

# SAR TEST REPORT

<b>Equipment Under Test :</b>	GSM 850/1900MHz mobile phone with BT
<b>Model No. :</b>	C7Ca
<b>Market name:</b>	OT-C701a
<b>FCC ID :</b>	RAD054
<b>Applicant :</b>	T&A Mobile phones
<b>Address of Applicant :</b>	4/F, No.2966, Jinke Rd, Zhangjiang High-Tech Park, Pudong Shanghai 201203. P. R. China
<b>Date of Receipt :</b>	2007.03.8
<b>Date of Test :</b>	2007.03.15 – 200.04.10 2008.05.29 – 2008.05.30
<b>Date of Issue :</b>	2008.06.03

Standards:

**FCC OET Bulletin 65 supplement C,  
ANSI/IEEE C95.1, C95.3, IEEE 1528-2003**

In the configuration tested, the EUT complied with the standards specified above.

**Remarks:**

This report details the results of the testing carried out on one sample, the results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

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# 1. General Information

## 1.1 Test Laboratory

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## 1.2 Details of Applicant

Name: T&A Mobile phones  
 Address: 4/F, No.2966, Jinke Rd, Zhangjiang High-Tech Park,  
 Pudong Shanghai 201203. P. R. China

## 1.3 Description of EUT(s)

Brand name	ALCATEL	
Model No.	C7Ca	
Market Name	OT-C701a	
Serial No.	IMEI: 011073000003040	
Sample Status	Production	
Battery Type	Lithium-Ion	T5001418AAAA—750mAh
		T5000572AAAA—700mAh
Antenna Type	Inner Antenna	
Operation Mode	GSM850/PCS1900	
Modulation Mode	GMSK	
Frequency range	GSM850	Tx: 824~849 MHz
		Rx: 869~894 MHz
	PCS1900	Tx: 1850~1910 MHz
		Rx: 1930~1990 MHz
Maximum RF Conducted Power	GSM850: 32.2dBm, PCS1900: 29.2dBm	
GPRS	Multi-Slot Class 10 uplink 2TS	

#### **1.4 Test Environment**

Ambient temperature: 22.0° C

Tissue Simulating Liquid: 22° C

Relative Humidity: 45%~55%

#### **1.5 Operation Configuration**

Configuration 1: GSM 850, LeftHandSide Cheek & 15° Tilt Position

Configuration 2: GSM 850, RightHandSide Cheek & 15° Tilt Position

Configuration 3: GSM 850, GPRS,BodyWorn (2.0 cm between EUT and phantom)

Configuration 4: PCS 1900, LeftHandSide Cheek & 15° Tilt Position

Configuration 5: PCS 1900, RightHandSide Cheek & 15° Tilt Position

Configuration 6: PCS 1900, GPRS,BodyWorn (2.0 cm between EUT and phantom)

#### **1.6 The SAR Measurement System**

A photograph of the SAR measurement System is given in Fig. a.

This SAR Measurement System uses a Computer-controlled 3-D stepper motor system (Speag Dasy 4 professional system). A Model ES3DV3 3088 E-field probe is used to determine the internal electric fields. The SAR can be obtained from the equation  $SAR = \sigma (|E_i|^2) / \rho$  where  $\sigma$  and  $\rho$  are the conductivity and mass density of the tissue-simulant.

The DASY4 system for performing compliance tests consists of the following items:

- ÿ A standard high precision 6-axis robot (Stabile RX family) with controller, teach pendant and software. An arm extension for accommodation the data acquisition electronics (DAE).
- ÿ A dosimetric probe, i.e., an isotropic E-field probe optimized and calibrated for usage in tissue simulating liquid. The probe is equipped with an optical surface detector system.
- ÿ A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.

- The Electro-optical converter (EOC) performs the conversion between optical and electrical of the signals for the digital communication to DAE and for the analog signal from the optical surface detection. The EOC is connected to the measurement server.

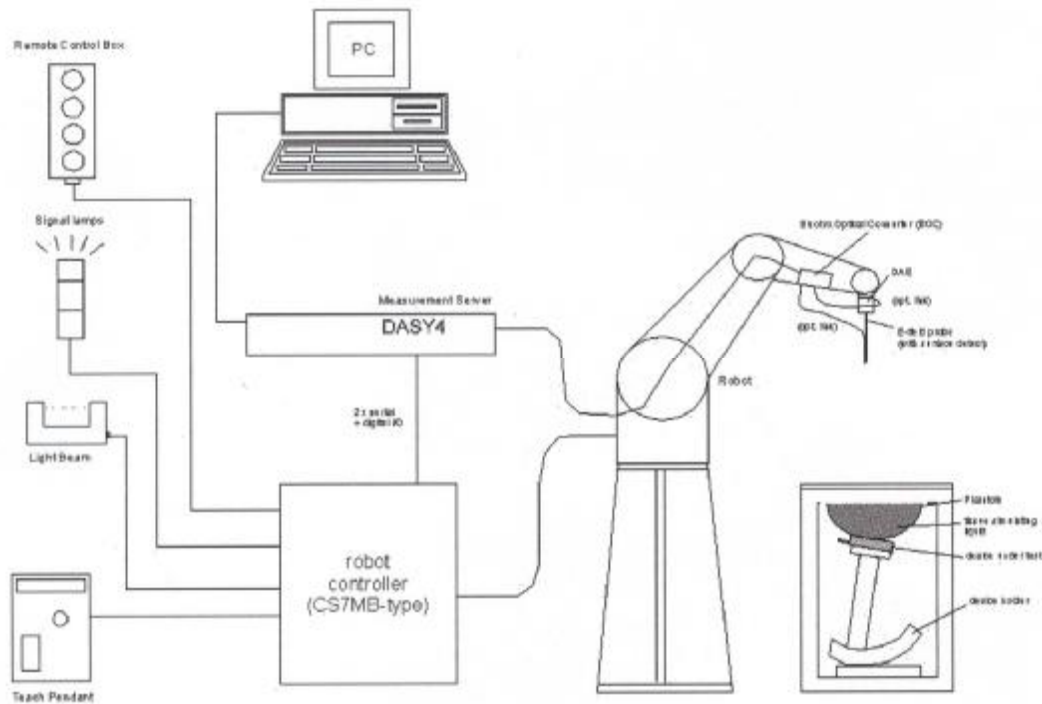


Fig. a SAR System Configuration

- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- A probe alignment unit which improves the (absolute) accuracy of the probe positioning.
- A computer operating Windows 2000.
- DASY4 software.
- Remote control with teach pendant and additional circuitry for robot safety such as warning lamps, etc.
- The SAM twin phantom enabling testing left-hand, right-hand and body-worn usage.
- The device holder for handheld mobile phones.
- Tissue simulating liquid mixed according to the given recipes.



- Validation dipole kits allowing to validating the proper functioning of the system.

### 1.7 SAR System Verification

The microwave circuit arrangement for system verification is sketched in Fig. b. The daily system accuracy verification occurs within the flat section of the SAM phantom. A SAR measurement was performed to see if the measured SAR was within +/- 10% from the target SAR values. These tests were done at 900MHz and 1900MHz. The tests were conducted on the same days as the measurement of the DUT. The obtained results from the system accuracy verification are displayed in the table 1 (SAR values are normalized to 1W forward power delivered to the dipole). During the tests, the ambient temperature of the laboratory was in the range 22°C, the relative humidity was in the range 60% and the liquid depth above the ear reference points was above 15 cm in all the cases. It is seen that the system is operating within its specification, as the results are within acceptable tolerance of the reference values.

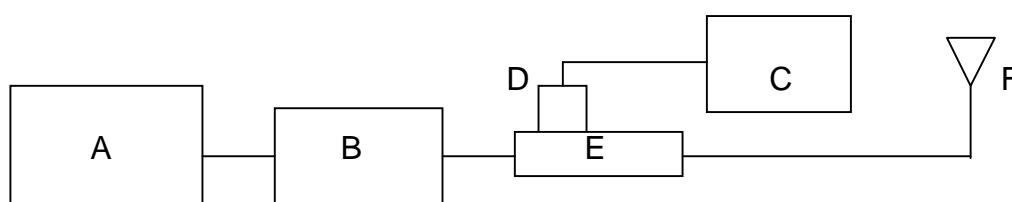


Fig. b the microwave circuit arrangement used for SAR system verification

- A. Agilent Model E4438C Signal Generator
- B. Mini-Circuit Model ZHL-42 Preamplifier
- C. Agilent Model E4416A Power Meter
- D. Agilent Model 8481H Power Sensor
- E. HT CP6100 20N Dual directional coupler
- F. Reference dipole antenna

Validation Kit	Frequency MHz	Target SAR 1g (250mW)	Target SAR 10g (250mW)	Measured SAR 1g	Measured SAR 10g	Measured Date
D900V2 SN184	900 Head	2.72	1.75	2.83	1.81	2007-03-23
D900V2 SN184	900 Head	2.72	1.75	2.81	1.79	2007-04-10
D900V2 SN184	900 Body	2.75	1.79	2.69	1.72	2007-03-16
D900V2 SN184	900 Body	2.75	1.79	2.71	1.74	2007-04-10
D900V2 SN184	900 Body	2.9	1.87	2.88	1.75	2008-05-29
D1900V2 SN5d028	1900 Head	9.36	4.96	9.12	4.83	2007-03-22
				9.15	4.86	2007-03-27
D1900V2 SN5d028	1900 Head	9.36	4.96	9.22	4.85	2007-04-10
D1900V2 SN5d028	1900 Body	9.5	5.05	9.61	5.09	2007-03-19
D1900V2 SN5d028	1900 Body	9.5	5.05	9.64	5.11	2007-04-10
D1900V2 SN5d028	1900 Body	9.34	4.97	9.57	5.07	2008-05-30

Table 1. Result System Validation

### **1.8 Tissue Simulant Fluid for the Frequency Band 850MHz and 1900MHz**

The dielectric properties for this body-simulant fluid were measured by using the HP Model 85070D Dielectric Probe (rates frequency band 200 MHz to 20 GHz) in conjunction with Agilent E5071B Network Analyzer (300 KHz-8500 MHz). The Conductivity ( $\sigma$ ) and Permittivity ( $\rho$ ) are listed in Table 2. For the SAR measurement given in this report. The temperature variation of the Tissue Simulant Fluid was 22°C.

Frequency (MHz)	Tissue Type	Limit/Measured	Permittivity ( $\rho$ )	Conductivity ( $\sigma$ )	Simulated Tissue Temp ( $^{\circ}$ C)
850	Head	Recommended Limit	41.5 $\pm$ 5%	0.90 $\pm$ 5%	20-24
		Measured, 2007-03-23	41.8	0.87	22.5
		Measured, 2007-04-09	41.7	0.86	22.8
	Body	Recommended Limit	55.2 $\pm$ 5%	0.97 $\pm$ 5%	20-24
		Measured, 2007-03-16	56.2	0.939	22.5
		Measured, 2007-04-10	55.8	0.941	22.1
		Measured, 2008-05-29	53.1	0.997	22.2
1900	Head	Recommended Limit	40.0 $\pm$ 5%	1.40 $\pm$ 5%	20-24
		Measured, 2007-03-22	39.15	1.445	22.3
		Measured, 2007-03-27	39.17	1.441	22.1
		Measured, 2007-04-09	39.18	1.438	22.4
	Body	Recommended Limit	53.3 $\pm$ 5%	1.52 $\pm$ 5%	20-24
		Measured, 2007-03-19	51.74	1.566	22.6
		Measured, 2007-04-09	52.68	1.557	21.7
		Measured, 2008-05-30	52.52	1.581	22.1

Table 2. Dielectric parameters for the Frequency Band 850MHz&amp;1900MHZ

### 1.9 Test Standards and Limits

According to FCC 47 CFR §2.1093(d) the limits to be used for evaluation are based generally on criteria published by the American National Standards Institute (ANSI) for localized specific absorption rate (SAR) in Section 4.2 of "IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3KHz to 300GHz," ANSI/IEEE C95.1-1992, Copyright 1992 by the Institute of Electrical & Electronics Engineers, Inc., New York, New York 10071.

<b>Human Exposure</b>	<b>Uncontrolled Environment General Population</b>
Spatial Peak SAR (Brain)	1.60 mW/g (averaged over a mass of 1g)

Table 3. RF Exposure Limits

## Notes:

1. Uncontrolled environments are defined as locations where there is potential exposure of individuals who have no knowledge or control of their potential exposure.

## 2. Summary of Results

### GSM850 SAR (T5001418AAAA – 750mAh)

Mode	Test Configuration		SAR, Averaged over 1g(W/kg)			Temperature (°C)	Verdict
	Channel/Power(dBm)		Low/32.2	Middle/32.2	High/32.1		
GSM850	Left	Cheek	0.269	0.414	0.582	22	Pass
		Tilt	-	0.192	-	22	Pass
		Worst Case With SD	-	-	0.600	22	Pass
		Worst Case With BT	-	-	0.750	22	Pass
	Right	Cheek	0.449	0.588	0.780	22	Pass
		Tilt	-	0.237	-	22	Pass
		Worst Case With SD	-	-	0.759	22	Pass
		Worst Case With BT	-	-	0.747	22	Pass
	Body	GPRS	0.786	1.07	0.998	22	Pass
		Worst Case With SD	-	0.975	-	22	Pass
		Worst Case With BT	-	0.989	-	22	Pass

### PCS1900 SAR(T5001418AAAA – 750mAh)

Mode	Test Configuration		SAR, Averaged over 1g(W/kg)			Temperature (°C)	Verdict
	Channel/Power(dBm)		Low/29.2	Middle/29.2	High/29.3		
PCS1900	Left	Cheek	0.595	0.758	0.807	22	Pass
		Tilt	-	0.208	-	22	Pass
		Worst Case With SD	-	-	0.825	22	Pass
		Worst Case With BT	-	-	0.748	22	Pass
	Right	Cheek	0.604	0.729	0.761	22	Pass
		Tilt	-	0.243	-	22	Pass

		<b>Worst Case With SD</b>	-	-	0.703	22	Pass
		<b>Worst Case With BT</b>	-	-	0.685	22	Pass
	<b>Body</b>	<b>GPRS</b>	0.393	0.412	0.348	22	Pass
		<b>Worst Case With SD</b>	-	0.551	-	22	Pass
		<b>Worst Case With BT</b>	-	0.408	-	22	Pass

## Maximum Values (T5001418AAAA – 750mAh)

Frequency Band(MHz)	EUT position	Output Power (dBm)	1g Average (W/Kg)	Power Drift (dB)	Temperature (°C)	Verdict
<b>GSM850</b>	LeftHandSide,Cheek,High+BT	32.1	0.750	0.048	22	PASS
	RightHandSide,Cheek, High	32.1	0.780	-0.127	22	PASS
	GPRS,BodyWorn,Middle	32.2	1.07	-0.031	22	PASS
<b>PCS1900</b>	LeftHandSide,Cheek, High+SD	29.3	0.825	0.073	22	PASS
	RightHandSide,Cheek, High	29.3	0.761	-0.028	22	PASS
	GPRS,BodyWorn, Middle+SD	29.2	0.551	-0.246	22	PASS

## Maximum Values With Battery-T5000572AAAA – 700mAh

Frequency Band(MHz)	EUT position	Output Power (dBm)	1g Average (W/Kg)	Power Drift (dB)	Temperature (°C)	Verdict
<b>GSM850</b>	LeftHandSide,Cheek,High+BT	32.1	0.678	-0.187	22	PASS
	RightHandSide,Cheek, High	32.1	0.772	-0.118	22	PASS
	GPRS,BodyWorn,Middle	32.2	0.979	-0.114	22	PASS
<b>PCS1900</b>	LeftHandSide,Cheek, High+SD	29.3	0.809	-0.233	22	PASS
	RightHandSide,Cheek, High	29.3	0.628	-0.123	22	PASS
	GPRS,BodyWorn, Middle+SD	29.2	0.427	-0.153	22	PASS

## 2A. Supplementary Results

Body	Test Configuration		SAR, Averaged over 1g(W/kg)			Temperature (°C)	Verdict
	Channel/Power(dBm)		Low/32.2	Middle/32.2	High/32.1		
850MHZ	750mAh	GPRS	1.06	0.910	1.05	22	Pass
	750mAh	Worst Case With BT	1.02	--	--	22	Pass
	700mAh	Worst Case	0.999	--	--	22	Pass
	700mAh	Worst Case With BT	0.971	--	--	22	Pass

Body	Test Configuration		SAR, Averaged over 1g(W/kg)			Temperature (°C)	Verdict
	Channel/Power(dBm)		Low/29.2	Middle/29.2	High/29.3		
1900MHZ	750mAh	GPRS	0.493	0.611	0.573	22	Pass
	750mAh	Worst Case With BT	--	0.615	--	22	Pass
	700mAh	Worst Case	--	0.511	--	22	Pass
	700mAh	Worst Case With BT	--	0.495	--	22	Pass

Note:

1. In GSM850 band, the low, middle and high channels are CH128/824.2MHz, CH189/836.4MHz and CH251/848.8MHz separately.
2. In PCS1900 band, the low, middle and high channels are CH512/1805.2MHz, CH661/1880.0MHz and CH810/1909.8MHz separately.
3. The conducted output power is identical with both battery type T5000572AAAA—700mAh and T5001418AAAA—750mAh
4. For the Bodyworn measurements the sample was only placed with the antenna toward the phantom since this position delivers the highest SAR values.
5. For the Bodyworn measurements, the distance from the sample to the phantom is 2.0 cm.
6. For all the tests, the maximum absolute value of the power drift which is under the GSM850-LeftHandSide-Cheek-High+SD configuration is 0.277dB.
7. The supplementary results are derived from the adding new type headset (T5003308AAAA) as described in Fig 16.
8. T5001418AAAA-750mAh and T5000572AAAA—700mAh



### 3. Instruments List

#### List Y2006-2007

Instrument	Model	Serial number	NO.	Date of last Calibration
Desktop PC	COMPAQ EVO	N/A	GSM-SAR-025	N/A
Dasy 4 software	V 4.7 build 44	N/A	GSM-SAR-001	N/A
Probe	ES3DV3	3088	GSM-SAR-034	2006.12.12
DAE	DAE3	569	GSM-SAR-023	2006.12.08
900MHz system validation dipole	D900V2	184	GSM-SAR-017	2006.12.06
1900MHz system validation dipole	D1900V2	5d028	GSM-SAR-019	2006.12.12
Phantom	SAM 12	TP-1283	GSM-SAR-005	N/A
Robot	RX90L	F03/5V32A1/A01	GSM-SAR-028	N/A
Dielectric probe kit	85070D	US01440168	GSM-SAR-016	2006.12.19
Agilent network analyzer	E5071B	MY42100549	GSM-SAR-007	2006.12.19
Agilent signal generator	E4438	14438CATO-19719	GSM-SAR-008	2006.12.19
Mini-Circuits preamplifier	ZHL-42	D041905	GSM-SAR-033	2006.04.19
Agilent power meter	E4416A	GB41292095	GSM-SAR-010	2006.12.19
Agilent power sensor	8481H	MY41091234	GSM-SAR-011	2006.12.19
HT CP6100 20N Coupling	6100	SCP301480120	GSM-SAR-012	2006.12.19
R&S Universal radio communication tester	CMU200	103633	GSM-AUD-002	2006.12.19

**List Y2007-2008**

<b>Instrument</b>	<b>Model</b>	<b>Serial number</b>	<b>NO.</b>	<b>Date of last Calibration</b>
Desktop PC	COMPAQ EVO	N/A	GSM-SAR-025	N/A
Dasy 4 software	V 4.7 build 44	N/A	GSM-SAR-001	N/A
Probe	ES3DV3	3088	GSM-SAR-034	2008.1.18
DAE	DAE3	569	GSM-SAR-023	2007.11.19
900MHz system validation dipole	D900V2	184	GSM-SAR-017	2007.12.21
1900MHz system validation dipole	D1900V2	5d028	GSM-SAR-019	2007.12.21
Phantom	SAM 12	TP-1283	GSM-SAR-005	N/A
Robot	RX90L	F03/5V32A1/A01	GSM-SAR-006	N/A
Dielectric probe kit	85070D	US01440168	GSM-SAR-016	2007.12.18
Agilent network analyzer	E5071B	MY42100549	GSM-SAR-007	2007.12.18
Agilent signal generator	E4438	14438CATO-19719	GSM-SAR-008	2007.12.18
Mini-Circuits preamplifier	ZHL-42	D041905	GSM-SAR-033	2007.12.18
Agilent power meter	E4416A	GB41292095	GSM-SAR-010	2007.12.18
Agilent power sensor	8481H	MY41091234	GSM-SAR-011	2007.12.18
HT CP6100 20N Coupling	6100	SCP301480120	GSM-SAR-012	2007.12.18
R&S Universal radio communication tester	CMU200	103633	GSM-AUD-002	2007.12.18

## 4. Measurements

### 4.1 LeftHandSide-Cheek-GSM850-Middle

Date/Time: 2007-3-23 14:34:03

Test Laboratory: SGS-GSM

GSM850-LeftHandSide-Cheek-Middle

DUT: GSM10212817-body; Type: body; Serial: 011073000003040

Communication System: GSM850-GSM Mode; Frequency: 836.4 MHz; Duty Cycle: 1:8.3

Medium: HSL850-Head Medium parameters used:  $f = 836.4$  MHz;  $\sigma = 0.883$  mho/m;  $\epsilon_r = 41.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(6, 6, 6); Calibrated: 2006-12-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2006-12-8
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Cheek position - Mid/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.452 mW/g

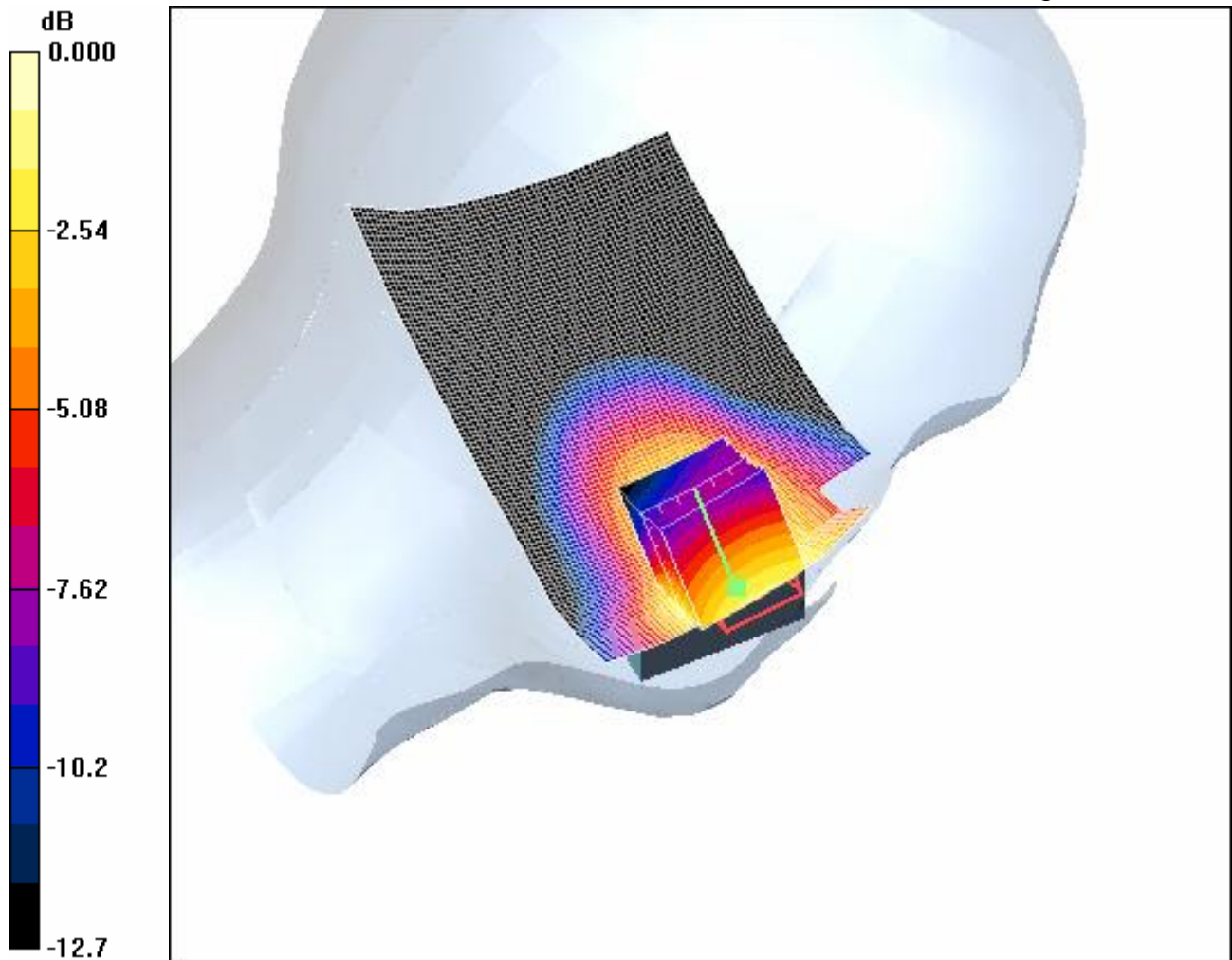
Cheek position - Mid/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.15 V/m; Power Drift = -0.004 dB

Peak SAR (extrapolated) = 0.605 W/kg

SAR(1 g) = 0.414 mW/g; SAR(10 g) = 0.283 mW/g

Maximum value of SAR (measured) = 0.445 mW/g



0 dB = 0.445mW/g

#### 4.2 LeftHandSide-Tilt-GSM850-Middle

Date/Time: 2007-3-23 14:02:25

Test Laboratory: SGS-GSM

GSM850-LeftHandSide-Tilt-Middle

DUT: GSM10212817-body; Type: body; Serial: 011073000003040

Communication System: GSM850-GSM Mode; Frequency: 836.4 MHz; Duty Cycle: 1:8.3

Medium: HSL850-Head Medium parameters used:  $f = 836.4$  MHz;  $\sigma = 0.883$  mho/m;  $\epsilon_r = 41.9$ ;  $\rho =$

1000 kg/m<sup>3</sup>

Phantom section: Left Section

**DASY4 Configuration:**

- Probe: ES3DV3 - SN3088; ConvF(6, 6, 6); Calibrated: 2006-12-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2006-12-8
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Tilt position - Mid/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.206 mW/g

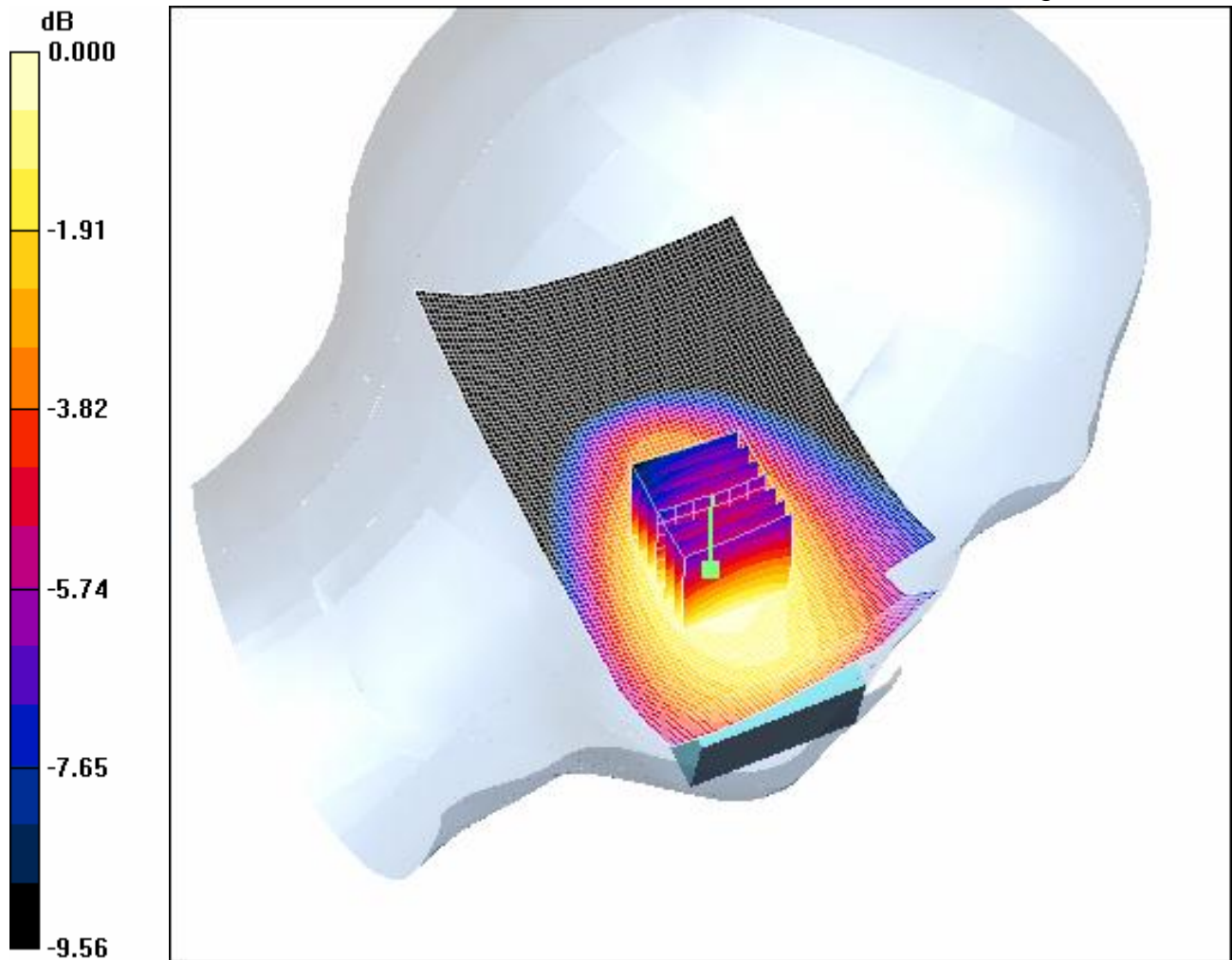
**Tilt position - Mid/Zoom Scan (7x7x7) (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.53 V/m; Power Drift = -0.087 dB

Peak SAR (extrapolated) = 0.241 W/kg

SAR(1 g) = 0.192 mW/g; SAR(10 g) = 0.143 mW/g

Maximum value of SAR (measured) = 0.203 mW/g



0 dB = 0.203mW/g

#### 4.3LeftHandSide-Cheek-GSM850-Low

Date/Time: 2007-3-23 15:00:48

Test Laboratory: SGS-GSM

GSM850-LeftHandSide-Cheek-Low

DUT: GSM10212817-body; Type: body; Serial: 011073000003040

Communication System: GSM850-GSM Mode; Frequency: 824.2 MHz;Duty Cycle: 1:8.3

Medium: HSL850-Head Medium parameters used:  $f = 824.2$  MHz;  $\sigma = 0.864$  mho/m;  $\epsilon_r = 42.1$ ;  $\rho =$

1000 kg/m<sup>3</sup>

Phantom section: Left Section

**DASY4 Configuration:**

- Probe: ES3DV3 - SN3088; ConvF(6, 6, 6); Calibrated: 2006-12-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2006-12-8
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Cheek position - Low/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm**

Maximum value of SAR (interpolated) = 0.298 mW/g

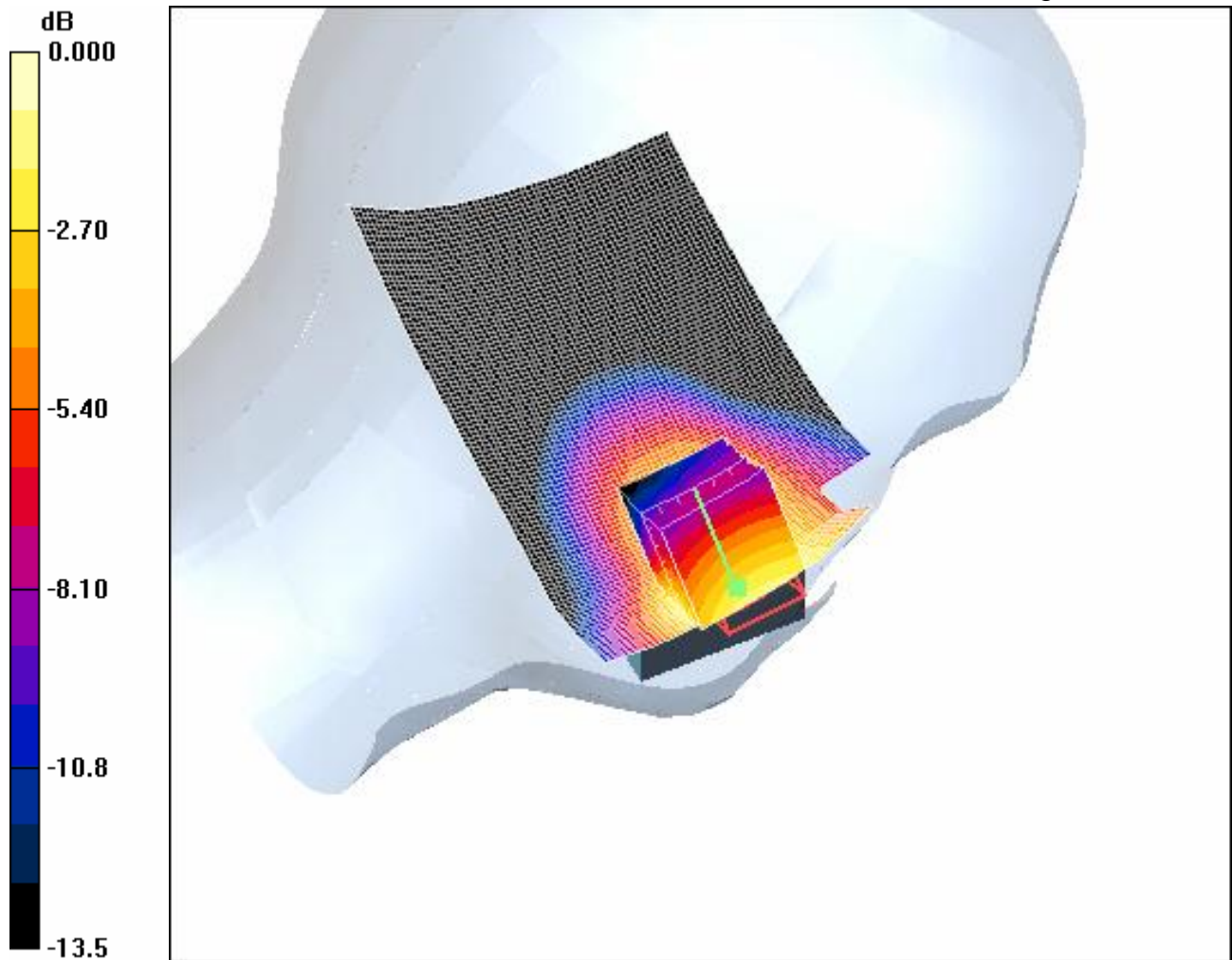
**Cheek position - Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm**

Reference Value = 2.72 V/m; Power Drift = 0.102 dB

Peak SAR (extrapolated) = 0.397 W/kg

SAR(1 g) = 0.269 mW/g; SAR(10 g) = 0.184 mW/g

Maximum value of SAR (measured) = 0.291 mW/g



0 dB = 0.291mW/g

#### 4.4LeftHandSide-Cheek-GSM850-High

Date/Time: 2007-3-23 15:24:57

Test Laboratory: SGS-GSM

GSM850-LeftHandSide-Cheek-High

DUT: GSM10212817-body; Type: body; Serial: 011073000003040

Communication System: GSM850-GSM Mode; Frequency: 848.8 MHz;Duty Cycle: 1:8.3

Medium: HSL850-Head Medium parameters used:  $f = 848.8$  MHz;  $\sigma = 0.901$  mho/m;  $\epsilon_r = 41.8$ ;  $\rho =$



1000 kg/m<sup>3</sup>

Phantom section: Left Section

**DASY4 Configuration:**

- Probe: ES3DV3 - SN3088; ConvF(6, 6, 6); Calibrated: 2006-12-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2006-12-8
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Cheek position - High/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm**

Maximum value of SAR (interpolated) = 0.630 mW/g

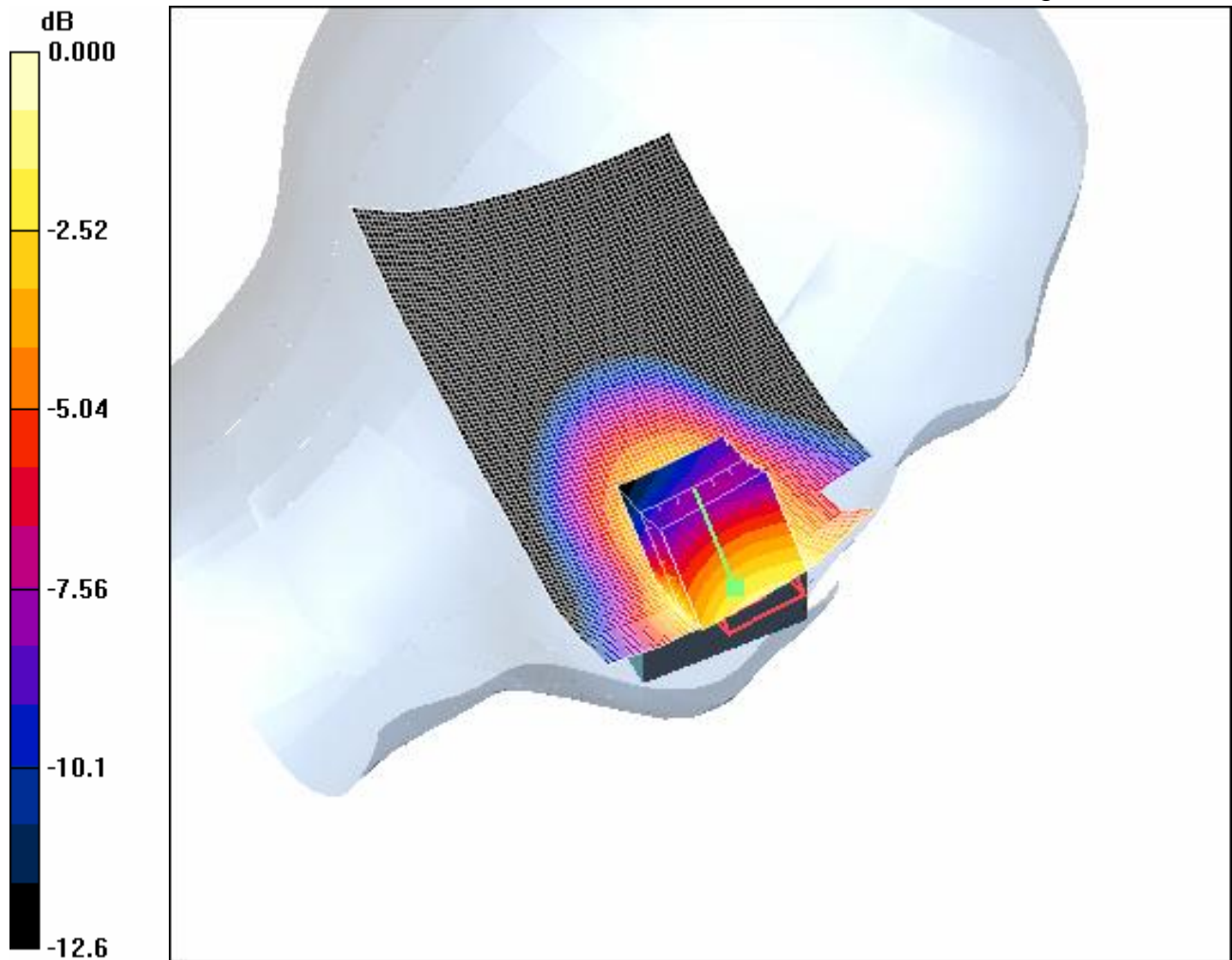
**Cheek position - High/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm**

