A Test Lab Techno Corp.

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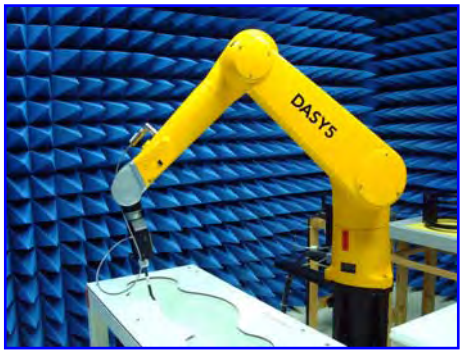
SAR EVALUATION REPORT

Test Report No.	:	**1001FS11-02**
Applicant	:	**HTC Corporation**
Product Type	:	**Smartphone**
IMEI No.	:	**357341030017443**
FCC ID	:	**NM8PB65100**
Trade Name	:	**HTC**
Model Number	:	**PB65100**
Dates of Test	:	**Dec. 25, 2009 ~ Jan. 05, 2010**
Test Environment	:	**Ambient Temperature： 22 ±2˚C**
		Relative Humidity：40 - 70 %
Test Specification	:	**Standard C95.1-2005**
		IEEE Std. 1528-2003
		2.1093;FCC/OET Bulletin 65 Supplement C [July 2001]
		FCC KDB 648474 D01 SAR Handsets Multi Xmiter and Ant
		FCC KDB 648474 D02 SAR Polcy Handsts Multi Xmiter Ant
		FCC KDB 941225 D03 SAR Test Reduction GSM GPRS EDGE
Max. SAR	:	**1.150 W/kg Head SAR**
		1.200 W/kg Body SAR
Test Lab Location	:	**Chang-an Lab**



1. The test operations have to be performed with cautious behavior, the test results are as attached.
2. The test results are under chamber environment of A Test Lab Techno Corp. A Test Lab Techno Corp. does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples.
3. The measurement report has to be written approval of A Test Lab Techno Corp. It may only be reproduced or published in full. This report shall not be reproduced except in full, without the written approval of A Test Lab Techno Corp. The test results in the report only apply to the tested sample.

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Sam Chuang 20100322	**Alex Wu 20100322**
Approve Signer	**Testing Engineer**

Contents

1. Description of Equipment under Test (EUT)

Applicant	:	HTC Corporation
Applicant Address	:	No. 23, Xinghua Rd., Taoyuan City, Taoyuan County 330, Taiwan
Manufacturer	:	HTC Corporation
Manufacturer Address	:	No. 23, Xinghua Rd., Taoyuan City, Taoyuan County 330, Taiwan
Product Type	:	Smartphone
IMEI No.	:	357341030017443
FCC ID	:	NM8PB65100
Trade Name	:	HTC
Model Number	:	PB65100
Test Device	:	Production Unit
Tx Frequency	:	824.2 - 848.8 MHz GSM/GPRS/EGPRS 850 1850.2 - 1909.8 MHz PCS/GPRS/EGPRS 1900 1712.4 - 1752.6 MHz WCDMA(RMC 12.2K)/HSDPA/HSUPA Band IV 2412 - 2462 MHz WLAN 802.11b/802.11g 2402 - 2480 MHz Bluetooth 2.1 / Bluetooth EDR
Device Class	:	GPRS/EGPRS Class B
Multi-slot Class	:	GPRS/EGPRS Class 10 (The maximum number of downlink is 4 and maximum number of uplink is 2,total timeslots is 5.)
RF Conducted Power (Time-Average)	:	0.451 W / 26.54 dBm GSM/GPRS/EGPRS 850 0.232 W / 23.66 dBm PCS/GPRS/EGPRS 1900 0.256 W / 24.09 dBm WCDMA/HSDPA/HSUPA Band IV 0.038 W / 15.77dBm WLAN 802.11b/802.11g 0.001 W / 0.73 dBm Bluetooth 2.1 / Bluetooth EDR
Max. SAR Measurement	:	1.150 W/kg Head SAR 1.200 W/kg Body SAR
Antenna Type	:	Planar Inverted-F Antenna (PIFA)
Antenna Gain	:	-0.39 dBi (GSM/GPRS/EGPRS 850) 2.43 dBi (PCS/GPRS/EGPRS 1900) 0.11 dBi (WCDMA/HSDPA/HSUPA Band IV) 0.87 dBi (WLAN 802.11b/802.11g) 0.80 dBi (Bluetooth 2.1 / Bluetooth EDR)
Device Category	:	Portable
RF Exposure Environment	:	General Population / Uncontrolled
Battery Option	:	Standard
Application Type	:	Certification

This wireless portable device has been shown to be capable of compliance for localized specific absorption rate (SAR) for uncontrolled environment / general population exposure limits specified in Standard C95.1-2005 and had been tested in accordance with the measurement procedures specified in IEEE Std. 1528-2003.

2. Introduction

The A Test Lab Techno Corp. has performed measurements of the maximum potential exposure to the user of **HTC Corporation Trade Name：HTC Model(s)：PB65100.** The test procedures, as described in American National Standards, Institute C95.1 - 2005〔1〕, FCC/OET Bulletin 65 Supplement C [July 2001] were employed and they specify the maximum exposure limit of 1.6mW/g as averaged over any 1 gram of tissue for portable devices being used within 25cm between user and EUT in the uncontrolled environment. A description of the product and operating configuration, detailed summary of the test results, methodology and procedures used in the equipment used are included within this test report.

3. SAR Definition

Specific Absorption Rate (SAR) is defined as the time derivative (rate) of the incremental energy (dw) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element (dv) of a given density (ρ). It is also defined as the rate of RF energy absorption per unit mass at a point in an absorbing body (see Figure 2).

$$SAR = \frac{d}{dt}\left(\frac{dw}{dm}\right) = \frac{d}{dt}\left(\frac{dw}{\rho dv}\right)$$

Figure 2. SAR Mathematical Equation

SAR is expressed in units of Watts per kilogram (W/kg)

$$SAR = \frac{\sigma E^2}{\rho}$$

Where：

σ = conductivity of the tissue (S/m)

ρ = mass density of the tissue (kg/m^3)

E = RMS electric field strength (V/m)

＊**Note**：

The primary factors that control rate of energy absorption were found to be the wavelength of the incident field in relations to the dimensions and geometry of the irradiated organism, the orientation of the organism in relation to the polarity of field vectors, the presence of reflecting surfaces, and whether conductive contact is made by the organism with a ground plane〔2〕

4. SAR Measurement Setup

These measurements were performed with the automated near-field scanning system DASY5 from Schmid & Partner Engineering AG (SPEAG). The system is based on a high precision robot (working range greater than 0.9m) which positions the probes with a positional repeatability of better than ±0.02mm. Special E- and H-field probes have been developed for measurements close to material discontinuity, the sensors of which are directly loaded with a Schottky diode and connected via highly resistive lines (length = 300mm) to the data acquisition unit.

A cell controller system contains the power supply, robot controller, teach pendant (Joystick), and remote control, is used to drive the robot motors. The Measurement Server is based on a PC/104 CPU board with a 400MHz intel ULV Celeron, 128MB chipdisk and 128MB RAM. The necessary circuits for communication with either the DAE4 (or DAE3) electronic box as well as the 16-bit AD-converter system for optical detection and digital I/O interface are contained on the DASY5 I/O-board, which is directly connected to the PC/104 bus of the CPU board. The PC consists of the Intel Core(TM)2 CPU @1.86GHz computer with Windows XP system and SAR Measurement Software DASY5, Post Processor SEMCAD, monitor, mouse, and keyboard. The Staubli 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 converter (EOC). The EOC performs the conversion from the optical into digital electric signal of the DAE and transfers data to the Measurement Server.

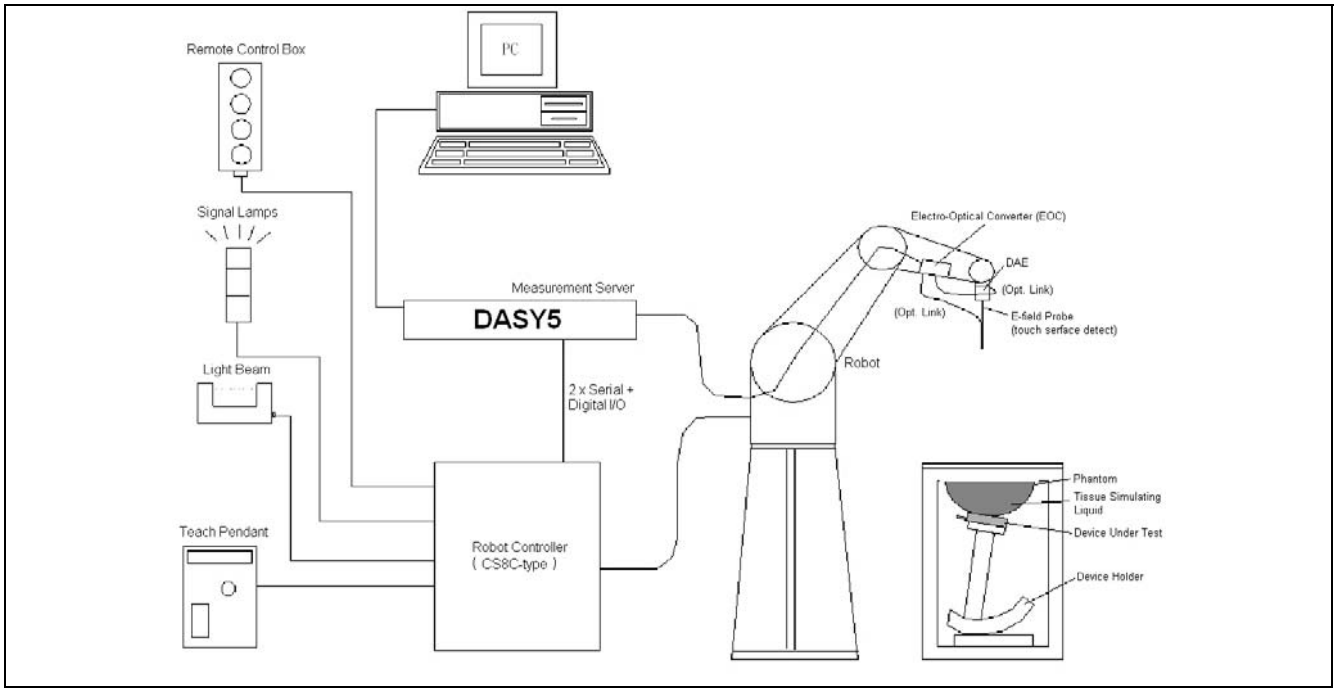


Figure 3. SAR Lab Test Measurement Setup

The DAE4 (or DAE3) 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. The system is described in detail in〔3〕.

5. System Components

5.1 DASY5 E-Field Probe System

The SAR measurements were conducted with the dosimetric probe ES3DV3 or ET3DV6 (manufactured by SPEAG), designed in the classical triangular configuration〔3〕and optimized for dosimetric evaluation. The probes is constructed using the thick film technique; with printed resistive lines on ceramic substrates. The probe is equipped with an optical multi-fiber line ending at the front of the probe tip. It is connected to the EOC box on the robot arm and provides an automatic detection of the phantom surface. Half of the fibers are connected to a pulsed infrared transmitter, the other half to a synchronized receiver. As the probe approaches the surface, the reflection from the surface produces a coupling from the transmitting to the receiving fibers. This reflection increases first during the approach, reaches maximum and then decreases. If the probe is flatly touching the surface, the coupling is zero. The distance of the coupling maximum to the surface is independent of the surface reflectivity and largely independent of the surface to probe angle. The DASY5 software reads the reflection during a software approach and looks for the maximum using a 2nd order fitting. The approach is stopped when reaching the maximum.

5.1.1 E-Field Probe Specification

Construction	Symmetrical design with triangular core Built-in optical fiber for surface detection System Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.q., glycol)
Calibration	In air from 10 MHz to 6 GHz In brain and muscle simulating tissue at frequencies of 835MHz, 1750MHz, 1900MHz and 2450MHz (accuracy ±8%) Calibration for other liquids and frequencies upon request
Frequency	10 MHz to > 6 GHz; Linearity: ±0.2 dB (30 MHz to 3 GHz)
Directivity	±0.3 dB in brain tissue (rotation around probe axis) ±0.5 dB in brain tissue (rotation normal probe axis)
Dynamic Range	10 μW/g to > 100mW/g; Linearity: ±0.2dB
Surface Detection	±0.2 mm repeatability in air and clear liquids over diffuse reflecting surface
Dimensions	Overall length: 330mm Tip length: 20mm Body diameter: 12mm Tip diameter: 2.5mm Distance from probe tip to dipole centers: 1.0mm
Application	General dosimetry up to 6GHz Compliance tests of mobile phones Fast automatic scanning in arbitrary phantoms

Figure 4. E-field Probe

Figure 5.
Probe setup on robot

5.1.2 E-Field Probe Calibration

Each probe is calibrated according to a dosimetric assessment procedure described in〔4〕with accuracy better than ±10%. The spherical isotropy was evaluated with the procedure described in〔5〕and found to be better than ±0.25dB. The sensitivity parameters (NormX, NormY, and NormZ), the diode compression parameter (DCP) and the conversion factor (ConvF) of the probe are tested.

The free space E-field from amplified probe outputs is determined in a test chamber. This is performed in a TEM cell for frequencies bellow 1GHz, and in a wave guide above 1GHz for free space. For the free space calibration, the probe is placed in the volumetric center of the cavity and at the proper orientation with the field. The probe is then rotated 360 degrees.

E-field temperature correlation calibration is performed in a flat phantom filled with the appropriate simulated brain tissue. The measured free space E-field in the medium correlates to temperature rise in a dielectric medium. For temperature correlation calibration a RF transparent thermistor-based temperature probe is used in conjunction with the E-field probe.

$$\mathbf{SAR} = \mathbf{C}\frac{\Delta T}{\Delta t}$$

Where：

Δt = Exposure time (30 seconds),

C = Heat capacity of tissue (head or body),

ΔT = Temperature increase due to RF exposure.

Or

$$\mathbf{SAR} = \frac{|E|^2 \sigma}{\rho}$$

Where：

σ = Simulated tissue conductivity,

ρ = Tissue density (kg/m^3).

5.2 Data Acquisition Electronic (DAE) System

Cell Controller

Processor：	Intel Core(TM)2 CPU
Clock Speed：	@ 1.86GHz
Operating System：	Windows XP Professional

Data Converter

Features：	Signal Amplifier, multiplexer, A/D converter, and control logic
Software：	DASY5 v5.0 (Build 125) & SEMCAD X Version 13.4 Build 125
Connecting Lines：	Optical downlink for data and status info
	Optical uplink for commands and clock

5.3 Robot

Positioner：	Stäubli Unimation Corp. Robot Model: TX90XL
Repeatability：	±0.02 mm
No. of Axis：	6

5.4 Measurement Server

Processor：	PC/104 with a 400MHz intel ULV Celeron
I/O-board：	Link to DAE4(or DAE3)
	16-bit A/D converter for surface detection system
	Digital I/O interface
	Serial link to robot
	Direct emergency stop output for robot

5.5 Device Holder for Transmitters

In combination with the SAM Twin Phantom V4.0, the Mounting Device (POM) enables the rotation of the mounted transmitter in spherical coordinates whereby the rotation points is the ear opening. The devices can be easily, accurately, and repeat ably positioned according to the IEEE SCC34-SC2 and CENELEC specifications. The device holder can be locked at different phantom locations (left head, right head, and flat phantom).

∗**Note**：A simulating human hand is not used due to the complex anatomical and geometrical structure of the hand that may produced infinite number of configurations〔6〕. To produce the worst-case condition (the hand absorbs antenna output power), the hand is omitted during the tests.

Larger DUT cannot be tested using this device holder. Instead a support of bigger polystyrene cubes and thin polystyrene plates is used to position the DUT in all relevant positions to find and measure spots with maximum SAR values. Therefore those devices are normally only tested at the flat part of the SAM.

Figure 6. Device Holder

5.6 Phantom - SAM v4.0

The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEEE 1528-2003, CENELEC 50361 and IEC 62209. It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents evaporation of the liquid. Reference markings on the phantom allow the complete setup of all predefined phantom positions and measurement grids by manually teaching three points with the robot.

Figure 7. SAM Twin Phantom

Shell Thickness	2 ±0.2 mm
Filling Volume	Approx. 25 liters
Dimensions	810x1000x500 mm (HxLxW)

Table 1. Specification of SAM v4.0

5.7 Data Storage and Evaluation

5.7.1 Data Storage

The DASY5 software stores the assessed data from the data acquisition electronics as raw data (in microvolt readings from the probe sensors), together with all the necessary software parameters for the data evaluation (probe calibration data, liquid parameters and device frequency and modulation data) in measurement files with the extension .DA4. The post processing software evaluates the desired unit and format for output each time the data is visualized or exported. This allows verification of the complete software setup even after the measurement and allows correction of erroneous parameter settings. For example, if a measurement has been performed with an incorrect crest factor parameter in the device setup, the parameter can be corrected afterwards and the data can be reevaluated.

5.7.2 Data Evaluation

The DASY5 post processing software (SEMCAD) automatically executes the following procedures to calculate the field units from the microvolt readings at the probe connector. The parameters used in the evaluation are stored in the configuration modules of the software：

Probe parameters：	- Sensitivity	Normi, ai0, ai1, ai2
	- Conversion factor	ConvFi
	- Diode compression point	dcpi
Device parameters：	- Frequency	f
	- Crest factor	cf
Media parameters：	- Conductivity	σ
	- Density	ρ

These parameters must be set correctly in the software. They can be found in the component documents or they can be imported into the software from the configuration files issued for the DASY components. In the direct measuring mode of the multimeter option, the parameters of the actual system setup are used. In the scan visualization and export modes, the parameters stored in the corresponding document files are used.
The first step of the evaluation is a linearization of the filtered input signal to account for the compression characteristics of the detector diode. The compensation depends on the input signal, the diode type and the DC-transmission factor from the diode to the evaluation electronics. If the exciting field is pulsed, the crest factor of the signal must be known to correctly compensate for peak power. The formula for each channel can be given as：

$$V_i = U_i + U_i^2 \cdot \frac{cf}{dcp_i}$$

with V_i = compensated signal of channel i (i = x, y, z)
U_i = input signal of channel i (i = x, y, z)
cf = crest factor of exciting field (DASY parameter)
dcp_i = diode compression point (DASY parameter)

From the compensated input signals the primary field data for each channel can be evaluated：

E-field probes： $$E_i = \sqrt{\frac{V_i}{Norm_i \cdot ConvF}}$$

H-field probes：

$$H_i = \sqrt{V_i} \cdot \frac{a_{i0} + a_{i1} f + a_{i2} f^2}{f}$$

with V_i = compensated signal of channel i (i = x, y, z)

$Norm_i$ = sensor sensitivity of channel i (i = x, y, z)

μV/(V/m)^2 for E-field Probes

$ConvF$ = sensitivity enhancement in solution

a_{ij} = sensor sensitivity factors for H-field probes

f = carrier frequency [GHz]

E_i = electric field strength of channel i in V/m

Hi = magnetic field strength of channel i in A/m

The RSS value of the field components gives the total field strength (Hermitian magnitude)：

$$E_{tot} = \sqrt{E_x^2 + E_y^2 + E_z^2}$$

The primary field data are used to calculate the derived field units.

$$SAR = E_{tot}^2 \cdot \frac{\sigma}{\rho \cdot 1000}$$

with SAR = local specific absorption rate in mW/g

E_{tot} = total field strength in V/m

σ = conductivity in [mho/m] or [Siemens/m]

ρ = equivalent tissue density in g/cm^3

∗**Note**：That the density is set to 1, to account for actual head tissue density rather than the density of the tissue simulating liquid.

The power flow density is calculated assuming the excitation field to be a free space field.

$$P_{pwe} = \frac{E_{tot}^2}{3770} \quad \text{or} \quad P_{pwe} = \frac{H_{tot}^2}{37.7}$$

with P_{pwe} = equivalent power density of a plane wave in mW/cm^2

E_{tot} = total electric field strength in V/m

H_{tot} = total magnetic field strength in A/m

6. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	Dosimetric E-Field Probe	ES3DV3	3150	Apr. 28, 2009	Apr. 28, 2010
SPEAG	835MHz System Validation Kit	D835V2	4d082	Jul. 13, 2009	Jul. 13, 2010
SPEAG	1750MHz System Validation Kit	D1750V2	1008	May 07, 2009	May 07, 2010
SPEAG	1900MHz System Validation Kit	D1900V2	5d111	Jul. 14, 2009	Jul. 14, 2010
SPEAG	2450MHz System Validation Kit	D2450V2	712	Feb. 11, 2009	Feb. 11, 2010
SPEAG	Data Acquisition Electronics	DAE3	393	Aug. 24, 2009	Aug. 24, 2010
SPEAG	Device Holder	N/A	N/A	NCR	NCR
SPEAG	Phantom	SAM V4.0	TP-1150	NCR	NCR
SPEAG	Robot	Staubli TX90XL	F07/564ZA1/C/01	NCR	NCR
SPEAG	Software	DASY5 V5.0 Build 125	N/A	NCR	NCR
SPEAG	Software	SEMCAD X V13.4 Build 125	N/A	NCR	NCR
SPEAG	Measurement Server	SE UMS 011 AA	1025	NCR	NCR
R&S	Wireless Communication Test Set	CMU200	109369	Jul. 29, 2009	Jul. 29, 2010
Agilent	Wireless Communication Test Set	E5515C	GB47020167	May 25, 2009	May 25, 2010
Agilent	ENA Series Network Analyzer	E5071B	MY42402996	Nov. 04, 2009	Nov. 04, 2010
Agilent	Dielectric Probe Kit	85070C	US99360094	NCR	NCR
R&S	Power Sensor	NRP-Z22	100179	May 17, 2009	May 17, 2010
Agilent	Signal Generator	E8257D	MY44320425	Mar. 09, 2009	Mar. 09, 2010
Agilent	Dual Directional Coupler	778D	50334	NCR	NCR
Mini-Circuits	Power Amplifier	ZHL-42W-SMA	D111103#5	NCR	NCR
Mini-Circuits	Power Amplifier	ZVE-8G-SMA	D042005 671800514	NCR	NCR

Table 2. Test Equipment List

7. Tissue Simulating Liquids

The mixture is calibrated to obtain proper dielectric constant (permittivity) and conductivity of the tissue.
The dielectric parameters of the liquids were verified prior to the SAR evaluation using an 85070C Dielectric Probe Kit and an 8720ES Network Analyzer.

IEEE SCC-34/SC-2 in 1528 recommended Tissue Dielectric Parameters

The head tissue dielectric parameters recommended by the IEEE SCC-34/SC-2 in 1528 have been incorporated in the following table. These head parameters are derived from planar layer models simulating the highest expected SAR for the dielectric properties and tissue thickness variations in human head. Other head and body tissue parameters that have not been s
pecified in 1528 are derived from the tissue dielectric parameters computed from the 4-Cole-Cole equation and extrapolated according to the head parameter specified in 1528.

Target Frequency	Head		Body	
(MHz)	ε_r	σ (S/m)	ε_r	σ (S/m)
150	52.3	0.76	61.9	0.80
300	45.3	0.87	58.2	0.92
450	43.5	0.87	56.7	0.94
835	41.5	0.90	55.2	0.97
900	41.5	0.97	55.0	1.05
915	41.5	0.98	55.0	1.06
1450	40.5	1.20	54.0	1.30
1610	40.3	1.29	53.8	1.40
1800 - 2000	40.0	1.40	53.3	1.52
2450	39.2	1.80	52.7	1.95
3000	38.5	2.40	52.0	2.73
5800	35.3	5.27	48.2	6.00
(ε_r = relative permittivity, σ = conductivity and ρ = 1000 kg/m^3)				

Table 3. Tissue dielectric parameters for head and body phantoms

7.1 Ingredients

The following ingredients are used:

- Water: deionized water (pure H_20), resistivity ≥ 16 M Ω -as basis for the liquid
- Sugar: refied white sugar (typically 99.7 % sucrose, available as crystal sugar in food shops) -to reduce relative permittivity
- Salt: pure NaCl -to increase conductivity
- Cellulose: Hydroxyethyl-cellulose, medium viscosity (75-125 mPa.s, 2% in water, 20° C), CAS # 54290 -to increase viscosity and to keep sugar in solution.
- Preservative: Preventol D-7 Bayer AG, D-51368 Leverkusen, CAS # 55965-84-9 -to prevent the spread of bacteria and molds
- DGBE: Diethylenglycol-monobuthyl ether (DGBE), Fluka Chemie GmbH, CAS # 112-34-5 -to reduce relative permittivity

7.2 Recipes

The following tables give the recipes for tissue simulating liquids to be used in different frequency bands.

Note: The goal dielectric parameters (at 22 °C) must be achieved within a tolerance of ±5% for ε and ±5% for σ .

Liquid type	HSL 900-B	
Ingredient	Weight (g)	Weight (%)
Water	532.63	40.29
Sugar	765.49	57.90
Cellulose	3.20	0.24
Salt	18.29	1.38
Preventol	2.40	0.18
Total amount	1,322.00	100.00
Goal dielectric parameters		
Frequency [MHz]	835	900
Relative Permittivity	41.5	41.5
Conductivity [S/m]	0.90	0.97

Liquid type	MSL 900-B	
Ingredient	Weight (g)	Weight (%)
Water	633.91	50.75
Sugar	602.12	50.75
Cellulose	-	0.00
Salt	11.76	0.94
Preventol	1.20	0.10
Total amount	1,249.00	100.00
Goal dielectric parameters		
Frequency [MHz]	835	900
Relative Permittivity	55.2	55.0
Conductivity [S/m]	0.97	1.05

Liquid type	HSL 1800-F	
Ingredient	Weight (g)	Weight (%)
Water	552.42	55.24
DGBE	444.52	44.45
Salt	3.06	0.31
Total amount	1,000.00	100.00
Goal dielectric parameters		
Frequency [MHz]	1800	1900
Relative Permittivity	40.0	40.0
Conductivity [S/m]	1.40	1.40

Liquid type	MSL 1800-B	
Ingredient	Weight (g)	Weight (%)
Water	701.66	70.17
DGBE	294.42	29.44
Salt	3.92	0.39
Total amount	1,000.00	100.00
Goal dielectric parameters		
Frequency [MHz]	1800	1900
Relative Permittivity	53.3	53.3
Conductivity [S/m]	1.52	1.52

Liquid type	HSL 1950-B	
Ingredient	Weight (g)	Weight (%)
Water	554.12	55.41
DGBE	445.08	44.51
Salt	0.80	0.08
Total amount	1,000.00	100.00
Goal dielectric parameters		
Frequency [MHz]	1950	2000
Relative Permittivity	40.0	40.0
Conductivity [S/m]	1.40	1.40

Liquid type	MSL 1950-A	
Ingredient	Weight (g)	Weight (%)
Water	697.94	69.79
DGBE	300.03	30.00
Salt	2.03	0.20
Total amount	1,000.00	100.00
Goal dielectric parameters		
Frequency [MHz]	1950	2000
Relative Permittivity	53.3	53.3
Conductivity [S/m]	1.52	1.52

Liquid type	MSL 2450-B	
Ingredient	Weight (g)	Weight (%)
Water	686.35	68.64
DGBE	313.65	31.37
Salt	-	0.00
Total amount	1,000.00	100.00
Goal dielectric parameters		
Frequency [MHz]	2450	
Relative Permittivity	52.7	
Conductivity [S/m]	1.95	

7.3 Liquid Confirmation

7.3.1 Parameters

Liquid Verify								
Ambient Temperature： 22 ± 2 °C；Relative Humidity：40 -70%								
Liquid Type	**Frequency**	**Temp (°C)**	**Parameters**	**Target Value**	**Measured Value**	**Deviation (%)**	**Limit (%)**	**Measured Date**
835MHz Head	820MHz	22.0	**εr**	41.5	41.7	**0.48%**	± 5	Dec. 25, 2009
			σ	0.90	0.86	**-4.44%**	± 5	
	835MHz	22.0	**εr**	41.5	41.5	**0.00%**	± 5	Dec. 25, 2009
			σ	0.90	0.88	**-2.22%**	± 5	
	850MHz	22.0	**εr**	41.5	41.5	**0.00%**	± 5	Dec. 25, 2009
			σ	0.90	0.91	**1.11%**	± 5	
1750MHz Head	1700MHz	22.0	**εr**	40.0	38.5	**-3.75%**	± 5	Dec. 24, 2009
			σ	1.40	1.34	**-4.29%**	± 5	
	1750MHz	22.0	**εr**	40.0	38.4	**-4.00%**	± 5	Dec. 24, 2009
			σ	1.40	1.44	**2.86%**	± 5	
	1800MHz	22.0	**εr**	40.0	38.3	**-4.25%**	± 5	Dec. 24, 2009
			σ	1.40	1.42	**1.43%**	± 5	
1750MHz Head	1700MHz	22.0	**εr**	40.0	38.5	**-3.75%**	± 5	Jan. 05, 2010
			σ	1.40	1.34	**-4.29%**	± 5	
	1750MHz	22.0	**εr**	40.0	38.4	**-4.00%**	± 5	Jan. 05, 2010
			σ	1.40	1.44	**2.86%**	± 5	
	1800MHz	22.0	**εr**	40.0	38.3	**-4.25%**	± 5	Jan. 05, 2010
			σ	1.40	1.42	**1.43%**	± 5	
1900MHz Head	1850MHz	22.0	**εr**	40.0	38.7	**-3.25%**	± 5	Dec. 29, 2009
			σ	1.40	1.34	**-4.29%**	± 5	
	1900MHz	22.0	**εr**	40.0	38.6	**-3.50%**	± 5	Dec. 29, 2009
			σ	1.40	1.38	**-1.43%**	± 5	
	1950MHz	22.0	**εr**	40.0	38.3	**-4.25%**	± 5	Dec. 29, 2009
			σ	1.40	1.43	**2.14%**	± 5	

Table 4. Measured Tissue dielectric parameters for head and body phantoms - 1

Ambient Temperature： 22 ± 2 °C；Relative Humidity：40 -70%								
Liquid Type	**Frequency**	**Temp (°C)**	**Parameters**	**Target Value**	**Measured Value**	**Deviation (%)**	**Limit (%)**	**Measured Date**
835MHz Body	820MHz	22.0	**εr**	55.2	53.7	**-2.72%**	± 5	Dec. 24, 2009
			σ	0.97	0.98	**1.03%**	± 5	
	835MHz	22.0	**εr**	55.2	53.7	**-2.72%**	± 5	Dec. 24, 2009
			σ	0.97	0.99	**2.06%**	± 5	
	850MHz	22.0	**εr**	55.2	53.5	**-3.08%**	± 5	Dec. 24, 2009
			σ	0.97	1.01	**4.12%**	± 5	
835MHz Body	820MHz	22.0	**εr**	55.2	53.7	**-2.72%**	± 5	Jan. 05, 2010
			σ	0.97	0.98	**1.03%**	± 5	
	835MHz	22.0	**εr**	55.2	53.7	**-2.72%**	± 5	Jan. 05, 2010
			σ	0.97	0.99	**2.06%**	± 5	
	850MHz	22.0	**εr**	55.2	53.5	**-3.08%**	± 5	Jan. 05, 2010
			σ	0.97	1.01	**4.12%**	± 5	
1750MHz Body	1700MHz	22.0	**εr**	53.3	52.1	**-2.25%**	± 5	Dec. 28, 2009
			σ	1.52	1.46	**-3.95%**	± 5	
	1750MHz	22.0	**εr**	53.3	51.8	**-2.81%**	± 5	Dec. 28, 2009
			σ	1.52	1.49	**-1.97%**	± 5	
	1800MHz	22.0	**εr**	53.3	51.7	**-3.00%**	± 5	Dec. 28, 2009
			σ	1.52	1.56	**2.63%**	± 5	
1900MHz Body	1850MHz	22.0	**εr**	53.3	51.7	**-3.00%**	± 5	Dec. 25, 2009
			σ	1.52	1.45	**-4.61%**	± 5	
	1900MHz	22.0	**εr**	53.3	51.6	**-3.19%**	± 5	Dec. 25, 2009
			σ	1.52	1.50	**-1.32%**	± 5	
	1950MHz	22.0	**εr**	53.3	51.4	**-3.56%**	± 5	Dec. 25, 2009
			σ	1.52	1.55	**1.97%**	± 5	
2450MHz Body	2400MHz	22.0	**εr**	52.7	50.5	**-4.17%**	± 5	Dec. 30, 2009
			σ	1.95	1.86	**-4.62%**	± 5	
	2450MHz	22.0	**εr**	52.7	50.2	**-4.74%**	± 5	Dec. 30, 2009
			σ	1.95	1.92	**-1.54%**	± 5	
	2500MHz	22.0	**εr**	52.7	50.2	**-4.74%**	± 5	Dec. 30, 2009
			σ	1.95	1.97	**1.03%**	± 5	

Table 5. Measured Tissue dielectric parameters for head and body phantoms - 2

7.3.2 Liquid Depth

The liquid level was during measurement 15cm ±0.5cm.

