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CONFORMANCE TEST REPORT FOR

HUMAN EXPOSURE TO ELECTROMAGNETIC FIELDS

Report No.: SRTC2012-H024-E0027

Product Name: GSM/GPRS/EDGE/UMTS

Digital Mobile Phone with Bluetooth and WiFi

Product Model: ONE TOUCH 902A

Applicant: TCT Mobile Limited

Manufacturer: TCT Mobile Limited

Specification: FCC OET Bulletin 65 (Edition 97-01)

Supplement C (Edition 01-01)

47CFR 2.1093

FCC ID: RAD243

The State Radio_monitoring_center Testing Center (SRTC)

No.80 Beilishi Road Xicheng District Beijing, China

Tel: 86-10-68009202 Fax: 86-10-68009205

Executive summary

Test report no.:	**SRTC2012-H024-E0027**
Product Model:	**ONE TOUCH 902A**
Date of test:	**2012.05.21**
Date of report:	**2012.05.21**
Laboratory:	**The State Radio_monitoring_center Testing Center (SRTC)**
Test has been Carried out in accordance with:	**47CFR §2.1093** Radiofrequency Radiation Exposure Evaluation: Portable Devices **FCC OET Bulletin 65 (Edition 97-01), Supplement C (Edition 01-01)** Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields **ANSI/IEEE C95.1-2005** Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz **IEEE 1528 - 2003** IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Technique
Documentation:	**The documentation of the testing performed on the tested devices is archived for 5 years at SRTC**

Result summary:

Mode	CH/*f*(MHz)	Power (dBm)	Position	Sar Limit (1g avg) (mW/g)	Measured value (1g avg)(mW/g)	Result
GPRS850	128/824.2	29.25	Towards ground	1.6	**1.100**	PASS

This Test Report Is Issued by: Mr. Song Qizhu Director of the test lab	Checked by: Mr. Wang Junfeng Deputy director of the test lab
Tested by: Mr. Zhang Helun Test engineer	Issued date: **2012.06.05**

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1. GENERAL INFORMATION

1.1 Notes of the test report

The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written permission of The State Radio_monitoring_center Testing Center (SRTC).
The test results relate only to individual items of the samples which have been tested.

1.2 Information about the testing laboratory

Company: The State Radio_monitoring_center Testing Center (SRTC)
Address: No.80 Beilishi Road, Xicheng District, Beijing China
City: Beijing
Country or Region: China
Contacted person: Wang Junfeng
Tel: +86 10 68009181 +86 10 68009202
Fax: +86 10 68009195 +86 10 68009205
Email: wangjf@srrc.org.cn / wangjunfeng@srtc.org.cn

1.3 Applicant's details

Company: TCT Mobile Limited
Address: 5F, C building, No. 232, Liang Jing Road ZhangJiang High-Tech Park, Pudong Area
City: Shanghai
Country or Region: P.R.China
Grantee Code: RAD
Contacted Person: Gong Zhizhou
Tel: +86-21-61460890
Fax: +86-21-61460602
Email: zhizhou.gong@jrdcom.com

1.4 Manufacturer's details

Company: TCT Mobile Limited
Address: 5F, C building, No. 232, Liang Jing Road ZhangJiang High-Tech Park, Pudong Area
City: Shanghai
Country or Region: P.R.China
Contacted Person: Gong Zhizhou
Tel: +86-21-61460890
Fax: +86-21-61460602
Email: zhizhou.gong@jrdcom.com

1.5 Test Details

Period of test	2012.05.21
Batteries used in testing	Li-Lon/CAB31L0000C2/SHENZHEN BAK BATTERY CO., LTD
State of sample	production unit
Headsets used in testing	CCB3160A11C1/Shen Zhen Ju Wei Electronic Co., LTD
	CCB3160A15C1/Shen Zhen Ju Wei Electronic Co., LTD
	CCB3160A11C4/SUPERFINE ELECTRONIC CO., LTD
	CCB3160A15C4/SUPERFINE ELECTRONIC CO., LTD
H/W Version S/W Version	PIO01 SW134
IMEI	01302200000728
Device class/ Multislot class DTM	B/12 N/A
Notes	As the information described above, there are four different models of headset manufactured by two different companies. The relevant tests have been performed in order to verify when connected with which headset the EUT would have the worst features. So all the tests shown in this test report are performed when the EUT connected with the headset CCB3160A15C1.

1.6 Maximum Results

The maximum measured SAR values for Head configuration and Body Worn configuration are given in section 1.6.1 and 1.6.2 respectively. The device conforms to the requirements of the standard(s) when the maximum measured SAR value is less than or equal to the limit.

1.6.1 GSM

The multi-slot mode configuration level in GPRS and EDGE is the class 12. The configurations including four slot modes below:
1Txslot: 4 downlink and 1 uplink
2Txslots: 3 downlink and 2 uplink
3Txslots: 2 downlink and 3 uplink
4Txslots: 1 downlink and 4 uplink
The DUT's output power was test through the conducted spurious emissions with the four slot modes,and the maximum averaged power was under 1 downlink and 4 uplink mode. Therefore, during GPRS and EDGE test will choose 1 downlink and 4 uplink mode as the basic test mode.

Head Configuration

Mode	CH/*f*(MHz)	Power (dBm)	Position	Sar Limit (1g avg) (mW/g)	Measured value (1g avg)(mW/g)	Result
GSM850	128/824.2	33.06	Right cheek	1.6	**0.879**	PASS

Body Worn Configuration

Mode	CH/*f*(MHz)	Power (dBm)	Position	Sar Limit (1g avg) (mW/g)	Measured value (1g avg)(mW/g)	Result
GPRS850	128/824.2	29.25	Towards ground	1.6	**1.100**	PASS

1.6.2 WCDMA

The default test configuration is to measure SAR with an established radio link between the DUT and a communication test set using a 12.2 kbps RMC (reference measurement channel) configured in Test Loop Mode 1. The dedicated channel will be set with RMC type, and the transmit power control in ALL UP BITS.

Head Configuration

Mode	CH/*f*(MHz)	Power (dBm)	Position	Sar Limit (1g avg) (mW/g)	Measured value (1g avg)(mW/g)	Result
WCDMA B5	4233/846.6	23.57	Right cheek	1.6	**0.836**	PASS

Body Worn Configuration

Mode	CH/*f*(MHz)	Power (dBm)	Position	Sar Limit (1g avg) (mW/g)	Measured value (1g avg)(mW/g)	Result
WCDMA B5	4233/846.6	23.57	Towards ground	1.6	**0.700**	PASS

1.6.3 Wifi

Head Configuration

Mode	Channel\data rate	Power (dBm)	Position	Sar Limit (1g avg) (mW/g)	Measured value (1g avg)(mW/g)	Result
802.11b	channel 11 /1Mbps	19.68	Left cheek	1.6	**0.586**	PASS

Body Worn Configuration

Mode	Channel\data rate	Power (dBm)	Position	Sar Limit (1g avg) (mW/g)	Measured value (1g avg)(mW/g)	Result
802.11b	channel 11 /1Mbps	19.68	Towards ground	1.6	**0.189**	PASS

2. DESCRIPTION OF THE DEVICE UNDER TEST

Device category	production unit
Exposure enviroment	General population/uncontrolled

Modes and Bands of operation	GSM 850	GSM 1900	GPRS	EGPRS	WCDMA B2	WCDMA B5	WiFi
Modulation Mode	GMSK	GMSK	GMSK	GMSK/ 8PSK	QPSK	QPSK	DBPSK/ DQPSK/ CCK/BPSK/QPSK/16QAM/64QAM
Duty Cycle	1/8	1/8	1/4	1/2	1/1	1/1	1/1
Transmitter Frequency Range(MHz)	824-849	1850-1910	824-849 1850-1910	824-849 1850-1910	1850-1910	824-849	2400-2483.5

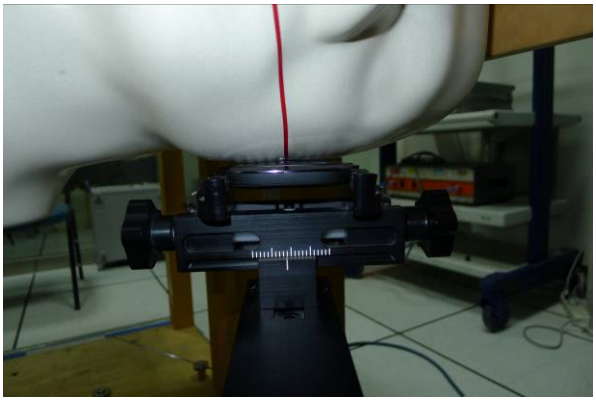
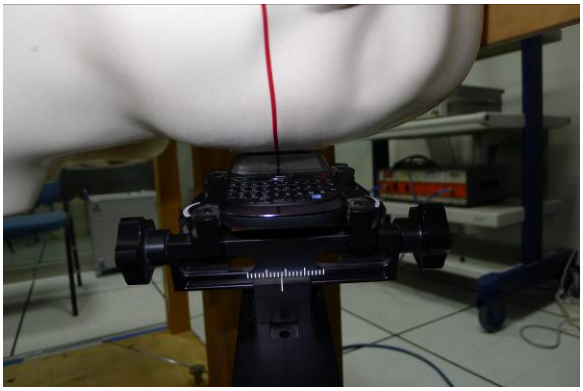
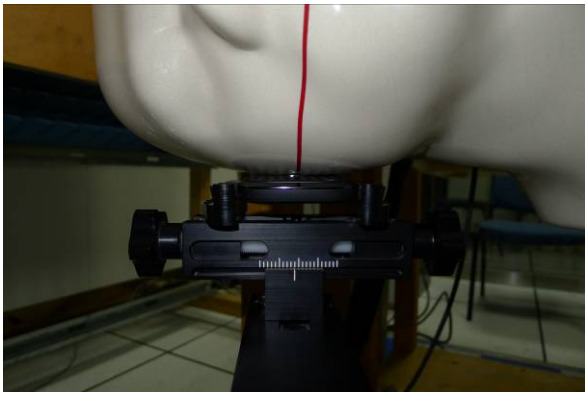
2.1 Description of the Antenna

The device has an internal antenna.

2.2 Picture of the EUT

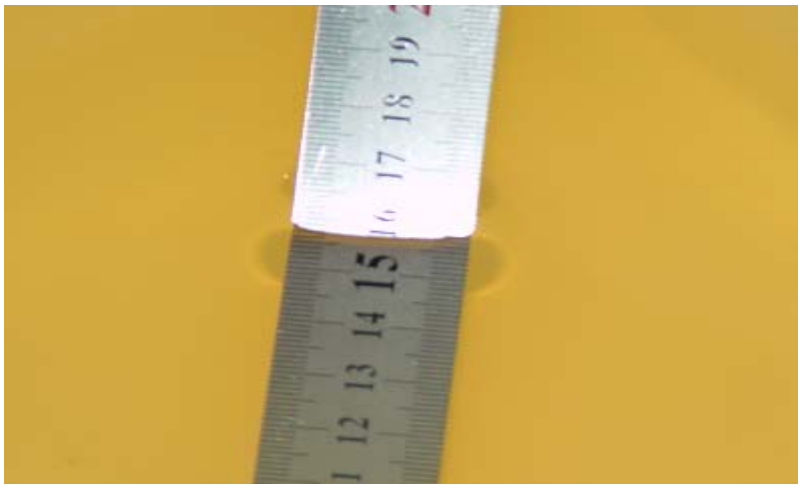
2.3 Test Positions for the Device under test

	
Cheek position, left side	**Tilt position, left side**
	
Cheek position, Right side	**Tilt position, Right side**

	
FLAT position (towards ground)	**15mm spacer**

2.4 Picture to demonstrate the required liquid depth

the liquid depth in the used SAM phantoms



Liquid depth for SAR Measurement

3. TEST CONDITIONS

3.1 Temperature and Humidity

Ambient temperature (°C)	21.0 to 23.0
Ambient humidity (RH %)	30 to 45

3.2 Test Signal, Frequencies and Output Power

The device was put into operation by using a call tester. Communication between the device and the call tester was established by air link.
The device output power was set to maximum power level for all tests; a fully charged battery was used for every test sequence.
In all operating bands the measurements were performed on lowest, middle and highest channels.

3.3 SAR Measurement Set-up

The system is based on a high precision robot (working range greater than 0.9m), which positions the probes with a positional repeatability of better than ± 0.02mm. Special E- and H-field probes have been developed for measurements close to material discontinuity, the sensors of which are directly loaded with a Schottky diode and connected via highly resistive lines (length =300mm) to the data acquisition unit. A cell controller system contains the power supply, robot controller, teaches pendant (Joystick),and remote control, is used to drive the robot motors.
The PC consists of the Micron Pentium IV computer with Windows 2000 system and SAR Measurement Software DASY4 Professional, A/D interface card, monitor, mouse, and keyboard. The Stäubli Robot is connected
to the cell controller to allow software manipulation of the robot.
A data acquisition electronic (DAE) circuit performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. is connected to the Electro-optical coupler
(EOC). The EOC performs the conversion from the optical into digital electric signal of the DAEand transfers data to the PC plug-in card.The DAE consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder and control logic unit. Transmission to the PC-card is accomplished through an optical downlink for data and status information and an optical uplink for commands and clock lines.
The mechanical probe mounting device includes two different sensor systems for frontal and sidewise probe contacts. They are also used for mechanical surface detection and probe collision detection
The robot uses its own controller with a built in VME-bus computer.

4. DESCRIPTION OF THE TEST EQUIPMENT

4.1 Measurement System and Components

The measurements were performed using an automated near-field scanning system, DASY4,manufactured by Schmid & Partner Engineering AG (SPEAG) in Switzerland.

The SAR extrapolation algorithm used in all measurements was the 'advanced extrapolation' algorithm.

The following table lists calibration dates of SPEAG components:

Test Equipment	Serial Number	Calibration interval	Calibration expiry
DAE4	725	1 year	2012.10.18
Dosimetric E-field Probe EX3DV4	3708	1 year	2012.10.26
Dipole Validation Kit, D835V2	4d023	1 year	2012.10.17
Dipole Validation Kit, D2450V2	738	1 year	2012.10.19
DASY4 software Version	4.7	N/A	N/A

Note: the Dipole Calibration interval is 24 months

Additional test equipment used in testing:

Test Equipment	Model	Serial Number	Calibration interval	Calibration expiry
Signal Generator	E4428C	MY45280865	1year	2012.08.20
Amplifier	5S1G4	0323472	N/A	N/A
Power meter	E4417A	MY45101004	1year	2012.08.19
Power Sensor	E9300B	MY41496001	1year	2012.08.19
Power Sensor	E9300B	MY41496003	1year	2012.08.19
Call Tester	8960	GB43194054	1year	2012.08.20
Network Analyzer	8714ET	US40372083	1year	2012.08.20
Dielectric Probe Kit	85070D	US33030365	N/A	N/A

Detailed information of Isotropic E-field Probe Type EX3DV4

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	Calibration certificate in Appendix C
Frequency	10 MHz to 4 GHz; Linearity: ± 0.2 dB (30 MHz to 4 GHz)
Optical Surface Detection	± 0.2 mm repeatability in air and clear liquids over diffuse reflecting surfaces
Dimensions	Overall length: 337 mm (Tip: 9 mm) Tip diameter: 2.5 mm (Body: 10mm) Distance from probe tip to dipole centers: 2.0 mm
Dynamic Range	5 μW/g to > 100 mW/g; Linearity: ± 0.2 dB
Application	General dosimetry up to 4 GHz Dosimetry in strong gradient fields Compliance tests of mobile phones

4.2 Phantoms

The phantom used for all tests i.e. for both system checks and device testing, was the twinheaded "SAM Phantom", manufactured by SPEAG. The phantom conforms to the requirements of IEEE 1528 - 2003.
System checking was performed using the flat section, whilst Head SAR tests used the left and right head profile sections. Body SAR testing also used the flat section between the head profiles.
The SPEAG device holder (see Section 5.1) was used to position the device in all tests whilst a tripod was used to position the validation dipoles against the flat section of phantom.

4.3 Tissue Simulants

Recommended values for the dielectric parameters of the tissue simulants are given in IEEE 1528 - 2003 and FCC Supplement C to OET Bulletin 65. All tests were carried out using simulants whose dielectric parameters were within ± 5% of the recommended values. All tests were carried out within 24 hours of measuring the dielectric parameters.
The depth of the tissue simulant was 15.0 ± 0.5 cm measured from the ear reference point during system checking and device measurements.

4.3.1 Tissue Simulant Recipes

The following recipe(s) were used for Head and Body tissue stimulant(s):

835MHz band

Ingredient	Head (% by weight)	Body (% by weight)
Water	41.45	52.50
Sugar	56.00	45.0
Nacl	1.45	1.40
Cellulose	1.0	1.0
Preventol	0.1	0.10

2450MHz band

Ingredient	Head (% by weight)	Body (% by weight)
Water	55.00	68.64
DGBE	45.00	31.37
Nacl	0.00	0.00

4.3.2 System Checking

The manufacturer calibrates the probes annully. Dielectric parameters of the tissue simulants were measured every day using the dielectric probe kit and the network analyser. A system check measurement was made following the determination of the dielectric parameters of the simulant, using the dipole validation kit. A power level of 250 mW was supplied to the dipole antenna, which was placed under the flat section of the twin SAM phantom. The system checking results (dielectric parameters and SAR values) are given in the table below. Test Date is 2012.5.21

System checking,head tissue simulant

		SAR_{1g} [w/kg]	ε_r	σ[S/m]	Temperature	
					Ambient[℃]	Liquid[℃]
835MHz	Target Value	9.5	42.5±2.1	0.91±0.05	15-30	-
	Measured Value	10.7	41.4	0.94	22.7	22.3

All SAR values are normalized to 1W forward power

		SAR_{1g} [w/kg]	ε_r	σ[S/m]	Temperature	
					Ambient[	Liquid[℃]
2450MHz	Target Value	52.4	39.2±3.92	1.8±0.09	15-30	-
	Measured Value	51.4	38.7	1.86	22.7	22.2

All SAR values are normalized to 1W forward power

Plots of the system checking scans are given in Appendix A.

4.3.3 Tissue Simulants used in the Measurements

For the measurement of the following parameters the HP 85070D dielectric probe kit is used, representing the open-ended coaxial probe measurement procedure. Tested date is 2012.5.21

Head		εr	σ[S/m]	Temperature	
				Ambient [℃]	Liquid [℃]
835MHz	Recommended Value	42.5±2.1	0.91±0.05	15-30	-
	Measured Value	41.4	0.94	22.7	22.3
2450MHz	Recommended Value	39.2±3.92	1.8±0.09	15-30	-
	Measured Value	38.7	1.86	22.7	22.2

Body		εr	σ[S/m]	Temperature	
				Ambient [℃]	Liquid [℃]
835MHz	Recommended Value	56.1±2.8	0.95±0.05	15-30	-
	Measured Value	54.6	1.00	22.4	22.1
2450MHz	Recommended Value	52.7±5.27	1.95±0.09	15-30	-
	Measured Value	52.9	1.94	22.2	22.0

5. DESCRIPTION OF THE TEST PROCEDURE

5.1 Device Holder

The device was placed in the device holder (illustrated below) that is supplied by SPEAG as an integral part of the Dasy system.

Device holder supplied by SPEAG

5.2 Test positions

5.2.1 Against Phantom Head

Measurements were made in “cheek” and “tilt” positions on both the left hand and right hand sides of the phantom.
The positions used in the measurements were according to IEEE 1528 - 2003 "IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques".

5.2.2 Body Worn Configuration

The device was placed in the SPEAG holder below the flat section of the phantom. The distance between the device and the phantom was kept at the separation distance using a separate flat spacer that was removed before the start of the measurements. And the distance is 1.5cm.The device was oriented with its antenna facing the phantom since this orientation gives higher results.

5.3 Scan Procedure

First, area scans were used for determination of the field distribution and the approximate location of the local peak SAR values. The SAR distribution is

scanned along the inside surface, at least for an area larger than the projection of the handset and antenna. The angle between the probe axis and the surface normal line is recommended but not required to be less than 30°. The SAR distribution is first measured on a 2-D coarse grid. The scan region should cover all areas that are exposed and encompassed by the projection of the handset. It is a 15 mm × 15 mm measurement grid used when two staggered one-dimensional cubic splines are used to estimate the maximum SAR location. Next, a zoom scan, a minimum of 7 x 7x7 points covering a volume of at least 30x30x30mm, was performed around the highest E-field value to determine the averaged SAR value. Drift was determined by measuring the same point at the start of the area scan and again at the end of the zoom scan.

5.4 SAR Averaging Methods

The maximum SAR value was averaged over a cube of tissue using interpolation and extrapolation.
The interpolation, extrapolation and maximum search routines within Dasy4 are all based on the modified Quadratic Shepard's method (Robert J. Renka, "Multivariate Interpolation Of Large Sets Of Scattered Data", University of North Texas ACM Transactions on Mathematical Software, vol. 14, no. 2, June 1988, pp. 139-148).
The interpolation scheme combines a least-square fitted function method with a weighted average method. A trivariate 3-D / bivariate 2-D quadratic function is computed for each measurement point and fitted to neighbouring points by a least-square method. For the zoom scan, inverse distance weighting is incorporated to fit distant points more accurately. The interpolating function is finally calculated as a weighted average of the quadratics.
In the zoom scan, the interpolation function is used to extrapolate the Peak SAR from the deepest measurement points to the inner surface of the phantom.

6. MEASUREMENT UNCERTAINTY

DASY4 Uncertainty Budget								
Error description	Uncertainty value	Prob. Dist.	Div.	(c_i) 1g	(c_i) 10g	Std.Unc (1g).	Std.Unc. (10g)	$(v_i)\ V_{eff}$
Measurement system								
Probe calibration	±5.9%	N	1	1	1	±5.9%	±5.9%	∞
Axial isotropy	±4.7%	R	$\sqrt{3}$	0.7	0.7	±1.9%	±1.9%	∞
Hemispherical isotropy	±9.6%	R	$\sqrt{3}$	0.7	0.7	±3.9%	±3.9%	∞
Boundary effects	±1.0%	R	$\sqrt{3}$	1	1	±0.6%	±0.6%	∞
Linearity	±4.7%	R	$\sqrt{3}$	1	1	±2.7%	±2.7%	∞
System detection limits	±1.0%	R	$\sqrt{3}$	1	1	±0.6%	±0.6%	∞
Readout electronics	±0.3%	N	1	1	1	±0.3%	±0.3%	∞
Response time	±0.8%	R	$\sqrt{3}$	1	1	±0.5%	±0.5%	∞
Integration time	±2.6%	R	$\sqrt{3}$	1	1	±1.5%	±1.5%	∞
RF ambient noise	±3.0%	R	$\sqrt{3}$	1	1	±1.7%	±1.7%	∞
RF ambient reflections	±3.0%	R	$\sqrt{3}$	1	1	±1.7%	±1.7%	∞
Probe positioner	±0.4%	R	$\sqrt{3}$	1	1	±0.2%	±0.2%	∞
Probe positioning	±2.9%	R	$\sqrt{3}$	1	1	±1.7%	±1.7%	∞
Max.SAR Eval.	±1.0%	R	$\sqrt{3}$	1	1	±0.6%	±0.6%	∞
Test Sample Related								
Device Positioning	±2.9%	N	1	1	1	±2.9%	±2.9%	145
Device holder	±3.6%	N	1	1	1	±3.6%	±3.6%	5
Power drift	±5.0%	R	$\sqrt{3}$	1	1	±2.9%	±2.9%	∞
Phantom and Setup								
Phantom uncertainty	±4.0%	R	$\sqrt{3}$	1	1	±2.3%	±2.3%	∞
Liquid conductivity(target)	±5.0%	R	$\sqrt{3}$	0.64	0.43	±1.8%	±1.2%	∞
Liquid conductivity(meas.)	±2.5%	N	1	0.64	0.43	±1.6%	±1.1%	∞
Liquid conductivity(target)	±5.0%	R	$\sqrt{3}$	0.6	0.49	±1.7%	±1.4%	∞
Liquid onductivity(means.)	±2.5%	N	1	0.6	0.49	±1.5%	±1.2%	∞
Combined std. Uncertainty						±10.9%	±10.7%	387
Expanded STD Uncertainty						**±21.9%**	**±21.4%**	

Table 6.1 – Measurement uncertainty evaluation

7. RESULTS

7.1 Test result

In order to determine the largest value of the peak spatial-average SAR of a handset, all device positions, configurations, and operational modes should be tested for each frequency band according to Steps 1 to 3 below.
Step 1: The tests should be performed at the channel that is closest to the center of the transmit frequency band.
Step 2: For the condition providing the highest peak spatial-average SAR determined in Step 1 for each frequency, perform all tests at all other test frequency channels, e.g., lowest and highest frequencies. In addition, for all other conditions (device position, configuration, and operational mode) where the peak spatial-average SAR value determined in Step 1 is within 3 dB of the applicable SAR limit, it is recommended that all other test frequencies should be tested as well.
Step 3: Examine all data to determine the largest value of the peak.

