



MOTOROLA

FCC ID: ABZ99FT3046

Date: September 2, 2003

To: Diane Poole, FCC Application Processing Branch

Re: FCC ID: ABZ99FT3046

Applicant: Motorola, Inc.

Correspondence Reference Number: 25579

731 Confirmation Number: EA912517

Subject: CGISS EME Response to FCC Correspondence 25579

Dear Ms. Poole:

Motorola, Inc. herein submits its response to the request for additional information in correspondence reference number 25579 dated August 12, 2003:

General

Q1) Please update the test report for apparent inconsistencies.

- confirm accurate reference numbers for MPE table on page 34
- section 10b) stating only HAD4007A tested on roof
- List of tables pp 2-4 has HAD4009A, sec 2.0 has HAD4009AR _ please clarify. Tables 7,10,19,22,43,46,58 have HAD4009AR; tables 27, 28, 33, 34, 55, 63, 64, 69, 70 have HAD4009A -Graphics shifted in conversion to PDF. See pages 51, 52, and 53
- pg 34 SAR model reference has typo, should be tables 1, 4, 5, 6, 9, 11, 13, 18, 37, 40, 43, 46, and 49

R1)

- Confirmed that Table 72 on page 34 is correct.
- Corrected section 10b) which incorrectly stated only HAD4007A antenna was tested on roof; all antennas were tested on roof.
- Corrected antenna kit number typo for HAD4009A which was incorrectly identified as HAD4009AR in some areas of report.
- Corrected SAR model reference typo on page 34 to correctly indicate Tables 1,4,5,6,9,11,13,18,37,40,43,46,49.

MPE RT

Q1) Please provide procedures used to determine worst case MPE test configurations. Please confirm that behind vehicle, not at corners etc, is highest MPE position for trunk mount.

R1)

- Additional MPE testing was performed at the trunk corners (45° radial) and on the side of vehicle adjacent to trunk (90° radial) which confirmed that the worst case MPE test configuration is behind the vehicle; report has been revised to reflect this additional data in Tables 73-88.

Q2) What is distance from trunk antenna to back seat passengers during testing?

R2)

- The distance from the trunk antenna to back seat passengers during testing was 85 cm.

Q3) Report refers to _standard test distance of 60 cm to the antenna_ what is rationale for 60 cm, when roof antenna is tested at 110 cm with 20 cm from car, and trunk antenna tested at 60 cm with 34 cm from car? Why not test at 20 cm (C95) from trunk?

R3)

- In order to assure compliance to Standards, the user information safety section previously submitted displayed a chart which sets a minimum distance, depending on the rated RF power output of the radio, during transmission; for this 45W rated power radio, the distance is 60cm. The 110cm roof configuration is tested because it is a user configuration even though this is the closest distance that can be achieved to an antenna mounted in the center of the vehicle roof while maintaining the recommended minimum separation distance of 20cm from the vehicle body.

Q4) Please submit calibration uncertainty info for both E and H probes, and/or calibration certificates.

R4)

- Both E-Field and H-Field probe calibration certificates have been added to the report.

SAR RT

Q1) Photographs of each antenna showing test length and height used for modeling. Also please provide antenna specifications and descriptive details. Antenna lengths shown in tables pp 41-42 are not multiples of 5 mm grid size _ please list actual model antenna lengths along with tested lengths. Antenna lengths shown in tables pp 41-42 are slightly different than pg 6; also trim lengths for RAD4000A are not shown pg 6 _ please clarify. FYI In the future please assure antenna lengths are modeled to 1 voxel accuracy.

R1)

Photographs of the antennas were added in the Appendix if the SAR report. Actual and simulated lengths were specified in the Tables II and III.

Q2) SAR appendix 10c) _ previous discussions with applicant indicated XFDTD uses interpolation from three SAR values, while report says interpolate two values _ please clarify

R2)

Corrected the oversight. The interpolation to determine the 1-g average SAR is performed through the 1x1x1, the 3x3x3, and 5x5x5 voxel averages.

Q3) Page 54 summary table normalized to 54 W, per pg 10 measurements use 53.2W 146 MHZ, 56.4W 155 MHZ, 56.5W 164 MHZ _ please revise if appropriate

R3)

Normalized all SAR and MPE values to the measured power levels. These levels are summarized in Table I of the revised report. As a consequence, some SAR values were revised.

User manual RT

Q1) Updated user and installer instructions to address the following: -vehicular requirements to assure consistency/applicability with evaluations -Details of appropriate safe distances for occupational and general population consistent with evaluation configurations. Current information does not appear to be consistent with evaluations (test at 34 vs 20 cm, 60 vs 90 cm below and above 50W, etc).

- Full RF safety antenna installation requirements in the manual titled Two Way Radio Installation Guide. In addition clearly advise the installer that there are RF safety requirements for installation and refer the installer to the Full RF safety antenna installation information. Modifications to page 5 of 36 may be appropriate. Currently circular references are contained.

- Comprehensive description of RF exposure, occupational/controlled environment, uncontrolled environment, and bystander (anybody other than the trained radio operator) in layman terms.

R1)

(Note: Revised pdf manuals are attached)

Installation Manual updated on pages iii, 8, 9, as follows:

- Installation Manual (page-8) emphasizes and clarifies that to assure optimum performance and compliance with RF Safety standards, these antenna installation guidelines and instructions are limited to metal-body vehicles with appropriate ground planes and take into account the potential exposure of backseat passengers and bystanders outside the vehicle.

- Installation Manual (page-8) added that before installing an antenna on the trunk lid, be sure that the distance from the antenna location on the trunk lid will be at least 85 cm (33

inches) from the front surface of the rear seat-back to assure compliance with RF Safety standards. If these conditions cannot be satisfied, then mount the antenna on the roof top.

- Product Safety and RF Energy Exposure Booklet (page-5): Modified text and changed Distance/RF Power table stating transmit only when people outside the vehicle are at least the recommended minimum lateral distance away, as shown in Table 1, from the **body of a vehicle** with a properly installed antenna. This separation distance will ensure that there is sufficient distance from a properly installed externally-mounted antenna to satisfy the RF exposure requirements in the standards.

- Added full RF safety antenna installation requirements in the Installation Manual (page-8,9).

- TIA TSB 133 language, in which FCC had final draft participation, has been incorporated into manual.

Q2) Please confirm that the radio has no automated transmission capabilities (i.e. transmission without push of PTT button).

R2)

The radio has no automated transmissions without the push of the PTT button except for rare MDC acknowledgements for an approximate 750msec duration initiated as a response to user initiated radio check or selective radio inhibit. The burst frequency is a standard MDC1200 signaling format consisting of two tones (1200Hz and 1800Hz) toggled at a 1200 baud rate.

Sincerely,

/s/ Mike Ramnath (signed)

Mike Ramnath

FCC Liaison

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