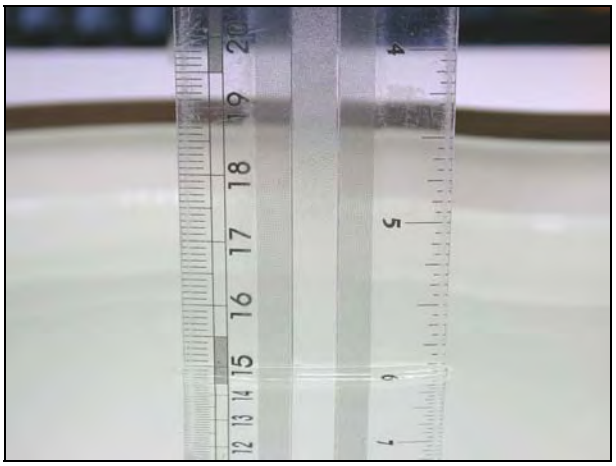


Figure 8. Head-Tissue-Simulating-Liquid

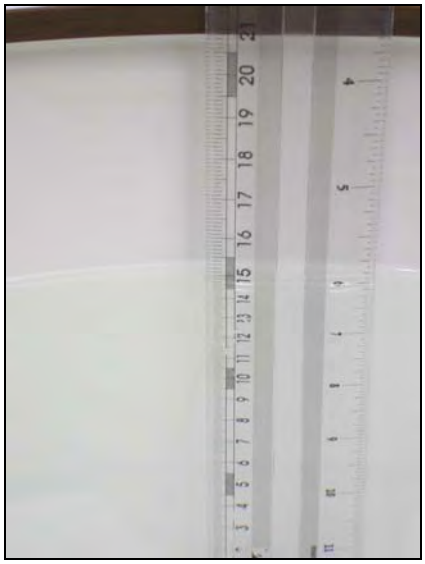


Figure 9. Body-Tissue-Simulating-Liquid

8. Measurement Process

8.1 Device and Test Conditions

The Test Device was provided by **HTC Corporation** for this evaluation. The spatial peak SAR values were assessed for the lowest, middle and highest channels defined by **GSM 850** (#128=824.2MHz, #190=836.6MHz, #251=848.8MHz), **PCS 1900** (#512=1850.2MHz, #661=1880.0MHz, #810=1909.8MHz), **WCDMA Band IV (RMC 12.2K)** (#1312=1712.4MHz, #1450=1740.0MHz, #1513=1752.6MHz) systems, **WLAN 802.11b / 802.11g** (#1=2412MHz, #6=2437MHz, #11=2462MHz) and **Bluetooth** (#0=2402MHz, #39=2441MHz, #78=2480MHz) systems.

HSDPA Date Devices setup for SAR Measurement.

HSDPA should be configured according to the UE category of a test device. The number of HS-DSCH/HS-PDSCHs, HARQ processes, minimum inter-TTI interval, transport block sizes and RV coding sequence are defined by the H-set. To maintain a consistent test configuration and stable transmission conditions, QPSK is used in the H-set for SAR testing. HS-DPCCH should be configured with a CQI feedback cycle of 4 ms with a CQI repetition factor of 2 to maintain a constant rate of active CQI slots. DPCCH and DPDCH gain factors(βc, βd), and HS-DPCCH power offset parameters (ΔACK, ΔNACK, ΔCQI) should be set according to values indicated in the Table below.[32] The CQI value is determined by the UE category, transport block size, number of HS-PDSCHs and modulation used in the H-set.[33]

Sub-test	βc	βd	βd (SF)	βc/βd	βhs(1,2)	CM (dB)(3)	MRP (dB)(3)
1	2/15	15/15	64	2/15	4/15	0.0	0.0
2	12/15(4)	15/15(4)	64	12/15(4)	24/15	1.0	0.0
3	15/15	8/15	64	15/8	30/15	1.5	0.5
4	15/15	4/15	64	15/4	30/15	1.5	0.5

Note

1. Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 8 ⇔ Ahs = βhs/βc = 30/15 ⇔ βhs= 30/15 *βc
2. For theHS-DPCCH power mask requirement test in clause 5.2C, 5.7A, and the Error Vector Magnitude(EVM) with HS-DPCCH test in clause 5.13.1A and HSDPA EVM with phase discontinuity in clause 5.13.1AA, Δ_{ACK} and Δ_{NACK} = 30/15 with βhs = 30/15 *βc and Δ_{CQI} = 24/15 with βhs = 24/15*βc
3. CM = 1 for βc/βd =12/15, βhs/βc=24/15. For all other combinations of DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.
4. For subtest 2 the βc/βd ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TF1, TF1) to βc = 11/15 and βd = 15/15.

Table 6. Setup for Release 5 HSDPA

HSPA Date Devices setup for SAR Measurement.

The following procedures are applicable to HSPA (HSUPA/HSDPA) data devices operating under 3GPP Release 6. Body exposure conditions generally apply to these devices, including handsets and data modems operating in various electronic devices. HSUPA operates in conjunction with WCDMA and HSDPA. SAR is initially measured in WCDMA test configurations without HSPA. The default test configuration is to establish a radio link between the DUT and a communication test set to configure a 12.2 kbps RMC (reference measurement channel) in Test Loop Mode 1. SAR for HSPA is selectively measured with HS-DPCCH, EDPCCH and E-DPDCH, all enabled, along with a 12.2 kbps RMC using the highest SAR configuration in WCDMA with 12.2 kbps RMC only. An FRC is configured according to HSDPCCH Sub-test 1 using H-set 1 and QPSK. HSPA is configured according to E-DCH Subtest 5 requirements. SAR for other HSPA sub-test configurations is also confirmed selectively according to output power, exposure conditions and E-DCH UE Category. Maximum output power is verified according to procedures in applicable versions of 3GPP TS 34.121 and SAR must be measured according to these maximum output conditions. The UE Categories for HSDPCCH and HSPA should be clearly identified in the SAR report. The following procedures are applicable only if Maximum Power Reduction (MPR) is implemented according to Cubic Metric (CM) requirements.

When voice transmission and head exposure conditions are applicable to a WCDMA/HSPA data device, head exposure is measured according to the 'Head SAR Measurements' procedures in the 'WCDMA Handsets' section of this document. SAR for body exposure configurations are measured according to the 'Body SAR Measurements' procedures in the 'WCDMA Handsets' section of this document. In addition, body SAR is also measured for HSPA when the maximum average output of each RF channel with HSPA active is at least ¼ dB higher than that measured without HSPA using 12.2 kbps RMC or the maximum SAR for 12.2 kbps RMC is above 75% of the SAR limit. Body SAR for HSPA is measured with E-DCH Sub-test 5, using H-Set 1 and QPSK for FRC and a 12.2 kbps RMC configured in Test Loop Mode 1 with power control algorithm 2, according to the highest body SAR configuration in 12.2 kbps RMC without HSPA. When VOIP is applicable for head exposure, SAR is not required when the maximum output of each RF channel with HSPA is less than ¼ dB higher than that measured using 12.2 kbps RMC; otherwise, the same HSPA configuration used for body measurements should be used to test for head exposure.

Due to inner loop power control requirements in HSPA, a commercial communication test set should be used for the output power and SAR tests. The 12.2 kbps RMC, FRC H-set 1 and E-DCH configurations for HSPA should be configured according to the β values indicated below as well as other applicable procedures described in the 'WCDMA Handset' and 'Release 5 HSDPA Data Devices' sections of this document.

The highest body SAR measured in Antenna Extended & Retracted configurations on a channel in 12.2 kbps RMC. The possible channels are the High, Middle & Low channel. Contact the FCC Laboratory for test and approval requirements if the maximum output power measured in E-DCH Sub-test 2 - 4 is higher than Sub-test 5.

Sub-test	βc	βd	βd (SF)	βc/βd	βhs(1)	βec	βed	Bed (SF)	Bed (codes)	CM(2) (dB)	MPR (dB)	AG(4) Index	E-TFCI
1	11/15(3)	15/15(3)	64	11/15(3)	22/15	209/225	1039/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	βed1: 47/15 βed2: 47/15	4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15(4)	15/15(4)	64	15/15(4)	30/15	24/15	134/15	4	1	1.0	0.0	21	81

Note 1: ΔACK, ΔNACK and ΔCQI = 8 ⇔ Ahs = βhs/βc = 30/15 ⇔ βhs= 30/15 *βc.
Note 2: CM = 1 for βc/βd =12/15, βhs/βc=24/15. For all other combinations of DPDCH, DPCCH, HS- DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference.
Note 3: For subtest 1 the βc/βd ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TF1, TF1) to βc = 10/15 and βd = 15/15.
Note 4: For subtest 5 the βc/βd ratio of 15/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TF1, TF1) to βc = 14/15 and βd = 15/15.
Note 5: Testing UE using E-DPDCH Physical Layer category 1 Sub-test 3 is not required according to TS 25.306 Table 5.1g.
Note 6: βed can not be set directly; it is set by Absolute Grant Value.

Table 7. Setup for Release 6 HSPA

Usage:	Operates with a normal mode by client (GSM/PCS/WCDMA) Operates with a test mode by client (802.11b/802.11g)
Simulating human Head/Body:	Head & Body
EUT Battery:	Fully-charged with Li-ion batteries.
Comment:	The SAR test mode is chosen by the max conducted power.

Band	Mode	CH	Frequency (MHz)	Time-Average Conducted Power (dBm)		Burst Averaged Conducted Power (dBm)	Worst
				before	After		
GSM850	-----	Lowest	824.2	23.97	23.95	33.10	☐
		Middle	836.6	23.98	23.94	33.12	☐
		Highest	848.8	24.05	24.00	33.19	☐
GPRS 850	4Down1Up	Lowest	824.2	23.98	23.96	33.11	☐
		Middle	836.6	23.99	23.98	33.13	☐
		Highest	848.8	24.05	24.03	33.19	☐
	3Down2Up	Lowest	824.2	26.48	26.45	32.65	☐
		Middle	836.6	26.48	26.47	32.66	☐
		Highest	848.8	**26.54**	26.51	32.72	■
EGPRS 850	4Down1Up	Lowest	824.2	18.09	18.08	27.22	☐
		Middle	836.6	18.05	18.02	27.19	☐
		Highest	848.8	18.06	18.04	27.20	☐
	3Down2Up	Lowest	824.2	20.06	20.05	26.23	☐
		Middle	836.6	20.03	20.09	26.21	☐
		Highest	848.8	20.07	20.02	26.25	☐
PCS1900	-----	Lowest	1850.2	21.40	21.39	30.53	☐
		Middle	1880.0	21.74	21.72	30.88	☐
		Highest	1909.8	21.78	21.75	30.92	☐
GPRS 1900	4Down1Up	Lowest	1850.2	21.39	21.36	30.52	☐
		Middle	1880.0	21.73	21.70	30.87	☐
		Highest	1909.8	21.77	21.76	30.91	☐
	3Down2Up	Lowest	1850.2	23.32	23.31	29.49	☐
		Middle	1880.0	23.61	23.60	29.79	☐
		Highest	1909.8	**23.66**	23.64	29.84	■
EGPRS 1900	4Down1Up	Lowest	1850.2	16.83	16.79	25.96	☐
		Middle	1880.0	17.13	17.11	26.27	☐
		Highest	1909.8	17.25	17.23	26.39	☐
	3Down2Up	Lowest	1850.2	18.85	18.84	25.01	☐
		Middle	1880.0	19.07	19.03	25.25	☐
		Highest	1909.8	19.18	19.17	25.36	☐

Band	Mode / Sub-test	CH	Frequency (MHz)	Average Conducted power (dBm)		Worst
				before	After	
WCDMA IV (RMC 12.2K)	---	Lowest	1712.4	23.97	23.87	☐
		Middle	1740.0	23.80	23.74	☐
		Highest	1752.6	**24.09**	24.07	■
HSDPA IV	1	Lowest	1712.4	23.90	23.88	☐
		Middle	1740.0	23.70	23.62	☐
		Highest	1752.6	24.08	24.07	☐
	2	Lowest	1712.4	23.84	23.78	☐
		Middle	1740.0	23.64	23.54	☐
		Highest	1752.6	24.04	23.96	☐
	3	Lowest	1712.4	23.50	23.43	☐
		Middle	1740.0	23.25	23.19	☐
		Highest	1752.6	23.61	23.52	☐
	4	Lowest	1712.4	23.45	23.37	☐
		Middle	1740.0	23.23	23.21	☐
		Highest	1752.6	23.59	23.47	☐
HSUPA IV	1	Lowest	1712.4	22.36	22.34	☐
		Middle	1740.0	22.54	22.46	☐
		Highest	1752.6	22.00	21.95	☐
	2	Lowest	1712.4	20.42	20.41	☐
		Middle	1740.0	20.57	20.46	☐
		Highest	1752.6	20.18	20.09	☐
	3	Lowest	1712.4	21.44	21.39	☐
		Middle	1740.0	21.57	21.45	☐
		Highest	1752.6	21.07	21.04	☐
	4	Lowest	1712.4	20.40	20.35	☐
		Middle	1740.0	20.47	20.39	☐
		Highest	1752.6	20.02	19.92	☐
	5	Lowest	1712.4	22.35	22.35	☐
		Middle	1740.0	22.53	22.46	☐
		Highest	1752.6	22.02	22.00	☐

Band	Data Rate	CH	Frequency (MHz)	Average Conducted power (dBm)		Worst
				before	After	
IEEE 802.11b	1M	Lowest	2412	15.42	15.41	☐
		Middle	2437	15.26	15.23	☐
		Highest	2462	15.32	15.28	☐
	2M	Lowest	2412	14.83	14.82	☐
		Middle	2437	14.68	14.65	☐
		Highest	2462	14.63	14.62	☐
	5.5M	Lowest	2412	14.84	14.81	☐
		Middle	2437	14.88	14.85	☐
		Highest	2462	14.63	14.61	☐
	11M	Lowest	2412	14.41	14.36	☐
		Middle	2437	15.77	15.74	■
		Highest	2462	15.62	15.61	☐
IEEE 802.11g	6M	Lowest	2412	10.24	10.22	☐
		Middle	2437	10.31	10.28	☐
		Highest	2462	10.63	10.61	■
	9M	Lowest	2412	10.12	10.11	☐
		Middle	2437	10.20	10.16	☐
		Highest	2462	10.05	10.03	☐
	12M	Lowest	2412	9.69	9.67	☐
		Middle	2437	9.83	9.80	☐
		Highest	2462	9.88	9.82	☐
	18M	Lowest	2412	10.08	10.06	☐
		Middle	2437	9.72	9.70	☐
		Highest	2462	9.81	9.78	☐
	24M	Lowest	2412	9.52	9.51	☐
		Middle	2437	9.50	9.47	☐
		Highest	2462	9.37	9.36	☐
	36M	Lowest	2412	9.77	9.74	☐
		Middle	2437	9.63	9.61	☐
		Highest	2462	9.28	9.25	☐
	48M	Lowest	2412	9.43	9.41	☐
		Middle	2437	9.37	9.34	☐
		Highest	2462	9.28	9.27	☐
	54M	Lowest	2412	9.83	9.82	☐
		Middle	2437	9.56	9.55	☐
		Highest	2462	7.10	7.07	☐
Bluetooth	---	Lowest	2402	0.73	0.72	■
		Middle	2441	0.33	0.31	☐
		Highest	2480	0.54	0.52	☐

8.2 Simultaneous Transmitting Evaluate

RF Conducted Power:

0.451 W	(26.54 dBm)	GSM/GPRS/EGPRS 850
0.234W	(23.70 dBm)	PCS/GPRS/EGPRS 1900
0.256 W	(24.09 dBm)	WCDMA Band IV/HSDPA Band IV/HSUPA Band IV
0.038 W	(15.77dBm)	WLAN IEEE 802.11b / IEEE 802.11g
0.001 W	(0.732 dBm)	Bluetooth 2.1 / Bluetooth EDR

BT and GSM and WLAN simultaneously SAR Description

BT Antenna and WLAN Antenna	0 cm
BT Antenna and GSM/PCS (License) Antenna	7.3 cm
WLAN Antenna and GSM/PCS (License) Antenna	7.3 cm

(1) Antenna Distance
1a.BT & GSM 7.3 cm > 5 cm
1b.BT & WLAN 0 cm, can't transmitting at the same time.

(2) BT Power <Pref and antenna-to-antenna is >2.5 cm. ~ BT Stand alone SAR is not required.

(3) WLAN > 2*Pref and antenna-to-antenna < 5.0 cm. ~ WLAN Stand alone SAR is required.

(4) Cell/PCS Stand alone SAR is required due to routine evaluation requirements.

(5) WLAN Stand alone SAR and License Device Stand alone SAR
1.2+0.167 = 1.367mW/g <1.6mW/g

8.3 System Performance Check

8.3.1 Symmetric Dipoles for System Validation

Construction	Symmetrical dipole with l/4 balun enables measurement of feed point impedance with NWA matched for use near flat phantoms filled with head simulating solutions Includes distance holder and tripod adaptor Calibration Calibrated SAR value for specified position and input power at the flat phantom in head simulating solutions.
Frequency	835, 1900, 2450 MHz
Return Loss	> 20 dB at specified validation position
Power Capability	> 100 W (f < 1GHz); > 40 W (f > 1GHz)
Options	Dipoles for other frequencies or solutions and other calibration conditions are available upon request
Dimensions	D835V2：dipole length 150 mm; overall height 330 mm D1750V2：dipole length 62 mm; overall height 300 mm D1900V2：dipole length 62 mm; overall height 300 mm D2450V2：dipole length 51.5 mm; overall height 300 mm

Figure 10. Validation Kit

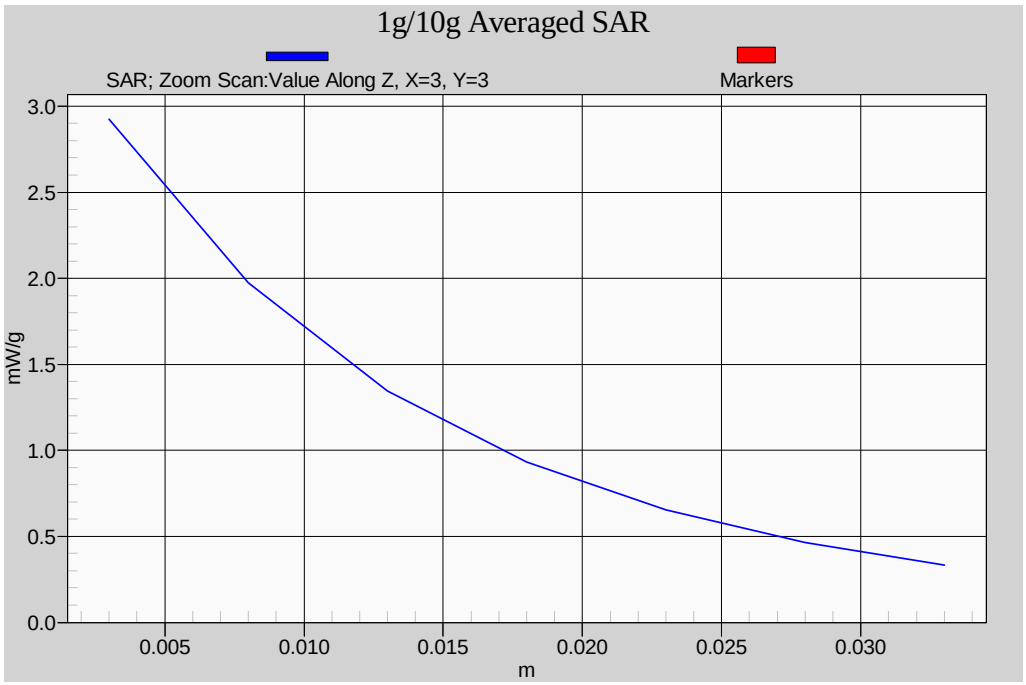
8.3.2 Validation

Prior to the assessment, the system validation kit was used to test whether the system was operating within its specifications of ± 7%. The validation was performed at 835MHz, 1750MHz, 1900MHz and 2450MHz.

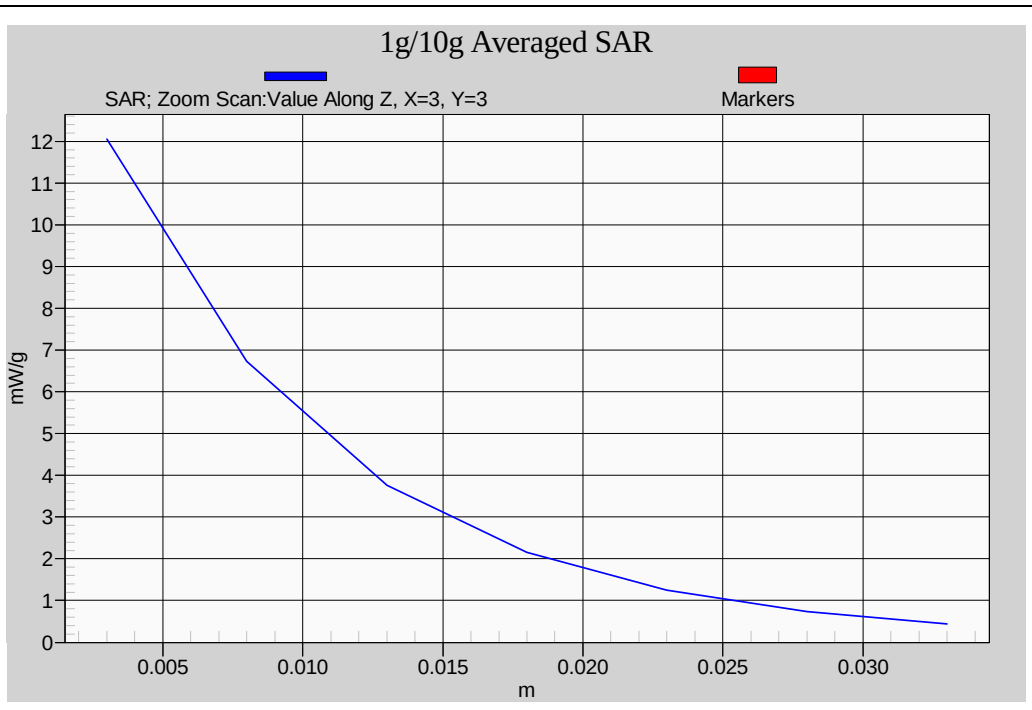
Validation kit	Mixture Type	SAR_{1g} [mW/g]	SAR_{10g} [mW/g]	Date of Calibration
D835V2-SN4d082	Head	9.68	6.32	Jul. 13, 2009
	Body	10.24	6.72	
D1750V2-SN1008	Head	38.36	20.16	May 07, 2009
	Body	37.00	20.04	
D1900V2-SN5d111	Head	42.00	21.96	Jul. 14, 2009
	Body	42.80	22.44	
D2450V2-SN712	Body	52.80	24.72	Jul. 14, 2009

Frequency (MHz)	Power (dBm)	SAR_{1g} (mW/g)	SAR_{10g} (mW/g)	Drift (dB)	Difference percentage		Date
					1g	10g	
835 (Head)	250mW	2.5	1.64	**0.029**	**3.3 %**	**3.8 %**	**Dec. 25, 2009**
	Normalize to 1 Watt	**10**	**6.56**				
1750 (Head)	250mW	9.5	4.98	**-0.136**	**-0.9 %**	**-1.2 %**	**Dec. 24, 2009**
	Normalize to 1 Watt	**38**	**19.92**				
1750 (Head)	250mW	9.4	4.9	**-0.115**	**-2.0 %**	**-2.8 %**	**Jan. 05, 2010**
	Normalize to 1 Watt	**37.6**	**19.6**				
1900 (Head)	250mW	10.2	5.25	**-0.084**	**-2.9 %**	**-4.4 %**	**Dec. 29, 2009**
	Normalize to 1 Watt	**40.8**	**21**				
835 (Body)	250mW	2.62	1.71	**-0.014**	**2.3 %**	**1.8 %**	**Dec. 24, 2009**
	Normalize to 1 Watt	**10.48**	**6.84**				
835 (Body)	250mW	2.64	1.73	**-0.045**	**3.1 %**	**3.0 %**	**Jan. 05, 2010**
	Normalize to 1 Watt	**10.56**	**6.92**				
1750 (Body)	250mW	9.54	4.95	**-0.002**	**3.1 %**	**-1.2 %**	**Dec. 28, 2009**
	Normalize to 1 Watt	**38.16**	**19.8**				
1900 (Body)	250mW	10.3	5.37	**0.065**	**-3.7 %**	**-4.3 %**	**Dec. 25, 2009**
	Normalize to 1 Watt	**41.2**	**21.48**				
2450 (Body)	250mW	13.3	5.93	**0.094**	**0.8 %**	**-4.0 %**	**Dec. 30, 2009**
	Normalize to 1 Watt	**53.2**	**23.72**				

