



Exhibit 11: SAR Test Report: IHDT6BD1

Date of test: June 13–19, 2001

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Accreditation: ISO Guide 25 Accredited Lab, A2LA certificate #1651-01

Statement of Compliance: Motorola declares under its sole responsibility that portable cellular telephone FCC ID IHDT6BD1 to which this declaration relates, is in conformity with the appropriate RF exposure standards, recommendations and guidelines. It also declares that the product was tested in accordance with the appropriate measurement standards, guidelines and recommended practices. Any deviations from these standards, guidelines and recommended practices are noted below:

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

Motorola encourages all feedback, both positive and negative, on this test report.

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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 IHDT6BD1. 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 IHDT6BD1) 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

Antenna description

Type	Fixed Stub	
Location	Right Side	
Dimensions	Length	31mm
	Width at Base	9mm
Configuration	Helix	

Device description

FCC ID Number	IHDT6BD1
Serial number	F7W0011
Mode(s) of Operation	GSM 1900
Maximum Output Power Setting	29.20 dBm
Duty Cycle	1:8
Transmitting Frequency Rang(s)	1850.2 –1909.8 MHz

3. Test Results

The SAR results shown in tables 1 and 2 are maximum SAR values averaged over 1 gram of phantom tissue. Also shown are the measured conducted output powers and the temperature of the test facility during the test.

The test sample was operated using a Hewlett Packard 8922M and placing phone into a call. The unit was 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.

A full data set output of two test conditions with the highest SAR values from the Dasy™ measurement system is included as appendix 1 and 2. The test conditions included are indicated as bold numbers in the following table. All other test conditions measured lower SAR values than those included.

f (MHz)	Description	Conducted Output Power (dBm)	SAR, 1g (W/kg)	
			Left Head	Right Head
Digital 1900MHz	Channel 512	29.23	0.33	0.35
	Channel 660	29.15	0.31	0.31
	Channel 812	29.20	0.30	0.27

Table 1: SAR measurement results for the portable cellular telephone FCC ID IHDT6BD1 at highest possible output power. Measured against the head.

f (MHz)	Description	Conducted Output Power (dBm)	SAR, 1g (W/kg)
			Body Worn
Digital 1900MHz	Channel 512	29.23	0.23
	Channel 660	29.15	0.20
	Channel 812	29.20	0.20

Table 2: SAR measurement results for the portable cellular telephone FCC ID IHDT6BD1 at highest possible output power. Measured against the body.

4. Test Equipment Used

4.1 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	3/2002
E-Field Probe ETDV6	SN1506	10/2001
Dipole Validation Kit, DV1800V2	SN250	9/2001

4.2 Additional Equipment

Description	Serial Number	Cal Due Date
Signal Generator HP8648C	3847A04832	1/18/2003
Power Meter E4419B	GB39511087	1/19/2002
Power Sensor 8481A	US39210917	1/24/2002

5. Electrical parameters of the tissue simulating liquid

Prior to conducting SAR measurements, the relative permittivity, ϵ_r , and the conductivity, σ , of the tissue simulating liquids were measured with HP85070 Dielectric Probe Kit. These values are shown in the table below. The mass density, ρ , used by the dosimetric system is also given. Recommended limits for maximum permittivity, minimum conductivity and maximum mass density are also shown. These come from the Federal Communication Commission, "Tissue Dielectric Properties" web site at <http://www.fcc.gov/fcc-bin/dielec.sh>. It is seen that the measured parameters are satisfactory for compliance testing.

f (MHz)	Tissue type	Limits / Measured	Dielectric Parameters		
			ϵ_r	σ (S/m)	ρ (g/cm ³)
1880	Head	Measured, 06/13/2001	39.1	1.45	1.00
		Recommended Limits	43.4	1.19	1.00
	Body	Measured, 06/19/2001	51.0	1.71	1.00
		Recommended Limits	54.0	1.43	1.00

6. System Accuracy Verification

A system accuracy verification of the DASY3 was performed using the measurement equipment listed in Section 4. The test was conducted on the same day as the measurement of the DUT. The obtained results are displayed in the table below. The distributions of SAR compare well with those of the reference measurements (see Appendix 1).

