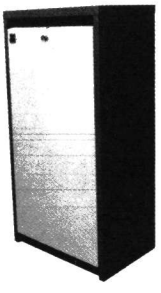
MOBILE RADIO

LBI30964A

INSTALLATION OF GENERAL ELECTRIC GE-MARC V™ TRUNKED MOBILE RADIO SOLID-STATE REPEATER STATION COMBINATIONS

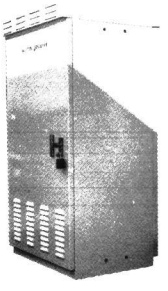
CABINETS

Three cabinet styles (Desk-Mate, Pole-Mount and Floor-Mount) are available to meet different system requirements.



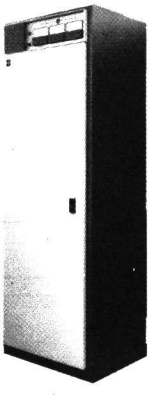
DESK MATE STATION

Desk-Mate – The Desk-Mate station cabinet can be conveniently located on either side of a desk to provide additional working area or in some other suitable location as required.



POLE MOUNT STATION

Pole-Mount – The Pole-Mount station cabinet is a weatherproof cabinet designed for outdoor use. The cabinet can be mounted on a pole, wall or a pedestal.



FLOOR MOUNT STATION

Floor-Mount – The Floor-Mount station cabinet can be located in the building adjacent to the antenna installation or in some other convenient area as required.

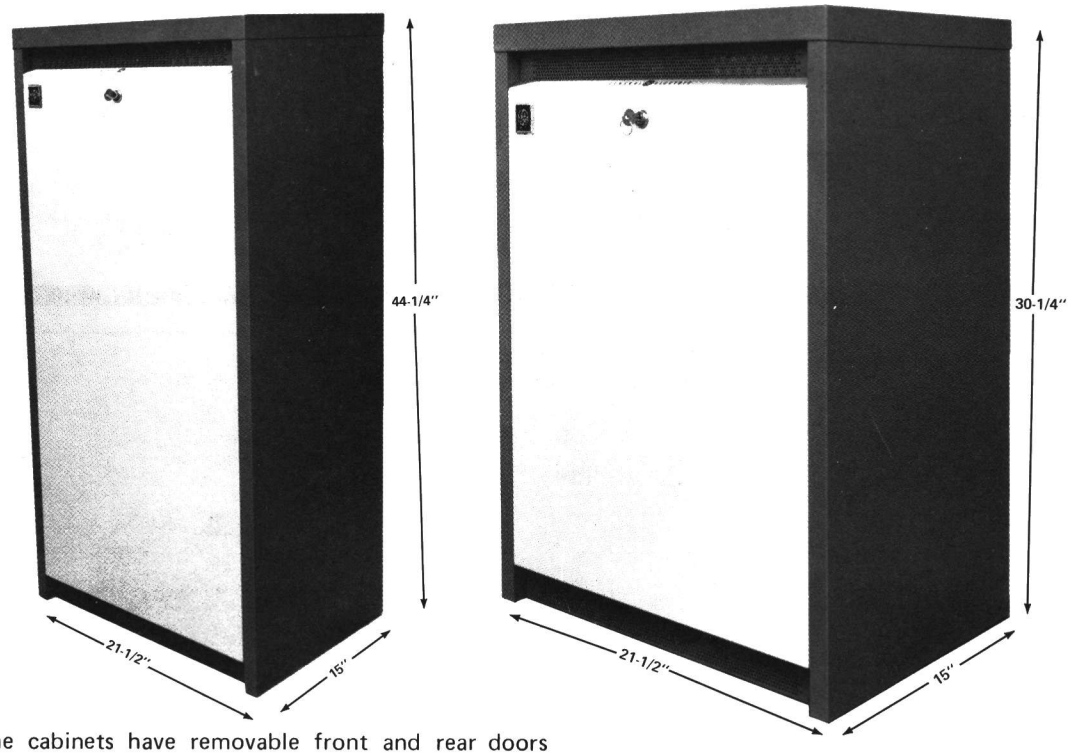
UNPACKING AND CHECKING EQUIPMENT

As you unpack the station combination, carefully inspect each item. If any damage has occurred to the equipment during shipment, file a claim with the freight carrier immediately.

