HIGH SPEED TAPE RECEIVER WITH RADIO FREQUENCY INTERFERENCE (RFI) SUPPRESSION FOR THE MULTIPLE ADDRESS PROCESSING SYSTEM (MAPS)

INSTALLATION AND CHECKOUT

CONTENTS

1.

1.01 This section contains information necessary to install radio frequency interference (RFI) suppression equipment on standard high speed receivers. It is used with reference to the standard (MAPS) literature as additional information relating to certain modules and components. The operating functions of the high speed tape receivers are 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. Clearance for service and maintenance is necessary in front, rear, and top of cabinet. Tape handling equipment, tape punch, chad box, tape supply, electronic logic, and power supplies are accessible from the front of the cabinet (Figure 1).

2.

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. Refer to appropriate parts literature for identification of components.

3.

DOOR SHIELDING

3.01 Unlatch upper tape punch door and pivot down to its open position (Figure 2). Remove all upper window mounting hardware including door handle and window tape guide hardware. Leave plastic window in place, lay TP333327 screen over window aligning screw holes and tape exit openings. Place the TP333311 frame with flange up over the screen, replace handle, window tape guide hardware with ground strap, and upper window mounting hardware. Place tape punch door in its latched position.

3.02 Unlatch lower tape punch door and pivot down to its open position. Repeat operation in 3.01 using TP333328 screen, and TP333312 frame shield parts, reassemble in the same manner. Place lower tape punch door in its latched position.

3.03 Open tape supply door (to the right), and remove window bracket hardware (four screws and lockwashers). Discard left window bracket. Remove plastic