The measured Head/body SAR values for the test device are tabulated below:

Mode: GSM 850

f_L(MHz)=824.2MHz f_M(MHz)=836.4 MHz f_H(MHz)= 848.8MHz

SAR Values（Head，850MHz Band）

Limit of SAR (W/kg)	1 g Average
	1.6
Test Case	**Measurement Result (mW/g)**
	1g Average
Left hand, Touch cheek, f_H	0.608
Left hand, Touch cheek, f_M	0.744
Left hand, Touch cheek, f_L	0.871
Left hand, Tilt 15 Degree, f_H	0.470
Left hand, Tilt 15 Degree, f_M	0.531
Left hand, Tilt 15 Degree, f_L	0.575
Right hand, Touch cheek, f_H	0.555
Right hand, Touch cheek, f_M	0.717
Right hand, Touch cheek, f_L	**0.879**
Right hand, Tilt 15 Degree, f_H	0.417
Right hand, Tilt 15 Degree, f_M	0.463
Right hand, Tilt 15 Degree, f_L	0.500

So, the maximum SAR is

Phantom Configuration	Device Test Position	SAR(mW/g)/ (10g/1g)		
		f_L(MHz)	f_M(MHz)	f_H(MHz)
Right Side	Cheek	**0.879**	---	---

Mode: GSM850 (GSM/GPRS/EDGE)

f_L(MHz)=824.2MHz f_M(MHz)=836.4 MHz f_H(MHz)= 848.8MHz

SAR Values（body, 850MHz Band）

Limit of SAR (W/kg)	**1 g Average**
	1.6
Test Case	**Measurement Result (mW/g)**
	1 g Average
Towards ground/GSM, with headset 15mm spacer f_M	0.518
Towards phantom/GSM, with headset 15mm spacer f_M	0.464
Towards ground/GPRS, 15mm spacer f_H	0.742
Towards ground /GPRS, 15mm spacer f_M	0.820
Towards ground /GPRS, 15mm spacer f_L	**1.100**
Towards phantom/GPRS, 15mm spacer f_M	0.734
Towards ground/EGPRS, 15mm spacer f_H	0.562
Towards ground /EGPRS, 15mm spacer f_M	0.676
Towards ground /EGPRS, 15mm spacer f_L	0.874
Towards phantom/EGPRS, 15mm spacer f_M	0.639

During the body testing GPRS/EDGE work at the “1 downlink and 4 uplink”,at this Tx slot RF averaged power is larger than other Tx slots.

So, the maximum SAR is

Phantom Configuration	Device Test Position	SAR(mW/g)		
		f_L(MHz)	f_M(MHz)	f_H(MHz)
Towards Ground/GPRS	15mm spacer	**1.100**	---	---

Mode: WCDMA B5

f_L(MHz)=826.4MHz f_M(MHz)=836.4MHz f_H(MHz)= 846.6MHz

SAR Values（Head，WCDMA B5）

Limit of SAR (W/kg)	1 g Average 1.6
Test Case	**Measurement Result (mW/g)** **1 g Average**
Left hand, Touch cheek , f_H	0.821
Left hand, Touch cheek, f_M	0.817
Left hand, Touch cheek , f_L	0.746
Left hand, Tilt 15 Degree, f_H	0.625
Left hand, Tilt 15 Degree, f_M	0.565
Left hand, Tilt 15 Degree, f_L	0.532
Right hand, Touch cheek, f_H	**0.836**
Right hand, Touch cheek, f_M	0.780
Right hand, Touch cheek, f_L	0.767
Right hand, Tilt 15 Degree f_H	0.498
Right hand, Tilt 15 Degree f_M	0.478
Right hand, Tilt 15 Degree, f_L	0.459

So, the maximum SAR is

Phantom Configuration	Device Test Position	SAR(mW/g)		
		f_L(MHz)	f_M(MHz)	f_H(MHz)
Right Side	Cheek	**0.836**	---	---

Mode: WCDMA B5

f_L(MHz)=826.4MHz f_M(MHz)=836.4MHz f_H(MHz)= 846.6MHz

SAR Values（body，WCDMA B5）

Limit of SAR (W/kg)	**1 g Average**
	1.6
Test Case	**Measurement Result (mW/g)**
	1 g Average
Towards ground, 15mm spacer with headset f_H	**0.700**
Towards ground, 15mm spacer with headset f_M	0.673
Towards ground, 15mm spacer with headset f_L	0.673
Towards phantom,15mm spacer with headset f_M	0.566

So, the maximum SAR is

Phantom Configuration	Device Test Position	SAR(mW/g)		
		f_L(MHz)	f_M(MHz)	f_H(MHz)
Towards ground	with headset 15mm spacer	---	---	**0.700**

7.2 Conducted power

Mode	GSM850(Head) Duty cycle: 1:8(12.5%)		
Channel	128	189	251
Frequency(MHz)	824.2	836.4	848.8
Measured Power(dBm)	33.06	33.08	33.03

GPRS/EDGE Measured Power

Mode	GPRS850 EDGE850		
Channel	128	189	251
Frequency(MHz)	824.2	836.4	848.8
4Downlink1uplinkPower(dBm)	32.99	33.00	32.95
	27.32	27.32	27.23
3Downlink2uplinkPower(dBm)	31.96	31.97	31.90
	27.30	27.31	27.20
2Downlink3uplinkPower(dBm)	30.03	30.01	29.93
	27.29	27.29	27.19
1Downlink4uplinkPower(dBm)	29.25	29.27	29.16
	27.28	27.29	27.18

GPRS/EDGE Averaged Power

Mode	GPRS850		
	EDGE850		
Channel	128	189	251
Frequency(MHz)	824.2	836.4	848.8
4Downlink1uplinkPower(dBm)	23.96	23.97	23.92
	16.29	16.29	16.34
3Downlink2uplinkPower(dBm)	25.94	25.95	25.88
	21.88	21.29	21.18
2Downlink3uplinkPower(dBm)	25.77	25.75	25.67
	23.03	23.03	22.93
1Downlink4uplinkPower(dBm)	26.24	26.26	26.15
	24.27	24.28	24.17

Division Factors(for Measured Power and Averaged Power):

To average the power, the division factor is as follows:

1TX-slot (4Downlink1uplink)= 1 transmit time slot out of 8 time slots=> conducted power divided by (8/1) => -9.03dB

2TX-slots(3Downlink2uplink) = 2 transmit time slots out of 8 time slots=> conducted power divided by (8/2) => -6.02dB

3TX-slots (2Downlink3uplink)= 3 transmit time slots out of 8 time slots=> conducted power divided by (8/3) => -4.26dB

4TX-slots (1Downlink4uplink)= 4 transmit time slots out of 8 time slots=> conducted power divided by (8/4) => -3.01dB

According to the conducted power as above, the body measurements are performed with 4Txslots(1Downlink4uplink) for GPRS and EGPRS.

The conducted output power for wcdma:

Duty cycle: 1（100%）

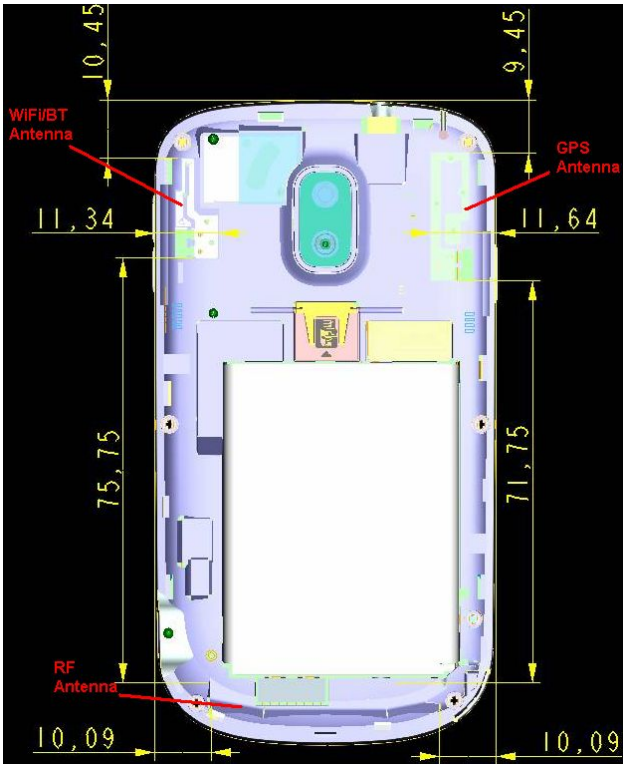
Mode	WCDMA B5		
Channel	4132	4183	4233
Frequency(MHz)	826.4	836.5	846.6
RB test mode+64kRMC(dBm)	24.01	23.85	23.55
RB test mode+12.2kRMC(dBm)	24.04	23.86	23.57
RB test mode+144kRMC(dBm)	24.08	23.90	23.58
RB test mode+384kRMC(dBm)	24.08	23.87	23.59
AMR Voice test mode+12.2kRMC(dBm)	24.07	23.89	23.57

Mode	HSDPA B5		
Channel	4132	4183	4233
Frequency(MHz)	826.4	836.5	846.6
sub-test1(dBm)	23.94	23.74	23.48
sub-test2(dBm)	22.94	22.78	22.54
sub-test3(dBm)	22.43	22.28	22.08
sub-test4(dBm)	22.42	22.25	22.09

Mode	**HSUPA B5**		
Channel	4132	4183	4233
Frequency(MHz)	826.4	836.5	846.6
sub-test1(dBm)	20.91	20.81	20.15
sub-test2(dBm)	19.91	19.89	19.66
sub-test3(dBm)	19.78	19.30	19.20
sub-test4(dBm)	20.95	19.33	20.62
sub-test5(dBm)	20.85	20.74	20.68

7.3 Summary of Measurement Results (Bluetooth and WiFi function)

The distance between BT/WiFi antenna and RF antenna is ＞5cm. The location of the antennas inside mobile phone is shown below:



The conducted output power of BT is as following:

Channel	The output power
2402 MHz	6.16
2441MHz	6.86
2480MHz	6.62

The average conducted power for WiFi is as following:
802.11b（dBm）

Channel\data rate	1Mbps	2Mbps	5.5Mbps	11Mbps
1	19.25	19.30	19.50	19.41
6	19.60	19.63	19.83	19.70
11	19.68	19.70	19.88	19.92

802.11g（dBm）

Channel\data rate	6Mbps	9Mbps	12Mbps	18Mbps	24Mbps	36Mbps	48Mbps	54Mbps
1	16.37	16.39	16.38	16.37	16.39	16.34	16.35	16.37
6	16.72	16.72	16.69	16.71	16.70	16.67	16.67	16.72
11	16.84	16.83	16.82	16.79	16.80	16.79	16.80	16.80

Note: Per KDB 248227, 11g output power is less than 1/4 dB higher than 11b mode, thus the SAR can be excluded. For each frequency band, testing at higher data rates and higher order modulations is not required when the maximum average output power for each of these configurations is less than 1/4 dB higher than those measured at the lowest data rate.

BT&WIFI
BT and wifi share the same antenna, there is no simultaneous transmission.

BT& RF
Separation distance ＞5cm
RF TX: Standard-alone SAR required
BT TX: Standard-alone SAR not required ($P \leqslant 2P_{ref}$)
No simultaneous Tx SAR (BT SAR=0W/kg)

RF&WIFI
Separation distance＞5cm
RF TX: Stand-alone SAR required
802.11b/g Tx: Stand-alone SAR required ($P > 2*P_{ref}$)

According to the conducted power measurement result, we can draw the conclusion that: stand-alone SAR for WiFi should be performed. Then, simultaneous transmission SAR for WiFi is considered with measurement results of GSM/WCDMA and WiFi.

SAR is not required for 802.11b channels if the output power is less than 0.25dB higher than that measured on the corresponding 802.11g channels, and for each frequency band, testing at higher data rates and higher order modulations is not required when the maximum average output power for each of these configurations is less than 0.25dB higher than those measured at the lowest data rate. According to the above conducted power, the EUT should be tested for “802.11b, 1Mbps, and channel 11.”

SAR Values (WIFI 802.11b - Head)

Limit of SAR (W/kg)	1 g Average
	1.6
Test Case	Measurement Result(W/kg)
	1 g Average
Left hand, Touch cheek, 1Mbps,channel 11	**0.586**
Left hand, Tilt 15 Degree, 1Mbps,channel 11	0.390
Right hand, Touch cheek, 1Mbps,channel 11	0.530
Right hand, Tilt 15 Degree, 1Mbps,channel 11	0.477

SAR Values (WIFI 802.11b - Body)

Limit of SAR (W/kg)	1 g Average
	1.6
Test Case	Measurement Result (W/kg)
	1 g Average
Toward Ground, 1Mbps,channel 11	**0.189**
Toward Phantom, 1Mbps,channel 11	0.152

The sum of SAR values for GSM and WiFi

	MAXIMUM SAR VALUE FOR HEAD	MAXIMUM SAR VALUE FOR BODY
GSM	0.879	1.100
WiFi	0.586	0.189
Sum	1.465	1.289

According to the above tables, the sum of SAR values for GSM and WiFi ＜1.6W/kg. So simultaneous transmission SAR are not required for WiFi transmitter.

The sum of SAR values for WCDMA and WiFi

	MAXIMUM SAR VALUE FOR HEAD	MAXIMUM SAR VALUE FOR BODY
WCDMA	0.836	0.700
WiFi	0.586	0.189
Sum	1.422	0.889

According to the above tables, the sum of SAR values for WCDMA and WiFi ＜1.6W/kg. So simultaneous transmission SAR are not required for WiFi transmitter.

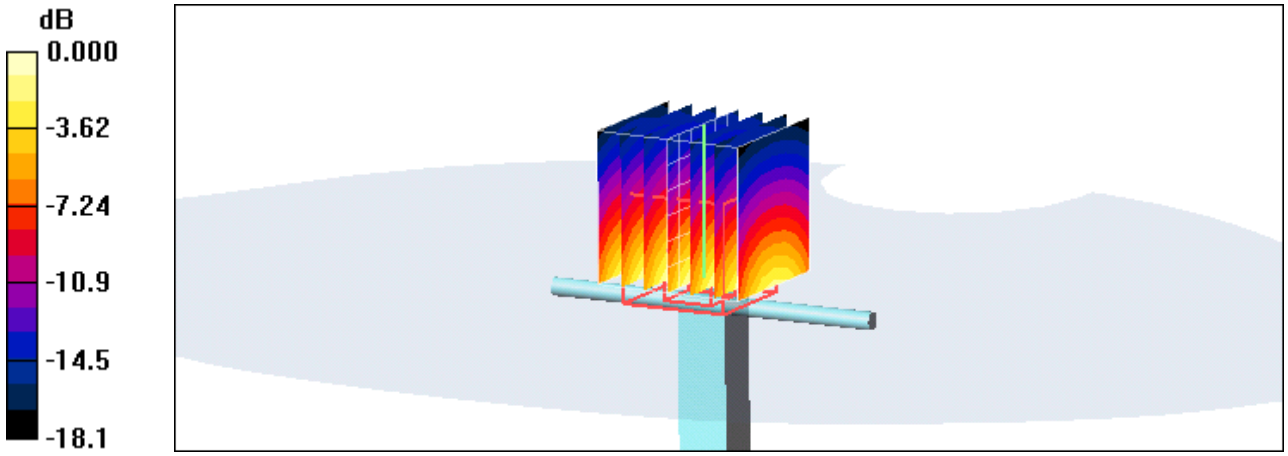
APPENDIX A: SYSTEM CHECKING SCANS

SYSTEM CHECKING SCANS	835MHz

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d023
Program Name: System Performance Check at 835 MHz
Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 835 MHz; σ = 0.94 mho/m; εr = 41.4; ρ = 1000 kg/m3Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3708; ConvF(8.68, 8.68, 8.68); Calibrated: 10/26/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn725; Calibrated: 10/18/2011
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

d=15mm, Pin=250mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 54.7V/m; Power Drift = -0.013 dB
Peak SAR (extrapolated) = 4.07 W/kg
SAR(1 g) = 2.68 mW/g; SAR(10 g) = 1.61 mW/g
Maximum value of SAR (measured) = 2.9 mW/g



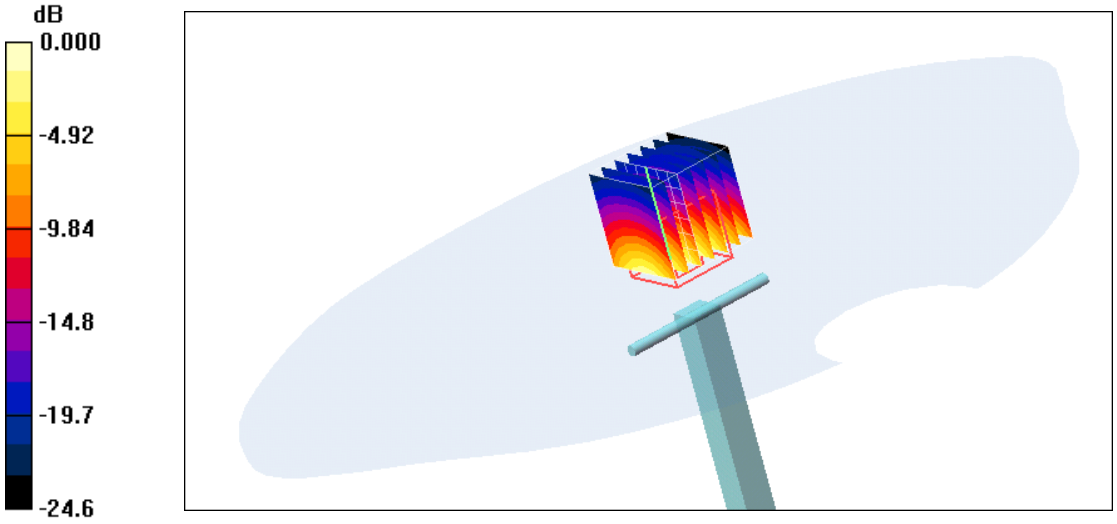
0 dB =2.9 mW/g

SYSTEM CHECKING SCANS	2450 MHz

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:738
Program Name: System Performance Check at 1800MHz
Communication System: CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2450 MHz; σ = 1.86 mho/m; εr = 38.7; ρ = 1000 kg/m3 Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3708; ConvF(6.84, 6.84, 6.84); Calibrated: 10/26/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn725; Calibrated: 10/18/2011
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

d=10mm, Pin=250mW /Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 79.4 V/m; Power Drift = 0.051 dB
Peak SAR (extrapolated) = 27.3 W/kg
SAR(1 g) = 12.85 mW/g; SAR(10 g) = 5.64 mW/g
Maximum value of SAR (measured) = 14.1 mW/g



0 dB =14.1mW/g

APPENDIX B: MEASUREMENT SCANS

GSM (850MHz/Head)

Left Side	Cheek	**824.2 MHz**

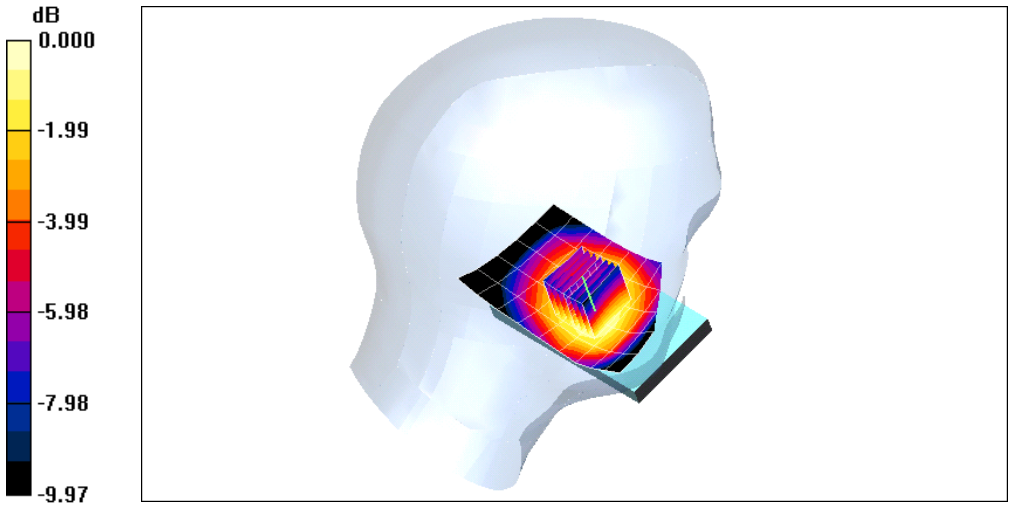
Communication System: GSM 850; Frequency: 824.2 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.892 mho/m; ε_r = 41; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3708; ConvF(8.68, 8.68, 8.68); Calibrated: 10/26/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn725; Calibrated: 10/18/2011
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Touch position - Low/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.904 mW/g

Touch position - Low/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 16.2 V/m; Power Drift = -0.038 dB Peak SAR (extrapolated) = 1.11 W/kg
SAR(1 g) = 0.871 mW/g; SAR(10 g) = 0.659 mW/g
Maximum value of SAR (measured) = 0.916 mW/g



0 dB = 0.916mW/g

Left Side	Cheek	**836.4 MHz**

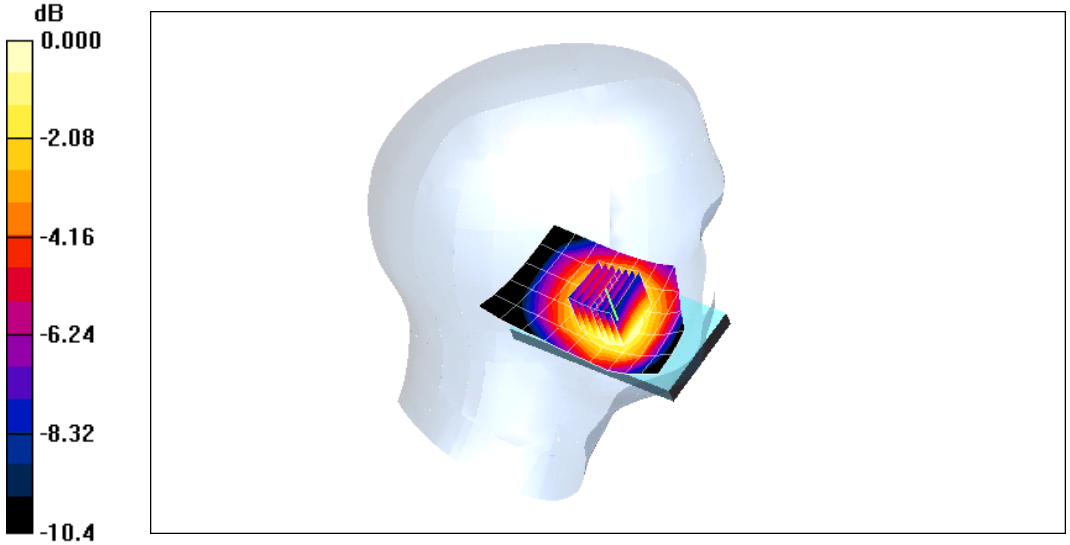
Communication System: GSM 850; Frequency: 836.4 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 836.4 MHz; σ = 0.894 mho/m; ε_r = 41; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3708; ConvF(8.68, 8.68, 8.68); Calibrated: 10/26/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn725; Calibrated: 10/18/2011
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Touch position - Middle /Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.776 mW/g

Touch position - Middle/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 14.0 V/m; Power Drift = -0.042 dB
Peak SAR (extrapolated) = 0.961 W/kg
SAR(1 g) = 0.744 mW/g; SAR(10 g) = 0.558 mW/g
Maximum value of SAR (measured) = 0.790 mW/g



0 dB = 0.790mW/g

Left Side	Cheek	**848.8 MHz**

Communication System: GSM 850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.907 mho/m; ε_r = 40.8; ρ = 1000 kg/m^3
Phantom section: Left Section

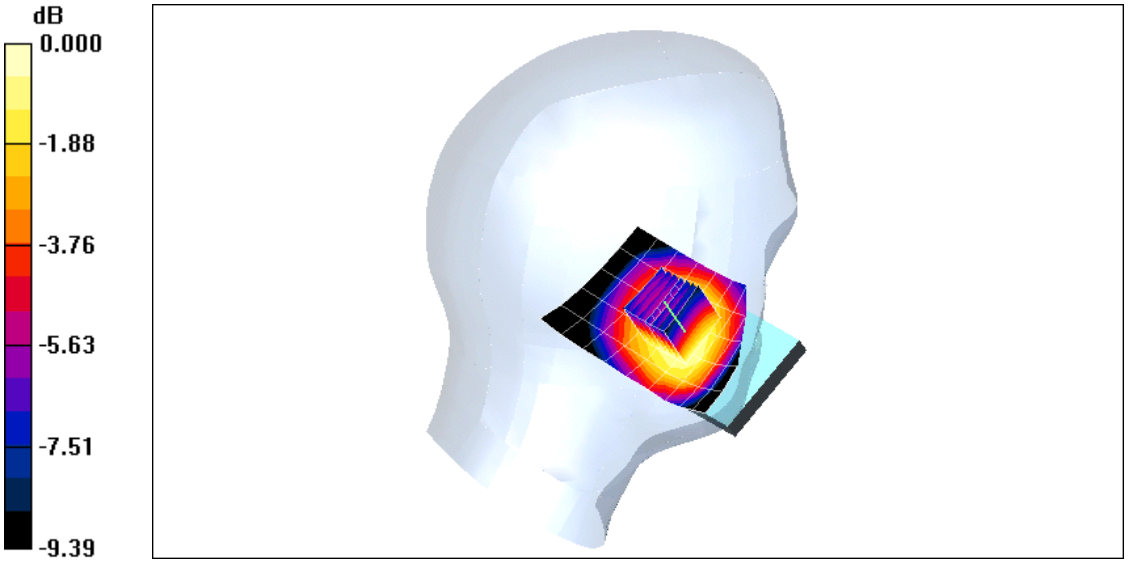
DASY4 Configuration:
- Probe: EX3DV4 - SN3708; ConvF(8.68, 8.68, 8.68); Calibrated: 10/26/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn725; Calibrated: 10/18/2011
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Touch position - High/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.624 mW/g

Touch position - High/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid:

dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.5 V/m; Power Drift = -0.002 dB
Peak SAR (extrapolated) = 0.774 W/kg
SAR(1 g) = 0.608 mW/g; SAR(10 g) = 0.459 mW/g
Maximum value of SAR (measured) = 0.639 mW/g



