Installation Manual

MDX™ & ORION™
WALL MOUNT STATION

ERICSSON

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NOTICE!

This manual covers Ericsson and General Electric products manufactured and sold by Ericsson Inc.

NOTICE!

Repairs to this equipment should be made only by an authorized service technician or facility designated by the supplier. Any repairs, alterations or substitution of recommended parts made by the user to this equipment not approved by the manufacturer could void the user's authority to operate the equipment in addition to the manufacturer's warranty.

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PLANNING SPECIFICATIONS

Dimensions (H x W x D)	21 1/4" x 22 1/2"" x 6 7/8"
Weight	66 pounds w/MDX radio 58 pounds w/ORION radio
Temperature	-30°C to +60°C (-22°F to +140°F)
AC Power Inputs	121-242 VAC, ±20%, 50/60 Hz (Normally shipped wired for 121 VAC.)
Power Requirements	Receive: 60.5 watts/0.5A Transmit: 399 watts/3.3A (low power) Transmit:(121 VAC) 847 watts/7A (high power)

PLANNING YOUR INSTALLATION

STATION LOCATION

The Weatherproof Wall Mount Station can be installed in your office, warehouse, garage, or even outdoors. Be sure that the selected location is strong enough to hold the weight of the station (approximately 70 pounds). When an outside location is selected for your station, it is recommended that the cabinet be mounted so that the cabinet door faces away from the prevailing wind for maximum protection against weather. The station should always be accessible for maintenance and servicing. When the station is wall mounted, be sure that the cabinet is mounted at least 1-inch above the floor or other flat surface to ensure adequate ventilation. The cabinet is equipped with a key lock to prevent unauthorized entry.

POWER AND GROUND REQUIREMENTS

Normally the station operates from 121 VAC. However, the station may be operated from a 242 VAC power source if it has been wired for 242 VAC operation as shown on the power supply Schematic Diagram in the Power Supply Maintenance Manual.

The station should be connected to a good earth ground. A No. 12 stranded flexible wire should be connected between the hinged cabinet rack and a ground rod--or if inside, to a cold water pipe--to ensure a good ground. In addition the cabinet should be grounded to the hinged rack to protect service personnel and minimize hum currents. This can be done by installing a 1 inch wide flexible tinned copper bond across the hinge and bolting each end of the bond to the frame. Before drilling the screw holes in the bond, apply solder across the width of the bond where the holes are to be drilled.

Check your local electrical code to be sure that you comply with all local ordinances.

ANTENNA REQUIREMENTS

The antenna should be located as close as possible to the Wall Mount Station, so that the antenna transmission line can be kept short. Receiving and transmitting efficiency decreases as the length of the antenna transmission line increases.

The antenna, tower, other antenna supports, and transmission line are ordered separately from the station, but proper installation of the antenna is essential for proper operation of the radio system. The system will not perform satisfactorily unless the antenna is installed in accordance with good engineering practice. Installation instructions are furnished with the antenna. A typical antenna system installation is shown in Figure 1.

CAUTION

In all multi-carrier systems, the use of any ferromagnetic material, such as nickel-plating, stainless steel, Invar or Kovar, must be avoided. The presence of several high power signals will produce fifth-order intermodulation products that lie in the base receiver band. All connectors, filters, and cables, connected in the transmitter-combiner-antenna path must be examined to prevent the use of ferromagnetic material. Silver plated brass is the preferred material.

