



February 1, 2002

Supplement to SAR Test Report for Motorola portable cellular phone (FCC ID IHDT56BJ1).

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1. 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 IHDT56BJ1) dated January 30, 2002. The requested information may be summarized as follows:

1. We are concerned that, given the reported liquid permittivity values close to and exceeding the Supplement C tolerance limits, it is difficult to evaluate compliance based on some of the reported SAR values. Please resubmit left and right touch antenna-out configurations for all AMPS channels using Supplement C parameters. Alternatively, please provide a pre-grant sample.

2. Please explain why probe was calibrated in liquid, which exceeds the Suppl C permittivity tolerance limits.

1. Head Adjacent Measurements

1.1 Results

			SAR, 1g in the Cheek Touch		
			<i>Left Head</i>		
			<i>Ant Extended</i>		
<i>f</i> (MHz)	Description	Conducted Output Power (dBm)	Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)
Analog 800MHz	Channel 991	27.03	1.51	-0.18	1.57
	Channel 384	27.04	1.52	-0.15	1.57
	Channel 799	27.20	1.41	-0.16	1.46

Table 1: SAR measurement results for the portable cellular telephone FCC ID IHDT56BJ1 at highest possible output power. Measured against the Left head (Antenna Extended) Cheek Touch.

			SAR, 1g in the Cheek Touch		
			<i>Right Head</i>		
			<i>Ant Extended</i>		
<i>f</i> (MHz)	Description	Conducted Output Power (dBm)	Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)
Analog 800MHz	Channel 991	27.03	1.41	-0.17	1.47
	Channel 384	27.04	1.38	0.01	1.38
	Channel 799	27.20	1.29	-0.10	1.32

Table 2: SAR measurement results for the portable cellular telephone FCC ID IHDT56BJ1 at highest possible output power. Measured against the Right head (Antenna Extended) Cheek Touch.

1.2 Electrical parameters of the tissue simulating liquid

Prior to conducting SAR measurements, the relative permittivity, and the conductivity, of the tissue simulating liquids were measured with HP85070 Dielectric Probe Kit. These values are shown in the table below. The mass density, used by the dosimetric system is also given. Recommended limits for maximum permittivity, minimum conductivity and maximum mass density are also shown. It is seen that the measured parameters are satisfactory for compliance testing.

<i>f</i> (MHz)	Tissue type	Limits / Measured	Dielectric Parameters		
			ϵ_r	σ (S/m)	ρ (g/cm ³)
800	Head	Measured, 01/31/02	41.90	0.91	1
		Measured, 01/31/02	41.60	0.90	1
		Recommended Limits	41.50	0.90	1.03

2. Clarification of Probe Calibration Method

The probe is calibrated in Zurich, SW by SPEAG. Their normal process is to calibrate the probe using the CENELEC tissue simulates. We have asked for and obtained additional probe conversion factors that do cover the Supplement C permittivity tolerance limits. These are included in Appendix 1 on the new report created on January 21, 2002.

Appendix 1

SAR Distribution Plots

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Ch# 384 / Pwr Step: 2 / Antenna Position: Extended

Robot 7 ARCHIE left head (sugar) Phantom; Left Head Section; Position: (80°,180°); Frequency: 837 MHz

