851 ---	Switch, Toggle: double-pole single-throw; 3 amp; 250 v power rating; bakelite body; 1 1/4" lg x 11/16" wd x 5/8" h excluding terminals, bushing and handle; slotted type handle 1/8" lg excluding length of bushing; locking action; 4 solder lug type terminals, 2 at each end; single hole mtd by 15/32-32 thd bushing 3/8" lg from mtg surface; National Company part/dwg R390-3; Mfr code 3; part of S102	S102 toggle switch
S102B		Same as S102A except for difference in keyway and National Company part/dwg R390-4	S102 toggle switch
S102C	Shop manufacture locally	Actuator, Switch: consists of cad plated steel frame and disk and nickel plated brass shaft and bushing; irregular U shaped frame; mts two toggle switches, each w/slotted handle; 2 5/16" lg x 7/8" wd x 1 1/16" h including shaft; shaft 1 5/8" lg x 1/4" diam w/two 5/16" lg flats for mtg knob; single hole mtg in panel by 15/32-32 thd bushing; shaft extends 3/8" beyond bushing; other end of shaft has 7/8" diam disk w/cutout 3/32" d along 70° of perephery which serves as shaft stop; two 1/2" lg pins located 20° apart one on each face and at outer edge of disk approx 180° from cutout for actuating slotted switch handles in sequence, two holes for mtg toggle switches spaced 3/4" c to c; National Company part/dwg R390-2; Mfr code 3, part of S102	S101 mounting bracket
S103	--- N17-S-68340-6002 ---	Switch, Sensitive: micro-switch; single pole, single throw; normally open; DC rating: 30 v at 10 amps at sea level, 30 v at 6 amp at 50,000 ft altitude; AC rating: 125 v or 250 v at 10 amps; 1 3/32" lg x 13/32" wd x 5/8" h excl term; plunger type actuator; 0.006" to 0.016" differential movement; 3/64" max pretravel; 1/32" min over-travel; operating force 4 oz min; 50,000 ft max altitute rating; type AN3234-2 per MIL-S-6743 spec; National Company part/dwg V058-1; Mfr code 990	V101 cathode bias switch
		TRANSFORMERS	
T101	--- N17-T-82158-3281 ---	Transformer, Radio Frequency: 2 windings, 4 pie, universal wound; primary inductance 49 microhenry at 1 kc; secondary inductance 2.83 millihenry at 1 kc; primary 60 turns no. 30 copper wire, DC resistance 0.92 ohm ±10%; secondary 645 turns 10/44 Litz wire, DC resistance 25.0 ohms ±15%; untapped; unshielded; 1 1/8" lg by approx 25/32" diam; ceramic coil form; powdered iron core; form 1 1/8" lg by 3/8" diam o/a; adjustable iron core; screwdriver adjustment at bottom; mts by two 1/8" diam holes on base 13/16" c to c; 4 wire pigtail type terminations one at top and bottom of each winding; wax impregnated and fungus proofed; National C mpany part/dwg SB:1051; Mfr code 1, type SB:1051; part of Z101	Z101 RF coupling

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		TRANSFORMERS (CONT'D)	
T102	--- N17-T-82166-9581 ---	Transformer, Radio Frequency: 2 windings; 4 pie universal wound; primary inductance 5 microhenries at 1 kc; secondary inductance 0.64 mh at 1 kc; primary 18 turns no. 30 copper wire; DC resistance 0.27 ohm ±10%; secondary 330 turns 15/44 Litz wire, DC resistance 8.3 ohms ±15%; untapped; unshielded; 1 1/8" lg by approx 9/16" diam; ceramic form; powdered iron core; form 1 1/8" lg x 3/8" diam o/a; adjustable iron core; screwdriver adjustment at bottom; mts by two 1/8" diam holes on base 13/16" c to c; 4 wire pigtail type terminations, one ot top and bottom of each winding; wax impregnated and fungus proofed; National Company part/dwg SB:1053; Mfr code 1, type SB:1053; part of Z102	Z102 RF coupling
T103	--- N17-T-82180-5081 ---	Transformer, Radio Frequency: 2 windings; primary single pie wound, secondary progessive universal wound; primary inductance 3 microhenry at 1 kc; secondary inductance 134.5 microhenries at 1 kc; primary 15 turns no. 30 copper wire, DC resistance 0.267 ohms ±10%; secondary 155 turns 10/44 Litz wire, DC resistance 4.9 ohms ±10%; untapped; unshielded; 1 1/8" lg x 15/32" diam coil; ceramic form; powdered iron core; form 1 1/8" lg x 3/8" diam o/a; adjustable iron core; screwdriver adjustment at bottom; mts by two 1/8" diam holes on bottom 13/16" c to c; 4 wire pigtail type terminations, one at bottom of each winding; wax impregnated and fungus proofed; National Company part/dwg SB:1055; Mfr code 1, type SB:1055; part of Z103	Z103 RF coupling
T104	--- N17-T-82184-7151 ---	Transformer, Radio Frequency: 2 windings; solenoid wound; primary inductance 1.12 microhenries at 7.9 mc. secondary inductance 23.7 microhenries at 2.5 mc; primary 8 3/4 turns no. 30 wire, DC resistance 0.166 ohm ±2%; secondary 61 1/2 turns no. 34 wire, DC resistance 1.83 ohms ±2%; frequency range w/70 mmf fixed capacitor 2.56 to 3.03 mc; untapped; unshielded; 1 1/8" lg x 9/16" diam coil; ceramic form; powdered iron core; form 1 1/8" lg x 3/8" diam; adjustable iron core; screwdriver adjustment at bottom; mts by two 1/8" diam holes on base 13/16" c to c; 4 wire pigtail type terminations; one at top and bottom of each winding; fungus proofed; National Company part/dwg SB:1057; Mfr code 1, type SB:1057; part of Z104	Z104 RF coupling

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS / STANDARD NAVY / AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		TRANSFORMERS (CONT'D)	
T105	--- N17-T-82193-3476 ---	Transformer, Radio Frequency: 2 windings, solenoid wound; primary inductance 0.448 microhenries at 25 mc; secondary inductance 7.5 microhenries at 7.9 mc; primary 3 3/4 turns no. 30 wire, DC resistance 0.12 ohm ±2%; secondary 32 turns no. 30 wire, DC resistance 0.42 ohm ±2%; frequency range w/70 mmf fixed capacitor 5.4 to 6.9 mc; untapped; unshielded; 1 1/8" lg by 9/16" diam coil; ceramic form; powdered iron core; form 1 1/8" lg by 3/8" diam; adjustable iron core; screwdriver adjustment at bottom; mts by two 1/8" diam holes on bottom 13/16" c to c; 4 wire pigtail type terminations, one at top and bottom of each winding; fungus proofed; National Company part/dwg SB:1059; Mfr code 1, type SB:1059; part of Z105	Z105 RF coupling
T106	--- N17-T-82207-9986 ---	Transformer, Radio Frequency: 2 windings, single layer wound; primary inductance 0.66 microhenries at 25 mc; secondary inductance 1.34 microhenries at 7.9 mc; primary 5 3/4 turns no. 30 wire, DC resistance less than 0.5 ohm; secondary 12 1/2 turns no. 24 wire, DC resistance less than 0.5 ohm; frequency range w/70 mmf fixed capacitor 12.55 to 15.8 mc; untapped; unshielded; 1 1/8" lg by 9/16" diam coil; ceramic form; powdered iron core; form 1 1/8" lg by 3/8" diam; adjustable iron core; screwdriver adjustment at bottom; mts by two 1/8" diam holes on bottom 13/16" c to c; 4 wire pigtail type terminations, one at top and bottom of each winding; fungus proofed; National Company part/dwg SB:1061; Mfr code 1, type SB:1061; part of Z106	Z106 RF coupling
T107	--- N17-T-82212-7976 ---	Transformer, Radio Frequency: 2 windings, single layer wound; primary inductance 0.66 microhenries at 25 mc; secondary inductance 0.317 microhenries at 25 mc; primary 5 3/4 turns no. 30 wire, DC resistance less than 0.5 ohm; secondary 3 3/4 turns no. 24 wire, DC resistance less than 0.5 ohm; frequency range w/70 mmf fixed capacitor 29.0 to 33.5 mc; untapped; unshielded; 1 1/8" lg by 9/16" diam coil; ceramic form; powdered iron core; form 1 1/8" lg by 3/8" diam; adjustable iron core; screwdriver adjustment at bottom; mts by two 1/8" diam holes on base 13/16" c to c; 4 wire pigtail type terminations, one at top and bottom of each winding; fungus proofed; National Company part/dwg SB:1063; Mfr code 1, type SB:1063; part of Z107	Z107 RF coupling
T108	--- N17-T-82228-1111 ---	Transformer, Radio Frequency: 2 windings, single layer wound; primary inductance not rated; secondary 0.0884 microhenries at 110 mc; primary 1 3/4 turns no. 18 bus wire, DC resistance less than 0.5 ohm; secondary 2 1/2 turns 0.125" wd by 0.005" thk silver plated copper strap, DC resistanc less than 0.5 ohm; frequency range w/25 mmf fixed capacitor 108 to 113 mc;	Z108 RF coupling

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		TRANSFORMERS (CONT'D)	
T108 (cont'd)		untapped; unshielded; 1 1/8" lg by 9/16" diam coil; ceramic form; silver plated brass core; form 1 3/8" lg by 3/8" diam; adjustable brass core, screwdriver adjustment on bottom; mts by two 1/8" diam holes on base 13/16" c to c; 4 wire pigtail type terminations, one at top and bottom of each winding; fungus proofed; National Company part/dwg SB:1064; Mfr code 1, type SB:1064; part of Z108	
T109	--- N17-T-65494-1241 ---	Transformer, Audio Frequency: plate coupling type; primary 10,000 ohms impedance; no. 1 secondary 500 ohms impedance; no. 2 secondary 50 ohms impedance; upright steel case; laminated iron core; case 1 15/16" lg by 1 13/16" wd x 3 1/8" h o/a; 1 watt max operating level; 4.47 to 1 turns ratio primary to no. 1 secondary; 14.15 to 1 turns ratio primary to no. 2 secondary; designed to operate at 90 CPS ±10 CPS; 6 solder post type terminals on bottom; min Q 3.8 at 90 CPS measured by the tuned circuit impedance method w/22 ma of DC in primary and 50 ohm winding loaded; max temp rise 40° C; per MIL-T-27 spec; National Company part/dwg R395-1; Mfr code 458	V104 audi oscillat r transf rm r
T110	--- N17-T-74827-9031 ---	Transformer, Step-down, Step-up: hermetically sealed metal case; primary input 115 VAC, 60 to 400 cycles, single phase; output no. 1 secondary 275 v RMS at 55 ma; no. 2 secondary 5 v RMS at 2 amps; no. 3 secondary 6.3 v RMS at 3 amps; no. 1 and no. 3 secondary center tapped; 3 9/16" lg by 3 1/16" wd by 3 7/8" h excluding terminals and mtg studs; 10 solder post terminals on bottom; mts by four 8-32 thd studs on 2 5/8" by 2 1/8" mtg/c; internally shielded; max temp rise 40° C; per MIL-T-27 spec; National Company part/dwg R391-1; Mfr code 180	Power supply transf rm r
		TUBES	
V101	--- N16-T-75654 ---	Tube, electron: JAN-5654; pentode; MIL-E-1E spec; glass RMA T5 1/2 envelope; 7 pins on bottom; receiving tube	R.F. amplifi r
V102	--- N16-T-56203-53 ---	Tube, electron: JAN-6AU6WA; pentode; MIL-E-1E spec; glass RMA T5 1/2 envelope; 7 pins on bottom; receiving tube	1st audio amplifier

