FCC SAR Measurement and Test Report

For

Wisky (Hong Kong) Co., Limited

Flat/RM1202, 12F, Tung Chun Commercial Centre, 438 – 444

Shanghai Street, Kowloon, Hong Kong

FCC ID: 2ACGU-3G051I

FCC 47 CFR Part 2 (2.1093)

ANSI/IEEE C95.1-1992

IEEE 1528-2003

KDB 865664 D01 v01r03 KDB 865664 D02 v01r01

Product Description: Entertainment Tablet

Tested Model: <u>3G051i</u>

Report No.: STR14048375H

Head: 0.2490W/kg(1g)

Max. SAR Values: Body: 1.2904 W/kg(1g)

Tested Date: <u>2014-06-03 to 2014-06-04</u>

Issued Date: 2014-06-04

Tested By: Silin Chen / Engineer

Silim chen Lahm peny Jumlyso

Reviewed By: <u>Lahm Peng / EMC Manager</u>

Manager Jumly&c

Approved & Authorized By:

Jandy so / PSQ Manager

Prepared By:

FCC Rules:

Shenzhen SEM.Test Technology Co., Ltd.

1/F, Building A, Hongwei Industrial Park, Liuxian 2nd Road,

Bao'an District, Shenzhen, P.R.C. (518101)

Tel.: +86-755-33663308 Fax.: +86-755-33663309 Website: www.semtest.com.cn

Note: This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by Shenzhen SEM. Test Technology Co., Ltd.

TABLE OF CONTENTS

1. General Information	
1.1 Product Description for Equipment Under Test (EUT)	
1.2 Test Standards	
1.3 Test Methodology	
1.4 Test Facility	
2. Summary of Test Results	
3. Specific Absorption Rate (SAR)	
3.1 Introduction	
3.2 SAR Definition	
4. SAR Measurement System	
4.1 The Measurement System	
4.2 Probe	
4.3 Probe Calibration Process	
4.4 Phantom	
4.6 Test Equipment List	
5. Tissue Simulating Liquids	
5.1 Composition of Tissue Simulating Liquid	
5.2 Tissue Dielectric Parameters for Head and Body Phantoms	
5.3 Tissue Calibration Result	
6. SAR Measurement Evaluation	
6.1 Purpose of System Performance Check	
6.2 System Setup	
6.3 Validation Results	
7. EUT Testing Position	18
7.1 Define Two Imaginary Lines on The Handset	
7.2 Cheek Position	
7.3 Tilted Position	
7.2 Body Worn Position	
7.3 EUT Antenna Position	
7.4 EUT Testing Position	
8. SAR Measurement Procedures	
8.1 Measurement Procedures	
8.2 Spatial Peak SAR Evaluation	
8.4 Volume Scan Procedures	
8.5 SAR Averaged Methods	
8.6 Power Drift Monitoring	
9. SAR Test Result	
9.1 Conducted RF Output Power	
9.2 Test Results for Standalone SAR Test	
9.3 Simultaneous Multi-band Transmission SAR Analysis	
10. Measurement Uncertainty	37
10.1 Uncertainty for EUT SAR Test	
10.2 Uncertainty for System Performance Check	
Annex A. Plots of System Performance Check	
Annex B. Plots of SAR Measurement	
Annex C. EUT Photos	
Annex D. Test Setup Photos	
Annex E. Calibration Certificate	

1. General Information

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant: Wisky (Hong Kong) Co., Limited

Address of applicant: Flat/RM1202, 12F, Tung Chun Commercial Centre,

438 – 444 Shanghai Street, Kowloon, Hong Kong

Manufacturer: Shenzhen Wisky Technology Co., LTD.

Address of manufacturer: 5th Floor, W2-A Building, Hi-tech Park South 1st

Road, Nanshan District, Shenzhen

General Description of EUT	
Product Name:	Entertainment Tablet
Brand Name:	1
Model No.:	3G051i
Adding Mode:	3GD51i
Software Version:	V1.00_20140411
Hardware Version:	TV1.0_140107
IMEI:	863059020233211
Rated Voltage:	DC 3.7V
Battery:	3000mAh
Power Adaptor:	Input 100-240V, 50/60Hz, Output DC 5V
Device Category:	Portable Device

The EUT is GSM850/900/DCS1800/PCS1900, WCDMA Band I, Band II, Band V, Band VIII, Entertainment Tablet. the Entertainment Tablet is intended for speech and Multimedia Message Service (MMS) transmission. It is equipped with GPRS/EDGE class 12 for GSM850 and GSM1900 and Bluetooth, Wi-Fi, and camera functions. For more information see the following datasheet

The test data is gathered from a production sample, provided by the manufacturer. The other model listed in the report has different appearance only of 3G051i without circuit and electronic construction changed, declared by the manufacturer.

Technical Characteristics of EUT	
2G	
Support Networks:	GSM, GPRS, EDGE
Support Band:	GSM850/PCS1900
Holink Eroguanov	GSM/GPRS/EDGE 850: 824~849MHz
Uplink Frequency:	GSM/GPRS/EDGE 1900: 1850~1910MHz
Downlink Fraguency:	GSM/GPRS/EDGE 850: 869~894MHz
Downlink Frequency:	GSM/GPRS/EDGE 1900: 1930~1990MHz

RF Output Power:	GSM850: 32.66dBm, GSM1900: 29.39dBm
Type of Modulation:	GMSK, 8PSK
Antenna Type:	Internal Antenna
Antenna Gain:	GSM850: 1.97dBi
	GSM1900: 2.14dBi
GPRS/EDGE Class:	Class 12
3G	
Support Networks:	WCDMA
Support Band:	WCDMA Band II, WCDMA Band V
Unlink Fraguency:	WCDMA Band II: 1850~1980MHz
Uplink Frequency:	WCDMA Band V: 824~849MHz
Downlink Fraguency:	WCDMA Band II: 1930~1990MHz
Downlink Frequency:	WCDMA Band V: 869~894MHz
RF Output Power:	WCDMA850: 22.916dBm, WCDMA1900: 21.52dBm
Type of Modulation:	BPSK
Antenna Type:	Integral Antenna
Antenna Gain:	2.14dBi
Bluetooth	
Bluetooth Version:	V3.0
Frequency Range:	2402-2480MHz
RF Output Power:	6.449dBm (Conducted)
Modulation Type:	1Mbps, 2Mbps, 3Mbps
Data Rate:	GFSK, Pi/4 QDPSK, 8DPSK
Quantity of Channels	79
Channel Separation:	1MHz
Antenna Type:	Integral
Antenna Gain:	1.62dBi
Wi-Fi	
Support Standards:	802.11b, 802.11g, 802.11n
Frequency Range:	2412-2472MHz
RF Output Power:	15.88dBm (Conducted)
Type of Modulation:	CCK, OFDM, QPSK, BPSK, 16QAM, 64QAM
Data Rate:	1-11Mbps, 6-54Mbps, up to 150Mbps
Quantity of Channels	11
Channel Separation:	5MHz
Type of Antenna:	Integral
Antenna Gain:	1.62dBi
	1

1.2 Test Standards

The following report is prepared on behalf of the Wisky (Hong Kong) Co., Limited in accordance with FCC 47 CFR Part 2.1093, ANSI/IEEE C95.1-1992, IEEE 1528-2003 and KDB 865664 D01 v01r03 and KDB 865664 D02 v01r01

The objective is to determine compliance with FCC Part 2.1093 of the Federal Communication Commissions rules.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product, which result in lowering the emission, should be checked to ensure compliance has been maintained.

1.3 Test Methodology

All measurements contained in this report were conducted with KDB 865664 D01 v01r03 and KDB 865664 D02 v01r01. The public notice KDB 447498 D01 V05 for Mobile and Portable Devices RF Exposure Procedure also.

1.4 Test Facility

• FCC – Registration No.: 934118

Shenzhen SEM.Test Technology Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files and the Registration is 934118.

• Industry Canada (IC) Registration No.: 11464A

The 3m Semi-anechoic chamber of Shenzhen SEM.Test Technology Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 11464A.

• CNAS Registration No.: L4062

Shenzhen SEM. Test Technology Co., Ltd. is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L4062. All measurement facilities used to collect the measurement data are located at 1/F, Building A, Hongwei Industrial Park, Liuxian 2nd Road, Bao'an District, Shenzhen, P.R.C (518101)

2. Summary of Test Results

The maximum results of Specific Absorption Rate (SAR) have found during testing are as follows:

Frequency Band	Position	SAR _{1g} (W/kg)	Scaled SAR _{1g} (W/kg)
GSM850	Head	0.1464	0.1583
GSM1900	Head	0.2405	0.2467
WCDMA Band V	Head	0.0360	0.0368
WCDMA Band II	Head	0.0547	0.0611
WLAN 2.4GHz	Head	0.0088	0.0090
GSM850	Body (0mm Gap)	1.0761	1.1745
GSM1900	Body (0mm Gap)	0.6398	0.6840
WCDMA Band V	Body (0mm Gap)	0.5004	0.5109
WCDMA Band II	Body (0mm Gap)	0.4108	0.4588
WLAN 2.4GHz	Body (0mm Gap)	0.1127	0.1159
GSM850 & WLAN 2.4GHz	Head		0.1606
GSM1900 & WLAN 2.4GHz	Head		0.2490
WCDMA Band V & WLAN 2.4GHz	Head		0.0391
WCDMA Band II & WLAN 2.4GHz	Head		0.0701
GSM850 & WLAN 2.4GHz	Body (0mm Gap)		1.2904
GSM1900 & WLAN 2.4GHz	Body (0mm Gap)		0.7999
WCDMA Band V & WLAN 2.4GHz	Body (0mm Gap)		0.6268
WCDMA Band II & WLAN 2.4GHz	Body (0mm Gap)		0.5747

The device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6 W/kg) specified in FCC 47 CFR Part 2.1093 and ANSI/IEEE C95.1-1992, and had been tested in accordance with the measurement methods and procedure specified in IEEE 1528-2003 and KDB 865664 D01 v01r03 and KDB 865664 D02 v01r01

3. Specific Absorption Rate (SAR)

3.1 Introduction

SAR is related to the rate at which energy is absorbed per unit mass in an object exposed to a radio field. The SAR distribution in a biological body is complicated and is usually carried out by experimental techiques or numerical modeling. The standard recommends limits for two tiers of groups, occupational/controlled and general population/uncontrolled, based on a person's awareness and ability to exercise control over his or her exposure. In general, occupational/controlled exposure limits are higher than the limits for general population/uncontrolled.

3.2 SAR Definition

The SAR definition is 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). The equation description is as below:

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

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

SAR measurement can be either related to the temperature elevation in tissue by

$$SAR = C\left(\frac{\delta T}{\delta t}\right)$$

Where: C is the specific heat capacity, δ T is the temperature rise and δ t is the exposure duration, or related to the

electrical field in the tissue by

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

Where: σ is the conductivity of the tissue, ρ is the mass density of the tissue and E is the RMS electrical field strength.

However for evaluating SAR of low power transmitter, electrical field measurement is typically applied.

4. SAR Measurement System

4.1 The Measurement System

Comosar is a system that is able to determine the SAR distribution inside a phantom of human being according to different standards. The Comosar system consists of the following items:

- Main computer to control all the system
- 6 axis robot
- Data acquisition system
- Miniature E-field probe
- Phone holder
- Head simulating tissue

The following figure shows the system.



The EUT under test operating at the maximum power level is placed in the phone holder, under the phantom, which is filled with head simulating liquid. The E-Field probe measures the electric field inside the phantom. The OpenSAR software computes the results to give a SAR value in a 1g or 10g mass.

4.2 Probe

For the measurements the Specific Dosimetric E-Field Probe SSE5 SN 09/13 EP168 with following specifications is used

- Dynamic range: 0.01-100 W/kg

- Probe Length: 330 mm

Length of Individual Dipoles: 4.5 mmMaximum external diameter: 8 mmProbe Tip External Diameter: 5 mm

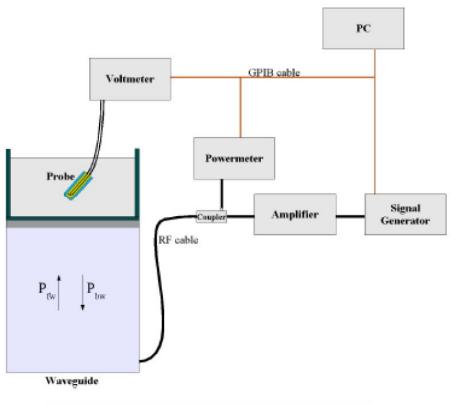
- Distance between dipoles / probe extremity: 2.7mm

- Probe linearity: <0.25 dB
- Axial Isotropy: <0.25 dB
- Spherical Isotropy: <0.50 dB

- Calibration range: 700 to 3000MHz for head & body simulating liquid.

Angle between probe axis (evaluation axis) and suface normal line:1ess than 30°

Probe calibration is realized, in compliance with EN 62209-1 and IEEE 1528 STD, with CALISAR, Antennessa proprietary calibration system. The calibration is performed with the EN 62209-1 annexe technique using reference guide at the five frequencies.



$$SAR = \frac{4\left(P_{fw} - P_{bw}\right)}{ab\delta}\cos^2\left(\pi\frac{y}{a}\right)e^{-(2z/\delta)}$$

Where:

Pfw = Forward Power Pbw = Backward Power

a and b = Waveguide dimensions

I = Skin depth

Keithley configuration:

Rate = Medium; Filter = ON; RDGS = 10; Filter type = Moving Average; Range auto after each calibration, a SAR measurement is performed on a validation dipole and compared with a NPL calibrated probe, to verify it.

The calibration factors, CF(N), for the 3 sensors corresponding to dipole 1, dipole 2 and dipole 3 are:

$$CF(N)=SAR(N)/Vlin(N)$$
 (N=1,2,3)

The linearised output voltage Vlin(N) is obtained from the displayed output voltage V(N) using

$$Vlin(N)=V(N)*(1+V(N)/DCP(N))$$
 (N=1,2,3)

where DCP is the diode compression point in mV.

4.3 Probe Calibration Process

Dosimetric Assessment Procedure

Each E-Probe/Probe Amplifier combination has unique calibration parameters. SATIMO Probe calibration procedure is conducted to determine the proper amplifier settings to enter in the probe parameters. The amplifier settings are determined for a given frequency by subjecting the probe to a known E-field density (1 mW/cm2) using an with CALISAR, Antenna proprietary calibration system.

Free Space Assessment Procedure

The free space E-field from amplified probe outputs is determined in a test chamber. This calibration can be performed in a TEM cell if the frequency is below 1 GHz and in a waveguide or other methodologies above 1 GHz 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 rotated 360 degrees until the three channels show the maximum reading. The power density readings equates to 1mW/cm2.

Temperature Assessment Procedure

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

Where:
$$\Delta t = \text{exposure time (30 seconds)},$$

$$C = \text{heat capacity of tissue (brain or muscle)},$$

$$\Delta T = \text{temperature increase due to RF exposure}.$$

SAR is proportional to $\Delta T/\Delta t$, the initial rate of tissue heating, before thermal diffusion takes place. The electric field in the simulated tissue can be used to estimate SAR by equating the thermally derived SAR to that with the E- field component.