0 dB = 0.639mW/g

Left Side	Tilt	**824.2 MHz**

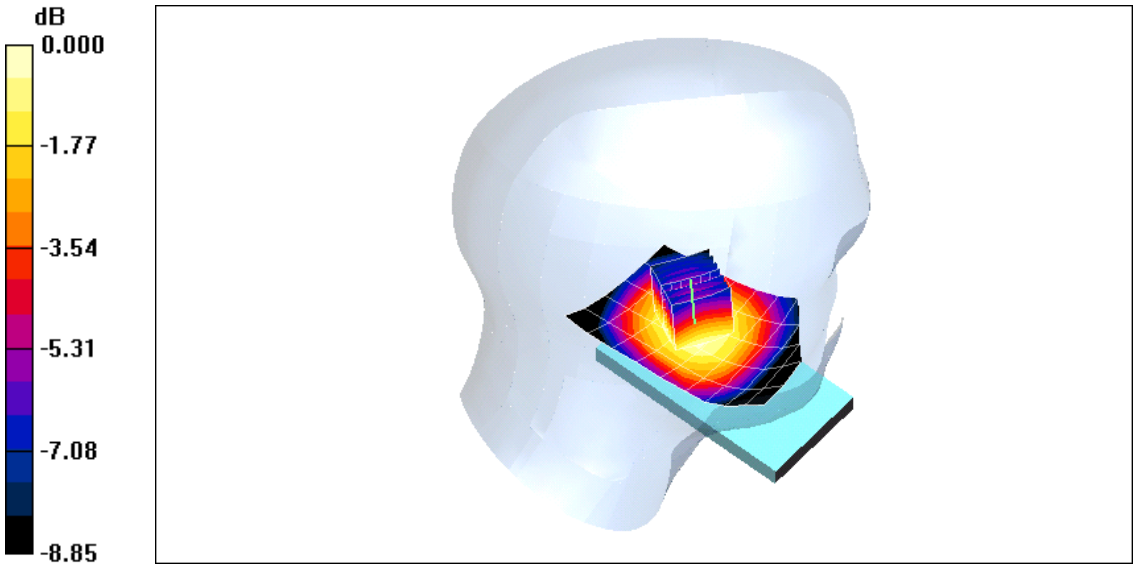
Communication System: GSM 850; Frequency: 824.2 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.892 mho/m; ε_r = 41; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3708; ConvF(8.68, 8.68, 8.68); Calibrated: 10/26/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn725; Calibrated: 10/18/2011
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Tilt position - Low/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.603 mW/g

Tilt position - Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 19.3 V/m; Power Drift = -0.031 dB
Peak SAR (extrapolated) = 0.739 W/kg
SAR(1 g) = 0.575 mW/g; SAR(10 g) = 0.427 mW/g
Maximum value of SAR (measured) = 0.605 mW/g



0 dB = 0.605mW/g

Left Side	Tilt	**836.4 MHz**

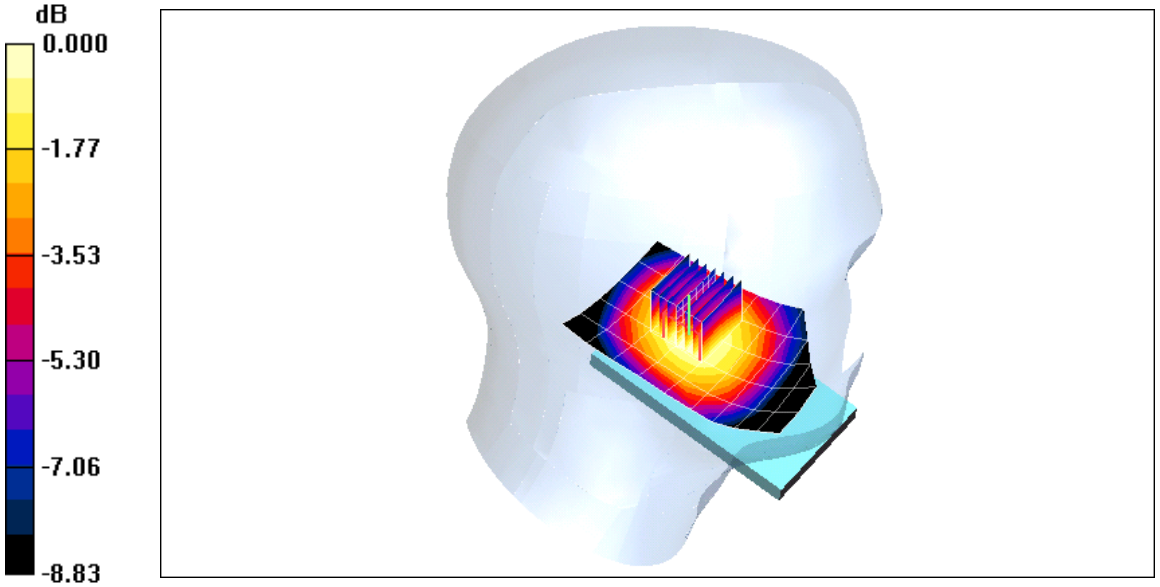
Communication System: GSM 850; Frequency: 836.4 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 836.4 MHz; σ = 0.894 mho/m; ε_r = 41; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3708; ConvF(8.68, 8.68, 8.68); Calibrated: 10/26/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn725; Calibrated: 10/18/2011
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Tilt position - Middle/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.561 mW/g

Tilt position - Middle/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 18.4 V/m; Power Drift = -0.027 dB
Peak SAR (extrapolated) = 0.688 W/kg
SAR(1 g) = 0.531 mW/g; SAR(10 g) = 0.395 mW/g
Maximum value of SAR (measured) = 0.556 mW/g



0 dB = 0.556mW/g

Left Side	Tilt	**848.8 MHz**

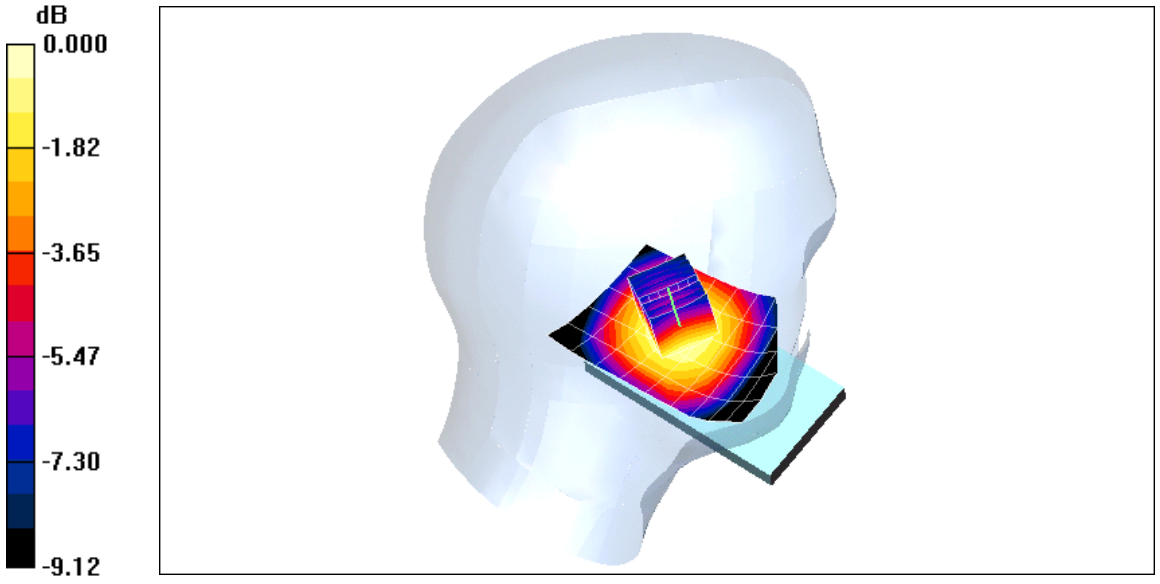
Communication System: GSM 850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.907 mho/m; ε_r = 40.8; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3708; ConvF(8.68, 8.68, 8.68); Calibrated: 10/26/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn725; Calibrated: 10/18/2011
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Tilt position - High/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.496 mW/g

Tilt position - High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 17.3 V/m; Power Drift = -0.007 dB
Peak SAR (extrapolated) = 0.610 W/kg
SAR(1 g) = 0.470 mW/g; SAR(10 g) = 0.347 mW/g
Maximum value of SAR (measured) = 0.495 mW/g



0 dB = 0.495mW/g

Right Side	Cheek	**824.2 MHz**

Communication System: GSM 850; Frequency: 824.2 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.892 mho/m; ε_r = 41; ρ = 1000 kg/m^3
Phantom section: Right Section

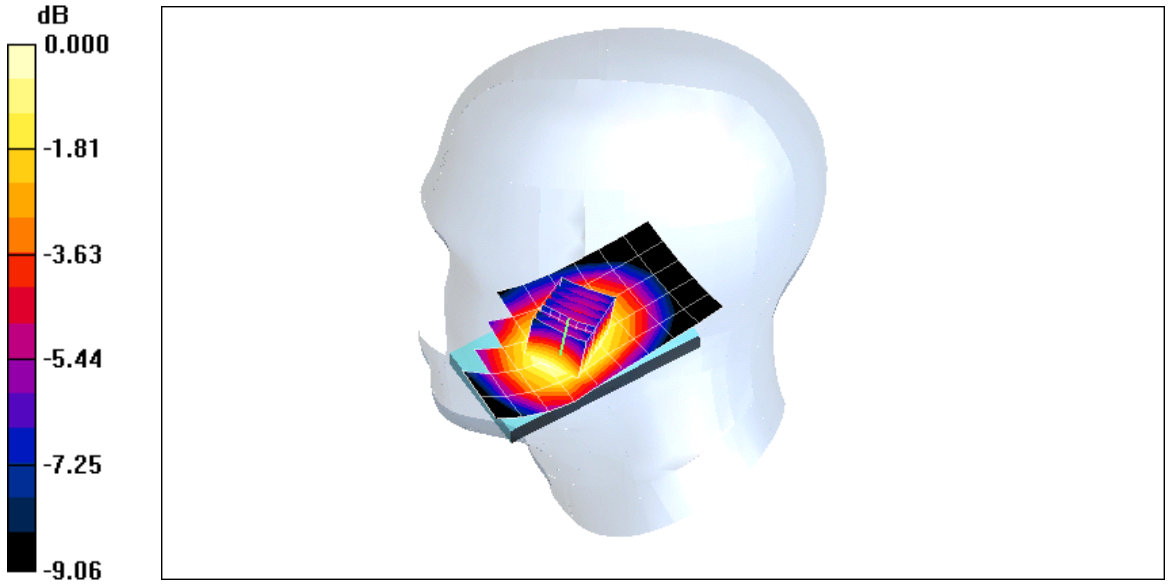
DASY4 Configuration:
- Probe: EX3DV4 - SN3708; ConvF(8.68, 8.68, 8.68); Calibrated: 10/26/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn725; Calibrated: 10/18/2011
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Touch position - Low/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

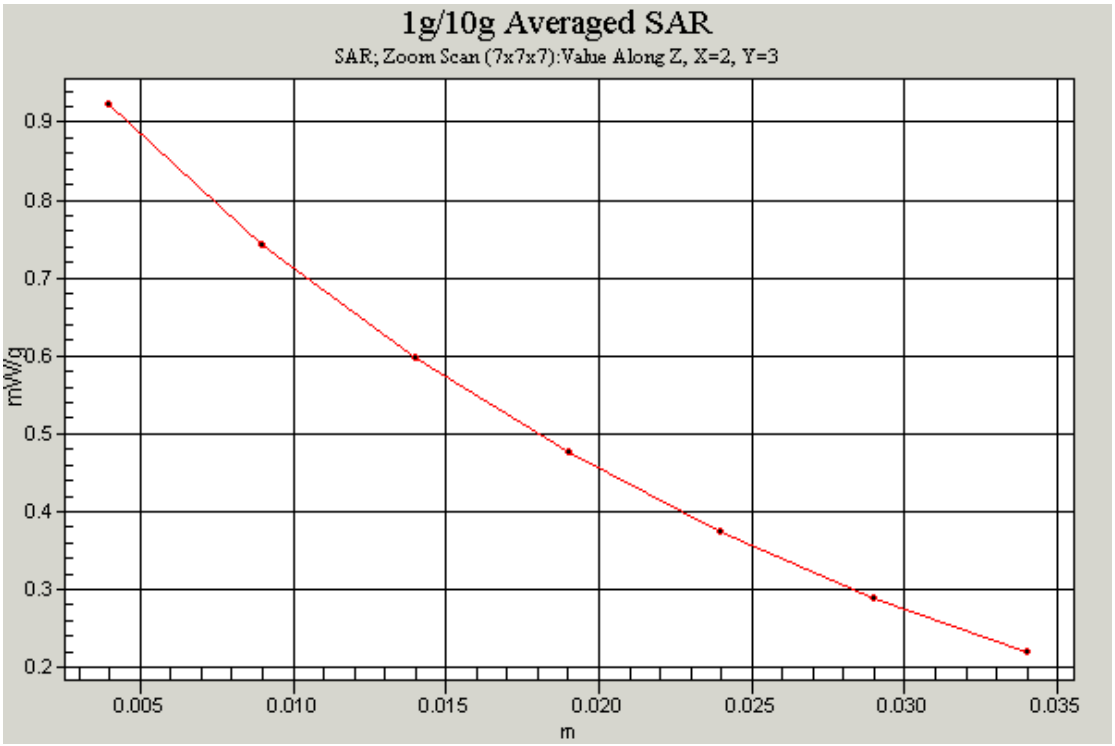
Maximum value of SAR (measured) = 0.912 mW/g

Touch position - Low/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid:

dx=5mm, dy=5mm, dz=5mm
Reference Value = 14.6 V/m; Power Drift = -0.109 dB
Peak SAR (extrapolated) = 1.09 W/kg
SAR(1 g) = 0.879 mW/g; SAR(10 g) = 0.668 mW/g
Maximum value of SAR (measured) = 0.922 mW/g



0 dB = 0.922mW/g



Z-Scan at power reference point (850 MHz CH128)

Right Side	Cheek	**836.4 MHz**

Communication System: GSM 850; Frequency: 836.4 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 836.4 MHz; σ = 0.894 mho/m; ε_r = 41; ρ = 1000 kg/m^3
Phantom section: Right Section

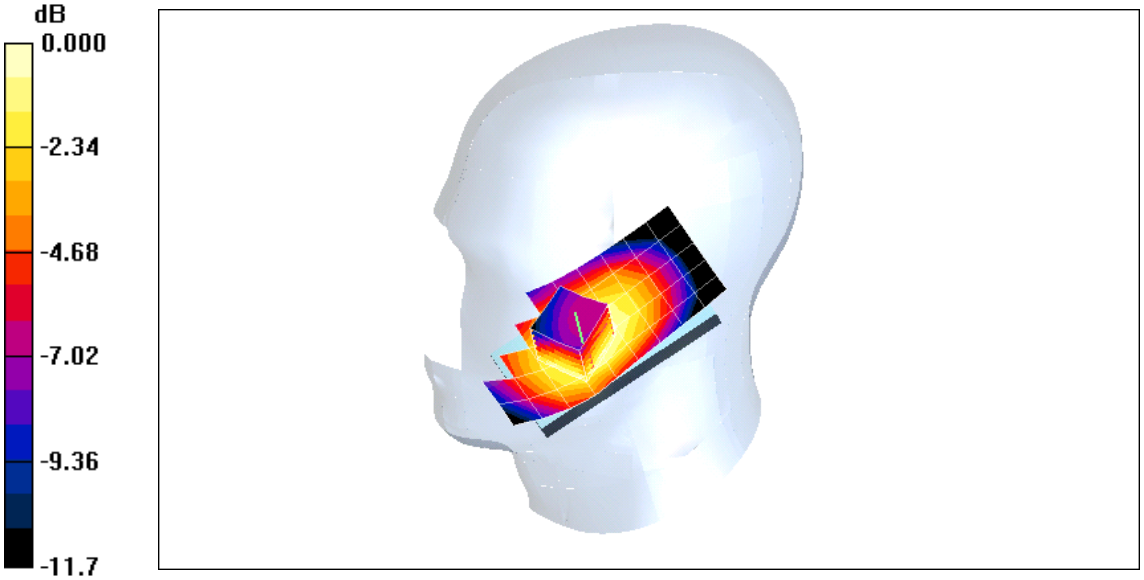
DASY4 Configuration:
- Probe: EX3DV4 - SN3708; ConvF(8.68, 8.68, 8.68); Calibrated: 10/26/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn725; Calibrated: 10/18/2011
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Touch position - Middle/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.736 mW/g

Touch position - Middle/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid:

dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.9 V/m; Power Drift = -0.088 dB
Peak SAR (extrapolated) = 0.894 W/kg
SAR(1 g) = 0.717 mW/g; SAR(10 g) = 0.540 mW/g
Maximum value of SAR (measured) = 0.753 mW/g



0 dB = 0.753mW/g

Right Side	Cheek	**848.8 MHz**

Communication System: GSM 850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.907 mho/m; ε_r = 40.8; ρ = 1000 kg/m^3
Phantom section: Right Section

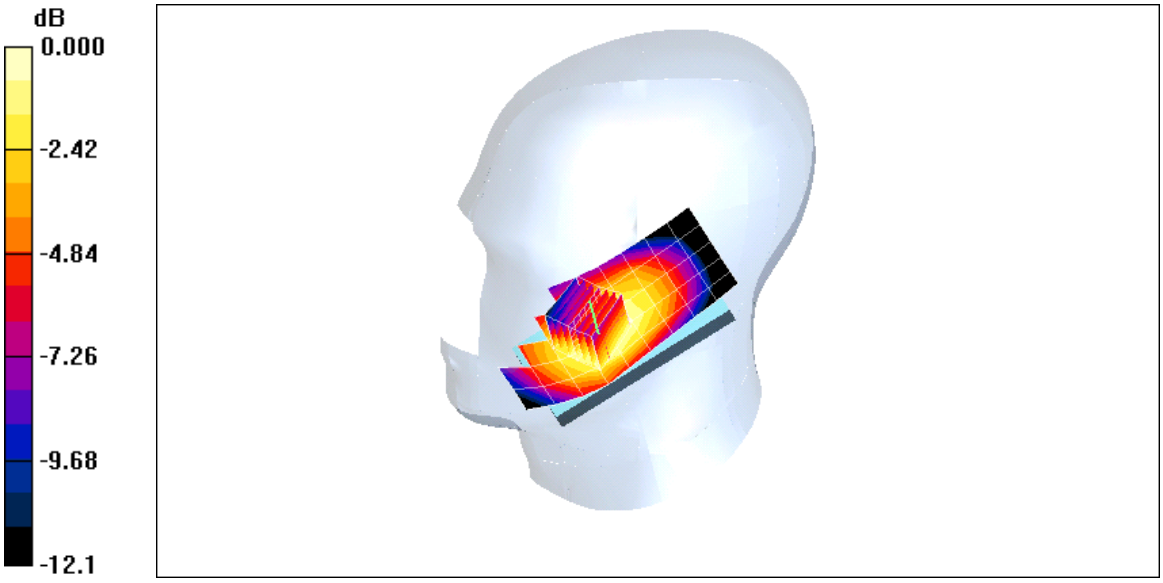
DASY4 Configuration:
- Probe: EX3DV4 - SN3708; ConvF(8.68, 8.68, 8.68); Calibrated: 10/26/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn725; Calibrated: 10/18/2011
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Touch position - High/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.556 mW/g

Touch position - High/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid:

dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.0 V/m; Power Drift = 0.132 dB
Peak SAR (extrapolated) = 0.698 W/kg
SAR(1 g) = 0.555 mW/g; SAR(10 g) = 0.416 mW/g
Maximum value of SAR (measured) = 0.585 mW/g



0 dB = 0.585mW/g

Right Side	Tilt	824.2MHz

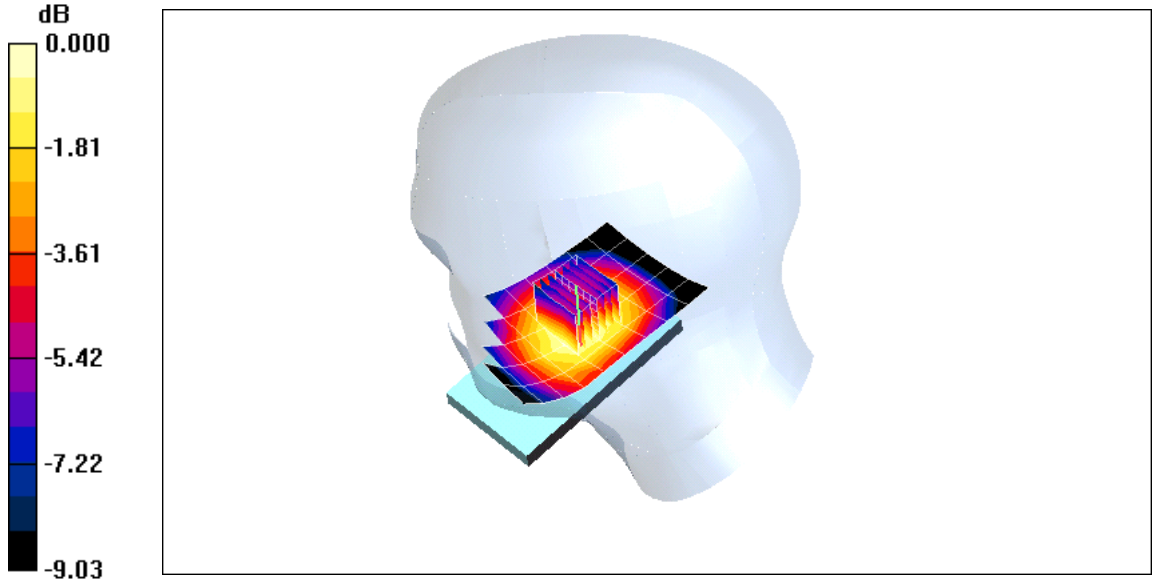
Communication System: GSM 850; Frequency: 824.2 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.892 mho/m; ε_r = 41; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3708; ConvF(8.68, 8.68, 8.68); Calibrated: 10/26/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn725; Calibrated: 10/18/2011
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Tilt position - Low/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.515 mW/g

Tilt position - Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.3 V/m; Power Drift = -0.061 dB
Peak SAR (extrapolated) = 0.638 W/kg
SAR(1 g) = 0.500 mW/g; SAR(10 g) = 0.377 mW/g
Maximum value of SAR (measured) = 0.525 mW/g



0 dB = 0.525mW/g

Right Side	Tilt	836.4MHz

Communication System: GSM 850; Frequency: 836.4 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 836.4 MHz; σ = 0.894 mho/m; ε_r = 41; ρ = 1000 kg/m^3
Phantom section: Right Section

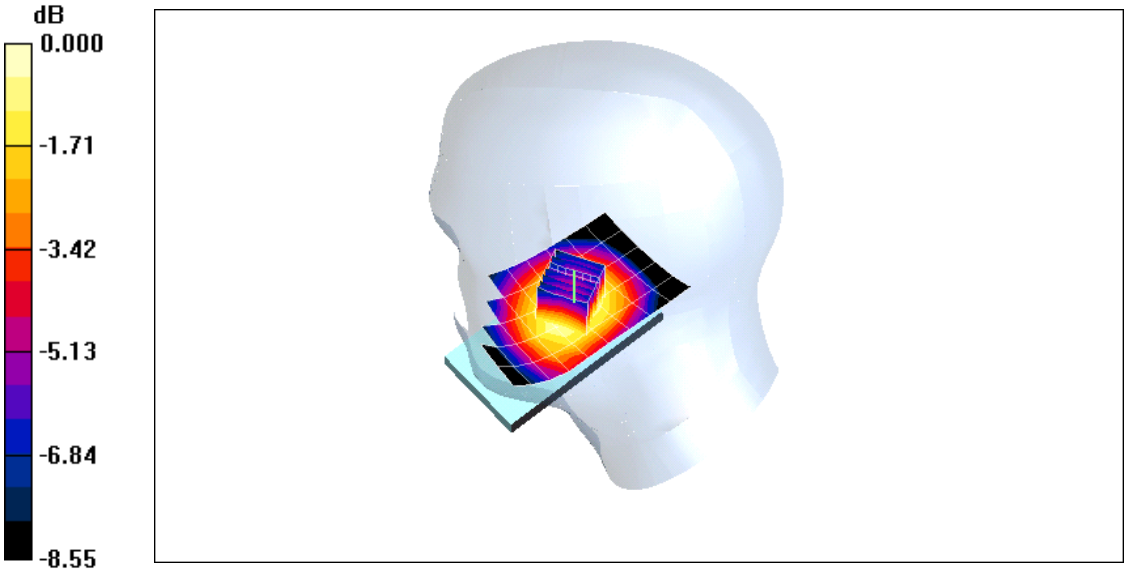
DASY4 Configuration:
- Probe: EX3DV4 - SN3708; ConvF(8.68, 8.68, 8.68); Calibrated: 10/26/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn725; Calibrated: 10/18/2011
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Tilt position - Middle/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.475 mW/g

Tilt position - Middle/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid:

dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.0 V/m; Power Drift = -0.182 dB
Peak SAR (extrapolated) = 0.592 W/kg
SAR(1 g) = 0.463 mW/g; SAR(10 g) = 0.349 mW/g
Maximum value of SAR (measured) = 0.487 mW/g



0 dB = 0.487mW/g

Right Side	Tilt	848.8MHz

Communication System: GSM 850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.907 mho/m; ε_r = 40.8; ρ = 1000 kg/m^3
Phantom section: Right Section