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84-URM-50

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		TUBES (CONT'D)	
V103	--- N16-T-75814 ---	Tube, electron: JAN-5814; twin triode; MIL-E-1E spec; glass RMA T6 1/2 envelope; 9 pins on bottom; receiving tube	
V103A		Part of V103	2nd audio amplifier
V103B		Part of V103	Audio output
V104	--- N16-T-76005 ---	Tube, electron: JAN-6005; pentode; MIL-E-1E spec; glass RMA T5 1/2 envelope; 7 pins on bottom; receiving tube	Audio oscillator
V105		Same as V102	1st carrier amplifier
V106		Same as V102	2nd carrier amplifier
V107		Same as V103	
V107A		Part of V107	Meter rectifier
V107B		Part of V107	Carrier amplifier limiter
V108	--- ---	Tube, electron: JAN-OB2WA; voltage regulator; MIL-E-1E spec; glass RMA T5 1/2 envelope; 7 pins on bottom; receiving tube	Voltage regulator
V109		Same as V108	Voltage regulator
V110	--- ---	Tube, electron: JAN-5Y3WGTA; duo-diode; rectifier; MIL-E-1E spec; glass RMA T9 envelope; octal base; 5 pins on bottom	Power supply rectifier
		CRYSTAL RECTIFIERS	
Y101	---	Crystal Unit, rectifying: germanium diode; max continuous forward current 24 ma; peak inverse voltage -2.0 v; 1 mmf shunt capacitance; rectification efficiency 65% at 100 mc measured with 2.0 v RMS input and a load resistance of 5,000 ohms and a load capacitance of 20 mmf; reverse resistance 40,000 ohms	Detector

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS / STANDARD NAVY / AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		CRYSTAL RECTIFIERS (CONT'D)	
Y101 (cont'd)		measured at an ambient temperature of 75°C with an RCA Volt-ohmist Senior, R X10,000 scale, Model WV97A or equivalent, in the opposite direction of easiest current flow; front to back current ratio is two times with the forward crystal current measured at +0.1 VDC to the reverse current measured at -0.5 VDC; 11/16" lg x 1/4" diam excl term; one axial wire lead at each end; term or clip mtd; input signal to produce a DC output of 3 mv shall not vary more than ±2 db when the crystal temperature is lowered from 40°C to -13°C or raised from 40°C to 85°C as measured by procedures on National Company dwg R896-1; National Company part/dwg R896-1; Mfr code 1380, type K11	
		COMPOUND TUNED CIRCUIT ASSEMBLIES	
Z101		Tuner Assembly, Radio Frequency: frequency range 0.3 to 0.65 mc; 2 trimmer capacitors and 2 coil slugs, all screwdriver adjusted; 5 11/16" lg by 1" wd by 1 3/4" h o/a; mts by 5/32" wd by 19/64" d slot at one end, 15/32" by 1/16" tab at other end and 0.149" diam hole at center; stamped "1" in black at slotted end; consists of one detector coil, one RF transformer and two trimmer capacitors; fungus proofed; National Company part/dwg SB:1067; Mfr code 1, type SB:1067; includes C101, C121, L103, R177, T101, TB110, E138; for reference only	Band no. 1 coil set
Z102		Tuner assembly, Radio Frequency: frequency range 0.65 to 1.3 mc; 2 trimmer capacitors and 2 coil slugs, all screwdriver adjusted; 5 11/16" lg by 1" wd by 1 3/4" h o/a; mts by 5/32" wd by 19/64" d slot at one end; 15/32" by 1/16" tab at other end and 0.149" diam hole at center; stamped "2" in black at slotted end; consists of 1 detector coil, 1 RF transformer and 2 trimmer capacitors; fungus proofed; National Company part/dwg SB:1068; Mfr code 1, type SB:1068; includes C102, C122, L104, R178, T102, TB109, E138; for reference only	Band no. 2 coil set
Z103		Tuner Assembly, Radio Frequency: frequency range 1.3 to 2.8 mc; 2 trimmer capacitors and 2 coil slugs, all screwdriver adjusted; 5 11/16" lg by 1" wd by 1 3/4" h o/a; mts by 5/32" wd by 19/64" d slot at one end, 15/32" by 1/16" tab at other end and 0.149" diam hole at center; stamped "3" in black at slotted end; consists of 1 detector coil, 1 RF transformer and 2 trimmer capacitors; fungus proofed; National Company part/dwg SB:1069; Mfr code 1, type SB:1069; includes C103, C123, L105, R179, T103, TB110, E138; for reference only	Band no. 3 coil set

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS / STANDARD NAVY / AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		COMPOUND TUNED CIRCUIT ASSEMBLIES (CONT'D)	
Z104		Tuner Assembly, Radio Frequency: frequency range 2.8 to 6.5 mc; 2 trimmer capacitors and 2 coil slugs, all screwdriver adjusted; 5 11/16" lg by 1" wd by 1 3/4" h o/a; mts by 5/32" wd by 19/64" d slot at one end, 15/32" by 1/16" tab at other end and stamped "4" in black at slotted end; consists of 1 detector coil, 1 RF transformer and 2 trimmer capacitors; fungus proofed; National Company part/dwg SB:1070; Mfr code 1, type SB:1070; includes C104, C124, R180, T104, TB109, E138; for reference only	Band no. 4 coil set
Z105		Tuner Assembly, Radio Frequency: frequency range 6.5 to 15 mc; 2 trimmer capacitors and 2 coil slugs, all screwdriver adjusted; 5 11/16" lg by 1" wd by 1 3/4" h o/a; mts by 5/32" wd by 19/64" d slot at one end, 15/32" by 1/16" tab at other end and 0.149" diam hole at center; stamped "5" in black at slotted end; consists of 1 detector coil, 1 RF transformer and 2 trimmer capacitors; fungus proofed; National Company part/dwg SB:1071; Mfr code 1, type SB;1071; includes C105, C125, L107, R181, T105, TB110, E138; for reference only	Band no. 5 coil set
Z106		Tuner Assembly, Radio Frequency: frequency range 15 to 34 mc; 2 trimmer capacitors and 2 coil slugs, all screwdriver adjusted; 5 11/16" lg by 1" wd by 1 3/4" h o/a; mts by 5/32" wd by 19/32" d slot at one end, 15/32" by 1/16" tab at other end and 0.149" diam hole at center; stamped "6" in black at slotted end; consists of 1 detector coil, 1 RF transformer and 2 trimmer capacitors; fungus proofed; National Company part/dwg SB:1072; Mfr code 1, type SB:1072; includes C106, C126, L108, R182, T106, TB109, E138; for reference only	Band no. 6 coil set
Z107		Tuner Assembly, Radio Frequency: frequency range 34 to 75 mc; 2 trimmer capacitors and 2 coil slugs, all screwdriver adjusted; 5 11/16" lg by 1" wd by 1 3/4" h o/a; mts by 5/32" wd by 19/64" d slot at one end, 15/32" by 1/16" tab at other end and 1.149" diam hole at center; stamped "7" in black at slotted end; consists of 1 detector coil, 1 RF transformer and 2 trimmer capacitors; fungus proofed; National Company part/dwg SB:1073; Mfr code 1, type SB:1073; includes C107, C127, L109, R183, T107, TB110, E138; for reference only	Band no. 7 coil set
Z108		Tuner Assembly, Radio Frequency: frequency range 75 to 180 mc; 2 trimmer capacitors and 2 coil slugs, all screwdriver adjusted; 5 11/16" lg by 1" wd by 1 3/4" h o/a; mts by 5/32" wd by 19/64" d slot at one end, 15/32" by 1/16" tab at other end and 0.149" diam hole at center; stamped "8" in black at slotted end; consists of 1 detector coil, 1 RF transformer and 2 trimmer capa-	Band no. 8 coil set

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		COMPOUND TUNED CIRCUIT ASSEMBLIES (CONT'D)	
Z108 (cont'd)		citors; fungus proofed; National Company part/dwg SB:1074; Mfr code 1, type SB:1074; includes C108, C128, L110, R184, T108, TB109, E138; for reference only	
Z109		Tuner Assembly, Radio Frequency: frequency range 180 to 400 mc; 2 vane type trimmers w/manual adjustment; 5 11/16" lg by 1" wd by 13/16" h o/a; mts by 5/32" by 19/64" d slot at one end, 15/32" by 1/16" tab at other end and 0.149" diam hole at center; stamped "9" in black at slotted end; consists of 2 inductor plates and 2 vane type trimmers; fungus proofed; National Company part/dwg SB:1075; Mfr code 1, type SB:1075; includes L101, L111, TB109, E138; for reference only	Band n . 9 c il set
		TERMINAL BOARDS	
TB101	Shop manufacture locally.	Board, Terminal: 6 brass silver plated solder post term in two rows spaced 1.125" apart, 0.500" between term; XXP natural bakelite, wax impregnated; 1 1/2" lg x 1 3/8" wd x 39/64" h; two 0.156" diam mtg holes spaced 1/2" c to c; National Company part/dwg SA:9976; Mfr code 1, type SA:9976	Ti p int
TB102	Shop manufacture locally.	Board, Terminal: 11 brass silver plated solder post term in single row 0.344" between centers; XXP natural bakelite, wax impregnated; 4 3/4" lg x 5/8" wd x 39/64" h; two 0.156" diam mtg holes on 4 5/16" mtg/c; marked from 1 to 11 inclusive; National Company part/dwg SA:9038; Mfr code 1, type SA:9038	Tie p int
TB103	Shop manufacture locally.	Board, Terminal: mts 3 resistors; 14 brass silver plated solder post term in two rows spaced 1.125" apart, 0.3125" between term; XXP natural bakelite, wax impregnated; 2 1/4" lg x 1 1/2" wd x 39/64" h; two 0.156" diam mtg holes on 0.937" mtg/c; marked R134, R136, R135; National Company part/dwg SB:1189; Mfr code 1, type SB:1189	Terminal board
TB104	Shop manufacture locally.	Board, Terminal: mts 2 capacitors, 7 resistors; 20 brass silver plated solder post terminals; 2 rows spaced 1.125" apart; 0.3125" between term; XXP natural bakelite, wax impregnated; 3 3/16" lg x 1 1/2" wd x 39/64" h; two 0.156" diam mtg holes on 1.875" mtg/c; marked R132, R127, R124, R131, C132, R125, R130, C134, R129; National Company part/dwg SA:9037;	Terminal board