Reference Value = 4.93 V/m; Power Drift = -0.147 dB

Peak SAR (extrapolated) = 0.863 W/kg

SAR(1 g) = 0.582 mW/g; SAR(10 g) = 0.397 mW/g

Maximum value of SAR (measured) = 0.627 mW/g



0 dB = 0.627mW/g

#### **4.5LeftHandSide-GSM850-Maximum Value-SD**

Date/Time: 2007-3-23 16:02:25

Test Laboratory: SGS-GSM

GSM850-LeftHandSide-Cheek-High+SD

DUT: GSM10212817-body; Type: body; Serial: 011073000003040

Communication System: GSM850-GSM Mode; Frequency: 848.8 MHz;Duty Cycle: 1:8.3

Medium: HSL850-Head Medium parameters used:  $f = 848.8$  MHz;  $\sigma = 0.901$  mho/m;  $\epsilon_r = 41.8$ ;  $\rho =$

1000 kg/m<sup>3</sup>

Phantom section: Left Section

**DASY4 Configuration:**

- Probe: ES3DV3 - SN3088; ConvF(6, 6, 6); Calibrated: 2006-12-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2006-12-8
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Cheek position - High+SD/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.687 mW/g

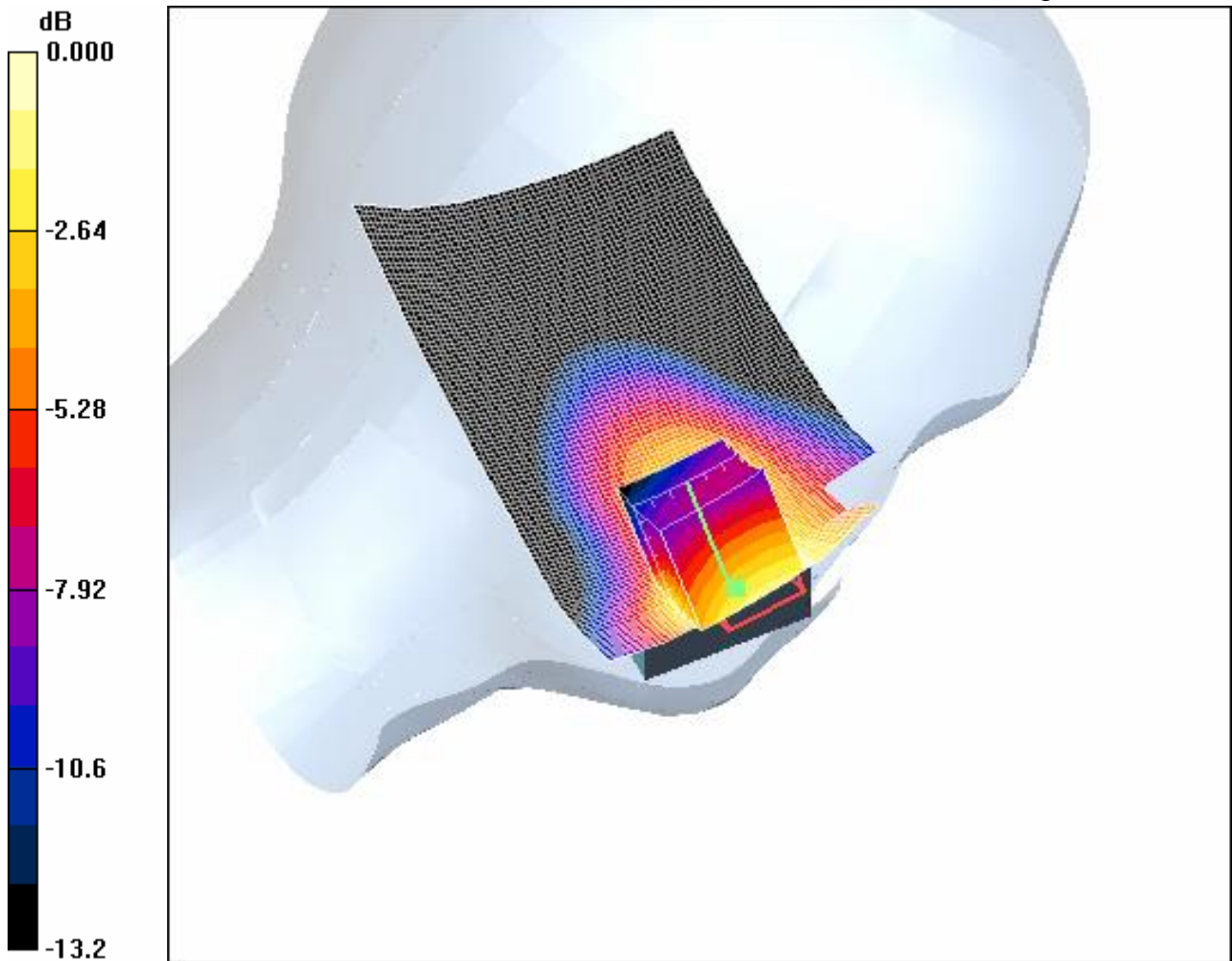
**Cheek position - High+SD/Zoom Scan (7x7x7) (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.48 V/m; Power Drift = 0.277 dB

Peak SAR (extrapolated) = 0.849 W/kg

SAR(1 g) = 0.600 mW/g; SAR(10 g) = 0.418 mW/g

Maximum value of SAR (measured) = 0.643 mW/g



0 dB = 0.643mW/g

#### 4.6 LeftHandSide-GSM850-Maximum Value-BT

Date/Time: 2007-4-11 15:38:55

Test Laboratory: SGS-GSM

GSM850-LeftHandSide-Cheek-High+BT

DUT: GSM10212817-body; Type: body; Serial: 011073000003040

Communication System: GSM850-GSM Mode; Frequency: 848.8 MHz; Duty Cycle: 1:8.3

Medium: HSL850-Head Medium parameters used:  $f = 848.8$  MHz;  $\sigma = 0.901$  mho/m;  $\epsilon_r = 41.8$ ;  $\rho =$

1000 kg/m<sup>3</sup>

Phantom section: Left Section

**DASY4 Configuration:**

- Probe: ES3DV3 - SN3088; ConvF(6, 6, 6); Calibrated: 2006-12-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2006-12-8
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Cheek position - High+BT/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.803 mW/g

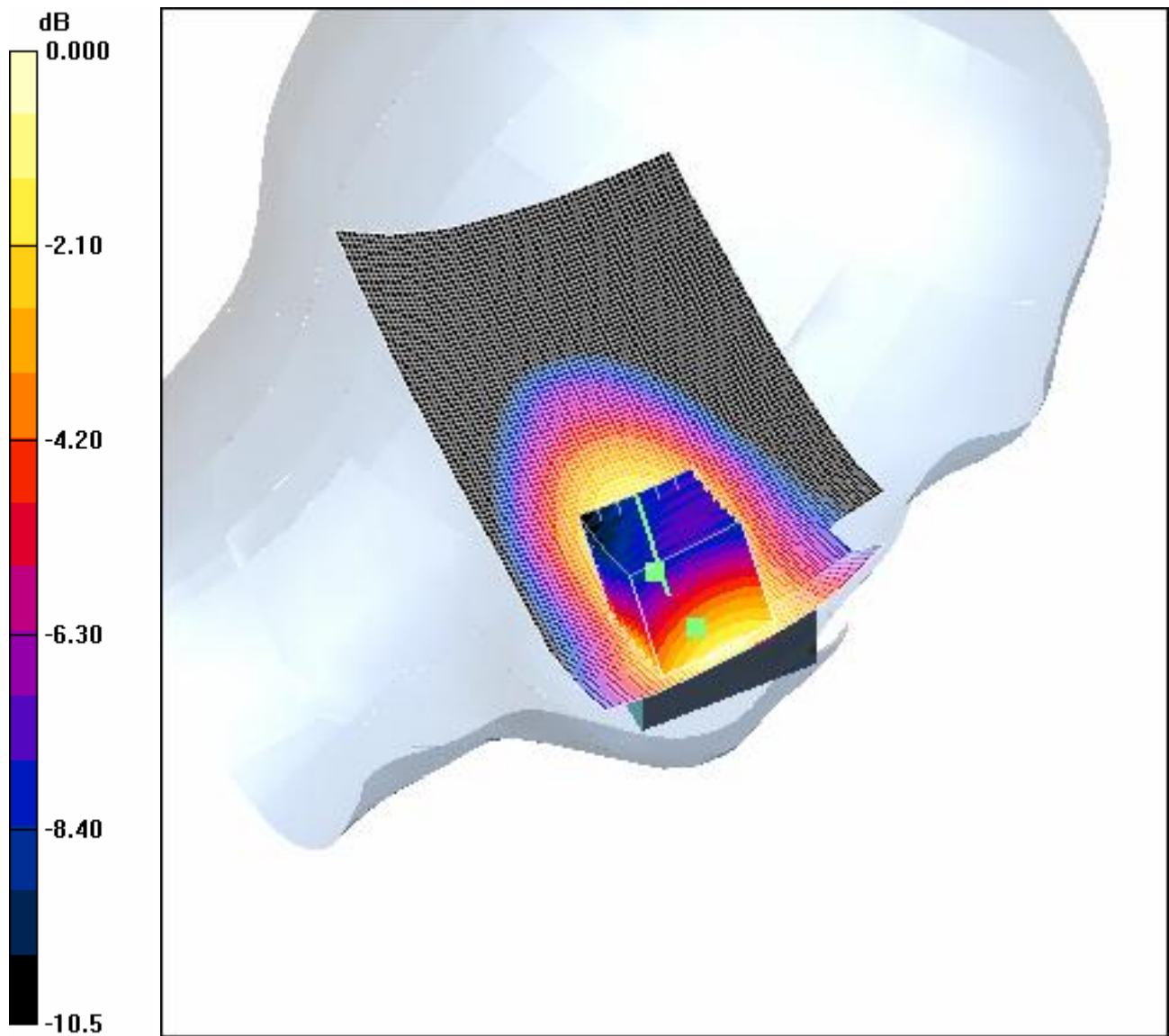
**Cheek position - High+BT/Zoom Scan (7x7x7) (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 11.6 V/m; Power Drift = 0.048 dB

Peak SAR (extrapolated) = 1.90 W/kg

SAR(1 g) = 0.750 mW/g; SAR(10 g) = 0.526 mW/g

Maximum value of SAR (measured) = 0.858 mW/g



0 dB = 0.858mW/g

**4.7RightHandSide-Cheek-GSM850-Middle**

Date/Time: 2007-3-23 17:33:51

Test Laboratory: SGS-GSM

GSM850-RightHandSide-Cheek-Middle

DUT: GSM10212817-body; Type: body; Serial: 011073000003040

Communication System: GSM850-GSM Mode; Frequency: 836.4 MHz; Duty Cycle: 1:8.3

Medium: HSL850-Head Medium parameters used:  $f = 836.4$  MHz;  $\sigma = 0.883$  mho/m;  $\epsilon_r = 41.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

#### DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(6, 6, 6); Calibrated: 2006-12-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2006-12-8
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Cheek position - Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.638 mW/g

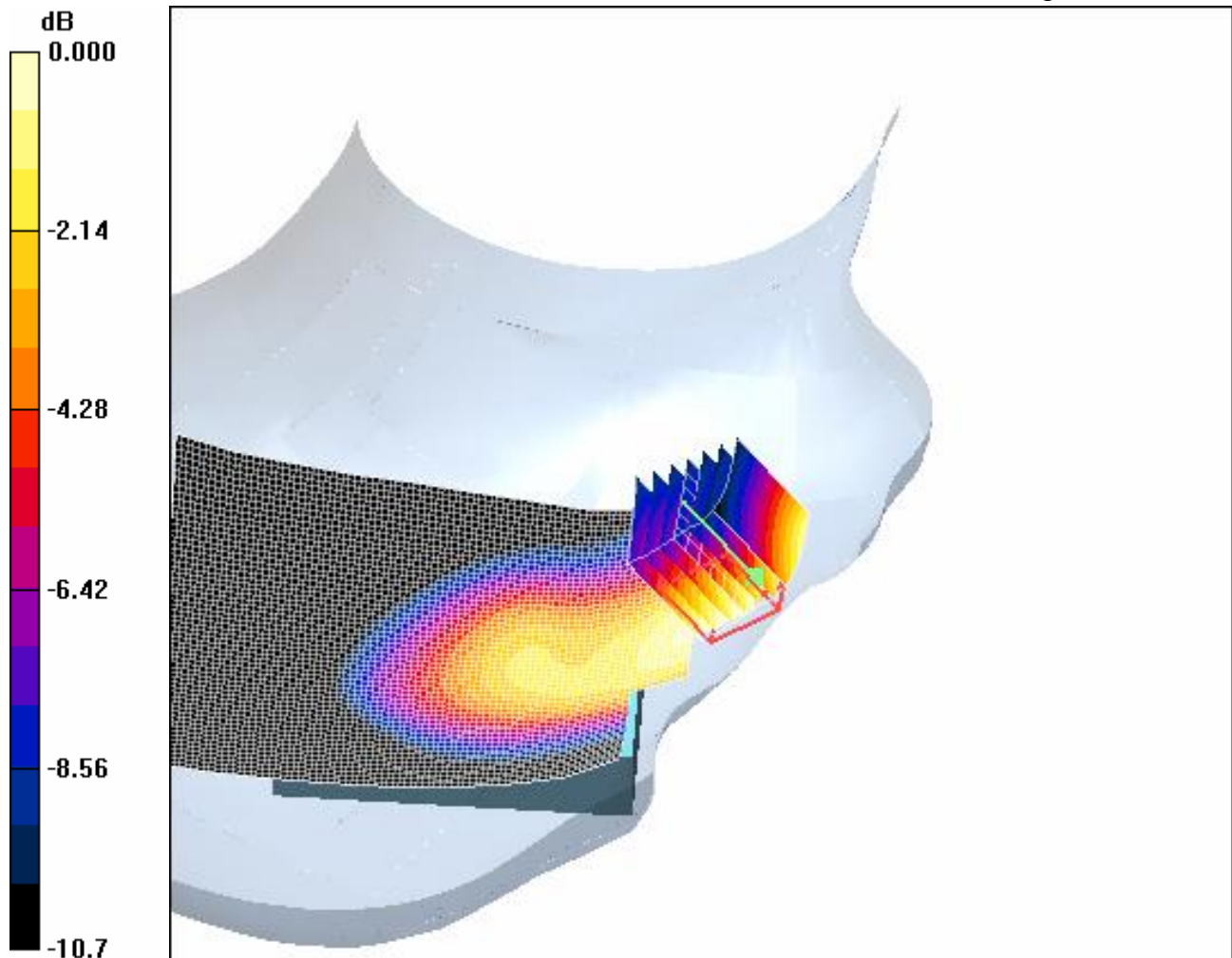
Cheek position - Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.31 V/m; Power Drift = -0.033 dB

Peak SAR (extrapolated) = 0.852 W/kg

SAR(1 g) = 0.588 mW/g; SAR(10 g) = 0.403 mW/g

Maximum value of SAR (measured) = 0.629 mW/g



0 dB = 0.629mW/g

#### **4.8RightHandSide-Tilt-GSM850-Middle**

Date/Time: 2007-3-23 17:03:07

Test Laboratory: SGS-GSM

GSM850-RightHandSide-Tilt-Middle

DUT: GSM10212817-body; Type: body; Serial: 011073000003040

Communication System: GSM850-GSM Mode; Frequency: 836.4 MHz;Duty Cycle: 1:8.3

Medium: HSL850-Head Medium parameters used:  $f = 836.4$  MHz;  $\sigma = 0.883$  mho/m;  $\epsilon_r = 41.9$ ;  $\rho =$



1000 kg/m<sup>3</sup>

Phantom section: Right Section

**DASY4 Configuration:**

- Probe: ES3DV3 - SN3088; ConvF(6, 6, 6); Calibrated: 2006-12-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2006-12-8
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Tilt position - Middle/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.255 mW/g

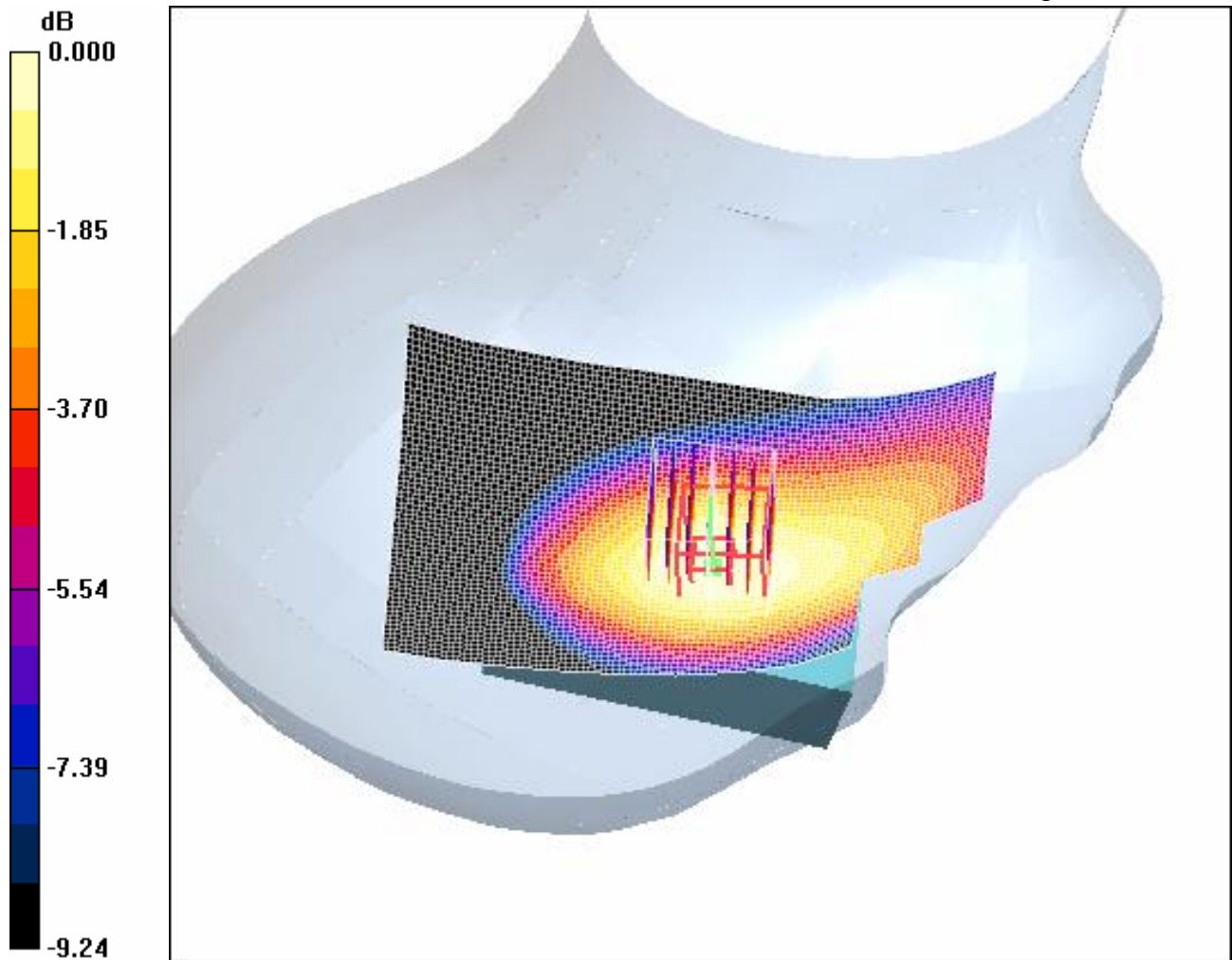
**Tilt position - Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 9.51 V/m; Power Drift = 0.132 dB

Peak SAR (extrapolated) = 0.299 W/kg

SAR(1 g) = 0.237 mW/g; SAR(10 g) = 0.175 mW/g

Maximum value of SAR (measured) = 0.251 mW/g



0 dB = 0.251mW/g

#### 4.9RightHandSide-Cheek-GSM850-Low

Date/Time: 2007-3-23 20:04:15

Test Laboratory: SGS-GSM

GSM850-RightHandSide-Cheek-Low

DUT: GSM10212817-body; Type: body; Serial: 011073000003040

Communication System: GSM850-GSM Mode; Frequency: 824.2 MHz;Duty Cycle: 1:8.3

Medium: HSL850-Head Medium parameters used:  $f = 824.2$  MHz;  $\sigma = 0.864$  mho/m;  $\epsilon_r = 42.1$ ;  $\rho =$

1000 kg/m<sup>3</sup>

Phantom section: Right Section

**DASY4 Configuration:**

- Probe: ES3DV3 - SN3088; ConvF(6, 6, 6); Calibrated: 2006-12-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2006-12-8
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Cheek position - Low/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.488 mW/g

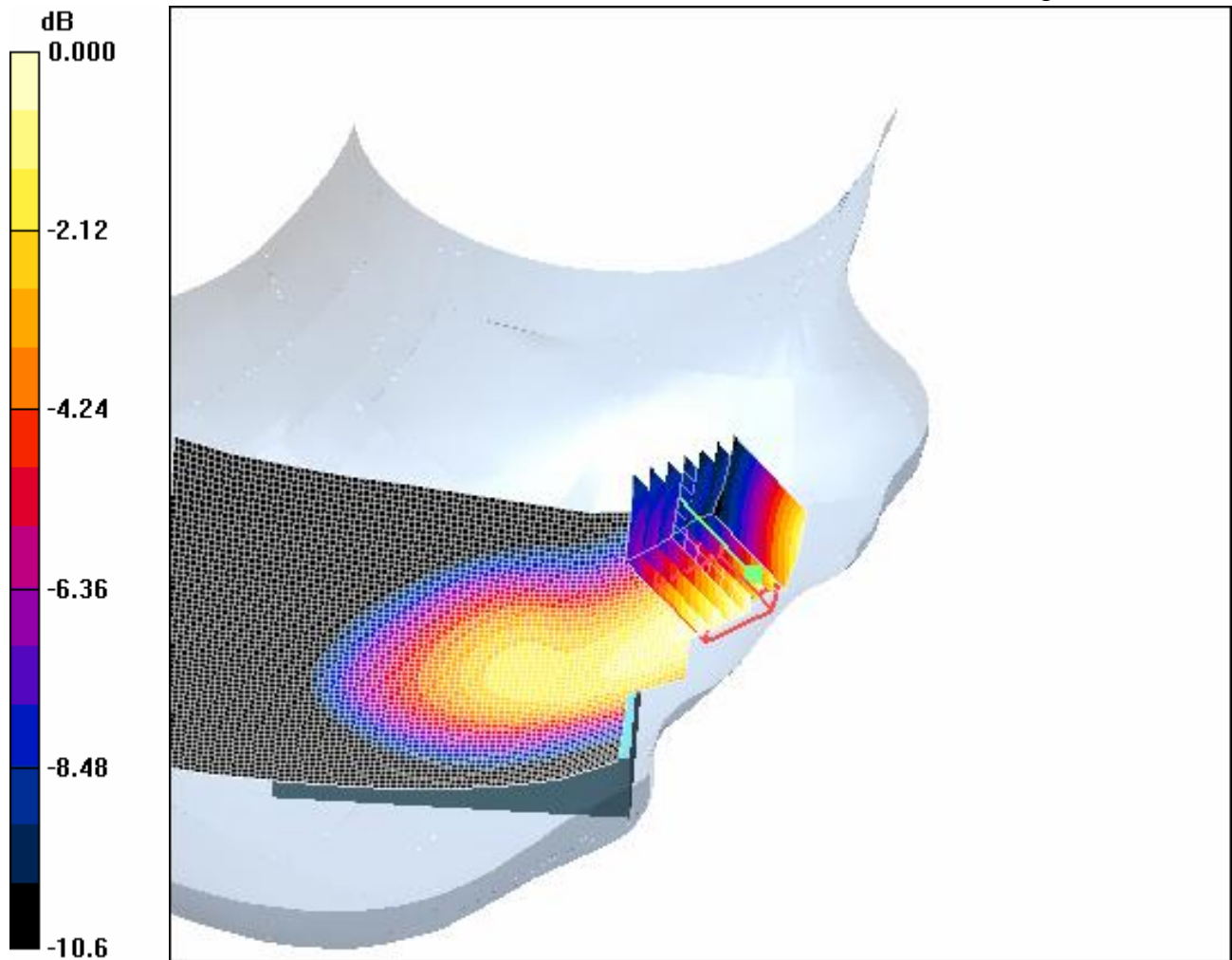
**Cheek position - Low/Zoom Scan (7x7x7) (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 7.29 V/m; Power Drift = 0.027 dB

Peak SAR (extrapolated) = 0.658 W/kg

SAR(1 g) = 0.449 mW/g; SAR(10 g) = 0.307 mW/g

Maximum value of SAR (measured) = 0.486 mW/g



0 dB = 0.486mW/g

#### 4.10 RightHandSide-Cheek-GSM850-High

Date/Time: 2007-3-23 18:47:28

Test Laboratory: SGS-GSM

GSM850-RightHandSide-Cheek-High

DUT: GSM10212817-body; Type: body; Serial: 011073000003040

Communication System: GSM850-GSM Mode; Frequency: 848.8 MHz; Duty Cycle: 1:8.3

Medium: HSL850-Head Medium parameters used:  $f = 848.8$  MHz;  $\sigma = 0.901$  mho/m;  $\epsilon_r = 41.8$ ;  $\rho =$

1000 kg/m<sup>3</sup>

Phantom section: Right Section

**DASY4 Configuration:**

- Probe: ES3DV3 - SN3088; ConvF(6, 6, 6); Calibrated: 2006-12-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2006-12-8
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Cheek position - High/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm**

Maximum value of SAR (interpolated) = 0.855 mW/g

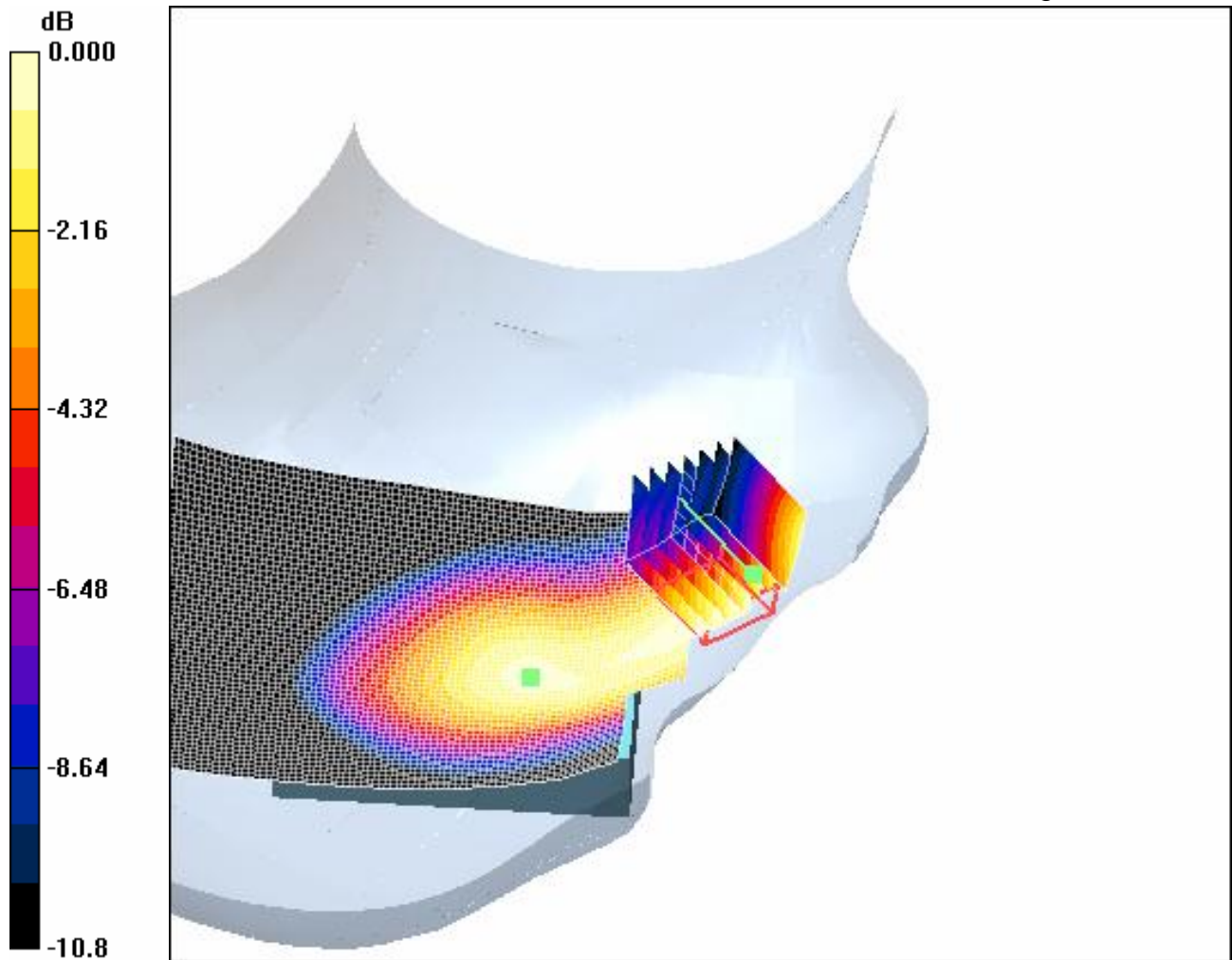
**Cheek position - High/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm**

Reference Value = 10.7 V/m; Power Drift = -0.127 dB

Peak SAR (extrapolated) = 1.17 W/kg

SAR(1 g) = 0.780 mW/g; SAR(10 g) = 0.531 mW/g

Maximum value of SAR (measured) = 0.845 mW/g



0 dB = 0.845mW/g

#### 4.11 RightHandSide-GSM850-Maximum Value-SD

Date/Time: 2007-3-23 21:23:38

Test Laboratory: SGS-GSM

GSM850-RightHandSide-Cheek-High+SD

DUT: GSM10212817-body; Type: body; Serial: 011073000003040

Communication System: GSM850-GSM Mode; Frequency: 848.8 MHz; Duty Cycle: 1:8.3

Medium: HSL850-Head Medium parameters used:  $f = 848.8$  MHz;  $\sigma = 0.901$  mho/m;  $\epsilon_r = 41.8$ ;  $\rho =$

1000 kg/m<sup>3</sup>

Phantom section: Right Section

**DASY4 Configuration:**

- Probe: ES3DV3 - SN3088; ConvF(6, 6, 6); Calibrated: 2006-12-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2006-12-8
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Cheek position - High +SD 2/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm**

Maximum value of SAR (interpolated) = 0.821 mW/g

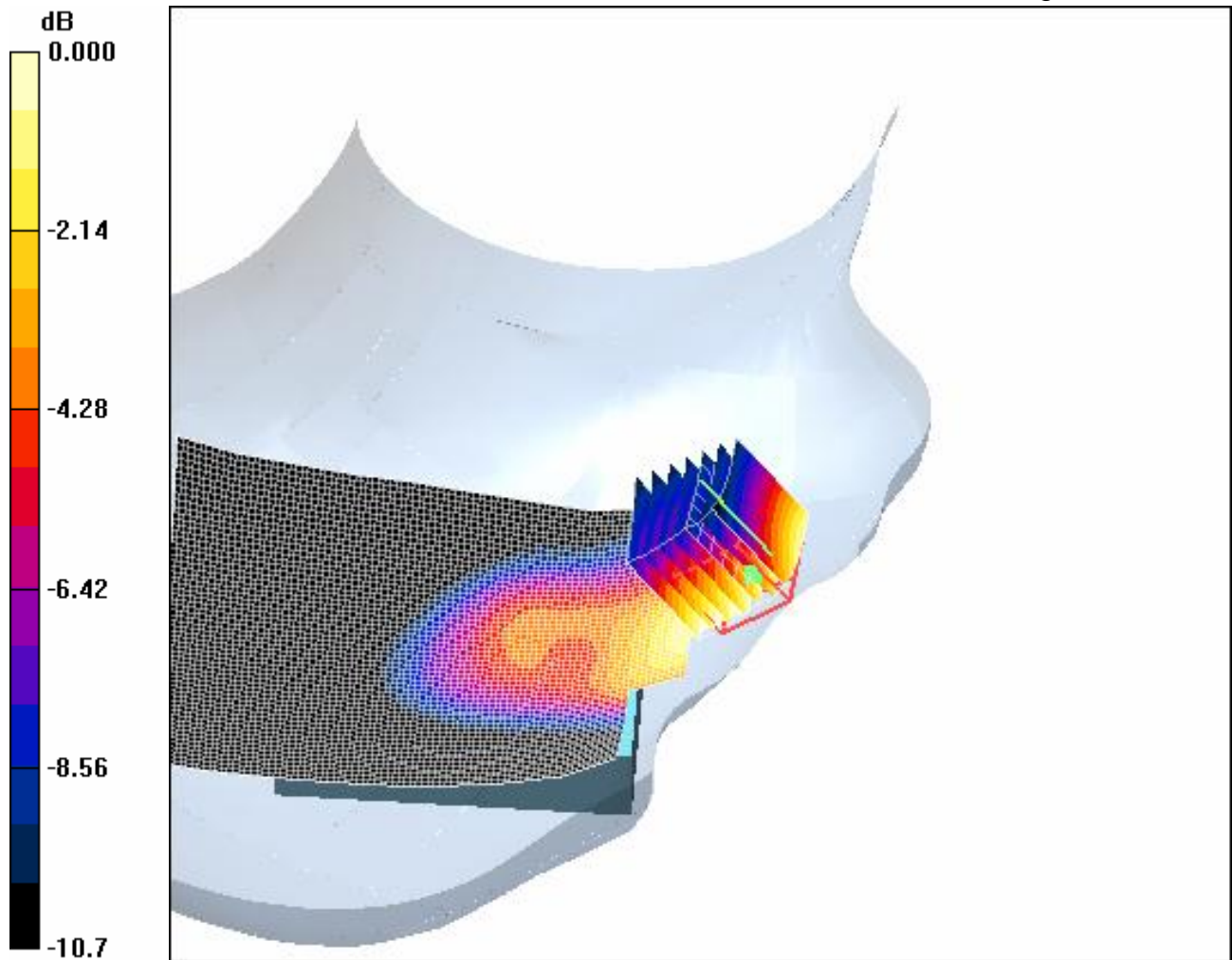
**Cheek position - High +SD 2/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm**

Reference Value = 5.10 V/m; Power Drift = 0.148 dB

Peak SAR (extrapolated) = 1.10 W/kg

SAR(1 g) = 0.759 mW/g; SAR(10 g) = 0.508 mW/g

Maximum value of SAR (measured) = 0.809 mW/g



0 dB = 0.809mW/g

#### 4.12RightHandSide-GSM850-Maximum Value-BT

Date/Time: 2007-3-23 21:57:30

Test Laboratory: SGS-GSM

GSM850-RightHandSide-Cheek-High+BT

DUT: GSM10212817-body; Type: body; Serial: 011073000003040

Communication System: GSM850-GSM Mode; Frequency: 848.8 MHz;Duty Cycle: 1:8.3

Medium: HSL850-Head Medium parameters used:  $f = 848.8$  MHz;  $\sigma = 0.901$  mho/m;  $\epsilon_r = 41.8$ ;  $\rho =$



1000 kg/m<sup>3</sup>

Phantom section: Right Section

**DASY4 Configuration:**

- Probe: ES3DV3 - SN3088; ConvF(6, 6, 6); Calibrated: 2006-12-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2006-12-8
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Cheek position - High +BT/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.809 mW/g

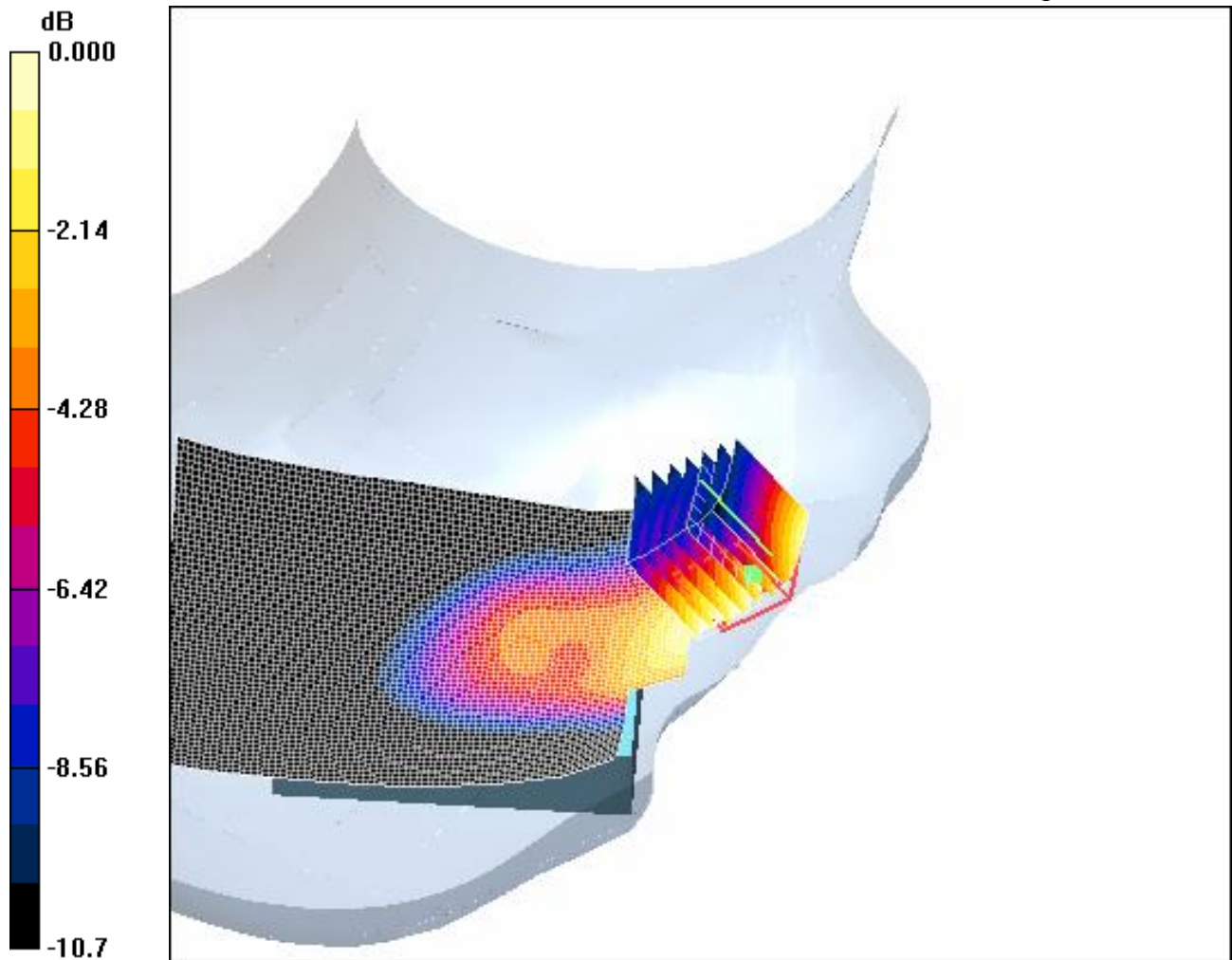
**Cheek position - High +BT/Zoom Scan (7x7x7) (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.36 V/m; Power Drift = 0.163 dB

