Exhibit 11: SAR Test Report IHDT56FZ1

Date of test: 12-Sept-2005 through 23-Sept-2005
Date of Report: 25-Oct-2005

Laboratory:
Motorola Mobile Devices Business Product Safety & Compliance Laboratory
600 N. US Highway 45
Room: MW113
Libertyville, Illinois 60048

Test Responsible:
Albert Patapack
Senior Staff Engineer

Accreditation: This laboratory is accredited to ISO/IEC 17025-1999 to perform the following tests:

Tests:	Procedures:
Electromagnetic Specific Absorption Rate	ANSI/IEEE C95.1-1992, 1999 (SAR) IEEE C95.3-1991 IEEE 1528, IEC 62209-1 FCC OET Bulletin 65 (*including Supplements A, B, C*) Australian Communications Authority Radio Communications (Electromagnetic Radiation – Human Exposure) Standard 1999 CENELEC EN 50361 (2001)
Simulated Tissue Preparation	APP-0247
RF Power Measurement	DOI-0876, 0900, 0902, 0904, 0915

On the following products or types of products:
Wireless Communications Devices (Examples): Two Way Radios; Portable Phones (including Cellular, Licensed Non-Broadcast and PCS); Low Frequency Readers; and Pagers

A2LA certificate #1651-01

Statement of Compliance: Motorola declares under its sole responsibility that portable cellular telephone FCC ID IHDT56FZ1 to which this declaration relates, is in conformity with the appropriate General Population/Uncontrolled RF exposure standards, recommendations and guidelines (FCC 47 CFR §2.1093). 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:

(none)

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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 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 Mobile Devices Business Product Safety Laboratory has performed measurements of the maximum potential exposure to the user of portable cellular phone (FCC ID IHDT56FZ1). The Specific Absorption Rate (SAR) of this product was measured. The portable cellular phone was tested in accordance with FCC OET Bulletin 65 Supplement C 01-01.

2 Description of the Device Under Test

2.1 Antenna description

Type	Internal Antenna	
Location	Bottom of transceiver housing	
Dimensions	Length	34.3mm
	Width	7.7mm
Configuration	FJA	

2.2 Device description

FCC ID Number	IHDT56FZ1								
Serial number	00440001659000								
Mode(s) of Operation	GSM 850	GSM 900	GSM 1800	GSM 1900	GPRS 850	GPRS 900	GPRS 1800	GPRS 1900	Blue Tooth
Modulation Mode(s)	GMSK	GMSK	GMSK	GMSK	GMSK	GMSK	GMSK	GMSK	GFSK
Maximum Output Power Setting	33.00 dBm	33.00 dBm	30.00 dBm	30.00 dBm	33.00 dBm	33.00 dBm	30.00 dBm	30.00 dBm	4.00 dBm
Duty Cycle	1:8	1:8	1:8	1:8	2:8	2:8	2:8	2:8	1:1
Transmitting Frequency Rang(s)	824.2-848.8 MHz	880.2-914.8 MHz	1710.2-1784.8 MHz	1850.20 – 1909.80 MHz	824.2-848.8 MHz	880.2-914.8 MHz	1710.2-1784.8 MHz	1850.20 – 1909.80 MHz	2400 - 2483.5 MHz
Production Unit or Identical Prototype (47 CFR §2..908)	Identical Prototype								
Device Category	Portable								
RF Exposure Limits	General Population / Uncontrolled								

3 Test Equipment Used

3.1 Dosimetric System

The Motorola Mobile Devices Business Product Safety & Compliance Laboratory utilizes a Dosimetric Assessment System (Dasy4™ v4.5) manufactured by Schmid & Partner Engineering AG (SPEAG™), of Zurich Switzerland. All the SAR measurements are taken within a shielded enclosure. The overall RSS uncertainty of the measurement system is ±11.1% (K=1) with an expanded uncertainty of ±22.2% (K=2). The measurement uncertainty budget is given in Appendix 6. Per IEEE 1528, this uncertainty budget is applicable to the SAR range of 0.4 W/kg to 10 W/kg. The list of calibrated equipment used for the measurements is shown below.

Description	Serial Number	Cal Due Date
DASY4 DAE4 V1	656	17-Jun-2006
E-Field Probe ETDV6	1502	19-Jul-2006
Dipole Validation Kit, DV900V2	097	02-Jun-2006
S.A.M. Phantom used for 900MHz	TP-1129	
Dipole Validation Kit, DV1800V2	277tr	
S.A.M. Phantom used for 1800MHz	TP-1134	

3.2 Additional Equipment

Description	Serial Number	Cal Due Date
Signal Generator HP8648C	3847A04840	26-Feb-2006
Signal Generator HP8648B	3642U01447	27-May-2006
Power Meter E4419B	GB39511085	01-Dec-2005
	US39250623	24-May-2006
Power Sensor #1 - E9301A	US39211012	31-May-2006
Power Sensor #1 - 8481A	3318A86935	31-May-2006
Power Sensor #2 - 8481A	2702A82671	17-Dec-2005
	US37296472	31-May-2006
Network Analyzer HP8753ES	US39172714	04-Mar-2006
Dielectric Probe Kit HP85070B	US99360207	

4 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 the HP85070 Dielectric Probe Kit These values, along with the temperature of the tissue simulate are shown in the table below. The recommended limits for maximum permittivity and minimum conductivity are also shown. These come from the Federal Communication Commission, OET Bulletin 65 Supplement C 01-01. 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)	Temp (°C)
835	Head	**Measured,** 12-Sept-2005	41.7	0.89	21.9
		Measured, 23-Sept-2005	41.7	0.90	21.7
		Recommended Limits	41.5 ±5%	0.90 ±5%	18-25
	Body	**Measured,** 12-Sept-2005	54.5	0.98	21.7
		Recommended Limits	55.2 ±5%	0.97 ±5%	18-25
1880	Head	**Measured,** 14-Sept-2005	38.7	1.44	22.0
		Recommended Limits	40.0 ±5%	1.40 ±5%	18-25
	Body	**Measured,** 15-Sept-2005	51.7	1.58	20.9
		Recommended Limits	53.3 ±5%	1.52 ±5%	18-25

The list of ingredients and the percent composition used for the tissue simulates are indicated in the table below.

Ingredient	800MHz Head	800MHz Body	1900MHz Head	1900MHz Body
Sugar	57.0	44.9	--	--
DGBE	--	--	47.0	30.80
Water	40.45	53.06	52.8	68.91
Salt	1.45	0.94	0.2	0.29
HEC	1.0	1.0	--	--
Bact.	0.1	0.1	--	--

5 System Accuracy Verification

A system accuracy verification of the DASY4 v4.5 was performed using the measurement equipment listed in Section 3.1. The daily system accuracy verification occurs within center section of the SAM phantom.

A SAR measurement was performed to see if the measured SAR was within +/- 10% from the target SAR indicated in Section 8.3.7 Reference SAR Values in IEEE 1528, or Appendix 7 for the 900Mhz band. These tests were done at 900MHz and 1800MHz. These frequencies are within 100MHz of the mid-band frequency of the test device. This is within the allowable window given in Supplement C 01-01 *Appendix D System Verification* section item #5. The test was conducted on the same days as the measurement of the DUT. Recommended limits for maximum permittivity, minimum conductivity are shown in the table below. These come from the Federal Communication Commission, OET Bulletin 65 Supplement C 01-01. The obtained results from the system accuracy verification are displayed in the table below. The distributions of SAR compare well with those of the reference measurements (see Appendix 1). The tissue stimulant depth was verified to be 15.0cm ±0.5cm. Z-axis scans showing the SAR penetration are also included in Appendix 1. SAR values are normalized to 1W forward power delivered to the dipole.

f (MHz)	Description	SAR (W/kg), 1gram	Dielectric Parameters		Ambient Temp (°C)	Tissue Temp (°C)
			ε_r	σ (S/m)		
900	**Measured,** 12-Sept-2005	11.83	41.0	0.95	22.0	22.1
	Measured, 23-Sept-2005	11.76	41.0	0.96	22.0	22.1
	Recommended Limits	10.8	41.5 ±5%	0.97 ±5%	18-25	18-25
1800	**Measured,** 14-Sept-2005	34.38	39.0	1.36	22.0	22.3
	Measured, 15-Sept-2005	35.15	38.9	1.36	22.0	21.4
	Recommended Limits	38.1	40.0 ±5%	1.4 ±5%	18-25	18-25

The following probe conversion factors were used on the E-Field probe(s) used for the system accuracy verification measurements:

Description	Serial Number	f (MHz)	Conversion Factor	Cal Cert pg #
E-Field Probe ET3DV6	1502	900	6.23	8 of 9
		1810	5.26	8 of 9

6 Test Results

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 tested in the configurations stipulated in OET Bulletin 65 Supplement C 01-01. Motorola also followed the requirements in Supplement. C / Appendix D: SAR Measurement Procedures, section titled "*Devices Operating Next To A Person's Ear* ". These directions state "The device should be tested on the left and right side of the head phantom in the "Cheek/Touch" and "Ear/Tilt" positions. When applicable, each configuration should be tested with the antenna in its fully extended and fully retracted positions. These test configurations should be tested at the high, middle and low frequency channels of each operating mode; for example, AMPS, CDMA, and TDMA. If the SAR measured at the middle channel for each test configuration (left, right, Cheek/Touch, Tile/Ear, extended and retracted) is at least 2.0 dB lower than the SAR limit, testing at the high and low channels is optional for such test configuration(s)."

The DASY4 v4.5 SAR measurement system specified in section 3.1 was utilized within the intended operations as set by the SPEAG™ setup. The phone was positioned into the measurement configurations using the positioner supplied with the DASY4 v4.5 SAR measurement system. The measured dielectric constant of the material used for the positioner is less than 2.9 and the loss tangent is less than 0.02 (± 30%) at 850MHz. The default settings for the "coarse" and "cube" scans were chosen and use for measurements. The grid spacing of the course scan was set to 15cm as shown in the SAR plots included in appendix 2 and 3. Please refer to the DASY manual for additional information on SAR scanning procedures and algorithms used.