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		TERMINAL BOARDS (CONT'D)	
TB104 (c nt'd)		Mfr code 1, type SA:9037	
TB105	Shop manufacture locally.	Board, Terminal: mts 3 capacitors, 4 resistors; 14 brass silver plated solder post term in two rows, spaced 1.125" apart, 0.3125" between term; XXP natural bakelite, wax impregnated; 2 1/4" lg x 1 1/2" wd by 39/64" h; two 0.156" diam mtg holes on 0.937" mtg/c; marked R138, R140, C141, R141, C144, R144, C145; National Company part/dwg SA:9042; Mfr code 1, type SA:9042	Terminal board
TB106	Shop manufacture locally.	Board, Terminal: mts 11 resistors, 1 crystal diode; 24 brass silver plated solder post term in two rows spaced 0.875" apart, 0.313" between term; XXP natural bakelite, wax impregnated; 4 3/16" lg x 1 1/4" wd x 39/64" h; two 0.156" diam mtg holes on 3.312" mtg/c; marked R155, R153, R151, R150, R149, R185, R142, R139, R143, R145, R147, R148; National Company part/dwg SA:9043; Mfr code 1, type SA:9043	Terminal board
TB107	Shop manufacture locally.	Board, Terminal: mts 2 resistors; 4 brass silver plated solder post term spaced on 1 3/16" x 5/16" mtg/c; XXP natural bakelite, wax impregnated; 1 9/16" lg x 11/16" wd x 39/64" h; two 0.156" diam mtg holes on 0.437" mtg/c; marked R157, R156; National Company part/dwg SB:1190; Mfr code 1, type SB:1190	Terminal board
TB108	Shop manufacture locally.	Board, Terminal: mts 2 resistors; 4 brass silver plated solder post term spaced on 1 3/16" x 5/16" mtg/c; 1/8 nylon laminated phenolic board; 1 9/16" lg x 11/16" wd x 5/8" h; two 0.156" diam mtg holes on 0.437" mtg/c; marked R119, R118; National Company part/dwg SB:1095; Mfr code 1, type SB:1195	Terminal board
TB109	Shop manufacture locally.	Plate, Mounting: nylon laminated phenolic board; contains slots for mtg six blade type contacts, mtg holes for one RF coil, one RF transformer and two trimmer capacitors;w/o barrier; 5 11/16" lg x 1" wd x 1/8" thk o/a; mts by 15/32" wd projection extending 0.062" from one end which fits into slot on band changing turret; other end has slot 0.156" wd x 0.296" d for mtg screw; two largest holes spaced 3.125" c to c; National Company part/dwg R421-1; Mfr code 88, part of Z102, Z104, Z106, Z108, Z109	Mounting board for band changing turret components

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		TERMINAL BOARDS (CONT'D)	
TB110	Shop manufacture locally.	Plate, Mounting: nylon laminated phenolic board; contains slots for mtg six blade type contacts, mtg holes for one RF coil, one RF transformer and two trimmer capacitors; w/o barrier; 5 11/16" lg x 1" wd x 1/8" thk o/a; mts by 15/32" wd projection extending 0.062" from one end which fits into slot on band changing turret; other end has slot 0.156" wd x 0.296" d for mtg screw; two largest holes spaced 1.125" c to c; National Company part/dwg R423-1; Mfr code 88, part of Z101, Z103, Z105, Z107	Mounting board for band changing turret components
		SOCKETS	
XE101	--- N16-S-63515-4160 ---	Socket, electron tube: 8 beryllium copper silver plated contacts; round ceramic body w/oval shaped metal mtg ring; 1 7/8" lg x 1 3/8" wd x 1/2" h excl term; under chassis mtg; two 0.156" diam mtg holes on 1 1/2" mtg/c; 1 1/8" diam chassis hole required for mtg; JAN type TS101C01; National Company part/dwg R802-1; Mfr code 128	E101 socket
XF101	Shop manufacture locally.	Fuseholder: includes cap; extractor post type; max electrical ratings 250 v, 15 amp; accommodates 1 cartridge type fuse 1 1/4" lg x 1/4" diam o/a; molded bakelite body w/friction type brass nickel plated contacts; 2 9/64" lg (2 7/32" lg with fuse in place) x 43/64" diam w/o hex nut; 2 solder lug terminals; single hole panel mtg by 1/2-24 thd body w/flat; requires 1/2" diam mtg hole w/0.468" flat; item furnished with one 21/32" OD x 1/2" ID x 1/16" thk neoprene washer, one stainless steel internal tooth lockwasher and one punched brass nickel plated w/iridite dip hex nut w/11/16" hex x 1/2-24 thd x 3/32" thk; cap marked FUSE with arrow pointing counterclockwise; bayonet type twist locking cap; inner solder lug band stamped HKP 15A.250V; end solder lug terminal may be rotated a total of 360°; metal parts per AN-QQ-S-91 spec; molded material per JAN-P-14 spec; National Company part/dwg H477-1; Mfr code 324, type HKP-JE; includes XF101A and B	Holder for A.C. line fus F101
XF101A	--- N17-F-74266-9068 ---	Fuseholder: body only without cap; extractor post type; max electrical ratings 250 v, 15 amp; accomodates 1 cartridge type fuse 1 1/4" lg x 1/4" diam o/a; molded bakelite body w/	Body of Fuse - holder XF101

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		SOCKETS (CONT'D)	
XF101A (cont'd)		friction type brass nickel plated contact; 1 7/8" lg x 11/16" diam w/o hex nut; 2 solder lug terminals; single hole panel mtg by 1/2-24 thd body w/flat; requires 1/2" diam mtg hole w/0.468" flat; item furnished with one 21/32" OD x 1/2" ID x 1/16" thk neoprene washer, one stainless steel internal tooth lockwasher and one punched brass nickel plated w/iridite dip hex nut w/ 11/16" hex x 1/2-24 thd x 3/32" thk; accomodates bayonet type twist locking cap; inner solder lug band stamped HKP 15A. 250V; end solder lug terminal may be rotated a total of 360°; metal parts per AN-QQ-S-91 spec; molded material per JAN-P-14 spec; National Company part/dwg H477-2; Mfr code 324, type HKP-JE body; part of XF101	
XF101B	--- N17-C-201330-651 ---	Cap, Fuseholder: molded bakelite w/nickel plated brass contact, friction type; 37/64" lg x 21/32" diam o/a; bayonet type twist locking mtg; marked FUSE with white fill letters on face with arrow pointing counterclockwise; metal parts per AN-QQ-S-91 spec; molded material per JAN-P-14 spec; National Company part/dwg H477-3; Mfr code 324; for use with Bussman type HKP-JE Fuseholder; part of XF101	Cap for Fuse-holder XF101
XF102		Same as XF101; includes XF102A and B	Holder for A.C. line fuse F102
XF102A		Same as XF101A; part of XF102	Body of Fuse-holder XF102
XF102B		Same as XF101B; part of XF102	Cap for Fuse-holder XF102
XF103		Same as XF101; includes XF103A and B	Holder for spare A.C. lin fuse
XF103A		Same as XF101A; part of XF103	Body of Fuse-holder for spare A.C. fuse
XF103B		Same as XF101B; part of XF103	Cap for Fuse-holder for spar A.C. fuse
XF104		Same as XF101; includes XF104A and B	Holder f r spare A.C. lin fuse

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		SOCKETS (CONT'D)	
XF104A		Same as XF101A; part of XF104	Body of fuse-holder for spare A.C. fuse
XF104B		Same as XF101B; part of XF104	Cap for fuse-holder for spare A.C. fuse
XI101	Shop manufacture locally.	Light, Indicator: red 1/2" diam hemispherical glass lens w/ frosted back; thd mtd holder; mechanical dimmer; accommodates GE type 47 lamp w/miniature bayonet base, 6-8 v, 0.15 amp; brass shell and body w/black nickel finish; enclosed; 2 3/8" lg x 15/16" diam o/a; one 0.687" diam mtg hole required; accomodates up to 3/16" thk panel; horizontal mtd; lamp replaceable from front of panel; two solder lug term located on opposite sides of base both insulated from shell; unit meets Navy Spec 16C39 (RE) par. E3; National Company part/dwg P616-2; Mfr code 317 , includes XI101A and B	Plate indicator light
XI101A	--- N17-L-76656-2446 ---	Light, Indicator: without lens; accomodates 1/2" diam lens; screw-on lens holder; uses GE type 47 lamp w/miniature bayonet base; 6-8 v, 0.15 amp; brass shell w/black nickel finish; enclosed; 1 9/16" lg x 15/16" diam o/a; one 0.687" diam mtg hole required; accomodates up to 1/4" thk panel; horizontal mtg; lamp replaceable from front of panel; two solder lug term located on opposite sides of base both insulated from shell; unit meets Navy Spec 16C9 (RE) par.E3; National Company part/dwg P616-11; Mfr code 317	Body of plate indicator light (XI101)
XI101B	--- N17-L-250607-501 ---	Lens, Indicator Light: red; 1/2" diam; hemispherical glass w/frosted back; 15/16" lg x 13/16" diam o/a; round brass holder w/black nickel finish; 9/16-27 thd type mtg 3/16" lg; has mechanical dimmer; National Company part/dwg P616-9; Mfr code 317	Plate indicator lens (XI101)
XI102	Shop manufacture locally.	Light, Indicator: clear 1/2" diam hemispherical glass lens w/frosted back; thd mtd holder; mechanical dimmer; accomodates GE type 47 lamp w/miniature bayonet base; 6-8 v, 0.15 amp; brass shell and body w/black nickel finish; enclosed; 2 3/8" lg x 15/16" diam o/a; one 0.687" diam mtg hole required; accomodates up to 3/16" thk panel; horizontal mtd; lamp re-	Filament indicator light

