MASTER AND SUPPLEMENTARY HIGH SPEED TAPE SENDER WITH RADIO PREQUENCY INTERFERENCE (RFI) SUPPRESSION FOR THE MULTIPLE ADDRESS PROCESSING SYSTEM (MAPS)

INSTALLATION AND CHECKOUT

CONTENTS PAGE

1. GENERAL

1.01 This section contains information necessary to install radio frequency interference **(RFI)** suppression equipment on standard master and supplementary high speed tape senders. It is used with **reference** to the standard (MAPS) literature as additional information relating to certain modules and components. The operating functions of the master and supplementary tape senders arc **unchanged.**

1.02 **Wiring diagram** sections contain pertinent actual and schematic wiring diagrams for rfi circuitry. Reference should be made to the appropriate wiring diagram for specific wiring information.

1.03 **All references to right or left, front or rear,** up or down, are made from a normal **operating** position in front of the cabinet. Clearances for service **and maintenance are necessary in front, rear, and** top **of cabinet. Tape** reader, tape handling, tape supply, electronic logic, and power supplies are accessible from the front of the cabinets.

2. UNPACKING

2.01 All equipment is packed for maximum protection during shipment. caution must be taken when unpacking the rfi modification parts cartons (one carton for master and supplementary cabinets and one carton for receiver cabinet) **to** prevent damage to the components. Observe all caution labels as well as any special instructions on the cartons. Small bags and loose parts should be kept with their associated components until used in the installation.

3. INSTALLATION

HIGH SPEED TAPE READER

3.01 Refer to Section 592-851-730TC before removing the DX reader from the cabinet. Disconnect the SO-pin connector from the receptacle at the rear of the tape reader, and remove the 50-pin receptacle from its mounting bracket. Remove the green ground lead from the mounting plate. Gut each TP328793 capacitor lead 1/2 inch in length.

3.02 Remove receptacle pins **10, 25, 27,** and 43, and remove plastic tubing. Solder the leads from two TP328793 capacitors to the rear portion of the pins (see CAUTION). Replace tubing over the pins and capacitor leads. Replace pins in the receptacle so one capacitor is across pins 10 and 25, and the other capacitor is across pins 27 and 43. Reinstall the receptacle in its mounting bracket, the green ground lead to the mounting plate, and reconnect the 50-pin connector.

CAUTION: DO NOT ALLOW SOLDER TO RUN DOWN ON FRONT PART OF PIN.

Note: Refer to appropriate parts literature for identification of components.

3.03 Install the TP333324 contact shorting assembly between the verify and code reading contact mounting screw heads and the reader top plate above the screw heads (Figure 1). **Remove** the nut and washers from the right hand lid latch mounting stud. Place the TP333335 position bar on the stud and over the contact shorting assembly . replace the nut and lockwasher only , Hold the position bar down firmiy on the contact shorting **assembly** while tightening the nut.

3.04 of the TP326778 ground strap under the mountin

3.05 inal end of the ground strap, a TP34432 flatwasher, and a TP112626 nut. tighten securely. Replace front cover and readjust reader position per Section 592 851 730TC.