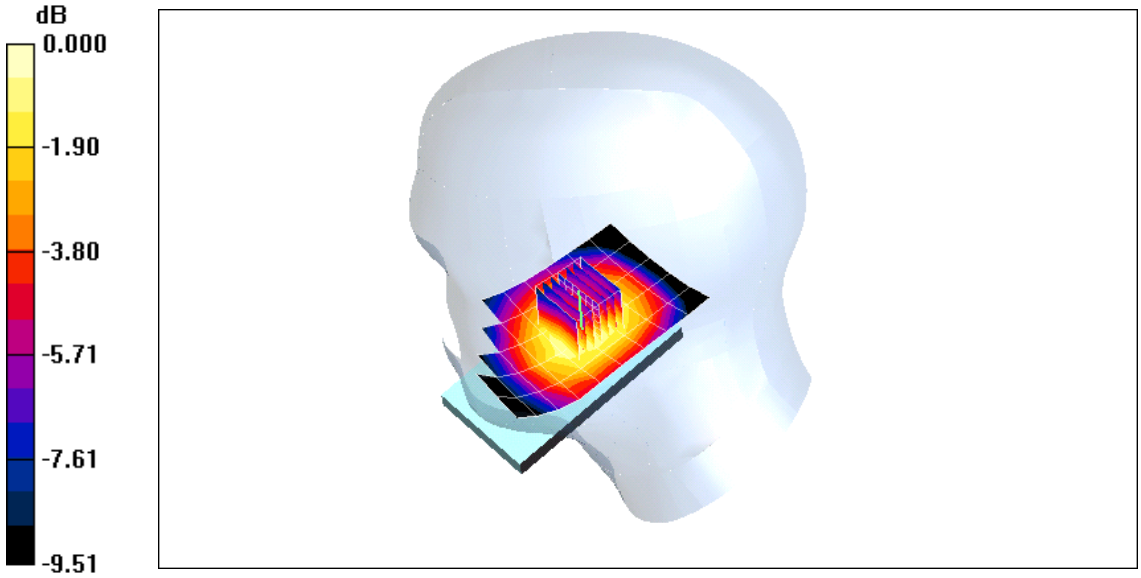
DASY4 Configuration:
- Probe: EX3DV4 - SN3708; ConvF(8.68, 8.68, 8.68); Calibrated: 10/26/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn725; Calibrated: 10/18/2011
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Tilt position - High/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.418 mW/g

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

Reference Value = 15.0 V/m; Power Drift = 0.005 dB
Peak SAR (extrapolated) = 0.539 W/kg
SAR(1 g) = 0.417 mW/g; SAR(10 g) = 0.310 mW/g
Maximum value of SAR (measured) = 0.438 mW/g



0 dB = 0.438mW/g

GSM with headset (850MHz/Flat)

FLAT	Towards ground	**836.4 MHz**

Communication System: GSM 850; Frequency: 836.4 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 836.41 MHz; σ = 0.96 mho/m; ε_r = 55.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

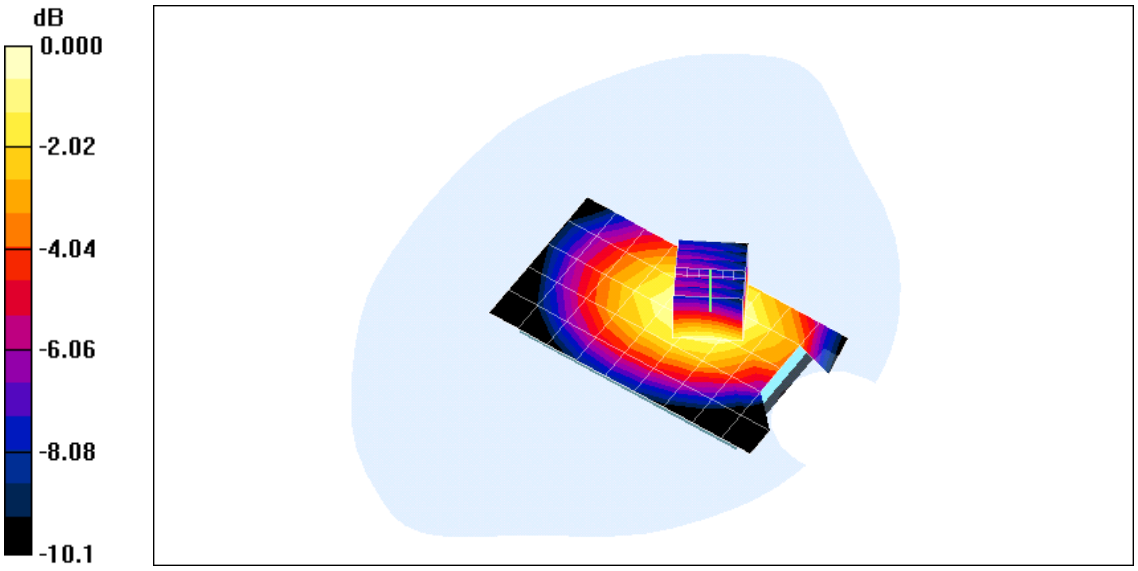
DASY4 Configuration:
- Probe: EX3DV4 - SN3708; ConvF(8.94, 8.94, 8.94); Calibrated: 10/26/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn725; Calibrated: 10/18/2011
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards ground-middle/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.520 mW/g

Towards ground-middle/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid:

dx=5mm, dy=5mm, dz=5mm
Reference Value = 19.6 V/m; Power Drift = -0.016 dB
Peak SAR (extrapolated) = 0.703 W/kg
SAR(1 g) = 0.518 mW/g; SAR(10 g) = 0.373 mW/g
Maximum value of SAR (measured) = 0.548 mW/g



0 dB = 0.548mW/g

FLAT	Towards phantom	**836.4 MHz**

Communication System: GSM 850; Frequency: 836.4 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 836.41 MHz; σ = 0.96 mho/m; ε_r = 55.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

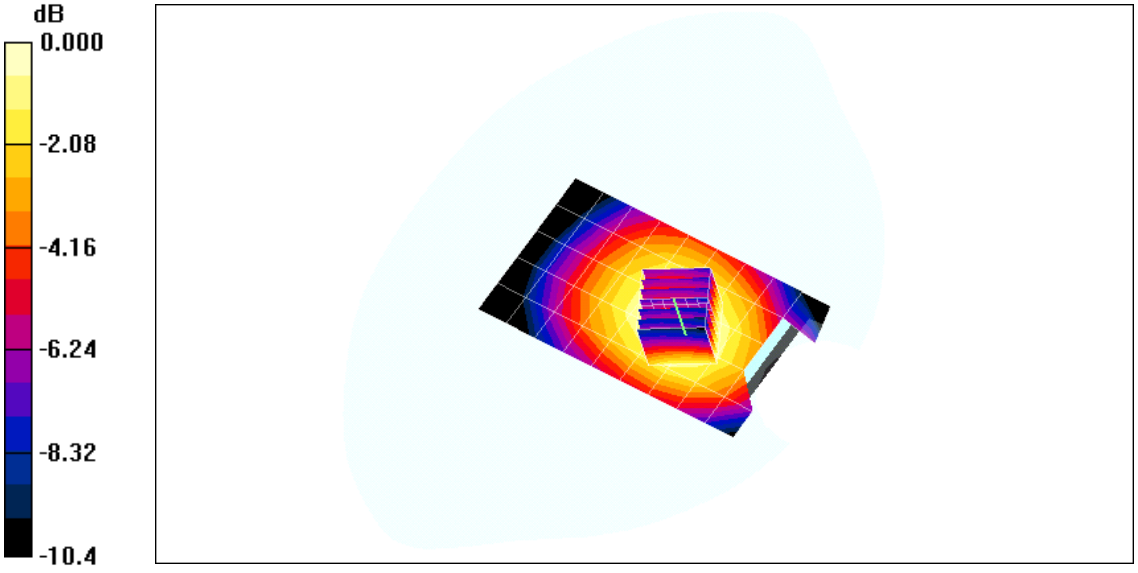
DASY4 Configuration:
- Probe: EX3DV4 - SN3708; ConvF(8.94, 8.94, 8.94); Calibrated: 10/26/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn725; Calibrated: 10/18/2011
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards plantom-middle/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.481 mW/g

Towards plantom-middle/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid:

dx=5mm, dy=5mm, dz=5mm
Reference Value = 18.6 V/m; Power Drift = 0.107 dB
Peak SAR (extrapolated) = 0.614 W/kg
SAR(1 g) = 0.464 mW/g; SAR(10 g) = 0.341 mW/g
Maximum value of SAR (measured) = 0.488 mW/g



0 dB = 0.488mW/g

GSM (850MHz with GPRS/Flat)

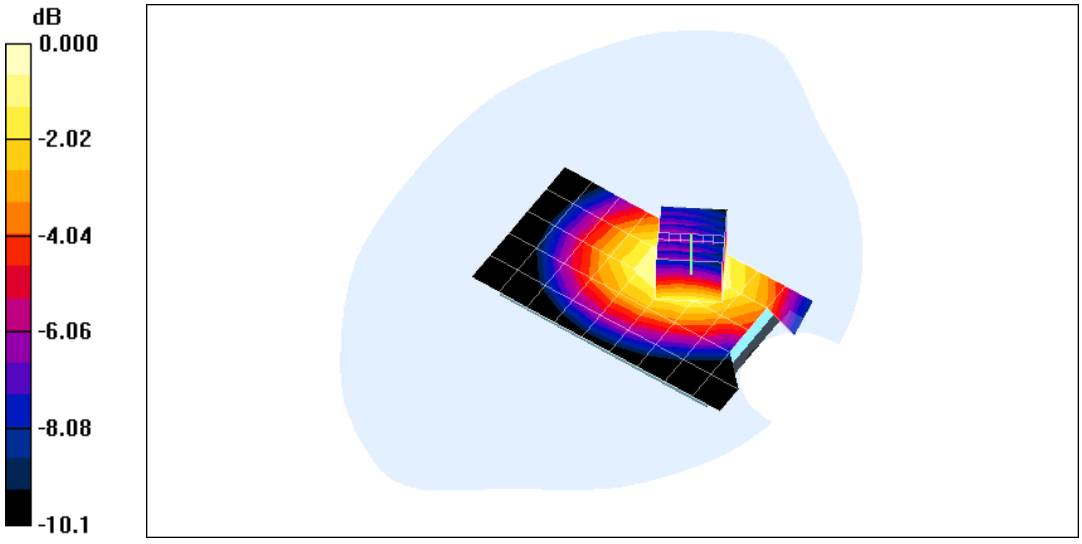
FLAT	Towards ground	**824.2 MHz**

Communication System: GSM 850; Frequency: 824.2 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.95 mho/m; ε_r = 56; ρ = 1000 kg/m^3
Phantom section: Flat Section

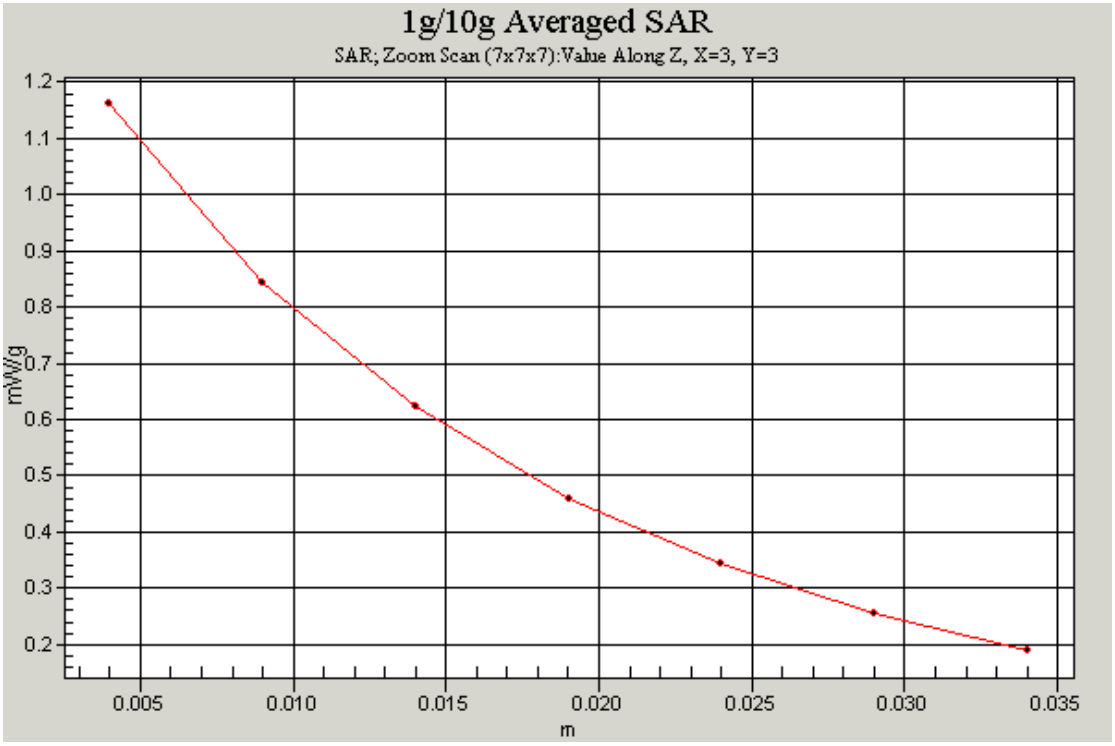
DASY4 Configuration:
- Probe: EX3DV4 - SN3708; ConvF(8.94, 8.94, 8.94); Calibrated: 10/26/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn725; Calibrated: 10/18/2011
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

towards ground- Low GPRS/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.12 mW/g

towards ground- Low GPRS/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 26.7 V/m; Power Drift = -0.011 dB
Peak SAR (extrapolated) = 1.53 W/kg
SAR(1 g) = 1.1 mW/g; SAR(10 g) = 0.776 mW/g
Maximum value of SAR (measured) = 1.16 mW/g



0 dB = 1.16mW/g



Z-Scan at power reference point (850 MHz CH128)

FLAT	Towards ground	**836.4 MHz**

Communication System: GSM 850; Frequency: 836.4 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 836.41 MHz; σ = 0.96 mho/m; ε_r = 55.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

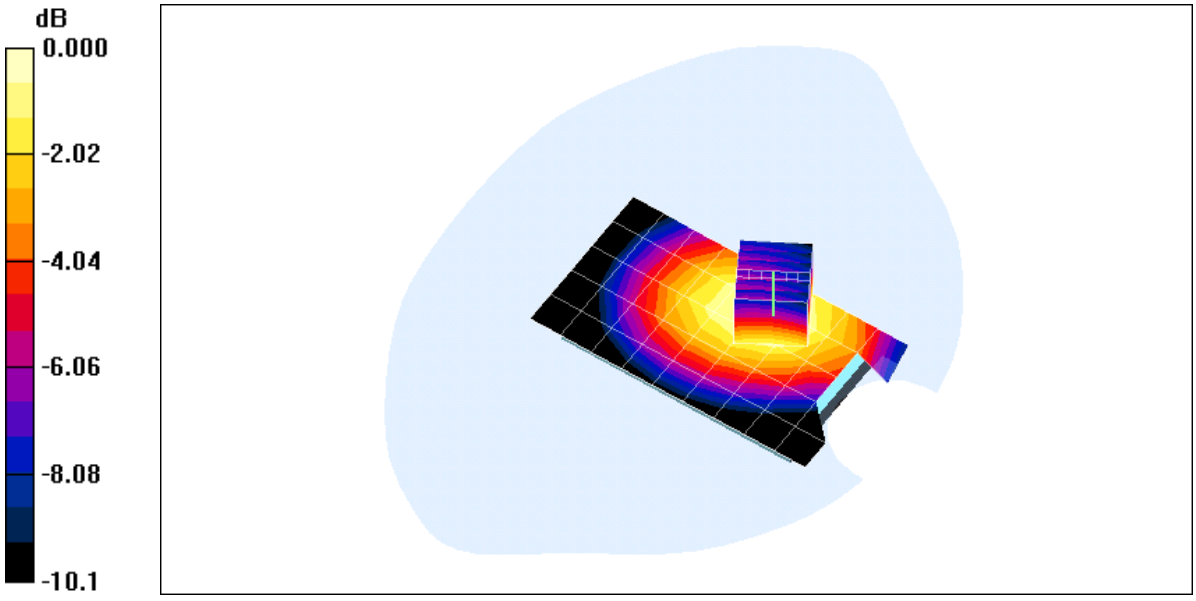
DASY4 Configuration:
- Probe: EX3DV4 - SN3708; ConvF(8.94, 8.94, 8.94); Calibrated: 10/26/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn725; Calibrated: 10/18/2011
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

towards ground- middle GPRS/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

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

towards ground- middle GPRS/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid:

dx=5mm, dy=5mm, dz=5mm
Reference Value = 23.9 V/m; Power Drift = -0.069 dB
Peak SAR (extrapolated) = 1.11 W/kg
SAR(1 g) = 0.820 mW/g; SAR(10 g) = 0.587 mW/g
Maximum value of SAR (measured) = 0.867 mW/g



0 dB = 0.867mW/g

FLAT	Towards ground	**848.8 MHz**

Communication System: GSM 850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.969 mho/m; ε_r = 55.8; ρ = 1000 kg/m^3
Phantom section: Flat Section

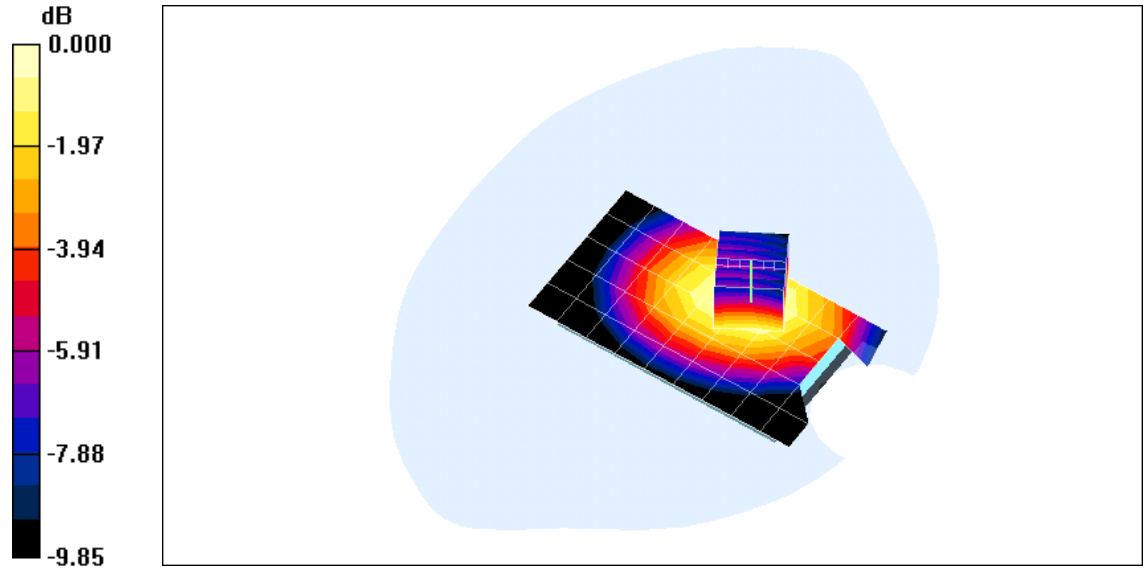
DASY4 Configuration:
- Probe: EX3DV4 - SN3708; ConvF(8.94, 8.94, 8.94); Calibrated: 10/26/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn725; Calibrated: 10/18/2011
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

towards ground- high GPRS/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.766 mW/g

towards ground- high GPRS/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid:

dx=5mm, dy=5mm, dz=5mm
Reference Value = 23.0 V/m; Power Drift = -0.041 dB
Peak SAR (extrapolated) = 1.01 W/kg
SAR(1 g) = 0.742 mW/g; SAR(10 g) = 0.533 mW/g
Maximum value of SAR (measured) = 0.783 mW/g



0 dB = 0.783mW/g

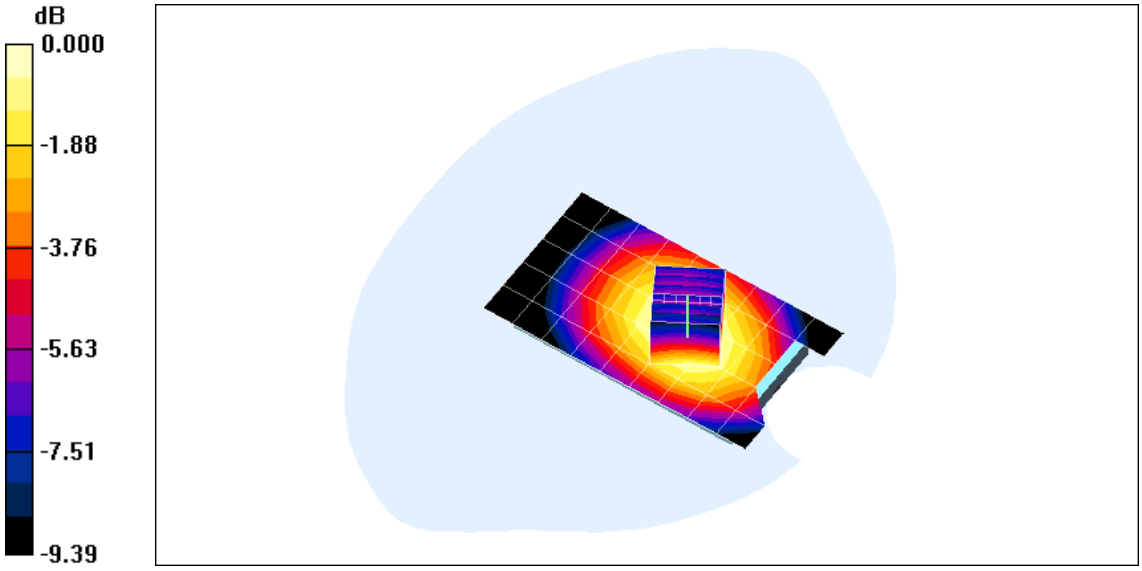
FLAT	Towards phantom	**836.4 MHz**

Communication System: GSM 850; Frequency: 836.4 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 836.41 MHz; σ = 0.96 mho/m; ε_r = 55.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3708; ConvF(8.94, 8.94, 8.94); Calibrated: 10/26/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn725; Calibrated: 10/18/2011
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards plantom - middle GPRS /Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.742 mW/g

Towards plantom - middle GPRS /Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 23.9 V/m; Power Drift = -0.125 dB
Peak SAR (extrapolated) = 0.961 W/kg
SAR(1 g) = 0.734 mW/g; SAR(10 g) = 0.540 mW/g
Maximum value of SAR (measured) = 0.773 mW/g



0 dB = 0.773mW/g

GSM (850MHz with EGPRS/Flat)

FLAT	Towards ground	**824.2 MHz**

Communication System: GSM 850; Frequency: 824.2 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.95 mho/m; ε_r = 56; ρ = 1000 kg/m^3
Phantom section: Flat Section

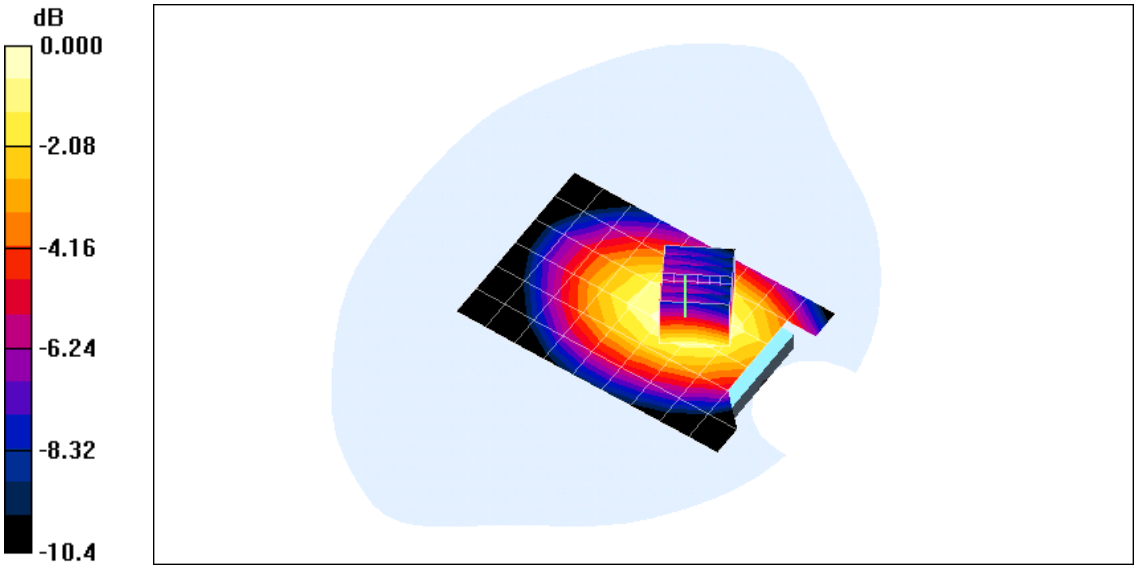
DASY4 Configuration:
- Probe: EX3DV4 - SN3708; ConvF(8.94, 8.94, 8.94); Calibrated: 10/26/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn725; Calibrated: 10/18/2011
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

towards ground Low EDGE/Area Scan (7x10x1): Measurement grid: dx=15mm, dy=15mm

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

towards ground Low EDGE/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid:

dx=5mm, dy=5mm, dz=5mm
Reference Value = 25.7 V/m; Power Drift = -0.045 dB
Peak SAR (extrapolated) = 1.21 W/kg
SAR(1 g) = 0.874 mW/g; SAR(10 g) = 0.626 mW/g
Maximum value of SAR (measured) = 0.925 mW/g