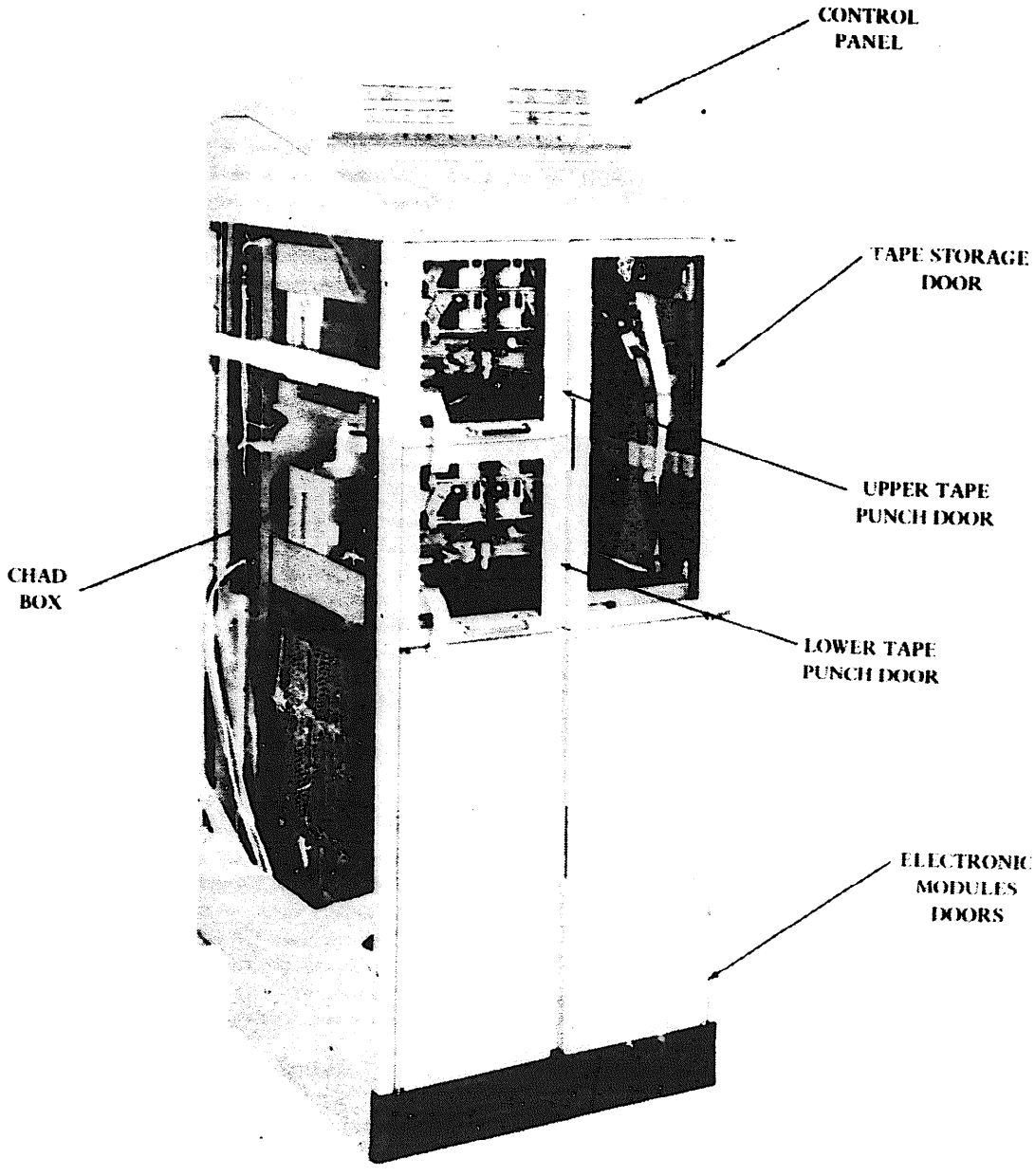

Figure 1 High Speed Tape Receiver Cabinet

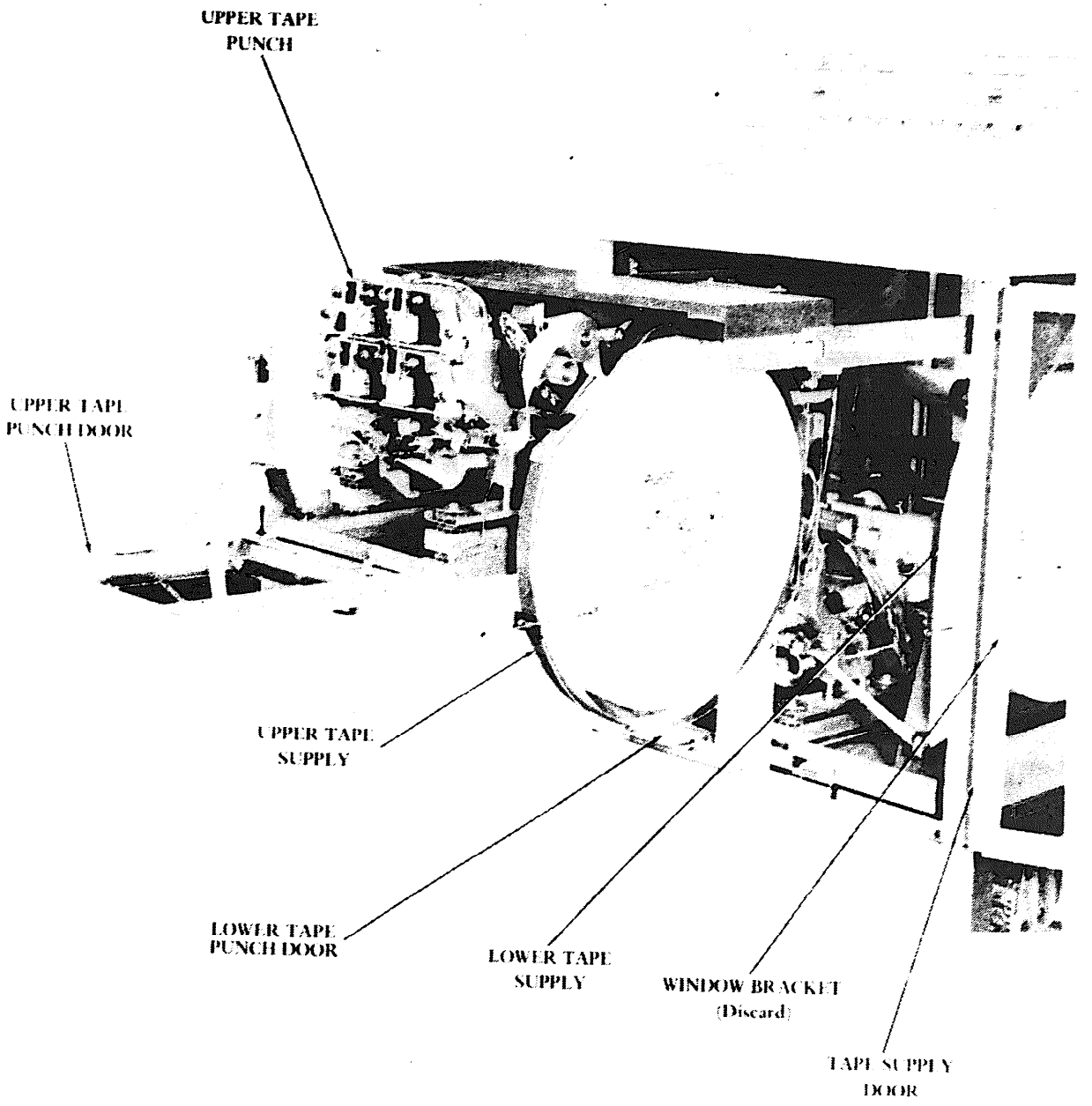

Figure 2 Tape Punch and Punch and Tape Supply Doors

window and pry up stationary metal flange on opposite side of window frame to allow for additional thickness necessary for added screen and frame.

3.04 Replace plastic window and place TP333329 screen on window. Place TP333313 frame on the screen with flange up and against the window. Make sure the frame is under the pried up window flange. Place new TP333318 clip bracket against the TP333313 frame on the opposite side of window frame, secure with hardware removed in disassembly operation. For ease of installation, form edges of screen over flanges of screen frame before installation.

CONDUIT PLATE

3.05 Before installing conduit plate, determine 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 and conduit through the appropriate openings before installing the plate (Figure 3).

3.06 Position TP333315 conduit plate on underside of cable opening in the lower rear section of the cabinet. Place flanged side of plate on top of front flange of cable opening, raise rear end of conduit plate to bottom side of cable opening. Place TP333316 bracket support on inside of cabinet above rear end of conduit plate. Secure plate and bracket together with five TP151723 screws and TP3639 lockwashers screwed into conduit plate (Figure 4).

3.07 Connect ground strap between conduit plate and inner frame of cabinet. Attach one end of strap to 6-40 tap hole on the left side of conduit plate with hardware provided. Connect other end of strap to the first hole from the bottom of the inner frame at rear vertical support with hardware furnished, tighten securely. (Place star lockwashers between terminals and mounting surfaces.)