Peak SAR (extrapolated) = 1.09 W/kg

SAR(1 g) = 0.747 mW/g; SAR(10 g) = 0.503 mW/g

Maximum value of SAR (measured) = 0.799 mW/g



0 dB = 0.799mW/g

#### 4.13 Body-Worn-GSM850-GPRS-Low

Date/Time: 2007-3-16 11:26:34

Test Laboratory: SGS-GSM

GSM850-Body-Worn-GPRS-Low-2.0cm

DUT: GSM10212817-body; Type: body; Serial: 011073000003040

Communication System: GSM850-GPRS Mode; Frequency: 824.2 MHz; Duty Cycle: 1:4

Medium: 850-Body Medium parameters used:  $f = 824.2$  MHz;  $\sigma = 0.924$  mho/m;  $\epsilon_r = 56.2$ ;  $\rho = 1000$

kg/m<sup>3</sup>

Phantom section: Flat Section

**DASY4 Configuration:**

- Probe: ES3DV3 - SN3088; ConvF(5.92, 5.92, 5.92); Calibrated: 2006-12-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2006-12-8
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Body Worn - Low/Area Scan (51x91x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.893 mW/g

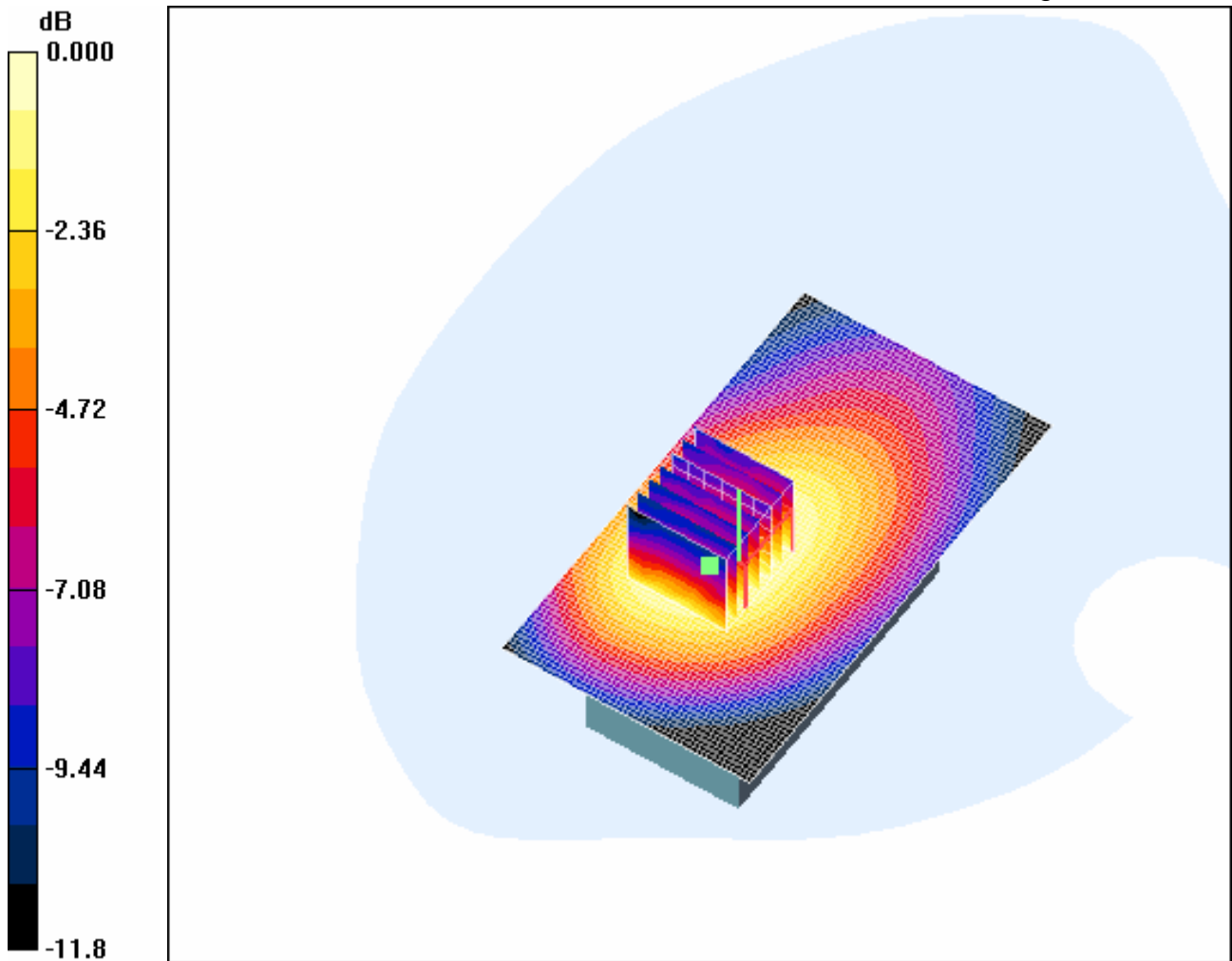
**Body Worn - Low/Zoom Scan (7x7x7) (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 20.4 V/m; Power Drift = -0.076 dB

Peak SAR (extrapolated) = 1.18 W/kg

SAR(1 g) = 0.786 mW/g; SAR(10 g) = 0.539 mW/g

Maximum value of SAR (measured) = 0.876 mW/g



0 dB = 0.876mW/g

#### **4.14 Body-Worn-GSM850-GPRS-Middle**

Date/Time: 2007-4-10 17:08:24

Test Laboratory: SGS-GSM

GSM850-Body-Worn-GPRS-Middle-2.0cm

DUT: GSM10212817-body; Type: body; Serial: 011073000003040

Communication System: GSM850-GPRS Mode; Frequency: 836.4 MHz; Duty Cycle: 1:4

Medium: 850-Body Medium parameters used:  $f = 836.4$  MHz;  $\sigma = 0.942$  mho/m;  $\epsilon_r = 56.2$ ;  $\rho = 1000$

kg/m<sup>3</sup>

Phantom section: Flat Section

**DASY4 Configuration:**

- Probe: ES3DV3 - SN3088; ConvF(5.92, 5.92, 5.92); Calibrated: 2006-12-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2006-12-8
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Body Worn - Middle 2/Area Scan (51x91x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.15 mW/g

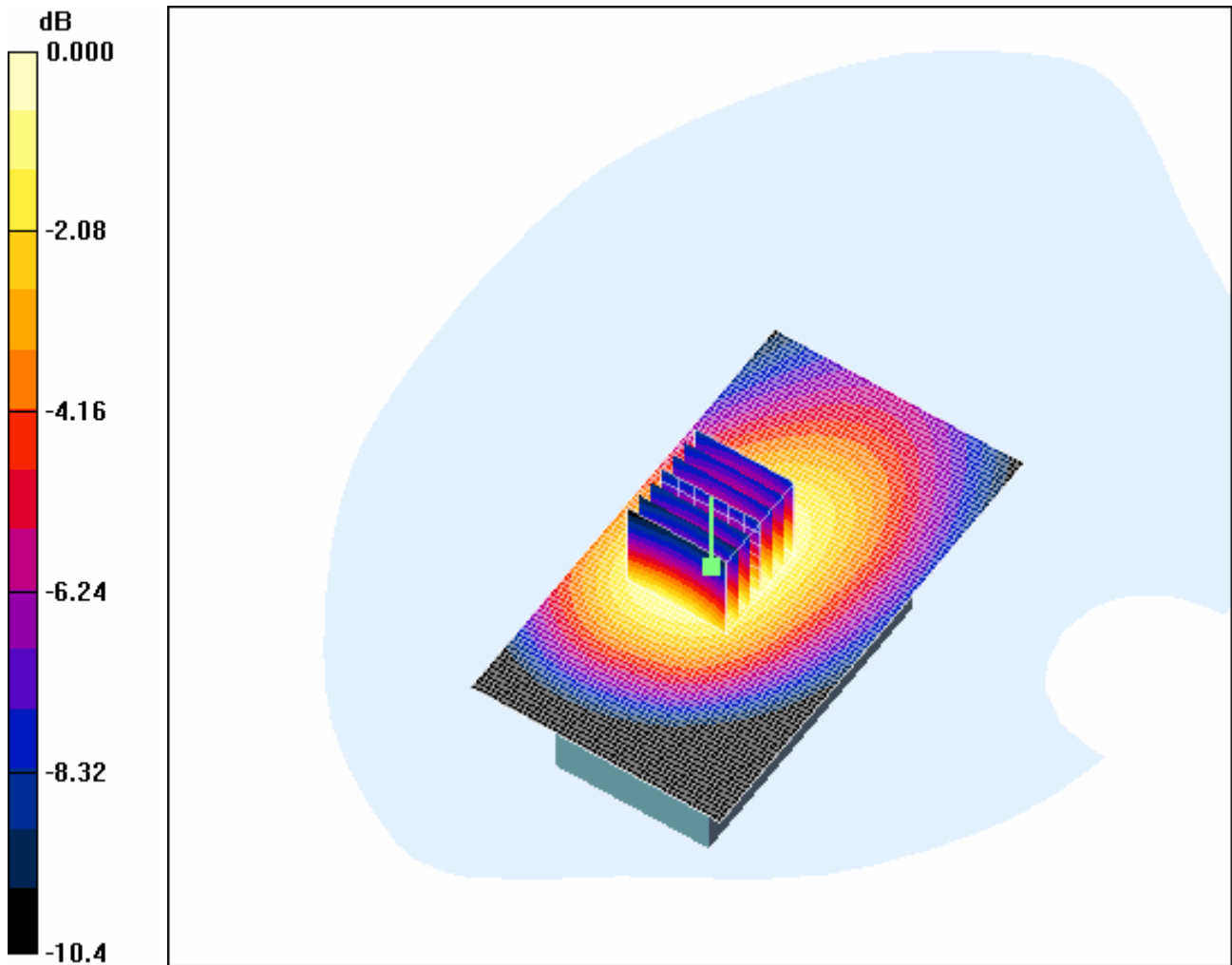
**Body Worn - Middle 2/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm,  
dz=5mm

Reference Value = 28.1 V/m; Power Drift = -0.031 dB

Peak SAR (extrapolated) = 1.43 W/kg

SAR(1 g) = 1.07 mW/g; SAR(10 g) = 0.752 mW/g

Maximum value of SAR (measured) = 1.14 mW/g



0 dB = 1.14mW/g

**4.15 Body-Worn-GSM850-GPRS-High**

Date/Time: 2007-3-16 14:17:03

Test Laboratory: SGS-GSM

GSM850-Body-Worn-GPRS-High-2.0cm

DUT: GSM10212817-body; Type: body; Serial: 011073000003040

Communication System: GSM850-GPRS Mode; Frequency: 848.8 MHz; Duty Cycle: 1:4

Medium: 850-Body Medium parameters used:  $f = 848.8$  MHz;  $\sigma = 0.955$  mho/m;  $\epsilon_r = 56.1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

**DASY4 Configuration:**

- Probe: ES3DV3 - SN3088; ConvF(5.92, 5.92, 5.92); Calibrated: 2006-12-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2006-12-8
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Body Worn - High 2/Area Scan (51x91x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.08 mW/g

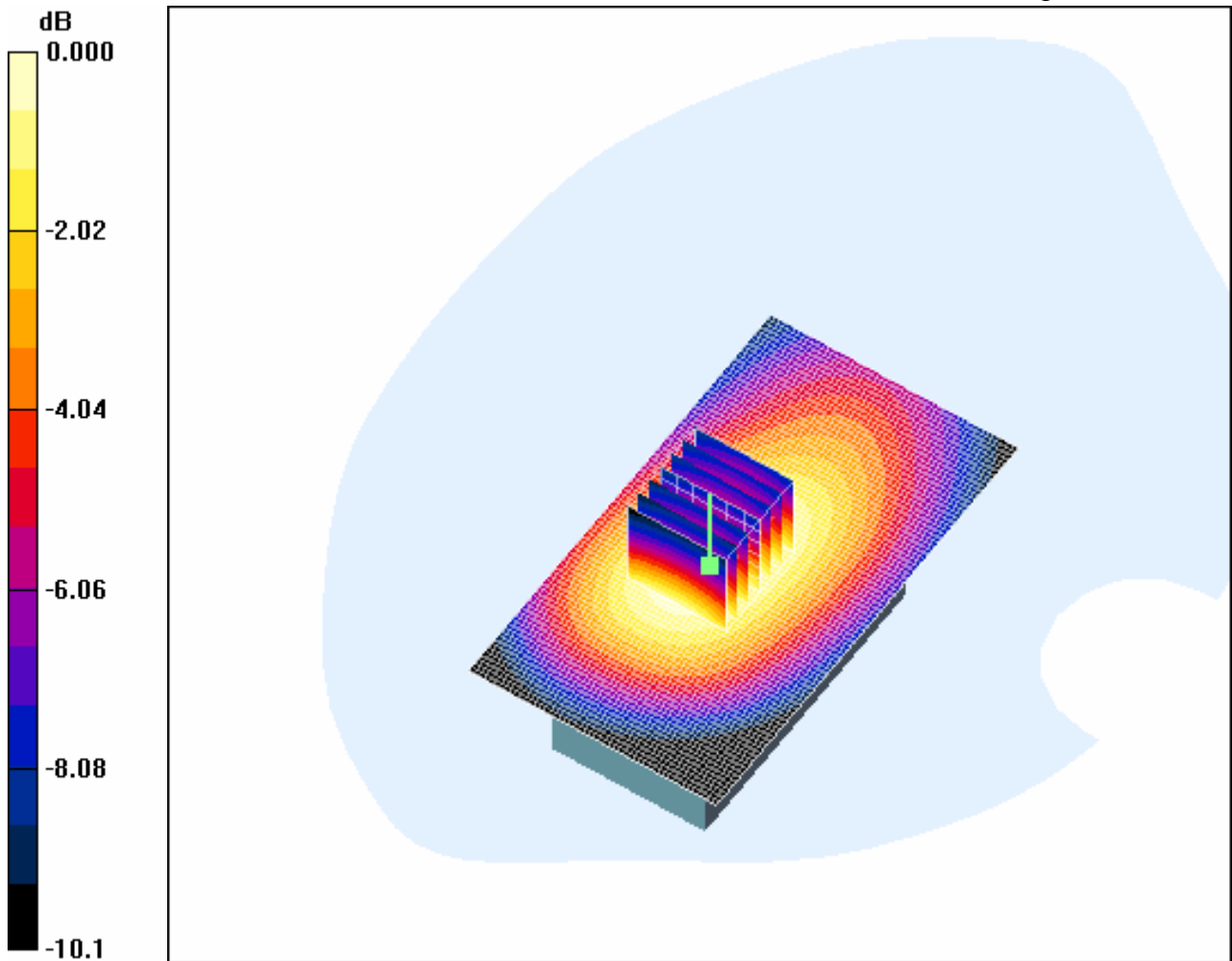
**Body Worn - High 2/Zoom Scan (7x7x7) (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 26.4 V/m; Power Drift = -0.069 dB

Peak SAR (extrapolated) = 1.34 W/kg

SAR(1 g) = 0.998 mW/g; SAR(10 g) = 0.707 mW/g

Maximum value of SAR (measured) = 1.06 mW/g



0 dB = 1.06mW/g

#### 4.16 Body-Worn-GSM850-Maximum Value-SD

Date/Time: 2007-3-16 15:13:37

Test Laboratory: SGS-GSM

GSM850-Body-Worn-GPRS-Middle-2.0cm+SD

DUT: GSM10212817-body; Type: body; Serial: 011073000003040

Communication System: GSM850-GPRS Mode; Frequency: 836.4 MHz; Duty Cycle: 1:4

Medium: 850-Body Medium parameters used:  $f = 836.4$  MHz;  $\sigma = 0.942$  mho/m;  $\epsilon_r = 56.2$ ;  $\rho = 1000$



kg/m<sup>3</sup>

Phantom section: Flat Section

**DASY4 Configuration:**

- Probe: ES3DV3 - SN3088; ConvF(5.92, 5.92, 5.92); Calibrated: 2006-12-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2006-12-8
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Body Worn - Middle+SD/Area Scan (51x91x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.04 mW/g

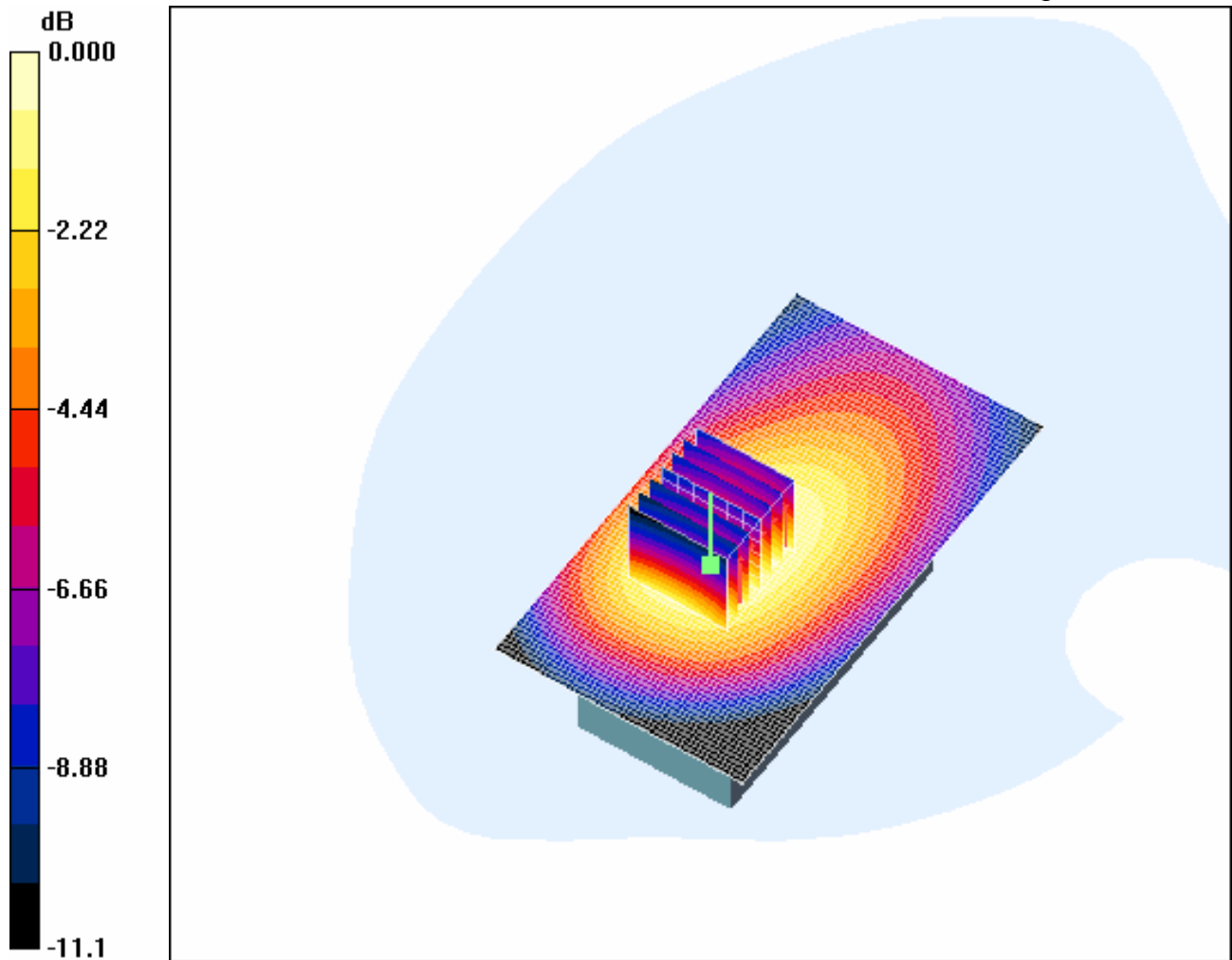
**Body Worn - Middle+SD/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm,  
dz=5mm

Reference Value = 24.1 V/m; Power Drift = -0.109 dB

Peak SAR (extrapolated) = 1.33 W/kg

SAR(1 g) = 0.975 mW/g; SAR(10 g) = 0.685 mW/g

Maximum value of SAR (measured) = 1.05 mW/g



0 dB = 1.05mW/g

#### **4.17 Body-Worn-GSM850-Maximum Value-BT**

Date/Time: 2007-3-16 15:42:13

Test Laboratory: SGS-GSM

GSM850-Body-Worn-GPRS-Middle-2.0cm+BT

DUT: GSM10212817-body; Type: body; Serial: 011073000003040

Communication System: GSM850-GPRS Mode; Frequency: 836.4 MHz; Duty Cycle: 1:4

Medium: 850-Body Medium parameters used:  $f = 836.4$  MHz;  $\sigma = 0.942$  mho/m;  $\epsilon_r = 56.2$ ;  $\rho = 1000$

kg/m<sup>3</sup>

Phantom section: Flat Section

**DASY4 Configuration:**

- Probe: ES3DV3 - SN3088; ConvF(5.92, 5.92, 5.92); Calibrated: 2006-12-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2006-12-8
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Body Worn - Middle+BT/Area Scan (51x91x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.05 mW/g

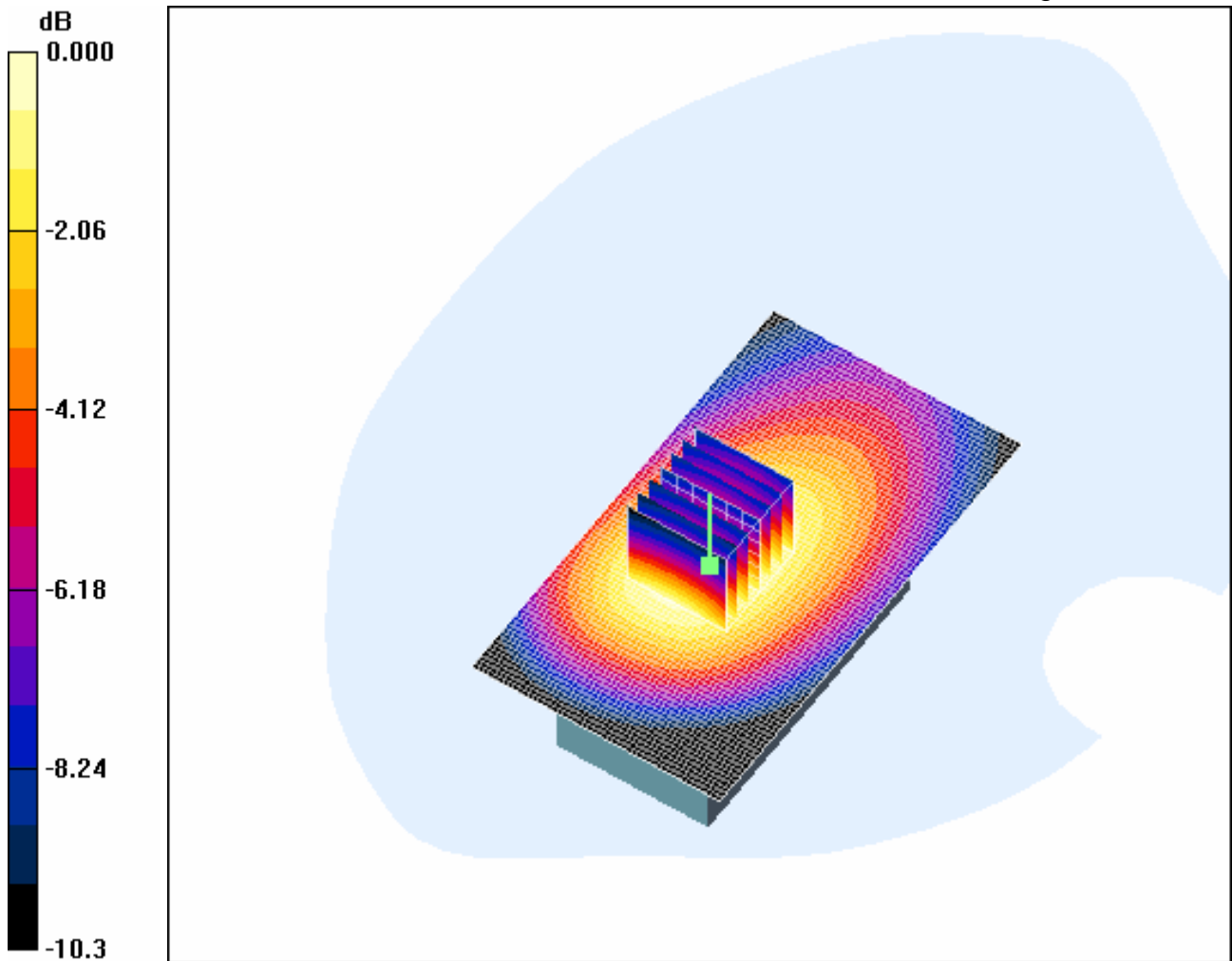
**Body Worn - Middle+BT/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 24.7 V/m; Power Drift = -0.045 dB

Peak SAR (extrapolated) = 1.34 W/kg

SAR(1 g) = 0.989 mW/g; SAR(10 g) = 0.695 mW/g

Maximum value of SAR (measured) = 1.06 mW/g



0 dB = 1.06mW/g

#### 4.18LeftHandSide-Cheek-PCS1900-Middle

Date/Time: 2007-3-22 14:40:06

Test Laboratory: SGS-GSM

PCS1900-LeftHandSide-Cheek-Middle

DUT: GSM10212817-body; Type: body; Serial: 011073000003040

Communication System: PCS1900-GSM Mode; Frequency: 1880 MHz;Duty Cycle: 1:8.3

Medium: PCS1900-Head Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.42$  mho/m;  $\epsilon_r = 39.2$ ;  $\rho =$

1000 kg/m<sup>3</sup>

Phantom section: Left Section

**DASY4 Configuration:**

- Probe: ES3DV3 - SN3088; ConvF(5.07, 5.07, 5.07); Calibrated: 2006-12-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2006-12-8
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Cheek position - Middle/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.865 mW/g

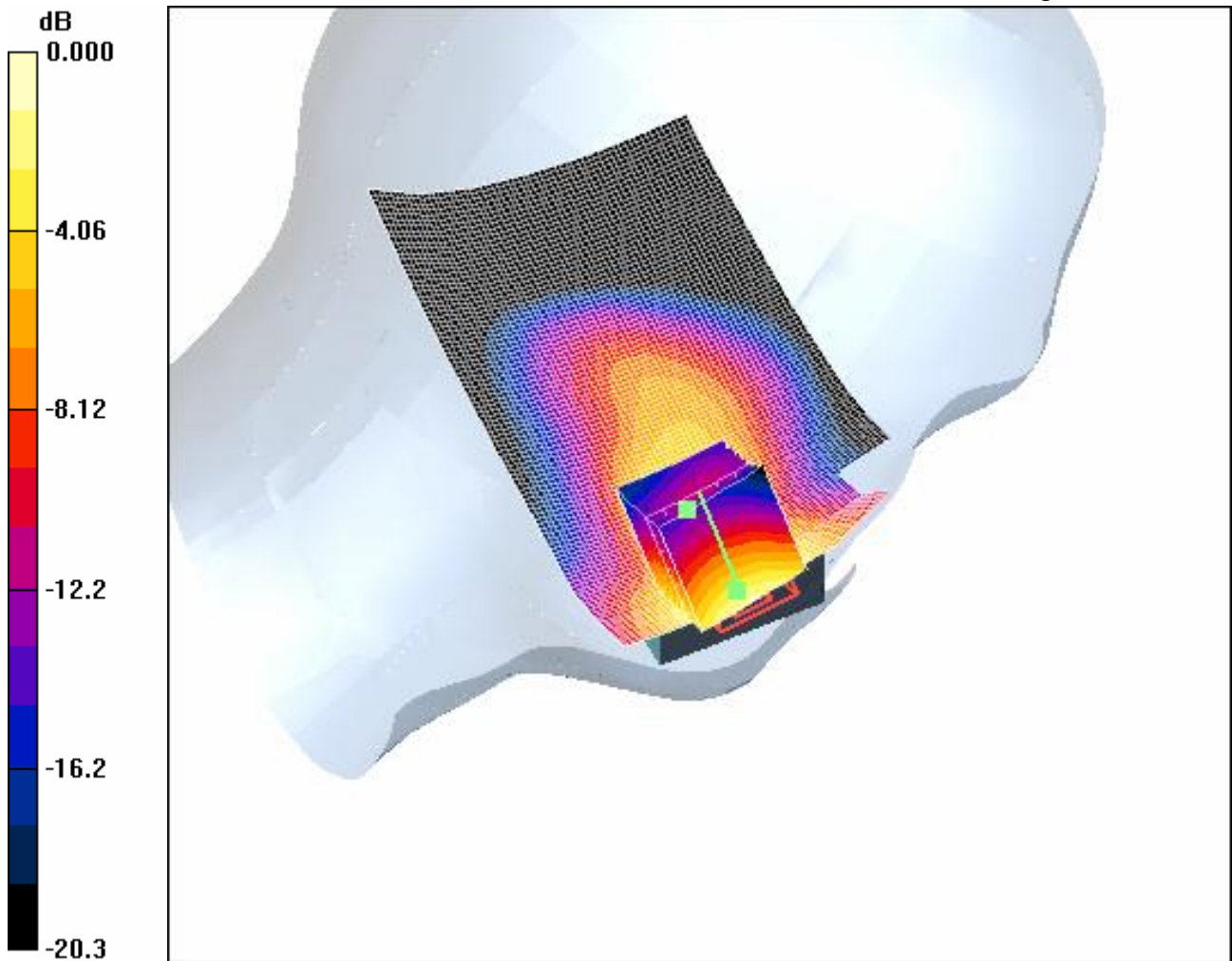
**Cheek position - Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm,  
dz=5mm

Reference Value = 5.96 V/m; Power Drift = -0.159 dB

Peak SAR (extrapolated) = 1.19 W/kg

SAR(1 g) = 0.758 mW/g; SAR(10 g) = 0.456 mW/g

Maximum value of SAR (measured) = 0.819 mW/g



0 dB = 0.819mW/g

**4.19LeftHandSide-Tilt-PCS1900-Middle**

Date/Time: 2007-3-22 14:09:36

Test Laboratory: SGS-GSM

PCS1900-LeftHandSide-Tilt-Middle

DUT: GSM10212817-body; Type: body; Serial: 011073000003040

Communication System: PCS1900-GSM Mode; Frequency: 1880 MHz;Duty Cycle: 1:8.3

Medium: PCS1900-Head Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.42$  mho/m;  $\epsilon_r = 39.2$ ;  $\rho =$

1000 kg/m<sup>3</sup>

Phantom section: Left Section

**DASY4 Configuration:**

- Probe: ES3DV3 - SN3088; ConvF(5.07, 5.07, 5.07); Calibrated: 2006-12-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2006-12-8
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Tilt position - Middle/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.237 mW/g

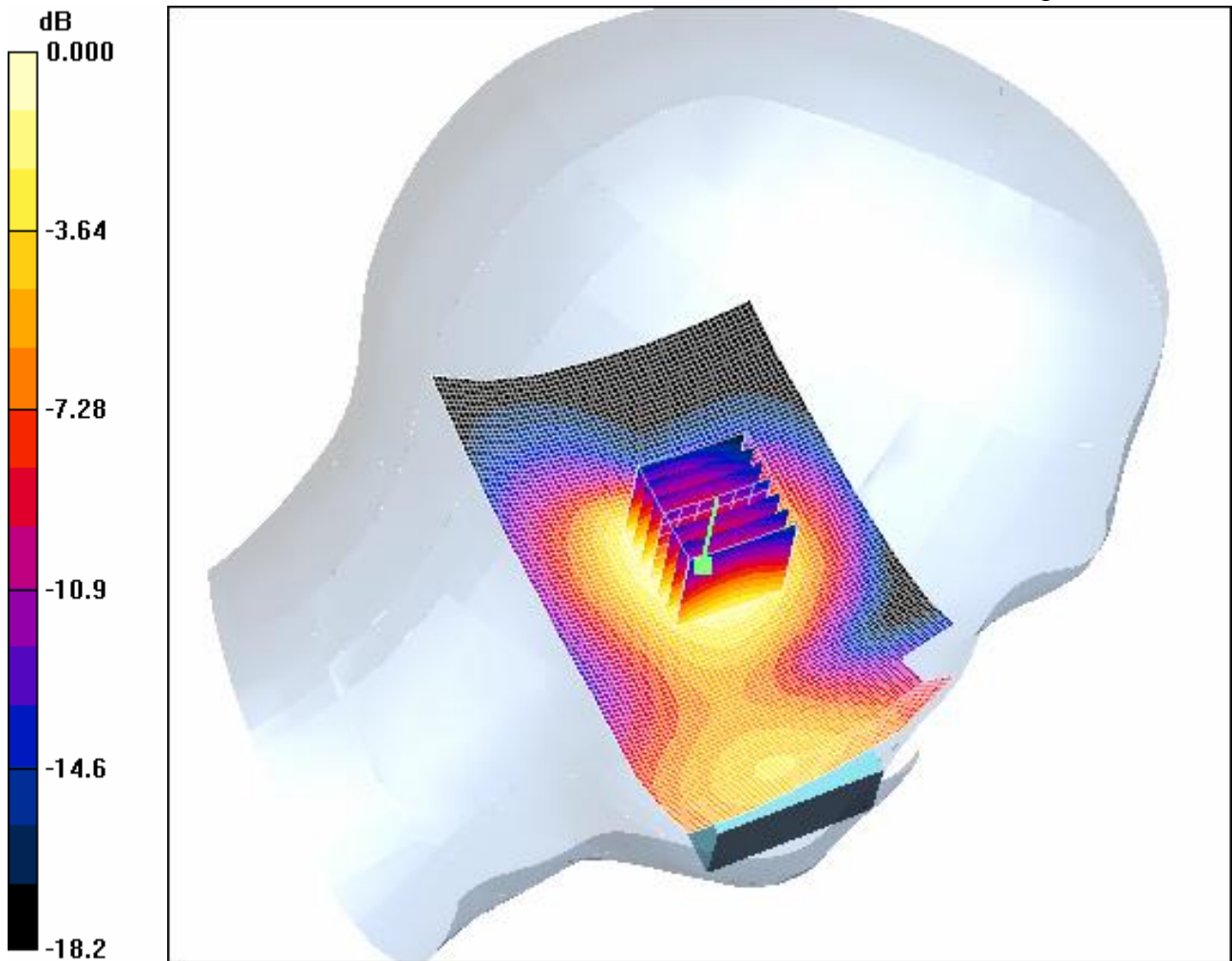
**Tilt position - Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.79 V/m; Power Drift = -0.086 dB

Peak SAR (extrapolated) = 0.320 W/kg

SAR(1 g) = 0.208 mW/g; SAR(10 g) = 0.124 mW/g

Maximum value of SAR (measured) = 0.227 mW/g



0 dB = 0.227mW/g

#### 4.20LeftHandSide-Cheek-PCS1900-Low

Date/Time: 2007-3-22 15:07:46

Test Laboratory: SGS-GSM

PCS1900-LeftHandSide-Cheek-Low

DUT: GSM10212817-body; Type: body; Serial: 011073000003040

Communication System: PCS1900-GSM Mode; Frequency: 1850.2 MHz; Duty Cycle: 1:8.3

Medium: PCS1900-Head Medium parameters used:  $f = 1850.2$  MHz;  $\sigma = 1.37$  mho/m;  $\epsilon_r = 39.3$ ;  $\rho =$



1000 kg/m<sup>3</sup>

Phantom section: Left Section

**DASY4 Configuration:**

- Probe: ES3DV3 - SN3088; ConvF(5.07, 5.07, 5.07); Calibrated: 2006-12-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2006-12-8
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Cheek position - Low/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.665 mW/g

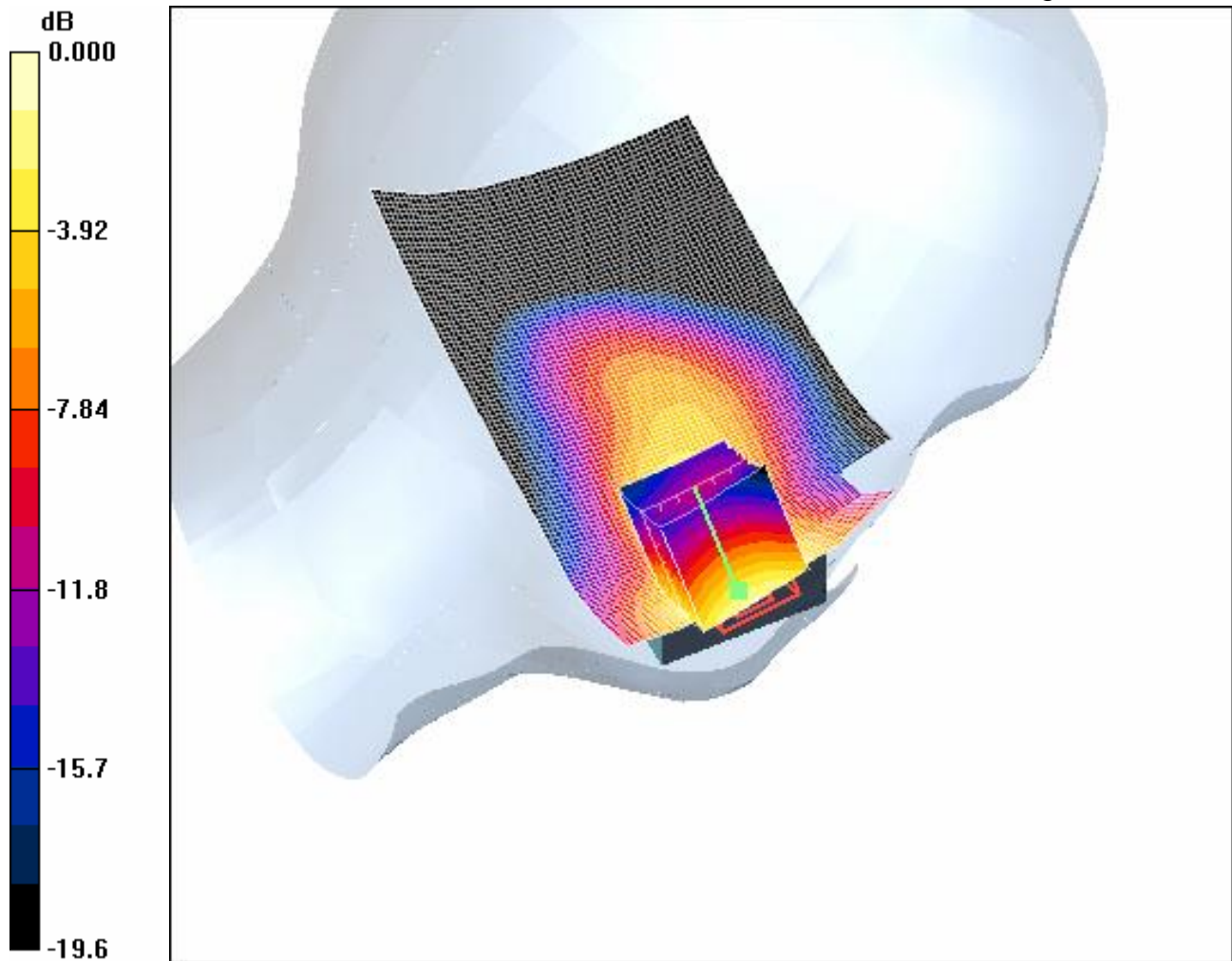
**Cheek position - Low/Zoom Scan (7x7x7) (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.57 V/m; Power Drift = -0.011 dB

Peak SAR (extrapolated) = 0.930 W/kg

SAR(1 g) = 0.595 mW/g; SAR(10 g) = 0.361 mW/g

Maximum value of SAR (measured) = 0.642 mW/g



0 dB = 0.642mW/g

#### **4.21LeftHandSide-Cheek-PCS1900-High**

Date/Time: 2007-3-22 15:36:09

Test Laboratory: SGS-GSM

PCS1900-LeftHandSide-Cheek-High

DUT: GSM10212817-body; Type: body; Serial: 011073000003040

Communication System: PCS1900-GSM Mode; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3

Medium: PCS1900-Head Medium parameters used:  $f = 1909.8$  MHz;  $\sigma = 1.46$  mho/m;  $\epsilon_r = 39.1$ ;  $\rho =$

1000 kg/m<sup>3</sup>

Phantom section: Left Section

**DASY4 Configuration:**

- Probe: ES3DV3 - SN3088; ConvF(5.07, 5.07, 5.07); Calibrated: 2006-12-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2006-12-8
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Cheek position - High/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm**