0 dB = 0.925mW/g

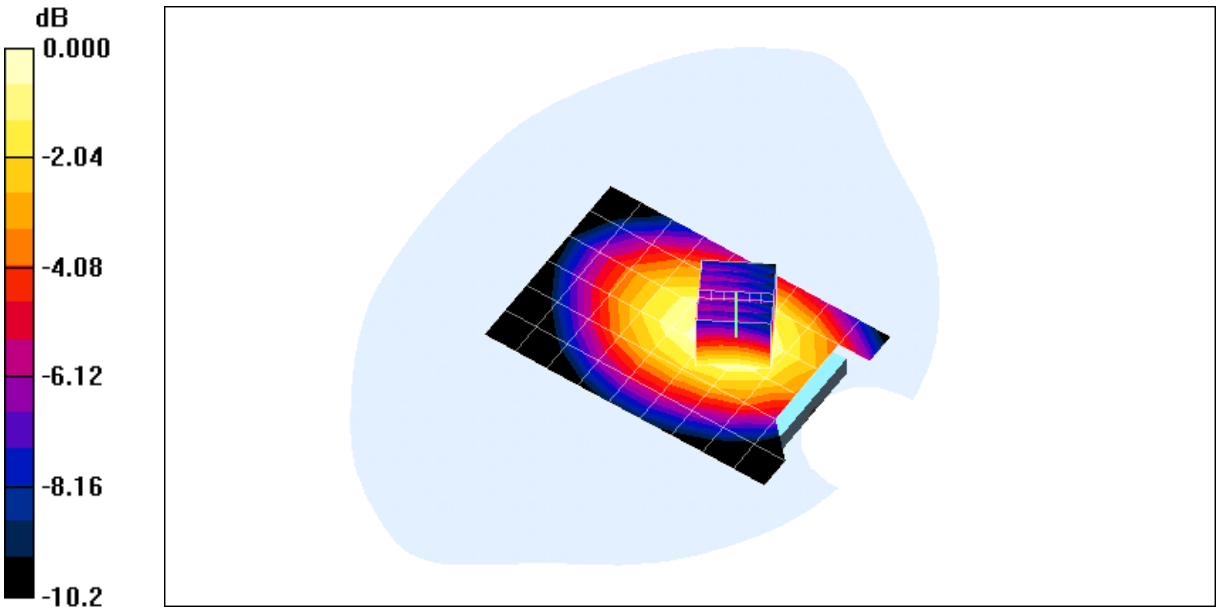
FLAT	Towards ground	**836.4 MHz**

Communication System: GSM 850; Frequency: 836.4 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 836.41 MHz; σ = 0.96 mho/m; ε_r = 55.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3708; ConvF(8.94, 8.94, 8.94); Calibrated: 10/26/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn725; Calibrated: 10/18/2011
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

towards ground-Middle EDGE/Area Scan (7x10x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.691 mW/g

towards ground-Middle EDGE/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 23.2 V/m; Power Drift = 0.042 dB
Peak SAR (extrapolated) = 0.906 W/kg
SAR(1 g) = 0.676 mW/g; SAR(10 g) = 0.490 mW/g
Maximum value of SAR (measured) = 0.716 mW/g



0 dB = 0.716mW/g

FLAT	Towards ground	**848.8 MHz**

Communication System: GSM 850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.969 mho/m; ε_r = 55.8; ρ = 1000 kg/m^3
Phantom section: Flat Section

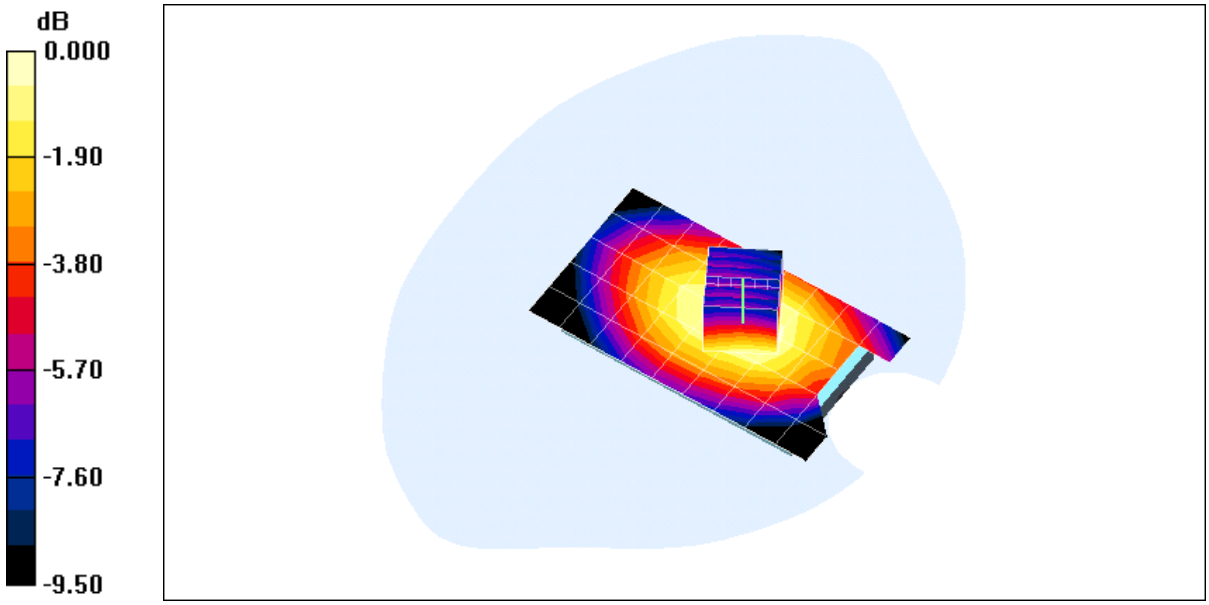
DASY4 Configuration:
- Probe: EX3DV4 - SN3708; ConvF(8.94, 8.94, 8.94); Calibrated: 10/26/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn725; Calibrated: 10/18/2011
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

towards ground-High EDGE/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.589 mW/g

towards ground-High EDGE/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid:

dx=5mm, dy=5mm, dz=5mm
Reference Value = 22.6 V/m; Power Drift = -0.014 dB
Peak SAR (extrapolated) = 0.747 W/kg
SAR(1 g) = 0.562 mW/g; SAR(10 g) = 0.412 mW/g
Maximum value of SAR (measured) = 0.591 mW/g



0 dB = 0.591mW/g

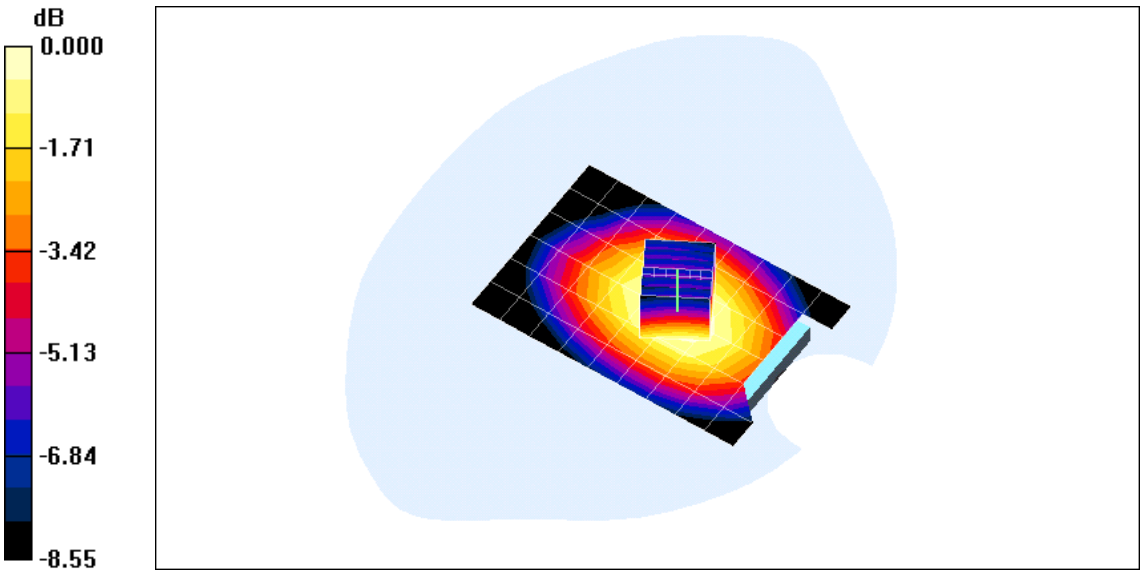
FLAT	Towards phantom	**836.4 MHz**

Communication System: GSM 850; Frequency: 836.4 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 836.41 MHz; σ = 0.96 mho/m; ε_r = 55.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3708; ConvF(8.94, 8.94, 8.94); Calibrated: 10/26/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn725; Calibrated: 10/18/2011
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards plantom -Middle EDGE/Area Scan (7x10x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.682 mW/g

Towards plantom -Middle EDGE/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 24.4 V/m; Power Drift = -0.102 dB
Peak SAR (extrapolated) = 0.834 W/kg
SAR(1 g) = 0.639 mW/g; SAR(10 g) = 0.476 mW/g
Maximum value of SAR (measured) = 0.675 mW/g



0 dB = 0.675mW/g

WCDMA B5 (Head)

Left Side	Cheek	**826.4 MHz**

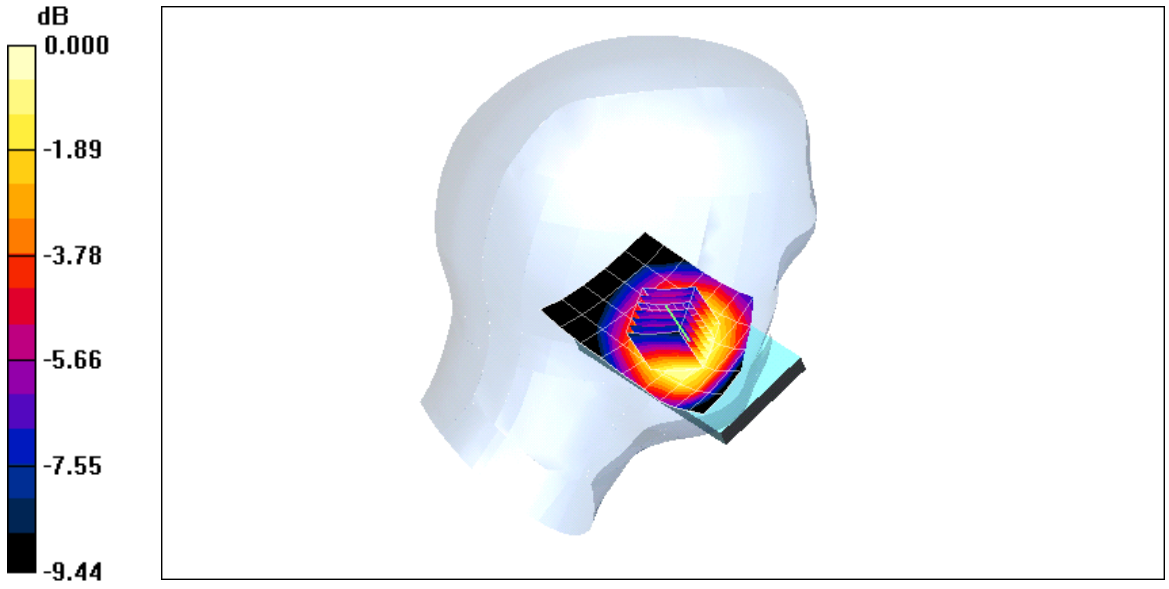
Communication System: UMTS 835; Frequency: 826.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.888 mho/m; ε_r = 41.9; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3708; ConvF(8.68, 8.68, 8.68); Calibrated: 10/26/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn725; Calibrated: 10/18/2011
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Touch position - Low/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.784 mW/g

Touch position - Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.1 V/m; Power Drift = 0.132 dB Peak SAR (extrapolated) = 0.946 W/kg
SAR(1 g) = 0.746 mW/g; SAR(10 g) = 0.560 mW/g
Maximum value of SAR (measured) = 0.779 mW/g



0 dB = 0.779mW/g

Left Side	Cheek	**836.5 MHz**

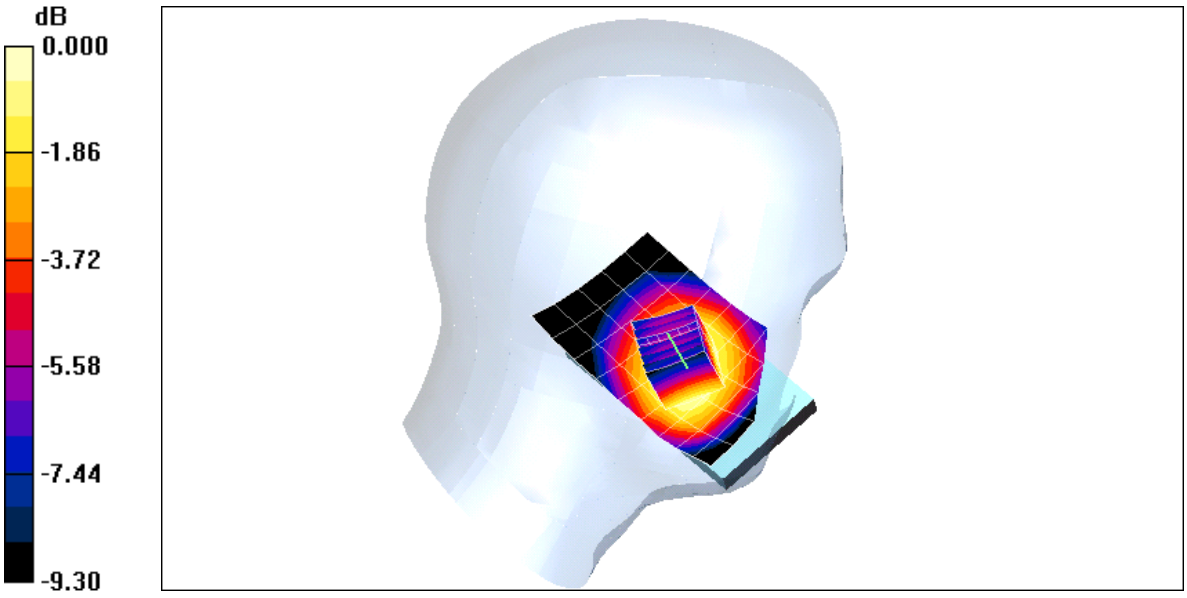
Communication System: UMTS 835; Frequency: 836.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.5 MHz; σ = 0.897 mho/m; ε_r = 41.6; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3708; ConvF(8.68, 8.68, 8.68); Calibrated: 10/26/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn725; Calibrated: 10/18/2011
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Touch position - Middle/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.848 mW/g

Touch position - Middle/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.8 V/m; Power Drift = 0.060 dB
Peak SAR (extrapolated) = 1.05 W/kg
SAR(1 g) = 0.817 mW/g; SAR(10 g) = 0.614 mW/g
Maximum value of SAR (measured) = 0.853 mW/g



0 dB = 0.853mW/g

Left Side	Cheek	**846.6 MHz**

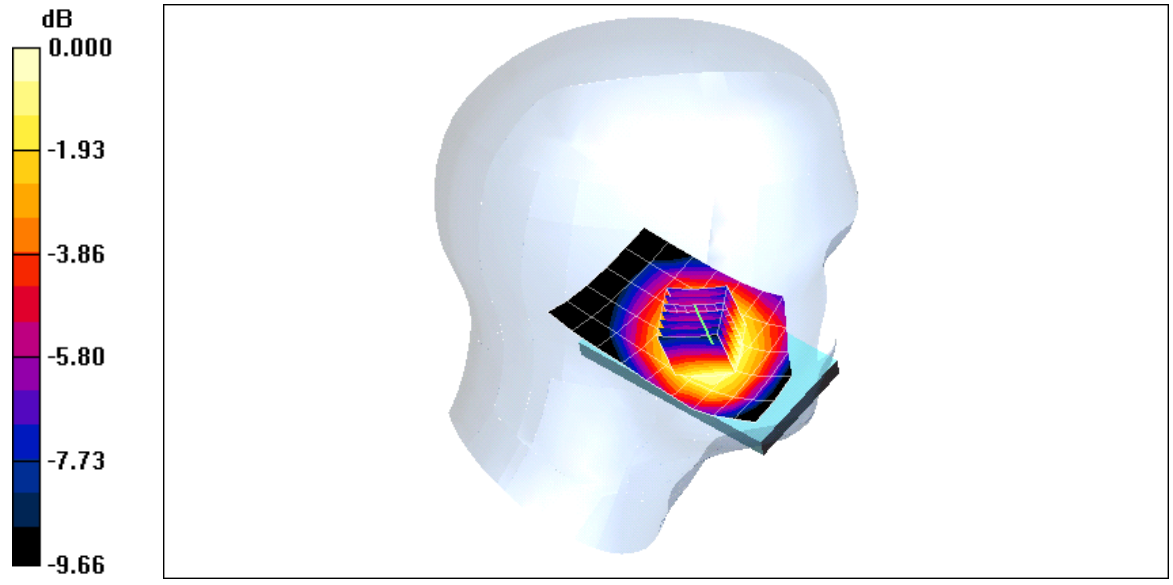
Communication System: UMTS 835; Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 846.6 MHz; σ = 0.905 mho/m; ε_r = 41.7; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3708; ConvF(8.68, 8.68, 8.68); Calibrated: 10/26/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn725; Calibrated: 10/18/2011
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Touch position - High/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.864 mW/g

Touch position - High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.6 V/m; Power Drift = 0.072 dB
Peak SAR (extrapolated) = 1.05 W/kg
SAR(1 g) = 0.821 mW/g; SAR(10 g) = 0.616 mW/g
Maximum value of SAR (measured) = 0.856 mW/g



0 dB = 0.856mW/g

Left Side	Tilt	**826.4 MHz**

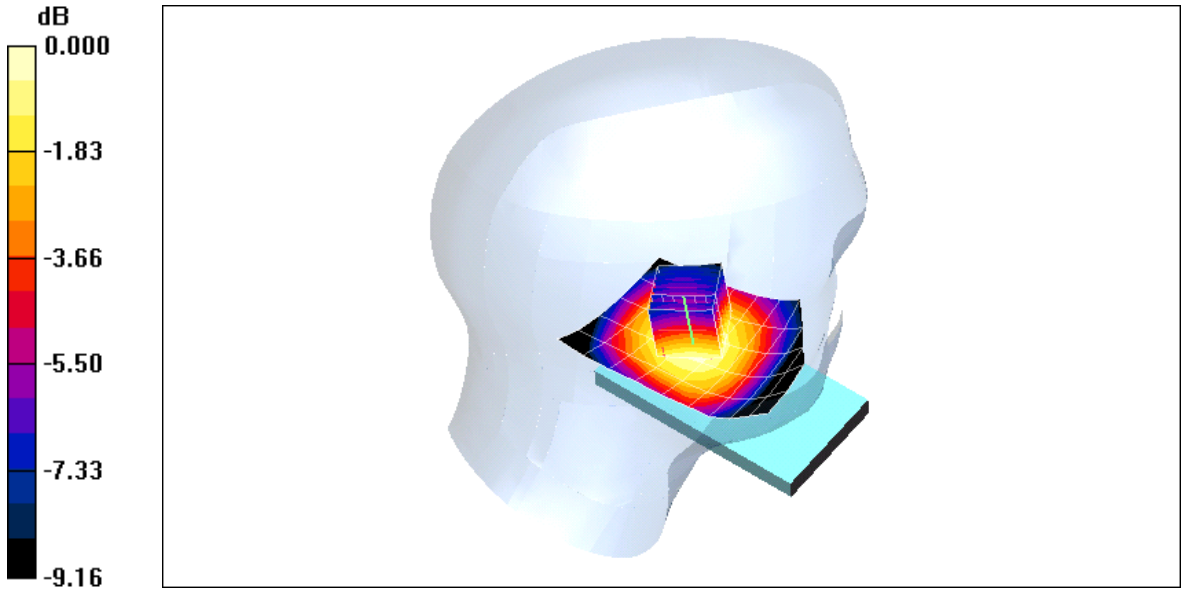
Communication System: UMTS 835; Frequency: 826.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.888 mho/m; ε_r = 41.9; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3708; ConvF(8.68, 8.68, 8.68); Calibrated: 10/26/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn725; Calibrated: 10/18/2011
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Tilt position - Low /Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.545 mW/g

Tilt position - Low /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 19.0 V/m; Power Drift = 0.025 dB
Peak SAR (extrapolated) = 0.685 W/kg
SAR(1 g) = 0.532 mW/g; SAR(10 g) = 0.396 mW/g
Maximum value of SAR (measured) = 0.558 mW/g



0 dB = 0.558mW/g

Left Side	Tilt	**836.5 MHz**

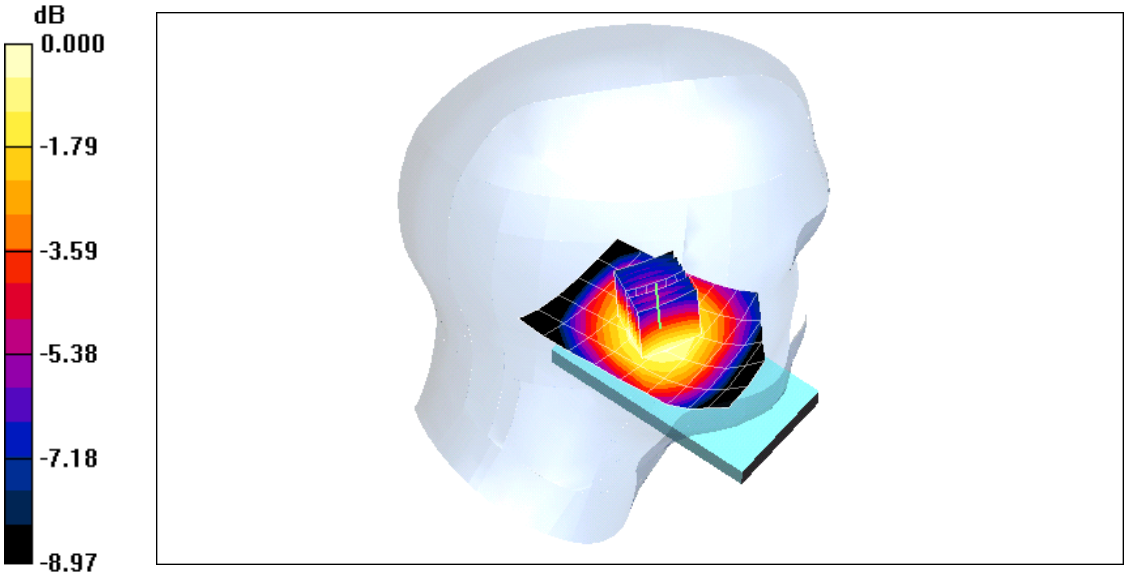
Communication System: UMTS 835; Frequency: 836.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.5 MHz; σ = 0.897 mho/m; ε_r = 41.6; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3708; ConvF(8.68, 8.68, 8.68); Calibrated: 10/26/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn725; Calibrated: 10/18/2011
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Tilt position - Middle/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.565 mW/g

Tilt position - Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 16.9 V/m; Power Drift = 0.037 dB
Peak SAR (extrapolated) = 0.716 W/kg
SAR(1 g) = 0.565 mW/g; SAR(10 g) = 0.423 mW/g
Maximum value of SAR (measured) = 0.592 mW/g



0 dB = 0.592mW/g

Left Side	Tilt	846.6MHz

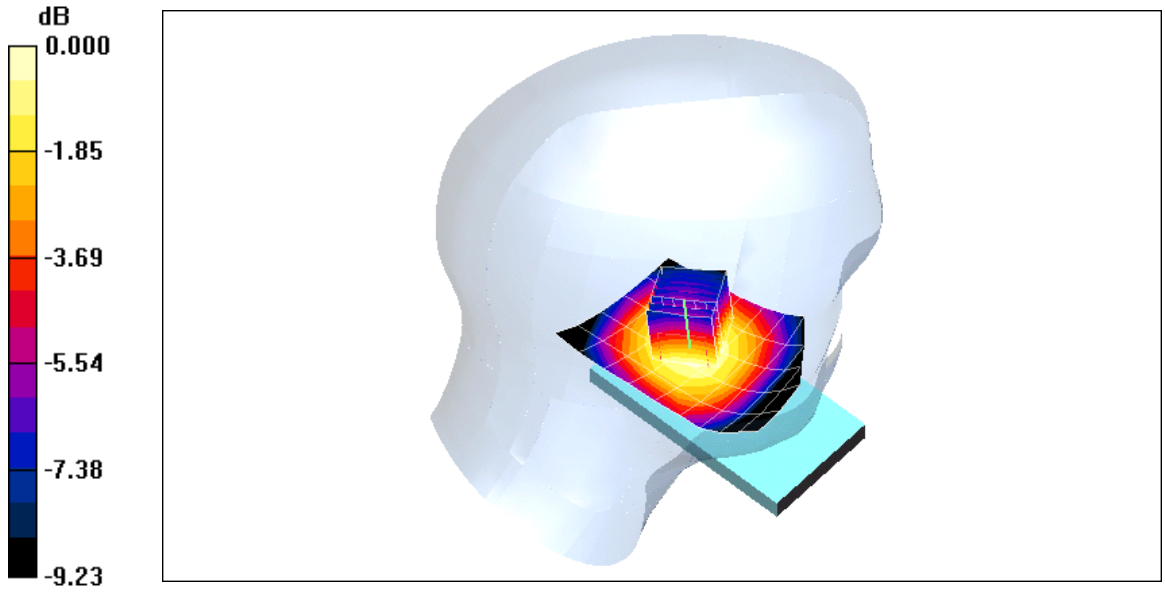
Communication System: UMTS 835; Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 846.6 MHz; σ = 0.905 mho/m; ε_r = 41.7; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3708; ConvF(8.68, 8.68, 8.68); Calibrated: 10/26/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn725; Calibrated: 10/18/2011
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Tilt position - High/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.647 mW/g

Tilt position - High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 20.6 V/m; Power Drift = 0.002 dB
Peak SAR (extrapolated) = 0.810 W/kg
SAR(1 g) = 0.625 mW/g; SAR(10 g) = 0.462 mW/g
Maximum value of SAR (measured) = 0.658 mW/g



