Exhibit 11: SAR Test Report IHDT56FR1

Date of test:	05/10/2005 to 05/18/2005
Date of Report:	6/07/2005
Laboratory:	Motorola Personal Communications Sector 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 IHDT56FR1 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 Personal Communications Sector Product Safety Laboratory has performed measurements of the maximum potential exposure to the user of portable cellular phone (FCC ID IHDT56FR1). 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	External	
Location	Upper Right Corner	
Dimensions	Length	20mm
	Width	10mm
Configuration	Helix	

2.2 Device description

FCC ID Number	**IHDT56FR1**							
Serial number(s)	**G00M030068**							
Mode(s) of Operation	GSM 850	GSM 900	GSM 1800	GSM 1900	GPRS 850	GPRS 900	GPRS 1800	GPRS 1900
Modulation Mode(s)	GSM	GSM	GSM	GSM	GSM	GSM	GSM	GSM
Maximum Output Power Setting	32.50 dBm	32.30 dBm	30.00 dBm	30.00 dBm	32.50 dBm	32.30 dBm	30.00 dBm	30.00 dBm
Duty Cycle	1:8	1:8	1:8	1:8	2:8	2:8	2:8	2:8
Transmitting Frequency Rang(s)	824.2-848.8 MHz	880.2-914.8 MHz	1710.2-1784.8 MHz	1850.2 – 1909.8 MHz	824.2-848.8 MHz	880.2-914.8 MHz	1710.2-1784.8 MHz	1850.2 – 1909.8 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 Personal Communications Sector Product Safety & Compliance Laboratory utilizes a Dosimetric Assessment System (Dasy4™ v4.4) 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 ±11.7% (K=1) with an expanded uncertainty of ±23.0% (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
DASY3 DAE V1	383	08/20/2005
E-Field Probe ET3DV6	1390	04/22/2006
Dipole Validation Kit, D900V2	94	
S.A.M. Phantom used for 800MHz	TP-1168	
Dipole Validation Kit, D1800V2	276tr	
S.A.M. Phantom used for 1900MHz	TP-1138	

3.2 Additional Equipment

Description	Serial Number	Cal Due Date
Signal Generator HP8648C	3847A04840	02/26/2006
Power Meter E4419B	GB39511085	12/01/2005
Power Sensor #1 - 8481A	3318A85415	12/17/2005
Power Sensor #2 - 8481A	2702A82671	12/17/2005
Network Analyzer HP8753ES	US39172714	03/04/2006
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,** 05/10/2005	42.5	0.92	20.7
		Measured, 05/11/2005	42.2	0.92	20.7
		Recommended Limits	41.5 ±5%	0.90 ±5%	18-25
	Body	**Measured,** 05/11/2005	54.8	0.97	20.5
		Measured, 05/12/2005	54.9	0.97	20.3
		Recommended Limits	55.2 ±5%	0.97 ±5%	18-25
1880	**Head**	**Measured,** 05/12/2005	38.1	1.45	20.4
		Measured, 05/12/2005	38.1	1.47	20.8
		Recommended Limits	40.0 ±5%	1.40 ±5%	18-25
	Body	**Measured,** 05/18/2005	50.9	1.59	20.1
		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 DASY4.4 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. These tests were done at 900MHz and/or 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,** 05/10/2005	11.50	41.8	0.99	21.0	21.1
	Measured, 05/11/2005	11.46	41.5	0.98	21.0	20.9
	Measured, 05/12/2005	11.35	41.1	0.97	21.0	20.9
	Recommended Limits	10.8	41.5 ±5%	0.97 ±5%	18-25	18-25
1800	**Measured,** 05/12/2005	38.60	38.4	1.39	20.0	20.7
	Measured, 05/18/2005	37.60	38.6	1.38	21.0	20.6
	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	1390	900	6.45	8 of 9
		1810	5.24	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 DASY v4.4 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 DASY v4.4 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 IHDT56FR1) has the following battery options:

SYN5766A - 810 mAH Battery
SYN5767A – 1010 mAH Battery

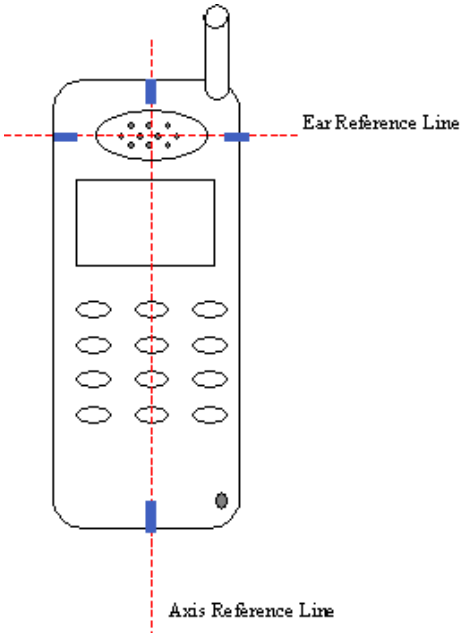
The battery with the highest capacity is the SYN5767A. SYN5767A was used to do most of the SAR head testing. SYN5766A was used to do most of the SAR body worn testing. The configuration that resulted in the highest SAR values were tested using the other battery listed above. The phone was placed in the 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, & wrap around the sides of the device.



The SAR results shown in tables 1 through 3 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 test conditions indicated as bold numbers in the following table are included in Appendix 2

The SAR measurements were performed using the SAM phantoms listed in section 3.1. Since 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. All other test conditions measured lower SAR values than those included in Appendix 2.

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	1390	900	6.45	8 of 9
		1810	5.24	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)
Digital 850MHz	Channel 128	32.48	0.823	-0.03	0.83	20.9	0.823	-0.05	0.83	20.8
	Channel 190	32.45	0.93	-0.03	0.94	20.8	0.968	0.00	0.97	20.8
	Channel 251	32.49	**0.972**	**-0.01**	**0.97**	**20.7**	**1.06**	**-0.05**	**1.07**	**20.7**
Digital 1900MHz	Channel 512	29.97	1.07	-0.02	1.07	21.1	1.02	-0.01	1.02	20.4
	Channel 661	30.00	1.07	-0.01	1.07	21.2	1.04	-0.07	1.06	20.5
	Channel 810	30.07	**1.10**	**-0.05**	**1.11**	**20.8**	**1.08**	**-0.1**	**1.11**	**20.5**

Table 1: SAR measurement results for the portable cellular telephone FCC ID IHDT56FR1 at highest possible output power. Measured against the left 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)
Digital 850MHz	Channel 128	32.48								
	Channel 190	32.45	**0.249**	**0.01**	**0.25**	**20.8**	**0.237**	**-0.02**	**0.24**	**20.6**
	Channel 251	32.49								
Digital 1900MHz	Channel 512	29.97								
	Channel 661	30.00	**0.418**	**-0.09**	**0.43**	**20.5**	**0.401**	**0.05**	**0.40**	**20.3**
	Channel 810	30.07								

Table 2: SAR measurement results for the portable cellular telephone FCC ID IHDT56FR1 at highest possible output power. Measured against the left and right head in the 15° Tilt Position.

f (MHz)	Description	Conducted Output Power (dBm)	Cheek / Touch Position							
			Right Head with SNN5766A battery				Right Head with SNN5766A and SYN1072A pouch			
			Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Simulate Temp (°C)	Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Simulate Temp (°C)
Digital 850MHz	Channel 128	32.48	0.835	-0.08	0.85	20.7	0.878	0.07	0.88	20.7
	Channel 190	32.45	0.951	-0.07	0.97	20.7	0.97	-0.02	0.97	20.8
	Channel 251	32.49	**1.09**	**-0.08**	**1.11**	**20.7**	**1.04**	**-0.05**	**1.05**	**20.7**
			Left Head with SNN5766A battery				Left Head with SNN5766A and SYN1072A pouch			
Digital 1900MHz	Channel 512	29.97	1.11	0.02	1.11	20.5	1.14	-0.01	1.14	20.4
	Channel 661	30.00	**1.11**	**-0.05**	**1.12**	**20.4**	**1.15**	**0.02**	**1.15**	**20.5**
	Channel 810	30.07	1.11	0.00	1.11	20.4	1.15	0.00	1.15	20.4

Table 3: SAR measurement results for the portable cellular telephone FCC ID IHDT56FR1 at highest possible output power. Measured against the left head in the Cheek/Touch Position.

6.2 Body Worn Test Results

The SAR results shown in table 4 through 7 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 indicated as bold numbers in the following table 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. The functional accessories were divided into two categories, the ones with metal components and the ones with non-metal components. For non-metallic component accessories', testing was performed on the accessory that displayed the closest proximity to the flat phantom. Each metallic component accessory, if any, was checked for uniqueness of metal component so that each is tested with the device. If multiple accessories shared an identical metal component, only the accessory that dictates the closest spacing to the body was tested. The cellular phone was tested with a headset connected to the device for all body-worn SAR measurements.

There is one Body-Worn Accessory, using two belt clips, available for this phone:
Half Leather Case with Tab: SYN1072A
Plastic Belt Clips: SYN8631A and SYN8736A
This case, and the two belt clips, was used for the SAR body worn 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	1390	900	6.37	8 of 9
		1810	4.77	8 of 9

f (MHz)	Description	Conducted Output Power (dBm)	Body Worn							
			GSM with SYN1072A & SYN8631A & SNN5766A				GSM with SYN1072A & SYN8763A & SNN5766A			
			Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Simulate Temp (°C)	Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Simulate Temp (°C)
Digital 850MHz	Channel 128	32.48								
	Channel 190	32.45	**0.142**	**0.03**	**0.14**	**21.9**	**0.099**	**-0.01**	**0.10**	**21.8**
	Channel 251	32.49								
Digital 1900MHz	Channel 512	29.97								
	Channel 661	30.00	**0.108**	**-0.02**	**0.11**	**21.0**	**0.433**	**0.00**	**0.43**	**20.9**
	Channel 810	30.07								

Table 4: SAR measurement results for the portable cellular telephone FCC ID IHDT56FR1 at highest possible output power. Measured against the body.

f (MHz)	Description	Conducted Output Power (dBm)	Body Worn							
			GSM with SYN1072A & SYN8631A & SNN5767A				GSM with SYN1072A & SYN8763A & SNN5767A			
			Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Simulate Temp (°C)	Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Simulate Temp (°C)
Digital 850MHz	Channel 128	32.48								
	Channel 190	32.45	**0.146**	**0.04**	**0.15**	**21.6**				
	Channel 251	32.49								
Digital 1900MHz	Channel 512	29.97								
	Channel 661	30.00					**0.415**	**-0.20**	**0.43**	**21.0**
	Channel 810	30.07								

Table 5: SAR measurement results for the portable cellular telephone FCC ID IHDT56FR1 at highest possible output power. Measured against the body.

f (MHz)	Description	Conducted Output Power (dBm)	Body Worn							
			Class 10 GPRS with SNN5766A front 25mm from phantom				Class 10 GPRS with SNN5766A back 25mm from phantom			
			Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Simulate Temp (°C)	Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Simulate Temp (°C)
Digital 850MHz	Channel 128	32.48								
	Channel 190	32.45	**0.373**	**0.00**	**0.37**	**20.8**	**0.598**	**0.00**	**0.60**	**20.7**
	Channel 251	32.49								
Digital 1900MHz	Channel 512	29.97								
	Channel 661	30.00	**0.138**	**-0.05**	**0.14**	**20.5**	**0.252**	**0.01**	**0.25**	**20.5**
	Channel 810	30.07								

Table 6: SAR measurement results for the portable cellular telephone FCC ID IHDT56FR1 at highest possible output power. Measured against the body.

f (MHz)	Description	Conducted Output Power (dBm)	Body Worn with GPRS Class 10			
			Class 10 GPRS with SNN5767A back 25mm from phantom			
			Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Simulate Temp (°C)
Digital 850MHz	Channel 128	32.48				
	Channel 190	32.45	**0.53**	**-0.06**	**0.54**	**20.8**
	Channel 251	32.49				
Digital 1900MHz	Channel 512	29.97				
	Channel 661	30.00	**0.182**	**0.03**	**0.18**	**20.5**
	Channel 810	30.07				

Table 7: SAR measurement results for the portable cellular telephone FCC ID IHDT56FR1 at highest possible output power. Measured against the body.

Appendix 1

SAR distribution comparison for the system accuracy verification

Date/Time: 5/10/2005 7:35:37AM

Test Laboratory: Motorola **20050510 900MHz_Good+6.5%**

DUT: Dipole 900 MHz; Type: D900V2; Serial: D900V2 - SN:094;
Procedure Notes: 900 MHz System Performance Check / Dipole Sn# 094 PM1 Power = 200 mW

Sim.Temp@meas = 21.03 ┌C Sim.Temp@SPC = 21.1 ┌C Room Temp @ SPC = 21 ┌C

Communication System: CW - Dipole; Frequency: 900 MHz; Channel Number: 4; Duty Cycle: 1:1
Medium: VALIDATION Only; Medium parameters used: σ = 0.99 mho/m, ε_r = 41.8; ρ = 1000 kg/m^3

DASY4 Configuration:

- Probe: ET3DV6 - SN1390; ConvF(6.45, 6.45, 6.45); Calibrated: 4/22/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn383; Calibrated: 8/20/2004
- Phantom: PCS-8: Sugar Water SAM; Type: SAM; Serial: TP-1168;
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 147

Daily SPC Check/Dipole Area Scan (4x9x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 2.35 mW/g

Daily SPC Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0:

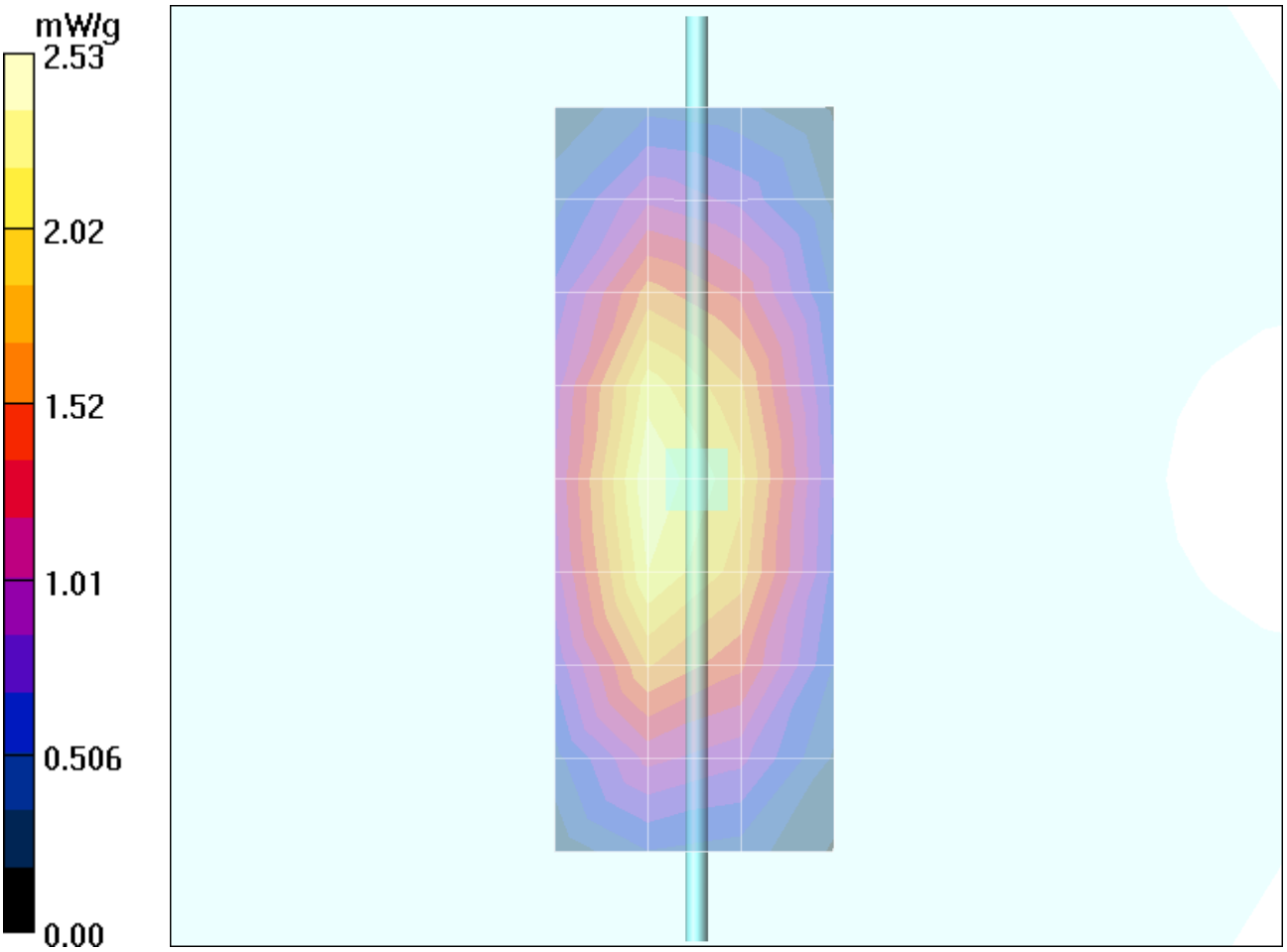
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 51.5 V/m; **Power Drift = 0.01 dB** Peak SAR (extrapolated) = 3.55 W/kg
SAR(1 g) = 2.32 mW/g; SAR(10 g) = 1.47 mW/g Maximum value of SAR (measured) = 2.52 mW/g

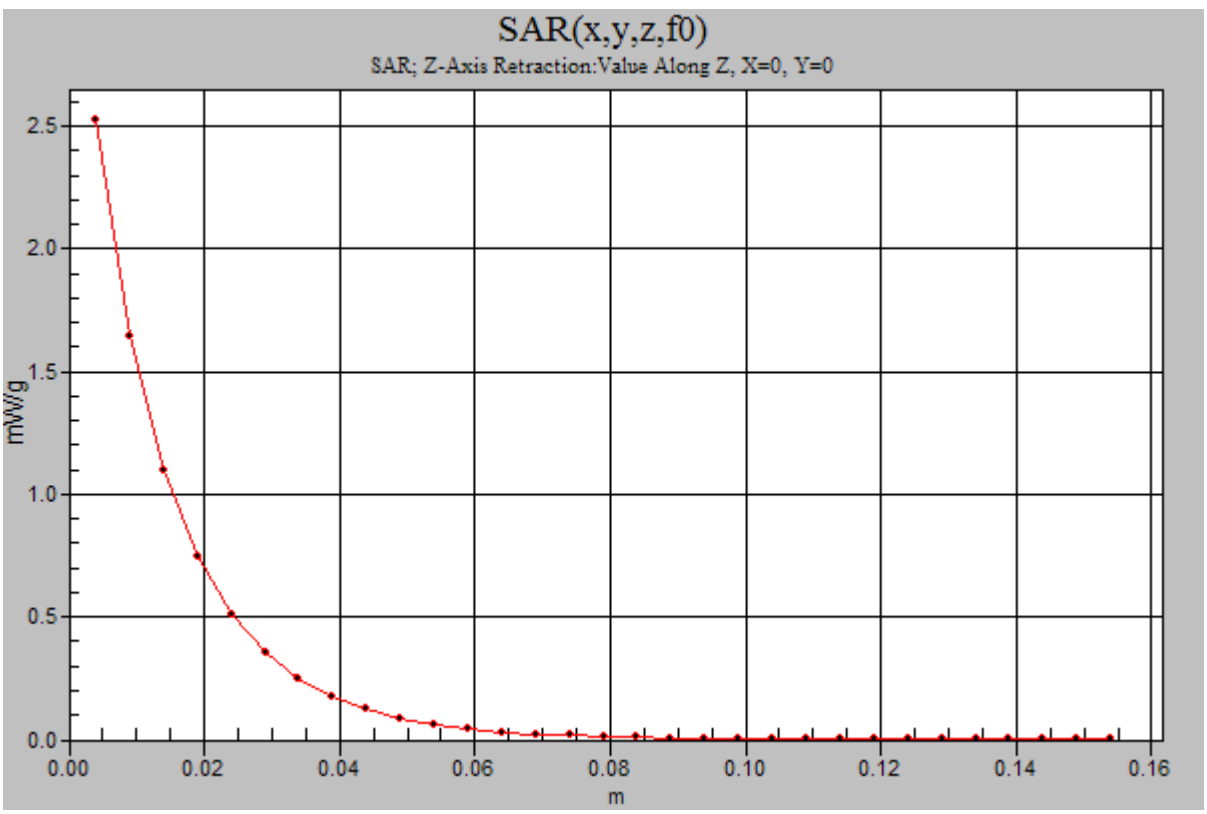
Daily SPC Check/90-Degree 5x5x7 Cube (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 51.5 V/m; **Power Drift = 0.01 dB** Peak SAR (extrapolated) = 3.46 W/kg
SAR(1 g) = 2.28 mW/g; SAR(10 g) = 1.46 mW/g Maximum value of SAR (measured) = 2.47 mW/g

Daily SPC Check/Z-Axis Retraction (1x1x31):

Measurement grid: dx=20mm, dy=20mm, dz=5mm Maximum value of SAR (measured) = 2.53 mW/g


mW/g
2.53
2.02
1.52
1.01
0.506
0.00


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: 5/11/2005 7:50:45AM

Test Laboratory: Motorola **20050511 900MHz_Good+6.1%**

DUT: Dipole 900 MHz; Type: D900V2; Serial: D900V2 - SN:094;
Procedure Notes: 900 MHz System Performance Check / Dipole Sn# 094 PM1 Power = 199 mW

Sim.Temp@meas = 20.93 ┌C Sim.Temp@SPC = 20.9 ┌C Room Temp @ SPC = 21 ┌C

Communication System: CW - Dipole; Frequency: 900 MHz; Channel Number: 4; Duty Cycle: 1:1
Medium: VALIDATION Only; Medium parameters used: σ = 0.98 mho/m, ε_r = 41.5; ρ = 1000 kg/m^3

DASY4 Configuration:

- Probe: ET3DV6 - SN1390; ConvF(6.45, 6.45, 6.45); Calibrated: 4/22/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn383; Calibrated: 8/20/2004
- Phantom: PCS-8: Sugar Water SAM; Type: SAM; Serial: TP-1168;
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 147

Daily SPC Check/Dipole Area Scan (4x9x1):

Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 2.30 mW/g

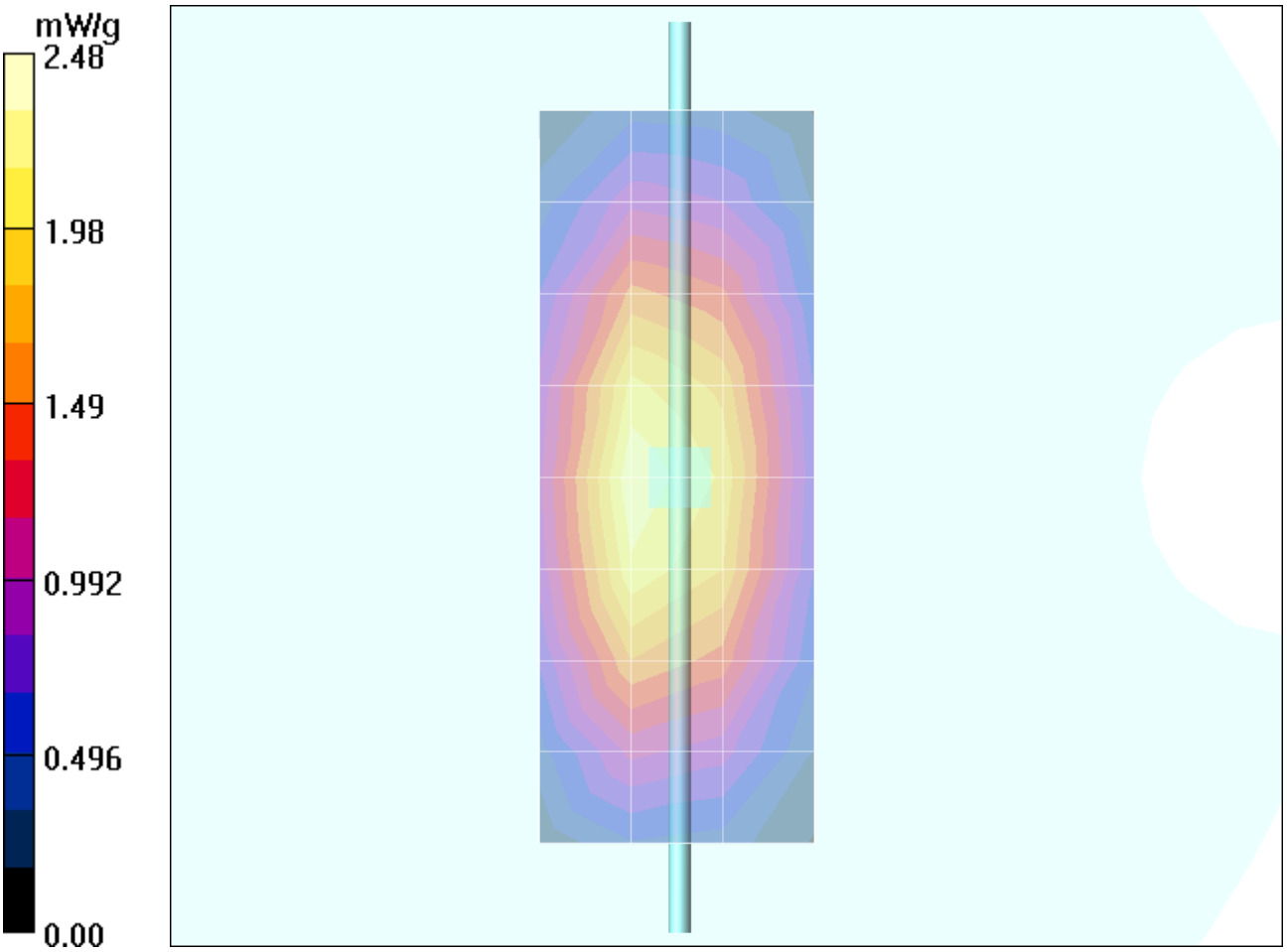
Daily SPC Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0:

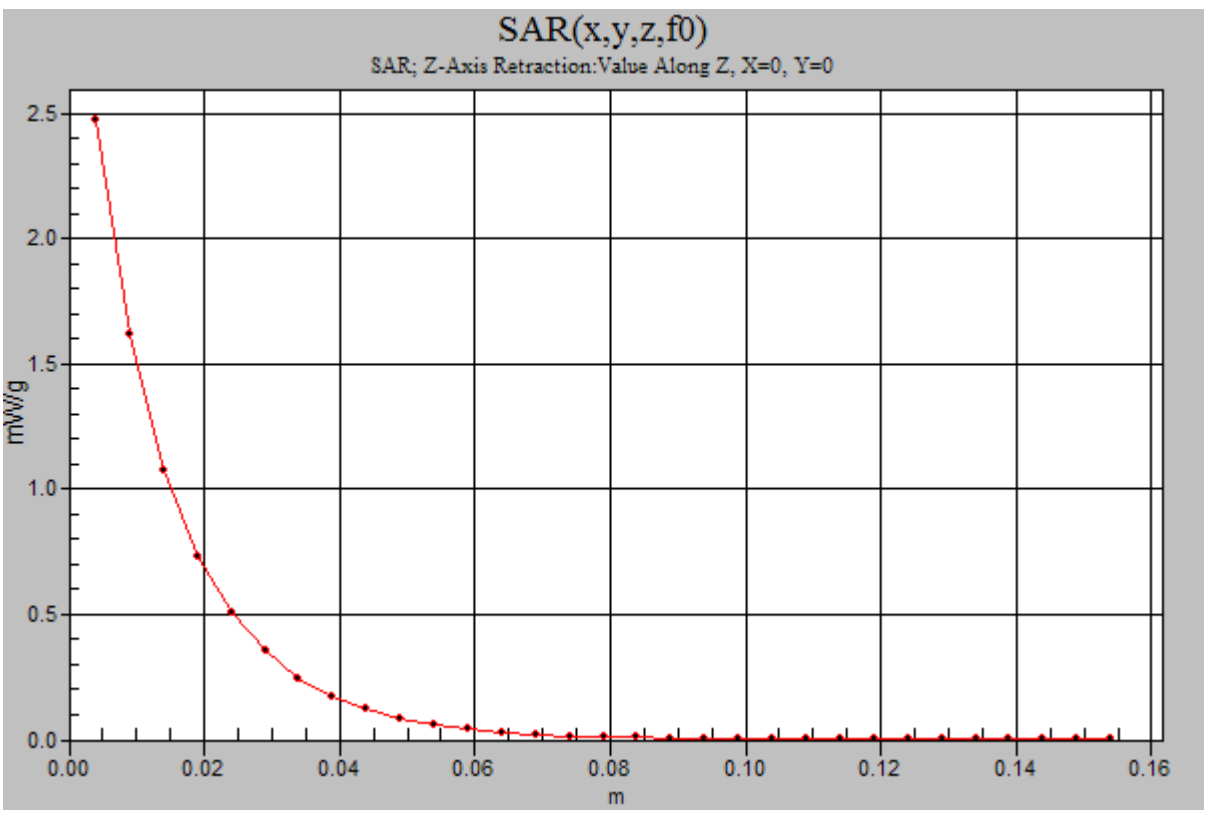
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 51.4 V/m; **Power Drift = -0.014 dB** Peak SAR (extrapolated) = 3.48 W/kg
SAR(1 g) = 2.29 mW/g; SAR(10 g) = 1.46 mW/g Maximum value of SAR (measured) = 2.48 mW/g

Daily SPC Check/90-Degree 5x5x7 Cube (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 51.4 V/m; **Power Drift = -0.014 dB** Peak SAR (extrapolated) = 3.43 W/kg
SAR(1 g) = 2.27 mW/g; SAR(10 g) = 1.45 mW/g Maximum value of SAR (measured) = 2.44 mW/g

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


mW/g
2.48
1.98
1.49
0.992
0.496
0.00


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: 5/12/2005 7:51:48AM

Test Laboratory: Motorola **20050512 900MHz_Good+5.1%**

DUT: Dipole 900 MHz; Type: D900V2; Serial: D900V2 - SN:094;
Procedure Notes: 900 MHz System Performance Check / Dipole Sn# 094 PM1 Power = 200 mW

Sim.Temp@meas = 20.81 ┌C Sim.Temp@SPC = 20.9 ┌C Room Temp @ SPC = 21 ┌C

Communication System: CW - Dipole; Frequency: 900 MHz; Channel Number: 4; Duty Cycle: 1:1
Medium: VALIDATION Only; Medium parameters used: σ = 0.97 mho/m, ε_r = 41.1; ρ = 1000 kg/m^3

DASY4 Configuration:

- Probe: ET3DV6 - SN1390; ConvF(6.45, 6.45, 6.45); Calibrated: 4/22/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn383; Calibrated: 8/20/2004
- Phantom: PCS-8: Sugar Water SAM; Type: SAM; Serial: TP-1168;
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 147

Daily SPC Check/Dipole Area Scan (4x9x1):

Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 2.29 mW/g

Daily SPC Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0:

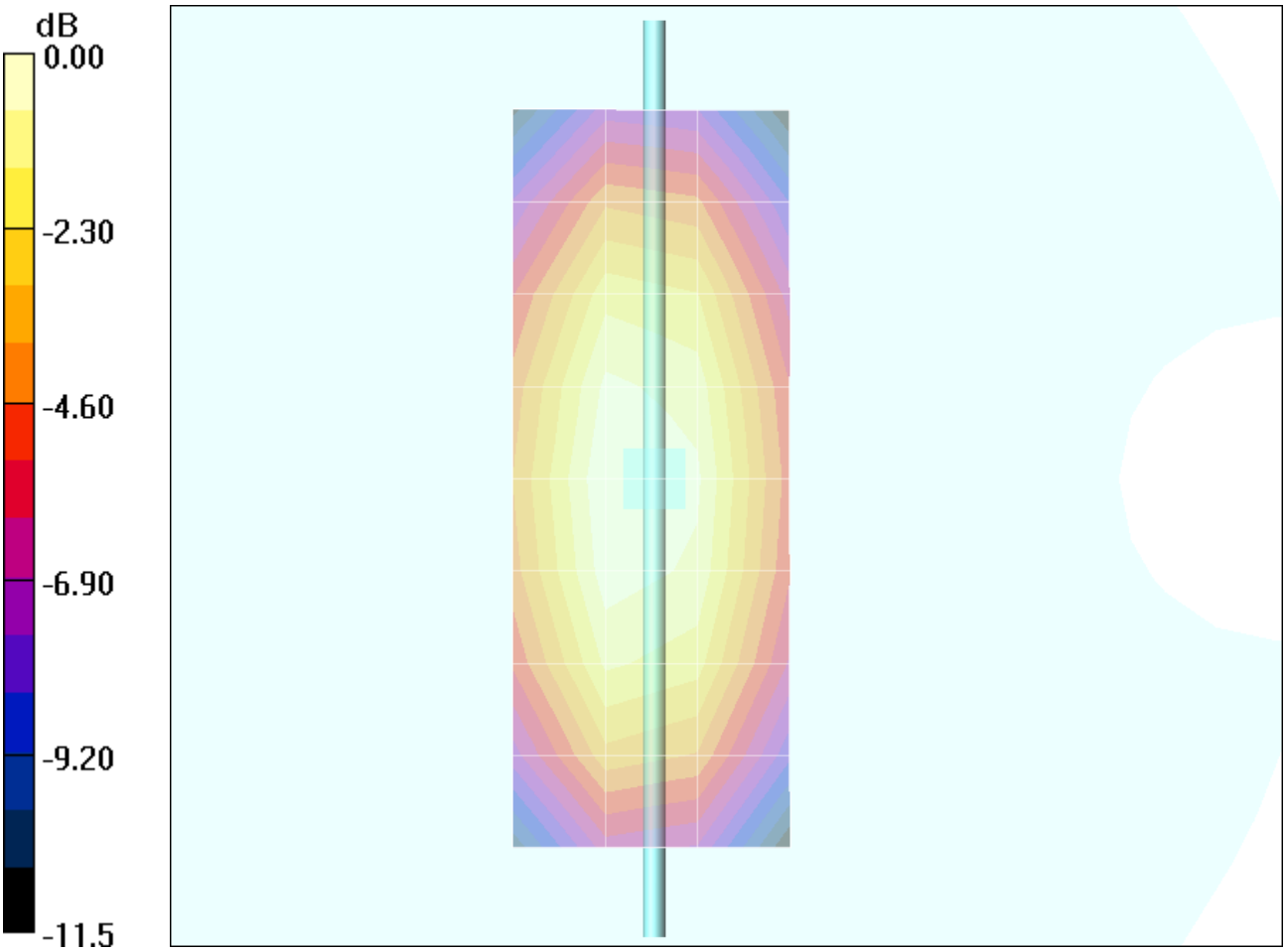
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 51.9 V/m; **Power Drift = -0.00 dB** Peak SAR (extrapolated) = 3.45 W/kg
SAR(1 g) = 2.28 mW/g; SAR(10 g) = 1.46 mW/g Maximum value of SAR (measured) = 2.45 mW/g

Daily SPC Check/90-Degree 5x5x7 Cube (5x5x7)/Cube 0:

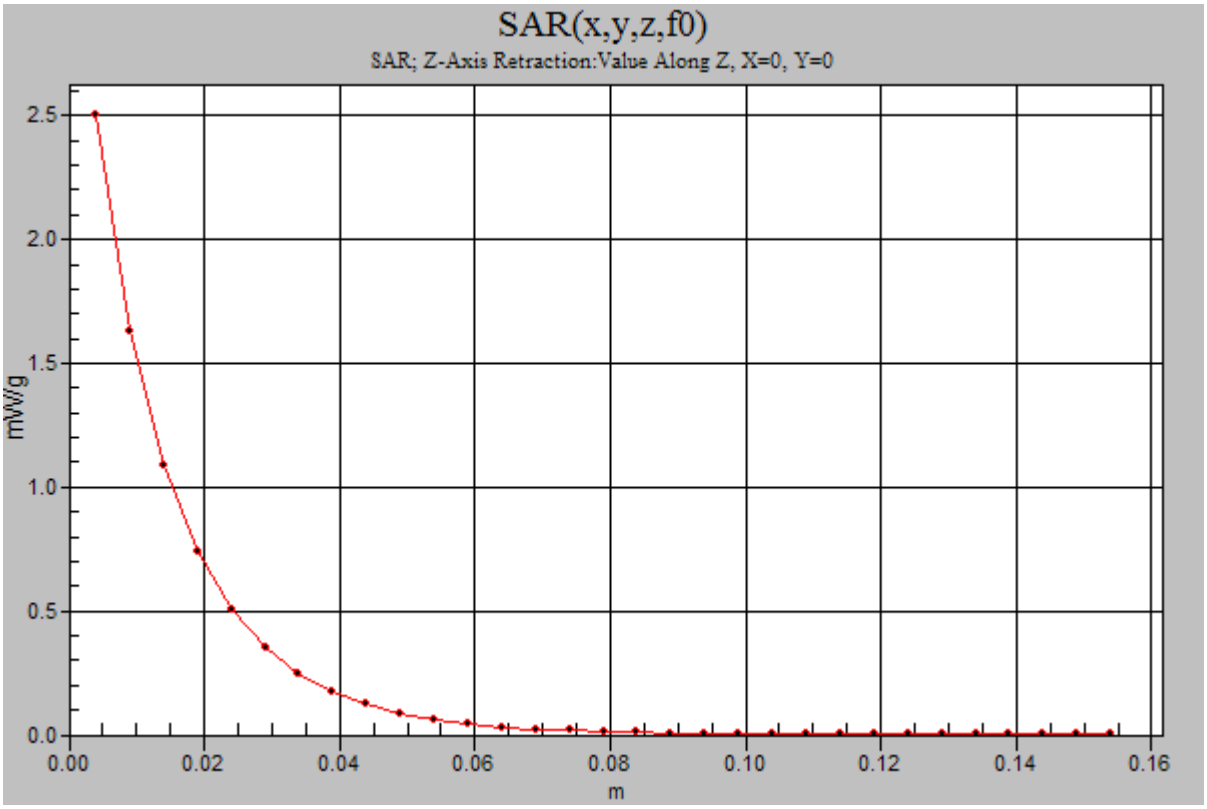
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 51.9 V/m; **Power Drift = -0.00 dB** Peak SAR (extrapolated) = 3.42 W/kg
SAR(1 g) = 2.26 mW/g; SAR(10 g) = 1.45 mW/g Maximum value of SAR (measured) = 2.42 mW/g

Daily SPC Check/Z-Axis Retraction (1x1x31):

Measurement grid: dx=20mm, dy=20mm, dz=5mm Maximum value of SAR (measured) = 2.50 mW/g


dB
0.00
-2.30
-4.60
-6.90
-9.20
-11.5

0 dB = 2.29mW/g


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: 5/12/2005 5:06:40PM

Test Laboratory: Motorola **20050512 1800MHz_Good+1.3%**

DUT: Dipole 1800 MHz; Type: D1800V2; Serial: D1800V2 - SN:276tr;
Procedure Notes: 1800 MHz System Performance Check / Dipole Sn# 276tr PM1 Power = 200 mW

Sim.Temp@meas = 20.42 ┌C Sim.Temp@SPC =20.7 ┌C Room Temp @ SPC = 20 ┌C

Communication System: CW - Dipole; Frequency: 1800 MHz; Channel Number: 8; Duty Cycle: 1:1
Medium: VALIDATION Only; Medium parameters used: σ = 1.39 mho/m, ε_r = 38.4; ρ = 1000 kg/m^3

DASY4 Configuration:

- Probe: ET3DV6 - SN1390; ConvF(5.24, 5.24, 5.24); Calibrated: 4/22/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn383; Calibrated: 8/20/2004
- Phantom: PCS-8: Glycol SAM; Type: SAM; Serial: TP-1138;
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 147

Daily SPC Check/Dipole Area Scan (4x9x1):

Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 6.71 mW/g

Daily SPC Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0:

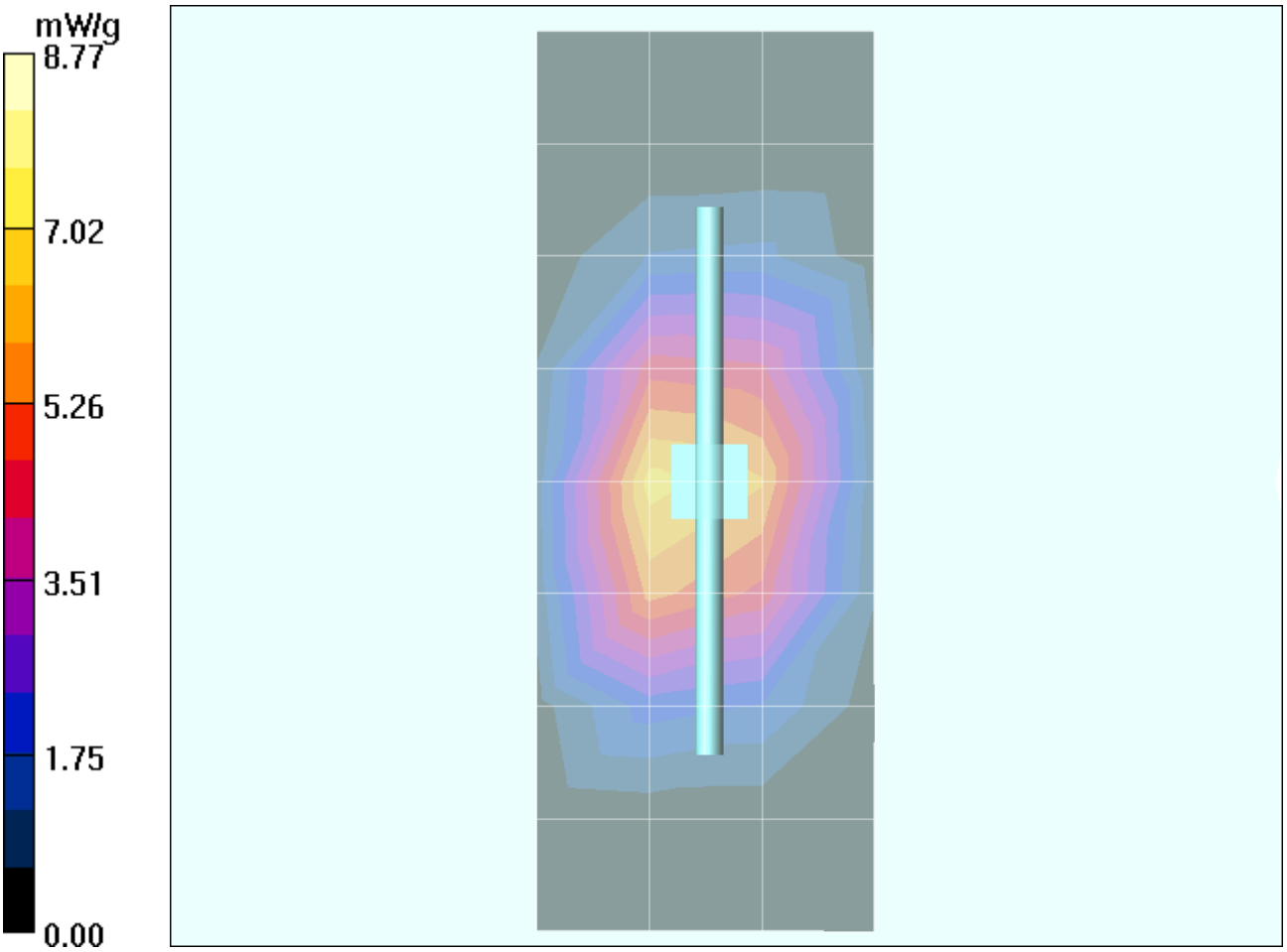
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 82.9 V/m; **Power Drift = 0.00 dB** Peak SAR (extrapolated) = 13.4 W/kg
SAR(1 g) = 7.74 mW/g; SAR(10 g) = 4.12 mW/g Maximum value of SAR (measured) = 8.74 mW/g

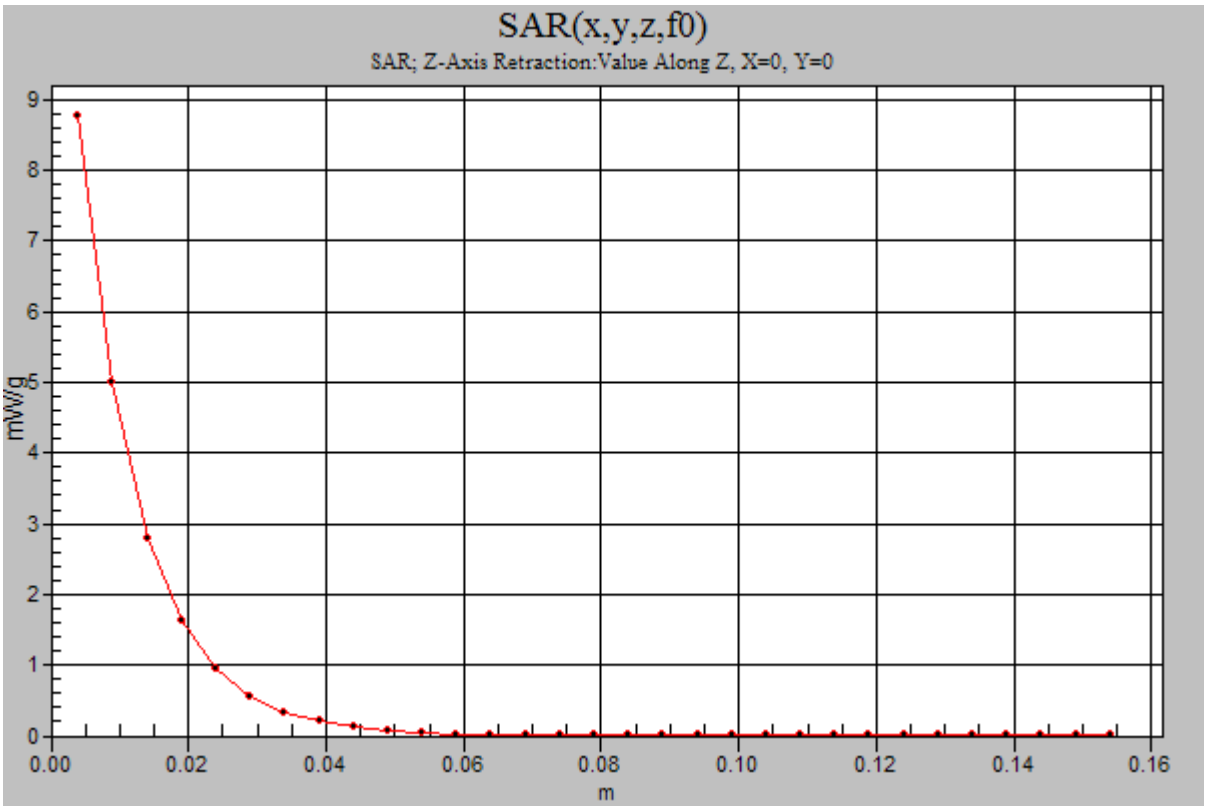
Daily SPC Check/90-Degree 5x5x7 Cube (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 82.9 V/m; **Power Drift = 0.00 dB** Peak SAR (extrapolated) = 13.3 W/kg
SAR(1 g) = 7.7 mW/g; SAR(10 g) = 4.1 mW/g Maximum value of SAR (measured) = 8.62 mW/g

Daily SPC Check/Z-Axis Retraction (1x1x31):

Measurement grid: dx=20mm, dy=20mm, dz=5mm Maximum value of SAR (measured) = 8.77 mW/g


mW/g
8.77
7.02
5.26
3.51
1.75
0.00


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
9
0.00
0.02
0.04
0.06
0.08
0.10
0.12
0.14
0.16
m

Date/Time: 5/18/2005 3:37:44PM

Test Laboratory: Motorola 20050518 1800MHz_Good-1.3%

DUT: Dipole 1800 MHz; Type: D1800V2; Serial: D1800V2 - SN:276tr;
Procedure Notes: 1800 MHz System Performance Check / Dipole Sn# 276tr PM1 Power = 200 mW

Sim.Temp@meas = 21.63 ┌C Sim.Temp@SPC = 20.6 ┌C Room Temp @ SPC = 21 ┌C

Communication System: CW - Dipole; Frequency: 1800 MHz; Channel Number: 8; Duty Cycle: 1:1
Medium: VALIDATION Only; Medium parameters used: σ = 1.38 mho/m, ε_r = 38.6; ρ = 1000 kg/m^3

DASY4 Configuration:

- Probe: ET3DV6 - SN1390; ConvF(5.24, 5.24, 5.24); Calibrated: 4/22/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn383; Calibrated: 8/20/2004
- Phantom: PCS-8: Glycol SAM; Type: SAM; Serial: TP-1138;
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 147

Daily SPC Check/Dipole Area Scan (4x9x1):

Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 6.39 mW/g

Daily SPC Check/0-Degree 5x5x7 Cube (5x5x7)/Cube 0:

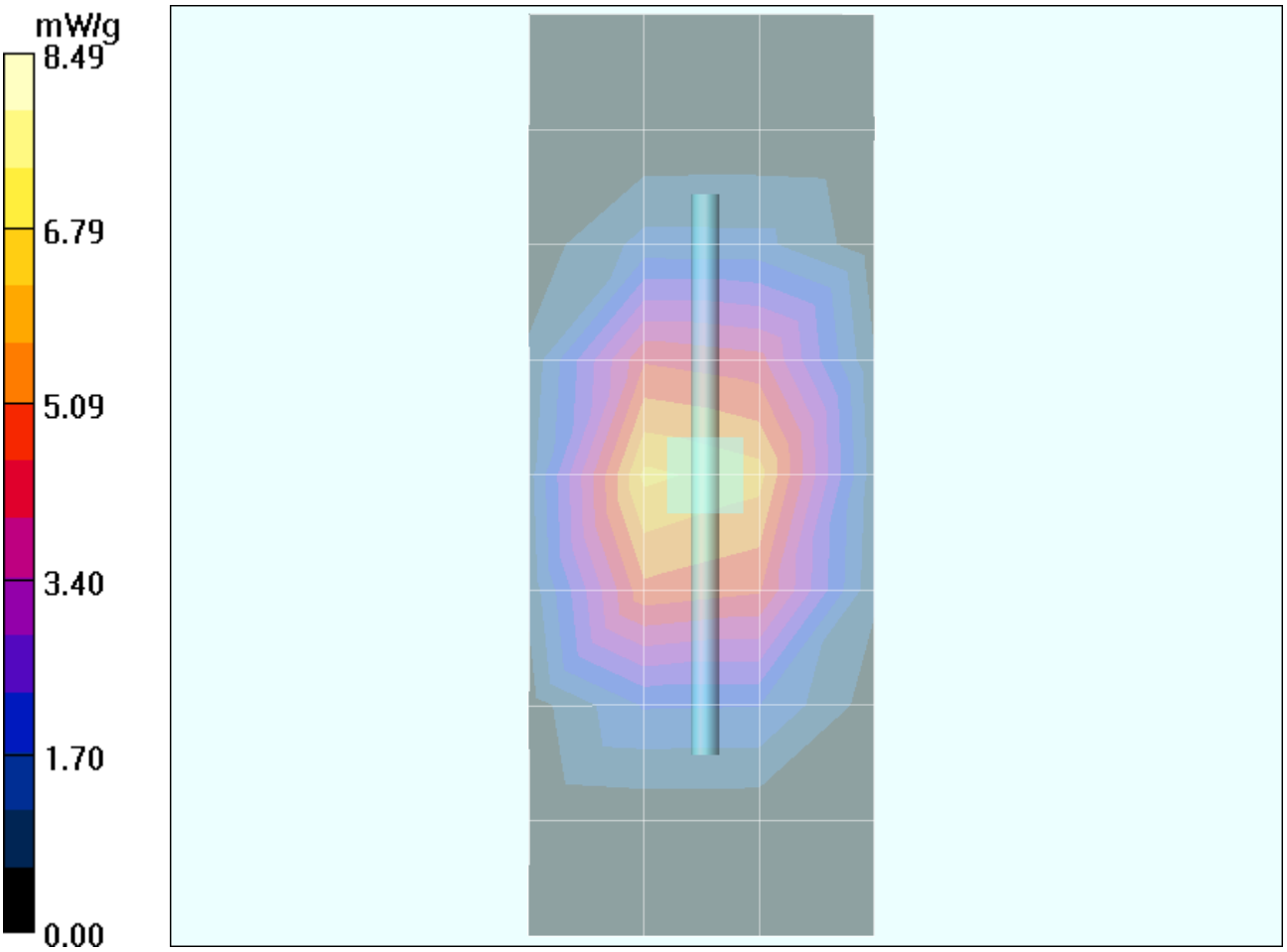
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 82.4 V/m; **Power Drift = 0.020 dB** Peak SAR (extrapolated) = 12.9 W/kg
SAR(1 g) = 7.53 mW/g; SAR(10 g) = 4.02 mW/g Maximum value of SAR (measured) = 8.45 mW/g

