



Exhibit 11 FCC ID: IHDT6AF1

Motorola Personal Communications Sector Product Safety Laboratory
2001 N. Division
Room: AS228
Harvard, Illinois 60033

September 18, 2000

Federal Communications Commission
Authorization & Evaluation Division
7435 Oakland Mills Rd
Columbia MD 21046

Attention: Equipment Authorization Branch

We hereby certify that the testing procedures contained within are used for determination of compliance for a Motorola portable cellular with respect to ANSI/IEEE C951-1992 Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3kHz to 300GHz and the Federal Communications Commission rule §2.1093(d)(2).

Prepared by:

Steven Hauswirth

Motorola© This test report shall not be reproduced except in full, without written approval of the laboratory.

The results and statements contained herein relate only to the items tested. The names of the individuals involved may be mentioned only in connection with the statements or results from this report.

Contents	Page
1) Introduction	3
2) Description of the Device Under Test	3
3) Test Equipment Used	
3.1 Dosimetric system	3
3.2 Additional equipment used	4
4) Simulated Tissue Electrical Parameters	4
5) System Accuracy Verification	4
6) Body Worn Configuration Measurement Results	4

References

Appendix A: Photographs of Motorola Portable Cellular Phone FCC ID IHDT5YD1	6
Appendix B: Included data for Body Worn Configuration	9
Appendix C: Printout from the Dasy™ measurement system validation test	12

1. Introduction

The Motorola Personal Communications Sector Product Safety Laboratory has performed measurements of the maximum potential exposure to the user of portable cellular phone FCC ID IHDT6AF1. The Specific Absorption Rate (SAR) of this product was measured. The portable cellular phone was tested in accordance with the latest available test guidelines. The SAR values found for the portable cellular phone (FCC ID IHDT6AF1) are below the maximum recommended levels of 1.6 W/kg. Detailed procedures of the test are described in the *Motorola Exhibit 11 Reference SAR Test Report*.

2. Description of the Device Under Test

FCC ID Number	IHDT6AF1
Serial Number	078000A/A
Modes of Operation	GSM1900
Modulation Mode(s)	GSM
Duty Cycle	1/8
Transmitting Frequency Range(s)	1850.2-1909.8MHz

3. Test Equipment Used

3.1 Dosimetric System

The Motorola Personal Communications Sector Product Safety Laboratory utilizes a Dosimetric Assessment System (Dasy3™) SAR measurement system manufactured by Schmid & Partner Engineering AG (SPEAG™), of Zurich Switzerland. The overall RSS uncertainty of the measurement system is $\pm 12.0\%$ (K=1).

Description	Serial Number	Cal Due Date
DASY3 DAE V1	SN383	2/01
E-Field Probe ETDV6	SN1515	2/01
Dipole Validation Kit, DV1800V2	SN250	9/01

3.2 Additional Equipment

Description	Serial Number	Cal Due Date
Signal Generator HP8648C	3847A04845	2/8/01
Power Meter E4419B	GB39511082	3/13/01
Power Sensor E9301A	US39211011	3/20/01

4. Simulated Tissue Electrical Parameters

Before performing SAR measurements, the relative permittivity and the conductivity of the simulated tissue was measured with the dielectric probe kit. The results are shown below. The recommended limits for maximum permittivity and minimum conductivity are also shown. These come from the Federal Communication Commission, "Tissue Dielectric Properties" web site at <http://www.fcc.gov/fcc-bin/dielec.sh>.

F (MHz)	Description	Dielectric Parameters	
		ϵ_r	σ (S/m)
1900	Measured	50.42	1.66
	Recommended Limits	54.33	1.43

5. System Accuracy Verification

A system accuracy verification of the DASY3 was performed using the dipole validation kits listed in Section 3.1. The system verification test was conducted on the same day as the measurement of the portable cellular phone FCC ID IHDT5YD1. The results are shown in the table below. See appendix D for printout of the validation test from the Dasy™ measurement system

F (MHz)	Description	SAR (W/kg), 1gram	Dielectric Parameters		Temp (°C)
			ϵ_r	σ (S/m)	
800	Measured	44.00	41.00	1.73	19
	Recommended Limits	38.89	43.40	1.68	??

6. Body Worn Configuration Measurement Results

The measured SAR values and conducted output powers are shown in the following table. For the purposes of these tests the transmitter was operated at the highest transmitter output. The SAR results shown are maximum SAR values averaged over 1 gram of phantom tissue. A full data set output of the test condition with the highest SAR values from the Dasy™ measurement system is included as appendix B. The test condition included is indicated as a bold number in the following table. All other test conditions measured lower SAR values than those included.

The test sample was operated in a test mode that allows control of the transmitter without the need to place actual phone calls. For the purposes of this test the unit is commanded to test mode and manually set to the proper channel, transmitter power level and transmit mode of operation. The phone was then placed in the SAR measurement system with a fully charged battery.