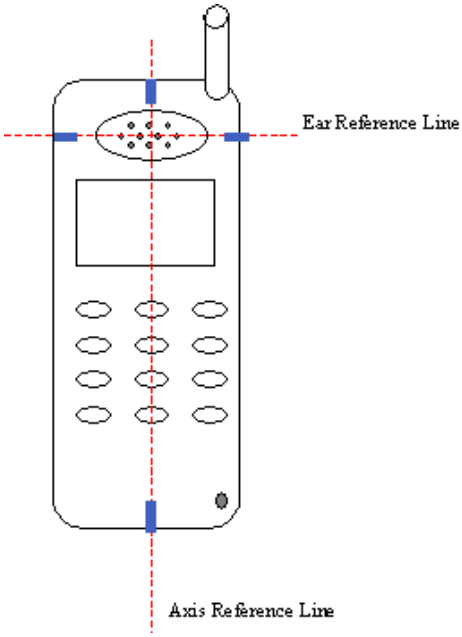
The Cellular Phone (FCC ID IHDT56FZ1) has the 850mAH model #SNN5771A as the only battery option. This battery was used to do all of the SAR testing. The phone was placed in the SAR measurement system with a fully charged battery.

6.1 Head Adjacent Test Results

To aid in positioning repeatability, the ear reference line of the device and the axis reference line of the device have been physically added using a non-metallic marker.

- Per Figure 1, the "Ear Reference Line" is centered vertically through the center of the listening area (as defined by the speaker holes in the housing).
- The "Axis Reference Line" bisects the front surface of the device at its top and bottom edges.
- The intersection of these two lines defines the location of the "Ear Reference Point".

The lines drawn on the device extended to the outside edges, as shown in blue in the figure below, and wrap around the sides of the device.



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, the temperature of the test facility during the test, the temperature of the tissue simulate after the test, the measured drift and the extrapolated SAR. The exact method of extrapolation is New SAR = Old SAR * 10^(-drift/10). The SAR reported at the end of the measurement process by the DASY™ measurement system can be scaled up by the measured drift to determine the SAR at the beginning of the measurement process. This is the most conservative SAR because it corresponds to the average output power at the beginning of the SAR test. This extrapolation has been done because when the DUT is operating properly it may exhibit a slump in radiated power and SAR over time. This is verified by measuring the SAR drift after the test.

The left head and right head SAR contour distributions are similar. Because of this similarity, the cheek/touch and 15° tilt test conditions with the highest SAR values in each band are indicated as bold numbers in the following tables and are included in Appendix 2. All other test conditions measured lower SAR values than those included in Appendix 2.

The SAR measurements were performed using the SAM phantoms listed in section 3.1. Since the same phantoms and tissue simulate are used for the system accuracy verification as the device SAR measurements, the Z-axis scans included in within Appendix 1 are applicable for verification of tissue simulate depth to be 15.0cm ±0.5cm.

The following probe conversion factors were used on the E-Field probe(s) used for the head adjacent measurements:

Description	Serial Number	f (MHz)	Conversion Factor	Cal Cert pg #
E-Field Probe ET3DV6	1502	900	6.23	8 of 9
		1810	5.26	8 of 9

f (MHz)	Description	Conducted Output Power (dBm)	Cheek / Touch Position							
			Left Head				Right Head			
			Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Simulate Temp (°C)	Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Simulate Temp (°C)
GSM 850MHz	Channel 128	32.99								
	Channel 190	33.02	0.505	-0.10	0.52	21.8	**0.649**	**0.03**	**0.65**	**21.9**
	Channel 251	33.05								
GSM 1900MHz	Channel 512	30.07								
	Channel 661	29.98	**0.385**	**-0.039**	**0.39**	**22.0**	0.276	0.04	0.28	22.0
	Channel 810	29.92								

Table 1: SAR measurement results for the portable cellular telephone FCC ID IHDT56FZ1 at highest possible output power. Measured against the Head in the Cheek/Touch Position.

f (MHz)	Description	Conducted Output Power (dBm)	15° Tilt Position							
			Left Head				Right Head			
			Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Simulate Temp (°C)	Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Simulate Temp (°C)
GSM 850MHz	Channel 128	32.99								
	Channel 190	33.02	**0.122**	**-0.013**	**0.12**	**21.7**	0.113	-0.10	0.12	21.8
	Channel 251	33.05								
GSM 1900MHz	Channel 512	30.07								
	Channel 661	29.98	0.0304	0.04	0.03	22.0	**0.037**	**0.01**	**0.04**	**21.9**
	Channel 810	29.92								

Table 2: SAR measurement results for the portable cellular telephone FCC ID IHDT56FZ1at highest possible output power. Measured against the head in the 15° Tilt Position.

6.2 Body Worn Test Results

The SAR results shown in table 3 and 4 are the maximum SAR values averaged over 1 gram of phantom tissue. Also shown are the measured conducted output powers, the temperature of the test facility during the test, the temperature of the tissue simulate after the test, the measured drift and the extrapolated SAR. The exact method of extrapolation is New SAR = Old SAR * 10^(-drift/10). The SAR reported at the end of the measurement process by the DASY™ measurement system can be scaled up by the measured drift to determine the SAR at the beginning of the measurement process. This is the most conservative SAR because it corresponds to the average output power at the beginning of the SAR test. This extrapolation has been done because when the DUT is operating properly it may exhibit a slump in radiated power and SAR over time. This is verified by measuring the SAR drift after the test.

The test conditions that produced the highest SAR values in each band are indicated as bold numbers in the following tables and are included in Appendix 3. All other test conditions measured lower SAR values than those included in Appendix 3.

A "flat" phantom was for the body-worn tests. This "flat" phantom is made out of 1" thick natural High Density Polyethylene with a thickness at the bottom equal to 2.0mm. It measures 52.7cm(long) x 26.7cm(wide) x 21.2cm(tall). The measured dielectric constant of the material used is less than 2.3 and the loss tangent is less than 0.0046 all the way up to 2.184GHz.

The tissue stimulant depth was verified to be 15.0cm ±0.5cm. The same device holder described in section 6 was used for positioning the phone. There are no Body-Worn Accessories available for this phone at the time of testing hence the device was tested per the supplement C testing guidelines for devices that do not have body worn accessories. The phone was placed a maximum of 25mm away from a flat phantom per the supplement C standard guidelines to perform SAR measurement. The cellular phone was tested with a headset connected to the device for all body-worn SAR measurements.

The following probe conversion factors were used on the E-Field probe(s) used for the body worn measurements:

Description	Serial Number	f (MHz)	Conversion Factor	Cal Cert pg #
E-Field Probe ET3DV6	1502	900	6.13	8 of 9
		1810	4.58	8 of 9

f (MHz)	Description	Conducted Output Power (dBm)	Body Worn							
			Front of Phone 15mm from Phantom				Back of Phone 15mm from Phantom			
			Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Simulate Temp (°C)	Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Simulate Temp (°C)
GSM 850MHz	Channel 128	32.99								
	Channel 190	33.02	0.261	0.04	0.26	21.8	**0.474**	**-0.127**	**0.49**	**21.7**
	Channel 251	33.05								
GSM 1900MHz	Channel 512	30.07								
	Channel 661	29.98	0.154	0.06	0.15	21.0	**0.213**	**0.07**	**0.21**	**20.9**
	Channel 810	29.92								

Table 3: SAR measurement results for the portable cellular telephone FCC ID IHDT56FZ1 at highest possible output power. Measured against the body.

f (MHz)	Description	Conducted Output Power (dBm)	Body Worn							
			GPRS Back of Phone 25mm from Phantom				Back of Phone 15mm from Phantom with Bluetooth enabled			
			Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Simulate Temp (°C)	Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Simulate Temp (°C)
GSM 850MHz	Channel 128	32.99								
	Channel 190	33.02	0.436	-0.02	0.44	21.6	0.46	-0.03	0.46	21.2
	Channel 251	33.05								
GSM 1900MHz	Channel 512	30.07								
	Channel 661	29.98	0.127	0.03	0.13	20.5	0.166	0.10	0.17	20.3
	Channel 810	29.92								

Table 4: SAR measurement results for the portable cellular telephone FCC ID IHDT56FZ1 at highest possible output power. Measured against the body.

Appendix 1

SAR distribution comparison for the system accuracy verification

Date/Time: 9/12/2005 7:26:20 AM

Test Laboratory: Motorola

091205_900MHz_Good +4.6%

DUT: Dipole 900 MHz; Type: D900V2; Serial: D900V2 - SN:097;

Procedure Notes: 900 MHz System Performance Check / Dipole Sn# 097 PM1 Power = 200 mW

Sim.Temp@meas = 22.09C Sim.Temp@SPC = 22.1C Room Temp @ SPC = 22C

Communication System: CW - Dipole; Frequency: 900 MHz; Channel Number: 4; Duty Cycle: 1:1

Medium: VALIDATION Only; Medium parameters used: f = 900 MHz; σ = 0.95 mho/m; ε_r = 41; ρ = 1000kg/m^3

DASY4 Configuration:

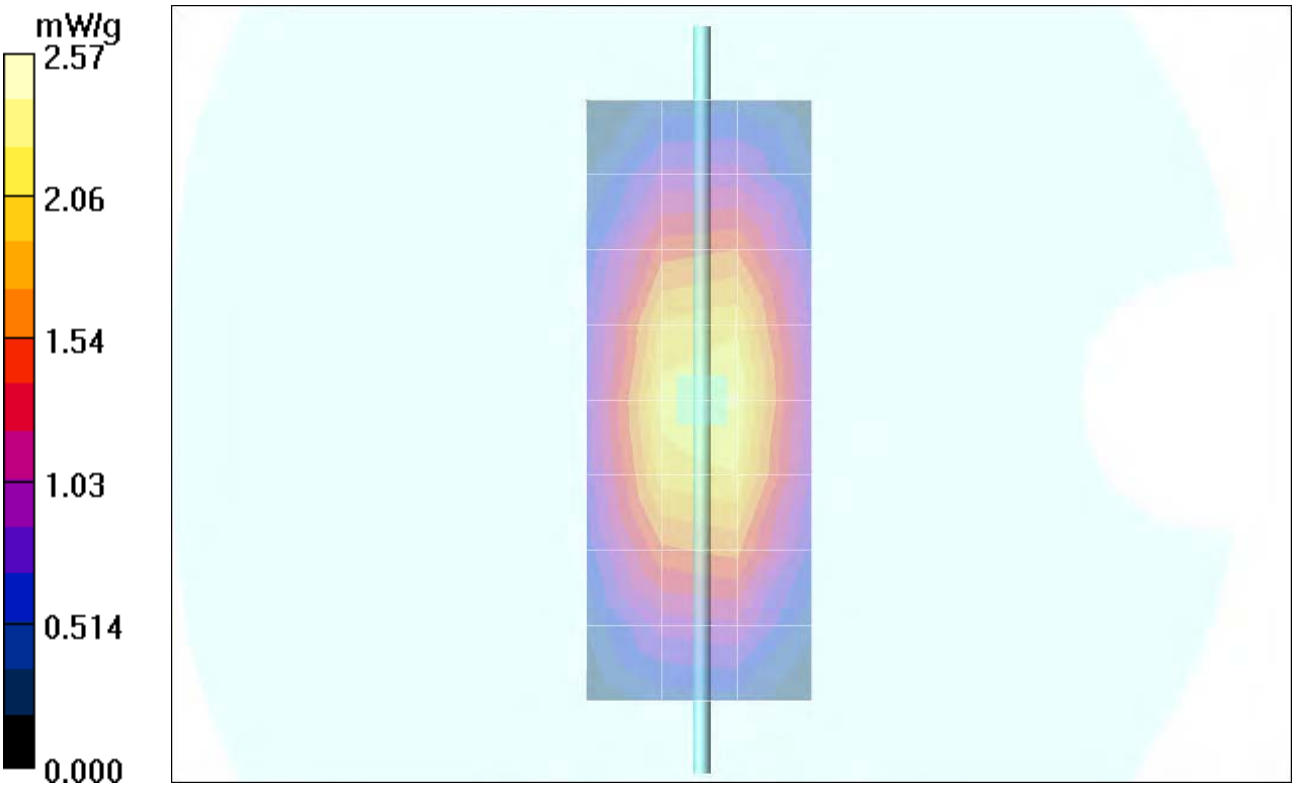
- Probe: ET3DV6 - SN1502; ConvF(6.23, 6.23, 6.23); Calibrated: 7/19/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn656; Calibrated: 6/17/2005
- Phantom: PCS9 Sugar Water SAM; Type: SAM; Serial: TP-1129;
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