Maximum value of SAR (interpolated) = 0.923 mW/g

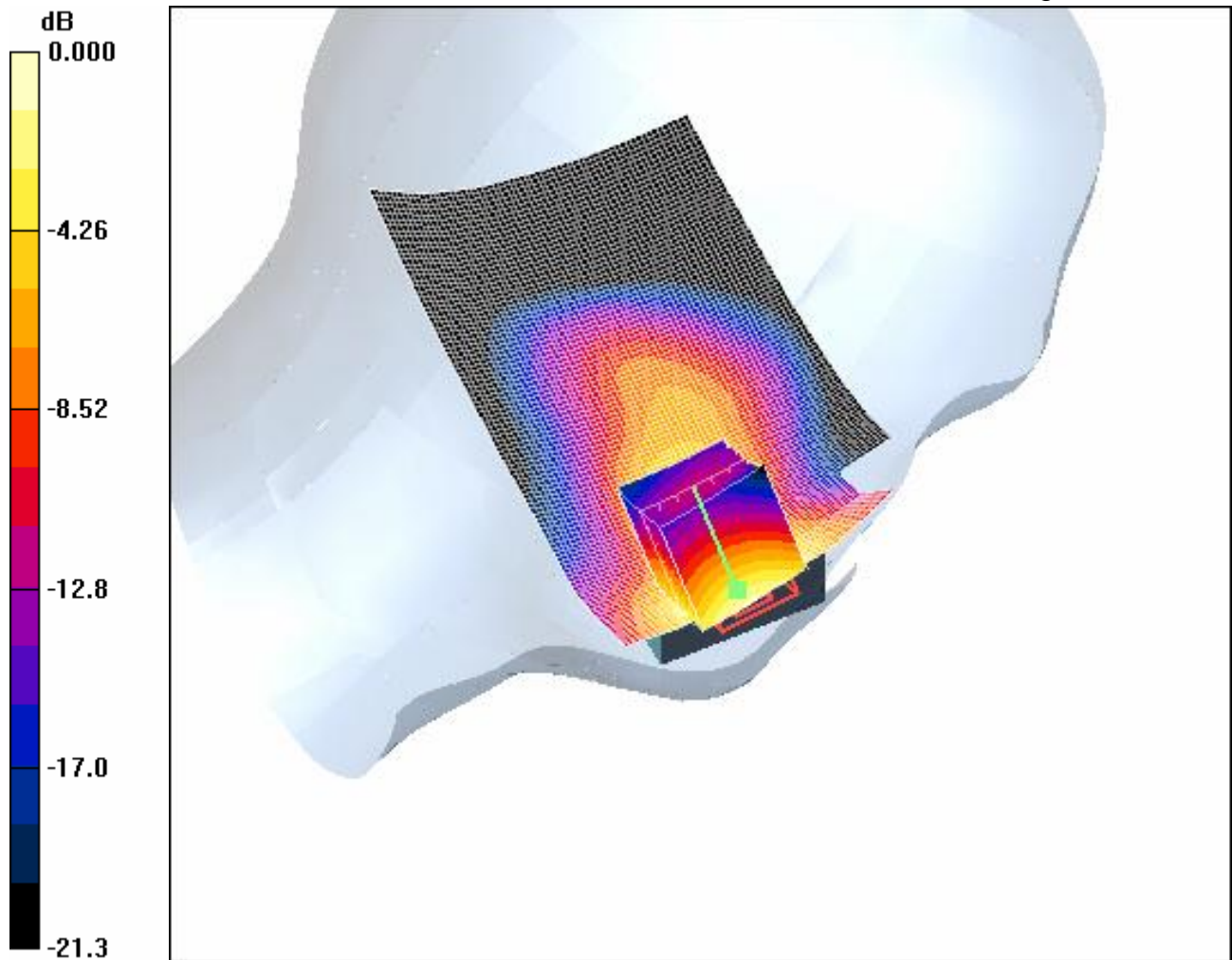
**Cheek position - High/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm**

Reference Value = 5.49 V/m; Power Drift = 0.017 dB

Peak SAR (extrapolated) = 1.28 W/kg

SAR(1 g) = 0.807 mW/g; SAR(10 g) = 0.481 mW/g

Maximum value of SAR (measured) = 0.874 mW/g



0 dB = 0.874mW/g

**4.22LeftHandSide-PCS1900-Maximum Value-SD**

Date/Time: 2007-3-22 16:36:35

Test Laboratory: SGS-GSM

PCS1900-LeftHandSide-Cheek-High+SD

DUT: GSM10212817-body; Type: body; Serial: 011073000003040

Communication System: PCS1900-GSM Mode; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3

Medium: PCS1900-Head Medium parameters used:  $f = 1909.8$  MHz;  $\sigma = 1.46$  mho/m;  $\epsilon_r = 39.1$ ;  $\rho =$

1000 kg/m<sup>3</sup>

Phantom section: Left Section

**DASY4 Configuration:**

- Probe: ES3DV3 - SN3088; ConvF(5.07, 5.07, 5.07); Calibrated: 2006-12-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2006-12-8
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Cheek position - High+SD/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.959 mW/g

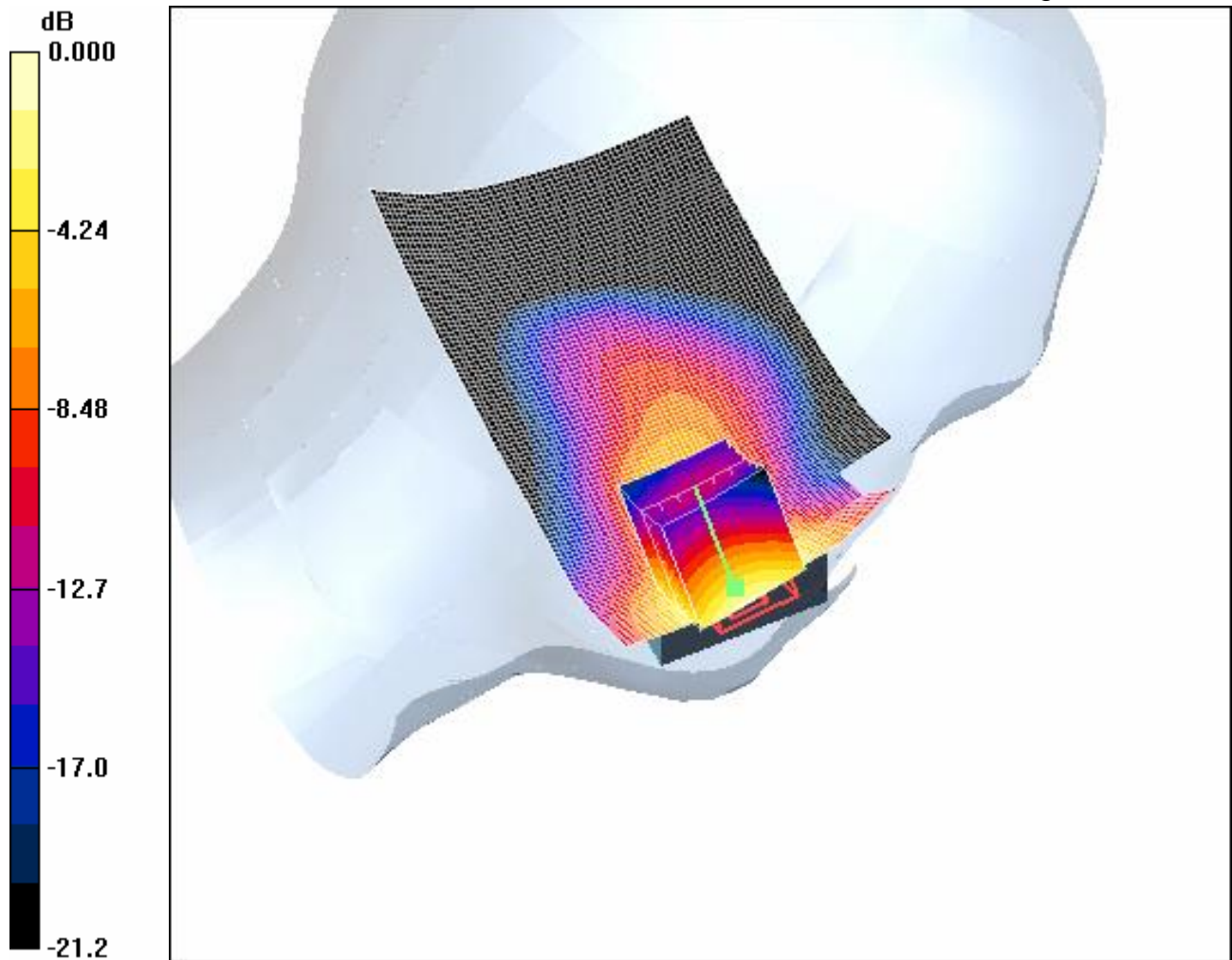
**Cheek position - High+SD/Zoom Scan (7x7x7) (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.02 V/m; Power Drift = 0.073 dB

Peak SAR (extrapolated) = 1.33 W/kg

SAR(1 g) = 0.825 mW/g; SAR(10 g) = 0.490 mW/g

Maximum value of SAR (measured) = 0.901 mW/g



0 dB = 0.901mW/g

**4.23LeftHandSide-PCS1900-Maximum Value-BT**

Date/Time: 2007-3-22 18:15:12

Test Laboratory: SGS-GSM

PCS1900-LeftHandSide-Cheek-High+BT

DUT: GSM10212817-body; Type: body; Serial: 011073000003040

Communication System: PCS1900-GSM Mode; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3

Medium: PCS1900-Head Medium parameters used:  $f = 1909.8$  MHz;  $\sigma = 1.46$  mho/m;  $\epsilon_r = 39.1$ ;  $\rho =$

1000 kg/m<sup>3</sup>

Phantom section: Left Section

**DASY4 Configuration:**

- Probe: ES3DV3 - SN3088; ConvF(5.07, 5.07, 5.07); Calibrated: 2006-12-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2006-12-8
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Cheek position - High+BT/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.843 mW/g

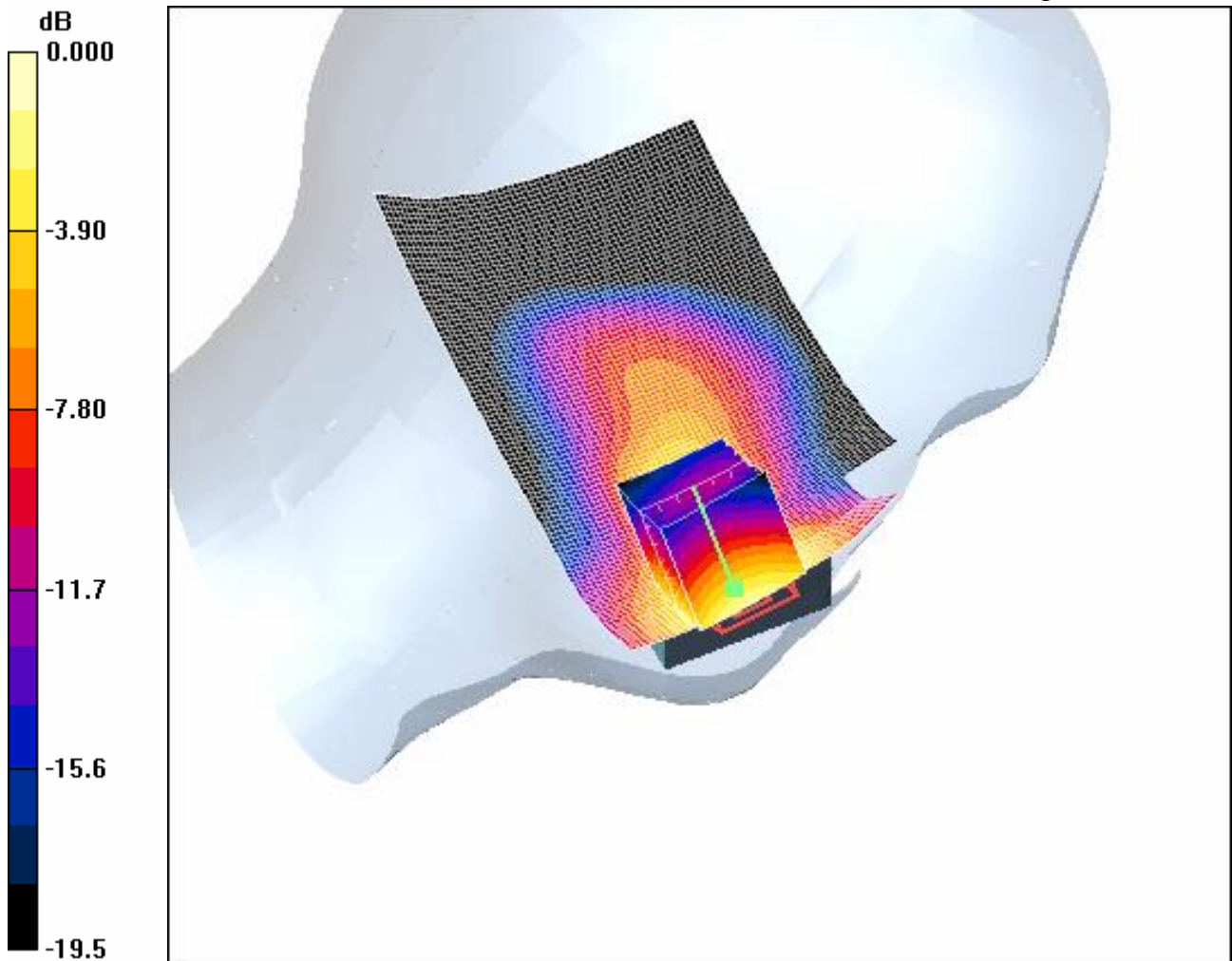
**Cheek position - High+BT/Zoom Scan (7x7x7) (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.80 V/m; Power Drift = -0.038 dB

Peak SAR (extrapolated) = 1.20 W/kg

SAR(1 g) = 0.748 mW/g; SAR(10 g) = 0.446 mW/g

Maximum value of SAR (measured) = 0.809 mW/g



0 dB = 0.809mW/g

**4.24RightHandSide-Cheek-PCS1900-Middle**

Date/Time: 2007-3-27 9:52:06

Test Laboratory: SGS-GSM

PCS1900-RightHandSide-Cheek-Middle

DUT: GSM10212817-body; Type: body; Serial: 011073000003040

Communication System: PCS1900-GSM Mode; Frequency: 1880 MHz;Duty Cycle: 1:8.3

Medium: PCS1900-Head Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.42$  mho/m;  $\epsilon_r = 39.2$ ;  $\rho =$



1000 kg/m<sup>3</sup>

Phantom section: Right Section

**DASY4 Configuration:**

- Probe: ES3DV3 - SN3088; ConvF(5.07, 5.07, 5.07); Calibrated: 2006-12-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2006-12-8
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Cheek position - Middle/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.794 mW/g

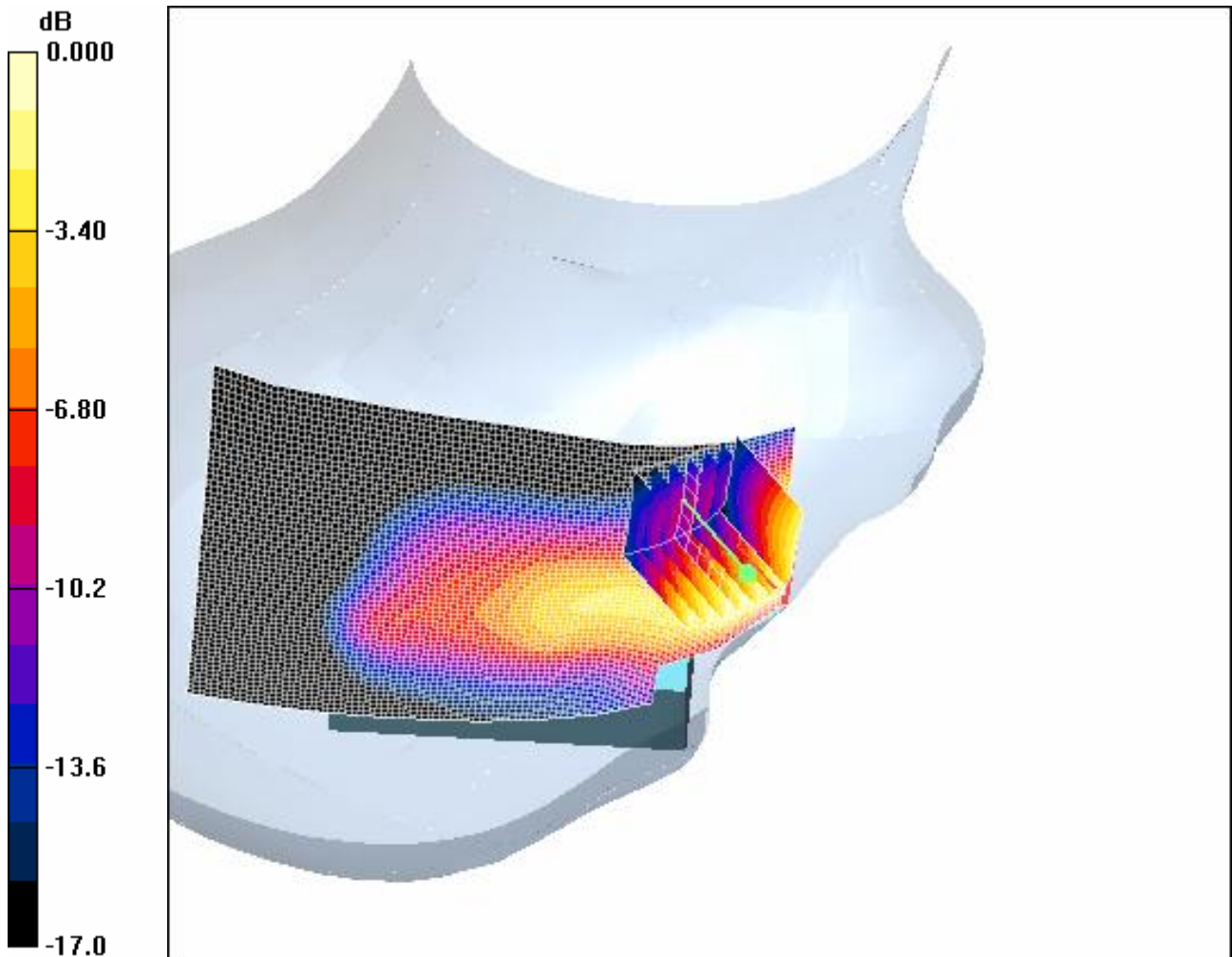
**Cheek position - Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm,  
dz=5mm

Reference Value = 6.03 V/m; Power Drift = -0.079 dB

Peak SAR (extrapolated) = 1.06 W/kg

SAR(1 g) = 0.729 mW/g; SAR(10 g) = 0.453 mW/g

Maximum value of SAR (measured) = 0.793 mW/g



0 dB = 0.793mW/g

#### 4.25RightHandSide-Tilt-PCS1900-Middle

Date/Time: 2007-3-27 11:35:35

Test Laboratory: SGS-GSM

PCS1900-RightHandSide-Tilt-Middle

DUT: GSM10212817-body; Type: body; Serial: 011073000003040

Communication System: PCS1900-GSM Mode; Frequency: 1880 MHz;Duty Cycle: 1:8.3

Medium: PCS1900-Head Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.42$  mho/m;  $\epsilon_r = 39.2$ ;  $\rho =$

1000 kg/m<sup>3</sup>

Phantom section: Right Section

**DASY4 Configuration:**

- Probe: ES3DV3 - SN3088; ConvF(5.07, 5.07, 5.07); Calibrated: 2006-12-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2006-12-8
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Tilt position - Middle/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.290 mW/g

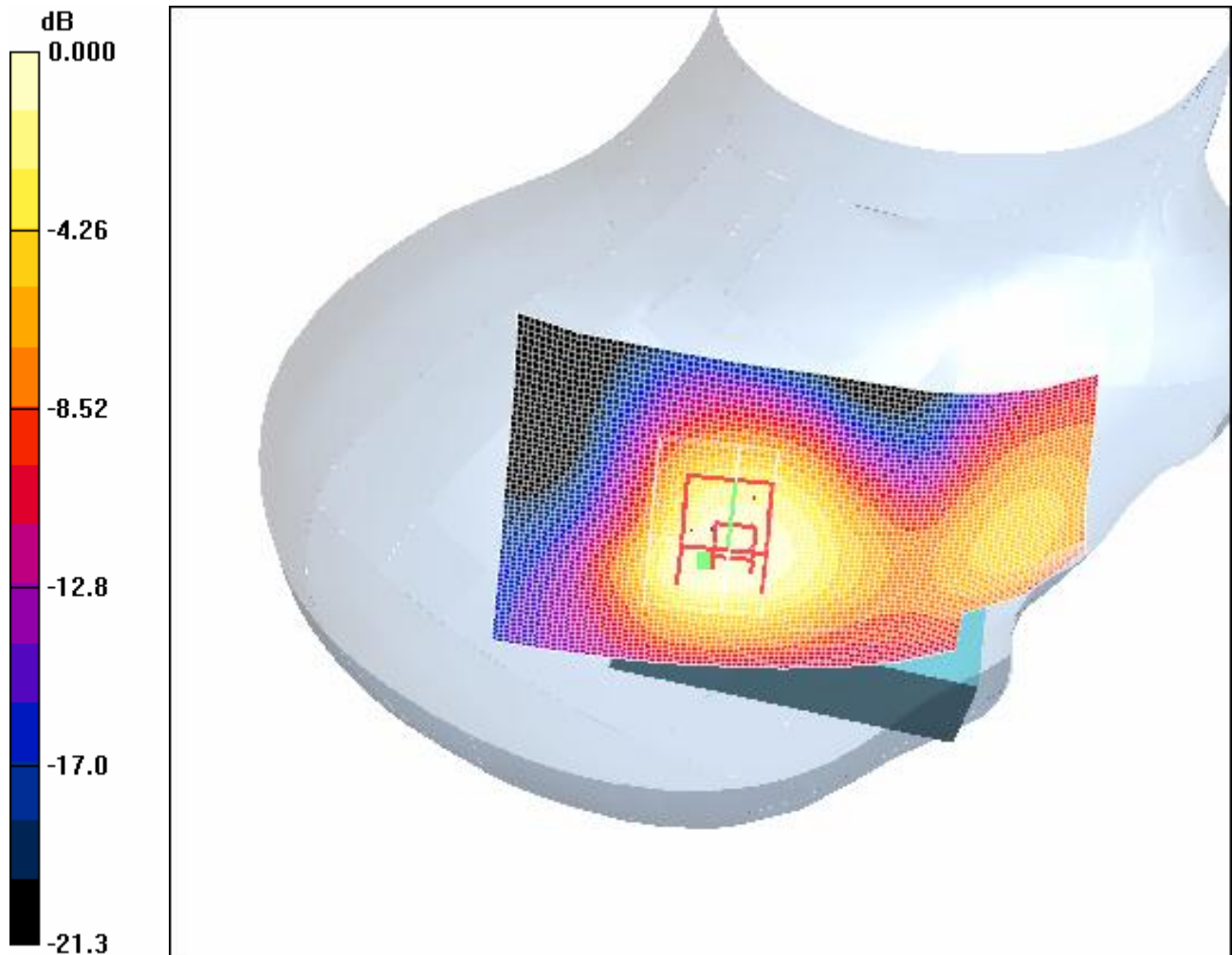
**Tilt position - Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.6 V/m; Power Drift = -0.051 dB

Peak SAR (extrapolated) = 0.374 W/kg

SAR(1 g) = 0.243 mW/g; SAR(10 g) = 0.143 mW/g

Maximum value of SAR (measured) = 0.263 mW/g



0 dB = 0.263mW/g

**4.26RightHandSide-Cheek-PCS1900-Low**

Date/Time: 2007-3-27 10:19:33

Test Laboratory: SGS-GSM

PCS1900-RightHandSide-Cheek-Low

DUT: GSM10212817-body; Type: body; Serial: 011073000003040

Communication System: PCS1900-GSM Mode; Frequency: 1880 MHz;Duty Cycle: 1:8.3

Medium: PCS1900-Head Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.42$  mho/m;  $\epsilon_r = 39.2$ ;  $\rho =$

1000 kg/m<sup>3</sup>

Phantom section: Right Section

**DASY4 Configuration:**

- Probe: ES3DV3 - SN3088; ConvF(5.07, 5.07, 5.07); Calibrated: 2006-12-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2006-12-8
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Cheek position - Low/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.652 mW/g

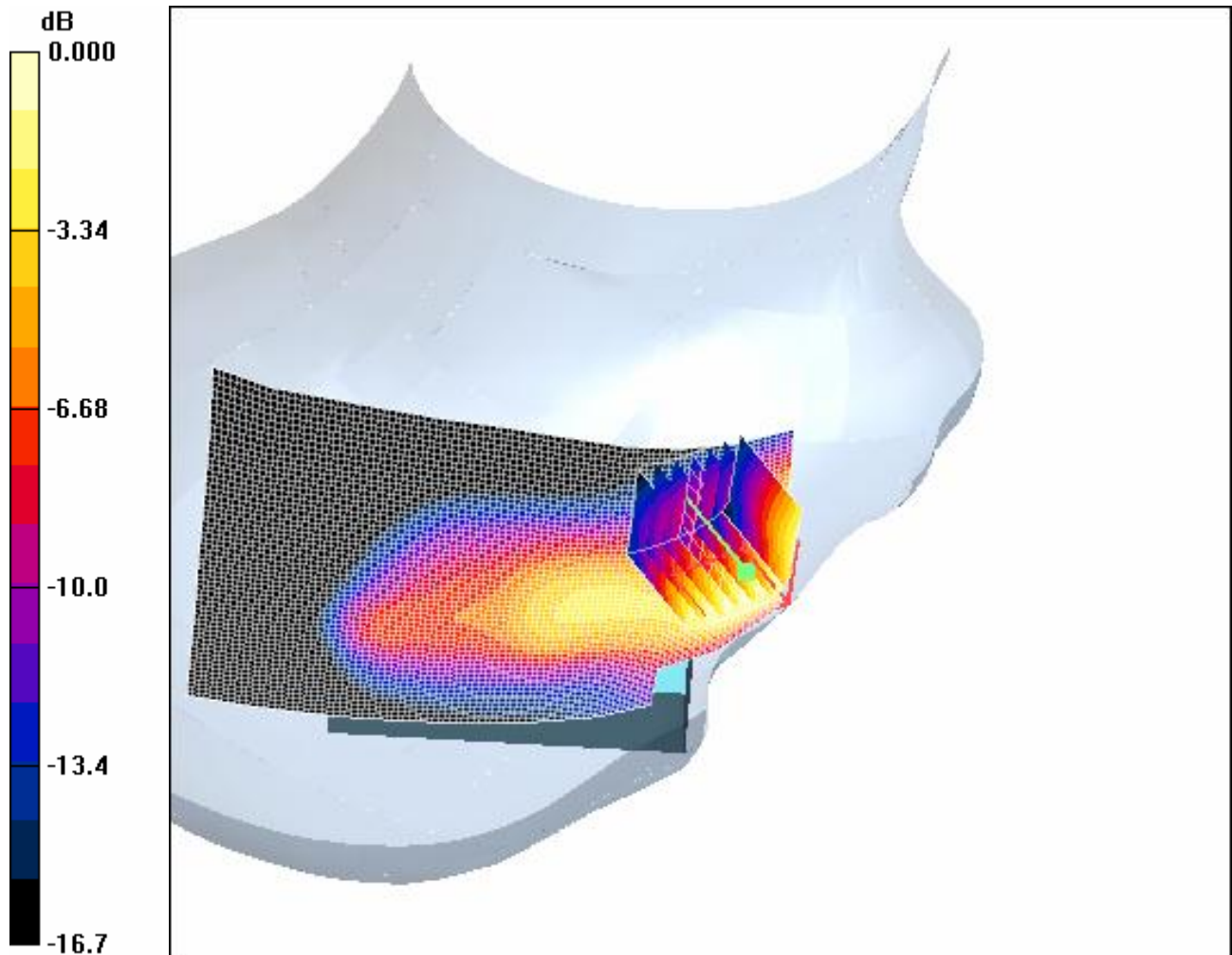
**Cheek position - Low/Zoom Scan (7x7x7) (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.74 V/m; Power Drift = -0.015 dB

Peak SAR (extrapolated) = 0.870 W/kg

SAR(1 g) = 0.604 mW/g; SAR(10 g) = 0.378 mW/g

Maximum value of SAR (measured) = 0.657 mW/g



0 dB = 0.657mW/g

**4.27RightHandSide-Cheek-PCS1900-High**

Date/Time: 2007-3-27 10:45:49

Test Laboratory: SGS-GSM

PCS1900-RightHandSide-Cheek-High

DUT: GSM10212817-body; Type: body; Serial: 011073000003040

Communication System: PCS1900-GSM Mode; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3

Medium: PCS1900-Head Medium parameters used:  $f = 1909.8$  MHz;  $\sigma = 1.46$  mho/m;  $\epsilon_r = 39.1$ ;  $\rho =$

1000 kg/m<sup>3</sup>

Phantom section: Right Section

**DASY4 Configuration:**

- Probe: ES3DV3 - SN3088; ConvF(5.07, 5.07, 5.07); Calibrated: 2006-12-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2006-12-8
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Cheek position - High/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm**

Maximum value of SAR (interpolated) = 0.822 mW/g

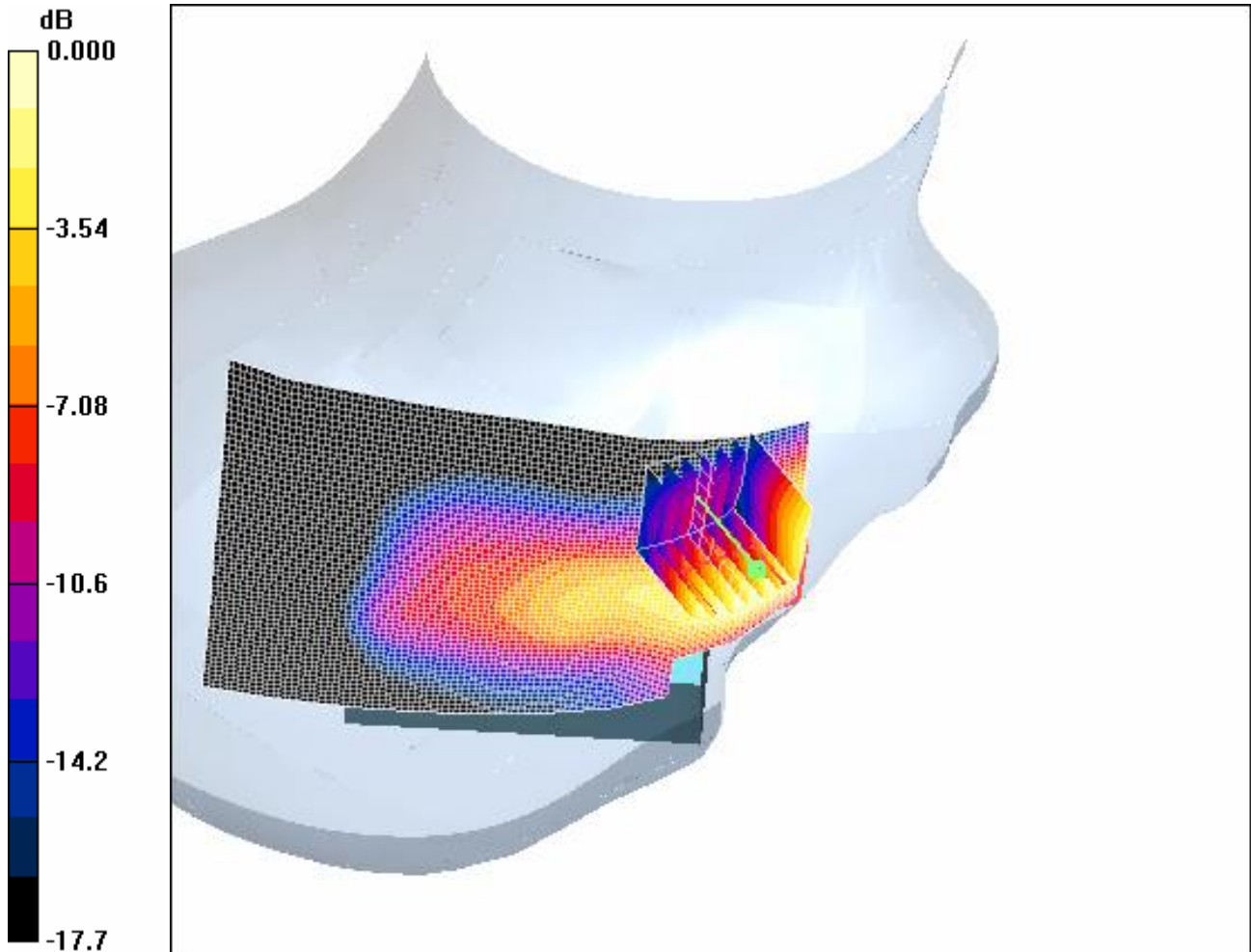
**Cheek position - High/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm**

Reference Value = 6.02 V/m; Power Drift = -0.028 dB

Peak SAR (extrapolated) = 1.12 W/kg

SAR(1 g) = 0.761 mW/g; SAR(10 g) = 0.469 mW/g

Maximum value of SAR (measured) = 0.830 mW/g



0 dB = 0.830mW/g

**4.28RightHandSide-PCS1900-Maximum Value-SD**

Date/Time: 2007-3-27 12:01:44

Test Laboratory: SGS-GSM

PCS1900-RightHandSide-Cheek-High+SD

DUT: GSM10212817-body; Type: body; Serial: 011073000003040

Communication System: PCS1900-GSM Mode; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3

Medium: PCS1900-Head Medium parameters used:  $f = 1909.8$  MHz;  $\sigma = 1.46$  mho/m;  $\epsilon_r = 39.1$ ;  $\rho =$



1000 kg/m<sup>3</sup>

Phantom section: Right Section

**DASY4 Configuration:**

- Probe: ES3DV3 - SN3088; ConvF(5.07, 5.07, 5.07); Calibrated: 2006-12-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2006-12-8
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Cheek position - High+SD/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.758 mW/g

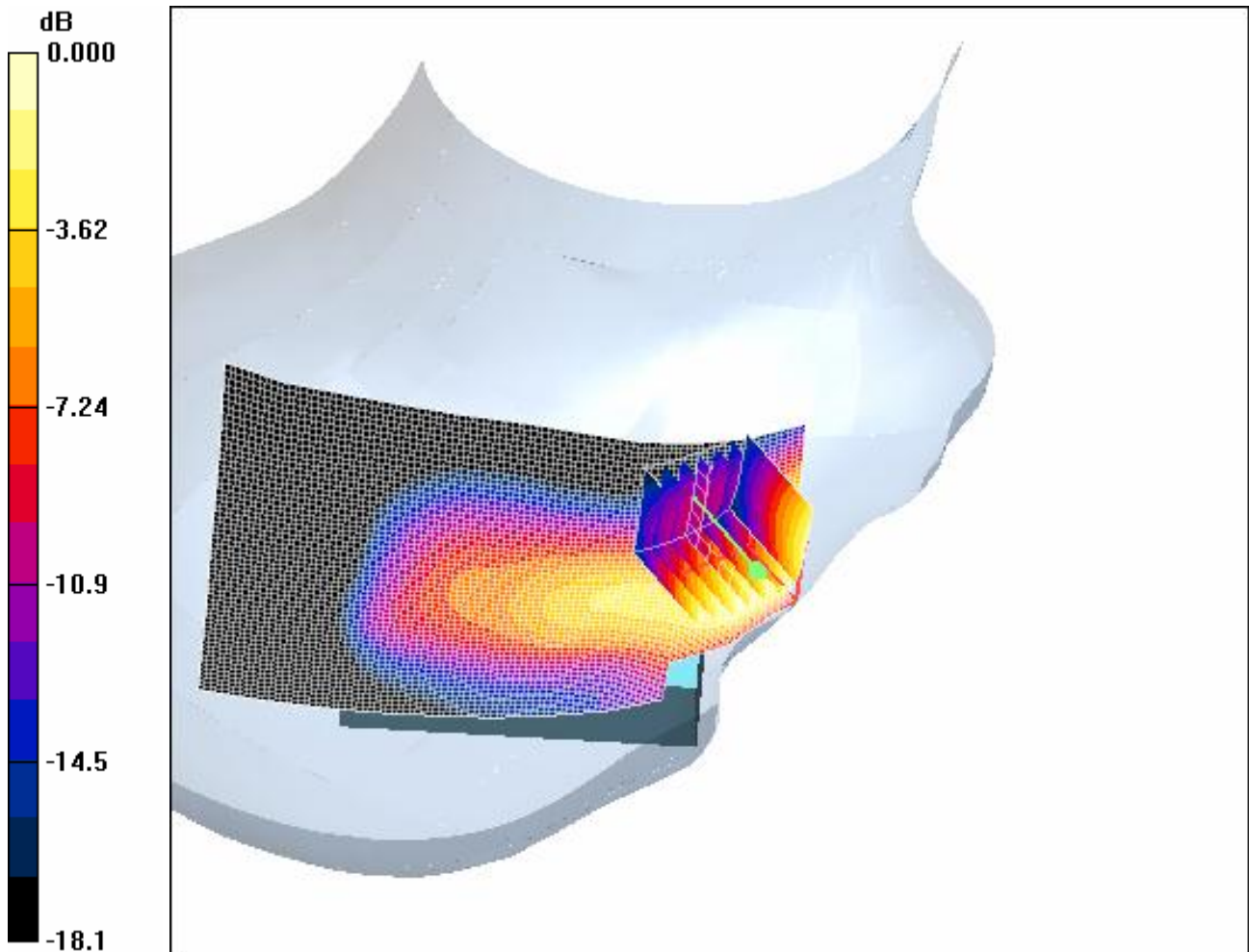
**Cheek position - High+SD/Zoom Scan (7x7x7) (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.18 V/m; Power Drift = -0.223 dB

Peak SAR (extrapolated) = 1.04 W/kg

SAR(1 g) = 0.703 mW/g; SAR(10 g) = 0.434 mW/g

Maximum value of SAR (measured) = 0.764 mW/g



0 dB = 0.764mW/g

**4.29RightHandSide-PCS1900-Maximum Value-BT**

Date/Time: 2007-3-27 12:30:09

Test Laboratory: SGS-GSM

PCS1900-RightHandSide-Cheek-High+BT

DUT: GSM10212817-body; Type: body; Serial: 011073000003040

Communication System: PCS1900-GSM Mode; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3

Medium: PCS1900-Head Medium parameters used:  $f = 1909.8$  MHz;  $\sigma = 1.46$  mho/m;  $\epsilon_r = 39.1$ ;  $\rho =$

1000 kg/m<sup>3</sup>

Phantom section: Right Section

**DASY4 Configuration:**

- Probe: ES3DV3 - SN3088; ConvF(5.07, 5.07, 5.07); Calibrated: 2006-12-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2006-12-8
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Cheek position - High+BT/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.748 mW/g