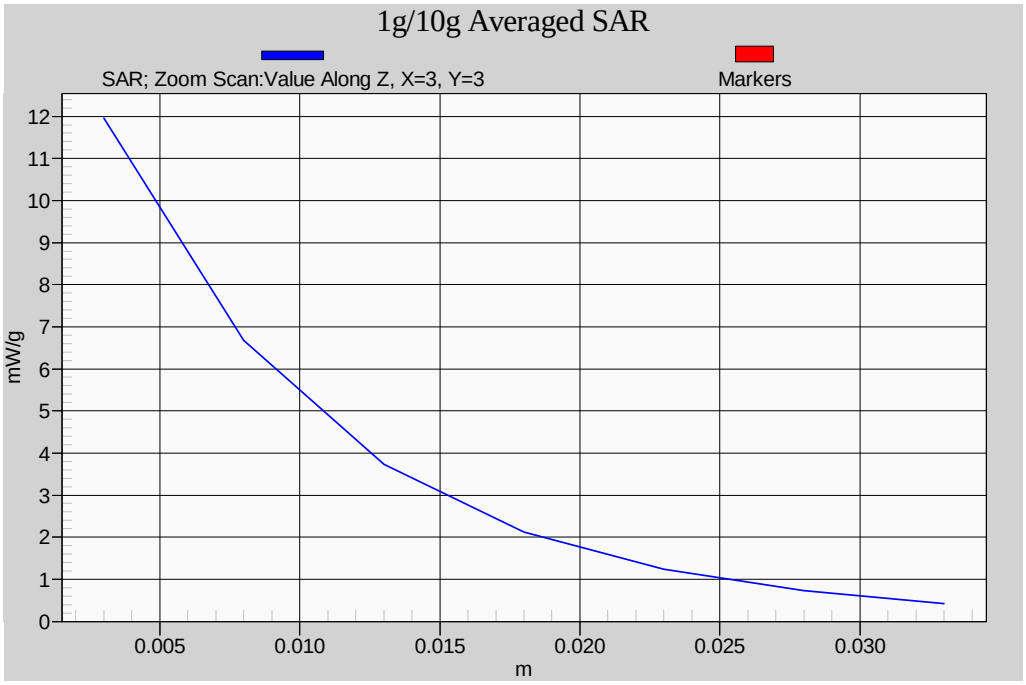
Z-axis Plot of System Performance Check



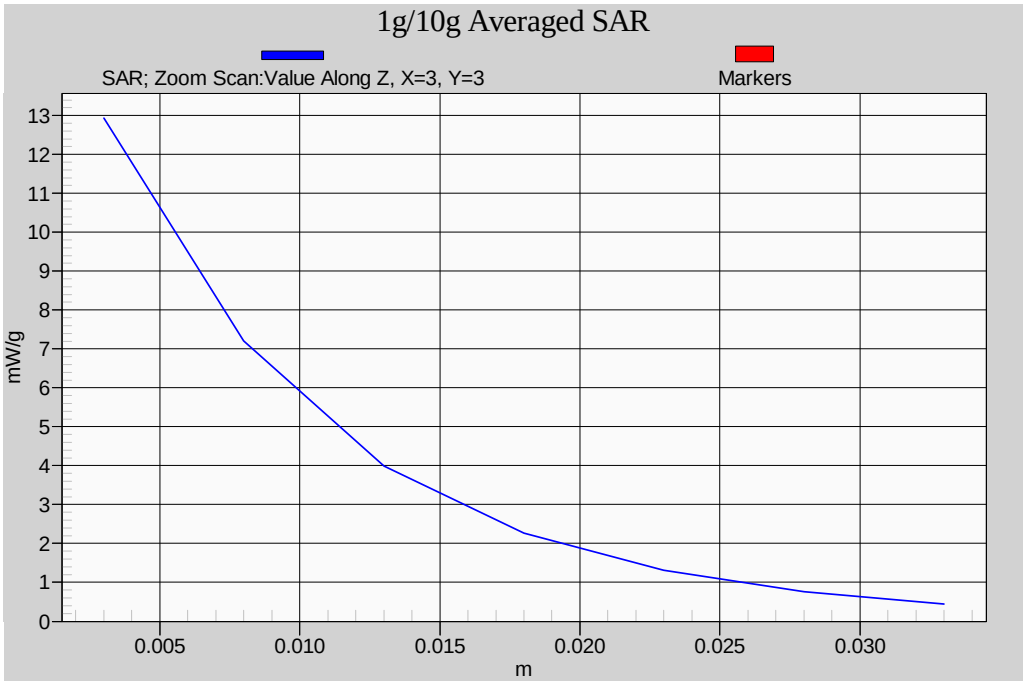
Head-Tissue-Simulating-Liquid 835MHz



Head-Tissue-Simulating-Liquid 1750MHz_2009/12/24

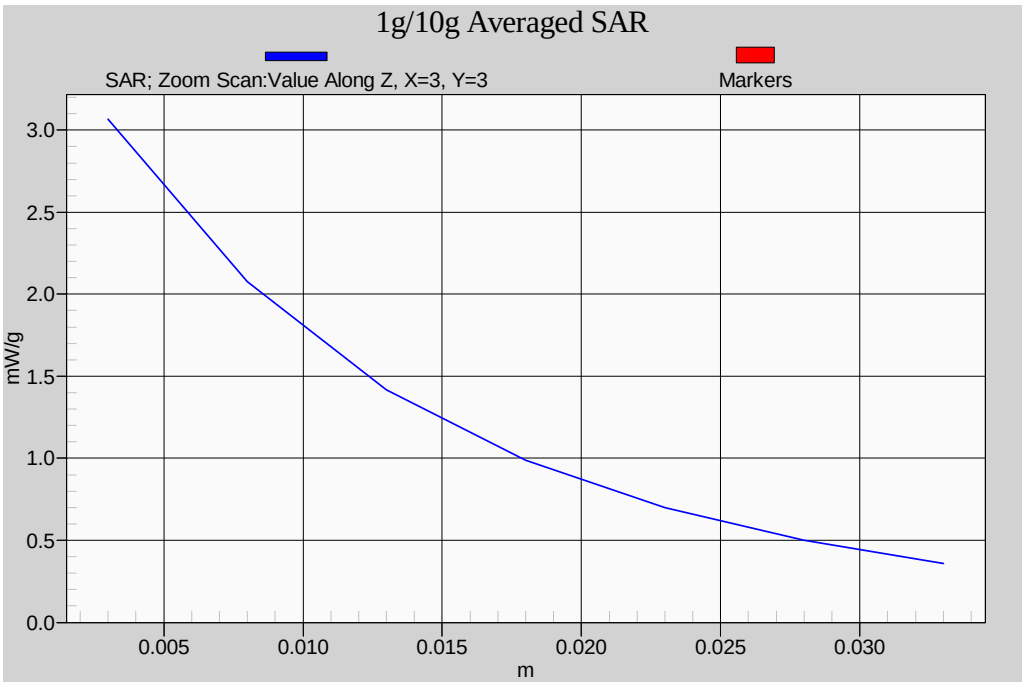


Head-Tissue-Simulating-Liquid 1750MHz_2010/01/05

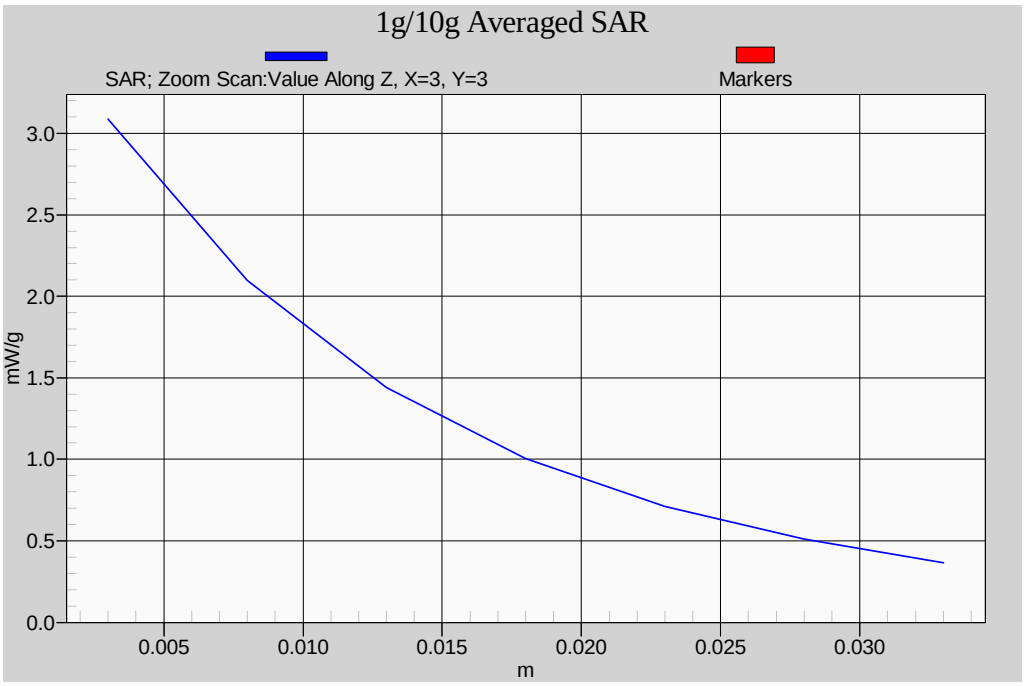


Head-Tissue-Simulating-Liquid 1900MHz

Z-axis Plot of System Performance Check

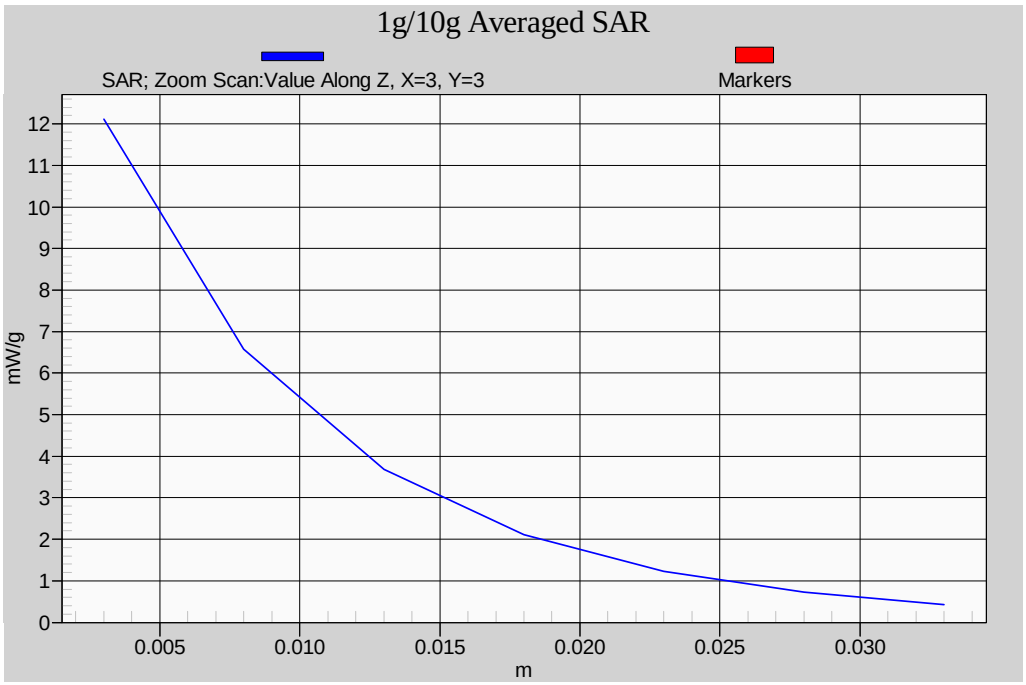


Body-Tissue-Simulating-Liquid 835MHz_2009/12/24

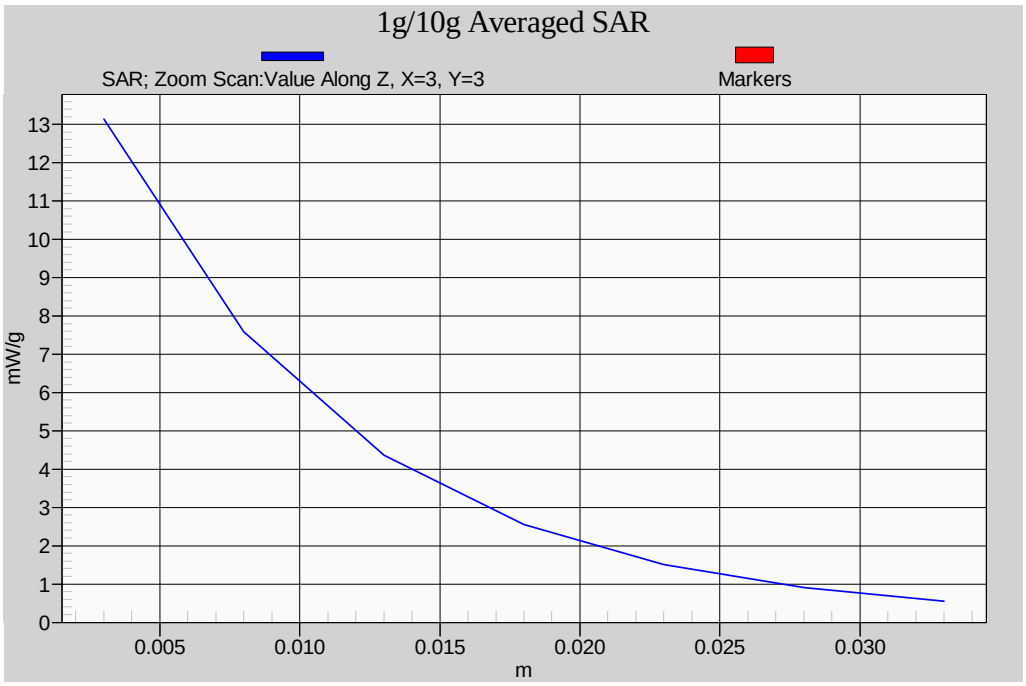


Body-Tissue-Simulating-Liquid 835MHz_2010/01/05

Z-axis Plot of System Performance Check

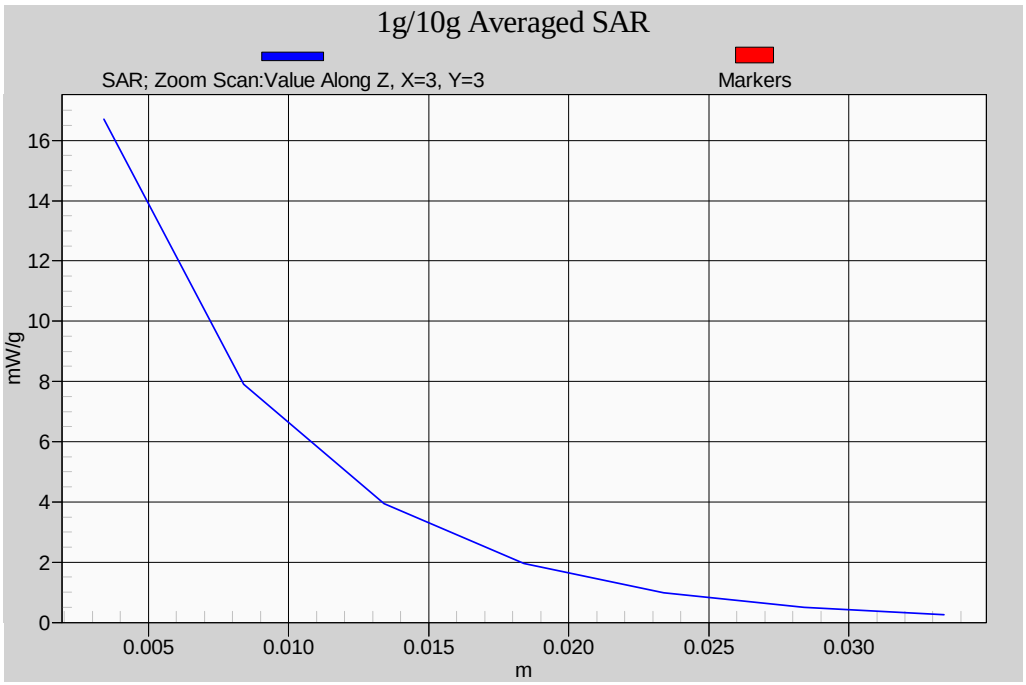


Body-Tissue-Simulating-Liquid 1750MHz



Body-Tissue-Simulating-Liquid 1900MHz

Z-axis Plot of System Performance Check



Body-Tissue-Simulating-Liquid 2450MHz

8.4 Dosimetric Assessment Setup

8.4.1 Body Test Position

Body - Worn Configuration

Body - Worn operating configurations should be tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in normal use configurations. Devices with a headset output should be tested with a headset connected to the device.

Body - Worn accessories may not always be supplied or available as options for some devices that are intended to be authorized for body-worn use. A separation distance of 15 mm between the back of the device and a flat phantom is recommended for testing body-worn SAR compliance under such circumstances.
For this test：

☐ The EUT is placed into the holster/belt clip and the holster is positioned against the surface of the phantom in a normal operating position.

■ Since this EUT doesn't supply any body-worn accessory to the end user, for **GSM850** / **PCS1900 / WCDMA Band IV (RMC 12.2K) / WLAN 802.11b / WLAN 802.11g** the distance of **15 mm** was tested to confirm the necessary "minimum SAR separation distance".
(＊Note：This distance includes the 2 mm phantom shell thickness.)

8.4.2 Measurement Procedures

The evaluation was performed with the following procedures：

Surface Check： A surface checks job gathers data used with optical surface detection. It determines the distance from the phantom surface where the reflection from the optical detector has its peak. Any following measurement jobs using optical surface detection will then rely on this value. The surface check performs its search a specified number of times, so that the repeatability can be verified. The probe tip distance is 1.3mm to phantom inner surface during scans.

Reference： The reference job measures the field at a specified reference position, at 4 mm from the selected section's grid reference point.

Area Scan： The area scan is used as a fast scan in two dimensions to find the area of high field values, before doing a finer measurement around the hot spot. The sophisticated interpolation routines can find the maximum locations even in relatively coarse grids. When an area scan has measured all reachable points, it computes the field maxima found in the scanned area, within a range of the global maximum. Any following zoom scan within the same procedure will then perform fine scans around these maxima. The area covered the entire dimension of the EUT and the horizontal grid spacing was 15 mm × 15 mm.

Zoom Scan： Zoom scans are used to assess the highest averaged SAR for cubic averaging volumes with 1 g and 10 g of simulated tissue. The zoom scan measures 7 x 7 x 9 points in a 30 x 30 x 24 mm cube whose base faces are centered around the maxima returned from a preceding area scan within the same procedure.

Drift： The drift job measures the field at the same location as the most recent reference job within the same procedure, with the same settings. The drift measurement gives the field difference in dB from the last reference measurement. Several drift measurements are possible for each reference measurement. This allows monitoring of the power drift of the device in the batch process. If the value changed by more than 5%, the evaluation was repeated.

8.5 Spatial Peak SAR Evaluation

The DASY5 software includes all numerical procedures necessary to evaluate the spatial peak SAR values. Based on the Draft: SCC-34, SC-2, WG-2 - Computational Dosimetry, IEEE P1529/D0.0 (Draft Recommended Practice for Determining the Spatial-Peak Specific Absorption Rate (SAR) Associated with the Use of Wireless Handsets - Computational Techniques), a new algorithm has been implemented. The spatial-peak SAR can be computed over any required mass.

The base for the evaluation is a ”cube” measurement in a volume of (32x32x30)mm^3 (5x5x7 points). The measured volume must include the 1g and 10g cubes with the highest averaged SAR values. For that purpose, the center of the measured volume is aligned to the interpolated peak SAR value of a previously performed area scan. If the 10g cube or both cubes are not entirely inside the measured volumes, the system issues a warning regarding the evaluated spatial peak values within the Postprocessing engine (SEMCAD). This means that if the measured volume is shifted, higher values might be possible. To get the correct values you can use a finer measurement grid for the area scan. In complicated field distributions, a large grid spacing for the area scan might miss some details and give an incorrectly interpolated peak location.
The entire evaluation of the spatial peak values is performed within the Postprocessing engine (SEMCAD). The system always gives the maximum values for the 1g and 10g cubes. The algorithm to find the cube with highest averaged SAR is divided into three stages:

Interpolation and Extrapolation

The probe is calibrated at the center of the dipole sensors which is located 1 to 2.7mm away from the probe tip. During measurements, the probe stops shortly above the phantom surface, depending on the probe and the surface detecting system. Both distances are included as parameters in the probe configuration file. The software always knows exactly how far away the measured point is from the surface. As the probe cannot directly measure at the surface, the values between the deepest measured point and the surface must be extrapolated.

In DASY5, the choice of the coordinate system defining the location of the measurement points has no influence on the uncertainty of the interpolation, Maxima Search and SAR extrapolation routines. The interpolation, Maxima Search and extrapolation routines are all based on the modified Quadratic Shepard’s method [7].

9. Measurement Uncertainty

Measurement uncertainties in SAR measurements are difficult to quantify due to several variables including biological, physiological, and environmental. However, we estimate the measurement uncertainties in SAR to be less than ±21.9 %〔8〕.

According to Std. C95.3〔9〕, the overall uncertainties are difficult to assess and will vary with the type of meter and usage situation. However, accuracy's of ±1 to 3 dB can be expected in practice, with greater uncertainties in near-field situations and at higher frequencies (shorter wavelengths), or areas where large reflecting objects are present. Under optimum measurement conditions, SAR measurement uncertainties of at least ±2dB can be expected.

According to CENELEC〔10〕, typical worst-case uncertainty of field measurements is ±5 dB. For well-defined modulation characteristics the uncertainty can be reduced to ±3 dB.

Error Description	Uncertainty value	Prob. Dist.	Div.	(*ci*) 1g	(*ci*) 10g	Std. Unc. (1g)	Std. Unc. (10g)	(*vi*) *veff*
Measurement System								
Probe Calibration	± 5.9 %	N	1	1	1	± 5.9 %	± 5.9 %	
Axial Isotropy	± 4.7 %	R		0.7	0.7	± 1.9 %	± 1.9 %	∞
Hemispherical Isotropy	± 9.6 %	R	$\sqrt{3}$	0.7	0.7	± 3.9 %	± 3.9 %	∞
Boundary Effects	± 1.0 %	R	$\sqrt{3}$	1	1	± 0.6 %	± 0.6 %	∞
Linearity	± 4.7 %	R	$\sqrt{3}$	1	1	± 2.7 %	± 2.7 %	∞
System Detection Limits	± 1.0 %	R	$\sqrt{3}$	1	1	± 0.6 %	± 0.6 %	∞
Readout Electronics	± 0.3 %	N	1	1	1	± 0.3 %	± 0.3 %	∞
Response Time	± 0.8 %	R	$\sqrt{3}$	1	1	± 0.5 %	± 0.5 %	∞
Integration Time	± 2.6 %	R	$\sqrt{3}$	1	1	± 1.5 %	± 1.5 %	∞
RF Ambient Noise	± 3.0 %	R	$\sqrt{3}$	1	1	± 1.7 %	± 1.7 %	∞
RF Ambient Reflections	± 3.0 %	R	$\sqrt{3}$	1	1	± 1.7 %	± 1.7 %	∞
Probe Positioner	± 0.4 %	R	$\sqrt{3}$	1	1	± 0.2 %	± 0.2 %	∞
Probe Positioning	± 2.9 %	R	$\sqrt{3}$	1	1	± 1.7 %	± 1.7 %	∞
Max. SAR Eval.	± 1.0 %	R	$\sqrt{3}$	1	1	± 0.6 %	± 0.6 %	∞
Test Sample Related								
Device Positioning	± 2.9 %	N	1	1	1	± 2.9 %	± 2.9 %	145
Device Holder	± 3.6 %	N	1	1	1	± 3.6 %	± 3.6 %	5
Power Drift	± 5.0 %	R	$\sqrt{3}$	1	1	± 2.9 %	± 2.9 %	∞
Phantom and Setup								
Phantom Uncertainty	± 4.0 %	R	$\sqrt{3}$	1	1	± 2.3 %	2.3 %	∞
Liquid Conductivity (target)	± 5.0 %	R	$\sqrt{3}$	0.64	0.43	± 1.8 %	1.2 %	∞
Liquid Conductivity (meas.)	± 2.5 %	N	1	0.64	0.43	± 1.6 %	1.1 %	∞
Liquid Permittivity (target)	± 5.0 %	R	$\sqrt{3}$	0.6	0.49	± 1.7 %	1.4 %	∞
Liquid Permittivity (meas.)	± 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 8. Uncertainty Budget of DASY

10. SAR Test Results Summary

10.1 GSM 850 - Head SAR

Ambient：

Temperature (℃)： 22 ± 2 Relative HUMIDITY (%)： 40-70

Liquid：

Mixture Type： HSL835 Liquid Temperature (℃) ： 22.0

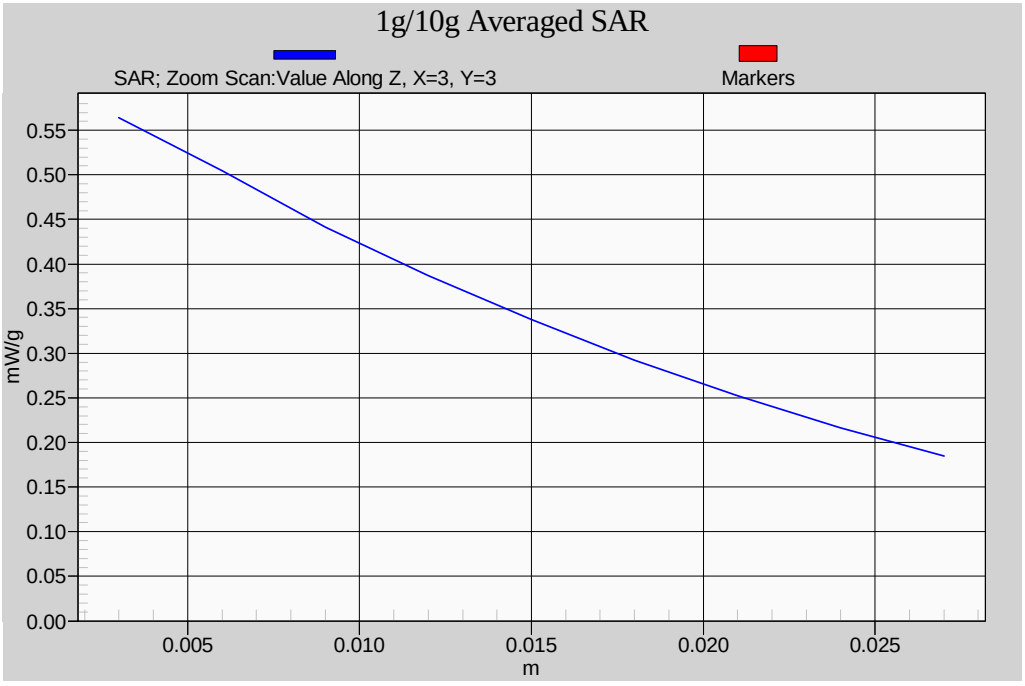
Depth of liquid (cm)： 15

Measurement：

Duty Cycle： 1:8.3 Probe S/N： 3150

Frequency		Band	Power (dBm)	Phantom Position	Antenna Position	Accessory	SAR_{1g} [mW/g]	Power Drift (dB)	Remark
MHz	CH								
848.8	251	GSM 850	24.05	Right-cheek	PIFA	N/A	0.504	0.03100	Sample 1st_Close
848.8	251	GSM 850	24.05	Right-cheek	PIFA	N/A	0.250	0.01900	Sample 1st_Open
848.8	251	GSM 850	24.05	Right-Tilted	PIFA	N/A	0.339	0.04600	Sample 1st_Close
848.8	251	GSM 850	24.05	Left-cheek	PIFA	N/A	0.514	0.03000	Sample 1st_Close
848.8	251	GSM 850	24.05	Left-cheek	PIFA	N/A	0.343	0.01400	Sample 1st_Open
848.8	251	GSM 850	24.05	Left-Tilted	PIFA	N/A	0.333	0.00640	Sample 1st_Close
Std. C95.1-2005 - Safety Limit Spatial Peak Uncontrolled Exposure/General Population					1.6 W/kg (mW/g) Averaged over 1 gram				

Z-axis Plot of SAR Measurement



Z-axis Plot of Left-Cheek GSM850 CH 251 _ Sample 1st_Close

10.2 PCS 1900 - Head SAR

Ambient：

Temperature (℃)： 22 ± 2 — Relative HUMIDITY (%)： 40-70

Liquid：

Mixture Type： HSL1900 — Liquid Temperature (℃)： 22.0

Depth of liquid (cm)： 15

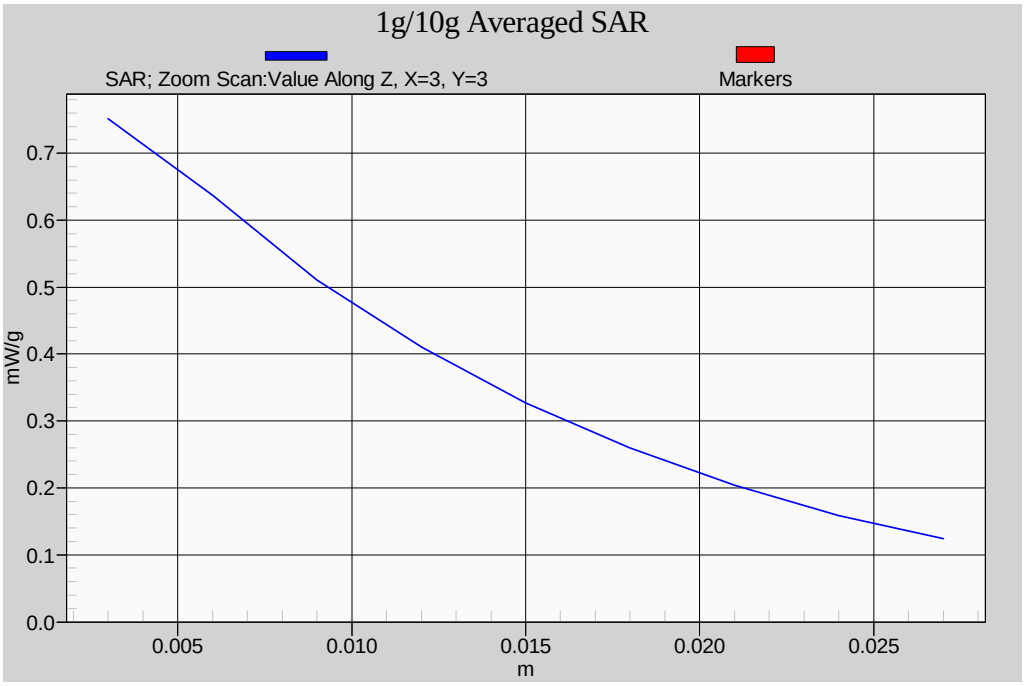
Measurement：

Duty Cycle： 1:8.3 — Probe S/N： 3150

Frequency		Band	Power (dBm)	Phantom Position	Antenna Position	Accessory	SAR_{1g} [mW/g]	Power Drift (dB)	Remark
MHz	CH								
1909.8	810	PCS	21.78	Right-cheek	PIFA	N/A	0.561	-0.00122	Sample 1st_Close
1909.8	810	PCS	21.78	Right-cheek	PIFA	N/A	0.325	0.01300	Sample 1st_Open
1909.8	810	PCS	21.78	Right-Tilted	PIFA	N/A	0.360	0.00396	Sample 1st_Close
1909.8	810	PCS	21.78	Left-cheek	PIFA	N/A	0.650	0.01700	Sample 1st_Close
1909.8	810	PCS	21.78	Left-cheek	PIFA	N/A	0.409	-0.01100	Sample 1st_Open
1909.8	810	PCS	21.78	Left-Tilted	PIFA	N/A	0.363	0.01500	Sample 1st_Close
Std. C95.1-2005 - Safety Limit Spatial Peak Uncontrolled Exposure/General Population					1.6 W/kg (mW/g) Averaged over 1 gram				

Detail results see Appendix B.

Z-axis Plot of SAR Measurement



Z-axis Plot of Left-Check PCS1900 CH 810 _ Sample 1st _Close

10.3 WCDMA Band IV (RMC 12.2K) - Head SAR

Ambient：

Temperature (℃)： 22 ± 2 Relative HUMIDITY (%)： 40-70

Liquid：

Mixture Type： HSL1800 Liquid Temperature (℃)： 22.0

Depth of liquid (cm)： 15

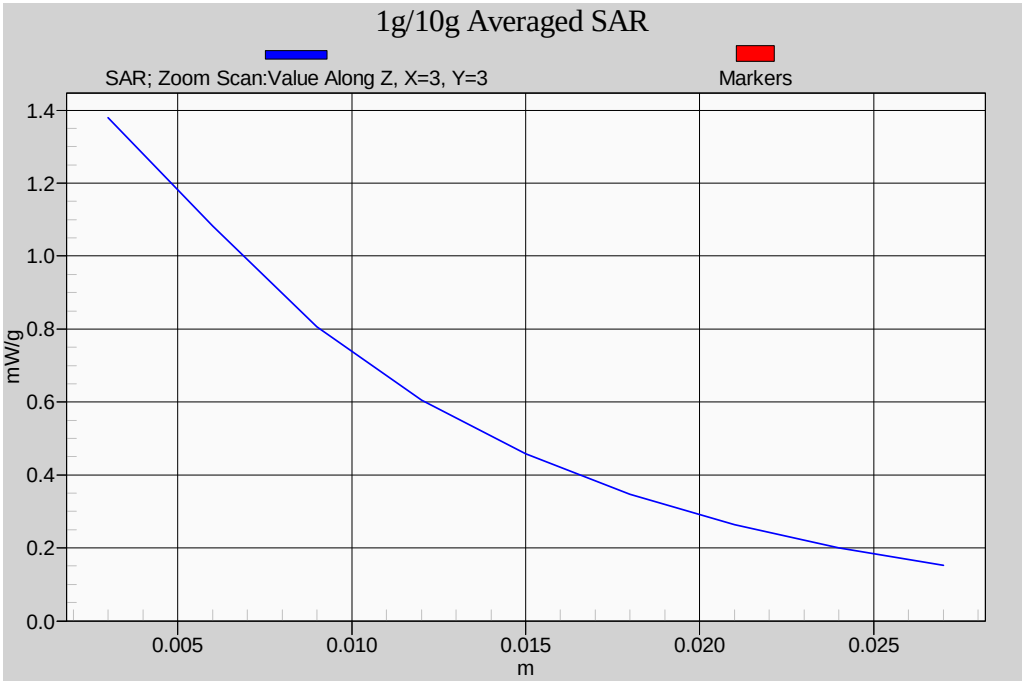
Measurement：

Duty Cycle： 1:1 Probe S/N： 3150

Frequency		Band	Power (dBm)	Phantom Position	Antenna Position	Accessory	SAR_{1g} [mW/g]	Power Drift (dB)	Remark
MHz	CH								
1712.4	1312	WCDMA Band IV	23.97	Right-cheek	PIFA	N/A	0.836	-0.01600	Sample 1st _Close
1740.0	1450	WCDMA Band IV	23.80	Right-cheek	PIFA	N/A	1.150	0.00564	Sample 1st _Close
1740.0	1450	WCDMA Band IV	23.80	Right-cheek	PIFA	N/A	0.350	0.02100	Sample 1st _Open
1740.0	1450	WCDMA Band IV	23.80	Right-cheek	PIFA	N/A	1.000	0.06700	Sample 2nd _Close
1752.6	1513	WCDMA Band IV	24.09	Right-cheek	PIFA	N/A	0.875	0.14400	Sample 1st _Close
1752.6	1513	WCDMA Band IV	24.09	Right-cheek	PIFA	N/A	0.305	0.01100	Sample 1st _Open
1752.6	1513	WCDMA Band IV	24.09	Right-Tilted	PIFA	N/A	0.432	-0.03500	Sample 1st _Close
1752.6	1513	WCDMA Band IV	24.09	Left-cheek	PIFA	N/A	0.856	-0.00447	Sample 1st _Close
1752.6	1513	WCDMA Band IV	24.09	Left-Tilted	PIFA	N/A	0.423	-0.00855	Sample 1st _Close
Std. C95.1-2005 - Safety Limit Spatial Peak Uncontrolled Exposure/General Population					1.6 W/kg (mW/g) Averaged over 1 gram				

Detail results see Appendix B.