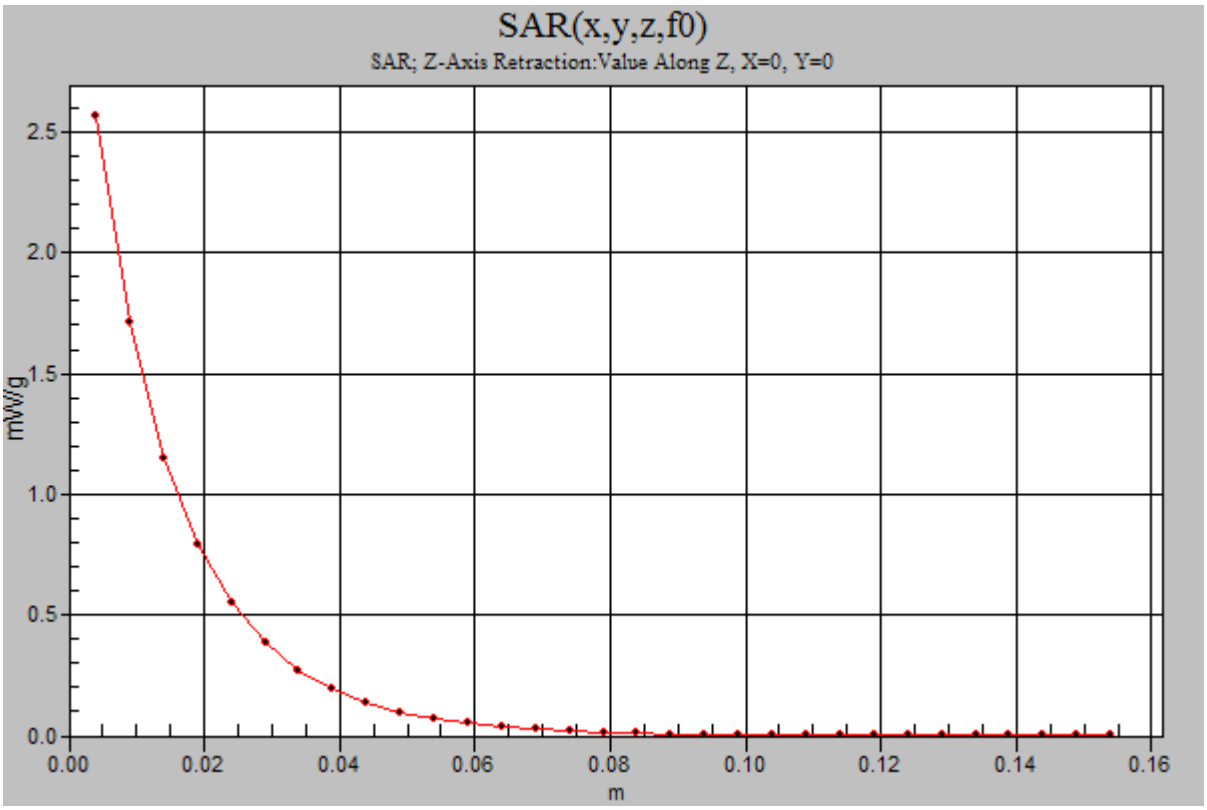
Daily SPC Check/Dipole Area Scan (4x9x1):
Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 2.26 mW/g

Daily SPC Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 53.9 V/m; Power Drift = -0.013 dB Peak SAR (extrapolated) = 3.46 W/kg
SAR(1 g) = 2.34 mW/g; SAR(10 g) = 1.51 mW/g Maximum value of SAR (measured) = 2.54 mW/g

Daily SPC Check/90-Degree 5x5x7 Cube (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 53.9 V/m; Power Drift = -0.013 dB Peak SAR (extrapolated) = 3.53 W/kg
SAR(1 g) = 2.39 mW/g; SAR(10 g) = 1.54 mW/g Maximum value of SAR (measured) = 2.58 mW/g

Daily SPC Check/Z-Axis Retraction (1x1x31):
Measurement grid: dx=20mm, dy=20mm, dz=5mm Maximum value of SAR (measured) = 2.57 mW/g


mW/g
2.57
2.06
1.54
1.03
0.514
0.000


SAR(x,y,z,f0)
SAR; Z-Axis Retraction:Value Along Z, X=0, Y=0
mW/g
2.5
2.0
1.5
1.0
0.5
0.0
0.00
0.02
0.04
0.06
0.08
0.10
0.12
0.14
0.16
m

Date/Time: 9/14/2005 4:25:18 PM

Test Laboratory: Motorola

091405_1800MHz_Good -9.8%

DUT: Dipole 1800 MHz; Type: D1800V2; Serial: D1800V2 - SN:277tr;

Procedure Notes: 1800 MHz System Performance Check / Dipole Sn# 277tr PM1 Power = 200 mW

Sim.Temp@meas = 22.36C Sim.Temp@SPC = 22.3C Room Temp @ SPC = 22C

Communication System: CW - Dipole; Frequency: 1800 MHz; Channel Number: 8; Duty Cycle: 1:1

Medium: VALIDATION Only; Medium parameters used: f = 1800 MHz; σ = 1.36 mho/m; ε_r = 39; ρ = 1000kg/m^3

DASY4 Configuration:

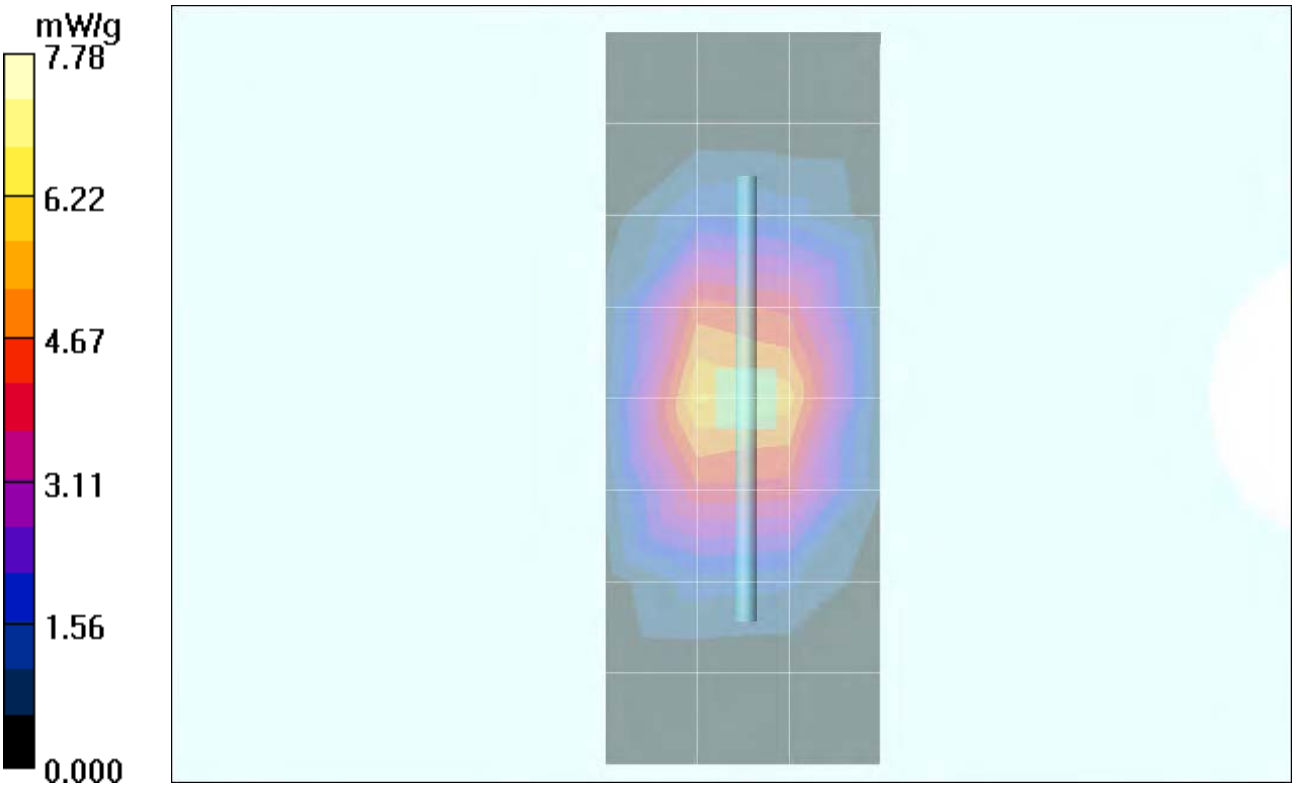
- Probe: ET3DV6 - SN1502; ConvF(5.26, 5.26, 5.26); Calibrated: 7/19/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn656; Calibrated: 6/17/2005
- Phantom: PCS9 Glycol SAM; Type: SAM; Serial: TP-1134;
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