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

Where:

 $\sigma = \text{simulated tissue conductivity},$

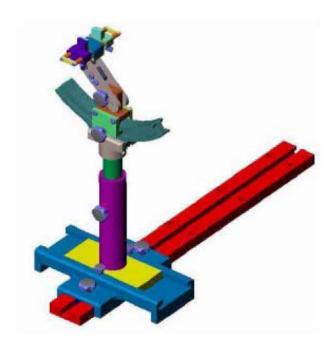
 ρ = Tissue density (1.25 g/cm3 for brain tissue)

4.4 Phantom

For the measurements the Specific Anthropomorphic Mannequin (SAM) defined by the IEEE SCC-34/SC2 group is used. The phantom is a polyurethane shell integrated in a wooden table. The thickness of the phantom amounts to 2mm +/- 0.2mm. It enables the dosimetric evaluation of left and right phone usage and includes an additional flat phantom part for the simplified performance check. The phantom set-up includes a cover, which prevents the evaporation of the liquid.

4.5 Device Holder

The positioning system allows obtaining cheek and tilting position with a very good accuracy. In compliance with CENELEC, the tilt angle uncertainty is lower than 1°.



System Material	Permittivity	Loss Tangent
Delrin	3.7	0.005

4.6 Test Equipment List

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
E-Field Probe	SATIMO	SSE5	SN 09/13 EP168	2014-03-21	2015-03-20
835MHz Dipole	SATIMO	SID835	SN 47/12 DIP 0G835-204	2014-11-26	2015-11-25
1900MHz Dipole	SATIMO	SID1900	SN 47/12 DIP 1G900-207	2014-11-26	2015-11-25
2450MHz Dipole	SATIMO	SID2450	SN 47/12 DIP 2G450-209	2014-11-26	2015-11-25
Dielectric Probe	SATIMO	SCLMP	SN 47/12 OCPG49	2014-11-26	2015-11-25
SAM Phantom	SATIMO	SAM	SN/ 47/12 SAM95	N/A	N/A
Multi Meter	Keithley	Keithley 2000	4006367	2014-05-07	2015-05-06
Signal Generator	Rohde & Schwarz	SMR20	100047	2014-05-07	2015-05-06
Universal Tester	Rohde & Schwarz	CMU200	112012	2014-05-07	2015-05-06
Network Analyzer	HP	8753C	2901A00831	2014-05-07	2015-05-06

5. Tissue Simulating Liquids

5.1 Composition of Tissue Simulating Liquid

For the measurement of the field distribution inside the SAM phantom with SMTIMO, the phantom must be filled with around 25 liters of homogeneous body tissue simulating liquid. For head SAR testing, the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15 cm. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15 cm. Please see the following photos for the liquid height.



Liquid Height for Head SAR



Liquid Height for Body SAR

The Composition of Tissue Simulating Liquid

Frequency	Water	Salt	Triton	HEC	Preventol	DGBE
(MHz)	(%)	(%)	(%)	(%)	(%)	(%)
			Head			
835	35.34	0.98	0.00	0.00	63.68	0.00
1900	55.26	0.52	30.40	0.00	0.00	13.82
2450	55.44	0.32	30.50	0.00	0.00	13.74
			Body			
835	52.87	1.07	0.00	0.00	46.10	0.00
1900	69.99	0.41	20.66	0.00	0.00	8.93
2450	55.44	0.32	30.50	0.00	0.00	13.74

5.2 Tissue Dielectric Parameters for Head and Body Phantoms

The head tissue dielectric parameters recommended by the IEEE SCC-34/SC-2 in P1528 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 a human head. Other head and body tissue parameters that have not been specified in P1528 are derived from the tissue dielectric parameters computed from the 4-Cole-Cole equations described in Reference [12] and extrapolated according to the head parameters specified in P1528.

To F	Не	ead	Во	ody
Target Frequency	Conductivity	Permittivity	Conductivity	Permittivity
(MHz)	(σ)	(E _r)	(σ)	(E _r)
150	0.76	52.3	0.80	61.9
300	0.87	45.3	0.92	58.2
450	0.87	43.5	0.94	56.7
835	0.90	41.5	0.97	55.2
900	0.97	41.5	1.05	55.0
915	0.98	41.5	1.06	55.0
1450	1.20	40.5	1.30	54.0
1610	1.29	40.3	1.40	53.8
1800-2000	1.40	40.0	1.52	53.3
2450	1.80	39.2	1.95	52.7
3000	2.40	38.5	2.73	52.0
5800	5.27	35.3	6.00	48.2

5.3 Tissue Calibration Result

The dielectric parameters of the liquids were verified prior to the SAR evaluation using COMOSAR Dielectric Probe Kit and an Agilent Network Analyzer.

Calibration Result for Dielectric Parameters of Tissue Simulating Liquid

Head Tissue Simulating Liquid									
Emag	Tomn	Conductivity Permittivity					Limit		
Freq. MHz.	Temp.	Reading	Target	Delta	Reading	Target	Delta		Date
MITIZ.	(0)	(σ)	(σ)	(%)	$(\mathcal{E}\mathbf{r})$	$(\mathcal{E}\mathbf{r})$	(%)	(%)	
835	21.2	0.91	0.90	1.11	40.02	41.5	-3.57	±5	2014-06-03
1900	21.3	1.41	1.40	0.71	38.91	40.0	-2.73	±5	2014-06-03
2450	21.3	1.78	1.80	-1.11	38.76	39.2	-1.12	±5	2014-06-03

Body Tissue Simulating Liquid									
Emag	F		Conductivity			Permittivity			
Freq. MHz.	Temp. (°C)	Reading	Target	Delta	Reading	Target	Delta	Limit (%)	Date
WIIIZ.	(0)	(σ)	(σ)	(%)	$(\mathcal{E}\mathbf{r})$	$(\mathcal{E}\mathbf{r})$	(%)	(/0)	
835	21.2	0.96	0.97	-1.03	54.49	55.2	-1.29	±5	2014-06-03
1900	21.3	1.49	1.52	-1.97	52.39	53.3	-1.71	±5	2014-06-03
2450	21.3	1.92	1.95	-1.54	52.43	52.7	-0.51	±5	2014-06-03

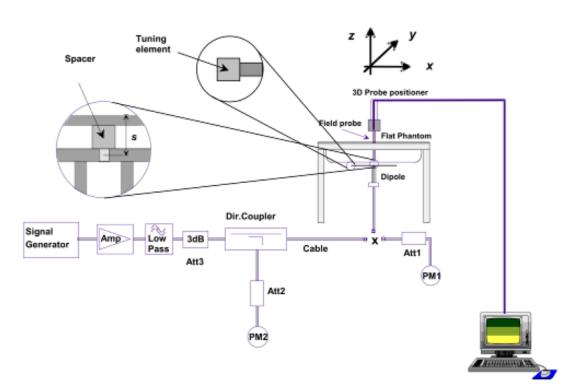
6. SAR Measurement Evaluation

6.1 Purpose of System Performance Check

The system performance check verifies that the system operates within its specifications. System and operator errors can be detected and corrected. It is recommended that the system performance check be performed prior to any usage of the system in order to guarantee reproducible results. The system performance check uses normal SAR measurements in a simplified setup with a well characterized source. This setup was selected to give a high sensitivity to all parameters that might fail or vary over time. The system check does not intend to replace the calibration of the components, but indicates situations where the system uncertainty is exceeded due to drift or failure.

6.2 System Setup

In the simplified setup for system evaluation, the EUT is replaced by a calibrated dipole and the power source is replaced by a continuous wave which comes from a signal generator at frequency 835 MHz and 1900 MHz. The calibrated dipole must be placed beneath the flat phantom section of the SAM twin phantom with the correct distance holder. The distance holder should touch the phantom surface with a light pressure at the reference marking and be oriented parallel to the long side of the phantom.



System Verification Setup Block Diagram



Setup Photo of Dipole Antenna

The output power on dipole port must be calibrated to 24 dBm (250 mW) before dipole is connected.

6.3 Validation Results

Comparing to the original SAR value provided by SATIMO, the validation data should be within its specification of 10 %. Table 6.1 shows the target SAR and measured SAR after normalized to 1W input power. The table below indicates the system performance check can meet the variation criterion.

Frequency	Targeted SAR _{1g}	Measured SAR _{1g}	Normalized SAR _{1g}	Tolerance
MHz	(W/kg)	(W/kg)	(W/kg)	(%)
		Head		
835	9.82	2.46	9.83	-2.24
1900	40.79	10.20	40.80	-2.92
2450	52.50	13.10	52.40	-0.93
		Body		
835	10.19	2.52	10.09	-0.98
1900	40.41	10.09	40.34	-0.17
2450	51.80	12.86	51.42	-0.73

Targeted and Measurement SAR

Please refer to Annex A for the plots of system performance check.

7. EUT Testing Position

7.1 Define Two Imaginary Lines on The Handset

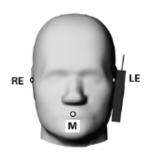
- (a) The vertical centerline passes through two points on the front side of the handset the midpoint of the width w_t of the handset at the level of the acoustic output, and the midpoint of the width w_b of the bottom of the handset.
- (b) The horizontal line is perpendicular to the vertical centerline and passes through the center of the acoustic output. The horizontal line is also tangential to the face of the handset at point A.
- (c) The two lines intersect at point A. Note that for many handsets, point A coincides with the center of the acoustic output; however, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical centerline is not necessarily parallel to the front face of the handset, especially for clamshell handsets, handsets with flip covers, and other irregularly shaped handsets.



Illustration for Handset Vertical and Horizontal Reference Lines

7.2 Cheek Position

(a) To position the device with the vertical center line of the body of the device and the horizontal line crossing the center piece in a plane parallel to the sagittal plane of the phantom. While maintaining the device in this plane, align the vertical center line with the reference plane containing the three ear and mouth reference point (M: Mouth, RE: Right Ear, and LE: Left Ear) and align the center of the ear piece with the line RE-LE. (b) To move the device towards the phantom with the ear piece aligned with the line LE-RE until the phone touched the ear. While maintaining the device in the reference plane and maintaining the phone contact with the ear, move the bottom of the phone until any point on the front side is in contact with the cheek of the phantom or until contact with the ear is lost (see Fig. 7.2).





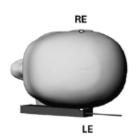
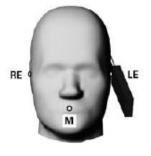


Illustration for Cheek Position

7.3 Tilted Position

- (a) To position the device in the "cheek" position described above.
- (b) While maintaining the device the reference plane described above and pivoting against the ear, moves it outward away from the mouth by an angle of 15 degrees or until contact with the ear is lost (see Fig. 7.3).





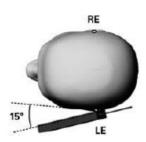


Illustration for Tilted Position

7.2 Body Worn Position

- (a) To position the device parallel to the phantom surface with either keypad up or down.
- (b) To adjust the device parallel to the flat phantom.
- (c) To adjust the distance between the device surface and the flat phantom to 0mm.

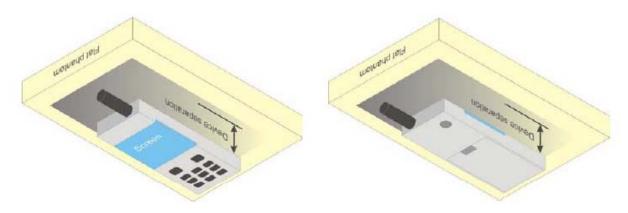
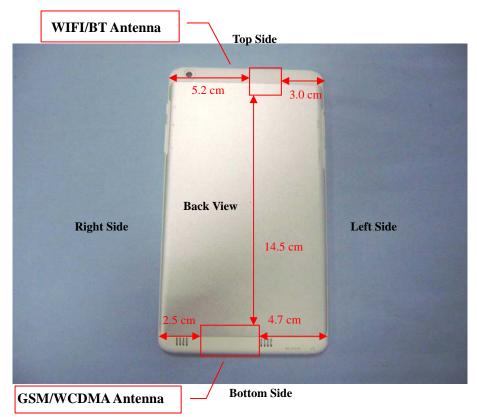


Illustration for Body Worn Position

7.3 EUT Antenna Position



Block Diagram for EUT Antenna Position

7.4 EUT Testing Position

	Exclusion Distance Calculation								
Frequency Bands	Service	Maximum Tune-up Power	Exclusion Distance						
GSM850	GSM	33.0dBm	24.0dBm	70mm					
GPRS850	GPRS(4slots)	29.0dBm	26.0dBm	100mm					
GSM1900	GSM	29.5dBm	20.5dBm	60mm					
GPRS1900	GPRS(4slots)	26.0dBm	23.0dBm	60mm					
WCDMA Band V	RMC 12.2k	23.0dBm	23.0dBm	60mm					
WCDMA Band II	RMC 12.2k	22.0dBm	22.0dBm	60mm					
WLAN	802.11b	16.0dBm	16.0dBm	25mm					
Note: Refer to Chap	oter 9.1 Conducted	d RF Output Power							

Remark:

 Referring to KDB 447498 D01v05 and KDB616217 D04 v01r01, the distance of the antennas to all adjacent edges SAR test exclusion for adjacent edges.

Head/Body-worn/Hotspot mode SAR assessments are required for this device. This EUT was tested in different positions for different SAR test modes, more information as below:

Head SAR tests							
Antennas	Right Cheek	Left Cheek	Right Tilted	Left Tilted			
WWAN	Yes	Yes	Yes	Yes			
WLAN	Yes	Yes	Yes	Yes			

Hotspot SAR tests, Test distance: 0mm								
Antennas Front Back Right Side Left Side Top Side Bottom Side								
WWAN	No	Yes	Yes	Yes	No	Yes		
WLAN	No	Yes	Yes	Yes	Yes	No		

Body-worn SAR tests, Test distance: 0mm						
Antennas Front Back Body-worn with headset						
WWAN	Yes	Yes	Yes			
WLAN	Yes	Yes	Yes			

Note: Body-worn means the back of device.

Remark:

1. Referring to KDB 616217 D04 v01r01, KDB 248227 D04 and KDB 447498 D01 v05r02, this device is a overall diagonal dimension(>20cm) tablet, tested in direct contact (no gap) with flat phantom.

Please refer to Annex D for the EUT test setup photos.

8. SAR Measurement Procedures

8.1 Measurement Procedures

The measurement procedures are as follows:

- (a) Use base station simulator (if applicable) or engineering software to transmit RF power continuously (continuous Tx) in the highest power channel.
- (b) Keep EUT to radiate maximum output power or 100% factor (if applicable)
- (c) Measure output power through RF cable and power meter.
- (d) Place the EUT in the positions as Annex E demonstrates.
- (e) Set scan area, grid size and other setting on the SATIMO software.
- (f) Measure SAR results for the highest power channel on each testing position.
- (g) Find out the largest SAR result on these testing positions of each band
- (h) Measure SAR results for other channels in worst SAR testing position if the SAR of highest power channel is larger than 0.8 W/kg

According to the test standard, the recommended procedure for assessing the peak spatial-average SAR value consists of the following steps:

- (a) Power reference measurement
- (b) Area scan
- (c) Zoom scan
- (d) Power drift measurement

8.2 Spatial Peak SAR Evaluation

The procedure for spatial peak SAR evaluation has been implemented according to the test standard. It can be conducted for 1g and 10g, as well as for user-specific masses. The SATIMO software includes all numerical procedures necessary to evaluate the spatial peak SAR value.

The base for the evaluation is a "cube" measurement. 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.

