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### Scope of Manual

This manual is intended for use by experienced technicians familiar with similar types of equipment. It covers the procedures for installing the GTX Mobile Radio.

### How to use this Manual

Before you start installing the radio, read the information on licensing, power protection circuitry, and installation planning. While installing, ensure that you are using the tools given under "recommended tools for installation". This manual covers the procedures for installing the Antenna Mounting, Mounting Trunnion, DC Power Cable, and optional External Speaker.

### Technical Support

To obtain technical support, you may call Motorola's Product Services. When you call, we ask that you have ready the model and serial numbers of the respective radio or its parts.

### Service Policy

If malfunctions occur within 30 days that cannot be resolved over the phone with Product Services, a defective major component should be returned. You must obtain authorization from Product Services before returning the component.

### Ordering Replacement Parts

You can order additional components and some piece parts directly through your price pages. When ordering replacement parts, include the complete identification number for all chassis, kits, and components. If you do not know a part number, include with your order the number of the chassis or kit which contains the part, and a detailed description of the desired component. If a Motorola part number is identified on a parts list, you should be able to order the part through Motorola Parts. If only a generic part is listed, the part is not normally available through Motorola. If no parts list is shown, generally, no user serviceable parts are available for the kit.

**30-Day Warranty  
Technical Support  
Product Services**  
8000 W. Sunrise Blvd.  
Plantation, FL 33322 USA

**Motorola Radio Support Center**  
Attention: Warranty Return  
3760 South Central Avenue  
Rockford, IL 61102 USA  
1-800-227-6772 (U.S. & Canada)

**Major Component Repair  
Motorola Radio Support Center**  
3760 South Central Avenue  
Rockford, IL 61102 USA

**Motorola Parts  
Worldwide System and  
Aftermarket Products Division**  
Attention: Order Processing  
1313 E. Algonquin Road  
Schaumburg, IL 60196

**Worldwide System and  
Aftermarket Products Division**  
Attention: International Order Processing  
1313 E. Algonquin Road  
Schaumburg, IL 60196

**Customer Service**  
1-800-422-4210  
1-847-538-8198 (FAX)

**Parts Identification**  
1-847-538-0021  
1-847-538-8194 (FAX)

### Exposure to Radio Frequency Energy

Your Motorola radio is designed to comply with the following national and international standards and guidelines regarding exposure of human beings to radio frequency electromagnetic energy:

- United States Federal Communications Commission Code of Federal Regulations; 47 CFR part 2 sub-part J.
- American National Standards Institute (ANSI) / Institute of Electrical and Electronic Engineers (IEEE) C95.

## Electromagnetic Interference/Compatibility

- Institute of Electrical and Electronic Engineers (IEEE) C95.1-1999 Edition.
- National Council on Radiation Protection and Measurements (NCRP) of the United States, Report 86, 1986.
- International Commission on Non-Ionizing Radiation Protection (ICNRP) 1998.
- National Radiological Protection Board of the United Kingdom, 1995.
- Ministry of Health (Canada) Safety Code 6. Limits of Human Exposure to Radiofrequency Electromagnetic Fields in the Frequency Range from 3 kHz to 300 GHz, 1999.
- Australian Communications Authority Radio-communications (Electromagnetic Radiation - Human Exposure) Standard 1999 (applicable to wireless phones only)

To assure optimal radio performance and to make sure human exposure to radio frequency electromagnetic energy is within the guidelines set forth in the above standards, always adhere to the following procedures:

## Electromagnetic Interference/Compatibility

### NOTE

Nearly every electronic device is susceptible to electromagnetic interference (EMI) if inadequately shielded, designed or otherwise configured for electromagnetic compatibility.

- To avoid electromagnetic interference and/or compatibility conflicts, turn off your radio in any facility where posted notices instruct you to do so. Hospitals or health care facilities may be using equipment that is sensitive to external RF energy.

## Operational Warnings

### *For Vehicles with an Air Bag*

### WARNING

Do not install a mobile radio in the area over an air bag or in the air bag deployment area. Air bags inflate with great force. If a mobile radio is installed in the air bag deployment area and the air bag inflates, the radio may be propelled with great force and cause serious injury to occupants of the vehicle.

## Potentially Explosive Atmospheres

### WARNING

Turn off your two-way radio when you are in any area with a potentially explosive atmosphere, unless it is a radio type especially qualified for use in such areas (for example, Factory Mutual Approved). Sparks in a potentially explosive atmosphere can cause an explosion or fire resulting in bodily injury or even death.