Antennas, transmission lines and towers are ordered separately from the station combination. The installer will normally provide any miscellaneous hardware as part of his installation "package". The user must provide the AC power service of adequate capacity and regulation as well as any telephone lines that may be required for "Remote Control" operation.

DESK MATE CABINET INSTALLATION

Two Desk-Mate cabinets are available: the 30-inch cabinet contains 14 EIA rack units of space (24-1/2 inches); the 44-inch cabinet contains 22 EIA rack units of space (38-1/2 inches).

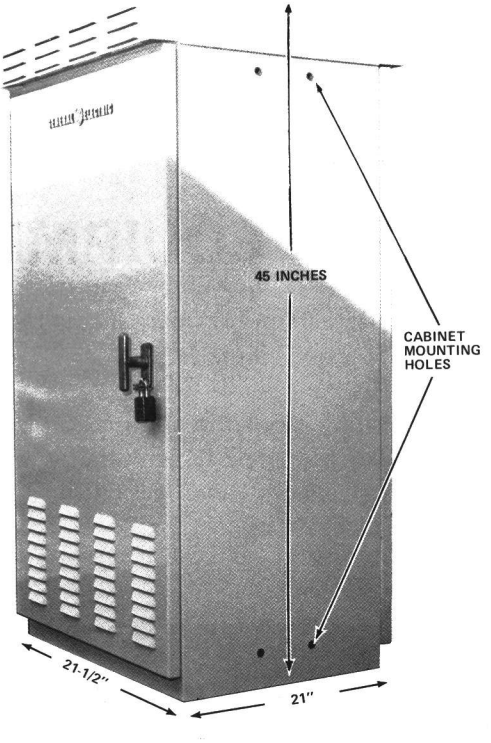


The Desk Mate cabinet can be placed adjacent to either side of a desk. The front and rear of the station should be kept clear of obstructions so that the serviceman can easily gain access to the transmitter, receiver and power supply components and to avoid obstructing the front and rear vents.

The cabinets have removable front and rear doors secured with individual locks. 3/4-inch holes are provided on the front and rear for cable entry.

POLE MOUNT CABINET INSTALLATION

Make certain the selected mount for the Pole-Mount cabinet will bear the weight of the station.



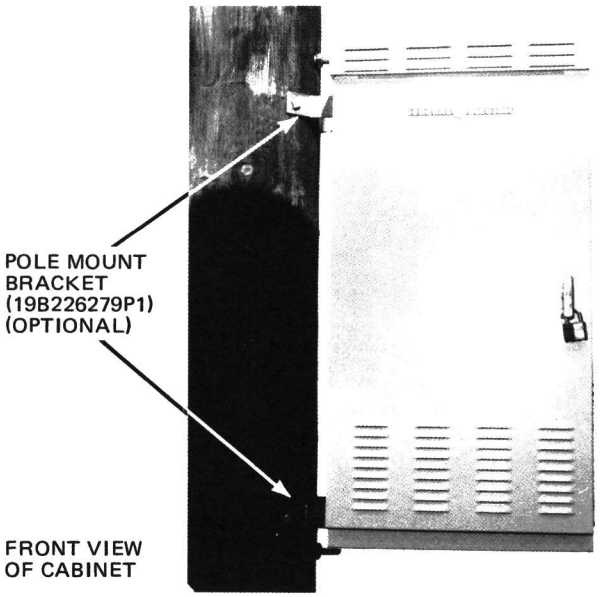
The brackets (19C320924P1) supplied with the cabinet permit mounting on the crossarm between two poles, on a wall (inside or outside) or some other vertical surface. The cabinet may also be mounted on a pedestal or platform.