The entire evaluation of the spatial peak values is performed within the post-processing engine. 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 the following stages:

- (a) Extraction of the measured data (grid and values) from the Zoom Scan
- (b) Calculation of the SAR value at every measurement point based on all stored data
- (c) Generation of a high-resolution mesh within the measured volume
- (d) Interpolation of all measured values form the measurement grid to the high-resolution grid
- (e) Extrapolation of the entire 3D field distribution to the phantom surface over the distance from sensor to surface
- (f) Calculation of the averaged SAR within masses of 1g and 10g

8.3 Area & Zoom Scan Procedures

First Area Scan is used to locate the approximate location(s) of the local peak SAR value(s). The measurement grid within an Area Scan is defined by the grid extent, grid step size and grid offset. Next, in order to determine the EM field distribution in a three-dimensional spatial extension, Zoom Scan is required. The Zoom Scan measures 5x5x7 points with step size 8, 8 and 5 mm for 300 MHz to 3 GHz, and 8x8x8 points with step size 4, 4 and 2.5 mm for 3 GHz to 6 GHz. The Zoom Scan is performed around the highest E-field value to determine the averaged SAR-distribution over 10 g.

8.4 Volume Scan Procedures

The volume scan is used for assess overlapping SAR distributions for antennas transmitting in different frequency bands. It is equivalent to an oversized zoom scan used in standalone measurements. The measurement volume will be used to enclose all the simultaneous transmitting antennas. For antennas transmitting simultaneously in different frequency bands, the volume scan is measured separately in each frequency band. In order to sum correctly to compute the 1g aggregate SAR, the EUT remain in the same test position for all measurements and all volume scan use the same spatial resolution and grid spacing (step-size is 4, 4 and 2.5 mm). When all volume scan were completed, the software can combine and subsequently superpose these measurement data to calculating the multiband SAR.

8.5 SAR Averaged Methods

The local SAR inside the phantom is measured using small dipole sensing elements inside a probe body. The probe tip must not be in contact with the phantom surface in order to minimize measurements errors, but the highest local SAR will occur at the surface of the phantom.

An extrapolation is using to determinate this highest local SAR values. The extrapolation is based on a fourth-order least-square polynomial fit of measured data. The local SAR value is then extrapolated from the liquid surface with a 1mm step.

The measurements have to be performed over a limited time (due to the duration of the battery) so the step of measurement is high. It could vary between 5 and 8 mm. To obtain an accurate assessment of the maximum SAR averaged over 10g and 1 g requires a very fine resolution in the three dimensional scanned data array.

8.6 Power Drift Monitoring

All SAR testing is under the EUT install full charged battery and transmit maximum output power. In SATIMO measurement software, the power reference measurement and power drift measurement procedures are used for monitoring the power drift of EUT during SAR test. Both these procedures measure the field at a specified reference position before and after the SAR testing. The software will calculate the field difference in dB. If the power drift more than 5%, the SAR will be retested.

9. SAR Test Result

9.1 Conducted RF Output Power

	GSM - Burst Average Power (dBm)								
Band	GSM850 PCS1900								
Channel	128	190	251	512	661	810			
Frequency (MHz)	824.2	836.4	848.8	1850.2	1880	1909.8			
GSM	32.66	32.63	32.54	29.39	29.30	28.69			
GPRS (1 slot)	32.48	32.53	32.44	29.39	29.27	28.67			
GPRS (2 slots)	31.05	31.15	31.43	28.21	28.01	28.32			
GPRS (3 slots)	29.12	29.44	29.59	26.35	26.51	26.75			
GPRS (4 slots)	28.24	28.62	28.43	25.64	25.43	25.71			
EDGE (1 slots)	26.65	26.35	26.42	25.89	25.69	25.87			
EDGE (2 slots)	25.32	25.14	25.20	24.25	24.02	24.21			
EDGE (3 slots)	24.02	23.93	23.98	22.01	21.96	22.00			
EDGE (4 slots)	22.35	22.12	22.26	20.65	20.52	20.24			

GSM	GSM - Source-Based Time-Average Power (dBm)								
Band		GSM850		PCS1900					
Channel	128	190	251	512	661	810			
Frequency (MHz)	824.2	836.4	848.8	1850.2	1880	1909.8			
GSM	23.66	23.63	23.54	20.39	20.30	19.69			
GPRS (1 slot)	23.48	23.53	23.44	20.39	20.27	19.67			
GPRS (2 slots)	25.05	25.15	25.43	22.21	22.01	22.32			
GPRS (3 slots)	24.87	25.19	25.34	22.10	22.26	22.50			
GPRS (4 slots)	25.24	<mark>25.62</mark>	25.43	22.64	22.43	22.71			
EDGE (1 slots)	17.65	17.35	17.42	16.89	16.69	16.87			
EDGE (2 slots)	19.32	19.14	19.20	18.25	18.02	18.21			
EDGE (3 slots)	19.77	19.68	19.73	17.76	17.71	17.75			
EDGE (4 slots)	19.35	19.12	19.26	17.65	17.52	17.24			

Note: The source-based time-averaged power is linearly scaled the maximum burst averaged power based on time slots. The calculated method are shown as below:

Source based time-average power = Burst averaged power - Duty cycle factor in dB

Duty cycle factor = 9 dB for 1 Tx slot, 6 dB for 2 Tx slots, 4.25 dB for 3 Tx slots, 3 dB for 4 Tx slots

Remark:

- 1. For Head SAR testing, GSM should be evaluated, therefore the EUT was set in GSM for GSM850 and GSM1900 due to its highest source-based time-average power.
- 2. For Body SAR testing, GPRS should be evaluated, therefore the EUT was set in GPRS (4 Tx slots) for GSM850 and GSM1900 due to its highest source-based time-average power.
- 3. Per KDB 447498, the maximum output power channel is used for SAR testing and for further SAR test reduction.
- 4. The DUT do not support DTM function.

	WCDMA	- Average P	Power (dBm)			
Band	W	CDMA Band	l V	W	CDMA Band	l II
Channel	4132	4183	4233	9262	9400	9538
Frequency (MHz)	826.4	836.6	846.6	1852.4	1880.0	1907.6
RMC 12.2k	22.81	22.61	<mark>22.91</mark>	21.52	21.50	21.23
RMC 64k	22.44	22.45	22.49	21.15	21.29	21.12
RMC 144k	22.43	22.46	22.49	21.17	21.18	21.13
RMC 384k	22.45	22.47	22.51	20.26	20.63	20.11
HSDPA Subtest-1	22.11	22.01	22.23	21.12	21.28	21.03
HSDPA Subtest-2	21.48	21.59	21.12	20.42	20.38	20.46
HSDPA Subtest-3	21.17	21.28	21.12	20.92	20.96	20.86
HSDPA Subtest-4	20.97	20.42	20.69	20.06	20.99	20.81
HSUPA Subtest-1	21.51	21.66	21.67	20.58	20.61	20.52
HSUPA Subtest-2	20.76	20.99	21.03	20.41	20.26	20.42
HSUPA Subtest-3	21.21	21.36	21.27	20.81	20.31	20.22
HSUPA Subtest-4	20.57	21.04	21.07	20.42	20.57	20.36
HSUPA Subtest-5	20.53	20.68	20.69	20.68	20.69	20.63

Remark:

- 1. For Head SAR, per KDB 941225 D01 v02, RMC 12.2kbps setting is used to evaluate SAR. If AMR 12.2kbps power is < 1/4 dB higher than RMC, SAR tests with AMR 12.2kbps can be excluded.
- 2. For Body SAR, per KDB 941225 D01 v02, RMC 12.2kbps setting is used to evaluate SAR. If HSDPA subset-1 and HSUPA subset-1 output power is < 1/4 dB higher than RMC, and SAR with RMC 12.2kbps setting is ≤ 1.2 W/kg, HSDPA and HSUPA SAR evaluation can be excluded.

	WLAN - Maximum Average Power								
Test Mode	Data Rate	Channel	Frequency (MHz)	Average Power (dBm)					
		CH 01	2412	15.88					
802.11b	1Mbps	CH 07	2442	15.59					
		CH 13	2472	15.67					
		CH 01	2412	15.03					
802.11g	54Mbps	CH 07	2442 14.92						
		CH 13	2472	15.23					
		CH 01	2412	15.50					
802.11n (20MHz)	MCS7	CH 07	2442	15.60					
		CH 13	2472	15.55					
		CH 03	2422	14.94					
802.11n (40MHz)	MCS7	CH 07	2442	15.02					
		CH 11	2462	14.77					

Remark:

- 1. Per KDB 248227, choose the highest output power channel to test SAR and determine further SAR exclusion
- 2. Per KDB 248227, if 11g and 11n average output power is higher than 1/4 dB higher than 11b mode, SAR will be verified.
- 3. For each frequency band, testing at higher data rates and higher order modulations is not required when the maximum average output power for each of these configurations is less than 1/4 dB higher than those measured at the lowest data rate. For 802.11n mode, SAR test according to the highest power channel with correspondence data rates.

Bluetooth - Maximum Average Power							
Test Mode	Data Rate	Channel	Frequency (MHz)	Average Power (dBm)			
		CH 00	2402	5.592			
GFSK	1Mbps	CH 39	2441	4.234			
		CH 78	2480	4.561			
		CH 00	2402	6.449			
8DPSK	3Mbps	CH 39	2441	5.893			
		CH 78	2480	5.352			

Remark:

Bluetooth maximum output power (including tune-up tolerance) is 6.0dBm. Per KDB 648474 D01, the 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances \leq 50 mm are determined by: [(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] \cdot [$\sqrt{f(GHz)} \leq 3.0$ for 1-g

SAR and ≤ 7.5 for 10-g extremity SAR,16 where

- f(GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation17
- The result is rounded to one decimal place for comparison

Max. Power (dBm)	Max. Power (mW)	Distance (mm)	Frequency (GHz)	Result	Limit
6.449	4.415	5	2.441	1.38	3

The exclusion thresoholds is 1.38 < 3, therefore, the RF exposure evaluation is not required.

9.2 Test Results for Standalone SAR Test

Head SAR

	GSM850 – Head SAR Test									
Plot		Test Position	Freq	uency	Output	Rated	Scaling	SAR1g	Scaled	
No.	Mode	Head	CH. MHz Power Limit	Limit	Factor	(W/kg)	SAR1g			
NO.		Heau		WIIIZ	(dBm)	(dBm)	Factor	(W/Kg)	(W/kg)	
1	GSM	Right Cheek	128	824.2	32.66	33.0	1.08	<mark>0.1464</mark>	0.1583	
2	GSM	Right Tilted	128	824.2	32.66	33.0	1.08	0.0989	0.1070	
3	GSM	Left Cheek	128	824.2	32.66	33.0	1.08	0.1083	0.1171	
4	GSM	Left Tilted	128	824.2	32.66	33.0	1.08	0.0928	0.1004	

	GSM1900 – Head SAR Test										
Plot		Test Position	Freq	uency	Output	Rated	Scaling	SAR1g	Scaled		
No.	Mode	Head	CH. MHz	Power	Limit	Factor	(W/kg)	SAR1g			
No.		Heau	CII.	WIIIZ	(dBm)	(dBm)	ractor	(W/Kg)	(W/kg)		
13	GSM	Right Cheek	512	1850.2	29.39	29.5	1.03	<mark>0.2405</mark>	0.2467		
14	GSM	Right Tilted	512	1850.2	29.39	29.5	1.03	0.1299	0.1332		
15	GSM	Left Cheek	512	1850.2	29.39	29.5	1.03	0.2012	0.2064		
16	GSM	Left Tilted	512	1850.2	29.39	29.5	1.03	0.0458	0.0470		

	WCDMA Band V – Head SAR Test									
Plot		Test Postion	Freq	uency	Output	Rated	Scaling	SAR1g	Scaled	
No.	Mode	Head	СН.	MHz	Power	Limit	Factor	(W/kg)	SAR1g	
110.		Heau	Cn.	MITZ	(dBm)	(dBm)	Factor	(W/Kg)	(W/kg)	
23	RMC	Right Cheek	4233	846.6	22.91	23.0	1.02	<mark>0.0360</mark>	0.0368	
24	RMC	Right Tilted	4233	846.6	22.91	23.0	1.02	0.0037	0.0038	
25	RMC	Left Cheek	4233	846.6	22.91	23.0	1.02	0.0187	0.0191	
26	RMC	Left Tilted	4233	846.6	22.91	23.0	1.02	0.0050	0.0051	

	WCDMA Band II – Head SAR Test								
Plot		Test Postion	Freq	uency	Output	Rated	Scaling	SAR1g	Scaled
No.	Mode	Head	СН.	MHz	Power	Limit	Factor	(W/kg)	SAR1g
110.		Heau	CII.	IVIIIZ	(dBm)	(dBm)	ractor	(W/Kg)	(W/kg)
33	RMC	Right Cheek	9262	1852.4	21.52	22.0	1.12	0.0459	0.0513
34	RMC	Right Tilted	9262	1852.4	21.52	22.0	1.12	0.0038	0.0042
35	RMC	Left Cheek	9262	1852.4	21.52	22.0	1.12	<mark>0.0547</mark>	0.0611
36	RMC	Left Tilted	9262	1852.4	21.52	22.0	1.12	0.0061	0.0068

	WLAN 2.4GHz – Head SAR Test											
Plot		Test Postion	Freq	uency	Output	Rated	Scaling	SAR1g	Scaled			
No.	Mode	Head	СН.	MHz	Power	Limit	Factor	(W/kg)	SAR1g			
110.		Heau	CII.	WIIIZ	(dBm)	(dBm)	ractor	(W/Kg)	(W/kg)			
43	802.11b	Right Cheek	01	2412	15.88	16.0	1.03	0.0022	0.0023			
44	802.11b	Right Tilted	01	2412	15.88	16.0	1.03	0.0048	0.0049			
45	802.11b	Left Cheek	01	2412	15.88	16.0	1.03	0.0088	0.0090			
46	802.11b	Left Tilted	01	2412	15.88	16.0	1.03	0.0038	0.0039			

Remark: Per KDB 447498, if the highest output channel SAR for each exposure position \leq 0.8 W/kg other channels SAR tests are not necessary.

