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## CONFORMANCE TEST REPORT FOR HUMAN EXPOSURE TO ELECTROMAGNETIC FIELDS

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Report No.: SRTC2011-H024-E0054

Product Name: GSM/GPRS/EDGE/WCDMA

Digital Mobile Phone with Bluetooth

Marketing Name: one touch 905M

Product Model: MINI3G M

Applicant: TCT Mobile Limited

Manufacture: TCT Mobile Limited

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

Supplement C (Edition 01-01)

47CFR 2.1093

FCC ID: RAD204

The State Radio\_monitoring\_center Testing Center (SRTC)

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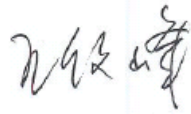
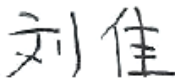
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## Executive summary

<b>Test report no.:</b>	<b>SRTC2011-H024-E0054</b>
<b>Product Model:</b>	<b>MINI3G M</b>
<b>Date of test:</b>	<b>2011.07.01</b>
<b>Date of report:</b>	<b>2011.07.04</b>
<b>Laboratory:</b>	<b>The State Radio_monitoring_center Testing Center (SRTC)</b>
<b>Test has been Carried out in accordance with:</b>	<p>47CFR §2.1093</p> <p>Radiofrequency Radiation Exposure Evaluation: Portable Devices</p> <p><b>FCC OET Bulletin 65 (Edition 97-01), Supplement C (Edition 01-01)</b></p> <p>Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields</p> <p><b>RSS-102</b></p> <p>Evaluation Procedure for Mobile and Portable Radio Transmitters with Respect to Health Canada's Safety Code 6 for Exposure of Humans to Radio Frequency Fields</p> <p><b>IEEE 1528 - 2003</b></p> <p>IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Technique</p>
<b>Documentation:</b>	<b>The documentation of the testing performed on the tested devices is archived for 5 years at SRTC</b>

## Result summary:

Mode	CH/f(MHz)	Power (dBm)	Position	Sar Limit (1g avg) (mW/g)	Measured value (1g avg)(mW/g)	Result
GSM850	128/824.2	32.50	Right cheek	1.6	<b>1.1</b>	PASS
	189/836.4	32.43				

<p>This Test Report Is Issued by: Mr. Song Qizhu Director of the test lab</p> 	<p>Checked by: Mr. Wang Junfeng Deputy director of the test lab</p> 
<p>Tested by: Ms. Liu Jia Test engineer</p> 	<p>Issued date:  <b>2011.07.04</b></p>

**Tables of contents**

1. GENERAL INFORMATION ..... 3

    1.1 Notes of the test report ..... 3

    1.2 Information about the testing laboratory ..... 3

    1.3 Applicant’s details..... 3

    1.4 Manufacturer’s details..... 3

    1.5 Test Details ..... 4

    1.6 Maximum Results ..... 4

        1.6.1 GSM ..... 4

        1.6.2 WCDMA ..... 5

2. DESCRIPTION OF THE DEVICE UNDER TEST ..... 6

    2.1 Description of the Antenna ..... 6

    2.2 Picture of the EUT ..... 6

    2.3 Test Positions for the Device under test ..... 7

    2.4 Picture to demonstrate the required liquid depth ..... 8

3. TEST CONDITIONS ..... 8

    3.1 Temperature and Humidity ..... 8

    3.2 Test Signal, Frequencies and Output Power ..... 8

    3.3 SAR Measurement Set-up ..... 8

4. DESCRIPTION OF THE TEST EQUIPMENT ..... 9

    4.1 Measurement System and Components ..... 9

    4.2 Phantoms ..... 10

    4.3 Tissue Simulants ..... 10

        4.3.1 Tissue Simulant Recipes ..... 11

        4.3.2 System Checking..... 11

        4.3.3 Tissue Simulants used in the Measurements ..... 12

5. DESCRIPTION OF THE TEST PROCEDURE ..... 13

    5.1 Device Holder ..... 13

    5.2 Test positions ..... 14

        5.2.1 Against Phantom Head ..... 14

        5.2.2 Body Worn Configuration ..... 14

    5.3 Scan Procedure..... 14

    5.4 SAR Averaging Methods ..... 14

6. MEASUREMENT UNCERTAINTY ..... 15

7. RESULTS ..... 16

    7.1 Test result..... 16

    7.2 Conducted power ..... 22

    7.3 Summary of Measurement Results (Bluetooth) ..... 24

APPENDIX A: SYSTEM CHECKING SCANS ..... 26

APPENDIX B: MEASUREMENT SCANS ..... 28

APPENDIX C: RELEVANT PAGES FROM PROBE CALIBRATION REPORT(S)..... 91

APPENDIX D: RELEVANT PAGES FROM DIPOLE VALIDATION KIT REPORT(S)..... 97

## 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

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Contacted person: Gong Zhizhou  
Tel: +86-21-61460890  
Fax: +86-21-61460602  
Email: zhizhou.gong@jrdcom.com

## 1.5 Test Details

Period of test	2011.07.01
Batteries used in testing	Li-Lon/CAB3120000C1/BYD LITHIUM BATTERY CO., LTD
State of sample	production unit
Headsets used in testing	CCB3160A10C2/Lianyun Electronic Technology CO.,LTD.
	CCB3160A10C3/Jiangxi Lianchuang Hongsheng
H/W Version	PIO3
S/W Version	sw160
IMEI	012835000000062
Device class/ Multislot class	B/12
DTM	N/A
Notes	As the information described above, there are two 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 CCB3160A10C3.

## 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	189/836.4	32.43	Right cheek	1.6	<b>1.1</b>	PASS
GSM1900	810/1909.8	29.95	Left cheek	1.6	<b>1.03</b>	PASS

### Body Worn Configuration

Mode	CH/f(MHz)	Power (dBm)	Position	Sar Limit (1g avg) (mW/g)	Measured value (1g avg)(mW/g)	Result
GPRS 850	251/848.8	29.51	Towards ground	1.6	<b>0.893</b>	PASS
GPRS 1900	810/1909.8	26.13	Towards ground	1.6	<b>0.58</b>	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	4123/826.4	23.56	Right cheek	1.6	<b>0.772</b>	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	4132/826.4	23.56	Towards ground	1.6	<b>0.613</b>	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 B5
Modulation Mode	GMSK	GMSK	GMSK	8-PSK /GMSK	QPSK
Duty Cycle	1/8	1/8	1/4	1/2	1/1
Transmitter Frequency Range(MHz)	824-849	1850-1910	824-849 1850-1910	824-849 1850-1910	824-849

### 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**

<p><b>Cheek position, left side</b></p>	<p><b>Tilt position, left side</b></p>
<p><b>Cheek position, Right side</b></p>	<p><b>Tilt position, Right side</b></p>
<p><b>FLAT position (towards ground)</b></p>	<p><b>15mm spacer</b></p>



## 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  $\pm 0.02\text{mm}$ . 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 DAE and 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	720	1year	2012.01.19
Dosimetric E-field Probe ES3DV3	3128	1year	2012.04.21
Dipole Validation Kit, D900V2	171	2 years	2012.06.11
Dipole Validation Kit, D1800V2	2d084	2 years	2012.06.11
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	2011.08.20
Amplifier	5S1G4	0323472	N/A	N/A
Power meter	E4417A	MY45101182	1year	2011.08.20
Power Sensor	E4412A	MY41502214	1year	2011.08.20

Power Sensor	E4412A	MY41502130	1year	2011.08.20
Call Tester	8960	GB43194054	1year	2011.08.20
Network Analyzer	8714ET	US40372083	1year	2011.08.20
Dielectric Probe Kit	85070D	US33030365	N/A	N/A

#### Detailed information of Isotropic E-field Probe Type ES3DV3

Construction	Symmetrical design with triangular core Interleaved sensors Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Calibration	Calibration certificate in Appendix C
Frequency	10 MHz to 4 GHz; Linearity: $\pm 0.2$ dB (30 MHz to 4 GHz)
Optical Surface Detection	$\pm 0.2$ mm repeatability in air and clear liquids over diffuse reflecting surfaces
Dimensions	Overall length: 330 mm (Tip: 20 mm) Tip diameter: 3.9 mm (Body: 12 mm) Distance from probe tip to dipole centers: 2.0 mm
Dynamic Range	5 $\mu$ W/g to > 100 mW/g; Linearity: $\pm 0.2$ 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  $\pm 5\%$  of the recommended values. All tests were carried out within 24 hours of measuring the dielectric parameters.

The depth of the tissue simulant was  $15.0 \pm 0.5$  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

#### 1900MHz band

Ingredient	Head (% by weight)	Body (% by weight)
Water	44.45	70.17
DGBE	55.24	29.44
Nacl	0.31	0.39

### 4.3.2 System Checking

The manufacturer calibrates the probes annually. 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 2011.07.01

#### System checking, head tissue simulant

		SAR <sub>1g</sub> [w/kg]	$\epsilon_r$	$\sigma$ [S/m]	Temperature	
					Ambient[°C]	Liquid[°C]
900MHz	Target Value	10.8	41.5±2.1	0.97±0.05	15-30	-
	Measured Value	10.9	41.5	0.98	24.0	22.3

All SAR values are normalized to 1W forward power

		SAR <sub>1g</sub> [w/kg]	ε <sub>r</sub>	σ[S/m]	Temperature	
					Ambient[°C]	Liquid[°C]
1800MHz	Target Value	38.1	40±1.9	1.40±0.07	15-30	-
	Measured Value	38.8	39.4	1.35	24.0	22.3

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. Liquid temperature during the test: 22.3° C。 Tested date is 2011.07.01

Head		ε <sub>r</sub>	σ[S/m]	Temperature	
				Ambient [°C]	Liquid [°C]
850MHz	Recommended Value	41.5±2.1	0.97±0.05	15-30	-
	Measured Value	41.5	0.98	24.0	22.3
1900MHz	Recommended Value	40±1.9	1.40±0.07	15-30	-
	Measured Value	39.0	1.44	24.0	22.3

Body		$\epsilon_r$	$\sigma[S/m]$	Temperature	
				Ambient t [°C]	Liquid [°C]
850MHz	Recommended Value	55.0±2.8	1.05±0.05	15-30	-
	Measured Value	54.6	1.00	24.0	22.3
1900MHz	Recommended Value	53.3±2.7	1.52±0.08	15-30	-
	Measured Value	54.6	1.49	24.0	22.3

## 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**

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## 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)	( $v_i$ ) <sup>V<sub>eff</sub></sup>
<b>Measurement system</b>								
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%	∞
<b>Test Sample Related</b>								
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%	∞



<b>Phantom and Setup</b>								
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)

<b>Limit of SAR (W/kg)</b>	<b>1 g Average</b>
	<b>1.6</b>
<b>Test Case</b>	<b>Measurement Result ( mW/g)</b>
	<b>1g Average</b>
Left hand, Touch cheek, $f_H$	1.06

Left hand, Touch cheek,	$f_M$	1.09
Left hand, Touch cheek,	$f_L$	1.07
Left hand, Tilt 15 Degree,	$f_H$	0.461
Left hand, Tilt 15 Degree,	$f_M$	0.46
Left hand, Tilt 15 Degree,	$f_L$	0.45
Right hand, Touch cheek,	$f_H$	1.07
Right hand, Touch cheek,	$f_M$	<b>1.10</b>
Right hand, Touch cheek,	$f_L$	<b>1.10</b>
Right hand, Tilt 15 Degree,	$f_H$	0.481
Right hand, Tilt 15 Degree,	$f_M$	0.455
Right hand, Tilt 15 Degree,	$f_L$	0.515

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	---	<b>1.10</b>	<b>1.10</b>

**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 $f_M$	0.364
Towards phantom/GSM, with headset 15mm spacer $f_M$	0.321
Towards ground/GPRS, 15mm spacer $f_H$	<b>0.893</b>
Towards ground/GPRS, 15mm spacer $f_M$	0.826
Towards ground/GPRS, 15mm spacer $f_L$	0.842
Towards phantom/GPRS, 15mm spacer $f_M$	0.685
Towards ground/EGPRS, 15mm spacer $f_M$	0.777
Towards phantom/EGPRS, 15mm spacer $f_M$	0.693

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 <sub>L</sub> (MHz)	f <sub>M</sub> (MHz)	f <sub>H</sub> (MHz)
Towards Ground/GPRS	15mm spacer	---	---	<b>0.893</b>

**Mode: GSM1900**

f<sub>L</sub>(MHz)=1850.2MHz      f<sub>M</sub>(MHz)=1880.0MHz      f<sub>H</sub>(MHz)=1909.8MHz

SAR Values (Head, 1900MHz Band)

Limit of SAR (W/kg)	1 g Average
	1.6
Test Case	Measurement Result ( mW/g)
	1g Average
Left hand, Touch cheek, f <sub>H</sub>	<b>1.03</b>
Left hand, Touch cheek, f <sub>M</sub>	0.893
Left hand, Touch cheek, f <sub>L</sub>	0.884
Left hand, Tilt 15 Degree, f <sub>H</sub>	0.635
Left hand, Tilt 15 Degree, f <sub>M</sub>	0.56
Left hand, Tilt 15 Degree, f <sub>L</sub>	0.615
Right hand, Touch cheek, f <sub>H</sub>	0.817
Right hand, Touch cheek, f <sub>M</sub>	0.797
Right hand, Touch cheek, f <sub>L</sub>	0.858
Right hand, Tilt 15 Degree, f <sub>H</sub>	0.605
Right hand, Tilt 15 Degree, f <sub>M</sub>	0.54
Right hand, Tilt 15 Degree, f <sub>L</sub>	0.534

So, the maximum SAR is

Phantom Configuration	Device Test Position	SAR(mW/g)		
		f <sub>L</sub> (MHz)	f <sub>M</sub> (MHz)	f <sub>H</sub> (MHz)
Left Side	Cheek	---	---	<b>1.03</b>

**Mode: GSM1900 (GSM/GPRS/EDGE)**

$f_L$ (MHz)=1850.2MHz       $f_M$ (MHz)=1880.0MHz       $f_H$ (MHz)=1909.8MHz

SAR Values (body, 1900MHz 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 $f_M$	0.452
Towards phantom/GSM, with headset 15mm spacer $f_M$	0.363
Towards ground/GPRS, 15mm spacer $f_H$	<b>0.580</b>
Towards ground/GPRS, 15mm spacer $f_M$	0.567
Towards ground/GPRS, 15mm spacer $f_L$	0.563
Towards phantom/GPRS, 15mm spacer $f_M$	0.532
Towards ground/EGPRS, 15mm spacer $f_M$	0.263
Towards phantom/EGPRS, 15mm spacer $f_M$	0.262

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	---	---	<b>0.580</b>

**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 ,	$f_H$	0.624
Left hand, Touch cheek,	$f_M$	0.667
Left hand, Touch cheek ,	$f_L$	0.701
Left hand, Tilt 15 Degree,	$f_H$	0.433
Left hand, Tilt 15 Degree,	$f_M$	0.408
Left hand, Tilt 15 Degree,	$f_L$	0.536
Right hand, Touch cheek,	$f_H$	0.715
Right hand, Touch cheek,	$f_M$	0.681
Right hand, Touch cheek,	$f_L$	<b>0.772</b>
Right hand, Tilt 15 Degree	$f_H$	0.409
Right hand, Tilt 15 Degree	$f_M$	0.346
Right hand, Tilt 15 Degree,	$f_L$	0.438

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	<b>0.772</b>	---	---

**Mode: WCDMA B5**

$f_L(\text{MHz})=826.4\text{MHz}$      $f_M(\text{MHz})=836.4\text{MHz}$      $f_H(\text{MHz})= 846.6\text{MHz}$

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 $f_H$	0.528
Towards ground, 15mm spacer with headset $f_M$	0.502
Towards ground, 15mm spacer with headset $f_L$	<b>0.613</b>
Towards phantom, 15mm spacer with headset $f_M$	0.468

So, the maximum SAR is

Phantom Configuration	Device Test Position	SAR(mW/g)		
		$f_L(\text{MHz})$	$f_M(\text{MHz})$	$f_H(\text{MHz})$
Towards ground	with headset 15mm spacer	<b>0.613</b>	---	---

## 7.2 Conducted power

Mode	GSM850(Head) Duty cycle: 1:8(12.5%)			GSM1900(Head) Duty cycle: 1:8(12.5%)		
	Channel	128	189	251	512	661
Frequency(MHz)	824.2	836.4	848.8	1850.2	1880.0	1909.8
Measured Power(dBm)	32.50	32.43	32.44	30.04	30.05	29.95

## GPRS/EDGE Measured Power

Mode	GPRS850			GPRS1900		
	EDGE850			EDGE1900		
Channel	128	189	251	512	661	810
Frequency(MHz)	824.2	836.4	848.8	1850.2	1880.0	1909.8
4Downlink1uplink Power(dBm)	32.49	32.42	32.45	30.03	30.02	29.93
	26.65	26.72	26.64	25.18	25.20	25.10
3Downlink2uplink Power(dBm)	31.82	31.74	31.78	28.95	28.88	28.84
	26.10	26.10	26.03	24.54	24.48	24.35
2Downlink3uplink Power(dBm)	30.40	30.25	30.28	27.08	27.01	26.93
	24.50	24.41	24.33	22.80	22.70	22.60
1Downlink4uplink Power(dBm)	29.63	29.50	29.51	26.29	26.24	26.13
	23.48	23.45	23.40	21.81	21.78	21.69

### GPRS/EDGE Averaged Power

Mode	GPRS850			GPRS1900		
	EDGE850			EDGE1900		
Channel	128	189	251	512	661	810
Frequency(MHz)	824.2	836.4	848.8	1850.2	1880.0	1909.8
4Downlink1uplink	23.46	23.39	23.42	21.00	20.99	20.90
Power(dBm)	17.62	17.69	17.61	16.15	16.17	16.07
3Downlink2uplink	25.80	25.72	25.76	22.93	22.86	22.82
Power(dBm)	20.08	20.08	20.01	18.52	18.46	18.33
2Downlink3uplink	26.14	25.99	26.02	22.82	22.75	22.67
Power(dBm)	20.24	20.15	20.07	18.54	18.44	18.34
1Downlink4uplink	26.62	26.49	26.50	23.28	23.23	23.12
Power(dBm)	20.47	20.44	20.39	18.80	18.77	18.68

#### 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 4xslots(1ownlink4plink) for GPRS and EGPRS.

The conducted output power for wcdma:

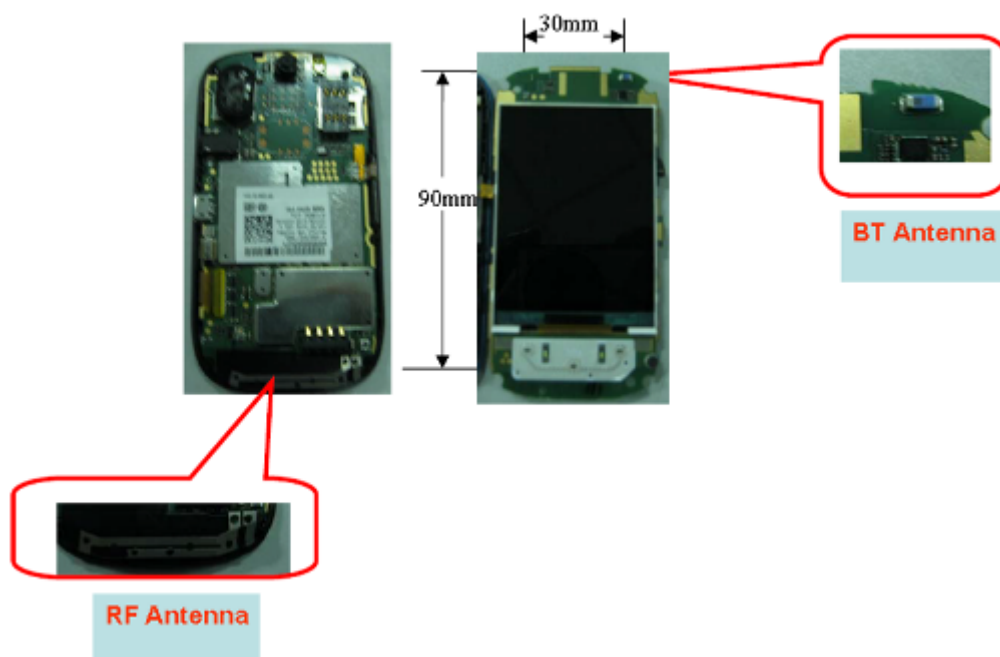


Duty cycle: 1 (100%)

Mode	WCDMA B5		
Channel	4132	4183	4233
Frequency(MHz)	826.4	836.5	846.6
Measured Power(dBm)	23.56	23.87	23.01

### 7.3 Summary of Measurement Results (Bluetooth)

The distance between BT 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	11.17 dBm
2441MHz	10.36 dBm
2480MHz	9.89 dBm

BT& RF

Separation distance  $> 5\text{cm}$

RF TX: Standard-alone SAR required

BT TX: Standard-alone SAR not required ( $P \leq 2P_{\text{ref}}$ )

No simultaneous Tx SAR (BT SAR=0W/kg)

**APPENDIX A: SYSTEM CHECKING SCANS**

SYSTEM CHECKING SCANS	900MHz
<p><b>DUT: Dipole 900 MHz; Type: D900V2; Serial: D900V2 - SN:171</b>            Medium parameters used (interpolated): <math>f = 900 \text{ MHz}</math>; <math>\sigma = 0.95 \text{ mho/m}</math>; <math>\epsilon_r = 40.7</math>; <math>\rho = 1000 \text{ kg/m}^3</math></p> <p><b>DASY4 Configuration:</b></p> <ul style="list-style-type: none"> <li>- Probe: ES3DV3 - SN3128; ConvF(9.03, 9.53, 9.2); Calibrated: 4/21/2011- Sensor-Surface: 4mm (Mechanical Surface Detection)</li> <li>- Electronics: DAE4 - SN720; Calibrated: 1/19/2011</li> <li>- Phantom: SAM 1560; Type: SAM; Serial: 1560</li> <li>- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</li> </ul> <p><b>d=15mm, Pin=250mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid:</b>  <math>dx=5\text{mm}</math>, <math>dy=5\text{mm}</math>, <math>dz=5\text{mm}</math>            Reference Value = 56.3V/m; Power Drift = -0.047 dB            Peak SAR (extrapolated) = 4.08 W/kg  <b>SAR(1 g) = 2.72 mW/g; SAR(10 g) = 1.62 mW/g</b>            Maximum value of SAR (measured) = 2.9 mW/g</p> <div style="display: flex; align-items: flex-start;"> <div data-bbox="151 1339 271 1787" style="margin-right: 20px;"> <p><b>dB</b></p> <p>0.000 -3.62 -7.24 -10.9 -14.5 -18.1</p> </div> <div data-bbox="322 1339 1437 1787"> </div> </div> <p style="margin-top: 20px;">0 dB = 2.9 mW/g</p>	

**SYSTEM CHECKING SCANS**

**1800 MHz**

**DUT: Dipole 1800 MHz; Type: D1800V2; Serial: D1800V2 - SN:2d084**  
**Program Name: System Performance Check at 1800 MHz**

Communication System: CW; Frequency: 1800 MHz; Duty Cycle: 1:1  
 Medium parameters used:  $f = 1800$  MHz;  $\sigma = 1.35$  mho/m;  $\epsilon_r = 39.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
 Phantom section: Flat Section

**DASY4 Configuration:**

- Probe: ES3DV3 - SN3128; ConvF(6.15, 6.5, 6.27); Calibrated: 4/21/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 - SN720; Calibrated: 1/19/2011
- Phantom: SAM 1559; Type: SAM; Serial: 1559
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

