

SAR TEST REPORT

Report No.: GSM11598970S02
According to IEEE1528-2003

For

ZTE CORPORATION

Market Name: MF110

Final Hardware Version: P671A2-2.0.0

Final Software Version: BD_P671A2V1.0.0B02

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Change History

Version	Change Contents	Author	Date
V1.0	First edition	Ken Wang	2009-05-31
V1.1	Second edition	Ken Wang	2009-07-02
V1.2	Format update	Ken Wang	2009-07-07
V1.3	Additional test	Ken Wang	2009-07-14

Standards

The Equipment under Test (EUT) has been tested at SGS's (own or subcontracted) laboratories according to IEEE 1528-2003.

The following table summarizes the specific reference documents such as harmonized standards or test specifications which were used for testing as SGS's (own or subcontracted) laboratories.

Identity	Document Title	Version
IEEE1528	IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques	2003
Supplement C (Edition 01-01) to OET Bulletin 65 (Edition 97-01)	Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions	2001
KDB 447498	Mobile and Portable Device RF Exposure Procedure and Equipment Authorization Policies	-
KDB941225 D01	SAR Measurement Procedures for 3G Devices	-
KDB941225 D02	Guidance for Requesting a Permit-But-Ask for 3GPPP R6-HSPA	-
KDB941225 D03	Recommended SAR Test Reduction Procedures for GSM/GPRS/EGPRS	-

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.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS-CSTC Shanghai GSM Lab or testing done by SGS-CSTC Shanghai GSM Lab should be approved by SGS Shanghai GSM Lab in connection with distribution or use of the product described in this report in writing.

1. General Information

1.1 Testing Laboratory

1.1.1 Responsible Testing Laboratory

Wireless Telecommunications Laboratory SGS-CSTC Standards Technical Services Co., Ltd Shanghai Branch	
Address:	9F, 3rd Building, No.889, Yishan Rd, Xuhui District, Shanghai, China 200233
Telephone:	+86 (0) 21 6495 1616
Fax:	+86 (0) 21 5450 0149
Internet:	http://www.cn.sgs.com
Contact:	Mr. Peter Xue
Email:	peter.xue@sgs.com

1.1.2 Testing Locations

Wireless Telecommunications Laboratory SGS-CSTC Standards Technical Services Co., Ltd Shanghai Branch	
Address:	9F, 3rd Building, No.889, Yishan Rd, Xuhui District, Shanghai, China 200233
Telephone:	+86 (0) 21 6140 2666
Fax:	+86 (0) 21 5450 0149
Internet:	http://www.cn.sgs.com
Contact:	Mr. Peter Xue
Email:	peter.xue@sgs.com

1.1.3 SGS Wireless Shanghai, Personnel

Project Management Team

Surname	Forename
Cai	Cai
Anya	Xu
Roger	Ruan

Test Engineer

Surname	Forename
Ken	Wang
Zenger	Zhang

1.2 Testing Environments

Ambient Temperature:	20~24 °C
Relative Humidity:	25~60%

1.3 Client information

1.3.1 Details of Applicant

Company Name	ZTE CORPORATION
Address	ZTE Plaza, Keji Road South, Hi-Tech Industrial Park, Nanshan District, Shenzhen, Guangdong, 518057, P.R.China
Telephone	86-21-68897541
Fax	86-21-50801070
Contact	Zhang min
Email	Zhang.min@zte.com.cn

1.3.2 Details of Manufacture

Company Name	ZTE CORPORATION
Address	ZTE Plaza, Keji Road South, Hi-Tech Industrial Park, Nanshan District, Shenzhen, Guangdong, 518057, P.R.China
Telephone	86-21-68897541
Fax	86-21-50801070
Contact	Zhang min
Email	Zhang.min@zte.com.cn

1.4 Equipment Under Test (EUT) and Accessories

1.4.1 Description of EUT(s)

Product Name	HSUPA USB Stick
Brand Name	ZTE
Model Name	MF110
Marketing Name	MF110
Final Hardware Version	P671A2-2.0.0
Final Software Version	BD_P671A2V1.0.0B02
Normal Voltage	5V
Low Voltage	4.5V
High Voltage	5.5V

Battery Type	N/A	
Antenna Type	Inner Antenna	
	GSM 850	Tx: 824~849MHz
		Rx: 869~894MHz
	PCS 1900	Tx: 1850~1910MHz
		Rx: 1930~1990MHz
	FDD II	Tx: 1850~1910MHz
		Rx: 1930~1990MHz
	FDD V	Tx: 824~849MHz
		Rx: 869~894MHz
Modulation Mode	GMSK, 8PSK, QPSK, 16QAM	
GPRS Multislot Class	Class 10	
EGPRS Multislot Class	Class 12	
GSM Power Class	GSM 850	4
	PCS 1900	1
8PSK Power Class	GSM 900	E2
	DCS 1800	E2
	GSM 850	E2
	PCS 1900	E2
UMTS Power Class	FDD II	3
	FDD V	3

1.4.2 Internal Identification of EUT(s)

Sample No.	S/N or IMEI	Hardware Status	Software Status
KZ038AP01	351790030003690	P671A2-2.0.0	BD_P671A2V1.0.0B02
Date Initial Sample Received		2009-05-23	
Testing Start Date		2009-05-28	
Testing End Date		2009-05-30	

1.4.3 Internal Identification of Accessories

Sample No.	Descriptions	S/N or IMEI
N/A	Battery	N/A
N/A	Charger	N/A
N/A	RF Cable	N/A

1.5 Operation Configuration

Configuration 1: GSM 850, BodyWorn P1&P2&P3&P4&P5

Configuration 2: PCS1900, BodyWorn P1&P2&P3&P4&P5

Configuration 3: UMTS FDD II, BodyWorn P1&P2&P3&P4&P5

Configuration 4: UMTS FDD V, BodyWorn P1&P2&P3&P4&P5

Note:

(1) position 1-P1, position 2-P2, position 3-P3, position 4-P4, position 5-P5

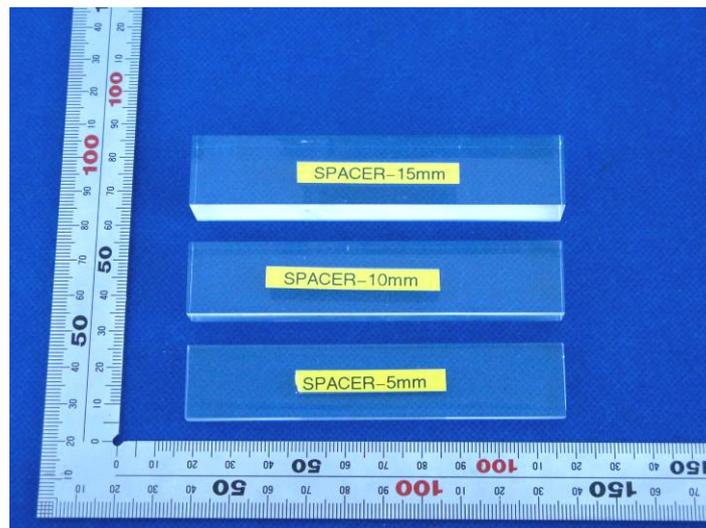
(2) An IBM laptop (T61) was used in configuration P2&P5

(3) A short USB cable was used in configuration P1&P3&P4

(4) Distance separation for each position

$P1=P2=P3=P4=P5=5\text{mm}$

(5) Spacer holder



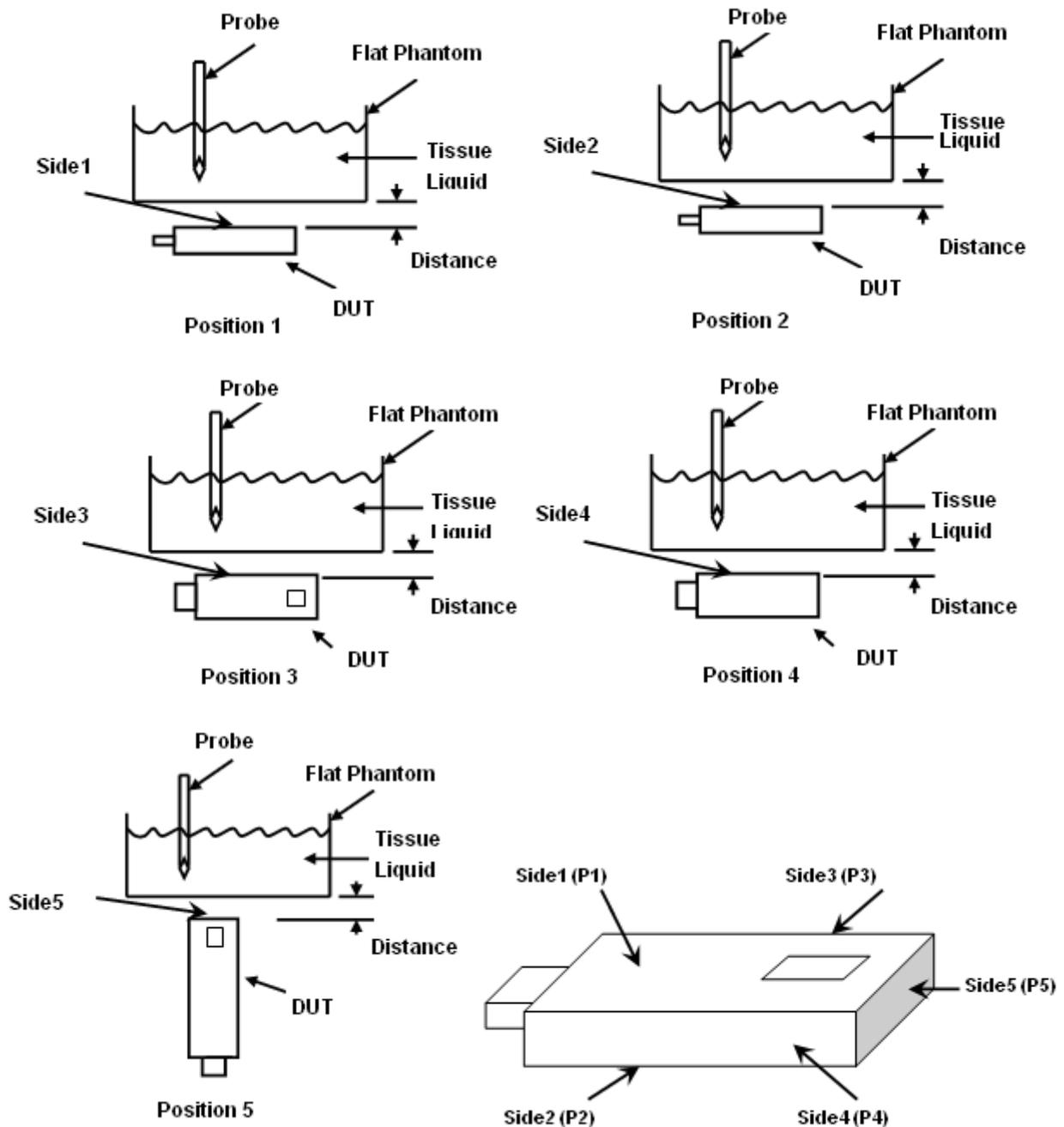


Figure 1-1 Operation configuration for EUT positions

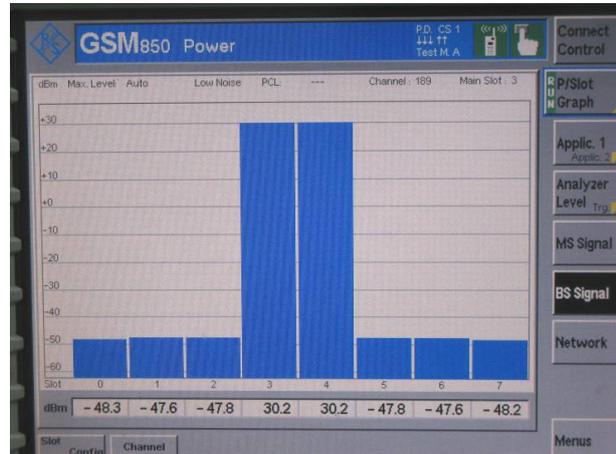
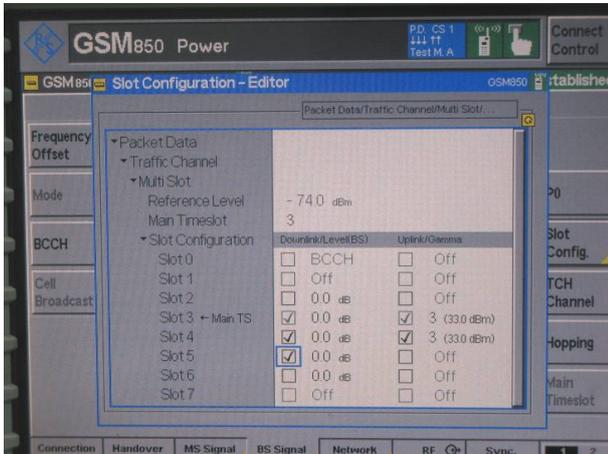
For SS

The device was put into operation by using CMU200 radio tester through air link.

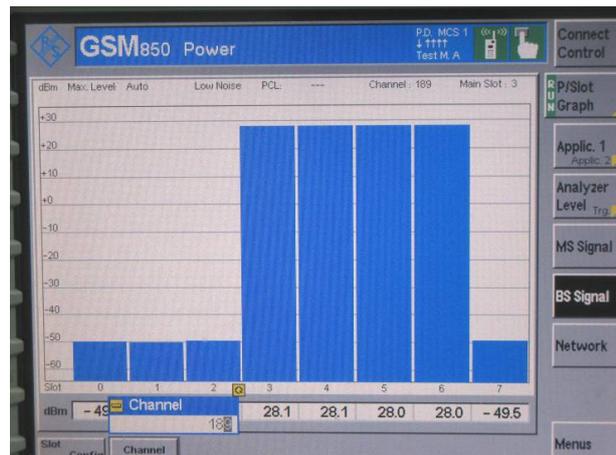
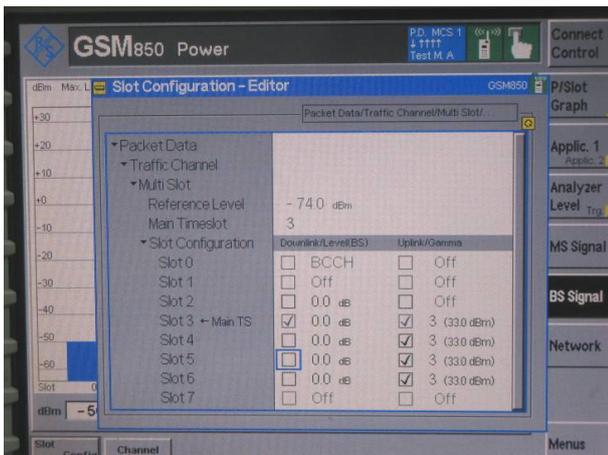
The device output power was set to maximum power level for each test.

The measurements were performed on lowest, middle and highest channels.

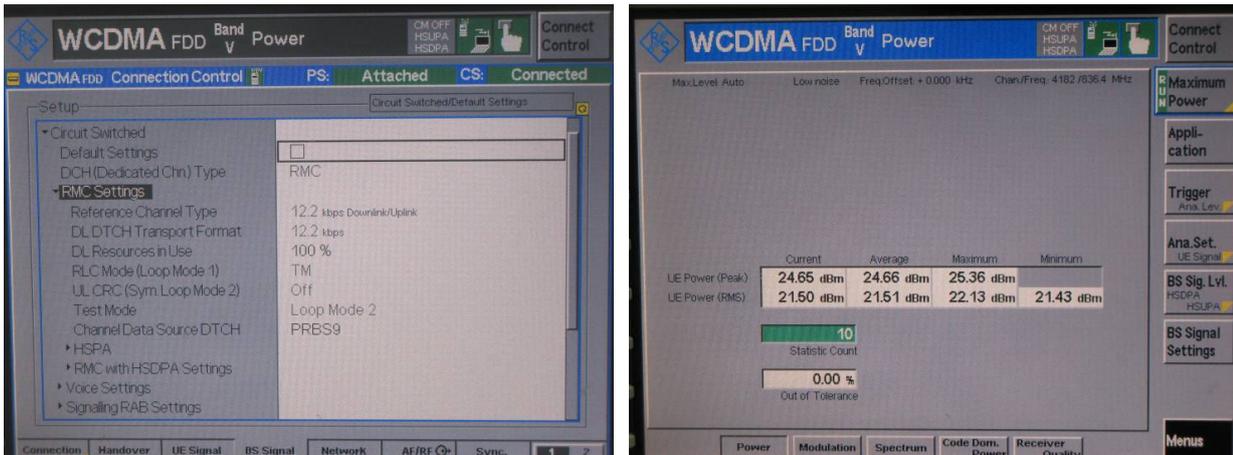
In GPRS mode



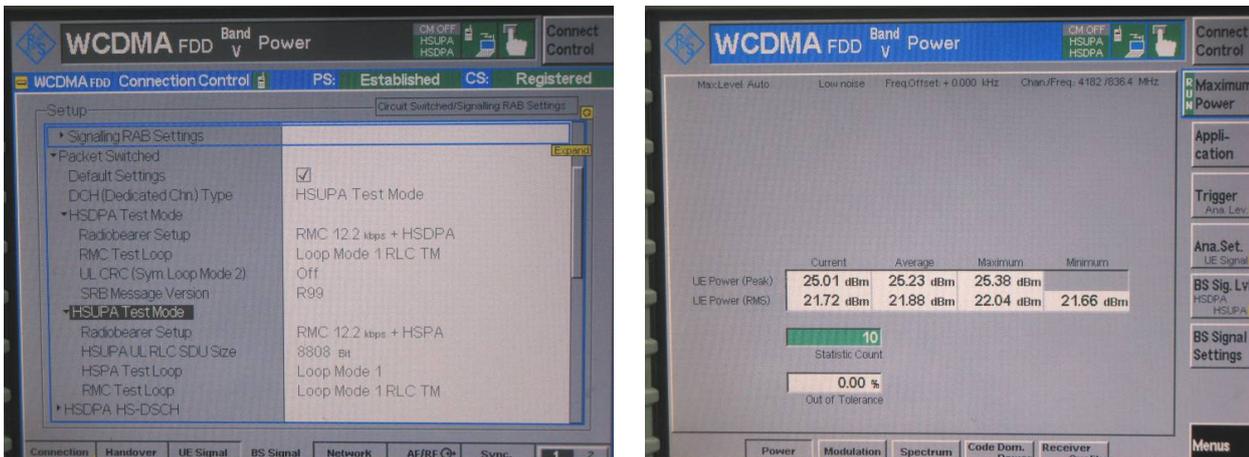
In EGPRS mode(with GMSK modulation)



In WCDMA mode



In HSPA mode(both HSDPA and HSUPA applied)



1.6 Measurement procedure

Step 1: Power reference measurement

The SAR measurement was taken at a selected spatial reference point to monitor power variations during testing. This fixed location point was measured and used as a reference value.

Step 2: Area scan

The SAR distribution at the exposed side of the head was measured at a distance of 4 mm from the inner surface of the shell. The area covered the entire dimension of the head and the horizontal grid spacing was 10mm*10mm. Based on the area scan data, the area of the maximum absorption was determined by spline interpolation.

Step 3: Zoom scan

Around this point, a volume of 30mm*30mm*30mm (fine resolution volume scan, zoom scan) was

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assessed by measuring 7*7*7 points. On this basis of this data set, the spatial peak SAR value was evaluated with the following procedure:

The data at the surface was extrapolated, since the center of the dipoles is 2.0mm away from the tip of the probe and the distance between the surface and the lowest measuring point is 1.2mm. (This can be variable. Refer to the probe specification) The extrapolation was based on a least square algorithm. A polynomial of the fourth order was calculated through the points in z-axes. This polynomial was then used to evaluate the points between the surface and the probe tip. The maximum interpolated value was searched with a straight-forward algorithm. Around this maximum the SAR values averaged over the spatial volumes (1g or 10g) were computed using the 3D-Spline interpolation algorithm. The volume was integrated with the trapezoidal algorithm. One thousand points (10*10*10) were interpolated to calculate the average. All neighboring volumes were evaluated until no neighboring volume with a higher average value was found.

Step 4: Power reference measurement (drift)

The SAR value at the same location as in step 1 was again measured. (If the value changed by more than 5%, the evaluation should be done repeatedly)

1.7 Test Limits

According to 47 CFR §2.1091: 2001, 47 CFR §2.1093: 2001, IEEE Std C95.1-2005, 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 C95.1-2005.

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

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

2.1 Measurement of RF conducted Power

Unit: dBm

Mode		GPRS				EGPRS								GSM
		1	2	3	4	1		2		3		4		
Band	Channel					GMSK	8PSK	GMSK	8PSK	GMSK	8PSK	GMSK	8PSK	-
850	128	31.6	28.6	-	-	31.6	26.7	28.6	25.2	26.9	23.4	25.7	22.3	-
	189	31.4	28.5	-	-	31.4	26.6	28.5	25.0	26.8	23.3	25.5	22.1	-
	251	31.2	28.3	-	-	31.2	26.5	28.3	25.0	26.6	23.2	25.4	22.0	-
1900	512	28.7	25.7	-	-	28.7	25.5	25.7	24.0	23.9	22.3	22.9	21.0	-
	661	28.8	25.8	-	-	28.8	25.4	25.8	24.2	24.0	22.4	23.0	21.1	-
	810	28.8	25.8	-	-	28.8	25.5	25.8	24.3	23.9	22.4	22.9	21.1	-

Mode		HSPA					WCDMA
Subtests		1	2	3	4	5	
Band	Channel						
II	12	20.6	18.9	19.4	18.8	20.6	20.9
	9400	20.6	18.9	19.4	18.6	20.4	20.9
	9538	20.5	19.0	19.4	18.6	20.6	21.0
V	4132	20.8	18.7	19.5	18.6	20.5	21.1
	4182	20.8	18.8	19.6	18.6	21.0	21.3
	4233	20.7	18.8	19.5	18.5	20.9	21.3
Bc		11	6	15	2	15	
Bd		15	15	9	15	15	
Bec							
Bed							
ΔACK,ΔNACK,ΔCQI		8	8	8	8	8	
AG		20	12	15	17	21	
CM (dB)		1.0	3.0	2.0	3.0	1.0	
MPR (dB)		0.0	2.0	1.0	2.0	0.0	
E-TFCI		75	67	92	71	81	

2.2 Measurement of SAR average value

GSM850

Band	EUT Position	Test Configurations	Averaged SAR over 1g (W/kg)			Temp. (°C)	Verdict
			CH128	CH189	CH251		
			824.2MHz	836.4MHz	848.8MHz		
GSM850	P1	GPRS 1TS	-	0.265	-	22	Pass
	P2	GPRS 1TS	0.441	0.432	0.329	22	Pass
		GPRS 2TS	-	0.420	-	22	Pass
		EGPRS 3TS	-	0.396	-	22	Pass
		EGPRS 4TS	-	0.381	-	22	Pass
		Worst with SD	0.440	-	-	22	Pass
	P3	GPRS 1TS	-	0.157	-	22	Pass
	P4	GPRS 1TS	-	0.144	-	22	Pass
	P5	GPRS 1TS	-	0.017	-	22	Pass

PCS1900

Band	EUT Position	Test Configurations	Averaged SAR over 1g (W/kg)			Temp. (°C)	Verdict
			CH512	CH661	CH810		
			1850.2MHz	1880.0MHz	1909.8MHz		
PCS1900	P1	GPRS 2TS	-	0.807	-	22	Pass
	P2	GPRS 1TS	0.882	1.05	0.823	22	Pass
		GPRS 2TS	-	0.824	-	22	Pass
		EGPRS 3TS	-	0.743	-	22	Pass
		EGPRS 4TS	-	0.720	-	22	Pass
		Worst with SD	-	1.06	-	22	Pass
	P3	GPRS 1TS	-	0.567	-	22	Pass
	P4	GPRS 1TS	-	0.383	-	22	Pass
	P5	GPRS 1TS	-	0.241	-	22	Pass

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UMTS FDD II

Band	EUT Position	Test Configurations	Averaged SAR over 1g (W/kg)			Temp. (°C)	Verdict
			CH12	CH9400	CH9538		
			1852.4MHz	1880.0MHz	1907.6MHz		
UMTS FDD II	P1	WCDMA	-	0.912	-	22	Pass
	P2	WCDMA	1.0	1.17	1.03	22	Pass
		HSPA	-	0.597	-	22	Pass
		Worst with SD	-	1.13	-	22	Pass
	P3	WCDMA	-	0.651	-	22	Pass
	P4	WCDMA	-	0.426	-	22	Pass
	P5	WCDMA	-	0.274	-	22	Pass

UMTS FDD V

Band	EUT Position	Test Configurations	Averaged SAR over 1g (W/kg)			Temp. (°C)	Verdict
			CH4132	CH4182	CH4233		
			826.4MHz	836.4MHz	846.6MHz		
UMTS FDD V	P1	WCDMA	-	0.116	-	22	Pass
	P2	WCDMA	-	0.336	-	22	Pass
		HSPA	-	0.263	-	22	Pass
		Worst with SD	-	0.208	-	22	Pass
	P3	WCDMA	-	0.059	-	22	Pass
	P4	WCDMA	-	0.066	-	22	Pass
	P5	WCDMA	-	0.011	-	22	Pass

2.3 Maximum SAR average value

Band	EUT Position	Conducted Power (dBm)	SAR, Averaged over 1g (W/Kg)	Power Drift (dB)	Temp (°C)	Verdict
GSM850	BodyWorn,GPRS,1TS,Low,P2	31.6	0.441	-0.315	22	Pass
PCS1900	BodyWorn,GPRS,1TS,Mid+SD,P2	28.8	1.06	0.074	22	Pass
UMTS FDD II	BodyWorn,WCDMA,Mid,P2	20.9	1.17	0.227	22	Pass
UMTS FDD V	BodyWorn,WCDMA,Mid,P2	21.3	0.336	-0.019	22	Pass

Note:

- For all the tests, the maximum absolute value of the power drift which is under the GSM850-BodyWorn-GPRS-1TS-Low-P2 configuration is -0.315dB.
- Test reduction has been adopted according to conducted output power and produced SAR level:
 Low and High channel SAR are optional if SAR value produced in the middle channel is 3dB lower than the applicable SAR limit;
 In GPRS/EGPRS mode, the multislot configuration which produces highest SAR value is regard as the worst case to be measured, other multislot configurations are selectively confirmed;
- In EGPRS mode, the test is in the GMSK modulation according to the power between GMSK and 8PSK.
- The (max.cube) labeling indicates that during the grid scanning an additional peak was found which within 2dB of the highest peak
- ES3DV3 Probe Tip diameter is 4.0 mm and distance from probe tip to dipole centers is 2.0 mm. The additional tests were manually performed according to FCC KDB 447498 and single point SAR values are recorded as shown in table below.