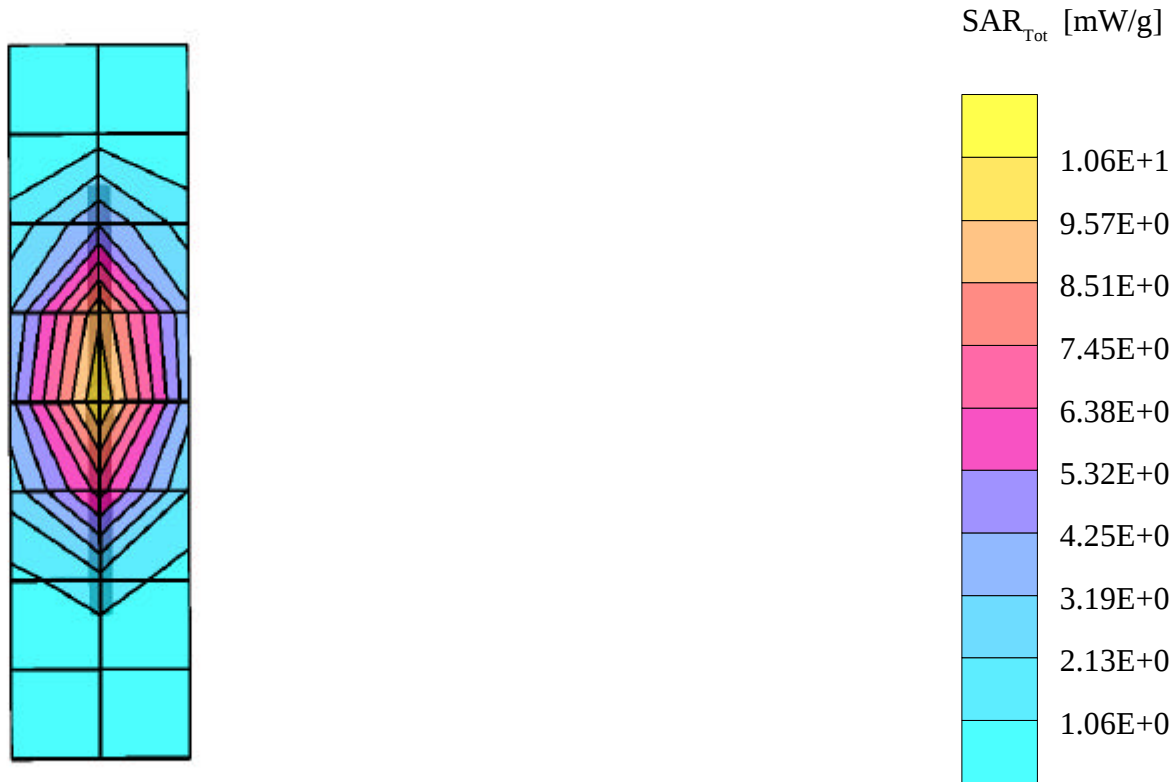
f (MHz)	Description	SAR (W/kg), 1gram	Dielectric Parameters		Temp (°C)
			ϵ_r	σ (S/m)	
1800	Measured, 06/13/01	39.39	39.2	1.73	22.8
	Recommended Limits	39.27	41.10	1.69	N/A
	Measured, 06/19/01	39.31	39.8	1.75	23.0
	Recommended Limits	38.39	41.2	1.68	N/A