0 dB = 0.658mW/g

Right Side	Cheek	**826.4MHz**

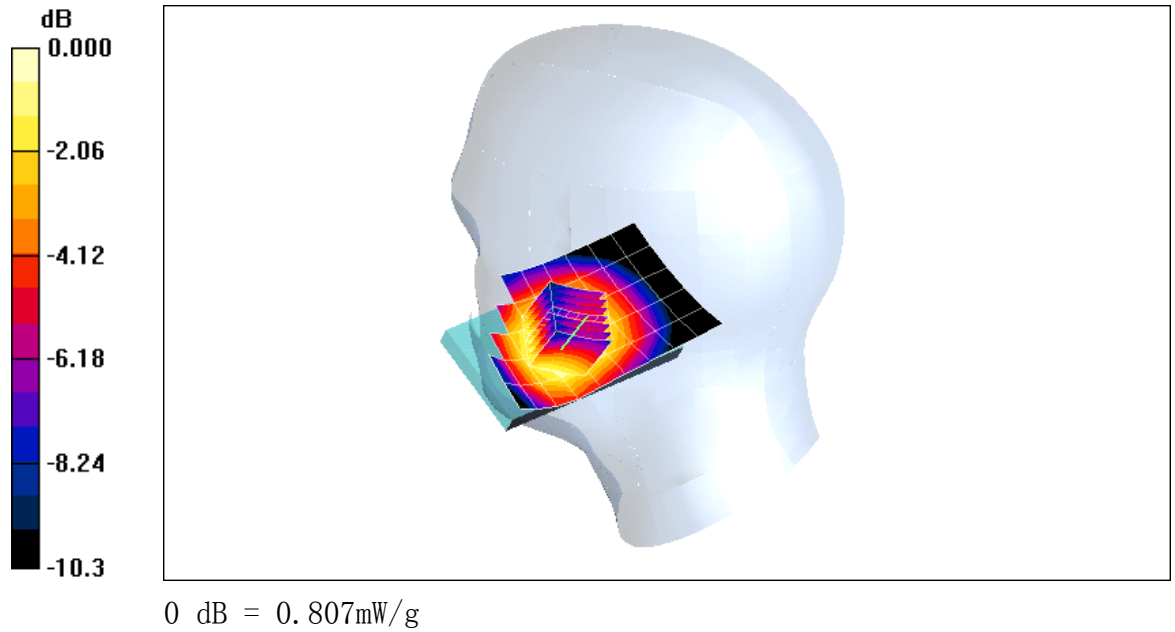
Communication System: UMTS 835; Frequency: 826.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.888 mho/m; ε_r = 41.9; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3708; ConvF(8.68, 8.68, 8.68); Calibrated: 10/26/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn725; Calibrated: 10/18/2011
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Touch position - Low /Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.783 mW/g

Touch position - Low /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.2 V/m; Power Drift = 0.056 dB
Peak SAR (extrapolated) = 0.954 W/kg
SAR(1 g) = 0.767 mW/g; SAR(10 g) = 0.580 mW/g
Maximum value of SAR (measured) = 0.807 mW/g



0 dB = 0.807mW/g

Right Side	Cheek	**836.5 MHz**

Communication System: UMTS 835; Frequency: 836.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.5 MHz; σ = 0.897 mho/m; ε_r = 41.6; ρ = 1000 kg/m^3
Phantom section: Right Section

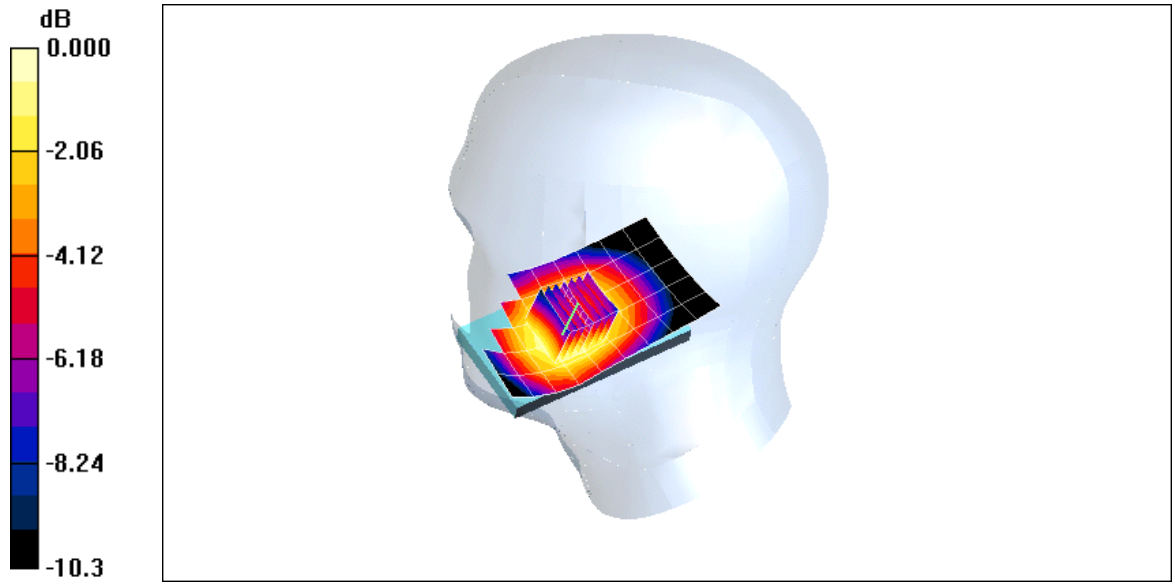
DASY4 Configuration:
- Probe: EX3DV4 - SN3708; ConvF(8.68, 8.68, 8.68); Calibrated: 10/26/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn725; Calibrated: 10/18/2011
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Touch position - Middle/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

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

Touch position - Middle/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid:

dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.8 V/m; Power Drift = -0.062 dB
Peak SAR (extrapolated) = 0.980 W/kg
SAR(1 g) = 0.780 mW/g; SAR(10 g) = 0.589 mW/g
Maximum value of SAR (measured) = 0.823 mW/g



0 dB = 0.823mW/g

Right Side	Cheek	**846.6 MHz**

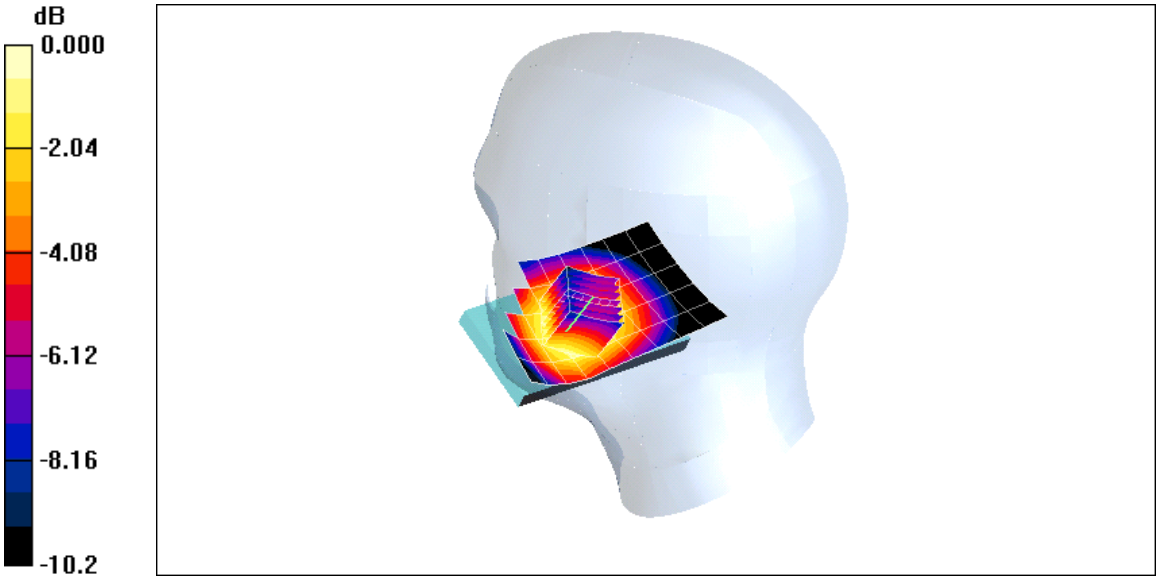
Communication System: UMTS 835; Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 846.6 MHz; σ = 0.905 mho/m; ε_r = 41.7; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3708; ConvF(8.68, 8.68, 8.68); Calibrated: 10/26/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn725; Calibrated: 10/18/2011
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

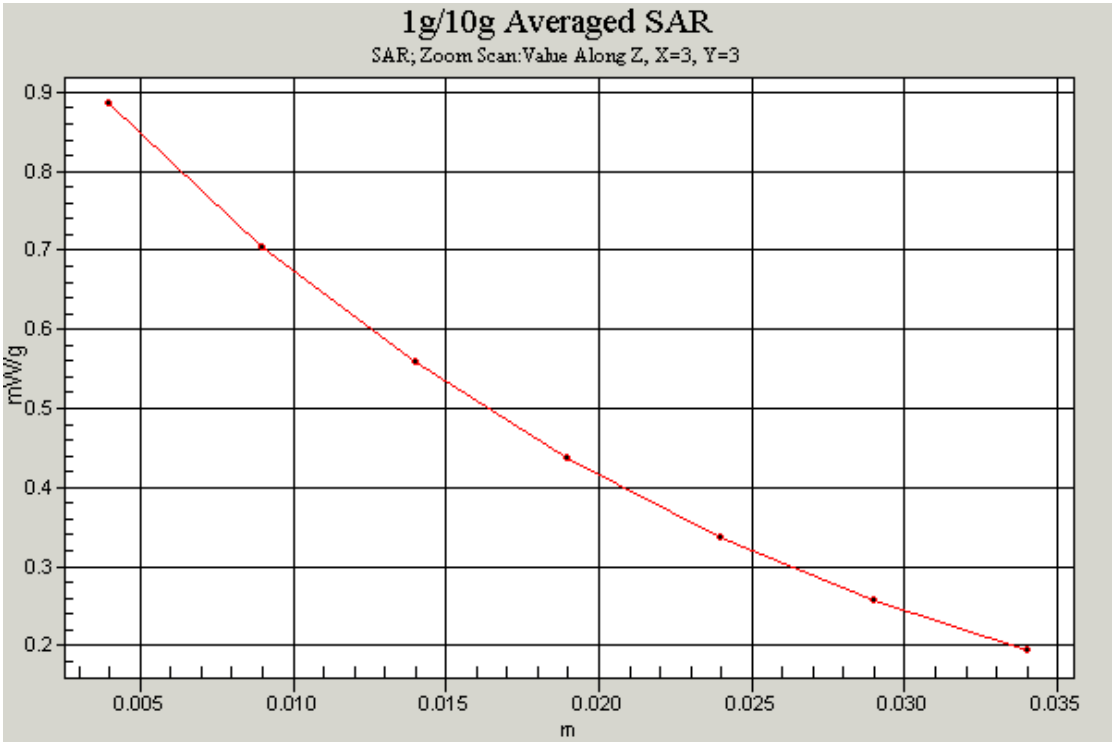
Touch position - High/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.868 mW/g

Touch position - High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.3 V/m; Power Drift = 0.010 dB
Peak SAR (extrapolated) = 1.05 W/kg
SAR(1 g) = 0.836 mW/g; SAR(10 g) = 0.630 mW/g
Maximum value of SAR (measured) = 0.882 mW/g



0 dB = 0.882mW/g



Z-Scan at power reference point (850 MHz CH4233)

Right Side	Tilt	826.4 MHz

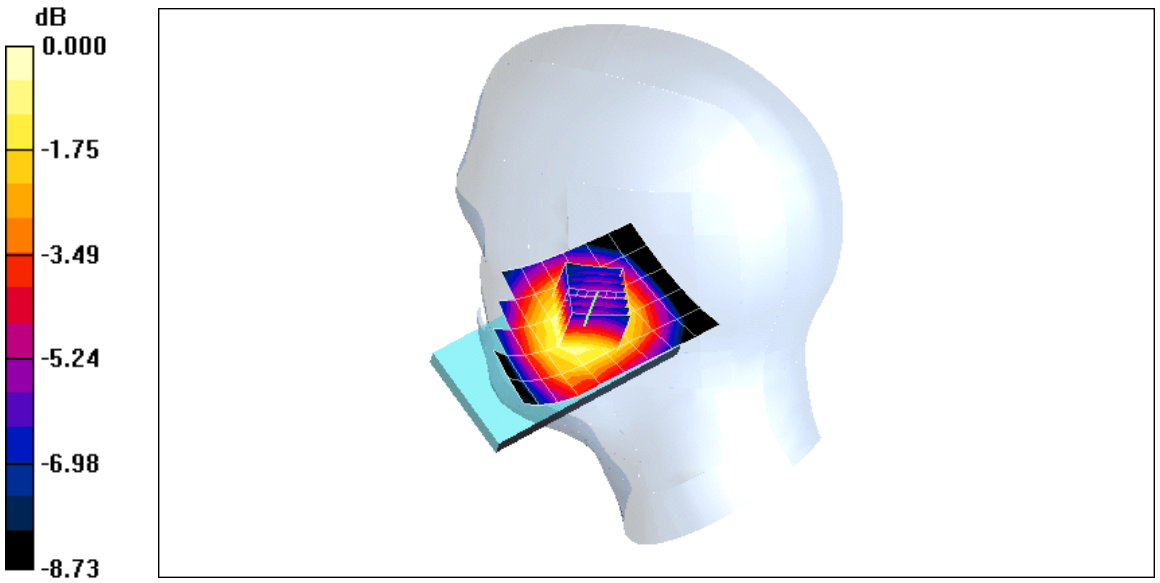
Communication System: UMTS 835; Frequency: 826.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.888 mho/m; ε_r = 41.9; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3708; ConvF(8.68, 8.68, 8.68); Calibrated: 10/26/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn725; Calibrated: 10/18/2011
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Tilt position - Low/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.468 mW/g

Tilt position - Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 14.7 V/m; Power Drift = 0.032 dB
Peak SAR (extrapolated) = 0.588 W/kg
SAR(1 g) = 0.459 mW/g; SAR(10 g) = 0.344 mW/g
Maximum value of SAR (measured) = 0.481 mW/g



0 dB = 0.481mW/g

Right Side	Tilt	836.5 MHz

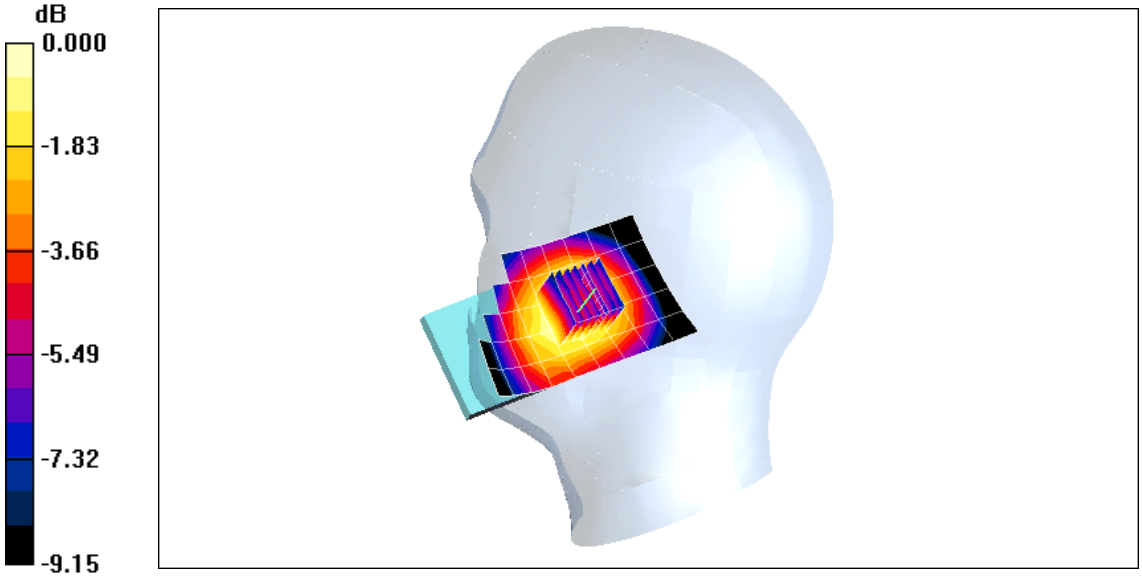
Communication System: UMTS 835; Frequency: 836.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.5 MHz; σ = 0.897 mho/m; ε_r = 41.6; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3708; ConvF(8.68, 8.68, 8.68); Calibrated: 10/26/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn725; Calibrated: 10/18/2011
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Tilt position - Middle/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

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

Tilt position - Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 14.9 V/m; Power Drift = 0.064 dB
Peak SAR (extrapolated) = 0.617 W/kg
SAR(1 g) = 0.478 mW/g; SAR(10 g) = 0.357 mW/g
Maximum value of SAR (measured) = 0.502 mW/g



0 dB = 0.502mW/g

Right Side	Tilt	846.6MHz

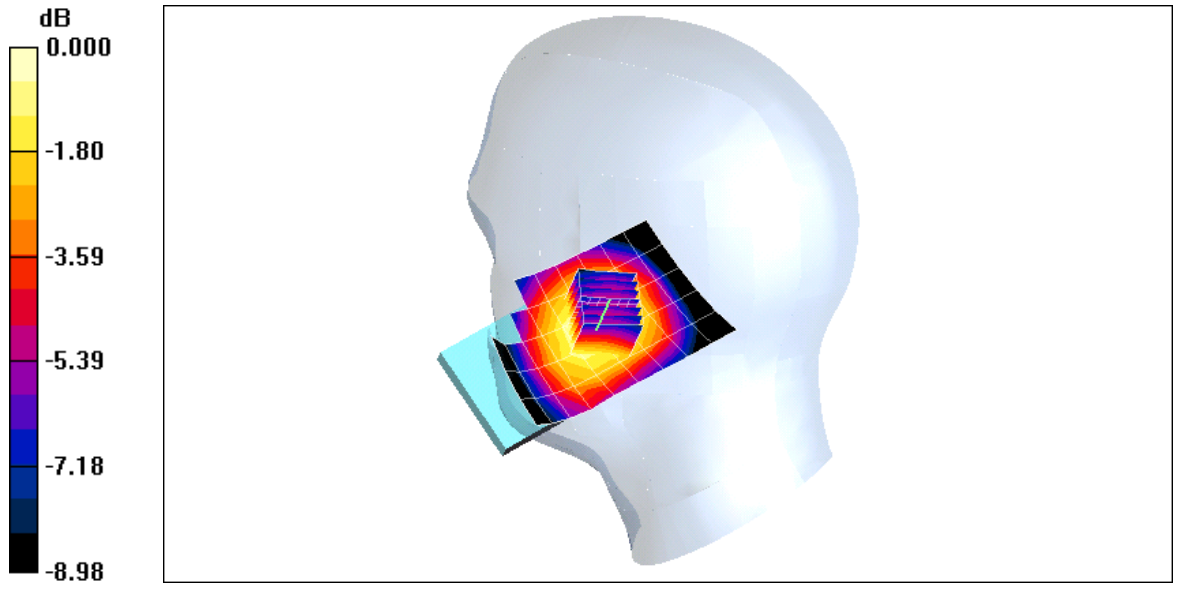
Communication System: UMTS 835; Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 846.6 MHz; σ = 0.905 mho/m; ε_r = 41.7; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3708; ConvF(8.68, 8.68, 8.68); Calibrated: 10/26/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn725; Calibrated: 10/18/2011
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Tilt position - High/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.494 mW/g

Tilt position - High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.5 V/m; Power Drift = -0.118 dB
Peak SAR (extrapolated) = 0.644 W/kg
SAR(1 g) = 0.498 mW/g; SAR(10 g) = 0.371 mW/g
Maximum value of SAR (measured) = 0.523 mW/g



0 dB = 0.523mW/g

WCDMA B5 with headset (Flat)

FLAT	Towards ground	**826.4 MHz**

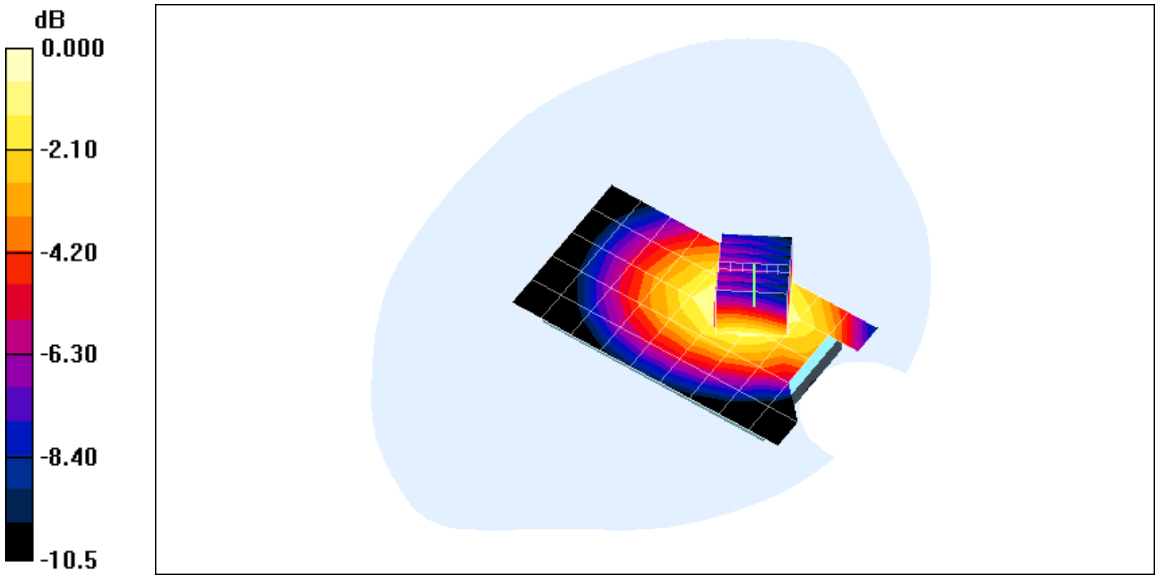
Communication System: UMTS 835; Frequency: 826.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.952 mho/m; ε_r = 55.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3708; ConvF(8.94, 8.94, 8.94); Calibrated: 10/26/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn725; Calibrated: 10/18/2011
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

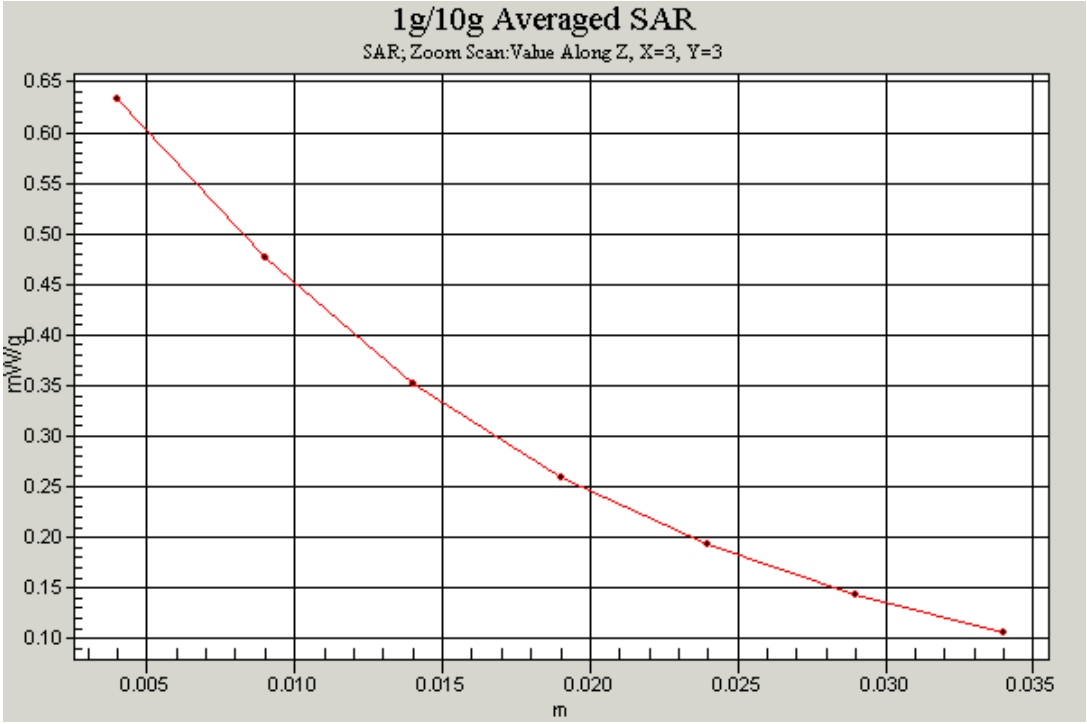
towards ground-low/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.694 mW/g

towards ground-low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 20.1 V/m; Power Drift = -0.015 dB
Peak SAR (extrapolated) = 0.933 W/kg
SAR(1 g) = 0.673 mW/g; SAR(10 g) = 0.477 mW/g
Maximum value of SAR (measured) = 0.716 mW/g



0 dB = 0.716mW/g



Z-Scan at power reference point (850 MHz CH4132)

FLAT	Towards ground	836.5 MHz

Communication System: UMTS 835; Frequency: 836.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.5 MHz; σ = 0.96 mho/m; ε_r = 55.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