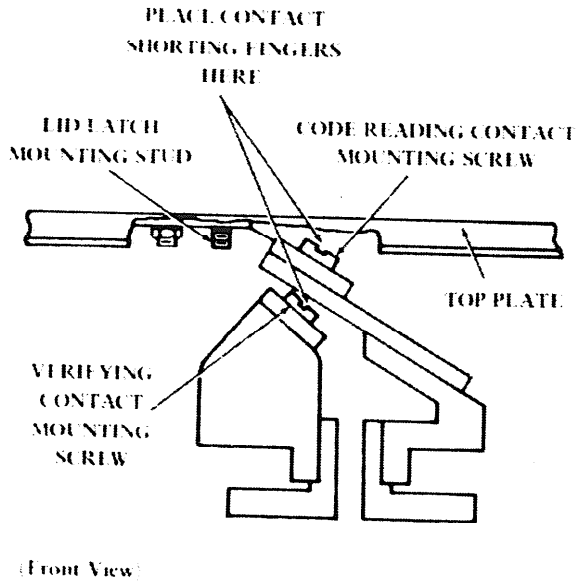

Figure 1. Tape Reading Contact Mounts

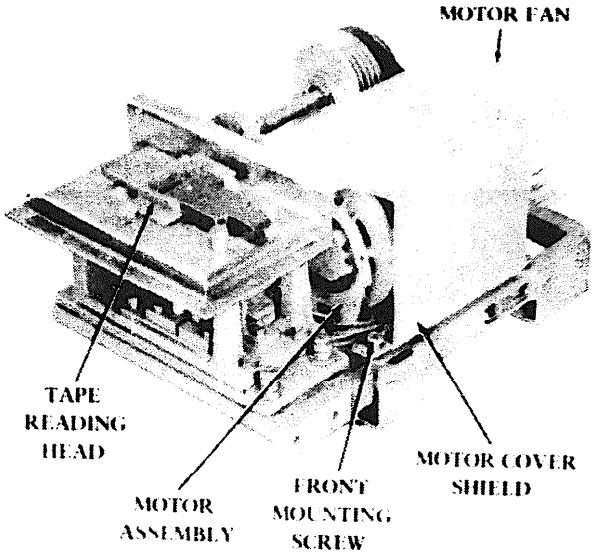

Figure 2. High Speed Tape Reader

TAPE TRANSPORT PANEL

TAPE TRANSPORT PANEL

in Figure 3 to layout and drill

3.06 holes for the panel latches. Install the two 333349 latches using washers and nuts accompanying the latches. Use two flat washers on the right latch only to compensate for single thickness stock. Place lockwashers between front face of latches and back of front panel. Latches should be positioned on panel to engage cabinet flange when latch pawl is turned clockwise.

Note: When securing front panel to cabinet, tighten adjustable pawl fasteners sufficiently to assure good metal to metal grounding connection.

REAR CABINET PANEL

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3.07 Remove the captive screw from the rear cabinet panel, place a TP151572 lockwasher under the head of the screw and replace screw in panel.

CONDUIT PLATE

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3.08 Before installing the TP333314 conduit plate,

3.08 determine the number of 3/4 inch conduits to be used for signal and clock cables. Remove the number of knockouts necessary. If cables have connectors attached, insert the cables through the appropriate openings before installing the plate.

3.09 Position the plate on the underside of the cable opening in the lower rear section of the cabinet. Place flanged side of plate on top of the front flange of cable