Appendix 1

SAR distribution comparison for the system accuracy verification

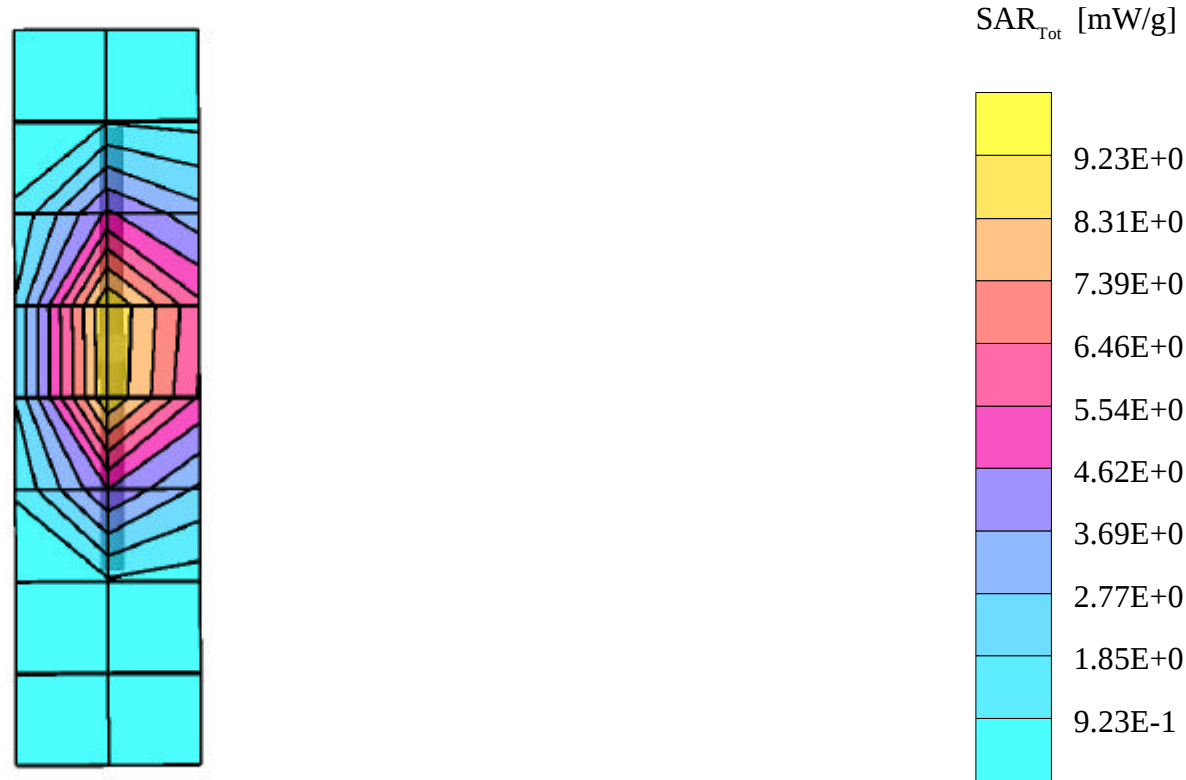
Dipole 1800 MHz

Robot 2 Amy Twin Optic OFF; Section 1
Probe: ET3DV6 - SN1506 - Validation; ConvF(5.87,5.87,5.87); Crest factor: 1.0; Validation 1800 MHz: $\sigma = 1.73 \text{ mho/m}$ $\epsilon_r = 39.2$ $\rho = 1.00 \text{ g/cm}^3$
Cubes (2): Peak: $19.3 \text{ mW/g} \pm 0.00 \text{ dB}$, SAR (1g): $9.77 \text{ mW/g} \pm 0.00 \text{ dB}$, SAR (10g): $4.88 \text{ mW/g} \pm 0.01 \text{ dB}$, (Worst-case extrapolation)
Penetration depth: 7.1 (6.7, 7.9) [mm]
Powerdrift: -0.05 dB



Dipole 1800 MHz

Robot 2 Amy Twin Optic OFF; Section 1
Probe: ET3DV6 - SN1506 - Validation; ConvF(5.87,5.87,5.87); Crest factor: 1.0; Validation 1800 MHz: $\sigma = 1.75 \text{ mho/m}$ $\epsilon_r = 39.8$ $\rho = 1.00 \text{ g/cm}^3$
Cubes (2): Peak: $19.1 \text{ mW/g} \pm 0.02 \text{ dB}$, SAR (1g): $9.79 \text{ mW/g} \pm 0.00 \text{ dB}$, SAR (10g): $4.91 \text{ mW/g} \pm 0.02 \text{ dB}$, (Worst-case extrapolation)
Penetration depth: 7.2 (6.8, 8.0) [mm]
Powerdrift: -0.05 dB