Z-axis Plot of SAR Measurement



Z-axis Plot of Right-Check WCDMA Band IV (RMC 12.2K) CH 1450 _ Sample 1st _Close

10.4 GSM / GPRS 850 - Body SAR (EUT 15 mm separation to Phantom)

Ambient：

Temperature (℃)： 22 ± 2 Relative HUMIDITY (%)： 40-70

Liquid：

Mixture Type： MSL835 Liquid Temperature (℃) ： 22.0

Depth of liquid (cm)： 15

Measurement：

Duty Cycle： 1:8.3 Probe S/N： 3150

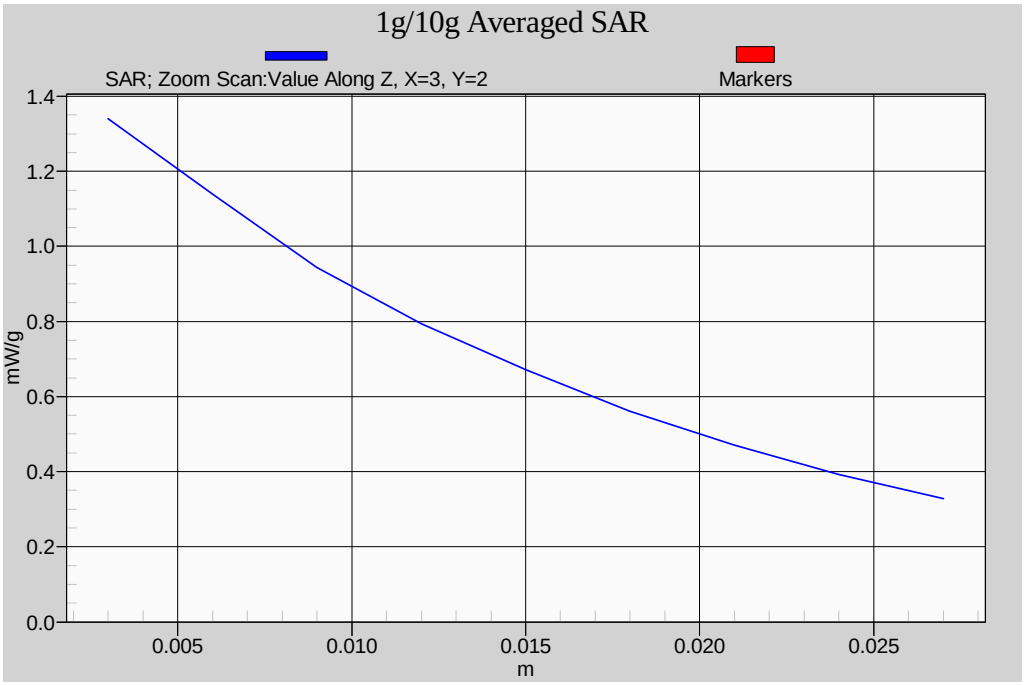
3Down2Up -- 1:4.2

4Down1Up -- 1:8.3

Frequency		Band	Power (dBm)	Phantom Position	Antenna Position	Accessory	SAR_{1g} [mW/g]	Power Drift (dB)	Remark
MHz	CH								
848.8	251	GSM 850	24.05	Flat	PIFA	Headset	0.692	0.00914	Sample 1st _Close
824.2	128	GPRS 850	26.48	Flat	PIFA	Headset	0.820	-0.02500	Sample 1st _Close 3Down2Up
836.6	190	GPRS 850	26.48	Flat	PIFA	Headset	1.140	-0.00979	Sample 1st _Close 3Down2Up
848.8	251	GPRS 850	26.54	Flat	PIFA	Headset	1.200	-0.15200	Sample 1st _Close 3Down2Up
848.8	251	GPRS 850	26.54	Flat	PIFA	Headset	0.966	-0.02600	Sample 1st _Open 3Down2Up
848.8	251	GPRS 850	26.54	Flat	PIFA	Headset	1.020	0.02100	Sample 2nd _Close 3Down2Up
848.8	251	GPRS 850	24.05	Flat	PIFA	Headset	0.747	0.03500	Sample 1st _Close 4Down1Up
Std. C95.1-2005 - Safety Limit Spatial Peak Uncontrolled Exposure/General Population						1.6 W/kg (mW/g) Averaged over 1 gram			

Detail results see Appendix B.

Z-axis Plot of SAR Measurement



Z-axis Plot of Flat GPRS850 CH 251 (3Down2Up) _ Sample 1st _Close

10.5 PCS / GPRS 1900 - Body SAR (EUT 15 mm separation to Phantom)

Ambient：

Temperature (℃)： 22 ± 2 Relative HUMIDITY (%)： 40-70

Liquid：

Mixture Type： MSL1900 Liquid Temperature (℃) ： 22.0

Depth of liquid (cm)： 15

Measurement：

Duty Cycle： 1:8.3 Probe S/N： 3150

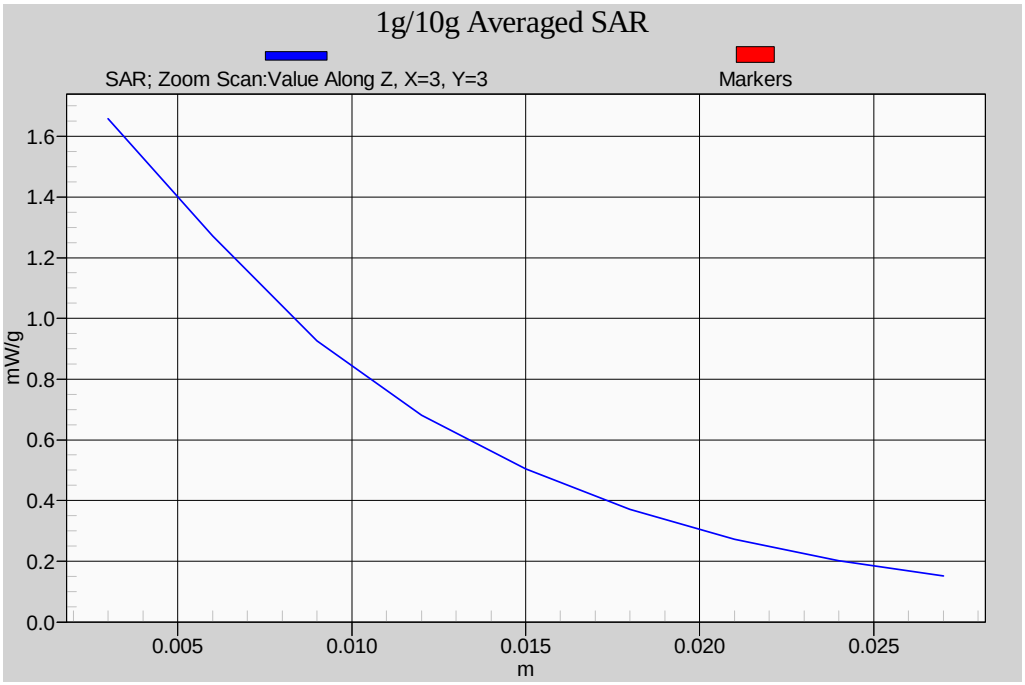
3Down2Up -- 1:4.2

4Down1Up -- 1:8.3

Frequency		Band	Power (dBm)	Phantom Position	Antenna Position	Accessory	SAR_{1g} [mW/g]	Power Drift (dB)	Remark
MHz	CH								
1909.8	810	PCS 1900	21.78	Flat	PIFA	Headset	0.531	-0.06800	Sample 1st_Close
1909.8	810	GPRS 1900	23.66	Flat	PIFA	Headset	0.746	0.05700	Sample 1st_Close 3Down2Up
1909.8	810	GPRS 1900	23.66	Flat	PIFA	Headset	0.627	0.01700	Sample 1st_Open 3Down2Up
1909.8	810	GPRS 1900	21.77	Flat	PIFA	Headset	0.488	0.03300	Sample 1st_Close 4Down1Up
Std. C95.1-2005 - Safety Limit Spatial Peak Uncontrolled Exposure/General Population						1.6 W/kg (mW/g) Averaged over 1 gram			

Detail results see Appendix B.

Z-axis Plot of SAR Measurement



Z-axis Plot of Flat GPRS 1900 CH 810 (3Down2Up) _ Sample 1st _Close

10.6 WCDMA Band IV (RMC 12.2K) - Body SAR (EUT 15 mm separation to Phantom)

Ambient：

Temperature (℃)： 22 ± 2 Relative HUMIDITY (%)： 40-70

Liquid：

Mixture Type： MSL1800 Liquid Temperature (℃) ： 22.0

Depth of liquid (cm)： 15

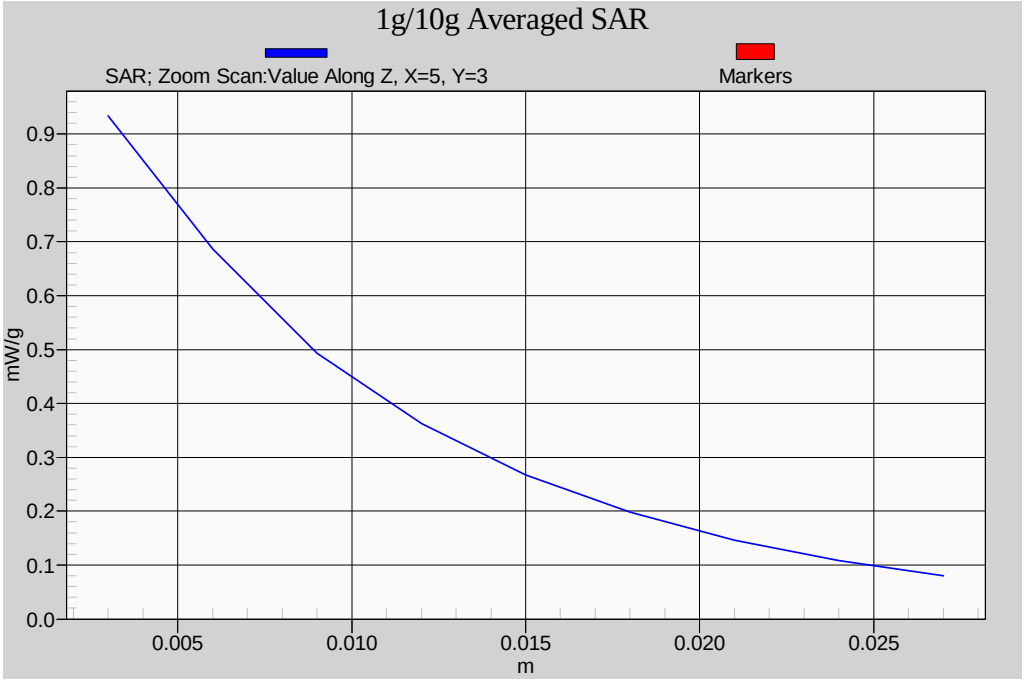
Measurement：

Duty Cycle： 1:1 Probe S/N： 3150

Frequency		Band	Power (dBm)	Phantom Position	Antenna Position	Accessory	SAR_{1g} [mW/g]	Power Drift (dB)	Remark
MHz	CH								
1752.6	1513	WCDMA Band IV	24.09	Flat	PIFA	Headset	0.768	0.04700	Sample 1st_Close
1752.6	1513	WCDMA Band IV	24.09	Flat	PIFA	Headset	0.670	0.06600	Sample 1st_Open
Std. C95.1-2005 - Safety Limit Spatial Peak Uncontrolled Exposure/General Population						1.6 W/kg (mW/g) Averaged over 1 gram			

Detail results see Appendix B.

Z-axis Plot of SAR Measurement



Z-axis Plot of Flat WCDMA Band IV (RMC 12.2K) CH 1513 _ Sample 1st _Close

10.7 HSDPA Band IV - Body SAR (EUT 15 mm separation to Phantom)

Ambient：

Temperature (℃)：	22 ± 2	Relative HUMIDITY (%)：	40-70

Liquid：

Mixture Type：	MSL1800	Liquid Temperature (℃) ：	22.0
		Depth of liquid (cm)：	15

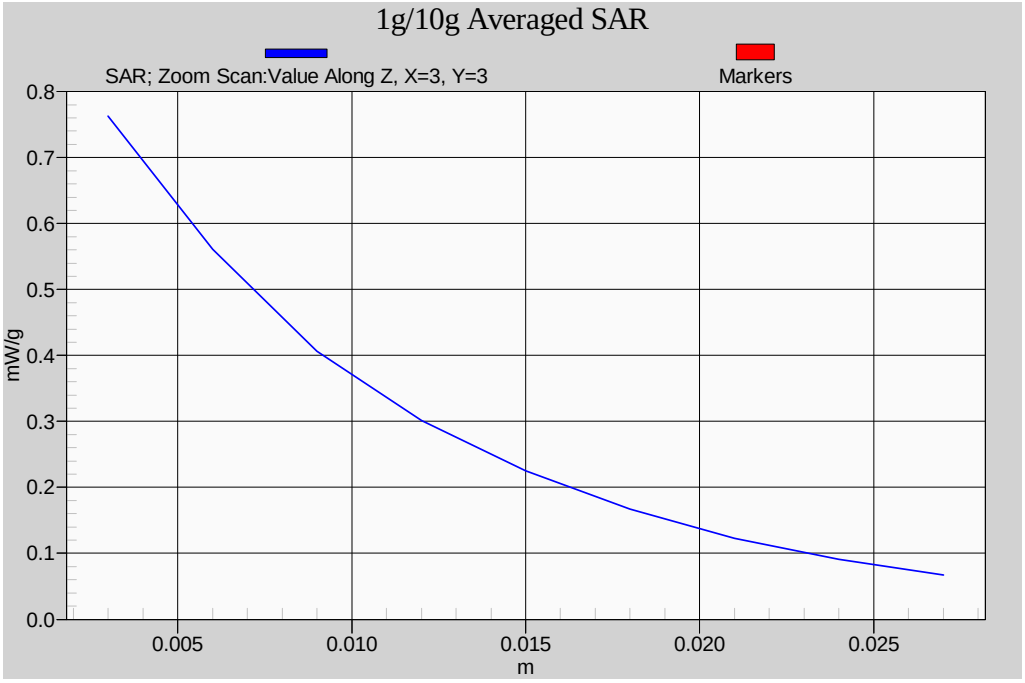
Measurement：

Duty Cycle：	1:1	Probe S/N：	3150

Frequency		Band	Power (dBm)	Phantom Position	Antenna Position	Accessory	SAR_{1g} [mW/g]	Power Drift (dB)	Remark
MHz	CH								
1752.6	1513	HSDPA Band IV	24.08	Flat	PIFA	Headset	0.624	-0.05500	Sample 1st _Close Sub-test 1
Std. C95.1-2005 - Safety Limit Spatial Peak Uncontrolled Exposure/General Population						1.6 W/kg (mW/g) Averaged over 1 gram			

Detail results see Appendix B.

Z-axis Plot of SAR Measurement



Z-axis Plot of Flat HSDPA Band IV CH 1513 _ Sample 1st _Close

10.8 HSUPA Band IV - Body SAR (EUT 15 mm separation to Phantom)

Ambient：

Temperature (℃)： 22 ± 2 Relative HUMIDITY (%)： 40-70

Liquid：

Mixture Type： MSL1800 Liquid Temperature (℃) ： 22.0

Depth of liquid (cm)： 15

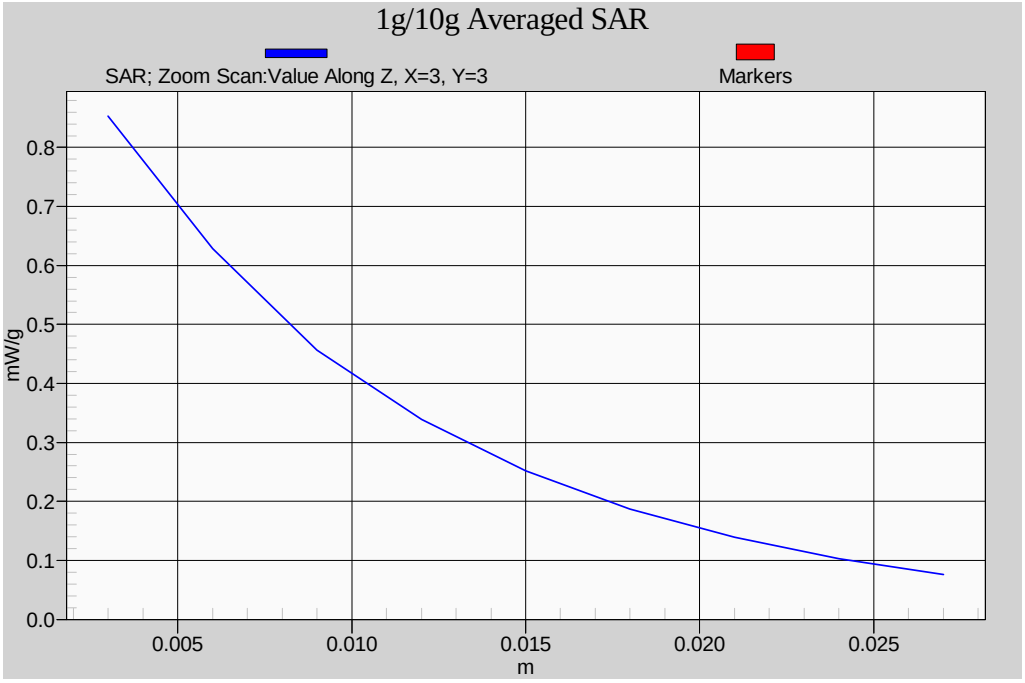
Measurement：

Duty Cycle： 1:1 Probe S/N： 3150

Frequency		Band	Power (dBm)	Phantom Position	Antenna Position	Accessory	SAR_{1g} [mW/g]	Power Drift (dB)	Remark
MHz	CH								
1740.0	1450	HSUPA Band IV	22.54	Flat	PIFA	Headset	0.624	-0.05500	Sample 1st _Close Sub-test 1
Std. C95.1-2005 - Safety Limit Spatial Peak Uncontrolled Exposure/General Population						1.6 W/kg (mW/g) Averaged over 1 gram			

Detail results see Appendix B.

Z-axis Plot of SAR Measurement



Z-axis Plot of Flat HSUPA Band IV CH 1450 _ Sample 1st _Close

10.9 WLAN 802.11b - Body SAR (EUT 15 mm separation to Phantom)

Ambient：

Temperature (℃)： 22 ± 2 Relative HUMIDITY (%)： 40-70

Liquid：

Mixture Type： MSL2450 Liquid Temperature (℃) ： 22.0

Depth of liquid (cm)： 15

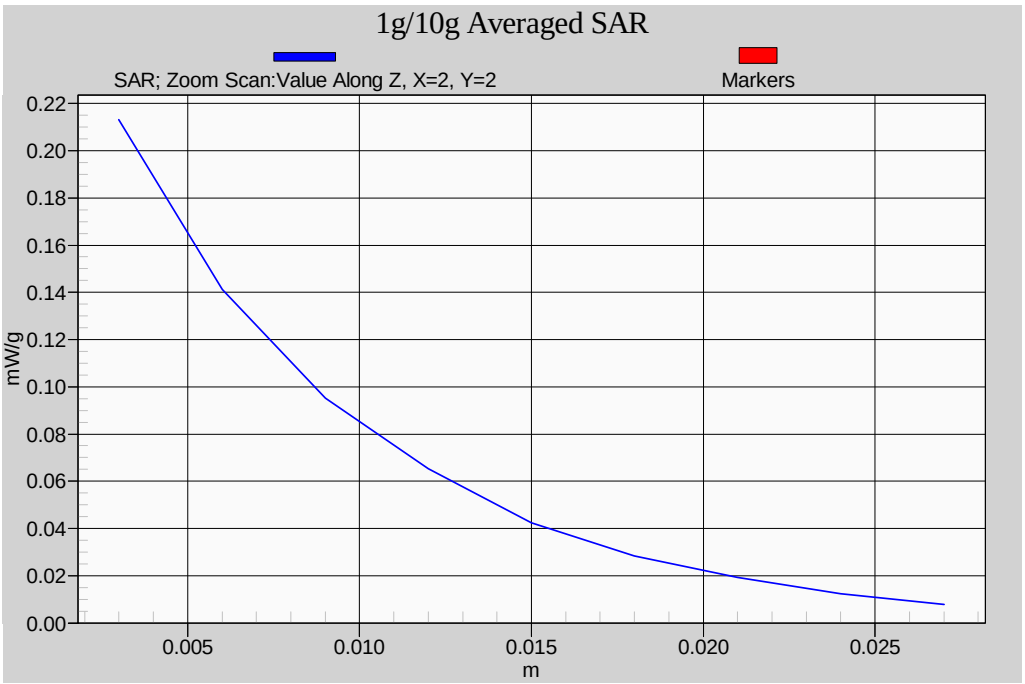
Measurement：

Duty Cycle： 1:1 Probe S/N： 3150

Frequency		Rate	Power (dBm)	Phantom Position	Antenna Position	Accessory	SAR_{1g} [mW/g]	Power Drift (dB)	Remark
MHz	CH								
2437	6	11M	15.77	Flat	PIFA	Headset	0.167	-0.08300	Sample 1st _Close
2437	6	11M	15.77	Flat	PIFA	Headset	0.150	0.17000	Sample 1st _Open
Std. C95.1-2005 - Safety Limit Spatial Peak Uncontrolled Exposure/General Population						1.6 W/kg (mW/g) Averaged over 1 gram			

Detail results see Appendix B.

Z-axis Plot of SAR Measurement



Z-axis Plot of Flat WLAN 802.11b CH 6 (Rate 11M) _ Sample 1st _Close

10.10 Std. C95.1-2005 RF Exposure Limit

Human Exposure	Population Uncontrolled Exposure (W/kg) or (mW/g)	Occupational Controlled Exposure (W/kg) or (mW/g)
Spatial Peak SAR* (head)	1.60	8.00
Spatial Peak SAR** (Whole Body)	0.08	0.40
Spatial Peak SAR*** (Partial-Body)	1.60	8.00
Spatial Peak SAR****** (Hands / Feet / Ankle / Wrist)	4.00	20.00

Table 9. Safety Limits for Partial Body Exposure

Notes：

***** The Spatial Peak value of the SAR averaged over any 1 gram of tissue.
(defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.

****** The Spatial Average value of the SAR averaged over the whole – body.

******* The Spatial Average value of the SAR averaged over the partial – body.

******** The Spatial Peak value of the SAR averaged over any 10 grams of tissue.
(defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.

Population / Uncontrolled Environments **：** are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure.

Occupational / Controlled Environments **：** are defined as locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, (i.e. as a result of employment or occupation).

11. Conclusion

The SAR test values found for the portable mobile phone **HTC Corporation Trade Name：HTC Model(s)：PB65100** is below the maximum recommended level of 1.6 W/kg (mW/g).

12. References

[1] Std. C95.1-2005, "*American National Standard safety levels with respect to human exposure to radio frequency electromagnetic fields, 300KHz to 100GHz",* New York.

[2] NCRP, National Council on Radiation Protection and Measurements, "*Biological Effects and Exposure Criteria for Radio frequency Electromagnetic Fields"*, NCRP report NO. 86, 1986.

[3] T. Schmid, O. Egger, and N. Kuster, "*Automatic E-field scanning system for dosimetric assessments*", IEEE Transactions on Microwave Theory and Techniques, vol. 44, pp, 105-113, Jan. 1996.

[4] K. Pokovi ć, T. Schmid, and N. Kuster, "*Robust setup for precise calibration of E-field probes in tissue simulating liquids at mobile communications frequency*", in ICECOM'97, Dubrovnik, October 15-17, 1997, pp.120-124.

[5] K. Pokovi ć, T. Schmid, and N. Kuster, "*E-field probe with improved isotropy in brain simulating liquids*", in Proceedings of the ELMAR, Zadar, Croatia, 23-25 June, 1996, pp.172-175.

[6] N. Kuster, and Q. Balzano, "*Energy absorption mechanism by biological bodies in the near field of dipole antennas above 300MHz"*, IEEE Transaction on Vehicular Technology, vol. 41, no. 1, Feb. 1992, pp. 17-23.

[7] 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.

[8] N. Kuster, R. Kastle, T. Schmid, *Dosimetric evaluation of mobile communications equipment with known precision*, IEEE Transaction on Communications, vol. E80-B, no. 5, May 1997, pp. 645-652.

[9] Std. C95.3-1991, "*IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields – RF and Microwave,* New York: IEEE, Aug. 1992.

[10] CENELEC CLC/SC111B, European Prestandard (prENV 50166-2), *Human Exposure to Electromagnetic Fields High-frequency*: 10KHz-300GHz, Jan. 1995.

Appendix A - System Performance Check

See following Attached Pages for System Performance Check.

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 12/25/2009 2:33:00 PM

System Performance Check at 835MHz_20091225_Head

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d082

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used: f = 835 MHz; σ = 0.884 mho/m; ε_r = 41.5; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

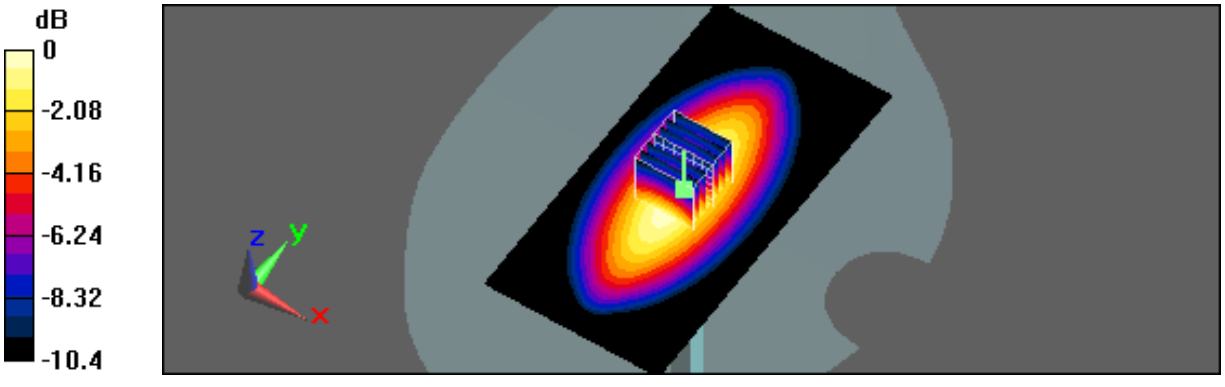
- Probe: ES3DV3 - SN3150 add; ConvF(6.05, 6.05, 6.05); Calibrated: 4/28/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn393; Calibrated: 8/24/2009
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

System Performance Check at 835MHz/Area Scan (61x121x1):

Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 2.92 mW/g

System Performance Check at 835MHz/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 59.2 V/m; Power Drift = 0.029 dB
Peak SAR (extrapolated) = 3.68 W/kg
SAR(1 g) = 2.5 mW/g; SAR(10 g) = 1.64 mW/g
Maximum value of SAR (measured) = 2.92 mW/g



0 dB = 2.92mW/g

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 12/24/2009 2:12:44 AM

System Performance Check at 1750MHz_20091224_Head

DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN:1008

Communication System: CW; Frequency: 1750 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1750 MHz; σ = 1.44 mho/m; ε_r = 38.4; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

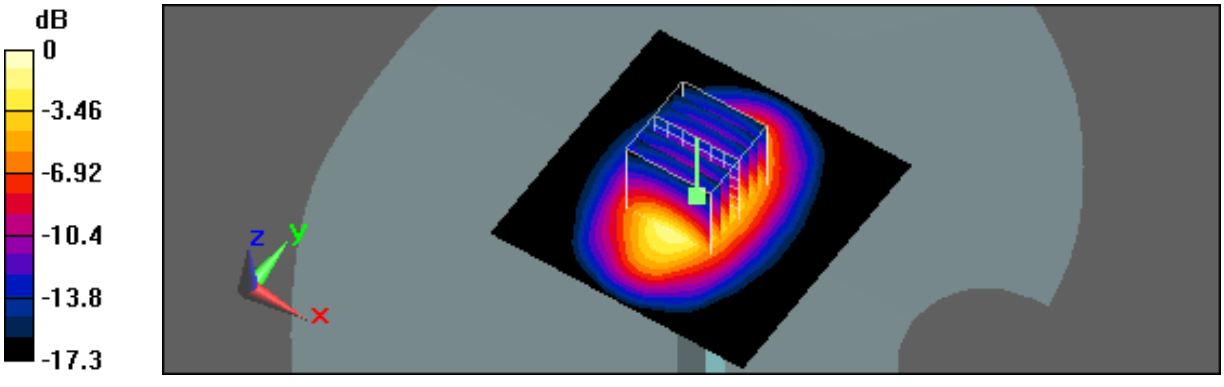
- Probe: ES3DV3 - SN3150; ConvF(5.04, 5.04, 5.04); Calibrated: 1/20/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn393; Calibrated: 8/24/2009
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

System Performance Check at 1750MHz/Area Scan (61x61x1):

Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 12.3 mW/g

System Performance Check at 1750MHz/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 97.3 V/m; Power Drift = -0.136 dB
Peak SAR (extrapolated) = 16.9 W/kg
SAR(1 g) = 9.5 mW/g; SAR(10 g) = 4.98 mW/g
Maximum value of SAR (measured) = 12 mW/g



0 dB = 12mW/g

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 1/5/2010 1:23:32 PM

System Performance Check at 1750MHz_20100105_Head

DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN:1008

Communication System: CW; Frequency: 1750 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1750 MHz; σ = 1.44 mho/m; ε_r = 38.4; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

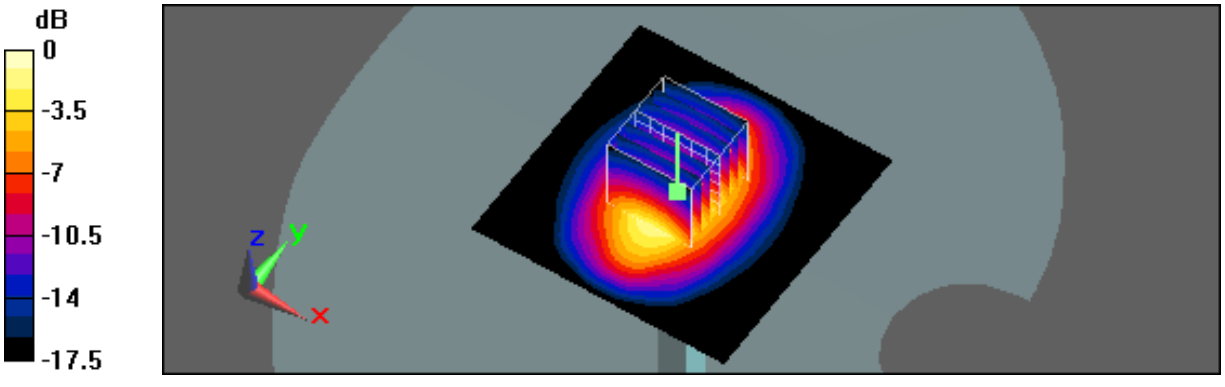
- Probe: ES3DV3 - SN3150; ConvF(5.04, 5.04, 5.04); Calibrated: 1/20/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn393; Calibrated: 8/24/2009
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

System Performance Check at 1750MHz/Area Scan (61x61x1):

Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 12.2 mW/g

System Performance Check at 1750MHz/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 96.6 V/m; Power Drift = -0.115 dB
Peak SAR (extrapolated) = 16.8 W/kg
SAR(1 g) = 9.4 mW/g; SAR(10 g) = 4.9 mW/g
Maximum value of SAR (measured) = 12 mW/g



0 dB = 12mW/g

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 12/29/2009 11:32:56 AM

System Performance Check at 1900MHz_20091229_Head

DUT: Dipole D1900V2_SN5d111; Type: D1900V2; Serial: D1900V2 - SN:5d111

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.38 mho/m; ε_r = 38.6; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