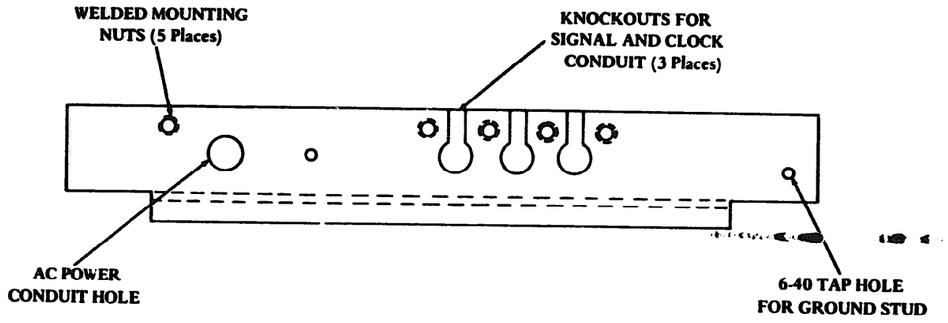

Figure 3 - Conduit Plate

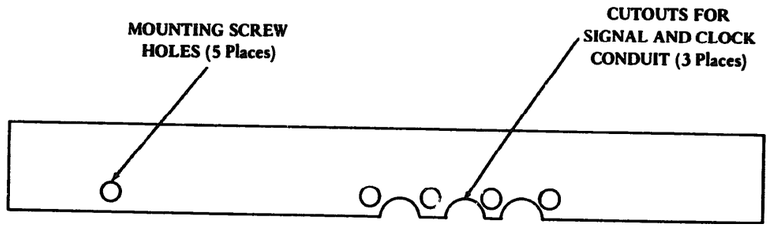

Figure 4 - Bracket Support Plate

JUNCTION BOX

3.08 Place TP333343 junction box assembly over conduit plate and align 3/4 inch hole in box with 3/4 inch hole in conduit plate, on the inside of cabinet (refer to Figure 5). Install 3/4 inch conduit connector into the 3/4 inch opening of conduit plate and junction box. Place connector locknut over thread of connector inside junction box and tighten securely (refer to Figure 6).

3.09 Make TP333336 cable connections at main power terminal board A as shown below:

POWER TERMINAL BOARD A	CAPACITOR CONNECTION	TP333336 CABLE WIRE
A-1	(1)	White
A-2	(2)	Black
A-3	(3)	White
A-4	(4)	Black
A-5	(5)	White
A-6	(6)	Black
Frame Ground	Ground Stud	Green

EXTERNAL ELECTRICAL CONNECTIONS

3.10 To maintain rfi capabilities all electrical inputs and outputs to the cabinet should be routed through solid steel conduit (EMT). Feed ac wires into junction box and make connections to terminal board as shown in 7730WD. After wiring is completed, install cover on junction box using the hardware provided.

INPUT SIGNAL AND CLOCK CONNECTIONS

3.11 Signal and clock cables with connectors installed may be routed through the conduit plate by removing the appropriate number of keyhole knockouts provided for 3/4 inch conduits. After conduit is installed, route the cables inside the cabinet and make wire connections according to information found in Section 592-851-230TC.

MAGNET DRIVER CARDS

Text Remove one of the TP303672 or TP303730 magnet driver cards located at ZC121-123 and ZC319-324, at the rear of module C. Compare the card with