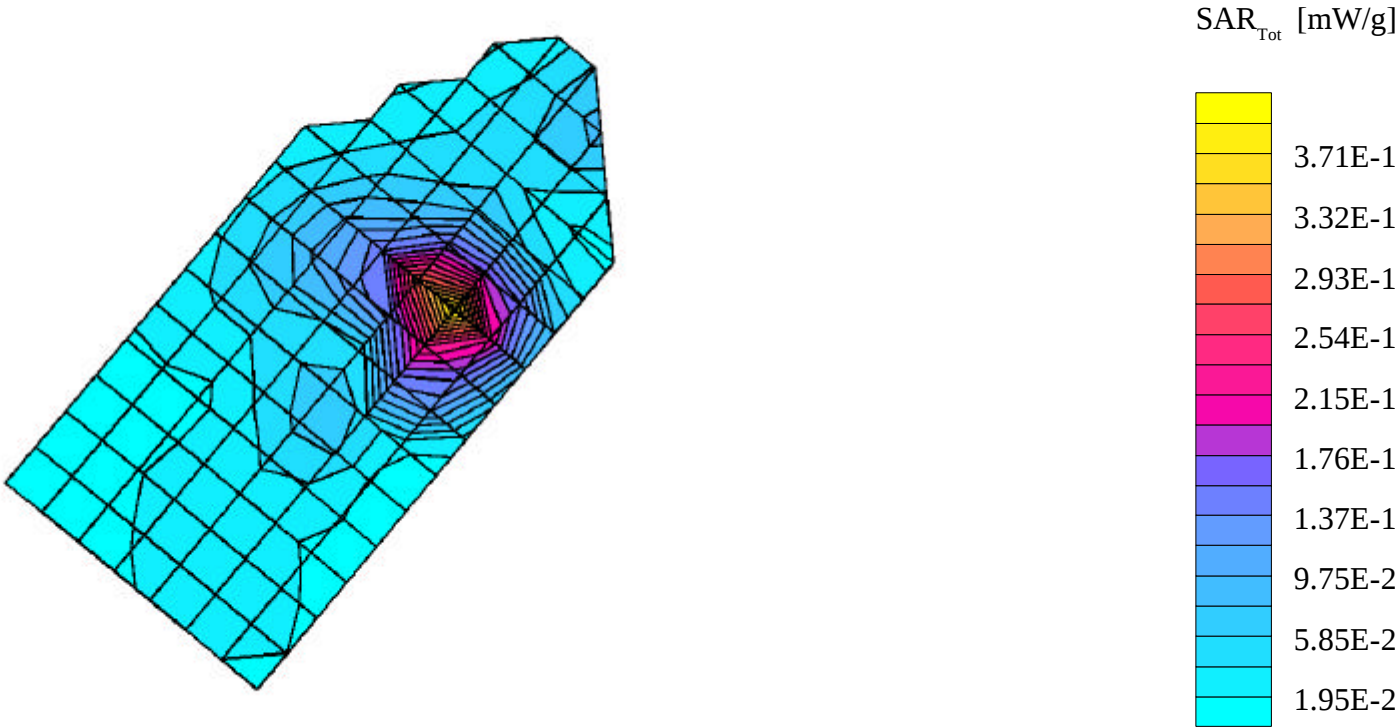


Appendix 2

SAR distribution plots for Phantom Head Adjacent Use

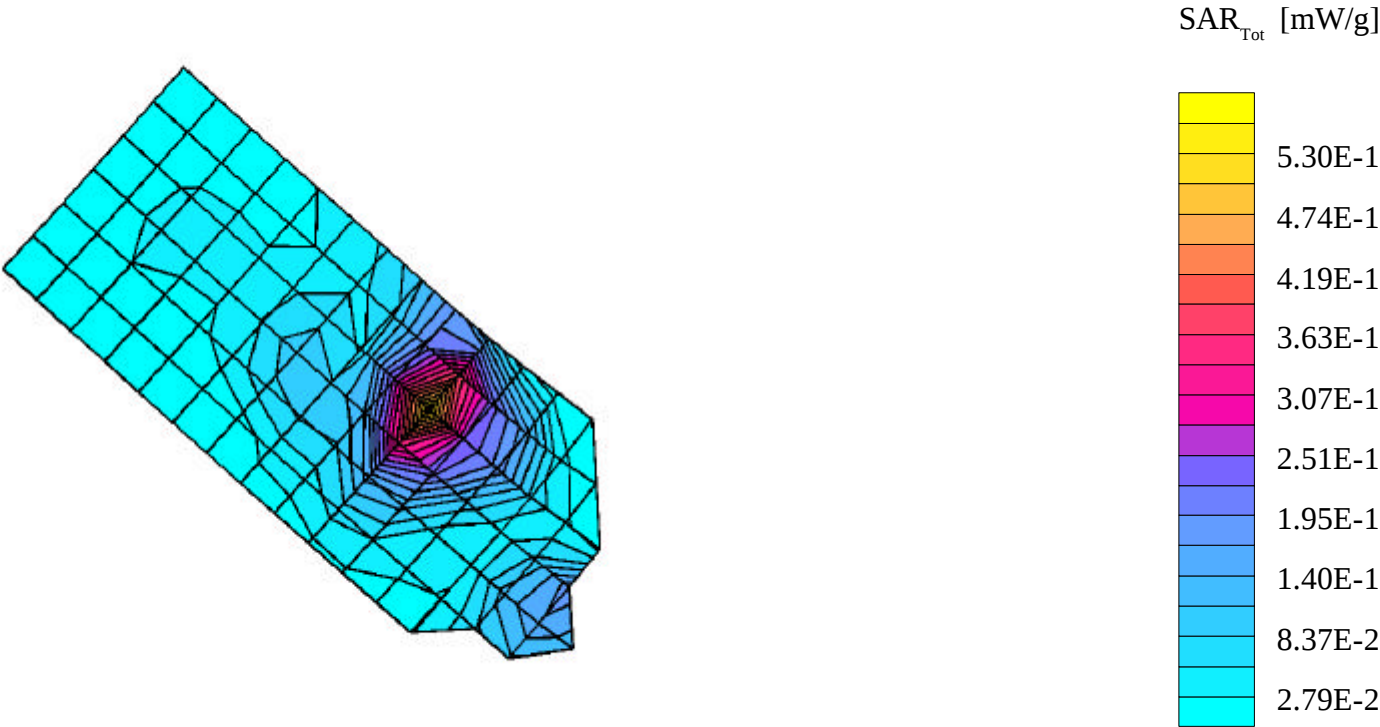
s/n F7W0011

Ch# 512/ Pwr Step: 0 / Antenna Position: Fixed
Robot 2 Bonnie (RIGHT HEAD) Phantom; Right Head Section; Position: (80°,180°); Frequency: 1850 MHz
Probe: ET3DV6 - SN1506 - Head (Glycol); ConvF(5.59,5.59,5.59); Crest factor: 8.0; Head Glycol 1900 MHz: $\sigma = 1.44$ mho/m $\epsilon_r = 38.2$ $\rho = 1.00$ g/cm³
Cube 5x5x7: SAR (1g): 0.352 mW/g, SAR (10g): 0.156 mW/g, (Worst-case extrapolation)
Coarse: Dx = 10.0, Dy = 10.0, Dz = 10.0
Penetration depth: 6.8 (6.5, 7.8) [mm]
Powerdrift: -0.34 dB



s/n F7W001

Ch#512 / Pwr Step:0 / Antenna Position: Fixed
Robot 2 Clyde (Left Head) Phantom; Left Head Section; Position: (80°,180°); Frequency: 1851 MHz
Probe: ET3DV6 - SN1506 - Head (Glycol); ConvF(5.59,5.59,5.59); Crest factor: 8.0; Head Glycol 1900 MHz: $\sigma = 1.45 \text{ mho/m}$ $\epsilon_r = 39.1$ $\rho = 1.00 \text{ g/cm}^3$
Cube 5x5x7: SAR (1g): 0.492 mW/g, SAR (10g): 0.217 mW/g, (Worst-case extrapolation)
Coarse: Dx = 10.0, Dy = 10.0, Dz = 10.0
Penetration depth: 7.1 (6.5, 8.7) [mm]
Powerdrift: -0.91 dB