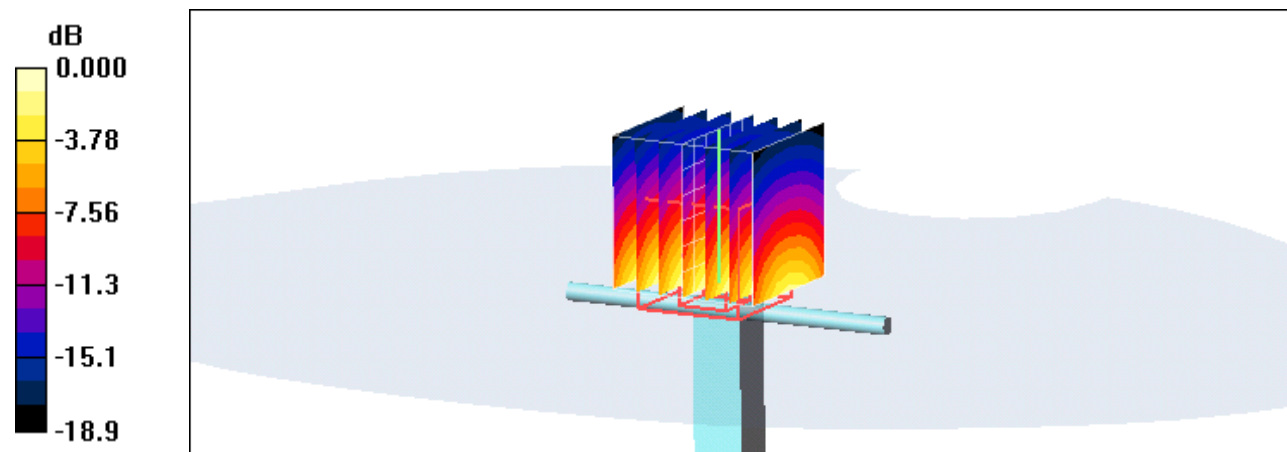
d=10mm, Pin=250mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 90.1 V/m; Power Drift = 0.030 dB

Peak SAR (extrapolated) = 17.9 W/kg

SAR(1 g) = 9.71 mW/g; SAR(10 g) = 5.08 mW/g

Maximum value of SAR (measured) = 10.9 mW/g

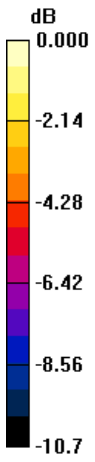
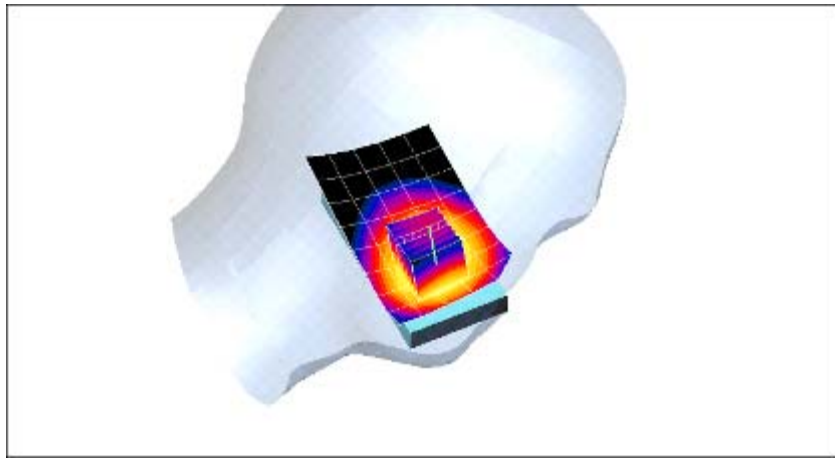


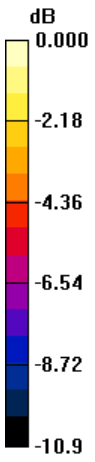
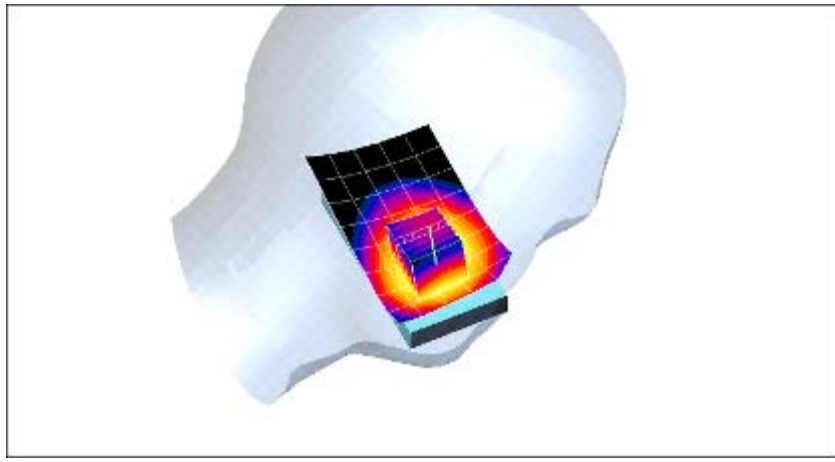
0 dB = 10.9 mW/g

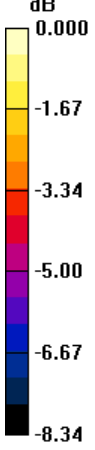
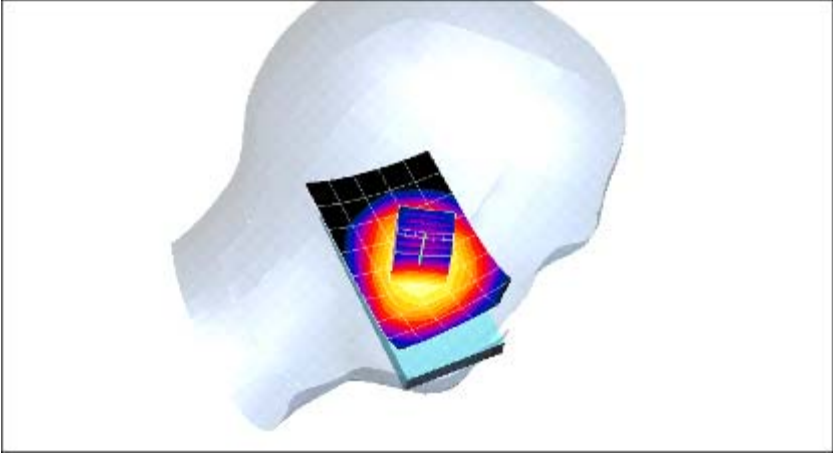
**APPENDIX B: MEASUREMENT SCANS**

**GSM (850MHz/Head)**

Left Side	Cheek	824.2 MHz
<p>Communication System: GSM 850; Frequency: 824.2 MHz; Duty Cycle: 1:8.3            Medium parameters used (interpolated): <math>f = 824.2</math> MHz; <math>\sigma = 0.887</math> mho/m; <math>\epsilon_r = 41.8</math>; <math>\rho = 1000</math> kg/m<sup>3</sup>            Phantom section: Left Section</p> <p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(7.88, 8.3, 8.05); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1560; Type: SAM; Serial: 1560            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p> <p>Touch position - Low/Area Scan (6x9x1): Measurement grid: dx=15mm, dy=15mm            Maximum value of SAR (measured) = 1.10 mW/g</p> <p>Touch position - Low/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid:            dx=5mm, dy=5mm, dz=5mm            Reference Value = 14.2 V/m; Power Drift = 0.008 dB            Peak SAR (extrapolated) = 1.34 W/kg  <b>SAR(1 g) = 1.07 mW/g; SAR(10 g) = 0.796 mW/g</b>            Maximum value of SAR (measured) = 1.12 mW/g</p> <div data-bbox="316 1518 1278 1973"> </div>		

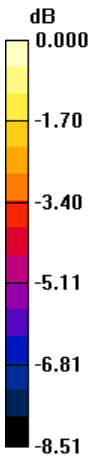
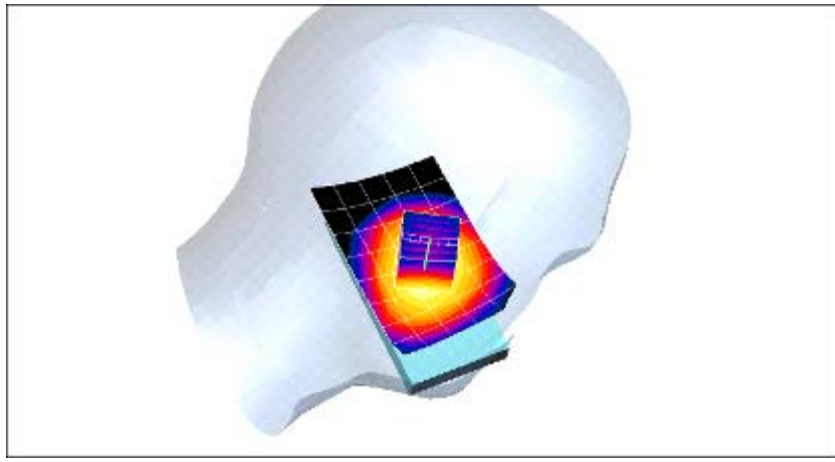
Left Side	Cheek	836.4 MHz
<p>Communication System: GSM 850; Frequency: 836.4 MHz; Duty Cycle: 1:8.3            Medium parameters used (interpolated): <math>f = 836.4</math> MHz; <math>\sigma = 0.897</math> mho/m; <math>\epsilon_r = 41.6</math>;  <math>\rho = 1000</math> kg/m<sup>3</sup>            Phantom section: Left Section</p> <p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(7.88, 8.3, 8.05); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1560; Type: SAM; Serial: 1560            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p> <p><b>Touch position - Middle/Area Scan (6x9x1):</b> Measurement grid: dx=15mm, dy=15mm            Maximum value of SAR (measured) = 1.10 mW/g</p> <p><b>Touch position - Middle/Zoom Scan (7x7x7) (7x7x7)/Cube 0:</b> Measurement grid:            dx=5mm, dy=5mm, dz=5mm            Reference Value = 14.3 V/m; Power Drift = 0.065 dB            Peak SAR (extrapolated) = 1.36 W/kg  <b>SAR(1 g) = 1.09 mW/g; SAR(10 g) = 0.809 mW/g</b>            Maximum value of SAR (measured) = 1.15 mW/g</p>		
<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p><b>dB</b></p>  </div> <div style="flex-grow: 1;">  </div> </div> <p style="text-align: center;">0 dB = 1.15mW/g</p>		

Left Side	Cheek	848.8 MHz
<p>Communication System: GSM 850; Frequency: 848.8 MHz; Duty Cycle: 1:8.3                      Medium parameters used (interpolated): <math>f = 848.8</math> MHz; <math>\sigma = 0.907</math> mho/m; <math>\epsilon_r = 41.6</math>;  <math>\rho = 1000</math> kg/m<sup>3</sup>                      Phantom section: Left Section</p> <p>DASY4 Configuration:                      - Probe: ES3DV3 - SN3128; ConvF(7.88, 8.3, 8.05); Calibrated: 4/21/2011                      - Sensor-Surface: 4mm (Mechanical Surface Detection)                      - Electronics: DAE - SN720; Calibrated: 1/19/2011                      - Phantom: SAM 1560; Type: SAM; Serial: 1560                      - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p> <p><b>Touch position - High/Area Scan (6x9x1):</b> Measurement grid: dx=15mm, dy=15mm                      Maximum value of SAR (measured) = 1.07 mW/g</p> <p><b>Touch position - High/Zoom Scan (7x7x7) (7x7x7)/Cube 0:</b> Measurement grid:                      dx=5mm, dy=5mm, dz=5mm                      Reference Value = 14.2 V/m; Power Drift = 0.009 dB                      Peak SAR (extrapolated) = 1.34 W/kg  <b>SAR(1 g) = 1.06 mW/g; SAR(10 g) = 0.787 mW/g</b>                      Maximum value of SAR (measured) = 1.13 mW/g</p>		
<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p><b>dB</b></p>  </div> <div style="text-align: center;">  </div> </div> <p style="text-align: center; margin-top: 10px;"><b>0 dB = 1.13mW/g</b></p>		

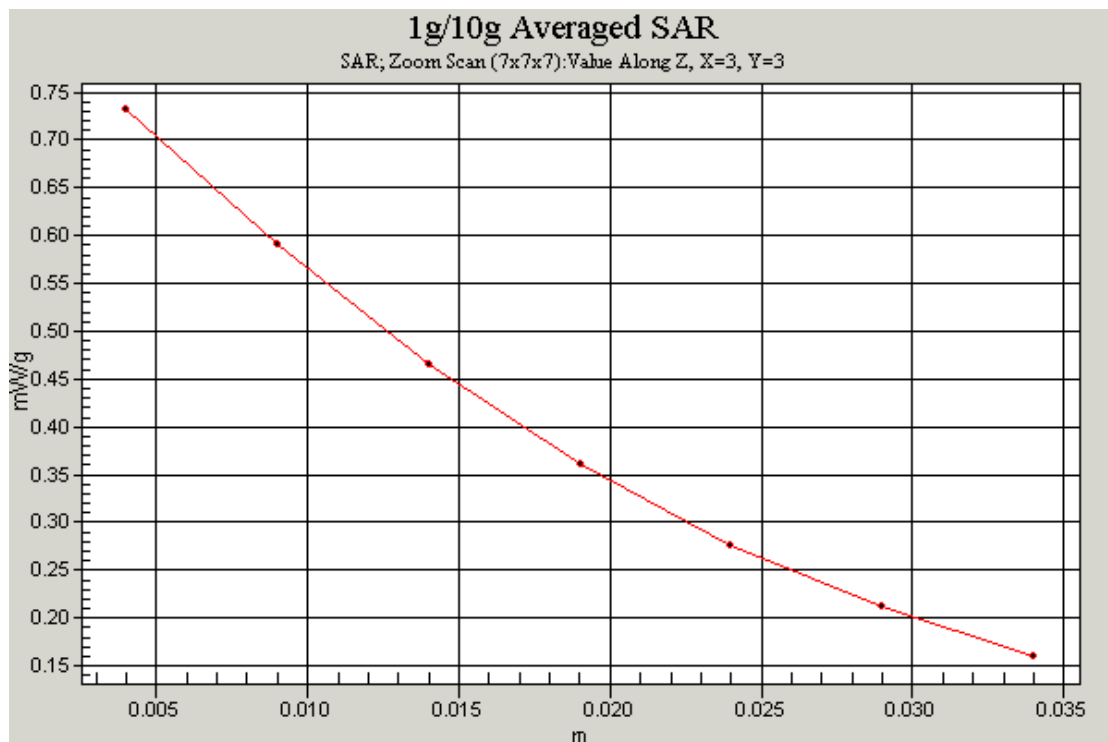
Left Side	Tilt	824.2 MHz
<p>Communication System: GSM 850; Frequency: 824.2 MHz; Duty Cycle: 1:8.3                      Medium parameters used (interpolated): <math>f = 824.2</math> MHz; <math>\sigma = 0.887</math> mho/m; <math>\epsilon_r = 41.8</math>;  <math>\rho = 1000</math> kg/m<sup>3</sup>                      Phantom section: Left Section</p> <p>DASY4 Configuration:                      - Probe: ES3DV3 - SN3128; ConvF(7.88, 8.3, 8.05); Calibrated: 4/21/2011                      - Sensor-Surface: 4mm (Mechanical Surface Detection)                      - Electronics: DAE - SN720; Calibrated: 1/19/2011                      - Phantom: SAM 1560; Type: SAM; Serial: 1560                      - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p> <p><b>Tilt position - Low/Area Scan (6x9x1):</b> Measurement grid: dx=15mm, dy=15mm                      Maximum value of SAR (measured) = 0.460 mW/g</p> <p><b>Tilt position - Low/Zoom Scan (7x7x7)/Cube 0:</b> Measurement grid: dx=5mm, dy=5mm, dz=5mm                      Reference Value = 16.6 V/m; Power Drift = 0.038 dB                      Peak SAR (extrapolated) = 0.559 W/kg  <b>SAR(1 g) = 0.450 mW/g; SAR(10 g) = 0.340 mW/g</b>                      Maximum value of SAR (measured) = 0.473 mW/g</p>		
<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p><b>dB</b></p>  <p>0.000 -1.67 -3.34 -5.00 -6.67 -8.34</p> </div> <div style="flex-grow: 1;">  <p style="text-align: center;">0 dB = 0.473 mW/g</p> </div> </div>		



Left Side	Tilt	836.4 MHz
<p>Communication System: GSM 850; Frequency: 836.4 MHz; Duty Cycle: 1:8.3            Medium parameters used (interpolated): <math>f = 836.4</math> MHz; <math>\sigma = 0.897</math> mho/m; <math>\epsilon_r = 41.6</math>;  <math>\rho = 1000</math> kg/m<sup>3</sup>            Phantom section: Left Section</p> <p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(7.88, 8.3, 8.05); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1560; Type: SAM; Serial: 1560            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p>		
<p><b>Tilt position - Middle/Area Scan (6x9x1):</b> Measurement grid: dx=15mm, dy=15mm</p>		
<p>Maximum value of SAR (measured) = 0.472 mW/g</p>		
<p><b>Tilt position - Middle/Zoom Scan (7x7x7) (7x7x7)/Cube 0:</b> Measurement grid:</p>		
<p>dx=5mm, dy=5mm, dz=5mm</p>		
<p>Reference Value = 16.7 V/m; Power Drift = -0.024 dB</p>		
<p>Peak SAR (extrapolated) = 0.573 W/kg</p>		
<p>SAR(1 g) = 0.460 mW/g; SAR(10 g) = 0.347 mW/g</p>		
<p>Maximum value of SAR (measured) = 0.487 mW/g</p>		
<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p><b>dB</b></p> <p>0.000 -1.79 -3.59 -5.38 -7.18 -8.97</p> </div> <div style="flex-grow: 1;"> </div> </div> <p style="text-align: center;">0 dB = 0.487mW/g</p>		

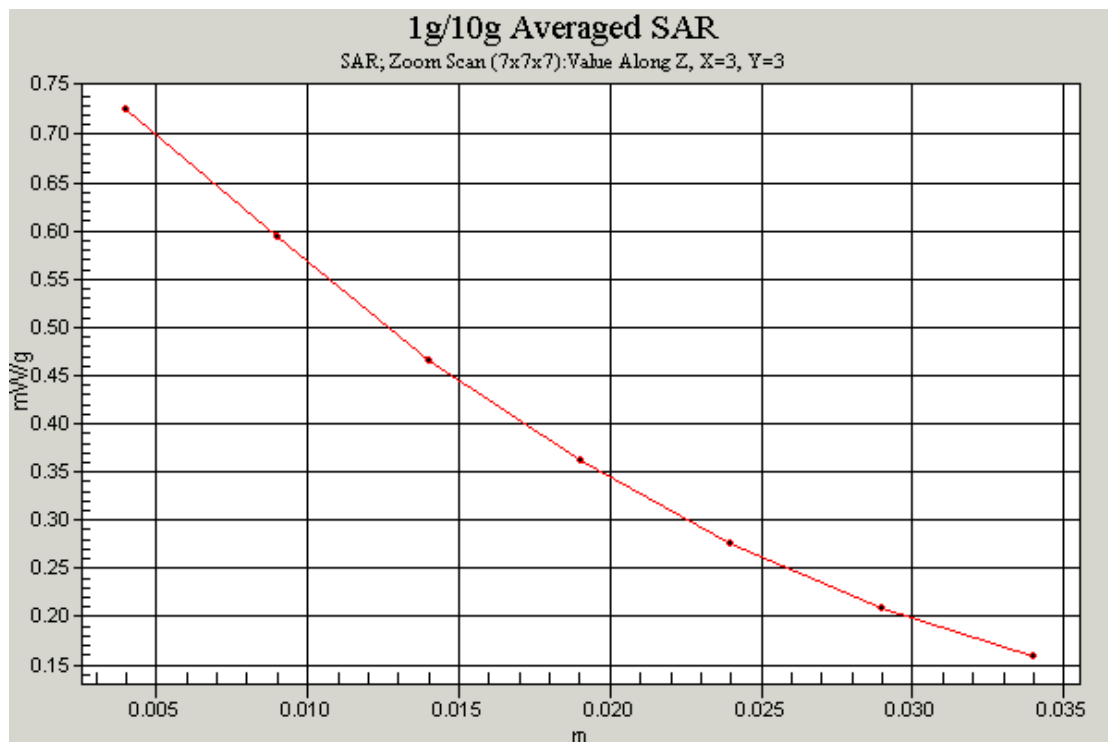
Left Side	Tilt	848.8 MHz
<p>Communication System: GSM 850; Frequency: 848.8 MHz; Duty Cycle: 1:8.3                      Medium parameters used (interpolated): <math>f = 848.8</math> MHz; <math>\sigma = 0.907</math> mho/m; <math>\epsilon_r = 41.6</math>;  <math>\rho = 1000</math> kg/m<sup>3</sup>                      Phantom section: Left Section</p> <p>DASY4 Configuration:                      - Probe: ES3DV3 - SN3128; ConvF(7.88, 8.3, 8.05); Calibrated: 4/21/2011                      - Sensor-Surface: 4mm (Mechanical Surface Detection)                      - Electronics: DAE - SN720; Calibrated: 1/19/2011                      - Phantom: SAM 1560; Type: SAM; Serial: 1560                      - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p> <p><b>Tilt position - High/Area Scan (6x9x1):</b> Measurement grid: dx=15mm, dy=15mm                      Maximum value of SAR (measured) = 0.470 mW/g</p> <p><b>Tilt position - High/Zoom Scan (7x7x7)/Cube 0:</b> Measurement grid: dx=5mm, dy=5mm,                      dz=5mm                      Reference Value = 16.7 V/m; Power Drift = -0.012 dB                      Peak SAR (extrapolated) = 0.579 W/kg  <b>SAR(1 g) = 0.461 mW/g; SAR(10 g) = 0.346 mW/g</b>                      Maximum value of SAR (measured) = 0.488 mW/g</p>		
<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p><b>dB</b></p>  <p>0.000 -1.70 -3.40 -5.11 -6.81 -8.51</p> </div> <div style="text-align: center;">  <p>0 dB = 0.488mW/g</p> </div> </div>		

Right Side	Cheek	824.2 MHz
<p>Communication System: GSM 850; Frequency: 824.2 MHz; Duty Cycle: 1:8.3            Medium parameters used (interpolated): <math>f = 824.2</math> MHz; <math>\sigma = 0.887</math> mho/m; <math>\epsilon_r = 41.8</math>; <math>\rho = 1000</math> kg/m<sup>3</sup>            Phantom section: Right Section</p> <p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(7.88, 8.3, 8.05); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1560; Type: SAM; Serial: 1560            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p> <p>Touch position - Low/Area Scan (6x9x1): Measurement grid: dx=15mm, dy=15mm            Maximum value of SAR (measured) = 1.13 mW/g</p> <p>Touch position - Low/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid:            dx=5mm, dy=5mm, dz=5mm            Reference Value = 16.8 V/m; Power Drift = 0.011 dB            Peak SAR (extrapolated) = 1.32 W/kg  <b>SAR(1 g) = 1.1 mW/g; SAR(10 g) = 0.832 mW/g</b>            Maximum value of SAR (measured) = 1.16 mW/g</p> <div data-bbox="311 1370 1276 1825"> </div>		