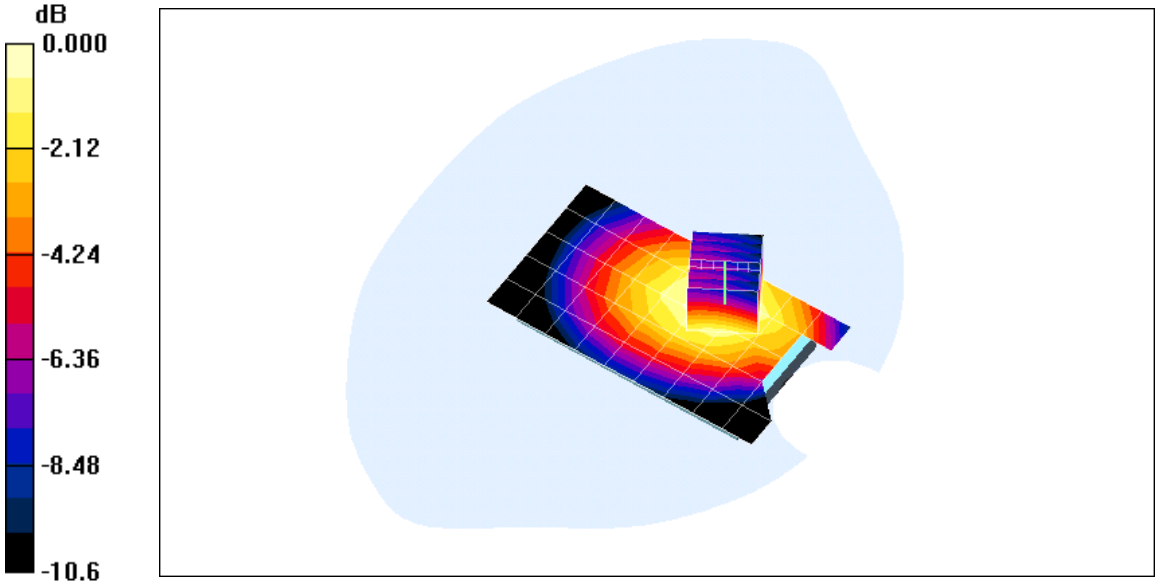
DASY4 Configuration:
- Probe: EX3DV4 - SN3708; ConvF(8.94, 8.94, 8.94); Calibrated: 10/26/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn725; Calibrated: 10/18/2011
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards ground - Middle/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

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

Towards ground - Middle/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid:

dx=5mm, dy=5mm, dz=5mm
Reference Value = 20.9 V/m; Power Drift = -0.009 dB
Peak SAR (extrapolated) = 0.926 W/kg
SAR(1 g) = 0.673 mW/g; SAR(10 g) = 0.480 mW/g
Maximum value of SAR (measured) = 0.714 mW/g



0 dB = 0.714mW/g

FLAT	Towards ground	**846.6 MHz**

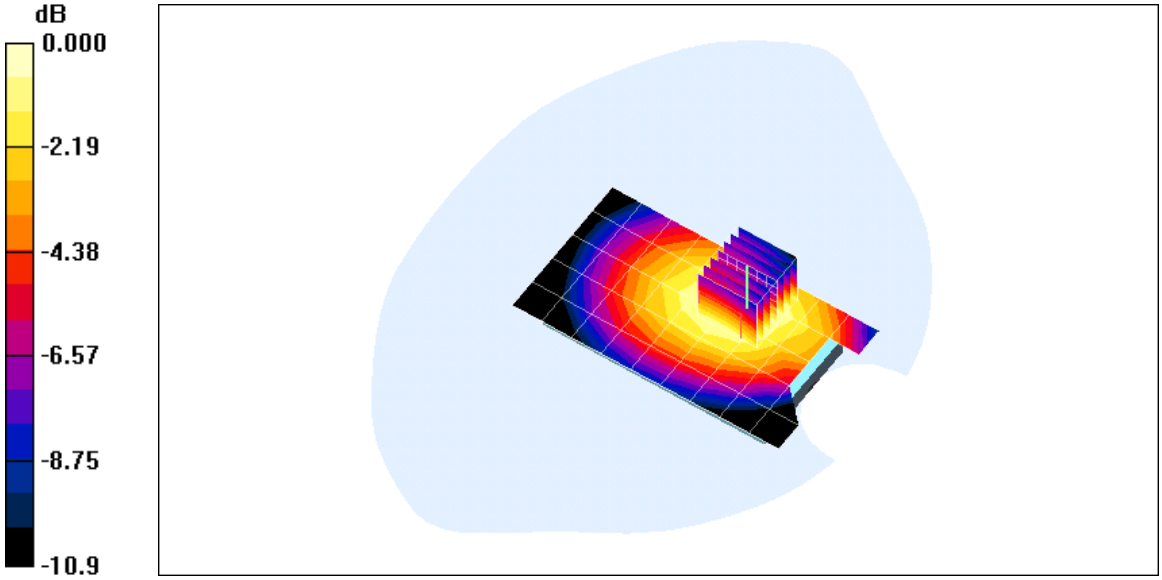
Communication System: UMTS 835; Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 846.6 MHz; σ = 0.968 mho/m; ε_r = 55.8; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3708; ConvF(8.94, 8.94, 8.94); Calibrated: 10/26/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn725; Calibrated: 10/18/2011
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

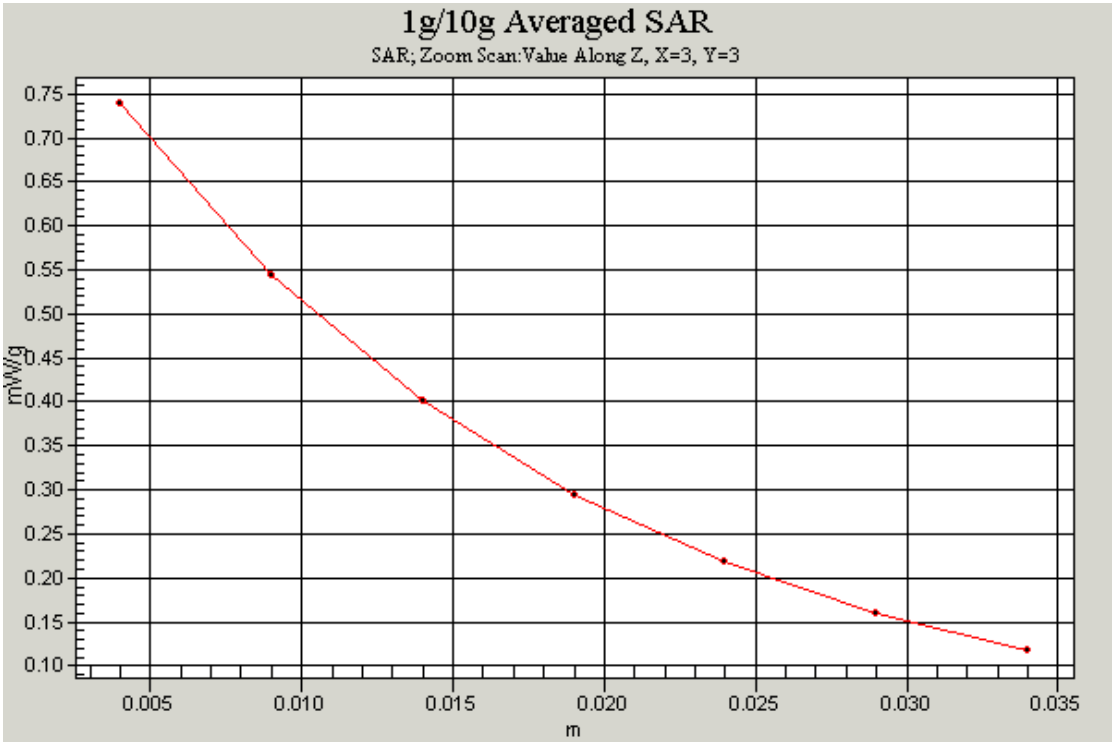
towards ground -high/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.700 mW/g

towards ground -high/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 22.2 V/m; Power Drift = -0.062 dB
Peak SAR (extrapolated) = 0.951 W/kg
SAR(1 g) = 0.700 mW/g; SAR(10 g) = 0.505 mW/g
Maximum value of SAR (measured) = 0.738 mW/g



0 dB = 0.738mW/g



Z-Scan at power reference point (850 MHz CH4233)

FLAT	Towards phantom	836.5 MHz

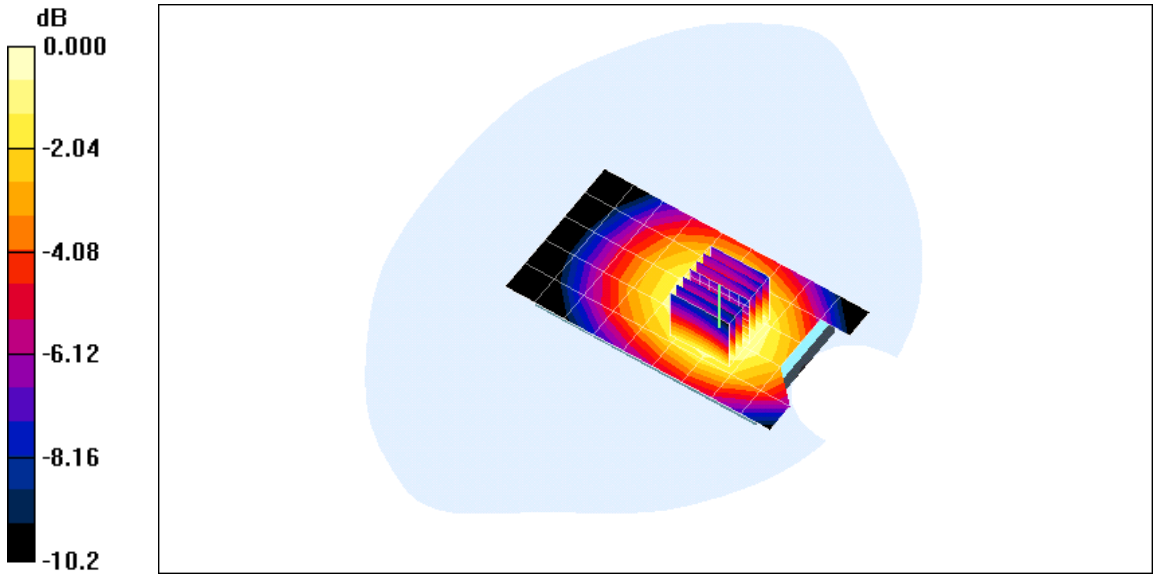
Communication System: UMTS 835; Frequency: 836.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.5 MHz; σ = 0.96 mho/m; ε_r = 55.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3708; ConvF(8.94, 8.94, 8.94); Calibrated: 10/26/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn725; Calibrated: 10/18/2011
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

towards plantom-mid/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.587 mW/g

towards plantom-mid/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 19.8 V/m; Power Drift = -0.061 dB
Peak SAR (extrapolated) = 0.750 W/kg
SAR(1 g) = 0.566 mW/g; SAR(10 g) = 0.416 mW/g
Maximum value of SAR (measured) = 0.596 mW/g



0 dB = 0.596mW/g

Wifi

FLAT	Towards ground	2462MHz

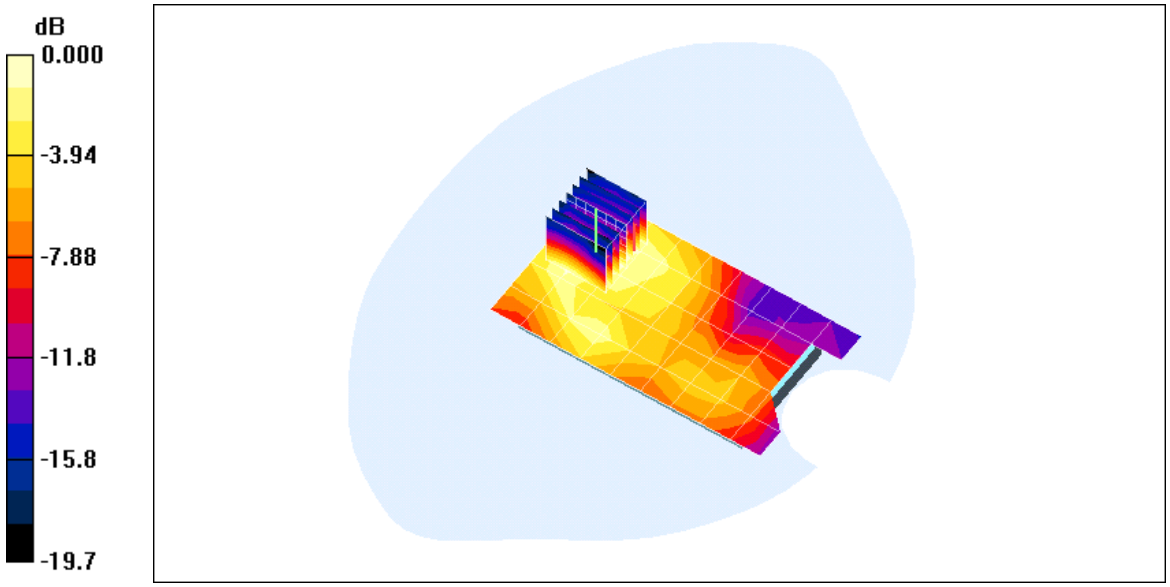
Communication System: Wifi 2450; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2462 MHz; σ = 1.94 mho/m; ε_r = 52.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3708; ConvF(6.98, 6.98, 6.98); Calibrated: 10/26/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn725; Calibrated: 10/18/2011
- Phantom: SAM 1559; Type: SAM; Serial: 1559
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

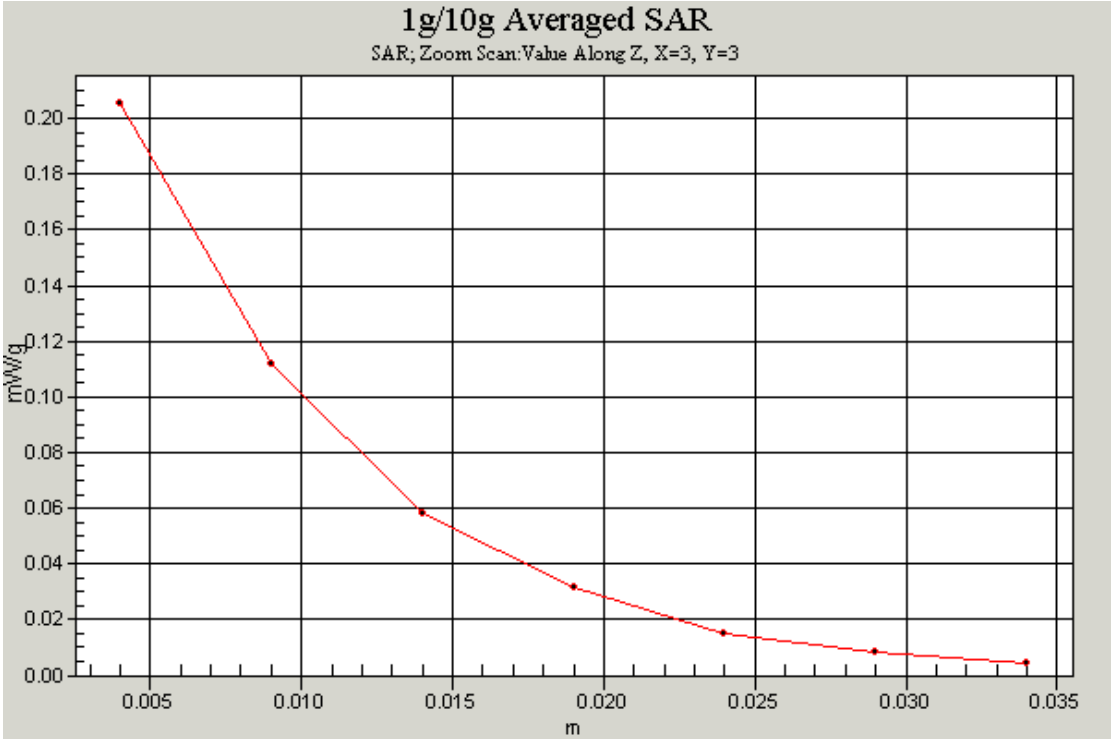
Towards ground - High/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.191 mW/g

Towards ground - High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.58 V/m; Power Drift = 0.134 dB
Peak SAR (extrapolated) = 0.339 W/kg
SAR(1 g) = 0.189 mW/g; SAR(10 g) = 0.104 mW/g
Maximum value of SAR (measured) = 0.206 mW/g



0 dB = 0.206mW/g



Z-Scan at power reference point (2450 MHz CH11)

FLAT	Towards phantom	2462MHz

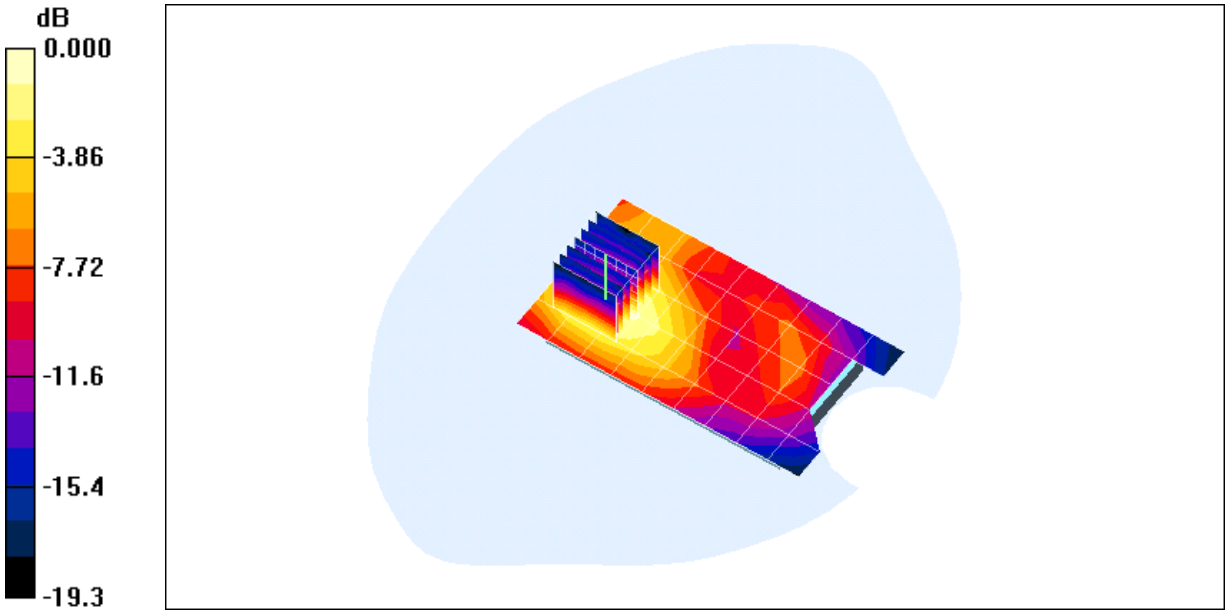
Communication System: Wifi 2450; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2462 MHz; σ = 1.94 mho/m; ε_r = 52.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3708; ConvF(6.98, 6.98, 6.98); Calibrated: 10/26/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn725; Calibrated: 10/18/2011
- Phantom: SAM 1559; Type: SAM; Serial: 1559
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards plantom - High/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.155 mW/g

Towards plantom - High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.97 V/m; Power Drift = 0.019 dB
Peak SAR (extrapolated) = 0.281 W/kg
SAR(1 g) = 0.152 mW/g; SAR(10 g) = 0.082 mW/g
Maximum value of SAR (measured) = 0.166 mW/g



0 dB = 0.166mW/g

Left Side	Tilt	2462MHz

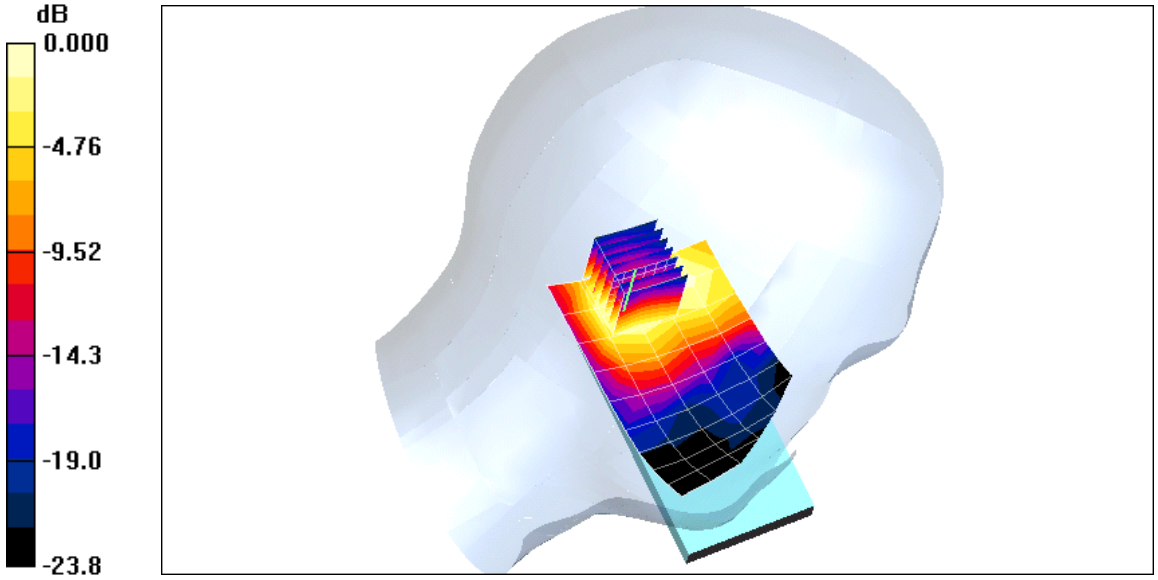
Communication System: Wifi 2450; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2462 MHz; σ = 1.92 mho/m; ε_r = 37.8; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3708; ConvF(6.84, 6.84, 6.84); Calibrated: 10/26/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn725; Calibrated: 10/18/2011
- Phantom: SAM 1559; Type: SAM; Serial: 1559
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Tilt position - High/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.411 mW/g

Tilt position - High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.9 V/m; Power Drift = 0.112 dB
Peak SAR (extrapolated) = 0.766 W/kg
SAR(1 g) = 0.390 mW/g; SAR(10 g) = 0.198 mW/g
Maximum value of SAR (measured) = 0.424 mW/g



0 dB = 0.424mW/g

Left Side	Cheek	2462MHz

Communication System: Wifi 2450; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2462 MHz; σ = 1.92 mho/m; ε_r = 37.8; ρ = 1000 kg/m^3
Phantom section: Left Section

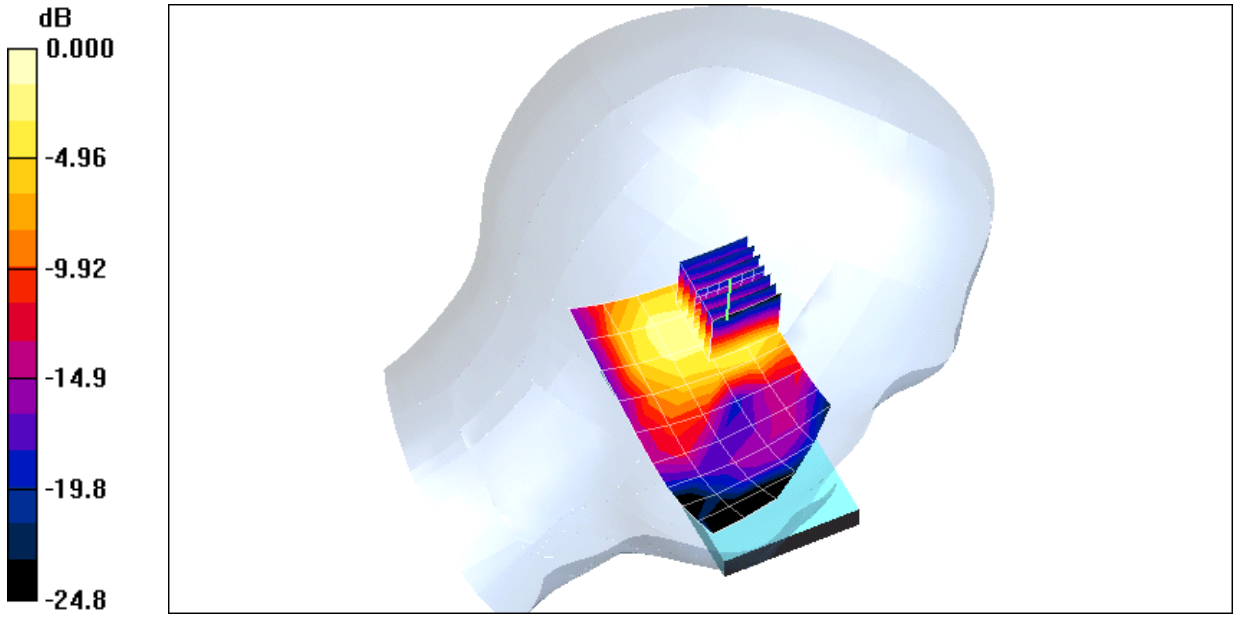
DASY4 Configuration:
- Probe: EX3DV4 - SN3708; ConvF(6.84, 6.84, 6.84); Calibrated: 10/26/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn725; Calibrated: 10/18/2011
- Phantom: SAM 1559; Type: SAM; Serial: 1559
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Touch position - High/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