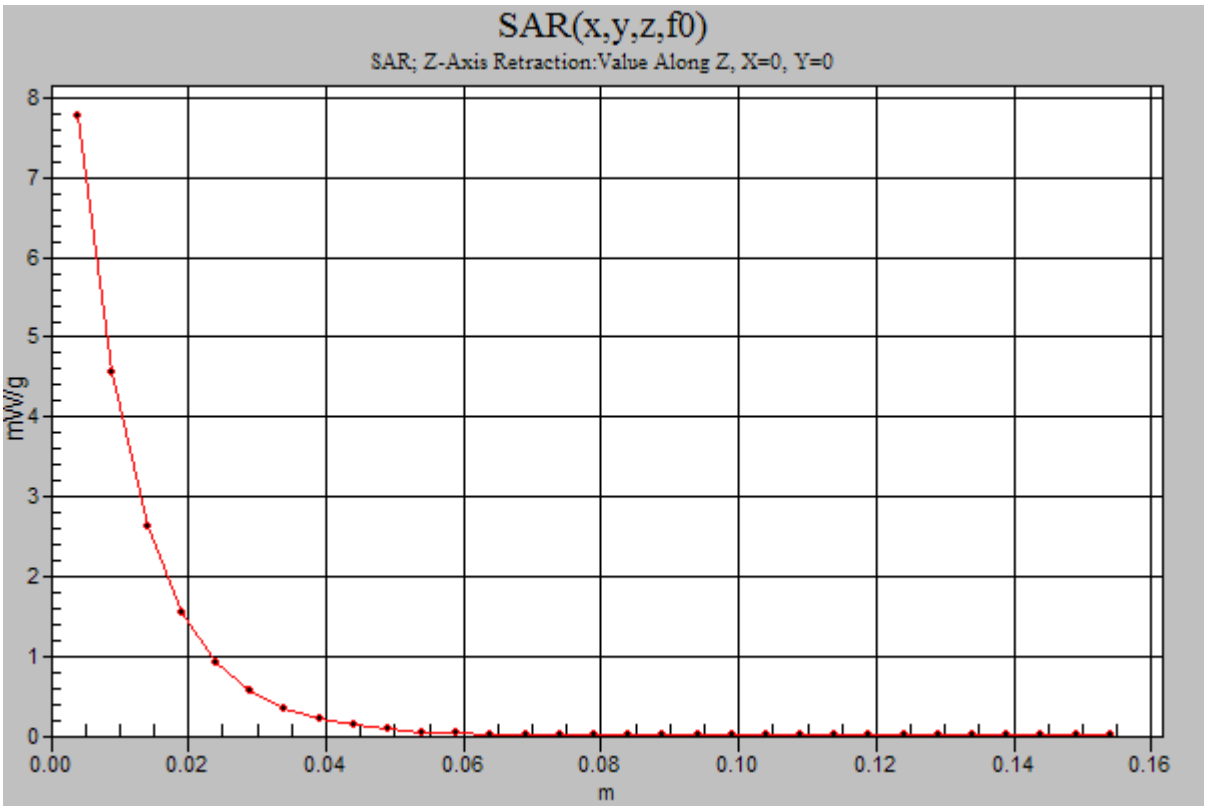
Daily SPC Check/Dipole Area Scan (4x9x1):
Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 5.80 mW/g

Daily SPC Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 79.2 V/m; Power Drift = 0.099 dB Peak SAR (extrapolated) = 11.3 W/kg
SAR(1 g) = 6.83 mW/g; SAR(10 g) = 3.69 mW/g Maximum value of SAR (measured) = 7.71 mW/g

Daily SPC Check/90-Degree 5x5x7 Cube (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 79.2 V/m; Power Drift = 0.099 dB Peak SAR (extrapolated) = 11.4 W/kg
SAR(1 g) = 6.92 mW/g; SAR(10 g) = 3.74 mW/g Maximum value of SAR (measured) = 7.83 mW/g

Daily SPC Check/Z-Axis Retraction (1x1x31):
Measurement grid: dx=20mm, dy=20mm, dz=5mm Maximum value of SAR (measured) = 7.78 mW/g


mW/g
7.78
6.22
4.67
3.11
1.56
0.000


SAR(x,y,z,f0)
SAR; Z-Axis Retraction:Value Along Z, X=0, Y=0
mW/g
0
1
2
3
4
5
6
7
8
0.00
0.02
0.04
0.06
0.08
0.10
0.12
0.14
0.16
m

Date/Time: 9/15/2005 6:11:54 PM

Test Laboratory: Motorola

091505_1800MHz_Good -7.7%

DUT: Dipole 1800 MHz; Type: D1800V2; Serial: D1800V2 - SN:277tr;

Procedure Notes: 1800 MHz System Performance Check / Dipole Sn# 277tr PM1 Power = 200 mW

Sim.Temp@meas = 22.27C Sim.Temp@SPC = 21.4C Room Temp @ SPC = 22C

Communication System: CW - Dipole; Frequency: 1800 MHz; Channel Number: 8; Duty Cycle: 1:1

Medium: VALIDATION Only; Medium parameters used: f = 1800 MHz; σ = 1.36 mho/m; ε_r = 38.9; ρ = 1000kg/m^3

DASY4 Configuration:

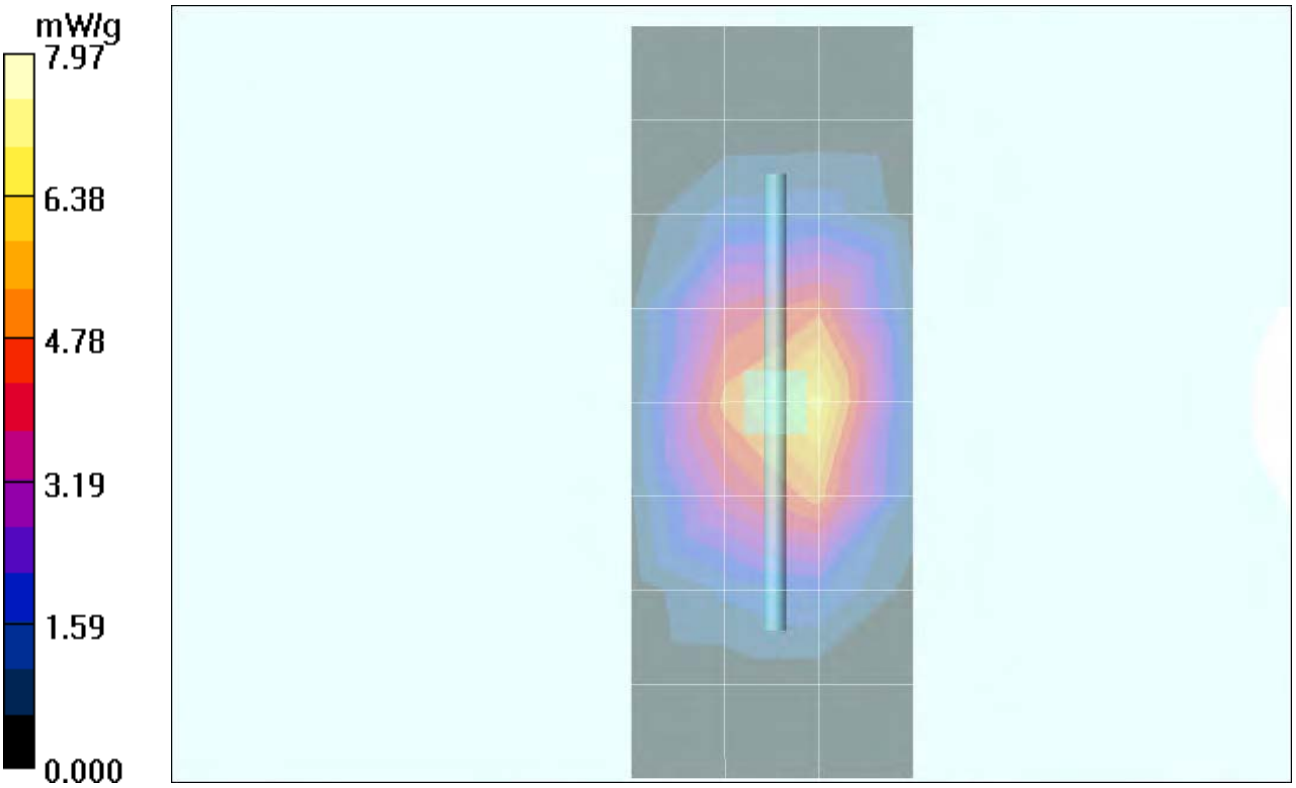
- Probe: ET3DV6 - SN1502; ConvF(5.26, 5.26, 5.26); Calibrated: 7/19/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn656; Calibrated: 6/17/2005
- Phantom: PCS9 Glycol SAM; Type: SAM; Serial: TP-1134;
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

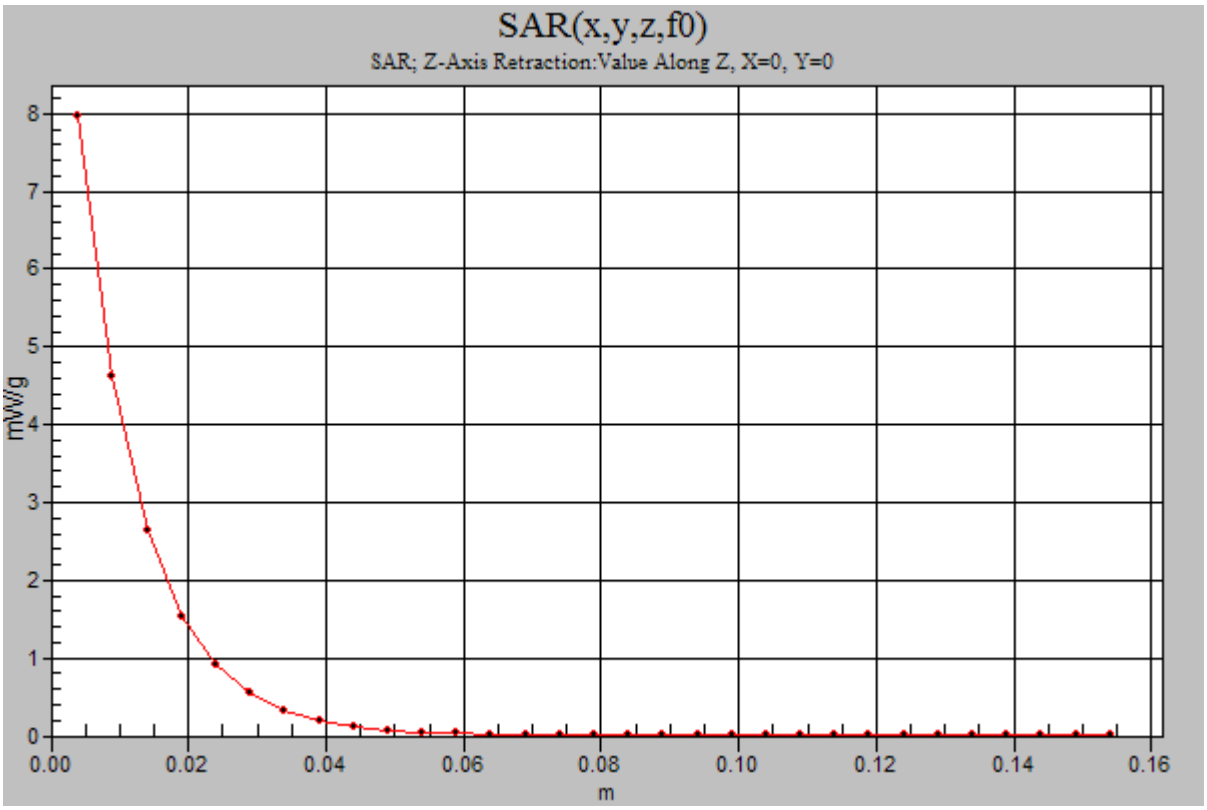
Daily SPC Check/Dipole Area Scan (4x9x1):
Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 6.58 mW/g