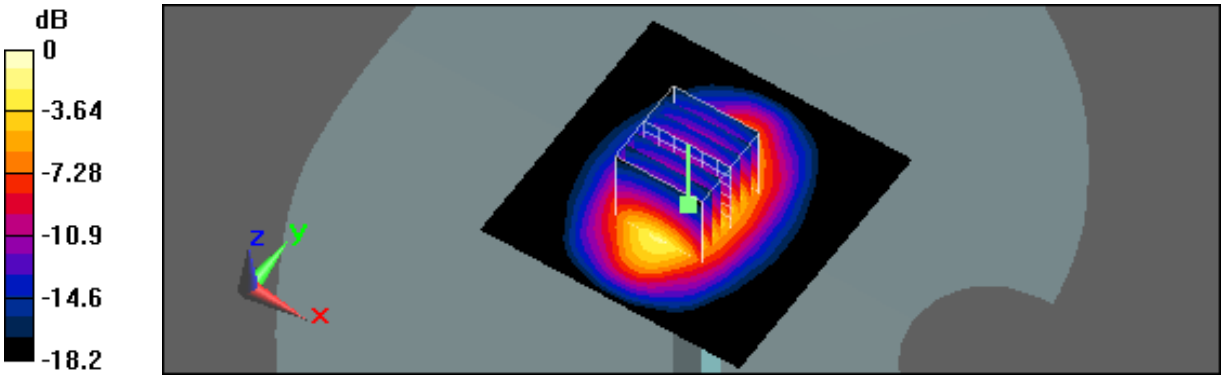
- Probe: ES3DV3 - SN3150 add; ConvF(5.12, 5.12, 5.12); Calibrated: 4/28/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn393; Calibrated: 8/24/2009
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

System Performance Check at 1900MHz/Area Scan (61x61x1):

Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 13.2 mW/g

System Performance Check at 1900MHz/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 101.3 V/m; Power Drift = -0.084 dB
Peak SAR (extrapolated) = 18.2 W/kg
SAR(1 g) = 10.2 mW/g; SAR(10 g) = 5.25 mW/g
Maximum value of SAR (measured) = 12.9 mW/g



0 dB = 12.9mW/g

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 12/24/2009 3:23:54 PM

System Performance Check at 835MHz_20091224_Body

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d082

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used: f = 835 MHz; σ = 0.994 mho/m; ε_r = 53.7; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

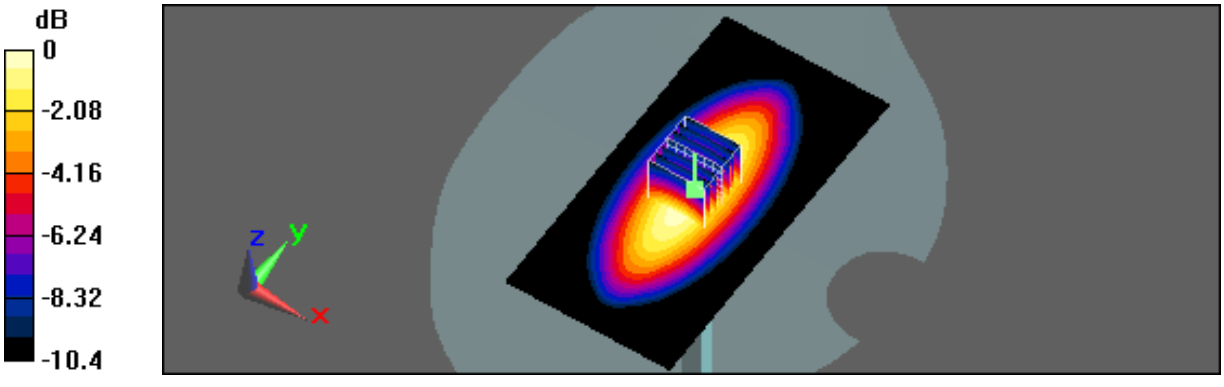
- Probe: ES3DV3 - SN3150 add; ConvF(6.02, 6.02, 6.02); Calibrated: 4/28/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn393; Calibrated: 8/24/2009
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

System Performance Check at 835MHz/Area Scan (61x121x1):

Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 3.05 mW/g

System Performance Check at 835MHz/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 57.4 V/m; Power Drift = -0.014 dB
Peak SAR (extrapolated) = 3.85 W/kg
SAR(1 g) = 2.62 mW/g; SAR(10 g) = 1.71 mW/g
Maximum value of SAR (measured) = 3.07 mW/g



0 dB = 3.07mW/g

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 1/5/2010 9:51:04 AM

System Performance Check at 835MHz_20100105_Body

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d082

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used: f = 835 MHz; σ = 0.994 mho/m; ε_r = 53.7; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

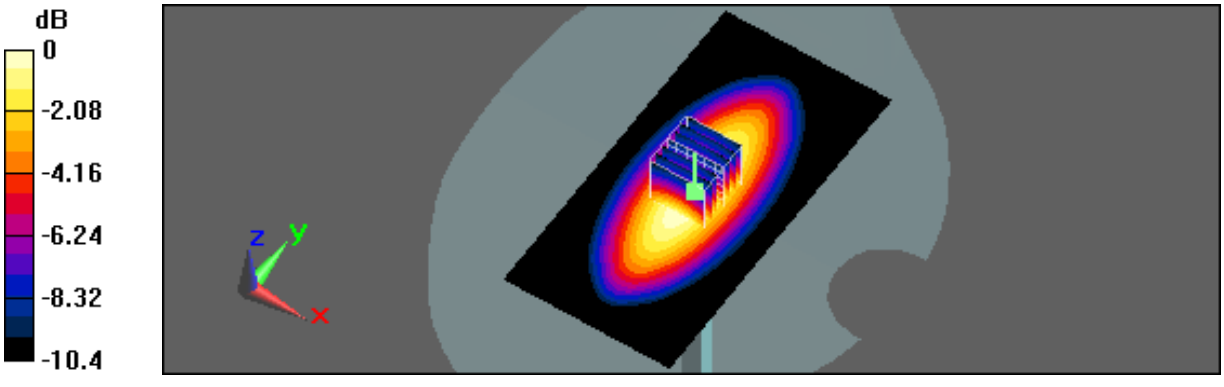
- Probe: ES3DV3 - SN3150 add; ConvF(6.02, 6.02, 6.02); Calibrated: 4/28/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn393; Calibrated: 8/24/2009
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

System Performance Check at 835MHz/Area Scan (61x121x1):

Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 3.16 mW/g

System Performance Check at 835MHz/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 58.4 V/m; Power Drift = -0.045 dB
Peak SAR (extrapolated) = 3.87 W/kg
SAR(1 g) = 2.64 mW/g; SAR(10 g) = 1.73 mW/g
Maximum value of SAR (measured) = 3.09 mW/g



0 dB = 3.09mW/g

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 12/28/2009 2:56:06 PM

System Performance Check at 1750MHz_20091228_Body

DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN:1008

Communication System: CW; Frequency: 1750 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1750 MHz; σ = 1.49 mho/m; ε_r = 51.8; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

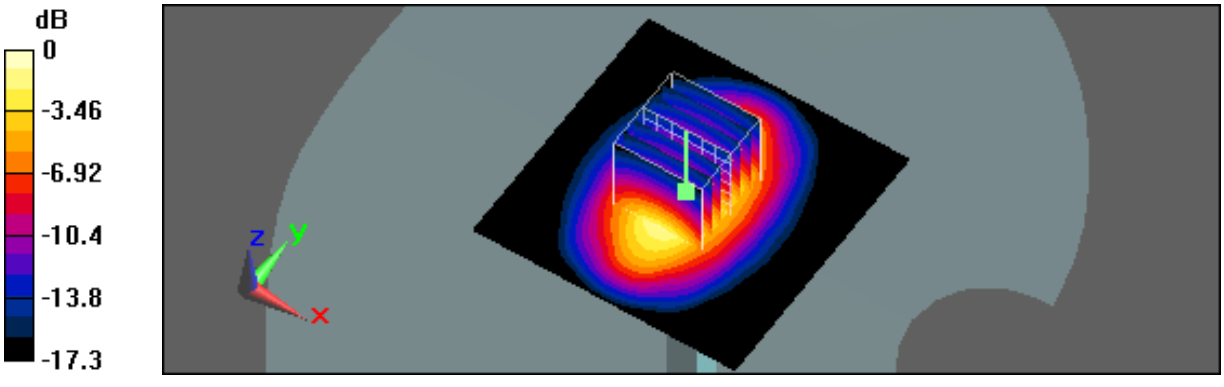
- Probe: ES3DV3 - SN3150; ConvF(4.92, 4.92, 4.92); Calibrated: 1/20/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn393; Calibrated: 8/24/2009
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

System Performance Check at 1750MHz/Area Scan (61x61x1):

Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 12.2 mW/g

System Performance Check at 1750MHz/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 93.6 V/m; Power Drift = -0.002 dB
Peak SAR (extrapolated) = 17.8 W/kg
SAR(1 g) = 9.54 mW/g; SAR(10 g) = 4.95 mW/g
Maximum value of SAR (measured) = 12.1 mW/g



0 dB = 12.1mW/g

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 12/25/2009 9:30:11 AM

System Performance Check at 1900MHz_20091225_Body

DUT: Dipole D1900V2_SN5d111; Type: D1900V2; Serial: D1900V2 - SN:5d111

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.5 mho/m; ε_r = 51.6; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

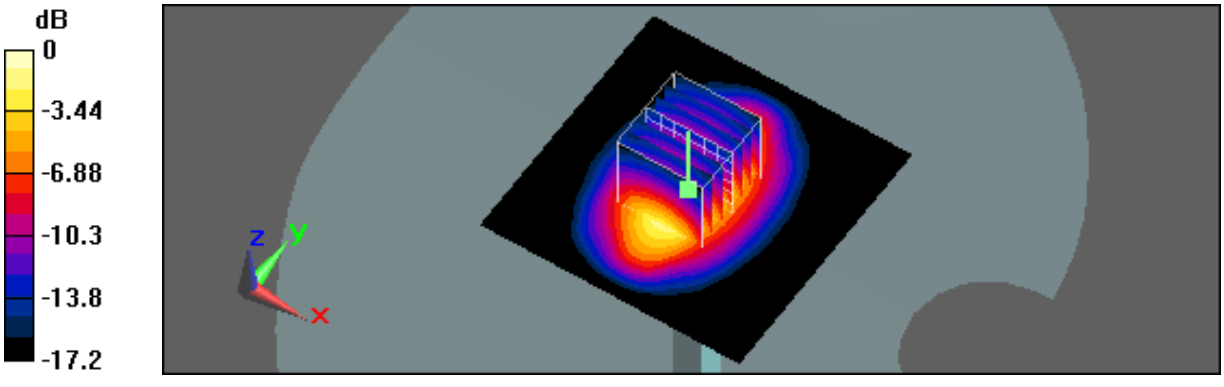
- Probe: ES3DV3 - SN3150 add; ConvF(4.81, 4.81, 4.81); Calibrated: 4/28/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn393; Calibrated: 8/24/2009
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

System Performance Check at 1900MHz/Area Scan (61x61x1):

Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 13.2 mW/g

System Performance Check at 1900MHz/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 97.8 V/m; Power Drift = 0.065 dB
Peak SAR (extrapolated) = 17.9 W/kg
SAR(1 g) = 10.3 mW/g; SAR(10 g) = 5.37 mW/g
Maximum value of SAR (measured) = 13.1 mW/g



0 dB = 13.1mW/g

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 12/30/2009 9:15:10 AM

System Performance Check at 2450MHz_20091230_Body

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:712

Communication System: CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2450 MHz; σ = 1.92 mho/m; ε_r = 50.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

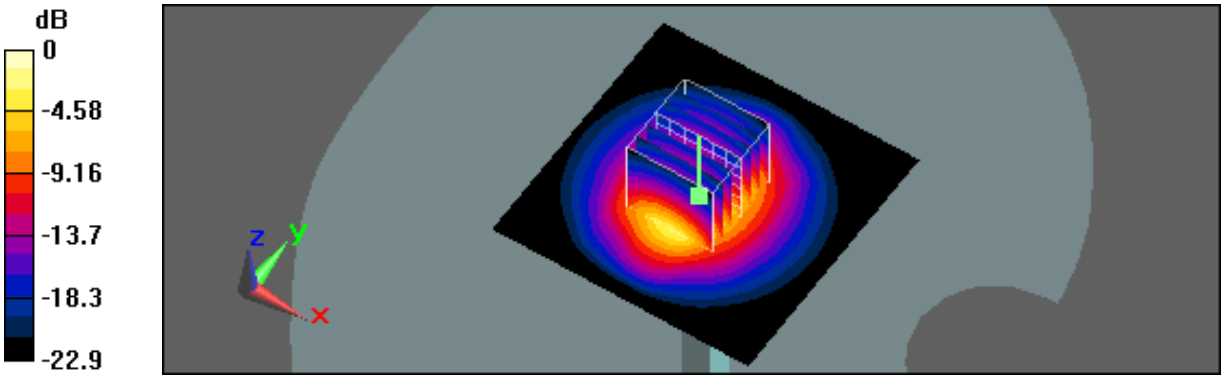
- Probe: ES3DV3 - SN3150; ConvF(4.23, 4.23, 4.23); Calibrated: 1/20/2009
- Sensor-Surface: 3.4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn393; Calibrated: 8/24/2009
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

System Performance Check at 2450MHz/Area Scan (61x61x1):

Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 16.3 mW/g

System Performance Check at 2450MHz/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 94 V/m; Power Drift = 0.094 dB
Peak SAR (extrapolated) = 29.1 W/kg
SAR(1 g) = 13.3 mW/g; SAR(10 g) = 5.93 mW/g
Maximum value of SAR (measured) = 16.7 mW/g



0 dB = 16.7mW/g

Appendix B - SAR Measurement Data

See following Attached Pages for SAR Measurement Data.

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 12/25/2009 3:21:39 PM

RC_GSM850 CH251_Main_Close

DUT: PB65100_Main_Close; Type: Mobile Phone; Serial: 357341030017443

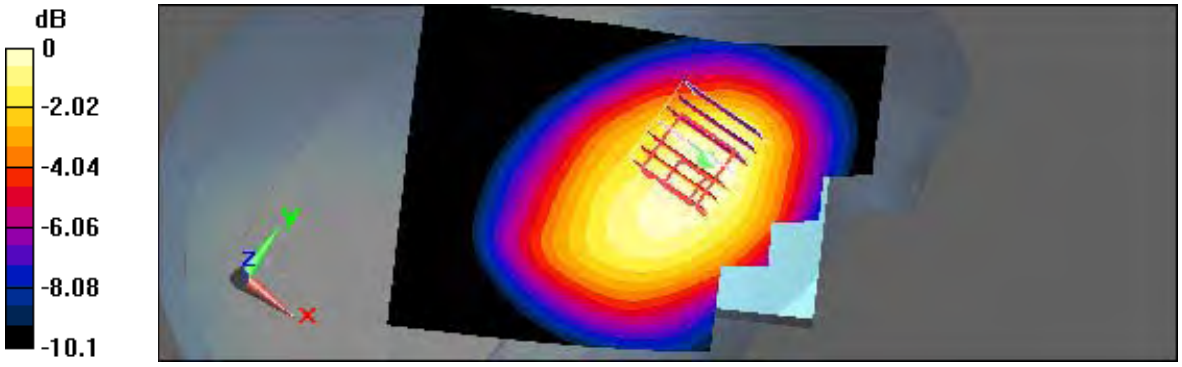
Communication System: GSM850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 849 MHz; σ = 0.906 mho/m; ε_r = 41.5; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV3 - SN3150 add; ConvF(6.05, 6.05, 6.05); Calibrated: 4/28/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn393; Calibrated: 8/24/2009
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Right Cheek/Area Scan (71x101x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.576 mW/g

Right Cheek/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 10 V/m; Power Drift = 0.031 dB
Peak SAR (extrapolated) = 0.700 W/kg
SAR(1 g) = 0.504 mW/g; SAR(10 g) = 0.359 mW/g
Maximum value of SAR (measured) = 0.569 mW/g



0 dB = 0.569mW/g

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 12/25/2009 3:57:59 PM

RC_GSM850 CH251_Main_Open

DUT: PB65100_Main Open; Type: Mobile Phone; Serial: 357341030017443

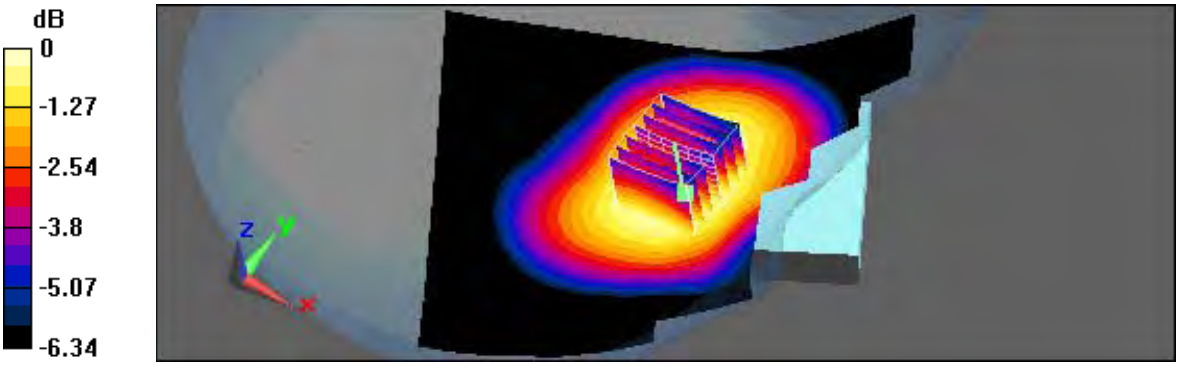
Communication System: GSM850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 849 MHz; σ = 0.906 mho/m; ε_r = 41.5; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV3 - SN3150 add; ConvF(6.05, 6.05, 6.05); Calibrated: 4/28/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn393; Calibrated: 8/24/2009
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Right Cheek/Area Scan (91x101x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.269 mW/g

Right Cheek/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 8.69 V/m; Power Drift = 0.019 dB
Peak SAR (extrapolated) = 0.287 W/kg
SAR(1 g) = 0.250 mW/g; SAR(10 g) = 0.200 mW/g
Maximum value of SAR (measured) = 0.270 mW/g



0 dB = 0.270mW/g

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 12/25/2009 4:28:07 PM

RT_GSM850 CH251_Main_Close

DUT: PB65100_Main_Close; Type: Mobile Phone; Serial: 357341030017443

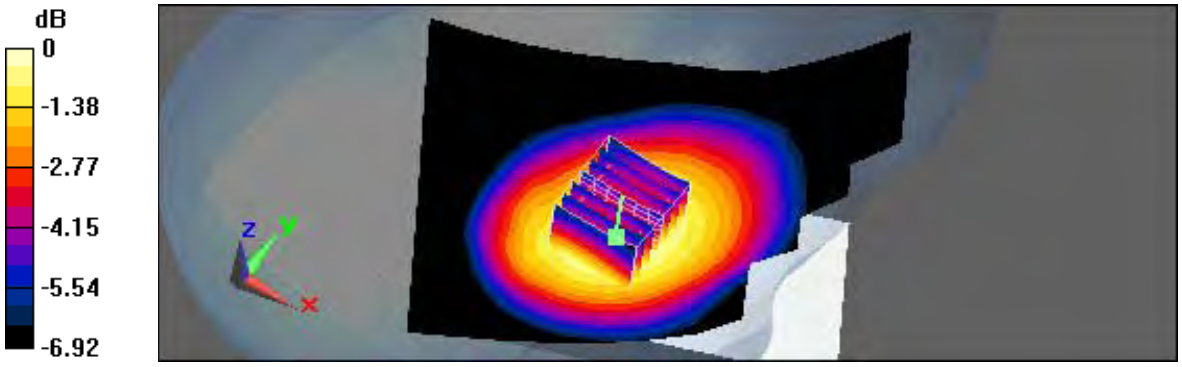
Communication System: GSM850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 849 MHz; σ = 0.906 mho/m; ε_r = 41.5; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV3 - SN3150 add; ConvF(6.05, 6.05, 6.05); Calibrated: 4/28/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn393; Calibrated: 8/24/2009
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Right Tilted/Area Scan (71x101x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.374 mW/g

Right Tilted/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 15.4 V/m; Power Drift = 0.046 dB
Peak SAR (extrapolated) = 0.405 W/kg
SAR(1 g) = 0.339 mW/g; SAR(10 g) = 0.255 mW/g
Maximum value of SAR (measured) = 0.373 mW/g



0 dB = 0.373mW/g

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 12/25/2009 4:58:59 PM

LC_GSM850 CH251_Main_Close

DUT: PB65100_Main_Close; Type: Mobile Phone; Serial: 357341030017443

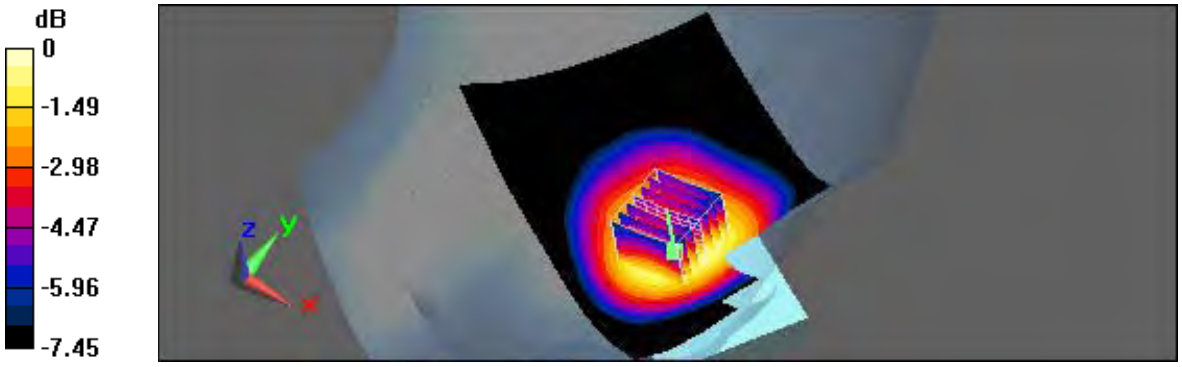
Communication System: GSM850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 849 MHz; σ = 0.906 mho/m; ε_r = 41.5; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV3 - SN3150 add; ConvF(6.05, 6.05, 6.05); Calibrated: 4/28/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn393; Calibrated: 8/24/2009
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Left Cheek/Area Scan (71x101x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.564 mW/g

Left Cheek/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 10 V/m; Power Drift = 0.030 dB
Peak SAR (extrapolated) = 0.611 W/kg
SAR(1 g) = 0.514 mW/g; SAR(10 g) = 0.386 mW/g
Maximum value of SAR (measured) = 0.564 mW/g



0 dB = 0.564mW/g

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 12/25/2009 5:57:44 PM

LC_GSM850 CH251_Main_Open

DUT: PB65100_Main Open; Type: Mobile Phone; Serial: 357341030017443

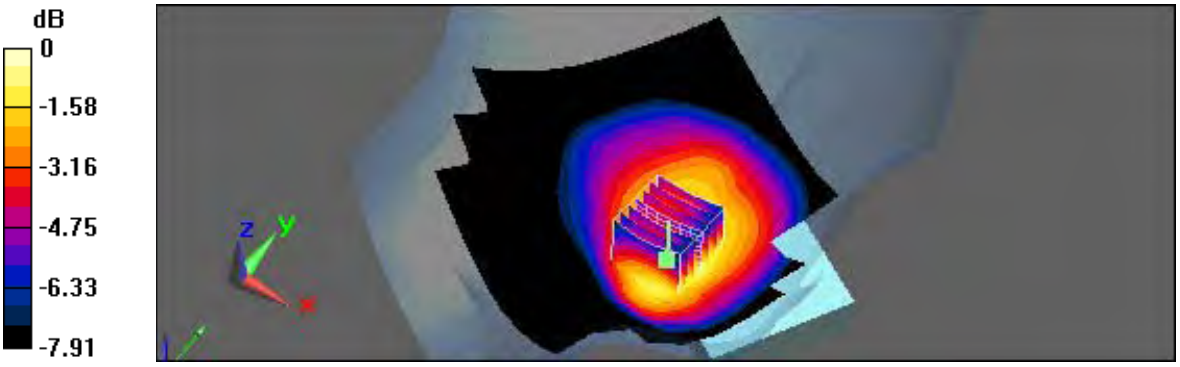
Communication System: GSM850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 849 MHz; σ = 0.906 mho/m; ε_r = 41.5; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV3 - SN3150 add; ConvF(6.05, 6.05, 6.05); Calibrated: 4/28/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn393; Calibrated: 8/24/2009
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Left Cheek/Area Scan (91x101x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.371 mW/g

Left Cheek/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 10.4 V/m; Power Drift = 0.014 dB
Peak SAR (extrapolated) = 0.424 W/kg
SAR(1 g) = 0.343 mW/g; SAR(10 g) = 0.256 mW/g
Maximum value of SAR (measured) = 0.382 mW/g



0 dB = 0.382mW/g

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 12/25/2009 5:28:19 PM

LT_GSM850 CH251_Main_Close

DUT: PB65100_Main_Close; Type: Mobile Phone; Serial: 357341030017443

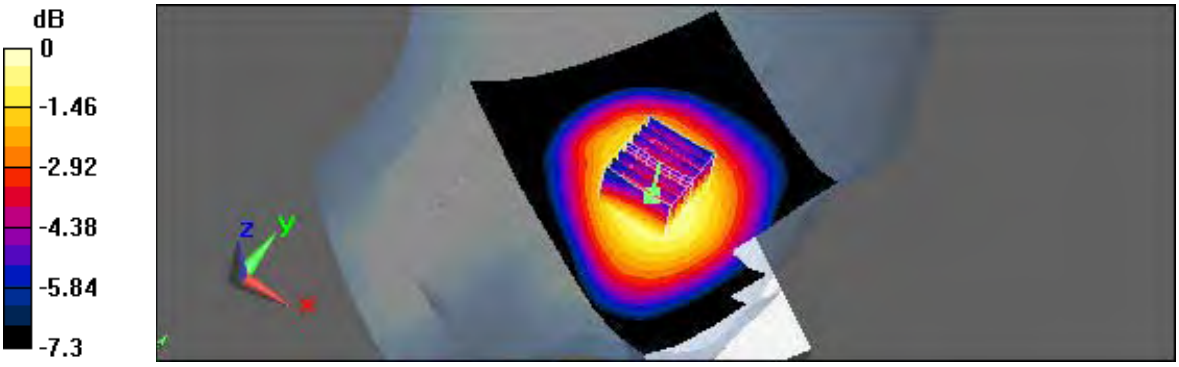
Communication System: GSM850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 849 MHz; σ = 0.906 mho/m; ε_r = 41.5; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV3 - SN3150 add; ConvF(6.05, 6.05, 6.05); Calibrated: 4/28/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn393; Calibrated: 8/24/2009
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Left Tilted/Area Scan (71x101x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.372 mW/g

Left Tilted/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 15.8 V/m; Power Drift = 0.0064 dB
Peak SAR (extrapolated) = 0.411 W/kg
SAR(1 g) = 0.333 mW/g; SAR(10 g) = 0.251 mW/g
Maximum value of SAR (measured) = 0.370 mW/g



0 dB = 0.370mW/g

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 12/29/2009 1:37:03 PM

RC_PCS CH810_Main_Close

DUT: PB65100_Main_Close; Type: Mobile Phone; Serial: 357341030017443

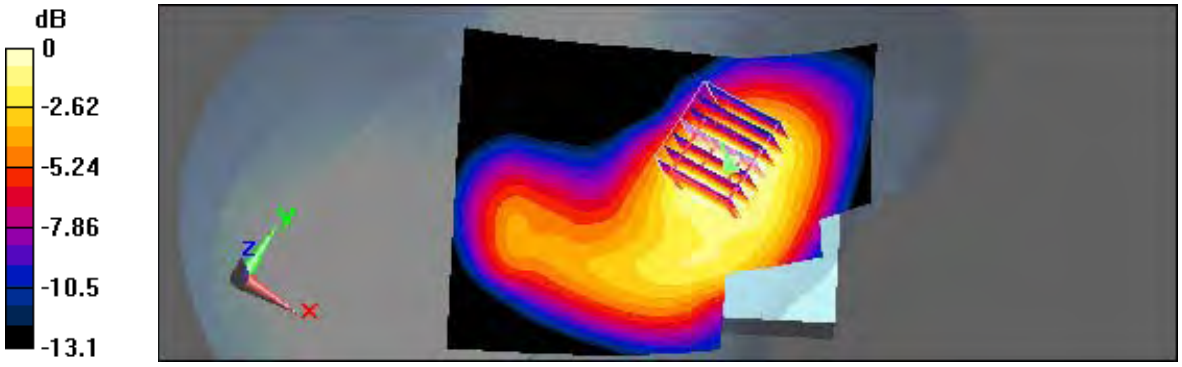
Communication System: PCS; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1910 MHz; σ = 1.39 mho/m; ε_r = 38.5; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV3 - SN3150 add; ConvF(5.12, 5.12, 5.12); Calibrated: 4/28/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn393; Calibrated: 8/24/2009
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Right Cheek/Area Scan (71x91x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.682 mW/g

Right Cheek/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 12.8 V/m; Power Drift = -0.00122 dB
Peak SAR (extrapolated) = 0.794 W/kg
SAR(1 g) = 0.561 mW/g; SAR(10 g) = 0.348 mW/g
Maximum value of SAR (measured) = 0.665 mW/g



0 dB = 0.665mW/g

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 12/29/2009 2:06:11 PM

RC_PCS CH810_Main_Open

DUT: PB65100_Main Open; Type: Mobile Phone; Serial: 357341030017443

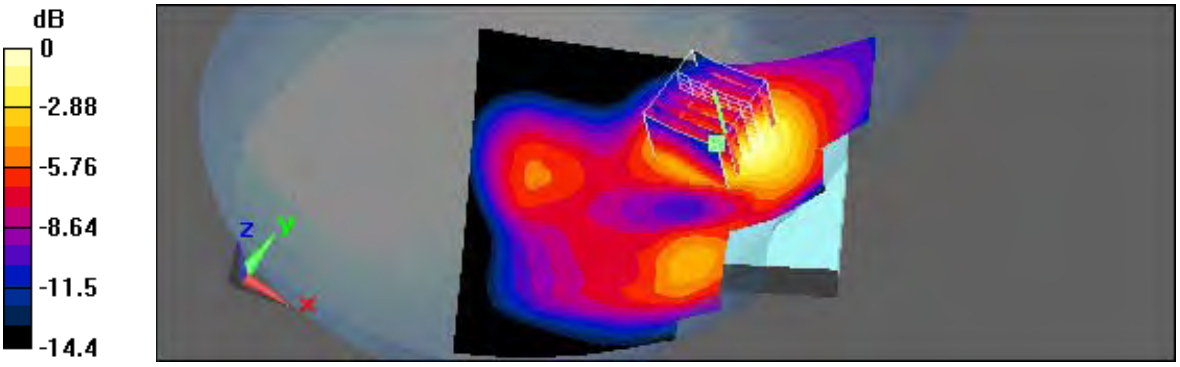
Communication System: PCS; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1910 MHz; σ = 1.39 mho/m; ε_r = 38.5; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV3 - SN3150 add; ConvF(5.12, 5.12, 5.12); Calibrated: 4/28/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn393; Calibrated: 8/24/2009
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Right Cheek/Area Scan (91x91x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.387 mW/g

Right Cheek/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 8.45 V/m; Power Drift = 0.013 dB
Peak SAR (extrapolated) = 0.453 W/kg
SAR(1 g) = 0.325 mW/g; SAR(10 g) = 0.198 mW/g
Maximum value of SAR (measured) = 0.382 mW/g