Single Point SAR with Highest SAR Configuration

Frequency Band(MHz)	EUT position	Distance separation between DUT and Flat Phantom					
		5mm	10mm	15mm	20mm	25mm	
UMTS FDD II	Body Worn/WCDMA/Mid/P2	E Field (V/m)	29.52	17.67	12.47	7.617	-
		SAR (W/Kg)	1.17	0.513	0.289	-	-

Full averaged SAR is evaluated at the separation distance of 10mm and the value is 0.513 W/Kg in page 49.

3. Test Equipment

3.1 SPEAG DASY4

Test Platform	SPEAG DASY4 Professional			
Location	SGS SH Lab #8			
Manufacture	SPEAG			
Description	SAR Test System (Frequency range 300MHz-3GHz) 835, 900, 1800, 1900, 2000, 2450 frequency band HAC Extension			
Software Reference	DASY4: V4.7 Build 44 SEMCAD: V1.8 Build 171			
Hardware Reference				
Equipment	Model	Serial Number	Calibration Date	Due date of calibration
Robot	RX90L	F03/5V32A1/A01	n/a	n/a
Phantom	SAM 12	TP-1283	n/a	n/a
DAE	DAE3	569	2008-12-18	2009-12-17
E-Field Probe	ES3DV3	3088	2008-12-22	2009-12-21
H-Field Probe	ER3DV6	2308	2008-07-21	2009-07-20
H-Field Probe	H3DV6	6145	2008-07-23	2009-07-22
Validation Kits	D835V2	4d070	2008-12-15	2009-12-14
Validation Kits	D900V2	184	2009-01-13	2010-01-12
Validation Kits	D1800V2	2d070	2009-01-14	2010-01-13
Validation Kits	D1900V2	5d028	2009-01-13	2010-01-12
Validation Kits	D2000V2	1017	2009-01-07	2010-01-06
Validation Kits	D2450V2	733	2009-01-12	2010-01-11
Validation Kits	CD835V3	1060	2008-07-23	2009-07-22
Validation Kits	CD1880V3	1047	2008-07-23	2009-07-22
Validation Kits	CD2450V3	1046	2008-07-23	2009-07-22
Agilent Network Analyzer	E5071B	MY42100549	2008-12-08	2009-12-07
RF Bi-Directional Coupler	ZABDC20-252H	n/a	2009-05-18	2010-05-17
Agilent Signal Generator	E4438C	14438CATO-19719	2008-12-08	2009-12-07
Mini-Circuits Preamplifier	ZHL-42	D041905	2008-12-01	2009-11-30
Agilent Power Meter	E4416A	GB41292095	2008-12-08	2009-12-07
Agilent Power Sensor	8481H	MY41091234	2008-12-08	2009-12-07
R&S Power Sensor	NRP-Z92	100025	2009-04-28	2010-04-27
R&S Universal Radio Communication Tester	CMU200	103633	2008-12-08	2009-12-07

3.2 The SAR Measurement System

A photograph of the SAR measurement System is given in Fig. 3-1.

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 $SAR = \sigma (|E|)^2 / \rho$ where σ and ρ are the conductivity and mass density of the tissue-equivalent.

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

- 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).
- A dosimetric probe, i.e., an isotropic E-field probe optimized and calibrated for usage in tissue Equivalent liquid. The probe is equipped with an optical surface detector system.
- 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.

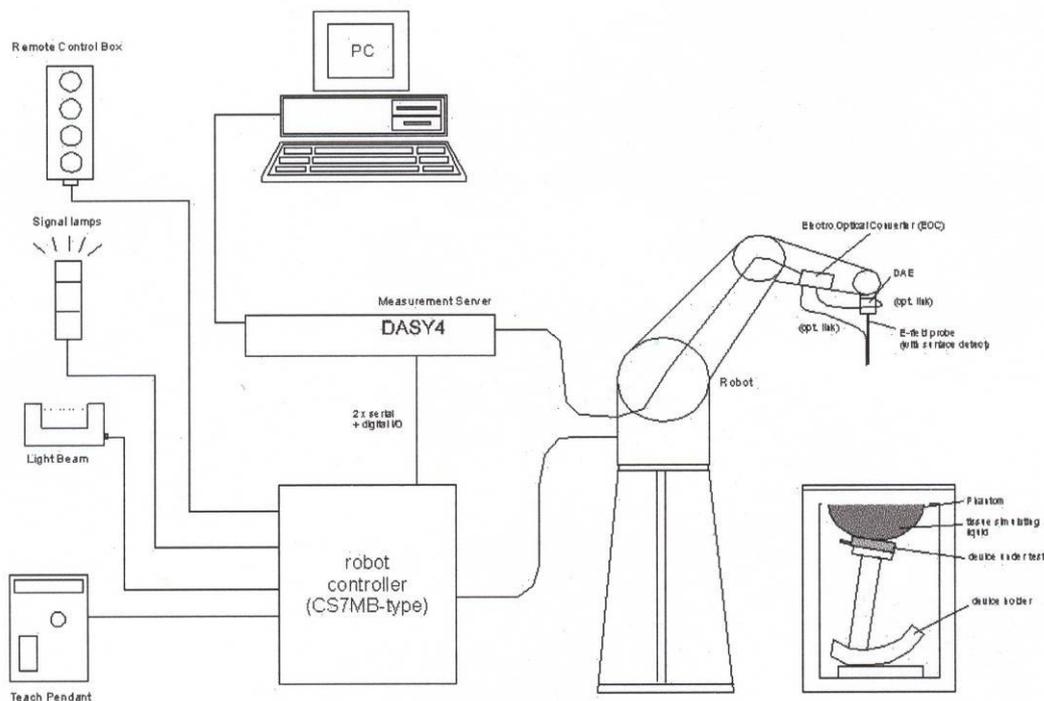


Fig. 3-1 SAR System Configuration

- 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 BodyWorn usage.
- The device holder for handheld mobile phones.
- Tissue Equivalent liquid mixed according to the given recipes.
- Validation dipole kits allowing to validating the proper functioning of the system.

3.3 Isotropic E-field Probe ES3DV3

Construction	Symmetrical design with triangular core Interleaved sensors Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Calibration	Basic Broad Band Calibration in air Conversion Factors (CF) for HSL 900 and HSL 1810 Additional CF for other liquids and frequencies upon request
Frequency	10 MHz to 4 GHz; Linearity: ± 0.2 dB (30 MHz to 4 GHz)
Directivity	± 0.2 dB in HSL (rotation around probe axis) ± 0.3 dB in tissue material (rotation normal to probe axis)
Dynamic Range	5 μ W/g to > 100 mW/g; Linearity: ± 0.2 dB
Dimensions	Overall length: 330 mm (Tip: 20 mm) Tip diameter: 4 mm (Body: 12 mm) Distance from probe tip to dipole centers: 2.0 mm
Application	General dosimetry up to 4 GHz Dosimetry in strong gradient fields Compliance tests of mobile phones

3.4 SAM Twin Phantom



Fig. 3-2 SAM Twin Phantom

The SAM twin phantom is a fiberglass shell phantom with 2mm shell thickness (except the ear region where shell thickness increases to 6mm). It has three measurement areas:

- Left hand
- Right hand
- Flat phantom

A white cover is provided to tap the phantom during off-periods to prevent water evaporation and changes in the liquid parameters. Free space scans of devices on the cover are possible.

On the phantom top, three reference markers are provided to identify the phantom position with respect to the robot.

Phantom specification:

Description	The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEEE 1528-2003, CENELEC 50361 and IEC 62209. It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents evaporation of the liquid. Reference markings on the phantom allow the complete setup of all predefined phantom positions and measurement grids by teaching three points with the robot.
Shell Thickness	2 ± 0.2 mm, Center ear point: 6 ± 0.2 mm
Filling Volume	Approx.25 liters
Dimensions	Length: 1000mm, Width: 500mm, Height: 850mm

3.5 Device Holder for Transmitters



Fig. 3-3 Device Holder for Transmitters

The SAR in the phantom is approximately inversely proportional to the square of the distance between the source and the liquid surface. For a source in 5mm distance, a positioning uncertainty of $\pm 0.5\text{mm}$ would produce a SAR uncertainty of $\pm 20\%$. An accurate device positioning is therefore crucial for accurate and repeatable measurements. The positions, in which the devices must be measured, are defined by the standards.

The DASY device holder is designed to cope with different positions given in the standard. It has two scales for the device rotation (with respect to the body axis) and the device inclination (with respect to the line between the ear reference points). The rotation centers for both scales are the ear reference point (ERP). Thus the device needs no repositioning when changing the angles.

The DASY device holder has been made out of low-loss POM material having the following dielectric parameters: relative permittivity $\epsilon_r = 3$ and loss tangent $\tan \delta = 0.02$. The amount of dielectric material has been reduced in the closest vicinity of the device, since measurements have suggested that the influence of the clamp on the test results could thus be lowered.

4. Measurements

4.1 GSM850-BodyWorn-GPRS-1TS-Mid-P2

Date/Time: 2009-5-30 9:55:25

Test Laboratory: SGS-GSM

GSM850-Body-Worn-GPRS-1TS-Mid-P2

DUT: KZ038AP01; Type: Body; Serial: 351790030003690

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

Medium: HSL835 Body Medium parameters used: $f = 836.4$ MHz; $\sigma = 0.948$ mho/m; $\epsilon_r = 54.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(5.67, 5.67, 5.67); Calibrated: 2008-12-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2008-12-18
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 186

Body Worn - Middle P2/Area Scan (81x121x1): **Measurement grid: dx=10mm, dy=10mm**

Maximum value of SAR (interpolated) = 0.482 mW/g

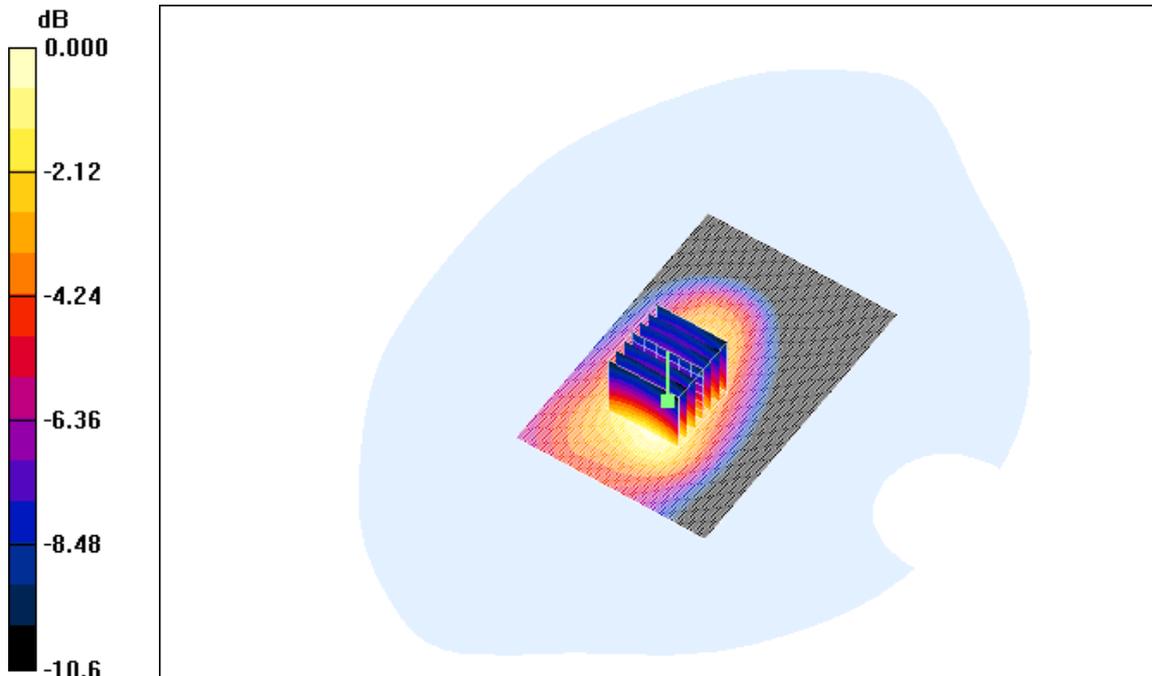
Body Worn - Middle P2/Zoom Scan (7x7x7)/Cube 0: **Measurement grid: dx=5mm, dy=5mm, dz=5mm**

Reference Value = 19.1 V/m; Power Drift = -0.208 dB

Peak SAR (extrapolated) = 0.657 W/kg

SAR(1 g) = 0.432 mW/g; SAR(10 g) = 0.280 mW/g

Maximum value of SAR (measured) = 0.458 mW/g



0 dB = 0.458mW/g

SHGSM

4.2 GSM850-BodyWorn-GPRS-2TS-Mid-P2

Date/Time: 2009-5-30 10:23:52

Test Laboratory: SGS-GSM

GSM850-Body-Worn-GPRS-2TS-Mid-P2

DUT: KZ038AP01; Type: Body; Serial: 351790030003690

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

Medium: HSL835 Body Medium parameters used: $f = 836.4$ MHz; $\sigma = 0.948$ mho/m; $\epsilon_r = 54.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(5.67, 5.67, 5.67); Calibrated: 2008-12-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2008-12-18
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 186

Body Worn - Middle P2/Area Scan (81x121x1): **Measurement grid: dx=10mm, dy=10mm**

Maximum value of SAR (interpolated) = 0.457 mW/g

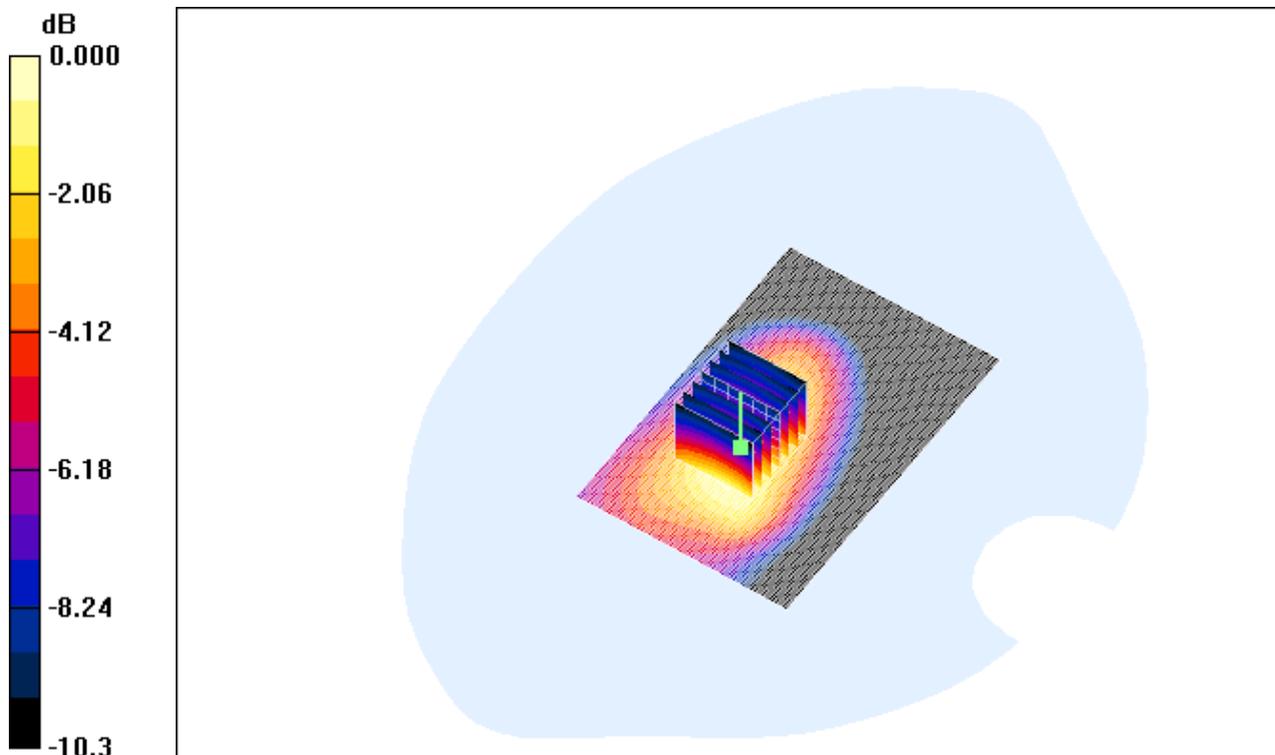
Body Worn - Middle P2/Zoom Scan (7x7x7)/Cube 0: **Measurement grid: dx=5mm, dy=5mm, dz=5mm**

Reference Value = 18.5 V/m; Power Drift = -0.039 dB

Peak SAR (extrapolated) = 0.638 W/kg

SAR(1 g) = 0.420 mW/g; SAR(10 g) = 0.273 mW/g

Maximum value of SAR (measured) = 0.453 mW/g



0 dB = 0.453mW/g

SHGSM

4.3 GSM850-BodyWorn-EGPRS-3TS-Mid-P2

Date/Time: 2009-5-30 10:56:20

Test Laboratory: SGS-GSM

GSM850-Body-Worn-EGPRS-3TS-Mid-P2

DUT: KZ038AP01; Type: Body; Serial: 351790030003690

Communication System: GSM850-EGPRS Mode; Frequency: 836.4 MHz; Duty Cycle: 1:2.7

Medium: HSL835 Body Medium parameters used: $f = 836.4 \text{ MHz}$; $\sigma = 0.948 \text{ mho/m}$; $\epsilon_r = 54.2$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(5.67, 5.67, 5.67); Calibrated: 2008-12-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2008-12-18
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 186

Body Worn - Middle P2/Area Scan (81x121x1): **Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$**

Maximum value of SAR (interpolated) = 0.427 mW/g

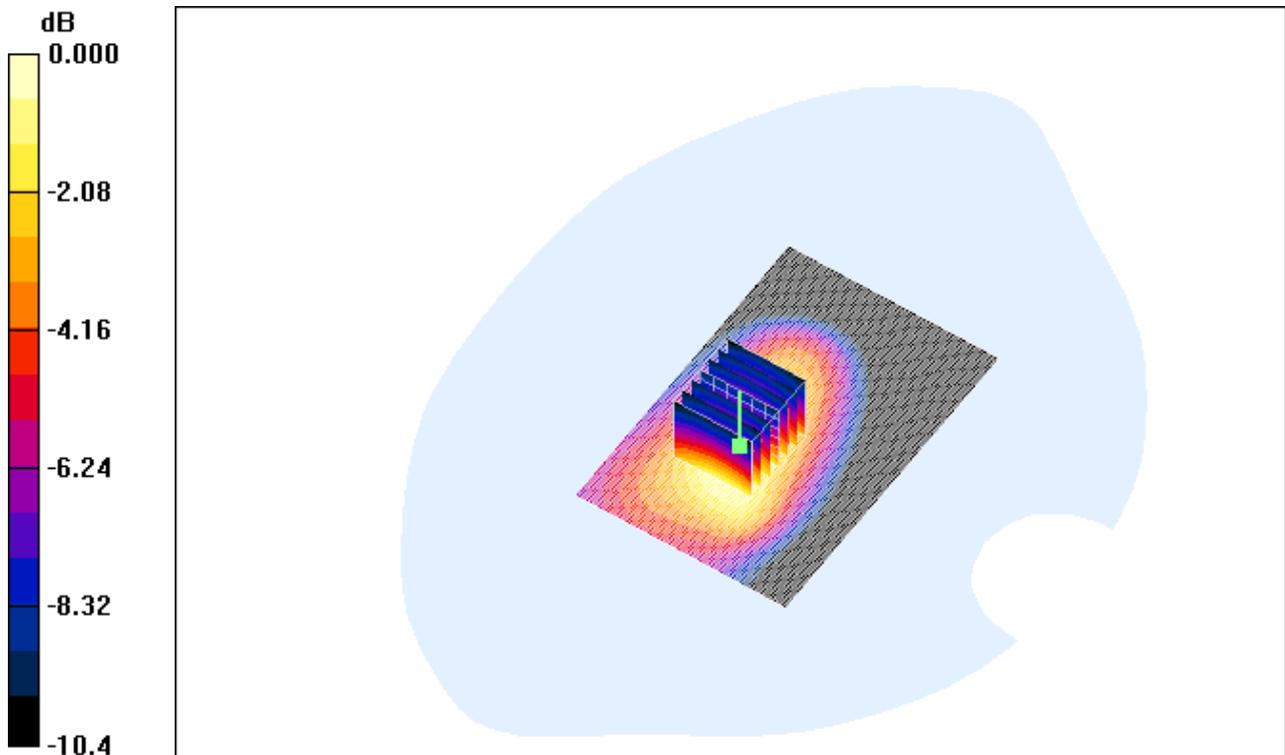
Body Worn - Middle P2/Zoom Scan (7x7x7)/Cube 0: **Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$**

Reference Value = 17.8 V/m; Power Drift = 0.107 dB

Peak SAR (extrapolated) = 0.604 W/kg

SAR(1 g) = 0.396 mW/g; SAR(10 g) = 0.258 mW/g

Maximum value of SAR (measured) = 0.434 mW/g



0 dB = 0.434mW/g

4.4 GSM850-BodyWorn-EGPRS-4TS-Mid-P2

Date/Time: 2009-5-30 11:23:36

Test Laboratory: SGS-GSM

GSM850-Body-Worn-EGPRS-4TS-Mid-P2

DUT: KZ038AP01; Type: Body; Serial: 351790030003690

Communication System: GSM850-EGPRS Mode; Frequency: 836.4 MHz; Duty Cycle: 1:2

Medium: HSL835 Body Medium parameters used: $f = 836.4 \text{ MHz}$; $\sigma = 0.948 \text{ mho/m}$; $\epsilon_r = 54.2$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(5.67, 5.67, 5.67); Calibrated: 2008-12-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2008-12-18
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 186

Body Worn - Middle P2/Area Scan (81x121x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

Maximum value of SAR (interpolated) = 0.414 mW/g

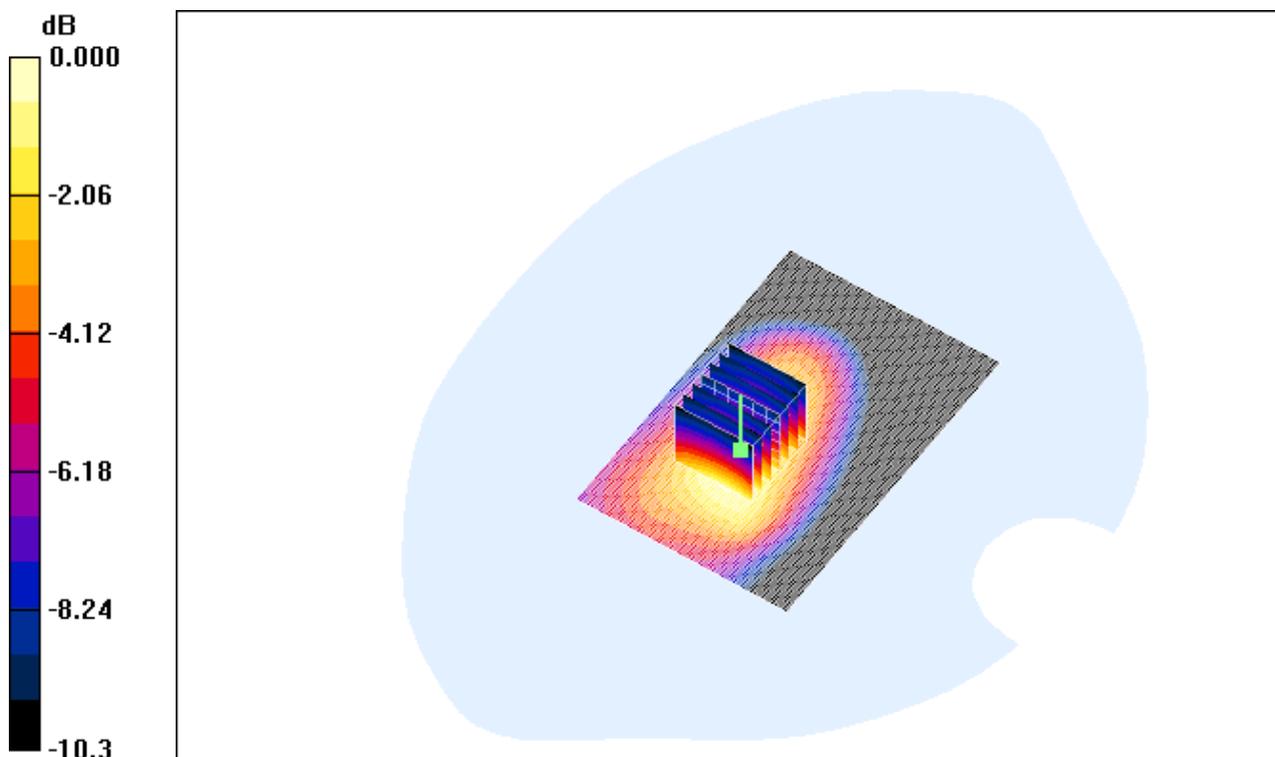
Body Worn - Middle P2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 17.6 V/m; Power Drift = -0.003 dB