Daily SPC Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 80.9 V/m; Power Drift = 0.016 dB Peak SAR (extrapolated) = 11.7 W/kg
SAR(1 g) = 6.99 mW/g; SAR(10 g) = 3.76 mW/g Maximum value of SAR (measured) = 7.91 mW/g

Daily SPC Check/90-Degree 5x5x7 Cube (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 80.9 V/m; Power Drift = 0.016 dB Peak SAR (extrapolated) = 11.9 W/kg
SAR(1 g) = 7.07 mW/g; SAR(10 g) = 3.79 mW/g Maximum value of SAR (measured) = 7.84 mW/g

Daily SPC Check/Z-Axis Retraction (1x1x31):
Measurement grid: dx=20mm, dy=20mm, dz=5mm Maximum value of SAR (measured) = 7.97 mW/g


mW/g
7.97
6.38
4.78
3.19
1.59
0.000


SAR(x,y,z,f0)
SAR; Z-Axis Retraction:Value Along Z, X=0, Y=0
mW/g
0
1
2
3
4
5
6
7
8
0.00
0.02
0.04
0.06
0.08
0.10
0.12
0.14
0.16
m

Date/Time: 9/23/2005 8:09:58 AM

Test Laboratory: Motorola

092305_900MHz_Good +4.1%

DUT: Dipole 900 MHz; Type: D900V2; Serial: D900V2 - SN:097;

Procedure Notes: 900 MHz System Performance Check / Dipole Sn# 097 PM1 Power = 199 mW

Sim.Temp@meas = 22.03C Sim.Temp@SPC = 22.1C Room Temp @ SPC = 22C

Communication System: CW - Dipole; Frequency: 900 MHz; Channel Number: 4; Duty Cycle: 1:1

Medium: VALIDATION Only; Medium parameters used: f = 900 MHz; σ = 0.96 mho/m; ε_r = 41; ρ = 1000kg/m^3

DASY4 Configuration:

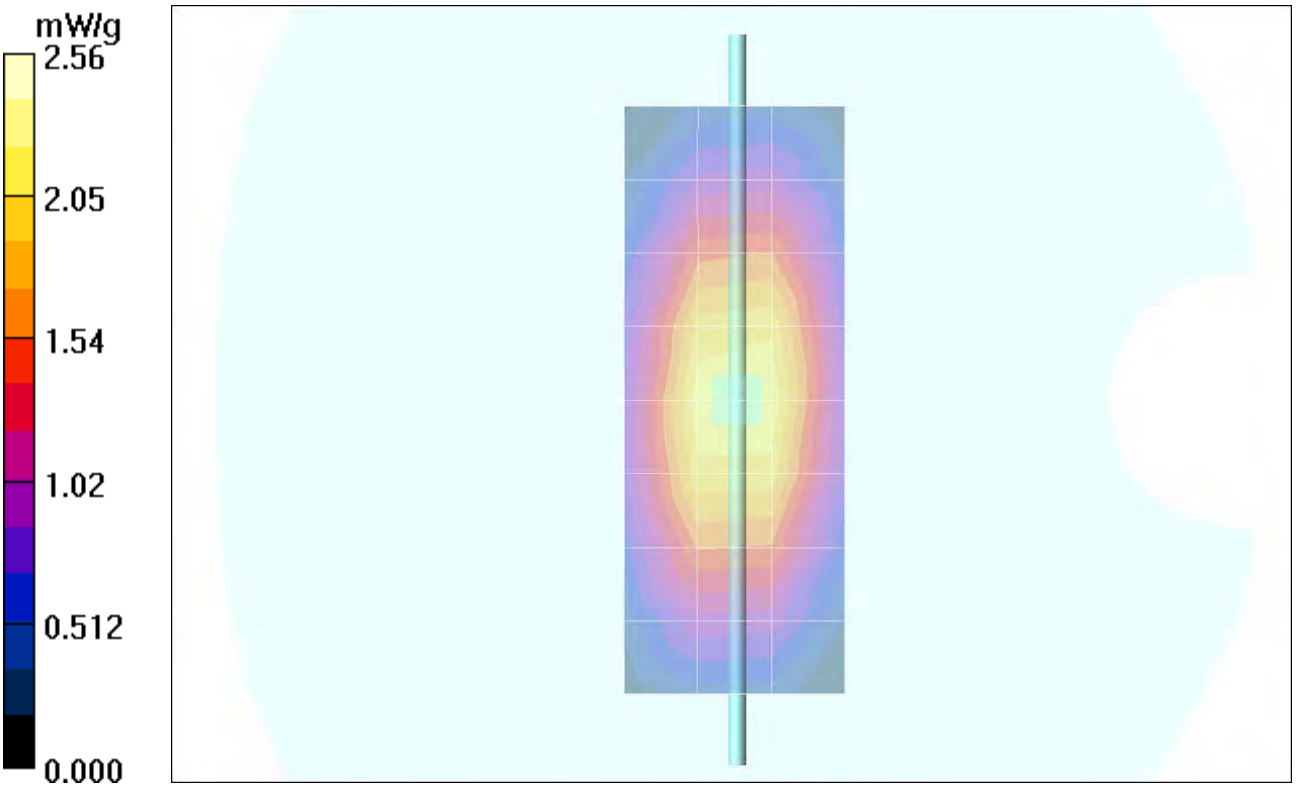
- Probe: ET3DV6 - SN1502; ConvF(6.23, 6.23, 6.23); Calibrated: 7/19/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn656; Calibrated: 6/17/2005
- Phantom: PCS9 Sugar Water SAM; Type: SAM; Serial: TP-1129;
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

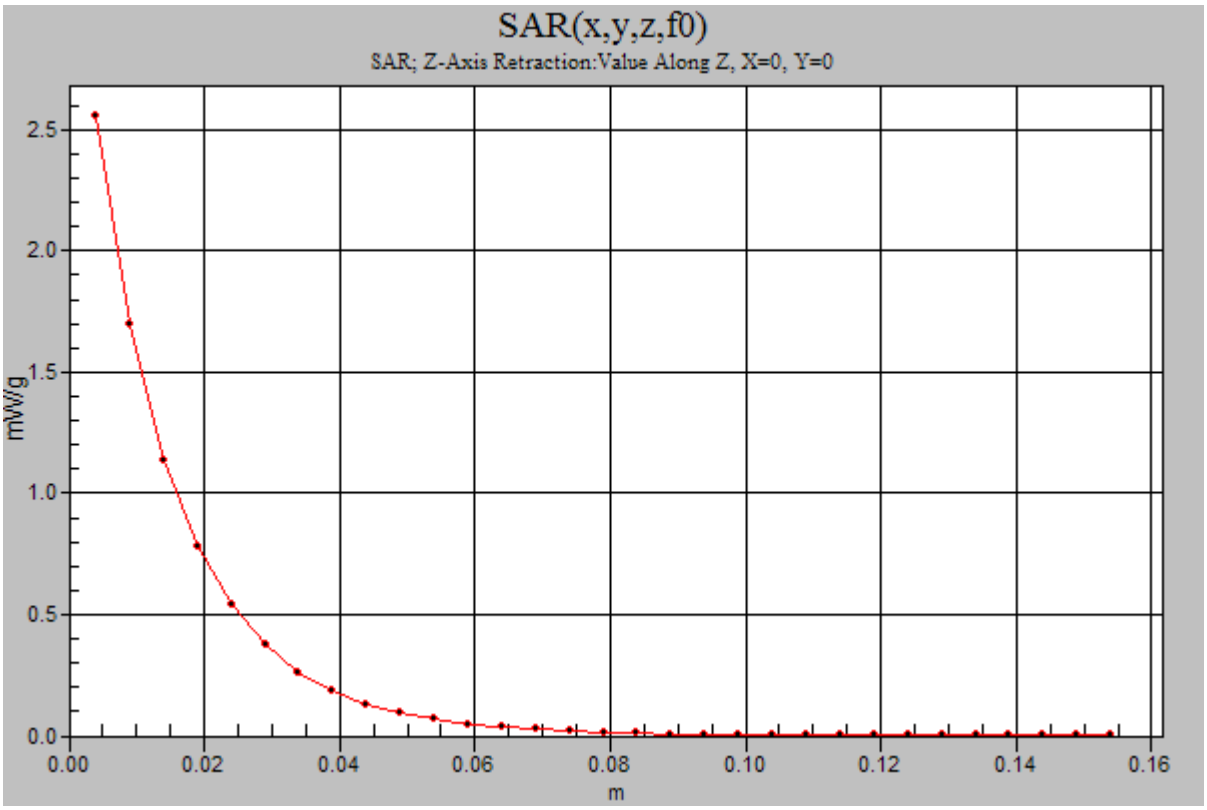
Daily SPC Check/Dipole Area Scan (4x9x1):
Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 2.20 mW/g

Daily SPC Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 53.4 V/m; Power Drift = 0.016 dB Peak SAR (extrapolated) = 3.40 W/kg
SAR(1 g) = 2.31 mW/g; SAR(10 g) = 1.49 mW/g Maximum value of SAR (measured) = 2.49 mW/g

Daily SPC Check/90-Degree 5x5x7 Cube (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 53.4 V/m; Power Drift = 0.016 dB Peak SAR (extrapolated) = 3.51 W/kg
SAR(1 g) = 2.37 mW/g; SAR(10 g) = 1.52 mW/g Maximum value of SAR (measured) = 2.56 mW/g