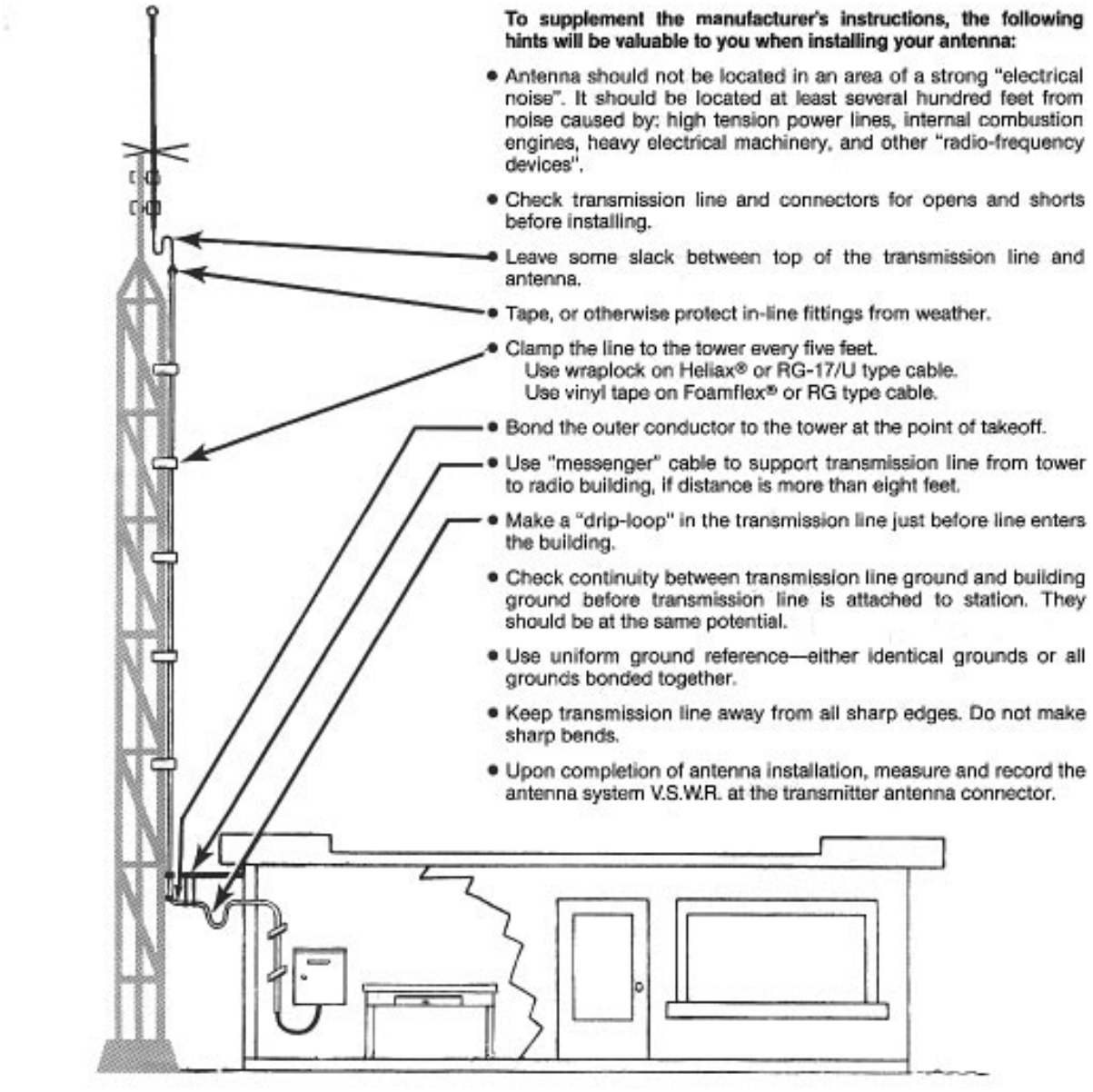


Figure 1 - Typical Antenna System Installation

INSTALLING YOUR STATION

The "swing-out" chassis should be swung out to simplify cabinet mounting and the drilling of cable entry holes in the cabinet.

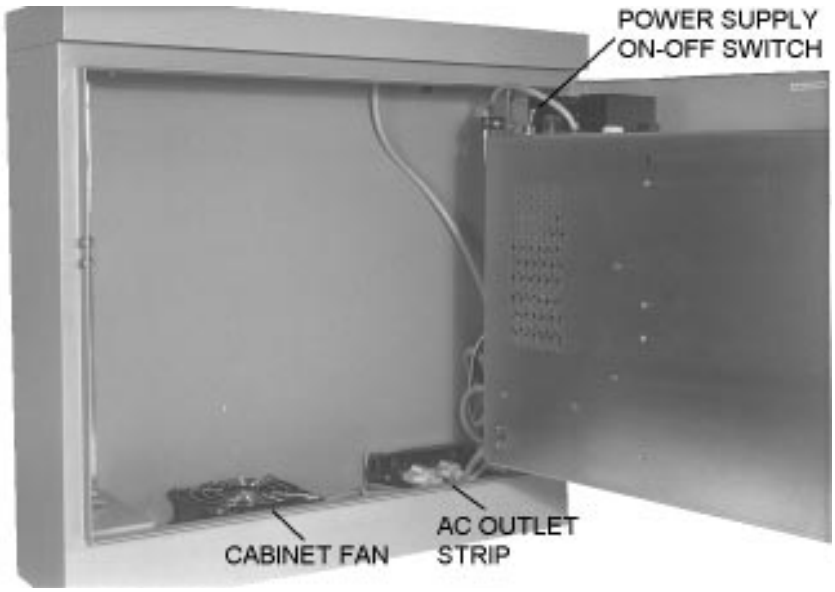


Figure 2 - Wall Mount Station (Chassis View)