Peak SAR (extrapolated) = 0.577 W/kg

SAR(1 g) = 0.381 mW/g; SAR(10 g) = 0.247 mW/g

Maximum value of SAR (measured) = 0.413 mW/g



0 dB = 0.413mW/g

4.5 GSM850-BodyWorn-GPRS-1TS-Mid-P1

Date/Time: 2009-7-13 15:29:42

Test Laboratory: SGS-GSM

GSM850-Body-Worn-GPRS-1TS-Mid-P1

DUT: KZ038AP01; Type: Body; Serial: 351790030003690

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

Medium: HSL835 Body Medium parameters used: $f = 836.4 \text{ MHz}$; $\sigma = 0.95 \text{ mho/m}$; $\epsilon_r = 54.1$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(5.67, 5.67, 5.67); Calibrated: 2008-12-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2008-12-18
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Body Worn - Middle P1/Area Scan (81x121x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

Maximum value of SAR (interpolated) = 0.271 mW/g

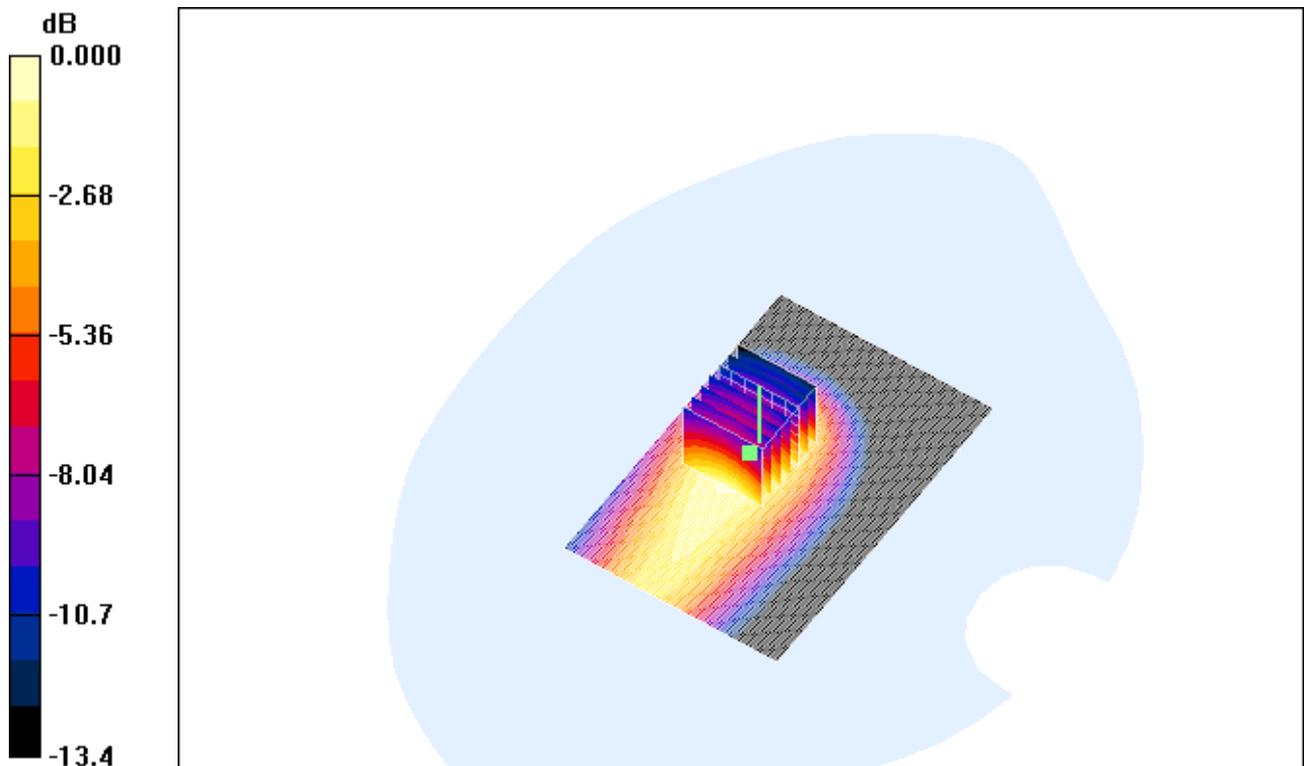
Body Worn - Middle P1/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 14.2 V/m; Power Drift = -0.080 dB

Peak SAR (extrapolated) = 0.421 W/kg

SAR(1 g) = 0.265 mW/g; SAR(10 g) = 0.168 mW/g

Maximum value of SAR (measured) = 0.287 mW/g



0 dB = 0.287mW/g

4.6 GSM850-BodyWorn-GPRS-1TS-Mid-P3

Date/Time: 2009-5-30 12:44:11

Test Laboratory: SGS-GSM

GSM850-Body-Worn-GPRS-1TS-Mid-P3

DUT: KZ038AP01; Type: Body; Serial: 351790030003690

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

Medium: HSL835 Body Medium parameters used: $f = 836.4 \text{ MHz}$; $\sigma = 0.948 \text{ mho/m}$; $\epsilon_r = 54.2$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(5.67, 5.67, 5.67); Calibrated: 2008-12-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2008-12-18
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 186

Body Worn - Middle P3/Area Scan (81x121x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

Maximum value of SAR (interpolated) = 0.175 mW/g

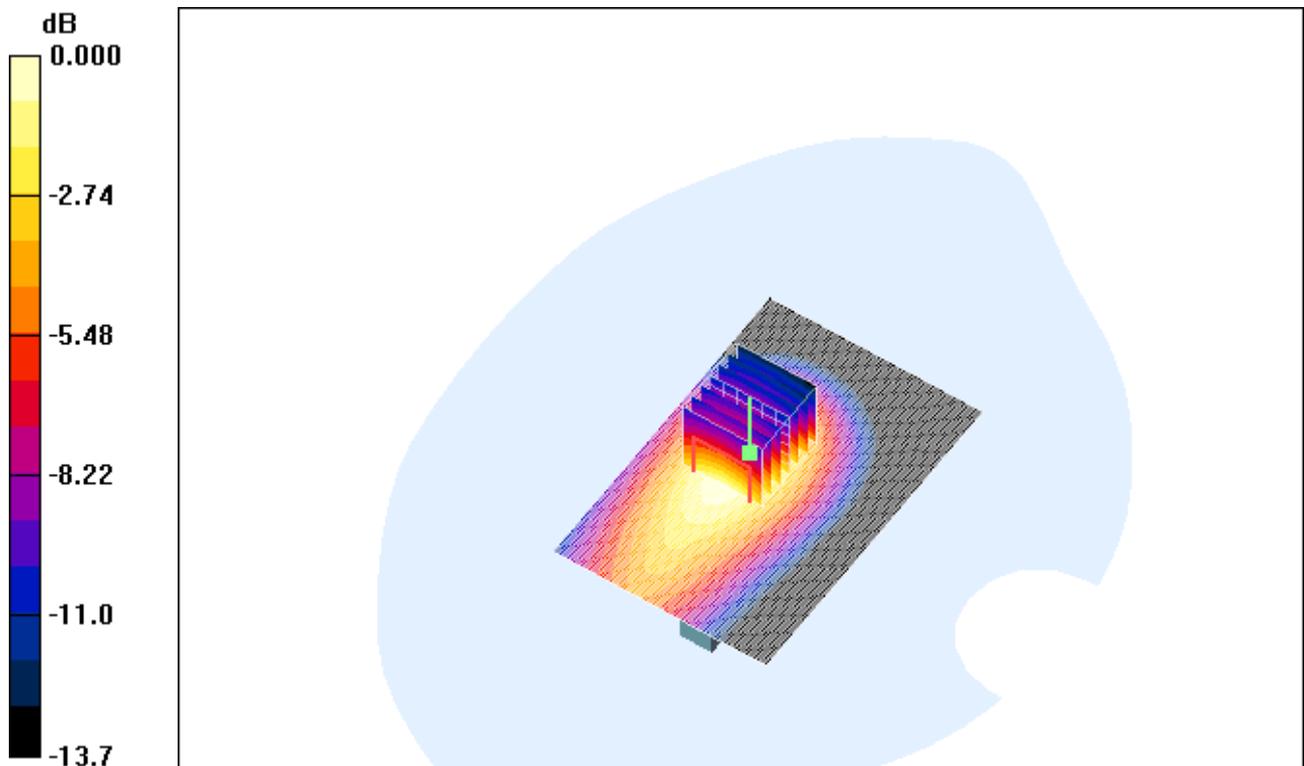
Body Worn - Middle P3/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 11.6 V/m; Power Drift = -0.190 dB

Peak SAR (extrapolated) = 0.256 W/kg

SAR(1 g) = 0.157 mW/g; SAR(10 g) = 0.098 mW/g

Maximum value of SAR (measured) = 0.172 mW/g



0 dB = 0.172mW/g

4.7 GSM850-BodyWorn-GPRS-1TS-Mid-P4

Date/Time: 2009-5-30 13:18:56

Test Laboratory: SGS-GSM

GSM850-Body-Worn-GPRS-1TS-Mid-P4

DUT: KZ038AP01; Type: Body; Serial: 351790030003690

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

Medium: HSL835 Body Medium parameters used: $f = 836.4 \text{ MHz}$; $\sigma = 0.948 \text{ mho/m}$; $\epsilon_r = 54.2$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(5.67, 5.67, 5.67); Calibrated: 2008-12-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2008-12-18
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 186

Body Worn - Middle P4/Area Scan (81x121x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

Maximum value of SAR (interpolated) = 0.153 mW/g

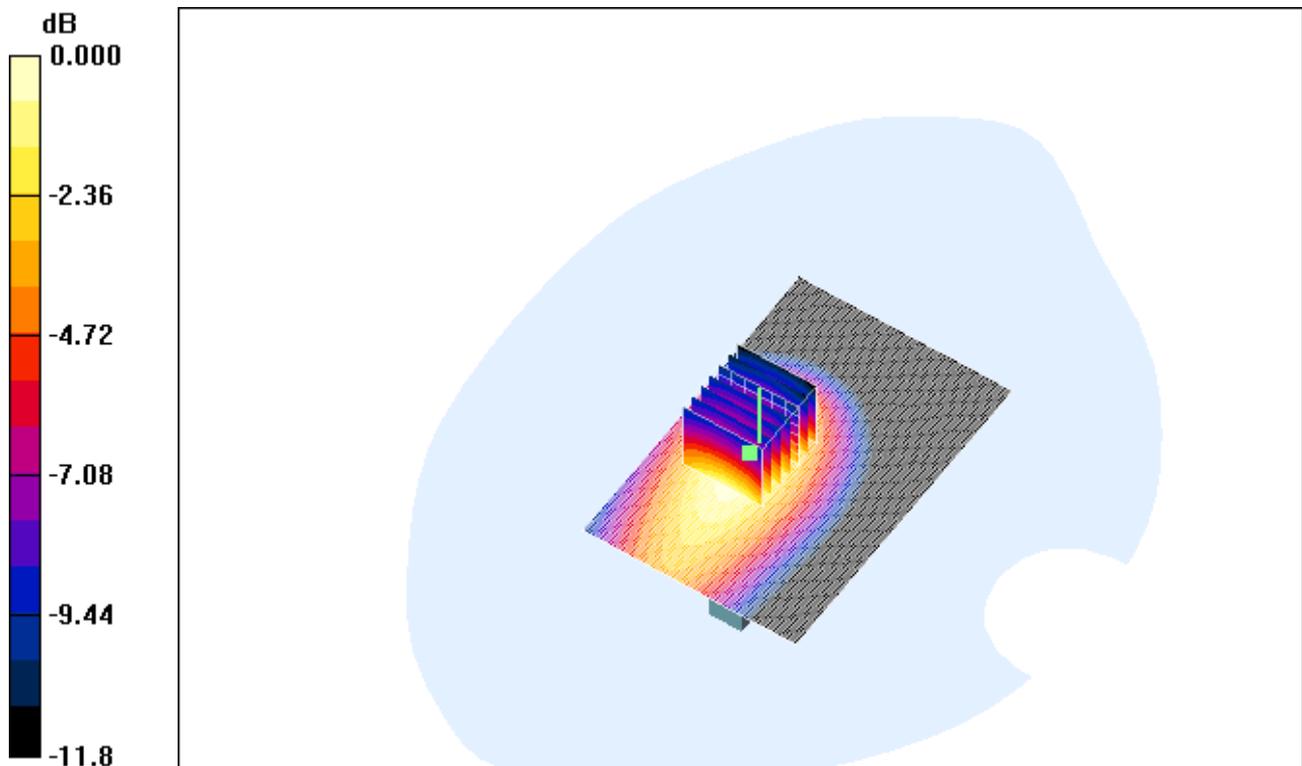
Body Worn - Middle P4/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 9.70 V/m; Power Drift = 0.037 dB

Peak SAR (extrapolated) = 0.219 W/kg

SAR(1 g) = 0.144 mW/g; SAR(10 g) = 0.093 mW/g

Maximum value of SAR (measured) = 0.156 mW/g



0 dB = 0.156mW/g

4.8 GSM850-BodyWorn-GPRS-1TS-Mid-P5

Date/Time: 2009-5-30 13:56:22

Test Laboratory: SGS-GSM

GSM850-BodyWorn-GPRS-1TS-Mid-P5

DUT: KZ038AP01; Type: Body; Serial: 351790030003690

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

Medium: HSL835 Body Medium parameters used: $f = 836.4 \text{ MHz}$; $\sigma = 0.948 \text{ mho/m}$; $\epsilon_r = 54.2$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(5.67, 5.67, 5.67); Calibrated: 2008-12-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2008-12-18
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 186

Body Worn - Middle P5/Area Scan (81x121x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

Maximum value of SAR (interpolated) = 0.018 mW/g

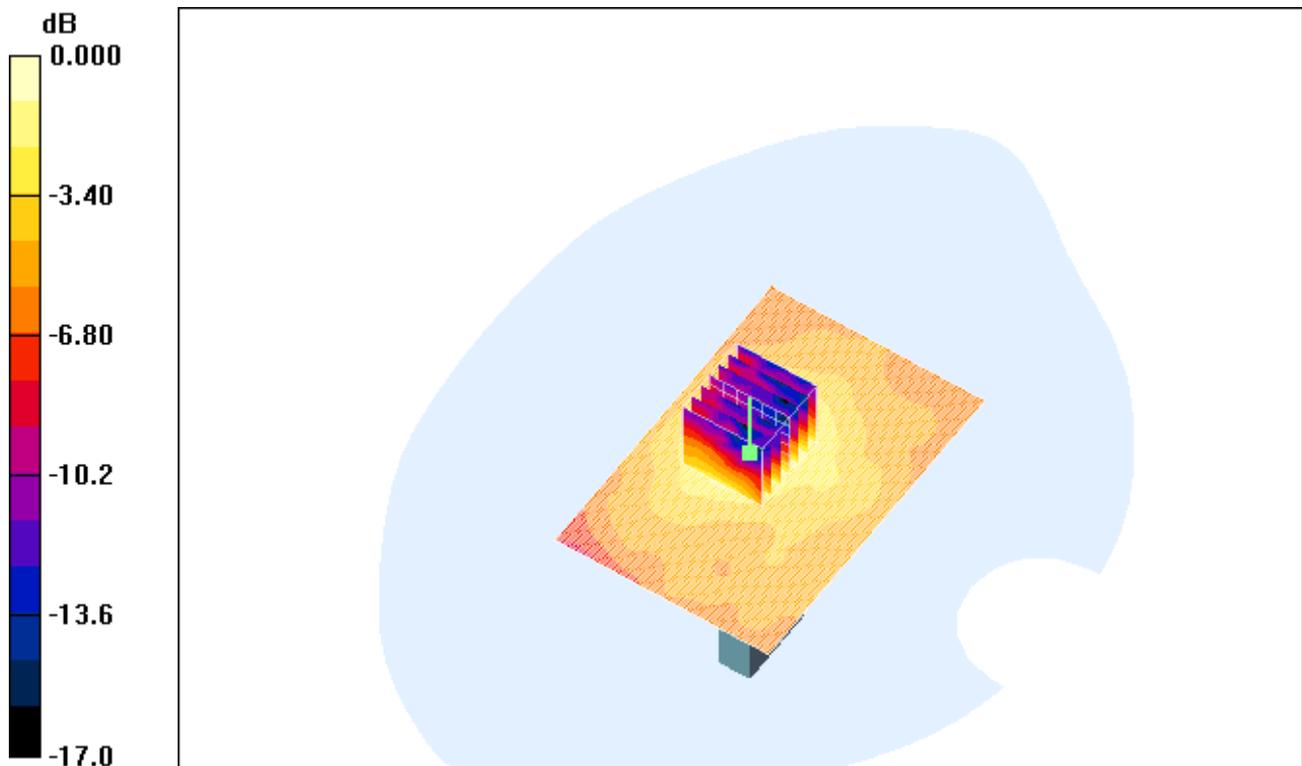
Body Worn - Middle P5/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 4.34 V/m; Power Drift = 0.222 dB

Peak SAR (extrapolated) = 0.040 W/kg

SAR(1 g) = 0.017 mW/g; SAR(10 g) = 0.00899 mW/g

Maximum value of SAR (measured) = 0.018 mW/g



0 dB = 0.018mW/g

4.9 GSM850-BodyWorn-GPRS-1TS-Low-P2

Date/Time: 2009-5-30 14:42:41

Test Laboratory: SGS-GSM

GSM850-Body-Worn-GPRS-1TS-Low-P2

DUT: KZ038AP01; Type: Body; Serial: 351790030003690

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

Medium: HSL835 Body Medium parameters used: $f = 824.2 \text{ MHz}$; $\sigma = 0.936 \text{ mho/m}$; $\epsilon_r = 54.3$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(5.67, 5.67, 5.67); Calibrated: 2008-12-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2008-12-18
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 186

Body Worn - Low P2/Area Scan (81x121x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

Maximum value of SAR (interpolated) = 0.490 mW/g

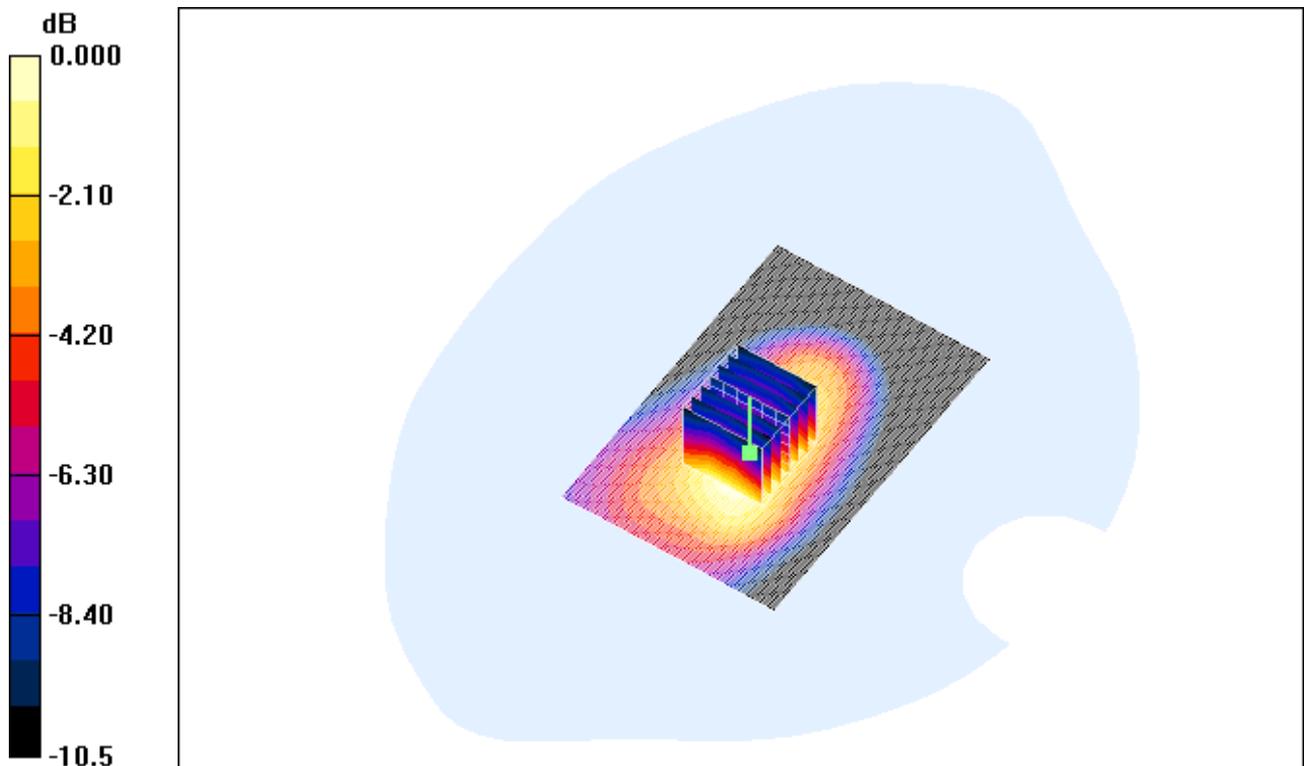
Body Worn - Low P2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 22.3 V/m; Power Drift = -0.315 dB

Peak SAR (extrapolated) = 0.659 W/kg

SAR(1 g) = 0.441 mW/g; SAR(10 g) = 0.286 mW/g

Maximum value of SAR (measured) = 0.477 mW/g



0 dB = 0.477mW/g

4.10 GSM850-BodyWorn-GPRS-1TS-High-P2

Date/Time: 2009-5-30 15:10:28

Test Laboratory: SGS-GSM

GSM850-BodyWorn-GPRS-1TS-High-P2

DUT: KZ038AP01; Type: Body; Serial: 351790030003690

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

Medium: HSL835 Body Medium parameters used: $f = 848.8 \text{ MHz}$; $\sigma = 0.962 \text{ mho/m}$; $\epsilon_r = 54$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(5.67, 5.67, 5.67); Calibrated: 2008-12-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2008-12-18
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 186

Body Worn - High P2/Area Scan (81x121x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.358 mW/g

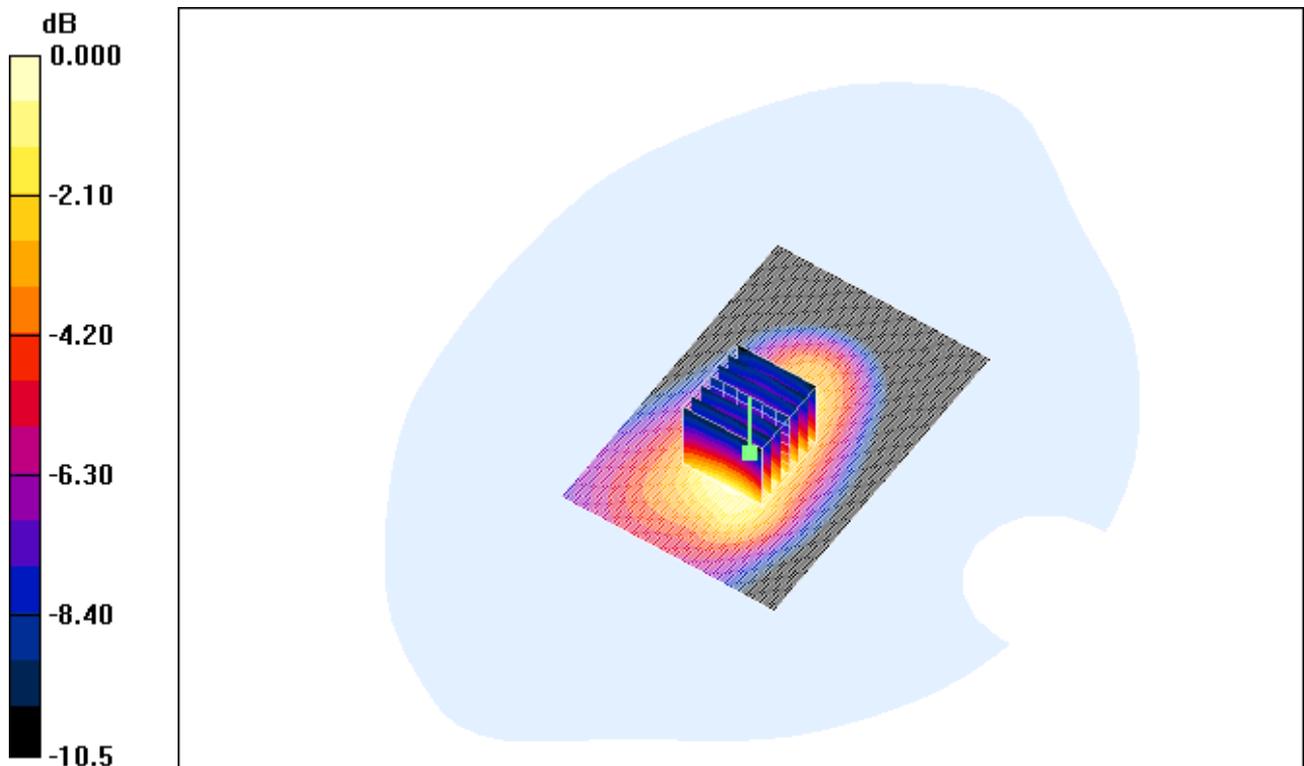
Body Worn - High P2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 18.0 V/m; Power Drift = 0.062 dB