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		SOCKETS (CONT'D)	
X1102 (c nt'd)		placeable from front of panel; two solder lug term located on opposite sides of base both insulated from shell; unit meets Navy Spec 16C39 (RE) par.E3; National Company part/dwg P616-2; Mfr code 317, includes X1101A and B	
X1102A		Same as X1101A	Body of filament indicator light (X1102)
X1102B	--- N17-L-250849-457 ---	Lens, Indicator Light: clear; 1/2" diam hemispherical glass w/ frosted back; 15/16" lg x 13/16" diam o/a; round brass holder w/black nickel finish; 9/16-27 thd type mtg 3/16" lg; has mechanical dimmer; National Company part/dwg P616-10; Mfr code 317	Filament indicator lens (X1102)
X1103	--- N17-L-51622-3155 ---	Lampholder: single holder; accommodates miniature bayonet base lamp, MBCA ref dwg Group 7; max electrical ratings 115 v, 65 ma, 7.5 watts; metal parts of cad plated steel; phenolic insulated; 31/32" lg x 19/32" wd x 13/16" h o/a; two wire lead type term 8.00" lg; mts by 15/32" lg x 5/32" wd loop which slides over mtg bracket; item meets JAN-S-213 spec; National Company part/dwg R184-1; Mfr code 127, type 82 ML	Left hand dial lamp socket
X1104	--- N17-L-51622-3133 ---	Lampholder: single holder; accommodates miniature bayonet base lamp, MBCA ref dwg Group 7; max electrical ratings 115 v, 65 ma, 7.5 watts; metal parts of cad plated steel; phenolic insulated; 31/32" lg x 19/32" wd x 13/16" h o/a; two wire lead type term 17" lg; mts by 15/32" lg x 5/32" wd loop which slides over mtg bracket; item meets JAN-S-213 spec; National Company part/dwg R184-2; Mfr code 127, type 82 ML; same as X1103 except for length of wire leads	Right hand dial lamp socket
XV101	--- N16-S-62603-6443 ---	Socket, Electron Tube: 7 beryllium silver plated contacts; miniature oval shape grade L-3 ceramic body per JAN-I-10 spec; center shield 0.167" ID; 1.125" lg x 0.250" wd x 0.320" thk o/a excl term; mts by two 0.125" diam holes spaced 0.875" c to c; 0.625" diam chassis hole required; top surface glazed; contacts no. 2, 3, 4, 6 and 7 are radial; contacts no. 1 and 5 are axial; National Company part/dwg SA:4814-2; Mfr code 1, type SA:4814-2	V101 socket
XV102	--- N16-S-62603-6460 ---	Socket, Electron Tube: 7 beryllium copper silver plated contacts; miniature body; no metal shock shield; center shield 0.167" ID; oval shap d ceramic body 1.144" lg x 0.750" wd x 0.320" h	V102 socket

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR FIELD STRENGTH METER IM-84/URM-50

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		SOCKETS (CONT'D)	
XV102 (cont'd)		excl term; under chassis wafer mtg by two 0.125" diam mtg holes spaced 0.875" c to c; 0.750" diam chassis hole required for mtg; body wax impregnated per JAN-I-10 spec; National Company part/dwg SA:4916-2; Mfr code 1, type SA:4916-2	
XV103	--- N16-S-64063-6456 ---	Socket, electron tube: 9 beryllium copper silver plated contacts; miniature body; no metal shock shield; center shield 0.167" ID; oval shaped ceramic body 1.438" lg x 0.859" wd x 0.393" h excl term; under chassis wafer mtg; two mtg holes 0.125" wd x 0.145" lg on 1.125" mtg/c; 7/8" diam chassis hole required for mtg; body wax impregnated per JAN-I-10 spec; National Company part/dwg SA:4927-2; Mfr code 1, type SA:4927-2	V103 socket
XV104		Same as XV102	V104 socket
XV105	--- N16-S-62603-6718 ---	Socket, electron tube: 7 beryllium copper silver plated contacts; miniature body; no metal shock shield; small center shield; round mica-filled bakelite socket mtd in round rubber base; 0.875" diam x 0.75" h brass nickel plated shield mts on rubber base by two 1/8" diam holes spaced on 0.875" mtg/c; rubber base mts on chassis by two 1/8" diam holes spaced on 0.875" mtg/c; 1 3/16" diam x 1.052" h excl contacts; National Company part/dwg S468-1; Mfr code 128	V105 socket
XV106		Same as XV102	V106 socket
XV107	--- N16-S-64063-6713 ---	Socket, electron tube: 9 contacts per JAN-S-28A spec; miniature size; includes center shield; oval shape; 1 3/8" lg x 1.035" wd x 0.781" h excl term; molded thermosetting plastic body; two 0.125" diam mtg holes spaced 1.125" c to c; includes base shield; JAN type TS103P01	V107 socket
XV108		Same as XV102	V108 socket
XV109		Same as XV102	V109 socket
XV110		Same as XE101	V110 socket

TABLE 8-4. TABLE OF REPLACEABLE PARTS FOR ACCESSORY KIT AN TYPE MK-110/U

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
201-299	--- F16-T-20243-5953 ---	Kit, Accessory: aluminum w/light gray enamel finish; 15 21/32" lg x 10 23/32" wd x 15 45/64"h o/a; contains one encased meter ME-80/URM-50 w/cable; one RF test probe cable Cord CG-409A/U (10'4"); one test probe MX-936/URM; one test probe coupler CU-152/URM-3; two coupler connectors UG-58/U; one spare set of four rubber mounting feet; one coupler adapter UG-57A/U; two test probe adapters UG-201/U; two test probe connectors UG-88/U; non-removable cover w/carrying handle on top; four rubber mounting feet on bottom of case; AN type MK-110/U; National Company part BM:611, Dwg R789; Mfr code 1, type R789	Accessory Kit
	STRUCTURAL PARTS		
A201	Shop manufacture locally.	Cover, Case: aluminum w/light gray enamel finish; 15 21/32" lg x 9 27/32" wd x 3 1/4" h excluding hardware; mts by hinges and hasps; contains four clamps for storing RF Probe Cable, two clamps for storing Coupler and two clamps for storing RF Probe; National Company part/dwg SB:1193; Mfr code 1, type SB:1193; includes 0201, 0202, 0203; for reference only	Accessory Kit Cover
A202	Shop manufacture locally.	Case, Accessory Kit: aluminum w/light gray enamel finish; 15 21/32" lg x 9 27/32" wd x 11 53/64" h excluding hardware; holes provided for mtg four rubber mtg feet (bumpers) on bottom; provisions for storing operating spares including encased external meter; National Company part/dwg SB:1194; Mfr code 1, type SB:1194; includes 0209	Accessory Kit Case
	MECHANICAL PARTS		
0201	Shop manufacture locally.	Clip, electrical: 0.032" grade A spring tempered phos bronze; nickel plated finish; 31/32" lg x 55/64" wd x 3/8" h; mts by single 0.156" diam hole; 5/16" normal jaw opening located at 45° angle from base; National Company part/dwg R686-1; Mfr code 77 , part of A201; same as 0120	Clamps for holding coiled probe cable in case cover (4)
0202	--- N17-C-804784-998 ---	Clip, electrical: phos bronze; nickel plated finish; 1 5/32" lg x 7/8" wd x 23/32" h; mts by single 1/4" diam hole; 7/8" max jaw opening; National Company part/dwg Q971-2; Mfr code1364, part of A201	Clamp for holding coupler in case cover (2)

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR ACCESSORY KIT AN TYPE MK-110/U

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		MECHANICAL PARTS (CONT'D)	
0203	--- N17-C-804908-508 ---	Clip, electrical: phos bronze; nickel plated finish; 1 9/16" lg x 1.00" wd x 5/8" h; 17/32" normal jaw opening; mts by single 0.156" diam hole; National Company part/dwg R796-1; Mfr code 239 , part of A201	Clamp f r holding probe in case cover (2)
0204		Handle, separable: 3/8" diam cad plated brass rod; consists of two halves; both irregular U shape; female half has one end bent on 1/4" rad 2 5/8" lg; other end bent on 1/4" rad 1 3/8" lg; long side has axial 1/8" d hole tapped 1/4"-20 for attaching threaded male half; 2 5/8" lg x 3 5/16" h; male half has one end bent on 1/4" rad 3 3/16" lg; other end bent on 1/4" rad 1 3/8" lg; end of long side has 1/4"-20 thd 9/16" lg; 3 3/16" lg x 3 5/16" h; includes 0204A and B; for reference only	Acc ssory case carrying handle
0204A	Shop manufacture locally.	Handle, half: female half; cad plated brass rod 3/8" diam; irregular U shape; one end bent on 1/4" rad 2 5/8" lg; other end bent on 1/4" rad 1 3/8" lg; long side has axial 1/8" d hole tapped 1/4"-20 for attaching male half; 2 5/8" wd x 3 5/16" lg o/a; National Company part/dwg R694-1; Mfr code 1399, part of 0204; same as 0115A	
0204B	Shop manufacture locally.	Handle, half: male half; cad plated brass rod 3/8" diam; irregular U shape; one end bent on 1/4" rad 3 3/16" lg; other end bent on 1/4" rad 1 3/8" lg; end of long side has 1/4"-20 thd 9/16" lg; 3 3/16" lg x 3 5/16" h o/a; National Company part/dwg R695-1; Mfr code1399 , part of 0204; same as 0115B	
0205	Shop manufacture locally.	Sleeve, handle: tubular shape black neoprene; 3 7/8" lg x 5/8" OD x 3/8" ID; National Company part/dwg R696-2; Mfr code 334 same as 0116	Sl ve for case carrying handle
0206	Shop manufacture locally.	Retainer, handle: 1/4 hard brass 0.045" thk; bright cad plated; 4.00" lg x 1 25/32" wd x 15/32" h o/a; longitudinal channel down the center 15/32" h on 13/64" rad; 6 mtg holes 0.203" diam in two rows on 1.500" x 1.156" mtg/c; National Company part/dwg R382-1; Mfr code 1, type R382-1; same as 0117	Retainer for acc ssory case carrying handle
0207	Shop manufacture locally.	Catch, luggage: bright cad plated brass per AN-P-61 spec; 1 15/16" lg x 1 5/16" wd x 1/2" thk in locked position; coil spring locking; mts by two 0.156" diam holes spaced 0.437" c to c; National Company part/dwg R388-1; Mfr code1343same as 0122	Accessory case cov r fasteners (2)

TABLE 8-4. TABLE OF REPLACEABLE PARTS FOR ACCESSORY KIT AN TYPE MK-110/U

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS / STANDARD NAVY / AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		MECHANICAL PARTS (CONT'D)	
0208	Shop manufacture locally.	Catch, fastener: 0.047" thk bright cad plated brass per AN-P-61 spec; 2.147" lg x 9/16" wd x 0.367" h o/a; 45° offset and 0.070" rad return bend at one end; National Company part/dwg R387-1; Mfr code 1, type R387-1; same as 0123	Catch for accessory case cover fasteners (2)
0209	Shop manufacture locally.	Rubber channel: extruded synthetic rubber 45-55 shore durometer hardness; black; tensile strength 1,200 PSI; elongation 400%; permanent set 60%; 29/64" wd x 0.179" thk w/slot 1/4" d at one edge and 5/32" x 5/64" throughout its length 1/16" from bottom of slot; suitable for use in an ambient of -20°C to +50°C; National Company part/dwg R617-1; Mfr code 236 , same as 0119; part of A202	Accessory cas gasket
0210		Not used	
0211	Shop manufacture locally.	Bumper: consists of cad plated steel stud 5/8" lg w/3/8-16 thd and rubber (neoprene) head 1.00" diam at bottom w/rounded taper to 1/2" diam at top; screwdriver slot at top of stud w/access hole in rubber head; 1 1/8" h x 1.00" diam o/a; National Company part/dwg R371-1; Mfr code 187 , same as 0135	Mounting feet (8) (4 used on Accessory Kit case; 4 stored in Kit for use on Field Strength Meter case)
0212	--- ---	Hinge, separable: 0.047" thk brass bright cad plated per AN-P-61 spec; consists of male and female halves; male half 1 5/8" lg x 1 3/8" wd x 3/8" thk o/a; non-removable pin 13/16" lg; female half 1 5/8" lg x 1 3/8" wd x 3/8" thk o/a; no pin; each half mts by two 0.156" diam holes on 1.00" mtg/c; includes 0212A and B; same as 0125; for reference only	Cover hinge on Accessory Case
0212A	Shop manufacture locally.	Hinge, separable, Male Half: 0.047" thk brass cad plated per AN-P-61 spec to withstand 200 hr salt spray test; 1 5/8" lg x 1 3/8" wd x 3/8" thk o/a; non-removable pin 13/16" lg; mts by two 0.156" diam holes on 1.00" mtg/c; National Company part/dwg SA:9041; Mfr code 1, type SA:9041; part of 0212; same as 0125A	
0212B	Shop manufacture locally.	Hinge, separable, Female Half: 0.047" thk brass cad plated per AN-P-61 spec to withstand 200 hr salt spray test; 1 5/8" lg x 1 3/8" wd x 3/8" thk o/a; no pin; mts by two 0.156" diam holes on 1.00" mtg/c; National Company part/dwg R383-2; Mfr code 1,	

