



MOTOROLA

Date: October 9, 2002

Subject: Supplement to SAR Test Report for Motorola portable cellular phone (FCC ID IHDT6BC1)

Reference:

Correspondence Reference Number:	5230
731 Confirmation Number:	TC611213
Date of Original Email:	09/20/2002

Prepared by:

Steven Hauswirth
Motorola Personal Communications Sector Product Safety Laboratory
Harvard, Illinois

Summary of FCC request for additional information

There was a request for additional information regarding Motorola's SAR Test Report for Motorola portable cellular phone (FCC ID IHDT56CG1). The requested information is addressed below in the same numbering sequence received.

1) Justification for probe conversion factor for body measurements. No associated probe certificate could be found.

Response: Since simulated tissue targets are the same for both 1800 & 1900 MHz head and the conversion factor for both 1800 & 1900 MHz head is the same '5.24' (Original SAR report "Probe SN1503 Attached Calibration Certificate), it is also true for body worn that both 1800 and 1900 MHz share the same conversion factor of '4.9' since they share the same simulated tissue targets.

2) Documentation used to develop target validation numbers.

Response: Please see appendix 1 for the documentation.

3) Explanation for reason behind extremely large SAR change from original grant.

Response: The large change in measured SAR is a result of the new Supplement C 01-01 methodology implementation. The configuration that results in the maximum measured SAR was in the Left Head 15° tilt configuration. This configuration was not measured for the original filing because it predated the new methodology implementation.


Appendix 1

Interim Dipole Target Correlations



Motorola

This document can be read by all users who have Reader access to this database.

 Departmental Operating Instruction		
Departmental Operating Instruction Title: Interim Dipole Target Correlations		DOI Number DOI-1265 Revision: 1
Department: EME Area: EME/PCS	<i>Approved & Released</i> <i>Departmental Operating</i> <i>Instruction</i>	Implementation Date: 10/02/2001
Type of Document: Level 3		Review Period - 364 Days

1.0 Purpose:

The purpose of this document is to provide a method for correlating existing dipoles to the new simulant parameters and requirements, using primary standards that have been re-calibrated by the manufacturer. The correlation results may be used only until the dipole's calibration due date, at which time the dipole shall be sent for calibration to the manufacturer.

Note: all dipoles shall still be sent to the manufacturer for their regularly scheduled calibration period and due dates.

2.0 Scope:

This procedure applies to the PCS EME Laboratories. It shall be used to correlate only those dipoles which were last calibrated per old simulant standards, but are not yet due for their regularly scheduled calibration.

3.0 Responsibilities:

- It is the responsibility of the PCS EME laboratory personnel to follow the requirements of this document, and to accurately perform the required measurements.
- It is the responsibility of the corporate EME research facility to approve and sign the certificate for each correlated dipole.
- It is the responsibility of the process engineer/technical operations personnel (or equivalent) to properly file and maintain the dipole records and certificates.

4.0 Definitions:

- **Primary Standards:** These are dipoles which have been sent to the manufacturer (SPEAG) for re-calibration in Head simulant, and have direct traceability to SPEAG. These dipoles shall be used to determine the new targets of the Secondary Standards. Primary Standards should be kept in a safe location, and should not be used for normal day-to-day testing.
- **Secondary Standards:** These are dipoles which were previously calibrated by SPEAG in the old validation simulants, but still have a significant amount of time before re-calibration is due. The new targets for the Secondary Standards are determined by utilizing the Primary Standards. Using this method, the targets for the Secondary Standards can still be traced back to the manufacturer.
- **SPEAG:** Schmidt and Partner Engineering, AG. The manufacturer/calibrator of the dipoles.
- **EME:** Electromagnetic Energy

5.0 Tools, Equipment, and Material:

DASY Robotic Cell

Validation Rack

Primary Standard Dipoles

Secondary Standard Dipoles

Dipole spacers

Tissue Simulant

6.0 Procedure:

6.1 By Similarity:

6.1.1 Using the same robot setup (ie - validation rack, robot, probe, dae box, simulant, etc), measure a Primary Standard dipole per APP-0238 "System Validation & Interlaboratory Comparison".

Special Considerations:

6.1.1.1 Adjust the power displayed on the power meter to be exactly 250mW (or as close as possible, but within +/-1mW).

6.1.1.2 The simulant used must be at least 15cm deep.

6.1.1.3 The simulated tissue characteristics shall be as close as possible to the target by the manufacturer when the Primary Standard was calibrated, (better than +/-5%).

6.1.2 On the same day, and using the exact same set-up/equipment, measure the Secondary Standard dipole as described in Section 6.1.1 above.

6.1.3 Determine the averaged (1g) cubed SAR for each of the measurements

taken in sections 6.1.1-6.1.2 above. This is done by averaging the 0-degree and 90-degree cubes for each test.

6.1.4 If the Secondary Standard's measurement is within +/-3% of the Primary Standard's measurement,

6.1.4.1 **THEN** - the condition that the two dipoles are virtually identical has been verified, and the target shown on the calibration certificate of the Primary Standard may be applied as the new correlated target for the Secondary Standard. Document the new correlated target via FCD-0359 "Interim Dipole Correlation Certificate". **END.**

6.1.4.2 **OTHERWISE**, (if the condition in 6.1.4 is NOT met) - proceed with the Transfer Calibration process.

6.2 By Transfer Calibration Process:

6.2.1 Measure the Primary Standard dipole three times as described in Section 6.1.1 above.

6.2.1.1 Calculate the average (A) of the 0&90-degree cubed averages for the three tests.

6.2.1.2 Calculate the fractional difference ($D = (A-T)/T$) between A and the target (T) on the calibration certificate.

6.2.1.2.1 If $Abs(D) \leq 0.08$, **continue**. Otherwise, contact the manufacturer.

6.2.2 Measure the Secondary Standard dipole three times as described in Section 6.1.1 above.

6.2.1.1 Calculate the average (B) of the 0&90-degree cubed averages for the three tests.

6.2.1.2 Calculate the new target value [Equation 1] by compensating the average value (B) based on the fractional difference (D) calculated in section 6.2.1.2 above.

Equation 1: New Target = $B*(1-D)$

6.2.1.3 Document the new target via FCD-0359 "Interim Dipole Correlation Certificate".

7.0 Environmental, Health, and Safety:

Follow all applicable EHS policies.