Peak SAR (extrapolated) = 0.503 W/kg

SAR(1 g) = 0.329 mW/g; SAR(10 g) = 0.213 mW/g

Maximum value of SAR (measured) = 0.355 mW/g



0 dB = 0.355mW/g

4.11 GSM850-BodyWorn-GPRS-1TS-Low+SD-P2

Date/Time: 2009-5-30 15:45:22

Test Laboratory: SGS-GSM

GSM850-Body-Worn-GPRS-1TS-Low+SD-P2

DUT: KZ038AP01; Type: Body; Serial: 351790030003690

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

Medium: HSL835 Body Medium parameters used: $f = 824.2 \text{ MHz}$; $\sigma = 0.936 \text{ mho/m}$; $\epsilon_r = 54.3$; $\rho = 1000 \text{ kg/m}^3$

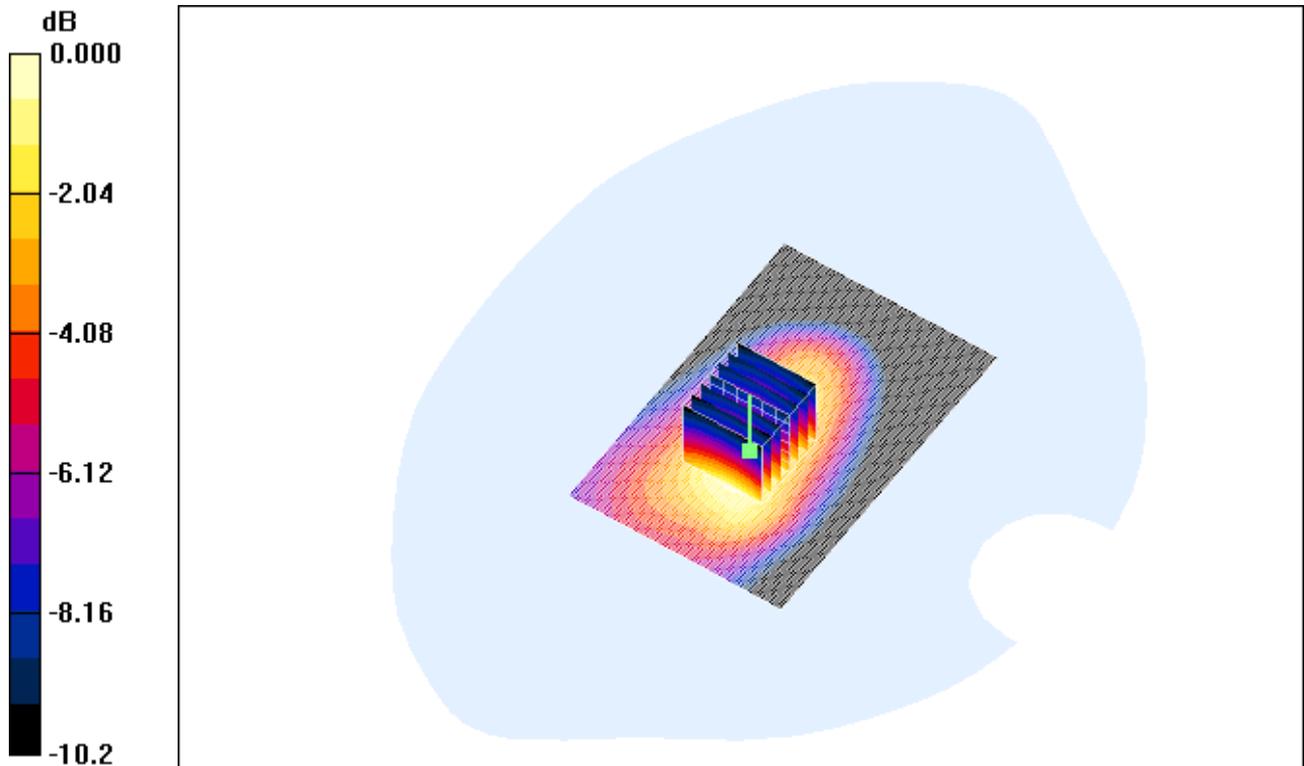
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(5.67, 5.67, 5.67); Calibrated: 2008-12-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2008-12-18
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 186

Body Worn - Low P2 +SD/Area Scan (81x121x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$
 Maximum value of SAR (interpolated) = 0.486 mW/g

Body Worn - Low P2 +SD/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$
 Reference Value = 20.9 V/m; Power Drift = 0.034 dB
 Peak SAR (extrapolated) = 0.676 W/kg
 SAR(1 g) = 0.440 mW/g; SAR(10 g) = 0.286 mW/g
 Maximum value of SAR (measured) = 0.475 mW/g



0 dB = 0.475mW/g

4.12 PCS1900-BodyWorn-GPRS-1TS-Mid-P2

Date/Time: 2009-5-29 10:30:03

Test Laboratory: SGS-GSM

PCS1900-BodyWorn-GPRS-1TS-Mid-P2

DUT: KZ038AP01; Type: Body; Serial: 351790030003690

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

Medium: HSL 1900 Body Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.5 \text{ mho/m}$; $\epsilon_r = 52.7$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(4.51, 4.51, 4.51); Calibrated: 2008-12-22
- Sensor-Surface: 4mm (Mechanical Surface Detection) Sensor-Surface: 5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2008-12-18
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 186

Body Worn - Middle P2/Area Scan (81x121x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

Maximum value of SAR (interpolated) = 1.17 mW/g

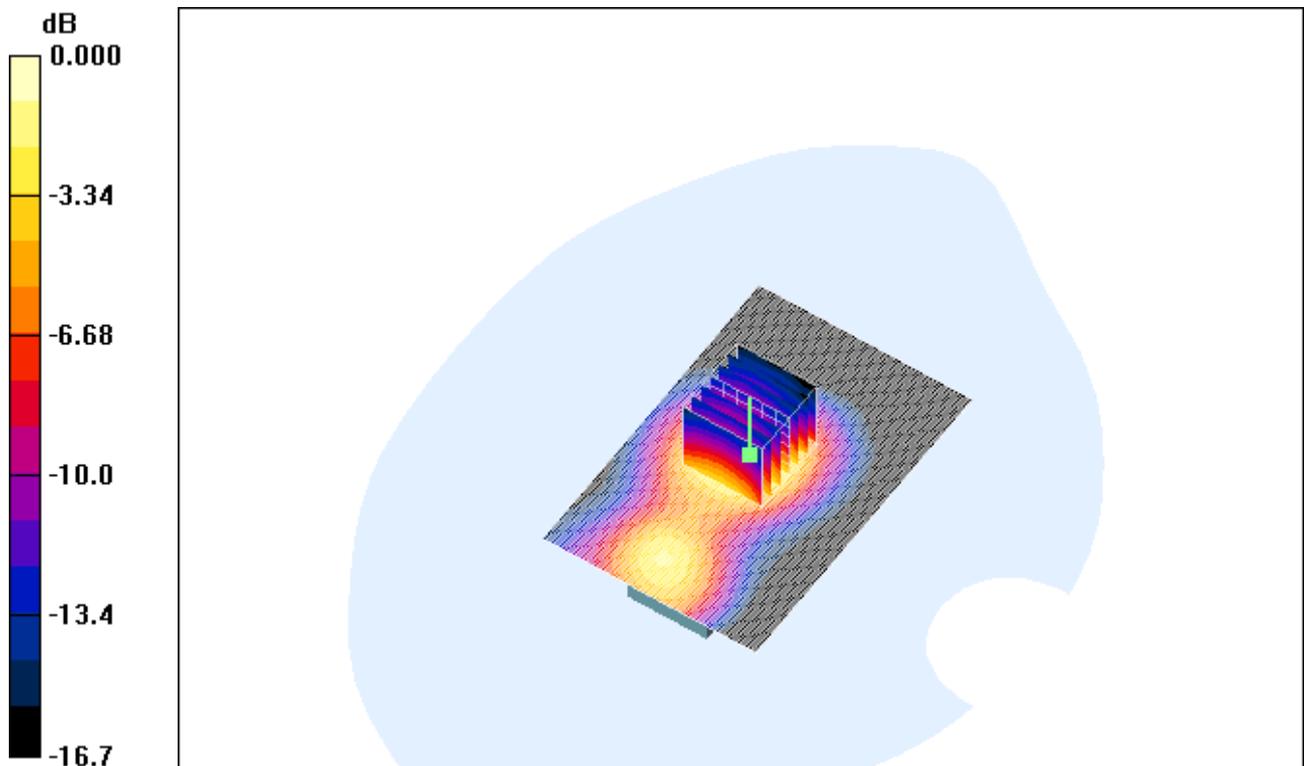
Body Worn - Middle P2 /Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 20.4 V/m; Power Drift = -0.170 dB

Peak SAR (extrapolated) = 1.85 W/kg

SAR(1 g) = 1.05 mW/g; SAR(10 g) = 0.558 mW/g

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



0 dB = 1.06mW/g

4.13 PCS1900-BodyWorn-GPRS-2TS-Mid-P2

Date/Time: 2009-5-28 21:24:10

Test Laboratory: SGS-GSM

PCS1900-BodyWorn-GPRS-2TS-Mid-P2

DUT: KZ038AP01; Type: Body; Serial: 351790030003690

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

Medium: HSL 1900 Body Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.5 \text{ mho/m}$; $\epsilon_r = 52.7$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(4.51, 4.51, 4.51); Calibrated: 2008-12-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2008-12-18
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 186

Body Worn - Middle P2/Area Scan (81x121x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

Maximum value of SAR (interpolated) = 0.912 mW/g

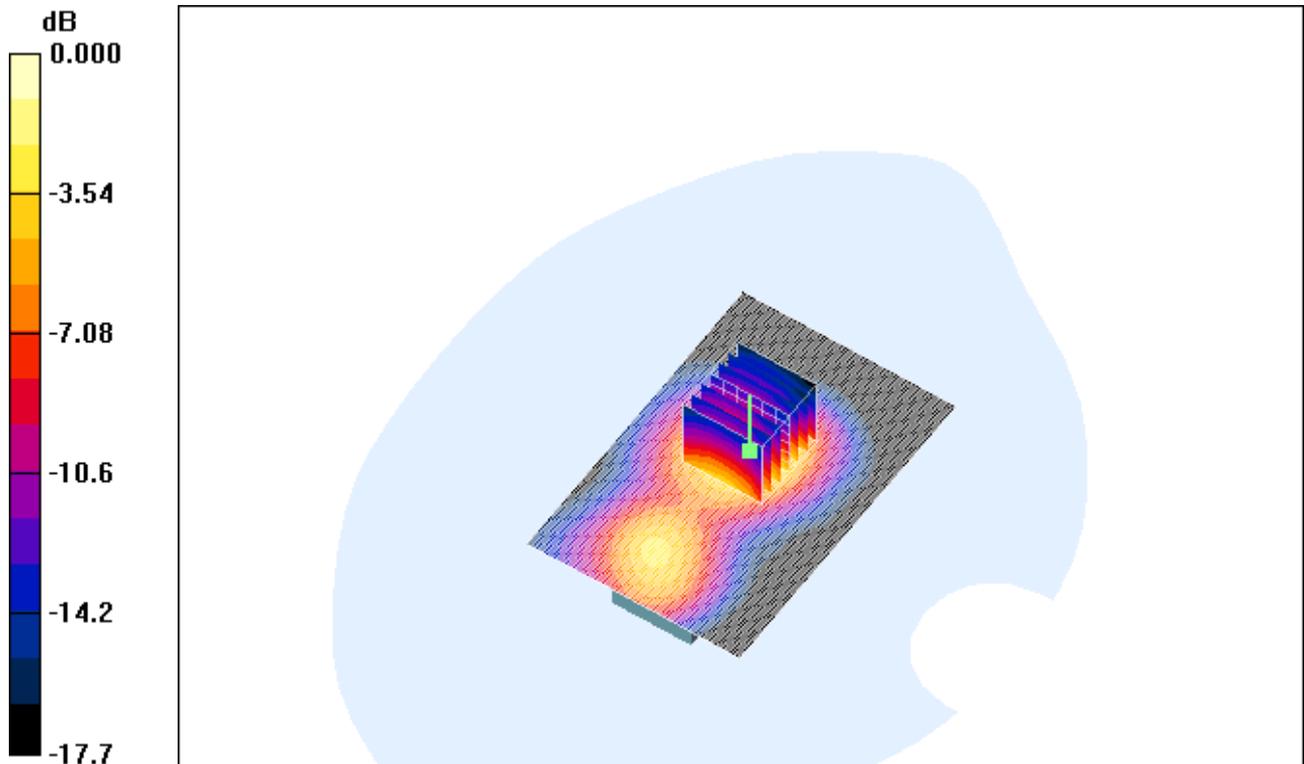
Body Worn - Middle P2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 14.3 V/m; Power Drift = 0.225 dB

Peak SAR (extrapolated) = 1.51 W/kg

SAR(1 g) = 0.824 mW/g; SAR(10 g) = 0.423 mW/g

Maximum value of SAR (measured) = 0.947 mW/g



0 dB = 0.947mW/g

4.14 PCS1900-BodyWorn-EGPRS-3TS-Mid-P2

Date/Time: 2009-5-28 23:08:51

Test Laboratory: SGS-GSM

PCS1900-Body-Worn-EGPRS-3TS-Mid-P2

DUT: KZ038AP01; Type: Body; Serial: 351790030003690

Communication System: PCS1900-EGPRS Mode; Frequency: 1880 MHz; Duty Cycle: 1:2.7

Medium: HSL 1900 Body Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.5 \text{ mho/m}$; $\epsilon_r = 52.7$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(4.51, 4.51, 4.51); Calibrated: 2008-12-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2008-12-18
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 186

Body Worn - Middle P2/Area Scan (81x121x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

Maximum value of SAR (interpolated) = 0.875 mW/g

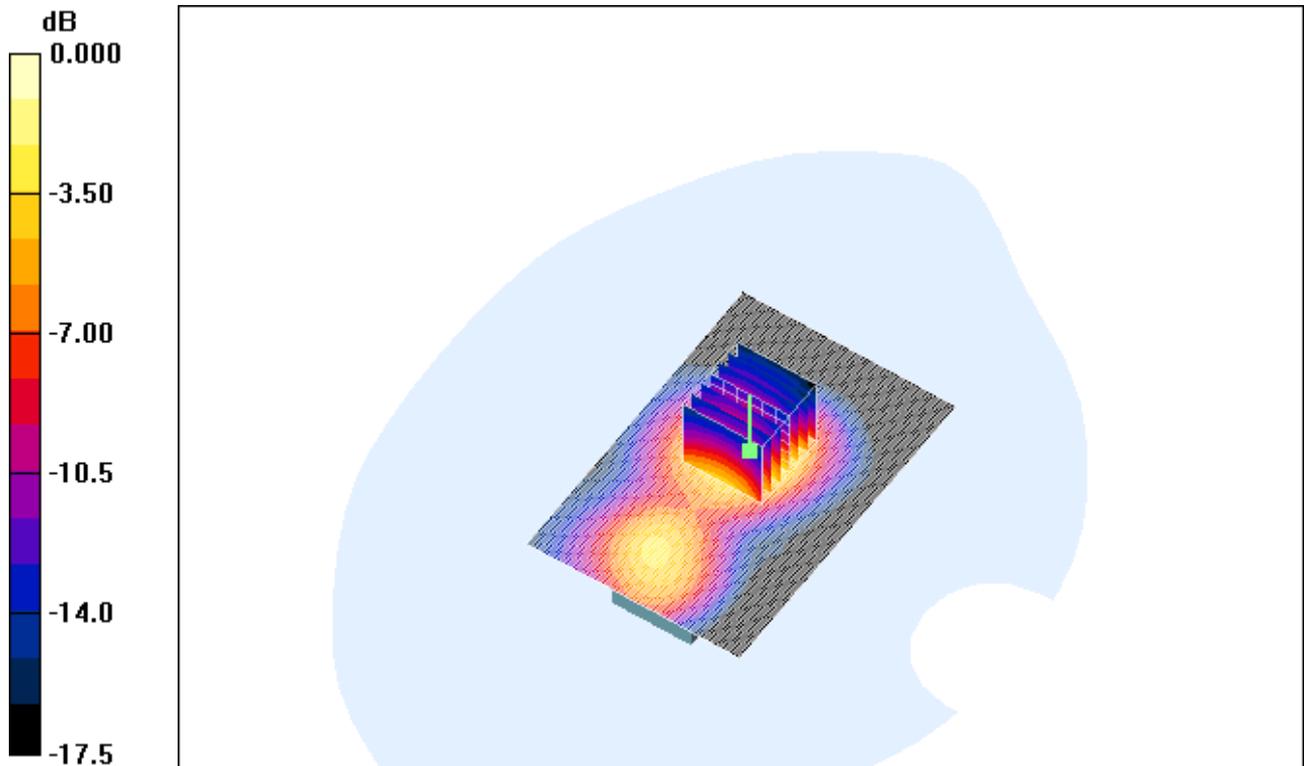
Body Worn - Middle P2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 13.3 V/m; Power Drift = 0.089 dB

Peak SAR (extrapolated) = 1.36 W/kg

SAR(1 g) = 0.743 mW/g; SAR(10 g) = 0.385 mW/g

Maximum value of SAR (measured) = 0.840 mW/g



0 dB = 0.840mW/g

4.15 PCS1900-BodyWorn-EGPRS-4TS-Mid-P2

Date/Time: 2009-5-28 23:37:01

Test Laboratory: SGS-GSM

PCS1900-Body-Worn-EGPRS-4TS-Mid-P2

DUT: KZ038AP01; Type: Body; Serial: 351790030003690

Communication System: PCS1900-EGPRS Mode; Frequency: 1880 MHz; Duty Cycle: 1:2

Medium: HSL 1900 Body Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.5 \text{ mho/m}$; $\epsilon_r = 52.7$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(4.51, 4.51, 4.51); Calibrated: 2008-12-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2008-12-18
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 186

Body Worn - Middle P2/Area Scan (81x121x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

Maximum value of SAR (interpolated) = 0.854 mW/g

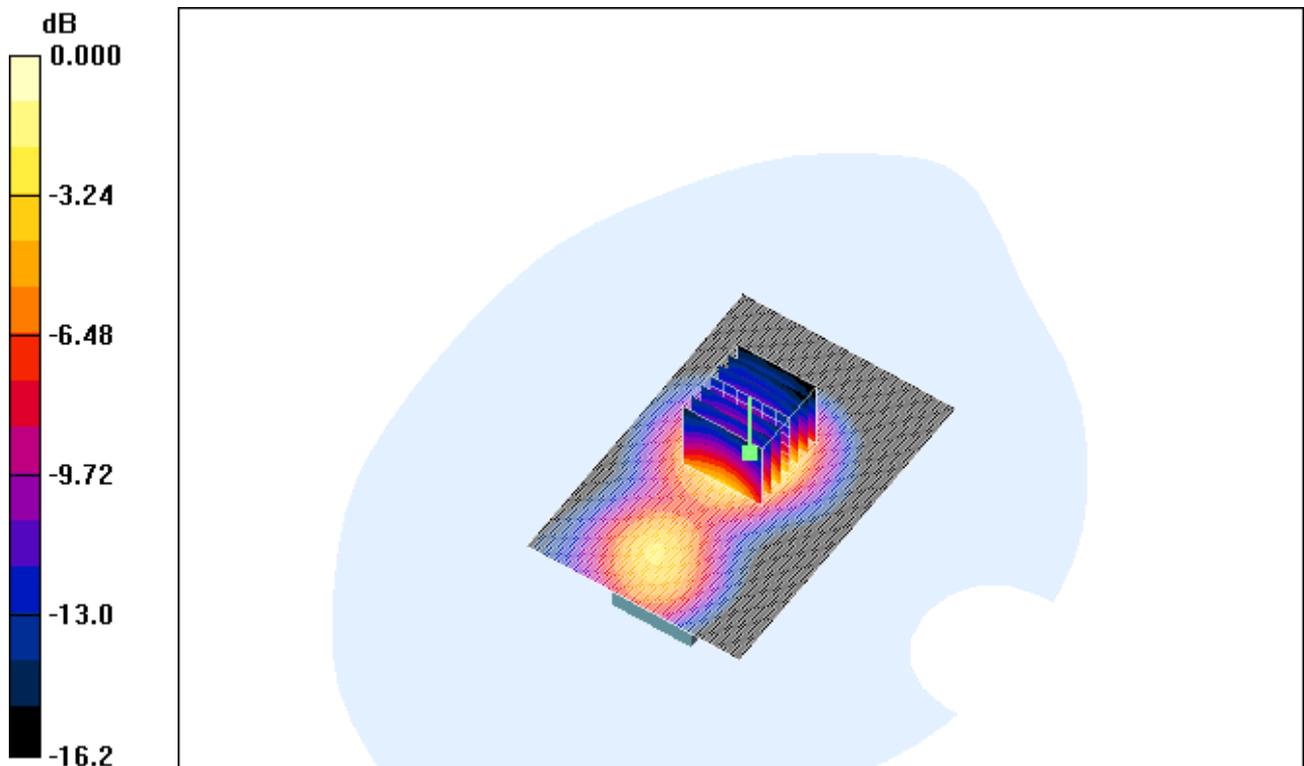
Body Worn - Middle P2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 13.6 V/m; Power Drift = -0.104 dB

Peak SAR (extrapolated) = 1.30 W/kg

SAR(1 g) = 0.720 mW/g; SAR(10 g) = 0.374 mW/g

Maximum value of SAR (measured) = 0.812 mW/g



0 dB = 0.812mW/g

4.16 PCS1900-BodyWorn-GPRS-1TS-Mid-P1

Date/Time: 2009-7-13 11:08:15

Test Laboratory: SGS-GSM

PCS1900-Body-Worn-GPRS-1TS-Mid-P1

DUT: KZ038AP01; Type: Body; Serial: 351790030003690

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

Medium: HSL 1900 Body Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.48 \text{ mho/m}$; $\epsilon_r = 52.5$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(4.51, 4.51, 4.51); Calibrated: 2008-12-22
- Sensor-Surface: 4mm (Mechanical Surface Detection) Sensor-Surface: 5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2008-12-18
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Body Worn - Middle P1/Area Scan (81x101x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

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

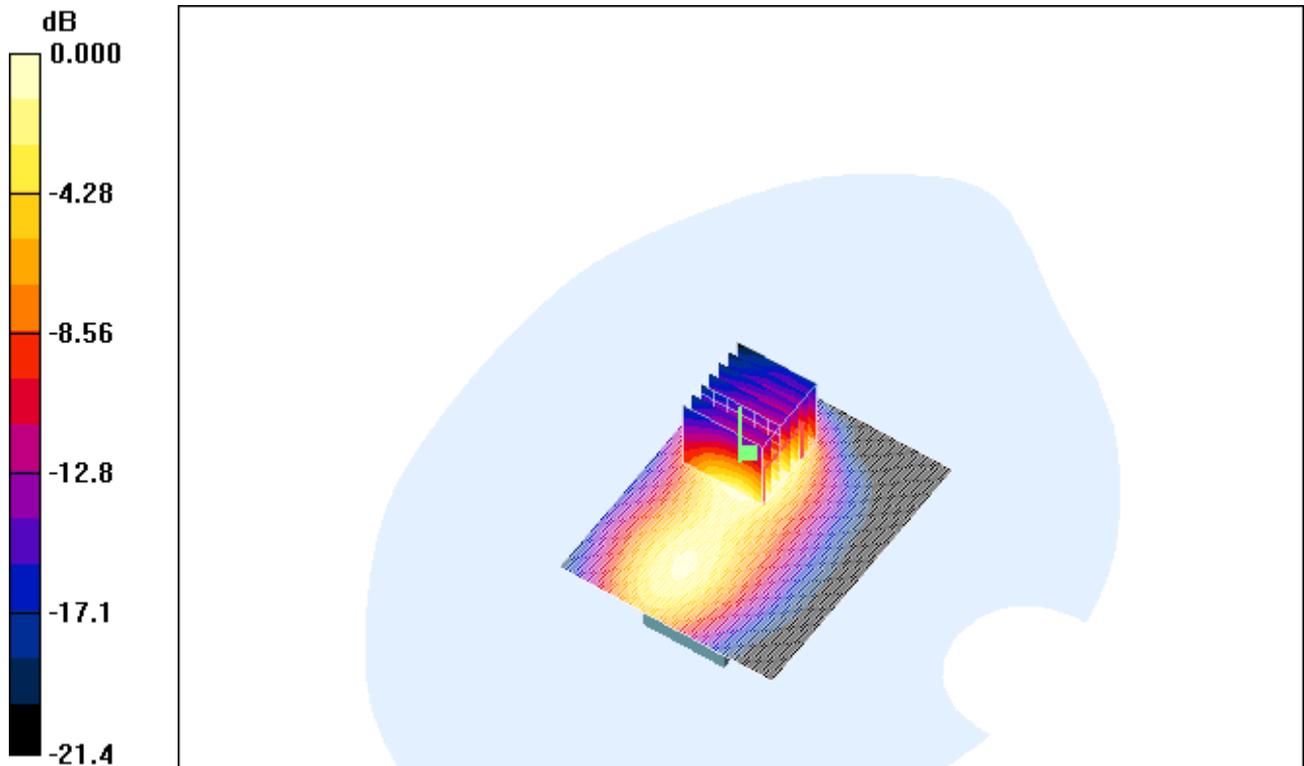
Body Worn - Middle P1/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 15.3 V/m; Power Drift = -0.170 dB