## Blasting Caps and Areas

To avoid possible interference with blasting operations, turn off your radio when you are near electrical blasting caps, in a blasting area, or in areas posted: "Turn off two-way radio". Obey all signs and instructions.

### NOTE

The areas with potentially explosive atmospheres referred to above include fueling areas such as: below decks on boats or chemical transfer or storage facilities; areas where the air contains chemicals or particles, such as grain, dust or metal powders; and any other area where you would normally be advised to turn off your vehicle engine. Areas with potentially explosive atmospheres are often but not always posted.

## Mobile Antenna Installation

### *Mobile Radio Operation and EME Exposure*

Observe the following caution and electromagnetic energy exposure (EME) statements when installing antennas:

### CAUTION

Use caution when installing antennas with mobile radio equipment using transmitter power of 7 W or greater. Install antennas only on metal bodied vehicles.

### NOTE

For low-power mobile radios (less than 7 W) there are no antenna type or installation restrictions.

To assure optimal radio performance and that human exposure to radio frequency electromagnetic energy is within the guidelines referenced in this document, transmit *only* when people outside the vehicle are at

least the minimum distance away from a properly installed, externally-mounted antenna.

Table 1-1 lists the minimum distance for several different ranges of rated radio power.

### Selecting an Antenna Site

1. Install the vehicle antenna *external* to the vehicle and in accordance with the requirements of the antenna manufacturer/supplier
2. The best mounting location for the antenna is in the center of a large, flat conductive surface. In almost all vehicles, mounting the antenna in the center of the roof will satisfy these requirements. A good alternative location is in the center of the trunk lid. If you use the trunk lid, ensure that the trunk lid is grounded by connecting grounding straps between the trunk lid and the vehicle chassis.
3. Ensure the antenna cable can be easily routed to the radio. Ensure that the antenna cable is routed separately and not in parallel to any other vehicle wiring or mobile radio cable wiring.
4. Check the antenna location for any electrical interference.

#### NOTE

Any two metal pieces rubbing against each other (such as seat springs, shift levers, trunk and hood lids, exhaust pipes, etc.) in close proximity to the antenna can cause severe receiver interference.

5. If the vehicle is equipped with an electronic anti-lock braking system (ABS), mount the antenna at the center of the roof or trunk lid and do not route the antenna cable near the ABS Modulator Box. Mount the radio as far away from the Modulator Box as physically possible. This minimizes radio interference to the modulator box from the radio.
6. Make sure the mobile radio antenna is installed at least one foot (30.48cm) away from any other antenna on the vehicle.

### Antenna Installation Procedure

1. Mount the antenna according to the instructions provided with the antenna kit. Run the coaxial cable to the radio mounting location. Unless specified otherwise by the antenna manufacturer/supplier, cut off the excess cable and install the cable connector.
2. Connect the antenna cable connector to the radio antenna connector on the rear of the radio. Refer to Figure 1-1.

### Completing the Installation

1. Mount the microphone clip to a convenient spot near your radio.
2. Your microphone has a telephone-type connector at the end of its cord. Plug the microphone into the control head connector.
3. To complete your radio installation, plug the power cable into the radio power connector. Refer to Figure 1-1.