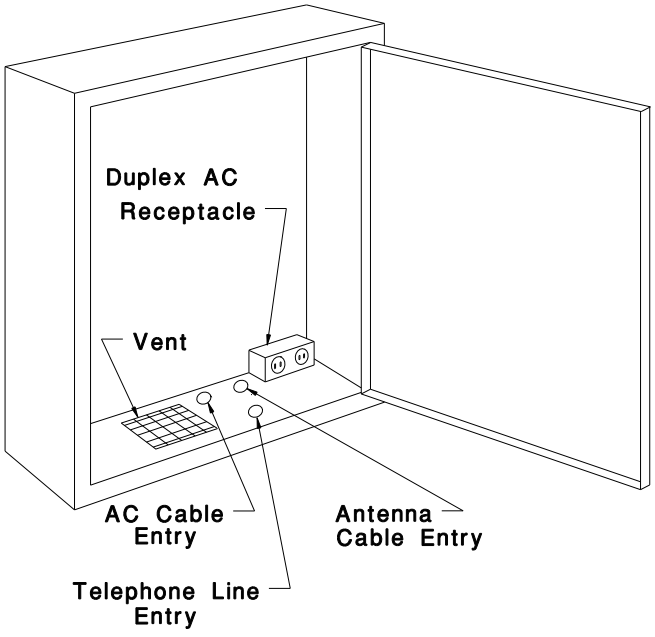


Figure 3 - Cable Entry Holes

CABLE ENTRY HOLES

Two access holes are located in the bottom of the cabinet for installing the antenna and AC power cables. A separate 1/2 inch hole for the telephone lines may be drilled by the installer, or the telephone lines can be brought in through the antenna cable entry hole. (See Figure 3 for the location of cable entry holes.) Attach a 1/2 inch conduit or strain relief cable clamps in each hole (clamps or conduit are supplied by the owner or installer).

ANTENNA CABLE CONNECTOR ASSEMBLY INSTRUCTIONS

One of two right angle adapters are used with the MDX Wall Mount Station to connect the radio to the antenna cable. A UHF adaptor with reducer (Part No. 19A705237P1) is used in all LB, HB,and UHF radios. A type N connector (Part No. 19A134115P2) is used in all 800/900 MHz applications. The adaptor allows the antenna cable to be routed out the back of the station cabinet under the top cover. Illustrated assembly procedures are given below.

NOTE

Before terminating the cable pass it through the cable entry hole in the bottom of the station (Figure 3).

To Assemble UHF Adaptor 19A705237P1:

1. Cut end of cable even and trim dielectric, shield, and vinyl jacket to dimensions shown below in Figure 4.

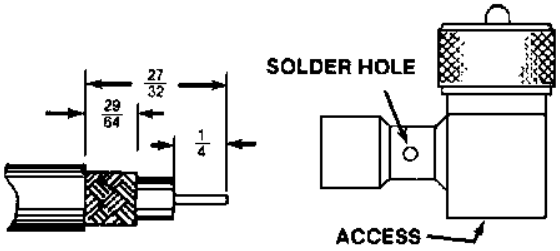
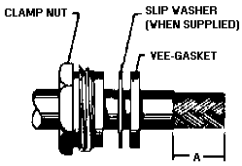


Figure 4 - UHF Adaptor

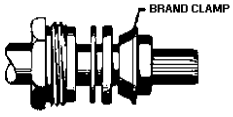
2. Insert cable into the connector and solder the center conductor to grooved contact. Close the access opening.
3. Solder the braided shield through solder holes. Use enough heat to bond braid to shell.

To Assemble Type N (800MHz) Adaptor 19A134115P2

1. Cut cable and square. Place clamp nut, slip washer, (when supplied), and gasket over jacket. Remove vinyl jacket to 13/32 inch as shown.

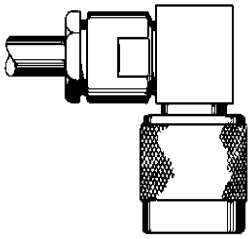


2. Place braid and taper forward. Place braid clamp over braid against jacket cut.



3. Fold braid back over braid clamp and trim as shown. Remove dielectric to dimension B (.216 inch). Cut center conductor to dimension C (3/32 inch).