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR ACCESSORY KIT AN TYPE MK-110/U

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		MECHANICAL PARTS (CONT'D)	
0212B (cont'd)		type R383-2; part of 0212; same as 0125B	
0213	--- ---	Hinge, separable: 0.047" thk brass bright cad plated per AN-P-61 spec; consists of male and female halves; male half 1 5/8" lg x 1 3/8" wd x 3/8" thk o/a; non-removable pin 11/16" lg; female half 1 5/8" lg x 1 3/8" wd x 3/8" thk o/a; no pin; each half mts by two 0.156" diam holes on 1.00" mtg/c; includes 0213A and B; for reference only	Cover hinge on Accessory Case
0213A	Shop manufacture locally.	Hinge, separable, Male Half: 0.047" thk brass cad plated per AN-P-61 spec to withstand 200 hr salt spray test; 1 5/8" lg x 1 3/8" wd x 3/8" thk o/a; non-removable pin 11/16" lg; mts by two 0.156" diam holes on 1.00" mtg/c; National Company part/dwg SA:9978; Mfr code 1, type SA:9978; part of 0213; same as 0126A	
0213B		Same as 0212B except part of 0213	

TABLE 8-4. TABLE OF REPLACEABLE PARTS FOR ANTENNA

REF. DESIG.	STOCK NUMBERS — SIGNAL CORPS / STANDARD NAVY / AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
301-399	--- N16-A-48586-531 ---	Antenna: dipole, straight type; 100 to 156 mc freq range; 50 ohms characteristic input impedance; coaxial transmission line feeder; array construction; single element; 47 1/16" lg; fixed type; brass w/gray paint finish; mts by four 7/16" diam holes on 3.75" x 4.5" mtg/c located on mtg bracket; hermetically sealed mast 23 3/4" h; for transmitting and/or receiving; Navy type 66095; BuShips Dwg RE66F590D; National Company part/dwg S671-1; Mfr code 1407; Navy type -66095; includes E301, E302, E303, 0301, 0302, 0303, 0304	Antenna
	MISCELLANEOUS ELECTRICAL PARTS		
E301	--- N16-A-61912-2501 ---	Antenna Element: half of 100 to 156 mc dipole; used with antenna having 50 ohms characteristic input impedance and coaxial transmission line feeder; brass tube 23 7/8" lg x 1/2" diam with round shoulder 3/16" thk x 1.00" diam located 2 7/8" from one end; 1/2-20 threaded portion 1/2" lg located 1 7/32" from shouldered end; 3/8" diam from threaded portion to end; item per BuShips Dwg RE66F590D; National Company part/dwg S671-8; Mfr code 1407;	Part of dipole
E302	--- N16-A-61906-7200 ---	Antenna Element: half of 100 to 156 mc dipole; used with antenna having 50 ohms characteristic input impedance and coaxial transmission line feeder; brass tube 21 3/8" lg x 1/2" diam; 1/2-20 threaded section at one end 3/16" lg; hex shaped shoulder 1.00" across flats x 3/8" thk located 3/16" from threaded end; item per BuShips Dwg RE66F509D; National Company part/dwg S671-7; Mfr code 1407	Part of dipole
E303	--- N17-I-50671-1001 ---	Insulator: one piece steatite w/brown glaze finish; round body 1 1/4" lg x 1 1/4" diam w/2 1/8" x 1 7/8" x 1/2" thk flange located 1/2" from one end; rounded section at same end tapers from 1 1/4" to 1.00" diam; 1/2" diam through hole in center; mts by four 0.203" diam holes on flange spaced on 1 3/8" x 1 1/8" centers; item per BuShips Dwg RE66F509D; National Company part/dwg S671-3; Mfr code 1407	Element insulator
	MECHANICAL PARTS		
0301	Shop manufacture	Gasket: neoprene; 1.00" sq x 1/32" thk; 5/8" diam center hole; four 0.147" diam mtg holes spaced on 23/32" x 23/32" centers; item per BuShips Dwg RE66F509D; National Company part/dwg S671-2; Mfr code 1407	Plate gasket at base of mast

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR ANTENNA

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		MECHANICAL PARTS (CONT'D)	
0302	Shop manufacture	Gasket: neoprene; round; 2 15/16" OD x 1 3/4" ID x 1/32" thk; item per BuShips Dwg RE66F509D; National Company part/dwg S671-4; Mfr code 1407	Plat gasket at base of mast
0303	Shop manufacture	Gasket: neoprene; 2 1/8" lg x 1 7/8" wd x 1/32" thk; 1 1/4" diam center hole; four 0.203" diam mtg holes spaced on 1 3/8" x 1 1/8" centers; item per BuShips Dwg RE66F509D; National Company part/dwg S671-5; Mfr code 1407	El ment insula-t r gasket
0304	Shop manufacture	Gasket: neoprene; round; 1.00" OD x 17/32" ID x 1/32" thk; item per BuShips Dwg RE66F509D; National Company part/dwg S671-6; Mfr code 1407	El m nt mtg gasket

TABLE 8-4. TABLE OF REPLACEABLE PARTS FOR RF PROBE MX-936/URM

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS / STANDARD NAVY / AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
401-499		Probe, R.F.: 300 kc to 400 mc frequency range; single turn loop; neoprene covered handle; has UG-23/U jack for attaching cable; 10" lg x 3 5/16" wd x 1 1/4" d o/a; AN type MX-936/URM; National Company part/dwg R806-1; Mfr code 1382	Test probe

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR COUPLER CU-152/URM-3

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
501-599	--- N16-A-96057-2601 ---	Coupler: resistive type, composition; unbalanced LL type; 50 ohms input 5 ohms output impedance; approx 1/4 watt power rating; frequency range 300 kc to 400 mc; 20 db attenuation; 1 1/2% tolerance; 1 1/8" sq x 2 3/4" lg; one UG-58/U type connector at each end; AN type CU-152/URM-3; National Company part/dwg R764-1; Mfr code 1382	Coupler for test probe
	JACKS		
J501	--- N17-C-73108-5905 ---	Connector, receptacle: one round female contact; straight type; 1.0" lg x 1.0" wd x 1 3/32" h o/a; silver plated brass cylindrical body w/square base; low loss mica insert; four 0.125" diam mtg holes on 23/32" x 23/32" mtg/c; JAN type UG-58/U; National Company part/dwg H553-1; Mfr code 1396, same as J106	Coupler connector
J502		Same as J501	Coupler connector
	RESISTORS		
R501	--- ---	Resistor, fixed: composition; 45 ohms ±2%; this resistor is specially selected to meet the resistance and tolerance requirements, its maximum diameter is 0.150"; for reference only	Part of attenuator network
R502	--- ---	Resistor, fixed: composition; 10 ohms ±2%; this resistor is specially selected to meet the resistance and tolerance requirements, its maximum diameter is 0.150" ; for reference only	Part of attenuator network
R503		Same as R502	Part of attenuator network

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR AMMETER ME-80/URM-50

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
601-699	--- F16-I-56471-1003 ---	Ammeter: panel mtg type; DC microammeter w/0-200 microampere movement; inscribed 0 to 100 in units of 10; 100 graduations; round molded textolite case; flush mtd; flange 3.5" diam x 0.165" thk; body diam 2.75"; 1 5/8" body depth excl term; accuracy ±2% at full scale reading; meter contained in portable case 9 3/32" lg x 6 3/32" wd x 4 15/32" d excl handle; 2000 ohms ±10% resistance across term; 200 microamperes required for full scale deflection; calibrated for magnetic or non-magnetic panels; black scale markings on white background; self-contained; includes 25 ft. extension cable and plug; includes 100,000 ohm potentiometer as external adjustable shunt; terminates in a JAN-P-642 type PJ-068 plug; unit has AN designation ME-80/URM-50; National Company part/dwg SA:9981; Mfr code 1, type SA:9981	External carrier level indicator
	STRUCTURAL PARTS		
A601	Shop manufacture locally.	Cover, case: aluminum w/light gray enamel finish; carrying handle on top; 9.00" lg x 6.00" wd x 0.844" d o/a; mts on case by two spring type hinges on one side; National Company part/dwg R786-1; Mfr code 1, type R786-1; includes O601	Cover for external meter case
A602	Shop manufacture locally.	Case, external meter: w/o cover; aluminum with light gray enamel finish; 9 3/32" lg x 6 3/32" wd x 3 13/16" d excluding handle; divided into two compartments by partition, one compartment has panel for mounting meter, other provides space for storing meter cable; National Company part/dwg SB:1183; Mfr code 1, type SB:1183	Case for external meter
	METER		
M601	--- N17-M-32373-3043 ---	Ammeter: (special scale); panel mtd; DC microammeter w/0-200 microammeter movement; marked "CARRIER LEVEL" on face of dial; inscribed 0 to 100 in units of 10 clockwise on 240° arc; 100 graduations; round molded textolite case; flange 3.5" diam x 0.165" thk; 2.75" body diam; 1 5/8" body depth excl term; ±2% accuracy at full scale reading; 2000 ohms ±10% resistance across term; 200 microamperes required for full scale deflection; calibrated for magnetic or non-magnetic panels; shielded case; black scale markings on white background; self- contained; three 0.150" diam mtg holes on flange spaced 120° apart on 1.580" rad; 2 screw stud term 11/16" lg; National Company part/dwg R363-1; Mfr code 908; Mfr dwg A739, Same as M101	Carrier level indicator (external)