Hotspot SAR

		GSN	M850 – Bo	dy SAR T	est (Gap: (Omm)			
Plot		Test Postion	Freq	uency	Output	Rated	Scaling	SAR1g	Scaled
No.	Mode	Body	СН.	MHz	Power	Limit	Factor	(W/kg)	SAR1g
110.		Bouy	Cn.	MITZ	(dBm)	(dBm)	Factor	(W/Kg)	(W/kg)
6	GPRS_4TX	Back	190	836.4	28.62	29.0	1.09	<mark>1.0761</mark>	1.1745
7	GPRS_4TX	Back	128	826.4	28.24	29.0	1.19	0.9012	1.0735
8	GPRS_4TX	Back	251	846.6	28.43	29.0	1.14	0.9203	1.0494
10	GPRS_4TX	Bottom side	190	836.4	28.62	29.0	1.09	0.2288	0.2497
11	GPRS_4TX	Right side	190	836.4	28.62	29.0	1.09	0.0723	0.0789
12	GPRS_4TX	Left side	190	836.4	28.62	29.0	1.09	0.0765	0.0835

	GSM1900 – Body SAR Test (Gap: 0mm)									
Plot		Test Postion	Freq	uency	Output	Rated	Scaling	SAR1g	Scaled	
No.	Mode	Body	СН.	MHz	Power	Limit	Factor	(W/kg)	SAR1g	
140.		Bouy	Cn.	MITZ	(dBm)	(dBm)	Factor	(W/Kg)	(W/kg)	
18	GPRS_4TX	Back	810	1909.8	25.71	26.0	1.07	<mark>0.6398</mark>	0.6840	
20	GPRS_4TX	Bottom side	810	1909.8	25.71	26.0	1.07	0.1752	0.1873	
21	GPRS_4TX	Right side	810	1909.8	25.71	26.0	1.07	0.0365	0.0391	
22	GPRS_4TX	Left side	810	1909.8	25.71	26.0	1.07	0.0729	0.0780	

	WCDMA Band V – Body SAR Test (Gap: 0mm)										
Plot		Test Postion	Freq	uency	Output	Rated	Scaling	SAR1g	Scaled		
No.	Mode	Body	СН.	MHz	Power	Limit	Factor	(W/kg)	SAR1g		
140.		Douy	CII.	WIIIZ	(dBm)	(dBm)	ractor	(W/Kg)	(W/kg)		
27	RMC 12.2k	Back	4233	846.6	22.91	23.0	1.02	<mark>0.5004</mark>	0.5109		
29	RMC 12.2k	Bottom side	4233	846.6	22.91	23.0	1.02	0.4599	0.4695		
30	RMC 12.2k	Right side	4233	846.6	22.91	23.0	1.02	0.1870	0.1907		
31	RMC 12.2k	Left side	4233	846.6	22.91	23.0	1.02	0.1036	0.1057		

	WCDMA Band II – Body SAR Test (Gap: 0mm)										
Plot		Test Postion -	Freq	uency	Output	Rated	Scaling	SAR1g	Scaled		
No.	Mode	Body	СН.	MHz	Power	Limit	Factor	(W/kg)	SAR1g		
110.		Dody	CII.	IVIIIZ	(dBm)	(dBm)	ractor	(W/Kg)	(W/kg)		
37	RMC 12.2k	Back	9262	1852.4	21.52	22.0	1.12	<mark>0.4108</mark>	0.4588		
39	RMC 12.2k	Bottom side	9262	1852.4	21.52	22.0	1.12	0.1870	0.2089		
40	RMC 12.2k	Right side	9262	1852.4	21.52	22.0	1.12	0.1468	0.1644		
41	RMC 12.2k	Left side	9262	1852.4	21.52	22.0	1.12	0.1326	0.1485		

	WLAN 2.4GHz -Body SAR Test(Gap: 0mm)										
Plot		Test Postion	Freq	uency	Output	Rated	Scaling	SAR1g	Scaled		
No.	Mode	Body	СН.	MHz	Power	Limit	Factor	(W/kg)	SAR1g		
110.		Body	CII.	WIIIZ	(dBm)	(dBm)	ractor	(W/Kg)	(W/kg)		
47	802.11b	Back	01	2412	15.88	16.0	1.03	<mark>0.1127</mark>	0.1159		
49	802.11b	Top Side	01	2412	15.88	16.0	1.03	0.0765	0.0786		
50	802.11b	Right side	01	2412	15.88	16.0	1.03	0.0066	0.0068		
51	802.11b	Left side	01	2412	15.88	16.0	1.03	0.0053	0.0055		

Remark: Per KDB 447498 D01 v05r02, if the highest output channel SAR for each exposure position \leq 0.8 W/kg other channels SAR tests are not necessary.

Body-worn SAR

		GSN	M850 – Bo	dy SAR T	est (Gap: (Omm)			
Plot	Mode	Tost Postion	Freq	Frequency		Rated	Scaling	SAR1g	Scaled
No.	Mode	Mode Test Postion Body	CH	MUa	Power	Limit		(W/kg)	SAR1g
110.		Bouy	СН.	MHz	(dBm)	(dBm)	Factor	(W/Kg)	(W/kg)
52	Voice	Back	128	824.2	32.66	33.0	1.08	<mark>0.5307</mark>	0.5732
53	Voice	Front	128	824.2	32.66	33.0	1.08	0.2389	0.2580

		GSN	11900 – B	ody SAR T	Test (Gap:	0mm)			
Plot		Test Postion	Frequency		Output	Rated	Scaling	SAR1g	Scaled
No.	Mode		CH	MUa	Power	Limit	Factor	(W/kg)	SAR1g
110.		Bouy	СН.	MHz	(dBm)	(dBm)	Factor	(W/Kg)	(W/kg)
54	Voice	Back	512	1850.2	29.39	29.5	1.03	<mark>0.4108</mark>	0.4231
55	Voice	Front	512	1850.2	29.39	29.5	1.03	0.1859	0.1915

	WCDMA Band V – Body SAR Test (Gap: 0mm)								
Plot	Test Postion	Tost Postion	Freq	uency	Output	Rated	Scaling	SAR1g	Scaled
No.	Mode		СП	MHa	Power	Limit	Factor	(W/kg)	SAR1g
110.		Body	СН.	MHz	(dBm)	(dBm)	Factor	(W/Kg)	(W/kg)
56	Voice	Back	4233	846.6	22.91	23.0	1.02	<mark>0.3844</mark>	0.3921
57	Voice	Front	4233	846.6	22.91	23.0	1.02	0.1968	0.2007

		WCDM	A Band II	- Body SA	AR Test (G	ap: 0mm)			
Plot		Test Postion Frequency Output Rate		Rated	Scaling	SAR1g	Scaled		
No.	Mode				Power	Limit		(W/kg)	SAR1g
110.		Body	СН.	MHz	(dBm)	(dBm)	Factor	(W/Kg)	(W/kg)
58	Voice	Back	9262	1852.4	21.52	22.0	1.12	<mark>0.2576</mark>	0.2885
	Voice	Front	9262	1852.4	21.52	22.0	1.12	0.1181	0.1323

WLAN 2.4GHz –Body SAR Test(Gap: 0mm)									
Plot		Test Postion	Frequency		Output Rated		Scaling	SAR1g	Scaled
No.	Mode	Body	СН.	MHz	Power	Limit	Factor	(W/kg)	SAR1g
110.		Douy	CII. WI	MITIZ	(dBm)	(dBm)	ractor	(vv/kg)	(W/kg)
60	Voice	Back	01	2412	15.88	16.0	1.03	0.1122	0.1156
61	Voice	Front	01	2412	15.88	16.0	1.03	0.0485	0.0500

Remark:

1. Per KDB 447498, if the highest output channel SAR for each exposure position \leq 0.8 W/kg other channels SAR tests are not necessary.

9.3 Simultaneous Multi-band Transmission SAR Analysis

List of Mode for Simultanous Multi-band Transmission

No.	Configurations	Head SAR	Body-worn SAR	Hotspot SAR
1	GSM + WLAN	Yes	Yes	-
2	GPRS + WLAN	-	-	Yes
3	WCDMA + WLAN	Yes	Yes	-
4	HSUPA + WLAN	-	-	Yes
5	HSDPA + WLAN	-	-	Yes
6	GSM + Bluetooth	Yes	Yes	-
7	GPRS + Bluetooth	-	-	Yes
8	WCDMA + Bluetooth	Yes	Yes	-
9	HSUPA + Bluetooth	-	-	Yes
10	HSDPA + Bluetooth	-	-	Yes

Remark:

- 1. GSM and WCDMA share the same antenna, and cannot transmit simultaneously.
- 2. WLAN and Bluetooth share the same antenna, and cannot transmit simultaneously.
- 3. According to the KDB 447498 D01v05r01, when standalone SAR test exclusion applies to an antenna that transmits simultaneously with other antennas, the standalone SAR must be estimated according to following to determine simultaneous transmission SAR test exclusion:

(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)]·[$\sqrt{f(GHz)/x}$] W/kg for test separation distances \leq 50 mm;

where x = 7.5 for 1-g SAR, and x = 18.75 for 10-g SAR.

For simultaneous transmission analysis, Bluetooth SAR is estimated per KDB 447498 D01v05r01 as below:

4. The maximum SAR summation is calculated based on the same configuration and test position. If 1g-SAR scalar summation < 1.6W/kg, simultaneous SAR measurement is not necessary.

Head SAR WWAN and WLAN

	WWAN		WLAN	Summed SAR	
Position	Band	Scaled SAR	Scaled SAR	(W/kg)	
		(W/kg)	(W/kg)	ν θ/	
Right Cheek	GSM850	0.1583	0.0023	0.1606	
Right Tilted	GSM850	0.1070	0.0049	0.1119	
Left Cheek	GSM850	0.1171	0.0090	0.1261	
Left Tilted	GSM850	0.1004	0.0039	0.1043	
Right Cheek	GSM1900	0.2467	0.0023	0.2490	
Right Tilted	GSM1900	0.1332	0.0049	0.1381	
Left Cheek	GSM1900	0.2064	0.0090	0.2154	
Left Tilted	GSM1900	0.0470	0.0039	0.0509	
Right Cheek	WCDMA Band V	0.0368	0.0023	0.0391	
Right Tilted	WCDMA Band V	0.0038	0.0049	0.0087	
Left Cheek	WCDMA Band V	0.0191	0.0090	0.0281	
Left Tilted	WCDMA Band V	0.0051	0.0039	0.009	
Right Cheek	WCDMA Band II	0.0513	0.0023	0.0536	
Right Tilted	WCDMA Band II	0.0042	0.0049	0.0091	
Left Cheek	WCDMA Band II	0.0611	0.0090	0.0701	
Left Tilted	WCDMA Band II	0.0068	0.0039	0.0107	

WWAN and Bluetooth

	WWAN		Bluetooth	Summed SAR	
Position	Band	Scaled SAR	Scaled SAR	(W/kg)	
1 OSITION	Danu	(W/kg)	(W/kg)	(W/Kg)	
Right Cheek	GSM850	0.1583	0.1840	0.3423	
Right Tilted	GSM850	0.1070	0.1840	0.291	
Left Cheek	GSM850	0.1171	0.1840	0.3011	
Left Tilted	GSM850	0.1004	0.1840	0.2844	
Right Cheek	GSM1900	0.2467	0.1840	0.4307	
Right Tilted	GSM1900	0.1332	0.1840	0.3172	
Left Cheek	GSM1900	0.2064	0.1840	0.3904	
Left Tilted	GSM1900	0.0470	0.1840	0.231	
Right Cheek	WCDMA Band V	0.0368	0.1840	0.2208	
Right Tilted	WCDMA Band V	0.0038	0.1840	0.1878	
Left Cheek	WCDMA Band V	0.0191	0.1840	0.2031	
Left Tilted	WCDMA Band V	0.0051	0.1840	0.1891	
Right Cheek	WCDMA Band II	0.0513	0.1840	0.2353	
Right Tilted	WCDMA Band II	0.0042	0.1840	0.1882	
Left Cheek	WCDMA Band II	0.0611	0.1840	0.2451	
Left Tilted	WCDMA Band II	0.0068	0.1840	0.1908	

Hotspot SAR WWAN and WLAN

	WW		WLAN	GIGAD	
Position	Band	Scaled SAR	Scaled SAR	Summed SAR (W/kg)	
1 OSITION	Danu	(W/kg)	(W/kg)	(W/Kg)	
Back	GSM850	1.1745	0.1159	1.2904	
Front	GSM850	-	-	-	
Top side	GSM850	-	0.0786	0.0786	
Bottom side	GSM850	0.2497	-	0.2497	
Right side	GSM850	0.0789	0.0068	0.0857	
Left side	GSM850	0.0835	0.0055	0.089	
Back	GSM1900	0.6840	0.1159	0.7999	
Front	GSM1900	-	-	-	
Top side	GSM1900	-	0.0786	0.0786	
Bottom side	GSM1900	0.1873	-	0.1873	
Right side	GSM1900	0.0391	0.0068	0.0459	
Left side	GSM1900	0.0780	0.0055	0.0835	
Back	WCDMA Band V	0.5109	0.1159	0.6268	
Front	WCDMA Band V	-	-	-	
Top side	WCDMA Band V	-	0.0786	0.0786	
Bottom side	WCDMA Band V	0.4695	-	0.4695	
Right side	WCDMA Band V	0.1907	0.0068	0.1975	
Left side	WCDMA Band V	0.1057	0.0055	0.1112	
Back	WCDMA Band II	0.4588	0.1159	0.5747	
Front	WCDMA Band II	-	-	-	
Top side	WCDMA Band II	-	0.0786	0.0786	
Bottom side	WCDMA Band II	0.2089	-	0.2089	
Right side	WCDMA Band II	0.1644	0.0068	0.1712	
Left side	WCDMA Band II	0.1485	0.0055	0.1540	

WWAN and Bluetooth

	WW	AN	Bluetooth	Summed SAR	
D:4:	D J	Scaled SAR	Scaled SAR		
Position	Band	(W/kg)	(W/kg)	(W/kg)	
Back	GSM850	1.1745	0.1840	1.3585	
Front	GSM850	-	0.1840	0.1840	
Top side	GSM850	-	0.1840	0.1840	
Bottom side	GSM850	0.2497	0.1840	0.4337	
Right side	GSM850	0.0789	0.1840	0.2629	
Left side	GSM850	0.0835	0.1840	0.2675	
Back	GSM1900	0.6840	0.1840	0.868	
Front	GSM1900	-	0.1840	0.1840	
Top side	GSM1900	-	0.1840	0.1840	
Bottom side	GSM1900	0.1873	0.1840	0.3713	
Right side	GSM1900	0.0391	0.1840	0.2231	
Left side	GSM1900	0.0780	0.1840	0.262	
Back	WCDMA Band V	0.5109	0.1840	0.6949	
Front	WCDMA Band V	-	0.1840	0.1840	
Top side	WCDMA Band V	-	0.1840	0.1840	
Bottom side	WCDMA Band V	0.4695	0.1840	0.6535	
Right side	WCDMA Band V	0.1907	0.1840	0.3747	
Left side	WCDMA Band V	0.1057	0.1840	0.2897	
Back	WCDMA Band II	0.4588	0.1840	0.6428	
Front	WCDMA Band II	-	0.1840	0.1840	
Top side	WCDMA Band II	-	0.1840	0.1840	
Bottom side	WCDMA Band II	0.2089	0.1840	0.3929	
Right side	WCDMA Band II	0.1644	0.1840	0.3484	
Left side	WCDMA Band II	0.1485	0.1840	0.3325	

Body-worn SAR WWAN and WLAN

	WWAN		WLAN	Summed SAR
Position	Band	Scaled SAR (W/kg)	Scaled SAR (W/kg)	(W/kg)
Back	GSM850	0.5732	0.1156	0.6888
Front	GSM850	0.2580	0.0500	0.308
Back	GSM1900	0.4231	0.1156	0.5387
Front	GSM1900	0.1915	0.0500	0.2415
Back	WCDMA Band V	0.3921	0.1156	0.5077
Front	WCDMA Band V	0.2007	0.0500	0.2507
Back	WCDMA Band II	0.2885	0.1156	0.4041
Front	WCDMA Band II	0.1323	0.0500	0.1823

WWAN and Bluetooth

	WWAN	1	Bluetooth	Summed SAR	
Position	Band	Scaled SAR (W/kg)	Scaled SAR (W/kg)	(W/kg)	
Back	GSM850	0.5732	0.1840	0.7572	
Front	GSM850	0.2580	0.1840	0.442	
Back	GSM1900	0.4231	0.1840	0.6071	
Front	GSM1900	0.1915	0.1840	0.3755	
Back	WCDMA Band V	0.3921	0.1840	0.5761	
Front	WCDMA Band V	0.2007	0.1840	0.3847	
Back	WCDMA Band II	0.2885	0.1840	0.4725	
Front	WCDMA Band II	0.1323	0.1840	0.3163	