Optional brackets (19B225279P1) are available for mounting the cabinet to a pole. The front and rear doors may be locked by a customer supplied padlock. The cabinet contains 22 EIA rack units of space (38-1/2 inches).

MOUNTING CABINET TO POLE

Determine which side of cabinet is to mount to pole. Minimum pole diameter is 12 inches. Remove four plastic plugs from cabinet mounting holes.

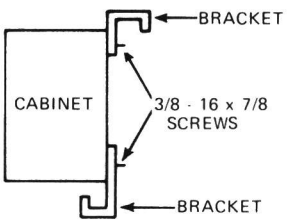
1. MOUNT THE TOP 19B226279P1 BRACKET TO THE POLE. BRACKET WILL ACCEPT 1/2-INCH HARDWARE.
2. SCREW TWO 3/8 - 16 x 7/8 INCH LONG BOLTS AND LOCKWASHERS (PART OF 19A130145G1 KIT) PART WAY INTO TOP MOUNTING HOLES.
3. MOUNT THE BOTTOM 19B225279P1 BRACKET TO THE BOTTOM MOUNTING HOLES IN THE CABINET USING TWO 3/8 - 16 x 7/8 INCH LONG BOLTS AND LOCK WASHERS. INSTALL SO THAT CABINET WILL BE SUPPORTED BY BRACKET.
4. MOUNT CABINET TO POLE BY PASSING HEAD OF 3/8 - 16 BOLT THROUGH HOLE IN TOP BRACKET.
5. TIGHTEN 3/8 - 16 BOLTS IN TOP BRACKET. INSTALL LAG SCREWS IN BOTTOM BRACKET AND SECURE TO POLE.



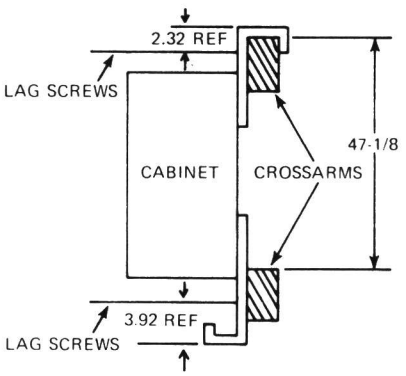
MOUNTING CABINET TO CROSSARMS

Determine which side of cabinet is to mount to crossarms. Remove four plastic plugs from cabinet mounting holes. !9C320924P1 brackets are supplied with cabinet.

1. ATTACH TWO 19C320924P1 MOUNTING BRACKETS TO CABINET USING 4-3/8-16 x 7/8 INCH LONG BOLTS AND LOCK-WASHERS SUPPLIED IN 19A130145G1 HARDWARE KIT. INSTALL BRACKETS AS SHOWN AT RIGHT.



2. INSTALL CROSSARMS WITH VERTICAL SPACING AS SHOWN BELOW. DIMENSIONS GIVEN WILL ALLOW MOUNTING LAG SCREW TO BE APPROXIMATELY CENTERED IN CROSSARMS IF STANDARD CROSSARM (3-4/16 x 4-7/8 INCHES, FINISHED SIZE) IS USED.

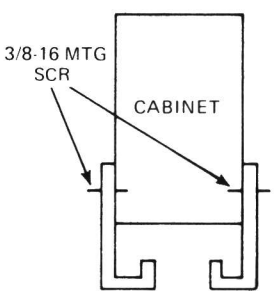


3. MOUNT CABINET OVER TOP CROSSARM AND INSTALL TWO LAG SCREWS IN EACH BRACKET IN LOCATION SHOWN. USE 3/8-INCH DIAMETER SCREWS. CENTER LINE OF LAG SCREWS IS 47.51 INCHES. CAUTION MUST BE USED IF CROSSARM SIZE IS LARGER THAN 4-7/8 INCHES BECAUSE OPENING OF CABINET DOOR MAY BE BLOCKED.