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

Right Side	Cheek	836.4 MHz
<p>Communication System: GSM 850; Frequency: 836.4 MHz; Duty Cycle: 1:8.3            Medium parameters used (interpolated): <math>f = 836.4</math> MHz; <math>\sigma = 0.897</math> mho/m; <math>\epsilon_r = 41.6</math>; <math>\rho = 1000</math> kg/m<sup>3</sup>            Phantom section: Right Section</p> <p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(7.88, 8.3, 8.05); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1560; Type: SAM; Serial: 1560            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p> <p>Touch position - Middle/Area Scan (6x9x1): Measurement grid: dx=15mm, dy=15mm            Maximum value of SAR (measured) = 1.13 mW/g</p> <p>Touch position - Middle/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid:            dx=5mm, dy=5mm, dz=5mm            Reference Value = 17.0 V/m; Power Drift = 0.027 dB            Peak SAR (extrapolated) = 1.32 W/kg  <b>SAR(1 g) = 1.1 mW/g; SAR(10 g) = 0.827 mW/g</b>            Maximum value of SAR (measured) = 1.16 mW/g</p> <div data-bbox="311 1370 1276 1825"> </div>		

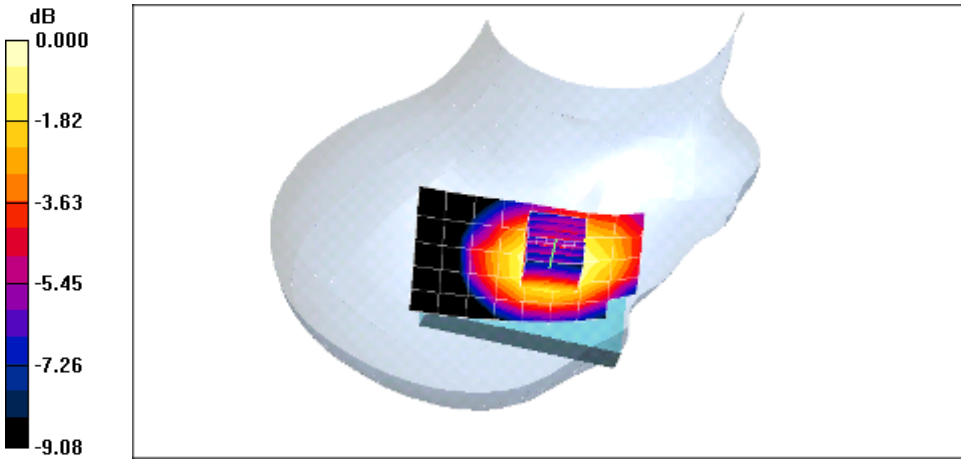


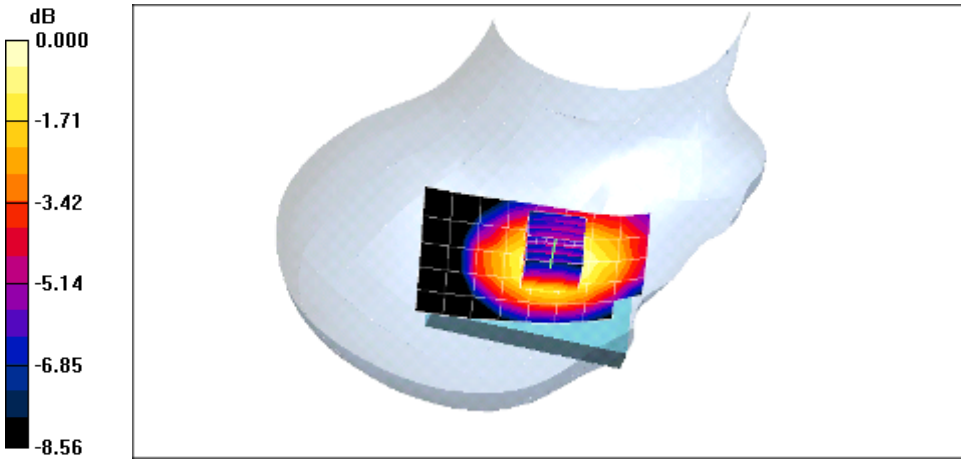
Z-Scan at power reference point (850MHz CH189)

Right Side	Cheek	848.8 MHz
<p>Communication System: GSM 850; Frequency: 848.8 MHz; Duty Cycle: 1:8.3            Medium parameters used (interpolated): <math>f = 848.8 \text{ MHz}</math>; <math>\sigma = 0.907 \text{ mho/m}</math>; <math>\epsilon_r = 41.6</math>;  <math>\rho = 1000 \text{ kg/m}^3</math>            Phantom section: Right Section</p> <p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(7.88, 8.3, 8.05); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1560; Type: SAM; Serial: 1560            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p> <p>Touch position - High/Area Scan (6x9x1): Measurement grid: dx=15mm, dy=15mm            Maximum value of SAR (measured) = 1.11 mW/g</p> <p>Touch position - High/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid:            dx=5mm, dy=5mm, dz=5mm            Reference Value = 16.8 V/m; Power Drift = 0.033 dB            Peak SAR (extrapolated) = 1.28 W/kg  <b>SAR(1 g) = 1.07 mW/g; SAR(10 g) = 0.807 mW/g</b>            Maximum value of SAR (measured) = 1.12 mW/g</p> <div data-bbox="311 1370 1276 1825"> </div>		

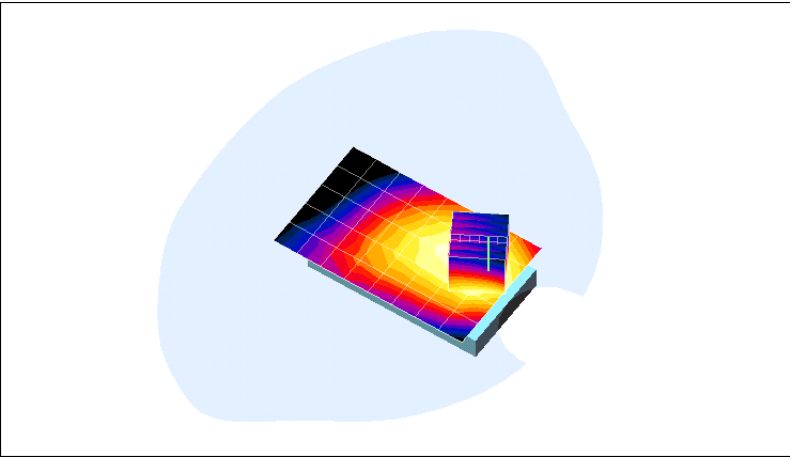
Right Side	Tilt	836.4MHz
<p>Communication System: GSM 850; Frequency: 836.4 MHz; Duty Cycle: 1:8.3            Medium parameters used (interpolated): <math>f = 836.4</math> MHz; <math>\sigma = 0.897</math> mho/m; <math>\epsilon_r = 41.6</math>; <math>\rho = 1000</math> kg/m<sup>3</sup>            Phantom section: Right Section</p> <p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(7.88, 8.3, 8.05); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1560; Type: SAM; Serial: 1560            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p> <p><b>Tilt position - Middle/Area Scan (6x9x1):</b> Measurement grid: dx=15mm, dy=15mm            Maximum value of SAR (measured) = 0.462 mW/g</p> <p><b>Tilt position - Middle/Zoom Scan (7x7x7) (7x7x7)/Cube 0:</b> Measurement grid:            dx=5mm, dy=5mm, dz=5mm            Reference Value = 14.0 V/m; Power Drift = 0.004 dB            Peak SAR (extrapolated) = 0.557 W/kg  <b>SAR(1 g) = 0.455 mW/g; SAR(10 g) = 0.344 mW/g</b>            Maximum value of SAR (measured) = 0.477 mW/g</p> <div data-bbox="311 1370 1276 1825"> </div> <p style="text-align: center;">0 dB = 0.477mW/g</p>		

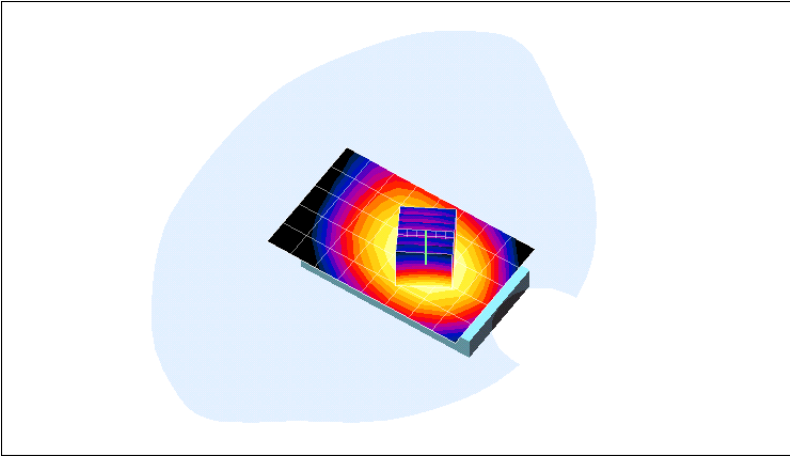


Right Side	Tilt	848.8MHz
<p>Communication System: GSM 850; Frequency: 848.8 MHz; Duty Cycle: 1:8.3            Medium parameters used (interpolated): <math>f = 848.8</math> MHz; <math>\sigma = 0.907</math> mho/m; <math>\epsilon_r = 41.6</math>; <math>\rho = 1000</math> kg/m<sup>3</sup>            Phantom section: Right Section</p> <p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(7.88, 8.3, 8.05); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1560; Type: SAM; Serial: 1560            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p> <p><b>Tilt position - High/Area Scan (6x9x1):</b> Measurement grid: dx=15mm, dy=15mm            Maximum value of SAR (measured) = 0.486 mW/g</p> <p><b>Tilt position - High/Zoom Scan (7x7x7)/Cube 0:</b> Measurement grid: dx=5mm, dy=5mm, dz=5mm            Reference Value = 14.0 V/m; Power Drift = 0.058 dB            Peak SAR (extrapolated) = 0.592 W/kg  <b>SAR(1 g) = 0.481 mW/g; SAR(10 g) = 0.362 mW/g</b>            Maximum value of SAR (measured) = 0.506 mW/g</p>		
 <p>0 dB = 0.506mW/g</p>		

Right Side	Tilt	824.2MHz
<p>Communication System: GSM 850; Frequency: 824.2 MHz; Duty Cycle: 1:8.3            Medium parameters used (interpolated): <math>f = 824.2</math> MHz; <math>\sigma = 0.887</math> mho/m; <math>\epsilon_r = 41.8</math>; <math>\rho = 1000</math> kg/m<sup>3</sup>            Phantom section: Right Section</p> <p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(7.88, 8.3, 8.05); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1560; Type: SAM; Serial: 1560            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p> <p><b>Tilt position - Low/Area Scan (6x9x1):</b> Measurement grid: dx=15mm, dy=15mm            Maximum value of SAR (measured) = 0.521 mW/g</p> <p><b>Tilt position - Low/Zoom Scan (7x7x7)/Cube 0:</b> Measurement grid: dx=5mm, dy=5mm, dz=5mm            Reference Value = 16.8 V/m; Power Drift = -0.004 dB            Peak SAR (extrapolated) = 0.639 W/kg  <b>SAR(1 g) = 0.515 mW/g; SAR(10 g) = 0.387 mW/g</b>            Maximum value of SAR (measured) = 0.546 mW/g</p>		
 <p>0 dB = 0.546mW/g</p>		

## GSM with headset (850MHz/Flat)

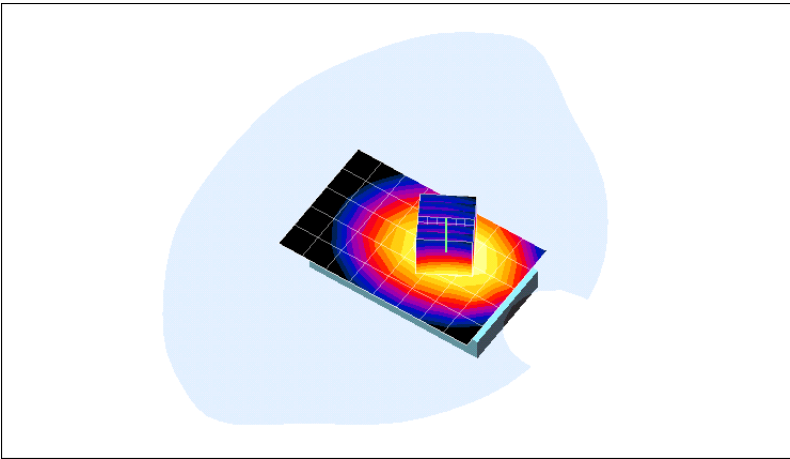
FLAT	Towards ground	836.4 MHz
<p>Communication System: GSM 850; Frequency: 836.4 MHz; Duty Cycle: 1:8.3            Medium parameters used: <math>f = 836.41 \text{ MHz}</math>; <math>\sigma = 0.96 \text{ mho/m}</math>; <math>\epsilon_r = 55.9</math>; <math>\rho = 1000 \text{ kg/m}^3</math>            Phantom section: Flat Section</p> <p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(6.78, 7.02, 6.8); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1560; Type: SAM; Serial: 1560            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p> <p><b>Towards ground - Middle/Area Scan (6x9x1):</b> Measurement grid: dx=15mm, dy=15mm            Maximum value of SAR (measured) = 0.389 mW/g</p> <p><b>Towards ground - Middle/Zoom Scan (7x7x7) (7x7x7)/Cube 0:</b> Measurement grid:            dx=5mm, dy=5mm, dz=5mm            Reference Value = 14.8 V/m; Power Drift = 0.017 dB            Peak SAR (extrapolated) = 0.521 W/kg            SAR(1 g) = 0.364 mW/g; SAR(10 g) = 0.259 mW/g</p>		
<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p><b>dB</b></p> <p>0.000</p> <p>-2.22</p> <p>-4.44</p> <p>-6.66</p> <p>-8.88</p> <p>-11.1</p> </div>  </div> <p style="text-align: center;">0 dB = 0.259mW/g</p>		

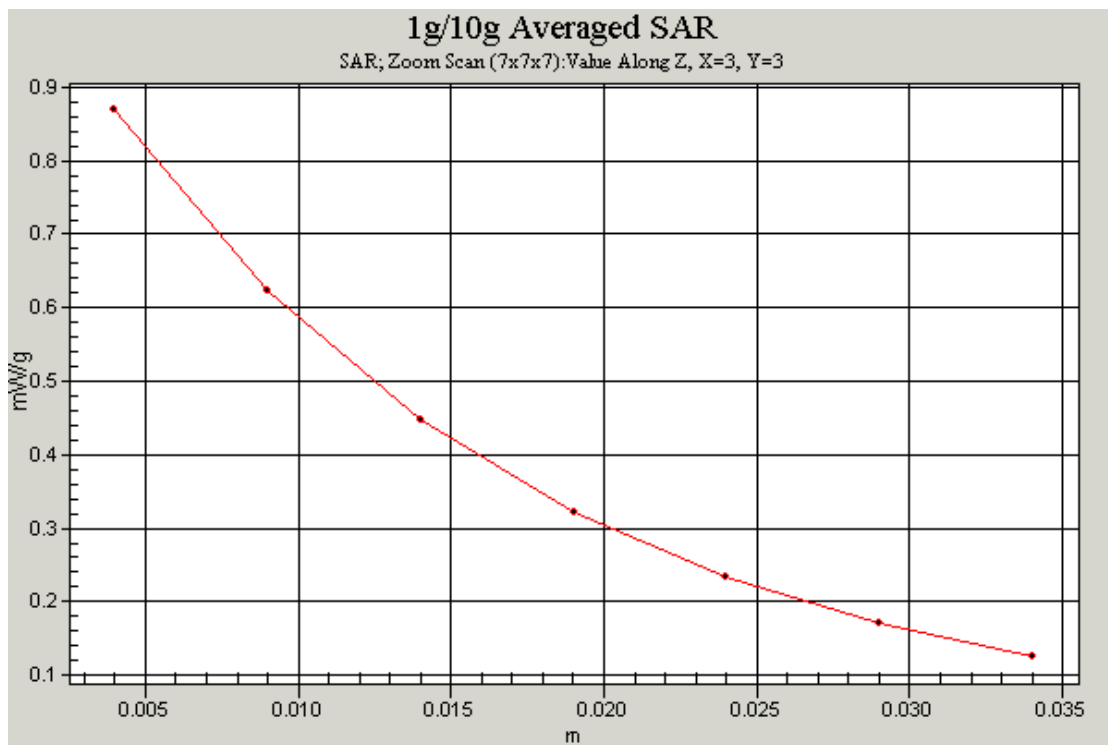
FLAT	Towards phantom	836.4 MHz
<p>Communication System: GSM 850; Frequency: 836.4 MHz; Duty Cycle: 1:8.3            Medium parameters used: <math>f = 836.41</math> MHz; <math>\sigma = 0.96</math> mho/m; <math>\epsilon_r = 55.9</math>; <math>\rho = 1000</math> kg/m<sup>3</sup>            Phantom section: Flat Section</p>		
<p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(6.78, 7.02, 6.8); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1560; Type: SAM; Serial: 1560            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p>		
<p><b>Towards phantom - Middle/Area Scan (6x9x1):</b> Measurement grid: dx=15mm, dy=15mm            Maximum value of SAR (measured) = 0.331 mW/g</p>		
<p><b>Towards phantom - Middle/Zoom Scan (7x7x7) (7x7x7)/Cube 0:</b> Measurement grid:            dx=5mm, dy=5mm, dz=5mm            Reference Value = 16.1 V/m; Power Drift = 0.064 dB            Peak SAR (extrapolated) = 0.412 W/kg  <b>SAR(1 g) = 0.321 mW/g; SAR(10 g) = 0.237 mW/g</b>            Maximum value of SAR (measured) = 0.338 mW/g</p>		
<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p><b>dB</b></p> <p>0.000</p> <p>-1.91</p> <p>-3.81</p> <p>-5.72</p> <p>-7.62</p> <p>-9.53</p> </div> <div style="flex-grow: 1;">  </div> </div> <p style="text-align: center; margin-top: 10px;">0 dB = 0.338 mW/g</p>		

## GSM (850MHz with GPRS/Flat)

FLAT	Towards ground	824.2 MHz
<p>Communication System: GSM 850; Frequency: 824.2 MHz; Duty Cycle: 1:8.3            Medium parameters used (interpolated): <math>f = 824.2</math> MHz; <math>\sigma = 0.95</math> mho/m; <math>\epsilon_r = 56</math>; <math>\rho = 1000</math> kg/m<sup>3</sup>            Phantom section: Flat Section</p> <p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(6.78, 7.02, 6.8); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1560; Type: SAM; Serial: 1560            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p> <p>Towards ground - Low GPRS/Area Scan (6x9x1): Measurement grid: dx=15mm, dy=15mm            Maximum value of SAR (measured) = 0.896 mW/g</p> <p>Towards ground - Low GPRS/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid:            dx=5mm, dy=5mm, dz=5mm            Reference Value = 23.8 V/m; Power Drift = -0.024 dB            Peak SAR (extrapolated) = 1.17 W/kg            SAR(1 g) = 0.842 mW/g; SAR(10 g) = 0.585 mW/g</p> <div data-bbox="331 1391 1254 1845"> </div> <p>0 dB = 0.585mW/g</p>		

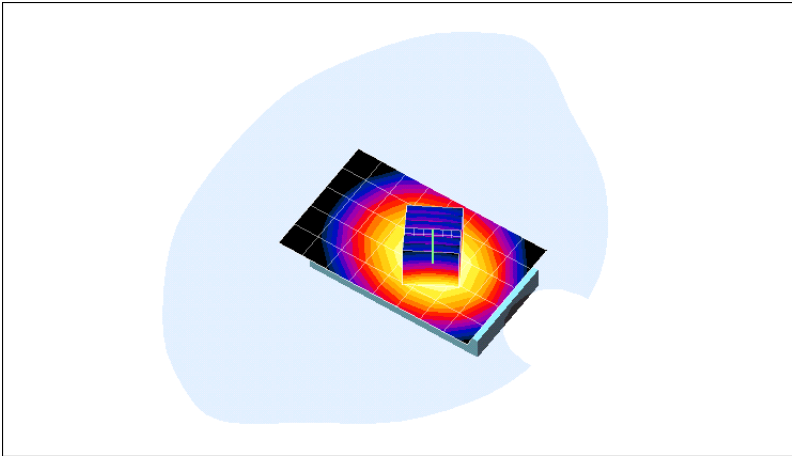
FLAT	Towards ground	836.4 MHz
<p>Communication System: GSM 850; Frequency: 836.4 MHz; Duty Cycle: 1:8.3            Medium parameters used: <math>f = 836.41 \text{ MHz}</math>; <math>\sigma = 0.96 \text{ mho/m}</math>; <math>\epsilon_r = 55.9</math>; <math>\rho = 1000 \text{ kg/m}^3</math>            Phantom section: Flat Section</p> <p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(6.78, 7.02, 6.8); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1560; Type: SAM; Serial: 1560            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p> <p><b>Towards ground - Middle GPRS/Area Scan (6x9x1):</b> Measurement grid: dx=15mm, dy=15mm            Maximum value of SAR (measured) = 0.870 mW/g</p> <p><b>Towards ground - Middle GPRS/Zoom Scan (7x7x7) (7x7x7)/Cube 0:</b> Measurement grid: dx=5mm, dy=5mm, dz=5mm            Reference Value = 24.6 V/m; Power Drift = -0.120 dB            Peak SAR (extrapolated) = 1.15 W/kg  <b>SAR(1 g) = 0.826 mW/g; SAR(10 g) = 0.571 mW/g</b>            Maximum value of SAR (measured) = 0.884 mW/g</p> <div data-bbox="331 1429 1252 1892"> </div> <p>0 dB = 0.884mW/g</p>		

FLAT	Towards ground	848.8 MHz
<p>Communication System: GSM 850; Frequency: 848.8 MHz; Duty Cycle: 1:8.3            Medium parameters used (interpolated): <math>f = 848.8</math> MHz; <math>\sigma = 0.969</math> mho/m; <math>\epsilon_r = 55.8</math>; <math>\rho = 1000</math> kg/m<sup>3</sup>            Phantom section: Flat Section</p> <p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(6.78, 7.02, 6.8); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1560; Type: SAM; Serial: 1560            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p> <p>Towards ground - High GPRS/Area Scan (6x9x1): Measurement grid: dx=15mm, dy=15mm            Maximum value of SAR (measured) = 0.862 mW/g</p> <p>Towards ground - High GPRS/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid:            dx=5mm, dy=5mm, dz=5mm            Reference Value = 24.1 V/m; Power Drift = 0.123 dB            Peak SAR (extrapolated) = 1.93 W/kg  <b>SAR(1 g) = 0.893 mW/g; SAR(10 g) = 0.583 mW/g</b>            Maximum value of SAR (measured) = 0.869 mW/g</p>		
<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p><b>dB</b></p> <p>0.000</p> <p>-2.22</p> <p>-4.44</p> <p>-6.66</p> <p>-8.88</p> <p>-11.1</p> </div> <div style="flex-grow: 1;">  <p style="text-align: center;">0 dB = 0.869mW/g</p> </div> </div>		