Daily SPC Check/Z-Axis Retraction (1x1x31):
Measurement grid: dx=20mm, dy=20mm, dz=5mm


mW/g
2.56
2.05
1.54
1.02
0.512
0.000


SAR(x,y,z,f0)
SAR; Z-Axis Retraction:Value Along Z, X=0, Y=0
mW/g
2.5
2.0
1.5
1.0
0.5
0.0
0.00
0.02
0.04
0.06
0.08
0.10
0.12
0.14
0.16
m

Appendix 2

SAR distribution plots for Phantom Head Adjacent Use

Date/Time: 9/12/2005 10:00:33 AM

Test Laboratory: Motorola 850 cheek

Serial: 00440001 659000; Procedure Notes: Pwr Step: 05(OTA) Antenna Position: Internal
Accessory Model #: N/A Battery Model #: SNN5771A DEVICE POSITION (cheek or rotated): cheek
Communication System: GSM 850; Frequency: 836.6 MHz; Channel Number: 190; Duty Cycle: 1:8
Medium: Low Freq Head; Medium parameters used: f = 835 MHz; σ = 0.89 mho/m; ε_r = 41.7; ρ = 1000 kg/m^3

DASY4 Configuration:

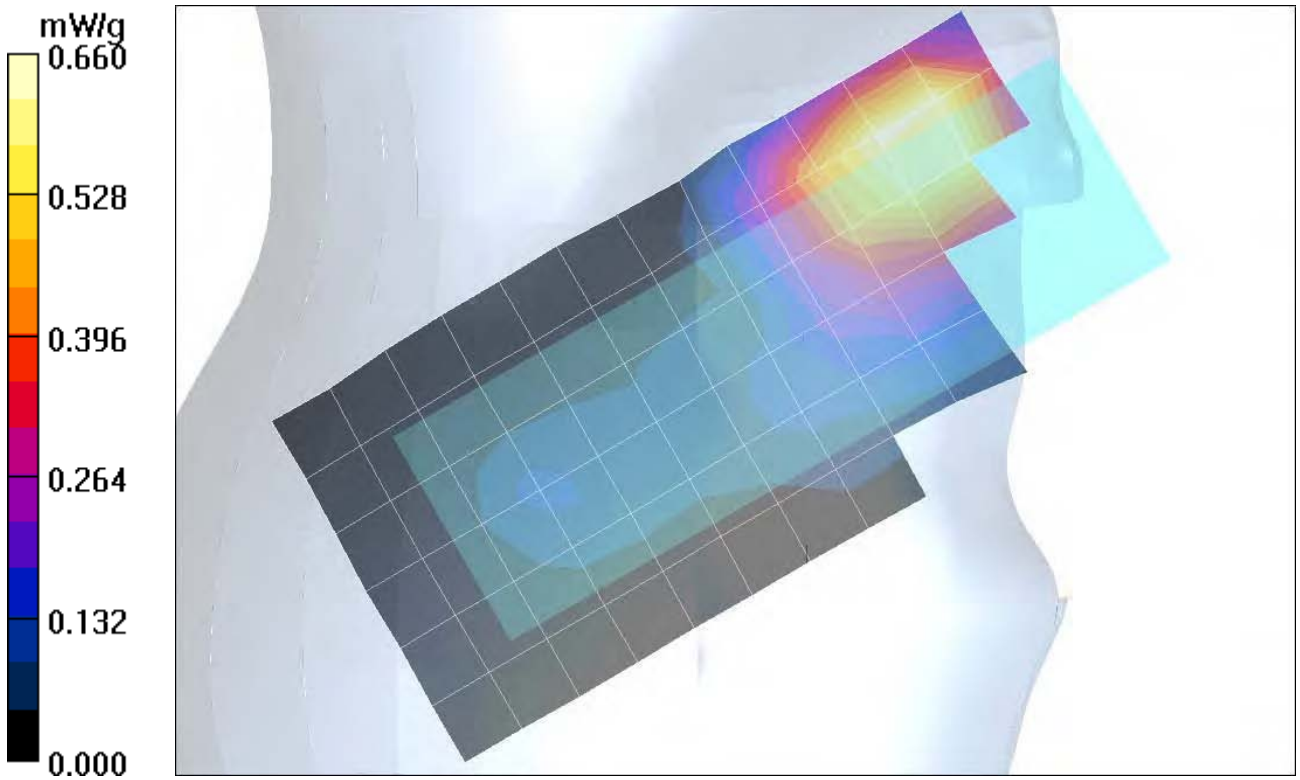
- Probe: ET3DV6 - SN1502; ConvF(6.23, 6.23, 6.23); Calibrated: 7/19/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn656; Calibrated: 6/17/2005
- Phantom: PCS9 Sugar Water SAM; Type: SAM; Serial: TP-1129;
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

Right Head Template/Area Scan - Normal (15mm) (7x17x1):

Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 0.626 mW/g

Right Head Template/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 25.4 V/m; **Power Drift = 0.030 dB** Peak SAR (extrapolated) = 0.943 W/kg
SAR(1 g) = 0.649 mW/g; SAR(10 g) = 0.439 mW/g Maximum value of SAR (measured) = 0.695 mW/g



Date/Time: 9/23/2005 11:41:46 AM

Test Laboratory: Motorola 850 tilt

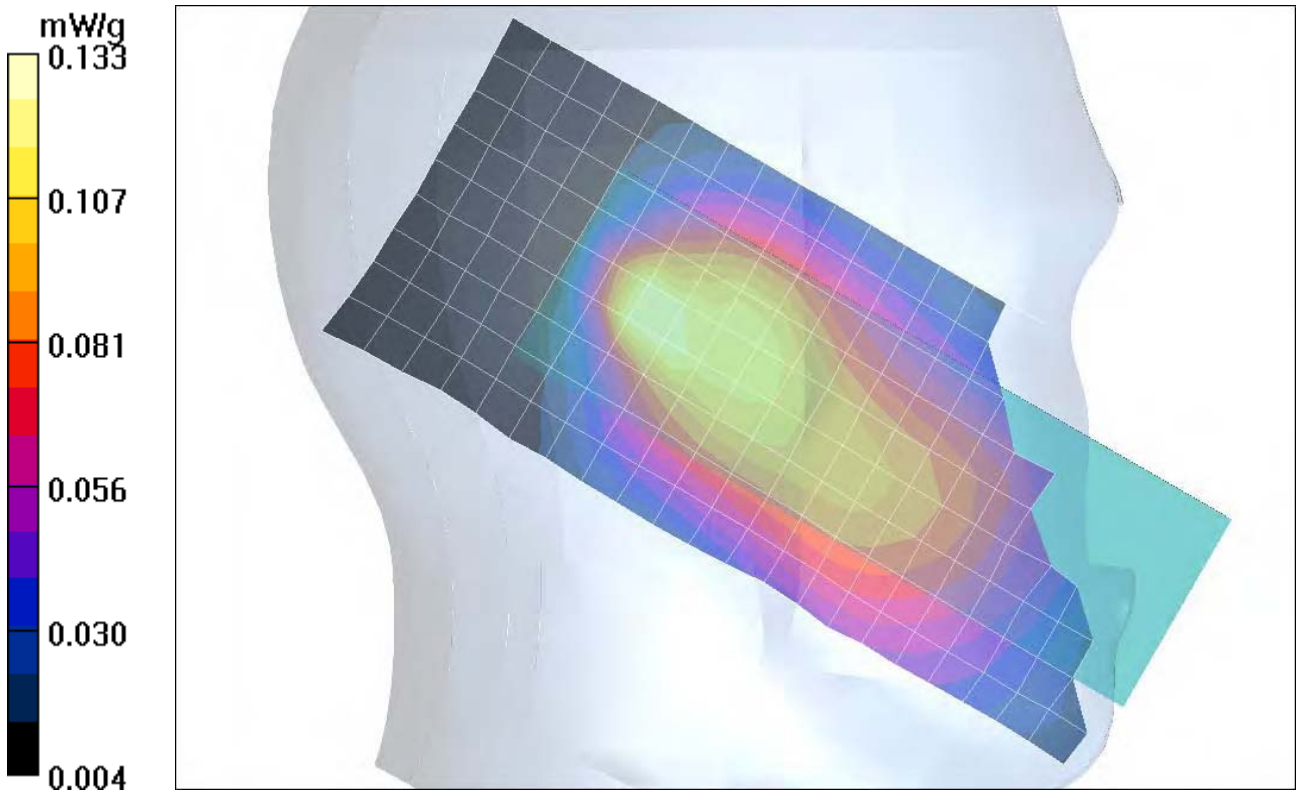
Serial: 00440001 659000
Procedure Notes: Pwr Step: 05 (OTA) Antenna Position: Internal Accessory Model #: N/A
Battery Model #: SNN5771A DEVICE POSITION (cheek or rotated): Rotated
Communication System: GSM 850; Frequency: 836.6 MHz; Channel Number: 190; Duty Cycle: 1:8
Medium: Low Freq Head; Medium parameters used: f = 835 MHz; σ = 0.9 mho/m; ε_r = 41.7; ρ = 1000 kg/m^3

DASY4 Configuration:

- Probe: ET3DV6 - SN1502; ConvF(6.23, 6.23, 6.23); Calibrated: 7/19/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn656; Calibrated: 6/17/2005
- Phantom: PCS9 Sugar Water SAM; Type: SAM; Serial: TP-1129;
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

Left Head Template/Area Scan - Normal (10mm) (10x25x1):
Measurement grid: dx=10mm, dy=10mm Maximum value of SAR (measured) = 0.124 mW/g

Left Head Template/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.4 V/m; **Power Drift = -0.013 dB** Peak SAR (extrapolated) = 0.236 W/kg
SAR(1 g) = 0.122 mW/g; SAR(10 g) = 0.081 mW/g Maximum value of SAR (measured) = 0.133 mW/g