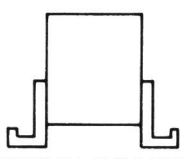
MOUNTING CABINET TO PLATFORM OR PEDESTAL

Remove four plastic plugs from bottom of cabinet, two from each side.

1. ATTACH TWO 19C320942P1 MOUNTING BRACKETS TO CABINET USING 4-3/8-16 X 7/8 LONG BOLTS AND LOCK WASHERS (SUPPLIED IN HARDWARE KIT 19A130145G1) AS SHOWN BELOW.



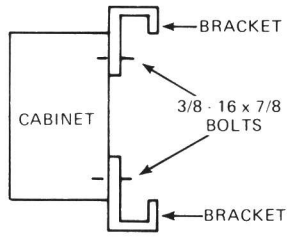
2. LAYOUT MOUNTING HOLES FOR BRACKETS BY PLACING CABINET IN POSITION AND MARKING HOLES. 3/8-INCH HARDWARE IS USED IN BRACKETS. PLACE CABINET IN POSITION AND BOLT DOWN.



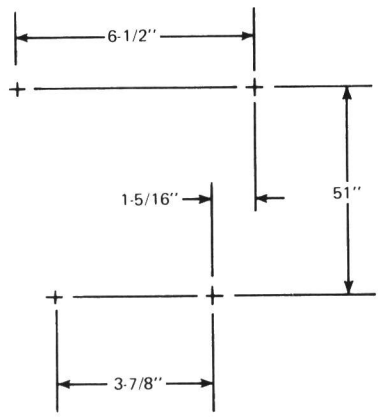
MOUNTING CABINET TO WALL

Determine which side of cabinet is to mount to wall. Remove four plastic plugs from cabinet mounting holes.

1. ATTACH TWO 19C320942P1 MOUNTING BRACKETS TO CABINET USING 4-3/8- 16 x 7/8 LONG BOLTS AND LOCKWASHERS (SUPPLIED IN HARDWARE KIT 19A130145G1) AS SHOWN AT RIGHT.



2. LAYOUT THE FOLLOWING HOLE PATTERN ON THE WALL.

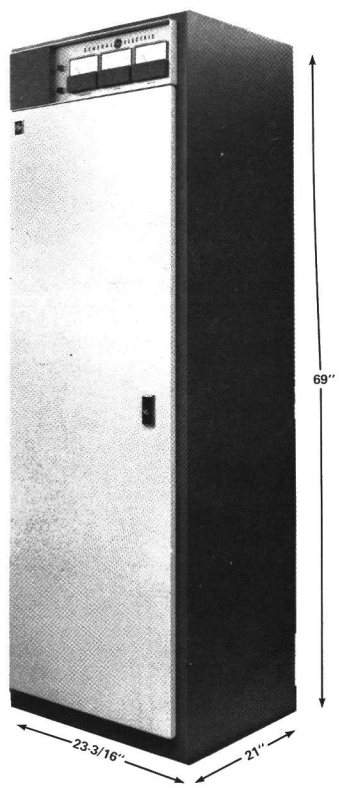


3. DRILL AND INSTALL ANCHORS IF REQUIRED. BRACKETS WILL ACCEPT 3/8 INCH BOLTS OR SCREWS. INSTALL BOLTS AND WASHERS IN TOP MOUNTING HOLES. ALLOW 3/8-INCH TO 1/2 INCH TO PROTRUDE FROM WALL.

4. MOUNT CABINET TO WALL. TOP BRACKET SCREWS WILL ACCEPT SLOTS IN TOP BRACKET. INSTALL SCREWS AND WASHERS IN WALL TO SECURE LOWER BRACKET. LARGE HOLES IN BRACKET FACILITATE ASSEMBLY. TIGHTEN ALL WALL MOUNTINGS.