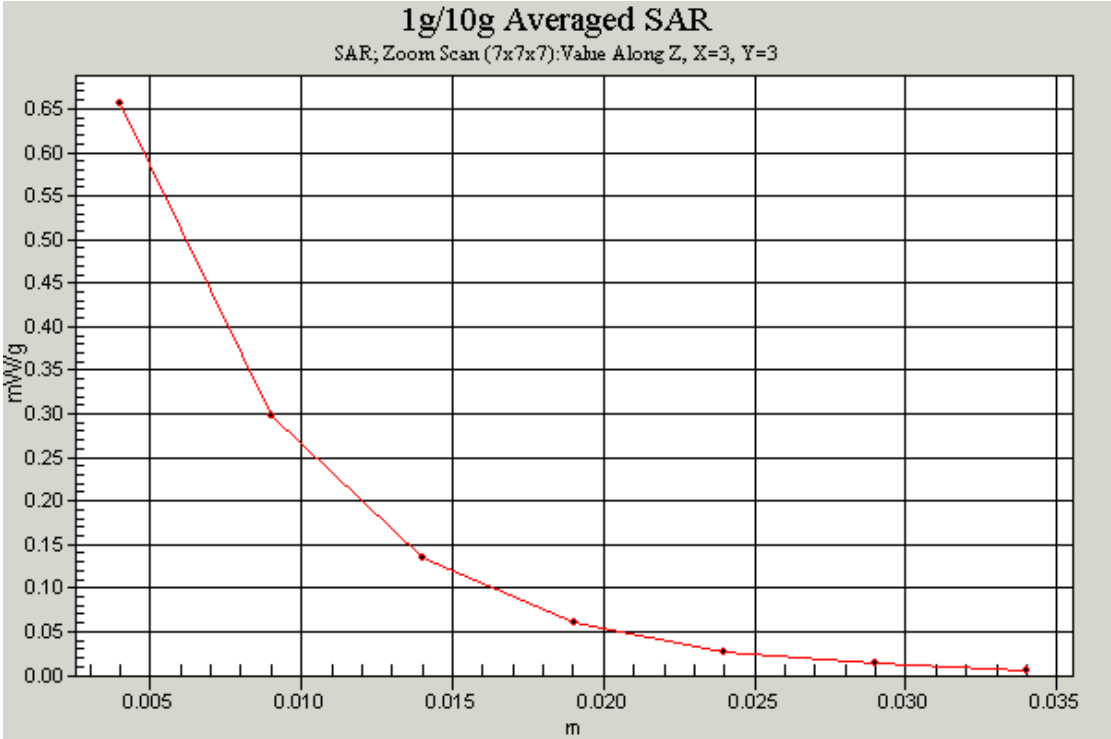
Maximum value of SAR (measured) = 0.538 mW/g

Touch position - High/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid:

dx=5mm, dy=5mm, dz=5mm
Reference Value = 14.9 V/m; Power Drift = -0.166 dB
Peak SAR (extrapolated) = 1.32 W/kg
SAR(1 g) = 0.586 mW/g; SAR(10 g) = 0.268 mW/g
Maximum value of SAR (measured) = 0.657 mW/g



0 dB = 0.657mW/g



Z-Scan at power reference point (2450 MHz CH11)

Right Side	Tilt	2462MHz

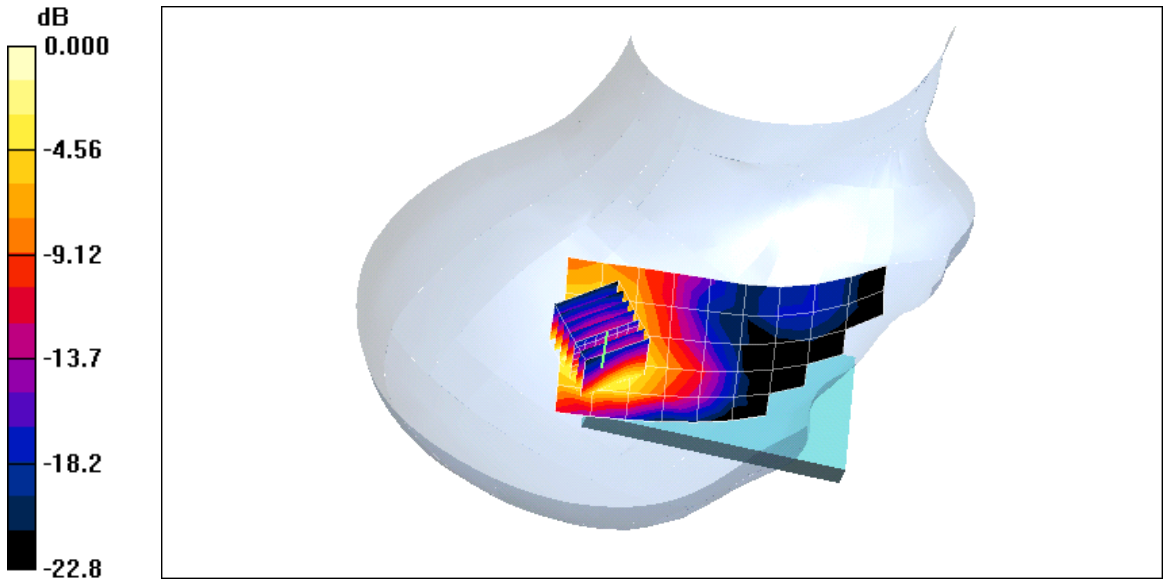
Communication System: Wifi 2450; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2462 MHz; σ = 1.92 mho/m; ε_r = 37.8; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3708; ConvF(6.84, 6.84, 6.84); Calibrated: 10/26/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn725; Calibrated: 10/18/2011
- Phantom: SAM 1559; Type: SAM; Serial: 1559
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Tilt position - High/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.502 mW/g

Tilt position - High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.9 V/m; Power Drift = 0.088 dB
Peak SAR (extrapolated) = 0.959 W/kg
SAR(1 g) = 0.477 mW/g; SAR(10 g) = 0.232 mW/g
Maximum value of SAR (measured) = 0.522 mW/g



0 dB = 0.522mW/g

Right Side	Cheek	2462MHz

Communication System: Wifi 2450; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2462 MHz; σ = 1.92 mho/m; ε_r = 37.8; ρ = 1000 kg/m^3
Phantom section: Right Section

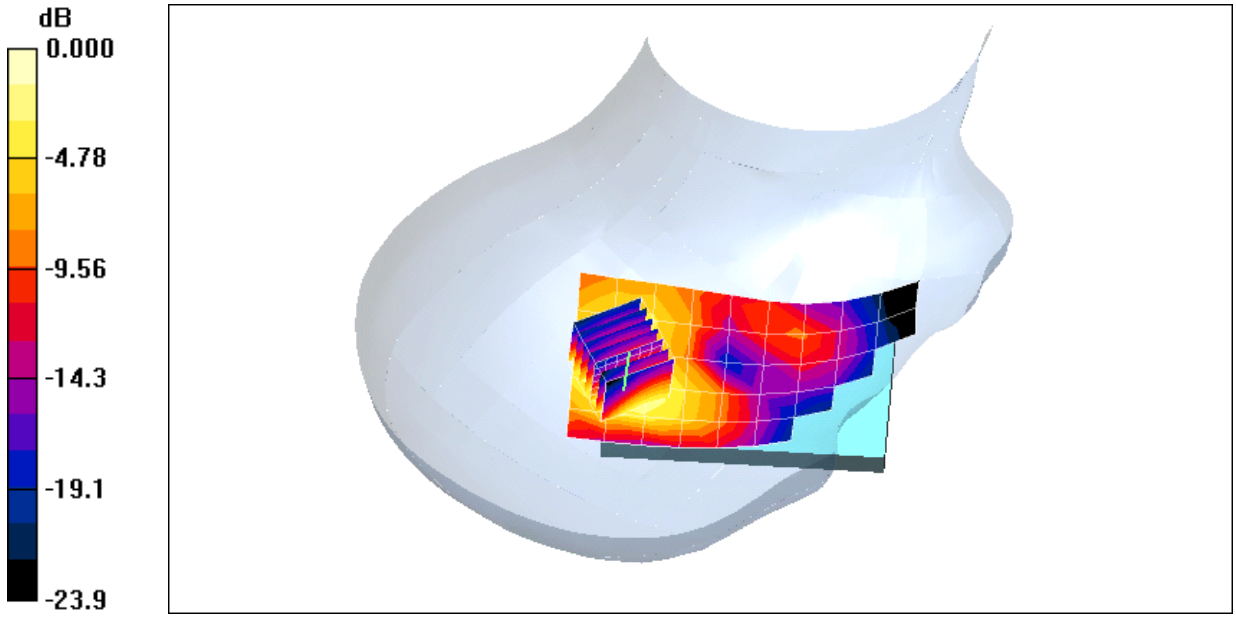
DASY4 Configuration:
- Probe: EX3DV4 - SN3708; ConvF(6.84, 6.84, 6.84); Calibrated: 10/26/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn725; Calibrated: 10/18/2011
- Phantom: SAM 1559; Type: SAM; Serial: 1559
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Touch position - High/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

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

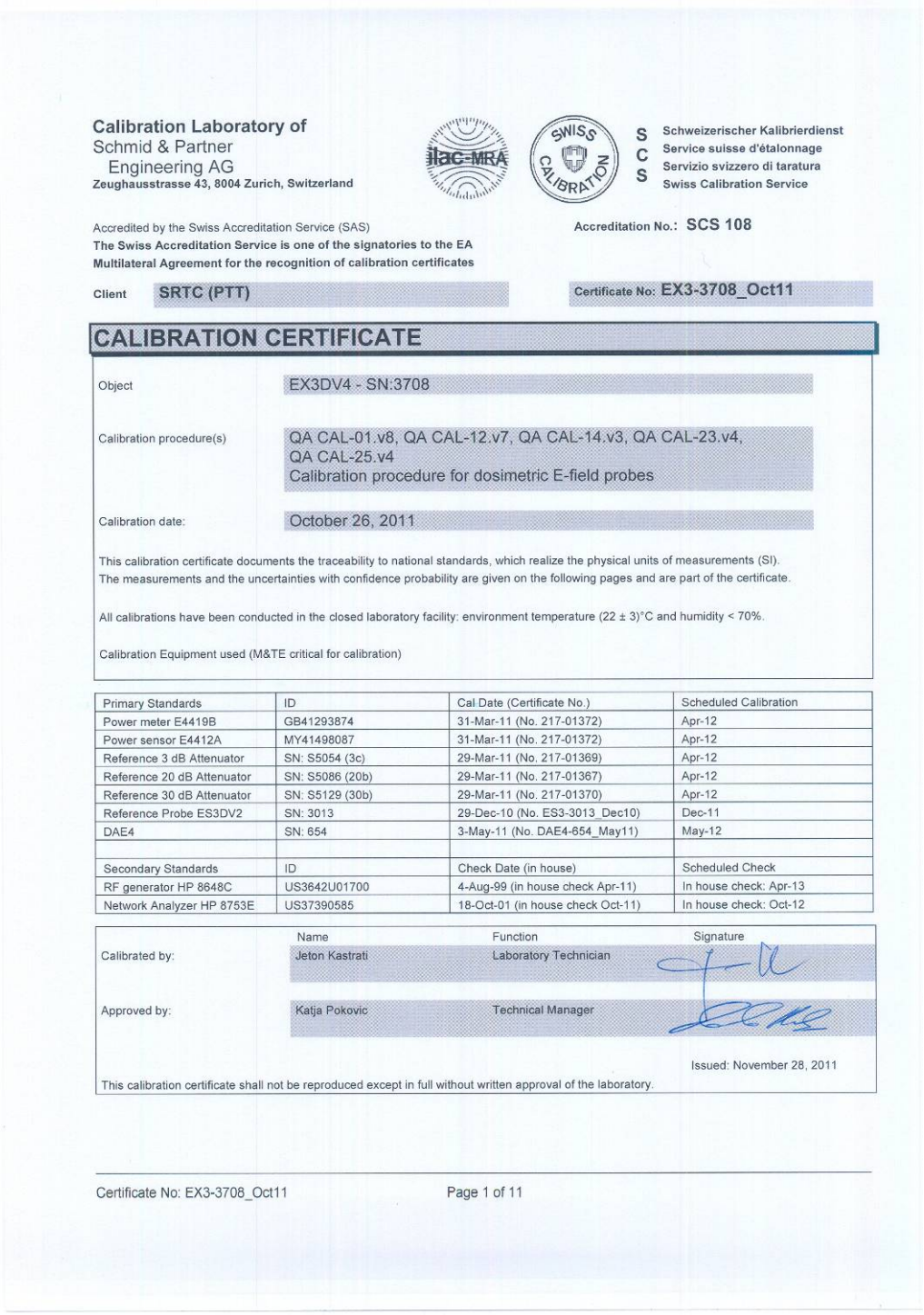
Touch position - High/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid:

dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.8 V/m; Power Drift = 0.162 dB
Peak SAR (extrapolated) = 1.05 W/kg
SAR(1 g) = 0.530 mW/g; SAR(10 g) = 0.264 mW/g
Maximum value of SAR (measured) = 0.582 mW/g



0 dB = 0.582mW/g

APPENDIX C: RELEVANT PAGES FROM PROBE CALIBRATION REPORT(S)



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

S Schweizerischer Kalibrierdienst
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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: SRTC (PTT)

Certificate No: EX3-3708_Oct11

CALIBRATION CERTIFICATE

Object: EX3DV4 - SN:3708

Calibration procedure(s): QA CAL-01.v8, QA CAL-12.v7, QA CAL-14.v3, QA CAL-23.v4, QA CAL-25.v4
Calibration procedure for dosimetric E-field probes

Calibration date: October 26, 2011

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	31-Mar-11 (No. 217-01372)	Apr-12
Power sensor E4412A	MY41498087	31-Mar-11 (No. 217-01372)	Apr-12
Reference 3 dB Attenuator	SN: S5054 (3c)	29-Mar-11 (No. 217-01369)	Apr-12
Reference 20 dB Attenuator	SN: S5086 (20b)	29-Mar-11 (No. 217-01367)	Apr-12
Reference 30 dB Attenuator	SN: S5129 (30b)	29-Mar-11 (No. 217-01370)	Apr-12
Reference Probe ES3DV2	SN: 3013	29-Dec-10 (No. ES3-3013_Dec10)	Dec-11
DAE4	SN: 654	3-May-11 (No. DAE4-654_May11)	May-12
Secondary Standards	ID	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Apr-11)	In house check: Apr-13
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-11)	In house check: Oct-12

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: November 28, 2011

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

Certificate No: EX3-3708_Oct11 Page 1 of 11

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C Service suisse d'étalonnage
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Accreditation No.: SCS 108

Glossary:

TSL	tissue simulating liquid
NORMx,y,z	sensitivity in free space
ConvF	sensitivity in TSL / NORMx,y,z
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C	modulation dependent linearization parameters
Polarization φ	φ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., $\vartheta = 0$ is normal to probe axis

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005

Methods Applied and Interpretation of Parameters:

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

Probe EX3DV4

SN:3708

Manufactured: July 21, 2009
Calibrated: October 26, 2011

Calibrated for DASY/EASY Systems
(Note: non-compatible with DASY2 system!)

EX3DV4– SN:3708 October 26, 2011

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3708

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$)[A]	0.49	0.44	0.55	± 10.1 %
DCP (mV)[B]	98.2	101.7	96.8	

Modulation Calibration Parameters

UID	Communication System Name	PAR		A dB	B dB	C dB	VR mV	Unc[E] (k=2)
10000	CW	0.00	X	0.00	0.00	1.00	111.0	±3.0 %
			Y	0.00	0.00	1.00	107.9	
			Z	0.00	0.00	1.00	121.6	

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

[A] The uncertainties of NormX,Y,Z do not affect the E^2-field uncertainty inside TSL (see Pages 5 and 6).
[B] Numerical linearization parameter: uncertainty not required.
[E] Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

EX3DV4– SN:3708 October 26, 2011

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3708

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
450	43.5	0.87	9.64	9.64	9.64	0.12	1.00	± 13.4 %
900	41.5	0.97	8.68	8.68	8.68	0.73	0.70	± 12.0 %
1750	40.1	1.37	8.04	8.04	8.04	0.80	0.63	± 12.0 %
2000	40.0	1.40	7.72	7.72	7.72	0.80	0.61	± 12.0 %
2450	39.2	1.80	6.84	6.84	6.84	0.80	0.61	± 12.0 %
5200	36.0	4.66	4.92	4.92	4.92	0.40	1.80	± 13.1 %
5800	35.3	5.27	4.43	4.43	4.43	0.50	1.80	± 13.1 %

[C] Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.
[F] At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

Certificate No: EX3-3708_Oct11 Page 5 of 11

EX3DV4– SN:3708 October 26, 2011

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3708

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$)[A]	0.49	0.44	0.55	± 10.1 %
DCP (mV)[B]	98.2	101.7	96.8	

Modulation Calibration Parameters

UID	Communication System Name	PAR		A dB	B dB	C dB	VR mV	Unc[E] (k=2)
10000	CW	0.00	X	0.00	0.00	1.00	111.0	±3.0 %
			Y	0.00	0.00	1.00	107.9	
			Z	0.00	0.00	1.00	121.6	

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

[A] The uncertainties of NormX,Y,Z do not affect the E^2-field uncertainty inside TSL (see Pages 5 and 6).
[B] Numerical linearization parameter: uncertainty not required.
[E] Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3708

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
450	43.5	0.87	9.64	9.64	9.64	0.12	1.00	± 13.4 %
900	41.5	0.97	8.68	8.68	8.68	0.73	0.70	± 12.0 %
1750	40.1	1.37	8.04	8.04	8.04	0.80	0.63	± 12.0 %
2000	40.0	1.40	7.72	7.72	7.72	0.80	0.61	± 12.0 %
2450	39.2	1.80	6.84	6.84	6.84	0.80	0.61	± 12.0 %
5200	36.0	4.66	4.92	4.92	4.92	0.40	1.80	± 13.1 %
5800	35.3	5.27	4.43	4.43	4.43	0.50	1.80	± 13.1 %

[C] Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.
[F] At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

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DASY/EASY - Parameters of Probe: EX3DV4 - SN:3708

Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
450	56.7	0.94	10.21	10.21	10.21	0.04	1.00	± 13.4 %
900	55.0	1.05	8.94	8.94	8.94	0.80	0.66	± 12.0 %
1750	53.4	1.49	7.46	7.46	7.46	0.80	0.65	± 12.0 %
2000	53.3	1.52	7.41	7.41	7.41	0.80	0.62	± 12.0 %
2450	52.7	1.95	6.98	6.98	6.98	0.80	0.50	± 12.0 %
5200	49.0	5.30	4.25	4.25	4.25	0.50	1.95	± 13.1 %
5800	48.2	6.00	3.94	3.94	3.94	0.60	1.95	± 13.1 %

[C] Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.
[F] At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

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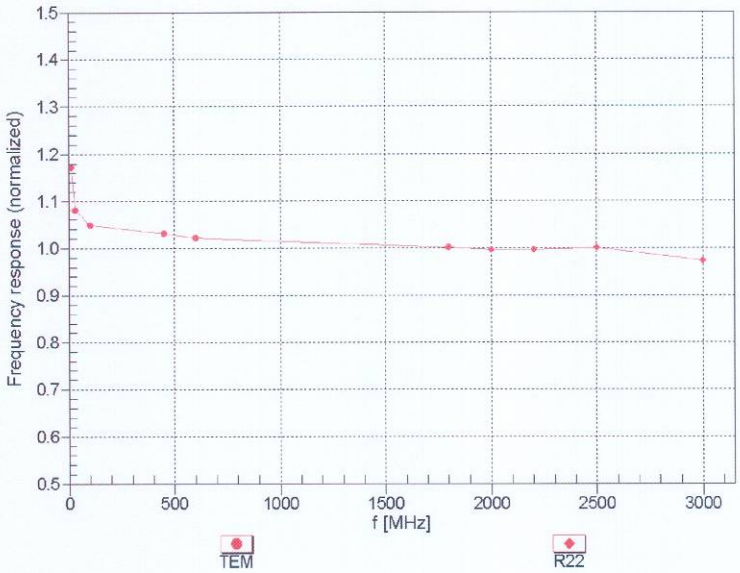
Frequency Response of E-Field
(TEM-Cell:ifi110 EXX, Waveguide: R22)



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

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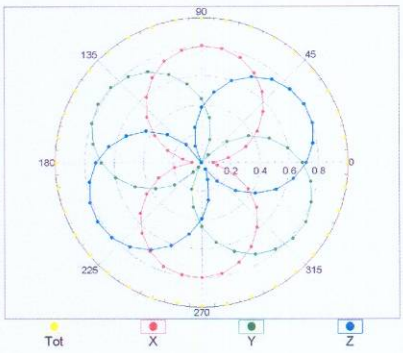
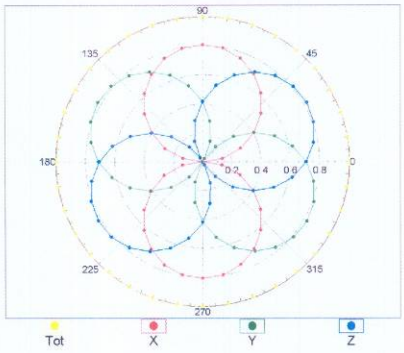
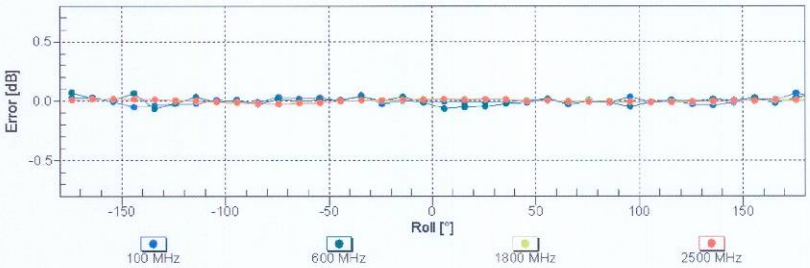
Receiving Pattern (ϕ), ϑ = 0°

f=600 MHz,TEM



f=1800 MHz,R22





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

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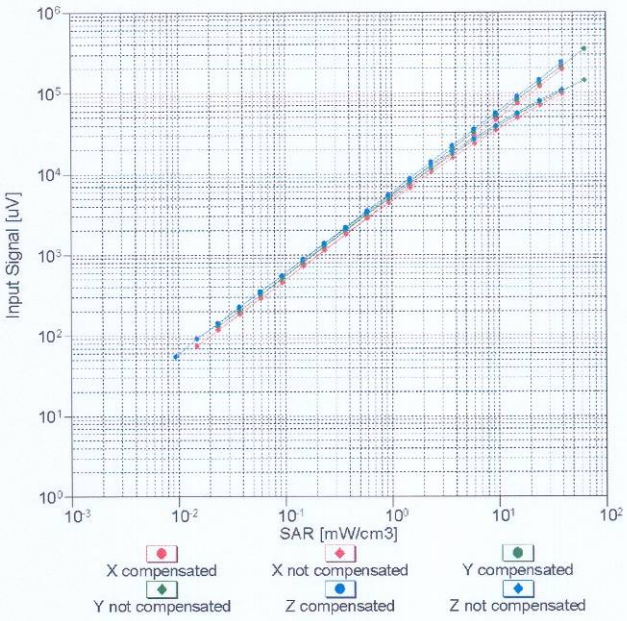
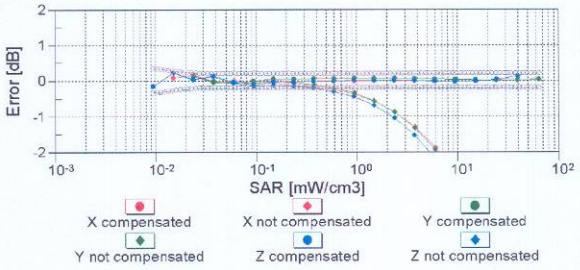
Dynamic Range f(SAR_{head})
(TEM cell , f = 900 MHz)





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

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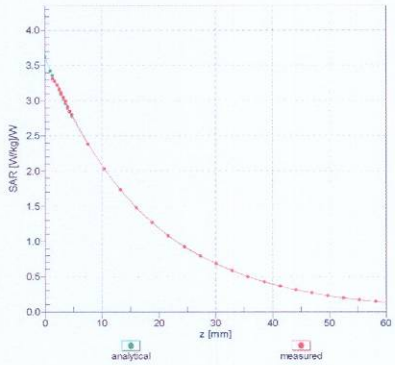
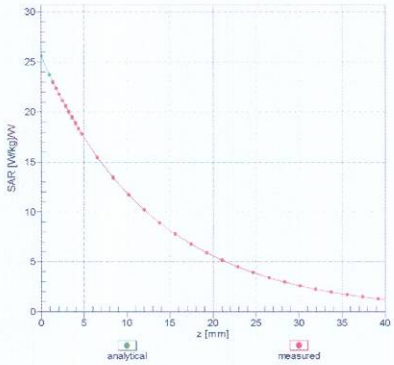
Conversion Factor Assessment

f = 900 MHz,WGLS R9 (H_convF)

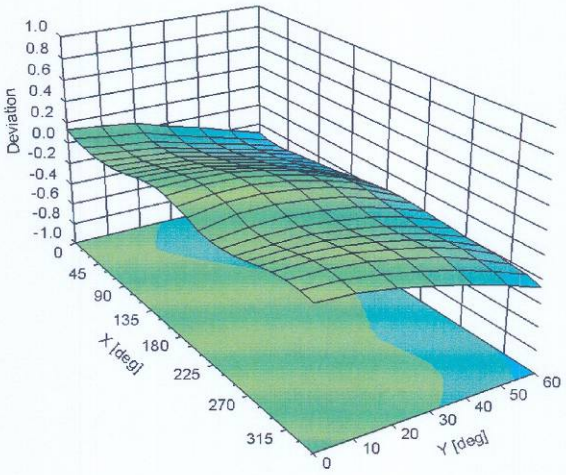


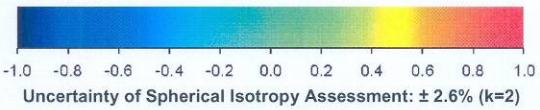
f = 1750 MHz,WGLS R22 (H_convF)



Deviation from Isotropy in Liquid

Error (ϕ, ϑ), f = 900 MHz





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

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3708

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	Not applicable
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	9 mm
Tip Diameter	2.5 mm
Probe Tip to Sensor X Calibration Point	1 mm
Probe Tip to Sensor Y Calibration Point	1 mm
Probe Tip to Sensor Z Calibration Point	1 mm
Recommended Measurement Distance from Surface	2 mm