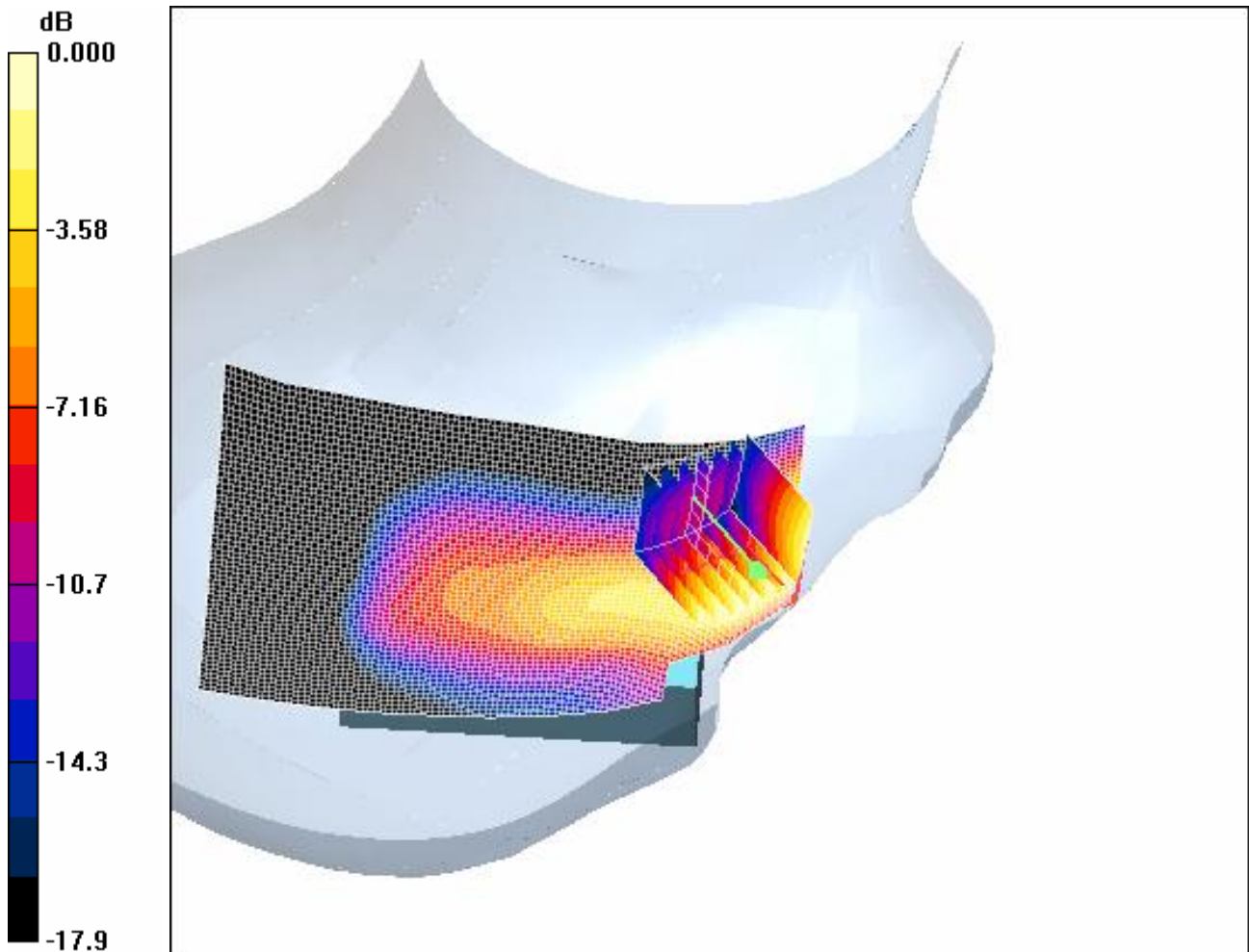
**Cheek position - High+BT/Zoom Scan (7x7x7) (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.21 V/m; Power Drift = -0.049 dB

Peak SAR (extrapolated) = 0.993 W/kg

SAR(1 g) = 0.685 mW/g; SAR(10 g) = 0.425 mW/g

Maximum value of SAR (measured) = 0.742 mW/g



0 dB = 0.742mW/g

#### **4.30Body-Worn-PCS1900-GPRS-Low**

Date/Time: 2007-3-19 20:22:56

Test Laboratory: SGS-GSM

PCS1900-Body-Worn-GPRS-Low-2.0cm

DUT: GSM10212817-body; Type: body; Serial: 011073000003040

Communication System: PCS1900-GPRS Mode; Frequency: 1850.2 MHz;Duty Cycle: 1:4

Medium: 1900-Body Medium parameters used:  $f = 1850.2$  MHz;  $\sigma = 1.53$  mho/m;  $\epsilon_r = 50.9$ ;  $\rho = 1000$

kg/m<sup>3</sup>

Phantom section: Flat Section

**DASY4 Configuration:**

- Probe: ES3DV3 - SN3088; ConvF(4.68, 4.68, 4.68); Calibrated: 2006-12-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2006-12-8
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Body Worn - Low/Area Scan (51x91x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.419 mW/g

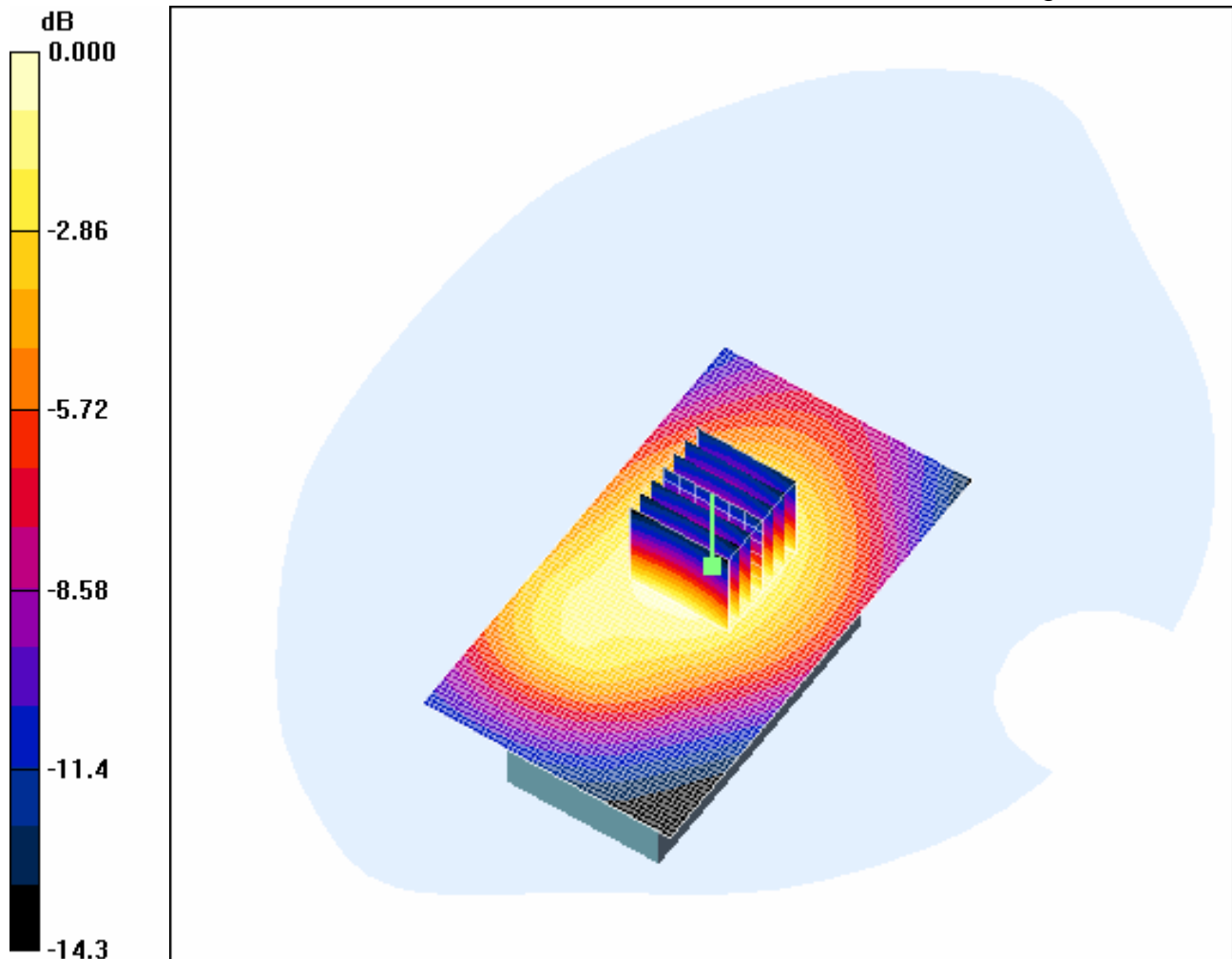
**Body Worn - Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 14.1 V/m; Power Drift = -0.060 dB

Peak SAR (extrapolated) = 0.620 W/kg

SAR(1 g) = 0.393 mW/g; SAR(10 g) = 0.247 mW/g

Maximum value of SAR (measured) = 0.422 mW/g



0 dB = 0.422mW/g

#### **4.31 Body-Worn-PCS1900-GPRS-Middle**

Date/Time: 2007-3-19 19:58:01

Test Laboratory: SGS-GSM

PCS1900-Body-Worn-GPRS-Middle-2.0cm

DUT: GSM10212817-body; Type: body; Serial: 011073000003040

Communication System: PCS1900-GPRS Mode; Frequency: 1880 MHz; Duty Cycle: 1:4

Medium: 1900-Body Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.56$  mho/m;  $\epsilon_r = 50.8$ ;  $\rho = 1000$

kg/m<sup>3</sup>

Phantom section: Flat Section

**DASY4 Configuration:**

- Probe: ES3DV3 - SN3088; ConvF(4.68, 4.68, 4.68); Calibrated: 2006-12-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2006-12-8
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Body Worn - Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm**

Maximum value of SAR (interpolated) = 0.446 mW/g

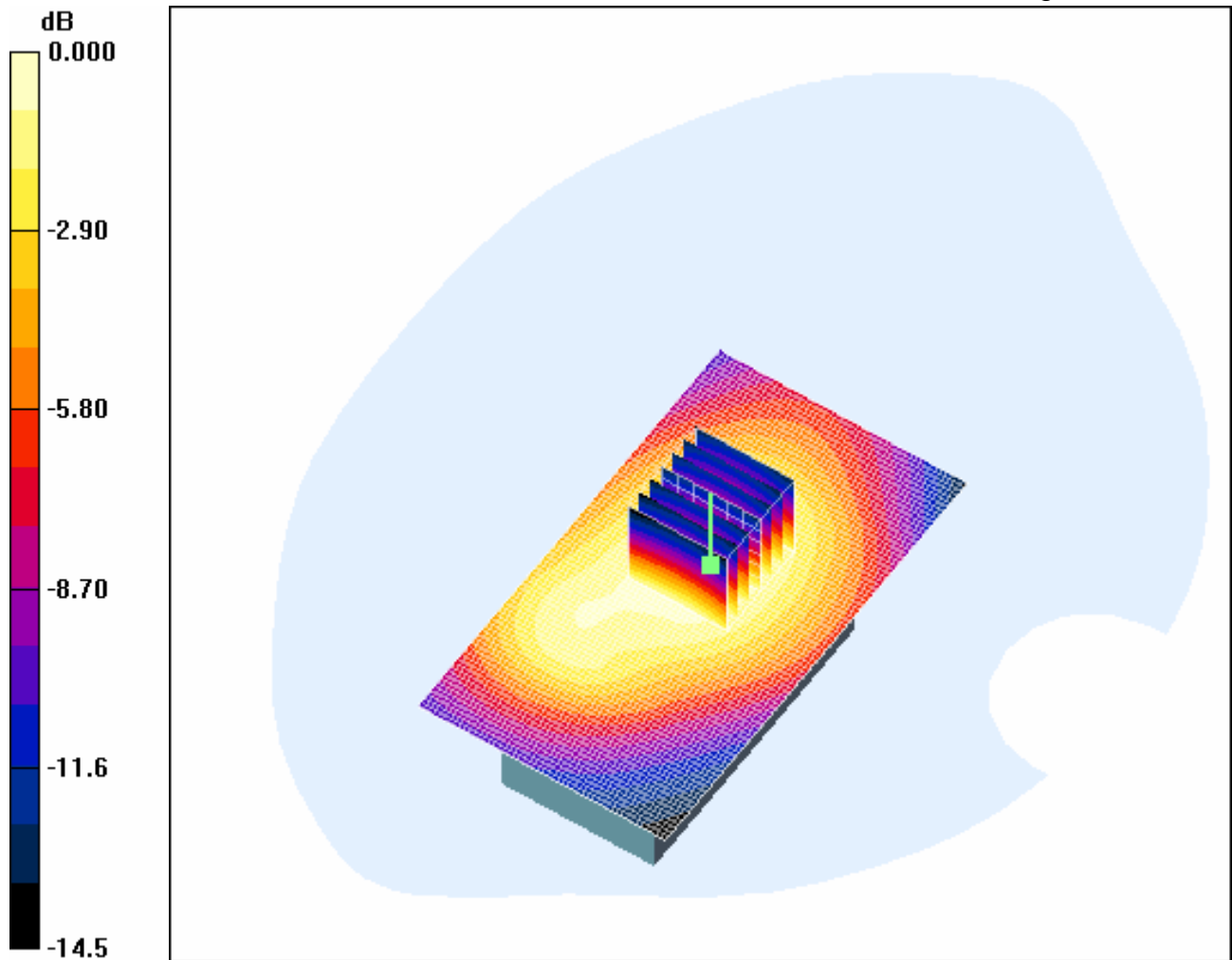
**Body Worn - Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm**

Reference Value = 14.9 V/m; Power Drift = -0.214 dB

Peak SAR (extrapolated) = 0.666 W/kg

SAR(1 g) = 0.412 mW/g; SAR(10 g) = 0.258 mW/g

Maximum value of SAR (measured) = 0.442 mW/g



0 dB = 0.442mW/g

#### **4.32Body-Worn-PCS1900-GPRS-High**

Date/Time: 2007-3-19 20:42:10

Test Laboratory: SGS-GSM

PCS1900-Body-Worn-GPRS-High-2.0cm

DUT: GSM10212817-body; Type: body; Serial: 011073000003040

Communication System: PCS1900-GPRS Mode; Frequency: 1909.8 MHz;Duty Cycle: 1:4

Medium: 1900-Body Medium parameters used:  $f = 1909.8$  MHz;  $\sigma = 1.6$  mho/m;  $\epsilon_r = 50.7$ ;  $\rho = 1000$



kg/m<sup>3</sup>

Phantom section: Flat Section

**DASY4 Configuration:**

- Probe: ES3DV3 - SN3088; ConvF(4.68, 4.68, 4.68); Calibrated: 2006-12-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2006-12-8
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Body Worn - High/Area Scan (51x91x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.384 mW/g

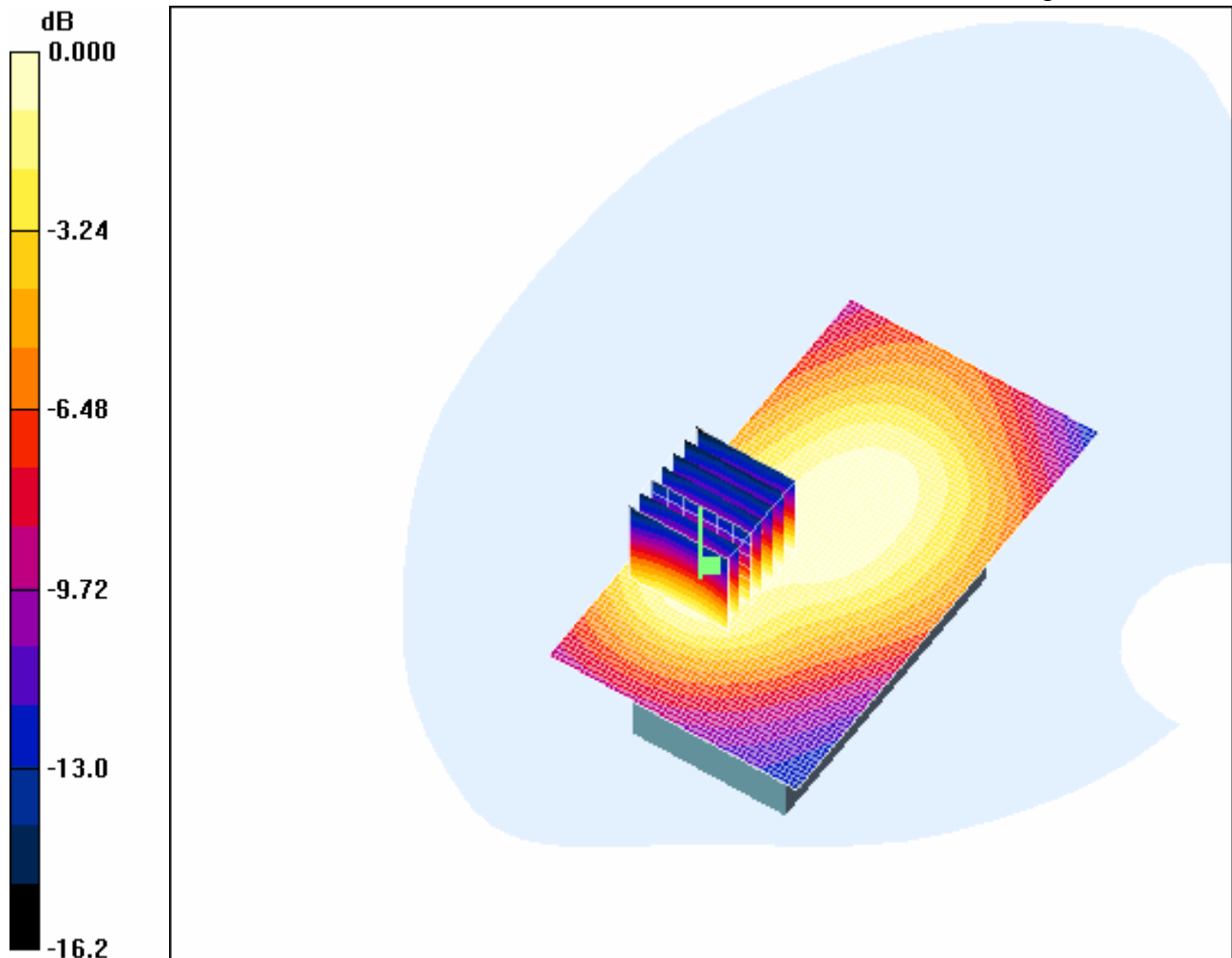
**Body Worn - High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 14.2 V/m; Power Drift = -0.005 dB

Peak SAR (extrapolated) = 0.595 W/kg

SAR(1 g) = 0.348 mW/g; SAR(10 g) = 0.207 mW/g

Maximum value of SAR (measured) = 0.378 mW/g



0 dB = 0.378mW/g

#### **4.33Body-Worn-PCS1900-Maximum Value-SD**

Date/Time: 2007-4-10 13:37:56

Test Laboratory: SGS-GSM

PCS1900-Body-Worn-GPRS-Middle-2.0cm+SD

DUT: GSM10212817-body; Type: body; Serial: 011073000003040

Communication System: PCS1900-GPRS Mode; Frequency: 1880 MHz;Duty Cycle: 1:4

Medium: 1900-Body Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.56$  mho/m;  $\epsilon_r = 50.8$ ;  $\rho = 1000$

kg/m<sup>3</sup>

Phantom section: Flat Section

**DASY4 Configuration:**

- Probe: ES3DV3 - SN3088; ConvF(4.68, 4.68, 4.68); Calibrated: 2006-12-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2006-12-8
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Body Worn - Middle+SD/Area Scan (51x91x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.631 mW/g

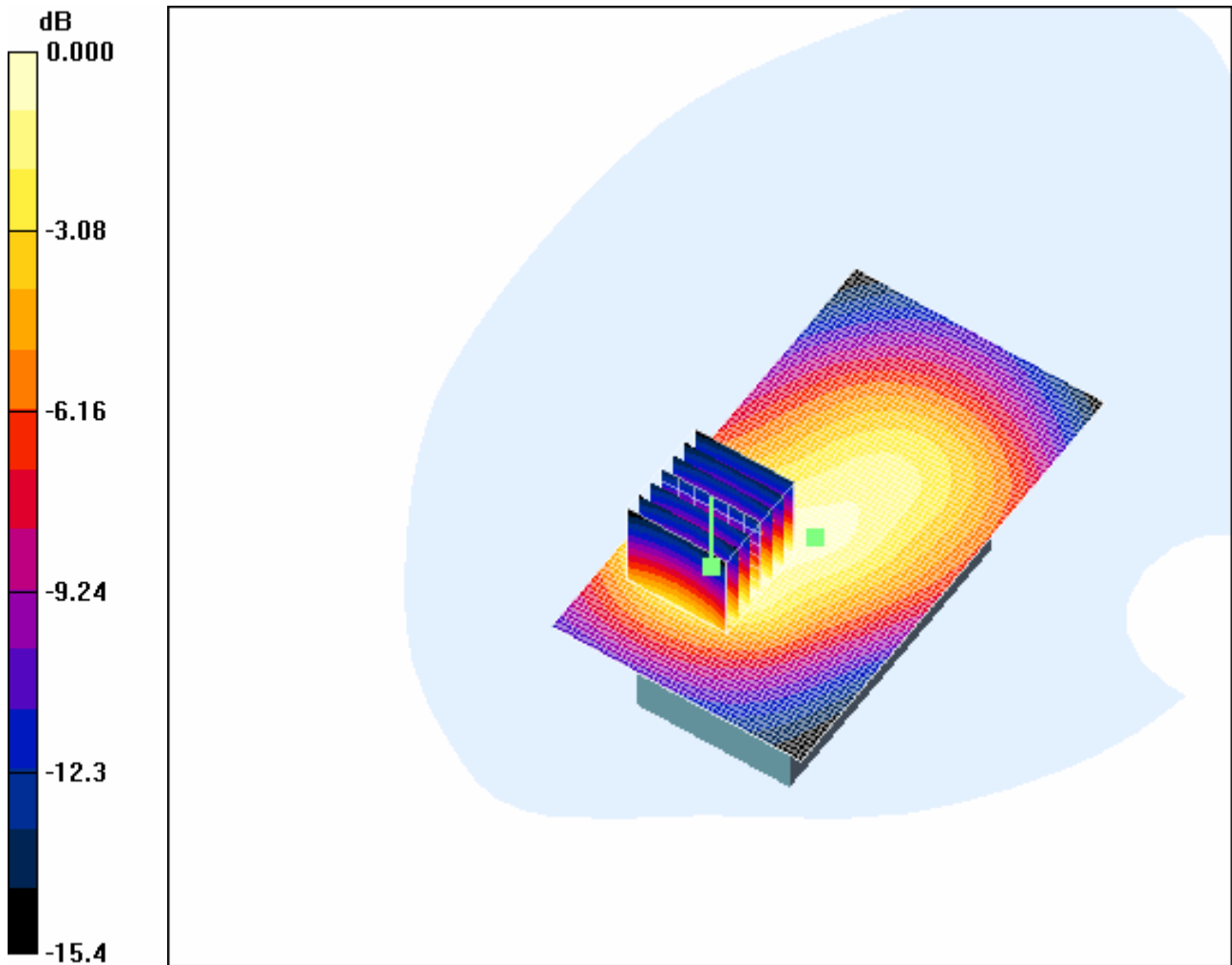
**Body Worn - Middle+SD/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 13.7 V/m; Power Drift = -0.246 dB

Peak SAR (extrapolated) = 0.940 W/kg

SAR(1 g) = 0.551 mW/g; SAR(10 g) = 0.329 mW/g

Maximum value of SAR (measured) = 0.592 mW/g



0 dB = 0.592mW/g

**4.34 Body-Worn-PCS1900-Maximum Value-BT**

Date/Time: 2007-3-19 21:48:37

Test Laboratory: SGS-GSM

PCS1900-Body-Worn-GPRS-Middle-2.0cm+BT

DUT: GSM10212817-body; Type: body; Serial: 011073000003040

Communication System: PCS1900-GPRS Mode; Frequency: 1880 MHz; Duty Cycle: 1:4

Medium: 1900-Body Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.56$  mho/m;  $\epsilon_r = 50.8$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

**DASY4 Configuration:**

- Probe: ES3DV3 - SN3088; ConvF(4.68, 4.68, 4.68); Calibrated: 2006-12-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2006-12-8
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Body Worn - Middle+BT/Area Scan (51x91x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.435 mW/g

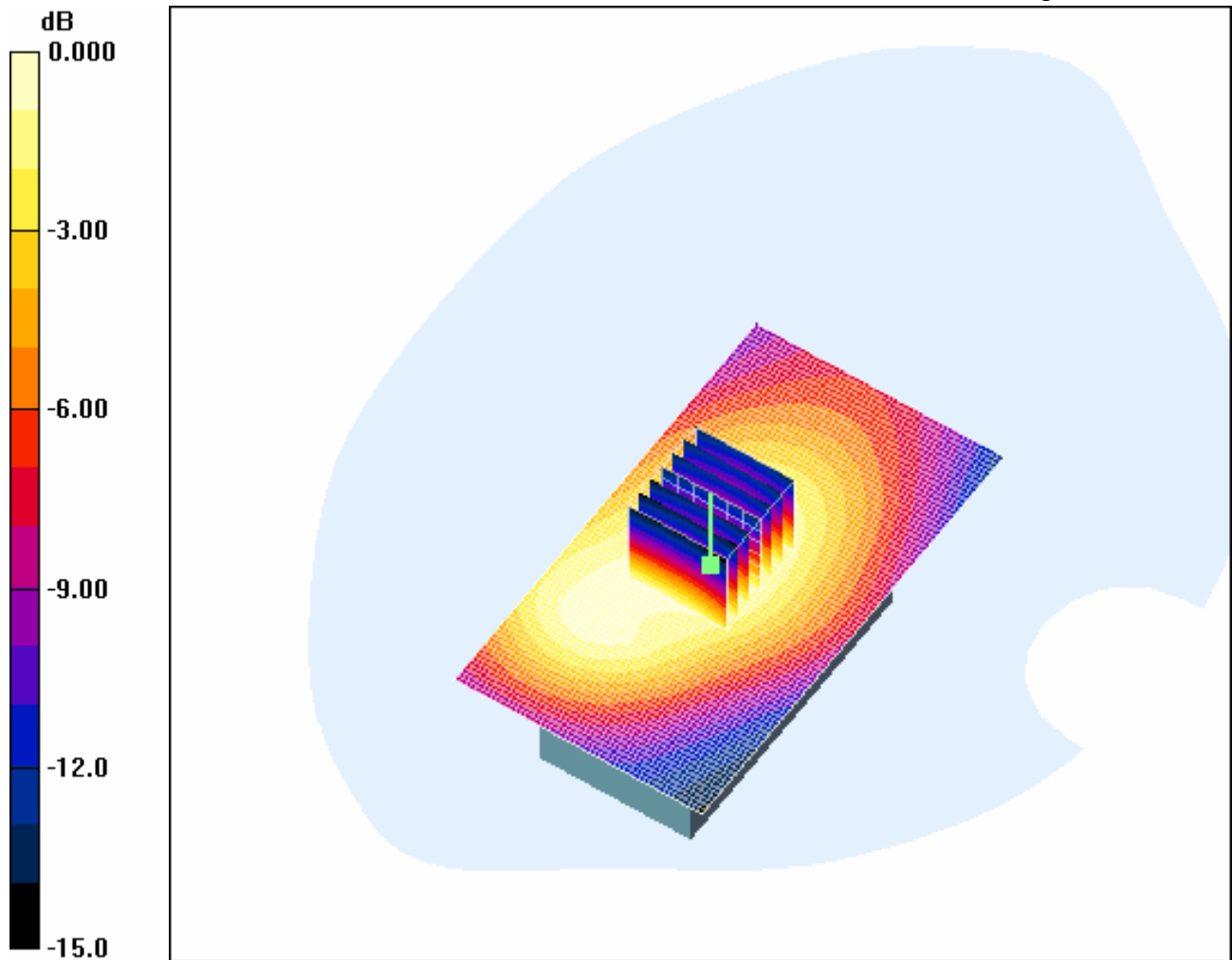
**Body Worn - Middle+BT/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 12.7 V/m; Power Drift = -0.074 dB

Peak SAR (extrapolated) = 0.658 W/kg

SAR(1 g) = 0.408 mW/g; SAR(10 g) = 0.252 mW/g

Maximum value of SAR (measured) = 0.437 mW/g



0 dB = 0.437mW/g

### ***Additional Testing for the Battery-T5000572AAAA-700mAh***

#### ***4.35LeftHandSide-Cheek-GSM850-High+BT***

Date/Time: 2007-4-10 20:11:32

Test Laboratory: SGS-GSM

GSM850-LeftHandSide-Cheek-High+BT(700mAh)

DUT: GSM10212817-body; Type: body; Serial: 011073000003040

Communication System: GSM850-GSM Mode; Frequency: 848.8 MHz; Duty Cycle: 1:8.3

Medium: HSL850-Head Medium parameters used:  $f = 848.8$  MHz;  $\sigma = 0.901$  mho/m;  $\epsilon_r = 41.8$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

#### DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(6, 6, 6); Calibrated: 2006-12-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2006-12-8
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Cheek position - High+BT(700mAh)/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.717 mW/g

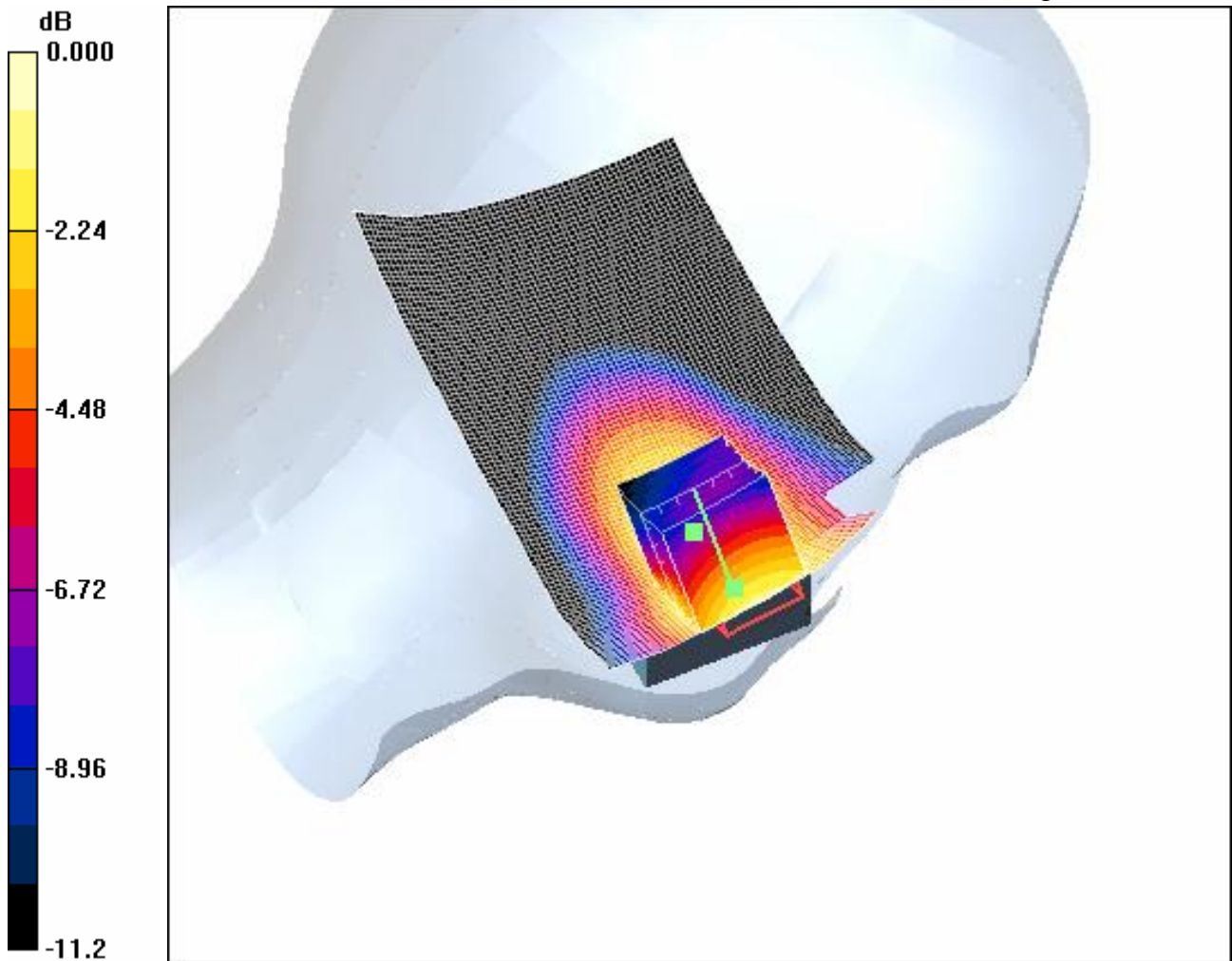
Cheek position - High+BT(700mAh)/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.13 V/m; Power Drift = -0.187 dB

Peak SAR (extrapolated) = 1.08 W/kg

SAR(1 g) = 0.678 mW/g; SAR(10 g) = 0.450 mW/g

Maximum value of SAR (measured) = 0.717 mW/g



0 dB = 0.717mW/g

#### **4.36RightHandSide-Cheek-GSM850-High**

Date/Time: 2007-4-10 18:53:27

Test Laboratory: SGS-GSM

GSM850-RightHandSide-Cheek-High(700mAh)

DUT: GSM10212817-body; Type: body; Serial: 011073000003040

Communication System: GSM850-GSM Mode; Frequency: 848.8 MHz;Duty Cycle: 1:8.3

Medium: HSL850-Head Medium parameters used:  $f = 848.8$  MHz;  $\sigma = 0.901$  mho/m;  $\epsilon_r = 41.8$ ;  $\rho =$



1000 kg/m<sup>3</sup>

Phantom section: Right Section

**DASY4 Configuration:**

- Probe: ES3DV3 - SN3088; ConvF(6, 6, 6); Calibrated: 2006-12-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2006-12-8
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Cheek position – High(700mAh)/Area Scan (61x91x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.887 mW/g

**Cheek position – High(700mAh)/Zoom Scan (7x7x7) (7x7x7)/Cube 0:** Measurement grid:

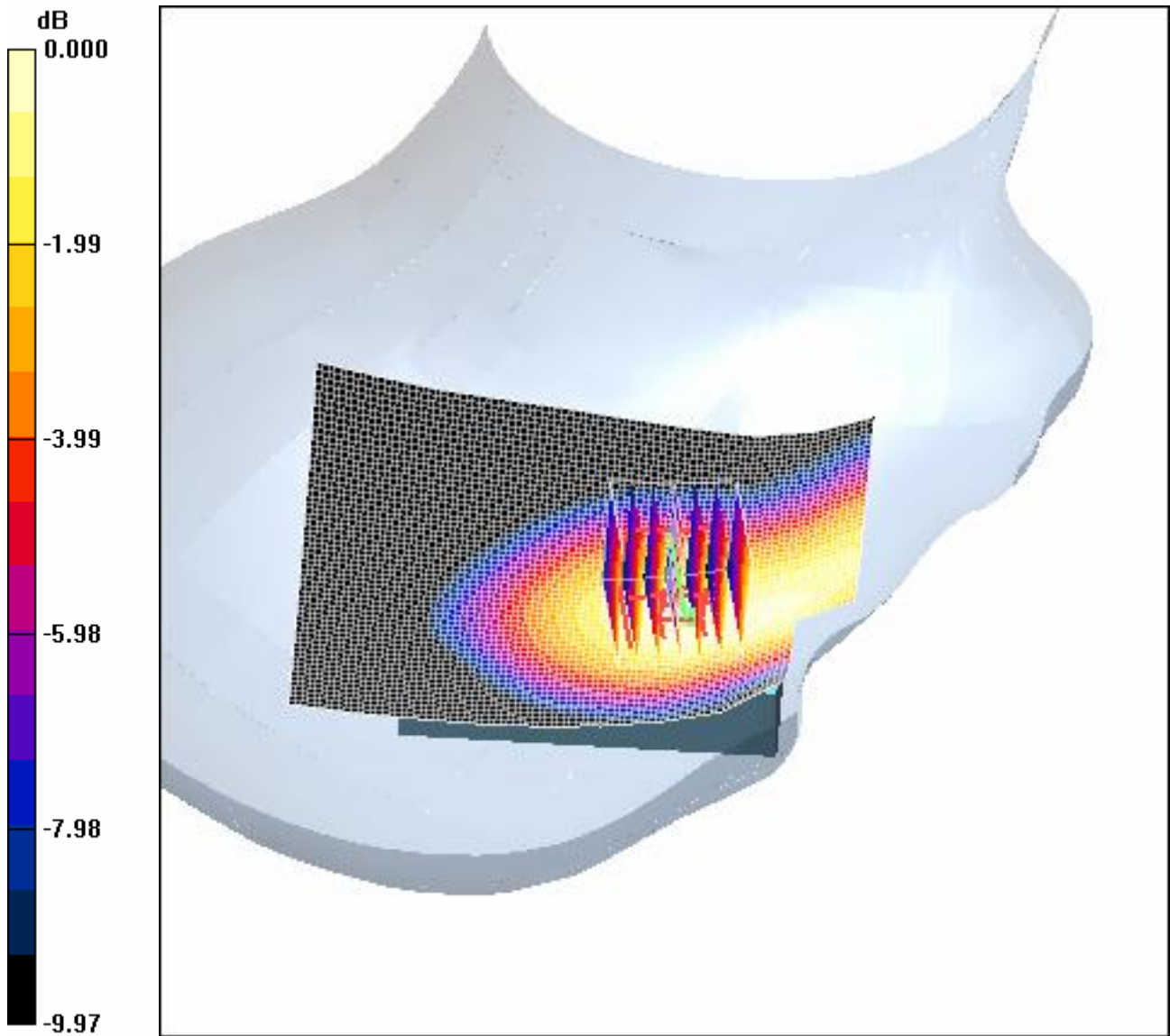
dx=5mm, dy=5mm, dz=5mm

Reference Value = 9.91 V/m; Power Drift = -0.118 dB

Peak SAR (extrapolated) = 1.30 W/kg

SAR(1 g) = 0.772 mW/g; SAR(10 g) = 0.526 mW/g

Maximum value of SAR (measured) = 0.819 mW/g



0 dB = 0.819mW/g

**4.37Body-Worn-GSM850-GPRS-Middle**

Date/Time: 2007-4-10 17:08:24

Test Laboratory: SGS-GSM

GSM850-Body-Worn-GPRS-Middle-2.0cm(700mAh)

DUT: GSM10212817-body; Type: body; Serial: 011073000003040

Communication System: GSM850-GPRS Mode; Frequency: 836.4 MHz; Duty Cycle: 1:4

Medium: 850-Body Medium parameters used:  $f = 836.4$  MHz;  $\sigma = 0.942$  mho/m;  $\epsilon_r = 56.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

#### DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(5.92, 5.92, 5.92); Calibrated: 2006-12-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2006-12-8
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body Worn - Middle(700mAh)2/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm  
Maximum value of SAR (interpolated) = 1.06 mW/g