FLOOR MOUNT CABINET INSTALLATION

STANDARD FLOOR MOUNT CABINET

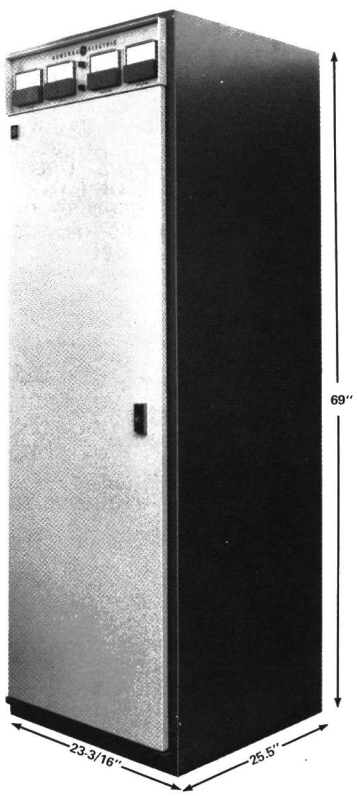


Be sure to allow sufficient space in front of—and behind—the cabinet to permit front and rear doors to open completely. Either door may be removed or inverted and hinged on the opposite side if desired.

Three knockouts are located along the rear bottom edge of the cabinet for cable entry. If it is desirable to bring the cables up through the floor, the cabinet can be situated over the power receptacle or cable hole on the floor. Conduit may be extended into the cabinet through one of the two 7-inch by 17-inch baseplate openings in the cabinet bottom. A cable entry hole (2" x 1") is located in the top rear of the cabinet to bring in the antenna cables or conduit from above the station. The front and back sides of the station must always be accessible for the serviceman.

Holes are located on the bottom for bolting the cabinet securely to the floor with 1/2" bolts. An FCC license holder (19A130126G1) is provided with the Floor Mount cabinet. This holder may be attached to the cabinet where desired using the adhesive backing on the holder.

HIGH POWER FLOOR MOUNT CABINET



POWE AND GROUND CO NECTIO S

A separate 15 or 20 Ampere, 121 VAC, 60 Hertz electrical circuit should be provided for the station. The 15-foot power cable supplied with the station is equipped with a standard 3-prong plug. One of the prongs grounds the station to protect personnel. Check the electrical code to be sure the power outlet complies with local ordinancies.

If a 242 VAC source is to be used for the station, jumper connections located on the hinged power supply front panel of the station power supply and the PA power supply must be changed. Refer to the Station Power Supply MAINTENANCE MANUAL and the PA and PA Power Supply MAINTENANCE MANUAL for these jumper changes. The plug on both power cables must be removed. The duplex outlet on the front of the station power supply must be disconnected, and the AC outlet strip mounted to the station frame should be removed. A customer furnished junction box must be provided to jumper both power cables to the 242 VAC source.

The station should be connected to a good earth ground using No. 14 or larger wire. A ground stud is provided on all cabinets for a separate cabinet ground. Use No. 14 or larger wire for connecting the cabinet to building ground.

NOTE: **After the ground lead from the power cable is connected to the building ground, check for continuity between building ground and the cabinet.**