4. Thread assembly into connector, and lock securely. Vee gasket must be split by braid clamp.



5. Solder center conductor in contact groove. Close access opening.

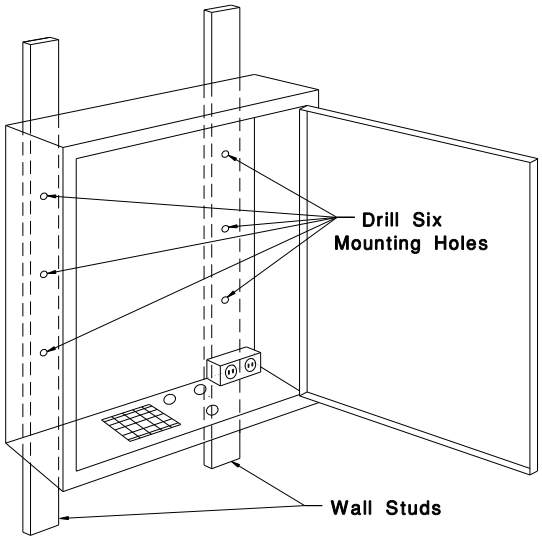


Figure 5 - Installation To Wall

TYPICAL WALL MOUNT INSTALLATION

1. Measure distance between the center of wall studs where station is being mounted as shown in Figure 5. (Be sure the wall can support full weight of station.)
2. Mark off the measurement inside cabinet.
3. Drill six (6) 1/4 inch mounting holes in cabinet.
4. Using cabinet as a template, drill six 3/16 inch starting holes in studs.
5. Mount cabinet using the No. 14 screws and flat washers supplied.
6. Bring in antenna cable and telephone lines.
7. Re-install chassis mounting frame in cabinet.
8. Connect station to AC power as follows:

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 a No. 12 wire from the "swing-out" chassis to the remaining green terminal.

Connect AC plug from chassis into AC duplex receptacle.

242-VAC Make modifications and connections as shown on the power supply Schematic Diagram in the Power Supply Maintenance Manual. **DO NOT** connect 242-VAC to the duplex receptacle.

9. Connect antenna cable to radio chassis antenna jack.

REMOTE CONNECTIONS

Remote stations can be equipped with Tone, or EDACS remote control. Refer to the appropriate equipment manual for adjustment instructions.

Connect the control lines to J11, located on the chassis. The mating connector for J11 is Amp # 5-641337-4. Amp-Tool # 231648-1 is required. If Amp connector and tools are not available, disconnect the wires of J11/W10 from J1/TB1 of the 686 Remote Board, and secure to prevent shorts.

TONE REMOTE: Connect the station control lines to J1-3 and J1-4 on the Tone Remote (19A704686P6) Board. J1-1&2 are ground.

EDACS REMOTE: Since tone control is used, standard phone lines may be used. Connect the station control lines to TB1-2 thru 5 on EDACS Remote Board (19A704686P8).

MICROPHONE OPTION

The microphone is sufficient for all required tests. An optional Desktop microphone is also available.