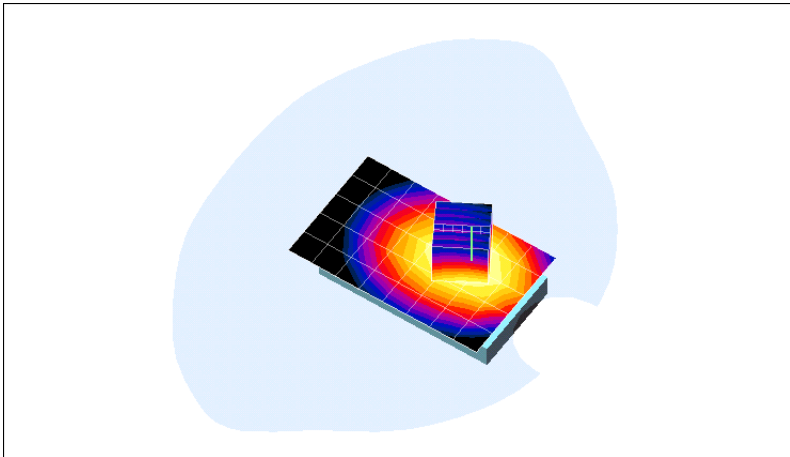


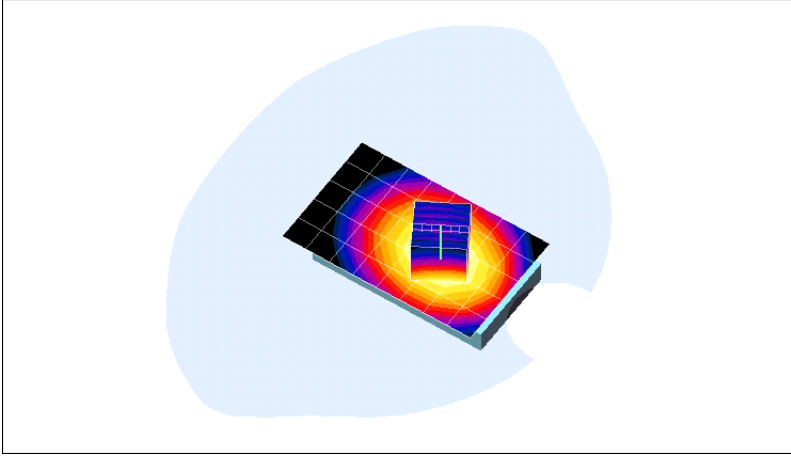
Z-Scan at power reference point (850MHz CH251)



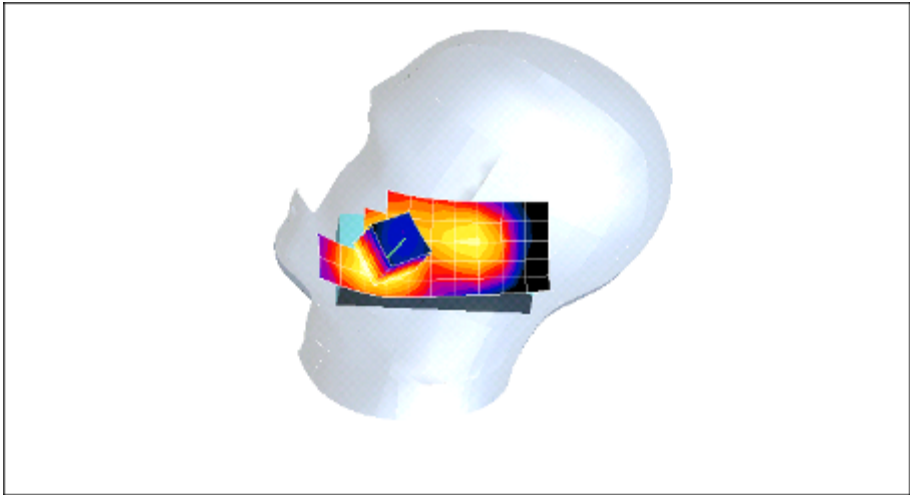
FLAT	Towards phantom	836.4 MHz
<p>Communication System: GSM 850; Frequency: 836.4 MHz; Duty Cycle: 1:8.3            Medium parameters used: <math>f = 836.41</math> MHz; <math>\sigma = 0.96</math> mho/m; <math>\epsilon_r = 55.9</math>; <math>\rho = 1000</math> kg/m<sup>3</sup>            Phantom section: Flat Section</p> <p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(6.78, 7.02, 6.8); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1560; Type: SAM; Serial: 1560            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p> <p><b>Towards phantom - Middle GPRS/Area Scan (6x9x1):</b> Measurement grid: dx=15mm, dy=15mm            Maximum value of SAR (measured) = 0.726 mW/g</p> <p><b>Towards phantom - Middle GPRS/Zoom Scan (7x7x7) (7x7x7)/Cube 0:</b> Measurement grid: dx=5mm, dy=5mm, dz=5mm            Reference Value = 23.5 V/m; Power Drift = -0.038 dB            Peak SAR (extrapolated) = 0.915 W/kg  <b>SAR(1 g) = 0.685 mW/g; SAR(10 g) = 0.493 mW/g</b>            Maximum value of SAR (measured) = 0.723 mW/g</p>		
<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p><b>dB</b></p> <p>0.000</p> <p>-1.90</p> <p>-3.80</p> <p>-5.70</p> <p>-7.60</p> <p>-9.50</p> </div>  </div> <p style="text-align: center;">0 dB = 0.723mW/g</p>		

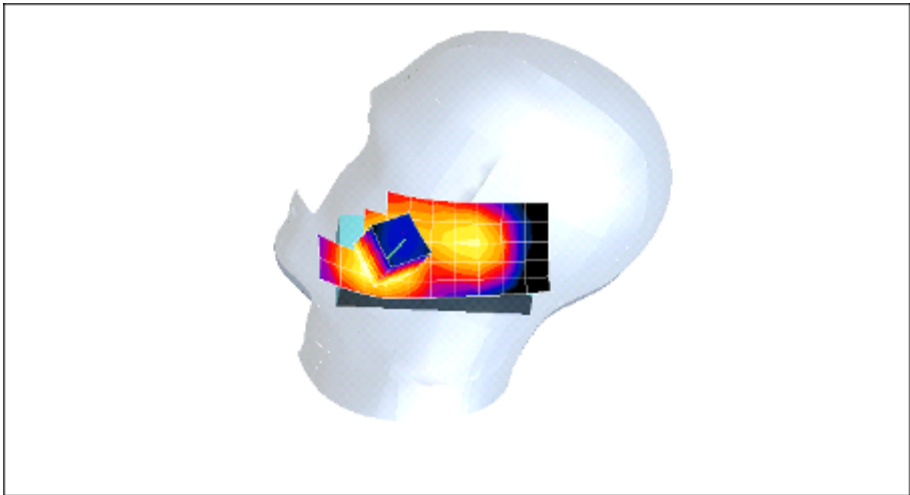
## GSM (850MHz with EGPRS/Flat)

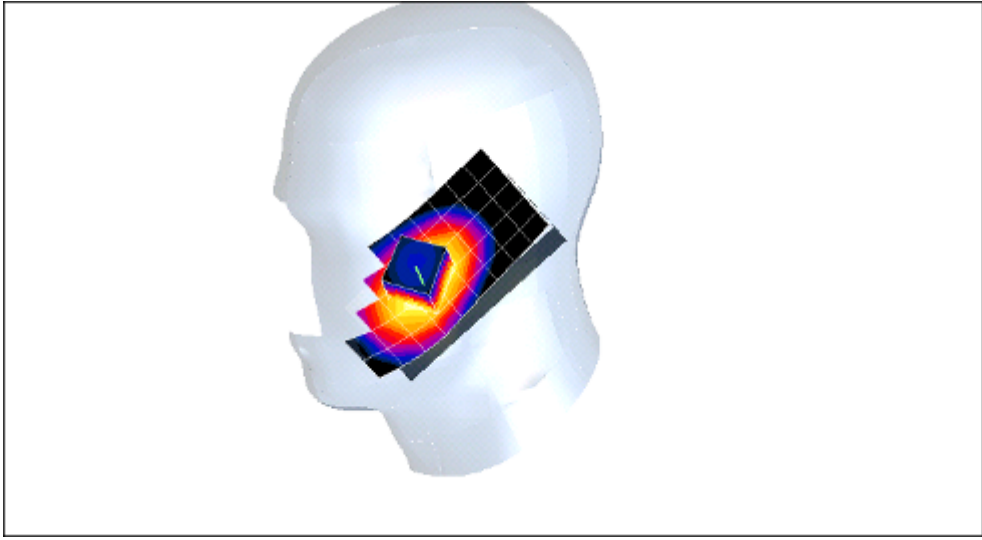
FLAT	Towards ground	836.4 MHz
<p>Communication System: GSM 850; Frequency: 836.4 MHz; Duty Cycle: 1:8.3            Medium parameters used: <math>f = 836.41</math> MHz; <math>\sigma = 0.96</math> mho/m; <math>\epsilon_r = 55.9</math>; <math>\rho = 1000</math> kg/m<sup>3</sup>            Phantom section: Flat Section</p> <p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(6.78, 7.02, 6.8); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1560; Type: SAM; Serial: 1560            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p> <p><b>Towards ground - Middle EDGE/Area Scan (6x9x1):</b> Measurement grid: dx=15mm, dy=15mm            Maximum value of SAR (measured) = 0.808 mW/g</p> <p><b>Towards ground - Middle EDGE/Zoom Scan (7x7x7) (7x7x7)/Cube 0:</b> Measurement grid: dx=5mm, dy=5mm, dz=5mm            Reference Value = 22.1 V/m; Power Drift = -0.082 dB            Peak SAR (extrapolated) = 1.10 W/kg  <b>SAR(1 g) = 0.777 mW/g; SAR(10 g) = 0.538 mW/g</b>            Maximum value of SAR (measured) = 0.828 mW/g</p>		
<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p><b>dB</b></p> <p>0.000</p> <p>-2.08</p> <p>-4.16</p> <p>-6.24</p> <p>-8.32</p> <p>-10.4</p> </div>  </div> <p style="text-align: center;">0 dB = 0.828mW/g</p>		

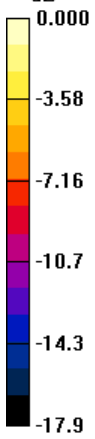
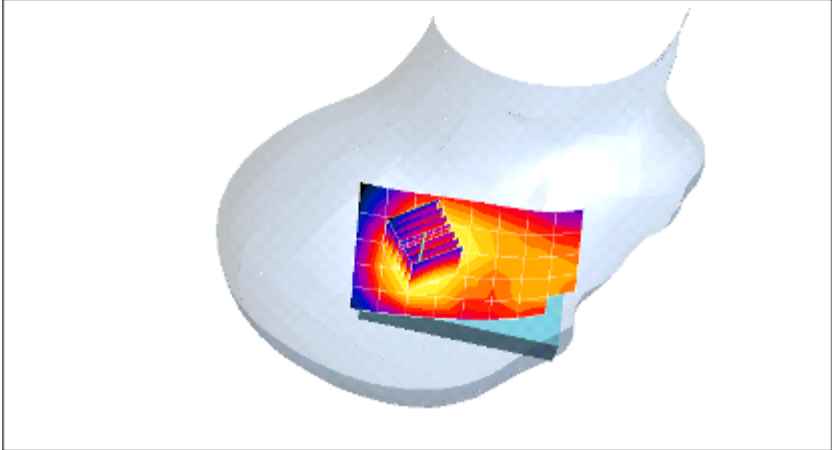
FLAT	Towards phantom	836.4 MHz
<p>Communication System: GSM 850; Frequency: 836.4 MHz; Duty Cycle: 1:8.3            Medium parameters used: <math>f = 836.41 \text{ MHz}</math>; <math>\sigma = 0.96 \text{ mho/m}</math>; <math>\epsilon_r = 55.9</math>; <math>\rho = 1000 \text{ kg/m}^3</math>            Phantom section: Flat Section</p> <p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(6.78, 7.02, 6.8); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1560; Type: SAM; Serial: 1560            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p> <p><b>Towards phantom - Middle EDGE/Area Scan (6x9x1):</b> Measurement grid: dx=15mm, dy=15mm            Maximum value of SAR (measured) = 0.712 mW/g</p> <p><b>Towards phantom - Middle EDGE/Zoom Scan (7x7x7) (7x7x7)/Cube 0:</b> Measurement grid: dx=5mm, dy=5mm, dz=5mm            Reference Value = 22.5 V/m; Power Drift = -0.033 dB            Peak SAR (extrapolated) = 0.923 W/kg  <b>SAR(1 g) = 0.693 mW/g; SAR(10 g) = 0.497 mW/g</b>            Maximum value of SAR (measured) = 0.733 mW/g</p>		
<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p><b>dB</b></p> <p>0.000</p> <p>-1.91</p> <p>-3.83</p> <p>-5.74</p> <p>-7.66</p> <p>-9.57</p> </div>  </div> <p style="text-align: center;">0 dB = 0.733mW/g</p>		

## GSM (1900MHz/Head)

Right Side	Cheek	1850.2 MHz
<p>Communication System: PCS1900; Frequency: 1850.2 MHz; Duty Cycle: 1:8.3            Medium parameters used (interpolated): <math>f = 1850.2</math> MHz; <math>\sigma = 1.41</math> mho/m; <math>\epsilon_r = 39.2</math>;  <math>\rho = 1000</math> kg/m<sup>3</sup>            Phantom section: Right Section</p> <p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(4.95, 5.22, 5.06); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1559; Type: SAM; Serial: 1559            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p> <p>Touch position - Middle/Area Scan (6x11x1): Measurement grid: dx=15mm, dy=15mm            Maximum value of SAR (measured) = 0.850 mW/g</p> <p>Touch position - Middle/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid:            dx=5mm, dy=5mm, dz=5mm            Reference Value = 10.7 V/m; Power Drift = 0.101 dB            Peak SAR (extrapolated) = 1.05 W/kg  <b>SAR(1 g) = 0.858 mW/g; SAR(10 g) = 0.632 mW/g</b>            Maximum value of SAR (measured) = 0.905 mW/g</p>		
<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p><b>dB</b></p> <p>0.000</p> <p>-1.77</p> <p>-3.54</p> <p>-5.32</p> <p>-7.09</p> <p>-8.86</p> </div>  </div> <p style="text-align: center;">0 dB = 0.905mW/g</p>		

Right Side	Cheek	1880.0 MHz
<p>Communication System: cdma PCS (2000 ,1900); Frequency: 1880 MHz;Duty Cycle: 1:1                      Medium parameters used: <math>f = 1880</math> MHz; <math>\sigma = 1.44</math> mho/m; <math>\epsilon_r = 39</math>; <math>\rho = 1000</math> kg/m<sup>3</sup>                      Phantom section: Right Section</p> <p>DASY4 Configuration:                      - Probe: ES3DV3 - SN3128; ConvF(4.95, 5.22, 5.06); Calibrated: 4/21/2011                      - Sensor-Surface: 4mm (Mechanical Surface Detection)                      - Electronics: DAE - SN720; Calibrated: 1/19/2011                      - Phantom: SAM 1559; Type: SAM; Serial: 1559                      - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p> <p><b>Touch position - Middle /Area Scan (6x11x1)</b>: Measurement grid: dx=15mm, dy=15mm                      Maximum value of SAR (measured) = 0.855 mW/g</p> <p><b>Touch position - Middle/Zoom Scan (7x7x7) (7x7x7)/Cube 0</b>: Measurement grid:                      dx=5mm, dy=5mm, dz=5mm                      Reference Value = 14.1 V/m; Power Drift = -0.177 dB                      Peak SAR (extrapolated) = 1.20 W/kg                      SAR(1 g) = 0.797 mW/g; SAR(10 g) = 0.486 mW/g</p>		
<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p><b>dB</b></p> <p>0.000</p> <p>-3.36</p> <p>-6.72</p> <p>-10.1</p> <p>-13.4</p> <p>-16.8</p> </div>  </div> <p style="text-align: center;">0 dB = 0.885mW/g</p>		

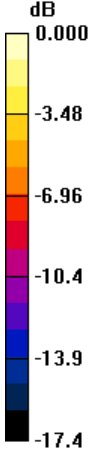
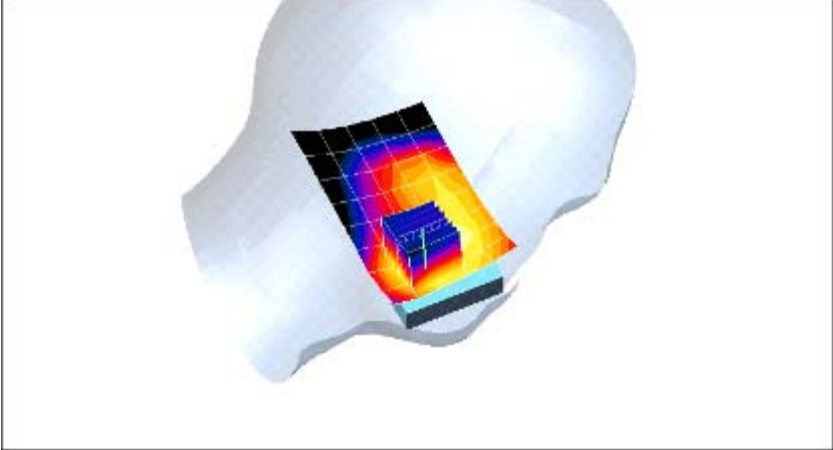
Right Side	Cheek	1909.8 MHz
<p>Communication System: PCS1900; Frequency: 1909.8 MHz; Duty Cycle: 1:8.3            Medium parameters used: <math>f = 1910</math> MHz; <math>\sigma = 1.46</math> mho/m; <math>\epsilon_r = 38.8</math>; <math>\rho = 1000</math> kg/m<sup>3</sup>            Phantom section: Right Section</p>		
<p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(4.95, 5.22, 5.06); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1559; Type: SAM; Serial: 1559            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p>		
<p>Touch position - High/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm            Maximum value of SAR (measured) = 0.806 mW/g</p>		
<p>Touch position - High/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid:            dx=5mm, dy=5mm, dz=5mm            Reference Value = 10.5 V/m; Power Drift = 0.167 dB            Peak SAR (extrapolated) = 1.02 W/kg  <b>SAR(1 g) = 0.817 mW/g; SAR(10 g) = 0.600 mW/g</b>            Maximum value of SAR (measured) = 0.873 mW/g</p>		
<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p><b>dB</b></p> <p>0.000</p> <p>-1.75</p> <p>-3.50</p> <p>-5.26</p> <p>-7.01</p> <p>-8.76</p> </div>  </div> <p style="text-align: center; margin-top: 10px;">0 dB = 0.873mW/g</p>		

Right Side	Tilt	1850.2 MHz
<p>Communication System: PCS1900; Frequency: 1850.2 MHz; Duty Cycle: 1:8.3            Medium parameters used (interpolated): <math>f = 1850.2</math> MHz; <math>\sigma = 1.41</math> mho/m; <math>\epsilon_r = 39.2</math>;  <math>\rho = 1000</math> kg/m<sup>3</sup>            Phantom section: Right Section</p> <p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(4.95, 5.22, 5.06); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1559; Type: SAM; Serial: 1559            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p> <p><b>Tilt position - Low/Area Scan (6x9x1):</b> Measurement grid: dx=15mm, dy=15mm            Maximum value of SAR (measured) = 0.519 mW/g</p> <p><b>Tilt position - Low/Zoom Scan (7x7x7)/Cube 0:</b> Measurement grid: dx=5mm, dy=5mm,            dz=5mm            Reference Value = 20.8 V/m; Power Drift = -0.038 dB            Peak SAR (extrapolated) = 0.782 W/kg  <b>SAR(1 g) = 0.534 mW/g; SAR(10 g) = 0.331 mW/g</b>            Maximum value of SAR (measured) = 0.584 mW/g</p>		
<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p><b>dB</b></p>  <p>0.000 -3.58 -7.16 -10.7 -14.3 -17.9</p> </div> <div style="flex-grow: 1;">  <p style="text-align: center;">0 dB = 0.584mW/g</p> </div> </div>		

Right Side	Tilt	1909.8 MHz
<p>Communication System: PCS1900; Frequency: 1909.8 MHz; Duty Cycle: 1:8.3            Medium parameters used: <math>f = 1910</math> MHz; <math>\sigma = 1.46</math> mho/m; <math>\epsilon_r = 38.8</math>; <math>\rho = 1000</math> kg/m<sup>3</sup>            Phantom section: Right Section</p> <p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(4.95, 5.22, 5.06); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1559; Type: SAM; Serial: 1559            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p> <p><b>Tilt position - High/Area Scan (6x9x1):</b> Measurement grid: dx=15mm, dy=15mm            Maximum value of SAR (measured) = 0.624 mW/g</p> <p><b>Tilt position - High/Zoom Scan (7x7x7)/Cube 0:</b> Measurement grid: dx=5mm, dy=5mm, dz=5mm            Reference Value = 21.7 V/m; Power Drift = 0.017 dB            Peak SAR (extrapolated) = 0.918 W/kg  <b>SAR(1 g) = 0.605 mW/g; SAR(10 g) = 0.366 mW/g</b>            Maximum value of SAR (measured) = 0.655 mW/g</p> <div data-bbox="311 1339 1276 1803"> </div> <p>0 dB = 0.655mW/g</p>		

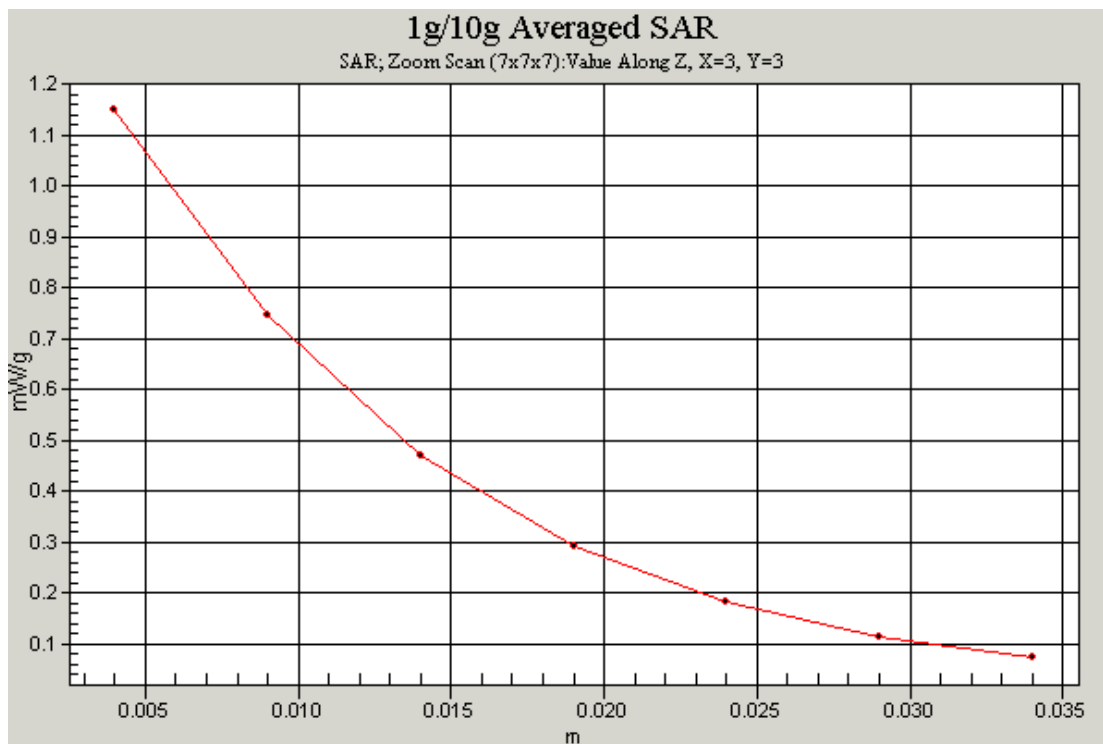


Right Side	Tilt	1880.0 MHz
<p>Communication System: PCS1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3            Medium parameters used: <math>f = 1880</math> MHz; <math>\sigma = 1.44</math> mho/m; <math>\epsilon_r = 39</math>; <math>\rho = 1000</math> kg/m<sup>3</sup>            Phantom section: Right Section</p> <p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(4.95, 5.22, 5.06); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1559; Type: SAM; Serial: 1559            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p> <p><b>Tilt position - Middle/Area Scan (6x9x1):</b> Measurement grid: dx=15mm, dy=15mm            Maximum value of SAR (measured) = 0.561 mW/g</p> <p><b>Tilt position - Middle/Zoom Scan (7x7x7) (7x7x7)/Cube 0:</b> Measurement grid:            dx=5mm, dy=5mm, dz=5mm            Reference Value = 20.7 V/m; Power Drift = 0.003 dB            Peak SAR (extrapolated) = 0.806 W/kg  <b>SAR(1 g) = 0.540 mW/g; SAR(10 g) = 0.332 mW/g</b>            Maximum value of SAR (measured) = 0.589 mW/g</p> <div data-bbox="311 1339 1276 1803"> </div> <p>0 dB = 0.589mW/g</p>		