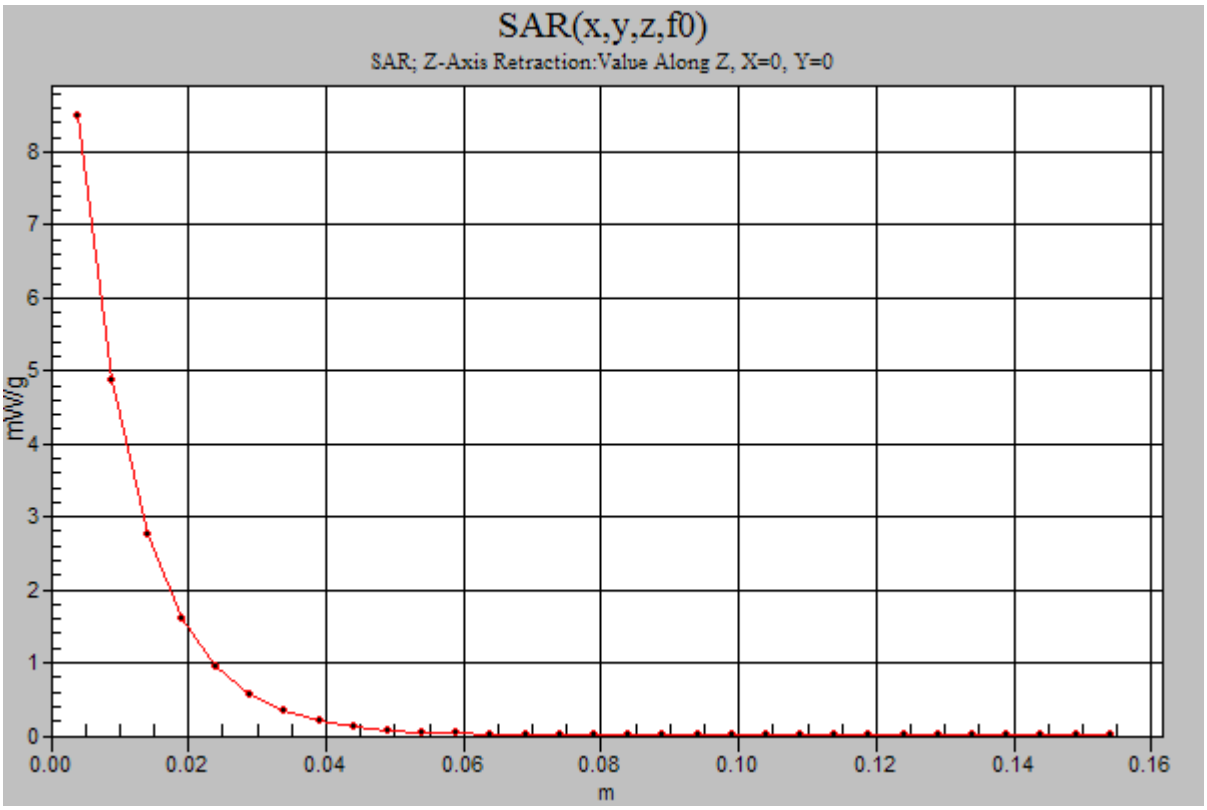
Daily SPC Check/90-Degree 5x5x7 Cube (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 82.4 V/m; **Power Drift = 0.020 dB** Peak SAR (extrapolated) = 12.9 W/kg
SAR(1 g) = 7.51 mW/g; SAR(10 g) = 4.02 mW/g

Daily SPC Check/Z-Axis Retraction (1x1x31):

Measurement grid: dx=20mm, dy=20mm, dz=5mm Maximum value of SAR (measured) = 8.49 mW/g


mW/g
8.49
6.79
5.09
3.40
1.70
0.00


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

Appendix 2

SAR distribution plots for Phantom Head Adjacent Use

Date/Time: 5/12/2005 1:57:25PM

Test Laboratory: Motorola 1900 RH Cheek ch810

Serial: G00M030068;
Procedure Notes: Ch# 810 / Pwr Step: 00(OTA) Antenna Position: Fixed Accessory Model #: N/A
Battery Model #: SNN5767A DEVICE POSITION (cheek or rotated): cheek
Communication System: GSM 1900; Frequency: 1909.8 MHz; Channel Number: 810; Duty Cycle: 1:8
Medium: Regular Glycol Head; Medium parameters used: $\sigma = 1.45$ mho/m, $\varepsilon_r = 38.1$; $\rho = 1000$ kg/m^3

DASY4 Configuration:

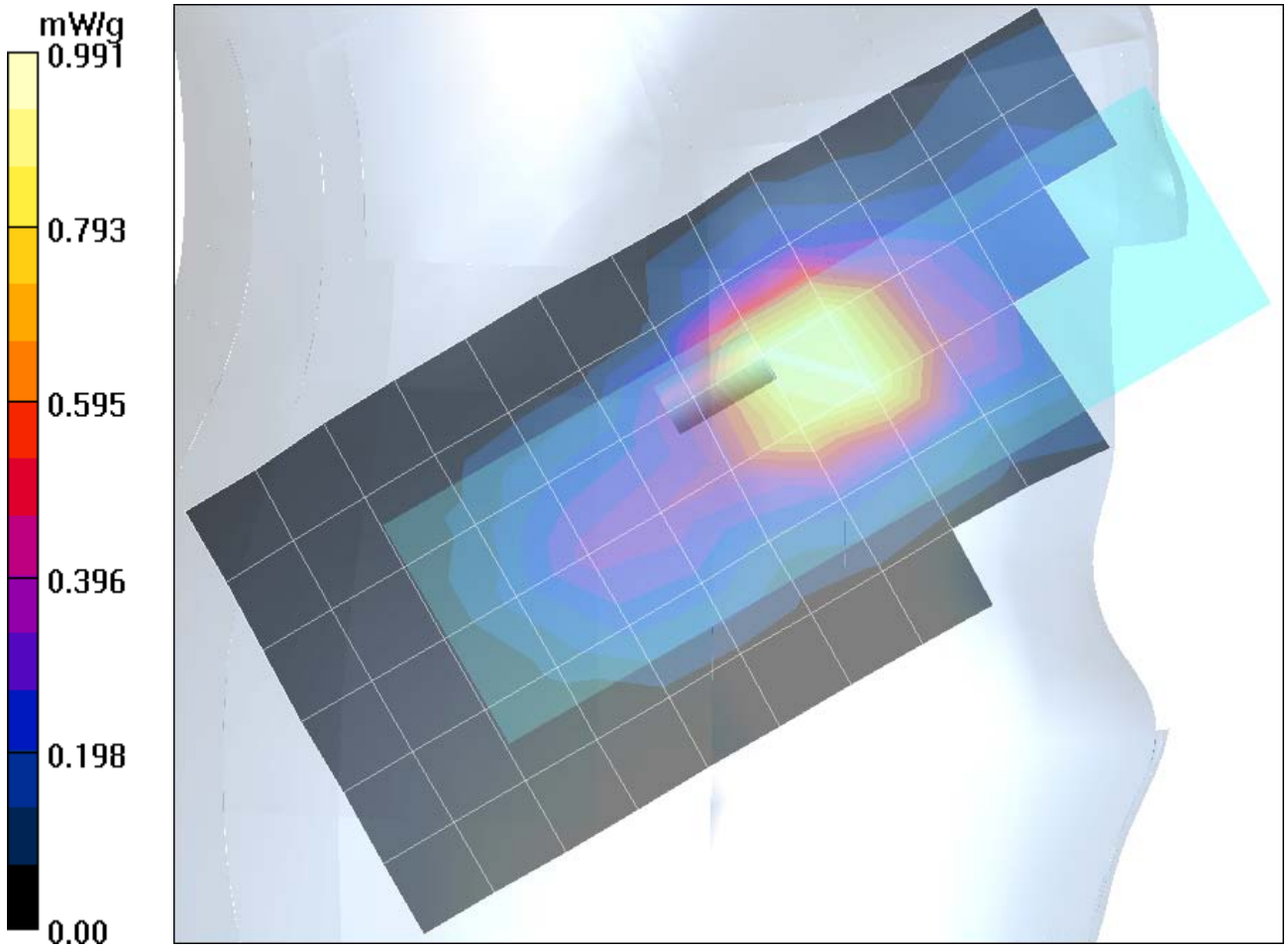
- Probe: ET3DV6 - SN1390; ConvF(5.24, 5.24, 5.24); Calibrated: 4/22/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn383; Calibrated: 8/20/2004
- Phantom: PCS-8: Glycol SAM; Type: SAM; Serial: TP-1138;
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 147

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

Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 0.931 mW/g

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

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 30.1 V/m; **Power Drift = -0.098 dB** Peak SAR (extrapolated) = 1.84 W/kg
SAR(1 g) = 1.08 mW/g; SAR(10 g) = 0.577 mW/g



Date/Time: 5/12/2005 11:54:54AM

Test Laboratory: Motorola 1900 LH Tilt ch661

Serial: G00M030068;
Procedure Notes: Ch# 661 / Pwr Step: 00(OTA) Antenna Position: Fixed Accessory Model #: N/A
Battery Model #: SNN5767A 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: σ = 1.45 mho/m, ε_r = 38.1; ρ = 1000 kg/m^3

DASY4 Configuration:

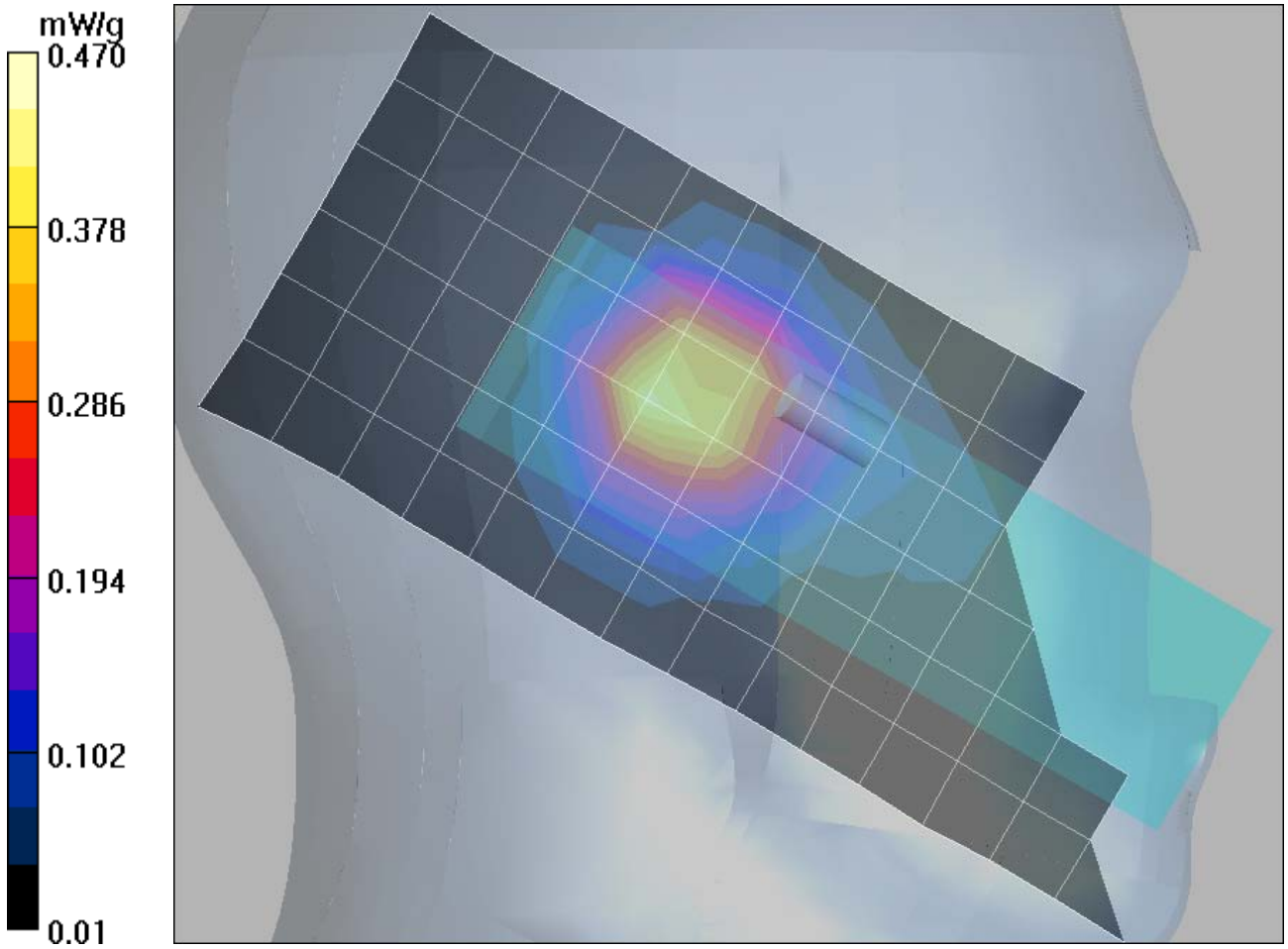
- Probe: ET3DV6 - SN1390; ConvF(5.24, 5.24, 5.24); Calibrated: 4/22/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn383; Calibrated: 8/20/2004
- Phantom: PCS-8: Glycol SAM; Type: SAM; Serial: TP-1138;
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 147

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

Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 0.423 mW/g

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

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 17.8 V/m; **Power Drift = -0.087 dB** Peak SAR (extrapolated) = 0.627 W/kg
SAR(1 g) = 0.418 mW/g; SAR(10 g) = 0.251 mW/g Maximum value of SAR (measured) = 0.460 mW/g



Date/Time: 5/12/2005 11:18:14AM

Test Laboratory: Motorola 1900 LH Cheek ch810

Serial: G00M030068
Procedure Notes: Ch# 810 / Pwr Step: 00(OTA) Antenna Position: Fixed Accessory Model #: N/A
Battery Model #: SNN5767A DEVICE POSITION (cheek or rotated): cheek
Communication System: GSM 1900; Frequency: 1909.8 MHz; Channel Number: 810; Duty Cycle: 1:8
Medium: Regular Glycol Head; Medium parameters used: σ = 1.45 mho/m, ε_r = 38.1; ρ = 1000 kg/m^3

DASY4 Configuration:

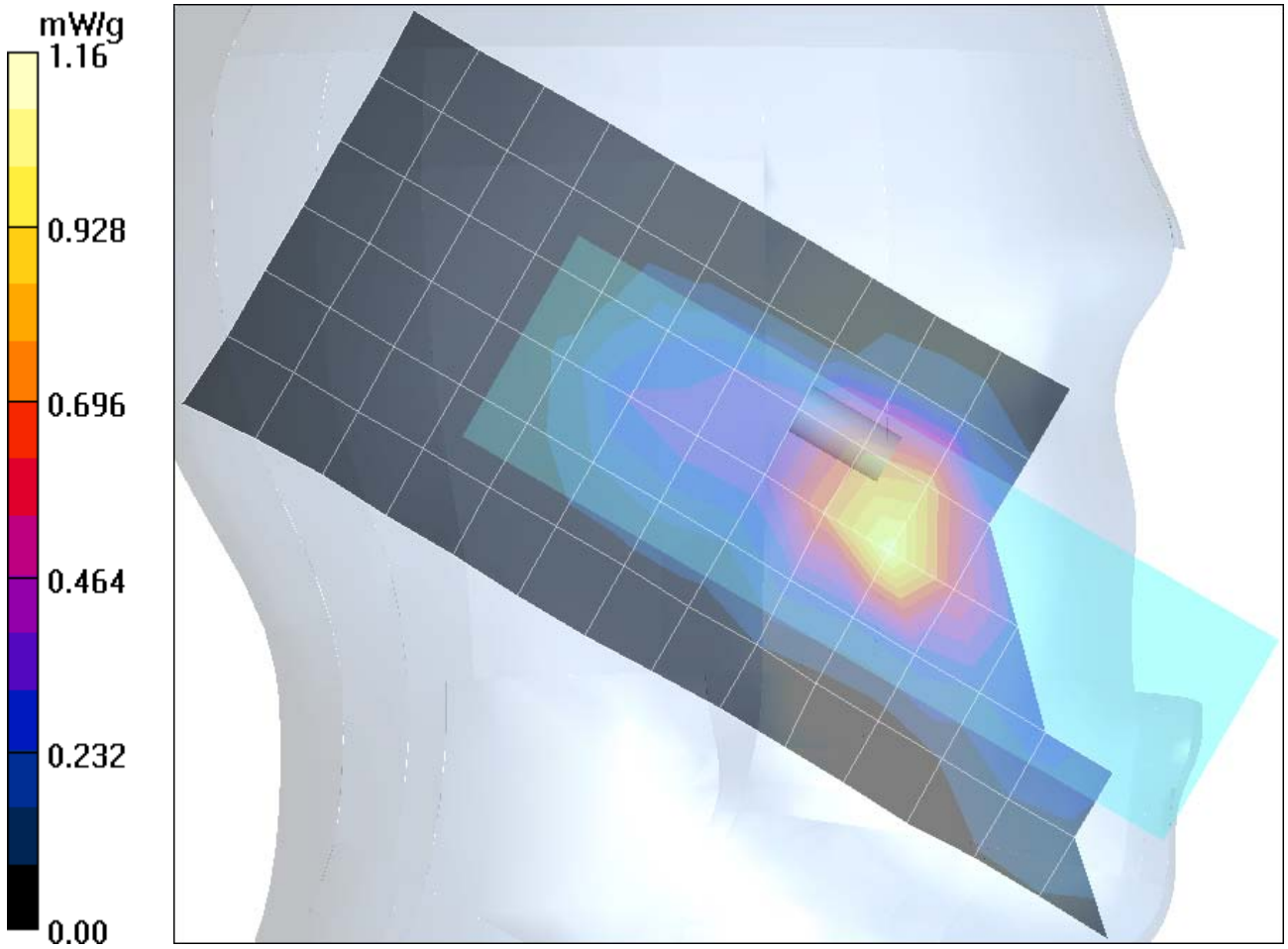
- Probe: ET3DV6 - SN1390; ConvF(5.24, 5.24, 5.24); Calibrated: 4/22/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn383; Calibrated: 8/20/2004
- Phantom: PCS-8: Glycol SAM; Type: SAM; Serial: TP-1138;
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 147

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

Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 1.06 mW/g

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

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 28.2 V/m; **Power Drift = -0.054 dB** Peak SAR (extrapolated) = 1.88 W/kg
SAR(1 g) = 1.1 mW/g; SAR(10 g) = 0.573 mW/g Maximum value of SAR (measured) = 1.23 mW/g



Date/Time: 5/12/2005 6:33:52PM

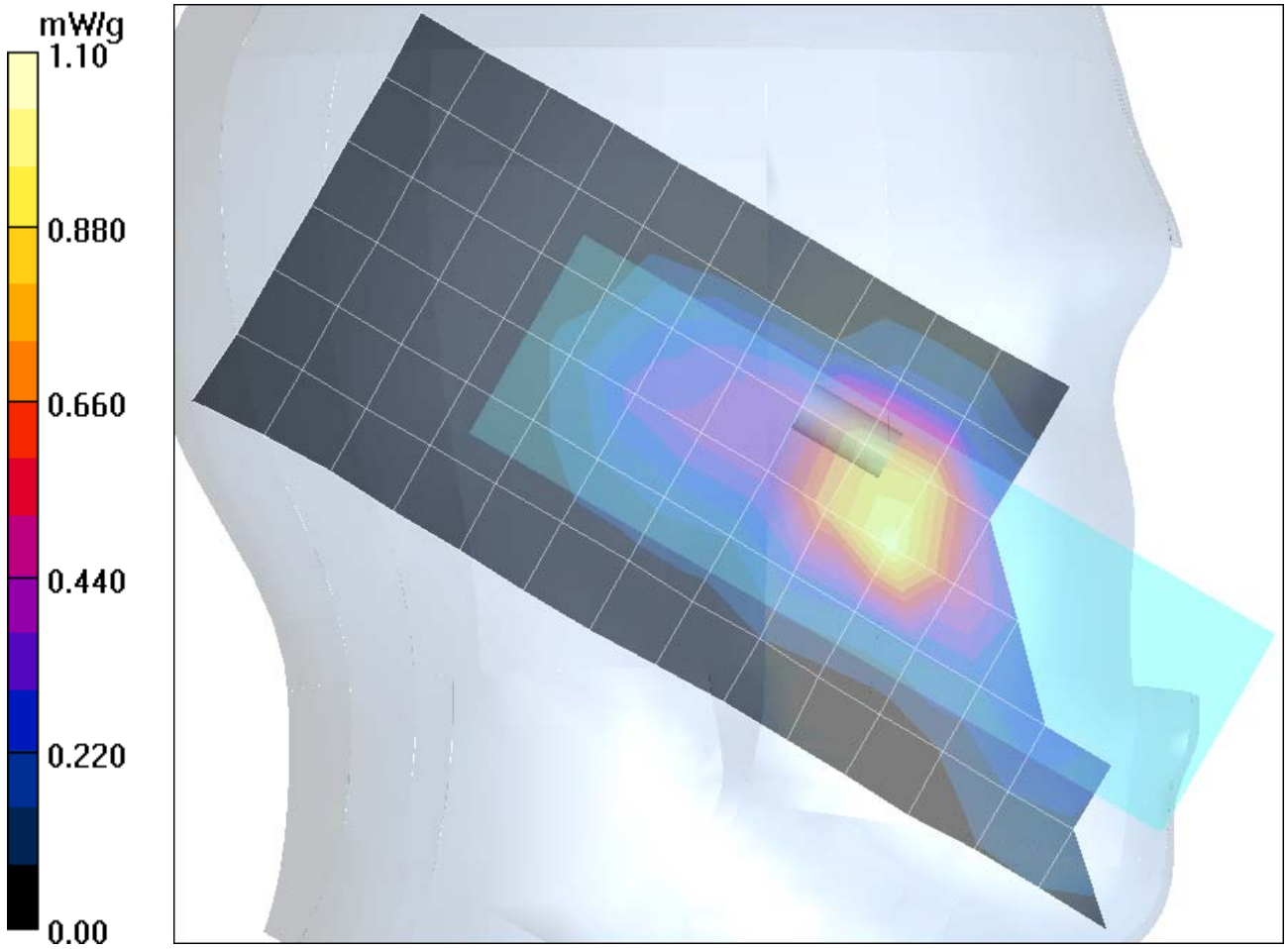
Test Laboratory: Motorola 1900 LH Cheek ch661 with SNN5766A

Serial: G00M030068
Procedure Notes: Ch# 661 / Pwr Step: 00 (OTA) Antenna Position: Fixed Accessory Model #: N/A
Battery Model #: SNN5766A 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: σ = 1.47 mho/m, ε_r = 38.1; ρ = 1000 kg/m^3

DASY4 Configuration:
- Probe: ET3DV6 - SN1390; ConvF(5.24, 5.24, 5.24); Calibrated: 4/22/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn383; Calibrated: 8/20/2004
- Phantom: PCS-8: Glycol SAM; Type: SAM; Serial: TP-1138;
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 147

Left Head Template/Area Scan - Normal (15mm) (7x17x1):
Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 1.00 mW/g

Left Head Template/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 29.3 V/m; **Power Drift = -0.050 dB** Peak SAR (extrapolated) = 1.94 W/kg
SAR(1 g) = 1.11 mW/g; SAR(10 g) = 0.576 mW/g Maximum value of SAR (measured) = 1.25 mW/g



Date/Time: 5/12/2005 8:15:50PM

Test Laboratory: Motorola 1900 LH Cheek ch661 with SNN5766A & SYN1072A

Serial: G00M030068
Procedure Notes: Ch# 661 / Pwr Step: 00 (OTA) Antenna Position: Fixed
Accessory Model #: VLV2203/SYN1072A pouch Battery Model #: SNN5766A
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: σ = 1.47 mho/m, ε_r = 38.1; ρ = 1000 kg/m^3
DASY4 Configuration:

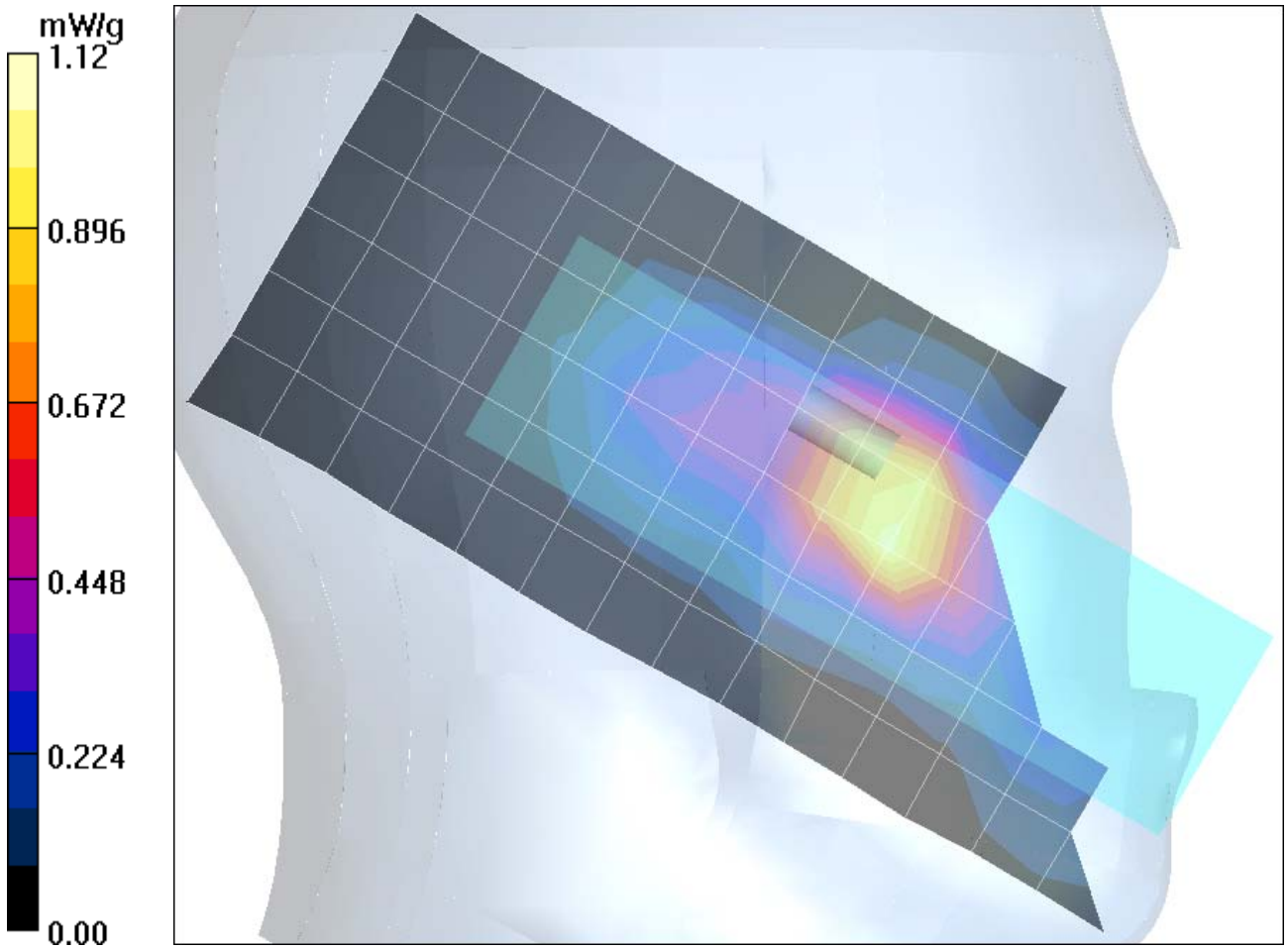
- Probe: ET3DV6 - SN1390; ConvF(5.24, 5.24, 5.24); Calibrated: 4/22/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn383; Calibrated: 8/20/2004
- Phantom: PCS-8: Glycol SAM; Type: SAM; Serial: TP-1138;
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 147