0 dB = 0.382mW/g

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 12/29/2009 3:01:06 PM

RT_PCS CH810_Main_Close

DUT: PB65100_Main_Close; Type: Mobile Phone; Serial: 357341030017443

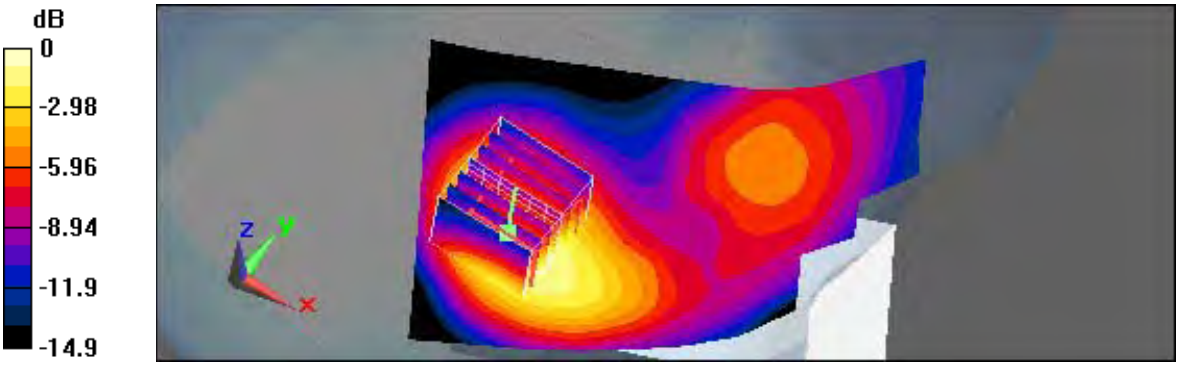
Communication System: PCS; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1910 MHz; σ = 1.39 mho/m; ε_r = 38.5; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV3 - SN3150 add; ConvF(5.12, 5.12, 5.12); Calibrated: 4/28/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn393; Calibrated: 8/24/2009
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Right Tilted/Area Scan (61x91x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.443 mW/g

Right Tilted/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 17.7 V/m; Power Drift = 0.00396 dB
Peak SAR (extrapolated) = 0.521 W/kg
SAR(1 g) = 0.360 mW/g; SAR(10 g) = 0.215 mW/g
Maximum value of SAR (measured) = 0.437 mW/g



0 dB = 0.437mW/g

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 12/29/2009 3:27:12 PM

LC_PCS CH810_Main_Close

DUT: PB65100_Main_Close; Type: Mobile Phone; Serial: 357341030017443

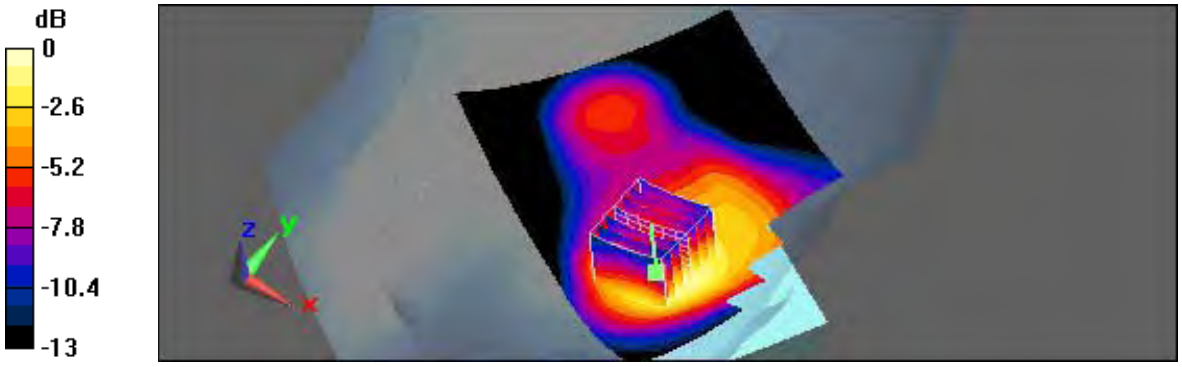
Communication System: PCS; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1910 MHz; σ = 1.39 mho/m; ε_r = 38.5; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV3 - SN3150 add; ConvF(5.12, 5.12, 5.12); Calibrated: 4/28/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn393; Calibrated: 8/24/2009
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Left Cheek/Area Scan (71x91x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.802 mW/g

Left Cheek/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 12.4 V/m; Power Drift = 0.017 dB
Peak SAR (extrapolated) = 0.875 W/kg
SAR(1 g) = 0.650 mW/g; SAR(10 g) = 0.411 mW/g
Maximum value of SAR (measured) = 0.751 mW/g



0 dB = 0.751mW/g

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 12/29/2009 4:24:37 PM

LC_PCS CH810_Main_Open

DUT: PB65100_Main Open; Type: Mobile Phone; Serial: 357341030017443

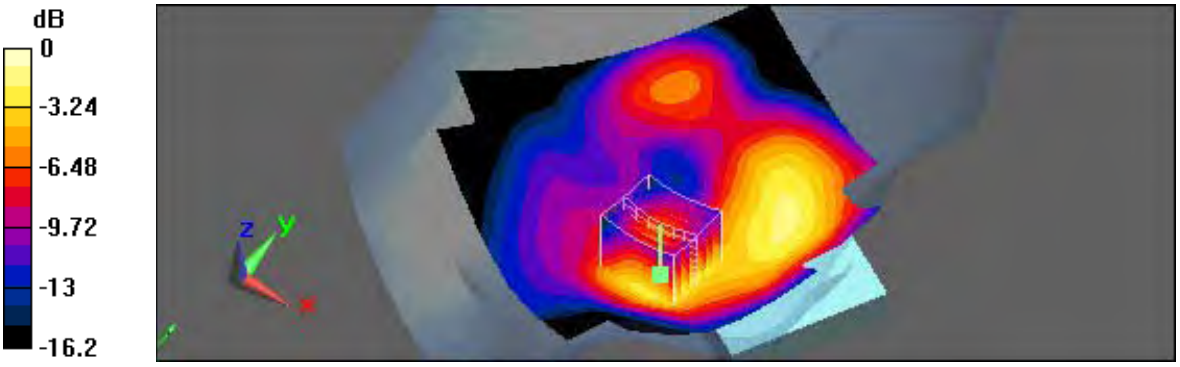
Communication System: PCS; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1910 MHz; σ = 1.39 mho/m; ε_r = 38.5; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV3 - SN3150 add; ConvF(5.12, 5.12, 5.12); Calibrated: 4/28/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn393; Calibrated: 8/24/2009
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Left Cheek/Area Scan (91x91x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.484 mW/g

Left Cheek/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 9.41 V/m; Power Drift = -0.011 dB
Peak SAR (extrapolated) = 0.495 W/kg
SAR(1 g) = 0.409 mW/g; SAR(10 g) = 0.250 mW/g
Maximum value of SAR (measured) = 0.465 mW/g



0 dB = 0.465mW/g

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 12/29/2009 3:56:19 PM

LT_PCS CH810_Main_Close

DUT: PB65100_Main_Close; Type: Mobile Phone; Serial: 357341030017443

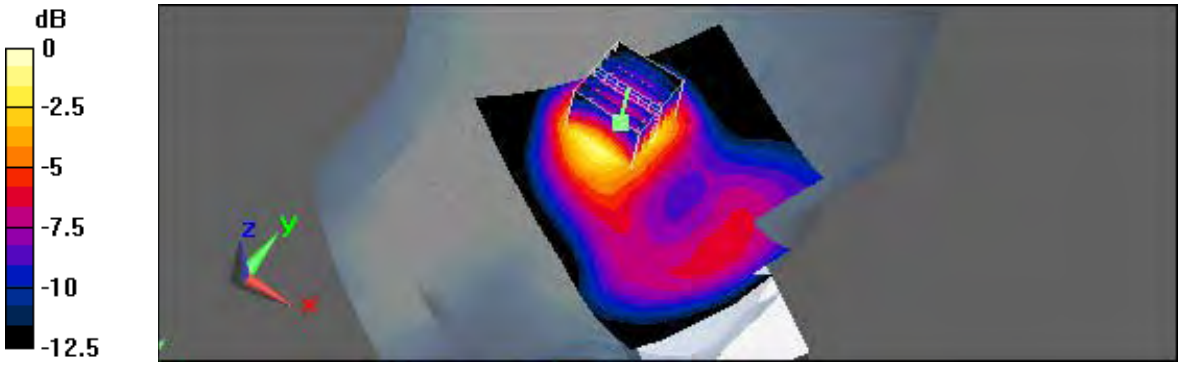
Communication System: PCS; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1910 MHz; σ = 1.39 mho/m; ε_r = 38.5; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV3 - SN3150 add; ConvF(5.12, 5.12, 5.12); Calibrated: 4/28/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn393; Calibrated: 8/24/2009
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Left Tilted/Area Scan (71x91x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.445 mW/g

Left Tilted/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 18.4 V/m; Power Drift = 0.015 dB
Peak SAR (extrapolated) = 0.526 W/kg
SAR(1 g) = 0.363 mW/g; SAR(10 g) = 0.211 mW/g
Maximum value of SAR (measured) = 0.437 mW/g



0 dB = 0.437mW/g

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 12/24/2009 1:38:41 PM

RC_WCDMA Band IV CH1312_Main_Close

DUT: PB65100_Main_Close; Type: Mobile Phone; Serial: 357341030017443

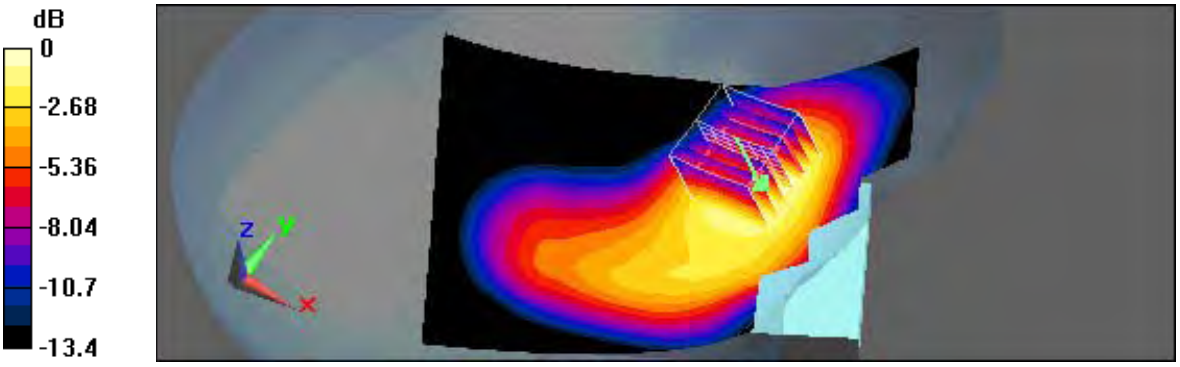
Communication System: WCDMA Band IV; Frequency: 1712.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1712.4 MHz; σ = 1.37 mho/m; ε_r = 38.4; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV3 - SN3150; ConvF(5.04, 5.04, 5.04); Calibrated: 1/20/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn393; Calibrated: 8/24/2009
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Right Cheek/Area Scan (71x101x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.03 mW/g

Right Cheek/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 13.5 V/m; Power Drift = -0.016 dB
Peak SAR (extrapolated) = 1.18 W/kg
SAR(1 g) = 0.836 mW/g; SAR(10 g) = 0.514 mW/g
Maximum value of SAR (measured) = 0.992 mW/g



0 dB = 0.992mW/g

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 12/24/2009 2:04:24 PM

RC_WCDMA Band IV CH1450_Main_Close

DUT: PB65100_Main_Close; Type: Mobile Phone; Serial: 357341030017443

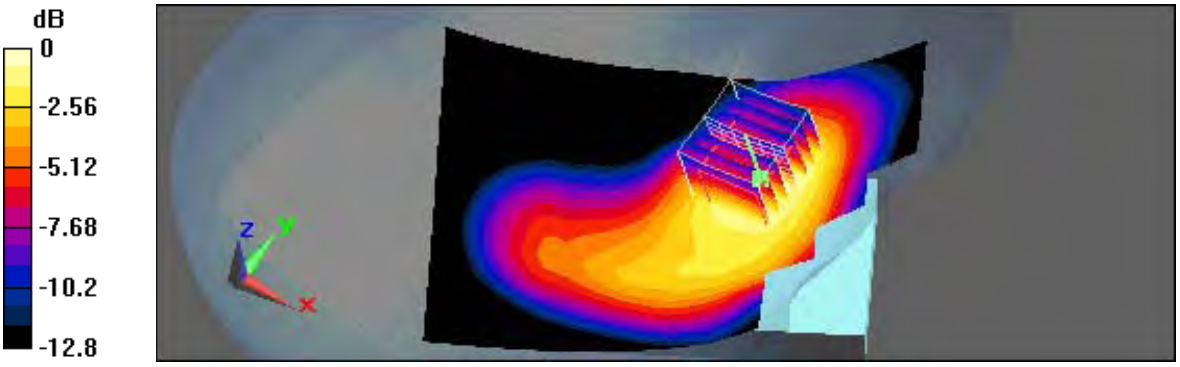
Communication System: WCDMA Band IV; Frequency: 1740 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1740 MHz; σ = 1.43 mho/m; ε_r = 38.3; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV3 - SN3150; ConvF(5.04, 5.04, 5.04); Calibrated: 1/20/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn393; Calibrated: 8/24/2009
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Right Cheek/Area Scan (71x101x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.42 mW/g

Right Cheek/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 15.6 V/m; Power Drift = 0.00564 dB
Peak SAR (extrapolated) = 1.65 W/kg
SAR(1 g) = 1.15 mW/g; SAR(10 g) = 0.704 mW/g
Maximum value of SAR (measured) = 1.38 mW/g



0 dB = 1.38mW/g

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 12/24/2009 7:52:58 PM

RC_WCDMA Band IV CH1450_Main_Open

DUT: PB65100_Main Open; Type: Mobile Phone; Serial: 357341030017443

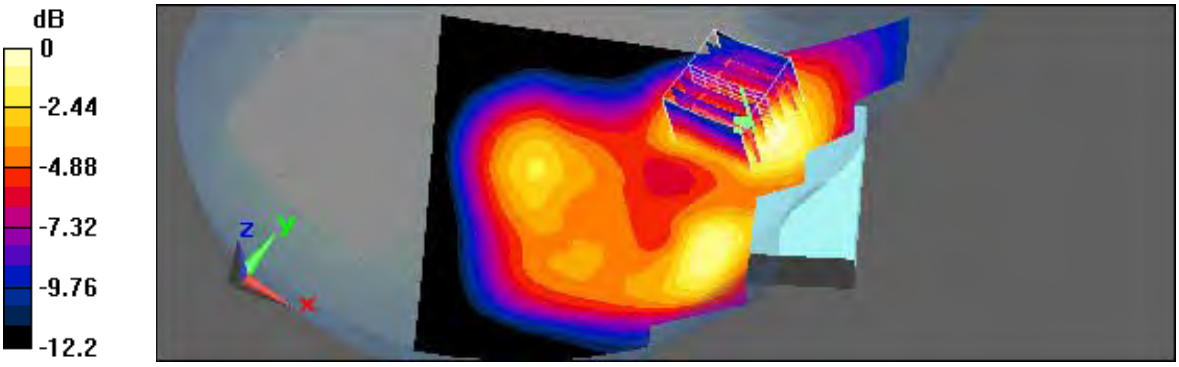
Communication System: WCDMA Band IV; Frequency: 1740 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1740 MHz; σ = 1.43 mho/m; ε_r = 38.3; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV3 - SN3150; ConvF(5.04, 5.04, 5.04); Calibrated: 1/20/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn393; Calibrated: 8/24/2009
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Right Cheek/Area Scan (91x101x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.419 mW/g

Right Cheek/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 12.3 V/m; Power Drift = 0.021 dB
Peak SAR (extrapolated) = 0.456 W/kg
SAR(1 g) = 0.350 mW/g; SAR(10 g) = 0.225 mW/g
Maximum value of SAR (measured) = 0.398 mW/g



0 dB = 0.398mW/g

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 1/5/2010 2:26:24 PM

RC_WCDMA Band IV CH1450_2nd_Close

DUT: PB65100_2nd_Close; Type: Mobile Phone; Serial: 357341030021767

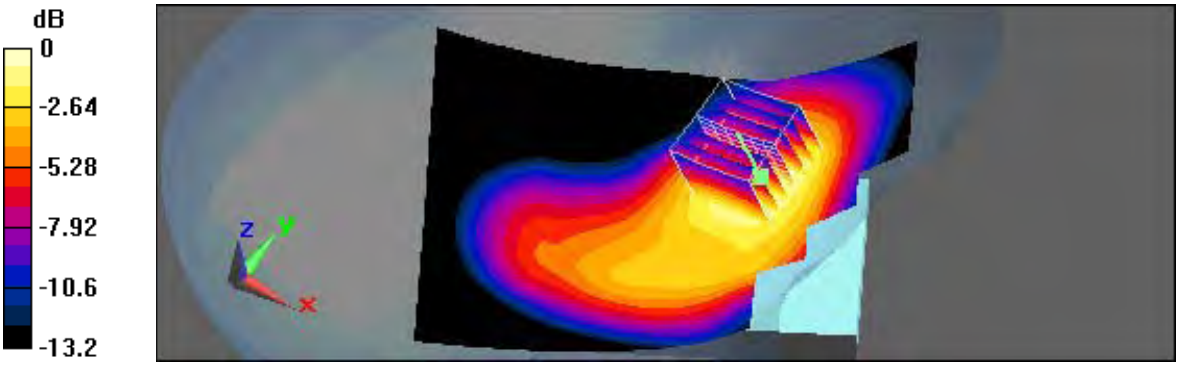
Communication System: WCDMA Band IV; Frequency: 1740 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1740 MHz; σ = 1.43 mho/m; ε_r = 38.3; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV3 - SN3150; ConvF(5.04, 5.04, 5.04); Calibrated: 1/20/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn393; Calibrated: 8/24/2009
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Right Cheek/Area Scan (71x101x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.24 mW/g

Right Cheek/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 14 V/m; Power Drift = 0.067 dB
Peak SAR (extrapolated) = 1.45 W/kg
SAR(1 g) = 1 mW/g; SAR(10 g) = 0.605 mW/g
Maximum value of SAR (measured) = 1.21 mW/g



0 dB = 1.21mW/g

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 12/24/2009 9:34:01 AM

RC_WCDMA Band IV CH1513_Main_Close

DUT: PB65100_Main_Close; Type: Mobile Phone; Serial: 357341030017443

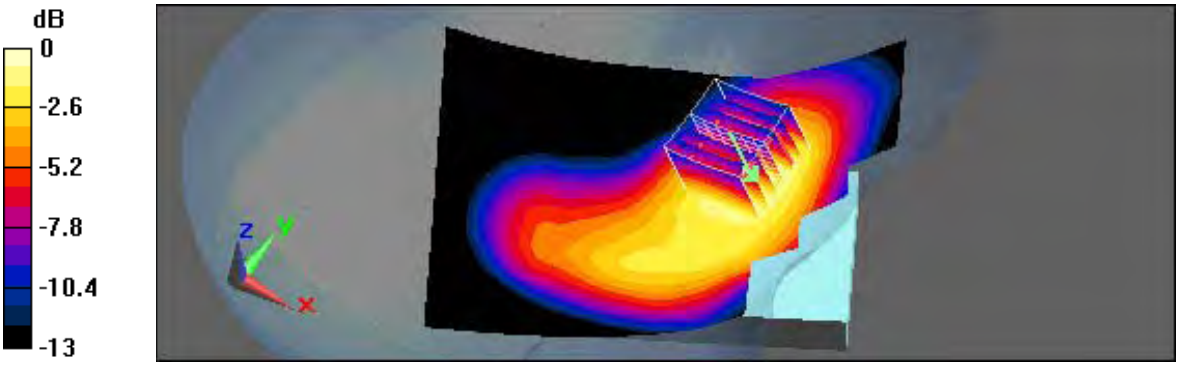
Communication System: WCDMA Band IV; Frequency: 1752.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1753 MHz; σ = 1.43 mho/m; ε_r = 38.5; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV3 - SN3150; ConvF(5.04, 5.04, 5.04); Calibrated: 1/20/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn393; Calibrated: 8/24/2009
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Right Cheek/Area Scan (71x101x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.05 mW/g

Right Cheek/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 12.8 V/m; Power Drift = 0.144 dB
Peak SAR (extrapolated) = 1.25 W/kg
SAR(1 g) = 0.875 mW/g; SAR(10 g) = 0.538 mW/g
Maximum value of SAR (measured) = 1.05 mW/g



0 dB = 1.05mW/g

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 12/24/2009 10:45:21 AM

RC_WCDMA Band IV CH1513_Main_Open

DUT: PB65100_Main Open; Type: Mobile Phone; Serial: 357341030017443

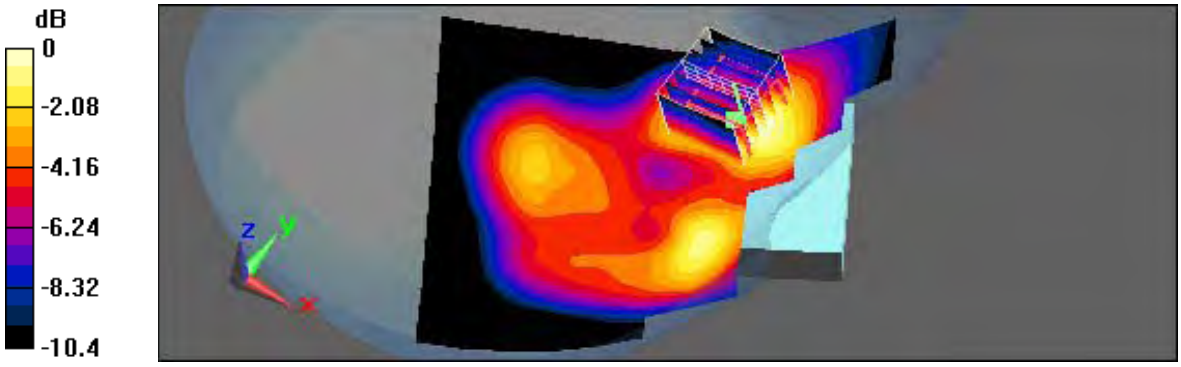
Communication System: WCDMA Band IV; Frequency: 1752.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1753 MHz; σ = 1.43 mho/m; ε_r = 38.5; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV3 - SN3150; ConvF(5.04, 5.04, 5.04); Calibrated: 1/20/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn393; Calibrated: 8/24/2009
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Right Cheek/Area Scan (91x101x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.363 mW/g

Right Cheek/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 11.1 V/m; Power Drift = 0.011 dB
Peak SAR (extrapolated) = 0.389 W/kg
SAR(1 g) = 0.305 mW/g; SAR(10 g) = 0.196 mW/g
Maximum value of SAR (measured) = 0.352 mW/g



0 dB = 0.352mW/g

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 12/24/2009 11:21:28 AM

RT_WCDMA Band IV CH1513_Main_Close

DUT: PB65100_Main_Close; Type: Mobile Phone; Serial: 357341030017443

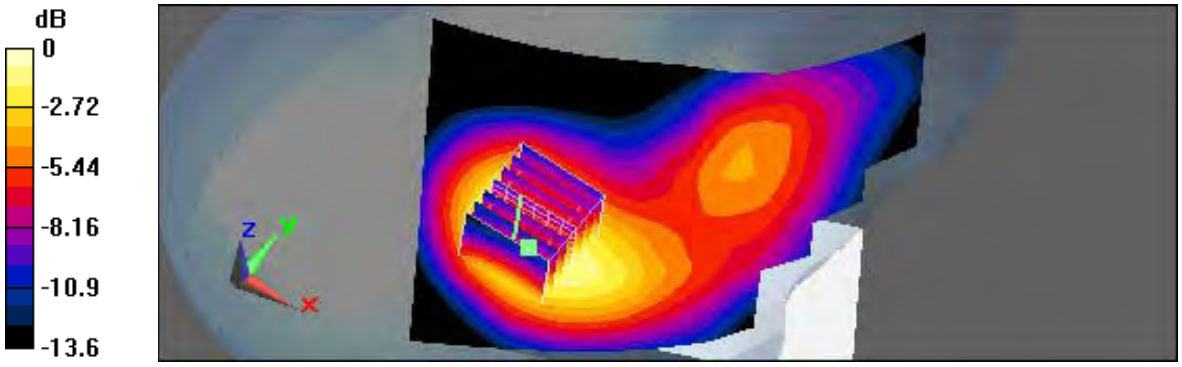
Communication System: WCDMA Band IV; Frequency: 1752.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1753 MHz; σ = 1.43 mho/m; ε_r = 38.5; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV3 - SN3150; ConvF(5.04, 5.04, 5.04); Calibrated: 1/20/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn393; Calibrated: 8/24/2009
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Right Tilted/Area Scan (71x101x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.528 mW/g

Right Tilted/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 18.6 V/m; Power Drift = -0.035 dB
Peak SAR (extrapolated) = 0.609 W/kg
SAR(1 g) = 0.432 mW/g; SAR(10 g) = 0.267 mW/g
Maximum value of SAR (measured) = 0.517 mW/g



0 dB = 0.517mW/g

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 12/24/2009 11:49:13 AM

LC_WCDMA Band IV CH1513_Main_Close

DUT: PB65100_Main_Close; Type: Mobile Phone; Serial: 357341030017443

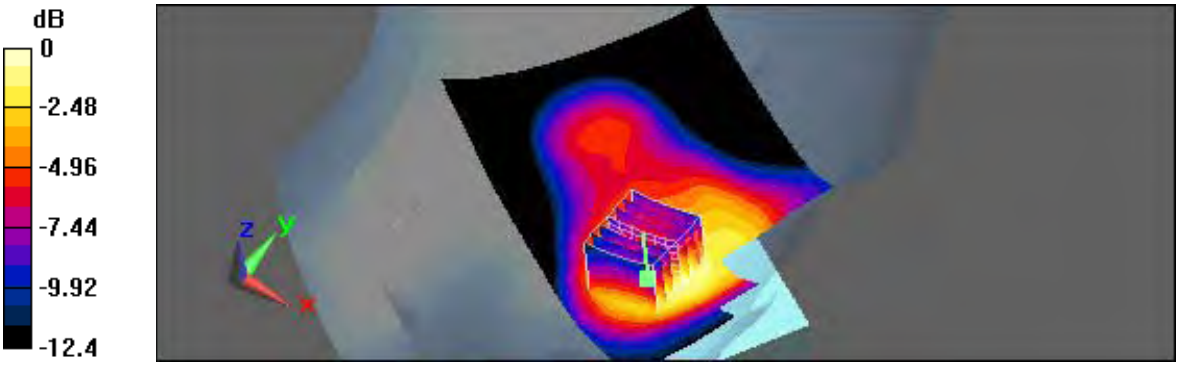
Communication System: WCDMA Band IV; Frequency: 1752.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1753 MHz; σ = 1.43 mho/m; ε_r = 38.5; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV3 - SN3150; ConvF(5.04, 5.04, 5.04); Calibrated: 1/20/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn393; Calibrated: 8/24/2009
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Left Cheek/Area Scan (71x101x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.01 mW/g

Left Cheek/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 13.8 V/m; Power Drift = -0.00447 dB
Peak SAR (extrapolated) = 1.11 W/kg
SAR(1 g) = 0.856 mW/g; SAR(10 g) = 0.557 mW/g
Maximum value of SAR (measured) = 0.986 mW/g



0 dB = 0.986mW/g

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 12/24/2009 12:16:15 PM

LT_WCDMA Band IV CH1513_Main_Close

DUT: PB65100_Main_Close; Type: Mobile Phone; Serial: 357341030017443

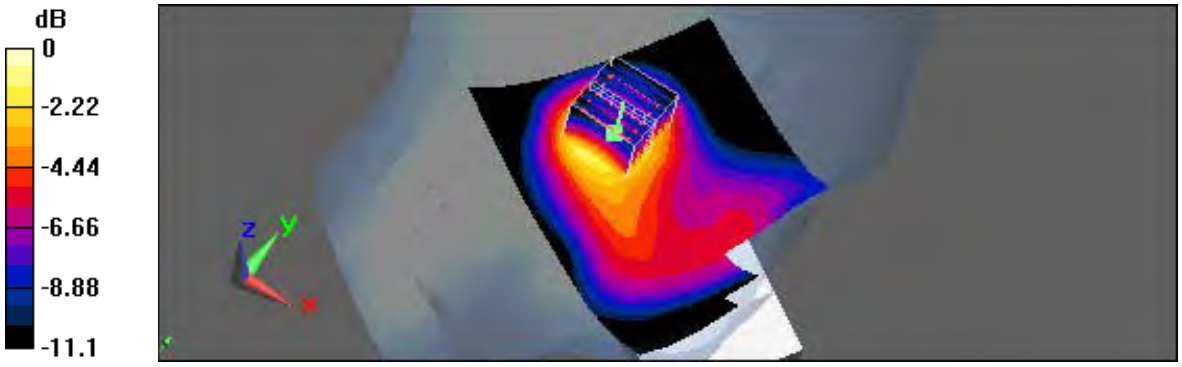
Communication System: WCDMA Band IV; Frequency: 1752.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1753 MHz; σ = 1.43 mho/m; ε_r = 38.5; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV3 - SN3150; ConvF(5.04, 5.04, 5.04); Calibrated: 1/20/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn393; Calibrated: 8/24/2009
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Left Tilted/Area Scan (71x101x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.520 mW/g

Left Tilted/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 19.5 V/m; Power Drift = -0.00855 dB
Peak SAR (extrapolated) = 0.594 W/kg
SAR(1 g) = 0.423 mW/g; SAR(10 g) = 0.255 mW/g
Maximum value of SAR (measured) = 0.502 mW/g



0 dB = 0.502mW/g

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 12/24/2009 6:49:16 PM

Flat_GSM850 CH251_Main_Close_Headset 15mm to phantom

DUT: PB65100_Main_Close; Type: Mobile Phone; Serial: 357341030017443

Communication System: GSM850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 849 MHz; σ = 1.01 mho/m; ε_r = 53.5; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

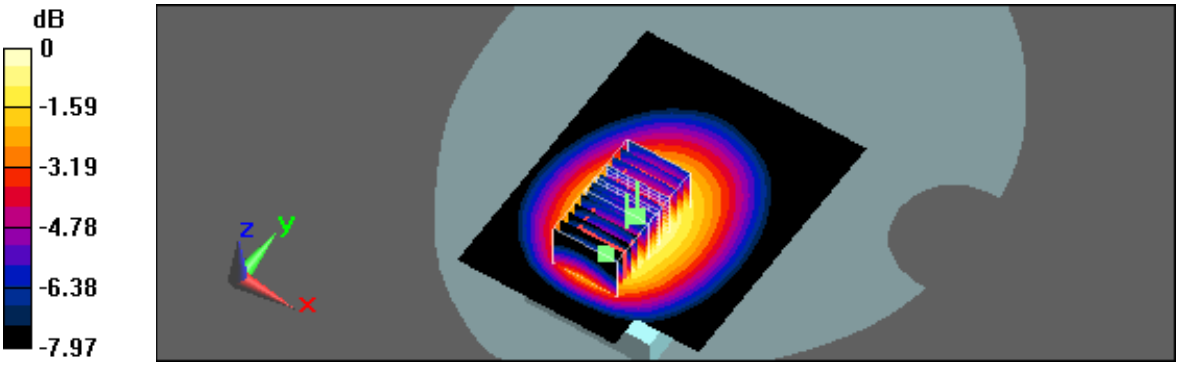
DASY5 Configuration:

- Probe: ES3DV3 - SN3150 add; ConvF(6.02, 6.02, 6.02); Calibrated: 4/28/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn393; Calibrated: 8/24/2009
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (71x91x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.766 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 10.6 V/m; Power Drift = 0.00914 dB
Peak SAR (extrapolated) = 0.853 W/kg
SAR(1 g) = 0.661 mW/g; SAR(10 g) = 0.461 mW/g
Maximum value of SAR (measured) = 0.760 mW/g