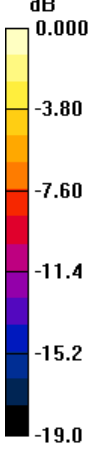
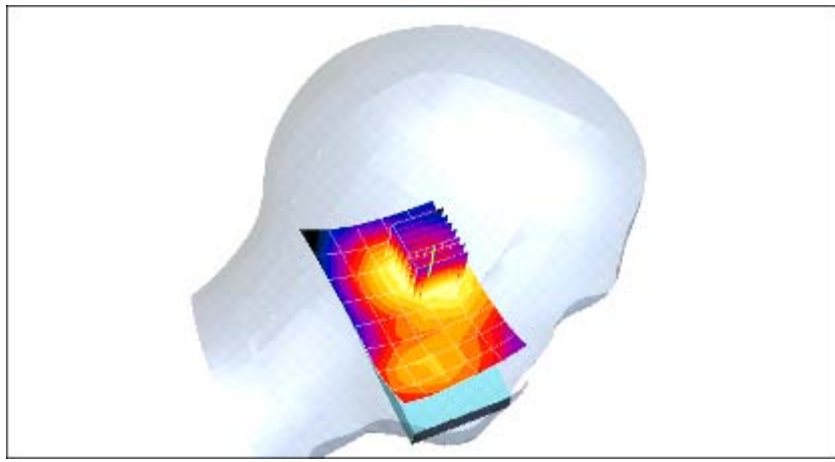
Left Side	Cheek	1850.2 MHz
<p>Communication System: PCS1900; Frequency: 1850.2 MHz; Duty Cycle: 1:8.3            Medium parameters used (interpolated): <math>f = 1850.2</math> MHz; <math>\sigma = 1.41</math> mho/m; <math>\epsilon_r = 39.2</math>;  <math>\rho = 1000</math> kg/m<sup>3</sup>            Phantom section: Left Section</p> <p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(4.95, 5.22, 5.06); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1559; Type: SAM; Serial: 1559            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p> <p>Touch position - Low/Area Scan (6x11x1): Measurement grid: dx=15mm, dy=15mm            Maximum value of SAR (measured) = 0.880 mW/g</p> <p>Touch position - Low/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid:            dx=5mm, dy=5mm, dz=5mm            Reference Value = 15.1 V/m; Power Drift = -0.015 dB            Peak SAR (extrapolated) = 1.39 W/kg  <b>SAR(1 g) = 0.884 mW/g; SAR(10 g) = 0.527 mW/g</b>            Maximum value of SAR (measured) = 0.967 mW/g</p>		
<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p><b>dB</b></p>  </div> <div style="flex-grow: 1;">  </div> </div> <p style="text-align: center;">0 dB = 0.967 mW/g</p>		

Left Side	Cheek	1880.0 MHz
<p>Communication System: PCS1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3            Medium parameters used (interpolated): <math>f = 1880</math> MHz; <math>\sigma = 1.35</math> mho/m; <math>\epsilon_r = 40.3</math>; <math>\rho = 1000</math> kg/m<sup>3</sup>            Phantom section: Left Section</p> <p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(5.438, 5.759, 5.595); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1559; Type: SAM; Serial: 1559            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p> <p><b>Touch position - Middle /Area Scan (6x9x1):</b> Measurement grid: dx=15mm, dy=15mm            Maximum value of SAR (measured) = 0.935 mW/g</p> <p><b>Touch position - Middle /Zoom Scan (7x7x7) (7x7x7)/Cube 0:</b> Measurement grid:            dx=5mm, dy=5mm, dz=5mm            Reference Value = 12.5 V/m; Power Drift = 0.011 dB            Peak SAR (extrapolated) = 1.37 W/kg  <b>SAR(1 g) = 0.893 mW/g; SAR(10 g) = 0.534 mW/g</b>            Maximum value of SAR (measured) = 0.988 mW/g</p> <div data-bbox="311 1400 1276 1859"> </div> <p style="text-align: center;">0 dB = 0.988mW/g</p>		

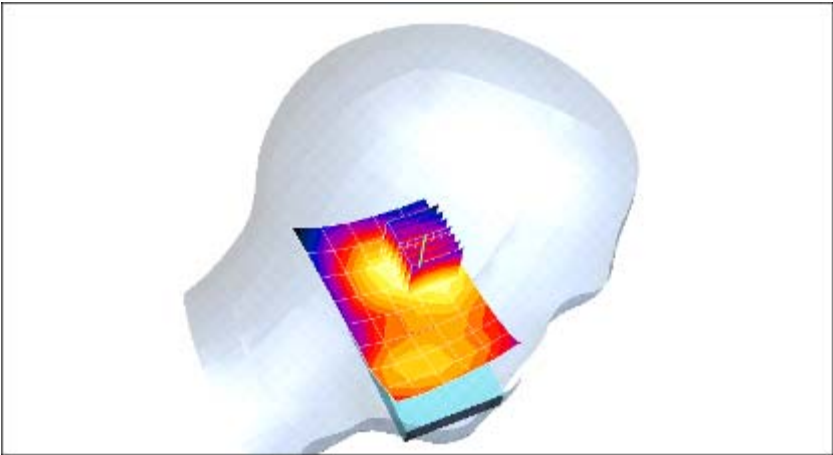
Left Side	Cheek	1909.8 MHz
<p>Communication System: PCS1900; Frequency: 1909.8 MHz; Duty Cycle: 1:8.3            Medium parameters used (interpolated): <math>f = 1909.8</math> MHz; <math>\sigma = 1.38</math> mho/m; <math>\epsilon_r = 40.2</math>;  <math>\rho = 1000</math> kg/m<sup>3</sup>            Phantom section: Left Section</p> <p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(5.438, 5.759, 5.595); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1559; Type: SAM; Serial: 1559            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p> <p><b>Touch position - High/Area Scan (6x9x1):</b> Measurement grid: dx=15mm, dy=15mm            Maximum value of SAR (measured) = 1.11 mW/g</p> <p><b>Touch position - High/Zoom Scan (7x7x7) (7x7x7)/Cube 0:</b> Measurement grid:            dx=5mm, dy=5mm, dz=5mm            Reference Value = 11.4 V/m; Power Drift = -0.009 dB            Peak SAR (extrapolated) = 1.64 W/kg  <b>SAR(1 g) = 1.03 mW/g; SAR(10 g) = 0.607 mW/g</b>            Maximum value of SAR (measured) = 1.14 mW/g</p> <div data-bbox="331 1406 1275 1865"> </div> <p style="text-align: center;">0 dB = 1.14mW/g</p>		



Z-Scan at power reference point (1900MHz CH810)

Left Side	Tilt	1850.2 MHz
<p>Communication System: PCS1900; Frequency: 1850.2 MHz; Duty Cycle: 1:8.3            Medium parameters used (interpolated): <math>f = 1850.2</math> MHz; <math>\sigma = 1.41</math> mho/m; <math>\epsilon_r = 39.2</math>; <math>\rho = 1000</math> kg/m<sup>3</sup>            Phantom section: Left Section</p> <p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(4.95, 5.22, 5.06); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1559; Type: SAM; Serial: 1559            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p> <p><b>Tilt position - Low/Area Scan (6x9x1):</b> Measurement grid: dx=15mm, dy=15mm            Maximum value of SAR (measured) = 0.629 mW/g</p> <p><b>Tilt position - Low/Zoom Scan (7x7x7)/Cube 0:</b> Measurement grid: dx=5mm, dy=5mm, dz=5mm            Reference Value = 20.8 V/m; Power Drift = -0.014 dB            Peak SAR (extrapolated) = 0.920 W/kg  <b>SAR(1 g) = 0.615 mW/g; SAR(10 g) = 0.377 mW/g</b>            Maximum value of SAR (measured) = 0.661 mW/g</p>		
<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p><b>dB</b></p>  </div> <div style="flex-grow: 1;">  </div> </div> <p style="text-align: center;">0 dB = 0.661mW/g</p>		

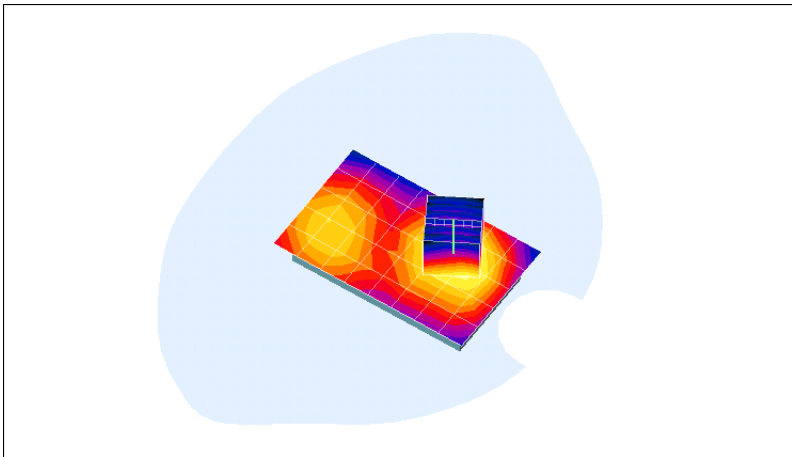
Left Side	Tilt	1880.0 MHz
<p>Communication System: PCS1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3            Medium parameters used: <math>f = 1880</math> MHz; <math>\sigma = 1.44</math> mho/m; <math>\epsilon_r = 39</math>; <math>\rho = 1000</math> kg/m<sup>3</sup>            Phantom section: Left Section</p> <p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(4.95, 5.22, 5.06); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1559; Type: SAM; Serial: 1559            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p> <p><b>Tilt position - Middle/Area Scan (6x9x1):</b> Measurement grid: dx=15mm, dy=15mm            Maximum value of SAR (measured) = 0.567 mW/g</p> <p><b>Tilt position - Middle/Zoom Scan (7x7x7) (7x7x7)/Cube 0:</b> Measurement grid:            dx=5mm, dy=5mm, dz=5mm            Reference Value = 19.3 V/m; Power Drift = -0.009 dB            Peak SAR (extrapolated) = 0.860 W/kg  <b>SAR(1 g) = 0.560 mW/g; SAR(10 g) = 0.339 mW/g</b>            Maximum value of SAR (measured) = 0.613 mW/g</p> <div data-bbox="311 1361 1278 1814"> </div>		

Left Side	Tilt	1909.8 MHz
<p>Communication System: PCS1900; Frequency: 1909.8 MHz; Duty Cycle: 1:8.3            Medium parameters used: <math>f = 1910</math> MHz; <math>\sigma = 1.46</math> mho/m; <math>\epsilon_r = 38.8</math>; <math>\rho = 1000</math> kg/m<sup>3</sup>            Phantom section: Left Section</p> <p>DASY4 Configuration:</p> <ul style="list-style-type: none"> <li>- Probe: ES3DV3 - SN3128; ConvF(4.95, 5.22, 5.06); Calibrated: 4/21/2011</li> <li>- Sensor-Surface: 4mm (Mechanical Surface Detection)</li> <li>- Electronics: DAE - SN720; Calibrated: 1/19/2011</li> <li>- Phantom: SAM 1559; Type: SAM; Serial: 1559</li> <li>- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</li> </ul> <p><b>Tilt position - High/Area Scan (6x9x1):</b> Measurement grid: dx=15mm, dy=15mm            Maximum value of SAR (measured) = 0.645 mW/g</p> <p><b>Tilt position - High/Zoom Scan (7x7x7)/Cube 0:</b> Measurement grid: dx=5mm, dy=5mm, dz=5mm            Reference Value = 21.1 V/m; Power Drift = -0.062 dB            Peak SAR (extrapolated) = 0.975 W/kg  <b>SAR(1 g) = 0.635 mW/g; SAR(10 g) = 0.383 mW/g</b>            Maximum value of SAR (measured) = 0.690 mW/g</p> <div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p><b>dB</b></p> <p>0.000</p> <p>-4.02</p> <p>-8.04</p> <p>-12.1</p> <p>-16.1</p> <p>-20.1</p> </div>  </div> <p style="text-align: center;">0 dB = 0.690mW/g</p>		

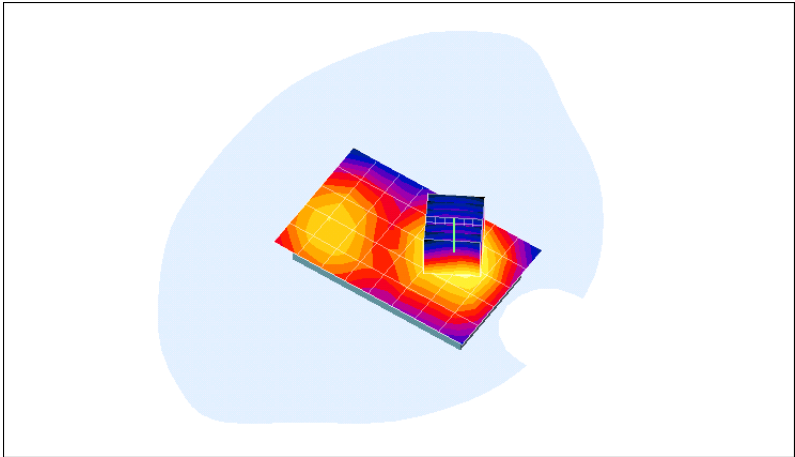


## GSM with headset (1900MHz/Flat)

FLAT	Towards ground	1880 MHz
<p>Communication System: PCS1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3            Medium parameters used: <math>f = 1880</math> MHz; <math>\sigma = 1.57</math> mho/m; <math>\epsilon_r = 53.5</math>; <math>\rho = 1000</math> kg/m<sup>3</sup>            Phantom section: Flat Section</p> <p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(4.53, 4.79, 4.63); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1559; Type: SAM; Serial: 1559            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p> <p><b>Towards ground - Middle/Area Scan (6x9x1):</b> Measurement grid: dx=15mm, dy=15mm            Maximum value of SAR (measured) = 0.439 mW/g</p> <p><b>Towards ground - Middle/Zoom Scan (7x7x7) (7x7x7)/Cube 0:</b> Measurement grid:            dx=5mm, dy=5mm, dz=5mm            Reference Value = 11.2 V/m; Power Drift = -0.073 dB            Peak SAR (extrapolated) = 0.714 W/kg  <b>SAR(1 g) = 0.452 mW/g; SAR(10 g) = 0.268 mW/g</b>            Maximum value of SAR (measured) = 0.492 mW/g</p> <div data-bbox="331 1368 1254 1827"> </div> <p>0 dB = 0.492mW/g</p>		

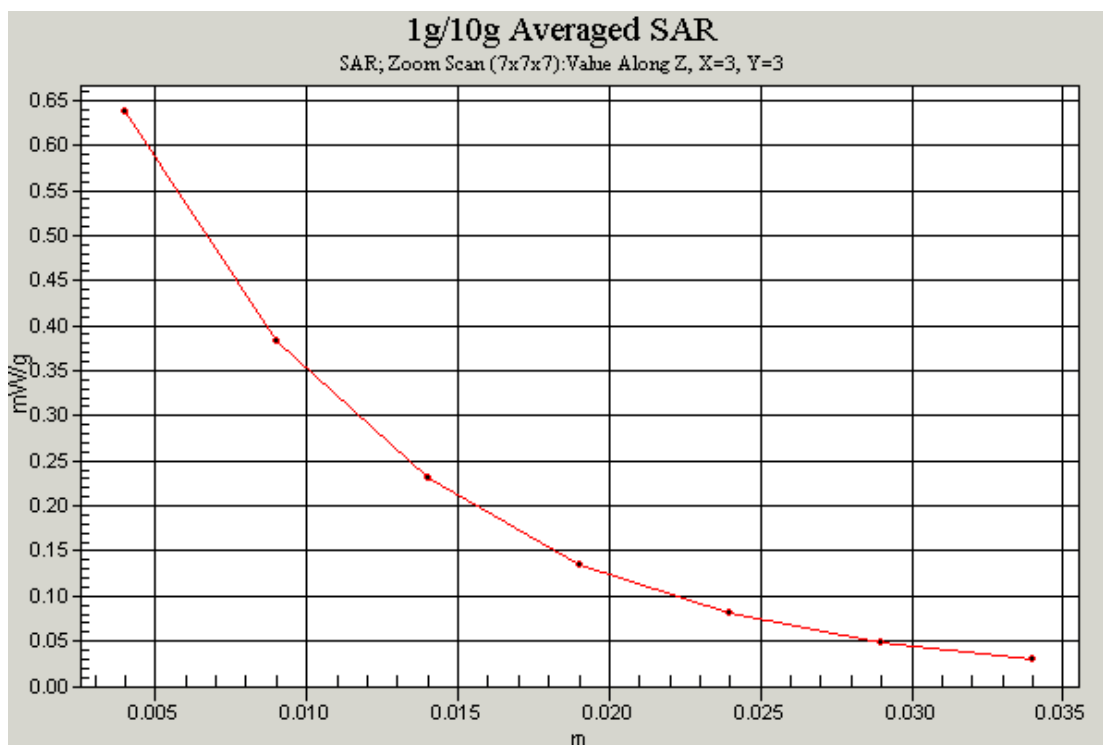
FLAT	Towards phantom	1880 MHz
<p>Communication System: PCS1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3            Medium parameters used: <math>f = 1880</math> MHz; <math>\sigma = 1.57</math> mho/m; <math>\epsilon_r = 53.5</math>; <math>\rho = 1000</math> kg/m<sup>3</sup>            Phantom section: Flat Section</p>		
<p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(4.53, 4.79, 4.63); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1559; Type: SAM; Serial: 1559            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p>		
<p><b>Towards phantom - Middle/Area Scan (6x9x1):</b> Measurement grid: dx=15mm, dy=15mm            Maximum value of SAR (measured) = 0.374 mW/g</p>		
<p><b>Towards phantom - Middle/Zoom Scan (7x7x7) (7x7x7)/Cube 0:</b> Measurement grid:            dx=5mm, dy=5mm, dz=5mm            Reference Value = 15.0 V/m; Power Drift = -0.049 dB            Peak SAR (extrapolated) = 0.576 W/kg  <b>SAR(1 g) = 0.363 mW/g; SAR(10 g) = 0.212 mW/g</b>            Maximum value of SAR (measured) = 0.395 mW/g</p>		
<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p>dB</p> <p>0.000</p> <p>-3.62</p> <p>-7.24</p> <p>-10.9</p> <p>-14.5</p> <p>-18.1</p> </div>  </div> <p style="text-align: center;">0 dB = 0.395mW/g</p>		

## GSM (1900MHz with GPRS/Flat)

FLAT	Towards ground	1850.2 MHz
<p>Communication System: PCS1900; Frequency: 1850.2 MHz; Duty Cycle: 1:8.3            Medium parameters used (interpolated): <math>f = 1850.2</math> MHz; <math>\sigma = 1.53</math> mho/m; <math>\epsilon_r = 53.8</math>;  <math>\rho = 1000</math> kg/m<sup>3</sup>            Phantom section: Flat Section</p> <p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(4.53, 4.79, 4.63); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1559; Type: SAM; Serial: 1559            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p> <p>Towards ground - Low GPRS/Area Scan (6x9x1): Measurement grid: dx=15mm, dy=15mm            Maximum value of SAR (measured) = 0.544 mW/g</p> <p>Towards ground - Low GPRS/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid:            dx=5mm, dy=5mm, dz=5mm            Reference Value = 8.95 V/m; Power Drift = -0.081 dB            Peak SAR (extrapolated) = 0.918 W/kg  <b>SAR(1 g) = 0.563 mW/g; SAR(10 g) = 0.327 mW/g</b>            Maximum value of SAR (measured) = 0.621 mW/g</p>		
<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p><b>dB</b></p> <p>0.000</p> <p>-3.14</p> <p>-6.28</p> <p>-9.42</p> <p>-12.6</p> <p>-15.7</p> </div>  </div> <p style="text-align: center;">0 dB = 0.621mW/g</p>		

FLAT	Towards ground	1880 MHz
<p>Communication System: PCS1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3            Medium parameters used: <math>f = 1880</math> MHz; <math>\sigma = 1.57</math> mho/m; <math>\epsilon_r = 53.5</math>; <math>\rho = 1000</math> kg/m<sup>3</sup>            Phantom section: Flat Section</p> <p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(4.53, 4.79, 4.63); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1559; Type: SAM; Serial: 1559            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p> <p><b>Towards ground - Middle GPRS/Area Scan (6x9x1):</b> Measurement grid: dx=15mm, dy=15mm            Maximum value of SAR (measured) = 0.554 mW/g</p> <p><b>Towards ground - Middle GPRS/Zoom Scan (7x7x7) (7x7x7)/Cube 0:</b> Measurement grid: dx=5mm, dy=5mm, dz=5mm            Reference Value = 7.78 V/m; Power Drift = -0.055 dB            Peak SAR (extrapolated) = 0.926 W/kg  <b>SAR(1 g) = 0.567 mW/g; SAR(10 g) = 0.331 mW/g</b>            Maximum value of SAR (measured) = 0.624 mW/g</p> <div data-bbox="331 1406 1257 1870"> </div> <p>0 dB = 0.624mW/g</p>		

FLAT	Towards ground	1909.8 MHz
<p>Communication System: PCS1900; Frequency: 1909.8 MHz; Duty Cycle: 1:8.3            Medium parameters used: <math>f = 1910</math> MHz; <math>\sigma = 1.6</math> mho/m; <math>\epsilon_r = 53.5</math>; <math>\rho = 1000</math> kg/m<sup>3</sup>            Phantom section: Flat Section</p> <p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(4.53, 4.79, 4.63); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1559; Type: SAM; Serial: 1559            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p> <p><b>Towards ground - High GPRS/Area Scan (6x9x1) :</b> Measurement grid: dx=15mm, dy=15mm            Maximum value of SAR (measured) = 0.579 mW/g</p> <p><b>Towards ground - High GPRS/Zoom Scan (7x7x7) (7x7x7)/Cube 0:</b> Measurement grid:            dx=5mm, dy=5mm, dz=5mm            Reference Value = 7.38 V/m; Power Drift = -0.030 dB            Peak SAR (extrapolated) = 0.951 W/kg  <b>SAR(1 g) = 0.580 mW/g; SAR(10 g) = 0.341 mW/g</b>            Maximum value of SAR (measured) = 0.637 mW/g</p> <div data-bbox="331 1368 1257 1825"> </div> <p style="text-align: center;">0 dB = 0.624mW/g</p>		



Z-Scan at power reference point (1900 MHz CH810)

FLAT	Towards phantom	1880 MHz
<p>Communication System: PCS1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3            Medium parameters used: <math>f = 1880</math> MHz; <math>\sigma = 1.57</math> mho/m; <math>\epsilon_r = 53.5</math>; <math>\rho = 1000</math> kg/m<sup>3</sup>            Phantom section: Flat Section</p> <p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(4.53, 4.79, 4.63); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1559; Type: SAM; Serial: 1559            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p> <p><b>Towards phantom - Middle GPRS/Area Scan (6x9x1):</b> Measurement grid: dx=15mm, dy=15mm            Maximum value of SAR (measured) = 0.573 mW/g</p> <p><b>Towards phantom - Middle GPRS/Zoom Scan (7x7x7) (7x7x7)/Cube 0:</b> Measurement grid: dx=5mm, dy=5mm, dz=5mm            Reference Value = 10.9 V/m; Power Drift = 0.130 dB            Peak SAR (extrapolated) = 0.868 W/kg  <b>SAR(1 g) = 0.532 mW/g; SAR(10 g) = 0.313 mW/g</b>            Maximum value of SAR (measured) = 0.576 mW/g</p> <div data-bbox="331 1406 1257 1870"> </div>		

