

Re: FCC ID ABZ99FT3003  
Applicant: Motorola, Inc.  
Correspondence Reference Number: 13461  
731 Confirmation Number: EA96210  
Date of Original E-mail: 2000 April 14  
Date of Response: 2000 May 23

Mr. Errol Chang:

In response to your inquiries in your e-mail dated 2000 April 14, Motorola, Inc. submits the following answers and clarifications. Your questions are repeated here, in quotation marks, to provide continuity.

"1. The MPE report indicated tests were performed at 20 cm from the side of the vehicle and 60 cm from the back of the vehicle for the antenna configurations evaluated. Normally measurements should be made at the closest distance persons may normally be from the antenna so that the proper distance can be used in the installation procedures without imposing any burden on the radio operator to maintain the additionally needed separation distance as indicated in the manual."

For clarification the test lab procedures prescribe fixed distances to the antenna of 30, 60, or 90 cm depending on the transmitter power output and consistent with the distance instructions in both the User Manual and the Installation Manuals. One additional prescribed procedural item is to not allow the probe to be closer than 20 cm from the vehicle body to prevent erroneous measurements per the guidance provided by ANSI/IEEE C95.1, Section 6.6. Hence the measurements made for this nominal 35 watt radio were conducted at a distance of 20 cm from the side of the vehicle for a roof center mount antenna and 60 cm from the antenna for a center trunk mount antenna.

"Please clarify with respect to the following -

(a) MPE report indicated this radio was evaluated for controlled/occupational exposure environment. Please confirm if marketing of this radio will be limited to occupational workers who will be trained and have knowledge to control the exposure conditions for all persons exposed to the antenna of this radio and maintaining the needed distance proposed in the manual (2 feet from the vehicle) to ensure RF exposure compliance. If so, please clarify how such training will be implemented so that additional clarifications will be unnecessary for satisfying uncontrolled MPE limits."

This device is designed specifically for use by occupational workers (occupational/controlled environment) and will be marketed to federal government and public safety agencies and private businesses such as utilities, airlines and railroads. These radios are typically used in a disciplined way to help improve productivity; control and coordinate work teams; and, enhance personal safety. Push-to-talk two-way radio conversations are measured in seconds, not minutes.

The user's manual provides clear instructions on proper usage, including a specific section on EME. As a point of clarification the user instructions relative to distance are referenced to the antenna and not to the vehicle. While user training is the responsibility of the customer, who uses manuals, instructional sessions or other means to inform workers, Motorola also offers its customers training classes on the proper use of two-way radios.

"(b) If the radio is not intended for use in occupational environment that requires workers to have the needed knowledge to qualify for the higher controlled MPE limits, please clarify and/or provide additional data to indicate exposure at the side of the vehicle,

closest to the antenna configurations, can comply with uncontrolled MPE limit. Note: the roof center antenna when mounted on the left or right side of the trunk edge, as suggested in the manual, would represent worst case."

As noted above the radio is intended for use in the occupational environment.

The Antenna manual contained in Exhibit 12D is a generic manual for a series of 12 different antennas that are selectively specified by a variety of different radio models. The User Manual for this radio specifies only one of the twelve antennas, the HAF4002A; i.e. the Trunk Lip Mount antenna is not specified for this radio.

"2. If necessary, the relevant installation and user information should be revised accordingly."

The manual previously uploaded as Exhibit 12D has been modified to add the following note for the Trunk Lip Antenna Models: "Not recommended for transmitters with power output 7 watts or greater"

New versions of the Radio, the Mobile ¼-Wavelength Antennas and the Mobile Gain Antennas installation manuals are provided as replacements for Exhibit 12C, Exhibit 12D and Exhibit 12E, respectively.

Regards,

Robert O. Loving, Jr.