

Trunked Mobile Radio System (TMR2)

TMR2 Mobile Installation Guide

Sponsoring Organization:
Province of Nova Scotia
Internal Services Department
Public Safety and Field Communications

March, 2019

Version # 1.2

TMR2 Mobile Installation Guide

Document Owner:

TMR2 PNS Office

Version	Date	Author	Change Description
0.1	January 24, 2014	AB	Initial draft prepared (notes provided by M. Boyle).
0.2	January 30, 2014	ND	Added section for installation in private vehicles.
0.3	February 3, 2014	MB	Various edits to each section.
0.4	February 4, 2014	MB	Addition of airbag deployment zone restrictions.
0.5	April 9, 2014	MB	Clarified 'center' mounting, added mirror mount.
1.0	September 16, 2014	AB	Version control updated to mark as approved.
1.1	May 21, 2015	TC	3.1 & 3.2 amended to reflect heavy equipment challenges.
1.2	March 15 2019	SH	Edits to move it from project mode to steady state
1.3	March 20 2019	SH	Added a questions/enquires section, and minor edits

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Purpose of Document

The purpose of this document is to outline installation guidelines for all TMR2 mobile radio installations. This document is intended to be read in conjunction with the *Motorola Installation Guide which is included with each mobile radio, the contents of which are also to be followed.* This document provides detailed descriptions of expectations for all mobile radio installations.

Objectives of Mobile Installation Guide

The overall goal of this mobile installation guide is to ensure all mobile installations are performed in a consistent manner for all vehicles.

The mobile installation guidelines to be established achieve this overall goal through the following objectives:

- Provide a clear description of antenna placement and installation guidelines.
- Provide a clear description of mobile radio mounting guidelines.
- Provide a complete description of 'end of installation' documentation guidelines.

Mobile Installation Guidelines

Antennas

Antennas shall always be mounted in the center of the vehicle roof for all vehicles, unless physically impossible. Where there is an existing antenna in the center of the roof, which is not being removed, or where there is a light bar in the center of the roof, antennas shall be mounted toward the center of the largest available area of open roof space, but as far away as possible from other antennas, light bars, or other obstructions. Where possible, space multiple antennas on a single roof evenly across the surface. Provide as much spacing as possible between multiple antennas.

Fender mount, bumper mount, mirror mount, and trunk mount antenna installations shall not be acceptable. Where alternative antenna types can be used to make a roof mount installation feasible, these purpose designed antennas are to be used.

Antennas require a conductive ground plane to be effective. If the vehicle roof is not a conductive surface, or if an available higher mounting surface is not sufficiently large, a suitable conductive, non-corroding ground plane disc (of aluminum or stainless steel) at least equal in radius to the antenna length, must be installed under, and in contact with, the base of the antenna. For 700-800 MHz radios, the ground plane shall be a minimum of 3" radius.

Antenna feedline for roof-mounted antennas shall be run neatly and normally within the headliner, if one exists, so as not to be visible from inside the vehicle.

Mobile Radios

Mobile radios shall not normally be mounted under or behind seats unless using a remote head configuration. The mobile radio display and controls must normally be visible and accessible from the radio operator's seat (usually the driver's seat), and every effort shall be made to accommodate this. In heavy equipment and in some fire apparatus in which no suitable mounting location allowing operator visibility of the radio display and controls while in the normal operating position is available, it is permissible to mount the radio in a safe location which would require the operator to read the display and/or change controls **only when the vehicle is stationary**. Further, radios, external speakers, and microphone hang-up clips shall not be attached to any component of a certified ROPS (roll over protective structure) in heavy equipment. Drilling holes or inserting screws into the ROPS invalidates the ROPS certification, leaving the installer culpable in case of subsequent roll-over and/or injury to the operator.

Mobile radios must be permanently mounted within the vehicle. Installations using Velcro or tape are not acceptable.

The mobile microphone hanger shall be mounted to be within easy reach of the operator while operating the vehicle, or within easy reach of the radio operator where the radio operator is not normally the driver.

Radios, external speakers and microphone hangers shall not be mounted within the airbag deployment zone or otherwise in a way that would interfere with airbag operation.

Documentation of Installation

After each installation, the installer shall send an email to TMR2@novascotia.ca containing a photo of the mounted antenna, the mounted radio, and the microphone location. The email subject line must contain the radio serial number, and the email must contain the agency's name, vehicle number, radio serial number, and ID number.

Wiring

Wiring shall be concealed and properly restrained to the greatest extent possible. Any visible wires shall be covered by split loom. Radios shall normally be wired with constant power, and ignition sense, unless not appropriate based on vehicle type.

Installations in Private Vehicles

These guidelines should be followed as closely as possible where TMR2 radios are being installed in private vehicles.

Questions/enquires

Any questions or enquires please contact TMR2@novascotia.ca or call the Mobile Communication Support on call officer via Shubie Radio 1-877-293-6977