TABLE 8-4. TABLE OF REPLACEABLE PARTS FOR AMMETER ME-80/URM-50

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		MECHANICAL PARTS	
0601	Shop manufacture locally.	Bail, Panel: 3/8" diam brass rod w/nickel plate; 4 5/8" lg x 1 5/8" wd o/a; 1 1/2" rad bends at each end; one 1/2" d axial mtg hole at each end tapped 1/4-20; National Company part/dwg R380-1; Mfr code 1399, part of A601; same as 0127	External met r cas carrying
		PLUGS	
P601	--- N17-P-61400-5186 ---	Plug, telephone: 3 conductors; single shank 0.2065" diam x 1 3/32" lg; black plastic shell; tubular shape; 1/2" diam; 3 7/32" lg o/a; for lug or eyelet cable terminations; "PJ-068" stamped on shell; JAN-P-642 spec; JAN type PJ-068; National Company part/dwg R790-1; Mfr code 1150	Plug for external meter cable
		RESISTORS	
R601	--- N16-R-88010-9693 ---	Resistor, variable: composition, 1 section; 100,000 ohms ±20%; 1/4 watt power rating; std A taper MBCA ref dwg group 3; 3 solder lug term; enclosed bakelite case; 31/32" diam x 33/64" d max; screwdriver slot adjustment; 0.250" diam metal shaft 7/8" lg FMS w/0.047" wd x 0.063" d slot in end; normal torque; insulated contact arm; no off position; mts by 3/8-32 thd bushing 3/8" lg; non-turn device on 7/16" rad at 9 o'clock; JAN-R-94 spec; JAN type RV2AUSD104B; National Company part/dwg M364-37; Mfr code 307	Variabl shunt for external · met r
		CABLES	
W601	Shop manufacture locally.	Cable, RF: two no. 22 AWG stranded tinned copper conductors, sixteen no. 34 AWG strands per conductor; low loss polythylene insulation; color coded black and white; tinned copper braid shield and vinyl plastic jacket; round shape; 0.240" OD; National Company part/dwg R773-1; Mfr code 1296	External meter cable

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR ACCESSORIES

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
701-799		Accessories: includes P701, P702, P703	
		PLUGS	
P701	--- N17-C-68241-3601 ---	Connector, adapter: one round shielded male contact at each end; straight type; 1 1/2" lg x 13/16" diam; radio frequency connector, 52 ohms impedance; constant frequency impedance characteristic; cylindrical shape; silver plated brass shell; copolymer insert; AN type UG-57A/U; National Company part/dwg R836-1; Mfr code 1396	Coupler adapt r
P702	--- N17-C-67990-2447 ---	Connector, adapter: one round shielded male contact at one end; one round shielded female contact at other end; straight type; 1 7/16" lg x 3/4" diam; radio frequency connector; 52 ohms impedance; constant frequency impedance characteristic; cylindrical shape; silver plated brass shell; AN type UG-201/U; National Company part/dwg R833-1; Mfr code 1396	R.F. probe cable adapter
P703		Same as P702	R.F. probe cable adapter

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR CORD CG-409A/U (10'4")

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
801-899		Cable Assembly, RF: JAN RG-58A/U coaxial cable; 52 ohms impedance; max operating voltage 1900 v RMS; single conductor no. 20 AWG stranded copper w/tinned finish; polyethylene dielectric 0.116" OD; single tinned copper shield; round shape; 0.195" diam o/a cross-section; black vinyl jacket; 121" lg excluding terminations; approx 124" lg o/a; one connector receptacle AN type UG-88/U at each end; assembly is AN type CG-409A/U (10'4") National Company part/dwg SB:1187; Mfr code 1, type SB:1187; includes P801, P802, W801	RF Probe Cable assembly
		PLUGS	
P801	--- N17-C-71408-3521 ---	Connector, plug: one round male contact; straight type; 31/32" lg x 37/64" diam o/a; nominal impedance 52 ohms; cylindrical metal body; teflon insert; cable opening 0.212" diam max; AN type CG-88/U; National Company part/dwg L649-2; Mfr code 1396	RF Probe Cable connector
P802		Same as P801	RF Probe Cable connector
		CABLE	
W801	--- N15-C-12200-575 ---	Cable, RF: coaxial; 52 ohms impedance; max operating voltage 1900 v RMS; 28.5 mmf capacitance per foot; inner conductor no. 20 AWG stranded wire w/tinned finish; polyethylene dielectric 0.116" OD; single tinned copper shield w/black vinyl jacket; 0.196" diam o/a; AN type RG-58A/U; National Company part/dwg R832; Mfr code 128	RF Probe Cable (bulk)

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR CABLE ASSEMBLY CX-2374/U (8'7")

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
901-999	Shop manufacture locally.	Cable Assembly, Special Purpose: three no. 20 AWG stranded copper conductors each consisting of seven no. 28 AWG strands w/synthetic copper braid shield, cotton braid, synthetic (vinylite) insulation 3/64" thk; 1,000 v working; round, 5/16" diam; plug type AN3106B-14S-1S at one end; standard 2 prong AC plug at other end; 103" lg o/a; AN type CX-2374/U (8'7"); National Company part/dwg SA:9977; Mfr code 1, type SA:9977; includes 0901, P902, W901	AC power cable assembly
	MISCELLANEOUS ELECTRICAL PARTS		
0901	--- N17-C-781366-251 ---	Clamp, Electrical: die cast aluminum w/sand blast finish; cable opening adjustable by 2 screws; 27/32" lg x 1 3/64" diam o/a; mts by coupling nut w/3/4-20 thd class 2 fit; designed to hold cable approx 9/16" max diam; Navy type AN 3057-6; National Company part/dwg H548-1; Mfr code 128 , part of AC Power Cable Assembly	Cable clamp on P901
	PLUGS		
P901	--- N17-C-70328-1338 ---	Connector, plug: 3 round female contacts; polarized; straight type; 1 11/16" lg x 1 1/16" diam o/a; aluminum body, cylindrical shape; sand blast w/clear lacquer finish; locking type; split shell; molded phenolic insert; 1/2" diam max cable opening; multiple piece construction w/single mtg hole for cable; 1/2" diam mtg hole; body mtd by 3/4-20 conduit thd; 3/8" lg threaded body; 1 1/16" OD coupling nut; 7/8-20 coupling nut thd; type AN 3106B-14S-1S; National Company part/dwg Q676-1; Mfr code 128	AC power plug
P902	--- N17-C-71426-7829 ---	Connector, Plug: 2 flat parallel male contacts; not polarized; straight type; 1.500" diam x 0.750" h excluding contacts and cord grip; rating 250 v AC at 10 amp or 125 v AC at 15 amp; cylindrical shaped black rubber body; 0.562" diam max cable opening; eliptic cable grip adjustable by two 8-32 screws at cable opening; National Company part/dwg R801-1; Mfr code 93	AC power cable plug
W901	--- N15-C-31163-7000 ---	Cable, Special Purpose, Electrical: three no. 20 AWG stranded copper conductors each consisting of seven no. 28 AWG strands w/synthetic resin insulation, color coded black, brown, violet; tinned copper braid shield, cotton braid, synthetic (vinylite) insulation 3/64" thk; 1,000 v max working voltage; round cross-	AC power cable (bulk) 8'6"

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR CABLE ASSEMBLY CX-2374/U (8'7")

REF. DESIG.	STOCK NUMBERS SIGNAL CORPS STANDARD NAVY AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
		PLUGS (CONT'D)	
W901 (cont'd)		section 5/16" diam o/a; National Company part/dwg M856-1; Mfr code 1402	

TABLE 8–4. TABLE OF REPLACEABLE PARTS FOR HEADSET -49985-A

REF. DESIG.	STOCK NUMBERS / SIGNAL CORPS / STANDARD NAVY / AIR FORCE	NAME AND DESCRIPTION	LOCATING FUNCTION
1001-1099	--- N17-H-52025-2091 ---	Headset: magnetic type; 600 ohms impedance; two receivers 2 1/16" diam x 15/16" d; one flat metal headband; two NT-49016 receivers; one NT-49028 headband; one NT-49012 cord; one NT-49009 plug; assembly is NT-49985-A; National Company part/dwg R799-1;	Headset
	MISCELLANEOUS ELECTRICAL PARTS		
E1001	--- N17-R-43427-7121 ---	Receiver, Telephone: black phenolic case; impedance 600 ohms per pair; freq range 200 to 2000 cycles; 2 1/16" diam x 15/16" d o/a; NT-49016; National Company part/dwg R799-3; Mfr code 1158	Headset receivers
	MECHANICAL PARTS		
O1001	--- N17-H-46178-4441 ---	Headband, Telephone: brass w/nickel plate, fabric covered; 2 metal bands; 11 3/8" lg x 1/2" wd x 1/4" thk o/a; accomodates 2 receivers; yokes to fit 1 5/8" diam receivers; NT-49028; National Company part/dwg R799-2; Mfr code 1158	Headset band
	PLUGS		
P1001	--- N17-P-61264-5423 ---	Plug, Telephone: two conductor: single shank; tubular black molded pyroxylin or cellulose shell; shank 1/4" diam x 1 7/32" lg; shell 1/2" siam x 2 55/64" lg o/a; for lug or eyelet cable termination; stamped "PL-55"; NT-49109; National Company part/dwg R799-5; Mfr code 217	Headset plug
	CABLES		
W1001	--- N17-C-920001-124 ---	Cord, Telephone: double; Y shape cord, 3 conductors of 3 braid tinsel, each braid consists of 6 strands of 0.0008" x 0.015" copper wnd over mercerized cotton thd; 1 cord does not run thru but is bound along Y fork acting as a jumper; 60" min to 72" max lg o/a; 1 end terminated w/2 pin type phone tips; other end terminated w/4 cylindrical type tips; has 1 crimp cord holder on one end and 2 crimp clip cord holders on other end; NT-49012C; National Company part/dwg R799-4; Mfr code 217	Headset cord

TABLE 8–5.