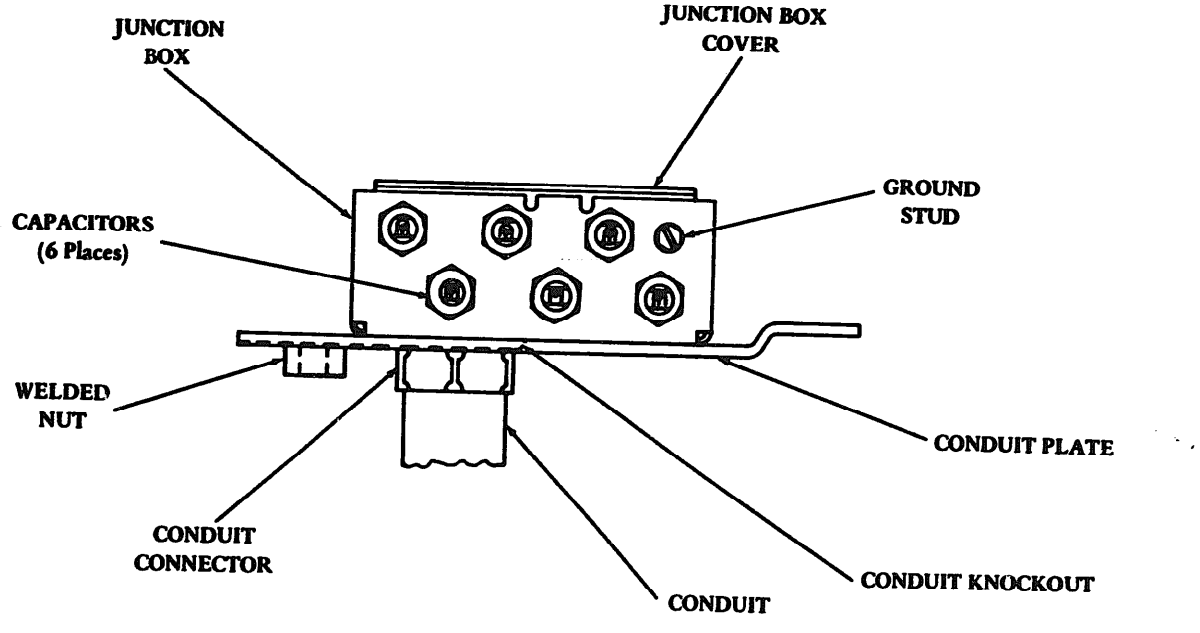

Figure 5 - Junction Box and Conduit Plate Connection

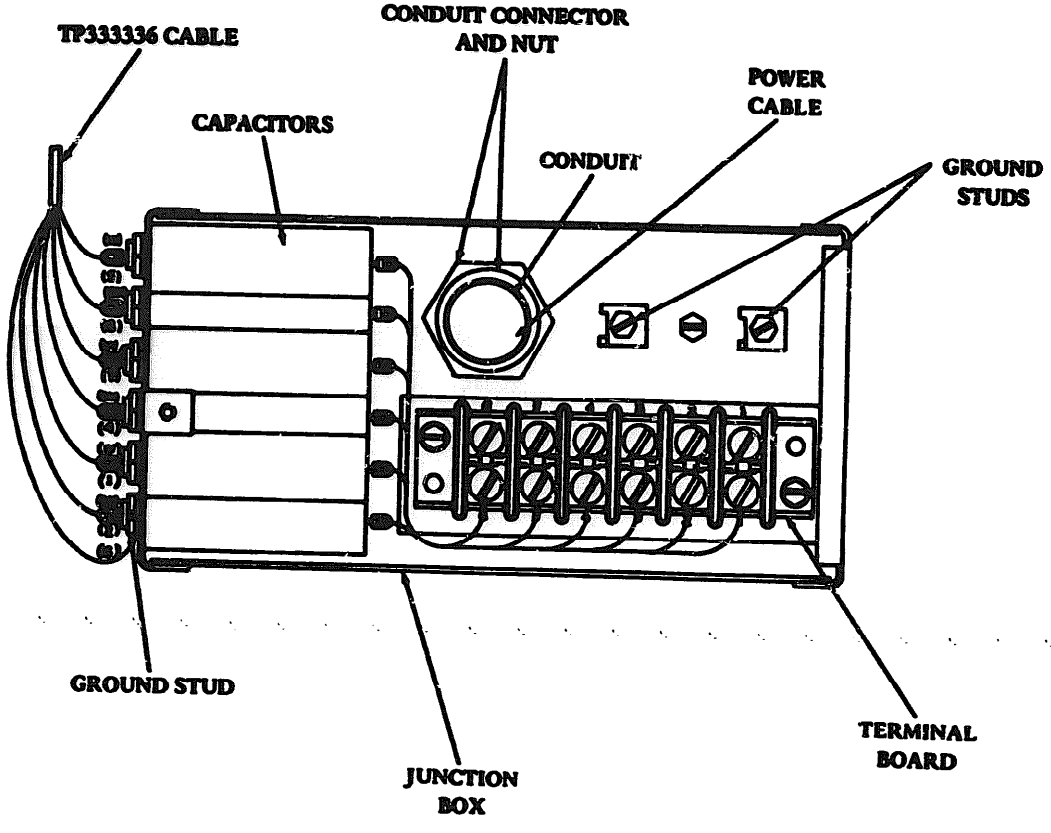

Figure 6 - Junction Box Components

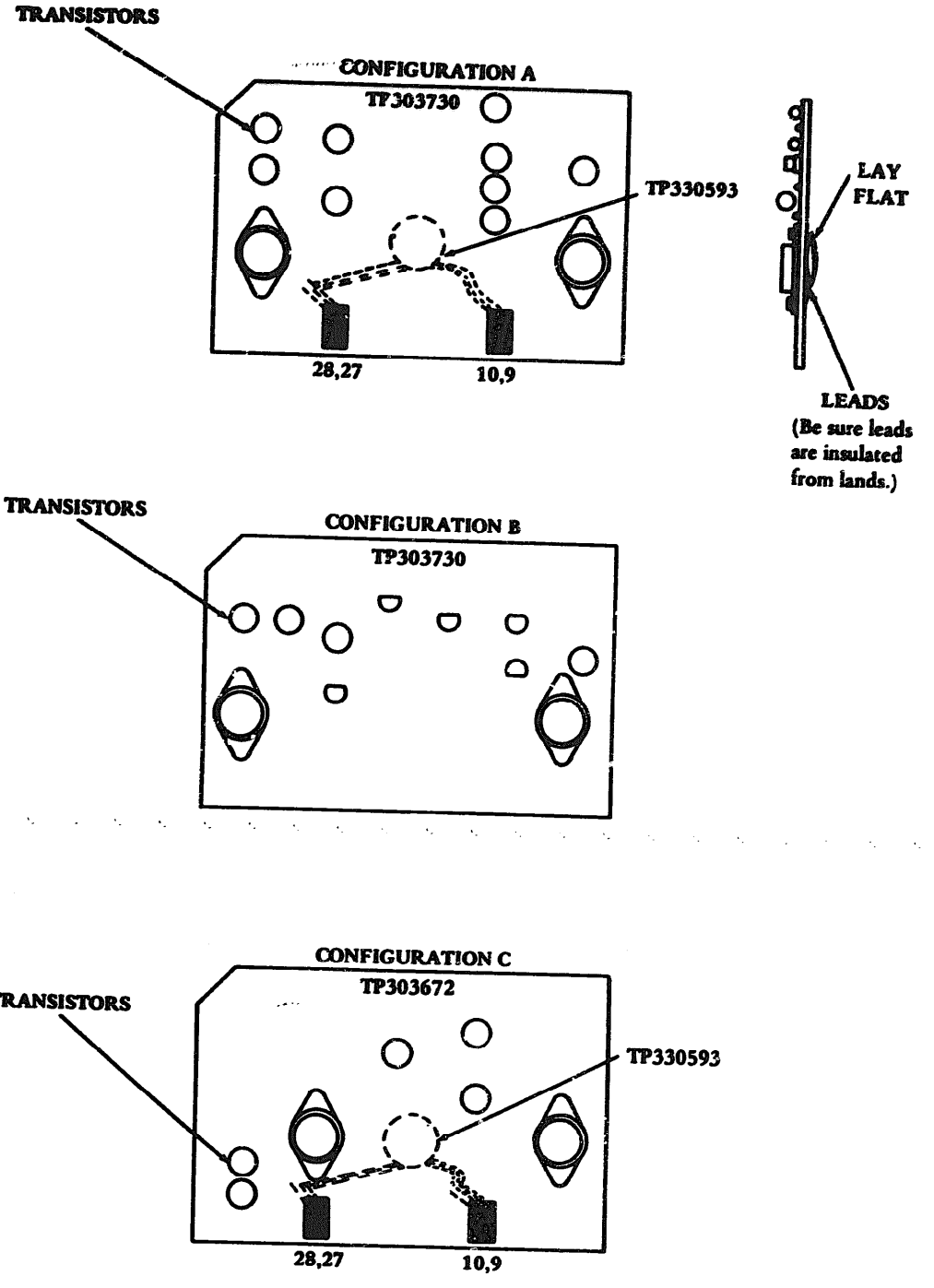

Figure 7 - Magnetic Driver Card Configurations

configurations shown in Figure 7. If the card conforms to configuration B nothing need be done to the card, replace it in the module.