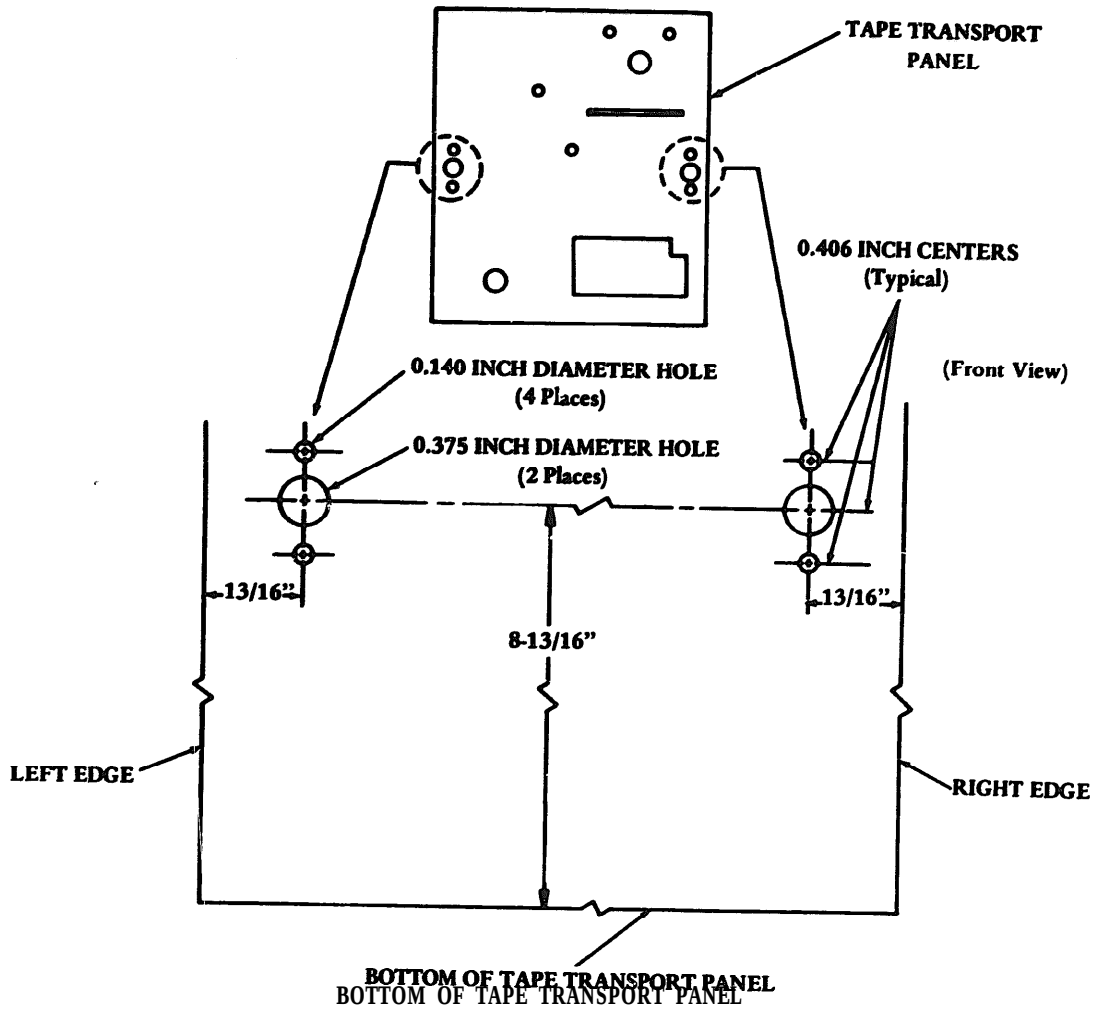

Figure 3 - Dimensions for Panel Latches

opening, raise rear of conduit plate up to bottom side of cable opening. Place bracket support TP333317 on inside of cable opening above conduit plate. Connect plate and bracket together by inserting seven TP151723 screws with lock-washers through mounting holes in the bracket support, tighten screws (Figures 4,5, and 6).

3.10 Insert. the 1/2 inch end of a 3/4 inch connector enlarger through the 1/2 inch conduit plate hole with the 3/4 inch end extending from under the plate. Screw on a locknut over the 1/2 inch end of the connector enlarger inside the cabinet, and tighten (Figure 6). Screw on a connector extension over the remaining threads of the connector enlarger and tighten. Screw on a locknut approximately 3/8 inches down on the connector extension.

3.11 Place 1/2 inch opening of junction box over 1/2 inch connector extension and rest box on locknut. Screw on another locknut inside the junction box to the connector extension. Position junction box so electrical connections can be made from rear of cabinet, tighten locknut.

CABINET CONNECTIONS

A. Electrical

3.12 To maintain rfi capabilities all electrical inputs and outputs to the cabinet should be routed through solid steel conduit (EMT). Connect terminal ends of TP333337 junction box power cable to terminal block TBF101 or TBG101 as shown in the following chart:

CHART 1

TBF 101 OR TBG 101	TP333337 CABLE WIRE
1	GREEN
3	WHITE
4	BLACK

B. AC connections

3.13 Use locknut on conduit connector to secure it to the connector enlarger. Feed wires into junction box and connect conduit to connector. Make necessary connections in junction box and **attach cover** with hardware provided.

C. Signal and Clock Connections

3.14 After the signal **and** clock cables are installed through the conduit plate, make connections as shown in wiring diagrams 7710WD and 7716WD.

4. CHECKOUT PROCEDURE

GENERAL

4.01 Checkout procedures should be made after installation is completed. These checkout tests should also be performed after routine servicing or correcting **extensive** troubles in the set. A physical inspection should precede all rfi tests to insure that all ground straps and shields are properly installed and all connections properly tightened.