MAINTENANCE PARTS KIT

KEY DESIGNATION	QUANTITY
C131	1
E101	1
E123	1
L112	1
S101A	1
S102A	1
T109	1
T110	1
Y101	1
R187	1

TABLE 8–6. CROSS REFERENCE PARTS LIST

JAN DESIGNATION	SYMBOL NUMBER
AN 3057-6	O901
AN 3102-14S-7P	J110
AN 3106B-14S-1S	P901
AN 3234-2	S103
CC21CH070D	C111
CC21CK100D	C115
CC21SL470K	C118
CK63Y103Z	C155
CM30B102K	C129
CM35B472K	C132
CM35B682K	C144
CP06SA5	O131
CP53B1EF104V	C130
CP53B1EF105V	C136
CP53B1EF504V	C137
CP61B1DF105V	C133
CV11A070	C101
CV11B130	C102
RA20A1SD500AK	R158
RA20A1SD751AK	R162
RC20BF100K	R103
RC20BF101K	R101
RC20BF102K	R128
RC20BF103J	R172
RC20BF104K	R125
RC20BF105K	R133
RC20BF106K	R123
RC20BF150K	R138
RC20BF151K	R131
RC20BF152K	R152
RC20BF153K	R117
RC20BF154K	R150
RC20BF155K	R179
RC20BF184K	R180
RC20BF220J	R109
RC20BF221K	R116
RC20BF222K	R151
RC20BF223K	R120
RC20BF224K	R115
RC20BF225K	R139
RC20BF272J	R173
RC20BF275K	R177
RC20BF332K	R147
RC20BF333K	R134
RC20BF393K	R185
RC20BF473J	R170
RC20BF473K	R119
RC20BF474K	R124
RC20BF475K	R137
RC20BF682K	R184

JAN DESIGNATION	SYMBOL NUMBER
RC20BF683K	R181
RC30BF104K	R129
RC30BF221K	R110
RC30BF222J	R112
RC30BF271J	R113
RC30BF391J	R111
RC30BF471K	R136
RC42BF103K	R118
RC42BF221K	R102
RC42BF332K	R156
RC42BF472K	R132
RC42BF682K	R127
RG-58A/U	W801
RV2ANRD104B	R154
RV2AURD504B	R126
RV2AUSD104B	R601
TS103P01	XV107
TS103U02	E105
UG57A/U	P701
UG-58/U	J106
UG-88/U	P801
UG-158/U	J105
UG-201/U	P702
OB2WA	V108
5Y3WGTA	V110
6005	V104
6AU6WA	V102
5654	V101
5814	V103

STANDARD NAVY STOCK NO.	SYMBOL NUMBER
F16-I-56471-1003	ME-80/URM-50
F16-M-23308-4118	IM-84/URM-50
F16-M-46251-1024	AN/URM-50
F16-T-20243-5953	MK-110/U
G17-F-16302-80	F101
G17-L-6297	I101
N15-C-12200-575	W801
N15-C-31163-7000	W901
N16-A-48586-531	NT-66095
N16-A-61906-7200	E302
N16-A-61912-2501	E301
N16-A-96057-2601	CU-152/URM-3
N16-B-151921-132	E119
N16-B-300001-182	O110
N16-C-15755-9168	C111
N16-C-15916-1367	C115
N16-C-16541-7014	C118

STANDARD NAVY STOCK NO.	SYMBOL NUMBER
N16-C-18657-8630	C116
N16-C-18657-8801	C119
N16-C-30172-4329	C110
N16-C-31090-4164	C129
N16-C-31095-6291	C114
N16-C-32646-6940	C132
N16-C-33068-5823	C144
N16-C-45777-3122	C130
N16-C-46200-9902	C131
N16-C-47297-3175	C137
N16-C-48841-9598	C133
N16-C-48841-9635	C136
N16-C-49958-5175	C143
N16-C-63900-6762	C101
N16-C-63965-2800	C102
N16-C-76181-1036	L101
N16-C-76515-7315	L110
N16-C-76520-7088	L109
N16-C-76547-4241	L108
N16-C-76574-6723	L103
N16-C-76613-8201	L107
N16-C-76647-1001	L106
N16-C-76675-1361	L105
N16-C-76699-4093	L113
N16-C-76717-2126	L104
N16-C-300442-625	O143
N16-G-432730-506	O106
N16-G-433210-161	O107
N16-G-433210-452	O108
N16-K-700310-912	E128
N16-K-700311-127	E132
N16-K-700371-381	E127
N16-K-700410-656	E126
N16-K-700418-726	E131
N16-M-16001-1009	O102
N16-M-60911-4456	O131
N16-P-400441-112	A301
N16-P-404104-360	TB110
N16-P-404104-361	TB109
N16-R-29267-6538	L112
N16-R-49238-0811	R103
N16-R-49283-0811	R138
N16-R-49318-0431	R109
N16-R-49580-0811	R101
N16-R-49625-0811	R131
N16-R-49661-0811	R116
N16-R-49662-506	R102
N16-R-49662-0231	R110
N16-R-49687-0751	R113
N16-R-49732-0751	R111

TABLE 8-6. CROSS REFERENCE PARTS LIST (CONT'D)

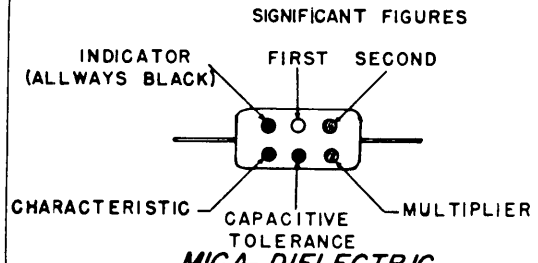
STANDARD NAVY STOCK NUMBE	SYMBOL NUMBER
N16-R-49770-0231	R136
N16-R-49922-0811	R128
N16-R-49967-0811	R152
N16-R-50011-0751	R112
N16-R-50012-0811	R151
N16-R-50038-0431	R173
N16-R-50066-0811	R147
N16-R-50067-501	R156
N16-R-50130-469	R132
N16-R-50202-0811	R184
N16-R-50281-0431	R172
N16-R-50283-0529	R118
N16-R-50336-0811	R117
N16-R-50372-0811	R120
N16-R-50417-0811	R134
N16-R-50444-0811	R185
N16-R-50479-0431	R170
N16-R-50480-0811	R119
N16-R-50552-0811	R181
N16-R-50633-0811	R125
N16-R-50634-0231	R129
N16-R-50678-0811	R150
N16-R-50696-0811	R180
N16-R-50714-0811	R115
N16-R-50822-0811	R124
N16-R-50975-0811	R133
N16-R-51020-0811	R179
N16-R-51065-0811	R139
N16-R-51092-0811	R177
N16-R-51173-0811	R137
N16-R-51326-0811	R123
N16-R-88010-9632	R154
N16-R-88010-9693	R601
N16-R-89956-7032	R158
N16-R-90656-6505	R162
N16-R-99999-0916	R187
N16-R-651091-197	O301
N16-S-34516-2337	E110
N16-S-34576-6514	E105
N16-S-34557-8351	E102
N16-S-34599-7750	E107
N16-S-34658-2580	E106
N16-S-62603-6443	XV101
N16-S-62603-6460	XV102
N16-S-62603-6718	XV105
N16-S-63511-2015	XE101
N16-S-64063-6456	XV103
N16-S-64063-6713	XV107
N16-S-177101-813	O101
N16-T-56203-53	V102

STANDARD NAVY STOCK NO.	SYMBOL NUMBER
N16-T-75654	V101
N16-T-75814	V103
N16-T-76005	V104
N17-A-25801-1017	O154
N17-C-67990-2447	P702
N17-C-68214-3601	P701
N17-C-70328-1338	P901
N17-C-71408-3521	P801
N17-C-71426-7928	P902
N17-C-72604-1516	J110
N17-C-73104-1269	J105
N17-C-73108-5905	J106
N17-C-73120-1801	J301
N17-C-77146-8760	E135
N17-C-201330-651	XF101B
N17-C-781336-251	O901
N17-C-804784-998	O202
N17-C-804908-508	O203
N17-C-920001-124	W1001
N17-F-74266-9068	XF101A
N17-G-161231-101	O303
N17-G-163640-101	O304
N17-G-164241-101	O305
N17-H-46178-4441	O1001
N17-H-52025-2091	1001-1099
N17-I-50671-1001	E303
N17-J-39248-4418	J108
N17-J-39409-8522	J109
N17-L-51622-3133	XI104
N17-L-76656-2446	XI101A
N17-L-250607-501	XI101B
N17-L-250849-457	XI102B
N17-M-32373-3043	M101
N17-M-75368-5902	O124
N17-M-79978-1125	J301B
N17-P-61400-5186	P601
N17-P-69135-8101	E124
N17-R-43427-7121	E1001
N17-S-68310-6002	S103
N17-S-73663-3851	S102A
N17-S-91700-2823	S101A
N17-T-28218-3901	E123
N17-T-65494-1241	T109
N17-T-74827-9031	T110
N17-T-82158-3281	T101
N17-T-82166-9581	T102
N17-T-82180-5081	T103
N17-T-82184-7151	T104
N17-T-82193-3476	T105
N17-T-82207-9986	T106

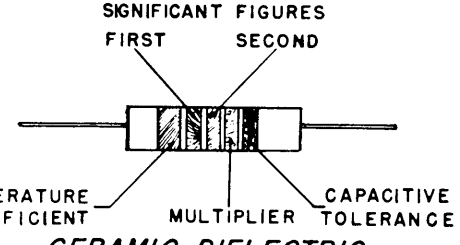
STANDARD NAVY STOCK NO.	SYMBOL NUMBER
N17-T-82212-7976	T107
N17-T-82228-1111	T108
N17-V-49179-5166	E101
N41-W-2460	H101
N41-W-2460-10	H102
N43-B-21914-1500	O302

TABLE 8–7. COLOR CODES

CAPACITOR COLOR CODE

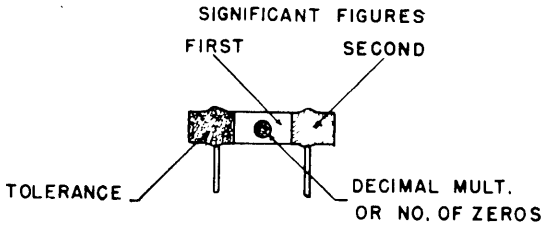


MICA-DIELECTRIC

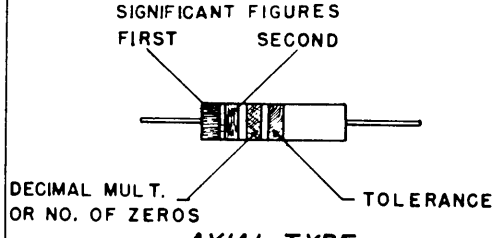


CERAMIC-DIELECTRIC

RESISTOR COLOR CODE

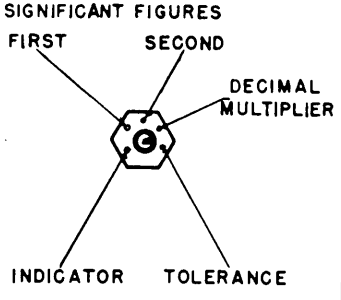


RADIAL TYPE



AXIAL TYPE

FEED-THRU TYPE CAPACITOR



CERAMIC-DIELECTRIC

RESISTORS

DECIMAL MULTIPLIER OR NO. OF ZEROS	TOLERANCE	SIGNIFICANT FIGURE	COLOR
.0		0	BLACK
1		1	BROWN
2		2	RED
3		3	ORANGE
4		4	YELLOW
5		5	GREEN
6		6	BLUE
7		7	VIOLET
8		8	GRAY
9		9	WHITE
.1	±5		GOLD
.01	±10		SILVER
	±20		NO COLOR