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

Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 1.02 mW/g

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

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 29.5 V/m; **Power Drift = 0.025 dB** Peak SAR (extrapolated) = 2.00 W/kg
SAR(1 g) = 1.15 mW/g; SAR(10 g) = 0.606 mW/g Maximum value of SAR (measured) = 1.28 mW/g



Date/Time: 5/11/2005 12:07:13PM

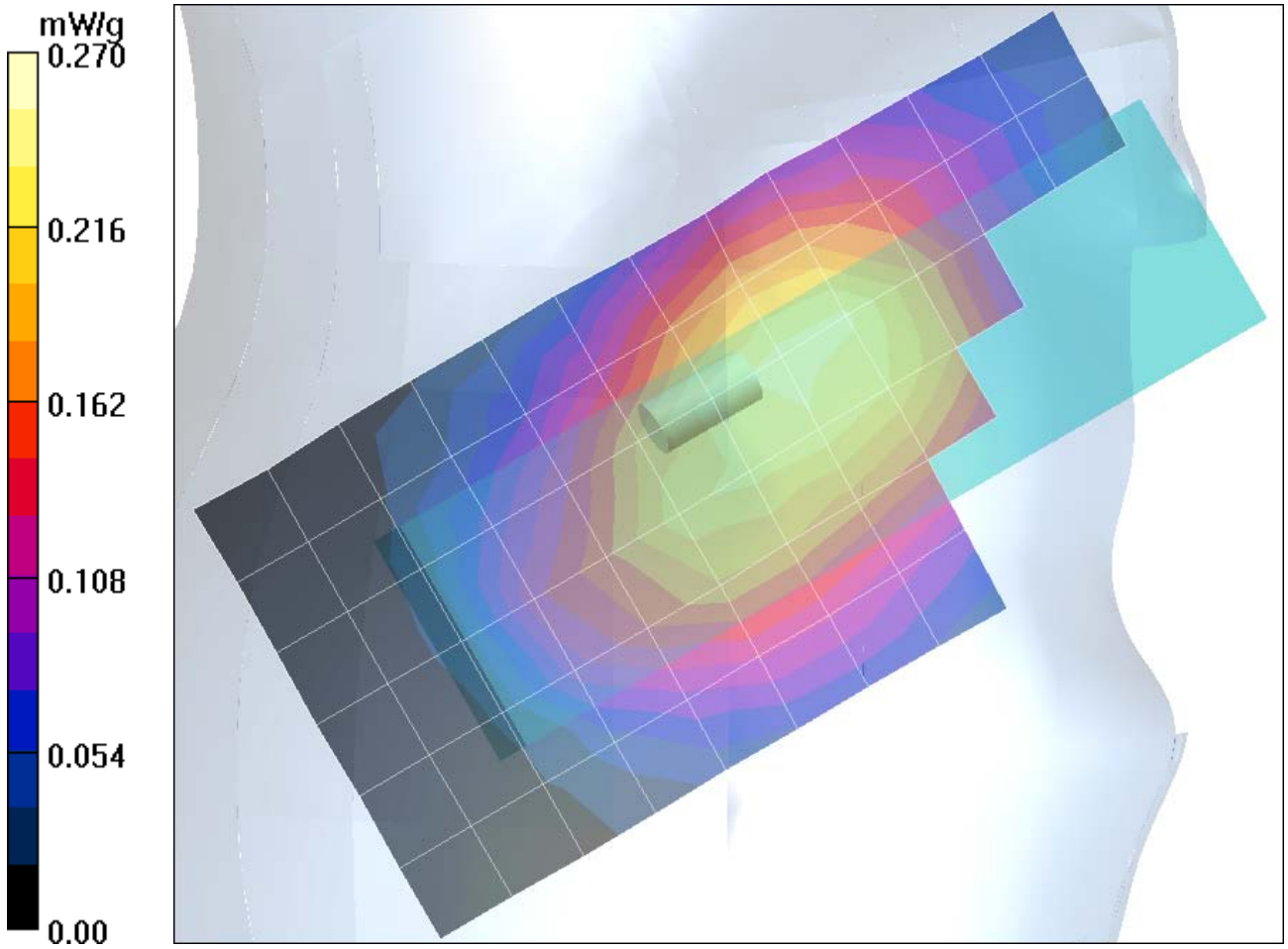
Test Laboratory: Motorola 850 RH Tilt ch190

Serial: G00M030068
Procedure Notes: Ch# 190 / Pwr Step: 05(OTA) Antenna Position: Fixed Accessory Model #: N/A
Battery Model #: SNN5767A 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: $\sigma = 0.92$ mho/m, $\varepsilon_r = 42.2$; $\rho = 1000$ kg/m^3

DASY4 Configuration:
- Probe: ET3DV6 - SN1390; ConvF(6.45, 6.45, 6.45); Calibrated: 4/22/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn383; Calibrated: 8/20/2004
- Phantom: PCS-8: Sugar Water SAM; Type: SAM; Serial: TP-1168;
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 147

Right Head Template/Area Scan - Normal (15mm) (7x17x1):
Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 0.243 mW/g

Right Head Template/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 16.8 V/m; **Power Drift = -0.024 dB** Peak SAR (extrapolated) = 0.304 W/kg
SAR(1 g) = 0.237 mW/g; SAR(10 g) = 0.180 mW/g Maximum value of SAR (measured) = 0.251 mW/g



Date/Time: 5/11/2005 11:30:54AM

Test Laboratory: Motorola 850 RH Cheek ch251

Serial: G00M030068 ;
Procedure Notes: Ch# 251 / Pwr Step: 05(OTA) Antenna Position: Fixed Accessory Model #: N/A
Battery Model #: SNN5767A DEVICE POSITION (cheek or rotated): cheek
Communication System: GSM 850; Frequency: 848.8 MHz; Channel Number: 251; Duty Cycle: 1:8
Medium: Low Freq Head; Medium parameters used: $\sigma = 0.92$ mho/m, $\varepsilon_r = 42.2$; $\rho = 1000$ kg/m^3

DASY4 Configuration:

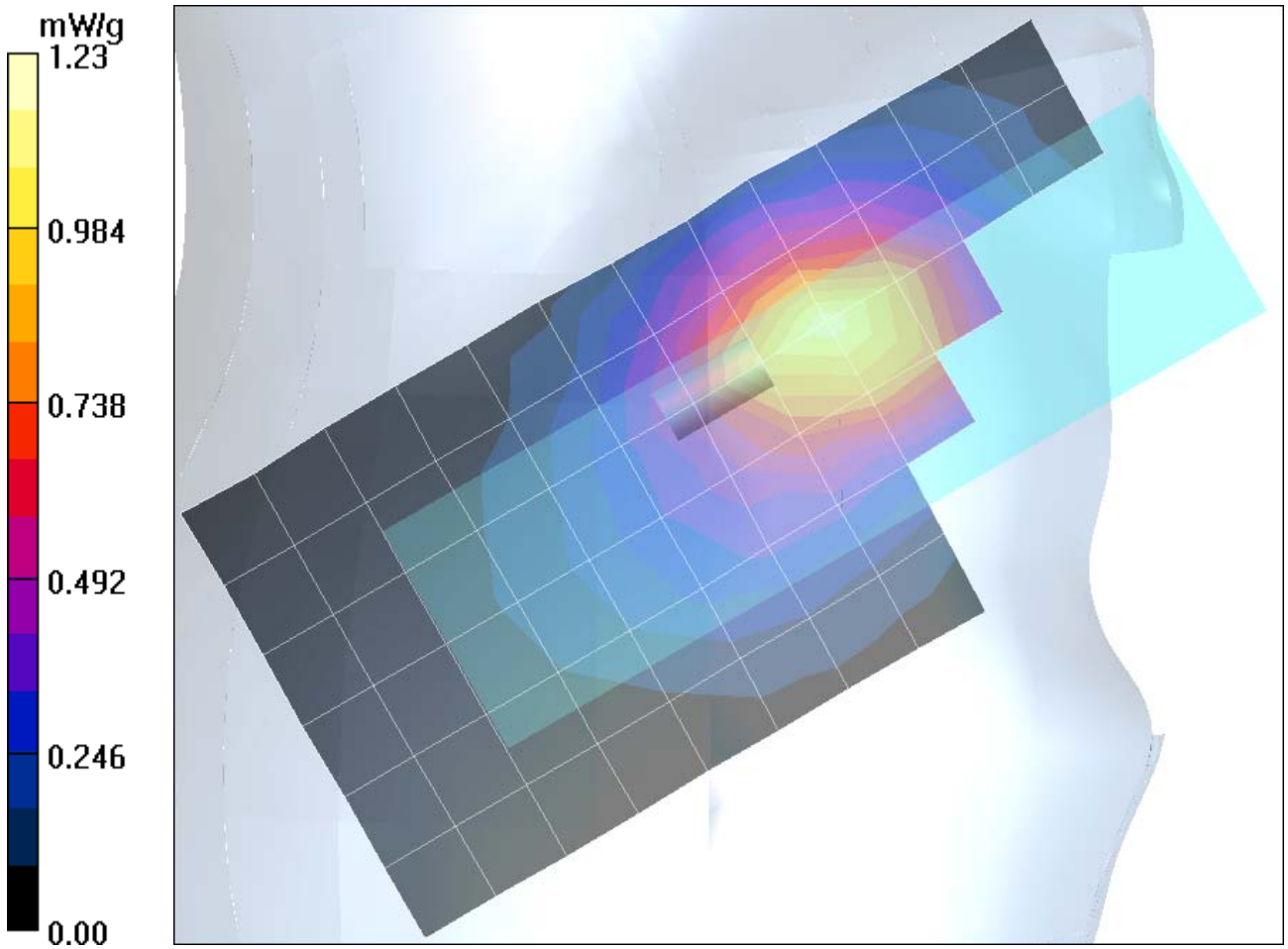
- Probe: ET3DV6 - SN1390; ConvF(6.45, 6.45, 6.45); Calibrated: 4/22/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn383; Calibrated: 8/20/2004
- Phantom: PCS-8: Sugar Water SAM; Type: SAM; Serial: TP-1168;
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 147

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

Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 1.13 mW/g

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

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 35.4 V/m; **Power Drift = -0.046 dB** Peak SAR (extrapolated) = 1.57 W/kg
SAR(1 g) = 1.06 mW/g; SAR(10 g) = 0.689 mW/g Maximum value of SAR (measured) = 1.16 mW/



Date/Time: 5/11/2005 2:30:39PM

Test Laboratory: Motorola 850 RH Cheek ch251 with SNN5766A

Serial: G00M030068 ;
Procedure Notes: Ch# 251 / Pwr Step: 05(OTA) Antenna Position: Fixed Accessory Model #: N/A
Battery Model #: SNN5766A DEVICE POSITION (cheek or rotated): cheek
Communication System: GSM 850; Frequency: 848.8 MHz; Channel Number: 251; Duty Cycle: 1:8
Medium: Low Freq Head; Medium parameters used: $\sigma = 0.92$ mho/m, $\varepsilon_r = 42.2$; $\rho = 1000$ kg/m^3

DASY4 Configuration:

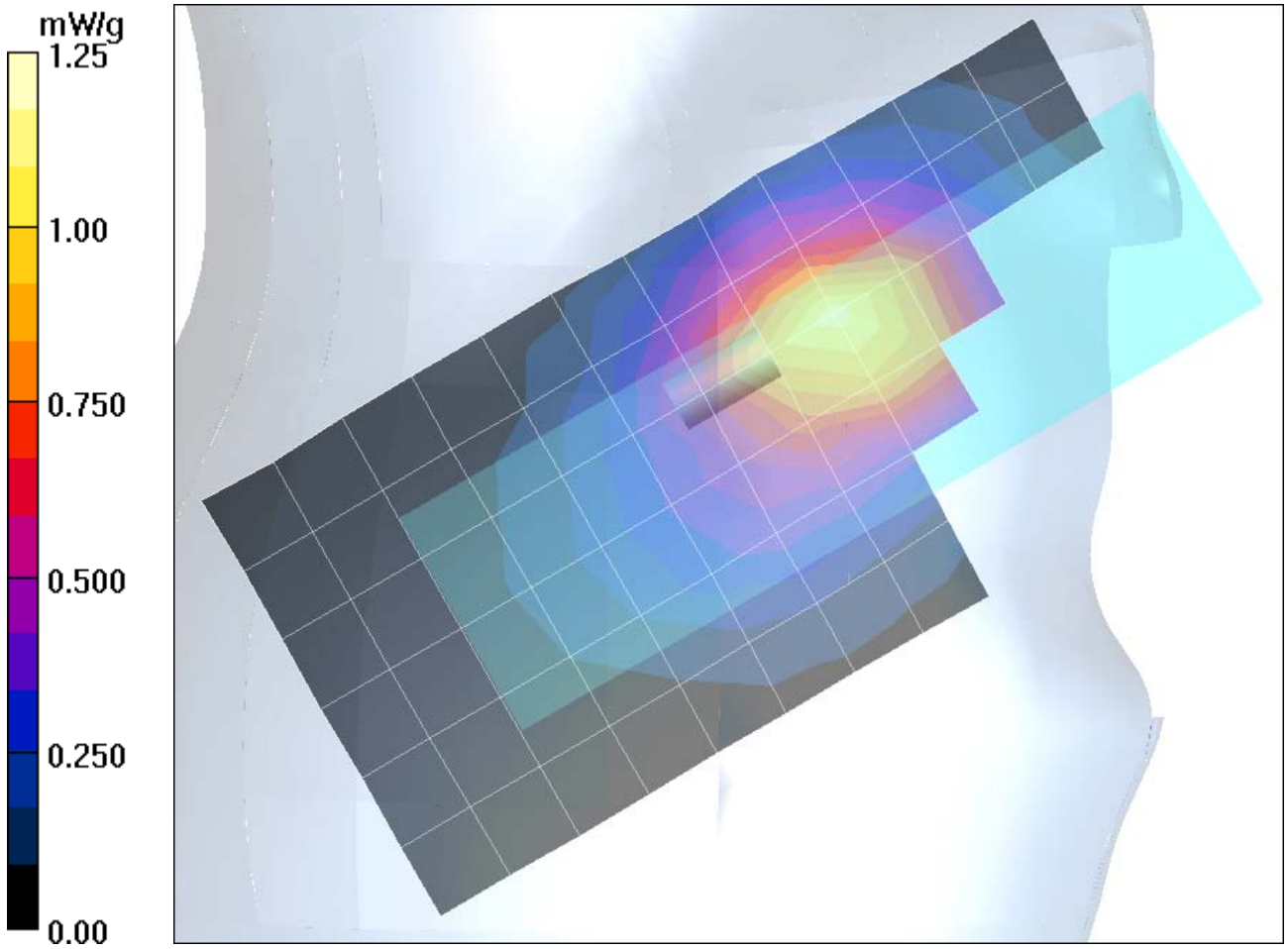
- Probe: ET3DV6 - SN1390; ConvF(6.45, 6.45, 6.45); Calibrated: 4/22/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn383; Calibrated: 8/20/2004
- Phantom: PCS-8: Sugar Water SAM; Type: SAM; Serial: TP-1168;
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 147

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

Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 1.14 mW/g

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

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 36.2 V/m; **Power Drift = -0.079 dB** Peak SAR (extrapolated) = 1.61 W/kg
SAR(1 g) = 1.09 mW/g; SAR(10 g) = 0.709 mW/g Maximum value of SAR (measured) = 1.19 mW/g



Date/Time: 5/11/2005 6:06:25PM

Test Laboratory: Motorola 850 RH Cheek ch251 with SNN5766A & SYN1072A

Serial: G00M030068
Procedure Notes: Ch# 251/ Pwr Step: 05 (OTA)Antenna Position: Fixed Accessory Model #: SYN1072A
Pouch Battery Model #: SNN5766A DEVICE POSITION (cheek or rotated): Cheek
Communication System: GSM 850; Frequency: 848.8 MHz; Channel Number: 251; Duty Cycle: 1:8
Medium: Low Freq Head; Medium parameters used: $\sigma = 0.92$ mho/m, $\varepsilon_r = 42.2$; $\rho = 1000$ kg/m^3

DASY4 Configuration:

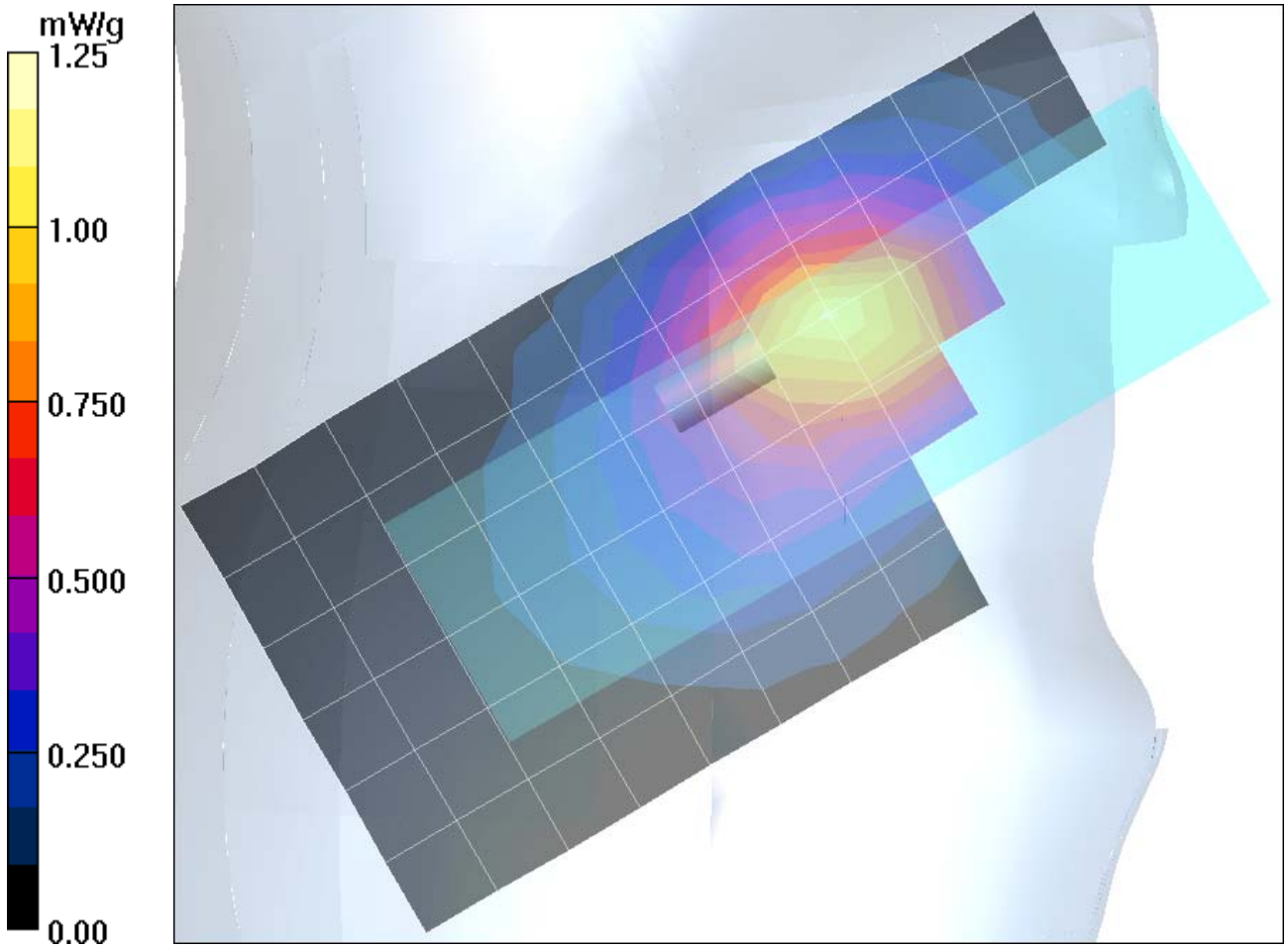
- Probe: ET3DV6 - SN1390; ConvF(6.45, 6.45, 6.45); Calibrated: 4/22/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn383; Calibrated: 8/20/2004
- Phantom: PCS-8: Sugar Water SAM; Type: SAM; Serial: TP-1168;
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 147

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

Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 1.11 mW/g

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

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 35.1 V/m; **Power Drift = -0.046 dB** Peak SAR (extrapolated) = 1.54 W/kg
SAR(1 g) = 1.04 mW/g; SAR(10 g) = 0.683 mW/g Maximum value of SAR (measured) = 1.13 mW/g



Date/Time: 5/10/2005 10:13:52PM

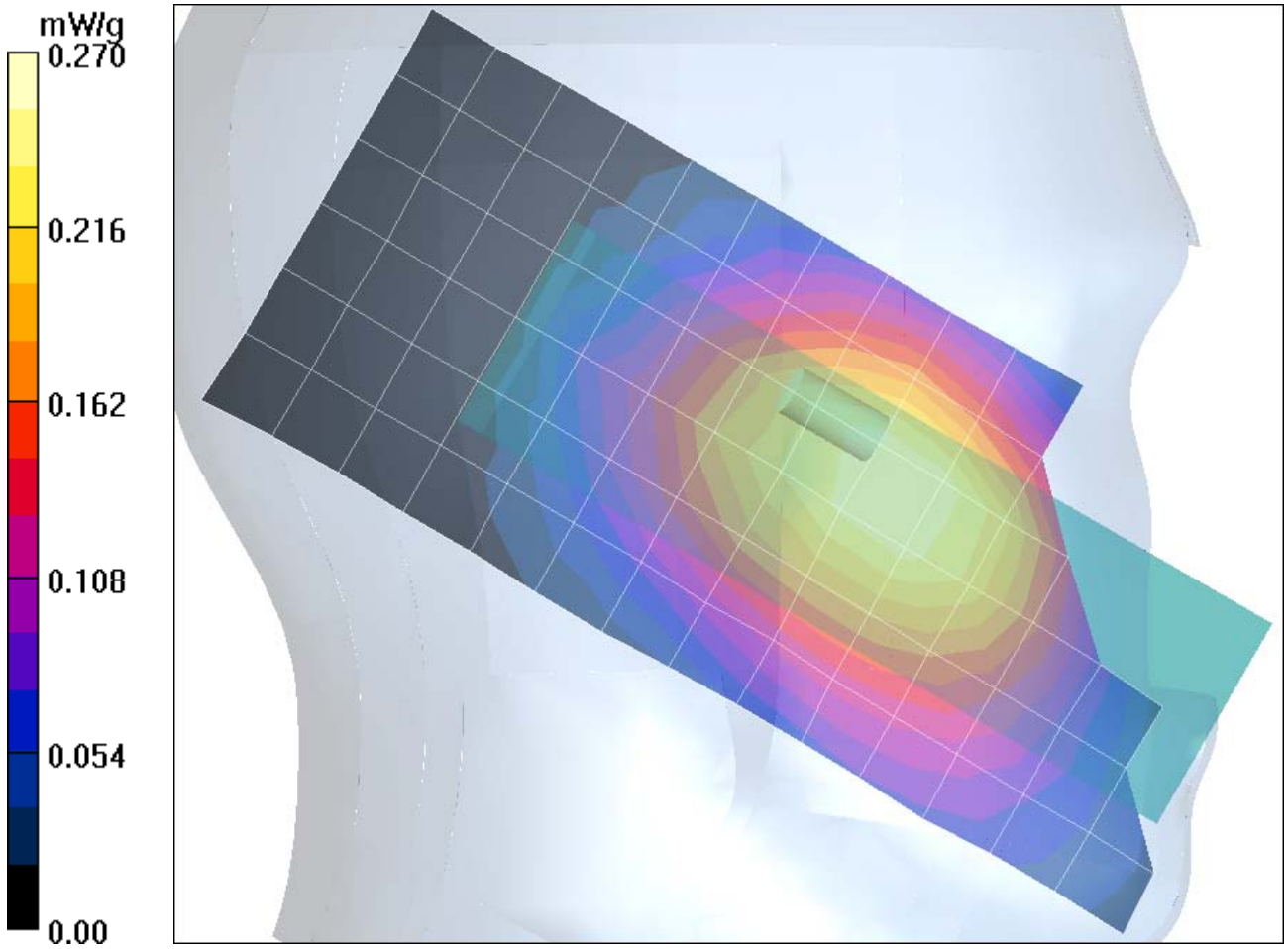
Test Laboratory: Motorola 850 LH Tilt ch190

Serial: G00M030068
Procedure Notes: Ch# 190 / Pwr Step: 05 (OTA) Antenna Position: Fixed Accessory Model #: N/A
Battery Model #: SNN5767A 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: $\sigma = 0.92$ mho/m, $\varepsilon_r = 42.5$; $\rho = 1000$ kg/m^3

DASY4 Configuration:
- Probe: ET3DV6 - SN1390; ConvF(6.45, 6.45, 6.45); Calibrated: 4/22/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn383; Calibrated: 8/20/2004
- Phantom: PCS-8: Sugar Water SAM; Type: SAM; Serial: TP-1168;
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 147

Left Head Template/Area Scan - Normal (15mm) (7x17x1):
Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 0.248 mW/g

Left Head Template/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 17.4 V/m; **Power Drift = 0.014 dB** Peak SAR (extrapolated) = 0.319 W/kg
SAR(1 g) = 0.249 mW/g; SAR(10 g) = 0.186 mW/g Maximum value of SAR (measured) = 0.260 mW/g



Date/Time: 5/10/2005 9:43:14PM

Test Laboratory: Motorola 850 LH Cheek ch251

Serial: G00M030068
Procedure Notes: Ch# 251 / Pwr Step: 05 (OTA) Antenna Position: Fixed Accessory Model #: N/A
Battery Model #: SNN5767A DEVICE POSITION (cheek or rotated): Cheek
Communication System: GSM 850; Frequency: 848.8 MHz; Channel Number: 251; Duty Cycle: 1:8
Medium: Low Freq Head; Medium parameters used: $\sigma = 0.92$ mho/m, $\varepsilon_r = 42.5$; $\rho = 1000$ kg/m^3

DASY4 Configuration:

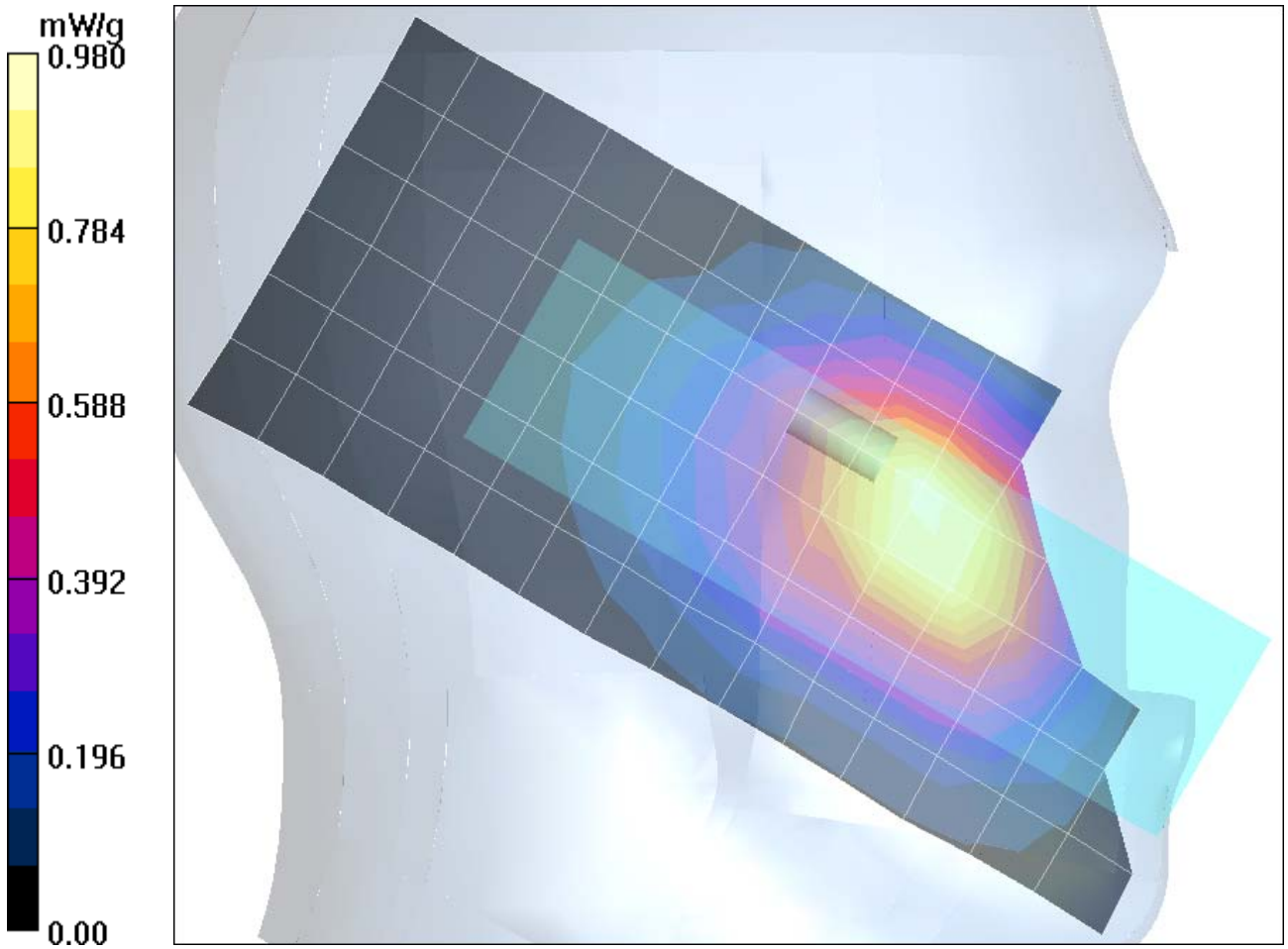
- Probe: ET3DV6 - SN1390; ConvF(6.45, 6.45, 6.45); Calibrated: 4/22/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn383; Calibrated: 8/20/2004
- Phantom: PCS-8: Sugar Water SAM; Type: SAM; Serial: TP-1168;
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 147

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

Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 0.952 mW/g

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

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 34.2 V/m; **Power Drift = -0.01 dB** Peak SAR (extrapolated) = 1.39 W/kg
SAR(1 g) = 0.972 mW/g; SAR(10 g) = 0.647 mW/g Maximum value of SAR (measured) = 1.02 mW/g



Date/Time: 5/12/2005 2:27:50PM

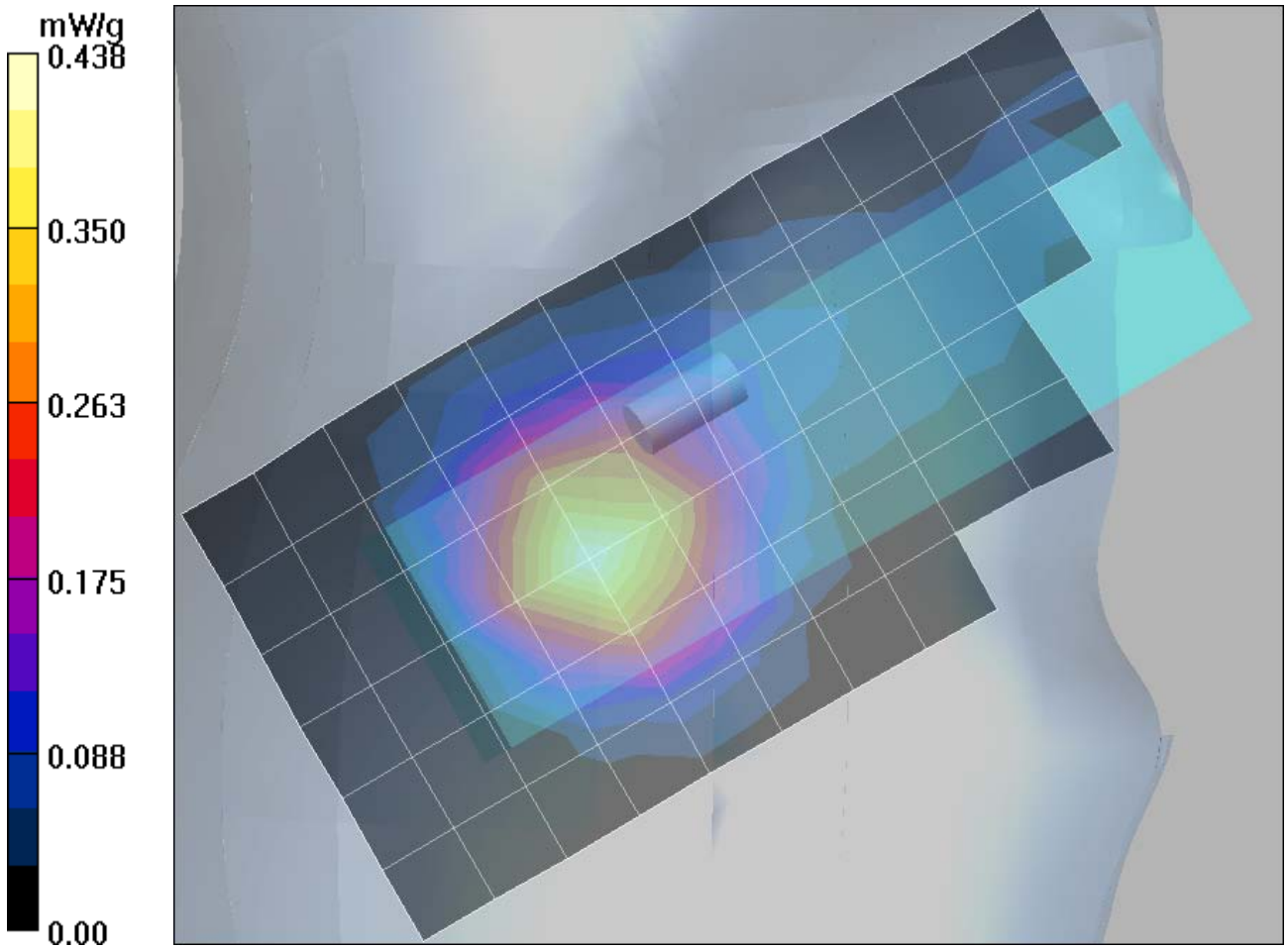
Test Laboratory: Motorola 1900 RH Tilt ch661

Serial: G00M030068
Procedure Notes: Ch# 661 / Pwr Step: 00(OTA) Antenna Position: Fixed Accessory Model #: N/A
Battery Model #: SNN5767A 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: $\sigma = 1.45$ mho/m, $\varepsilon_r = 38.1$; $\rho = 1000$ kg/m^3

DASY4 Configuration:
- Probe: ET3DV6 - SN1390; ConvF(5.24, 5.24, 5.24); Calibrated: 4/22/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn383; Calibrated: 8/20/2004
- Phantom: PCS-8: Glycol SAM; Type: SAM; Serial: TP-1138;
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 147

Right Head Template/Area Scan - Normal (15mm) (7x17x1):
Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 0.438 mW/g

Right Head Template/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 16.4 V/m; **Power Drift = 0.050 dB** Peak SAR (extrapolated) = 0.587 W/kg
SAR(1 g) = 0.401 mW/g; SAR(10 g) = 0.245 mW/g Maximum value of SAR (measured) = 0.434 mW/g



Appendix 3

SAR distribution plots for Body Worn Configuration

Date/Time: 5/18/2005 10:29:04AM

Test Laboratory: Motorola **1900 BW ch661 SYN1072 & SYN87963A & SNN5767A**

Serial: G00M030068;
Procedure Notes: Pwr Step: 00(OTA) Antenna Position: Fixed Battery Model #: SNN5767A
Accessory Model # = VLV2203/ SYN1072 and Universal belt clip &SYN8390B(Headset)
Communication System: GSM 1900; Frequency: 1880 MHz; Channel Number: 661; Duty Cycle: 1:8
Medium: Regular Glycol Body; Medium parameters used: σ = 1.59 mho/m, ε_r = 50.9; ρ = 1000 kg/m^3

DASY4 Configuration:

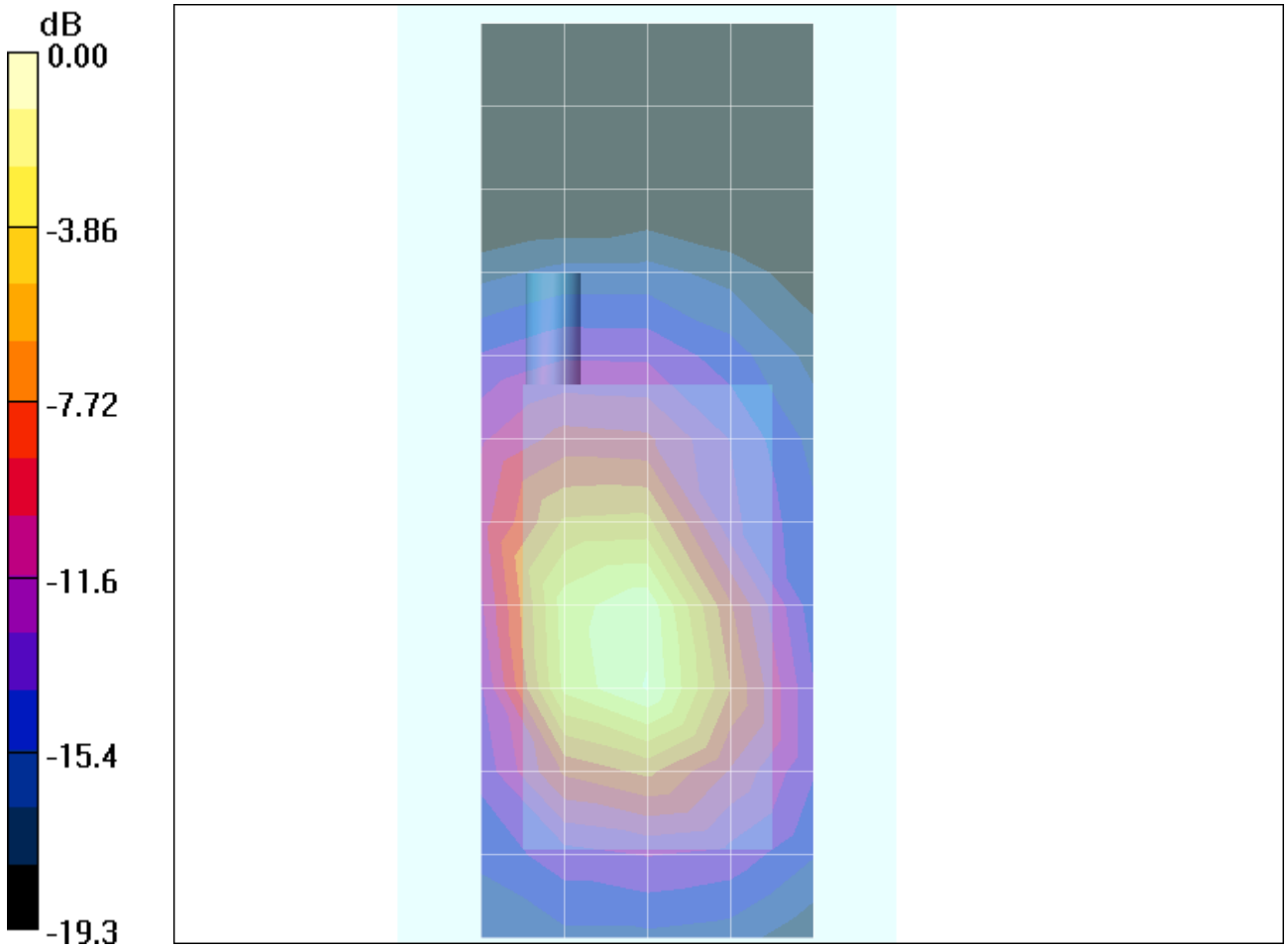
- Probe: ET3DV6 - SN1390; ConvF(4.77, 4.77, 4.77); Calibrated: 4/22/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn383; Calibrated: 8/20/2004
- Phantom: PCS-8: Section 2, Amy Twin, Rev2 (23-June-04); Type: Amy Twin Flat; Serial: n/a;
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 147

Amy Twin Phone Template/Area Scan - Normal Body (15mm) (13x7x1):

Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 0.362 mW/g

Amy Twin Phone Template/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 16.8 V/m; **Power Drift = -0.199 dB** Peak SAR (extrapolated) = 0.753 W/kg
SAR(1 g) = 0.415 mW/g; SAR(10 g) = 0.207 mW/g Maximum value of SAR (measured) = 0.474 mW/g



Date/Time: 5/18/2005 9:35:11AM

Test Laboratory: Motorola **1900 BW ch661 SYN1072 & SYN8763A & SNN5766A**

Serial: G00M030068
Procedure Notes: Pwr Step: 00(OTA) Antenna Position: Fixed Battery Model #: SNN5766A
Accessory Model # = VLV2203/ SYN1072 and Universal belt clip &SYN8390B(Headset)
Communication System: GSM 1900; Frequency: 1880 MHz; Channel Number: 661; Duty Cycle: 1:8
Medium: Regular Glycol Body; Medium parameters used: $\sigma = 1.59$ mho/m, $\varepsilon_r = 50.9$; $\rho = 1000$ kg/m^3

DASY4 Configuration:

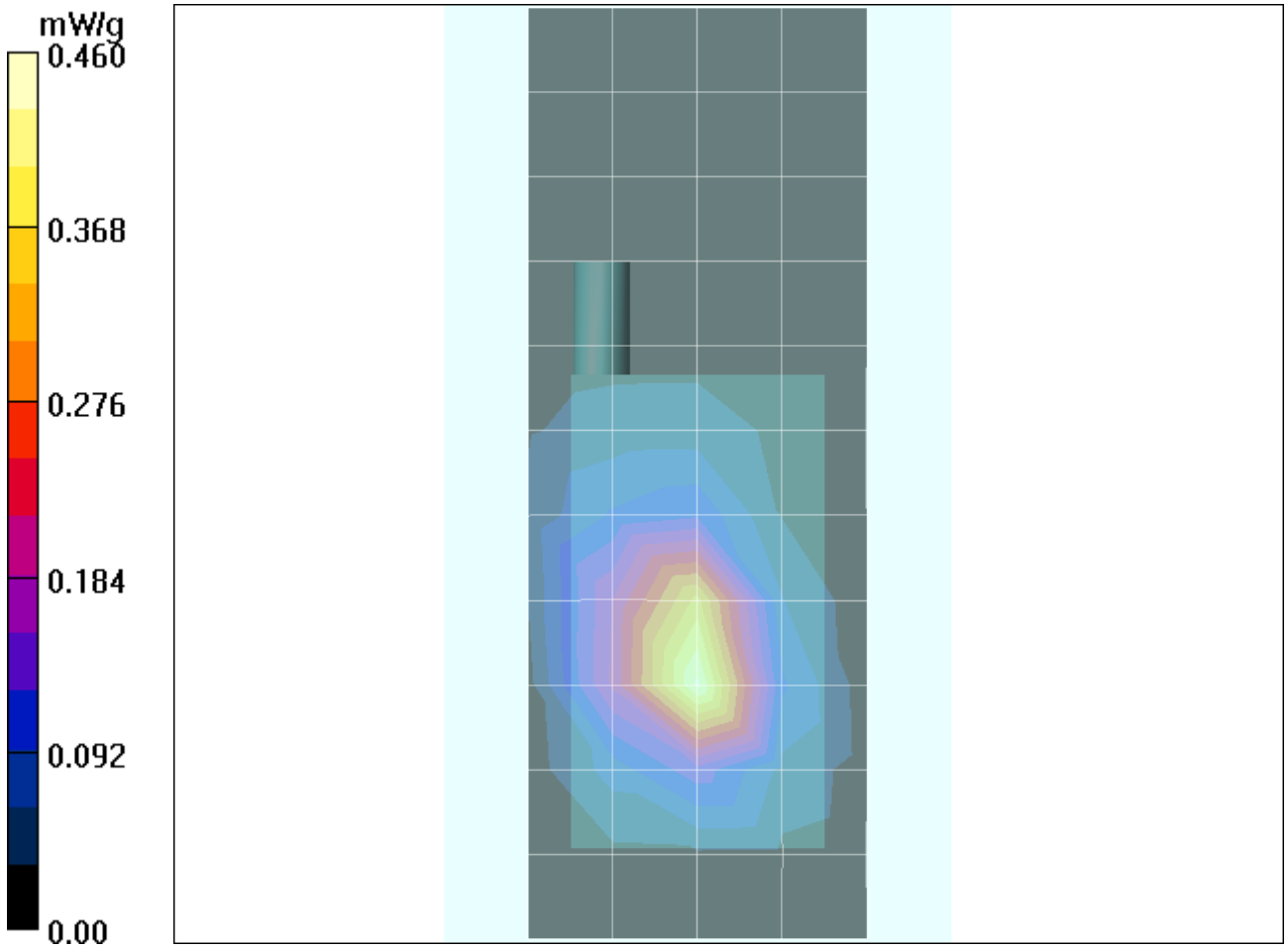
- Probe: ET3DV6 - SN1390; ConvF(4.77, 4.77, 4.77); Calibrated: 4/22/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn383; Calibrated: 8/20/2004
- Phantom: PCS-8: Section 2, Amy Twin, Rev2 (23-June-04); Type: Amy Twin Flat; Serial: n/a;
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 147

Amy Twin Phone Template/Area Scan - Normal Body (15mm) (13x7x1):

Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 0.439 mW/g

Amy Twin Phone Template/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 18.2 V/m; **Power Drift = -0.00 dB** Peak SAR (extrapolated) = 0.810 W/kg
SAR(1 g) = 0.433 mW/g; SAR(10 g) = 0.213 mW/g Maximum value of SAR (measured) = 0.497 mW/g



Date/Time: 5/18/2005 9:02:53AM

Test Laboratory: Motorola 1900 BW ch661 SYN1072 & SYN8631A & SNN5766A

Serial: G00M030068;
Procedure Notes: Pwr Step: 00(OTA) Antenna Position: Fixed Battery Model #: SNN5766A
Accessory Model # = VLV2203/ SYN1072 and Wishbone belt clip & SYN8390B(Headset)
Communication System: GSM 1900; Frequency: 1880 MHz; Channel Number: 661; Duty Cycle: 1:8
Medium: Regular Glycol Body; Medium parameters used: σ = 1.59 mho/m, ε_r = 50.9; ρ = 1000 kg/m^3
DASY4 Configuration:

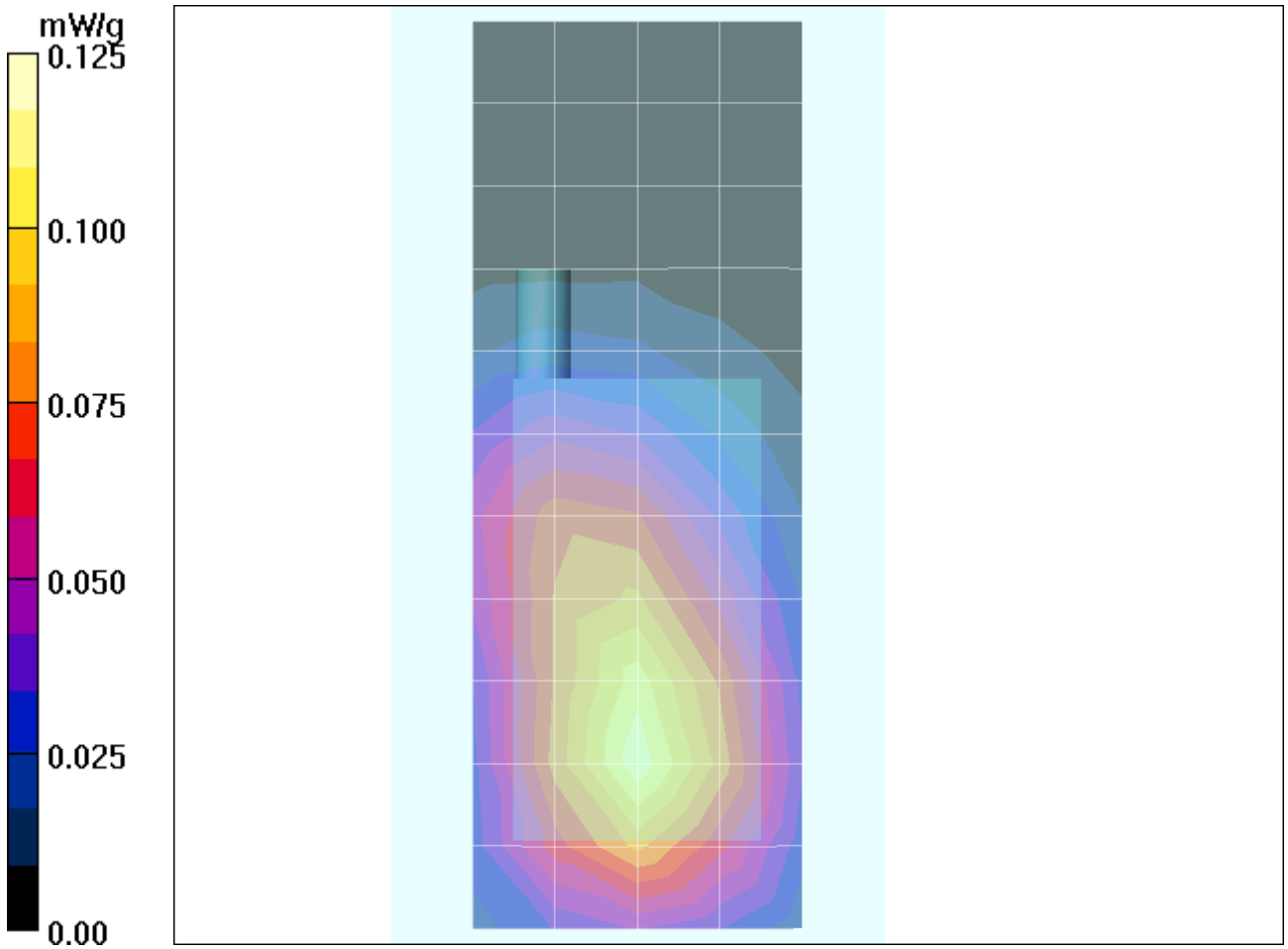
- Probe: ET3DV6 - SN1390; ConvF(4.77, 4.77, 4.77); Calibrated: 4/22/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn383; Calibrated: 8/20/2004
- Phantom: PCS-8: Section 2, Amy Twin, Rev2 (23-June-04); Type: Amy Twin Flat; Serial: n/a;
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 147

Amy Twin Phone Template/Area Scan - Normal Body (15mm) (13x7x1):

Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 0.115 mW/g

Amy Twin Phone Template/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.54 V/m; **Power Drift = -0.016 dB** Peak SAR (extrapolated) = 0.171 W/kg
SAR(1 g) = 0.108 mW/g; SAR(10 g) = 0.068 mW/g Maximum value of SAR (measured) = 0.116 mW/g



Date/Time: 5/18/2005 12:39:46PM

Test Laboratory: Motorola **1900 BW back 25mm ch661 CL10 GPRS & SNN5767A**

Serial: G00M030068
Procedure Notes: Pwr Step: 00(OTA) Antenna Position: Fixed
Battery Model #: SNN5767A Accessory Model # = N/A (25mm Back)
Communication System: GPRS 1900-Cl10; Frequency: 1880 MHz; Channel Number: 661; Duty Cycle: 1:4
Medium: Regular Glycol Body; Medium parameters used: σ = 1.59 mho/m, ε_r = 50.9; ρ = 1000 kg/m^3

DASY4 Configuration:

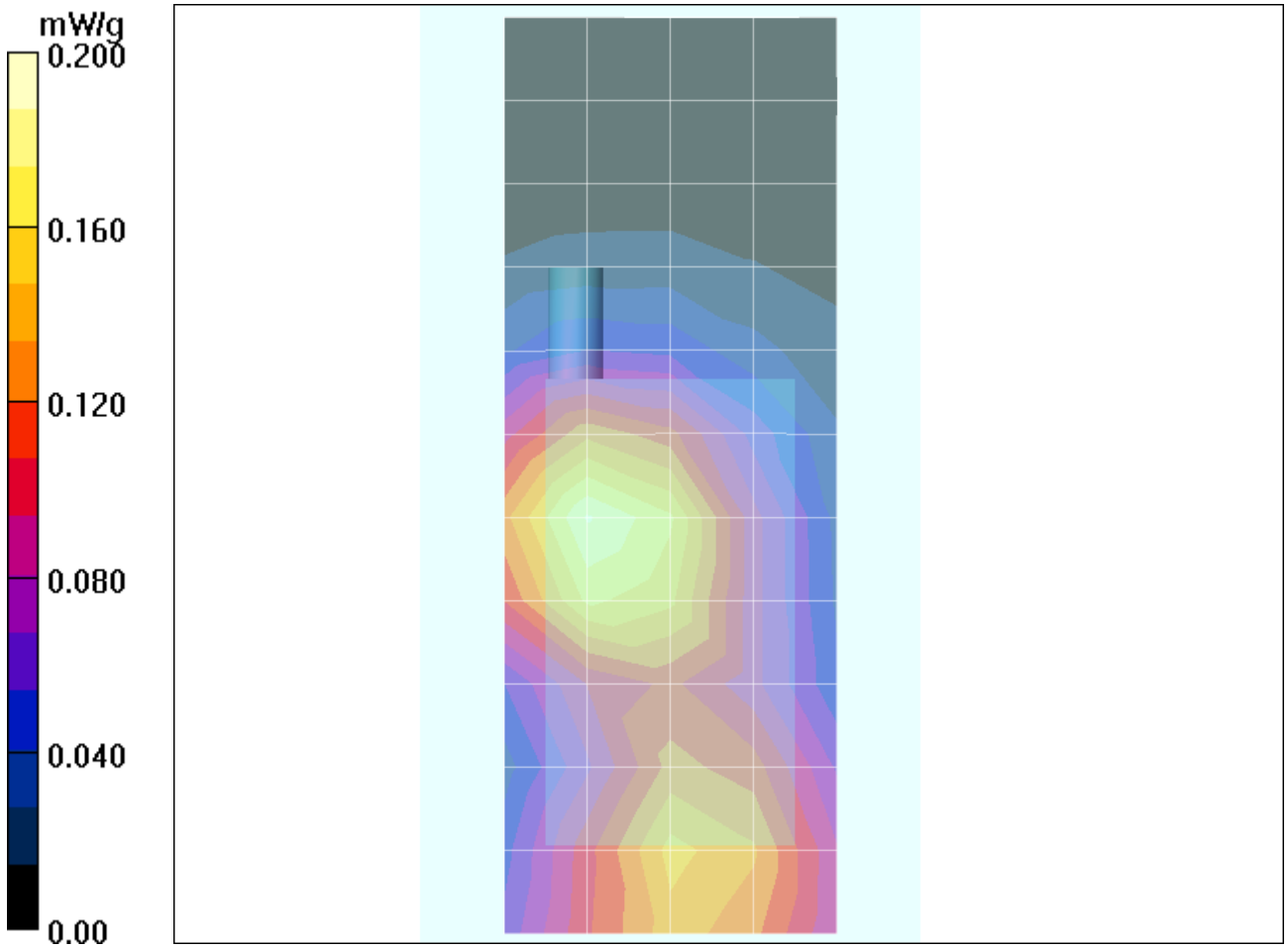
- Probe: ET3DV6 - SN1390; ConvF(4.77, 4.77, 4.77); Calibrated: 4/22/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn383; Calibrated: 8/20/2004
- Phantom: PCS-8: Section 2, Amy Twin, Rev2 (23-June-04); Type: Amy Twin Flat; Serial: n/a;
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 147

Amy Twin Phone Template/Area Scan - Normal Body (15mm) (13x7x1):

Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 0.189 mW/g

Amy Twin Phone Template/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.2 V/m; **Power Drift = 0.027 dB** Peak SAR (extrapolated) = 0.282 W/kg
SAR(1 g) = 0.182 mW/g; SAR(10 g) = 0.114 mW/g Maximum value of SAR (measured) = 0.196 mW/g



Date/Time: 5/18/2005 11:22:13AM

Test Laboratory: Motorola **1900 BW back 25mm ch661 CL10 GPRS & SNN5766A**

Serial: G00M030068
Procedure Notes: Pwr Step: 00(OTA) Antenna Position: Fixed
Battery Model #: SNN5766A Accessory Model # = N/A (25mm Back)
Communication System: GPRS 1900-Cl10; Frequency: 1880 MHz; Channel Number: 661; Duty Cycle: 1:4
Medium: Regular Glycol Body; Medium parameters used: σ = 1.59 mho/m, ε_r = 50.9; ρ = 1000 kg/m^3

DASY4 Configuration:

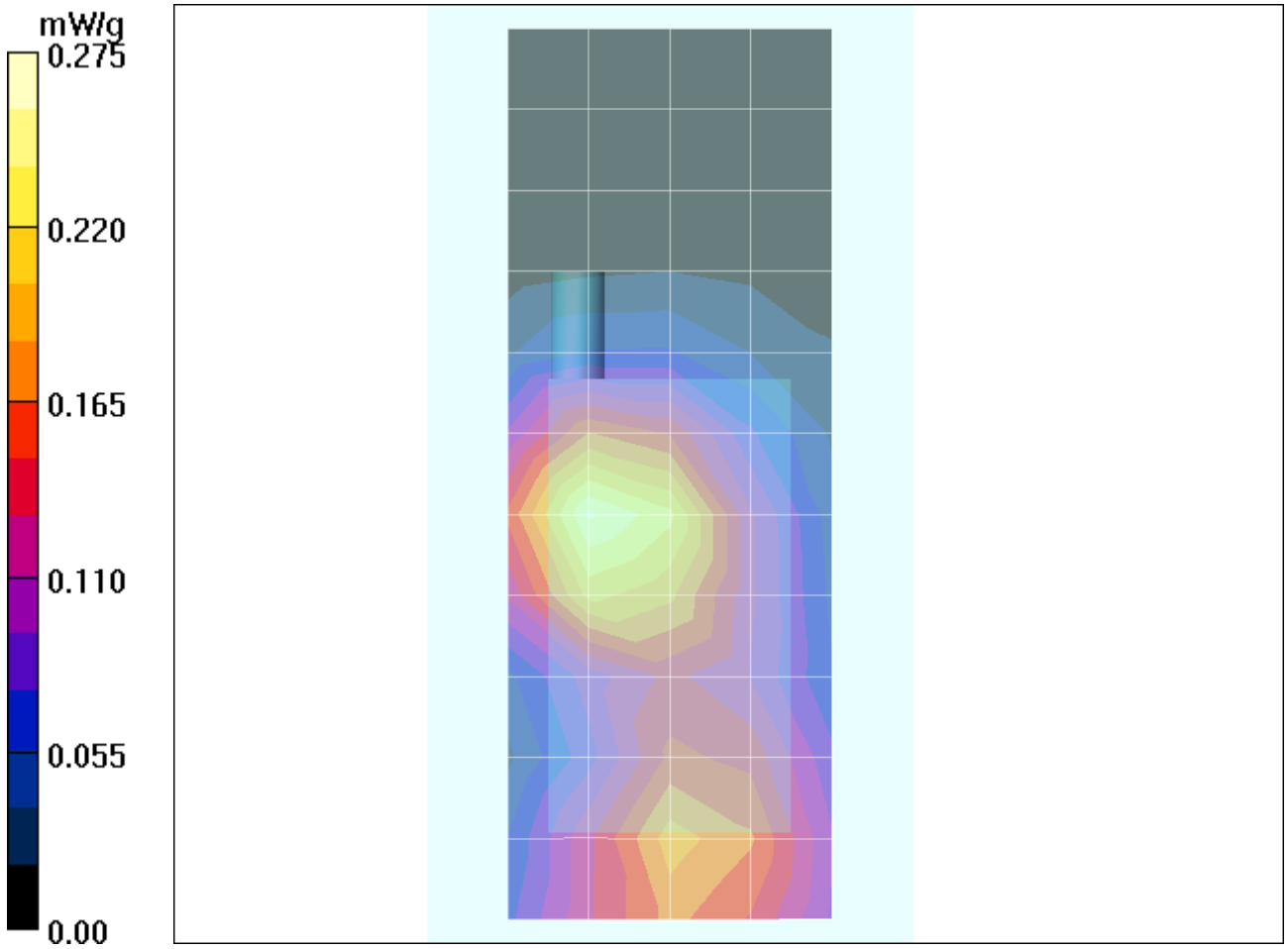
- Probe: ET3DV6 - SN1390; ConvF(4.77, 4.77, 4.77); Calibrated: 4/22/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn383; Calibrated: 8/20/2004
- Phantom: PCS-8: Section 2, Amy Twin, Rev2 (23-June-04); Type: Amy Twin Flat; Serial: n/a;
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 147

Amy Twin Phone Template/Area Scan - Normal Body (15mm) (13x7x1):

Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 0.260 mW/g

Amy Twin Phone Template/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.2 V/m; **Power Drift = 0.01 dB** Peak SAR (extrapolated) = 0.395 W/kg
SAR(1 g) = 0.252 mW/g; SAR(10 g) = 0.155 mW/g Maximum value of SAR (measured) = 0.271 mW/g



Date/Time: 5/12/2005 8:44:30AM

Test Laboratory: Motorola 850 BW ch190 CL10 GPRS & SNN5766A

Serial: G00M030068
Procedure Notes: Ch# 190 / Pwr Step: 05(OTA) Antenna Position: Fixed
Battery Model #: SNN5766A Accessory Model # = N/A
Communication System: GPRS 850-CL10; Frequency: 836.6 MHz; Channel Number: 190; Duty Cycle: 1:4
Medium: Low Freq Body; Medium parameters used: $\sigma = 0.97$ mho/m, $\varepsilon_r = 54.9$; $\rho = 1000$ kg/m^3

DASY4 Configuration:

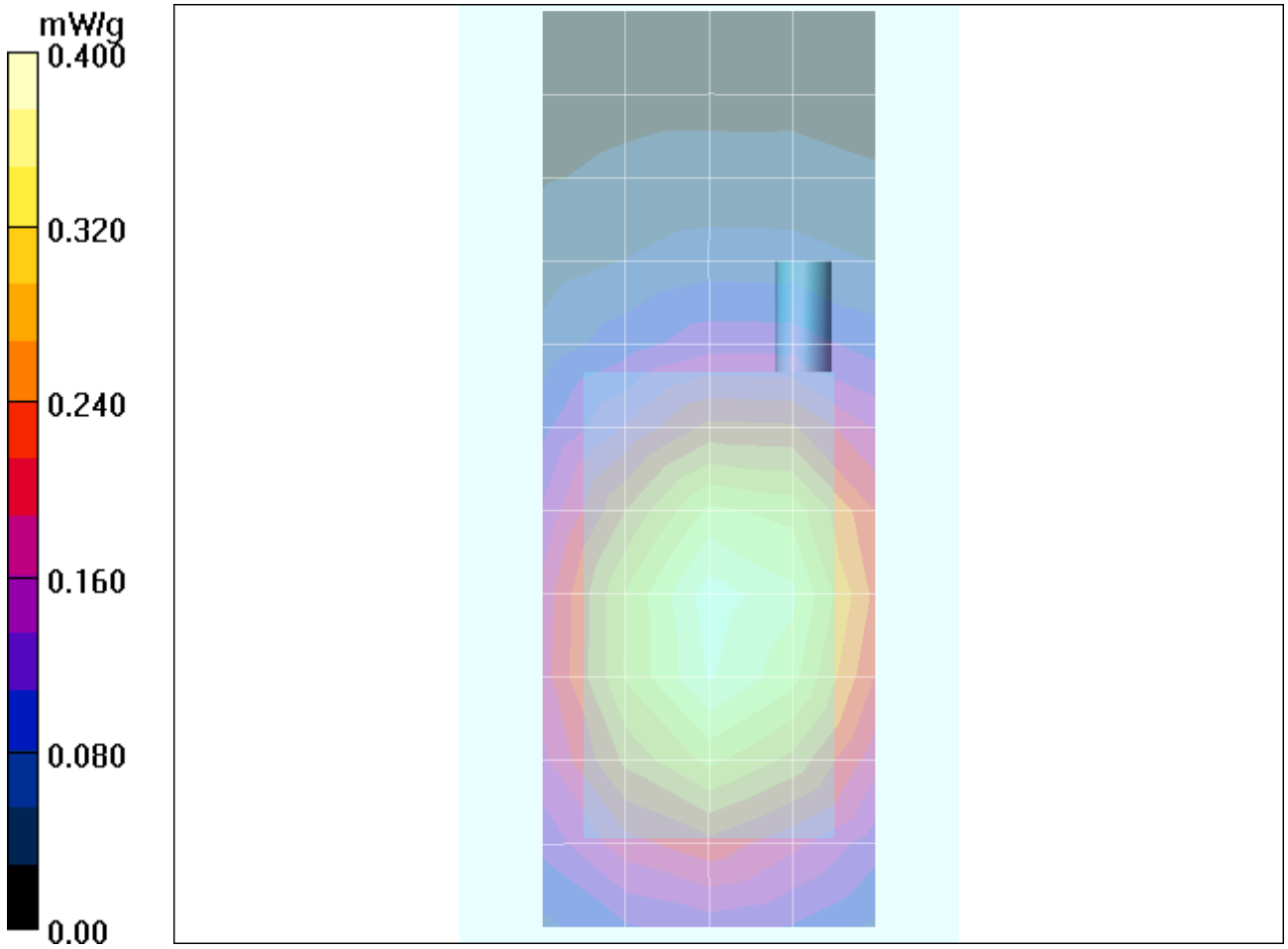
- Probe: ET3DV6 - SN1390; ConvF(6.37, 6.37, 6.37); Calibrated: 4/22/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn383; Calibrated: 8/20/2004
- Phantom: PCS-8: Section 1, Amy Twin, Rev2 (23-June-04); Type: Amy Twin Flat; Serial: n/a;
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 147

Amy Twin Phone Template/Area Scan - Normal Body (15mm) (13x7x1):

Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 0.389 mW/g

Amy Twin Phone Template/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 20.8 V/m; Power Drift = -0.00 dB Peak SAR (extrapolated) = 0.489 W/kg
SAR(1 g) = 0.373 mW/g; SAR(10 g) = 0.273 mW/g Maximum value of SAR (measured) = 0.396 mW/g



Date/Time: 5/11/2005 9:09:47PM

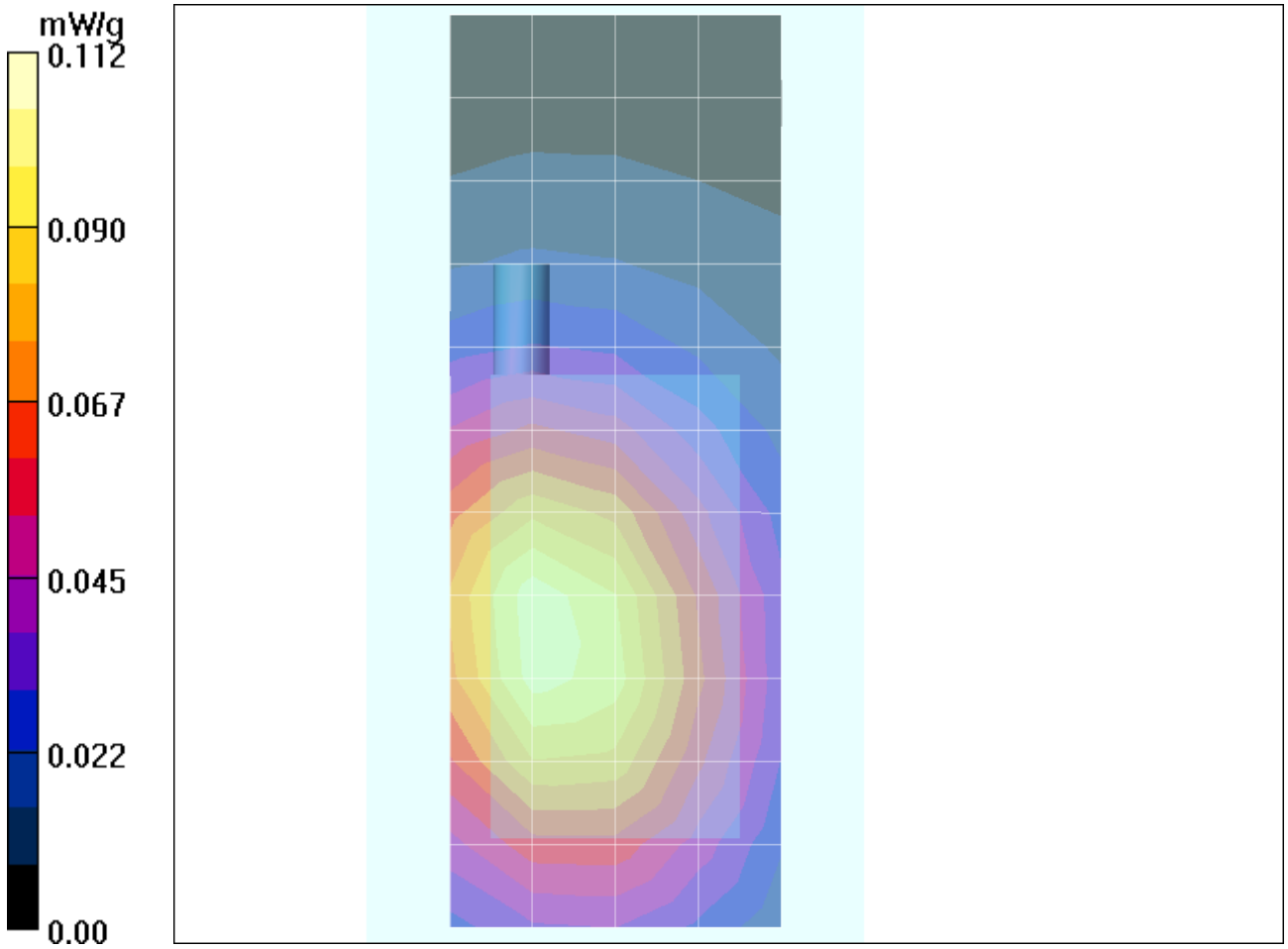
Test Laboratory: Motorola 850 BW ch190 SYN1072 & SYN8763A & SNN5766A

Serial: G00M030068
Procedure Notes: Ch# 190 / Pwr Step: 05 (OTA) Antenna Position: Fixed Battery Model #: SNN5766A
Accessory Model # = SYN8390B& VLV2203/ SYN1072 and Universal belt clip
Communication System: GSM 850; Frequency: 836.6 MHz; Channel Number: 190; Duty Cycle: 1:8
Medium: Low Freq Body; Medium parameters used: $\sigma = 0.97$ mho/m, $\varepsilon_r = 54.8$; $\rho = 1000$ kg/m^3

DASY4 Configuration:
- Probe: ET3DV6 - SN1390; ConvF(6.37, 6.37, 6.37); Calibrated: 4/22/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn383; Calibrated: 8/20/2004
- Phantom: PCS-8: 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 147

Amy Twin Phone Template/Area Scan - Normal Body (15mm) (13x7x1):
Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 0.102 mW/g

Amy Twin Phone Template/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.2 V/m; **Power Drift = -0.011 dB** Peak SAR (extrapolated) = 0.130 W/kg
SAR(1 g) = 0.100 mW/g; SAR(10 g) = 0.073 mW/g Maximum value of SAR (measured) = 0.106 mW/g



Date/Time: 5/11/2005 9:34:27PM

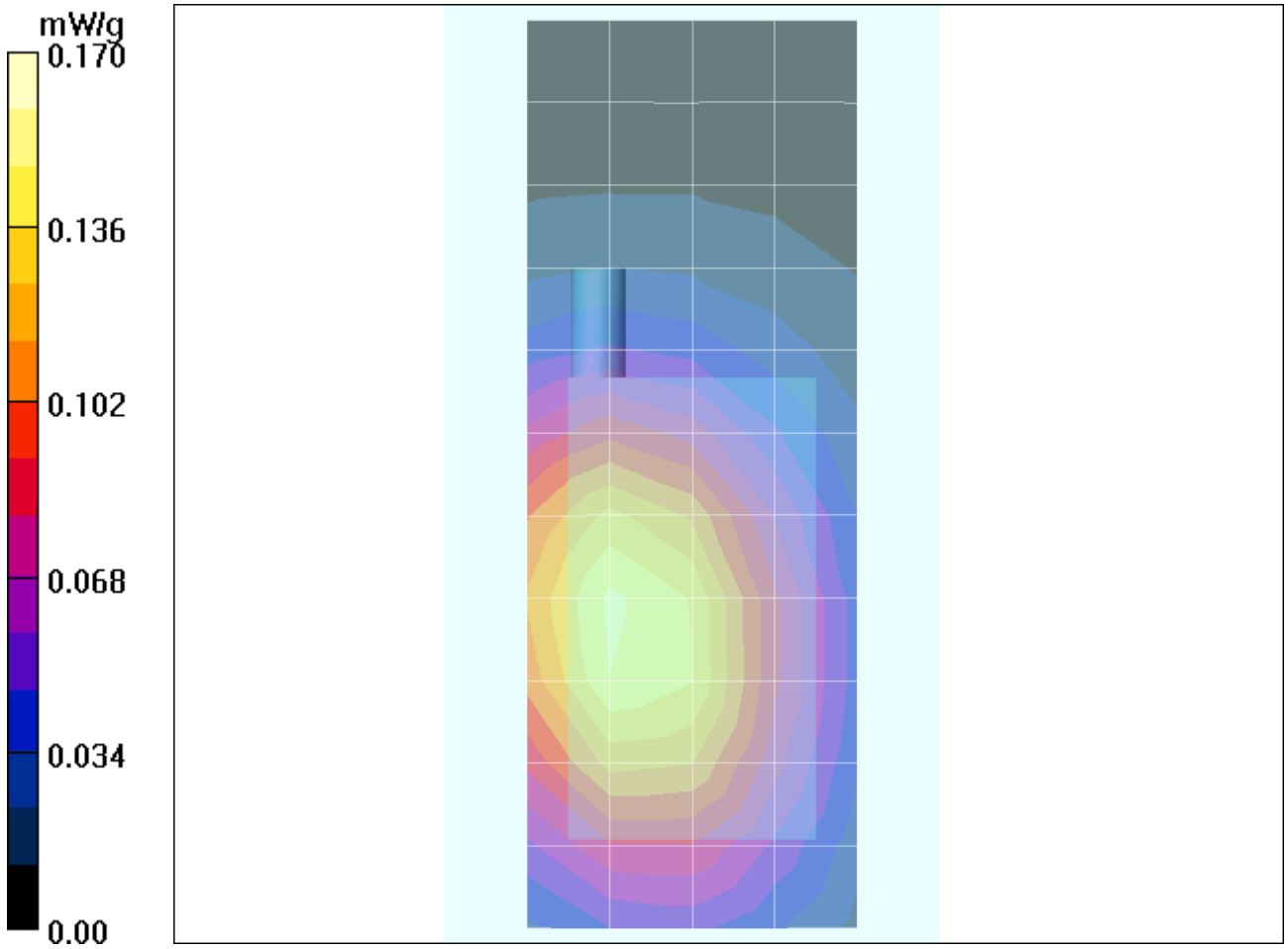
Test Laboratory: Motorola 850 BW ch190 SYN1072 & SYN8631A & SNN5767A

Serial: G00M030068;
Procedure Notes: Ch# 190 / Pwr Step: 05 (OTA) Antenna Position: Fixed Battery Model #: SNN5767A
Accessory Model # = SYN8390B& VLV2203/ SYN1072 and Wishbone belt clip
Communication System: GSM 850; Frequency: 836.6 MHz; Channel Number: 190; Duty Cycle: 1:8
Medium: Low Freq Body; Medium parameters used: $\sigma = 0.97$ mho/m, $\varepsilon_r = 54.8$; $\rho = 1000$ kg/m^3

DASY4 Configuration:
- Probe: ET3DV6 - SN1390; ConvF(6.37, 6.37, 6.37); Calibrated: 4/22/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn383; Calibrated: 8/20/2004
- Phantom: PCS-8: 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 147

Amy Twin Phone Template/Area Scan - Normal Body (15mm) (13x7x1):
Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 0.150 mW/g

Amy Twin Phone Template/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.4 V/m; **Power Drift = 0.038 dB** Peak SAR (extrapolated) = 0.186 W/kg
SAR(1 g) = 0.146 mW/g; SAR(10 g) = 0.106 mW/g Maximum value of SAR (measured) = 0.155 mW/g



Date/Time: 5/11/2005 8:46:57PM

Test Laboratory: Motorola 850 BW ch190 SYN1072 & SYN8631A & SNN5766A

Serial: G00M030068;
Procedure Notes: Ch# 190 / Pwr Step: 05 (OTA) Antenna Position: Fixed Battery Model #: SNN5766A
Accessory Model # = SYN8390B& VLV2203/ SYN1072 and Wishbone belt clip
Communication System: GSM 850; Frequency: 836.6 MHz; Channel Number: 190; Duty Cycle: 1:8
Medium: Low Freq Body; Medium parameters used: $\sigma = 0.97$ mho/m, $\varepsilon_r = 54.8$; $\rho = 1000$ kg/m^3

DASY4 Configuration:

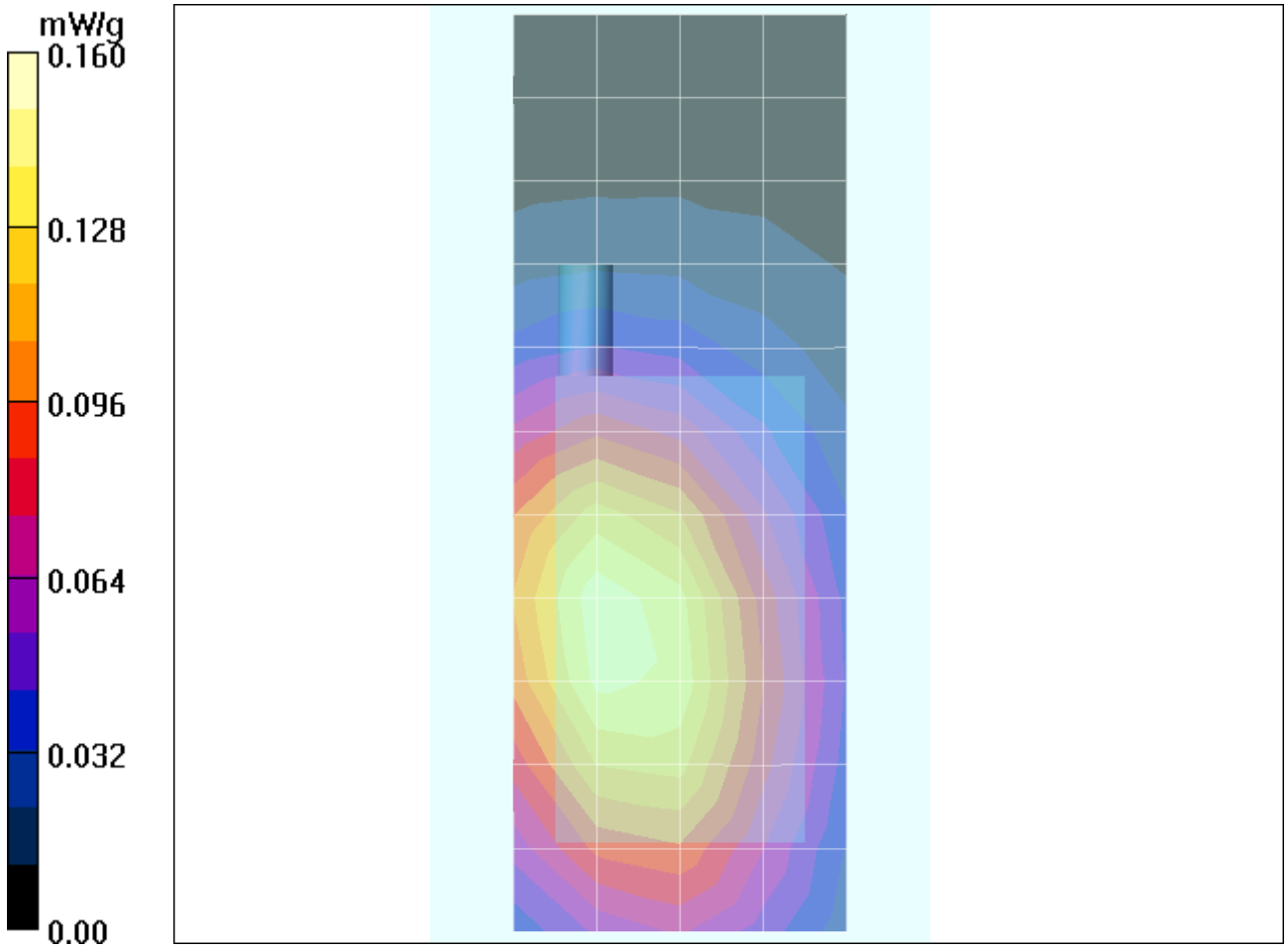
- Probe: ET3DV6 - SN1390; ConvF(6.37, 6.37, 6.37); Calibrated: 4/22/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn383; Calibrated: 8/20/2004
- Phantom: PCS-8: Section 1, Amy Twin, Rev2 (23-June-04); Type: Amy Twin Flat; Serial: n/a;
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 147