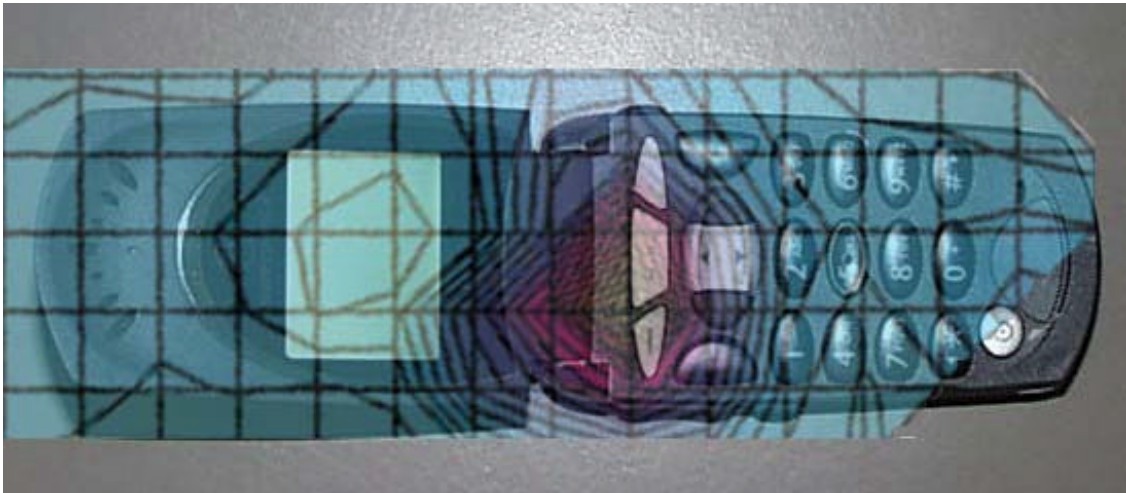


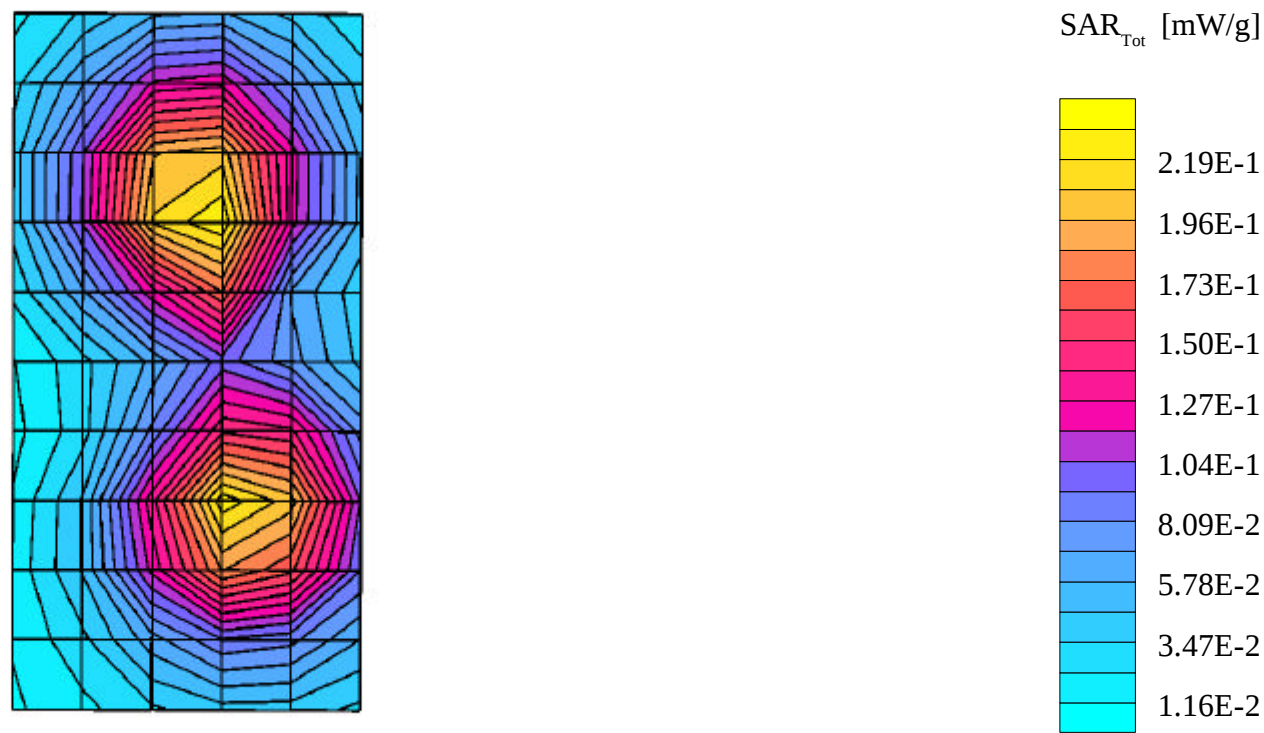
Figure 1. Typical Head Adjacent Contour Plot Overlaid on Face of Phone.