Date/Time: 9/14/2005 7:20:09 PM

Test Laboratory: Motorola 1900 cheek

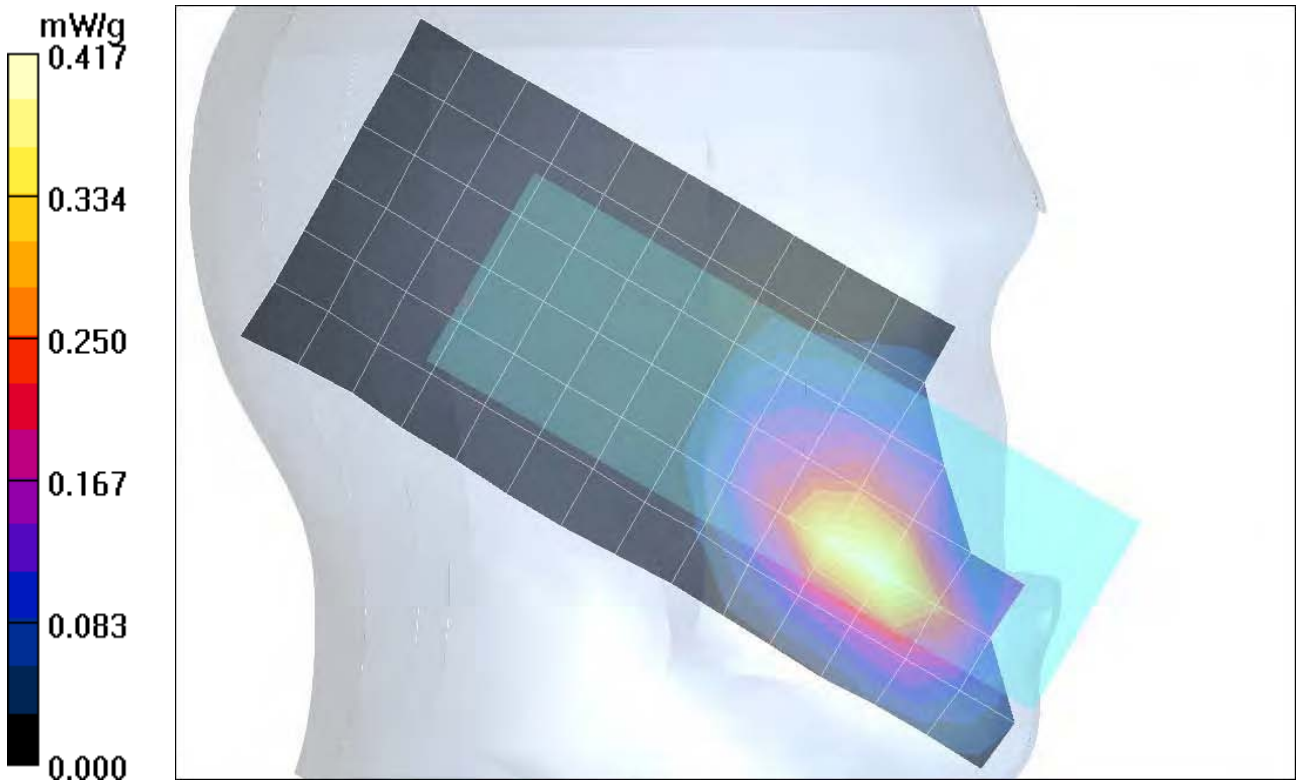
Serial: 00440001 659000;
Procedure Notes: Pwr Step: 00 (OTA) Antenna Position: Internal Accessory Model #: N/A
Battery Model #: SNN5771A DEVICE POSITION (cheek or rotated): Cheek
Communication System: GSM 1900; Frequency: 1880 MHz; Channel Number: 661; Duty Cycle: 1:8
Medium: Regular Glycol Head;
Medium parameters used: f = 1880 MHz; σ = 1.44 mho/m; ε_r = 38.7; ρ = 1000 kg/m^3

DASY4 Configuration:

- Probe: ET3DV6 - SN1502; ConvF(5.26, 5.26, 5.26); Calibrated: 7/19/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn656; Calibrated: 6/17/2005
- Phantom: PCS9 Glycol SAM; Type: SAM; Serial: TP-1134;
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

Left Head Template/Area Scan - Normal (15mm) (7x17x1):
Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 0.417 mW/g

Left Head Template/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 17.1 V/m; **Power Drift = -0.039 dB** Peak SAR (extrapolated) = 0.613 W/kg
SAR(1 g) = 0.385 mW/g; SAR(10 g) = 0.231 mW/g Maximum value of SAR (measured) = 0.420 mW/g



Date/Time: 9/14/2005 8:57:31 PM

Test Laboratory: Motorola 1900 tilt

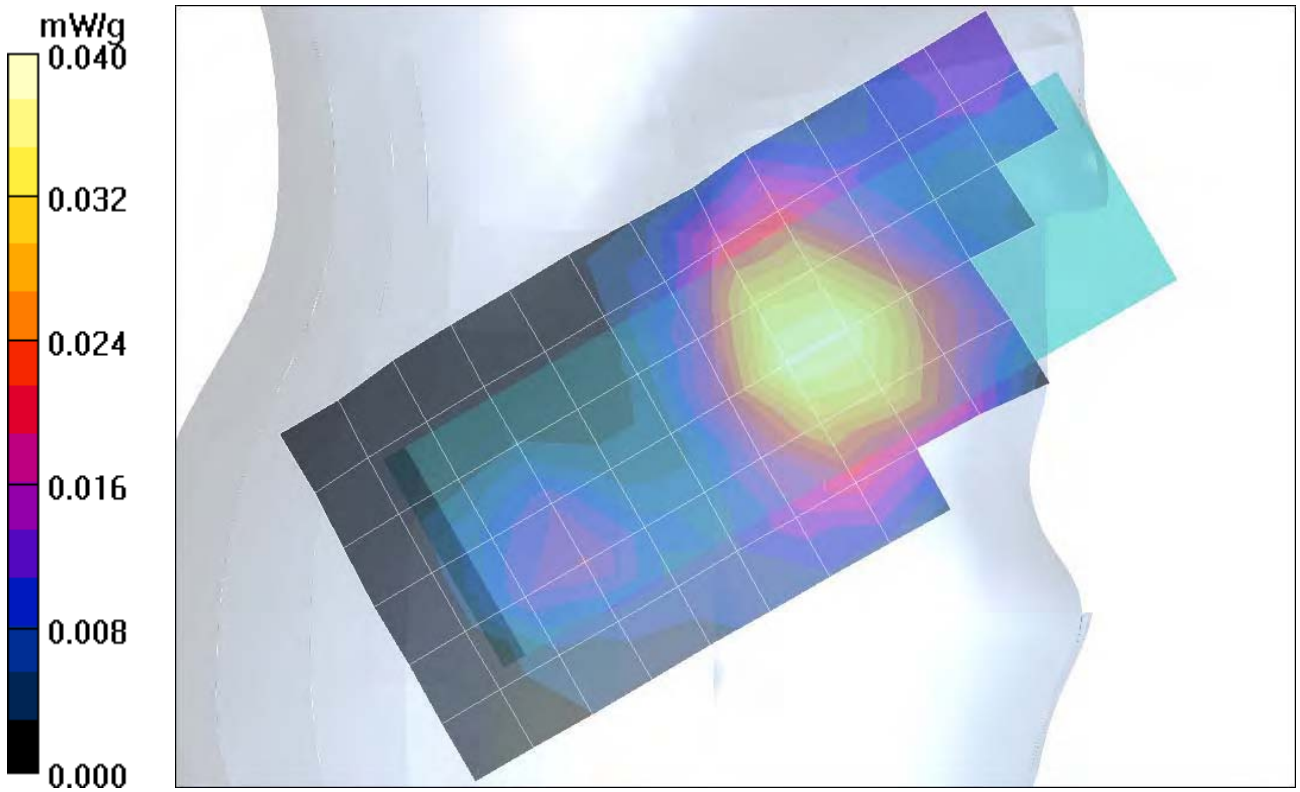
Serial: 00440001 659000
Procedure Notes: Pwr Step: 00 (OTA) Antenna Position: Internal Accessory Model #: N/A
Battery Model #: SNN5771A DEVICE POSITION (cheek or rotated): Rotated
Communication System: GSM 1900; Frequency: 1880 MHz; Channel Number: 661; Duty Cycle: 1:8
Medium: Regular Glycol Head; Medium parameters used: f = 1880 MHz; σ = 1.44 mho/m; ε_r = 38.7; ρ = 1000 kg/m^3

DASY4 Configuration:

- Probe: ET3DV6 - SN1502; ConvF(5.26, 5.26, 5.26); Calibrated: 7/19/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn656; Calibrated: 6/17/2005
- Phantom: PCS9 Glycol SAM; Type: SAM; Serial: TP-1134;
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

Right Head Template/Area Scan - Normal (15mm) (7x17x1):
Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 0.038 mW/g

Right Head Template/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.20 V/m; **Power Drift = 0.010 dB** Peak SAR (extrapolated) = 0.053 W/kg
SAR(1 g) = 0.037 mW/g; SAR(10 g) = 0.024 mW/g Maximum value of SAR (measured) = 0.039 mW/g