10. Measurement Uncertainty

10.1 Uncertainty for EUT SAR Test

Uncertainty Component	~			e = f(d,k)	f	g	h = c*f/e	i = c*g/e	k
encertainty component	Sec.	Tol	Prob.	Div.	Ci (1g)	Ci (10g)	1g Ui	10g Ui	Vi
		(+- %)	Dist.				(+-%)	(+-%)	
Measurement System		1	•		T		T		
Probe calibration	E.2.1	7.0	N	1	1	1	7.00	7.00	~
Axial Isotropy	E.2.2	2.5	R	√3	(1_Cp)^1/2	(1_Cp)^1/2	1.02	1.02	œ
Hemispherical Isotropy	E.2.2	4.0	R	√3	(Cp)^1/2	(Cp)^1/2	1.63	1.63	8
Boundary effect	E.2.3	1.0	R	√3	1	1	0.58	0.58	8
Linearity	E.2.4	5.0	R	√3	1	1	2.89	2.89	8
System detection limits	E.2.5	1.0	R	√3	1	1	0.58	0.58	8
Readout Electronics	E.2.6	0.02	N	1	1	1	0.02	0.02	œ
Reponse Time	E.2.7	3.0	R	√3	1	1	1.73	1.73	8
Integration Time	E.2.8	2.0	R	√3	1	1	1.15	1.15	×
RF ambient Conditions	E.6.1	3.0	R	√3	1	1	1.73	1.73	×
Probe positioner Mechanical Tolerance	E.6.2	2.0	R	√3	1	1	1.15	1.15	œ
Probe positioning with respect to Phantom Shell	E.6.3	0.05	R	√3	1	1	0.03	0.03	8
Extrapolation, interpolation and integration Algoritms for Max. SAR Evaluation	E.5.2	5.0	R	√3	1	1	2.89	2.89	8
Test Sample Related									
Test sample positioning	E.4.2.1	0.03	N	1	1	1	0.03	0.03	N-1
Device Holder Uncertainty	E.4.1.1	5.00	N	1	1	1	5.00	5.00	
Output power Variation - SAR	6.6.2	12.02	R	√3	1	1	6.94	6.94	8
drift measurement									
Phantom and Tissue Parameters			1	1	1		I		
Phantom Uncertainty (Shape and thickness tolerances)	E.3.1	0.05	R	√3	1	1	0.03	0.03	œ
Liquid conductivity - deviation	E.3.2	5.00	R	√3	0.64	0.43	1.85	1.24	
from target value									
Liquid conductivity - measurement uncertainty	E.3.3	5.00	N	1	0.64	0.43	3.20	2.15	
Liquid permittivity - deviation from target value	E.3.2	0.37	R	√3	0.6	0.49	0.13	0.10	
Liquid permittivity -	E.3.3	10.00	N	1	0.6	0.49	6.00	4.90	M

measurement uncertainty						
Combined Standard Uncertainty		RSS		12.98	12.53	
Expanded Uncertainty		K=2		25.32	24.43	
(95% Confidence interval)						

10.2 Uncertainty for System Performance Check

a	b	c	d	e= f(d,k)	f	g	h= c*f/e	i= c*g/e	k
Uncertainty Component	Sec.	Tol	Prob.	Div.	Ci (1g)	Ci (10g)	1g Ui	10g Ui	Vi
		(+- %)	Dist.				(+-%)	(+-%)	
Measurement System									
Probe calibration	E.2.1	7.0	N	1	1	1	7.00	7.00	∞
Axial Isotropy	E.2.2	2.5	R	√3	(1_Cp)^1/2	(1_Cp)^1/2	1.02	1.02	œ
Hemispherical Isotropy	E.2.2	4.0	R	√3	(Cp)^1/2	(Cp)^1/2	1.63	1.63	∞
Boundary effect	E.2.3	1.0	R	√3	1	1	0.58	0.58	8
Linearity	E.2.4	5.0	R	√3	1	1	2.89	2.89	8
System detection limits	E.2.5	1.0	R	√3	1	1	0.58	0.58	~
Readout Electronics	E.2.6	0.02	N	1	1	1	0.02	0.02	∞
Reponse Time	E.2.7	3.0	R	√3	1	1	1.73	1.73	~
Integration Time	E.2.8	2.0	R	√3	1	1	1.15	1.15	~
RF ambient Conditions	E.6.1	3.0	R	√3	1	1	1.73	1.73	∞
Probe positioner Mechanical	E.6.2	2.0	R	√3	1	1	1.15	1.15	œ
Tolerance									
Probe positioning with respect to	E.6.3	0.05	R	$\sqrt{3}$	1	1	0.03	0.03	∞
Phantom Shell				,					
Extrapolation, interpolation and	E.5.2	5.0	R	$\sqrt{3}$	1	1	2.89	2.89	∞
integration Algoritms for Max.									
SAR Evaluation									
Dipole									
Dipole axis to liquid Distance	8,E.4.2	1.00	N	$\sqrt{3}$	1	1	0.58	0.58	N-1
Input power and SAR drift	8,6.6.2	12.02	R	√3	1	1	6.94	6.94	œ
measurement									
Phantom and Tissue Parameters									
Phantom Uncertainty (Shape and	E.3.1	0.05	R	√3	1	1	0.03	0.03	oc
thickness tolerances)									
Liquid conductivity - deviation	E.3.2	5.00	R	√3	0.64	0.43	1.85	1.24	
from target value									

			I						
Liquid conductivity -	E.3.3	5.00	N	1	0.64	0.43	3.20	2.15	
measurement uncertainty									
Liquid permittivity - deviation	E.3.2	0.37	R	$\sqrt{3}$	0.6	0.49	0.13	0.10	
from target value									
Liquid permittivity -	E.3.3	10.00	N	1	0.6	0.49	6.00	4.90	M
measurement uncertainty									
Combined Standard Uncertainty			RSS				12.00	11.50	
Expanded Uncertainty			K=2				23.39	22.43	
(95% Confidence interval)									

Annex A. Plots of System Performance Check

MEASUREMENT 1

For Head Liquid

Type: Validation measurement (Fast, 75.00 %)

Date of measurement: 06/03/2014

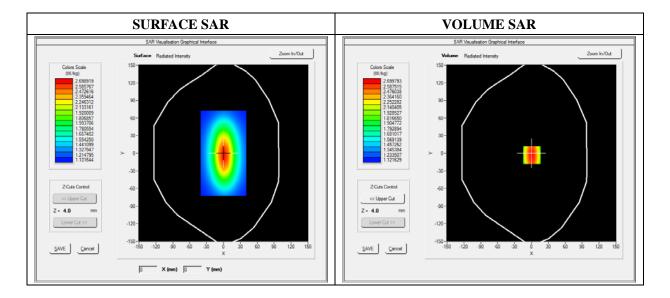
Measurement duration: 7 minutes 21 seconds

E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.25; Calibrated: 03/21/2014

A. Experimental conditions

Area Scan	dx=8mm dy=8mm			
Phantom	Validation plane			
Device Position	Dipole			
Band	CW835			
Channels	Middle			
Signal	CW (Crest factor: 1.0)			

Frequency (MHz)	835.000000
Relative Permittivity (real part)	40.0200000
Conductivity (S/m)	0.910000
Power Variation (%)	1.810000
Ambient Temperature	21.1
Liquid Temperature	21.3

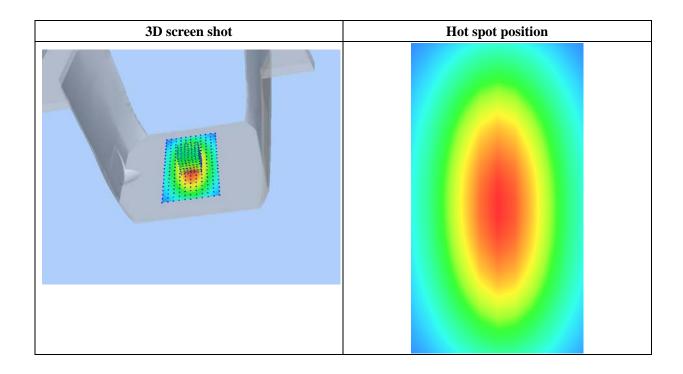


Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	1.545500
SAR 1g (W/Kg)	2.460145

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR	0.0000	2.5411	1.8756	1.4012	1.20124	1.1514	1.0698
(W/Kg)							
	2.50	00-					
	2.37	75-			+		
	_ 2.15	50-	\longrightarrow				
	夏 1.82 劉 1.82	25-	+				
	S 1.50	00-	++				
	ිර් 1.37						
	1.15						
	1.02					L .	
	1.02	0.0 2.5 5.0	7.5 10.0 12.515	.0 17.520.0 22.5	25.0 27.530.0 3	2.535.0	
				Z (mm)			



For Head Liquid

Type: Validation measurement (Fast, 75.00 %)

Date of measurement: 06/03/2014

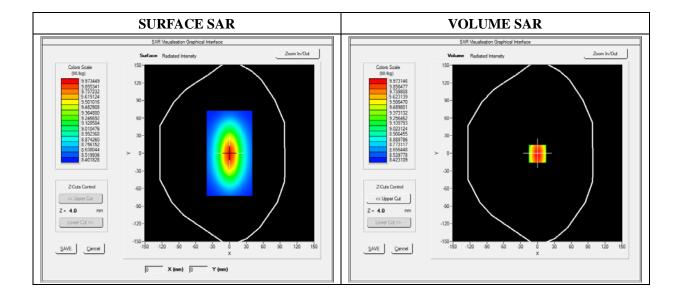
Measurement duration: 12 minutes 21 seconds

E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.16; Calibrated: 03/21/2014

A. Experimental conditions

Area Scan	dx=8mm dy=8mm			
Phantom	Validation plane			
Device Position	Dipole			
Band	CW1900			
Channels	Middle			
Signal	CW (Crest factor: 1.0)			

Frequency (MHz)	1900.000000		
Relative Permittivity (real part)	38.912360		
Conductivity (S/m)	1.410000		
Power Variation (%)	-0.523000		
Ambient Temperature	21.1		
Liquid Temperature	21.3		



Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	7.003210
SAR 1g (W/Kg)	10.203214

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR	0.0000	10.1019	7.1125	5.2120	4.0112	3.2104	2.2442
(W/Kg)							
	10.27 9.25 7.60 WW 6.17 EVS 4.50 3.05 2.03	7-	2.5 10.0 12.5 15.	0 17.520.0 22.5: Z (mm)	25.0 27.5 30.0 3	2.5 35.0	



For Head Liquid

Type: Validation measurement (Fast, 75.00 %)

Date of measurement: 06/03/2014

Measurement duration: 12 minutes 21 seconds

E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 5.51; Calibrated: 2013/03/21

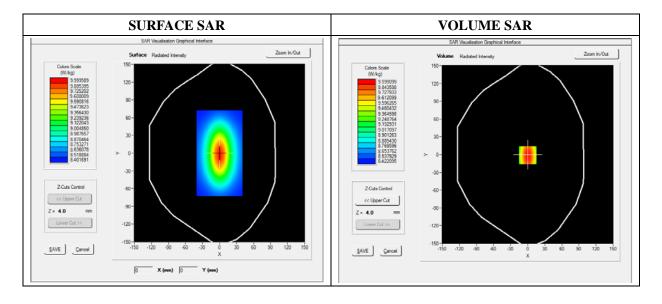
A. Experimental conditions

Area Scan	dx=8mm dy=8mm		
Phantom	Validation plane		
Device Position	Dipole		
Band	CW2450		
Channels	Middle		
Signal	CW (Crest factor: 1.0)		

B. SAR Measurement Results

Middle Band SAR

Frequency (MHz)	2450.000000		
Relative Permittivity (real part)	38.762140		
Conductivity (S/m)	1.781240		
Power Variation (%)	1.144120		
Ambient Temperature	21.1		
Liquid Temperature	21.2		



Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	8.021554		
SAR 1g (W/Kg)	13.102505		

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	14.1355	12.0120	10.2601	7.4845	5.9123	4.5212
	14.27 13.25 10.60 WWW 7.77 EV 6.50 4.05 3.03	7-	7.5 10.0 12.5 15.	0 17.520.0 22.5 Z (mm)	25.0 27.5 30.0 3	2.5 35.0	



For Body Liquid

Type: Validation measurement (Fast, 75.00 %)

Date of measurement: 06/03/2014

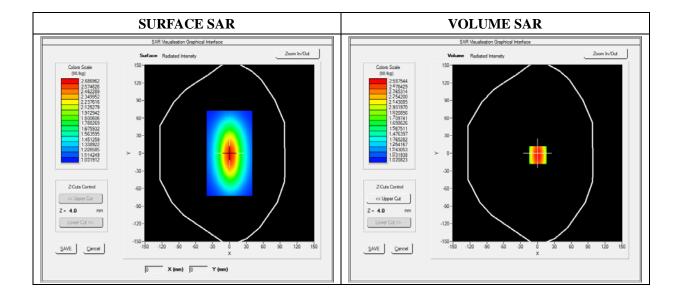
Measurement duration: 12 minutes 21 seconds

E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.50; Calibrated: 03/21/2014

A. Experimental conditions

Area Scan	dx=8mm dy=8mm		
Phantom	Validation plane		
Device Position	Dipole		
Band	CW835		
Channels	Middle		
Signal	CW (Crest factor: 1.0)		

Frequency (MHz)	835.000000		
Relative Permittivity (real part)	54.492364		
Conductivity (S/m)	0.963236		
Power Variation (%)	0.926400		
Ambient Temperature	21.1		
Liquid Temperature	21.3		

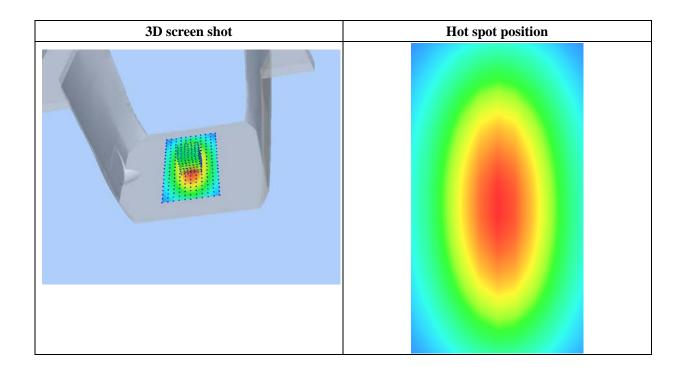


Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	1.502100		
SAR 1g (W/Kg)	2.521346		

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR	0.0000	2.5989	1.6985	1.1642	0.8322	0.5521	0.4025
(W/Kg)							
	2.59)-					
	2.16	; 					
	_ 1.74	l-	$\overline{}$				
	TB 1.52 (A/K) 1.30 1.10						
) 1.30 W 1.18						
	0.86			\rightarrow			
	0.64			++			
	0.43	0.0 2.5 5.0 7	7.5 10.0 12.5 15.	0 17.520.0 22.5	25.0 27.5 30.0 3	2.5 35.0	
				Z (mm)			



For Body Liquid

Type: Validation measurement (Fast, 75.00 %)

Date of measurement: 06/03/2014

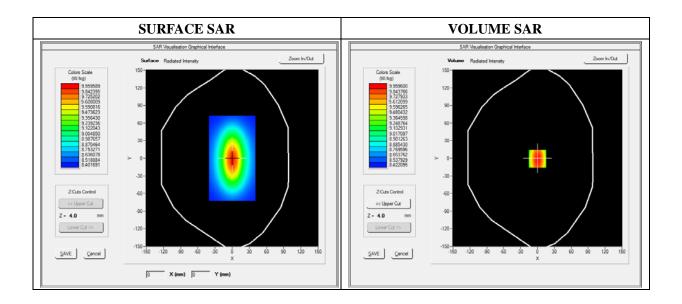
Measurement duration: 12 minutes 21 seconds