Amy Twin Phone Template/Area Scan - Normal Body (15mm) (13x7x1):

Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 0.146 mW/g

Amy Twin Phone Template/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.4 V/m; **Power Drift = 0.027 dB** Peak SAR (extrapolated) = 0.181 W/kg
SAR(1 g) = 0.142 mW/g; SAR(10 g) = 0.104 mW/g Maximum value of SAR (measured) = 0.150 mW/g



Date/Time: 5/12/2005 9:18:10AM

Test Laboratory: Motorola 850 BW back 25mm ch190 CL10 GPRS & SNN5767A

Serial: G00M030068
Procedure Notes: Ch# 190 / Pwr Step: 05(OTA) Antenna Position: Fixed
Battery Model #: SNN5767A Accessory Model # = N/A
Communication System: GPRS 850-Cl10; Frequency: 836.6 MHz; Channel Number: 190; Duty Cycle: 1:4
Medium: Low Freq Body; Medium parameters used: $\sigma = 0.97$ mho/m, $\varepsilon_r = 54.9$; $\rho = 1000$ kg/m^3

DASY4 Configuration:

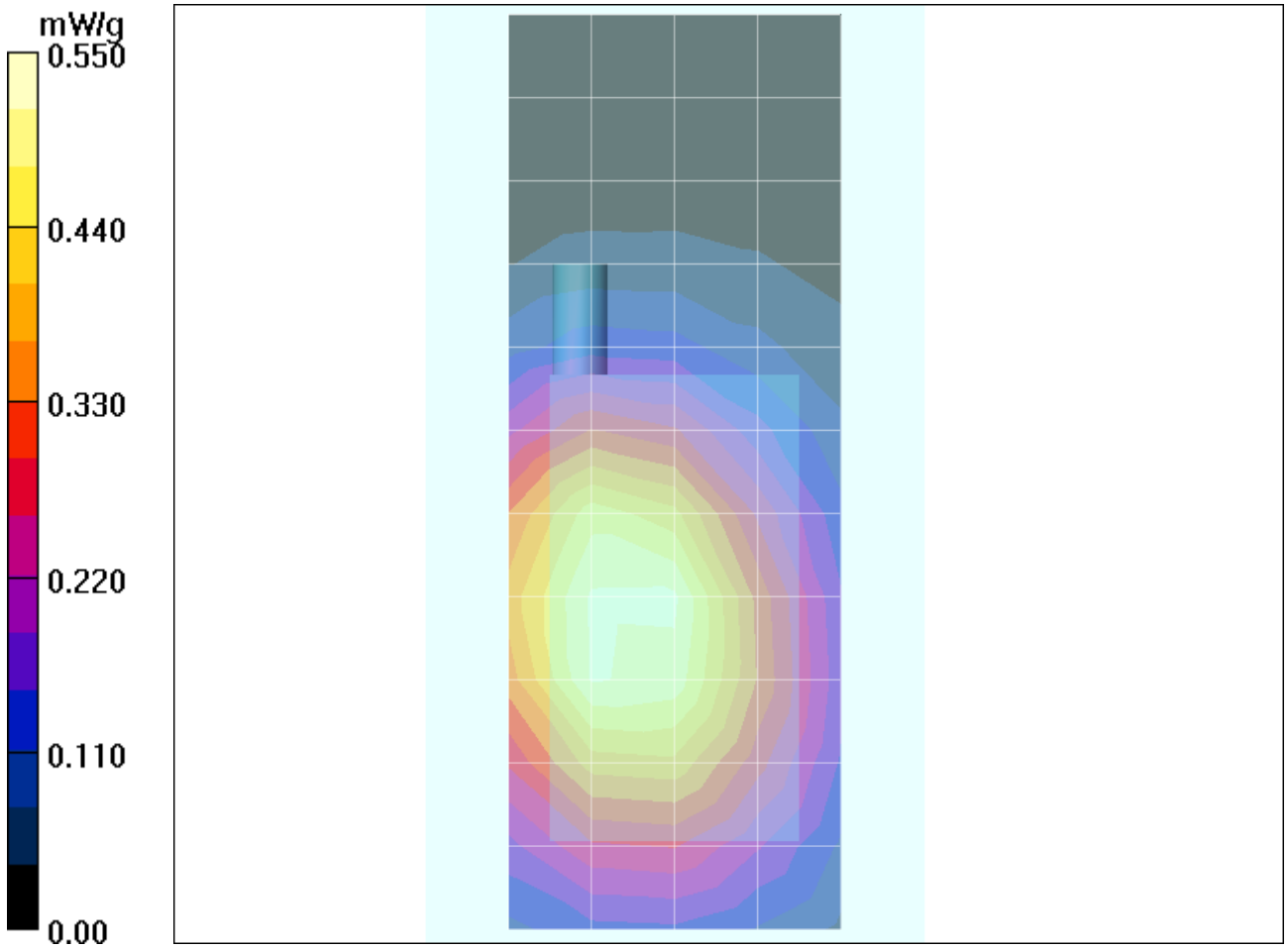
- Probe: ET3DV6 - SN1390; ConvF(6.37, 6.37, 6.37); Calibrated: 4/22/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn383; Calibrated: 8/20/2004
- Phantom: PCS-8: Section 1, Amy Twin, Rev2 (23-June-04); Type: Amy Twin Flat; Serial: n/a;
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 147

Amy Twin Phone Template/Area Scan - Normal Body (15mm) (13x7x1):

Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 0.521 mW/g

Amy Twin Phone Template/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 23.9 V/m; **Power Drift = -0.065 dB** Peak SAR (extrapolated) = 0.698 W/kg
SAR(1 g) = 0.530 mW/g; SAR(10 g) = 0.388 mW/g Maximum value of SAR (measured) = 0.565 mW/g



Date/Time: 5/12/2005 5:42:28PM

Test Laboratory: Motorola 850 BW back 25mm ch190 CL10 GPRS & SNN5766A

Serial: G00M030068;
Procedure Notes: Ch# 190 / Pwr Step: 05 (OTA) Antenna Position: Fixed
Battery Model #: SNN5766A Accessory Model # = N/A
Communication System: GPRS 850-Cl10; Frequency: 836.6 MHz; Channel Number: 190; Duty Cycle: 1:4
Medium: Low Freq Body; Medium parameters used: $\sigma = 0.97$ mho/m, $\varepsilon_r = 54.9$; $\rho = 1000$ kg/m^3

DASY4 Configuration:

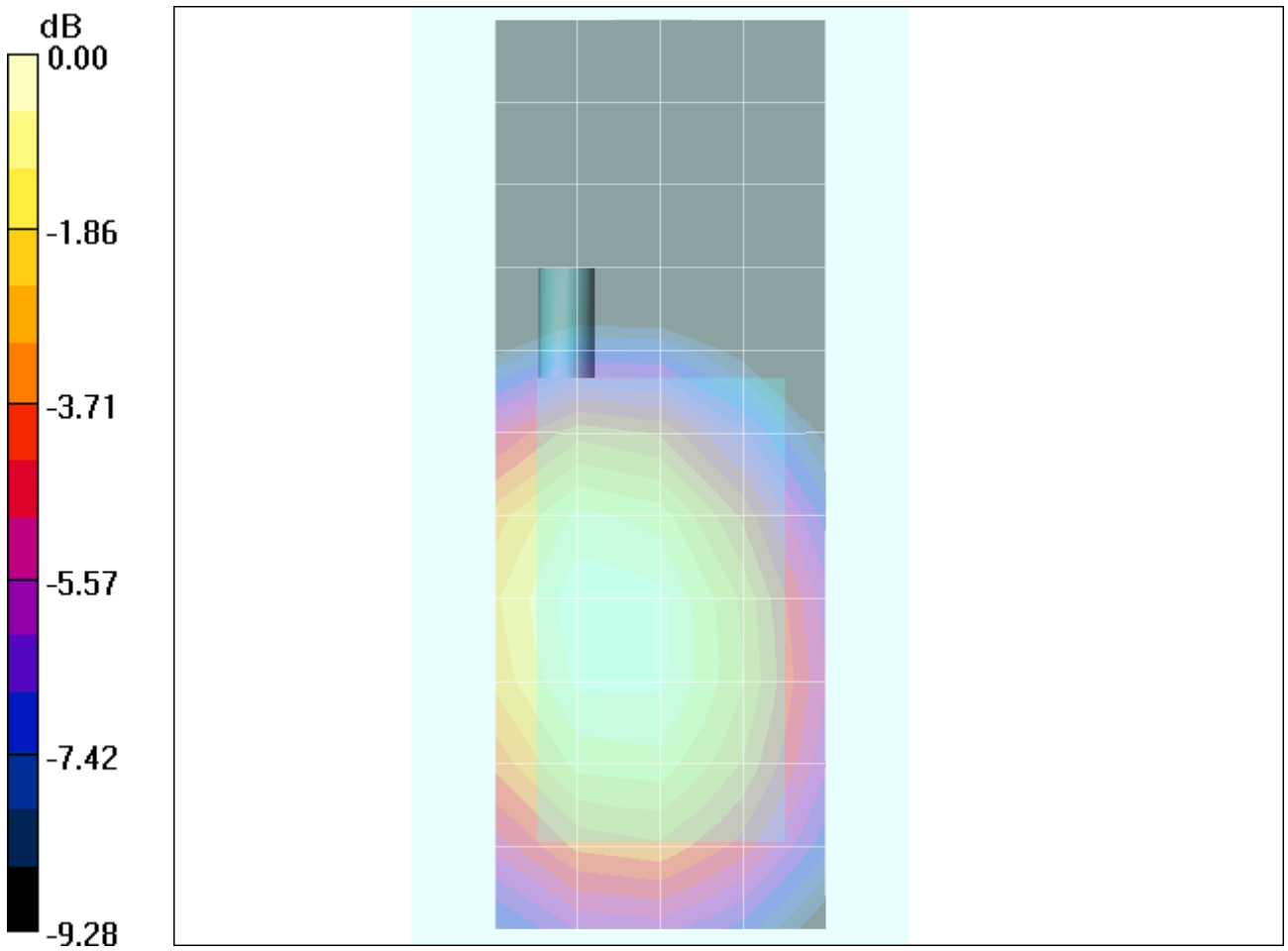
- Probe: ET3DV6 - SN1390; ConvF(6.37, 6.37, 6.37); Calibrated: 4/22/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn383; Calibrated: 8/20/2004
- Phantom: PCS-8: Section 1, Amy Twin, Rev2 (23-June-04); Type: Amy Twin Flat; Serial: n/a;
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 147

Amy Twin Phone Template/Area Scan - Normal Body (15mm) (13x7x1):

Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 0.608 mW/g

Amy Twin Phone Template/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 25.5 V/m; **Power Drift = -0.00 dB** Peak SAR (extrapolated) = 0.770 W/kg
SAR(1 g) = 0.598 mW/g; SAR(10 g) = 0.431 mW/g Maximum value of SAR (measured) = 0.634 mW/g



Date/Time: 5/18/2005 10:59:58AM

Test Laboratory: Motorola 1900 BW front 25mm ch661 CL10 GPRS & SNN5766A

Serial: G00M030068
Procedure Notes: Pwr Step: 00(OTA) Antenna Position: Fixed
Battery Model #: SNN5766A Accessory Model # = N/A (25mm Front)
Communication System: GPRS 1900-Cl10; Frequency: 1880 MHz; Channel Number: 661; Duty Cycle: 1:4
Medium: Regular Glycol Body; Medium parameters used: $\sigma = 1.59$ mho/m, $\varepsilon_r = 50.9$; $\rho = 1000$ kg/m^3

DASY4 Configuration:

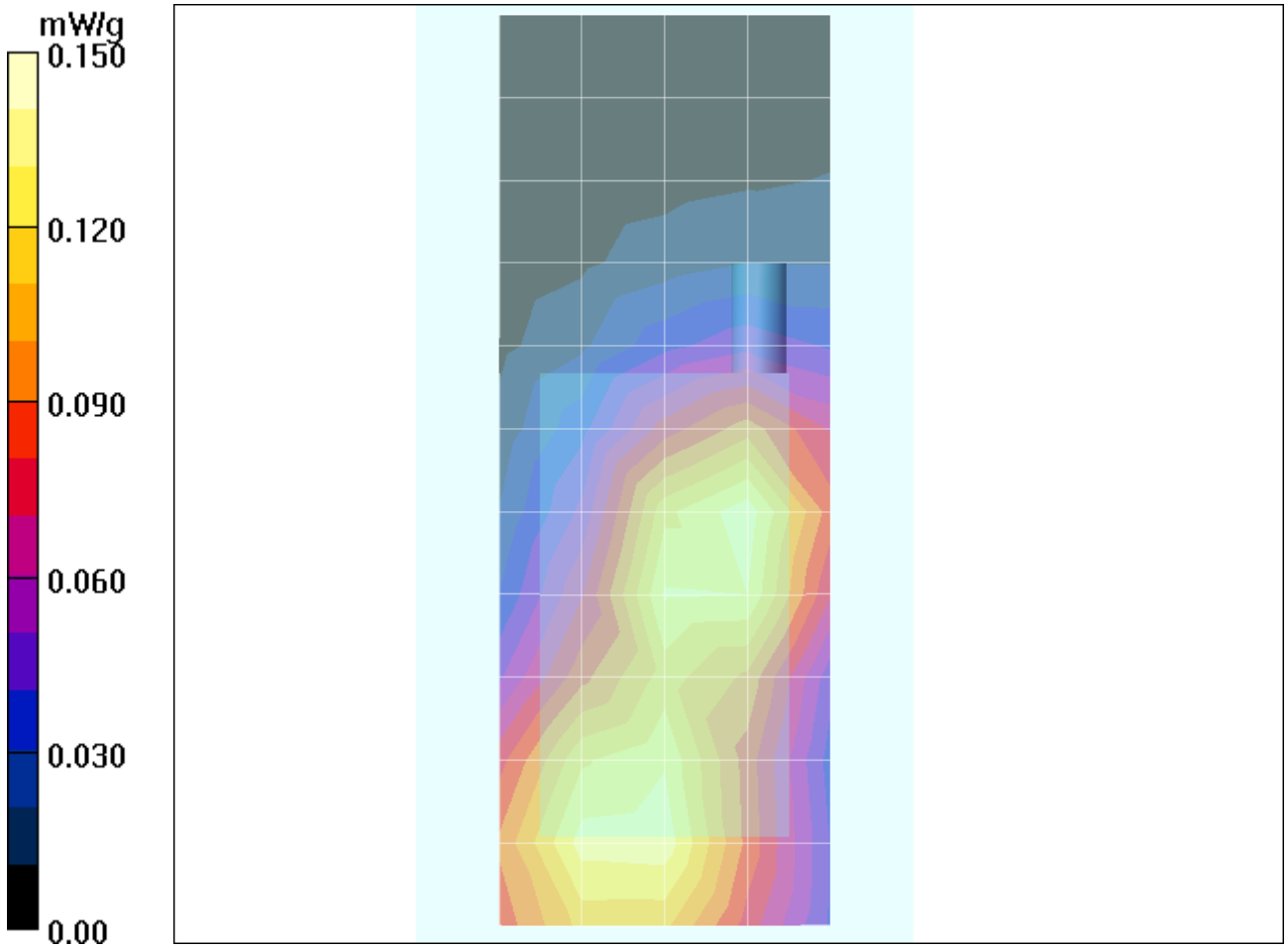
- Probe: ET3DV6 - SN1390; ConvF(4.77, 4.77, 4.77); Calibrated: 4/22/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn383; Calibrated: 8/20/2004
- Phantom: PCS-8: Section 2, Amy Twin, Rev2 (23-June-04); Type: Amy Twin Flat; Serial: n/a;
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 147

Amy Twin Phone Template/Area Scan - Normal Body (15mm) (13x7x1):

Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (measured) = 0.137 mW/g

Amy Twin Phone Template/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.94 V/m; **Power Drift = -0.054 dB** Peak SAR (extrapolated) = 0.215 W/kg
SAR(1 g) = 0.138 mW/g; SAR(10 g) = 0.086 mW/g Maximum value of SAR (measured) = 0.148 mW/g



Appendix 4

Probe Calibration Certificate

Zeughausstrasse 43, 8004 Zurich, Switzerland
Phone +41 1 245 9700, Fax +41 1 245 9779
info@speag.com, http://www.speag.com

IMPORTANT NOTICE

USAGE OF PROBES IN ORGANIC SOLVENTS

Diethylene Gycol Monobuthy Ether (the basis for liquids above 1 GHz), as many other organic solvents, is a very effective softener for synthetic materials. These solvents can cause irreparable damage to certain SPEAG products, except those which are explicitly declared as compliant with organic solvents.

Compatible Probes:
- ET3DV6
- ET3DV6R
- ES3DVx
- ER3DV6
- H3DV6

Important Note for ET3DV6 Probes:
The ET3DV6 probes shall not be exposed to solvents longer than necessary for the measurements and shall be cleaned daily after use with warm water and stored dry.

s p e a g
Schmid & Partner Engineering AG
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Phone +41 1 245 9700, Fax +41 1 245 9779
info@speag.com, http://www.speag.com

Schmid & Partner Engineering AG

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 Korea**

Certificate No: ET3-1390_Apr05

CALIBRATION CERTIFICATE

Object	ET3DV6 - SN:1390
Calibration procedure(s)	QA CAL-01.v5 Calibration procedure for dosimetric E-field probes
Calibration date:	April 22, 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	5-May-04 (METAS, No. 251-00388)	May-05
Power sensor E4412A	MY41495277	5-May-04 (METAS, No. 251-00388)	May-05
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-04 (METAS, No. 251-00389)	May-05
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: 617	19-Jan-05 (SPEAG, No. DAE4-617_Jan05)	Jan-06

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092180	18-Sep-02 (SPEAG, in house check Oct-03)	In house check: Oct 05
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: April 25, 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.

Probe ET3DV6

SN:1390

Manufactured:	October 1, 1999
Last calibrated:	April 27, 2004
Recalibrated:	April 22, 2005

Calibrated for DASY Systems

(Note: non-compatible with DASY2 system!)

DASY - Parameters of Probe: ET3DV6 SN:1390

Sensitivity in Free Space[A]

NormX	**1.93** ± 10.1%	$\mu V/(V/m)^2$	DCP X	**91** mV
NormY	**1.75** ± 10.1%	$\mu V/(V/m)^2$	DCP Y	**91** mV
NormZ	**1.94** ± 10.1%	$\mu V/(V/m)^2$	DCP Z	**91** mV

Diode Compression[B]

Sensitivity in Tissue Simulating Liquid (Conversion Factors)

Please see Page 8.

Boundary Effect

TSL **900 MHz** **Typical SAR gradient: 5 % per mm**

Sensor Center to Phantom Surface Distance		**3.7 mm**	**4.7 mm**
SAR_{be} [%]	Without Correction Algorithm	8.2	4.3
SAR_{be} [%]	With Correction Algorithm	0.0	0.2

TSL **1810 MHz** **Typical SAR gradient: 10 % per mm**

Sensor Center to Phantom Surface Distance		**3.7 mm**	**4.7 mm**
SAR_{be} [%]	Without Correction Algorithm	12.9	8.8
SAR_{be} [%]	With Correction Algorithm	0.5	0.1

Sensor Offset

Probe Tip to Sensor Center **2.7** mm

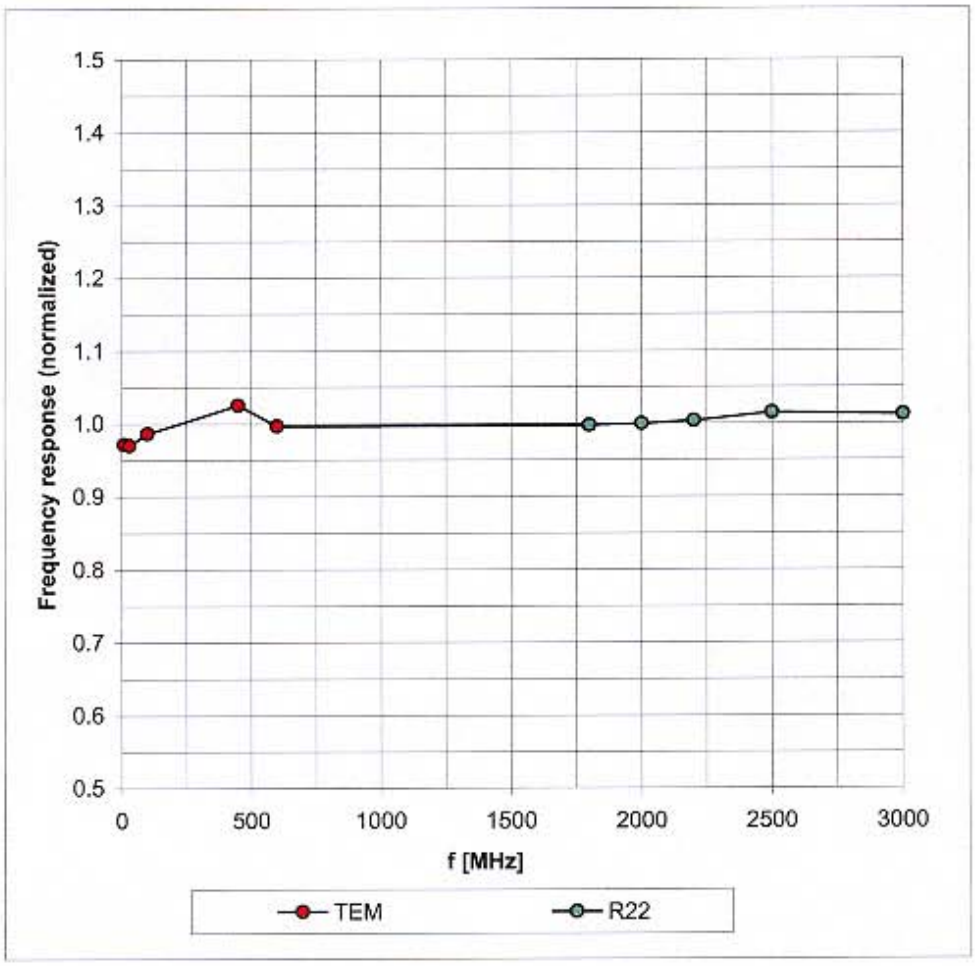
The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

[A] The uncertainties of NormX,Y,Z do not affect the E^2-field uncertainty inside TSL (see Page 8).

[B] Numerical linearization parameter: uncertainty not required.