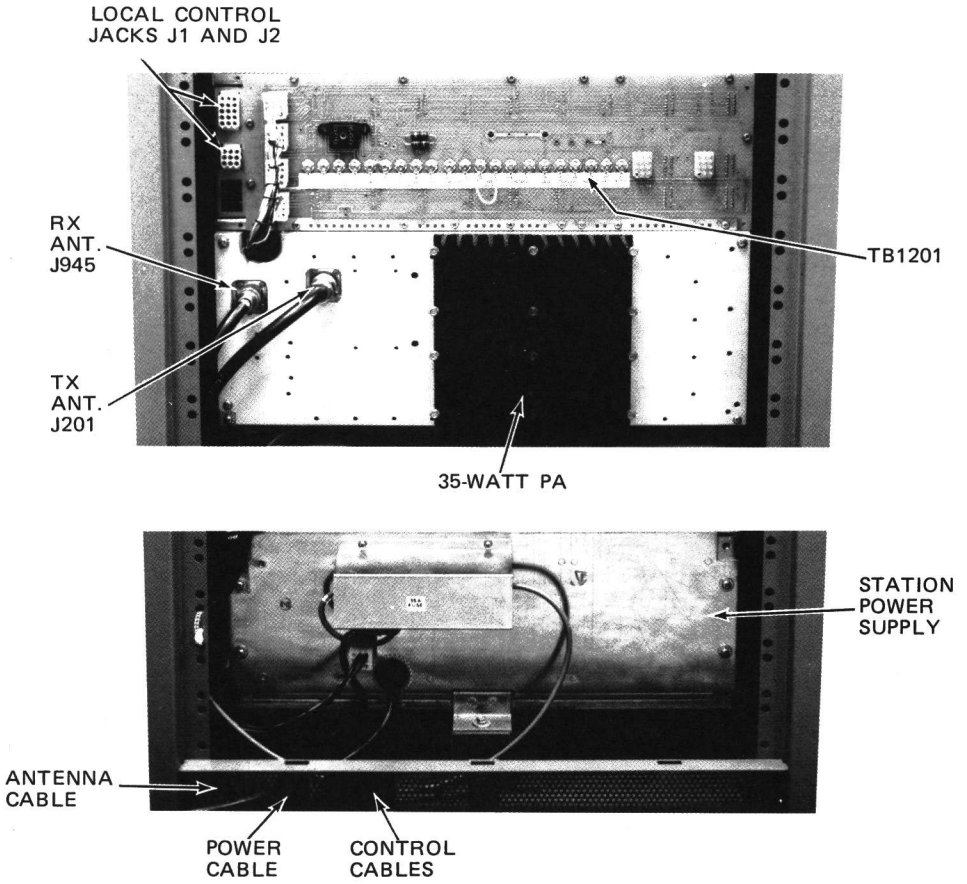
POLE-MOUNT POWER & GROUND CONNECTIONS

121-VAC Remove AC duplex receptacle cover and connect a No. 12 three-wire AC cable to its terminals. Connect black (hot) wire to copper terminal, the white wire to white terminal, and the ground wire to green terminal.

Connect AC plug from chassis into AC duplex receptacle.

242-VAC Make modifications and connections as outlined for the Desk Mate and Floor Mount cabinets.