### Control Station Antenna Installation

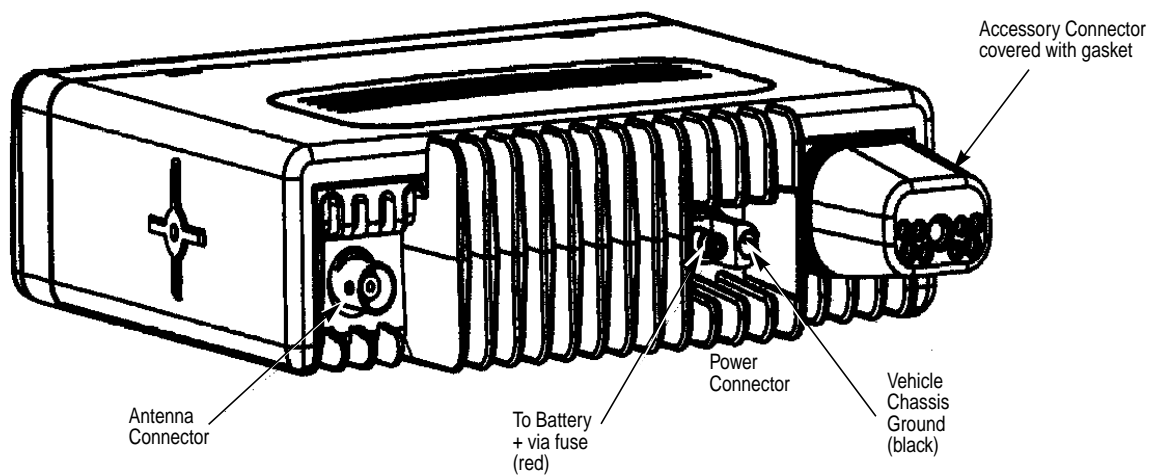
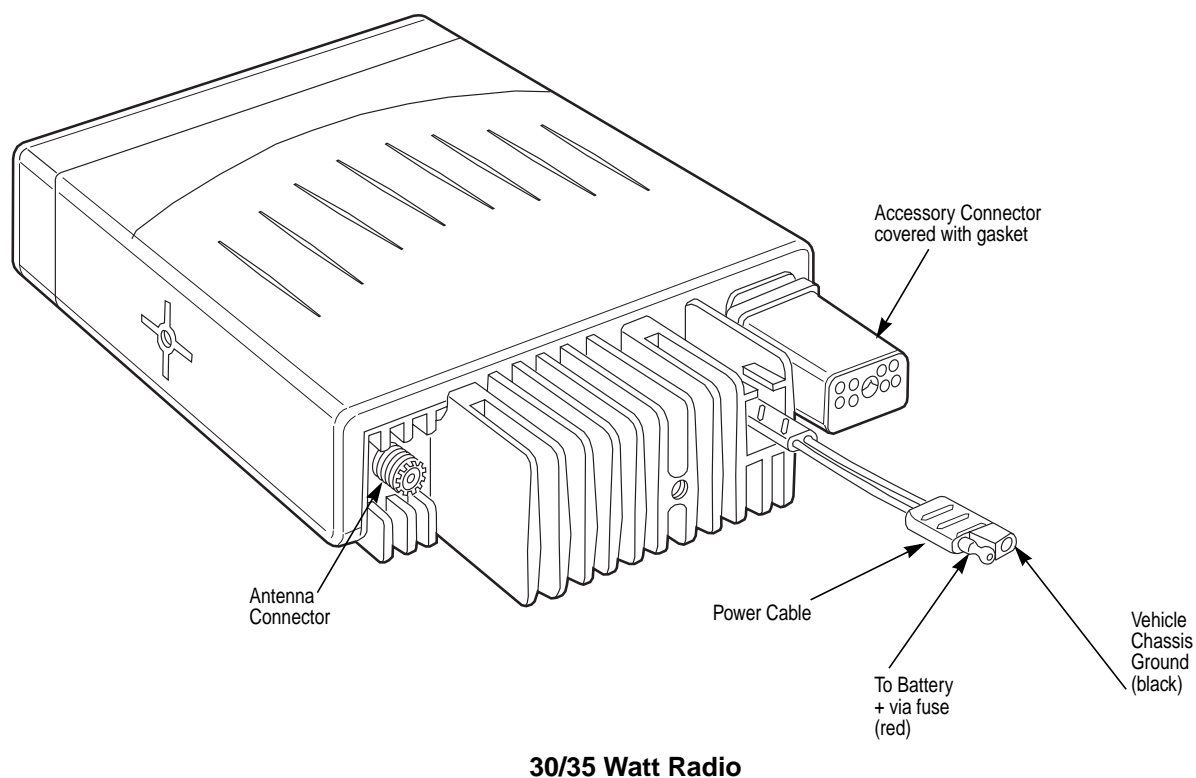
Mobile radio equipment is sometimes installed at a fixed location and operated as a control station. In such cases, the antenna installation must comply with the following requirements in order to assure optimal performance and make sure human exposure to radio frequency electromagnetic energy is within the guidelines set forth in the above standards:

- The antenna must be mounted outside the building.
- Mount the antenna on a tower if at all possible.
- If the antenna is to be mounted on a building, then it must be mounted on the roof of the top floor.
- If the antenna is to be co-located with other transmitting antennas, it is the responsibility of the licensee to manage the site in accordance with applicable regulatory requirements and may require additional compliance actions such as site survey measurements, signage, and site access restrictions.

Table 1-1. Rated Power and Distance

Rated Power of Vehicle-installed Mobile Two-Way Radios	Minimum Distance from Transmitting Antenna
7 to 15 W	1 Foot (30.5cm)
16 to 50 W	2 Feet (61cm)
More than 50 W	3 Feet (91.5cm)

## Mobile Antenna Installation

*Figure 1-1.*