Peak SAR (extrapolated) = 1.72 W/kg

SAR(1 g) = 0.807 mW/g; SAR(10 g) = 0.409 mW/g

Maximum value of SAR (measured) = 0.823 mW/g



0 dB = 0.823mW/g

4.17 PCS1900-BodyWorn-GPRS-1TS-Mid-P3

Date/Time: 2009-5-29 16:54:57

Test Laboratory: SGS-GSM

PCS1900-BodyWorn-GPRS-1TS-Mid-P3

DUT: KZ038AP01; Type: Body; Serial: 351790030003690

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

Medium: HSL 1900 Body Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.5 \text{ mho/m}$; $\epsilon_r = 52.7$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(4.51, 4.51, 4.51); Calibrated: 2008-12-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2008-12-18
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 186

Body Worn - Middle P3/Area Scan (81x121x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

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

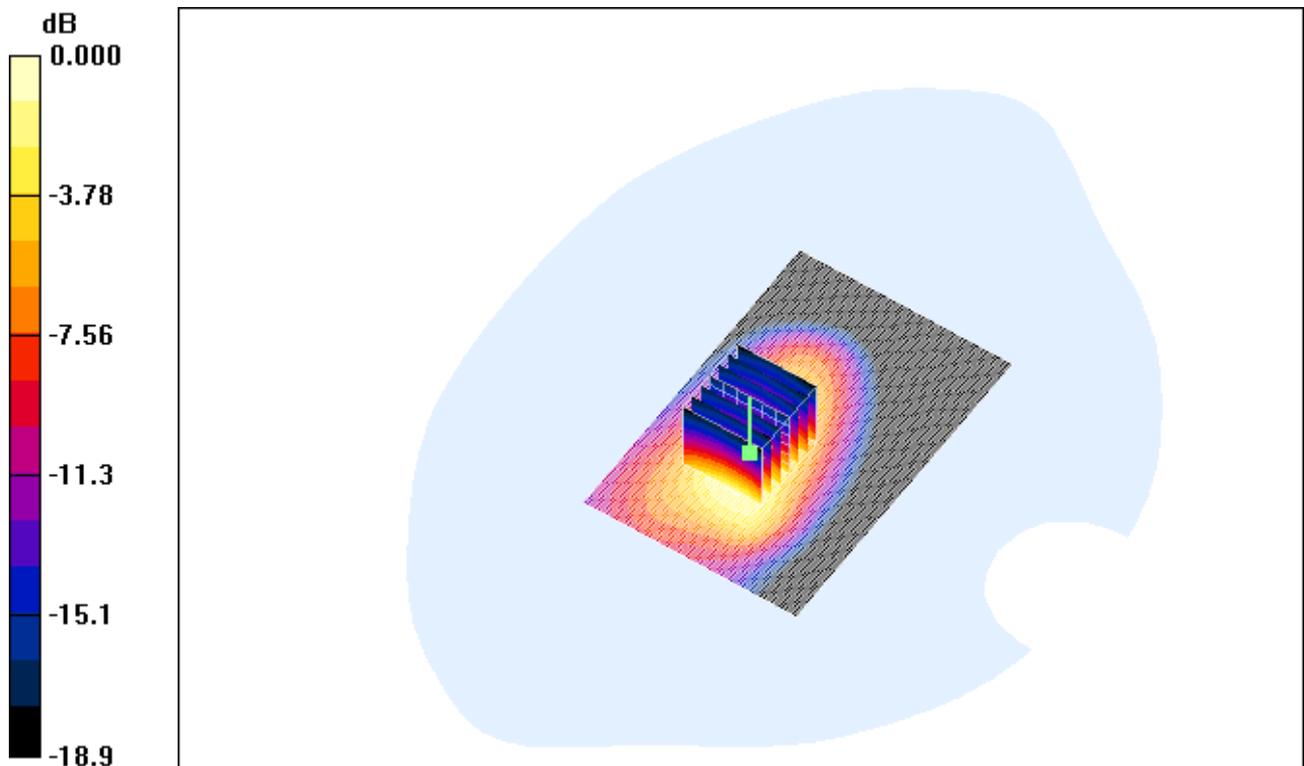
Body Worn - Middle P3/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 12.8 V/m; Power Drift = 0.140 dB

Peak SAR (extrapolated) = 1.18 W/kg

SAR(1 g) = 0.567 mW/g; SAR(10 g) = 0.265 mW/g

Maximum value of SAR (measured) = 0.625 mW/g



0 dB = 0.625mW/g

4.18 PCS1900-BodyWorn-GPRS-1TS-Mid-P4

Date/Time: 2009-5-29 21:54:17

Test Laboratory: SGS-GSM

PCS1900-BodyWorn-GPRS-1TS-Mid-P4

DUT: KZ038AP01; Type: Body; Serial: 351790030003690

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

Medium: HSL 1900 Body Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.5 \text{ mho/m}$; $\epsilon_r = 52.7$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(4.51, 4.51, 4.51); Calibrated: 2008-12-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2008-12-18
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 186

Body Worn - Middle P4/Area Scan (81x121x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

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

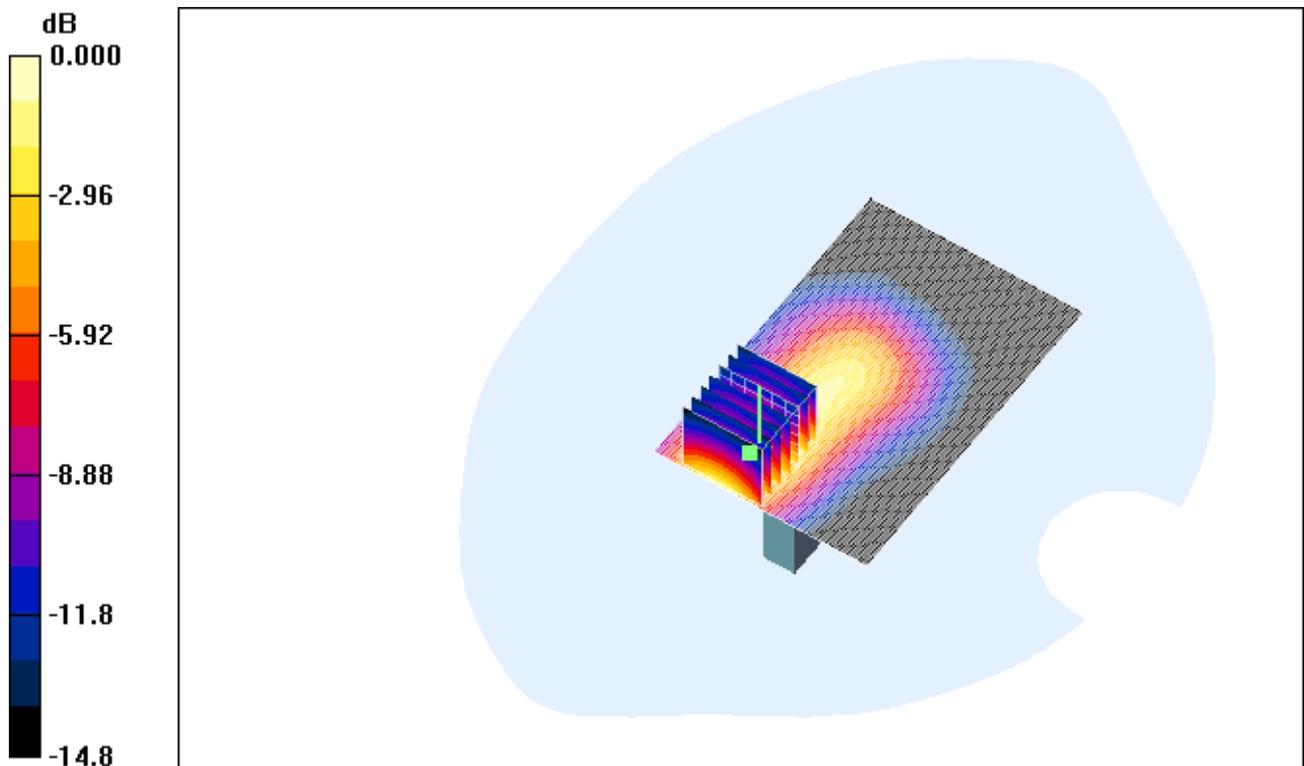
Body Worn - Middle P4/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 11.7 V/m; Power Drift = -0.031 dB

Peak SAR (extrapolated) = 0.649 W/kg

SAR(1 g) = 0.383 mW/g; SAR(10 g) = 0.221 mW/g

Maximum value of SAR (measured) = 0.421 mW/g



0 dB = 0.421mW/g

4.19 PCS1900-BodyWorn-GPRS-1TS-Mid-P5

Date/Time: 2009-5-29 22:30:09

Test Laboratory: SGS-GSM

PCS1900-BodyWorn-GPRS-1TS-Mid-P5

DUT: KZ038AP01; Type: Body; Serial: 351790030003690

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

Medium: HSL 1900 Body Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.5 \text{ mho/m}$; $\epsilon_r = 52.7$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(4.51, 4.51, 4.51); Calibrated: 2008-12-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2008-12-18
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 186

Body Worn - Middle P5/Area Scan (81x121x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

Maximum value of SAR (interpolated) = 0.277 mW/g

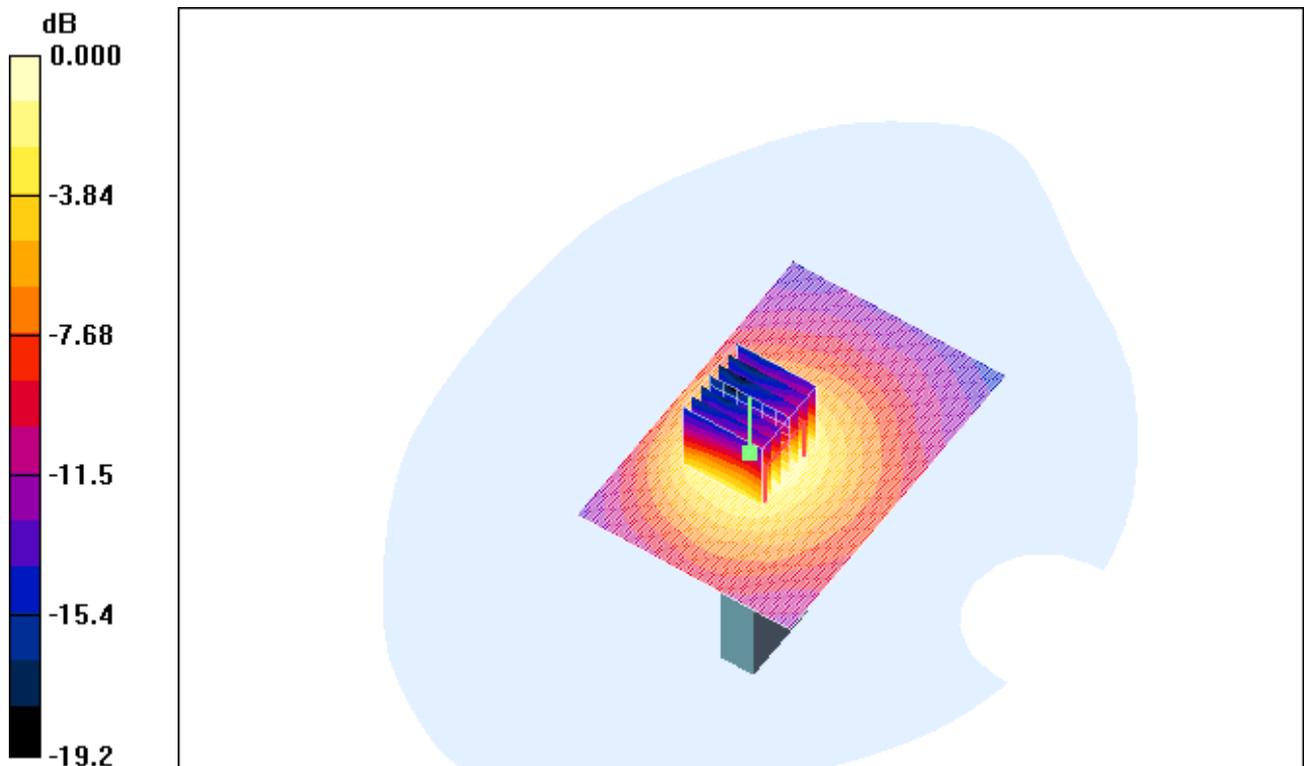
Body Worn - Middle P5/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 12.1 V/m; Power Drift = 0.060 dB

Peak SAR (extrapolated) = 0.565 W/kg

SAR(1 g) = 0.241 mW/g; SAR(10 g) = 0.123 mW/g

Maximum value of SAR (measured) = 0.286 mW/g



0 dB = 0.286mW/g

4.20 PCS1900-BodyWorn-GPRS-1TS-Low-P2

Date/Time: 2009-5-29 10:57:59

Test Laboratory: SGS-GSM

PCS1900-BodyWorn-GPRS-1TS-Low-P2

DUT: KZ038AP01; Type: Body; Serial: 351790030003690

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

Medium: HSL 1900 Body Medium parameters used: $f = 1850.24 \text{ MHz}$; $\sigma = 1.47 \text{ mho/m}$; $\epsilon_r = 52.7$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(4.51, 4.51, 4.51); Calibrated: 2008-12-22
- Sensor-Surface: 4mm (Mechanical Surface Detection) Sensor-Surface: 5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2008-12-18
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 186

Body Worn - Low P2/Area Scan (81x121x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

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

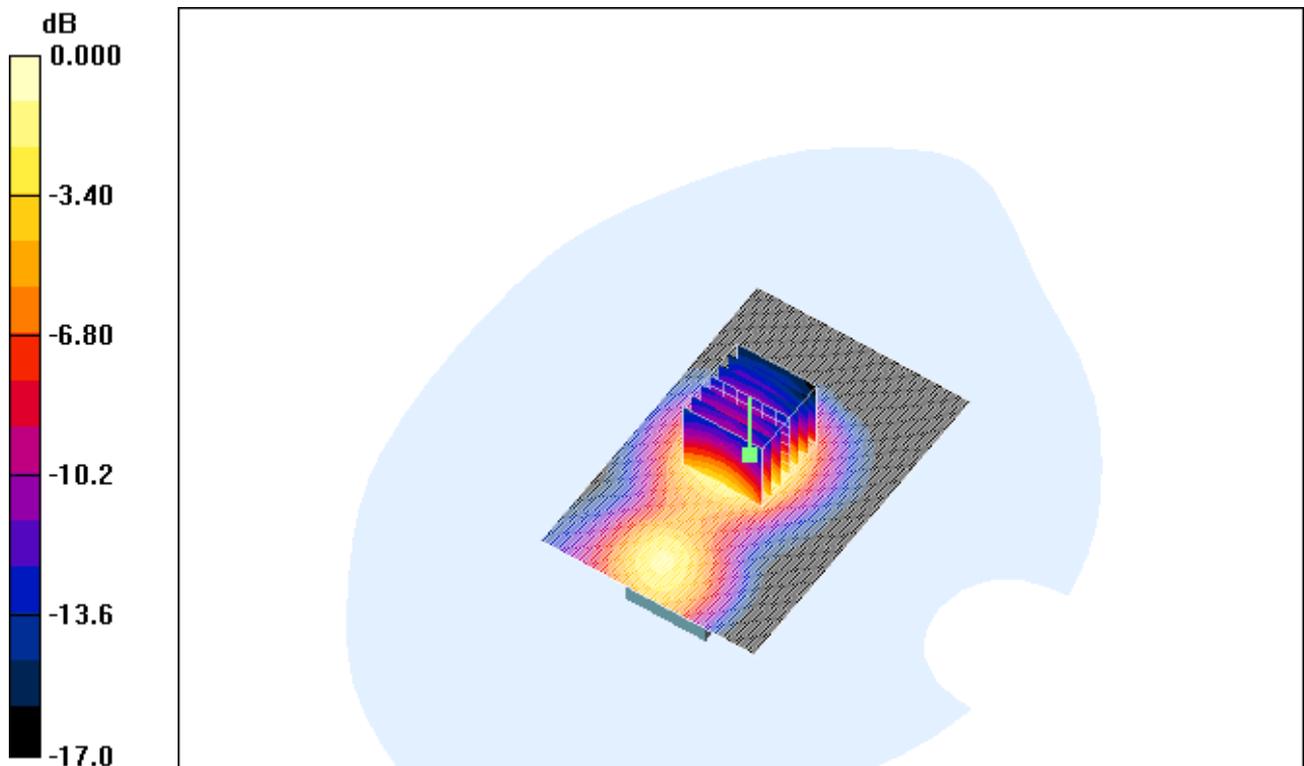
Body Worn - Low P2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 18.7 V/m; Power Drift = 0.067 dB

Peak SAR (extrapolated) = 1.57 W/kg

SAR(1 g) = 0.882 mW/g; SAR(10 g) = 0.470 mW/g

Maximum value of SAR (measured) = 0.898 mW/g



0 dB = 0.898mW/g

4.21 PCS1900-BodyWorn-GPRS-1TS-High-P2

Date/Time: 2009-5-29 11:25:40

Test Laboratory: SGS-GSM

PCS1900-BodyWorn-GPRS-1TS-High-P2

DUT: KZ038AP01; Type: Body; Serial: 351790030003690

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

Medium: HSL 1900 Body Medium parameters used (interpolated): $f = 1909.8 \text{ MHz}$; $\sigma = 1.53 \text{ mho/m}$; $\epsilon_r = 52.5$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(4.51, 4.51, 4.51); Calibrated: 2008-12-22
- Sensor-Surface: 4mm (Mechanical Surface Detection) Sensor-Surface: 5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2008-12-18
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 186

Body Worn -High P2/Area Scan (81x121x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

Maximum value of SAR (interpolated) = 0.934 mW/g

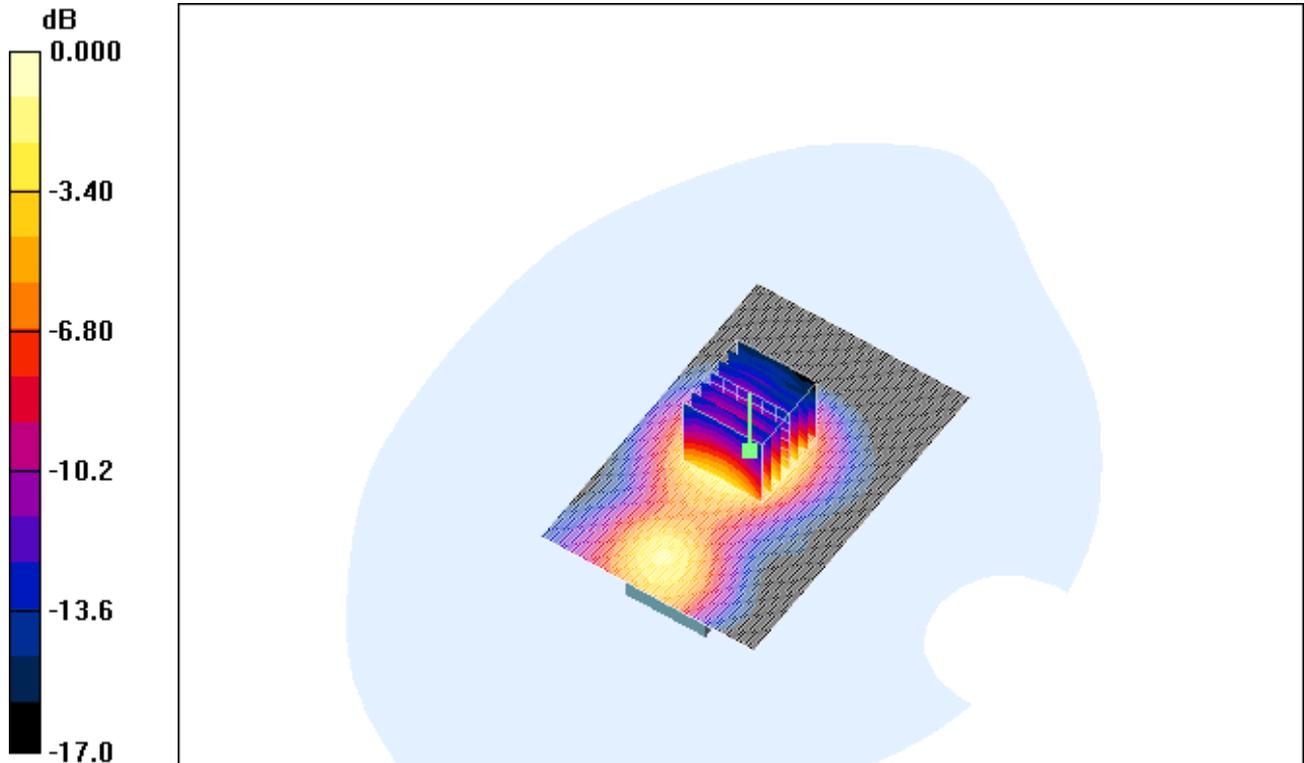
Body Worn -High P2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 18.0 V/m; Power Drift = -0.149 dB

Peak SAR (extrapolated) = 1.53 W/kg

SAR(1 g) = 0.823 mW/g; SAR(10 g) = 0.432 mW/g

Maximum value of SAR (measured) = 0.829 mW/g



0 dB = 0.829mW/g

4.22 PCS1900-BodyWorn-GPRS-1TS-Mid+SD-P2

Date/Time: 2009-5-29 12:12:07

Test Laboratory: SGS-GSM

PCS1900-BodyWorn-GPRS-1TS-Mid+SD-P2

DUT: KZ038AP01; Type: Body; Serial: 351790030003690

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

Medium: HSL 1900 Body Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.5 \text{ mho/m}$; $\epsilon_r = 52.7$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(4.51, 4.51, 4.51); Calibrated: 2008-12-22
- Sensor-Surface: 4mm (Mechanical Surface Detection) Sensor-Surface: 5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2008-12-18
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 186

Body Worn - Middle P2 +sd/Area Scan (81x121x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

Maximum value of SAR (interpolated) = 1.22 mW/g

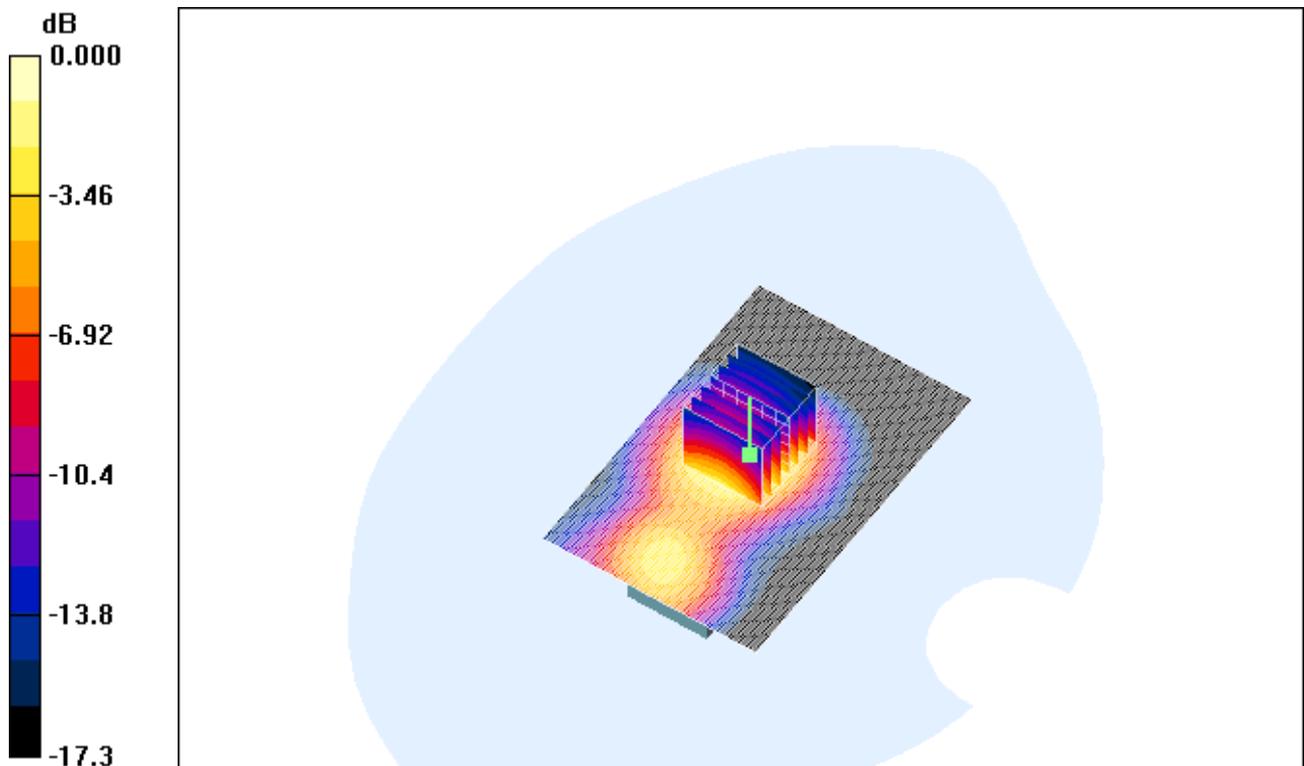
Body Worn - Middle P2 +sd/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 20.9 V/m; Power Drift = 0.074 dB