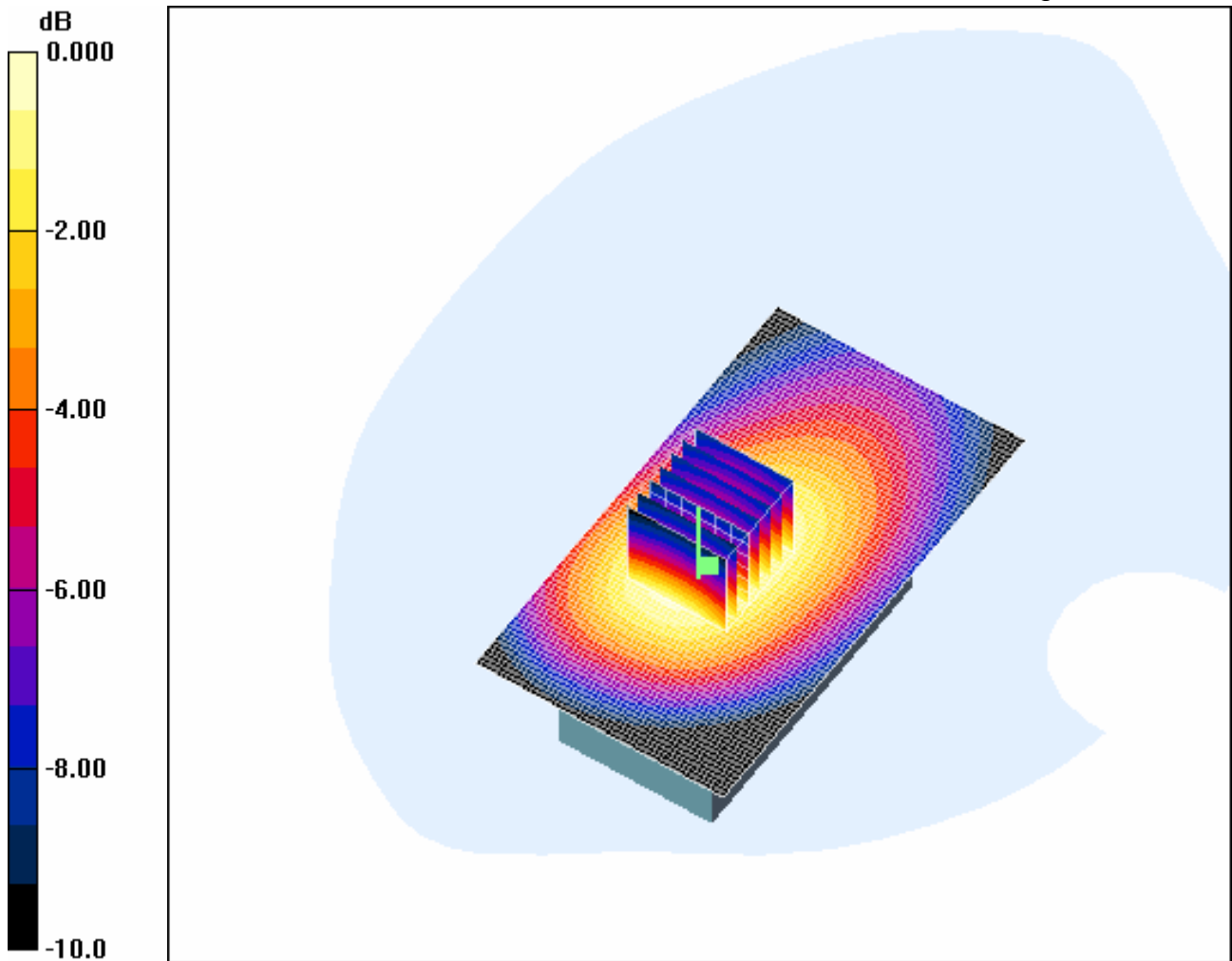
Body Worn - Middle(700mAh)2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm,  
dy=5mm, dz=5mm

Reference Value = 21.6 V/m; Power Drift = -0.114 dB

Peak SAR (extrapolated) = 1.15 W/kg

SAR(1 g) = 0.979 mW/g; SAR(10 g) = 0.679 mW/g

Maximum value of SAR (measured) = 1.01 mW/g



0 dB = 1.01mW/g

**4.38LeftHandSide-Cheek-PCS1900-High+SD**

Date/Time: 2007-4-10 11:35:17

Test Laboratory: SGS-GSM

PCS1900-LeftHandSide-Cheek-High+SD(700mAh)

DUT: GSM10212817-body; Type: body; Serial: 011073000003040

Communication System: PCS1900-GSM Mode; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3

Medium: PCS1900-Head Medium parameters used:  $f = 1909.8$  MHz;  $\sigma = 1.46$  mho/m;  $\epsilon_r = 39.1$ ;  $\rho =$

1000 kg/m<sup>3</sup>

Phantom section: Left Section

**DASY4 Configuration:**

- Probe: ES3DV3 - SN3088; ConvF(5.07, 5.07, 5.07); Calibrated: 2006-12-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2006-12-8
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Cheek position - High+SD(700mAh)/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.909 mW/g

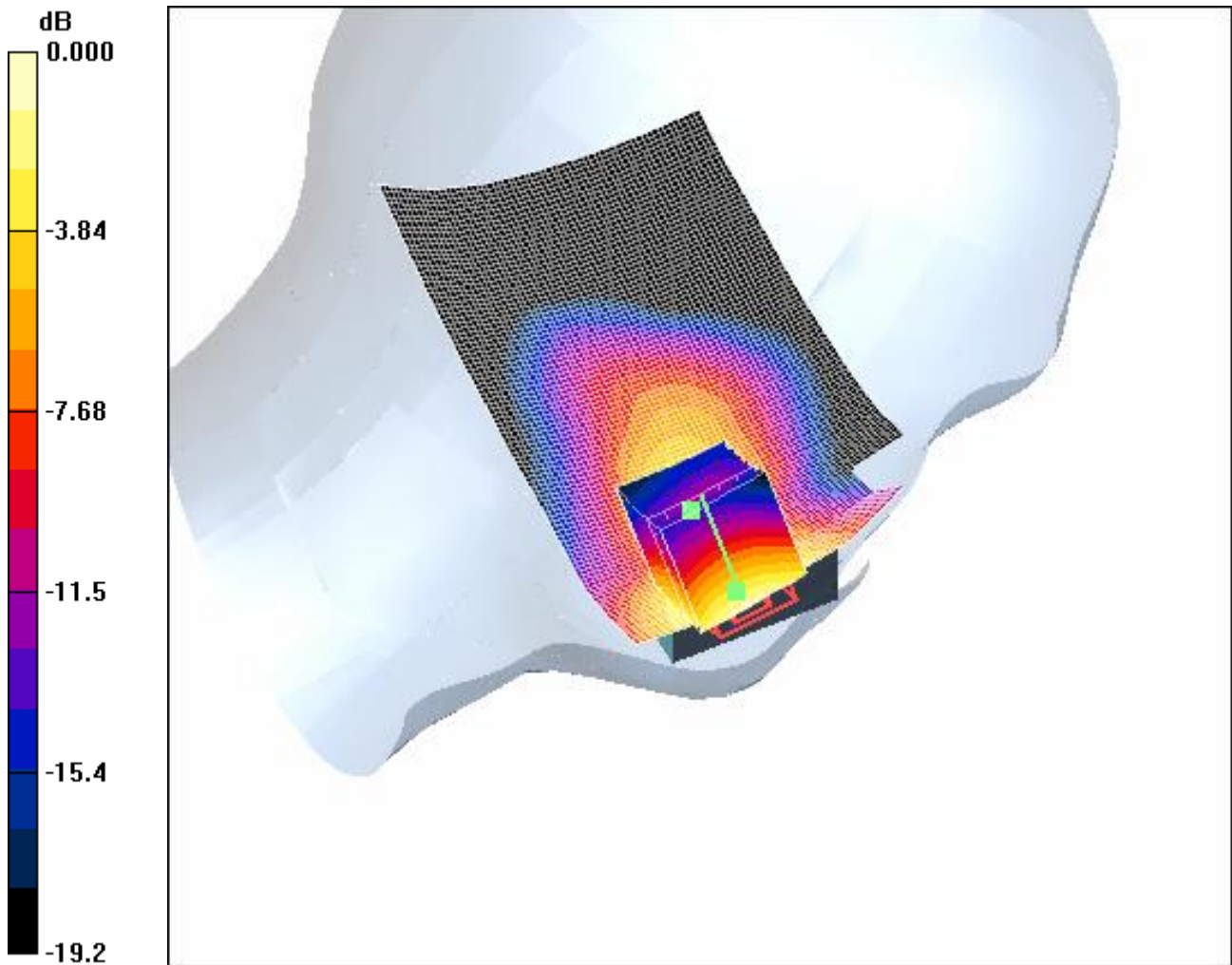
**Cheek position - High+SD(700mAh)/Zoom Scan (7x7x7) (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.18 V/m; Power Drift = -0.233 dB

Peak SAR (extrapolated) = 1.30 W/kg

SAR(1 g) = 0.809 mW/g; SAR(10 g) = 0.486 mW/g

Maximum value of SAR (measured) = 0.885 mW/g



0 dB = 0.885mW/g

**4.39RightHandSide-Cheek-PCS1900-High**

Date/Time: 2007-4-10 11:03:47

Test Laboratory: SGS-GSM

PCS1900-RightHandSide-Cheek-High(700mAh)

DUT: GSM10212817-body; Type: body; Serial: 011073000003040

Communication System: PCS1900-GSM Mode; Frequency: 1909.8 MHz; Duty Cycle: 1:8.3

Medium: PCS1900-Head Medium parameters used:  $f = 1909.8$  MHz;  $\sigma = 1.46$  mho/m;  $\epsilon_r = 39.1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

#### DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(5.07, 5.07, 5.07); Calibrated: 2006-12-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2006-12-8
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Cheek position - High (700mAh) 2/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm  
Maximum value of SAR (interpolated) = 0.705 mW/g

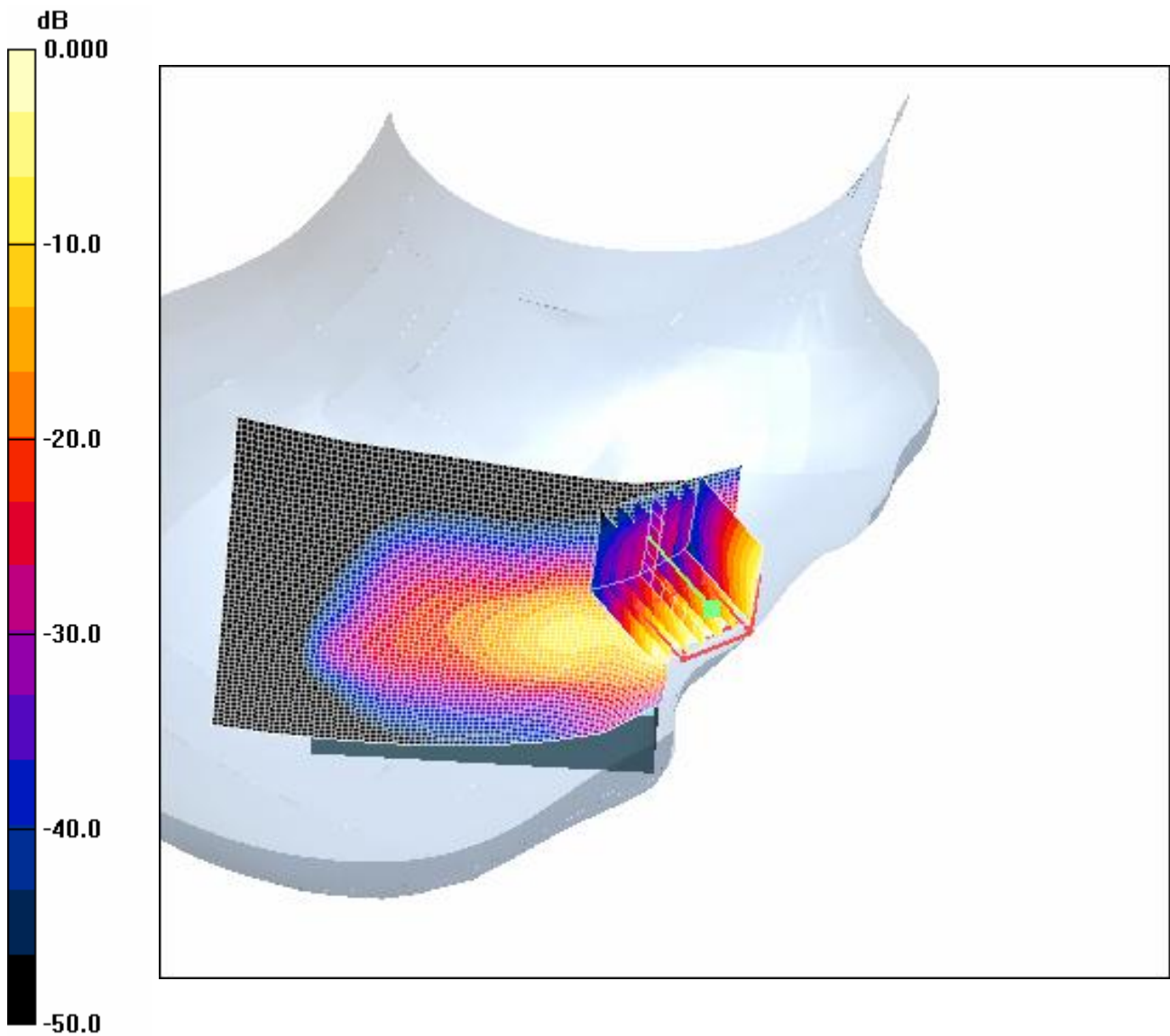
Cheek position - High (700mAh) 2/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid:  
dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.23 V/m; Power Drift = -0.123 dB

Peak SAR (extrapolated) = 0.897 W/kg

SAR(1 g) = 0.628 mW/g; SAR(10 g) = 0.390 mW/g

Maximum value of SAR (measured) = 0.686 mW/g



0 dB = 0.686mW/g

**4.40Body-Worn-PCS1900-GPRS-Middle+SD**

Date/Time: 2007-4-10 13:37:56

Test Laboratory: SGS-GSM

PCS1900-Body-Worn-GPRS-Middle-2.0cm+SD(700mAh)

DUT: GSM10212817-body; Type: body; Serial: 011073000003040



Communication System: PCS1900-GPRS Mode; Frequency: 1880 MHz; Duty Cycle: 1:4

Medium: 1900-Body Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.56$  mho/m;  $\epsilon_r = 50.8$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

#### DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(4.68, 4.68, 4.68); Calibrated: 2006-12-12
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2006-12-8
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body Worn - Middle+SD(700mAh)/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.551 mW/g

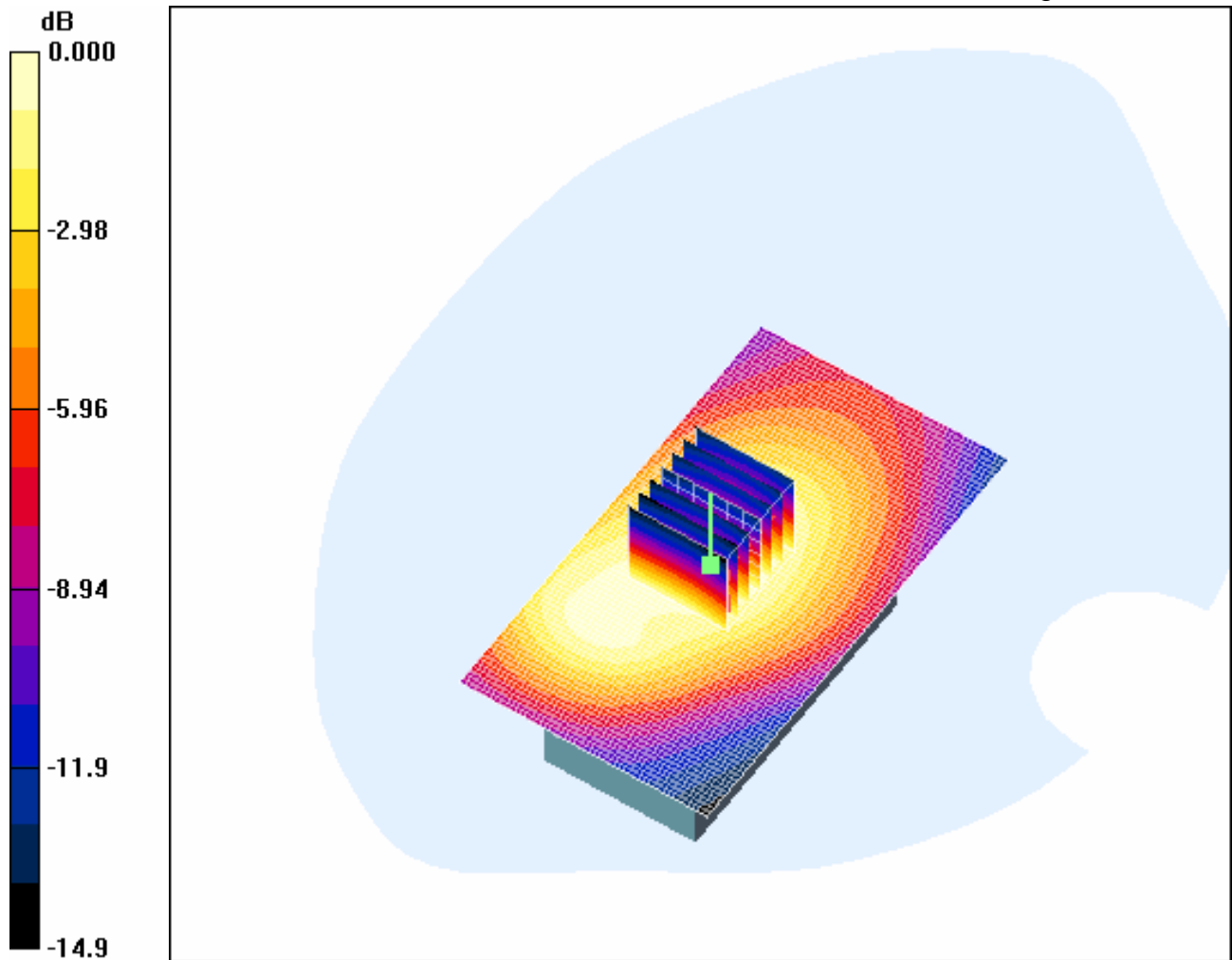
Body Worn - Middle+SD(700mAh)/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 13.5 V/m; Power Drift = -0.153 dB

Peak SAR (extrapolated) = 0.647 W/kg

SAR(1 g) = 0.427 mW/g; SAR(10 g) = 0.263 mW/g

Maximum value of SAR (measured) = 0.439 mW/g



0 dB = 0.439mW/g

## 4A. Supplementary

### *Supplementary Results with New Headset*

#### **4A.1 GSM850-Body-Worn-Low-2.0cm-750mAh**

Date/Time: 2008-5-29 12:39:56

Test Laboratory: SGS-GSM

GSM850-Body-Worn-Low-2.0cm-750

DUT: KJ010AA01; Type: Head; Serial: 20080227

Communication System: GSM850-GSM Mode; Frequency: 824.2 MHz; Duty Cycle: 1:8.3

Medium: HSL 850\_Body Medium parameters used:  $f = 824.2$  MHz;  $\sigma = 0.964$  mho/m;  $\epsilon_r = 53.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(5.81, 5.81, 5.81); Calibrated: 2008-1-18
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body Worn - Low BYD750/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.18 mW/g

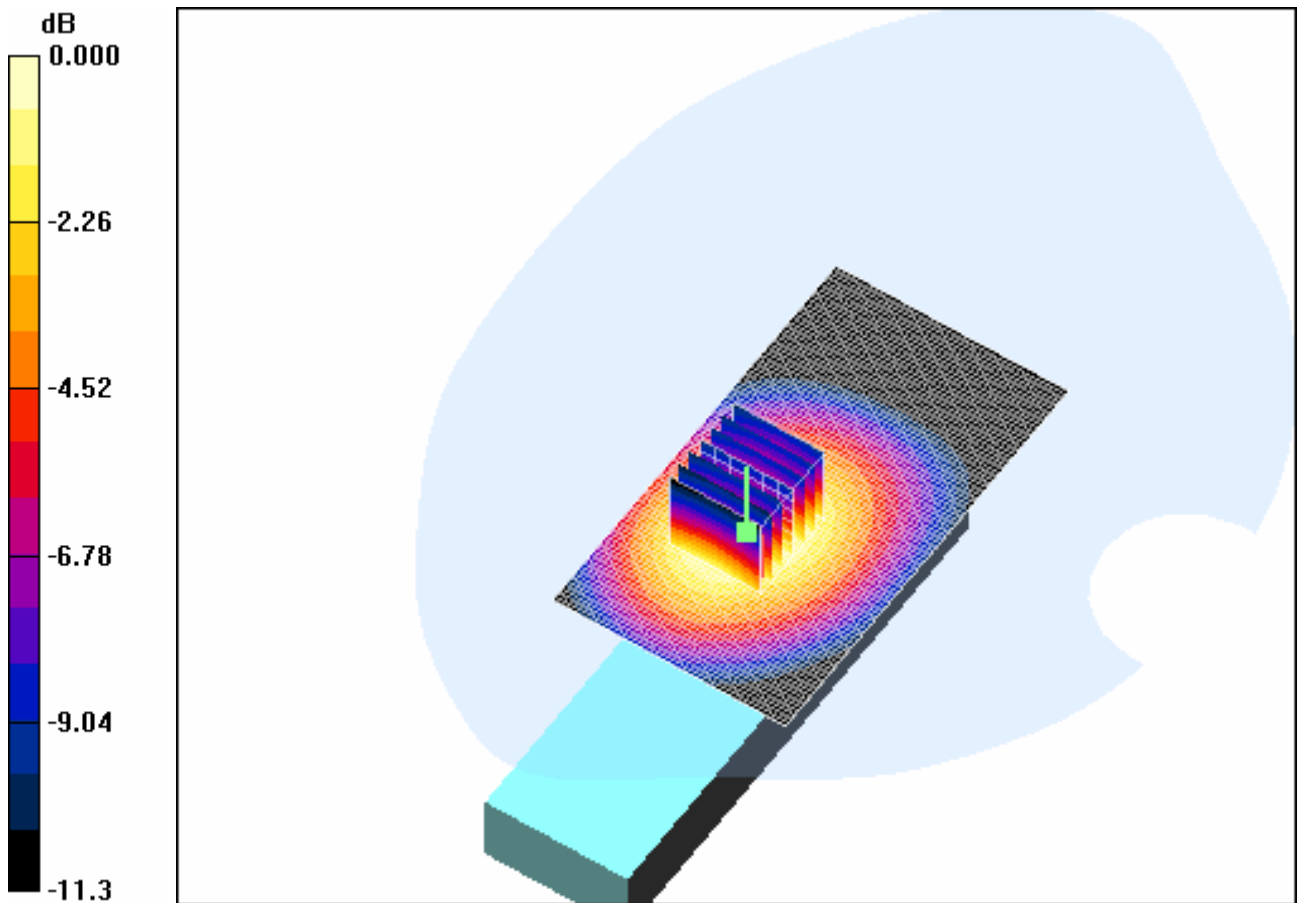
Body Worn - Low BYD750/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 12.2 V/m; Power Drift = -0.159 dB

Peak SAR (extrapolated) = 1.55 W/kg

SAR(1 g) = 1.06 mW/g; SAR(10 g) = 0.702 mW/g

Maximum value of SAR (measured) = 1.14 mW/g



0 dB = 1.14mW/g

#### 4A.2 GSM850-Body-Worn-Mid-2.0cm-750mAh

Date/Time: 2008-5-29 11:07:43

Test Laboratory: SGS-GSM

GSM850-Body-Worn-Mid-2.0cm-750

DUT: KJ010AA01; Type: Head; Serial: 20080227

Communication System: GSM850-GSM Mode; Frequency: 836.4 MHz; Duty Cycle: 1:8.3

Medium: HSL 850\_Body Medium parameters used:  $f = 836.4$  MHz;  $\sigma = 0.98$  mho/m;  $\epsilon_r = 53.1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

**DASY4 Configuration:**

- Probe: ES3DV3 - SN3088; ConvF(5.81, 5.81, 5.81); Calibrated: 2008-1-18
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Body Worn - Middle BYD750/Area Scan (51x91x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.00 mW/g

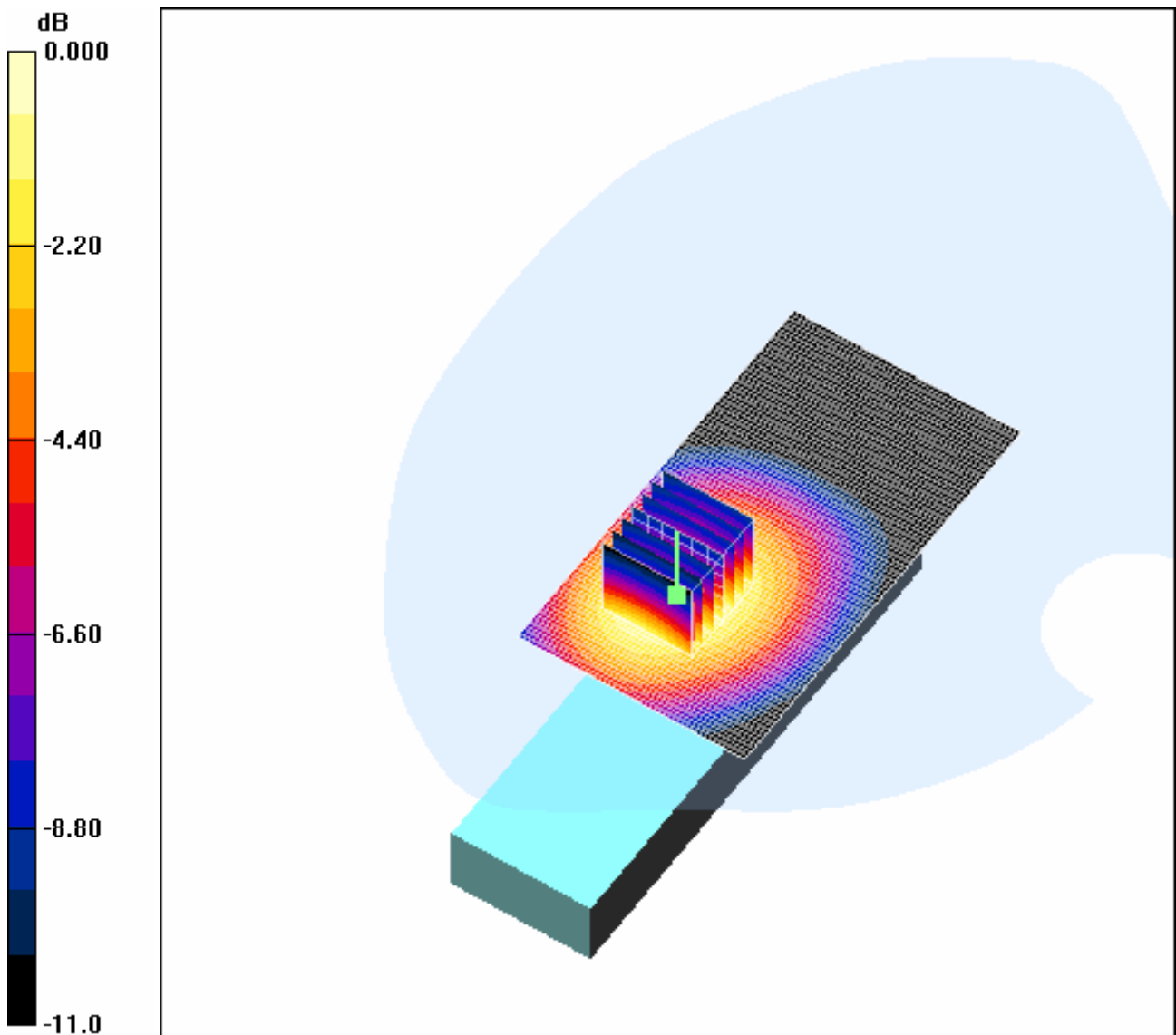
**Body Worn - Middle BYD750/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 7.23 V/m; Power Drift = -0.162 dB

Peak SAR (extrapolated) = 1.34 W/kg

SAR(1 g) = 0.910 mW/g; SAR(10 g) = 0.605 mW/g

Maximum value of SAR (measured) = 0.980 mW/g



0 dB = 0.980mW/g

**4A.3 GSM850-Body-Worn-High-2.0cm-750mAh**

Date/Time: 2008-5-29 12:06:59

Test Laboratory: SGS-GSM

GSM850-Body-Worn-High-2.0cm-750

DUT: KJ010AA01; Type: Head; Serial: 20080227

Communication System: GSM850-GSM Mode; Frequency: 848.8 MHz; Duty Cycle: 1:8.3

Medium: HSL 850\_Body Medium parameters used:  $f = 848.8$  MHz;  $\sigma = 0.994$  mho/m;  $\epsilon_r = 53.1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

#### DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(5.81, 5.81, 5.81); Calibrated: 2008-1-18
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body Worn - High BYD750/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.14 mW/g

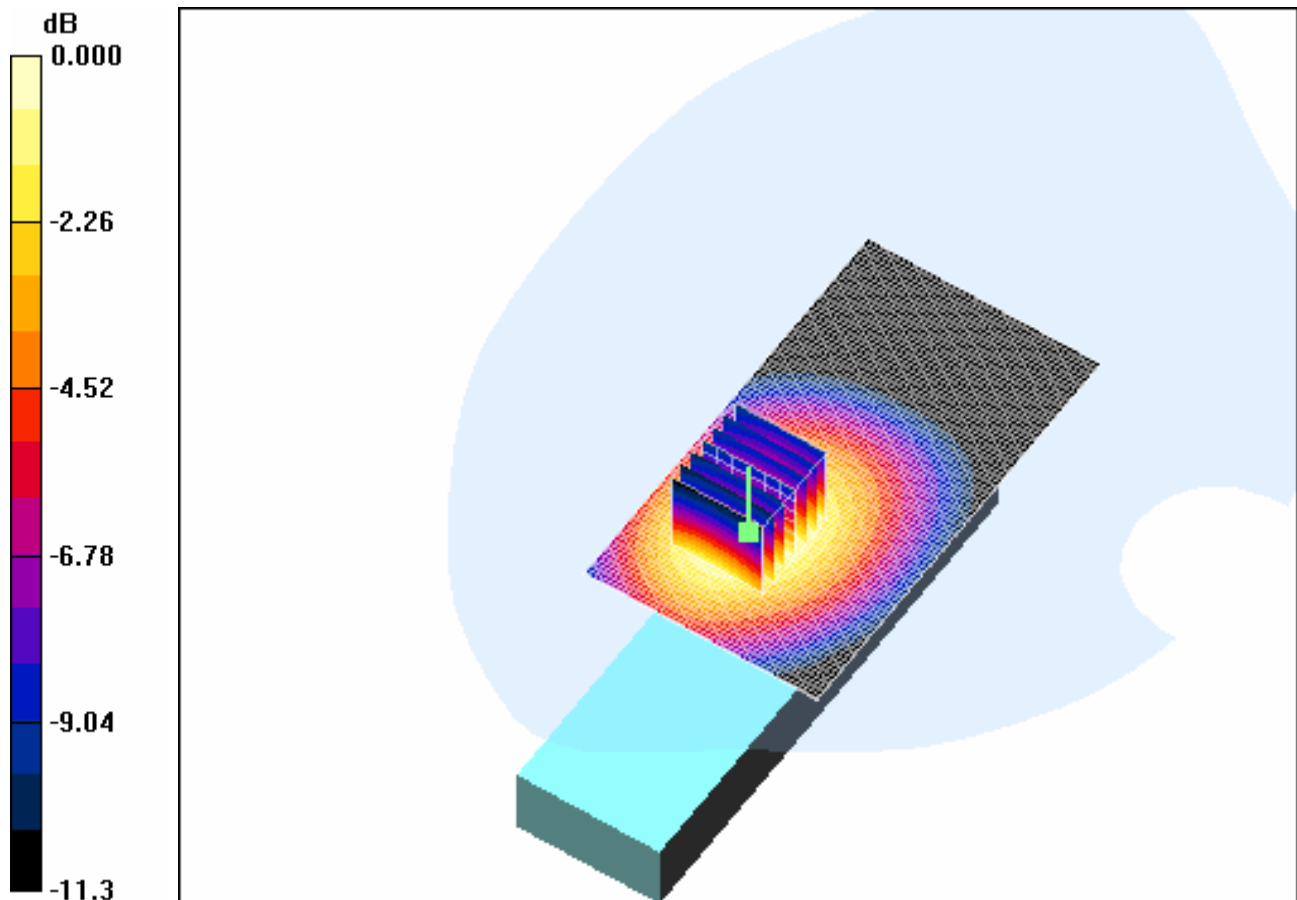
Body Worn - High BYD750/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.20 V/m; Power Drift = -0.039 dB

Peak SAR (extrapolated) = 1.53 W/kg

SAR(1 g) = 1.05 mW/g; SAR(10 g) = 0.696 mW/g

Maximum value of SAR (measured) = 1.13 mW/g



0 dB = 1.13mW/g

#### 4A.4 GSM850-Body-Worn-Low-2.0cm-750mAh BT

Date/Time: 2008-5-29 13:02:31

Test Laboratory: SGS-GSM

GSM850-Body-Worn-Low-2.0cm-750 BT

DUT: KJ010AA01; Type: Head; Serial: 20080227

Communication System: GSM850-GSM Mode; Frequency: 824.2 MHz; Duty Cycle: 1:8.3

Medium: HSL 850\_Body Medium parameters used:  $f = 824.2$  MHz;  $\sigma = 0.964$  mho/m;  $\epsilon_r = 53.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section



**DASY4 Configuration:**

- Probe: ES3DV3 - SN3088; ConvF(5.81, 5.81, 5.81); Calibrated: 2008-1-18
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Body Worn - Low BYD750 BT/Area Scan (51x91x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.11 mW/g

**Body Worn - Low BYD750 BT/Zoom Scan (7x7x7) (7x7x7)/Cube 0:** Measurement grid:

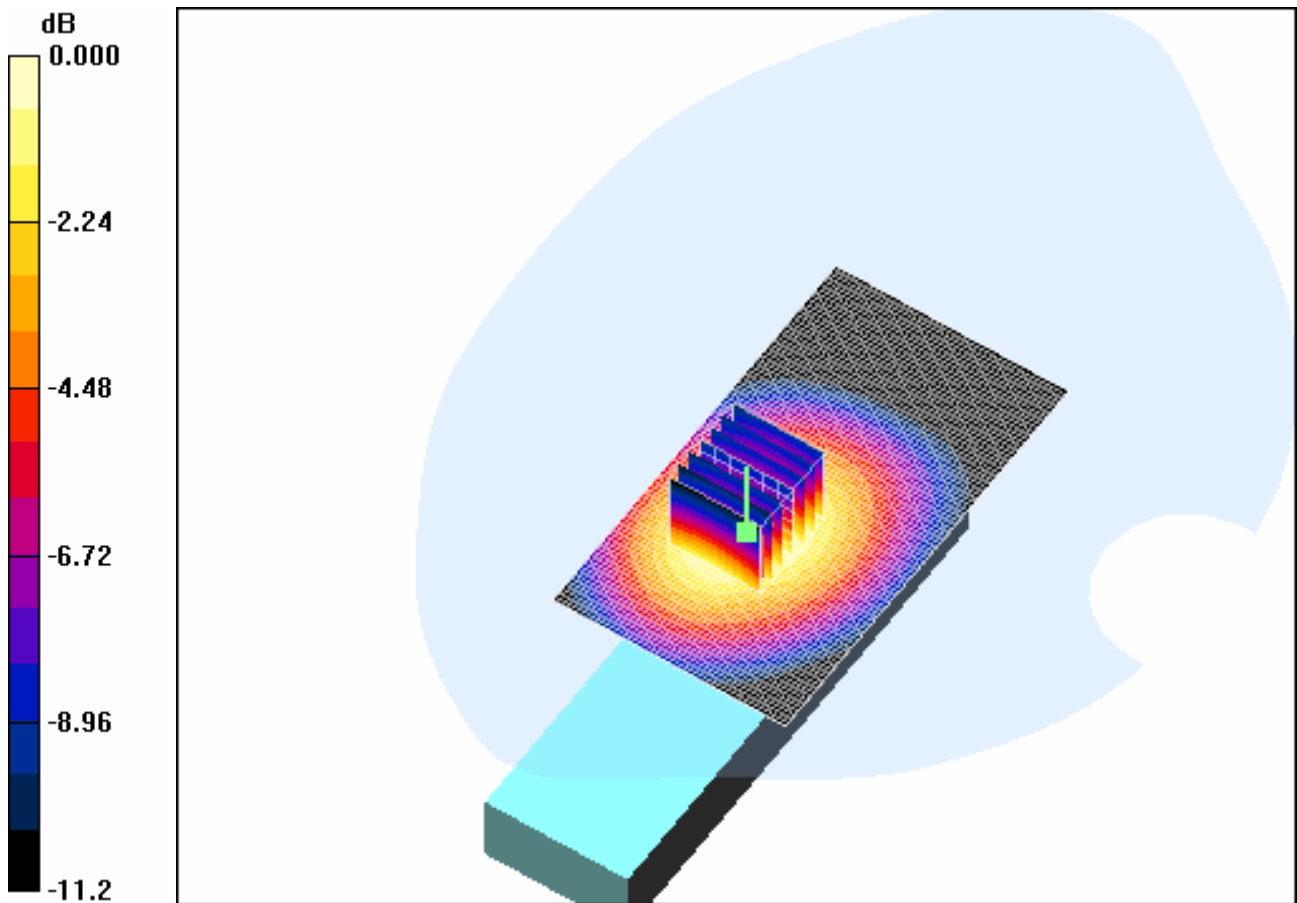
dx=5mm, dy=5mm, dz=5mm

Reference Value = 11.9 V/m; Power Drift = -0.062 dB

Peak SAR (extrapolated) = 1.47 W/kg

SAR(1 g) = 1.02 mW/g; SAR(10 g) = 0.677 mW/g

Maximum value of SAR (measured) = 1.09 mW/g



**4A.5 GSM850-Body-Worn-Low-2.0cm-700mAh**

Date/Time: 2008-5-29 13:24:44

Test Laboratory: SGS-GSM

GSM850-Body-Worn-Low-2.0cm-700 -2

DUT: KJ010AA01; Type: Head; Serial: 20080227

Communication System: GSM850-GSM Mode; Frequency: 824.2 MHz; Duty Cycle: 1:8.3

Medium: HSL 850\_Body Medium parameters used:  $f = 824.2$  MHz;  $\sigma = 0.964$  mho/m;  $\epsilon_r = 53.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

**DASY4 Configuration:**

- Probe: ES3DV3 - SN3088; ConvF(5.81, 5.81, 5.81); Calibrated: 2008-1-18
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Body Worn - Low BYD700/Area Scan (51x91x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.08 mW/g

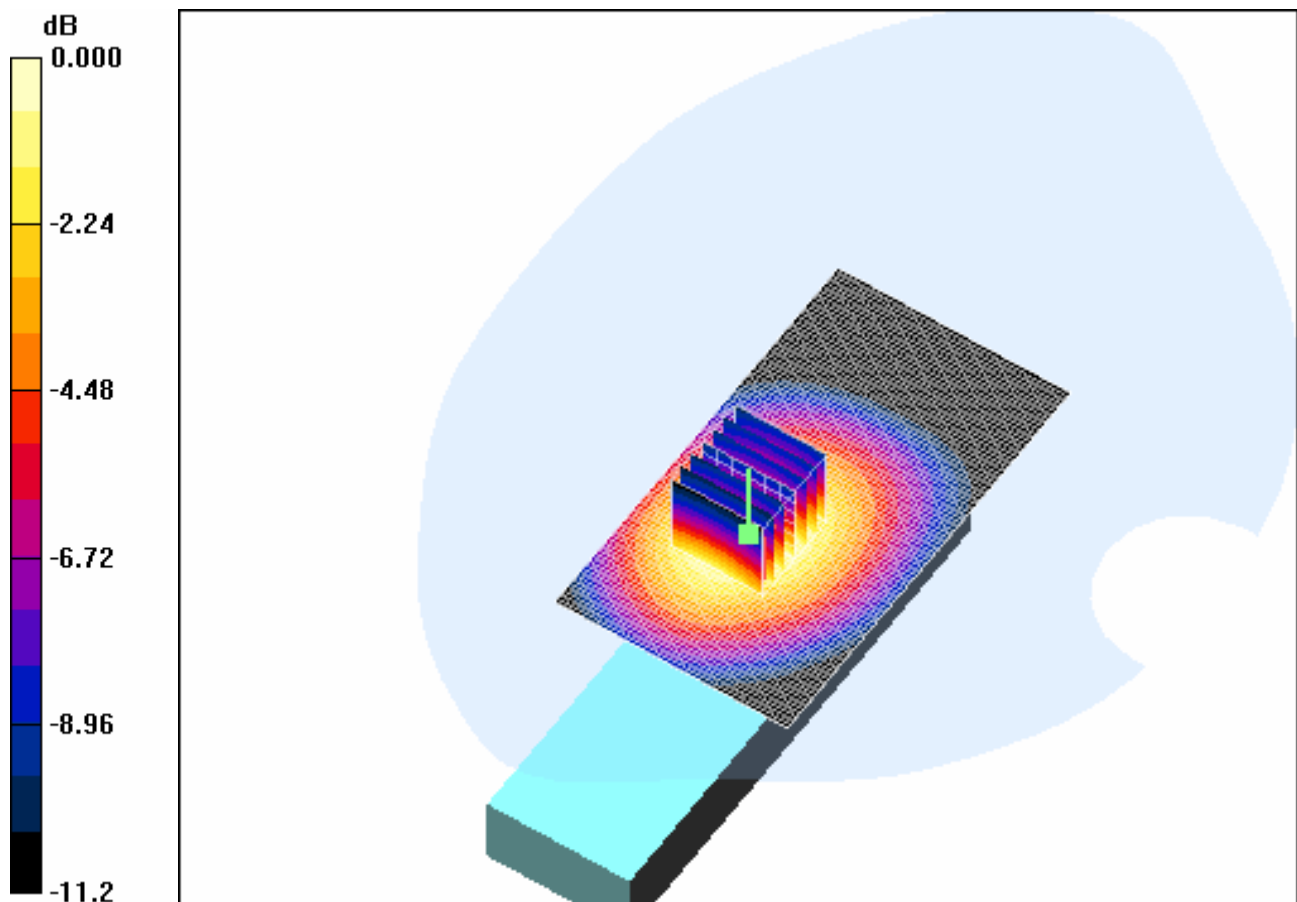
**Body Worn - Low BYD700/Zoom Scan (7x7x7) (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 11.9 V/m; Power Drift = -0.082 dB