E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.30; Calibrated: 03/21/2014

A. Experimental conditions

Area Scan	dx=8mm dy=8mm		
Phantom	Validation plane		
Device Position	Dipole		
Band	CW1900		
Channels	Middle		
Signal	CW (Crest factor: 1.0)		

Frequency (MHz)	1900.000000		
Relative Permittivity (real part)	52.394440		
Conductivity (S/m)	1.491240		
Power Variation (%)	0.768521		
Ambient Temperature	21.1		
Liquid Temperature	21.3		



Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	5.102232		
SAR 1g (W/Kg)	10.092420		

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR	0.0000	10.1564	6.4363	5.1336	3.9541	3.1262	2.7601
(W/Kg)							
	10.27 9.25	1					
	_ 7.60)-					
	SAB (Wkgl 9.17	7-					
	₹ 4.50)-		+			
	3.05 2.03	3-	75 10 0 12 5 15	0 17.520.0 22.5	25 0 27 5 30 0 3	2 5 3 5 0	
		2.5 2.5 5.6 7	.0 10.0 12.0 10.	Z (mm)	20.027.000.00	2.0 00.0	



For Body Liquid

Type: Validation measurement (Fast, 75.00 %)

Date of measurement: 06/03/2014

Measurement duration: 12 minutes 21 seconds

E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 5.70; Calibrated: 03/21/2014

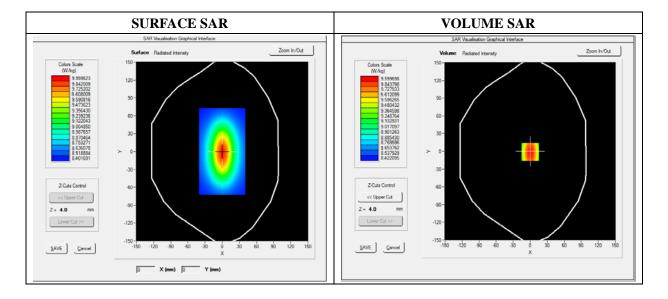
A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Phantom	Validation plane
Device Position	Dipole
Band	CW2450
Channels	Middle
Signal	CW (Crest factor: 1.0)

B. SAR Measurement Results

Middle Band SAR

Frequency (MHz)	2450.000000
Relative Permittivity (real part)	52.431240
Conductivity (S/m)	1.921230
Power Variation (%)	0.551121
Ambient Temperature	21.1
Liquid Temperature	21.2



Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	7.128414
SAR 1g (W/Kg)	12.863122

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR	0.0000	13.3942	11.8625	9.3022	8.5761	6.3612	4.5695
(W/Kg)							
	13.27	1					
	12.25	,					
	7.60)-	$\overline{}$				
		7-					
	SAB (Wikgl 9.17		$ \cdot \cdot $				
	4.50)-					
3.05 - 2.03 -							
	0.0 2.5 5.0 7.5 10.0 12.5 15.0 17.5 20.0 22.5 25.0 27.5 30.0 32.5 35.0						
Z (mm)							



Annex B. Plots of SAR Measurement

TYPE	BAND	<u>PARAMETERS</u>		
Tablet	GSM850	Measurement 1: Right Head with Cheek device		
		position on Low Channel in Voice mode		
Tablet	GSM850	Measurement 2: Right Head with Tilt device position on Low Channel in Voice mode		
		Measurement 3: Left Head with Cheek device position		
Tablet	GSM850	on Low Channel in Voice mode		
		Measurement 4: Left Head with Tilt device position on		
Tablet	GSM850	Low Channel in Voice mode		
TD 11.4	CDD050 ATV	Measurement 6: Flat Plane with Back device position		
Tablet	GPR850_4TX	on Middle Channel in GPRS mode		
Tablet	GPR850_4TX	Measurement 7: Flat Plane with Back device position		
Tablet	G1 K030_41A	on Low Channel in GPRS mode		
Tablet	GPR850_4TX	Measurement 8: Flat Plane with Back device position		
Tublet	G1 R050_1111	on High Channel in GPRS mode		
Tablet	GPRS850_4TX	Measurement 10: Flat Plane with Bottom side device		
	_	position on Middle Channel in GPRS mode		
Tablet	GPRS850_4TX	Measurement 11: Flat Plane with Right side device		
		position on Middle Channel in GPRS mode Measurement 12: Flat Plane with Left side device		
Tablet	GPRS850_4TX	position on Middle Channel in GPRS mode		
		Measurement 13: Right Head with Cheek device		
Tablet	GSM1900	position on Low Channel in GSM mode		
		Measurement 14: Right Head with Tilt device position		
Tablet	GSM1900	on Low Channel in GSM mode		
TD: 1: 1: 4	CCN/1000	Measurement 15: Left Head with Cheek device position		
Tablet	GSM1900	on Low Channel in GSM mode		
Tablet	GSM1900	Measurement 16: Left Head with Tilt device position		
Tablet	G5W11700	on Low Channel in GSM mode		
Tablet	GPRS1900_4TX	Measurement 18: Flat Plane with Back device position		
	01102/00_111	on High Channel in GPRS mode		
Tablet	GPRS1900_4TX	Measurement 20: Flat Plane with Bottom side device		
	_	position on High Channel in GPRS mode		
Tablet	GPRS1900_4TX	Measurement 21: Flat Plane with Right side device		
		position on High Channel in GPRS mode Measurement 22: Flat Plane with Left side device		
Tablet	GPRS1900_4TX	position on High Channel in GPRS mode		
		Measurement 23: Right Head with Cheek device		
Tablet	WCDMA850_RMC	position on High Channel in WCDMA mode		
		T 0 0 0 0 0 0 0 0 0		

Tablet	WCDMA850_RMC	Measurement 24: Right Head with Tilt device position on High Channel in WCDMA mode
		Measurement 25: Left Head with Cheek device position
Tablet	WCDMA850_RMC	on High Channel in WCDMA mode
Tablet	WCDMA850_RMC	Measurement 26: Left Head with Tilt device position
Tablet	WCDMA030_RMC	on High Channel in WCDMA mode
Tablet	WCDMA850_RMC	Measurement 27 Flat Plane with Back device position
		on High Channel in WCDMA mode Measurement 29: Flat Plane with Bottom side device
Tablet	WCDMA850_RMC	position on High Channel in WCDMA mode
	WGD144050 D14G	Measurement 30: Flat Plane with Right side device
Tablet	WCDMA850_RMC	position on High Channel in WCDMA mode
Tablet	WCDMA850_RMC	Measurement 31: Flat Plane with Left side device
Tablet	Weblymosu_Rivie	position on High Channel in WCDMA mode
Tablet	WCDMA1900_RMC	Measurement 33: Right Head with Cheek device
		position on Low Channel in WCDMA mode Measurement 34: Right Head with Tilt device position
Tablet	WCDMA1900_RMC	on Low Channel in WCDMA mode
	***************************************	Measurement 35: Left Head with Cheek device position
Tablet	WCDMA1900_RMC	on Low Channel in WCDMA mode
Tablet	WCDMA1900_RMC	Measurement 36: Left Head with Tilt device position
Tubict	VV CDIVILITYOU_ICIVIC	on Middle Channel in WCDMA mode
Tablet	WCDMA1900_RMC	Measurement 37: lat Plane with Back device position
		on Low Channel in WCDMA mode Measurement 39: Flat Plane with Bottom side device
Tablet	WCDMA1900_RMC	position on Low Channel in WCDMA mode
		Measurement 40: Flat Plane with Right side device
Tablet	WCDMA1900_RMC	position on Low Channel in WCDMA mode
Tablet	WCDMA1900 RMC	Measurement 41: Flat Plane with Left side device
Tablet	WCDMAI900_RMC	position on Low Channel in WCDMA mode
Tablet	WiFi_802.11b	Measurement 43: Right Head with Cheek device
		position on Low Channel in 802.11b mode Measurement 44: Right Head with Tilt device position
Tablet	WiFi_802.11b	on Low Channel in 802.11b mode
T 11 (11/1T/ 00A 441	Measurement 45: Left Head with Cheek device position
Tablet	WiFi_802.11b	on Low Channel in 802.11b mode
Tablet	WiFi_802.11b	Measurement 46: Left Head with Tilt device position
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	on Low Channel in 802.11b mode
Tablet	WiFi_802.11b	Measurement 47: Flat Plane with Back side device
		position on Low Channel in 802.11b mode Measurement 49: Flat Plane with Top side device
Tablet	WiFi_802.11b	position on Low Channel in 802.11b mode
T	W. COA 447	Measurement 50: Flat Plane with Right side device
Tablet	WiFi_802.11b	position on Low Channel in 802.11b mode

		Measurement 51: Flat Plane with Left side device
Tablet	WiFi_802.11b	position on Low Channel in 802.11b mode
		Measurement 52: Flat Plane with Back device position
Tablet	GSM850	_
		on Low Channel in Voice mode
Tablet	GSM850	Measurement 53: Flat Plane with Front device position
Tubict	351/1020	on Low Channel in Voice mode
Tablet	GSM1900	Measurement 54: Flat Plane with Back device position
Tablet	GSW11900	on Low Channel in Voice mode
T 11 4	CC7.#1000	Measurement 55: Flat Plane with Front device position
Tablet	GSM1900	on Low Channel in Voice mode
	**********	Measurement 56: Flat Plane with Front device position
Tablet	WCDMA850_RMC	on Low Channel in Voice mode
TD 1.1.4	IVODA A OFO. DATO	Measurement 57: Flat Plane with Front device position
Tablet	WCDMA850_RMC	on Low Channel in Voice mode
75.11.4	THORNA 1000 PMG	Measurement 58: Flat Plane with Front device position
Tablet	WCDMA1900_RMC	on Low Channel in Voice mode
TD 1.1.4	WCDMA 1000 DMC	Measurement 59: Flat Plane with Front device position
Tablet	WCDMA1900_RMC	on Low Channel in Voice mode
TD 11.4	11/PP 000 111	Measurement 60: Flat Plane with Front device position
Tablet	WiFi_802.11b	on Low Channel in Voice mode
7 7.11	XXXXI 000 443	Measurement :61 Flat Plane with Front device position
Tablet	WiFi_802.11b	on Low Channel in Voice mode
L	L	

Report No.: STR14048375H Page 54 of 169 SAR Report

Type: Phone measurement (Complete)
Date of measurement: 06/03/2014

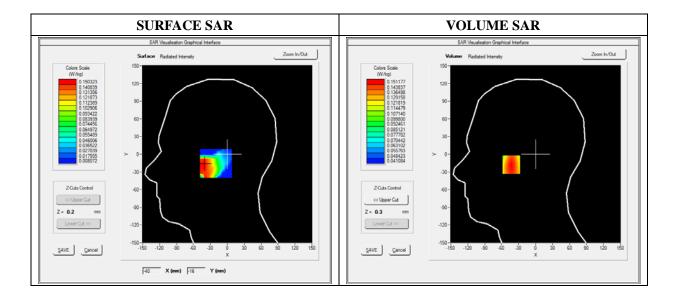
Measurement duration: 12 minutes 3 seconds

E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.25; Calibrated: 03/21/2014

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt
Phantom	Right head
Device Position	Cheek
Band	GSM850
Channels	Low
Signal	TDMA (Crest factor: 8.0)

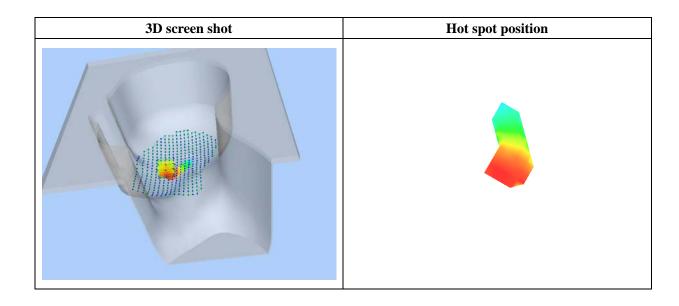
Frequency (MHz)	824.200000
Relative Permittivity (real part)	40.0200000
Conductivity (S/m)	0.910000
Power Variation (%)	1.810000
Ambient Temperature	21.1
Liquid Temperature	21.3



Maximum location: X=-43.00, Y=-18.00

SAR 10g (W/Kg)	0.118539
SAR 1g (W/Kg)	0.146410

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.1512	0.1303	0.1126	0.0977
	0.15- 0.14- 				
	0.09 - 0.08 - 0.0 2.5	5.0 7.5 10.0	12.5 15.0 17.5 Z (mm)	20.0 22.5 25.0	



Type: Phone measurement (Complete)
Date of measurement: 06/03/2014

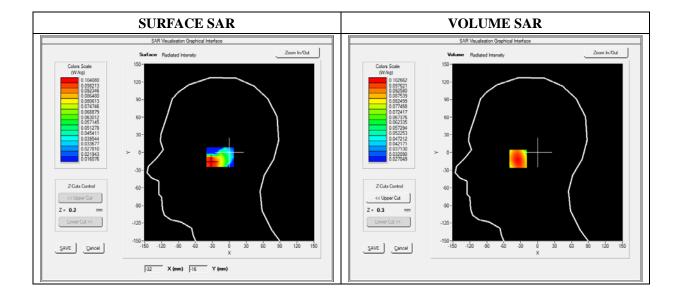
Measurement duration: 12 minutes 3 seconds

E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.25; Calibrated: 03/21/2014

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt
Phantom	Right head
Device Position	Tilt
Band	GSM850
Channels	Low
Signal	TDMA (Crest factor: 8.0)

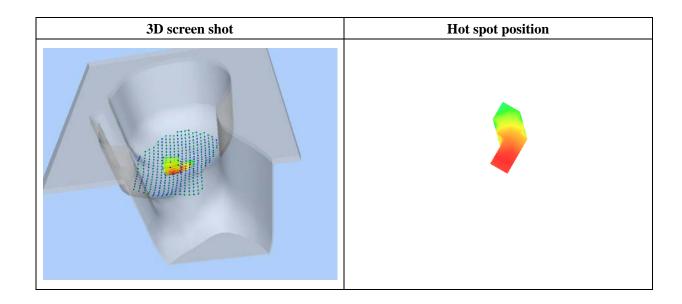
Frequency (MHz)	824.200000
Relative Permittivity (real part)	40.0200000
Conductivity (S/m)	0.910000
Power Variation (%)	1.810000
Ambient Temperature	21.1
Liquid Temperature	21.3



Maximum location: X=-33.00, Y=-11.00

SAR 10g (W/Kg)	0.076059
SAR 1g (W/Kg)	0.098850

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.1027	0.0840	0.0691	0.0573
	0.10-				
	0.09-	+			
	₹ 0.08-	\rightarrow			
	SAB (Wkg		\setminus		
	₹ 0.0/-				
	0.06-		++	_	
	0.05- 0.0 2.5	5.0 7.5 10.0	12.5 15.0 17.5	20.0 22.5 25.0	
	0.0 2.3	3.0 7.3 10.0	Z (mm)	20.0 22.3 23.0	
			2 (min)		