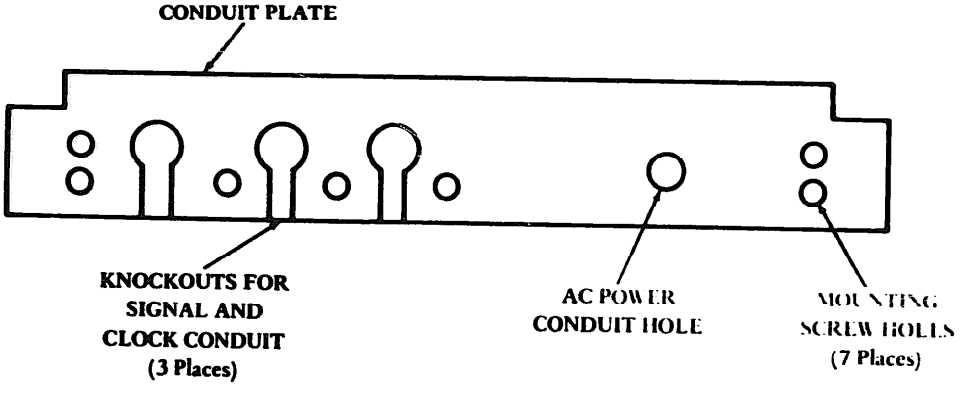

Figure 4 - Conduit Plate

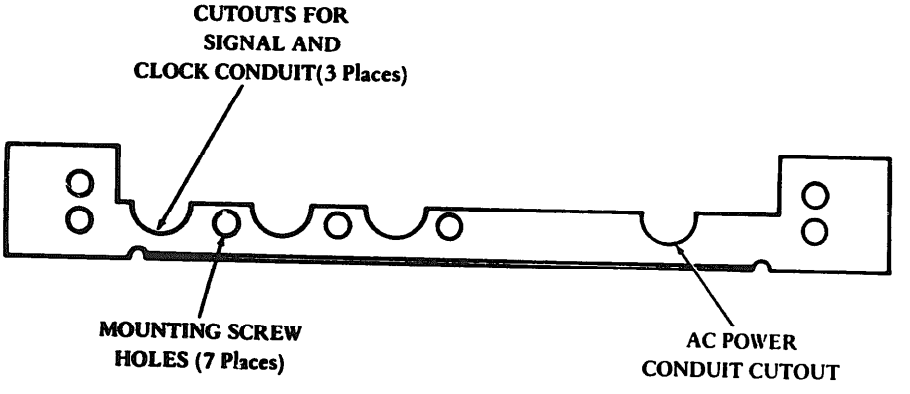

Figure 5 - Bracket Support

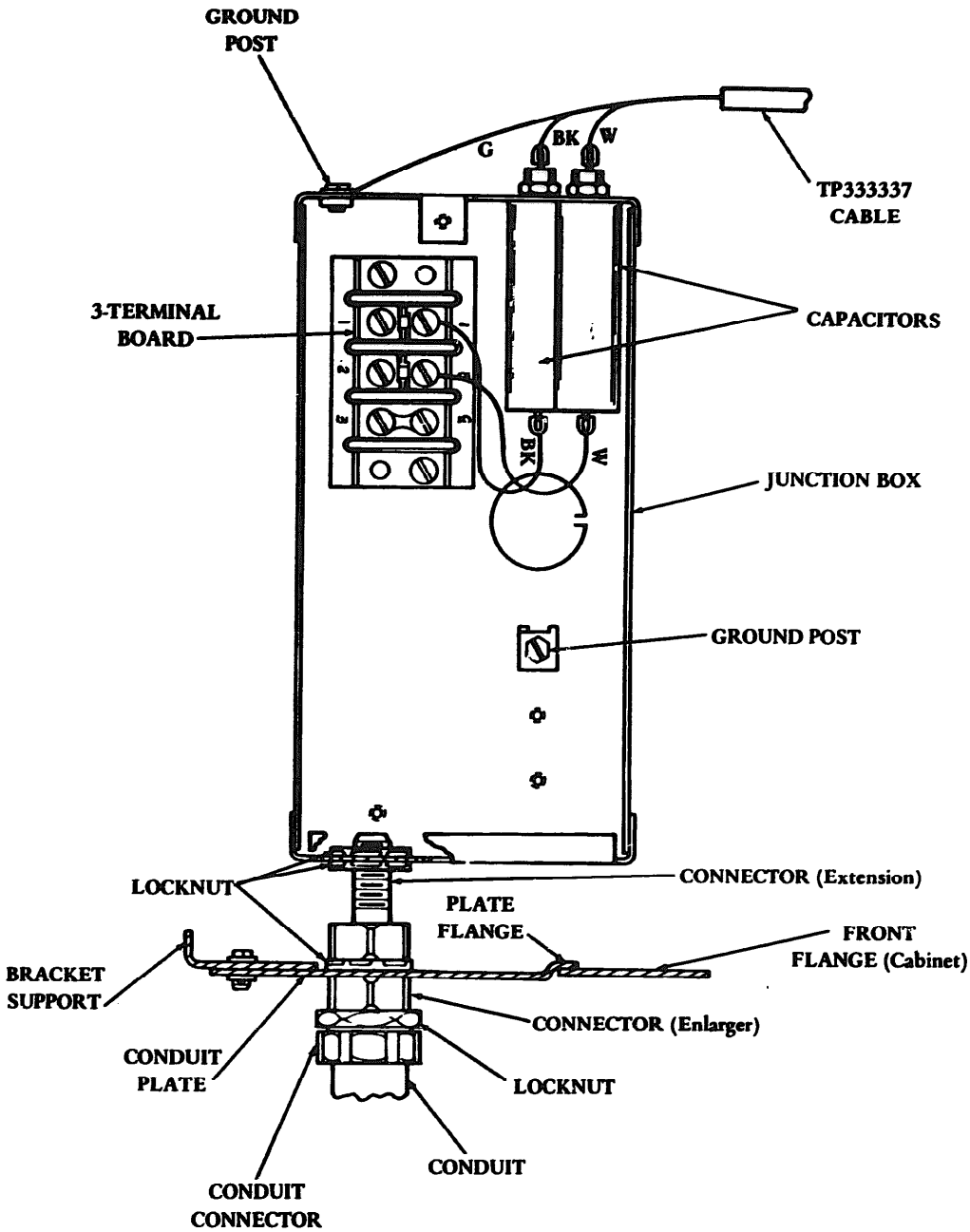

Figure 6 - Conduit Connection and Junction Box

Text The standard checkout procedure chart in Section 592-851-230TC should be used with this procedure to completely checkout each cabinet. When using the standard checkout chart with rfi equipped cabinets, the eighth SOM character received by the equipment will become the ninth SOM character received.

4.03 Checkout procedure for bid retention and external stop-send features is arranged in the following chart form. Each step is designed to be followed in sequence.

4.04 Sets with rfi components installed should be tested by setting up a functional system consisting of a receiver, and master or supplementary transmitter in an rfi shielded room. Primary power and interconnecting signal leads are to be enclosed in separate 3/4 inch electrical metal tubing conduit. A radio frequency (rf) quiet clock should be used for timing and must be in a shielded enclosure.

4.05 All mechanical adjustments and electrical continuity tests should be completed before rfi testing. To insure good shield connections, shield continuity tests should be made. The screen room should be free of all loose metallic parts, tools, wires, and nonessential test equipment.