Peak SAR (extrapolated) = 1.44 W/kg

SAR(1 g) = 0.999 mW/g; SAR(10 g) = 0.663 mW/g

Maximum value of SAR (measured) = 1.08 mW/g



0 dB = 1.08mW/g

#### 4A.6 GSM850-Body-Worn-Low-2.0cm-700mAh BT

Date/Time: 2008-5-29 13:51:54

Test Laboratory: SGS-GSM

GSM850-Body-Worn-Low-2.0cm-700 BT

DUT: KJ010AA01; Type: Head; Serial: 20080227

Communication System: GSM850-GSM Mode; Frequency: 824.2 MHz; Duty Cycle: 1:8.3

Medium: HSL 850\_Body Medium parameters used:  $f = 824.2$  MHz;  $\sigma = 0.964$  mho/m;  $\epsilon_r = 53.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

**DASY4 Configuration:**

- Probe: ES3DV3 - SN3088; ConvF(5.81, 5.81, 5.81); Calibrated: 2008-1-18
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Body Worn - Low BYD700 BT/Area Scan (51x91x1):** Measurement grid: dx=15mm, dy=15mm  
Maximum value of SAR (interpolated) = 1.07 mW/g

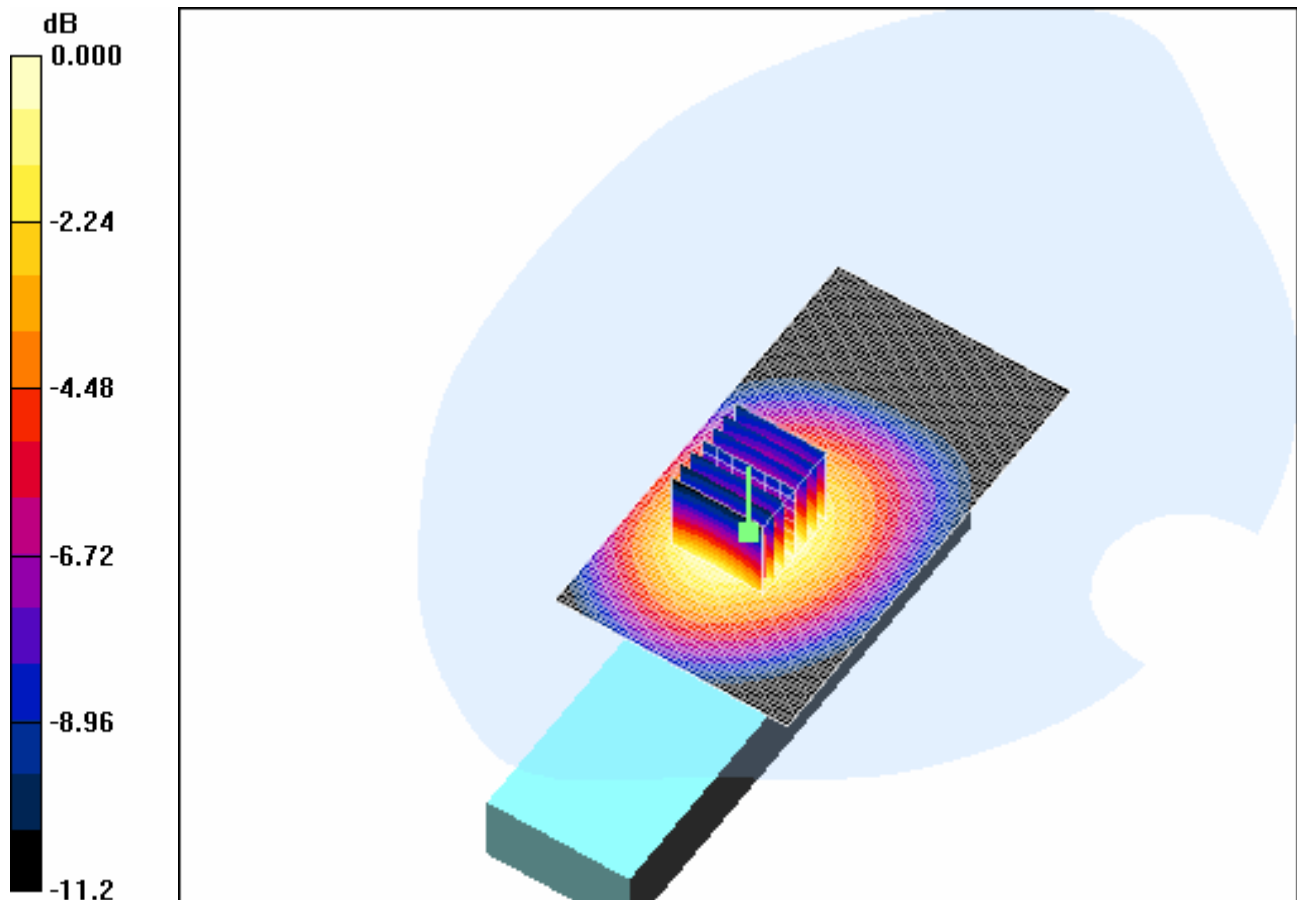
**Body Worn - Low BYD700 BT/Zoom Scan (7x7x7) (7x7x7)/Cube 0:** Measurement grid:  
dx=5mm, dy=5mm, dz=5mm

Reference Value = 11.7 V/m; Power Drift = -0.074 dB

Peak SAR (extrapolated) = 1.40 W/kg

SAR(1 g) = 0.971 mW/g; SAR(10 g) = 0.645 mW/g

Maximum value of SAR (measured) = 1.04 mW/g



0 dB = 1.04mW/g

#### **4A.7 GSM1900-Body-Worn-Low-2.0cm-750mAh**

Date/Time: 2008-5-30 9:01:07

Test Laboratory: SGS-GSM

GSM1900-Body-Worn-Low-2.0cm-750

DUT: KJ010AA01; Type: Head; Serial: 20080227

Communication System: PCS1900-GPRS Mode; Frequency: 1850.2 MHz; Duty Cycle: 1:4

Medium: HSL1900-Body Medium parameters used:  $f = 1850.2$  MHz;  $\sigma = 1.53$  mho/m;  $\epsilon_r = 52.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

**DASY4 Configuration:**

- Probe: ES3DV3 - SN3088; ConvF(4.6, 4.6, 4.6); Calibrated: 2008-1-18
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Body Worn - Low BYD750/Area Scan (51x91x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.535 mW/g

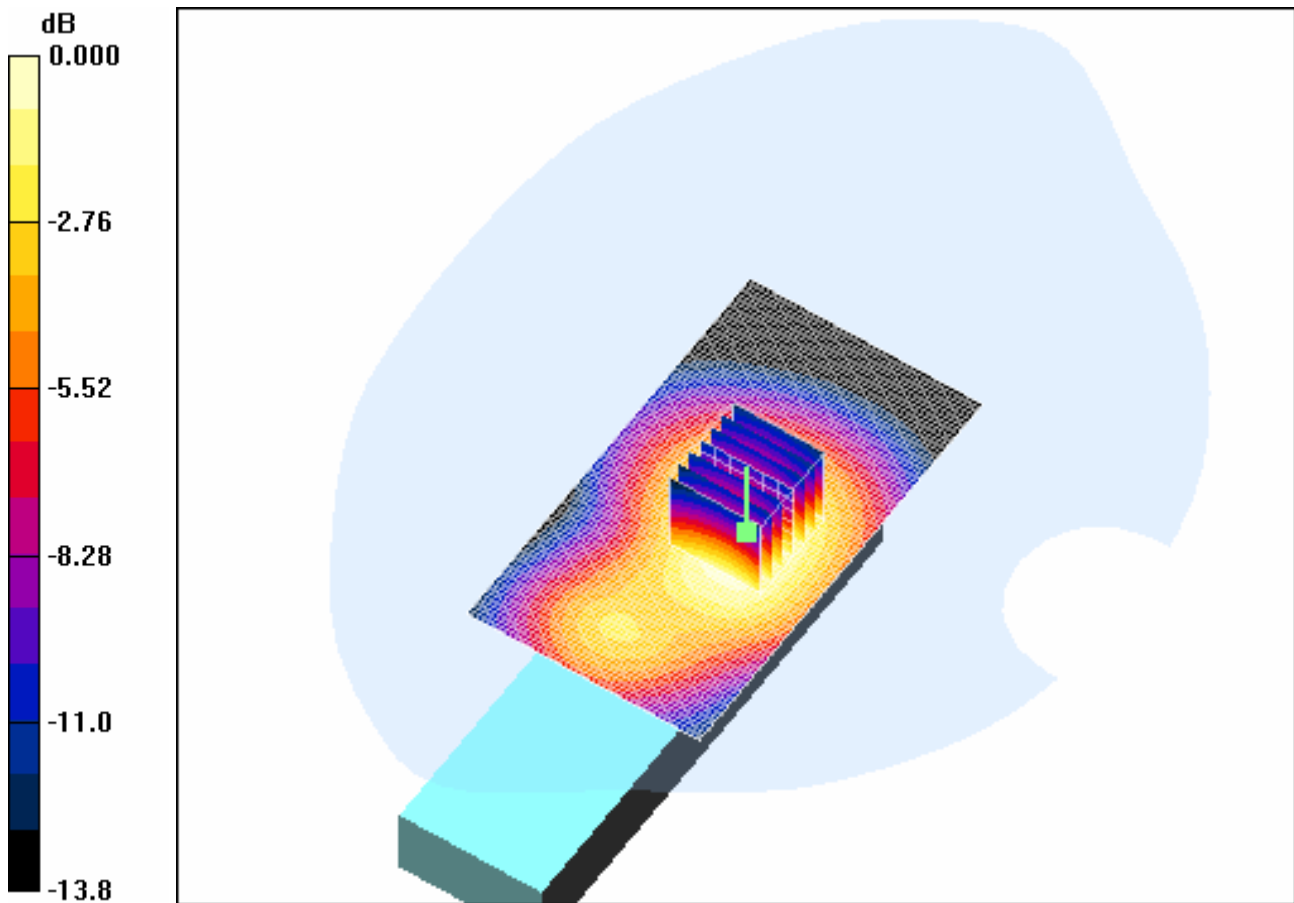
**Body Worn - Low BYD750/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.84 V/m; Power Drift = -0.246 dB

Peak SAR (extrapolated) = 0.743 W/kg

SAR(1 g) = 0.493 mW/g; SAR(10 g) = 0.318 mW/g

Maximum value of SAR (measured) = 0.530 mW/g



0 dB = 0.530mW/g

#### 4A.8 GSM1900-Body-Worn-Mid-2.0cm-750mAh

Date/Time: 2008-5-30 8:33:11

Test Laboratory: SGS-GSM

GSM1900-Body-Worn-Mid--2.0cm-750

DUT: KJ010AA01; Type: Head; Serial: 20080227

Communication System: PCS1900-GPRS Mode; Frequency: 1880 MHz;Duty Cycle: 1:4

Medium: HSL1900-Body Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.56$  mho/m;  $\epsilon_r = 52.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section



**DASY4 Configuration:**

- Probe: ES3DV3 - SN3088; ConvF(4.6, 4.6, 4.6); Calibrated: 2008-1-18
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Body Worn - Middle BYD750/Area Scan (51x91x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.657 mW/g

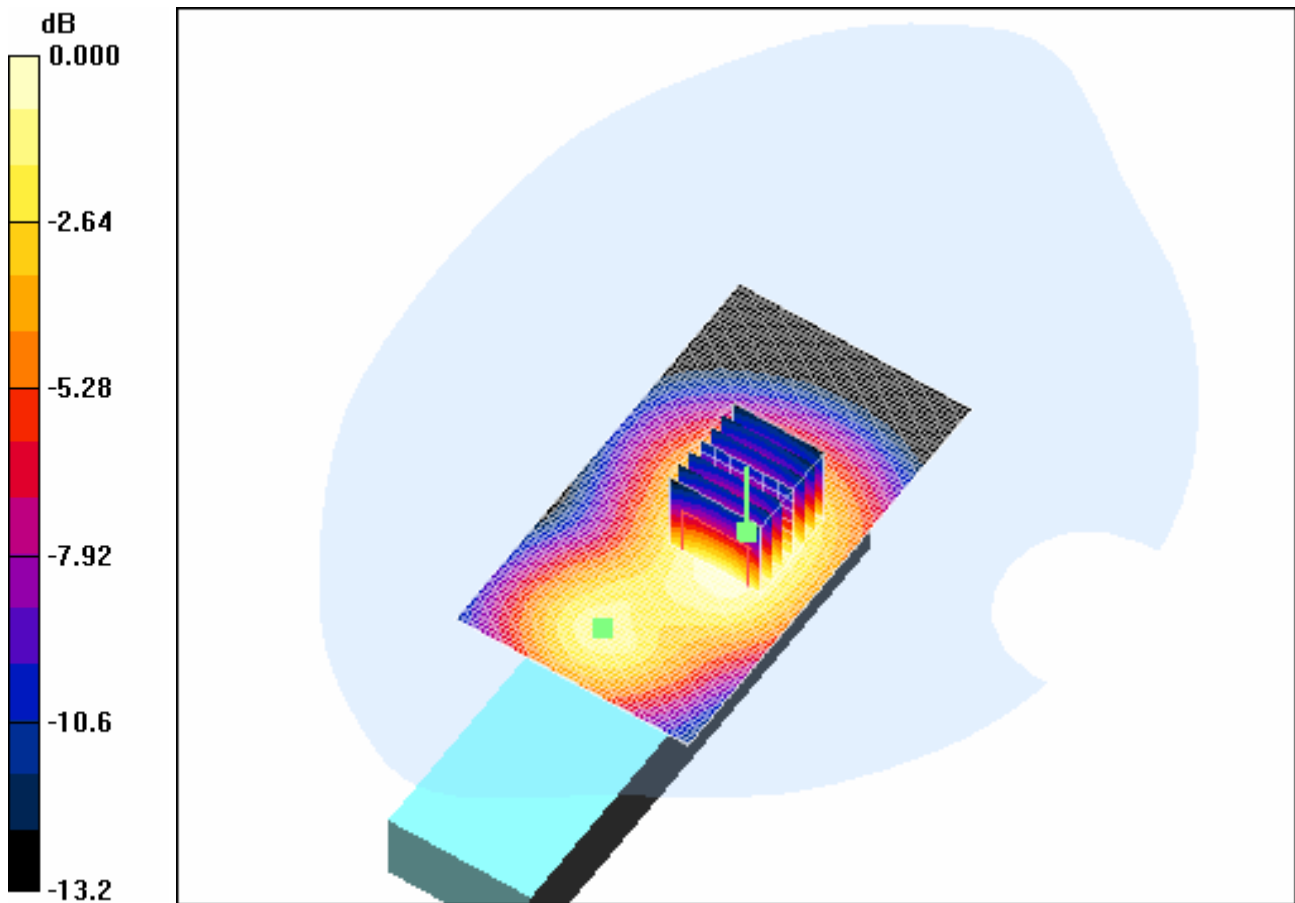
**Body Worn - Middle BYD750/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.1 V/m; Power Drift = -0.102 dB

Peak SAR (extrapolated) = 0.934 W/kg

SAR(1 g) = 0.611 mW/g; SAR(10 g) = 0.391 mW/g

Maximum value of SAR (measured) = 0.653 mW/g



0 dB = 0.653mW/g

#### 4A.9 GSM1900-Body-Worn-High-2.0cm-750mAh

Date/Time: 2008-5-30 9:25:00

Test Laboratory: SGS-GSM

GSM1900-Body-Worn-Hig--2.0cm-750

DUT: KJ010AA01; Type: Head; Serial: 20080227

Communication System: PCS1900-GPRS Mode; Frequency: 1909.8 MHz;Duty Cycle: 1:4

Medium: HSL1900-Body Medium parameters used:  $f = 1909.8$  MHz;  $\sigma = 1.59$  mho/m;  $\epsilon_r = 52.5$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

**DASY4 Configuration:**

- Probe: ES3DV3 - SN3088; ConvF(4.6, 4.6, 4.6); Calibrated: 2008-1-18
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Body Worn -High BYD750/Area Scan (51x91x1):** Measurement grid: dx=15mm, dy=15mm  
Maximum value of SAR (interpolated) = 0.628 mW/g

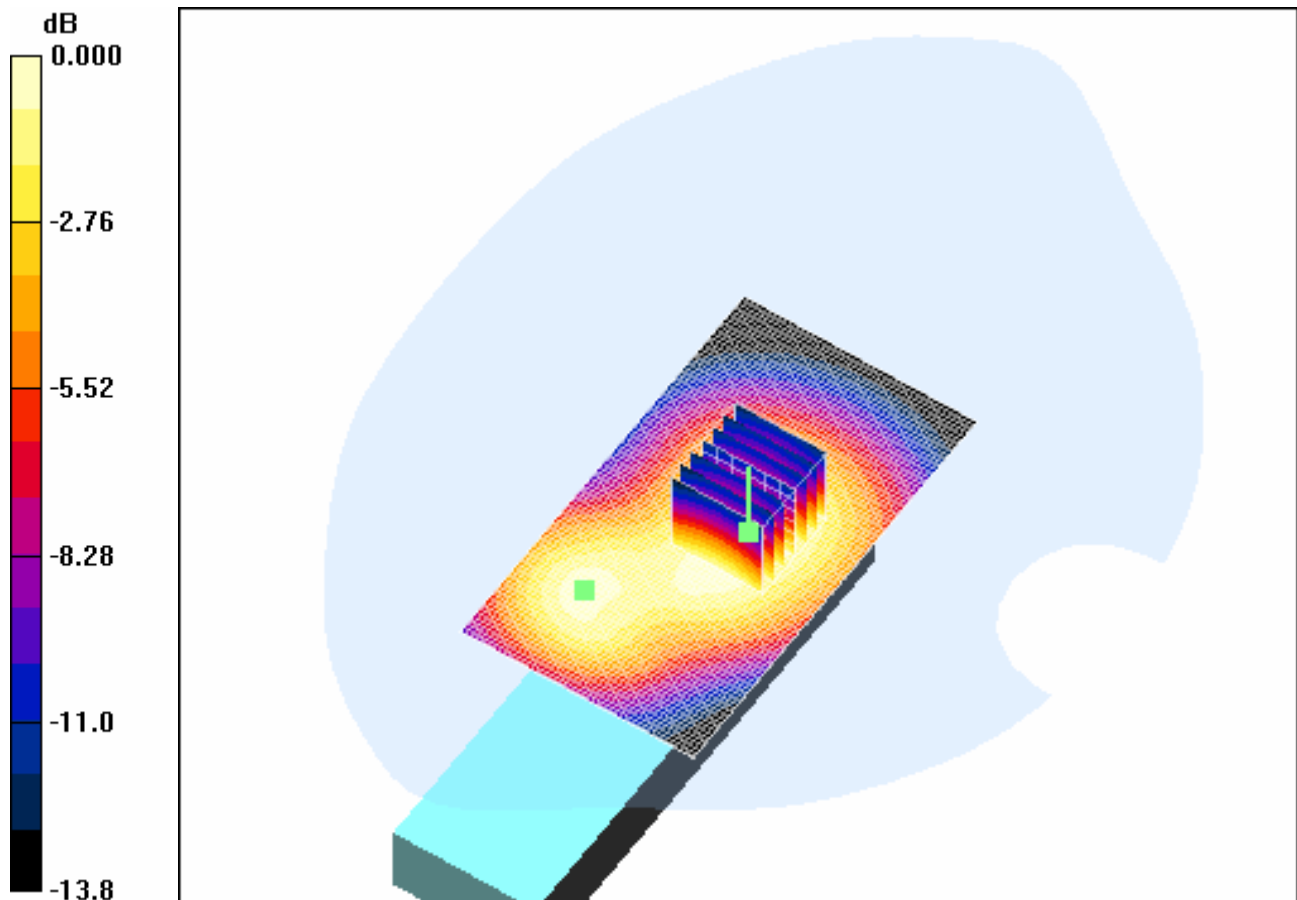
**Body Worn -High BYD750/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm,  
dz=5mm

Reference Value = 12.7 V/m; Power Drift = -0.152 dB

Peak SAR (extrapolated) = 0.881 W/kg

SAR(1 g) = 0.573 mW/g; SAR(10 g) = 0.366 mW/g

Maximum value of SAR (measured) = 0.615 mW/g



0 dB = 0.615mW/g

#### **4A.10 GSM1900-Body-Worn-Mid-2.0cm-750mAh BT**

Date/Time: 2008-5-30 11:16:53

Test Laboratory: SGS-GSM

GSM1900-Body-Worn-Mid-2.0cm-750-BT

DUT: KJ010AA01; Type: Head; Serial: 20080227

Communication System: PCS1900-GPRS Mode; Frequency: 1880 MHz; Duty Cycle: 1:4

Medium: HSL1900-Body Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.56$  mho/m;  $\epsilon_r = 52.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

**DASY4 Configuration:**

- Probe: ES3DV3 - SN3088; ConvF(4.6, 4.6, 4.6); Calibrated: 2008-1-18
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Body Worn - Middle BYD750 BT/Area Scan (51x91x1):** Measurement grid: dx=15mm, dy=15mm  
Maximum value of SAR (interpolated) = 0.684 mW/g

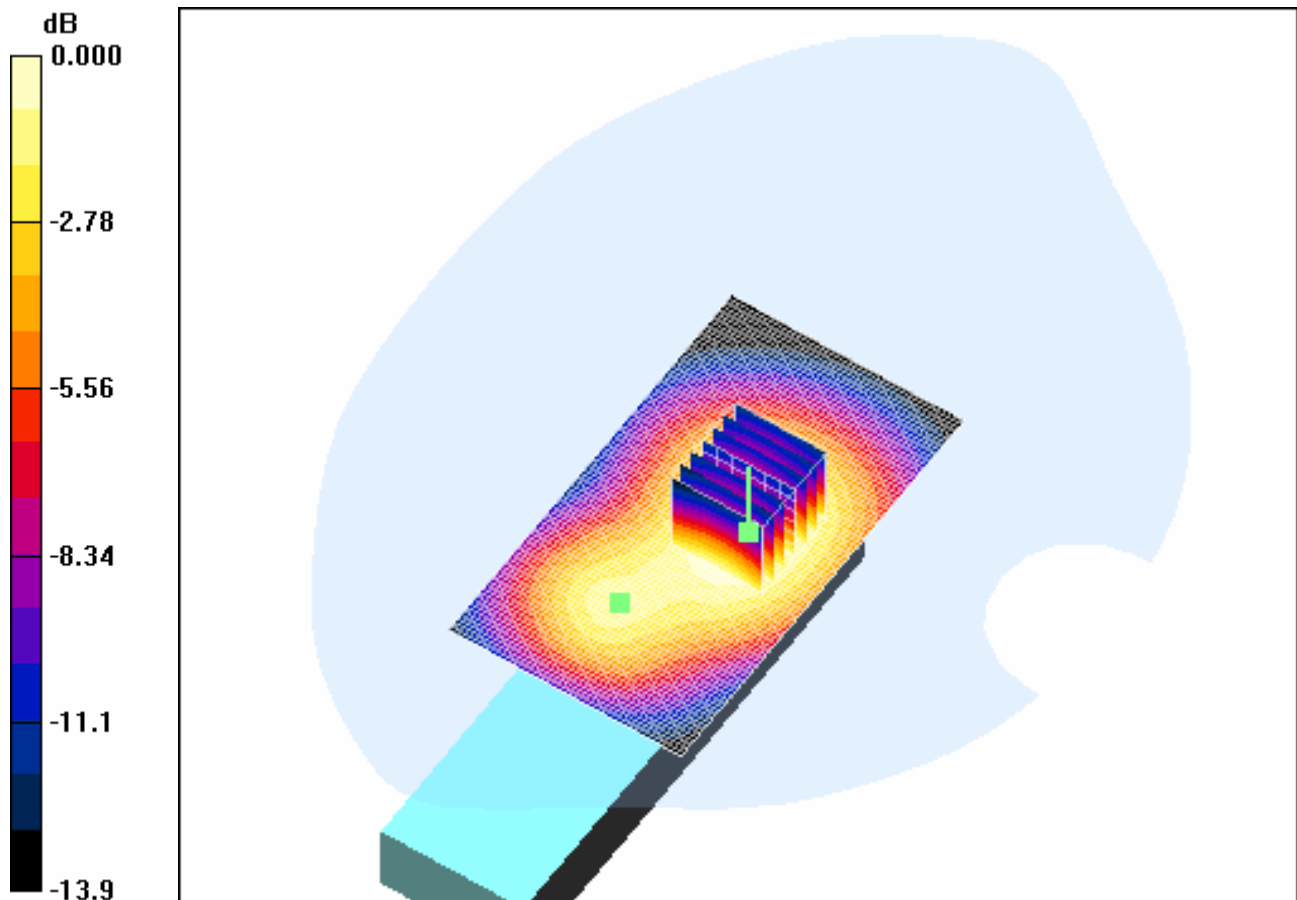
**Body Worn - Middle BYD750 BT/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm,  
dy=5mm, dz=5mm

Reference Value = 14.3 V/m; Power Drift = -0.162 dB

Peak SAR (extrapolated) = 0.947 W/kg

SAR(1 g) = 0.615 mW/g; SAR(10 g) = 0.394 mW/g

Maximum value of SAR (measured) = 0.658 mW/g



0 dB = 0.658mW/g

#### 4A.11 GSM1900-Body-Worn-Mid-2.0cm-700mAh

Date/Time: 2008-5-30 10:18:32

Test Laboratory: SGS-GSM

GSM1900-Body-Worn-Mid-2.0cm-700

DUT: KJ010AA01; Type: Head; Serial: 20080227

Communication System: PCS1900-GPRS Mode; Frequency: 1880 MHz; Duty Cycle: 1:4

Medium: HSL1900-Body Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.56$  mho/m;  $\epsilon_r = 52.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

**DASY4 Configuration:**

- Probe: ES3DV3 - SN3088; ConvF(4.6, 4.6, 4.6); Calibrated: 2008-1-18
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Body Worn - Middle BYD700/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm**

**Maximum value of SAR (interpolated) = 0.542 mW/g**

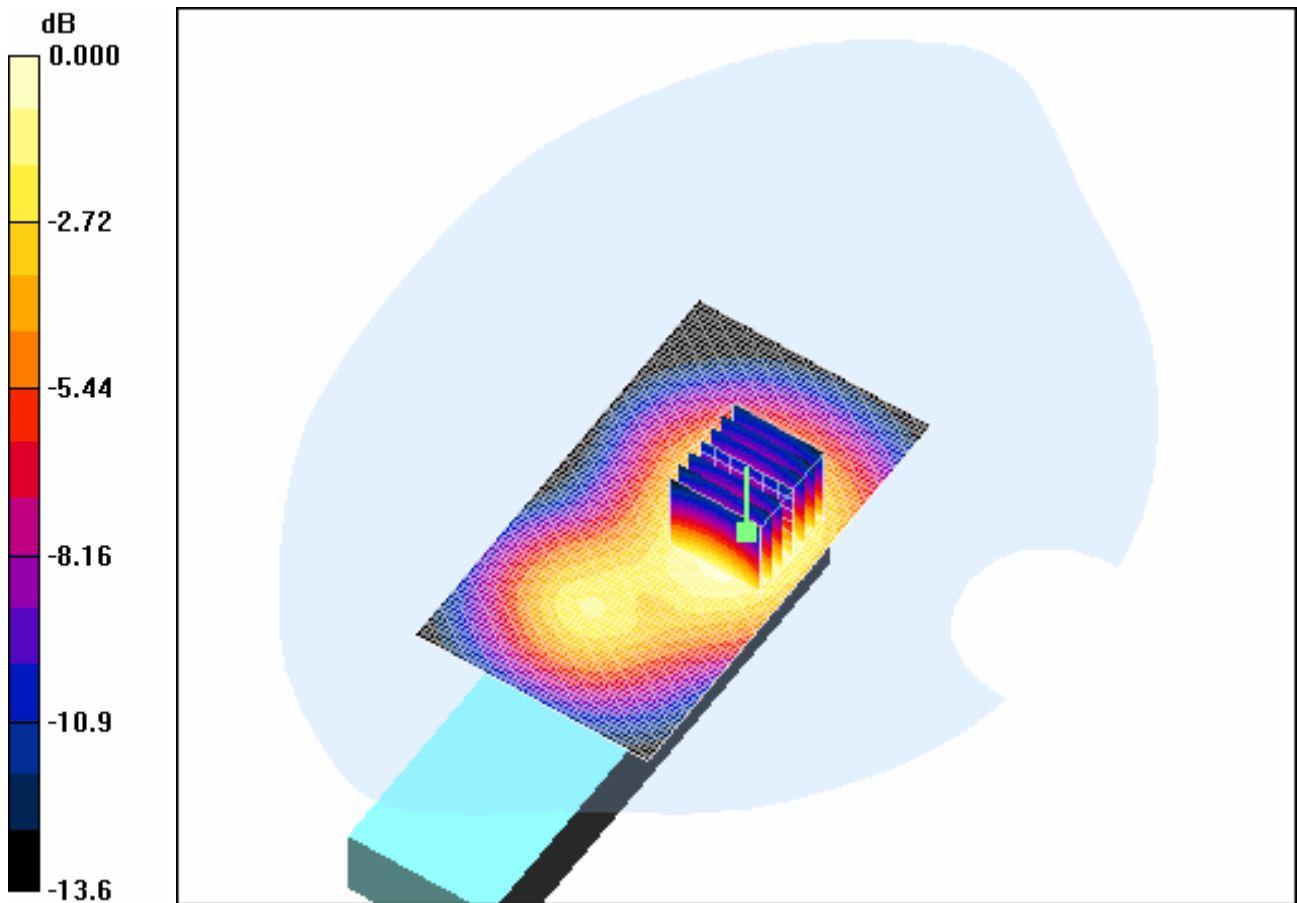
**Body Worn - Middle BYD700/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm**

**Reference Value = 12.8 V/m; Power Drift = -0.014 dB**

**Peak SAR (extrapolated) = 0.787 W/kg**

**SAR(1 g) = 0.511 mW/g; SAR(10 g) = 0.325 mW/g**

**Maximum value of SAR (measured) = 0.542 mW/g**



0 dB = 0.542mW/g

#### **4A.12 GSM1900-Body-Worn-Mid-2.0cm-700mAh BT**

Date/Time: 2008-5-30 10:53:02

Test Laboratory: SGS-GSM

GSM1900-Body-Worn-Mid-2.0cm-700BT

DUT: KJ010AA01; Type: Head; Serial: 20080227

Communication System: PCS1900-GPRS Mode; Frequency: 1880 MHz; Duty Cycle: 1:4

Medium: HSL1900-Body Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.56$  mho/m;  $\epsilon_r = 52.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section



**DASY4 Configuration:**

- Probe: ES3DV3 - SN3088; ConvF(4.6, 4.6, 4.6); Calibrated: 2008-1-18
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2007-11-19
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

**Body Worn - Middle BYD700 BT/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm**

**Maximum value of SAR (interpolated) = 0.543 mW/g**

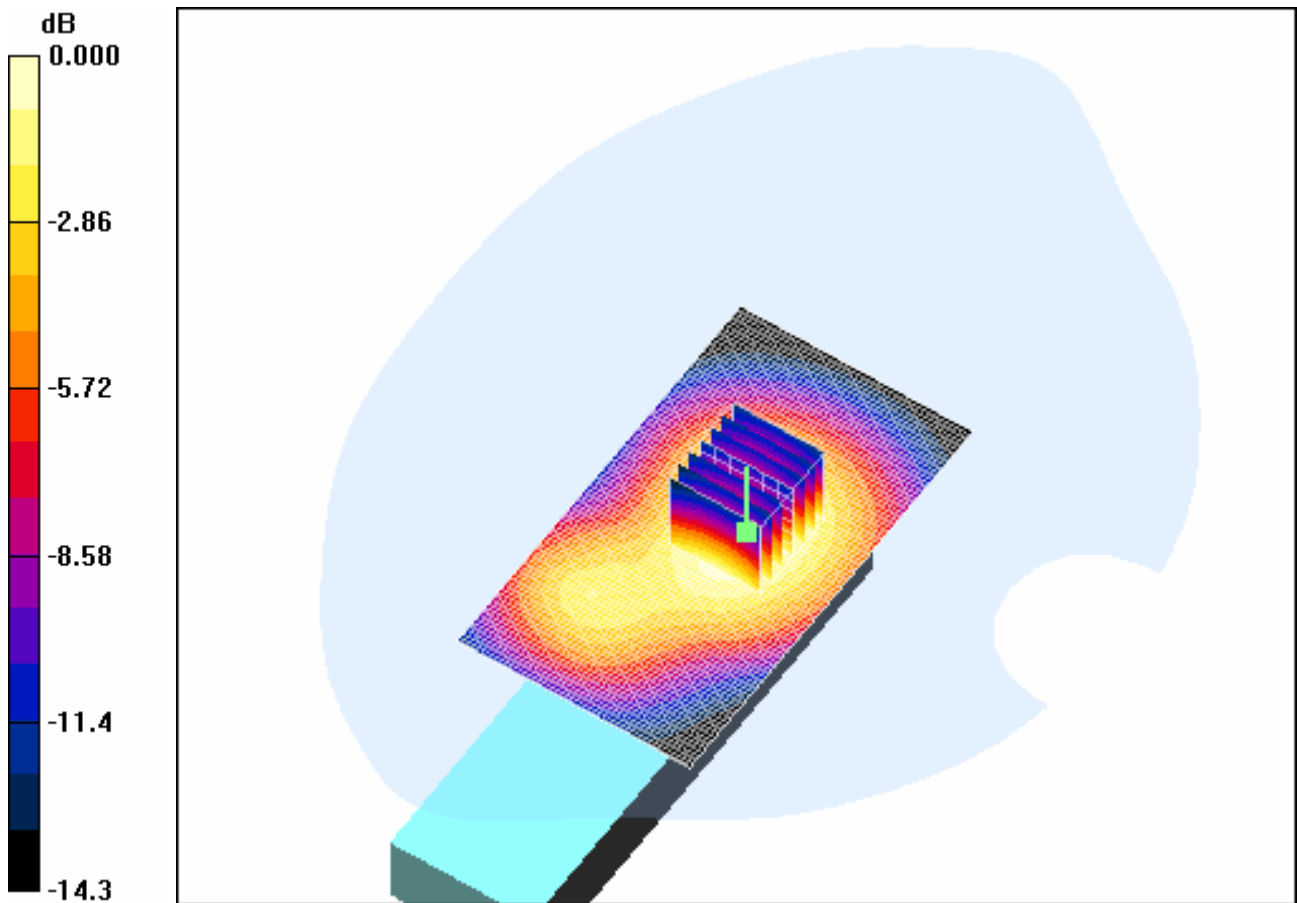
**Body Worn - Middle BYD700 BT/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm**

**Reference Value = 13.1 V/m; Power Drift = -0.121 dB**

**Peak SAR (extrapolated) = 0.773 W/kg**

**SAR(1 g) = 0.495 mW/g; SAR(10 g) = 0.314 mW/g**

**Maximum value of SAR (measured) = 0.533 mW/g**



0 dB = 0.533mW/g

# Appendix

## 1. Photographs of Test Setup

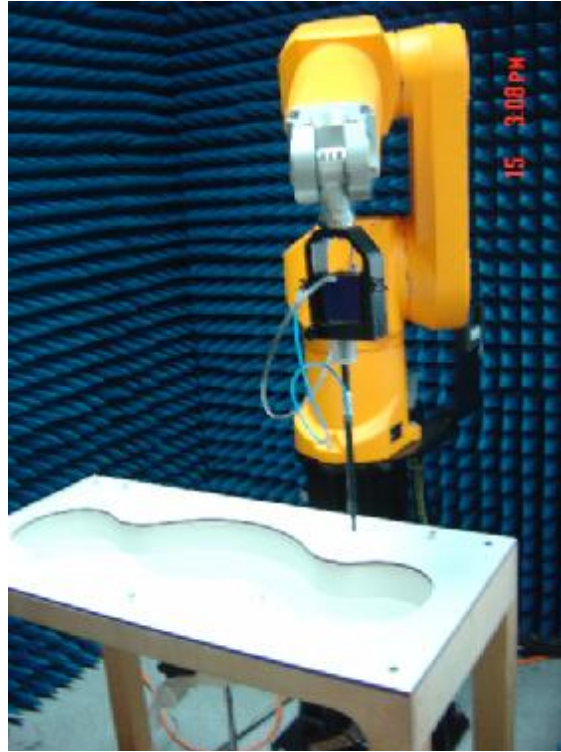


Fig.1 Photograph of the SAR measurement System

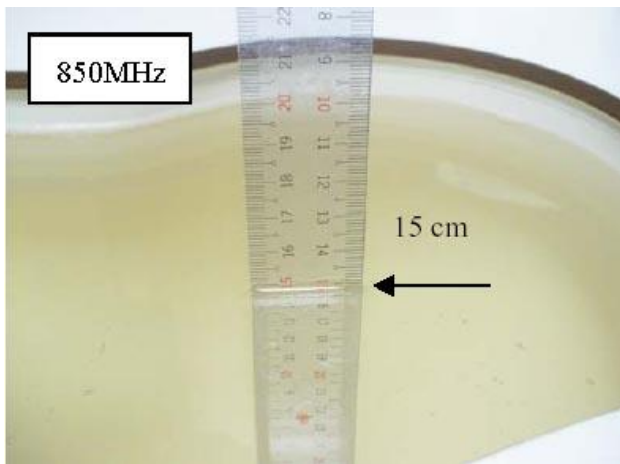


Fig.2 Photograph of the Tissue Simulant Fluid Liquid depth 15cm for Left-Head Side