Type: Phone measurement (Complete)
Date of measurement: 06/03/2014

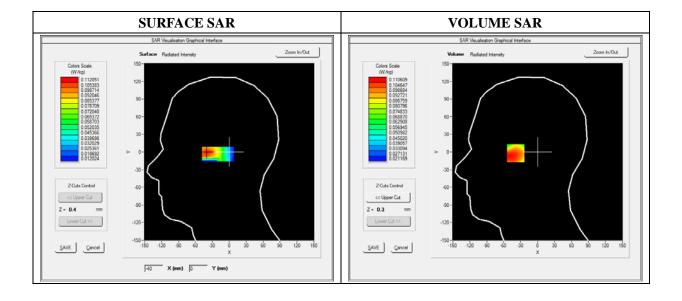
Measurement duration: 11 minutes 48 seconds

E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.25; Calibrated: 03/21/2014

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt
Phantom	Left head
Device Position	Cheek
Band	GSM850
Channels	Low
Signal	TDMA (Crest factor: 8.0)

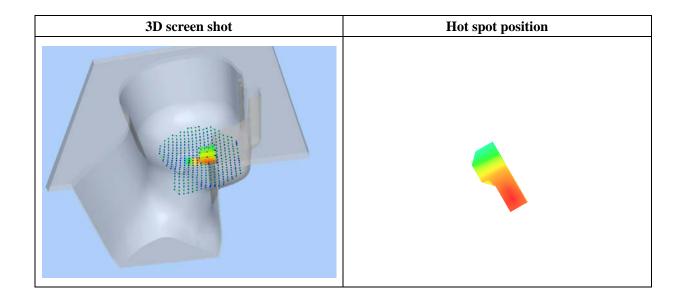
Frequency (MHz)	824.200000
Relative Permittivity (real part)	40.0200000
Conductivity (S/m)	0.910000
Power Variation (%)	1.810000
Ambient Temperature	21.1
Liquid Temperature	21.3



Maximum location: X=-39.00, Y=-1.00

SAR 10g (W/Kg)	0.083333	
SAR 1g (W/Kg)	0.108304	

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.1063	0.0889	0.0729	0.0585
	0.11-				
	0.10-	$\overline{}$			
	0.09	\rightarrow			
	<u></u>				
	₹ 0.08-				
	0.08- W (Wkg				
	0.06-		++		
	0.05-		105 150 175	20.0 20.5 25.0	
	0.0 2.5	5.0 7.5 10.0	12.5 15.0 17.5 Z (mm)	20.0 22.5 25.0	



Type: Phone measurement (Complete)
Date of measurement: 06/03/2014

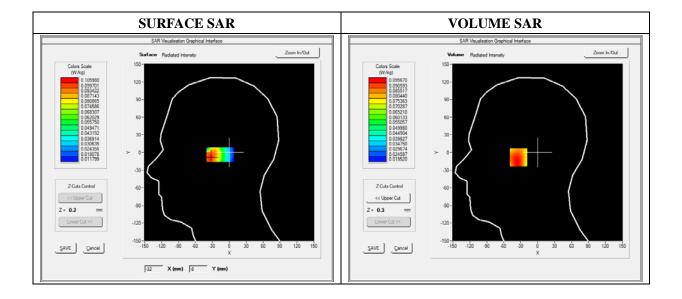
Measurement duration: 12 minutes 3 seconds

E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.25; Calibrated: 03/21/2014

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt
Phantom	Left head
Device Position	Tilt
Band	GSM850
Channels	Low
Signal	TDMA (Crest factor: 8.0)

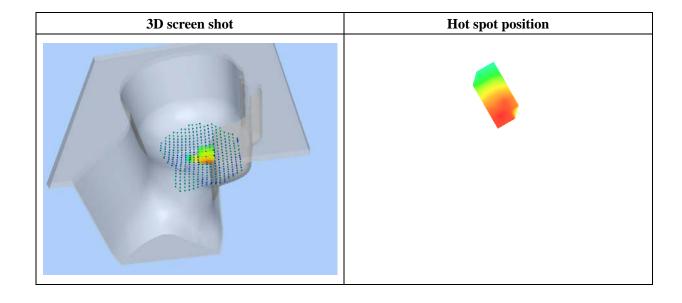
Frequency (MHz)	824.200012
Relative Permittivity (real part)	40.0200000
Conductivity (S/m)	0.910000
Power Variation (%)	1.810000
Ambient Temperature	21.1
Liquid Temperature	21.3



Maximum location: X=-33.00, Y=-8.00

SAR 10g (W/Kg)	0.070756
SAR 1g (W/Kg)	0.092774

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.0938	0.0746	0.0604	0.0499
	0.09-				
	0.08-	\rightarrow			
	₹ 0.07-				
	8 0.07- W (Wk				
	0.05				
	0.04-				
	0.0 2.5	5.0 7.5 10.0	12.5 15.0 17.5	20.0 22.5 25.0	
			Z (mm)		



Type: Phone measurement (Complete)
Date of measurement: 06/03/2014

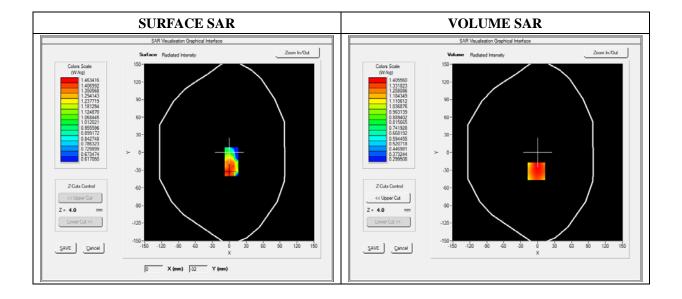
Measurement duration: 12 minutes 3 seconds

E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.5; Calibrated: 03/21/2014

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt
Phantom	Flat plane
Device Position	Back
Band	GPRS850_4TX
Channels	Middle
Signal	Duty Cycle: 3.00 (Crest factor: 3.00)

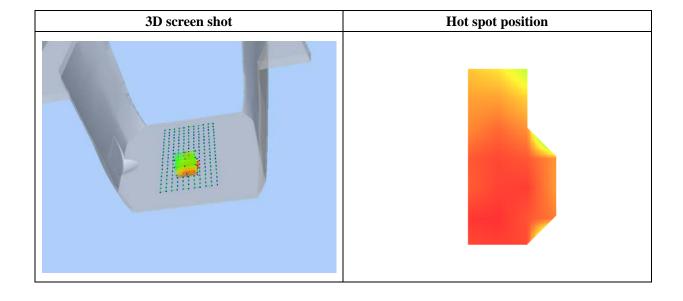
Frequency (MHz)	836.400000
Relative Permittivity (real part)	52.124510
Conductivity (S/m)	0.96000
Power Variation (%)	0.80000
Ambient Temperature	21.1
Liquid Temperature	21.3



Maximum location: X=-2.00, Y=-32.00

SAR 10g (W/Kg)	0.992319	
SAR 1g (W/Kg)	1.076061	

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	1.3525	1.0803	0.8002	0.6128
	1.4-				
	1.2-				
	- kg				
	TB 1.0-				
	-8.0 &		\rightarrow		
	0.6-		 		
	0.5-				
	0.0 2.5		12.5 15.0 17.5	20.0 22.5 25.0	
			Z (mm)		



Type: Phone measurement (Complete)
Date of measurement: 06/03/2014

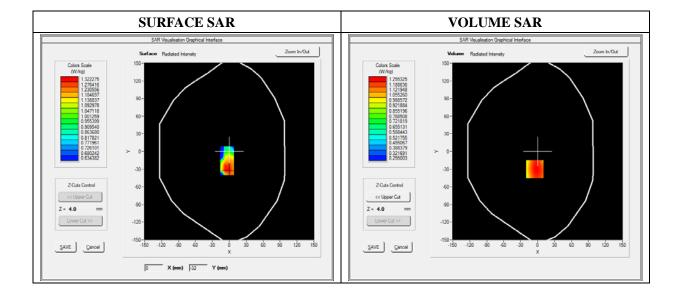
Measurement duration: 12 minutes 3 seconds

E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.5; Calibrated: 03/21/2014

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt
Phantom	Flat plane
Device Position	Back
Band	GPRS850_4TX
Channels	Low
Signal	Duty Cycle: 3.00 (Crest factor: 3.00)

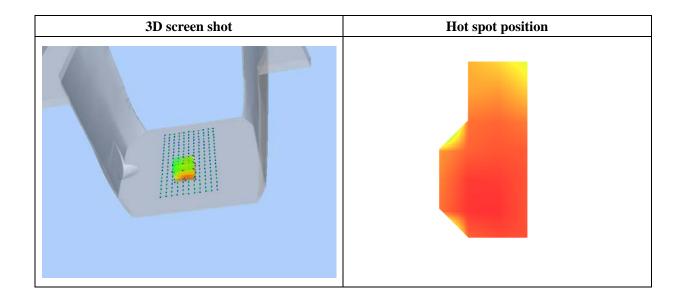
Frequency (MHz)	826.400000
Relative Permittivity (real part)	52.124510
Conductivity (S/m)	0.96000
Power Variation (%)	0.80000
Ambient Temperature	21.1
Liquid Temperature	21.3



Maximum location: X=-5.00, Y=-30.00

SAR 10g (W/Kg)	0.781415	
SAR 1g (W/Kg)	0.901202	

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	1.2508	0.9365	0.7086	0.5432
	1.3-				
	1.1-				
	1.0 -				
	§ 0.9				
	0.8 - 0.8 - 0.7 -				
	0.6-				
	0.5 -				
	0.0 2.5	5.0 7.5 10.0	12.5 15.0 17.5	20.0 22.5 25.0	
			Z (mm)		
			2 (mm)		



Type: Phone measurement (Complete)
Date of measurement: 06/03/2014

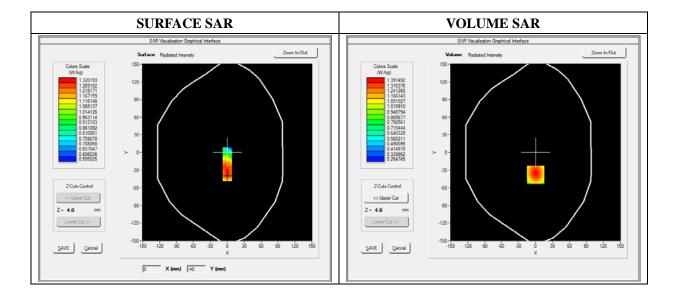
Measurement duration: 12 minutes 3 seconds

E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.5; Calibrated: 03/21/2014

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt
Phantom	Flat plane
Device Position	Back
Band	GPRS850_4TX
Channels	High
Signal	Duty Cycle: 3.00 (Crest factor: 3.00)

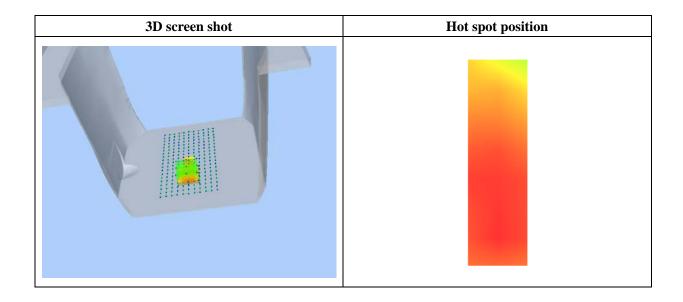
Frequency (MHz)	846.600000
Relative Permittivity (real part)	52.124510
Conductivity (S/m)	0.96000
Power Variation (%)	0.80000
Ambient Temperature	21.1
Liquid Temperature	21.3



Maximum location: X=0.00, Y=-38.00

SAR 10g (W/Kg)	0.815905	
SAR 1g (W/Kg)	0.920291	

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	1.3915	0.9533	0.6809	0.5165
	1.4-				
		$\mathbf{X} + \mathbf{I}$			
	1.2-	+			
	₹ 1.0-				
	§ "."				
	-8.0 WK	- - - - - - - - - - 	++		
	0.6				
	0.4-				
	0.0 2.5		12.5 15.0 17.5	20.0 22.5 25.0	
			Z (mm)		



Type: Phone measurement (Complete)
Date of measurement: 06/03/2014

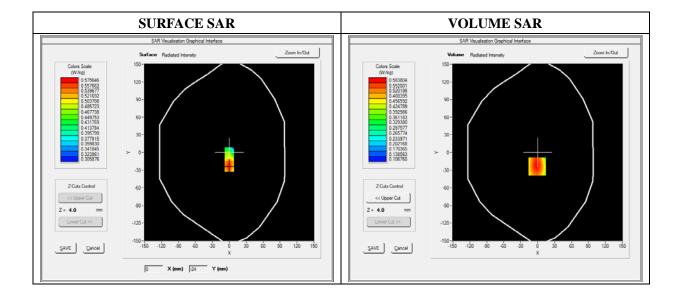
Measurement duration: 12 minutes 3 seconds

E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.50; Calibrated: 03/21/2014

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt
Phantom	Flat plane
Device Position	Bottom
Band	GPRS850_4TX
Channels	Middle
Signal	Duty Cycle: 3.00 (Crest factor: 3.00)

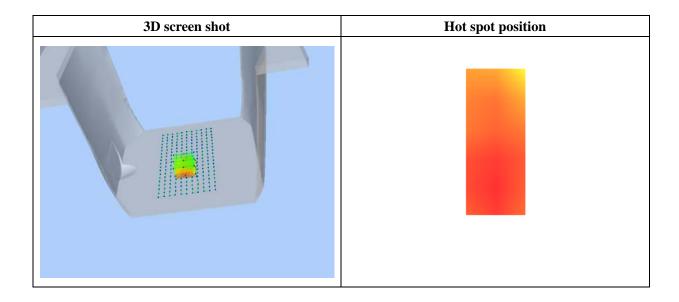
Frequency (MHz)	836.600000		
Relative Permittivity (real part)	52.124510		
Conductivity (S/m)	0.96000		
Power Variation (%)	0.80000 21.1		
Ambient Temperature			
Liquid Temperature	21.3		



Maximum location: X=-56.00, Y=-57.00

SAR 10g (W/Kg)	0.123959		
SAR 1g (W/Kg)	0.228798		

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	(g) 0.0000	0.2482	0.1393	0.0783	0.0457
	0.25- 0.20- 8 0.15- 8 0.10- 0.05- 0.03- 0.0 2.5	5 5.0 7.5 10.0	12.5 15.0 17.5 Z (mm)	20.0 22.5 25.0	



Type: Phone measurement (Complete)
Date of measurement: 06/03/2014

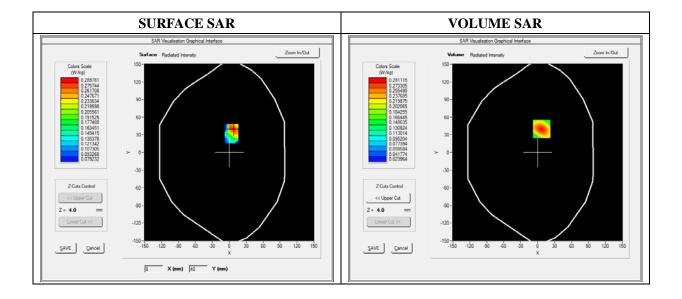
Measurement duration: 12 minutes 3 seconds

E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.50; Calibrated: 03/21/2014

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt	
Phantom	Flat plane	
Device Position	Right side	
Band	GPRS850_4TX	
Channels	Middle	
Signal	Duty Cycle: 3.00 (Crest factor: 3.00)	