3.13 If the card conforms to configuration A or C, remove nine cards from the locations given (3.12), from each module C. Place plastic tubing over each TP330593 capacitor lead, solder one lead to terminals 9 and 10 and the other lead to terminals 27 and 28 of the card (Figure 7).

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.

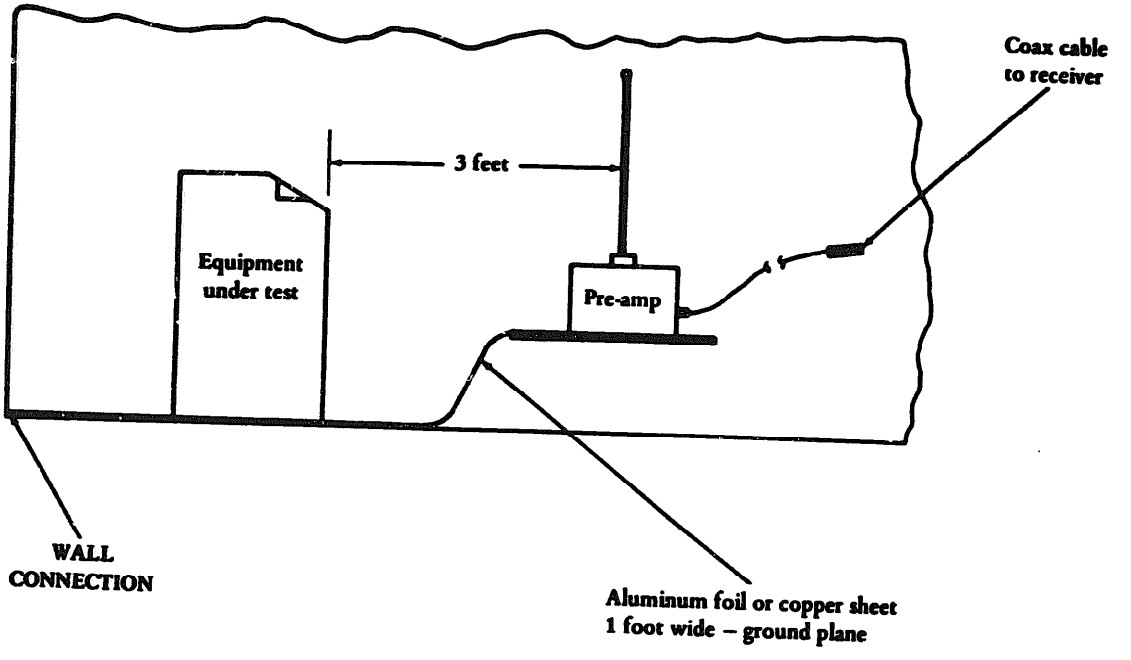

Figure 8- Vertical Rod Antenna Test Setup

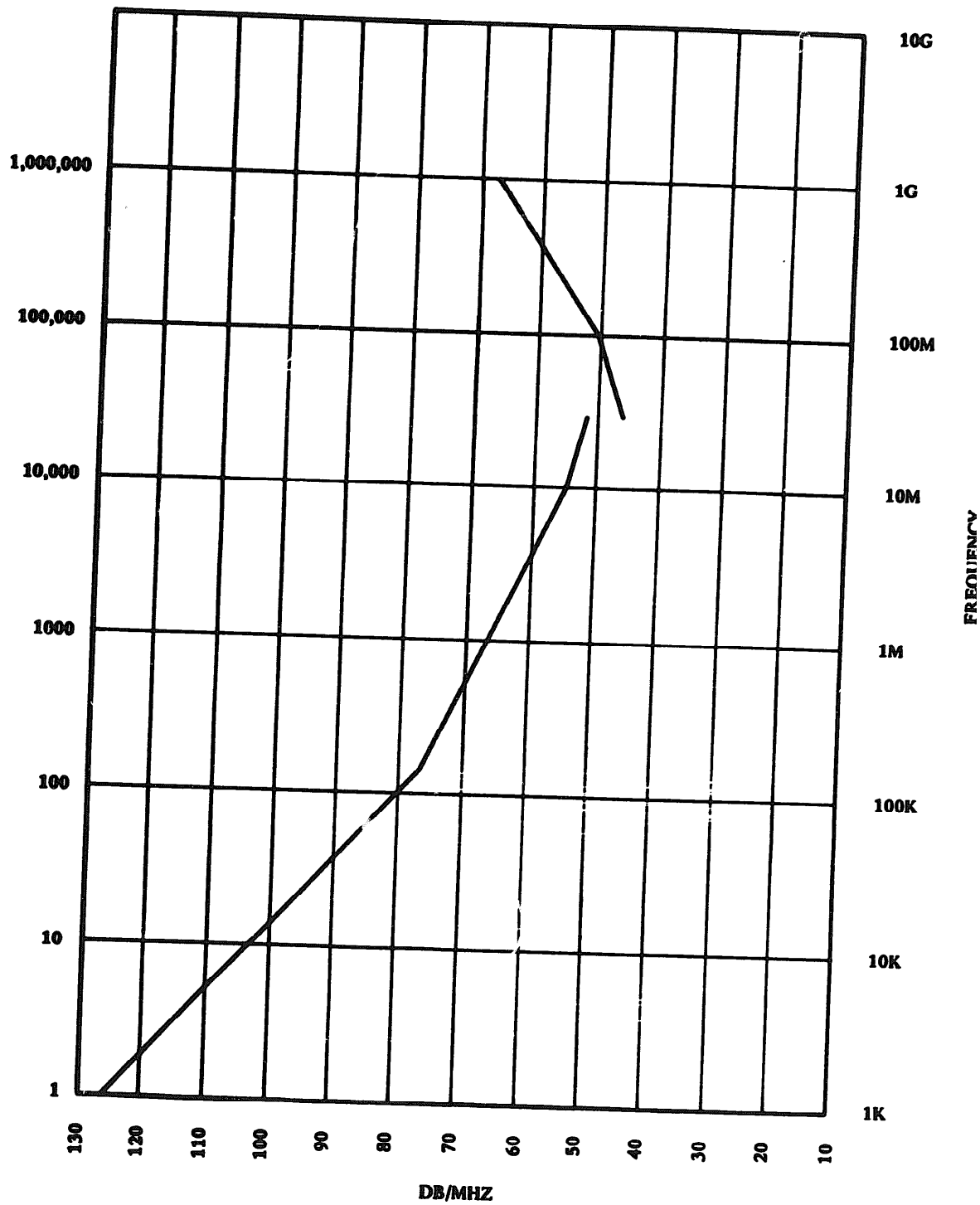

Figure 9 - Electrical Field Limits

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

4.03 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.

4.04

RFI TEST

4.05 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.

4.06 Place the cabinets in a row facing the antenna approximately 1 foot apart. Center the antenna 3 feet in front of the cabinet group. When making test with a vertical rod antenna setup, mount the cabinets and antenna on a common ground plane (aluminum foil or copper sheet 1 foot wide and appropriate length), connected to the shielded room walls (Figure 8). Electrical field limits are shown in Figure 9.