Appendix 3

SAR distribution plots for Body Worn Configuration

s/n F7W0011

Ch# 512/ Pwr Step: 0 / Antenna Position: Fixed
Robot 2 Amy Twin Optic OFF Phantom; Section2 Section; Position: (0°,0°); Frequency: 1850 MHz
Probe: ET3DV6 - SN1506 - Muscle (Glycol); ConvF(5.30,5.30,5.30); Crest factor: 8.0; Muscle Glycol 1900 MHz: $\sigma = 1.71 \text{ mho/m}$ $\epsilon_r = 51.0$ $\rho = 1.00 \text{ g/cm}^3$
Cube 5x5x7: SAR (1g): 0.228 mW/g, SAR (10g): 0.135 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Penetration depth: 9.4 (8.3, 11.1) [mm]
Powerdrift: 0.01 dB



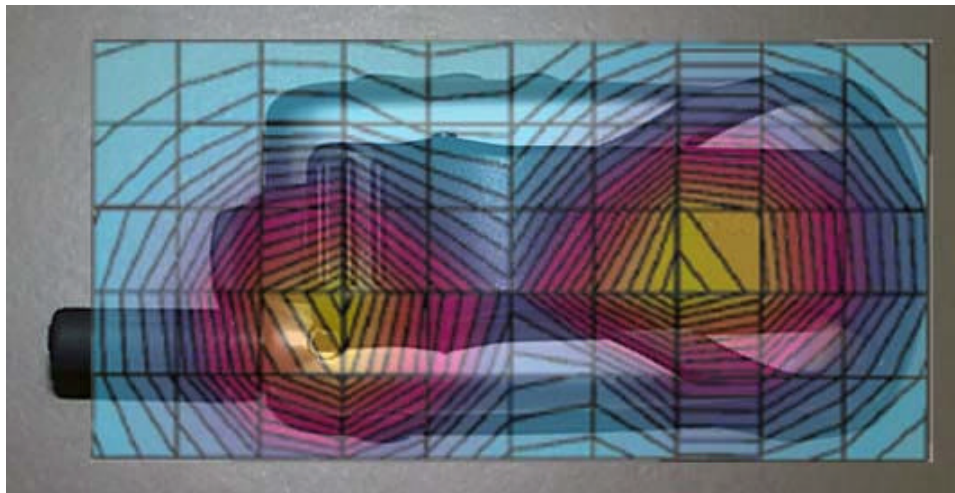


Figure 2. Typical Body Worn Contour Overlaid on Back of Phone with Accessory.