Peak SAR (extrapolated) = 1.84 W/kg

SAR(1 g) = 1.06 mW/g; SAR(10 g) = 0.568 mW/g

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



0 dB = 1.06mW/g

4.23 UMTS FDD II-BodyWorn-WCDMA-Mid-P1

Date/Time: 2009-7-13 12:01:43

Test Laboratory: SGS-GSM

UMTS FDD II-BodyWorn-WCDMA-Mid-P1

DUT: KZ038AP01; Type: Body; Serial: 351790030003690

Communication System: WCDMA Band II ; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: HSL 1900 Body Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.48 \text{ mho/m}$; $\epsilon_r = 52.5$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(4.51, 4.51, 4.51); Calibrated: 2008-12-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2008-12-18
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Body Worn Mid -P1/Area Scan (81x101x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

Maximum value of SAR (interpolated) = 1.24 mW/g

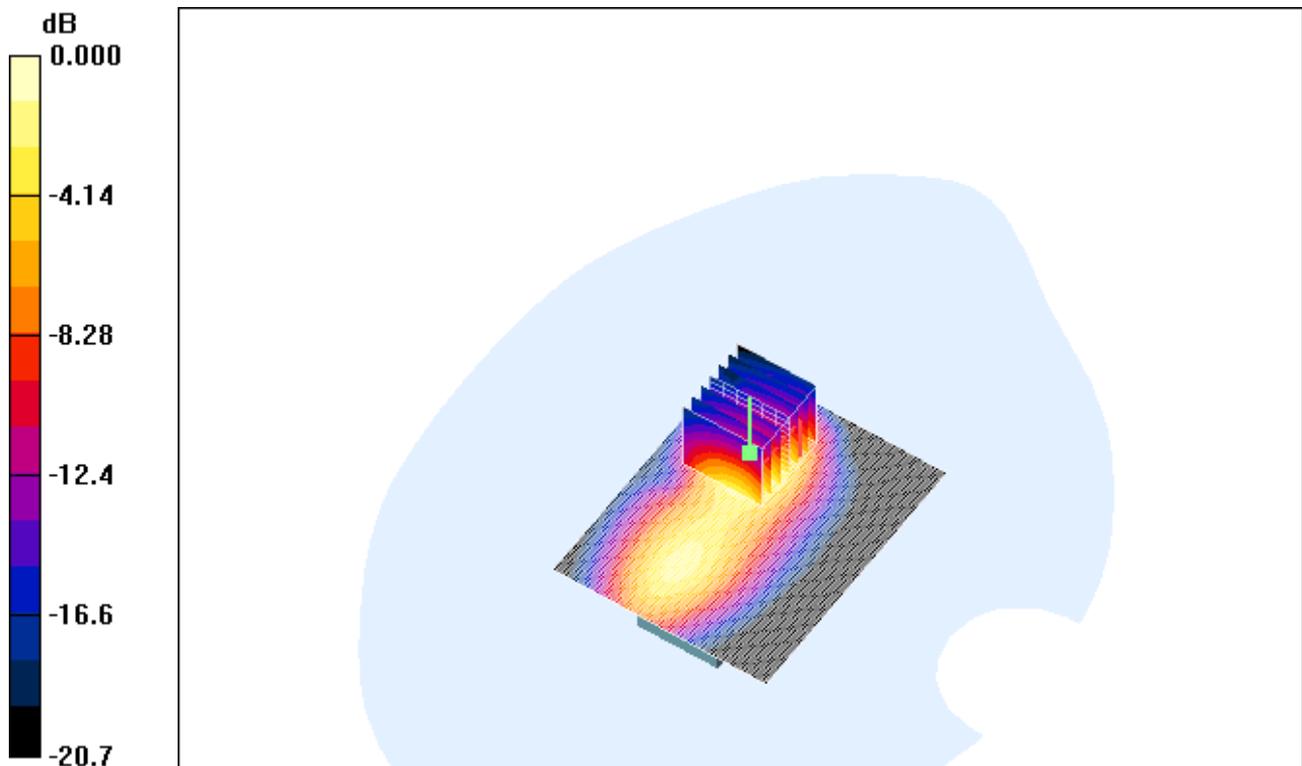
Body Worn Mid -P1/Zoom Scan (7x7x11)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=3\text{mm}$

Reference Value = 15.8 V/m; Power Drift = 0.044 dB

Peak SAR (extrapolated) = 1.89 W/kg

SAR(1 g) = 0.912 mW/g; SAR(10 g) = 0.439 mW/g

Maximum value of SAR (measured) = 1.19 mW/g



0 dB = 1.19mW/g

4.24 UMTS FDD II-BodyWorn-WCDMA-Mid-P2

Date/Time: 2009-5-28 18:45:52

Test Laboratory: SGS-GSM

UMTS FDD II-BodyWorn-WCDMA-Mid-P2

DUT: KZ038AP01; Type: Body; Serial: 351790030003690

Communication System: WCDMA Band II ; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: HSL 1900 Body Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.5 \text{ mho/m}$; $\epsilon_r = 52.7$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(4.51, 4.51, 4.51); Calibrated: 2008-12-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2008-12-18
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 186

Body Worn Mid -P2 3/Area Scan (81x121x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 1.35 mW/g

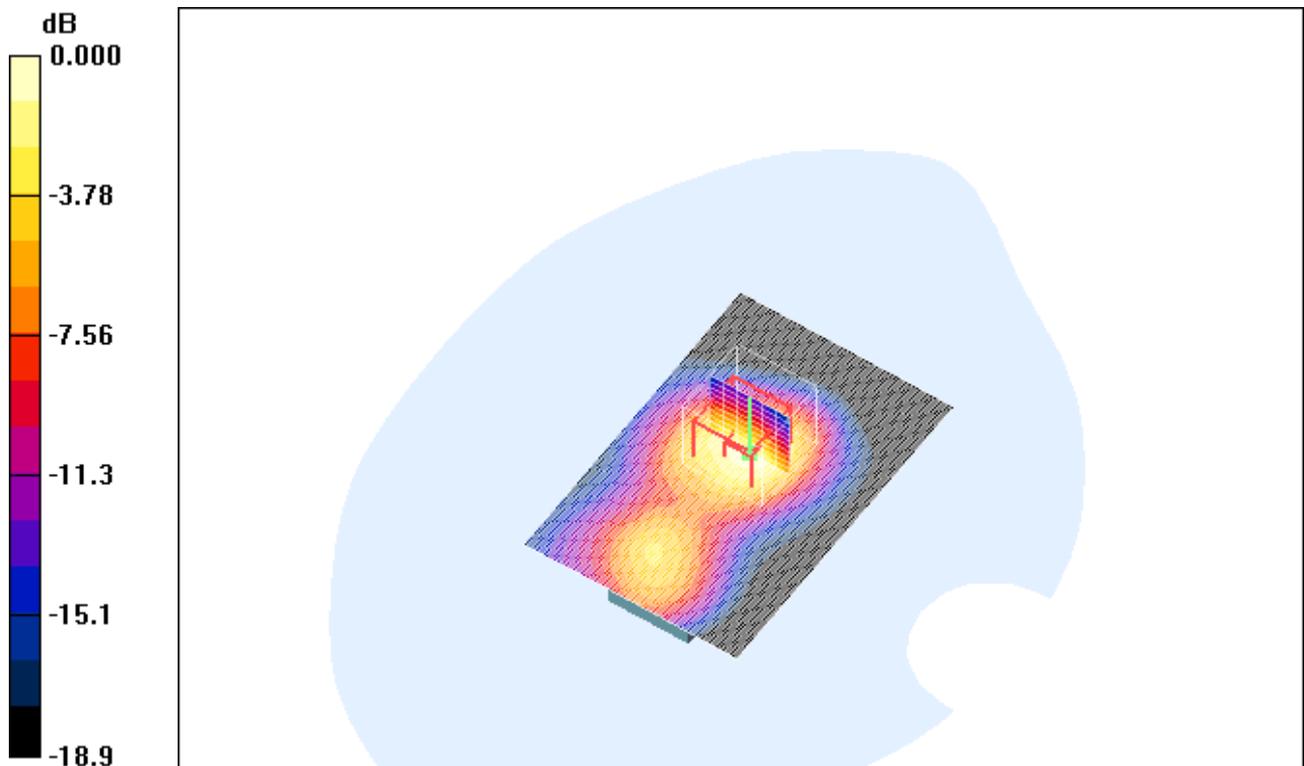
Body Worn Mid -P2 3/Zoom Scan (7x7x11)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=3mm

Reference Value = 17.9 V/m; Power Drift = 0.227 dB

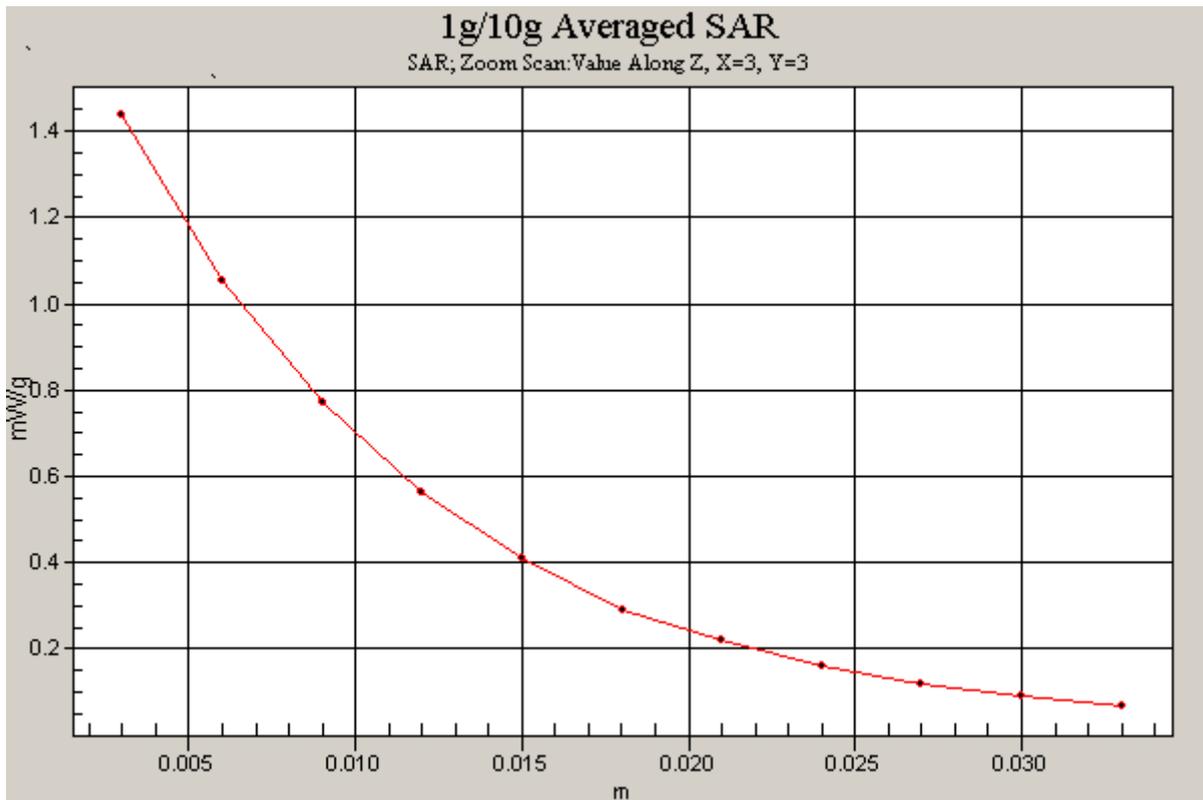
Peak SAR (extrapolated) = 2.47 W/kg

SAR(1 g) = 1.17 mW/g; SAR(10 g) = 0.596 mW/g

Maximum value of SAR (measured) = 1.44 mW/g



0 dB = 1.44mW/g



4.25 UMTS FDD II-BodyWorn-WCDMA-Mid-P2-10mm

Date/Time: 2009-5-29 14:23:57

Test Laboratory: SGS-GSM

UMTS FDD II-BodyWorn-WCDMA-Mid-P2-10mm

DUT: KZ038AP01; Type: Body; Serial: 351790030003690

Communication System: WCDMA Band II ; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: HSL 1900 Body Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.5 \text{ mho/m}$; $\epsilon_r = 52.7$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(4.51, 4.51, 4.51); Calibrated: 2008-12-22
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2008-12-18
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 186

Body Worn - Mid p2 Xmm/Area Scan (51x81x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.575 mW/g

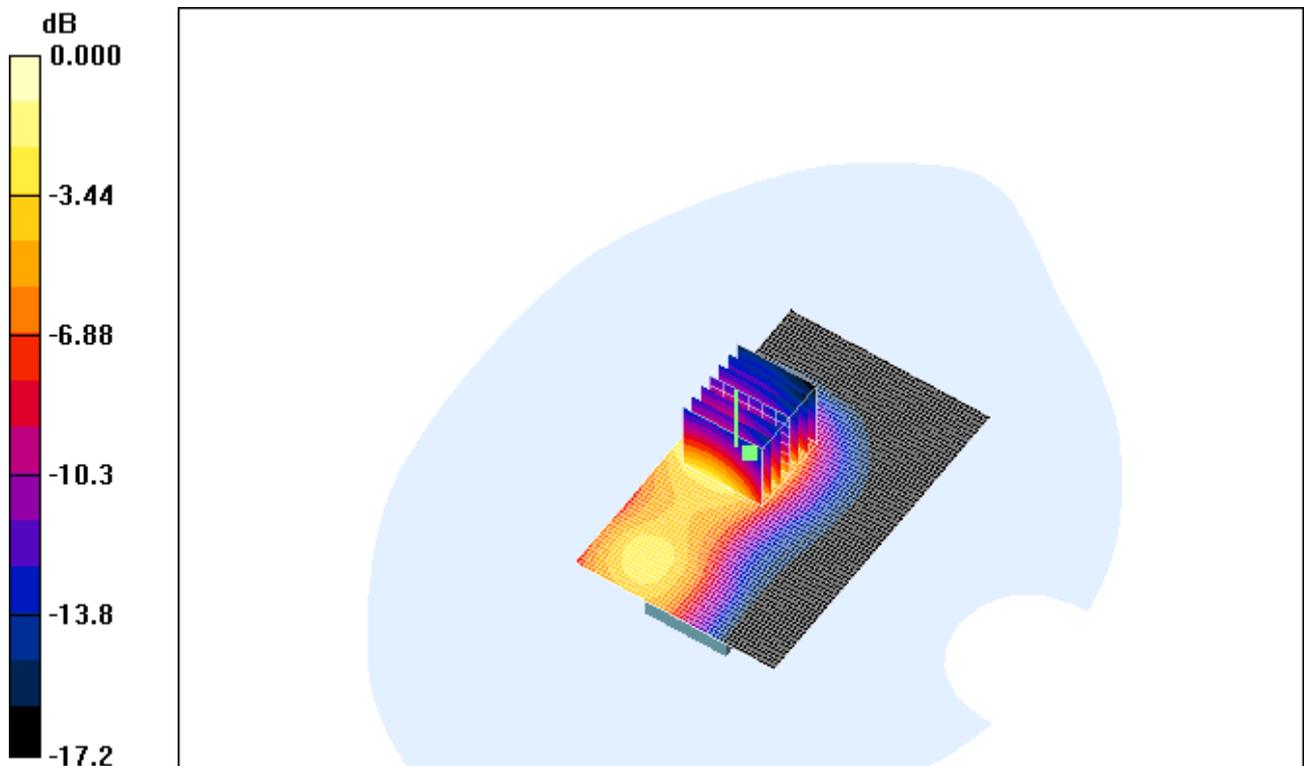
Body Worn - Mid p2 Xmm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 8.38 V/m; Power Drift = 0.097 dB

Peak SAR (extrapolated) = 0.885 W/kg

SAR(1 g) = 0.513 mW/g; SAR(10 g) = 0.279 mW/g

Maximum value of SAR (measured) = 0.566 mW/g



0 dB = 0.566mW/g

4.26 UMTS FDD II-BodyWorn-WCDMA-Mid-P3

Date/Time: 2009-5-29 18:04:57

Test Laboratory: SGS-GSM

UMTS FDD II-BodyWorn-WCDMA-Mid-P3

DUT: KZ038AP01; Type: Body; Serial: 351790030003690

Communication System: WCDMA Band II ; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: HSL 1900 Body Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.5 \text{ mho/m}$; $\epsilon_r = 54$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(4.51, 4.51, 4.51); Calibrated: 2008-12-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2008-12-18
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 186

Body Worn - Middle P3/Area Scan (81x121x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

Maximum value of SAR (interpolated) = 0.867 mW/g

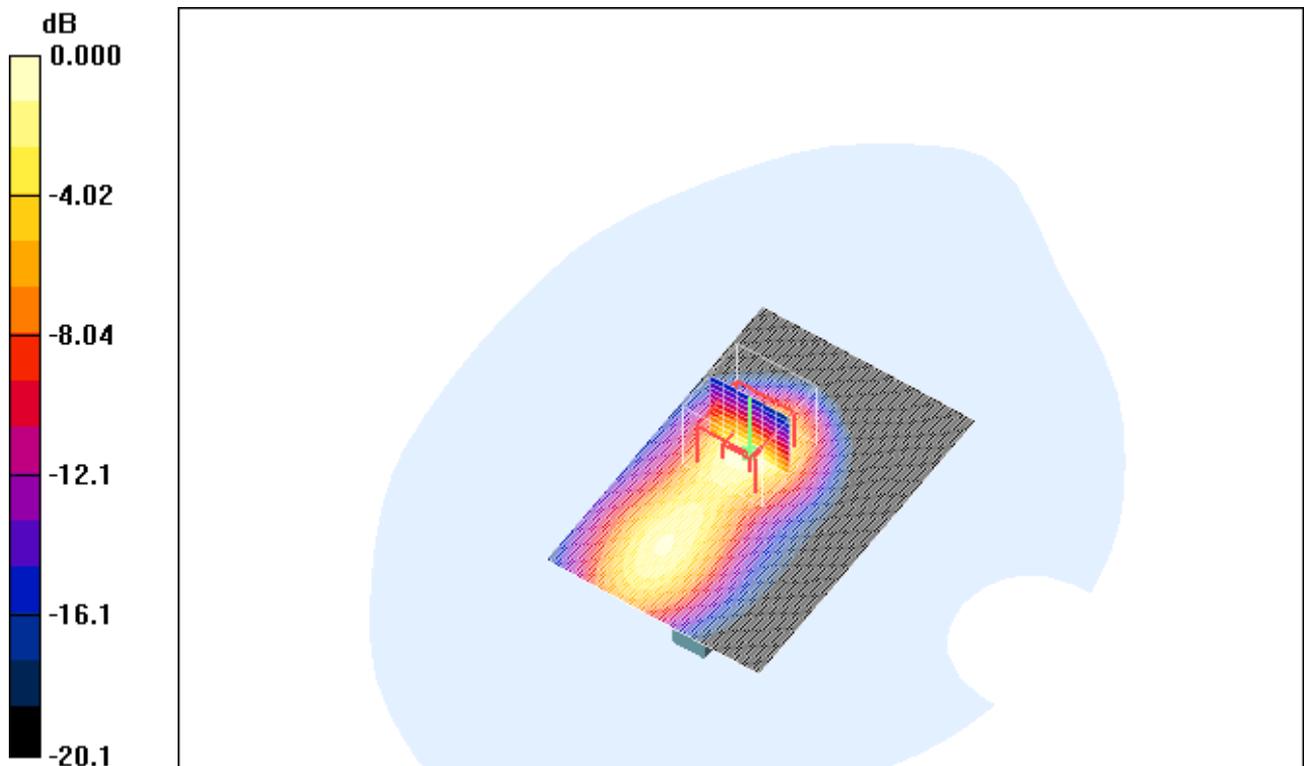
Body Worn - Middle P3/Zoom Scan (7x7x11)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=3\text{mm}$

Reference Value = 13.0 V/m; Power Drift = -0.052 dB

Peak SAR (extrapolated) = 1.31 W/kg

SAR(1 g) = 0.651 mW/g; SAR(10 g) = 0.303 mW/g

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



0 dB = 0.874mW/g

4.27 UMTS FDD II-BodyWorn-WCDMA-Mid-P4

Date/Time: 2009-5-29 20:52:20

Test Laboratory: SGS-GSM

UMTS FDD II-BodyWorn-WCDMA-Mid-P4

DUT: KZ038AP01; Type: Body; Serial: 351790030003690

Communication System: WCDMA Band II ; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: HSL 1900 Body Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.5 \text{ mho/m}$; $\epsilon_r = 54$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(4.51, 4.51, 4.51); Calibrated: 2008-12-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2008-12-18
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 186

Body Worn - Middle P4/Area Scan (81x121x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

Maximum value of SAR (interpolated) = 0.525 mW/g

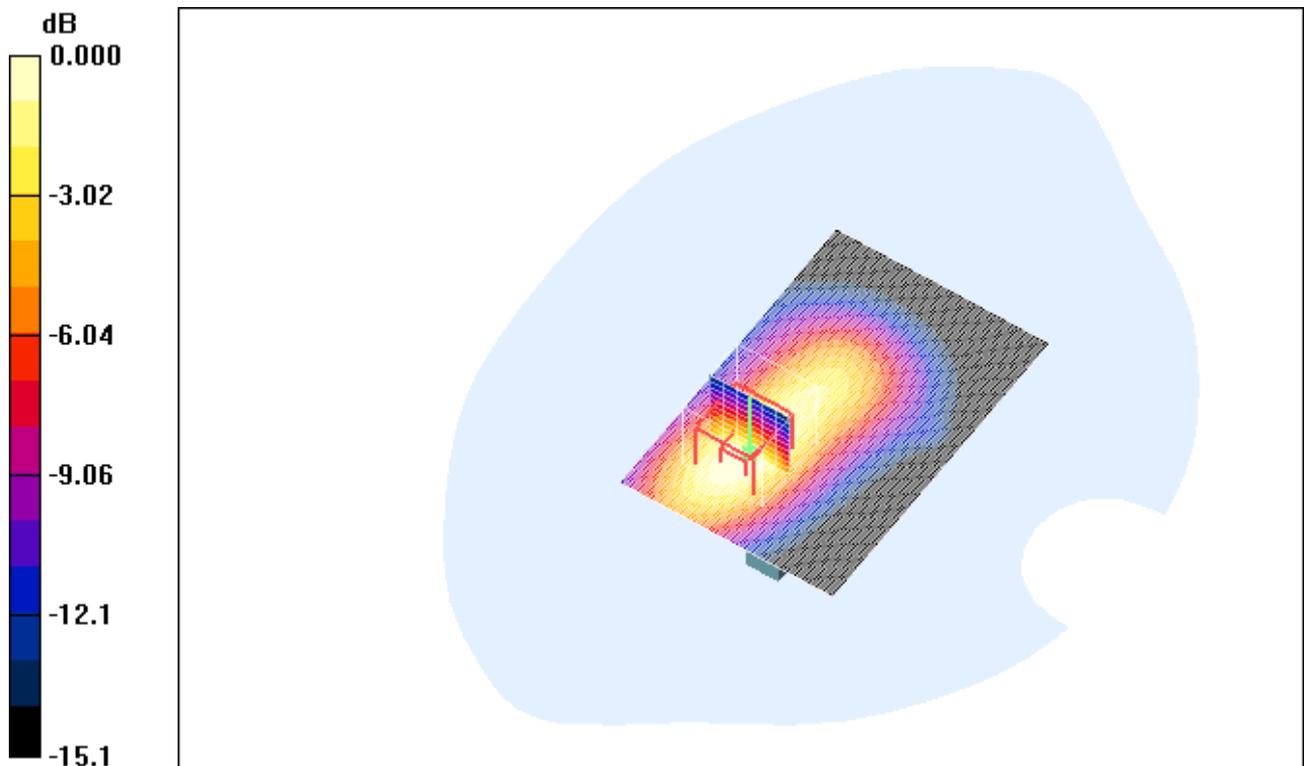
Body Worn - Middle P4/Zoom Scan (7x7x11)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=3\text{mm}$

Reference Value = 13.4 V/m; Power Drift = 0.367 dB

Peak SAR (extrapolated) = 0.700 W/kg

SAR(1 g) = 0.426 mW/g; SAR(10 g) = 0.243 mW/g

Maximum value of SAR (measured) = 0.527 mW/g



0 dB = 0.527mW/g

4.28 UMTS FDD II-BodyWorn-WCDMA-Mid-P5

Date/Time: 2009-5-29 22:59:42

Test Laboratory: SGS-GSM

UMTS FDD II-BodyWorn-WCDMA-Mid-P5

DUT: KZ038AP01; Type: Body; Serial: 351790030003690

Communication System: WCDMA Band II ; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: HSL 1900 Body Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.5 \text{ mho/m}$; $\epsilon_r = 54$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(4.51, 4.51, 4.51); Calibrated: 2008-12-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2008-12-18
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 186

Body Worn - Middle P5/Area Scan (61x101x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