Flat/Zoom Scan (7x7x9)/Cube 1:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 10.6 V/m; Power Drift = 0.00914 dB
Peak SAR (extrapolated) = 0.884 W/kg
SAR(1 g) = 0.692 mW/g; SAR(10 g) = 0.502 mW/g
Maximum value of SAR (measured) = 0.775 mW/g



0 dB = 0.775mW/g

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 12/24/2009 5:15:20 PM

Flat_GPRS 850 CH128_Main_Close_Headset 15mm to phantom_3Down 2Up

DUT: PB65100_Main_Close; Type: Mobile Phone; Serial: 357341030017443

Communication System: GPRS 850 (3Down, 2Up); Frequency: 824.2 MHz;Duty Cycle: 1:4.2
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.983 mho/m; ε_r = 53.7; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

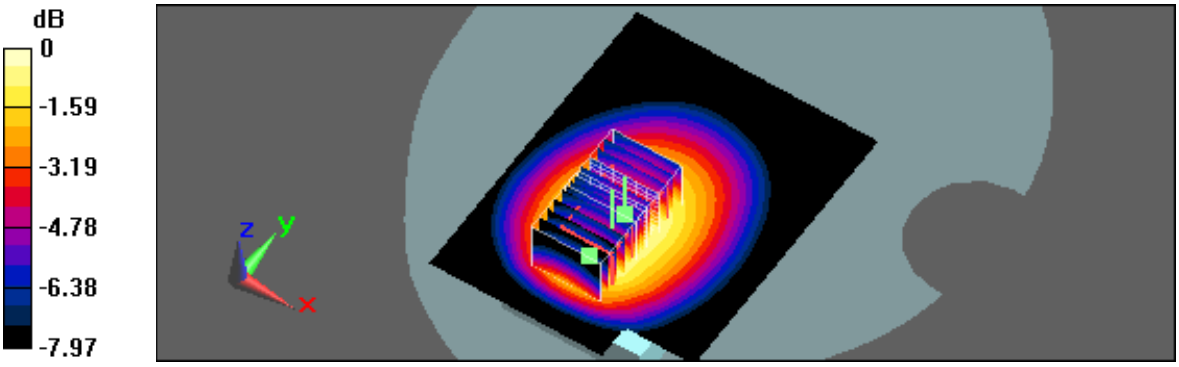
DASY5 Configuration:

- Probe: ES3DV3 - SN3150 add; ConvF(6.02, 6.02, 6.02); Calibrated: 4/28/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn393; Calibrated: 8/24/2009
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (71x91x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.924 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 11 V/m; Power Drift = -0.025 dB
Peak SAR (extrapolated) = 1.02 W/kg
SAR(1 g) = 0.792 mW/g; SAR(10 g) = 0.557 mW/g
Maximum value of SAR (measured) = 0.909 mW/g

Flat/Zoom Scan (7x7x9)/Cube 1:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 11 V/m; Power Drift = -0.025 dB
Peak SAR (extrapolated) = 1.05 W/kg
SAR(1 g) = 0.820 mW/g; SAR(10 g) = 0.598 mW/g
Maximum value of SAR (measured) = 0.917 mW/g



0 dB = 0.917mW/g

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 12/24/2009 5:57:07 PM

Flat_GPRS 850 CH190_Main_Close_Headset 15mm to phantom_3Down 2Up

DUT: PB65100_Main_Close; Type: Mobile Phone; Serial: 357341030017443

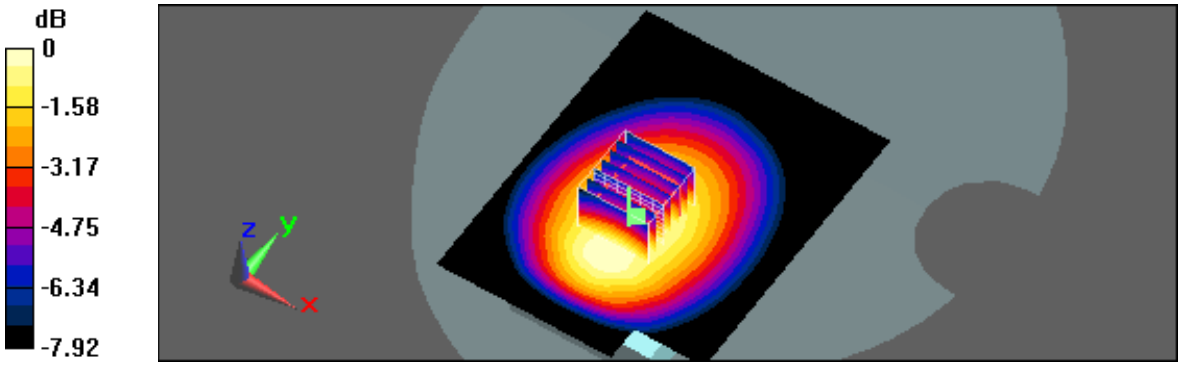
Communication System: GPRS 850 (3Down, 2Up); Frequency: 836.6 MHz;Duty Cycle: 1:4.2
Medium parameters used: f = 837 MHz; σ = 0.997 mho/m; ε_r = 53.6; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV3 - SN3150 add; ConvF(6.02, 6.02, 6.02); Calibrated: 4/28/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn393; Calibrated: 8/24/2009
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (71x91x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.28 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 13.8 V/m; Power Drift = -0.00979 dB
Peak SAR (extrapolated) = 1.43 W/kg
SAR(1 g) = 1.14 mW/g; SAR(10 g) = 0.828 mW/g
Maximum value of SAR (measured) = 1.27 mW/g



0 dB = 1.27mW/g

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 12/24/2009 3:56:54 PM

Flat_GPRS 850 CH251_Main_Close_Headset 15mm to phantom_3Down 2Up

DUT: PB65100_Main_Close; Type: Mobile Phone; Serial: 357341030017443

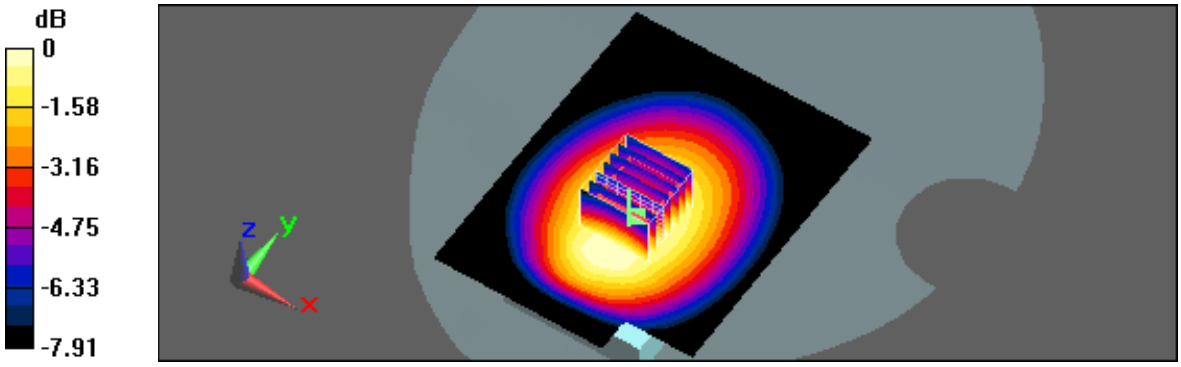
Communication System: GPRS 850 (3Down, 2Up); Frequency: 848.8 MHz;Duty Cycle: 1:4.2
Medium parameters used: f = 849 MHz; σ = 1.01 mho/m; ε_r = 53.5; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV3 - SN3150 add; ConvF(6.02, 6.02, 6.02); Calibrated: 4/28/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn393; Calibrated: 8/24/2009
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (71x91x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.4 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 16 V/m; Power Drift = -0.152 dB
Peak SAR (extrapolated) = 1.52 W/kg
SAR(1 g) = 1.2 mW/g; SAR(10 g) = 0.871 mW/g
Maximum value of SAR (measured) = 1.34 mW/g



0 dB = 1.34mW/g

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 12/24/2009 4:29:21 PM

Flat_GPRS 850 CH251_Main_Open_Headset 15mm to phantom_3Down 2Up

DUT: PB65100_Main Open; Type: Mobile Phone; Serial: 357341030017443

Communication System: GPRS 850 (3Down, 2Up); Frequency: 848.8 MHz;Duty Cycle: 1:4.2
Medium parameters used: f = 849 MHz; σ = 1.01 mho/m; ε_r = 53.5; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

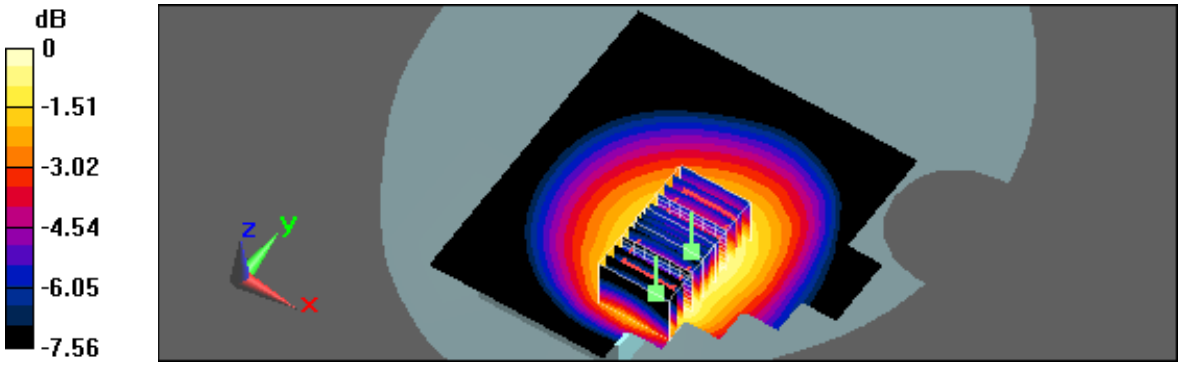
DASY5 Configuration:

- Probe: ES3DV3 - SN3150 add; ConvF(6.02, 6.02, 6.02); Calibrated: 4/28/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn393; Calibrated: 8/24/2009
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (91x91x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.19 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 12 V/m; Power Drift = -0.026 dB
Peak SAR (extrapolated) = 1.35 W/kg
SAR(1 g) = 0.954 mW/g; SAR(10 g) = 0.666 mW/g
Maximum value of SAR (measured) = 1.11 mW/g

Flat/Zoom Scan (7x7x9)/Cube 1:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 12 V/m; Power Drift = -0.026 dB
Peak SAR (extrapolated) = 1.21 W/kg
SAR(1 g) = 0.966 mW/g; SAR(10 g) = 0.708 mW/g
Maximum value of SAR (measured) = 1.08 mW/g



0 dB = 1.08mW/g

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 1/5/2010 10:53:09 AM

Flat_GPRS 850 CH251_2nd_Close_Headset 15mm to phantom_3Down 2Up

DUT: PB65100_2nd_Close; Type: Mobile Phone; Serial: 357341030021767

Communication System: GPRS 850 (3Down, 2Up); Frequency: 848.8 MHz;Duty Cycle: 1:4.2
Medium parameters used: f = 849 MHz; σ = 1.01 mho/m; ε_r = 53.5; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

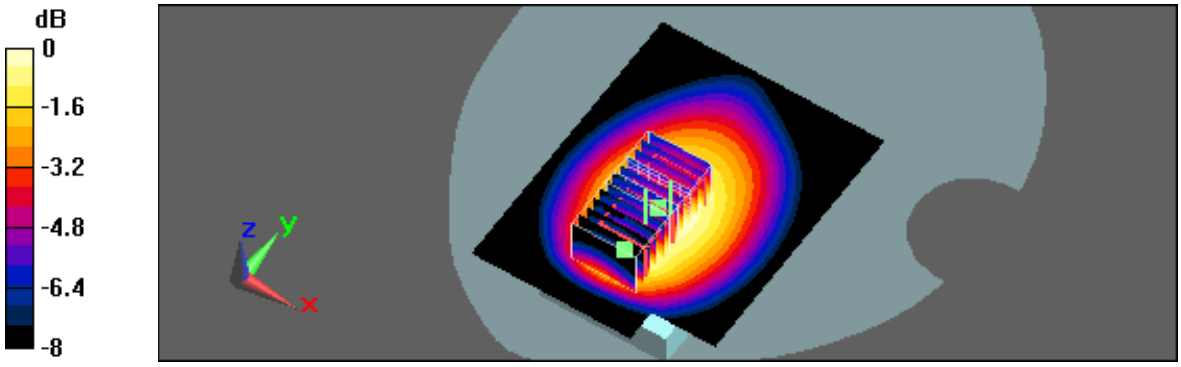
DASY5 Configuration:

- Probe: ES3DV3 - SN3150 add; ConvF(6.02, 6.02, 6.02); Calibrated: 4/28/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn393; Calibrated: 8/24/2009
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (71x91x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.14 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 17.2 V/m; Power Drift = 0.021 dB
Peak SAR (extrapolated) = 1.28 W/kg
SAR(1 g) = 1.02 mW/g; SAR(10 g) = 0.736 mW/g
Maximum value of SAR (measured) = 1.13 mW/g

Flat/Zoom Scan (7x7x9)/Cube 1:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 17.2 V/m; Power Drift = 0.021 dB
Peak SAR (extrapolated) = 1.24 W/kg
SAR(1 g) = 0.944 mW/g; SAR(10 g) = 0.648 mW/g
Maximum value of SAR (measured) = 1.09 mW/g



0 dB = 1.09mW/g

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 12/24/2009 6:23:23 PM

Flat_GPRS 850 CH251_Main_Close_Headset 15mm to phantom_4Down 1Up

DUT: PB65100_Main_Close; Type: Mobile Phone; Serial: 357341030017443

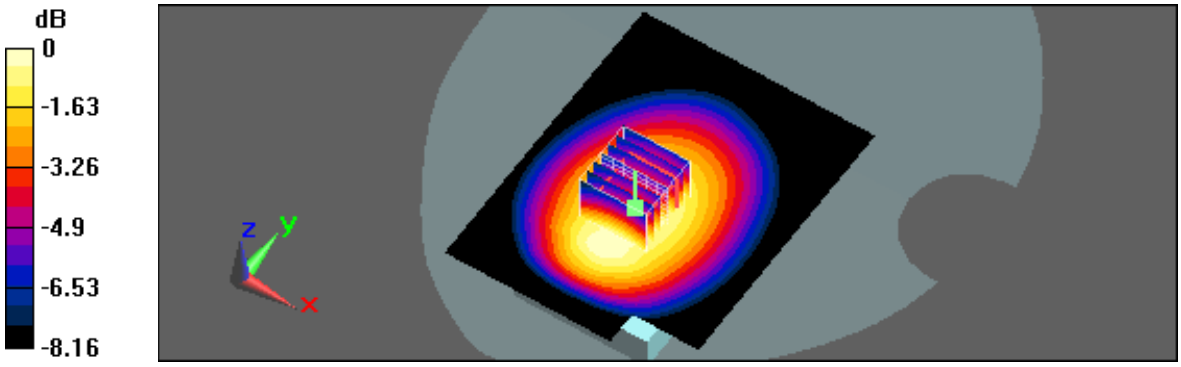
Communication System: GPRS 850 (4Down, 1Up); Frequency: 848.8 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 849 MHz; σ = 1.01 mho/m; ε_r = 53.5; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV3 - SN3150 add; ConvF(6.02, 6.02, 6.02); Calibrated: 4/28/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn393; Calibrated: 8/24/2009
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (71x91x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.827 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 11.5 V/m; Power Drift = 0.035 dB
Peak SAR (extrapolated) = 0.948 W/kg
SAR(1 g) = 0.747 mW/g; SAR(10 g) = 0.541 mW/g
Maximum value of SAR (measured) = 0.836 mW/g



0 dB = 0.836mW/g

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 12/25/2009 12:25:58 PM

Flat_PCS CH810_Main_Close_Headset 15mm to phantom

DUT: PB65100_Main_Close; Type: Mobile Phone; Serial: 357341030017443

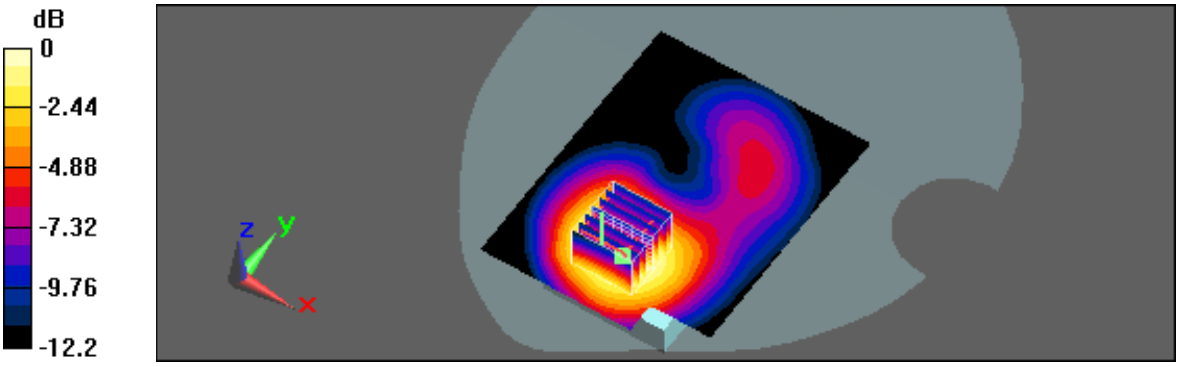
Communication System: PCS; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1910 MHz; σ = 1.51 mho/m; ε_r = 51.5; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV3 - SN3150 add; ConvF(4.81, 4.81, 4.81); Calibrated: 4/28/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn393; Calibrated: 8/24/2009
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (71x91x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.662 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 8.82 V/m; Power Drift = -0.068 dB
Peak SAR (extrapolated) = 0.769 W/kg
SAR(1 g) = 0.531 mW/g; SAR(10 g) = 0.332 mW/g
Maximum value of SAR (measured) = 0.637 mW/g



0 dB = 0.637mW/g

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 12/25/2009 11:32:43 AM

Flat_PCS CH810_Main_Close_Headset 15mm to phantom_3Down 2Up

DUT: PB65100_Main_Close; Type: Mobile Phone; Serial: 357341030017443

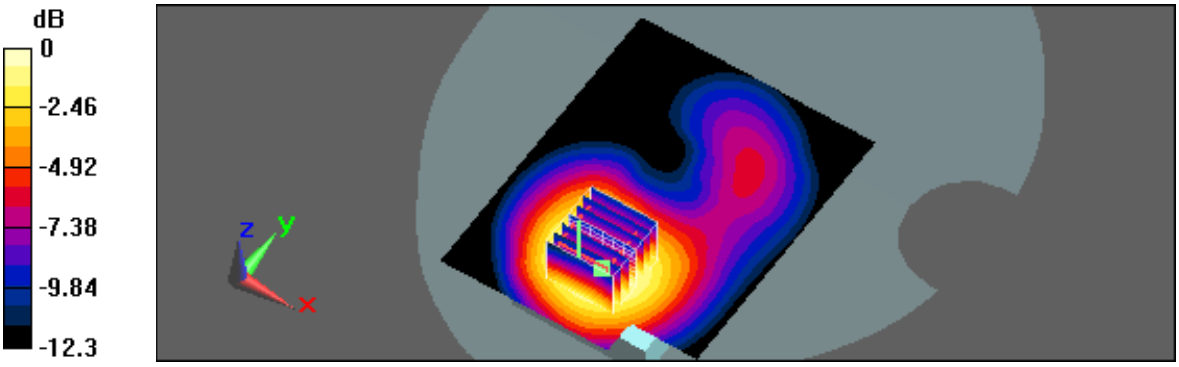
Communication System: GPRS PCS (3Down,2Up); Frequency: 1909.8 MHz;Duty Cycle: 1:4.2
Medium parameters used: f = 1910 MHz; σ = 1.51 mho/m; ε_r = 51.5; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV3 - SN3150 add; ConvF(4.81, 4.81, 4.81); Calibrated: 4/28/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn393; Calibrated: 8/24/2009
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (71x91x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.937 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 9.74 V/m; Power Drift = 0.057 dB
Peak SAR (extrapolated) = 1.08 W/kg
SAR(1 g) = 0.746 mW/g; SAR(10 g) = 0.476 mW/g
Maximum value of SAR (measured) = 0.891 mW/g



0 dB = 0.891mW/g

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 12/25/2009 11:06:53 AM

Flat_PCS CH810_Main_Open_Headset 15mm to phantom_3Down 2Up

DUT: PB65100_Main Open; Type: Mobile Phone; Serial: 357341030017443

Communication System: GPRS PCS (3Down,2Up); Frequency: 1909.8 MHz;Duty Cycle: 1:4.2
Medium parameters used: f = 1910 MHz; σ = 1.51 mho/m; ε_r = 51.5; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

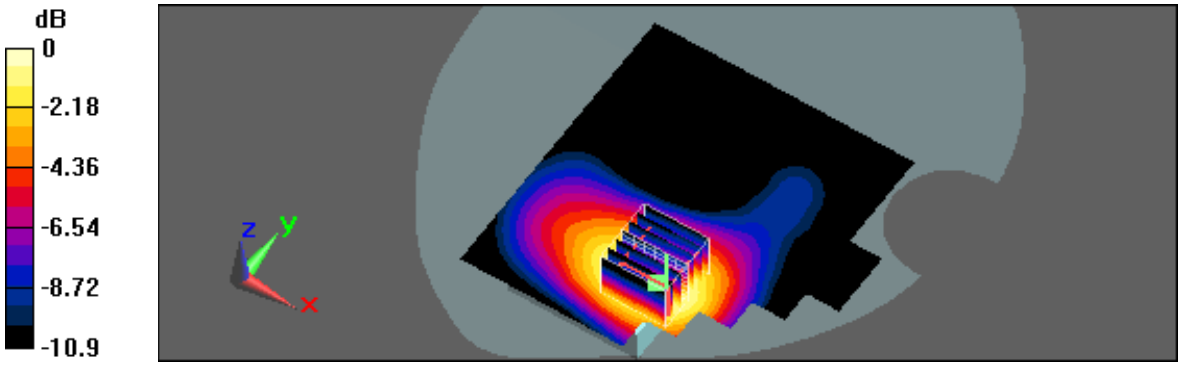
- Probe: ES3DV3 - SN3150 add; ConvF(4.81, 4.81, 4.81); Calibrated: 4/28/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn393; Calibrated: 8/24/2009
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (91x91x1):

Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.809 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 4.56 V/m; Power Drift = 0.017 dB
Peak SAR (extrapolated) = 0.913 W/kg
SAR(1 g) = 0.627 mW/g; SAR(10 g) = 0.385 mW/g
Maximum value of SAR (measured) = 0.752 mW/g



0 dB = 0.752mW/g

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 12/25/2009 11:59:29 AM

Flat_PCS CH810_Main_Close_Headset 15mm to phantom_4Down 1Up

DUT: PB65100_Main_Close; Type: Mobile Phone; Serial: 357341030017443

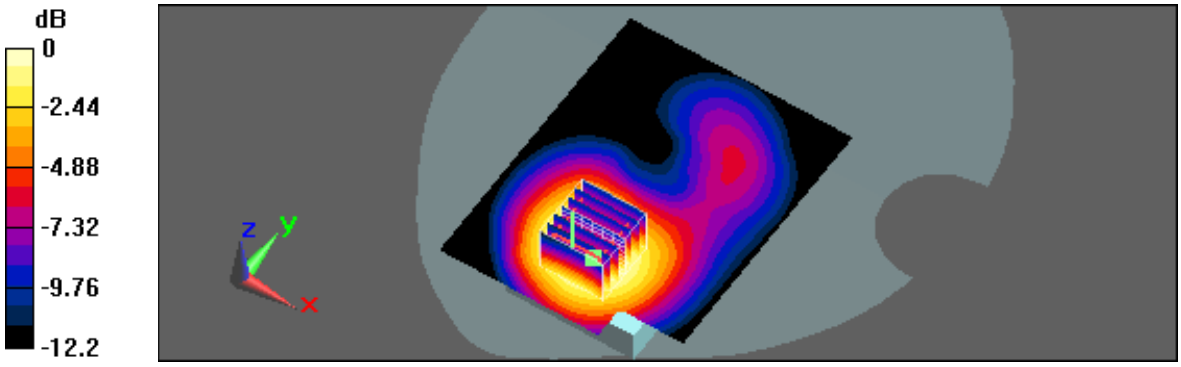
Communication System: GPRS PCS (4Down,1Up); Frequency: 1909.8 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1910 MHz; σ = 1.51 mho/m; ε_r = 51.5; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV3 - SN3150 add; ConvF(4.81, 4.81, 4.81); Calibrated: 4/28/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn393; Calibrated: 8/24/2009
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (71x91x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.619 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 7.85 V/m; Power Drift = 0.033 dB
Peak SAR (extrapolated) = 0.705 W/kg
SAR(1 g) = 0.488 mW/g; SAR(10 g) = 0.311 mW/g
Maximum value of SAR (measured) = 0.583 mW/g



0 dB = 0.583mW/g

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 12/28/2009 4:10:24 PM

Flat_WCDMA Band IV CH1513_Main_Close_Headset 15mm to phantom

DUT: PB65100_Main_Close; Type: Mobile Phone; Serial: 357341030017443

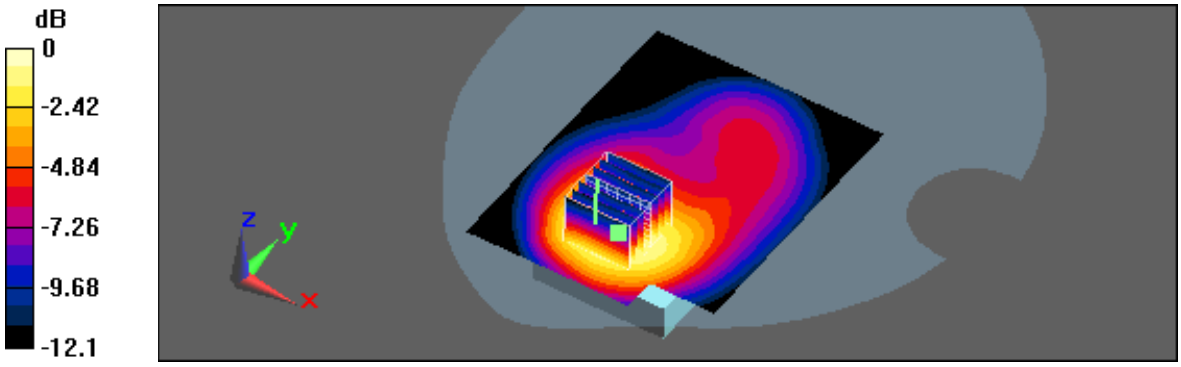
Communication System: WCDMA Band IV; Frequency: 1752.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1753 MHz; σ = 1.5 mho/m; ε_r = 51.9; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV3 - SN3150; ConvF(4.92, 4.92, 4.92); Calibrated: 1/20/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn393; Calibrated: 8/24/2009
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (71x91x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.900 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 10.8 V/m; Power Drift = 0.047 dB
Peak SAR (extrapolated) = 1.25 W/kg
SAR(1 g) = 0.768 mW/g; SAR(10 g) = 0.459 mW/g
Maximum value of SAR (measured) = 0.934 mW/g



0 dB = 0.934mW/g

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 12/28/2009 4:39:44 PM

Flat_WCDMA Band IV CH1513_Main_Open_Headset 15mm to phantom

DUT: PB65100_Main Open; Type: Mobile Phone; Serial: 357341030017443

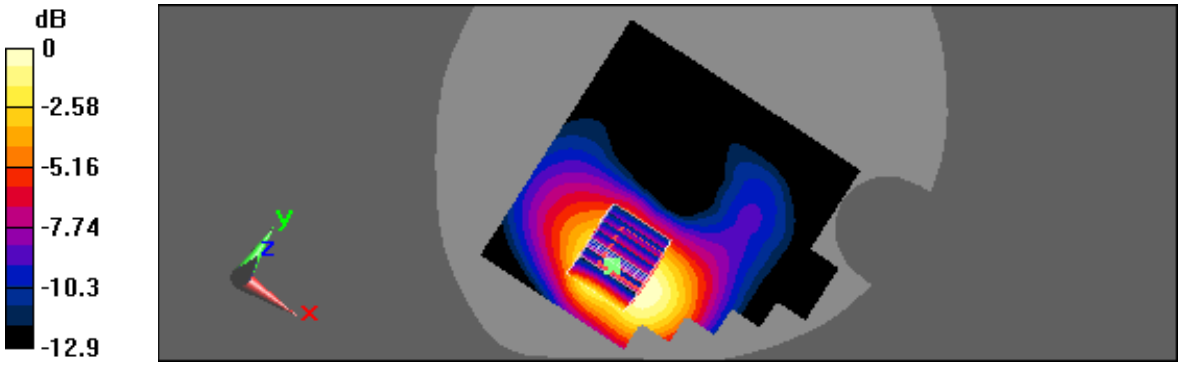
Communication System: WCDMA Band IV; Frequency: 1752.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1753 MHz; σ = 1.5 mho/m; ε_r = 51.9; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV3 - SN3150; ConvF(4.92, 4.92, 4.92); Calibrated: 1/20/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn393; Calibrated: 8/24/2009
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (91x91x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.815 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 5.52 V/m; Power Drift = 0.066 dB
Peak SAR (extrapolated) = 1.11 W/kg
SAR(1 g) = 0.670 mW/g; SAR(10 g) = 0.395 mW/g
Maximum value of SAR (measured) = 0.815 mW/g



0 dB = 0.815mW/g

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 12/29/2009 9:16:53 AM

Flat_HSDPA Band IV CH1513_Main_Close_Headset 15mm to phantom_Sub test1

DUT: PB65100_Main_Close; Type: Mobile Phone; Serial: 357341030017443

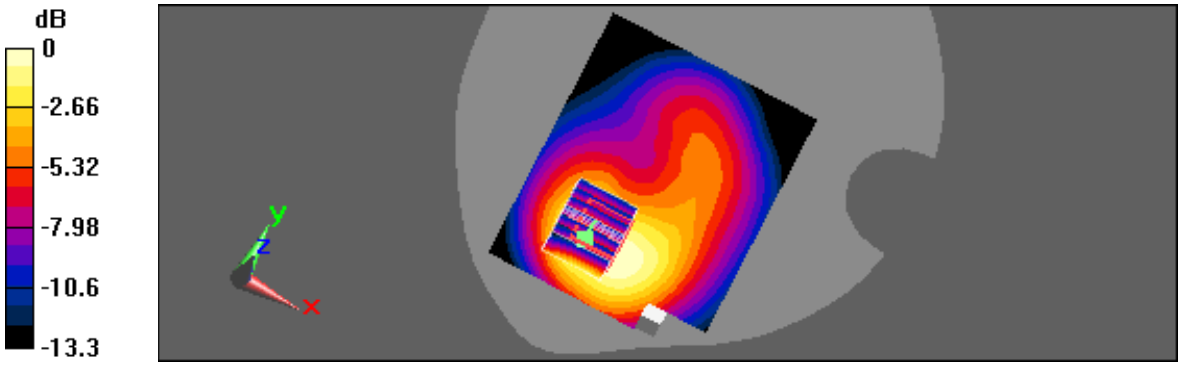
Communication System: WCDMA HSDPA Band IV; Frequency: 1752.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1753 MHz; σ = 1.5 mho/m; ε_r = 51.9; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV3 - SN3150; ConvF(4.92, 4.92, 4.92); Calibrated: 1/20/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn393; Calibrated: 8/24/2009
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (71x91x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.737 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 9.91 V/m; Power Drift = -0.055 dB
Peak SAR (extrapolated) = 1.01 W/kg
SAR(1 g) = 0.624 mW/g; SAR(10 g) = 0.377 mW/g
Maximum value of SAR (measured) = 0.763 mW/g