Appendix 4

Photographs of the device under test



Figure 3. Face of Phone with the Flip Closed



Figure 4. Face of Phone with the Flip Open



Figure 5. Side view of the phone



Figure 6. Separation Distance Provided by Phone in Belt Clip

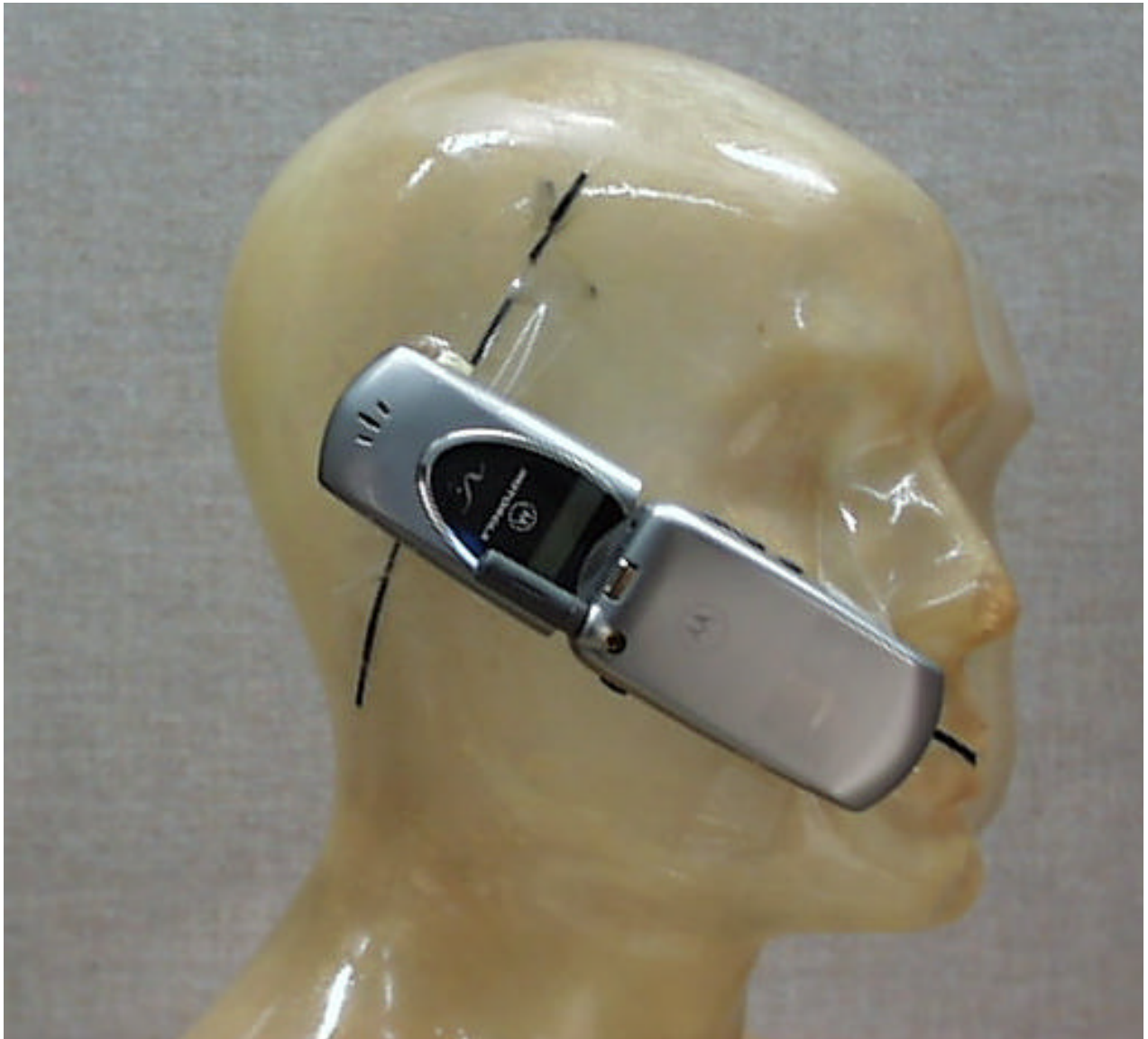


Figure 7. Phone Against the Head Phantom