## GSM (1900MHz with EGPRS/Flat)

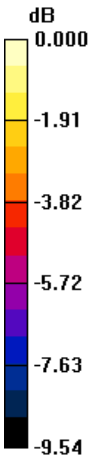
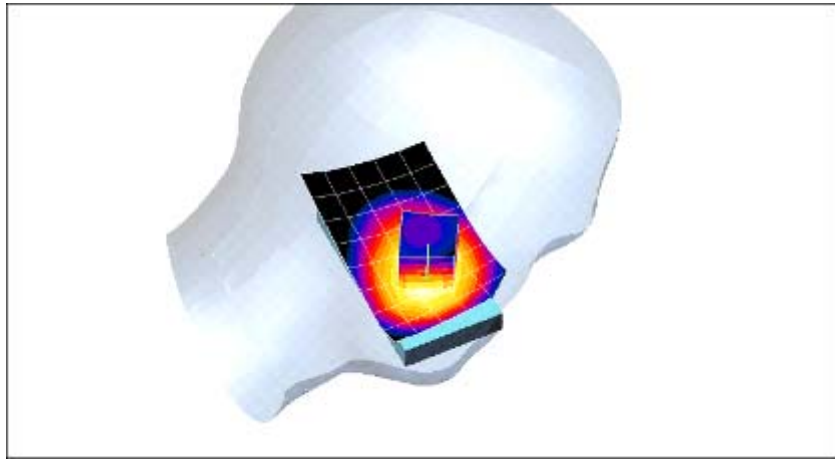
FLAT	Towards ground	1880 MHz
<p>Communication System: PCS1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3            Medium parameters used: <math>f = 1880</math> MHz; <math>\sigma = 1.57</math> mho/m; <math>\epsilon_r = 53.5</math>; <math>\rho = 1000</math> kg/m<sup>3</sup>            Phantom section: Flat Section</p> <p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(4.53, 4.79, 4.63); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1559; Type: SAM; Serial: 1559            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p> <p><b>Towards ground - Middle EDGE/Area Scan (6x9x1):</b> Measurement grid: dx=15mm, dy=15mm            Maximum value of SAR (measured) = 0.270 mW/g</p> <p><b>Towards ground - Middle EDGE/Zoom Scan (7x7x7) (7x7x7)/Cube 0:</b> Measurement grid: dx=5mm, dy=5mm, dz=5mm            Reference Value = 5.39 V/m; Power Drift = 0.058 dB            Peak SAR (extrapolated) = 0.433 W/kg  <b>SAR(1 g) = 0.263 mW/g; SAR(10 g) = 0.154 mW/g</b>            Maximum value of SAR (measured) = 0.291 mW/g</p> <div data-bbox="331 1406 1254 1870"> </div> <p>0 dB = 0.291mW/g</p>		

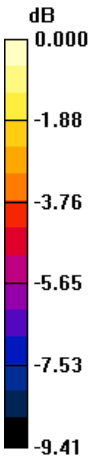
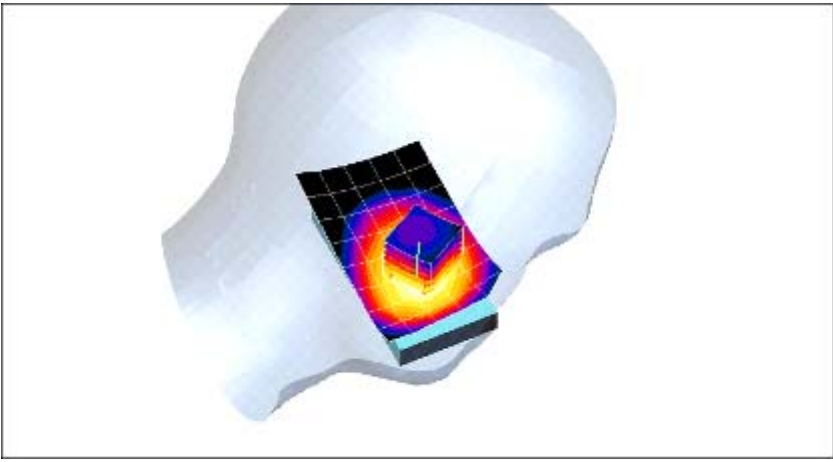


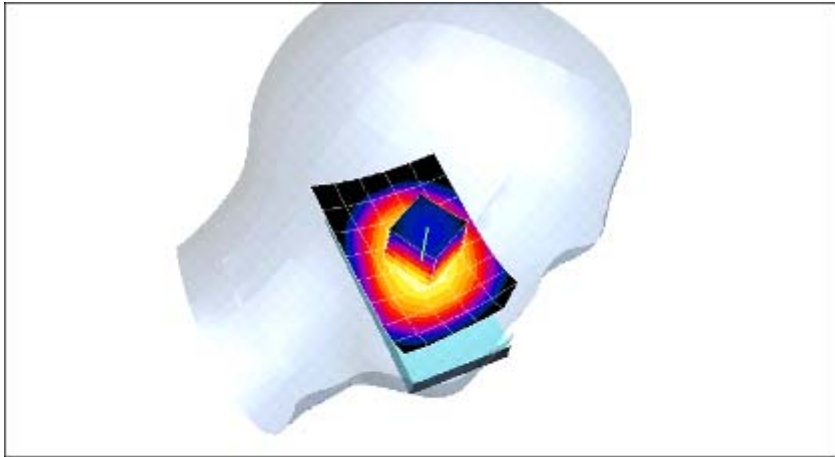
FLAT	Towards phantom	1880 MHz
<p>Communication System: PCS1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3            Medium parameters used: <math>f = 1880 \text{ MHz}</math>; <math>\sigma = 1.57 \text{ mho/m}</math>; <math>\epsilon_r = 53.5</math>; <math>\rho = 1000 \text{ kg/m}^3</math>            Phantom section: Flat Section</p> <p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(4.53, 4.79, 4.63); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1559; Type: SAM; Serial: 1559            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p> <p><b>Towards phantom - Middle EDGE/Area Scan (6x9x1):</b> Measurement grid: dx=15mm, dy=15mm            Maximum value of SAR (measured) = 0.284 mW/g</p> <p><b>Towards phantom - Middle EDGE/Zoom Scan (7x7x7) (7x7x7)/Cube 0:</b> Measurement grid: dx=5mm, dy=5mm, dz=5mm            Reference Value = 7.81 V/m; Power Drift = 0.086 dB            Peak SAR (extrapolated) = 0.436 W/kg  <b>SAR(1 g) = 0.262 mW/g; SAR(10 g) = 0.154 mW/g</b>            Maximum value of SAR (measured) = 0.286 mW/g</p> <div data-bbox="331 1406 1257 1870"> </div>		

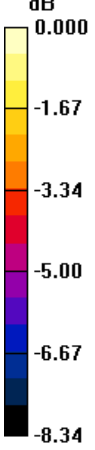
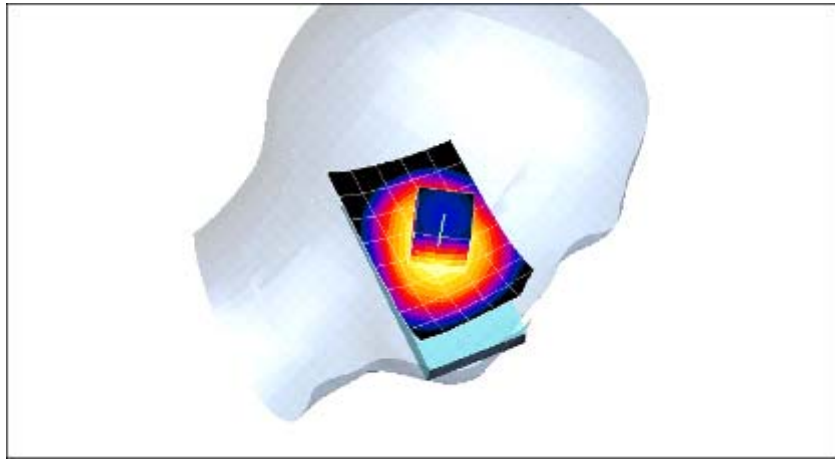
## WCDMA B5 (Head)

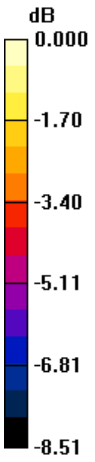
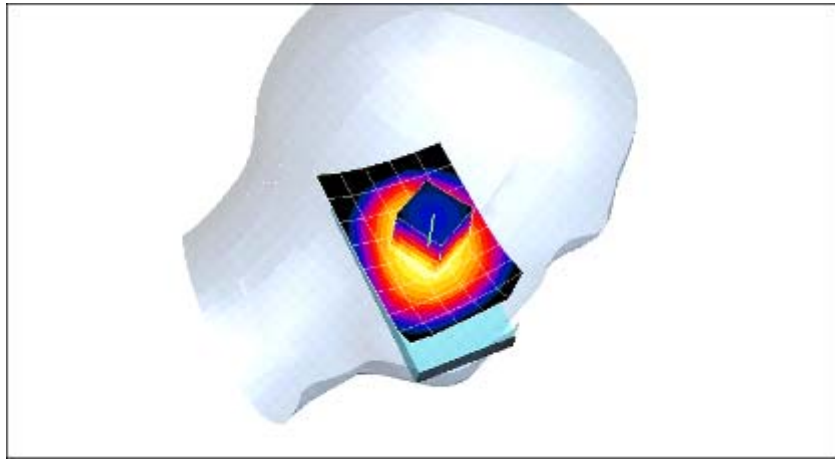
Left Side	Cheek	826.4 MHz
<p>Communication System: UMTS 835; Frequency: 826.4 MHz; Duty Cycle: 1:1            Medium parameters used (interpolated): <math>f = 826.4</math> MHz; <math>\sigma = 0.888</math> mho/m; <math>\epsilon_r = 41.9</math>; <math>\rho = 1000</math> kg/m<sup>3</sup>            Phantom section: Left Section</p> <p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(7.88, 8.3, 8.05); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1560; Type: SAM; Serial: 1560            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p> <p><b>Touch position - Low/Area Scan (6x9x1):</b> Measurement grid: dx=15mm, dy=15mm            Maximum value of SAR (measured) = 0.710 mW/g</p> <p><b>Touch position - Low/Zoom Scan (7x7x7)/Cube 0:</b> Measurement grid: dx=5mm, dy=5mm, dz=5mm            Reference Value = 15.0 V/m; Power Drift = 0.015 dB            Peak SAR (extrapolated) = 0.856 W/kg  <b>SAR(1 g) = 0.701 mW/g; SAR(10 g) = 0.532 mW/g</b>            Maximum value of SAR (measured) = 0.740 mW/g</p> <div data-bbox="311 1429 1279 1886"> </div>		

Left Side	Cheek	836.5 MHz
<p>Communication System: UMTS 835; Frequency: 836.5 MHz; Duty Cycle: 1:1            Medium parameters used (interpolated): <math>f = 836.5</math> MHz; <math>\sigma = 0.897</math> mho/m; <math>\epsilon_r = 41.6</math>; <math>\rho = 1000</math> kg/m<sup>3</sup>            Phantom section: Left Section</p> <p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(7.88, 8.3, 8.05); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1560; Type: SAM; Serial: 1560            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p>		
<p><b>Touch position - Middle/Area Scan (6x9x1):</b> Measurement grid: dx=15mm, dy=15mm            Maximum value of SAR (measured) = 0.661 mW/g</p>		
<p><b>Touch position - Middle/Zoom Scan (7x7x7) (7x7x7)/Cube 0:</b> Measurement grid:            dx=5mm, dy=5mm, dz=5mm            Reference Value = 14.1 V/m; Power Drift = 0.151 dB            Peak SAR (extrapolated) = 0.823 W/kg  <b>SAR(1 g) = 0.667 mW/g; SAR(10 g) = 0.501 mW/g</b>            Maximum value of SAR (measured) = 0.702 mW/g</p>		
<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p><b>dB</b></p>  </div> <div style="flex-grow: 1;">  </div> </div> <p style="text-align: center;">0 dB = 0.702mW/g</p>		

Left Side	Cheek	846.6 MHz
<p>Communication System: UMTS 835; Frequency: 846.6 MHz; Duty Cycle: 1:1            Medium parameters used (interpolated): <math>f = 846.6</math> MHz; <math>\sigma = 0.905</math> mho/m; <math>\epsilon_r = 41.7</math>; <math>\rho = 1000</math> kg/m<sup>3</sup>            Phantom section: Left Section</p> <p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(7.88, 8.3, 8.05); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1560; Type: SAM; Serial: 1560            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p> <p><b>Touch position - High/Area Scan (6x9x1):</b> Measurement grid: dx=15mm, dy=15mm            Maximum value of SAR (measured) = 0.634 mW/g</p> <p><b>Touch position - High/Zoom Scan (7x7x7)/Cube 0:</b> Measurement grid: dx=5mm, dy=5mm, dz=5mm            Reference Value = 14.1 V/m; Power Drift = 0.076 dB            Peak SAR (extrapolated) = 0.760 W/kg  <b>SAR(1 g) = 0.624 mW/g; SAR(10 g) = 0.474 mW/g</b>            Maximum value of SAR (measured) = 0.656 mW/g</p>		
<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p><b>dB</b></p>  <p>0.000 -1.88 -3.76 -5.65 -7.53 -9.41</p> </div> <div style="flex-grow: 1;">  </div> </div> <p style="text-align: center;">0 dB = 0.656 mW/g</p>		

Left Side	Tilt	826.4 MHz
<p>Communication System: UMTS 835; Frequency: 826.4 MHz; Duty Cycle: 1:1            Medium parameters used (interpolated): <math>f = 826.4</math> MHz; <math>\sigma = 0.888</math> mho/m; <math>\epsilon_r = 41.9</math>; <math>\rho = 1000</math> kg/m<sup>3</sup>            Phantom section: Left Section</p> <p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(7.88, 8.3, 8.05); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1560; Type: SAM; Serial: 1560            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p> <p><b>Tilt position - Low/Area Scan (6x9x1):</b> Measurement grid: dx=15mm, dy=15mm            Maximum value of SAR (measured) = 0.541 mW/g</p> <p><b>Tilt position - Low/Zoom Scan (7x7x7)/Cube 0:</b> Measurement grid: dx=5mm, dy=5mm, dz=5mm            Reference Value = 20.2 V/m; Power Drift = -0.011 dB            Peak SAR (extrapolated) = 0.674 W/kg  <b>SAR(1 g) = 0.536 mW/g; SAR(10 g) = 0.401 mW/g</b>            Maximum value of SAR (measured) = 0.567 mW/g</p>		
<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p><b>dB</b></p> <p>0.000</p> <p>-1.67</p> <p>-3.35</p> <p>-5.02</p> <p>-6.70</p> <p>-8.37</p> </div>  </div> <p style="text-align: center;">0 dB = 0.567mW/g</p>		

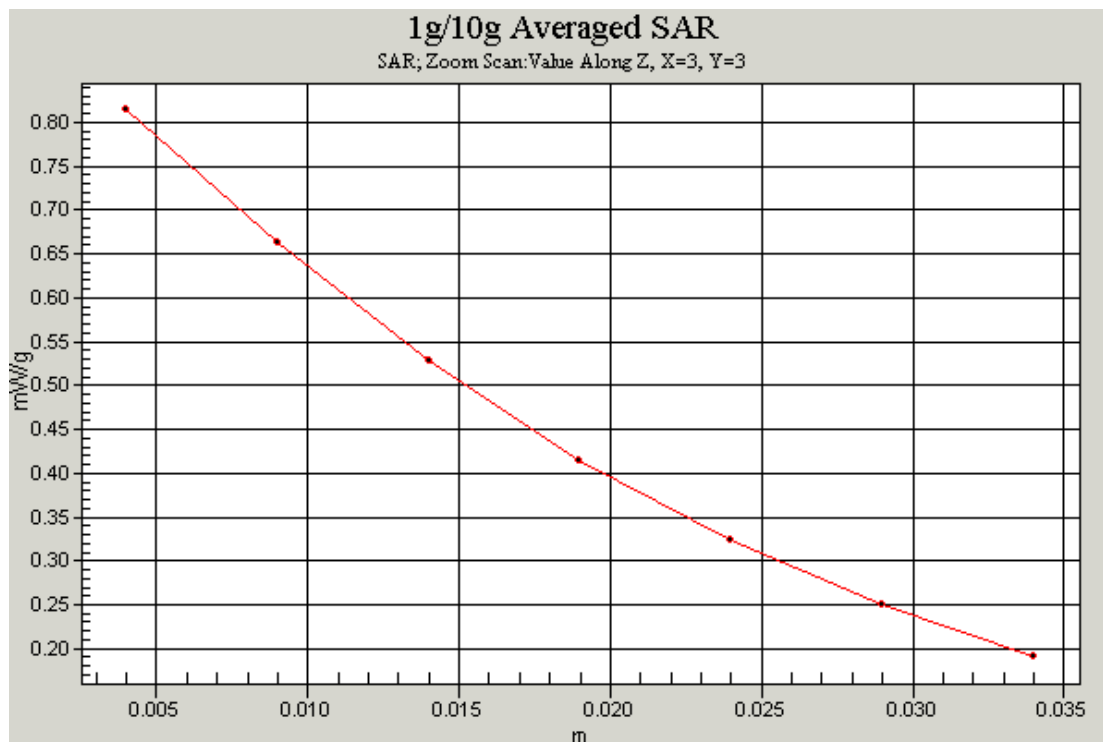
Left Side	Tilt	836.5 MHz
<p>Communication System: UMTS 835; Frequency: 836.5 MHz; Duty Cycle: 1:1            Medium parameters used (interpolated): <math>f = 836.5</math> MHz; <math>\sigma = 0.897</math> mho/m; <math>\epsilon_r = 41.6</math>; <math>\rho = 1000</math> kg/m<sup>3</sup>            Phantom section: Left Section</p> <p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(7.88, 8.3, 8.05); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1560; Type: SAM; Serial: 1560            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p>		
<p><b>Tilt position - Middle/Area Scan (6x9x1):</b> Measurement grid: dx=15mm, dy=15mm</p>		
<p>Maximum value of SAR (measured) = 0.410 mW/g</p>		
<p><b>Tilt position - Middle/Zoom Scan (7x7x7)/Cube 0:</b> Measurement grid: dx=5mm, dy=5mm, dz=5mm</p>		
<p>Reference Value = 17.5 V/m; Power Drift = 0.024 dB</p>		
<p>Peak SAR (extrapolated) = 0.514 W/kg</p>		
<p>SAR(1 g) = 0.408 mW/g; SAR(10 g) = 0.304 mW/g</p>		
<p>Maximum value of SAR (measured) = 0.430 mW/g</p>		
<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p><b>dB</b></p>  <p>0.000 -1.67 -3.34 -5.00 -6.67 -8.34</p> </div> <div style="flex-grow: 1;">  </div> </div> <p style="text-align: center;">0 dB = 0.430 mW/g</p>		

Left Side	Tilt	846.6MHz
<p>Communication System: UMTS 835; Frequency: 846.6 MHz; Duty Cycle: 1:1                      Medium parameters used (interpolated): <math>f = 846.6</math> MHz; <math>\sigma = 0.905</math> mho/m; <math>\epsilon_r = 41.7</math>; <math>\rho = 1000</math> kg/m<sup>3</sup>                      Phantom section: Left Section</p> <p>DASY4 Configuration:                      - Probe: ES3DV3 - SN3128; ConvF(7.88, 8.3, 8.05); Calibrated: 4/21/2011                      - Sensor-Surface: 4mm (Mechanical Surface Detection)                      - Electronics: DAE - SN720; Calibrated: 1/19/2011                      - Phantom: SAM 1560; Type: SAM; Serial: 1560                      - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p> <p><b>Tilt position - High/Area Scan (6x9x1):</b> Measurement grid: dx=15mm, dy=15mm                      Maximum value of SAR (measured) = 0.434 mW/g</p> <p><b>Tilt position - High/Zoom Scan (7x7x7)/Cube 0:</b> Measurement grid: dx=5mm, dy=5mm, dz=5mm                      Reference Value = 18.4 V/m; Power Drift = 0.048 dB                      Peak SAR (extrapolated) = 0.547 W/kg                      SAR(1 g) = 0.433 mW/g; SAR(10 g) = 0.322 mW/g                      Maximum value of SAR (measured) = 0.458 mW/g</p>		
<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p><b>dB</b></p>  <p>0.000 -1.70 -3.40 -5.11 -6.81 -8.51</p> </div> <div style="flex-grow: 1;">  </div> </div> <p style="text-align: center;">0 dB = 0.458mW/g</p>		

Right Side	Cheek	836.5 MHz
<p>Communication System: UMTS 835; Frequency: 836.5 MHz; Duty Cycle: 1:1            Medium parameters used (interpolated): <math>f = 836.5</math> MHz; <math>\sigma = 0.897</math> mho/m; <math>\epsilon_r = 41.6</math>; <math>\rho = 1000</math> kg/m<sup>3</sup>            Phantom section: Right Section</p> <p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(7.88, 8.3, 8.05); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1560; Type: SAM; Serial: 1560            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p> <p>Touch position - Middle/Area Scan (6x9x1): Measurement grid: dx=15mm, dy=15mm            Maximum value of SAR (measured) = 0.712 mW/g</p> <p>Touch position - Middle/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid:            dx=5mm, dy=5mm, dz=5mm            Reference Value = 13.3 V/m; Power Drift = 0.075 dB            Peak SAR (extrapolated) = 0.826 W/kg  <b>SAR(1 g) = 0.681 mW/g; SAR(10 g) = 0.513 mW/g</b>            Maximum value of SAR (measured) = 0.720 mW/g</p> <div data-bbox="311 1370 1276 1825"> </div>		



Right Side	Cheek	826.4MHz
<p>Communication System: UMTS 835; Frequency: 826.4 MHz; Duty Cycle: 1:1            Medium parameters used (interpolated): <math>f = 826.4</math> MHz; <math>\sigma = 0.888</math> mho/m; <math>\epsilon_r = 41.9</math>; <math>\rho = 1000</math> kg/m<sup>3</sup>            Phantom section: Right Section</p> <p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(7.88, 8.3, 8.05); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1560; Type: SAM; Serial: 1560            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p> <p>Touch position - Low/Area Scan (6x9x1): Measurement grid: dx=15mm, dy=15mm            Maximum value of SAR (measured) = 0.802 mW/g</p> <p>Touch position - Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm            Reference Value = 14.3 V/m; Power Drift = 0.079 dB            Peak SAR (extrapolated) = 0.940 W/kg  <b>SAR(1 g) = 0.772 mW/g; SAR(10 g) = 0.584 mW/g</b>            Maximum value of SAR (measured) = 0.814 mW/g</p> <div data-bbox="311 1370 1278 1825"> </div> <p>0 dB = 0.814mW/g</p>		



Z-Scan at power reference point (UMTS835 CH4132)