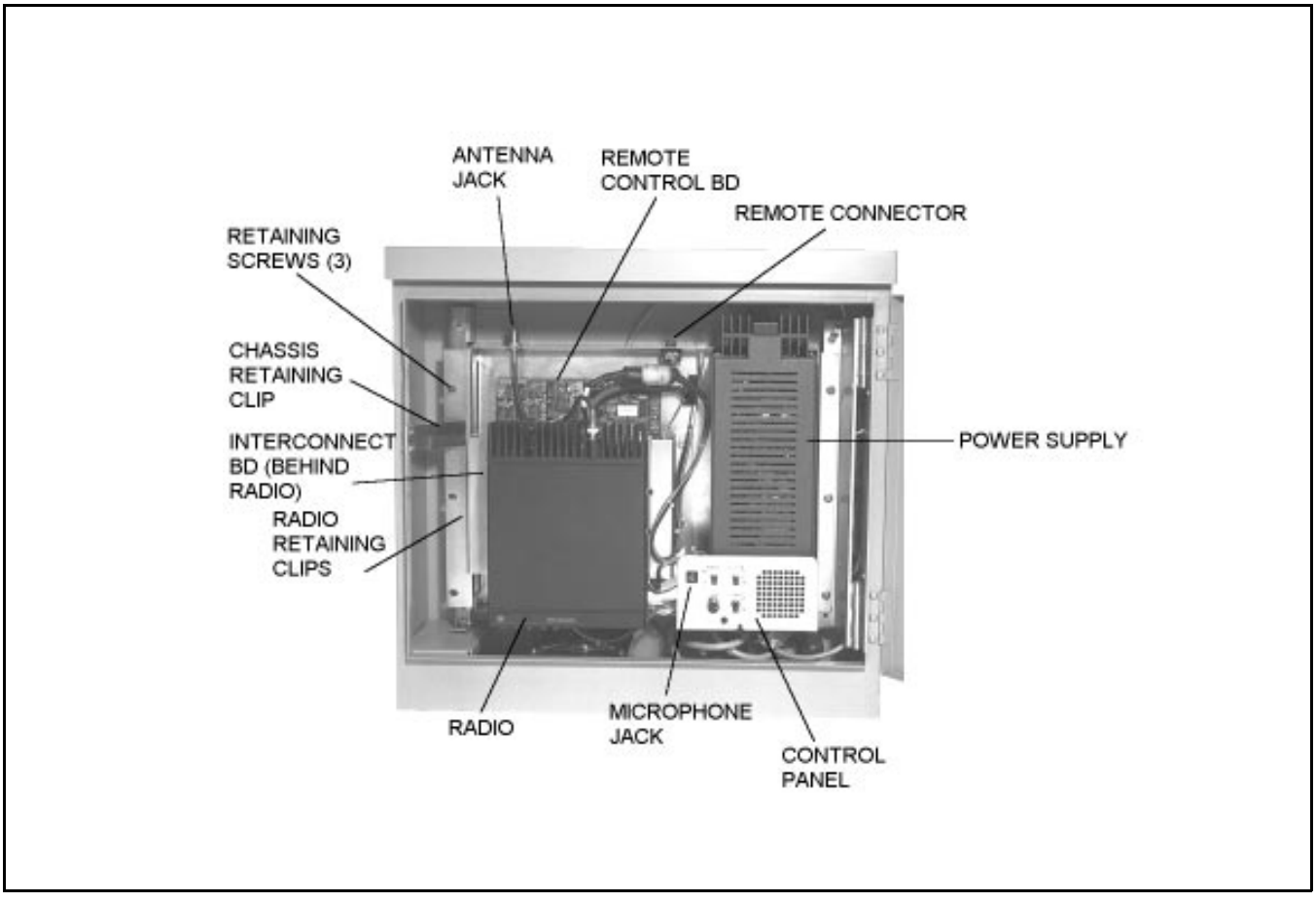


Figure 6 - Wall Mount Station (Showing MDX Radio)

TELEPHONE LINE REQUIREMENTS

Local/Remote Stations require the addition of telephone lines between the station and the Remote Control Console (see Methods 1 through 3 below).

When choosing one of the following methods, consider both the cost and performance. One of the methods may be available at a decidedly lower rate. Local telephone companies sometimes offer no choice of these methods, but will only provide an audio pair and a control pair (Method 3).

METHOD	DESCRIPTION	ADVANTAGES OR DISADVANTAGES
1	One metallic pair: for both audio and control voltages with control voltage from line to line.	Economical; dependable where earth currents may be large; slight keying clicks will be heard in paralleled Remote Control Units. In most applications, preferred over Method No. 2.
2	One metallic pair: for both audio and control voltages with control voltages from line to ground.	Economical; earth ground currents may result in interference with control functions; keying clicks minimized. Good earth to ground required at station and all control points.
3	Two telephone pairs; one for audio voltage and one for control voltage (metallic pair).	Provides best performance; keying clicks cannot be heard. Requires two pair.

FINAL CHECKS BEFORE PLACING YOUR STATION IN OPERATION

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

- Final adjustments should be made to the receiver and transmitter. Transmitter adjustment must be made by a certified electronics technician. Instructions for making these adjustments are included in the applicable Maintenance Manual.

The adjustments include:

- Measure and record forward and Reflected Power
- Set transmitter to rated power output.
- Measure the frequency and modulation.

NOTE

Transmitter measurements should be entered in the permanent station record.

- Give the alignment tools (packed with the unit) to the maintenance technician.
- CAUTION - **Intercom**, and **Speaker** switches must be left in the **OFF** position, and the **Remote** switch in the **ON** position when leaving station in operation.

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