4.06 Spectrum signature recording tests should be identified with the serial numbers of the units tested. Make notations for malfunctions encountered or abnormalities in rf measurements. Disconnect both sides of the screen room lighting circuits before making rfi tests.

RFI TEST

4.07 Make preliminary tests to assure proper operation of the system. Disconnect tape feed motors before making rfi tests to prevent triac noise. Test limits apply to data related signals only.

C H A R T 2

CHECKOUT PROCEDURE CHART FOR MASTER AND SUPPLEMENTARY RFI SENDER CABINETS

STEP	ACTION	VERIFICATION
1	Bid Retention	
	(a) Reader in on-line mode and reading tape. Operate STOP switch. Open tape lid and remove tape.	ON-LINE indicator remains lit.
	(b) Replace tape in reader and close tape lid. Release STOP switch.	Transmission is resumed.
2	External Stop-Send, Master Sender	
	(a) With the reader reading tape, apply +6 volts to input lead JG106-24 (normally -6 volts).	The reader stops on the character after the one being read when the +6 volts is applied.
	(b) Reapply the normal -6 volts to input lead JG106-24.	The reader resumes transmission in correct character frame.

4.08 Place the cabinets in a row facing the antenna approximately one foot apart. Center the antenna three feet in front of the cabinet group. When making tests with a vertical rod antenna setup, mount the cabinets and antenna on a common ground plane (aluminum foil or copper sheet one foot wide and appropriate length), connected to the shielded room walls (Figure 7). Electrical field limits are shown in Figure 8.