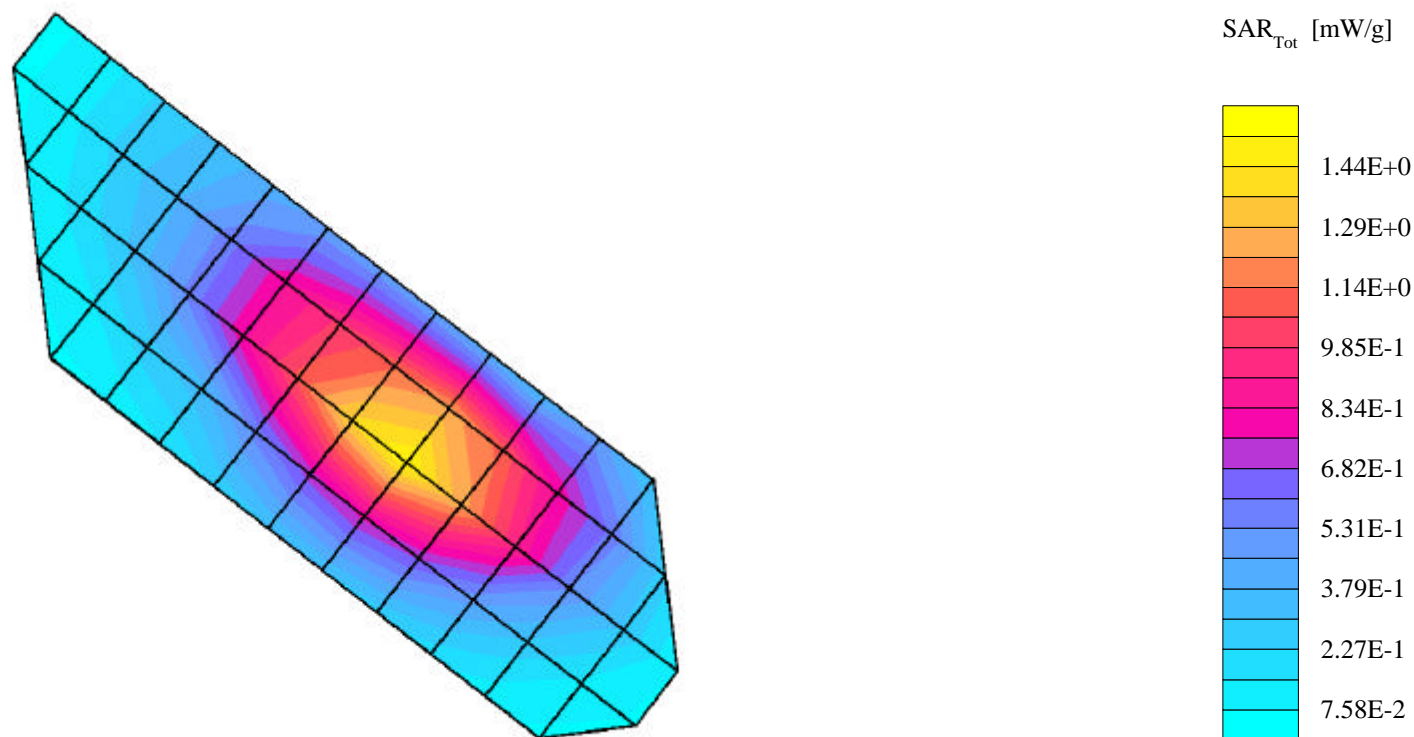
Probe: ET3DV6 - SN1501 - IEEE Head; ConvF(6.60,6.60,6.60); Crest factor: 1.0; 835 MHz Head & Body: $\sigma = 0.91$ mho/m $\epsilon_r = 41.9$ $\rho = 1.00$ g/cm³

Cube 7x7x7: SAR (1g): 1.52 mW/g, SAR (10g): 1.03 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0

Penetration depth: 15.8 (15.4, 16.3) [mm]

Powerdrift: -0.15 dB



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Ch# 991 / Pwr Step: 2 / Antenna Position: Extended

Robot 7 EDITH right head (sugar) Phantom; Right Head Section; Position: (80°,180°); Frequency: 824 MHz

Probe: ET3DV6 - SN1501 - IEEE Head; ConvF(6.60,6.60,6.60); Crest factor: 1.0; 835 MHz Head & Body: $\sigma = 0.90$ mho/m $\epsilon_r = 41.6$ $\rho = 1.00$ g/cm³

Cube 7x7x7: SAR (1g): 1.41 mW/g, SAR (10g): 0.978 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0

Penetration depth: 16.2 (14.9, 17.4) [mm]

Powerdrift: -0.17 dB