CAPACITORS

SIGNIFICANT FIGURE	MICA-DIELECTRIC MULTIPLIER	MICA-DIELECTRIC CAPACITIVE TOL. IN %	MICA-DIELECTRIC CHARACTERISTIC	CERAMIC-DIELECTRIC MULTIPLIER	CERAMIC-DIELECTRIC TEMP. COEF. IN PARTS/MEG/°C	CERAMIC-DIELECTRIC TOLERANCE > 10 UUF IN %	CERAMIC-DIELECTRIC TOLERANCE < 10 UUF IN UUF
0	1	20	A	1	0	20	2
1	10		B	10	−30	1	
2	100	2	C	100	−80	2	
3	1000		D	1000	−150		
4			E		−220		
5			F		−330	5	.5
6			G		−470		
7					−750		
8				.01	+30		.25
9				.1	−330 ± 500	10	1.0
	.1	5					
	.01	10					

TABLE 8–8. LIST OF MANUFACTURERS

CODE NO.	MFR'S PREFIX	NAME	ADDRESS
1	CNA	National Company, Inc.	61 Sherman St., Malden, Mass.
3	CHH	Arrow, Hart and Hegeman Co.	102 Hawthorne St., Hartford, Conn.
5	CMA	P.R. Mallory and Co.	1941 Thomas St., Indianapolis, Ind.
12	CD	Cornell-Dublier Electric Corp.	1000 Hamilton Blvd., South Plainfield, N.J.
14	CAW	Aerovox Corp.	700 Belleview Ave., New Bedford, Mass.
18	CG	General Electric Co. (Lamp Dept.)	Nela Park, Cleveland, Ohio
24		Humason Manufacturing Co.	100 Peese Ave., Forrestville, Conn.
63	CIR	International Resistance Co.	401 North Broad St., Philadelphia, Pa.
77		Fraen Corp.	3380 Main St., Wakefield, Mass.
83	CER	Erie Resistor Co.	640 W. 12th St., Erie, Pa.
88		Insulating Fabricators	69 Grove St., Watertown, Mass.
91		Elastic Stop Nut Corp.	2321 Vauxhall Road, Union, N.J.
93	CHU	Harvey Hubbell Co.	447 Concord Ave., Bridgeport, Conn.
127	CYA	Alden Products Co.	117 North Main St., Brockton, Mass.
128	CPH	American Phenolic Corp.	1830 S. 54th Ave., Chicago, Ill.
135		Pittsburgh Plate Glass Co.	300 Babcock St., Boston, Mass.
180	CHS	Sylvania Electric Products Corp.	Emporium, Pa.
187	CAXH	Canfield Rubber Co.	Railroad and Garden St., Bridgeport, Conn.
217	CTX	Trimm Radio Mfg. Ltd.	1770 West Berteau Ave., Chicago, Ill.
236		Atlantic India Rubber Works, Inc.	569 West Polk St., Chicago, Ill.
239		General Electric Supply Corp.	145 North Beacon St., Boston, Mass.
273	CBZ	Allen-Bradley Co.	118 West Greenfield Ave., Milwaukee, Wis.
274		Carboloy Dept. of General Electric Co.	Detroit, Michigan
296	CAIS	Birtcher Corp.	5087 Huntington Drive, Los Angeles, Calif.
298	CAMQ	Cambridge Thermionic Corp.	445 Concord Ave., Cambridge, Mass.
307	CTC	Chicago Telephone Supply Co.	Bearsley Ave., Elkhart, Ind.
317		Dial Light Corp.	900 Broadway, New York, N.Y.
324	CFA	Bussman Mfg. Co.	2538 West University St., St. Louis, Mo.
334		Irving Moore Co.	229 Purchase St., Boston, Mass.
339	CED	Cannon Electric Development Co.	3291 Humboldt St., Los Angeles, Calif.
356	CEB	Hugh H. Eby Inc.	4700 Stenton Ave., Philadelphia, Pa.
398	CAYU	Barry Corp.	700 Pleasant St., Watertown, Mass.
416		Croname Inc.	1765 Grace St., Chicag , Ill.
458	CFX	Freed Transformer, Inc.	1718 W irfield St., Ridg wo d, Br klyn 27, N.Y.
602		Grigsby-Allison Co.	407 North Salem Av ., Arlingt n H ight, Ill.
662		Arch G ar W rks	90 Holmes St., North Quincy, Mass.
908	CHK	Hickok Electrical Instrument Co.	10514 Dupont Ave., Cl veland, Ohio

TABLE 8-8. LIST OF MANUFACTURERS (CONT'D)

CODE NO.	MFR'S PREFIX	NAME	ADDRESS
929		Instrument Specialties Co., Inc.	181 Bergen Blvd., Little Falls, N.J.
1150	CBIM	Switchcraft Inc.	1328 North Halsted St., Chicago, Ill.
1158	CTE	Telephonics Corp.	Park Ave., Huntington, L.I., N.Y.
1296		Phalo Plastics	25 Foster St., Worcester, Mass.
1334	CBKT	Hardware Procucts Co.	100 Richmond St., Boston, Mass.
1343		American Cabinet Hardware Corp.	416 S. Main St., Rockford, Ill.
1364	CBGZ	Kolton Electric Co.	123 New Jersey Railroad Ave., Newark 5, N.J.
1380	CBQV	Kemtron Electron Products, Inc.	23 Brown St. Salem, Mass.
1382	CBLB	White Industries, Inc.	421 W. 54th St., New York, N.Y.
1392	CBOD	Aerpax Products Co.	1024 Greenmount Ave., Baltimore, Md.
1395		Aerovox Hi-Q	Olean, N.J.
1396		North Shore Research Corp.	1 Sylvan Rd., Peabody, Mass.
1397		Torbell Associates	64 Park St., Springfield, Mass.
1398		Williams Machine Co.	236 Broadway, Cambridge, Mass.
1399		Lockhart Machine Co.	Melrose, Mass.
1400		Sealube Corp.	Wakefield, Mass.
1402		Chester Cable Co.	Oakland Ave., Chester, N.Y.
1407	CBOR	Granite State Machine Co., Inc.	124 Joliet St., Manchester, N.H.

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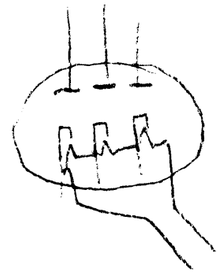

ANTENNA INPUT
J106
J101
R102 220
R103 10
R104 10
R105 10
R106 10
R107 10
R108 10
R109 22
R110 220
R111 390
R112 2200
R113 270
S101A
S101B
S101C
SENSITIVITY SWITCH
R101 100
R166 270
R169 100
R174 100
R175 10
R114 10
R164 10
R165 10
R167 22
R168 22
R170 47K
R171 220K
R172 10K
R173 2700
J102
J103
J104
J105
P101
Z101 T101 C101 1.5-7μμF R177 2.7M BAND 1 23Ω
Z102 T102 C102 3-13μμF R178 2.2M BAND 2 10.1Ω
Z103 T103 C103 1.5-7μμF R179 1.5M BAND 3 4.9Ω
Z104 T104 C104 1.5-7μμF R180 80K BAND 4 1.83Ω
Z105 T105 C105 1.5-7μμF R181 68K BAND 5 L115
Z106 T106 C106 1.5-7μμF R182 22K BAND 6
Z107 T107 C107 1.5-7μμF R183 15K BAND 7
Z108 T108 C108 1.5-7μμF R184 6.8K BAND 8
Z109 L101 BAND 9
V101 5654 R.F. AMPLIFIER
R115 220K
C111 7μμF
C115 10μμF
R117 15K
L102
R118 10K
C114 .001
R176 10
R119 47K
C116 .001
B+ 210V
C112 .0005
C110 .0005
R116 220
R186 1.5K
C155 .01
C109A
C109B
C109C
C109D
C109E
C109F
S103 MICRO-SWITCH (NORMALLY CLOSED OPENED ON BANDS 1,2,3)
TUNING CONTROL
Y101 K11
C118 47μμF
R161 10
R122 220K
R121 47K
C119 .001
R187 31.5K (2000-200K)
R120 22K
C120 .001
J107
C129 .001
R123 10 MEG.
V102 6AU6WA 1ST. AUDIO AMPLIFIER
XV102
C130 .1
R124 470K
R125 100K
V103A ½5814 2ND. AUDIO AMPLIFIER
C132 .0047
R126 500K AUDIO GAIN CONTROL
XV103
R128 1000
C134 .0047
R129 100K
R130 220K
V103B ½5814 AUDIO OUTPUT
C136 1.0
R133 1000K
J108 PHONES JACK
E102 OSCILLOSCOPE
E103
R132 4700
R131 150
C135 1.0
C143 4.0
R127 6800
B+ 270V
L103 C121 1.5-7μμF 22.5Ω
L104 C122 1.5-7μμF 10.1Ω
L105 C123 1.5-7μμF 5.25Ω
L106 C124 1.5-7μμF 1.83Ω
L107 C125 1.5-7μμF
L108 C126 1.5-7μμF
L109 C127 1.5-7μμF
L110 C128 1.5-7μμF
L111
T109
C137 .5
R134 33K
390Ω
75Ω
XV104
C138 .1
R135 100K
R136 470
R162 750Ω
B+ 275V
V104 6005 AUDIO OSCILLATOR
E101 CHOPPER
V105 6AU6WA 1ST. CARRIER AMPLIFIER
XE101
XV105
C139 .0047
R137 4700K
R138 15
C140 10
R139 2200K
R159 220K
R160 1000K
C131 .22
R142 22K
V106 6AU6WA 2ND. CARRIER AMPLIFIER
XV106
C141 .001
R140 1000K
R141 10,000K
C142 1.0
C144 .0068
R143 2200K
R144 1000K
C145 .0047
C133 1.0
R146 470K
R147 3300
R145 100K
V107B ½5814 CARRIER AMP. LIMITER
C146 10
R185 39K
R148 100K
B+ 105V
B+ 210V
V107A ½5814 METER RECTIFIER
XV107
R149 33K
R150 150K
M101 MA
R163 22K
J109 EXTERNAL METER JACK
P601
W601
M601 MA
R601 100K
R152 1500
R153 33K
R155 47K
B+ 105V
R154 100K METER ZERO CONTROL
R151 2200
P901
W901
P902
J110 POWER INPUT
S102 POWER SWITCH
1A. F103 XF103
1A. F104 XF104
F101 XF101 1A.
F102 XF102 1A.
C149 .001
L113
C150 .001
C151 .001
L114
C152 .001
V108 0B2WA V.R.
XV108
V109 0B2WA V.R.
XV109
1-5
2-4-7
R156 3300
R157 3300
L112 12h 250Ω
C147 4.0
C148 4.0
V110 5Y3WGTA RECT.
XV110
T110
275V
55MA
320Ω
5V @2A
6.3V @3A
115VAC 60/400~ 8.5Ω
TB101
C153 .001
C154 .001
V101 I101 XI101
V104 V105 V106 V107 V103 V102
PLATE
I103 XI103
I104 XI104
FILAMENT
R158 50Ω
I102 XI102
TB102
B+ 270V
B+ 275V
B+ 210V
B+ 105V

NOTE:
CAPACITOR VALUES = MICROFARADS EXCEPT AS NOTED.
RESISTOR VALUES = OHMS.
K = 1000.
INDUCTOR VALUES = MILLIHENRYS.
MEG = MILLION