RADIATED TEST

4.09 Electric field radiated measurements can be made over the frequency range of 1000 hertz to 1.0 giga hertz. The dipole or vertical rod antennas should be placed three feet from the mechanism under test. Amplitude limits for data related signals are shown in Figure 9. Antenna test setups are shown in Figures 10 and 11.

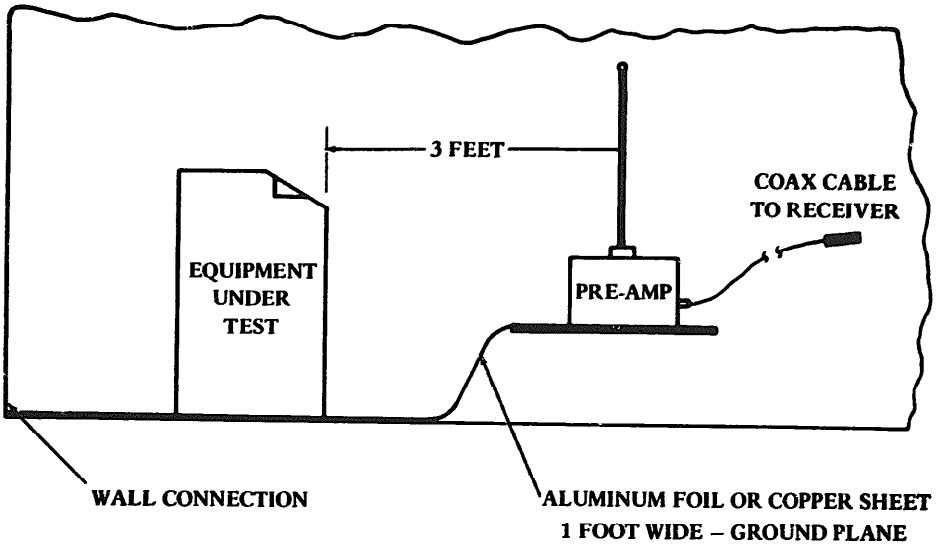

Figure 7 - Vertical Rod Antenna Test Setup

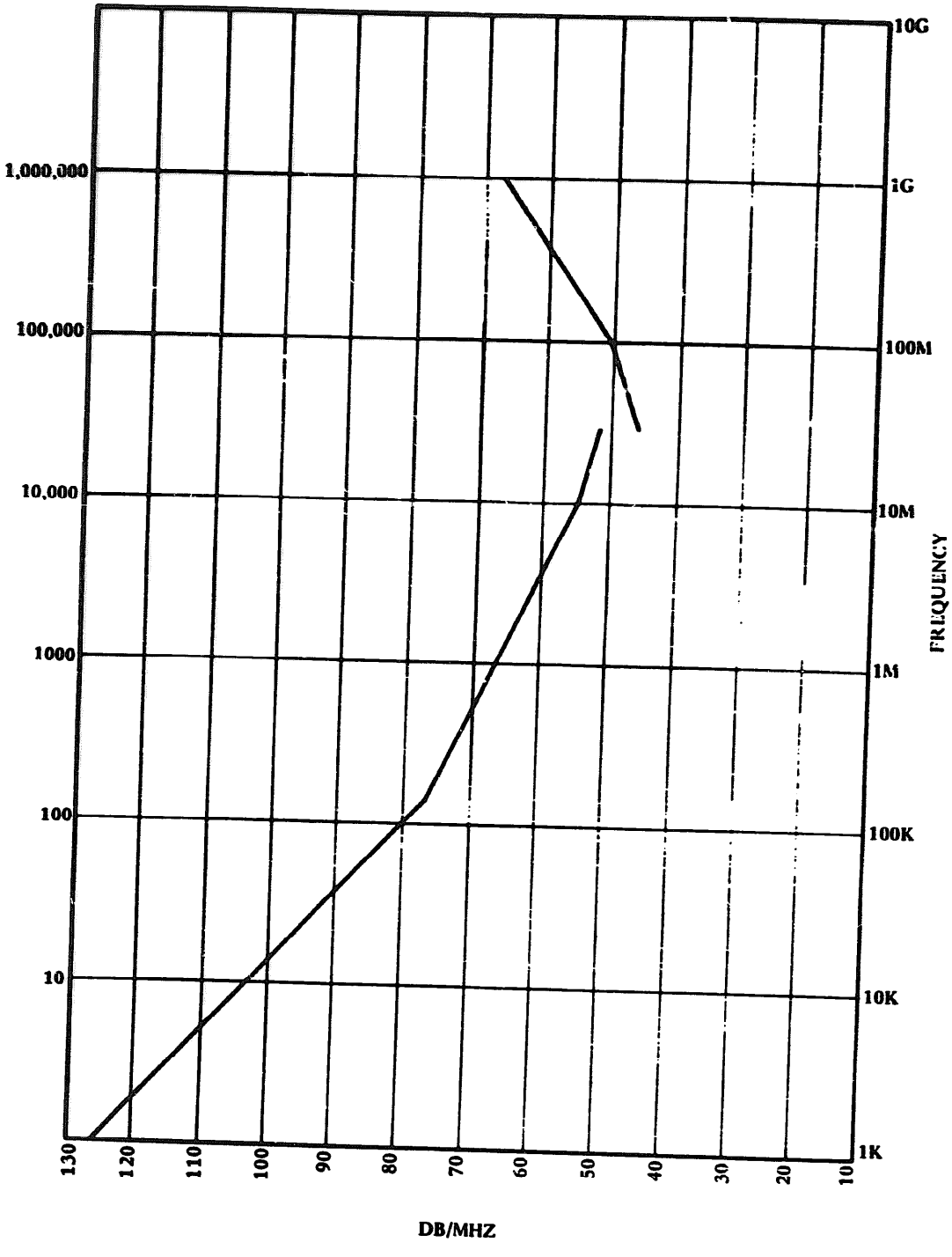

Figure 8 - Electrical Field Limits