35-WATT REPEATER CABLE CONNECTIONS

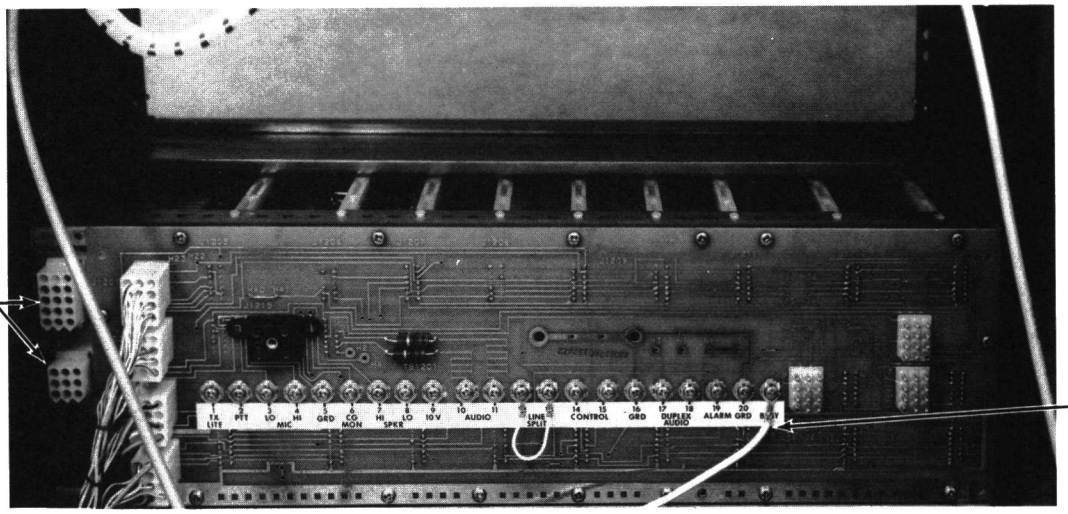


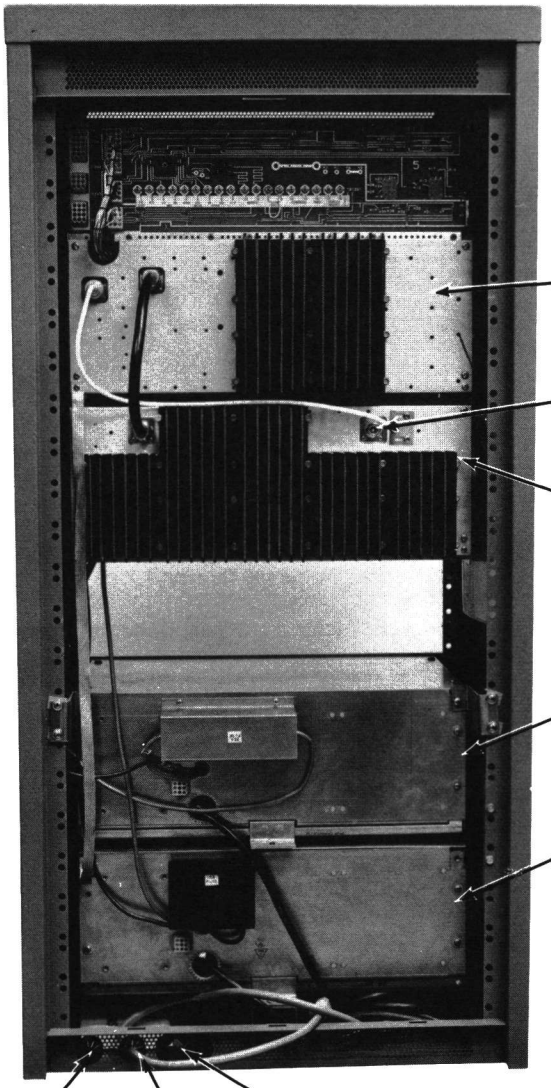
Route the antenna transmission line(s) through hole in cabinet and connect to ANT connector in PA assembly or Duplexer (if used).

Route the telephone pair from remote unit or local control cable through oval hole in base of cabinet. Connect remote cables to TB1201 as shown in Remote Control Manual. Connect local control cable P1102 to J1 and P1101 to J2.

Connect power cable to the power source.