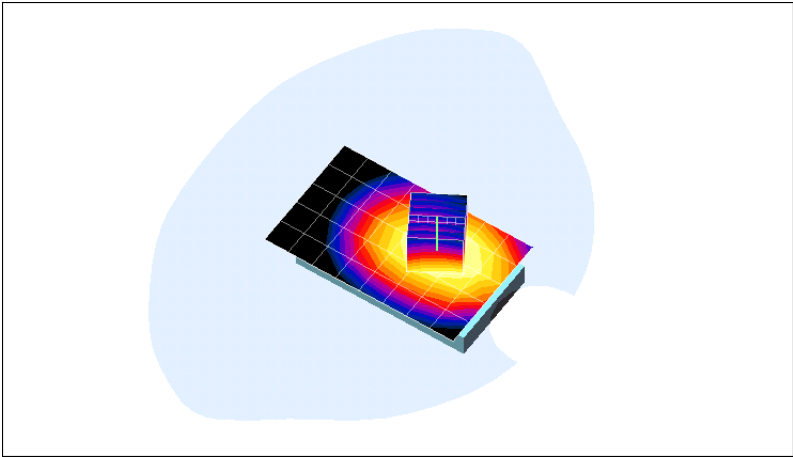
Right Side	Cheek	846.6 MHz
<p>Communication System: UMTS 835; Frequency: 846.6 MHz; Duty Cycle: 1:1            Medium parameters used (interpolated): <math>f = 846.6 \text{ MHz}</math>; <math>\sigma = 0.905 \text{ mho/m}</math>; <math>\epsilon_r = 41.7</math>;  <math>\rho = 1000 \text{ kg/m}^3</math>            Phantom section: Right Section</p> <p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(7.88, 8.3, 8.05); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1560; Type: SAM; Serial: 1560            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p> <p>Touch position - High/Area Scan (6x9x1): Measurement grid: dx=15mm, dy=15mm            Maximum value of SAR (measured) = 0.747 mW/g</p> <p>Touch position - High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm,            dy=5mm, dz=5mm            Reference Value = 13.8 V/m; Power Drift = 0.019 dB            Peak SAR (extrapolated) = 0.863 W/kg            SAR(1 g) = 0.715 mW/g; SAR(10 g) = 0.538 mW/g            Maximum value of SAR (measured) = 0.751 mW/g</p> <div data-bbox="311 1370 1276 1825"> </div> <p>0 dB = 1.07mW/g</p>		

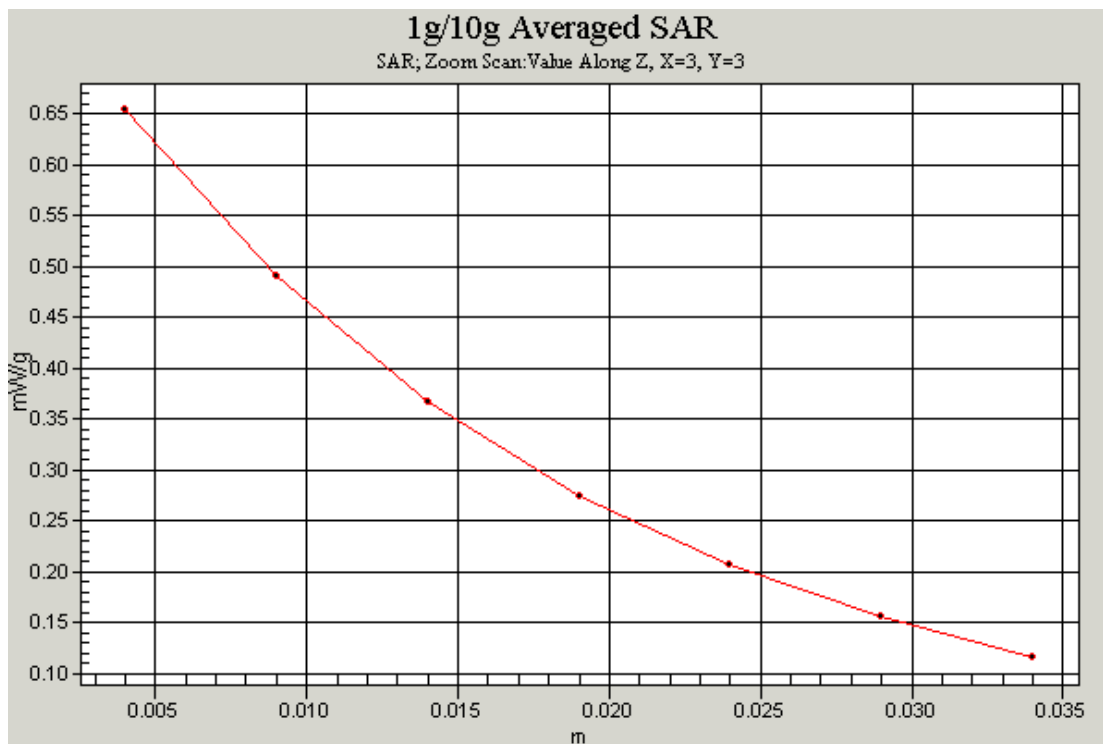
Right Side	Tilt	826.4 MHz
<p>Communication System: UMTS 835; Frequency: 826.4 MHz; Duty Cycle: 1:1            Medium parameters used (interpolated): <math>f = 826.4</math> MHz; <math>\sigma = 0.888</math> mho/m; <math>\epsilon_r = 41.9</math>; <math>\rho = 1000</math> kg/m<sup>3</sup>            Phantom section: Right Section</p> <p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(7.88, 8.3, 8.05); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1560; Type: SAM; Serial: 1560            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p> <p>Tilt position - Low/Area Scan (6x9x1): Measurement grid: dx=15mm, dy=15mm            Maximum value of SAR (measured) = 0.446 mW/g</p> <p>Tilt position - Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm            Reference Value = 17.4 V/m; Power Drift = 0.041 dB            Peak SAR (extrapolated) = 0.547 W/kg            SAR(1 g) = 0.438 mW/g; SAR(10 g) = 0.329 mW/g            Maximum value of SAR (measured) = 0.463 mW/g</p> <div data-bbox="311 1370 1279 1825"> </div> <p>0 dB = 0.463 mW/g</p>		

Right Side	Tilt	836.5 MHz
<p>Communication System: UMTS 835; Frequency: 836.5 MHz; Duty Cycle: 1:1            Medium parameters used (interpolated): <math>f = 836.5</math> MHz; <math>\sigma = 0.897</math> mho/m; <math>\epsilon_r = 41.6</math>; <math>\rho = 1000</math> kg/m<sup>3</sup>            Phantom section: Right Section</p> <p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(7.88, 8.3, 8.05); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1560; Type: SAM; Serial: 1560            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p> <p><b>Tilt position - Middle/Area Scan (6x9x1):</b> Measurement grid: dx=15mm, dy=15mm            Maximum value of SAR (measured) = 0.355 mW/g</p> <p><b>Tilt position - Middle/Zoom Scan (7x7x7)/Cube 0:</b> Measurement grid: dx=5mm, dy=5mm, dz=5mm            Reference Value = 15.4 V/m; Power Drift = -0.003 dB            Peak SAR (extrapolated) = 0.431 W/kg  <b>SAR(1 g) = 0.346 mW/g; SAR(10 g) = 0.259 mW/g</b>            Maximum value of SAR (measured) = 0.366 mW/g</p>		
<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p><b>dB</b></p> <p>0.000 -1.69 -3.38 -5.07 -6.76 -8.45</p> </div> <div style="flex-grow: 1;"> <p style="text-align: center;">0 dB = 0.366mW/g</p> </div> </div>		

Right Side	Tilt	846.6MHz
<p>Communication System: UMTS 835; Frequency: 846.6 MHz; Duty Cycle: 1:1            Medium parameters used (interpolated): <math>f = 846.6</math> MHz; <math>\sigma = 0.905</math> mho/m; <math>\epsilon_r = 41.7</math>; <math>\rho = 1000</math> kg/m<sup>3</sup>            Phantom section: Right Section</p> <p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(7.88, 8.3, 8.05); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1560; Type: SAM; Serial: 1560            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p> <p><b>Tilt position - High/Area Scan (6x9x1):</b> Measurement grid: dx=15mm, dy=15mm            Maximum value of SAR (measured) = 0.414 mW/g</p> <p><b>Tilt position - High/Zoom Scan (7x7x7)/Cube 0:</b> Measurement grid: dx=5mm, dy=5mm, dz=5mm            Reference Value = 16.4 V/m; Power Drift = 0.047 dB            Peak SAR (extrapolated) = 0.513 W/kg  <b>SAR(1 g) = 0.409 mW/g; SAR(10 g) = 0.305 mW/g</b>            Maximum value of SAR (measured) = 0.430 mW/g</p>		
<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p><b>dB</b></p> <p>0.000 -1.71 -3.42 -5.13 -6.84 -8.55</p> </div> <div> <p style="text-align: center;">0 dB = 0.430 mW/g</p> </div> </div>		

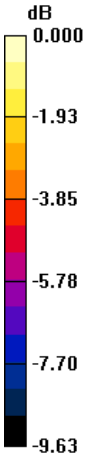
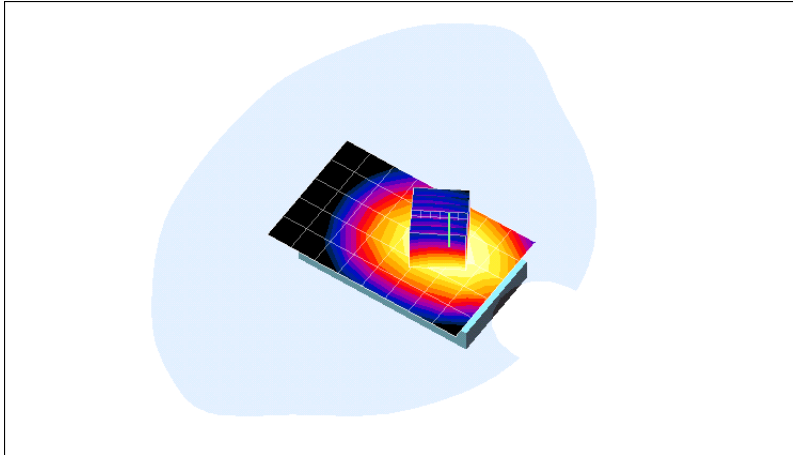
## WCDMA B5 with headset (Flat)

FLAT	Towards ground	826.4 MHz
<p>Communication System: UMTS 835; Frequency: 826.4 MHz; Duty Cycle: 1:1            Medium parameters used (interpolated): <math>f = 826.4</math> MHz; <math>\sigma = 0.952</math> mho/m; <math>\epsilon_r = 55.9</math>; <math>\rho = 1000</math> kg/m<sup>3</sup>            Phantom section: Flat Section</p> <p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(6.78, 7.02, 6.8); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1560; Type: SAM; Serial: 1560            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p> <p>Towards ground - Low/Area Scan (6x9x1): Measurement grid: dx=15mm, dy=15mm            Maximum value of SAR (measured) = 0.621 mW/g</p> <p>Towards ground - Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm            Reference Value = 20.2 V/m; Power Drift = 0.039 dB            Peak SAR (extrapolated) = 0.808 W/kg  <b>SAR(1 g) = 0.613 mW/g; SAR(10 g) = 0.443 mW/g</b>            Maximum value of SAR (measured) = 0.651 mW/g</p>		
<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p><b>dB</b></p> <p>0.000</p> <p>-1.92</p> <p>-3.84</p> <p>-5.77</p> <p>-7.69</p> <p>-9.61</p> </div> <div style="flex-grow: 1;">  </div> </div> <p style="text-align: center;">0 dB = 0.651 mW/g</p>		



Z-Scan at power reference point (UMTS835 CH4132)



FLAT	Towards ground	836.5 MHz
<p>Communication System: UMTS 835; Frequency: 836.5 MHz;Duty Cycle: 1:1            Medium parameters used (interpolated): <math>f = 836.5</math> MHz; <math>\sigma = 0.96</math> mho/m; <math>\epsilon_r = 55.9</math>; <math>\rho = 1000</math> kg/m<sup>3</sup>            Phantom section: Flat Section</p> <p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(6.78, 7.02, 6.8); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1560; Type: SAM; Serial: 1560            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p> <p><b>Towards ground - Middle/Area Scan (6x9x1):</b> Measurement grid: dx=15mm, dy=15mm            Maximum value of SAR (measured) = 0.521 mW/g</p> <p><b>Towards ground - Middle/Zoom Scan (7x7x7) (7x7x7)/Cube 0:</b> Measurement grid:            dx=5mm, dy=5mm, dz=5mm            Reference Value = 18.0 V/m; Power Drift = -0.041 dB            Peak SAR (extrapolated) = 0.671 W/kg  <b>SAR(1 g) = 0.502 mW/g; SAR(10 g) = 0.361 mW/g</b>            Maximum value of SAR (measured) = 0.532 mW/g</p> <div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p>dB</p>  <p>0.000 -1.93 -3.85 -5.78 -7.70 -9.63</p> </div> <div style="border: 1px solid black; padding: 10px; text-align: center;">  </div> </div> <p style="text-align: center; margin-top: 10px;">0 dB = 0.532mW/g</p>		

FLAT	Towards ground	846.6 MHz
<p>Communication System: UMTS 835; Frequency: 846.6 MHz; Duty Cycle: 1:1            Medium parameters used (interpolated): <math>f = 846.6</math> MHz; <math>\sigma = 0.968</math> mho/m; <math>\epsilon_r = 55.8</math>; <math>\rho = 1000</math> kg/m<sup>3</sup>            Phantom section: Flat Section</p> <p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(6.78, 7.02, 6.8); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1560; Type: SAM; Serial: 1560            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p> <p><b>Towards ground - High/Area Scan (6x9x1):</b> Measurement grid: dx=15mm, dy=15mm            Maximum value of SAR (measured) = 0.554 mW/g</p> <p><b>Towards ground - High/Zoom Scan (7x7x7)/Cube 0:</b> Measurement grid: dx=5mm, dy=5mm, dz=5mm            Reference Value = 17.4 V/m; Power Drift = -0.145 dB            Peak SAR (extrapolated) = 0.719 W/kg  <b>SAR(1 g) = 0.528 mW/g; SAR(10 g) = 0.376 mW/g</b>            Maximum value of SAR (measured) = 0.560 mW/g</p> <div data-bbox="300 1417 1227 1877"> </div> <p style="text-align: center;">0 dB = 0.560mW/g</p>		

FLAT	Towards phantom	836.5 MHz
<p>Communication System: UMTS 835; Frequency: 836.5 MHz; Duty Cycle: 1:1            Medium parameters used (interpolated): <math>f = 836.5</math> MHz; <math>\sigma = 0.96</math> mho/m; <math>\epsilon_r = 55.9</math>; <math>\rho = 1000</math> kg/m<sup>3</sup>            Phantom section: Flat Section</p> <p>DASY4 Configuration:            - Probe: ES3DV3 - SN3128; ConvF(6.78, 7.02, 6.8); Calibrated: 4/21/2011            - Sensor-Surface: 4mm (Mechanical Surface Detection)            - Electronics: DAE - SN720; Calibrated: 1/19/2011            - Phantom: SAM 1560; Type: SAM; Serial: 1560            - Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186</p> <p><b>Towards phantom - Middle/Area Scan (6x9x1):</b> Measurement grid: dx=15mm, dy=15mm            Maximum value of SAR (measured) = 0.478 mW/g</p> <p><b>Towards phantom - Middle/Zoom Scan (7x7x7)/Cube 0:</b> Measurement grid: dx=5mm, dy=5mm, dz=5mm            Reference Value = 18.4 V/m; Power Drift = 0.015 dB            Peak SAR (extrapolated) = 0.599 W/kg  <b>SAR(1 g) = 0.468 mW/g; SAR(10 g) = 0.345 mW/g</b>            Maximum value of SAR (measured) = 0.493 mW/g</p> <div data-bbox="287 1366 1220 1836"> </div>		

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

The State Radio\_monitoring\_center Testing Center

**Calibration Certificate**



**Instrument** Dosimetric E-field Probe

**Type/Model** ES3DV3

**Manufacturer** Schmid & Partner Engineering AG

**Serial No** SN:3128

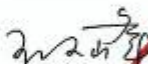
**Name of Client** The State Radio\_monitoring\_center Testing Center

**Address of Client** No.80 Bei Lishi Road XiCheng District

**Calibration Date** 2011.4.21

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

Approved by



Tel: +86-10-68009202 68009203 Fax: +86-10-68009205 68009195  
Add: No.80 Bei Lishi Road, Xi Cheng District Beijing 100037, P.R.China

Page 1 of 6

Certificate No.SRTC2011-CAL002-003

The State Radio\_monitoring\_center Testing Center

Reference documents of the measurement(Code, Name) SRTC3003-V1. 0. 0 Working procedure for calibration——SAR testing system
Place and environmental condition of the measurement Temperature 23.1℃ Humidity 28.6% Location SRTC226 room

Primary Calibration Equipment used	Model/Type	ID#	Cal Date	Scheduled Calibration
Power meter	E4417A	SN: MY45101004	2010.8	2011.8
Power sensor	E9300B	SN: MY41496001	2010.8	2011.8
Power sensor	E9300B	SN: MY41496003	2010.8	2011.8
Reference DAE	DAE4	SN: 720	2011.1	2012.1
Signal generator	SML03	SN:103514	2010.8	2011.8
Network analyzer	8714ET	SN:US40372083	2010.8	2011.8
Secondary Calibration Equipment used	Model/Type	ID#		
Waveguide	WGLS R9	SN:1006		
Waveguide	WGLS R14	SN:1003		
Waveguide	WGLS R22	SN:1006		

Tel: +86-10-68009202 68009203 Fax: +86-10-68009205 68009195  
Add: No.80 Bei Lishi Road, Xi Cheng District Beijing 100037, P.R. China

Page 2 of 6 Certificate No.SRTC2011-CAL002-003

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**The State Radio\_monitoring\_center Testing Center**

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**Note:**

1. 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.
2. This calibration certificate is not permitted to be reproduced except in full without written the approval of the only laboratory.
3. SRTC is responsible for the whole of certificate only with stamp of SRTC.
4. The calibration results would be valid only for the items calibration.

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Tel: +86-10-68009202 68009203 Fax: +86-10-68009205 68009195  
Add: No.80 Bei Lishi Road, Xi Cheng District Beijing 100037, P.R.China

Page 3 of 6 Certificate No.SRTC2011-CAL002-003

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## The State Radio\_monitoring\_center Testing Center

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### Glossary

TSL	Tissue Simulating Liquid
NORM <sub>x, y, z</sub>	The sensitivity in free space
ConvF	The sensitivity of the TSL/The sensitivity in free space
DCP	Diode Compression Point
Angle $\varphi$	$\varphi$ rotation around probe axis
Angle $\theta$	$\theta$ rotation around an axis that is in the plane normal to probe axis i.e. $\theta=0$ , means that is normal to probe axis

### Methods Applied and Interpretation of Parameters

- NORM<sub>x, y, z</sub>: Assessed for E-field polarization  $\theta=0$  for XY sensors and  $\theta=90$  for Z sensor
- NORM(f)<sub>x, y, z</sub>= NORM<sub>x, y, z</sub> \* frequency\_response. And this linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the states uncertainty of ConvF.
- DCP<sub>x,y,z</sub>: DCP are numerical linearization parameters assessed based on the data of power sweep(no uncertainty required). DCP does not depend on frequency and medium.
- ConvF and boundary effect: Assessed in flat phantom using E-field and inside waveguide using analytical field distributions based on power measurements for  $f > 800\text{MHz}$ . The same setups are used for assessment of the parameters applied for boundary compensation(alpha,depth)of which typical uncertainty values are given. A frequency dependent ConvF is used in DASY version 4.4 and higher which allows extending the validity from  $\pm 50\text{MHz}$  to  $\pm 100\text{MHz}$ .
- Spherical isotropy: in a locally homogeneous field realized using an open waveguide setup.

The State Radio\_monitoring\_center Testing Center

Measurement Conditions

DASY versions	DSAY 5	V52.2.0.163
Model	Flat phantom	—

Probe Sensitivity Parameters

	Value	Unit
Axis X	1.00	$\mu V / (V / m)^2$
Axis Y	1.00	$\mu V / (V / m)^2$
Axis Z	1.00	$\mu V / (V / m)^2$

1. Diode Compression Point

	Value	Unit	Uncertainty (k=2)
Axis X	97.40	mV	10.82%
Axis Y	101.40	mV	10.82%
Axis Z	100.70	mV	10.82%

2. Probe Conversion Factors: Head Tissue Liquid

Frequency (MHz)	Validity (MHz)	Permittivity	Conductivity (mho/m)	Alpha	Depth (mm)	ConvF <sub>x</sub> / ConvF <sub>y</sub> / ConvF <sub>z</sub>			Uncertainty (k = 2)
						$\mu V / (V / m)^2$			
835	±100	41.93	0.916	0.448	1.499	7.880	8.301	8.050	13.02%
900	±100	42.72	0.968	0.607	1.271	9.029	9.525	9.201	13.02%
1800	±100	39.61	1.354	0.312	2.126	6.154	6.495	6.273	13.02%
1900	±100	39.11	1.463	0.381	1.832	4.947	5.220	5.055	13.02%
2450	±100	38.30	1.890	0.394	1.808	3.308	3.487	3.402	13.02%



The State Radio\_monitoring\_center Testing Center

3. Probe Conversion Factors: Body Tissue Liquid

Frequency (MHz)	Validity (MHz)	Permittivity	Conductivity (mho/m)	Alpha	Depth (mm)	ConvFx/ ConvFy/ConvFz $\mu V^2/V^2/m^2$			Uncertainty ( $k=2$ )
835	±100	54.05	0.983	0.508	1.412	6.776	7.019	6.804	13.02%
900	±100	54.48	1.055	0.672	1.244	8.755	9.243	8.919	13.02%
1800	±100	53.74	1.567	0.316	2.446	5.702	6.018	5.816	13.02%
1900	±100	53.40	1.679	0.330	2.414	4.532	4.785	4.652	13.02%
2450	±100	52.70	1.950	0.623	1.368	4.580	4.859	4.673	13.02%

4. Probe Isotropy

	Value	Unit	Uncertainty(k=2)
Axial Isotropy	-0.071	dB	10.18%
Spherical Isotropy	-0.171	dB	10.18%

Calibrated by 张明远

Checked by 倪正

## APPENDIX D: RELEVANT PAGES FROM DIPOLE VALIDATION KIT REPORT(S)

The State Radio\_monitoring\_center Testing Center

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**Calibration Certificate**



Dipole

Instrument \_\_\_\_\_

Type/Model D900V2

Manufacturer Schmid & Partner Engineering AG

Serial No SN:171

Name of Client The State Radio\_monitoring\_center Testing Center

Address of Client No.98 Bei Lishi Road XiCheng District

Calibration Date 2010.6.11

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

Approved by  

---

Tel: +86-10-68009202 68009203 Fax: +86-10-68009205 68009195  
Add: No.80 Bei Lishi Road, Xi Cheng District Beijing 100037, P.R .China

Page 1 of 8 Certificate No.SRTC2010-CAL003-003

**The State Radio\_monitoring\_center Testing Center**

Reference documents of the measurement(Code, Name)	
SRTC3003-V1.0.0 Working procedure for calibration of SAR Testing system	
Place and environmental condition of the measurement	
Temperature 21.6℃	Humidity 30.7%
Location SRTC Room226	

Primary Calibration Equipment used	Model/Type	ID#	Cal Date	Scheduled Calibration
Power meter	E4417A	SN: MY45101004	2009.8	2010.8
Power sensor	E9300B	SN: MY41496001	2009.8	2010.8
Power sensor	E9300B	SN: MY41496003	2009.8	2010.8
Reference DAE	DAE4	SN: 720	2010.1	2011.1
Reference probe	ES3DV3	SN: 3128	2009.6	2010.6
Secondary Calibration Equipment used	Model/Type	ID#	Cal Date	Scheduled Calibration
Signal generator	SML03	SN:103514	2009.8	2010.8
Network analyzer	8714ET	SN:US40372083	2009.8	2010.8

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Add: No.80 Bei Lishi Road, Xi Cheng District Beijing 100037, P.R. China

Page 2 of 8 Certificate No.SRTC2010-CA1003-003

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**The State Radio\_monitoring\_center Testing Center**

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**Note:**

1. 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.
2. This calibration certificate is not permitted to be reproduced except in full without written the approval of the only laboratory
3. SRTC is responsible for the whole of certificate only with stamp of SRTC.
4. The calibration results would be valid only for the items calibration.
5. The certification is written by Chinese and English. Exact meaning should be explained only on Chinese version.