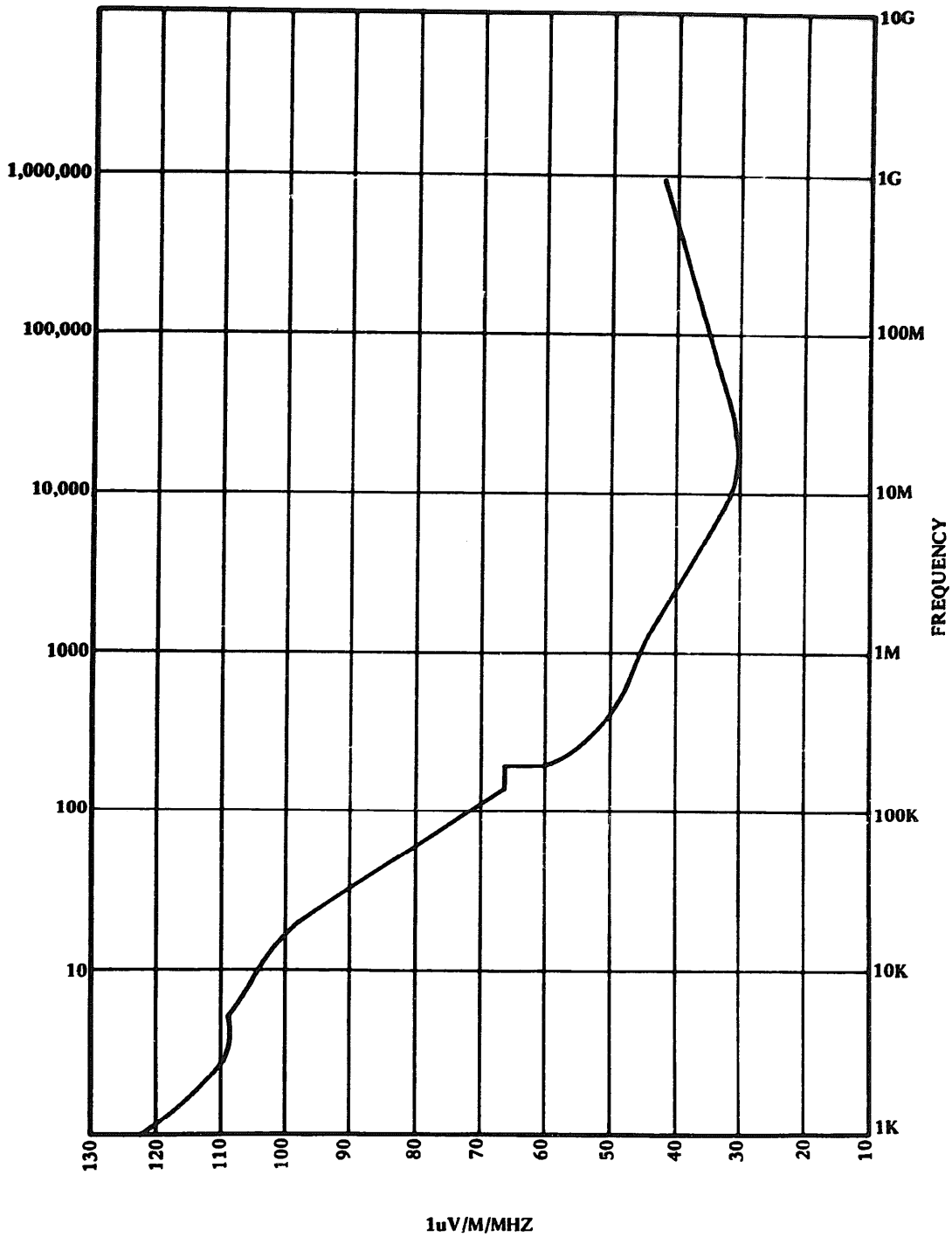

Figure 9- Electrical Field Radiated Limits

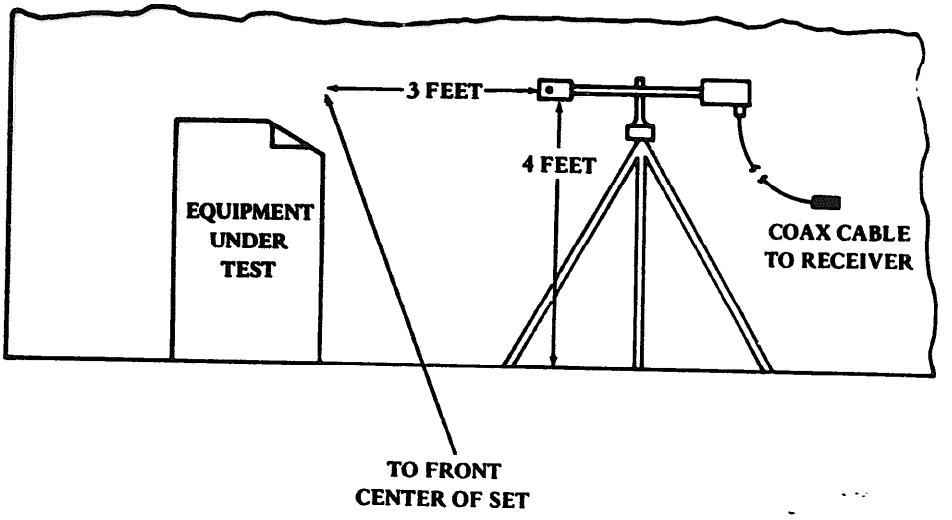

Figure 10 - Horizontal Dipole Antenna Test Setup

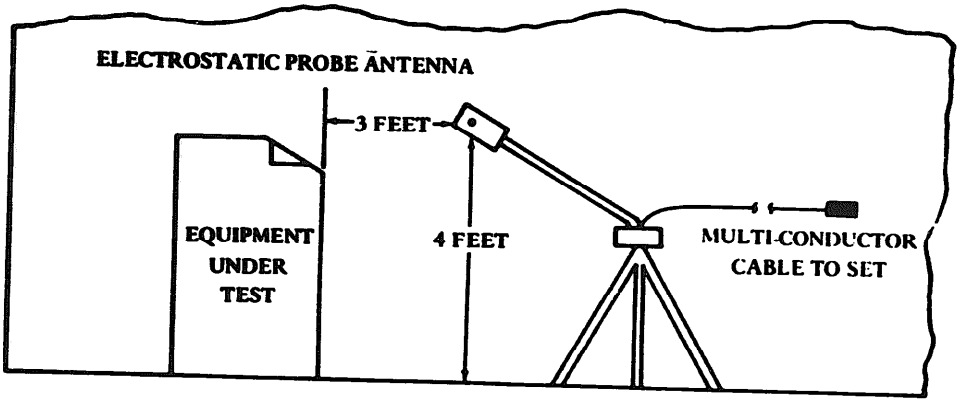

Figure 11 - Electrostatic Probe Antenna Test Setup