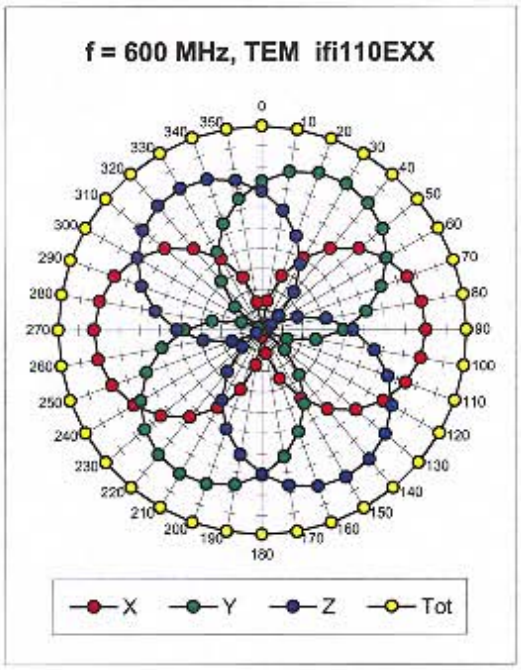
Frequency Response of E-Field

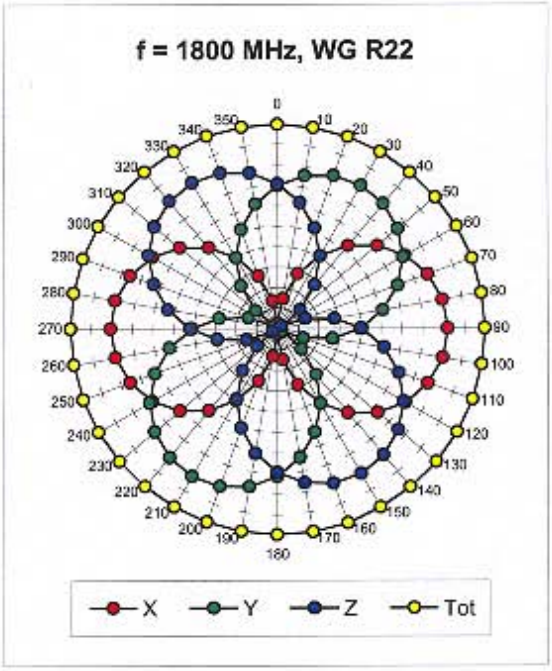
(TEM-Cell:ifi110 EXX, Waveguide: R22)

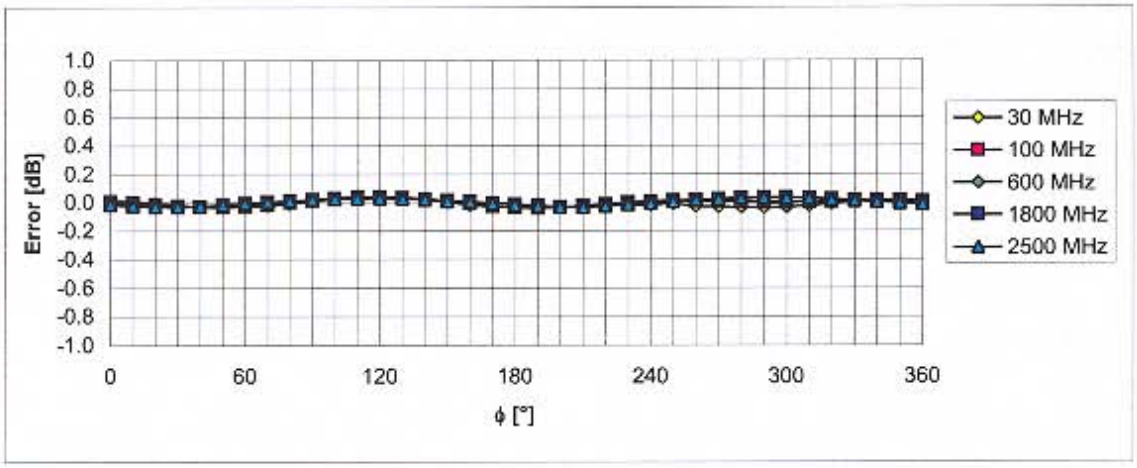


Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

Receiving Pattern (ϕ), ϑ = 0°



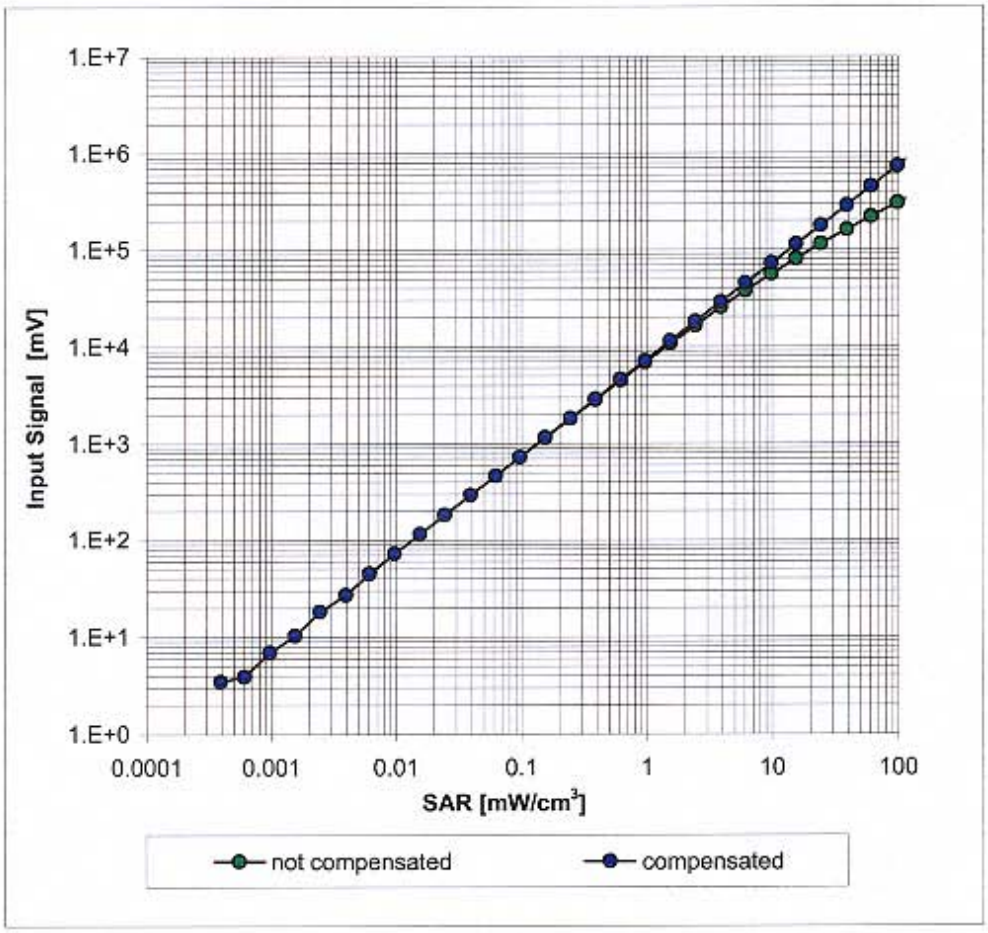


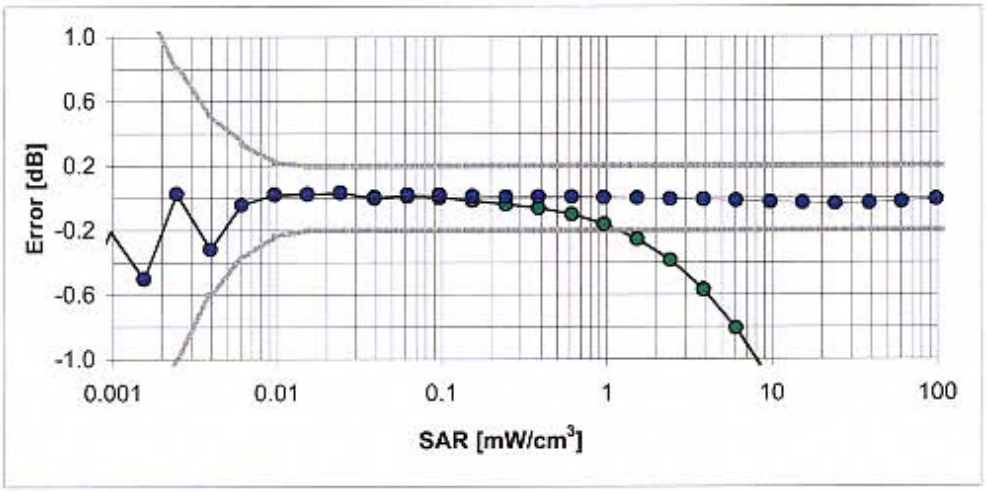


Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

Dynamic Range f(SAR_{head})

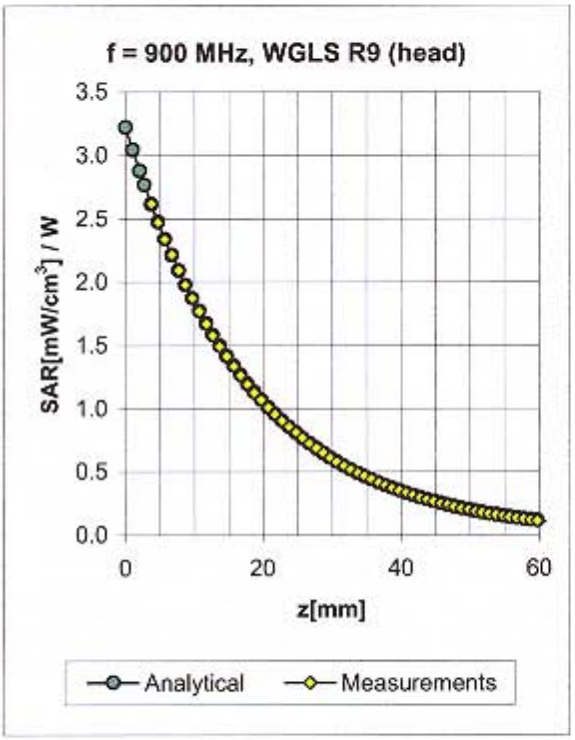
(Waveguide R22, f = 1800 MHz)

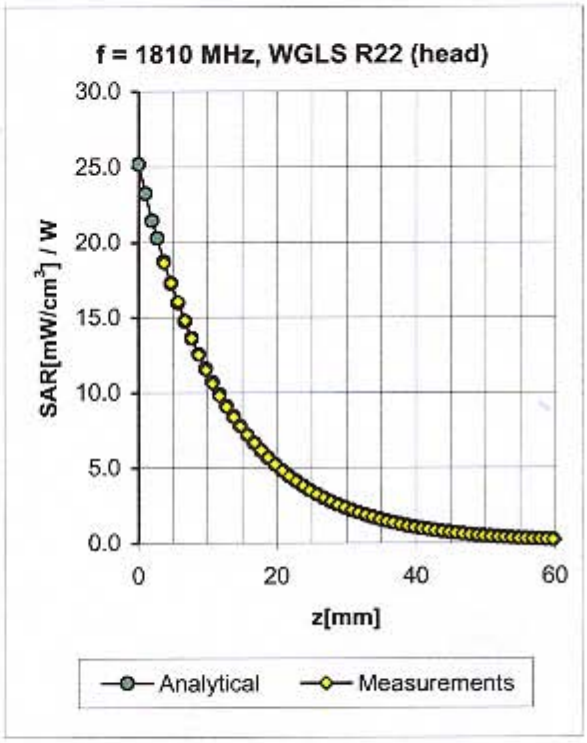




Uncertainty of Linearity Assessment: ± 0.6% (k=2)

Conversion Factor Assessment



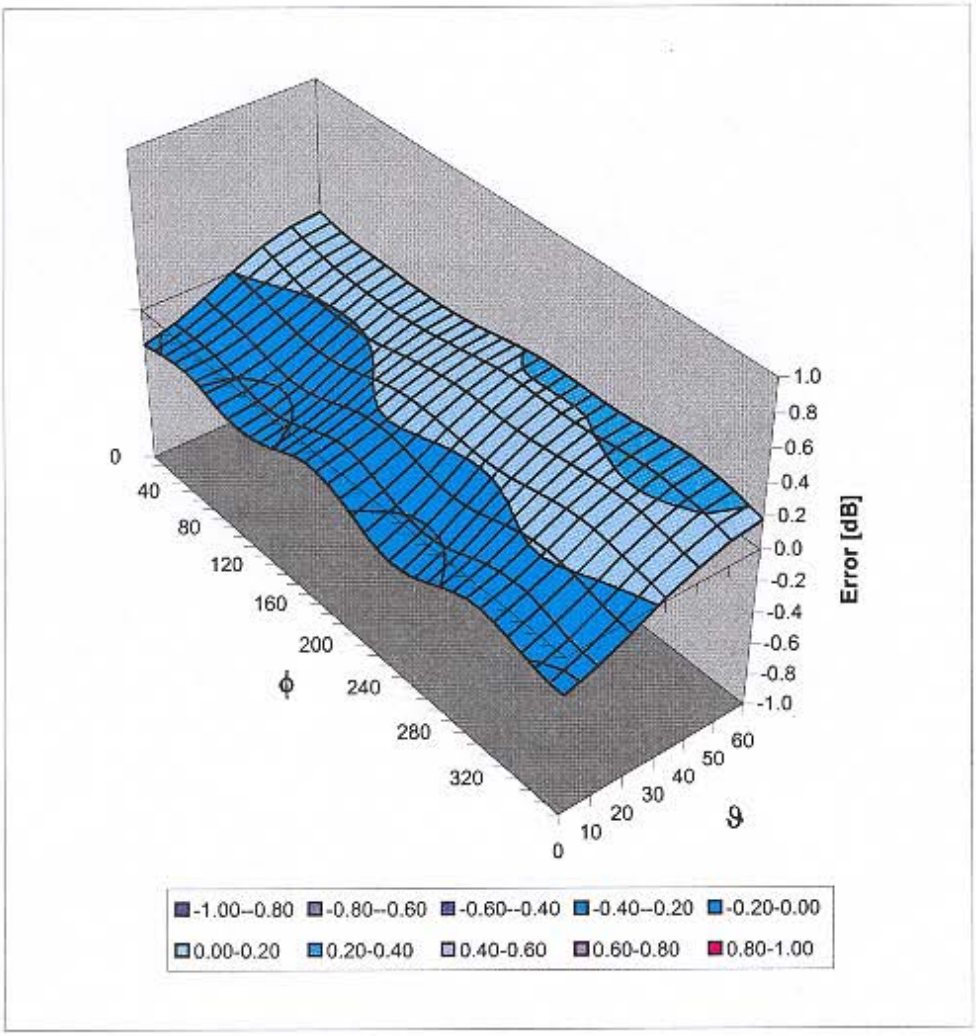


f [MHz]	Validity [MHz][c]	TSL	Permittivity	Conductivity	Alpha	Depth	ConvF Uncertainty
900	± 50 / ± 100	Head	41.5 ± 5%	0.97 ± 5%	0.59	1.80	6.45 ± 11.0% (k=2)
1810	± 50 / ± 100	Head	40.0 ± 5%	1.40 ± 5%	0.50	2.55	5.24 ± 11.0% (k=2)
1950	± 50 / ± 100	Head	40.0 ± 5%	1.40 ± 5%	0.50	2.67	4.98 ± 11.0% (k=2)
900	± 50 / ± 100	Body	55.0 ± 5%	1.05 ± 5%	0.53	2.02	6.37 ± 11.0% (k=2)
1810	± 50 / ± 100	Body	53.3 ± 5%	1.52 ± 5%	0.49	2.98	4.77 ± 11.0% (k=2)
1950	± 50 / ± 100	Body	53.3 ± 5%	1.52 ± 5%	0.55	2.60	4.50 ± 11.0% (k=2)

[c] The validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2). The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

Deviation from Isotropy in HSL

Error (ϕ, ϑ), f = 900 MHz



Uncertainty of Spherical Isotropy Assessment: ± 2.6% (k=2)

Appendix 5

Measurement Uncertainty Budget

Uncertainty Budget for Device Under Test

a	*b*	*c*	*d*	*e = f(d,k)*	*f*	*g*	*h = c x f / e*	*i = c x g / e*	*k*
Uncertainty Component	Sec.	**Tol. (± %)**	**Prob. Dist.**	**Div.**	c_i **(1 g)**	c_i **(10 g)**	**1 g** u_i **(±%)**	**10 g** u_i **(±%)**	v_i
Measurement System									
Probe Calibration	E.2.1	9.5	N	2.00	1	1	4.8	4.8	∞
Axial Isotropy	E.2.2	4.7	R	1.73	0.707	0.707	1.9	1.9	∞
Spherical Isotropy	E.2.2	9.6	R	1.73	0.707	0.707	3.9	3.9	∞
Boundary Effect	E.2.3	5.8	R	1.73	1	1	3.3	3.3	∞
Linearity	E.2.4	4.7	R	1.73	1	1	2.7	2.7	∞
System Detection Limits	E.2.5	1.0	R	1.73	1	1	0.6	0.6	∞
Readout Electronics	E.2.6	1.0	N	1.00	1	1	1.0	1.0	∞
Response Time	E.2.7	0.8	R	1.73	1	1	0.5	0.5	∞
Integration Time	E.2.8	1.3	R	1.73	1	1	0.8	0.8	∞
RF Ambient Conditions	E.6.1	3.0	R	1.73	1	1	1.7	1.7	∞
Probe Positioner Mechanical Tolerance	E.6.2	0.3	R	1.73	1	1	0.2	0.2	∞
Probe Positioning with respect to Phantom Shell	E.6.3	1.1	R	1.73	1	1	0.6	0.6	∞
Extrapolation, interpolation and Integration Algorithms for Max. SAR Evaluation	E.5	3.9	R	1.73	1	1	2.3	2.3	∞
Test sample Related									
Test Sample Positioning	E.4.2	3.6	N	1.00	1	1	3.6	3.6	29
Device Holder Uncertainty	E.4.1	2.8	N	1.00	1	1	2.8	2.8	8
Output Power Variation - SAR drift measurement	6.6.2	5.0	R	1.73	1	1	2.9	2.9	∞
Phantom and Tissue Parameters									
Phantom Uncertainty (shape and thickness tolerances)	E.3.1	4.0	R	1.73	1	1	2.3	2.3	∞
Liquid Conductivity - deviation from target values	E.3.2	5.0	R	1.73	0.64	0.43	1.8	1.2	∞
Liquid Conductivity - measurement uncertainty	E.3.3	10.0	R	1.73	0.64	0.43	3.7	2.5	∞
Liquid Permittivity - deviation from target values	E.3.2	10.0	R	1.73	0.6	0.49	3.5	2.8	∞
Liquid Permittivity - measurement uncertainty	E.3.3	5.0	R	1.73	0.6	0.49	1.7	1.4	∞
Combined Standard Uncertainty			RSS				11.72	11.09	1363
Expanded Uncertainty (95% CONFIDENCE LEVEL)			*k* =2				22.98	21.75	

Uncertainty Budget for System Performance Check (dipole & flat phantom)

a	*b*	*c*	*d*	*e = f(d,k)*	*f*	*g*	*h = c x f / e*	*i = c x g / e*	*k*
Uncertainty Component	Sec.	**Tol. (± %)**	**Prob. Dist.**	**Div.**	**c_i (1 g)**	**c_i (10 g)**	**1 g u_i (±%)**	**10 g u_i (±%)**	**v_i**
Measurement System									
Probe Calibration	E.2.1	9.5	N	2.00	1	1	4.8	4.8	∞
Axial Isotropy	E.2.2	4.7	R	1.73	1	1	2.7	2.7	∞
Spherical Isotropy	E.2.2	9.6	R	1.73	0	0	0.0	0.0	∞
Boundary Effect	E.2.3	5.8	R	1.73	1	1	3.3	3.3	∞
Linearity	E.2.4	4.7	R	1.73	1	1	2.7	2.7	∞
System Detection Limits	E.2.5	1.0	R	1.73	1	1	0.6	0.6	∞
Readout Electronics	E.2.6	1.0	N	1.00	1	1	1.0	1.0	∞
Response Time	E.2.7	0.0	R	1.73	1	1	0.0	0.0	∞
Integration Time	E.2.8	0.0	R	1.73	1	1	0.0	0.0	∞
RF Ambient Conditions	E.6.1	3.0	R	1.73	1	1	1.7	1.7	∞
Probe Positioner Mechanical Tolerance	E.6.2	0.3	R	1.73	1	1	0.2	0.2	∞
Probe Positioning with respect to Phantom Shell	E.6.3	1.1	R	1.73	1	1	0.6	0.6	∞
Extrapolation, interpolation and Integration Algorithms for Max. SAR Evaluation	E.5	3.9	R	1.73	1	1	2.3	2.3	∞
Dipole									
Dipole Axis to Liquid Distance	8, E.4.2	1.0	R	1.73	1	1	0.6	0.6	∞
Input Power and SAR Drift Measurement	8, 6.6.2	4.7	R	1.73	1	1	2.7	2.7	∞
Phantom and Tissue Parameters									
Phantom Uncertainty (shape and thickness tolerances)	E.3.1	4.0	R	1.73	1	1	2.3	2.3	∞
Liquid Conductivity - deviation from target values	E.3.2	5.0	R	1.73	0.64	0.43	1.8	1.2	∞
Liquid Conductivity - measurement uncertainty	E.3.3	10.0	R	1.73	0.64	0.43	3.7	2.5	∞
Liquid Permittivity - deviation from target values	E.3.2	10.0	R	1.73	0.6	0.49	3.5	2.8	∞
Liquid Permittivity - measurement uncertainty	E.3.3	5.0	R	1.73	0.6	0.49	1.7	1.4	∞
Combined Standard Uncertainty			RSS				10.16	9.43	99999
Expanded Uncertainty (95% CONFIDENCE LEVEL)			*k*=2				19.92	18.48	

Appendix 6

Photographs of the device under test

Figure 1. Front of Phone

Figure 2. Back of Phone

Figure 3. Phone open

Figure 4. Side View, SYN1072A with SYN8631A

Figure 5. Side View, SYN1072A with SYN8763A

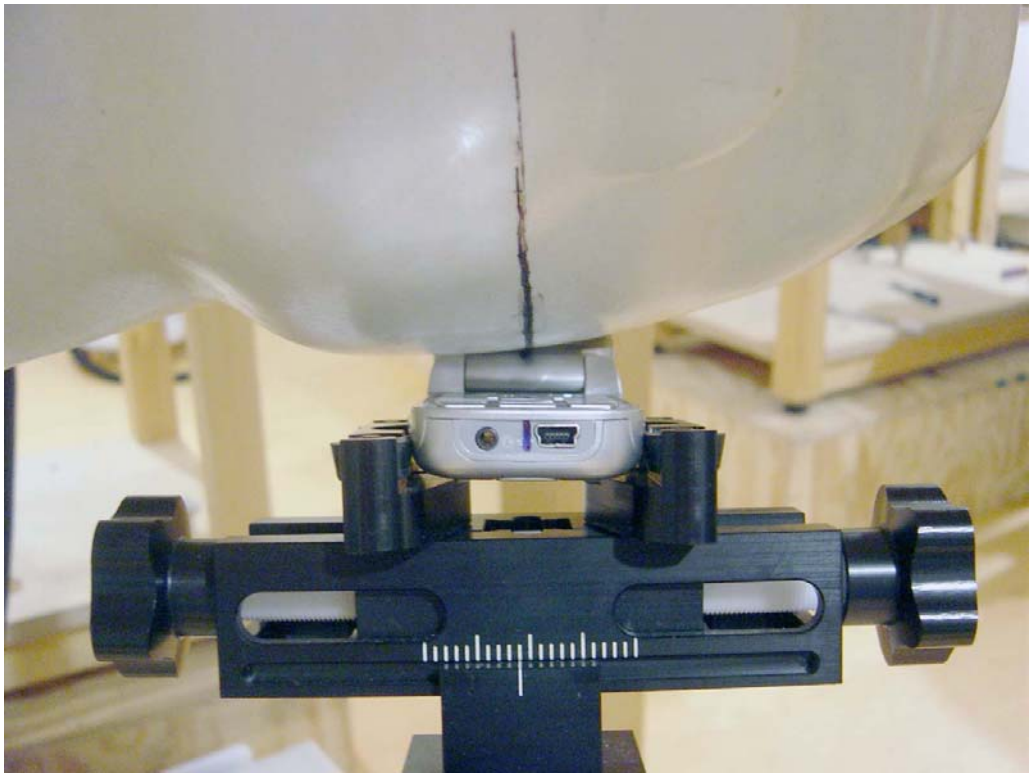


Figure 6. Cheek/Touch Position, front view

Figure 7. Cheek/Touch Position, rear view

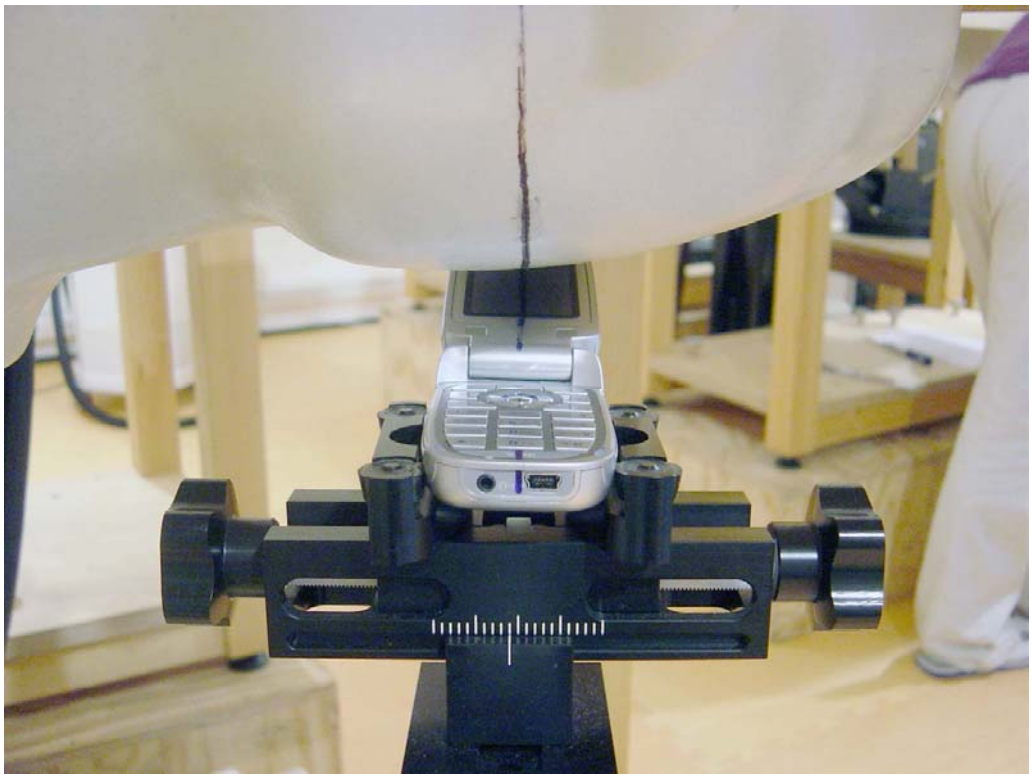


Figure 8. Tilt Position, front view

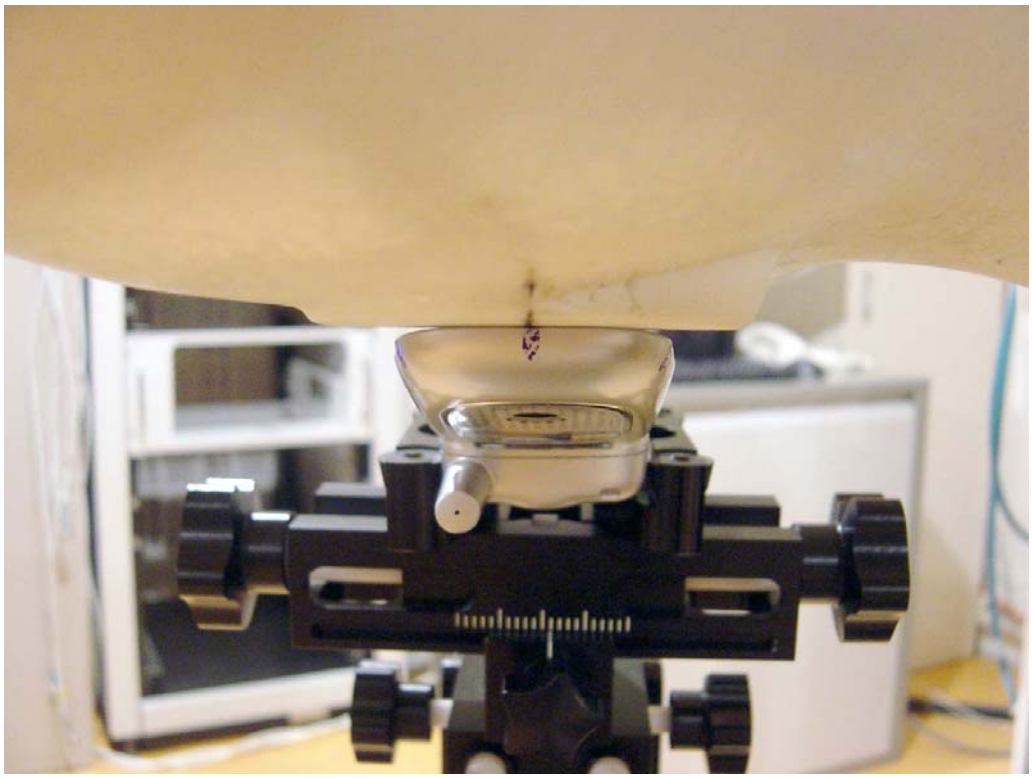


Figure 9. Tilt Position, rear view

Figure 10. Body Worn, SYN1072A with SYN8631A

Figure 11. Body Worn, SYN1072A with SYN8763A