Maximum value of SAR (interpolated) = 0.294 mW/g

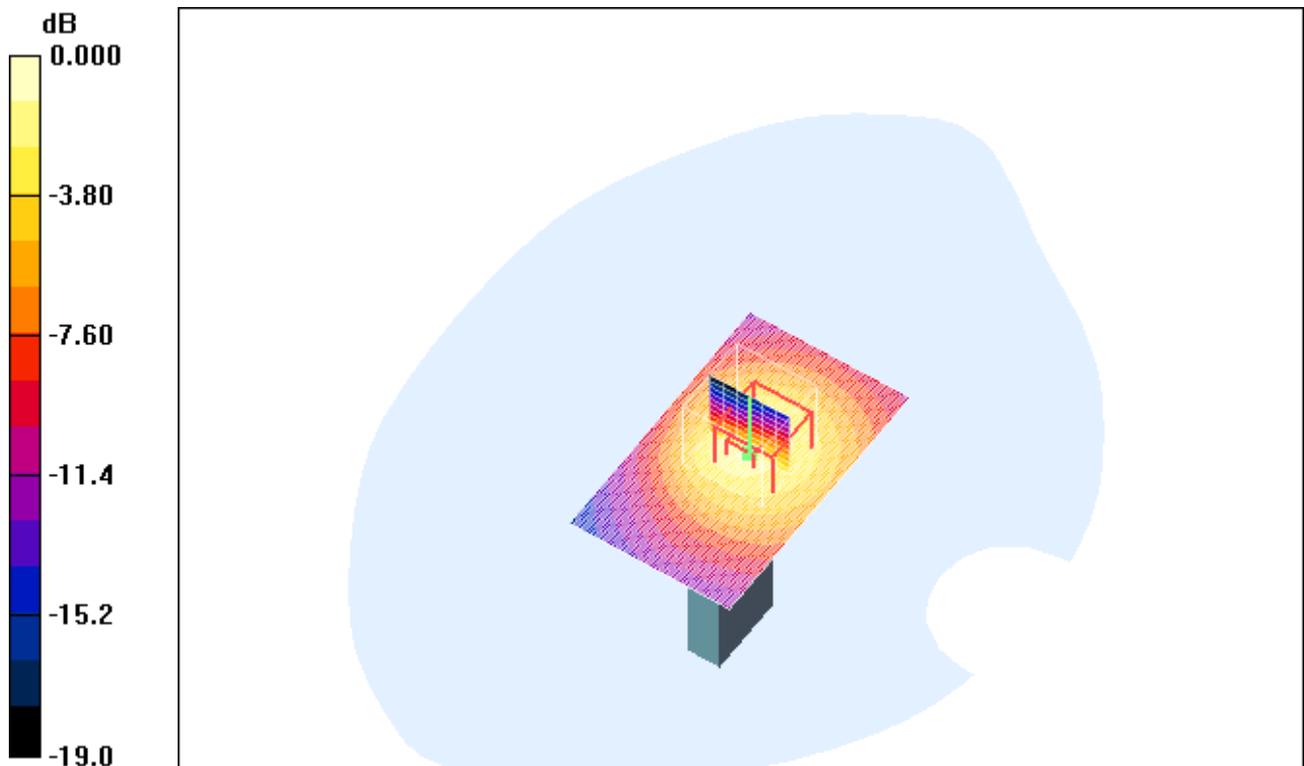
Body Worn - Middle P5/Zoom Scan (7x7x11)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=3\text{mm}$

Reference Value = 14.1 V/m; Power Drift = 0.094 dB

Peak SAR (extrapolated) = 0.833 W/kg

SAR(1 g) = 0.274 mW/g; SAR(10 g) = 0.132 mW/g

Maximum value of SAR (measured) = 0.377 mW/g



0 dB = 0.377mW/g

4.29 UMTS FDD II-BodyWorn-WCDMA-Low-P2

Date/Time: 2009-5-28 19:53:38

Test Laboratory: SGS-GSM

UMTS FDD II-BodyWorn-WCDMA-Low-P2

DUT: KZ038AP01; Type: Body; Serial: 351790030003690

Communication System: WCDMA Band II ; Frequency: 1852.5 MHz; Duty Cycle: 1:1

Medium: HSL 1900 Body Medium parameters used: $f = 1852.52 \text{ MHz}$; $\sigma = 1.47 \text{ mho/m}$; $\epsilon_r = 52.7$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(4.51, 4.51, 4.51); Calibrated: 2008-12-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2008-12-18
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 186

Body Worn -Low-P2/Area Scan (81x121x1): **Measurement grid: dx=10mm, dy=10mm**

Maximum value of SAR (interpolated) = 1.31 mW/g

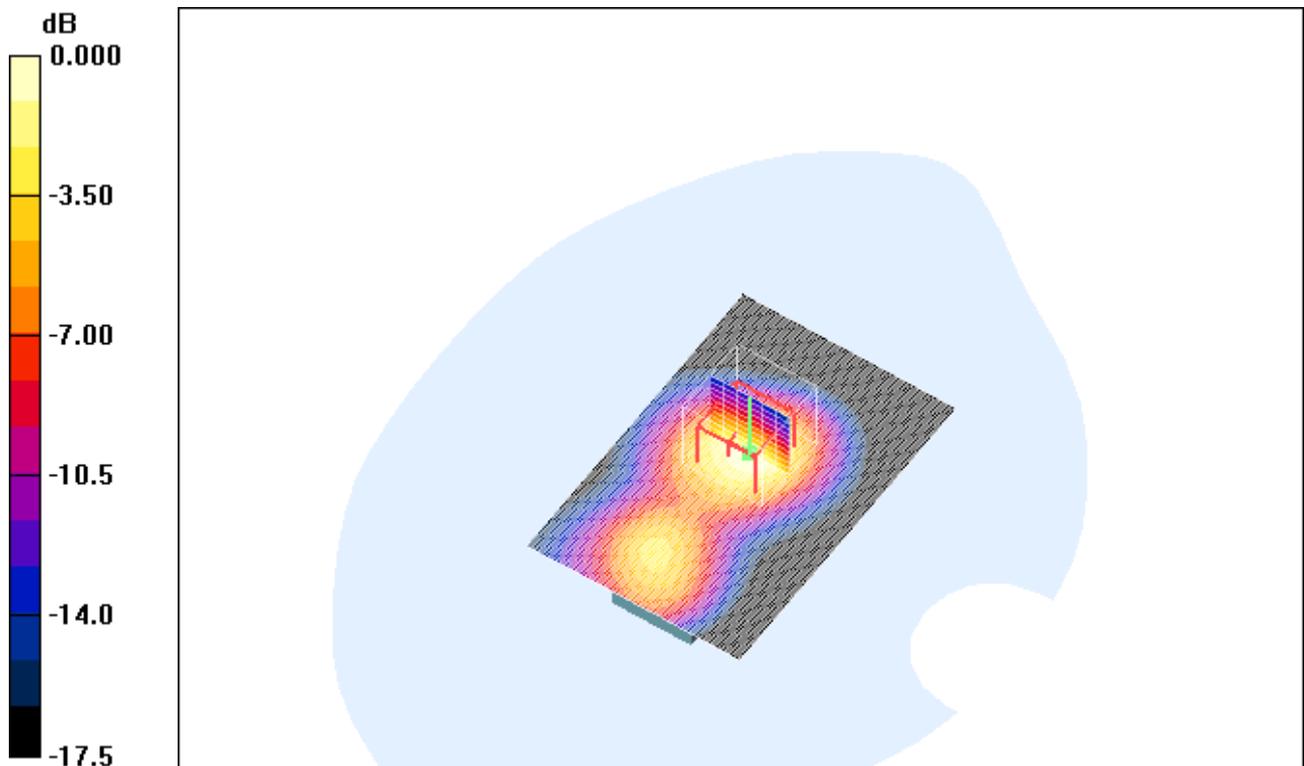
Body Worn -Low-P2/Zoom Scan (7x7x11)/Cube 0: **Measurement grid: dx=5mm, dy=5mm, dz=3mm**

Reference Value = 17.0 V/m; Power Drift = 0.066 dB

Peak SAR (extrapolated) = 1.74 W/kg

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

Maximum value of SAR (measured) = 1.28 mW/g



0 dB = 1.28mW/g

4.30 UMTS FDD II-BodyWorn-WCDMA-High-P2

Date/Time: 2009-5-28 19:20:33

Test Laboratory: SGS-GSM

UMTS FDD II-BodyWorn-WCDMA-High-P2

DUT: KZ038AP01; Type: Body; Serial: 351790030003690

Communication System: WCDMA Band II ; Frequency: 1907.6 MHz; Duty Cycle: 1:1

Medium: HSL 1900 Body Medium parameters used: $f = 1907.6 \text{ MHz}$; $\sigma = 1.53 \text{ mho/m}$; $\epsilon_r = 52.6$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(4.51, 4.51, 4.51); Calibrated: 2008-12-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2008-12-18
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 186

Body Worn -High-P2 2/Area Scan (81x121x1): **Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$**

Maximum value of SAR (interpolated) = 1.33 mW/g

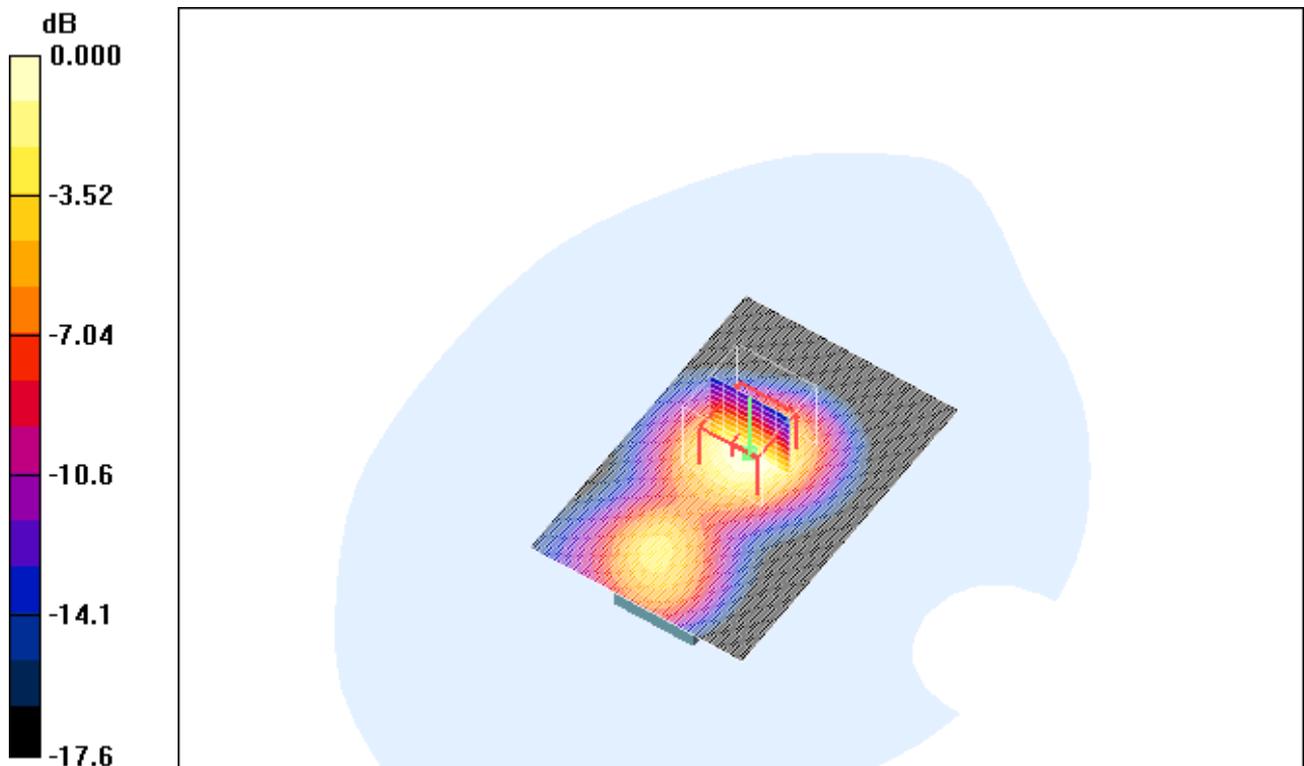
Body Worn -High-P2 2/Zoom Scan (7x7x11)/Cube 0: **Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=3\text{mm}$**

Reference Value = 16.8 V/m; Power Drift = 0.223 dB

Peak SAR (extrapolated) = 1.77 W/kg

SAR(1 g) = 1.03 mW/g; SAR(10 g) = 0.547 mW/g

Maximum value of SAR (measured) = 1.29 mW/g



0 dB = 1.29mW/g

4.31 UMTS FDD II-BodyWorn-HSPA-Mid-P2

Date/Time: 2009-5-29 12:48:58

Test Laboratory: SGS-GSM

UMTS FDD II-Body-Worn-HSPA-Mid-P2

DUT: KZ038AP01; Type: Body; Serial: 351790030003690

Communication System: WCDMA Band II HSPA; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: HSL 1900 Body Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.5 \text{ mho/m}$; $\epsilon_r = 52.7$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(4.51, 4.51, 4.51); Calibrated: 2008-12-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2008-12-18
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 186

Body Worn - Middle P2/Area Scan (81x121x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

Maximum value of SAR (interpolated) = 0.738 mW/g

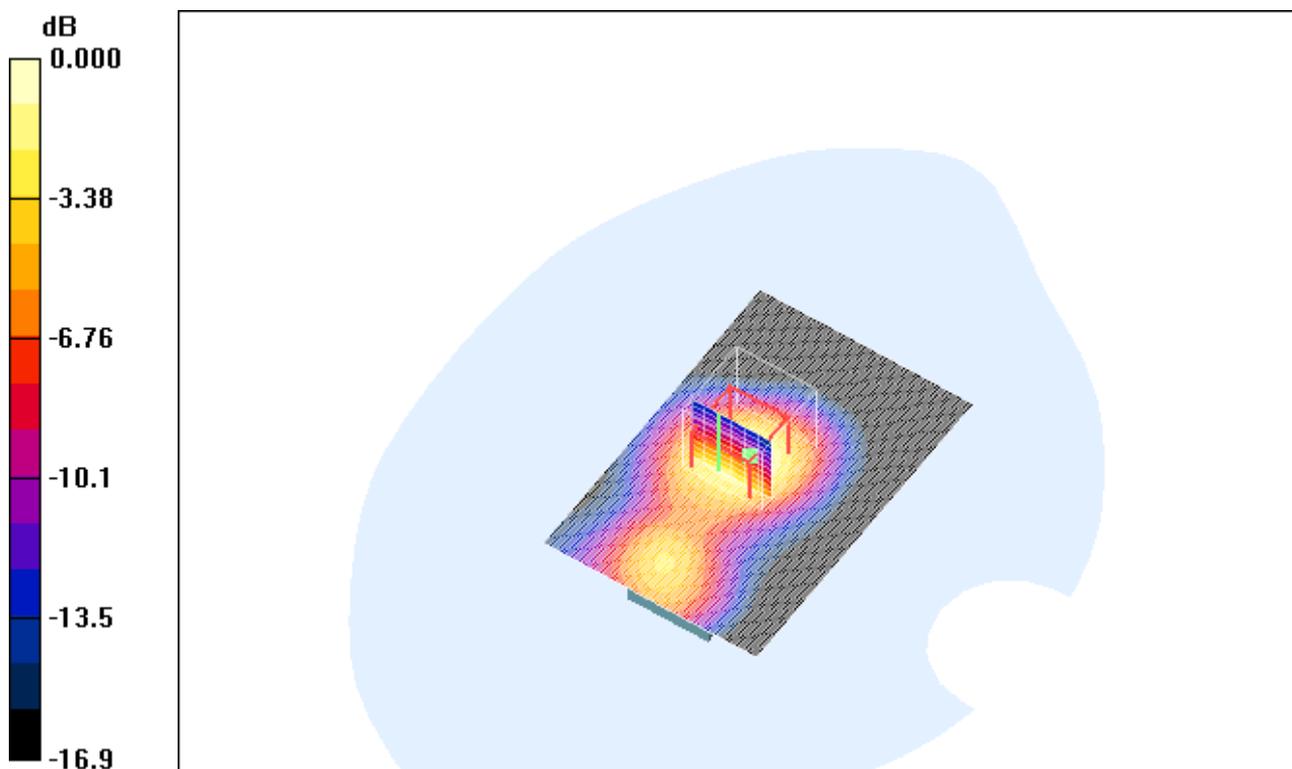
Body Worn - Middle P2/Zoom Scan (7x7x11)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=3\text{mm}$

Reference Value = 16.7 V/m; Power Drift = -0.135 dB

Peak SAR (extrapolated) = 1.29 W/kg

SAR(1 g) = 0.597 mW/g; SAR(10 g) = 0.325 mW/g

Maximum value of SAR (measured) = 0.805 mW/g



0 dB = 0.805mW/g

4.32 UMTS FDD II-BodyWorn-WCDMA-Mid+SD-P2

Date/Time: 2009-5-28 17:39:50

Test Laboratory: SGS-GSM

UMTS FDD II-Body-Worn-WCDMA-Mid+SD-P2

DUT: KZ038AP01; Type: Body; Serial: 351790030003690

Communication System: WCDMA Band II ; Frequency: 1880 MHz;Duty Cycle: 1:1

Medium: HSL 1900 Body Medium parameters used: f = 1880 MHz; $\sigma = 1.5$ mho/m; $\epsilon_r = 52.7$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(4.51, 4.51, 4.51); Calibrated: 2008-12-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2008-12-18
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 186

Body Worn Mid -P2 2/Area Scan (81x121x1): **Measurement grid: dx=10mm, dy=10mm**

Maximum value of SAR (interpolated) = 1.32 mW/g

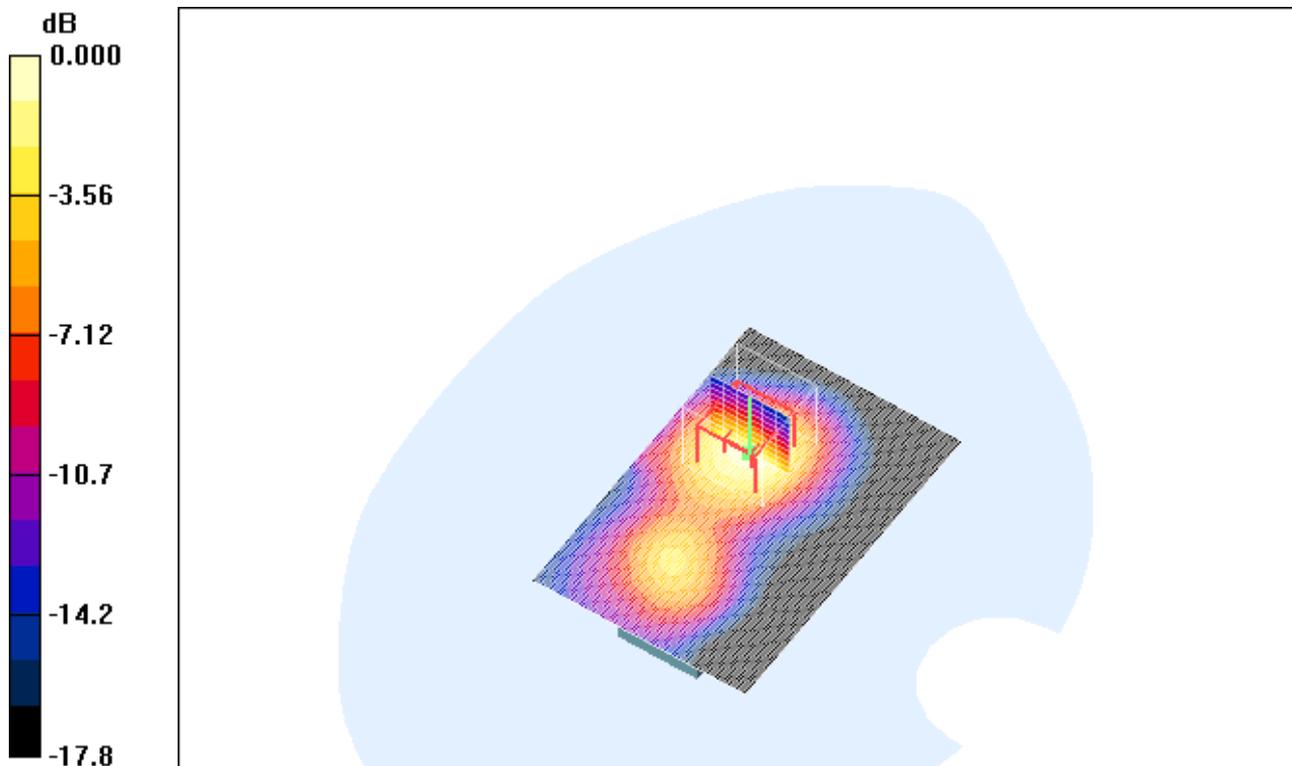
Body Worn Mid -P2 2/Zoom Scan (7x7x11)/Cube 0: **Measurement grid: dx=5mm, dy=5mm, dz=3mm**

Reference Value = 12.3 V/m; Power Drift = 0.053 dB

Peak SAR (extrapolated) = 2.01 W/kg

SAR(1 g) = 1.13 mW/g; SAR(10 g) = 0.586 mW/g

Maximum value of SAR (measured) = 1.44 mW/g



0 dB = 1.44mW/g

SHGSM

4.33 UMTS FDD V-BodyWorn-WCDMA-Mid-P1

Date/Time: 2009-7-13 14:54:08

Test Laboratory: SGS-GSM

UMTS FDD V-Body-Worn-WCDMA-Mid-P1

DUT: KZ038AP01; Type: Body; Serial: 351790030003690

Communication System: WCDMA Band V ; Frequency: 836.4 MHz; Duty Cycle: 1:1

Medium: HSL835 Body Medium parameters used: $f = 836.4 \text{ MHz}$; $\sigma = 0.95 \text{ mho/m}$; $\epsilon_r = 54.1$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(5.67, 5.67, 5.67); Calibrated: 2008-12-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2008-12-18
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Body Worn - Middle P1/Area Scan (81x101x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

Maximum value of SAR (interpolated) = 0.193 mW/g

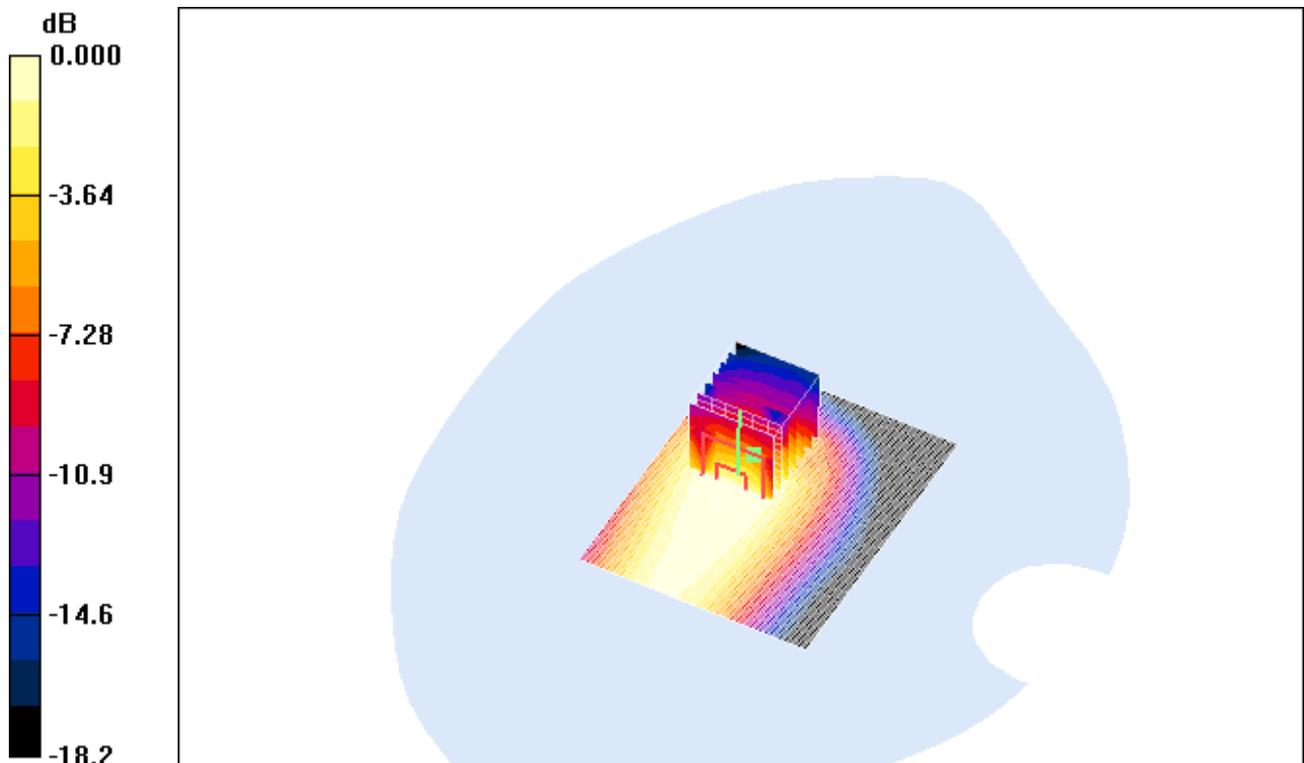
Body Worn - Middle P1/Zoom Scan (7x7x11)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=3\text{mm}$

Reference Value = 9.16 V/m; Power Drift = 0.286 dB

Peak SAR (extrapolated) = 0.259 W/kg

SAR(1 g) = 0.116 mW/g; SAR(10 g) = 0.068 mW/g

Maximum value of SAR (measured) = 0.135 mW/g



0 dB = 0.135mW/g

SHGSM

4.34 UMTS FDD V-BodyWorn-WCDMA-Mid-P2

Date/Time: 2009-5-30 16:20:06

Test Laboratory: SGS-GSM

UMTS FDD V-Body-Worn-WCDMA-Mid-P2

DUT: KZ038AP01; Type: Body; Serial: 351790030003690

Communication System: WCDMA Band V ; Frequency: 836.4 MHz; Duty Cycle: 1:1

Medium: HSL835 Body Medium parameters used: $f = 836.4 \text{ MHz}$; $\sigma = 0.948 \text{ mho/m}$; $\epsilon_r = 54.2$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(5.67, 5.67, 5.67); Calibrated: 2008-12-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2008-12-18
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 186

Body Worn - Middle P2/Area Scan (81x121x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