90-WATT RE EATER CABLE CONNECTIONS



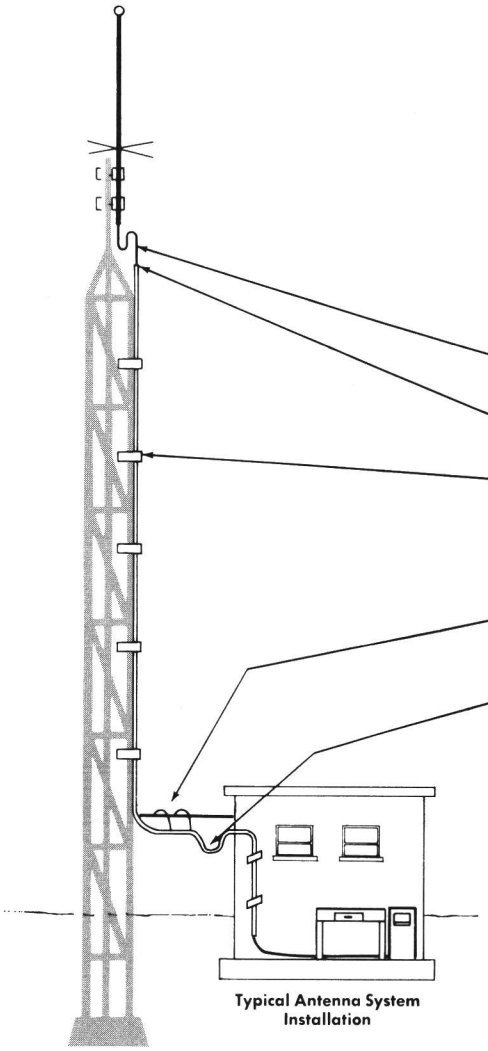


NOTE:
Connecting all BUSY terminals on the Repeater Mother Boards together allows disabling the time out function when any Repeater is not busy. Omission of this interconnection between BUSY terminals allows each Repeater to time out independently.

Route the antenna transmission line(s) through hole in cabinet and connect to ANT connectors or Duplexer (if used). Route the telephone pair from remote unit or local control cable through oval hole in base of cabinet. Connect remote cable to TB1201 as shown in Remote Control Manual. Connect local control cable P1102 to J1 and P1101 to J2. Connect power cable to the power source.

ANTENNA SYSTEM REQUIREMENTS

To supplement the manufacturer's instructions, the following hints will be valuable to you when installing your antenna.



Typical Antenna System Installation

- Antenna should not be located in an area of a strong "electrical noise". It should be located at least several hundred feet from noise caused by: high tension power lines, internal combustion engines, heavy electrical machinery, and other "radio-frequency devices".
- Check transmission line and connectors for opens and shorts before installing.
- Leave some slack between top of the transmission line and antenna.
- Tape, or otherwise protect in-line fittings from weather.
- Clamp the line to the tower every five feet.
  - Use wraplock on Heliax® or RG-17/U type cable.
  - Use vinyl tape on Foamflex® or RG type cable.
- Use "messenger" cable to support transmission line from tower to radio building, if distance is more than eight feet.
- Make a "drip-loop" in the transmission line just before line enters the building.
- Check continuity between transmission line ground and building ground before transmission line is attached to station. They should be at the same potential.
- Keep transmission line away from all sharp edges. Do not make sharp bends.
- Upon completion of antenna installation, measure and record the antenna system V S W R at the transmitter antenna connector.

CAUTION

The use of any ferromagnetic material, such as nickel-plating, stainless steel, Invar or Kovar, must be avoided in multi-carrier systems utilizing single transmit/receive antennas. The presence of several high-power signals may produce intermodulation products that lie in the receive band. All connectors on filters and cables in the common transmitter-antenna path should be **silver-plated brass.**

FINAL CHECKS BEFORE PLACING YOUR STATION IN OPERATION

After completing the installation of your station, the following final operations should be performed:

- Final adjustment should be made to the receiver and transmitter. Transmitter adjustments must be made by a 1st or 2nd Class Radiotelephone or Radiotelegraph licensed electronic technician. Instructions for making these adjustments are included in the station Maintenance Manual. The adjustments include:

Transmitter
- final tuning and loading
- deviation and frequency checks
- plate power input

Transmitter measurements should be entered in the permanent station records along with the signature and license number of the technician.

Receiver
- Matching to antenna.

Instructions for making these adjustments are included in the Maintenance Manual for the Two-Way Radio.

Be sure that a RADIO TRANSMITTER IDENTIFICATION form (FCC 452-C or General Electric Form NP270303) is filled out and attached to the transmitter.

GENERAL ELECTRIC COMPANY • MOBILE COMMUNICATIONS DIVISION
WORLD HEADQUARTERS • LYNCHBURG, VIRGINIA 24502 U.S.A.

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