0 dB = 0.763mW/g

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 12/29/2009 9:54:51 AM

Flat_HSUPA Band IV CH1450_Main_Close_Headset 15mm to phantom_Sub test1

DUT: PB65100_Main_Close; Type: Mobile Phone; Serial: 357341030017443

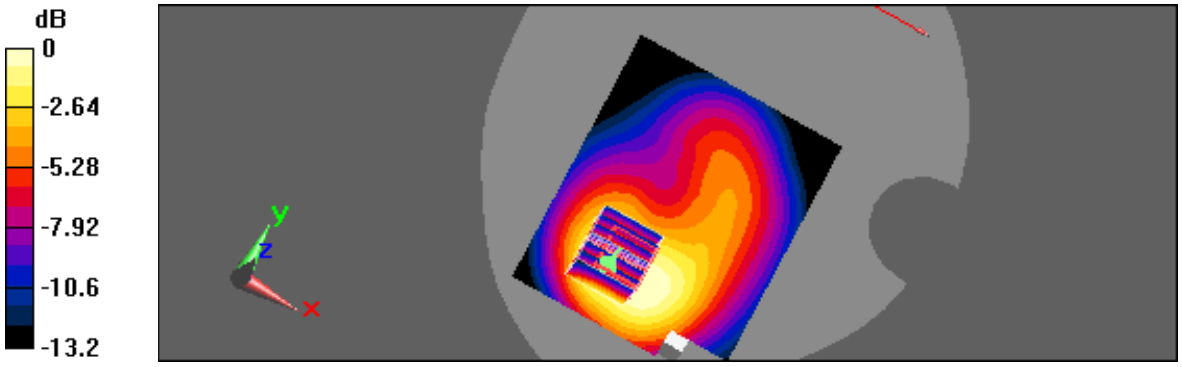
Communication System: HSUPA Band IV; Frequency: 1740 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1740 MHz; σ = 1.48 mho/m; ε_r = 51.9; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV3 - SN3150; ConvF(4.92, 4.92, 4.92); Calibrated: 1/20/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn393; Calibrated: 8/24/2009
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (71x91x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.880 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 11 V/m; Power Drift = -0.017 dB
Peak SAR (extrapolated) = 1.14 W/kg
SAR(1 g) = 0.705 mW/g; SAR(10 g) = 0.427 mW/g
Maximum value of SAR (measured) = 0.853 mW/g



0 dB = 0.853mW/g

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 12/30/2009 11:20:01 AM

Flat_802.11b CH6_11M_Main_Close_Headset 15mm to phantom

DUT: PB65100_Main_Close; Type: Mobile Phone; Serial: 357341030017443

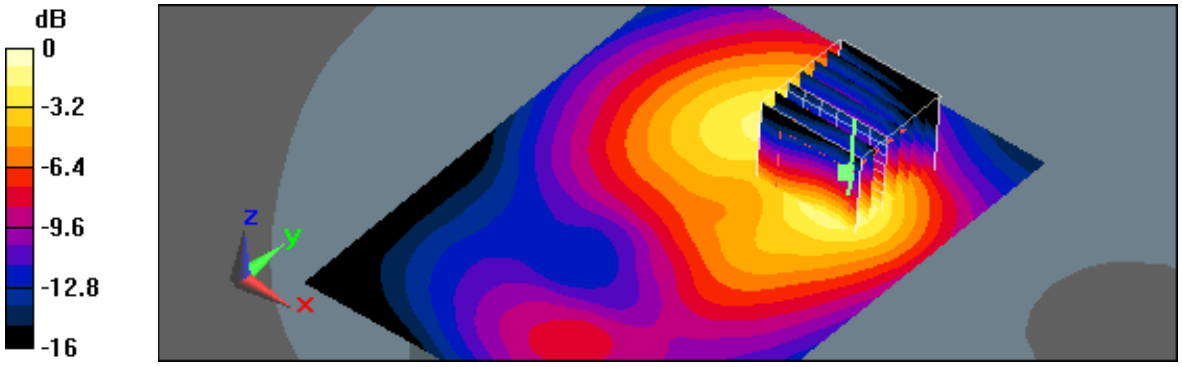
Communication System: IEEE 802.11b; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2437 MHz; σ = 1.9 mho/m; ε_r = 50.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV3 - SN3150; ConvF(4.23, 4.23, 4.23); Calibrated: 1/20/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn393; Calibrated: 8/24/2009
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (71x101x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.206 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 9.4 V/m; Power Drift = -0.083 dB
Peak SAR (extrapolated) = 0.337 W/kg
SAR(1 g) = 0.167 mW/g; SAR(10 g) = 0.082 mW/g
Maximum value of SAR (measured) = 0.213 mW/g



0 dB = 0.213mW/g

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 12/30/2009 11:48:56 AM

Flat_802.11b CH6_11M_Main_Open_Headset 15mm to phantom

DUT: PB65100_Main Open; Type: Mobile Phone; Serial: 357341030017443

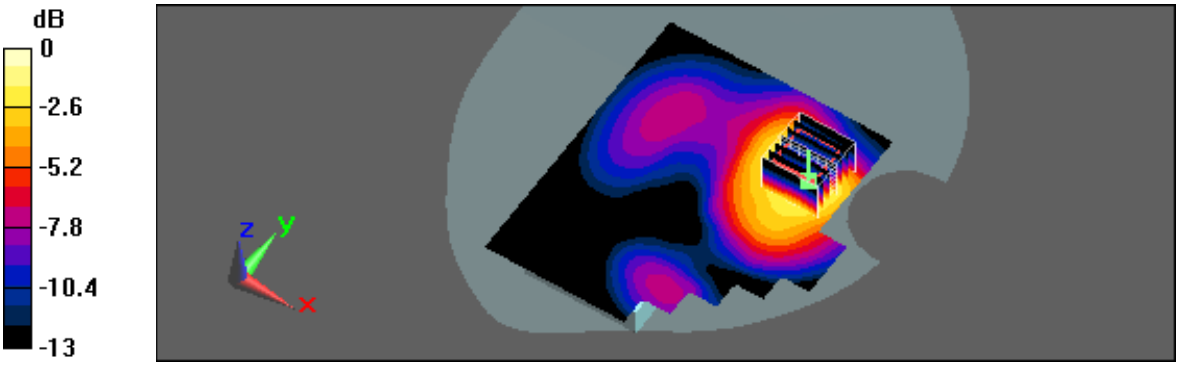
Communication System: IEEE 802.11b; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2437 MHz; σ = 1.9 mho/m; ε_r = 50.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV3 - SN3150; ConvF(4.23, 4.23, 4.23); Calibrated: 1/20/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn393; Calibrated: 8/24/2009
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1150 and higher
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

Flat/Area Scan (101x101x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.174 mW/g

Flat/Zoom Scan (7x7x9)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 4.07 V/m; Power Drift = 0.170 dB
Peak SAR (extrapolated) = 0.292 W/kg
SAR(1 g) = 0.150 mW/g; SAR(10 g) = 0.078 mW/g
Maximum value of SAR (measured) = 0.189 mW/g



0 dB = 0.189mW/g

Appendix C - Calibration

All of the instruments Calibration information are listed below.

- Dipole _ D835V2 SN:4d082 Calibration No.D835V2-4d082 _Jul09
- Dipole _ D1750V2 SN:1008 Calibration No.D1750V2-1008 _May09
- Dipole _ D1900V2 SN:5d111 Calibration No.D1900V-5d111_Jul09
- Dipole _ D2450V2 SN:712 Calibration No.D2450V-712_Feb09
- Probe _ ES3DV3 SN:3150 Calibration No.ES3-3150_Apr09
- DAE _ DAE3 SN:393 Calibration No.DAE3-393_ Aug09

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
Swiss Calibration Service

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

Accreditation No.: **SCS 108**

Client **ATL (Auden)** Certificate No: **D835V2-4d082_Jul09**

CALIBRATION CERTIFICATE

Object	D835V2 - SN: 4d082
Calibration procedure(s)	QA CAL-05.v7 Calibration procedure for dipole validation kits
Calibration date:	July 13, 2009
Condition of the calibrated item	In Tolerance

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	08-Oct-08 (No. 217-00898)	Oct-09
Power sensor HP 8481A	US37292783	08-Oct-08 (No. 217-00898)	Oct-09
Reference 20 dB Attenuator	SN: 5086 (20g)	31-Mar-09 (No. 217-01025)	Mar-10
Type-N mismatch combination	SN: 5047.2 / 06327	31-Mar-09 (No. 217-01029)	Mar-10
Reference Probe ES3DV2	SN: 3025	30-Apr-09 (No. ES3-3025_Apr09)	Apr-10
DAE4	SN: 601	07-Mar-09 (No. DAE4-601_Mar09)	Mar-10

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-07)	In house check: Oct-09
RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-07)	In house check: Oct-09
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-08)	In house check: Oct-09

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

Issued: July 13, 2009

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

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:

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

d) 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	DASY5	V5.0
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 %	0.89 mho/m ± 6 %
Head TSL temperature during test	(22.2 ± 0.2) °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.42 mW / g
SAR normalized	normalized to 1W	9.68 mW / g
SAR for nominal Head TSL parameters [1]	normalized to 1W	**9.71 mW /g ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.58 mW / g
SAR normalized	normalized to 1W	6.32 mW / g
SAR for nominal Head TSL parameters [1]	normalized to 1W	**6.34 mW /g ± 16.5 % (k=2)**

[1] 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	53.0 ± 6 %	0.99 mho/m ± 6 %
Body TSL temperature during test	(22.5 ± 0.2) °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	2.56 mW / g
SAR normalized	normalized to 1W	10.2 mW / g
SAR for nominal Body TSL parameters [2]	normalized to 1W	**10.0 mW / g ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	1.68 mW / g
SAR normalized	normalized to 1W	6.72 mW / g
SAR for nominal Body TSL parameters [2]	normalized to 1W	**6.61 mW / g ± 16.5 % (k=2)**

[2] Correction to nominal TSL parameters according to d), chapter "SAR Sensitivities"

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	52.3 Ω - 2.5 jΩ
Return Loss	- 29.5 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	48.3 Ω - 4.3 jΩ
Return Loss	- 26.6 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	October 17, 2008

DASY5 Validation Report for Head TSL

Date/Time: 13.07.2009 11:31:45

Test Laboratory: SPEAG, Zurich, Switzerland

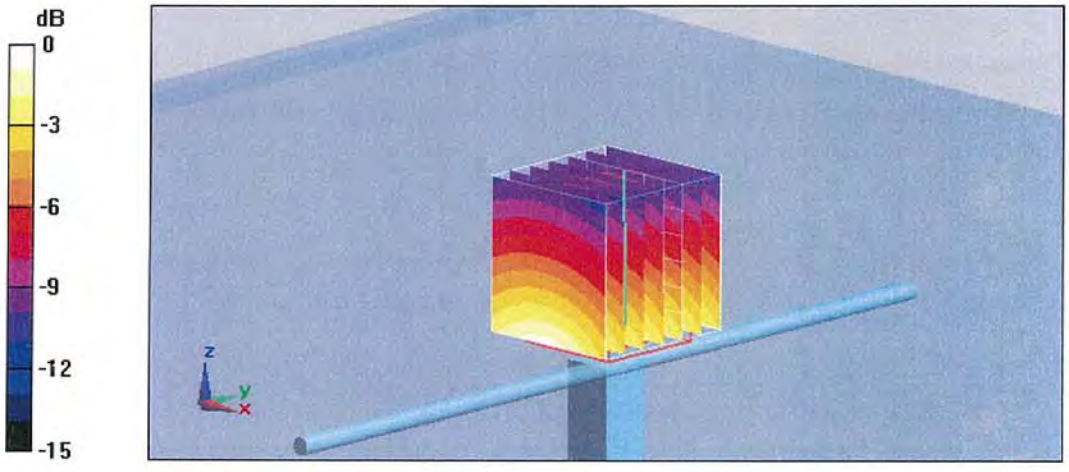
DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d082

Communication System: CW-835; Frequency: 835 MHz; Duty Cycle: 1:1
Medium: HSL 900 MHz
Medium parameters used: f = 835 MHz; σ = 0.89 mho/m; ε_r = 40.5; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

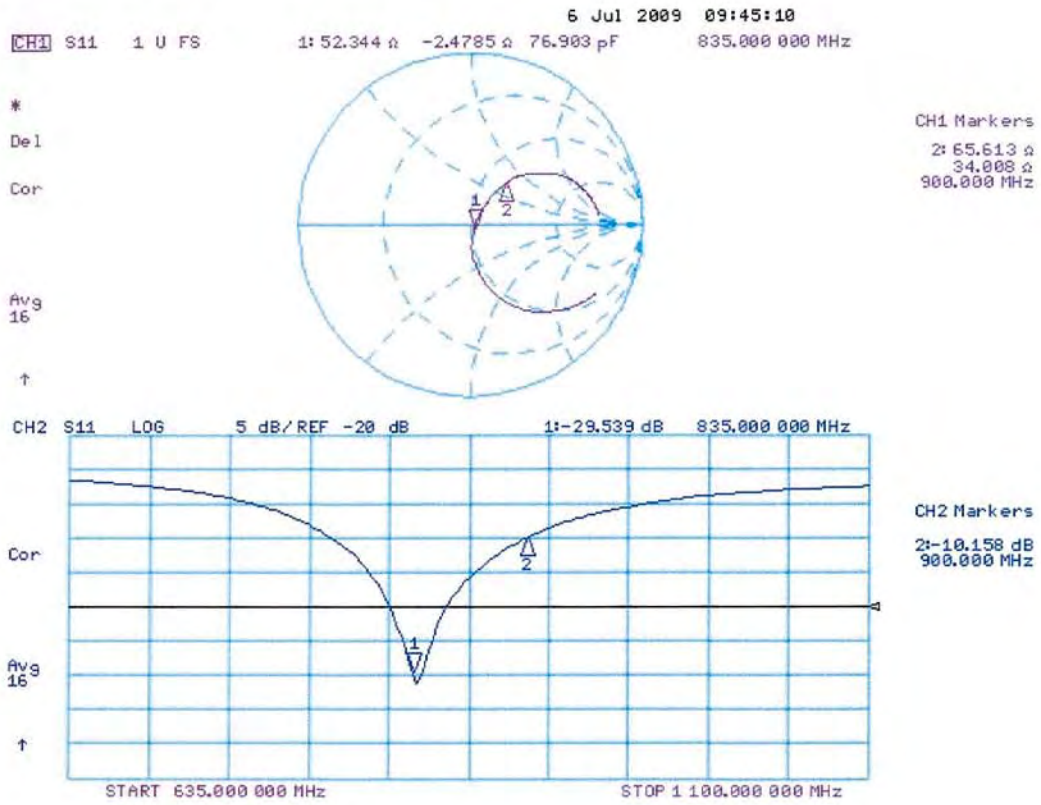
- Probe: ES3DV2 - SN3025; ConvF(5.86, 5.86, 5.86); Calibrated: 30.04.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 07.03.2009
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

Pin=250mW; dip=15mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 57.4 V/m; Power Drift = 0.00639 dB
Peak SAR (extrapolated) = 3.62 W/kg
SAR(1 g) = 2.42 mW/g; SAR(10 g) = 1.58 mW/g
Maximum value of SAR (measured) = 2.8 mW/g



0 dB = 2.8mW/g

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date/Time: 13.07.2009 11:50:13

Test Laboratory: SPEAG, Zurich, Switzerland

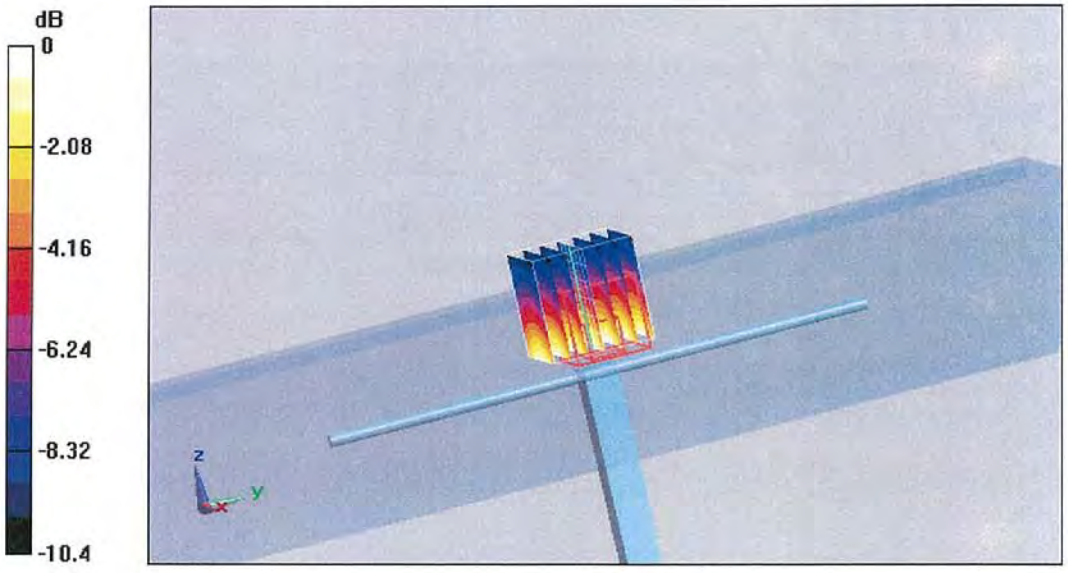
DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d082

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium: MSL900
Medium parameters used: f = 835 MHz; σ = 0.99 mho/m; ε_r = 53; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

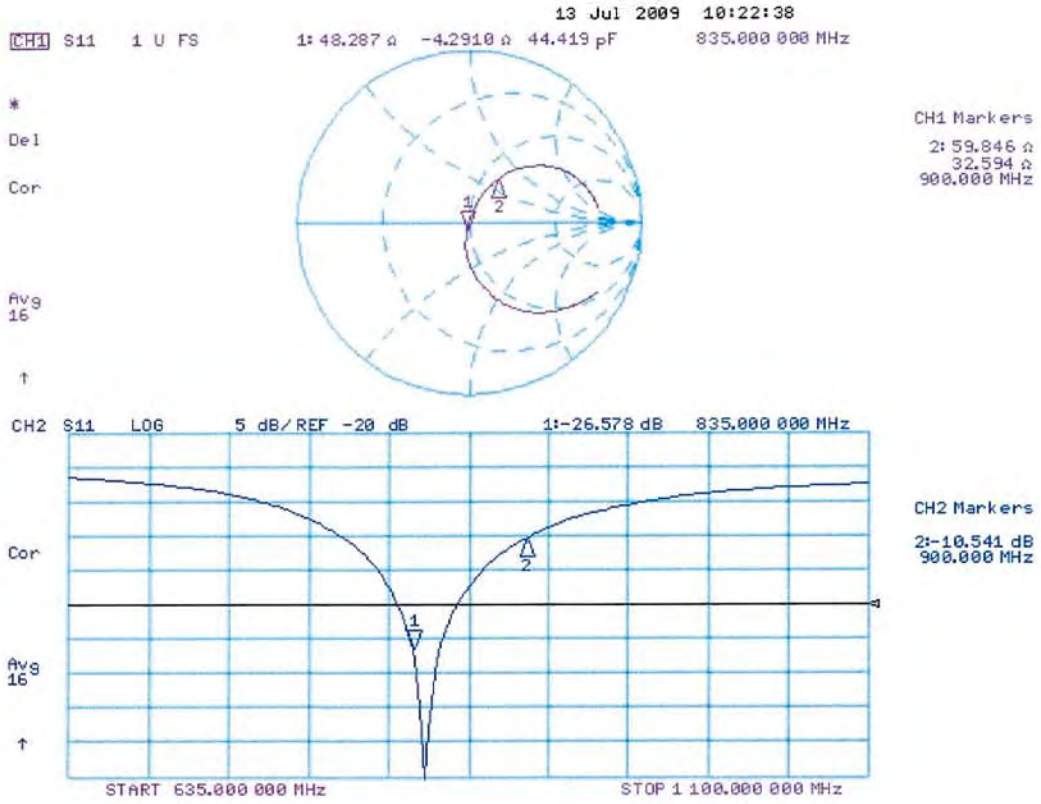
- Probe: ES3DV2 - SN3025; ConvF(5.79, 5.79, 5.79); Calibrated: 30.04.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 07.03.2009
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

Pin = 250mW, d = 15mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 56.4 V/m; Power Drift = 0.013 dB
Peak SAR (extrapolated) = 3.76 W/kg
SAR(1 g) = 2.56 mW/g; SAR(10 g) = 1.68 mW/g
Maximum value of SAR (measured) = 2.97 mW/g



0 dB = 2.97mW/g

Impedance Measurement Plot for Body TSL



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

Client: SGS (Auden)

Certificate No: D1750V2_1008_May09

CALIBRATION CERTIFICATE

Object	D1750V2 - SN: 1008
Calibration procedure(s)	QA CAL-05.v6 Calibration procedure for dipole validation kits
Calibration date:	May 7, 2009
Condition of the calibrated item	In Tolerance

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	08-Oct-08 (No. 217-00898)	Oct-09
Power sensor HP 8481A	US37292783	08-Oct-08 (No. 217-00898)	Oct-09
Reference 20 dB Attenuator	SN: 5086 (20g)	31-Mar-09 (No. 217-01025)	Mar-10
Type-N mismatch combination	SN: 5047.2 / 06327	31-Mar-09 (No. 217-01029)	Mar-10
Reference Probe ES3DV2	SN: 3025	30-Apr-09 (No. ES3-3025_Apr09)	Apr-10
DAE4	SN: 601	07-Mar-09 (No. DAE4-601_Mar09)	Mar-10

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-07)	In house check: Oct-09
RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-07)	In house check: Oct-09
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-08)	In house check: Oct-09

	Name	Function	Signature
Calibrated by:	Marcel Fehr	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: May 22, 2009

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:

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

d) 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	DASY5	V5.0
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V5.0	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	1750 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	40.1	1.37 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	38.9 ± 6 %	1.37 mho/m ± 6 %
Head TSL temperature during test	(21.8 ± 0.2) °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	9.59 mW / g
SAR normalized	normalized to 1W	38.4 mW / g
SAR for nominal Head TSL parameters [1]	normalized to 1W	**38.1 mW / g ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	5.04 mW / g
SAR normalized	normalized to 1W	20.2 mW / g
SAR for nominal Head TSL parameters[1]	normalized to 1W	**20.1 mW / g ± 16.5 % (k=2)**

[1] 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	53.4	1.49 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	55.2 ± 6 %	1.43 mho/m ± 6 %
Body TSL temperature during test	(21.2 ± 0.2) °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm³ (1 g) of Body TSL	condition	
SAR measured	250 mW input power	9.25 mW / g
SAR normalized	normalized to 1W	37.0 mW / g
SAR for nominal Body TSL parameters [2]	normalized to 1W	**38.3 mW / g ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	5.01 mW / g
SAR normalized	normalized to 1W	20.0 mW / g
SAR for nominal Body TSL parameters [2]	normalized to 1W	**20.4 mW / g ± 16.5 % (k=2)**

[2] Correction to nominal TSL parameters according to d), chapter "SAR Sensitivities"

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	51.6 Ω + 0.6 jΩ
Return Loss	- 35.4 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	46.8 Ω + 1.5 jΩ
Return Loss	- 28.8 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.225 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	February 11, 2009

DASY5 Validation Report for Head TSL

Date/Time: 07.05.2009 10:22:08

Test Laboratory: SPEAG, Zurich, Switzerland

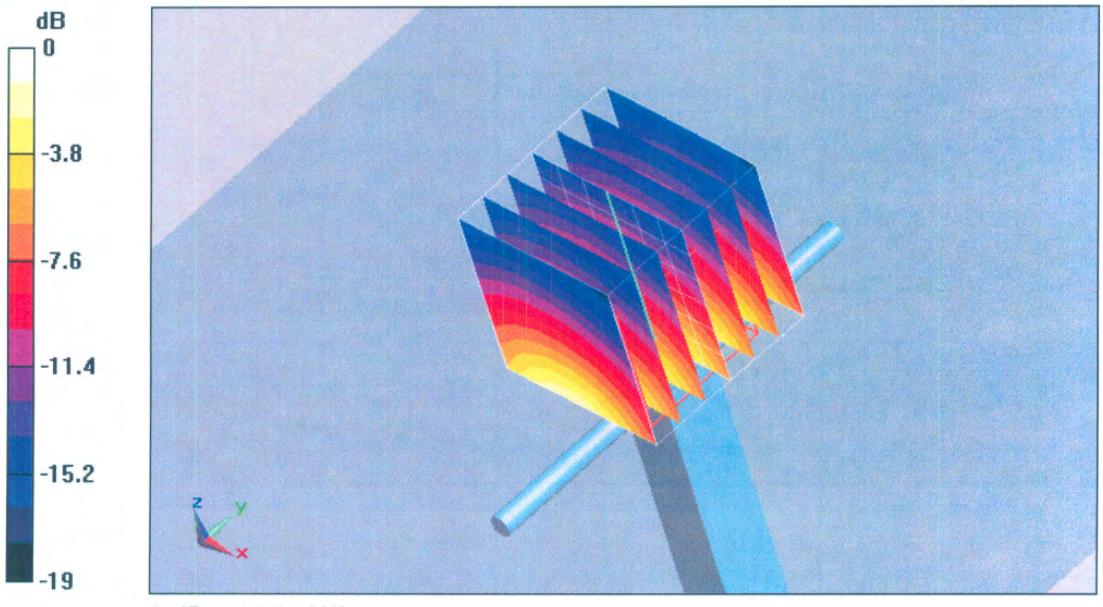
DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN:1008

Communication System: CW; Frequency: 1750 MHz; Duty Cycle: 1:1
Medium: HSL U10 BB
Medium parameters used: f = 1750 MHz; σ = 1.37 mho/m; ε_r = 38.9; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

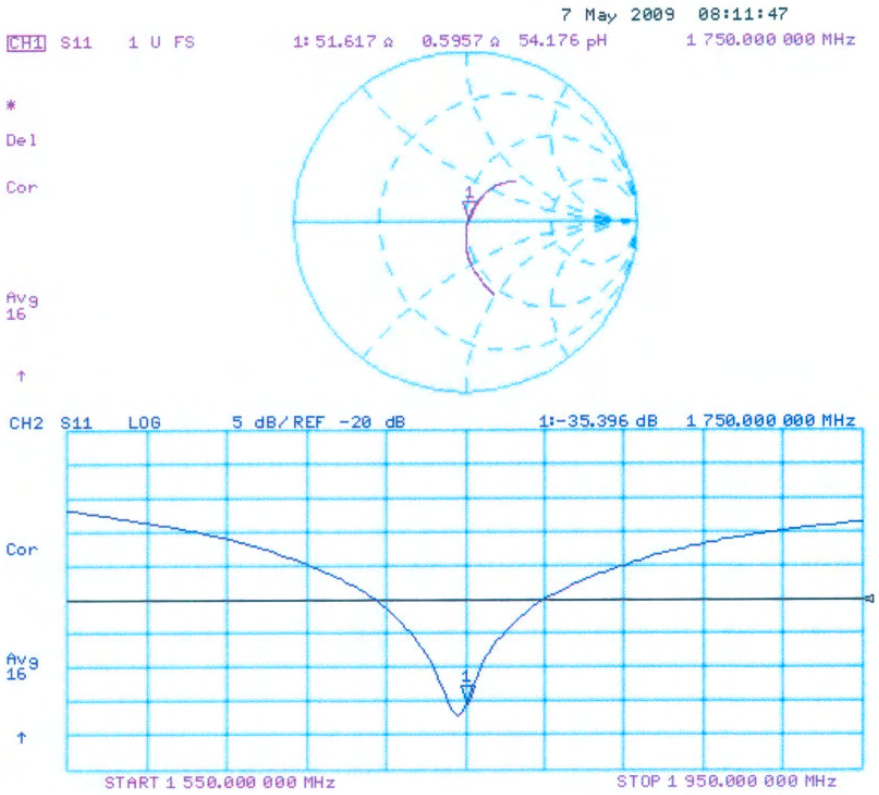
- Probe: ES3DV2 - SN3025; ConvF(5.04, 5.04, 5.04); Calibrated: 30.04.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 07.03.2009
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

Pin = 250 mW; dip = 10 mm, scan at 3.0mm/Zoom Scan (dist=3.0mm, probe 0deg) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 96.3 V/m; Power Drift = 0.029 dB
Peak SAR (extrapolated) = 17.5 W/kg
SAR(1 g) = 9.59 mW/g; SAR(10 g) = 5.04 mW/g
Maximum value of SAR (measured) = 11.8 mW/g



0 dB = 11.8mW/g

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date/Time: 07.05.2009 13:54:57

Test Laboratory: SPEAG, Zurich, Switzerland

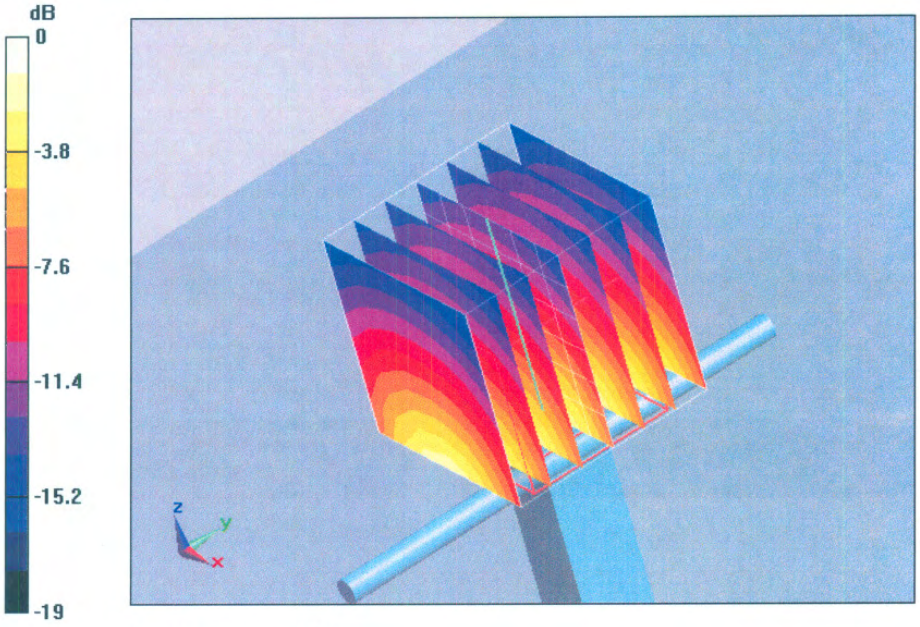
DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN:1008

Communication System: CW; Frequency: 1750 MHz; Duty Cycle: 1:1
Medium: MSL U10
Medium parameters used: f = 1750 MHz; σ = 1.43 mho/m; ε_r = 55.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV2 - SN3025; ConvF(4.71, 4.71, 4.71); Calibrated: 30.04.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 07.03.2009
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

Pin = 250 mW; dip = 10 mm, scan at 3.0mm/Zoom Scan (dist=3.4mm, probe 0deg) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 93.6 V/m; Power Drift = 0.018 dB
Peak SAR (extrapolated) = 15.7 W/kg
SAR(1 g) = 9.25 mW/g; SAR(10 g) = 5.01 mW/g
Maximum value of SAR (measured) = 11.6 mW/g



0 dB = 11.6mW/g

Impedance Measurement Plot for Body TSL