Maximum value of SAR (interpolated) = 0.403 mW/g

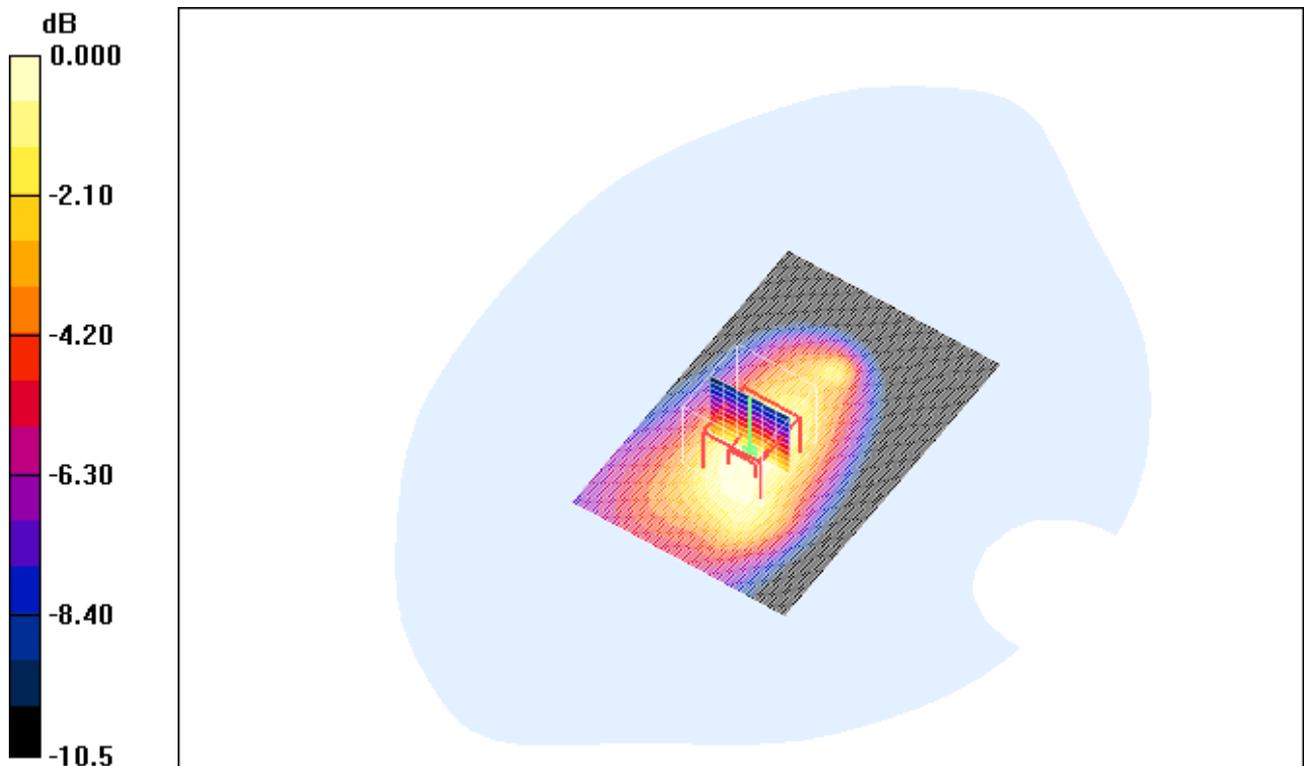
Body Worn - Middle P2/Zoom Scan (7x7x11)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=3\text{mm}$

Reference Value = 18.8 V/m; Power Drift = -0.019 dB

Peak SAR (extrapolated) = 0.517 W/kg

SAR(1 g) = 0.336 mW/g; SAR(10 g) = 0.218 mW/g

Maximum value of SAR (measured) = 0.395 mW/g



0 dB = 0.395mW/g

4.35 UMTS FDD V-BodyWorn-WCDMA-Mid-P3

Date/Time: 2009-5-30 23:24:17

Test Laboratory: SGS-GSM

UMTS FDD V-Body-Worn-WCDMA-Mid-P3

DUT: KZ038AP01; Type: Body; Serial: 351790030003690

Communication System: WCDMA Band V ; Frequency: 836.4 MHz; Duty Cycle: 1:1

Medium: HSL835 Body Medium parameters used: $f = 836.4 \text{ MHz}$; $\sigma = 0.944 \text{ mho/m}$; $\epsilon_r = 54$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(5.67, 5.67, 5.67); Calibrated: 2008-12-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2008-12-18
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 186

Body Worn - Middle P3/Area Scan (61x101x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

Maximum value of SAR (interpolated) = 0.068 mW/g

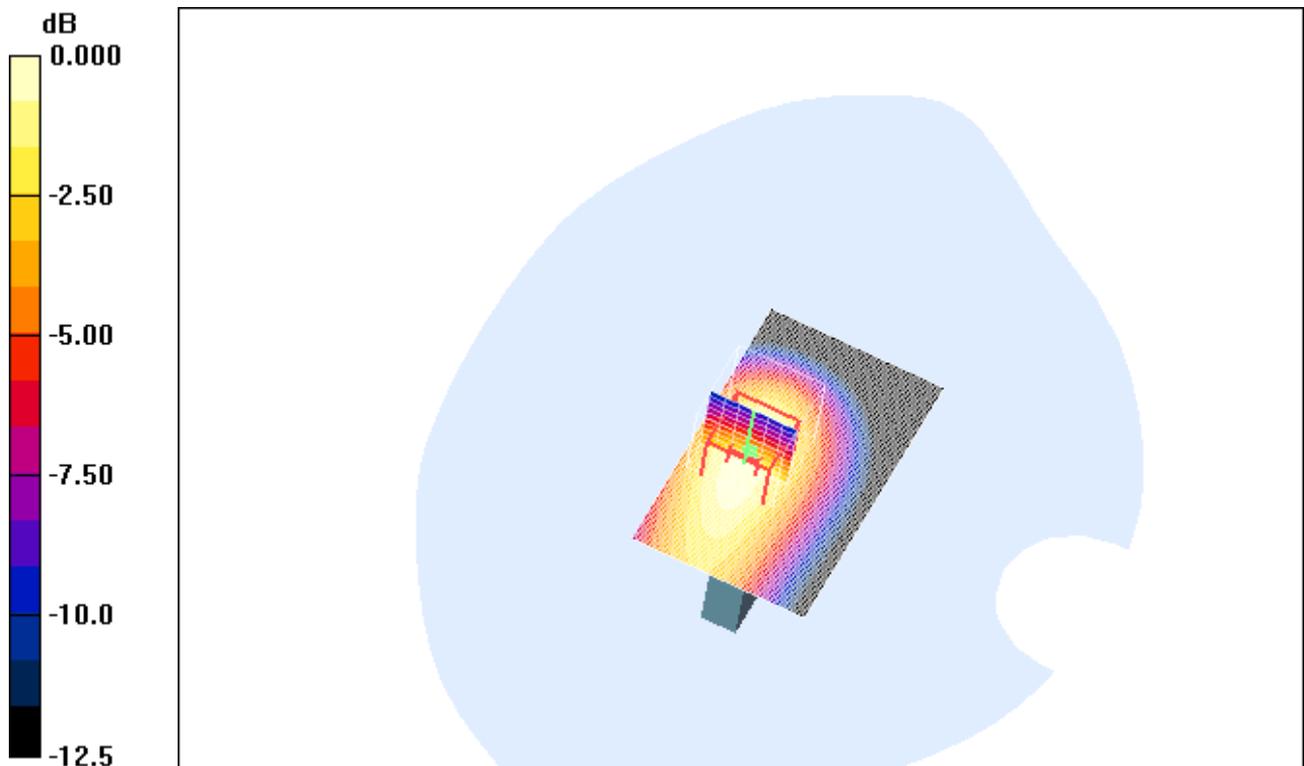
Body Worn - Middle P3/Zoom Scan (7x7x11)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=3\text{mm}$

Reference Value = 7.07 V/m; Power Drift = 0.155 dB

Peak SAR (extrapolated) = 0.093 W/kg

SAR(1 g) = 0.059 mW/g; SAR(10 g) = 0.038 mW/g

Maximum value of SAR (measured) = 0.069 mW/g



0 dB = 0.069mW/g

4.36 UMTS FDD V-BodyWorn-WCDMA-Mid-P4

Date/Time: 2009-5-31 8:40:09

Test Laboratory: SGS-GSM

UMTS FDD V-Body-Worn-WCDMA-Mid-P4

DUT: KZ038AP01; Type: Body; Serial: 351790030003690

Communication System: WCDMA Band V ; Frequency: 836.4 MHz; Duty Cycle: 1:1

Medium: HSL835 Body Medium parameters used: $f = 836.4 \text{ MHz}$; $\sigma = 0.944 \text{ mho/m}$; $\epsilon_r = 54$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(5.67, 5.67, 5.67); Calibrated: 2008-12-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2008-12-18
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 186

Body Worn - Middle P4/Area Scan (81x121x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

Maximum value of SAR (interpolated) = 0.089 mW/g

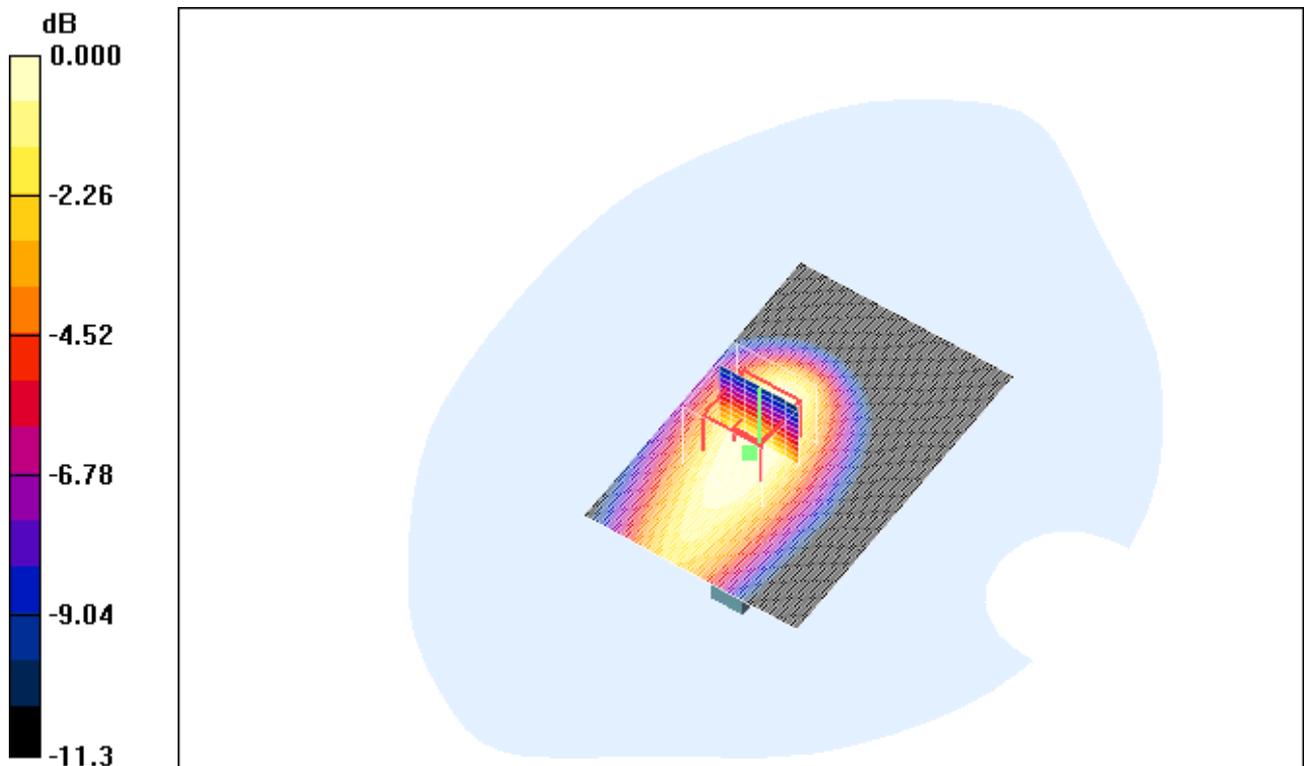
Body Worn - Middle P4/Zoom Scan (7x7x11)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=3\text{mm}$

Reference Value = 7.63 V/m; Power Drift = 0.162 dB

Peak SAR (extrapolated) = 0.111 W/kg

SAR(1 g) = 0.066 mW/g; SAR(10 g) = 0.042 mW/g

Maximum value of SAR (measured) = 0.079 mW/g



0 dB = 0.079mW/g

4.37 UMTS FDD V-BodyWorn-WCDMA-Mid-P5

Date/Time: 2009-5-31 9:39:38

Test Laboratory: SGS-GSM

UMTS FDD V-Body-Worn-WCDMA-Mid-P5

DUT: KZ038AP01; Type: Body; Serial: 351790030003690

Communication System: WCDMA Band V ; Frequency: 836.4 MHz; Duty Cycle: 1:1

Medium: HSL835 Body Medium parameters used: $f = 836.4 \text{ MHz}$; $\sigma = 0.948 \text{ mho/m}$; $\epsilon_r = 54.2$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(5.67, 5.67, 5.67); Calibrated: 2008-12-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2008-12-18
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 186

Body Worn - Middle P5/Area Scan (81x121x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

Maximum value of SAR (interpolated) = 0.014 mW/g

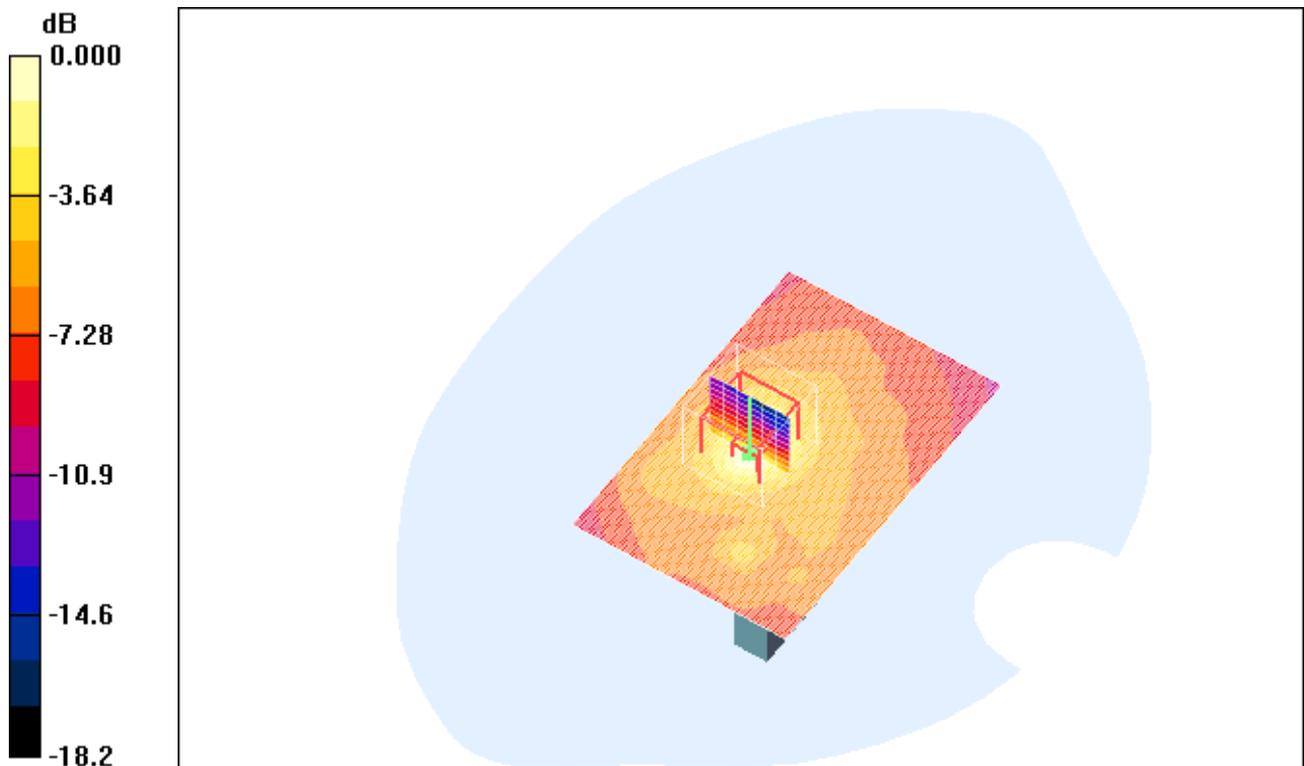
Body Worn - Middle P5/Zoom Scan (7x7x11)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=3\text{mm}$

Reference Value = 3.11 V/m; Power Drift = -0.058 dB

Peak SAR (extrapolated) = 0.041 W/kg

SAR(1 g) = 0.011 mW/g; SAR(10 g) = 0.00528 mW/g

Maximum value of SAR (measured) = 0.015 mW/g



0 dB = 0.015mW/g

4.38 UMTS FDD V-BodyWorn-HSPA-Mid-P2

Date/Time: 2009-5-30 17:42:47

Test Laboratory: SGS-GSM

UMTS FDD V-Body-Worn-HSPA-Mid+P2

DUT: KZ038AP01; Type: Body; Serial: 351790030003690

Communication System: WCDMA Band V HSPA; Frequency: 836.4 MHz; Duty Cycle: 1:1

Medium: HSL835 Body Medium parameters used: $f = 836.4 \text{ MHz}$; $\sigma = 0.944 \text{ mho/m}$; $\epsilon_r = 54$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(5.67, 5.67, 5.67); Calibrated: 2008-12-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2008-12-18
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 186

Body Worn - Middle P2/Area Scan (61x101x1): **Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$**

Maximum value of SAR (interpolated) = 0.303 mW/g

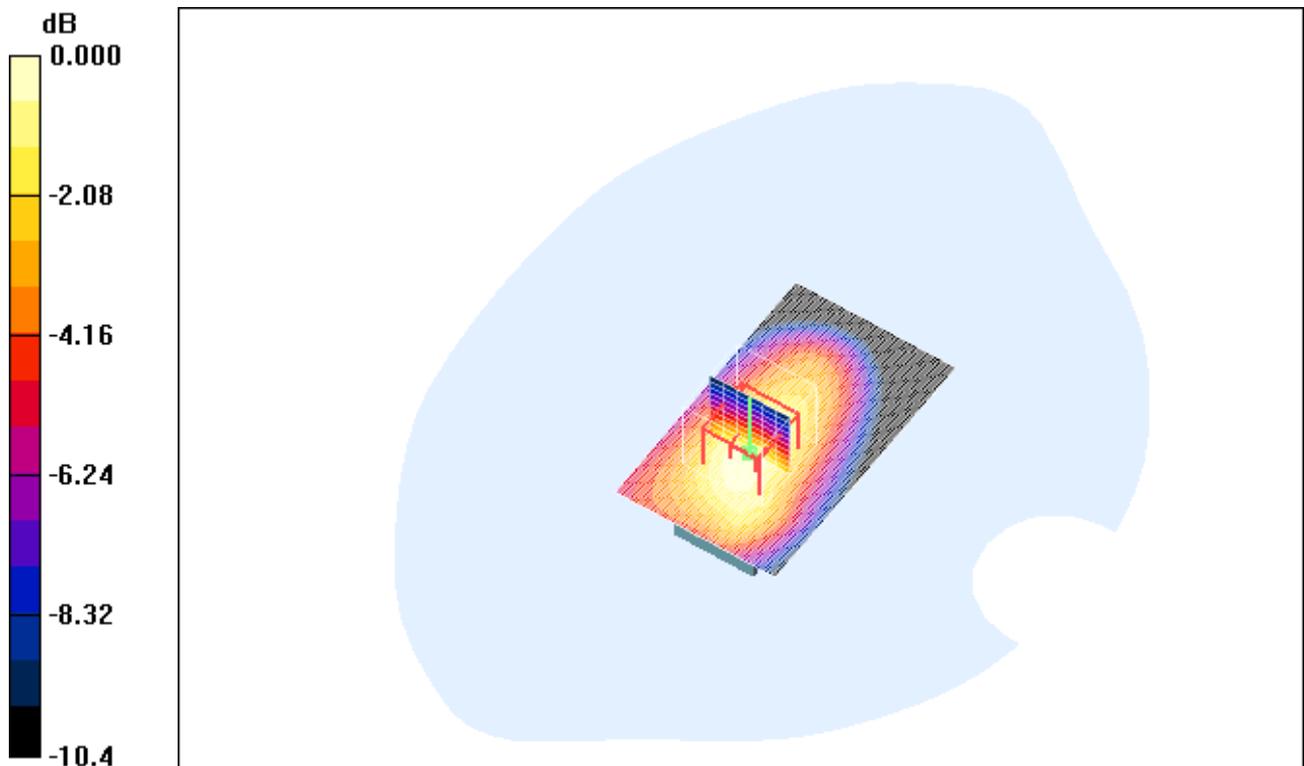
Body Worn - Middle P2/Zoom Scan (7x7x11)/Cube 0: **Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=3\text{mm}$**

Reference Value = 16.6 V/m; Power Drift = 0.043 dB

Peak SAR (extrapolated) = 0.421 W/kg

SAR(1 g) = 0.263 mW/g; SAR(10 g) = 0.169 mW/g

Maximum value of SAR (measured) = 0.306 mW/g



0 dB = 0.306mW/g

4.39 UMTS FDD V-BodyWorn-WCDMA-Mid+SD-P2

Date/Time: 2009-5-31 10:35:07

Test Laboratory: SGS-GSM

UMTS FDD V-Body-Worn-WCDMA-Mid+SD-P2

DUT: KZ038AP01; Type: Body; Serial: 351790030003690

Communication System: WCDMA Band V ; Frequency: 836.4 MHz;Duty Cycle: 1:1

Medium: HSL835 Body Medium parameters used: f = 836.4 MHz; $\sigma = 0.948$ mho/m; $\epsilon_r = 54.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ES3DV3 - SN3088; ConvF(5.67, 5.67, 5.67); Calibrated: 2008-12-22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn569; Calibrated: 2008-12-18
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1283
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 186

Body Worn - Middle P2+SD/Area Scan (81x121x1): **Measurement grid: dx=10mm, dy=10mm**

Maximum value of SAR (interpolated) = 0.243 mW/g

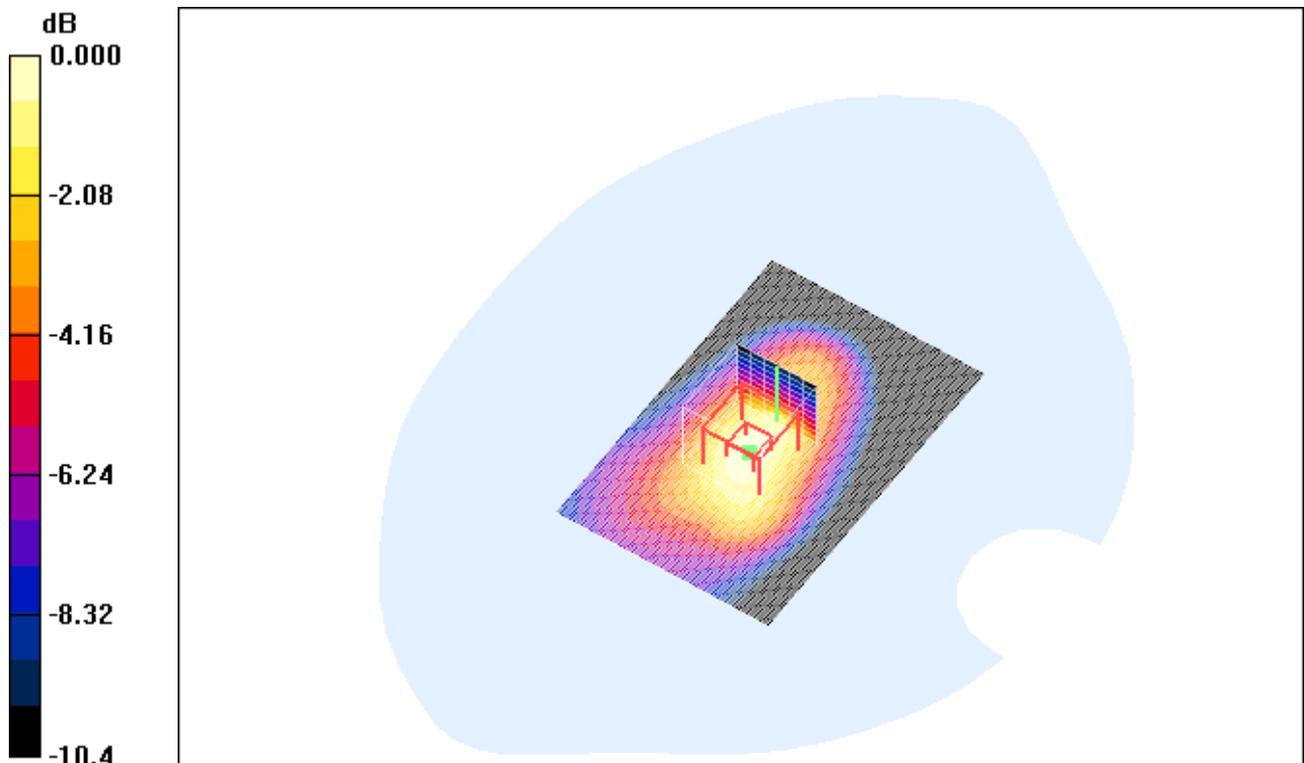
Body Worn - Middle P2+SD/Zoom Scan (7x7x11)/Cube 0: **Measurement grid: dx=5mm, dy=5mm, dz=3mm**

Reference Value = 15.8 V/m; Power Drift = 0.057 dB

Peak SAR (extrapolated) = 0.321 W/kg

SAR(1 g) = 0.208 mW/g; SAR(10 g) = 0.135 mW/g

Maximum value of SAR (measured) = 0.254 mW/g



0 dB = 0.254mW/g

SHGSM