F (MHz)	Description	Conducted Output Power (dBm)	SAR, 1g (W/kg)
			Body Worn
GSM 1900MHz	Channel 512	31.6	0.203
	Channel 661	31.6	0.120
	Channel 810	31.7	0.072

Appendix A

Photographs of Motorola Portable Cellular Phone FCC ID IHDT5YD1



Figure 1. Face of Motorola portable cellular phone FCC ID IHDT6AF1



Figure 2. Motorola portable cellular phone FCC ID IHDT6AF1 in Belt-clip

Appendix B

Included data for Body Worn Configuration

s/n 072800A/A

Ch# 512 / Pwr Step:00

Amy Twin Optics OFF Phantom; Section2 Section; Position: (0°,0°); Frequency: 1850 MHz

Probe: ET3DV6 - SN1515 - Muscle (Glycol); ConvF(4.98,4.98,4.98); Crest factor: 8.0; Muscle Glycol 1900 MHz: $\sigma = 1.66 \text{ mho/m}$ $\epsilon_r = 50.4$ $\rho = 1.00 \text{ g/cm}^3$

Cube 5x5x7: SAR (1g): 0.203 mW/g, SAR (10g): 0.123 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0

Penetration depth: 10.1 (9.5, 11.0) [mm]

Powerdrift: 0.03 dB

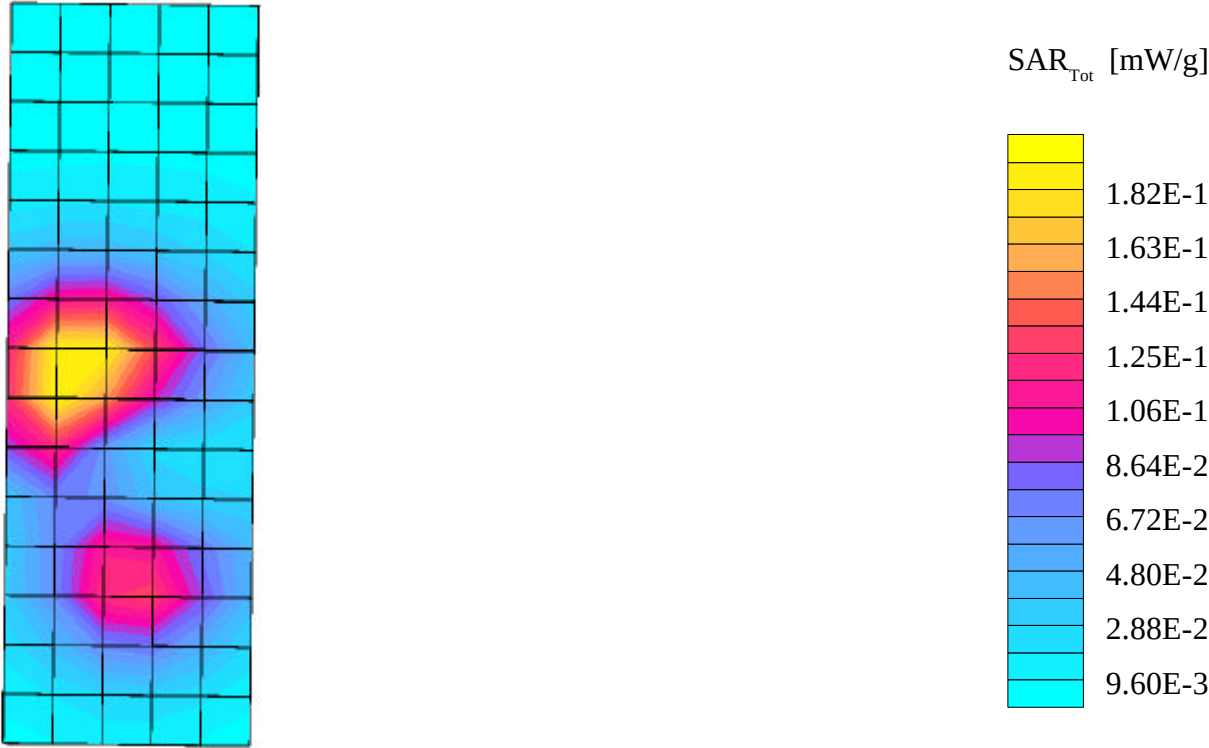




Figure 3. Contour Plot overlaid on Phone and Belt-clip



Figure 4. Picture of Phone showing Distance Provided by Belt-clip

Appendix C

Printout from the Dasy™ measurement system validation test

Dipole 1800 MHz

1800 MHz Dipole Validation / Dipole Sn# 250 / Forward Power = 254mW

Temp at time of measurement = 19 C

Amy Twin Optics OFF; Section 1

Probe: ET3DV6 - SN1515 Validation; ConvF(5.51,5.51,5.51); Crest factor: 1.0; Validation 1800MHz: $\sigma = 1.73 \text{ mho/m}$ $\epsilon_r = 41.0$ $\rho = 1.00 \text{ g/cm}^3$

Cubes (2): Peak: 21.5 mW/g $\pm 0.22 \text{ dB}$, SAR (1g): 11.0 mW/g $\pm 0.18 \text{ dB}$, SAR (10g): 5.47 mW/g $\pm 0.16 \text{ dB}$, (Worst-case extrapolation)