---

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Page 3 of 8 Certificate No.SRTC2010-CAL003-003

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**The State Radio\_monitoring\_center Testing Center**

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**Glossary**

TSL	Tissue Simulating Liquid
ConvF	The sensitivity of the TSL/ sensitivity in TSL/NORM x, y, z
N/A	not applicable or not measured

**Calibration is preformed according to the Following Standards**

- a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in Human Head from Wireless Communication 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 300MHz to 3GHz) ", February 2005
- c) Federal Communication Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

**Additional Documentation:**

- e) DASY System Handbook

## The State Radio\_monitoring\_center Testing Center

### Methods Applied and Interpretation of Parameters

- Measurement Conditions: Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- Antenna Parameters with TSL: The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- SAR measured: SAR measured at the stated antenna input power
- SAR normalized: SAR as measured, normalized to an input power of 1 W at the antenna connector.
- SAR for nominal TSL parameters: The measured TSL parameters are used to calculate the nominal SAR result.

### Measurement Conditions

DASY Version	DSAY 5	V5.0 Build 126
Extrapolation	Advanced Extrapolation	————
Phantom	ELI4	————
Distance Dipole Center-TSL	15mm	With spacer (See note)
Area Scan Resolution	dx,dy=15mm	————
Zoom Scan Resolution	dx,dy,dz=5mm	————
Frequency	900MHz	————

Note: As client can not provide a spacer for their dipole, we used a alternate method to define the distance from dipole center to TSL. Pictures in Annex 3 show the details.

The State Radio\_monitoring\_center Testing Center

**Head TSL Parameters**

The following parameters and calculation were applied

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0°C	41.5	0.97mho/m
Measured Head TSL parameters	(22±0.5)°C	41.2	0.95m±5%
Head TSL temperature during test	(21.6±0.6)°C	——	——

**1. SAR-Head TSL**

SAR -1g SAR averaged over 1cm <sup>3</sup> (1g) of Head TSL	Condition	——
SAR measured	250mW input power	2.70mW/g
SAR normalized	normalized to 1W	10.80mW/g
SAR for nominal Head TSL parameters	normalized to 1W	10.71 mW/g±15.20%(k=2)

SAR-10g SAR averaged over 10cm <sup>3</sup> (10g) of Head TSL	Condition	——
SAR measured	250mW input power	1.72mW/g
SAR normalized	normalized to 1W	6.88mW/g
SAR for nominal Head TSL parameters	normalized to 1W	6.80mW/g±14.38%(k=2)

## The State Radio\_monitoring\_center Testing Center

### 2. Annex

#### Annex 1

Date/Time: 6/11/2010 8:30:47 AM

Test Laboratory: SRTC, Beijing, China

DUT: Dipole 900 MHz; Type: D900V2; Serial: D900V2 - SN:171

Communication System: CW; Frequency: 900 MHz; Duty Cycle: 1:1  
Medium parameters used:  $f = 900$  MHz;  $\sigma = 0.949$  mho/m;  $\epsilon_r = 41.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC)

DASY4 Configuration:

- Probe: ES3DV3 - SN3128; ConvF(5.52, 5.52, 5.52); Calibrated: 6/22/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn720; Calibrated: 1/18/2010
- Phantom: ELI 4.0; Type: QDOVA001BA
- Measurement SW: DASYS, V5.0 Build 126; SEMCAD X Version 13.4 Build 125

Pin=250mW; d=15mm /Zoom Scan (7x7x7) (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 56.3 V/m; Power Drift = -0.025 dB

Peak SAR (extrapolated) = 4.18 W/kg

SAR(1 g) = 2.7 mW/g; SAR(10 g) = 1.72 mW/g

Maximum value of SAR (measured) = 2.93 mW/g



0 dB = 2.93mW/g

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Add: No.80 Bei Lishi Road, Xi Cheng District Beijing 100037, P.R.China

Page 7 of 8 Certificate No.SRTC2010-CAL003-003

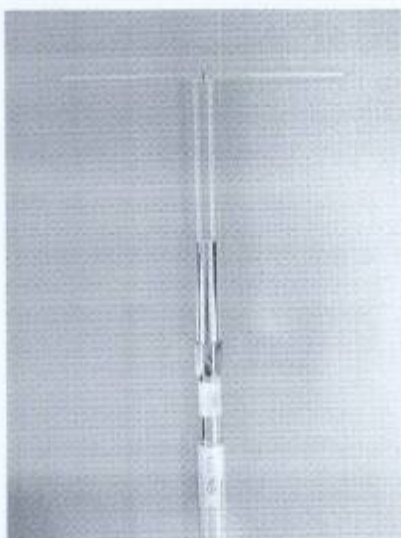


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The State Radio\_monitoring\_center Testing Center

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Annex 2



Calibrated by

张明远

Checked by

刘翔

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Tel: +86-10-68009202 68009203 Fax: +86-10-68009205 68009195  
Add: No.80 Bei Lishi Road, Xi Cheng District Beijing 100037, P.R.China

Page 8 of 8 Certificate No.SRTC2010-CAL003-003

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



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

Accredited by the Swiss Accreditation Service (SAS)  
The Swiss Accreditation Service is one of the signatories to the EA  
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

**Glossary:**

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

**Calibration is Performed According to the Following Standards:**

- IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
- 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
- Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

**Additional Documentation:**

- DASY4/5 System Handbook

**Methods Applied and Interpretation of Parameters:**

- Measurement Conditions:** Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- Antenna Parameters with TSL:** The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- Feed Point Impedance and Return Loss:** These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- Electrical Delay:** One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- SAR measured:** SAR measured at the stated antenna input power.
- SAR normalized:** SAR as measured, normalized to an input power of 1 W at the antenna connector.
- SAR for nominal TSL parameters:** The measured TSL parameters are used to calculate the nominal SAR result..

### Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY4	V4.7
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V4.9	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	835 MHz ± 1 MHz	

### Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	41.5	0.90 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	40.4 ± 6 %	0.88 mho/m ± 6 %
Head TSL temperature during test	(22.0 ± 0.2) °C	---	---

### SAR result with Head TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.37 mW / g
SAR normalized	normalized to 1W	9.46 mW / g
SAR for nominal Head TSL parameters <sup>1</sup>	normalized to 1W	9.46 mW / g ± 17.0 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.56 mW / g
SAR normalized	normalized to 1W	6.24 mW / g
SAR for nominal Head TSL parameters <sup>1</sup>	normalized to 1W	6.21 mW / g ± 16.5 % (k=2)

<sup>1</sup> Correction to nominal TSL parameters according to d), chapter "SAR Sensitivities"

### Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	55.2	0.97 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	53.4 ± 6 %	0.99 mho/m ± 6 %
Body TSL temperature during test	(22.0 ± 0.2) °C	—	—

### SAR result with Body TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	2.42 mW / g
SAR normalized	normalized to 1W	9.68 mW / g
SAR for nominal Body TSL parameters <sup>2</sup>	normalized to 1W	9.36 mW / g ± 17.0 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Body TSL	condition	
SAR measured	250 mW input power	1.60 mW / g
SAR normalized	normalized to 1W	6.40 mW / g
SAR for nominal Body TSL parameters <sup>2</sup>	normalized to 1W	6.24 mW / g ± 16.5 % (k=2)

<sup>2</sup> Correction to nominal TSL parameters according to d), chapter "SAR Sensitivities"

**Appendix**

**Antenna Parameters with Head TSL**

Impedance, transformed to feed point	54.9 $\Omega$ - 2.6 $j\Omega$
Return Loss	-25.5 dB

**Antenna Parameters with Body TSL**

Impedance, transformed to feed point	50.3 $\Omega$ - 4.5 $j\Omega$
Return Loss	- 27.0 dB

**General Antenna Parameters and Design**

Electrical Delay (one direction)	1.390 ns
----------------------------------	----------

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

**Additional EUT Data**

Manufactured by	SPEAG
Manufactured on	July 04, 2005

### DASY4 Validation Report for Head TSL

Date/Time: 16.06.2008 10:59:00

Test Laboratory: SPEAG, Zurich, Switzerland

**DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d023**

Communication System: CW-835; Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL 900 MHz;

Medium parameters used:  $f = 835$  MHz;  $\sigma = 0.88$  mho/m;  $\epsilon_r = 40.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY4 (High Precision Assessment)

#### DASY4 Configuration:

- Probe: ES3DV2 - SN3025; ConvF(5.97, 5.97, 5.97); Calibrated: 28.04.2008
- Sensor-Surface: 3.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 14.03.2008
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; ;
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

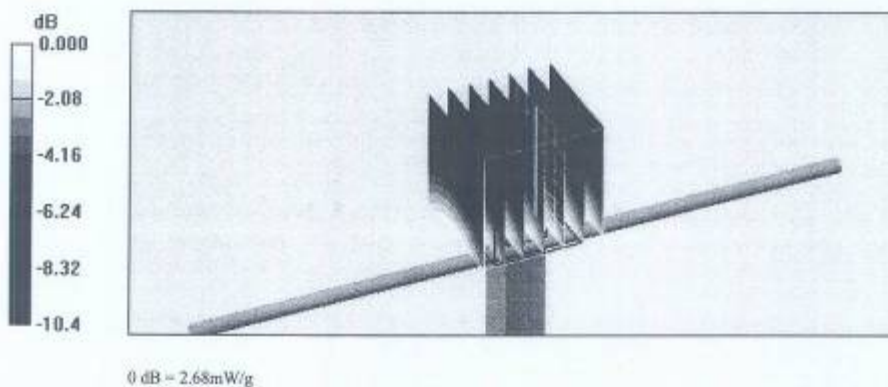
**Pin=250mW; dip=15mm; dist=3.4mm/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 56.5 V/m; Power Drift = -0.056 dB

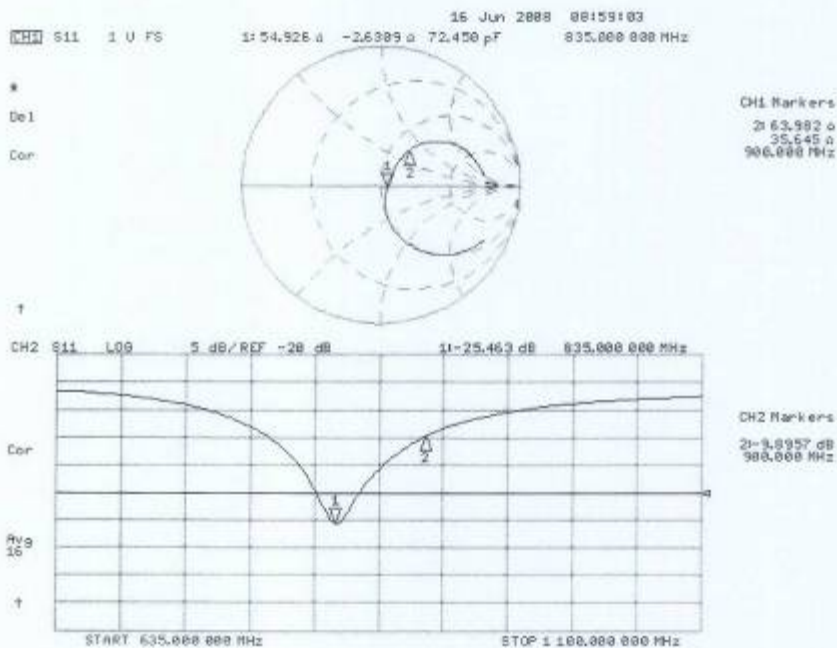
Peak SAR (extrapolated) = 3.48 W/kg

**SAR(1 g) = 2.37 mW/g; SAR(10 g) = 1.56 mW/g**

Maximum value of SAR (measured) = 2.68 mW/g



**Impedance Measurement Plot for Head TSL**



### DASY4 Validation Report for Body TSL

Date/Time: 06.06.2008 12:44:11

Test Laboratory: SPEAG, Zurich, Switzerland

**DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d023**

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1

Medium: MSL900;

Medium parameters used:  $f = 835$  MHz;  $\sigma = 0.99$  mho/m;  $\epsilon_r = 53.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY4 (High Precision Assessment)

#### DASY4 Configuration:

- Probe: ES3DV2 - SN3025; ConvF(5.9, 5.9, 5.9); Calibrated: 28.04.2008
- Sensor-Surface: 3.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 14.03.2008
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; ;
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

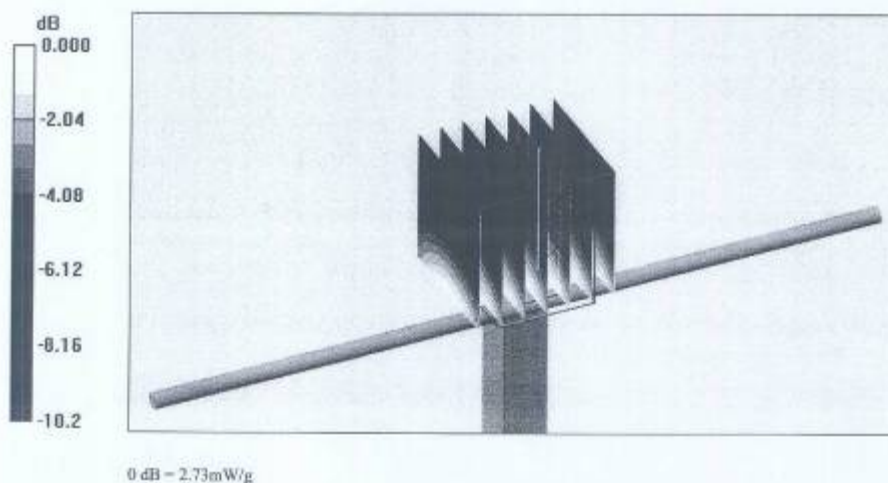
**Pin = 250mW, d = 15mm/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 53.7 V/m; Power Drift = 0.008 dB

Peak SAR (extrapolated) = 3.49 W/kg

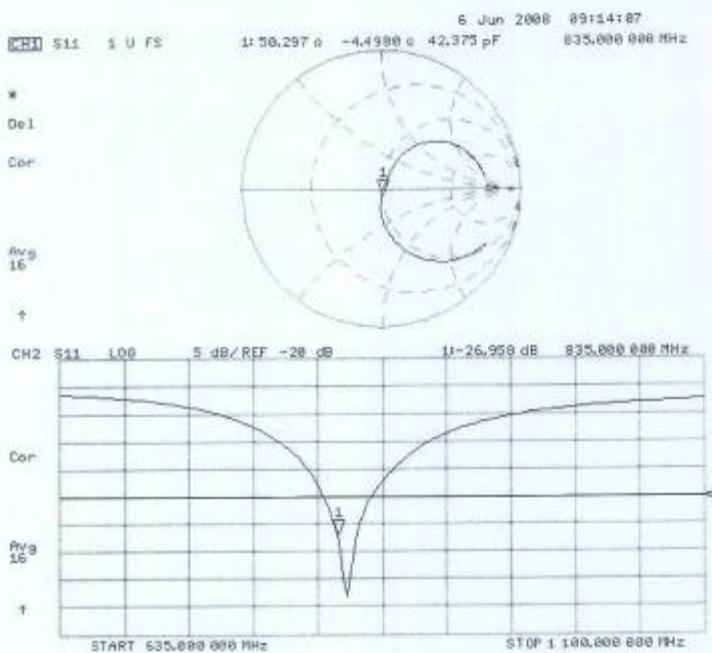
**SAR(1 g) = 2.42 mW/g; SAR(10 g) = 1.6 mW/g**

Maximum value of SAR (measured) = 2.73 mW/g





**Impedance Measurement Plot for Body TSL**



The State Radio\_monitoring\_center Testing Center

Calibration Certificate



Instrument Dipole

Type/Model D1800V2

Manufacturer Schmid & Partner Engineering AG

Serial No SN:2d084

Name of Client The State Radio\_monitoring\_center Testing Center

Address of Client No.98 Bei Lishi Road XiCheng District

Calibration Date 2010.6.11

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

Approved by



Tel: +86-10-68009202 68009203 Fax: +86-10-68009205 68009195  
Add: No.80 Bei Lishi Road, Xi Cheng District Beijing 100037, P.R ,China

Page 1 of 8 Certificate No.SRTC2010-CAL003-004

The State Radio\_monitoring\_center Testing Center

Reference documents of the measurement(Code, Name)
SRMC3003-V1.0.0 Working procedure for calibration of SAR Testing system
Place and environmental condition of the measurement
Temperature 21.6℃ Humidity 30.7%
Location SRTC Room226

Primary Calibration Equipment used	Model/Type	ID#	Cal Date	Scheduled Calibration
Power meter	E4417A	SN: MY45101004	2009.8	2010.8
Power sensor	E9300B	SN: MY41496001	2009.8	2010.8
Power sensor	E9300B	SN: MY41496003	2009.8	2010.8
Reference DAE	DAE4	SN: 720	2010.1	2011.1
Reference probe	ES3DV3	SN: 3128	2009.6	2010.6
Secondary Calibration Equipment used	Model/Type	ID#	Cal Date	Scheduled Calibration
Signal generator	SML03	SN:103514	2009.8	2010.8
Network analyzer	8714ET	SN:US40372083	2009.8	2010.8

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The State Radio\_monitoring\_center Testing Center

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Note:

1. 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.
2. This calibration certificate is not permitted to be reproduced except in full without written the approval of the only laboratory
3. SRTC is responsible for the whole of certificate only with stamp of SRTC.
4. The calibration results would be valid only for the items calibration.
5. The certification is written by Chinese and English. Exact meaning should be explained only on Chinese version.

---

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Add: No.80 Bei Lishi Road, Xi Cheng District Beijing 100037, P.R. China

Page 3 of 8 Certificate No.SRTC2010-CAL003-004

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**The State Radio\_monitoring\_center Testing Center**

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**Glossary**

TSL	Tissue Simulating Liquid
ConvF	The sensitivity of the TSL / sensitivity in TSL/NORM x, y, z
N/A	not applicable or not measured

**Calibration is preformed according to the Following Standards**

- a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in Human Head from Wireless Communication 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 300MHz to 3GHz)", February 2005
- c) Federal Communication Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

**Additional Documentation:**

- e) DASY System Handbook

## The State Radio\_monitoring\_center Testing Center

### Methods Applied and Interpretation of Parameters

- Measurement Conditions: Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- Antenna Parameters with TSL: The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- SAR measured: SAR measured at the stated antenna input power
- SAR normalized: SAR as measured, normalized to an input power of 1 W at the antenna connector.
- SAR for nominal TSL parameters: The measured TSL parameters are used to calculate the nominal SAR result.

### Measurement Conditions

DASY Version	DSAY 5	V5.0 Build 126
Extrapolation	Advanced Extrapolation	————
Phantom	ELI4	————
Distance Dipole Center-TSL	10mm	With spacer (See note)
Area Scan Resolution	dx,dy=10mm	————
Zoom Scan Resolution	dx,dy,dz=5mm	————
Frequency	1800MHz	————

Note: As client can not provide a spacer for their dipole, we used a alternate method to define the distance from dipole center to TSL. Pictures in Annex 3 show the details.

The State Radio\_monitoring\_center Testing Center

**Head TSL Parameters**

The following parameters and calculation were applied

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0°C	40.0	1.40mho/m
Measured Head TSL parameters	(22±0.5)°C	39.2	1.35m±5%
Head TSL temperature during test	(21.6±0.6)°C	——	——

**1. SAR-Head TSL**

SAR -1g	Condition	——
SAR averaged over 1cm <sup>3</sup> (1g) of Head TSL		
SAR measured	250mW input power	9.55mW/g
SAR normalized	normalized to 1W	38.20mW/g
SAR for nominal Head TSL parameters	normalized to 1W	37.62 mW/g±15.20%(k=2)

SAR-10g	Condition	——
SAR averaged over 10cm <sup>3</sup> (10g) of Head TSL		
SAR measured	250mW input power	5.09mW/g
SAR normalized	normalized to 1W	20.36mW/g
SAR for nominal Head TSL parameters	normalized to 1W	20.13mW/g±14.38%(k=2)

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2. Annex

Annex 1

Date/Time: 6/11/2010 8:30:47 AM

Test Laboratory: SRTC, Beijing, China

DUT: Dipole 1800 MHz; Type: D1800V2; Serial: D1800V2 - SN: 2d084

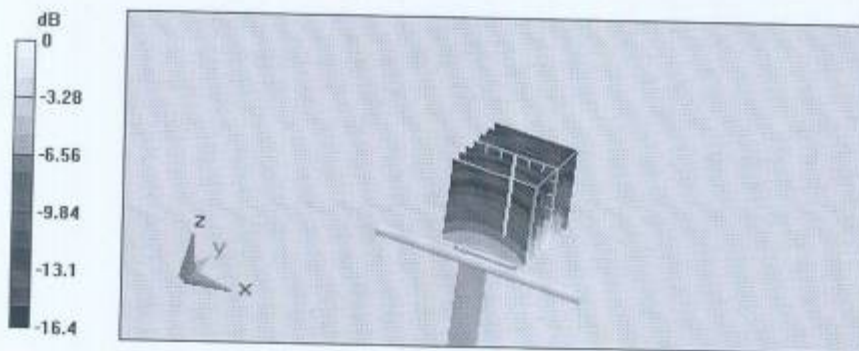
Communication System: CW; Frequency: 1800 MHz; Duty Cycle: 1:1  
Medium parameters used:  $f = 1800$  MHz;  $\sigma = 1.35$  mho/m;  $\epsilon_r = 39.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
Phantom section: Flat Section  
Measurement Standard: DASYS (IEEE/IEC)

DASY4 Configuration:

- Probe: ES3DV3 - SN3128; ConvF(4.93, 4.93, 4.93); Calibrated: 6/22/2009
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn720; Calibrated: 1/18/2010
- Phantom: ELI 4.0; Type: QDOVA001BA
- Measurement SW: DASYS, V5.0 Build 126; SEMCAD X Version 13.4 Build 125

Pin=250mW;d=10mm/Zoom Scan (7x7x7) (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm  
Reference Value = 89 V/m; Power Drift = -0.119 dB  
Peak SAR (extrapolated) = 17.2 W/kg  
SAR(1 g) = 9.55 mW/g; SAR(10 g) = 5.09 mW/g  
Maximum value of SAR (measured) = 10.7 mW/g



0 dB = 10.7mW/g

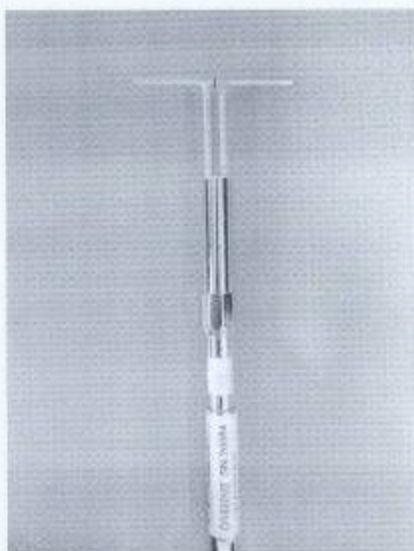
Tel: +86-10-68009202 68009203 Fax: +86-10-68009205 68009195  
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Page 7 of 8 Certificate No.SRTC2010-CAL003-004



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Annex 2



Calibrated by 张明远

Checked by 孙明

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Page 8 of 8 Certificate No.SRTC2010-CAL003-004