Appendix 3

SAR distribution plots for Body Worn Configuration

Date/Time: 9/12/2005 12:38:38 PM

Test Laboratory: Motorola 850 body worn

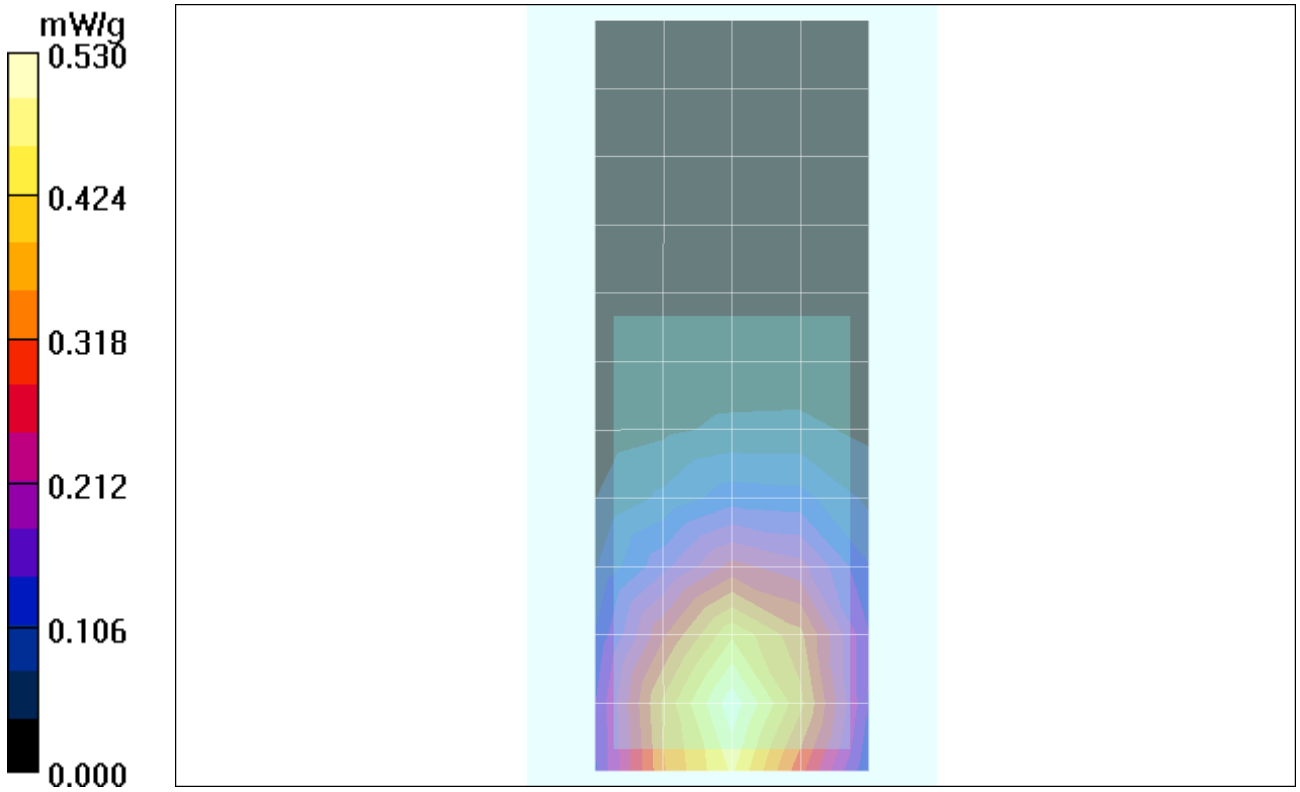
Serial: 00440001 659000
Procedure Notes: Pwr Step: 05(OTA) Antenna Position: Internal Battery Model #: SNN5771A
Accessory Model # = AAYN4264A_Headset(Back 15mm)
Communication System: GSM 850; Frequency: 836.6 MHz; Channel Number: 190; Duty Cycle: 1:8
Medium: Low Freq Body; Medium parameters used: f = 835 MHz; σ = 0.98 mho/m; ε_r = 54.5; ρ = 1000 kg/m^3

DASY4 Configuration:

- Probe: ET3DV6 - SN1502; ConvF(6.13, 6.13, 6.13); Calibrated: 7/19/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn656; Calibrated: 6/17/2005
- Phantom: R9: Section 1, Amy Twin, Rev2 (23-June-04); Type: Amy Twin Flat; Serial: n/a;
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

Amy Twin Phone Template/Area Scan - Normal Body (15mm) (13x7x1):
Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 0.519 mW/g

Amy Twin Phone Template/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 23.5 V/m; **Power Drift = -0.127 dB** Peak SAR (extrapolated) = 0.643 W/kg
SAR(1 g) = 0.474 mW/g; SAR(10 g) = 0.326 mW/g Maximum value of SAR (measured) = 0.510 mW/g



Date/Time: 9/15/2005 10:17:48 AM

Test Laboratory: Motorola 1900 body worn

Serial: 00440001 659000
Procedure Notes: Pwr Step: 00(OTA) Antenna Position: Internal Battery Model #: SNN5771A
Accessory Model # = Back 15mm
Communication System: GSM 1900; Frequency: 1880 MHz; Channel Number: 661; Duty Cycle: 1:8
Medium: Regular Glycol Body;

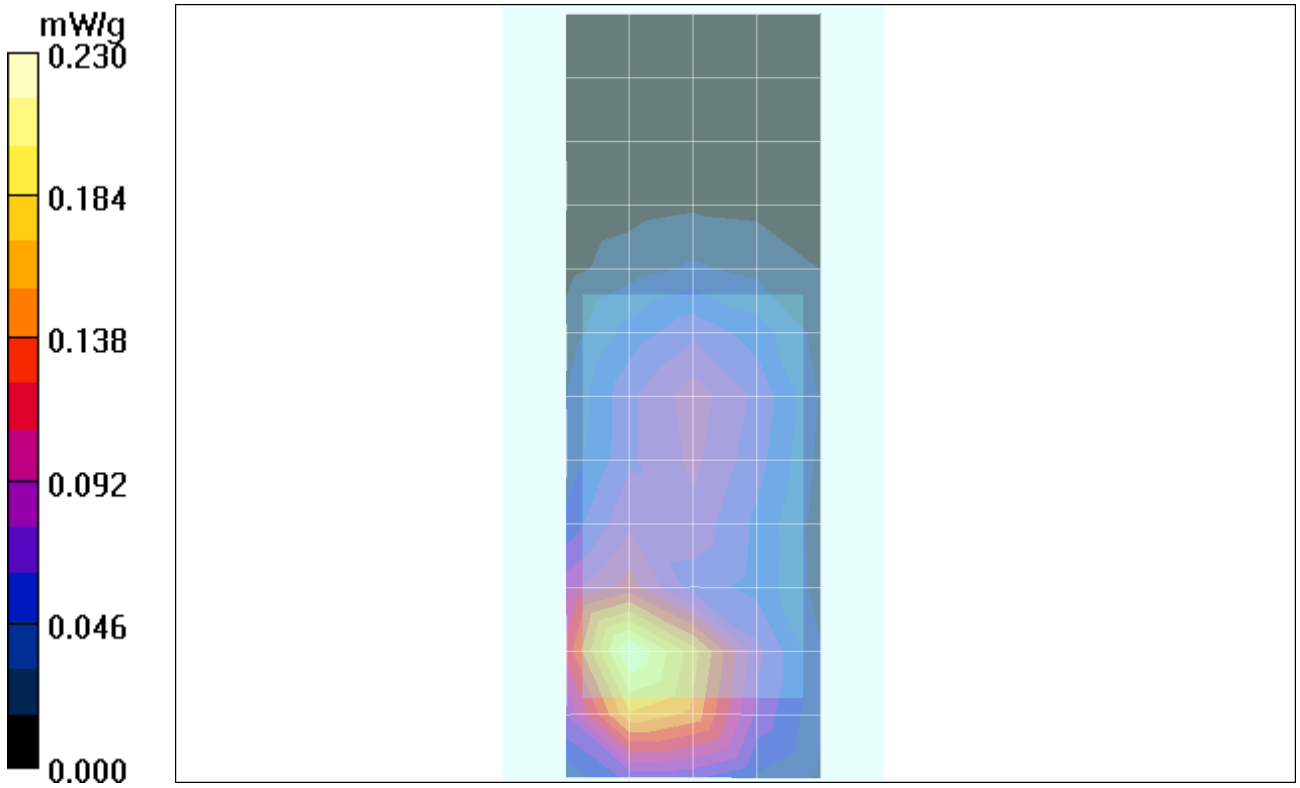
Medium parameters used: f = 1880 MHz; σ = 1.58 mho/m; ε_r = 51.7; ρ = 1000 kg/m^3

DASY4 Configuration:

- Probe: ET3DV6 - SN1502; ConvF(4.58, 4.58, 4.58); Calibrated: 7/19/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn656; Calibrated: 6/17/2005
- Phantom: R9: Section 2, Amy Twin, Rev2 (23-June-04); Type: Amy Twin Flat; Serial: n/a;
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

Amy Twin Phone Template/Area Scan - Normal Body (15mm) (13x7x1):
Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 0.217 mW/g

Amy Twin Phone Template/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.74 V/m; **Power Drift = 0.072 dB** Peak SAR (extrapolated) = 0.339 W/kg
SAR(1 g) = 0.213 mW/g; SAR(10 g) = 0.125 mW/g Maximum value of SAR (measured) = 0.234 mW/g



Appendix 4

Probe Calibration Certificate

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Federal Office of Metrology and Accreditation
The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 108

Client **Motorola MDb**

Certificate No: ET3-1502_Jul05

CALIBRATION CERTIFICATE

Object	ET3DV6 - SN:1502
Calibration procedure(s)	QA CAL-01.v5 Calibration procedure for dosimetric E-field probes
Calibration date:	July 19, 2005
Condition of the calibrated item	In Tolerance

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	3-May-05 (METAS, No. 251-00466)	May-06
Power sensor E4412A	MY41495277	3-May-05 (METAS, No. 251-00466)	May-06
Power sensor E4412A	MY41498087	3-May-05 (METAS, No. 251-00466)	May-06
Reference 3 dB Attenuator	SN: S5054 (3c)	10-Aug-04 (METAS, No. 251-00403)	Aug-05
Reference 20 dB Attenuator	SN: S5086 (20b)	3-May-05 (METAS, No. 251-00467)	May-06
Reference 30 dB Attenuator	SN: S5129 (30b)	10-Aug-04 (METAS, No. 251-00404)	Aug-05
Reference Probe ES3DV2	SN: 3013	7-Jan-05 (SPEAG, No. ES3-3013_Jan05)	Jan-06
DAE4	SN: 907	21-Jun-05 (SPEAG, No. DAE4-907_Jun05)	Jun-06

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (SPEAG, in house check Dec-03)	In house check: Dec-05
Network Analyzer HP 8753E	US37390585	18-Oct-01 (SPEAG, in house check Nov-04)	In house check: Nov 05

	Name	Function	Signature
Calibrated by:	Nico Vetterli	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: July 19, 2005

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

Glossary:

TSL	tissue simulating liquid
NORMx,y,z	sensitivity in free space
ConF	sensitivity in TSL / NORMx,y,z
DCP	diode compression point
Polarization φ	φ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., $\vartheta = 0$ is normal to probe axis

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
b) CENELEC EN 50361, "Basic standard for the measurement of Specific Absorption Rate related to human exposure to electromagnetic fields from mobile phones (300 MHz - 3 GHz), July 2001

Methods Applied and Interpretation of Parameters:

- *NORMx,y,z:* Assessed for E-field polarization $\vartheta = 0$ ($f \leq 900$ MHz in TEM-cell; $f > 1800$ MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not effect the E^2-field uncertainty inside TSL (see below *ConvF*).
- *NORM(f)x,y,z = NORMx,y,z * frequency_response* (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of *ConvF*.
- *DCPx,y,z:* DCP are numerical linearization parameters assessed based on the data of power sweep (no uncertainty required). DCP does not depend on frequency nor media.
- *ConvF and Boundary Effect Parameters:* Assessed in flat phantom using E-field (or Temperature Transfer Standard for $f \leq 800$ MHz) and inside waveguide using analytical field distributions based on power measurements for $f > 800$ MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to *NORMx,y,z * ConvF* whereby the uncertainty corresponds to that given for *ConvF*. A frequency dependent *ConvF* is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- *Spherical isotropy (3D deviation from isotropy)*: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- *Sensor Offset*: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.