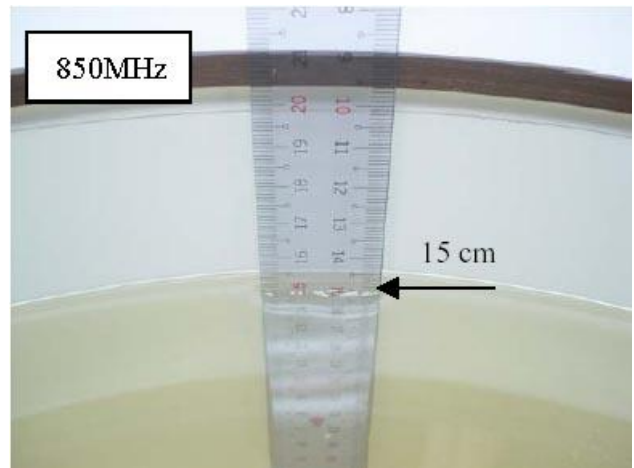


Fig.3 Photograph of the Tissue Simulant Liquid depth 15cm for Body-Worn

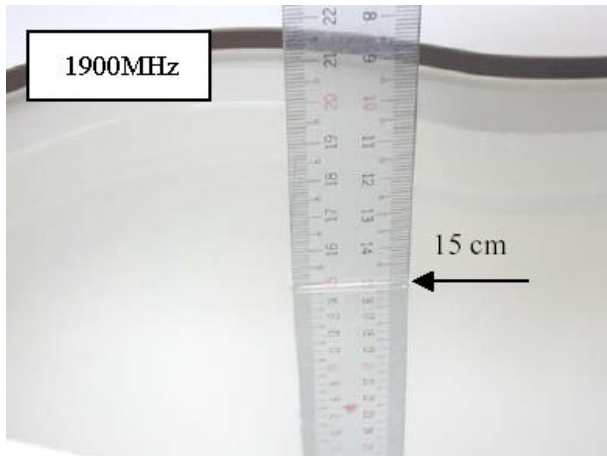


Fig.4 Photograph of the Tissue Simulant Fluid Liquid depth 15cm for Right-Head Side

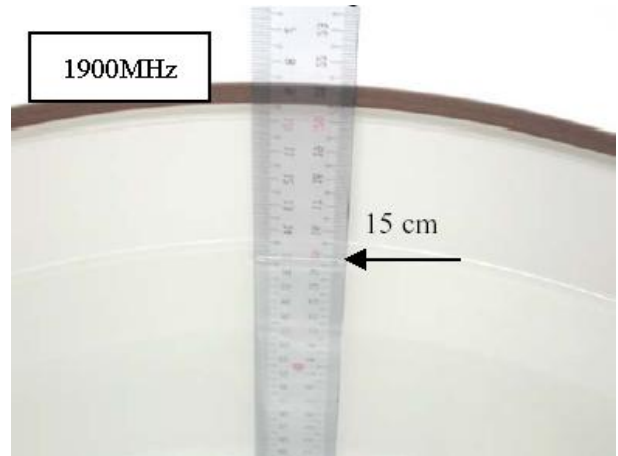


Fig.5 Photograph of the Tissue Simulant Liquid depth 15cm for Body-Worn

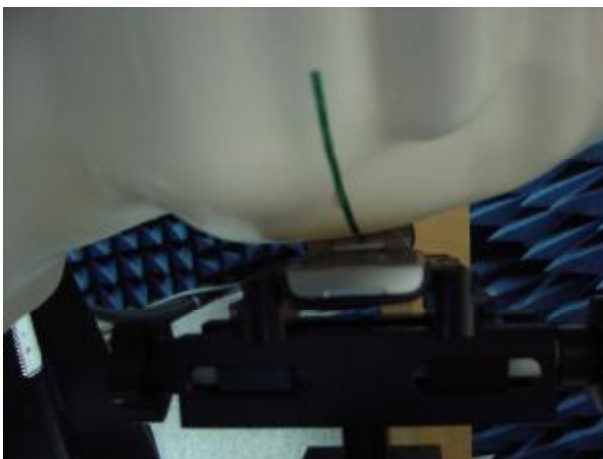


Fig.6 Photograph of the Left Hand Side Cheek status

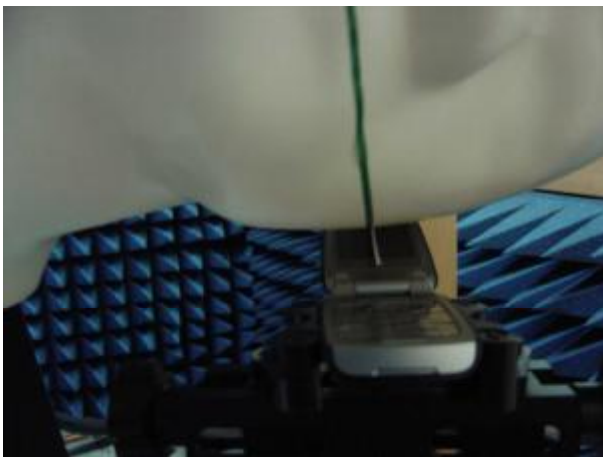
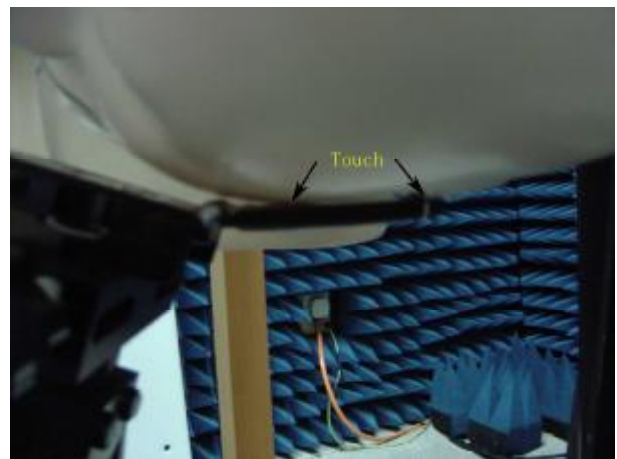


Fig.7 Photograph of the Left Hand Side Tilt status

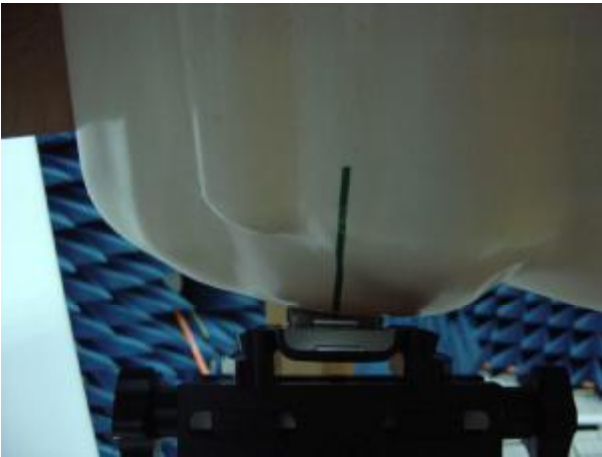


Fig.8 Photograph of the Right Hand Side Cheek status

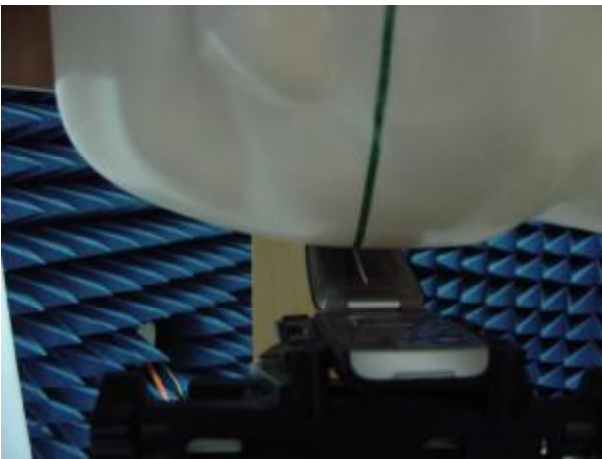


Fig.9 Photograph of the Right Hand Side Tilt status

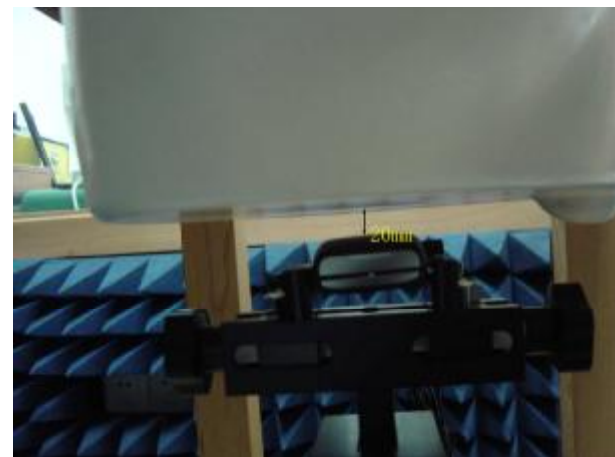
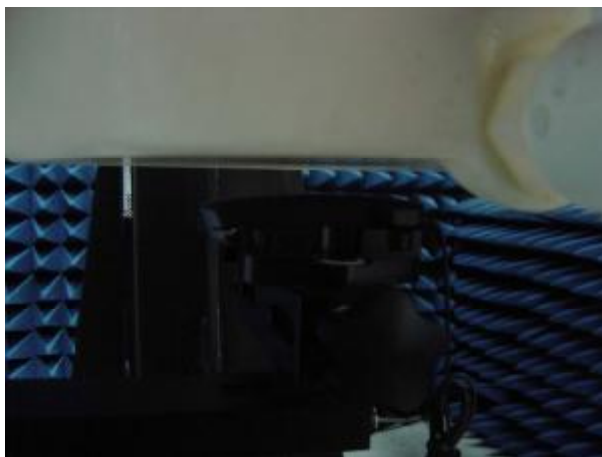


Fig.10 Photograph of the BodyWorn status

### 2. Photographs of the EUT



Fig.11 Front View



Fig.12 Back View

### 3. Photographs of the battery



Fig.13 Battery T5001418AAAA-750mAh



Fig.14 Battery T5000572AAAA-700mAh

#### 4. Photograph of the charger



Fig.15 Charger



Fig.16 Headset- T5003308AAAA





## 5. Probe Calibration certificate

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



S Schweizerischer Kalibrierdienst  
S Service suisse d'étalonnage  
S 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 SGS-CSTC (MTT)

Certificate No: ES3-3088\_Dec06

**CALIBRATION CERTIFICATE**

Object ES3DV3 - SN:3088

Calibration procedure(s) QA CAL-01.v5  
Calibration procedure for dosimetric E-field probes

Calibration date: December 12, 2006

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 ( $22 \pm 3$ °C and humidity < 70%.

Calibration Equipment used (M&amp;TE critical for calibration)

Primary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	5-Apr-06 (METAS, No. 251-00557)	Apr-07
Power sensor E4412A	MY41495277	5-Apr-06 (METAS, No. 251-00557)	Apr-07
Power sensor E4412A	MY41498087	5-Apr-06 (METAS, No. 251-00557)	Apr-07
Reference 3 dB Attenuator	SN: S5054 (3c)	10-Aug-06 (METAS, No. 217-00592)	Aug-07
Reference 20 dB Attenuator	SN: S5086 (20b)	4-Apr-06 (METAS, No. 251-00558)	Apr-07
Reference 30 dB Attenuator	SN: S5129 (30b)	10-Aug-06 (METAS, No. 217-00593)	Aug-07
Reference Probe ES3DV2	SN: 3013	2-Jan-06 (SPEAG, No. ES3-3013_Jan06)	Jan-07
DAE4	SN: 654	21-Jun-06 (SPEAG, No. DAE4-654_Jun06)	Jun-07

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (SPEAG, in house check Nov-05)	In house check: Nov-07
Network Analyzer HP 8753E	US37390585	18-Oct-01 (SPEAG, in house check Oct-06)	In house check: Oct-07

Calibrated by:	Name	Function	Signature
	Katja Prokovic	Technical Manager	
Approved by:	Niels Kuster	Quality Manager	

Issued: December 13, 2006

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

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



**S** Schweizerischer Kalibrierdienst  
**C** Service suisse d'étalonnage  
**S** 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**

**Glossary:**

TSL	tissue simulating liquid
NORM <sub>x,y,z</sub>	sensitivity in free space
ConF	sensitivity in TSL / NORM <sub>x,y,z</sub>
DCP	diode compression point
Polarization $\varphi$	$\varphi$ rotation around probe axis
Polarization $\vartheta$	$\vartheta$ 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:**

- 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
- 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:**

- NORM<sub>x,y,z</sub>**: Assessed for E-field polarization  $\vartheta = 0$  ( $f \leq 900$  MHz in TEM-cell;  $f > 1800$  MHz: R22 waveguide). NORM<sub>x,y,z</sub> are only intermediate values, i.e., the uncertainties of NORM<sub>x,y,z</sub> does not effect the E<sup>2</sup>-field uncertainty inside TSL (see below *ConvF*).
- NORM(f)<sub>x,y,z</sub>** = NORM<sub>x,y,z</sub> \* *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*.
- DCP<sub>x,y,z</sub>**: 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 NORM<sub>x,y,z</sub> \* *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  $\pm 50$  MHz to  $\pm 100$  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.

ES3DV3 SN:3088

December 12, 2006

# Probe ES3DV3

## SN:3088

Manufactured:	July 20, 2005
Last calibrated:	September 13, 2005
Recalibrated:	December 12, 2006

Calibrated for DASY Systems

(Note: non-compatible with DASY2 system!)

ES3DV3 SN:3088

December 12, 2006

**DASY - Parameters of Probe: ES3DV3 SN:3088**

Sensitivity in Free Space<sup>A</sup>

Diode Compression<sup>B</sup>

NormX	1.31 ± 10.1%	$\mu\text{V}/(\text{V}/\text{m})^2$	DCP X	94 mV
NormY	1.23 ± 10.1%	$\mu\text{V}/(\text{V}/\text{m})^2$	DCP Y	94 mV
NormZ	1.27 ± 10.1%	$\mu\text{V}/(\text{V}/\text{m})^2$	DCP Z	93 mV

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		3.0 mm	4.0 mm
SAR <sub>be</sub> [%]	Without Correction Algorithm	2.4	0.6
SAR <sub>be</sub> [%]	With Correction Algorithm	1.0	0.0

TSL                    1810 MHz    Typical SAR gradient: 10 % per mm

Sensor Center to Phantom Surface Distance		3.0 mm	4.0 mm
SAR <sub>be</sub> [%]	Without Correction Algorithm	7.6	4.5
SAR <sub>be</sub> [%]	With Correction Algorithm	0.1	0.2

Sensor Offset

Probe Tip to Sensor Center                    2.0 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%.

<sup>A</sup> The uncertainties of NormX,Y,Z do not affect the E<sup>2</sup>-field uncertainty inside TSL (see Page 8).

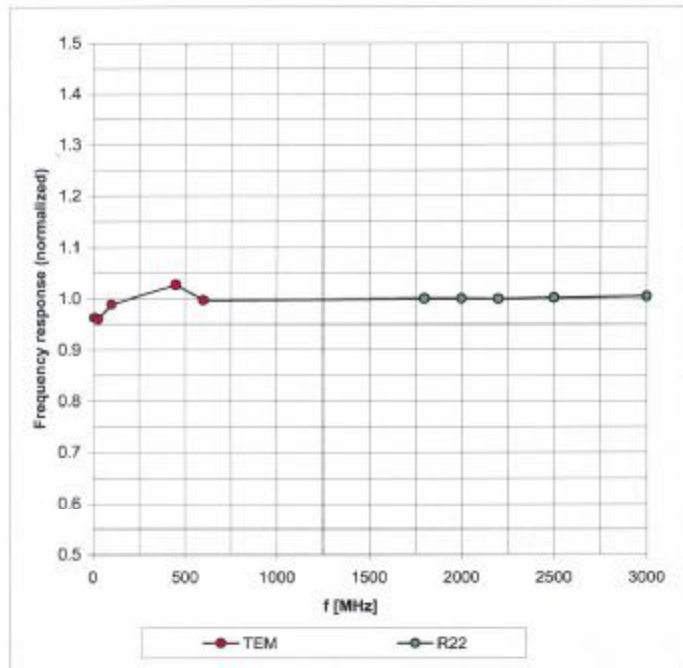
<sup>B</sup> Numerical linearization parameter: uncertainty not required.

ES3DV3 SN:3088

December 12, 2006

### Frequency Response of E-Field

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

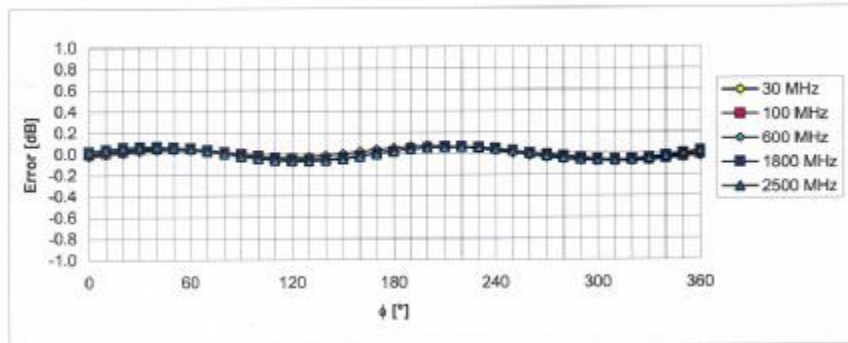
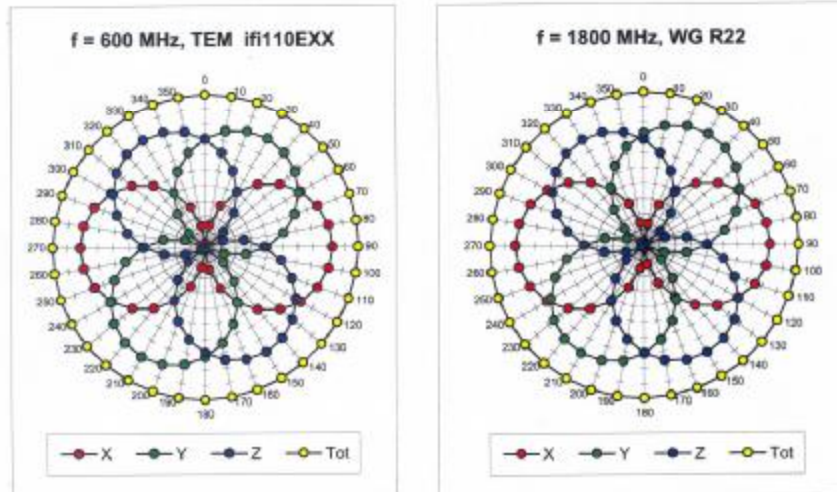


Uncertainty of Frequency Response of E-field:  $\pm 6.3\%$  (k=2)

ES3DV3 SN:3088

December 12, 2006

### Receiving Pattern ( $\phi$ ), $\vartheta = 0^\circ$

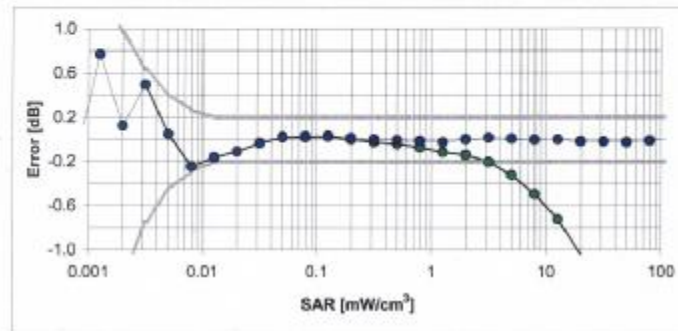
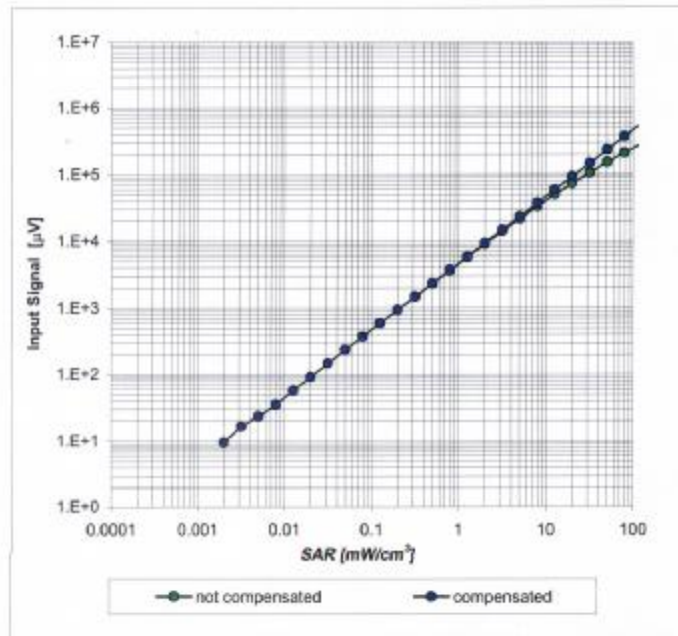


Uncertainty of Axial Isotropy Assessment:  $\pm 0.5\%$  ( $k=2$ )

ES3DV3 SN:3088

December 12, 2006

### Dynamic Range $f(SAR_{head})$ (Waveguide R22, $f = 1800$ MHz)

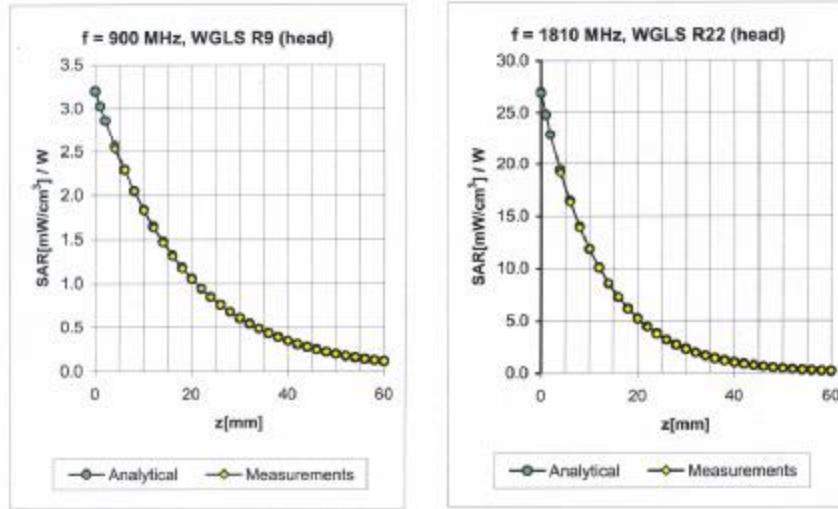


Uncertainty of Linearity Assessment:  $\pm 0.6\%$  ( $k=2$ )

ES3DV3 SN:3088

December 12, 2006

### Conversion Factor Assessment



f [MHz]	Validity [MHz] <sup>c</sup>	TSL	Permittivity	Conductivity	Alpha	Depth	ConvF Uncertainty
900	± 50 / ± 100	Head	41.5 ± 5%	0.97 ± 5%	1.00	1.18	6.00 ± 11.0% (k=2)
1810	± 50 / ± 100	Head	40.0 ± 5%	1.40 ± 5%	0.73	1.39	5.07 ± 11.0% (k=2)
2000	± 50 / ± 100	Head	40.0 ± 5%	1.40 ± 5%	0.73	1.38	4.97 ± 11.0% (k=2)
2450	± 50 / ± 100	Head	39.2 ± 5%	1.80 ± 5%	0.74	1.36	4.69 ± 11.8% (k=2)
900	± 50 / ± 100	Body	55.0 ± 5%	1.05 ± 5%	1.00	1.17	5.92 ± 11.0% (k=2)
1810	± 50 / ± 100	Body	53.3 ± 5%	1.52 ± 5%	1.00	1.18	4.68 ± 11.0% (k=2)
2000	± 50 / ± 100	Body	53.3 ± 5%	1.52 ± 5%	0.89	1.27	4.51 ± 11.0% (k=2)
2450	± 50 / ± 100	Body	52.7 ± 5%	1.95 ± 5%	0.80	1.12	4.33 ± 11.8% (k=2)

<sup>c</sup> 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.

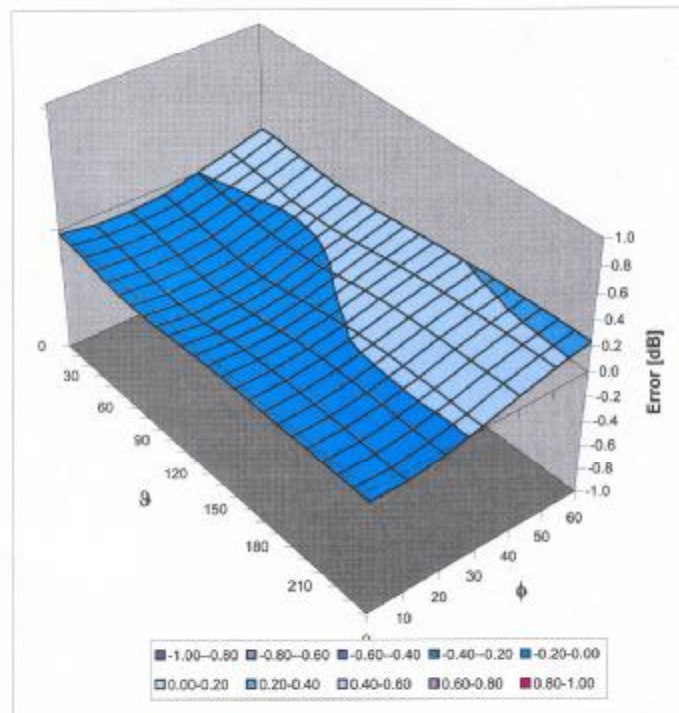


ES3DV3 SN:3088

December 12, 2006

### Deviation from Isotropy in HSL

Error ( $\phi$ ,  $\theta$ ),  $f = 900$  MHz



Uncertainty of Spherical Isotropy Assessment:  $\pm 2.6\%$  ( $k=2$ )

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



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

Accredited by the Swiss Accreditation Service (SAS)  
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 **SGS China (Auden)**

Certificate No: **ES3-3088\_Jan08**

**CALIBRATION CERTIFICATE**

Object **ES3DV3 - SN:3088**

Calibration procedure(s) **QA CAL-01.v6  
Calibration procedure for dosimetric E-field probes**

Calibration date: **January 18, 2008**

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 (MATE critical for calibration)

Primary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power meter E4419B	RR41293874	29-Mar-07 (METAS, No. 217-00670)	Mar-08
Power sensor E4412A	MY41495777	29-Mar-07 (METAS, No. 217-00670)	Mar-08
Power sensor E4412A	MY11498037	29-Mar-07 (METAS, No. 217-00670)	Mar-08
Reference 3 dB Attenuator	SN: 35054 (3c)	8-Aug-07 (METAS, No. 217-00719)	Aug-08
Reference 20 dB Attenuator	SN: 35086 (20b)	29-Mar-07 (METAS, No. 217-00671)	Mar-08
Reference 30 dB Attenuator	SN: 35129 (30b)	8-Aug-07 (METAS, No. 217-00720)	Aug-08
Reference Probe ES3DV2	SN: 3013	2-Jan-08 (SPEAG, No. ES3-3013_Jan08)	Jan-09
DAB4	SN: 854	23-Apr-07 (SPEAG, No. CAE4-6C4_Apr07)	Apr-08

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator HP 8848C	US3342UC1700	4-Aug-99 (SPEAG, in house check Oct-07)	In house check: Oct-08
Network Analyzer HP B753E	US37300585	18-Oct-01 (SPEAG, in house check Oct-07)	In house check: Oct-08

	Name	Function	Signature
Calibrated by:	Karja Pukovic	Technical Manager	
Approved by:	Nico Kuster	Quality Manager	

Issued: January 18, 2008

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

ES3DV3 SN:3088

January 18, 2008

# Probe ES3DV3

## SN:3088

Manufactured:	July 20, 2005
Last calibrated:	December 12, 2006
Recalibrated:	January 18, 2008

Calibrated for DASY Systems

(Note: non-compatible with DASY2 system!)

ES3DV3 SN:3088

January 18, 2008

**DASY - Parameters of Probe: ES3DV3 SN:3088**

Sensitivity in Free Space <sup>A</sup>			Diode Compression <sup>B</sup>	
NormX	1.31 ± 10.1%	μV/(V/m) <sup>2</sup>	DCP X	92 mV
NormY	1.26 ± 10.1%	μV/(V/m) <sup>2</sup>	DCP Y	93 mV
NormZ	1.24 ± 10.1%	μV/(V/m) <sup>2</sup>	DCP Z	93 mV

Sensitivity in Tissue Simulating Liquid (Conversion Factors)

Please see Page 8.

Boundary Effect

<b>TSL</b>	<b>900 MHz</b>	<b>Typical SAR gradient: 5 % per mm</b>		
	Sensor Center to Phantom Surface Distance	<b>3.0 mm</b>	<b>4.0 mm</b>	
	SAR <sub>be</sub> [%] Without Correction Algorithm	11.0	6.8	
	SAR <sub>be</sub> [%] With Correction Algorithm	0.9	0.4	
<b>TSL</b>	<b>1750 MHz</b>	<b>Typical SAR gradient: 10 % per mm</b>		
	Sensor Center to Phantom Surface Distance	<b>3.0 mm</b>	<b>4.0 mm</b>	
	SAR <sub>be</sub> [%] Without Correction Algorithm	9.6	5.1	
	SAR <sub>be</sub> [%] With Correction Algorithm	0.7	0.9	

Sensor Offset

Probe Tip to Sensor Center **2.0 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%.

<sup>A</sup> The uncertainties of NormX,Y,Z do not affect the E<sup>2</sup>-field uncertainty inside TSL (see Page 8).

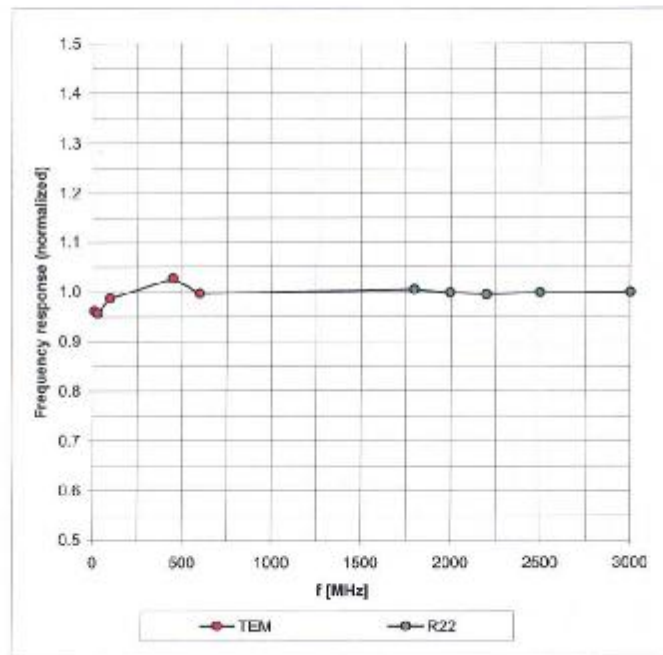
<sup>B</sup> Numerical linearization parameter; uncertainty not required.

ES3DV3 SN:3088

January 18, 2008

### Frequency Response of E-Field

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

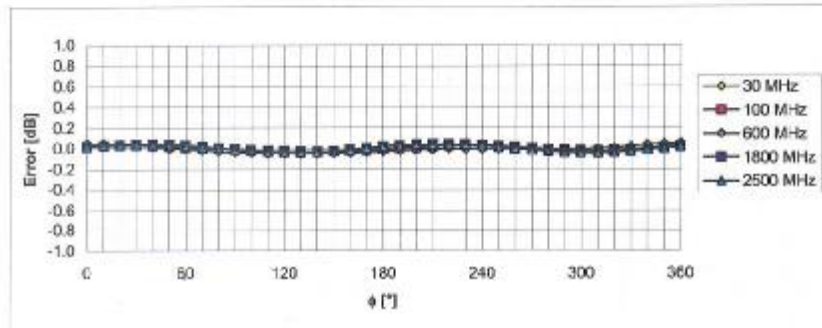
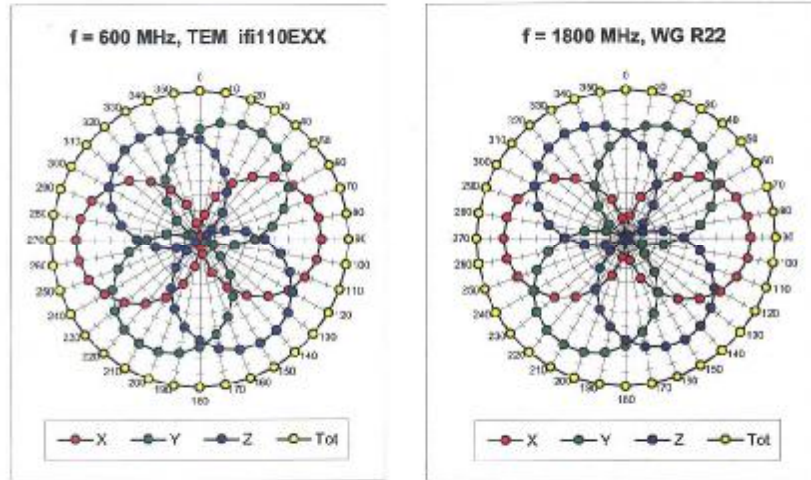


Uncertainty of Frequency Response of E-field:  $\pm 6.3\%$  ( $k=2$ )

ES3DV3 SN:3088

January 18, 2008

### Receiving Pattern ( $\phi$ ), $\vartheta = 0^\circ$

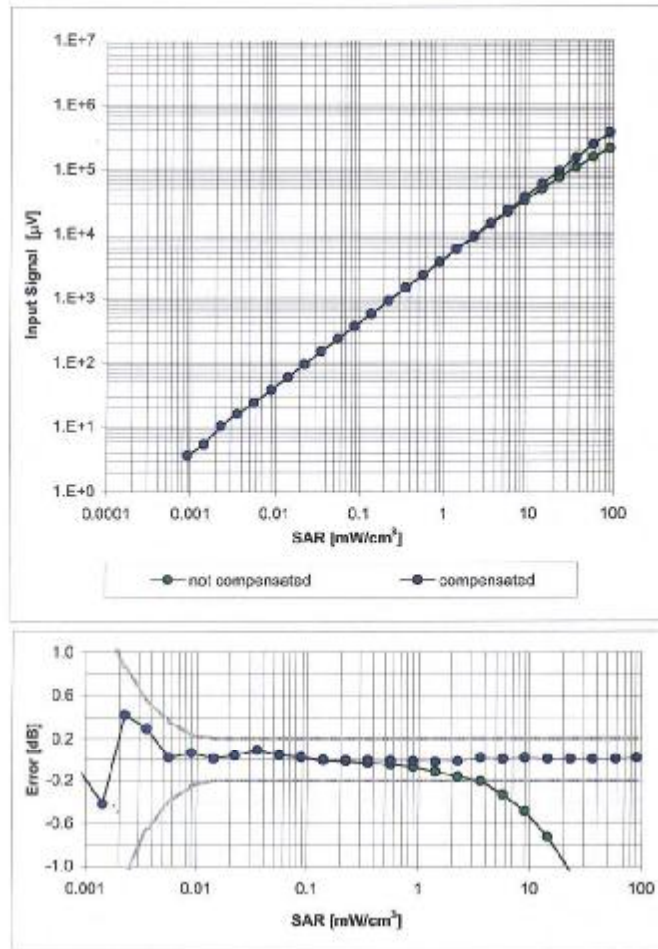


Uncertainty of Axial Isotropy Assessment:  $\pm 0.5\%$  ( $k=2$ )

ES3DV3 SN:3088

January 18, 2008

### Dynamic Range $f(\text{SAR}_{\text{head}})$ (Waveguide R22, $f = 1800 \text{ MHz}$ )

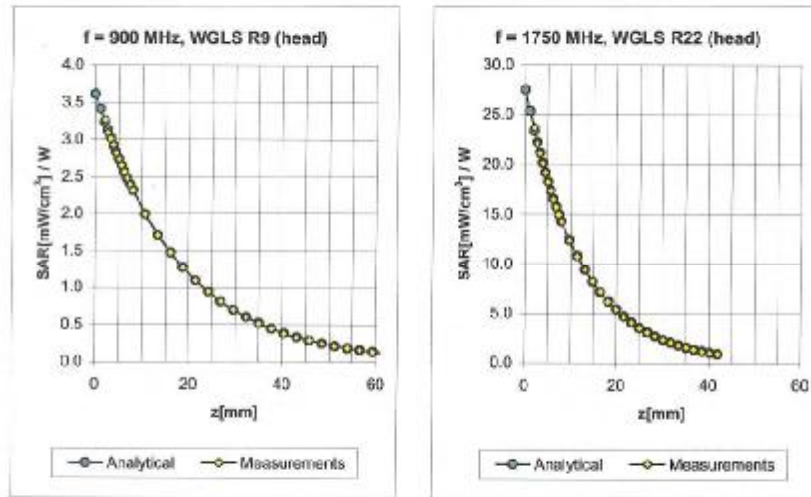


Uncertainty of Linearity Assessment:  $\pm 0.6\%$  ( $k=2$ )

ES3DV3 SN:3088

January 18, 2008

### Conversion Factor Assessment



f [MHz]	Validity [MHz] <sup>c</sup>	TSL	Permittivity	Conductivity	Alpha	Depth	ConvF Uncertainty
900	± 50 / ± 100	Head	41.5 ± 5%	0.97 ± 5%	0.90	1.23	6.15 ± 11.0% (k=2)
1750	± 50 / ± 100	Head	40.1 ± 5%	1.37 ± 5%	0.93	1.18	5.04 ± 11.0% (k=2)
1950	± 50 / ± 100	Head	40.0 ± 5%	1.40 ± 5%	0.73	1.35	4.84 ± 11.0% (k=2)
2450	± 50 / ± 100	Head	39.2 ± 5%	1.60 ± 5%	0.70	1.39	4.53 ± 11.8% (k=2)
900	± 50 / ± 100	Body	55.0 ± 5%	1.05 ± 5%	0.95	1.14	5.81 ± 11.0% (k=2)
1750	± 50 / ± 100	Body	53.4 ± 5%	1.49 ± 5%	0.90	1.17	4.92 ± 11.0% (k=2)
1950	± 50 / ± 100	Body	53.3 ± 5%	1.52 ± 5%	0.84	1.23	4.60 ± 11.0% (k=2)
2450	± 50 / ± 100	Body	52.7 ± 5%	1.95 ± 5%	0.84	1.17	4.13 ± 11.8% (k=2)

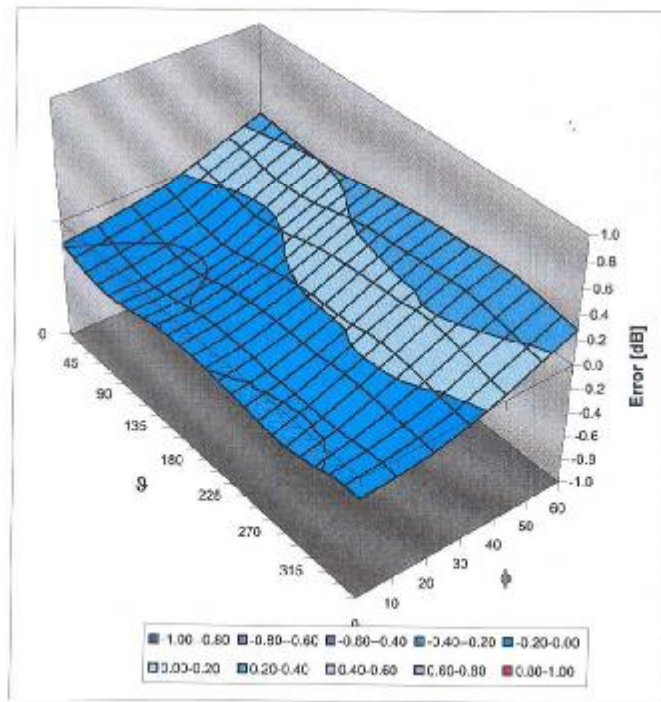
<sup>c</sup> The validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2). The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.



ES3DV3 SN:3088

January 18, 2008

### Deviation from Isotropy in HSL™ Error ( $\phi$ , $\theta$ ), $f = 900$ MHz



Uncertainty of Spherical Isotropy Assessment:  $\pm 2.6\%$  ( $k=2$ )