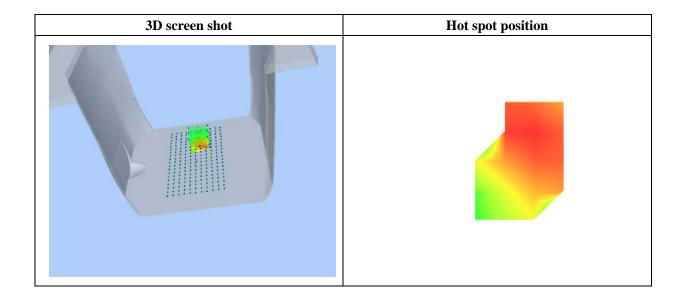
Frequency (MHz)	836.600000	
Relative Permittivity (real part)	52.124510	
Conductivity (S/m)	0.96000	
Power Variation (%)	0.80000	
Ambient Temperature	21.1	
Liquid Temperature	21.3	



Maximum location: X=7.00, Y=40.00

SAR 10g (W/Kg)	0.056186		
SAR 1g (W/Kg)	0.072273		

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	Kg) 0.0000	0.0744	0.0617	0.0505	0.0407
	0.074-				
	0.070 -	$\overline{}$			
	0.065-	+			
	ਲੂ 0.060 −				
	□ 0.060- ≥ 0.055-		$\overline{}$		
	₩ 0.050-		+		
	0.045-				
	0.040 -		- 		
	0.032-	5 5.0 7.5 10.0	0 12.5 15.0 17.5	20.0 22.5 25.0	
	0.0 2.	0 0.0 7.0 10.0	Z (mm)	25.5 22.5 25.5	



Type: Phone measurement (Complete)
Date of measurement: 06/03/2014

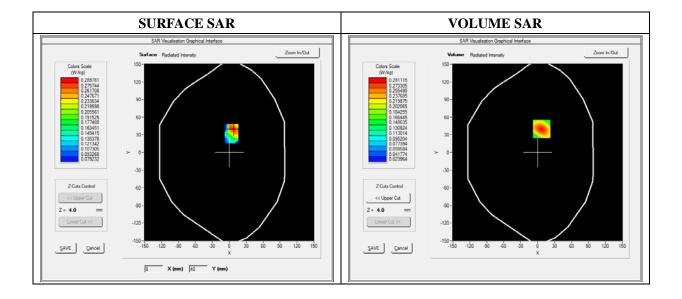
Measurement duration: 12 minutes 3 seconds

E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.50; Calibrated: 03/21/2014

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt	
Phantom	Flat plane	
Device Position	Left side	
Band	GPRS850_4TX	
Channels	Middle	
Signal	Duty Cycle: 3.00 (Crest factor: 3.00)	

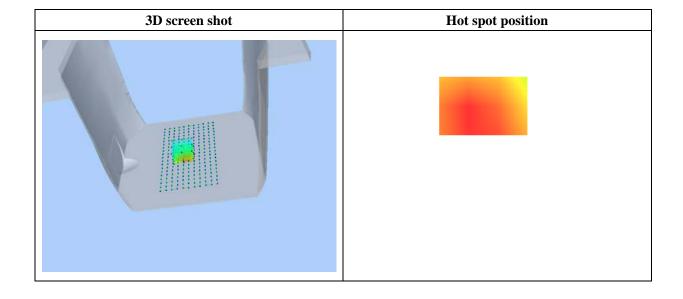
Frequency (MHz)	836.600000
Relative Permittivity (real part)	52.124510
Conductivity (S/m)	0.96000
Power Variation (%)	0.80000
Ambient Temperature	21.1
Liquid Temperature	21.3



Maximum location: X=-10.00, Y=10.00

SAR 10g (W/Kg)	0.040672	
SAR 1g (W/Kg)	0.076546	

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.0827	0.0435	0.0229	0.0127
	0.08-				
	0.07-				
	0.06-				
	O.05				
	또 0.04-				
	0.03				
	0.02-				
	0.01-		+++		
	0.0 2.5	5 5.0 7.5 10.0	12.5 15.0 17.5	20.0 22.5 25.0	
			Z (mm)		



Type: Phone measurement (Complete)
Date of measurement: 06/03/2014

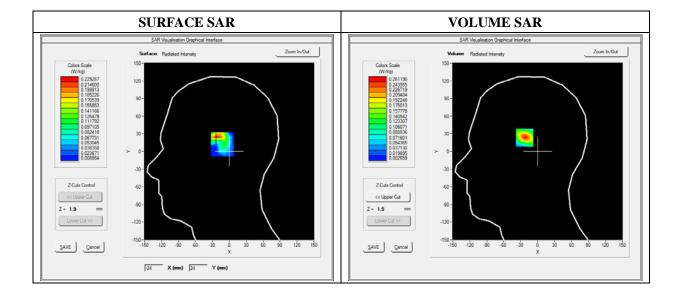
Measurement duration: 12 minutes 3 seconds

E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.16; Calibrated: 03/21/2014

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt	
Phantom	Right head	
Device Position	Cheek	
Band	GSM1900	
Channels	Low	
Signal	TDMA (Crest factor: 8.0)	

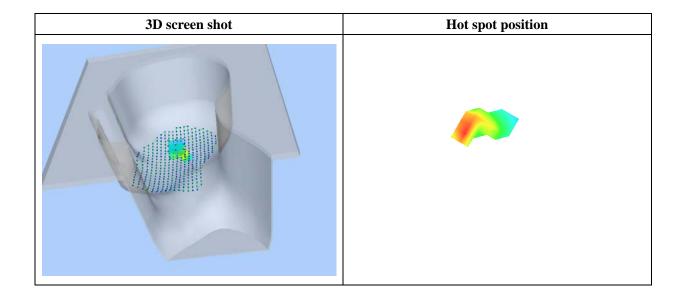
Frequency (MHz)	1850.200000	
Relative Permittivity (real part)	38.912360	
Conductivity (S/m)	1.410000	
Power Variation (%)	-0.523000	
Ambient Temperature	21.1	
Liquid Temperature	21.3	



Maximum location: X=-23.00, Y=25.00

SAR 10g (W/Kg)	0.100988	
SAR 1g (W/Kg)	0.240483	

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.2612	0.0901	0.0287	0.0116
Sim (Wing)	0.26 - 0.20 - 0.15 - 0.10 - 0.05 -	0.2012			0.0110
	0.01- 0.0 2.	5 5.0 7.5 10.0	12.5 15.0 17.5 Z (mm)	20.0 22.5 25.0	



Type: Phone measurement (Complete)
Date of measurement: 06/03/2014

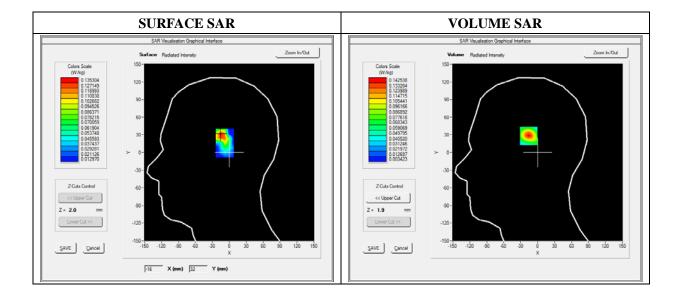
Measurement duration: 12 minutes 3 seconds

E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.16; Calibrated: 03/21/2014

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt	
Phantom	Right head	
Device Position	Tilt	
Band	GSM1900	
Channels	Low	
Signal	TDMA (Crest factor: 8.0)	

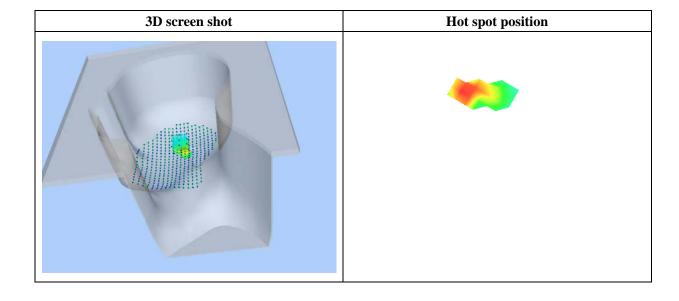
Frequency (MHz)	1850.200000		
Relative Permittivity (real part)	38.912360		
Conductivity (S/m)	1.410000		
Power Variation (%)	-0.523000		
Ambient Temperature	21.1		
Liquid Temperature	21.3		



Maximum location: X=-15.00, Y=30.00

SAR 10g (W/Kg)	0.060066	
SAR 1g (W/Kg)	0.129867	

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.1425	0.0596	0.0243	0.0114
	0.14-				
	0.12-				
	0.10- WK 0.08- 0.06-				
	K 0.06-	++			
	0.04				
	0.02 - 0.01 - 0.0 2.5	5.0 7.5 10.0	12.5 15.0 17.5	20.0 22.5 25.0	
	0.0 2.5		Z (mm)	20.0 22.0 20.0	



Type: Phone measurement (Complete)
Date of measurement: 06/03/2014

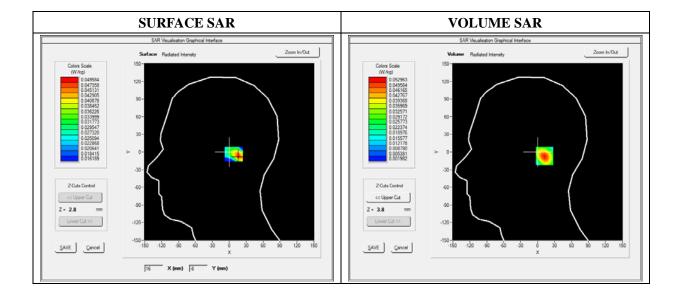
Measurement duration: 11 minutes 48 seconds

E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.16; Calibrated: 03/21/2014

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt		
Phantom	Left head		
Device Position	Cheek		
Band	GSM1900		
Channels	Low		
Signal	TDMA (Crest factor: 8.0)		

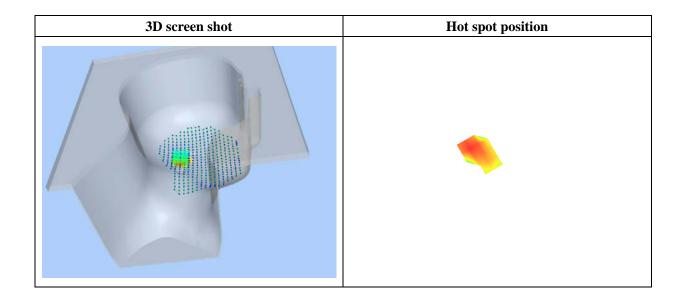
Frequency (MHz)	1850.200000		
Relative Permittivity (real part)	38.912360		
Conductivity (S/m)	1.410000		
Power Variation (%)	-0.523000		
Ambient Temperature	21.1		
Liquid Temperature	21.3		



Maximum location: X=-23.00, Y=25.00

SAR 10g (W/Kg)	0.099523	
SAR 1g (W/Kg)	0.201220	

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.2422	0.0845	0.0212	0.0100
DAR (WING)	0.26 - 0.20 - 0.15 - WW 0.10 - 0.05 - 0.01 -				0.0100
	0.0 2.9		12.5 15.0 17.5 Z (mm)	20.0 22.5 25.0	



Type: Phone measurement (Complete)
Date of measurement: 06/03/2014

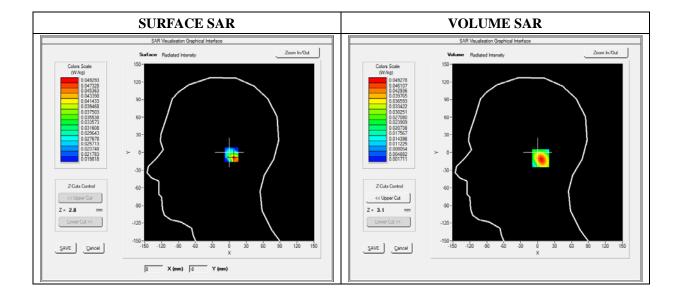
Measurement duration: 12 minutes 3 seconds

E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.16; Calibrated: 03/21/2014

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt		
Phantom	Left head		
Device Position	Tilt		
Band	GSM1900		
Channels	Low		
Signal	TDMA (Crest factor: 8.0)		

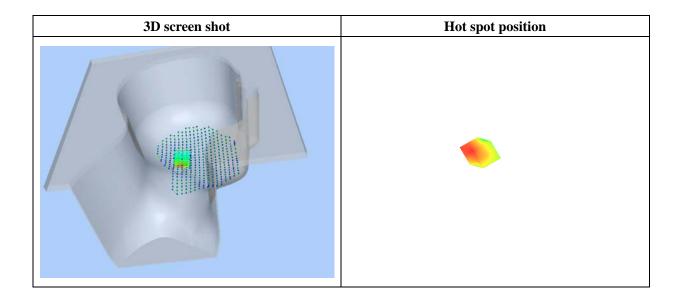
Frequency (MHz)	1850.200000		
Relative Permittivity (real part)	38.912360		
Conductivity (S/m)	1.410000		
Power Variation (%)	-0.523000		
Ambient Temperature	21.1		
Liquid Temperature	21.3		



Maximum location: X=9.00, Y=-10.00

SAR 10g (W/Kg)	0.023165	
SAR 1g (W/Kg)	0.045845	

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.0493	0.0241	0.0119	0.0065
### (**********************************	0.05 - 0.04 - 0.03 - W/W/B 0.02 -				
	0.01 - 0.00 - 0.0 2.5	5 5.0 7.5 10.0	12.5 15.0 17.5 Z (mm)	20.0 22.5 25.0	



Type: Phone measurement (Complete)
Date of measurement: 06/03/2014

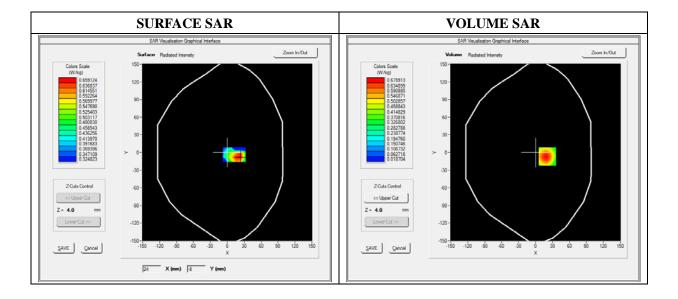
Measurement duration: 12 minutes 3 seconds

E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.30; Calibrated: 03/21/2014

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt		
Phantom	Flat plane		
Device Position	Back		
Band	GPRS1900_4TX		
Channels	Low		
Signal	Duty Cycle: 3.00 (Crest factor: 3.00)		

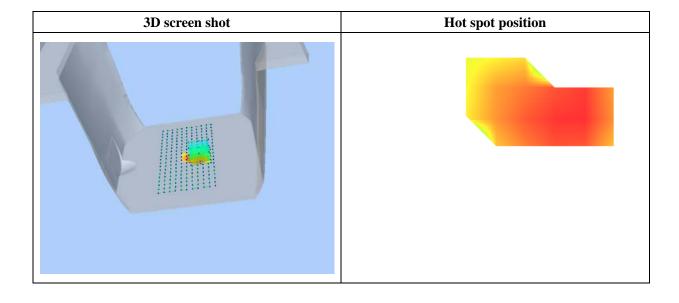
Frequency (MHz)	1850.200000
Relative Permittivity (real part)	51.361240
Conductivity (S/m)	1.510000
Power Variation (%)	0.752100
Ambient Temperature	21.1
Liquid Temperature	21.3



Maximum location: X=21.00, Y=-7.00

SAR 10g (W/Kg)	0.338366	
SAR 1g (W/Kg)	0.639838	

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.6789	0.3438	0.1711	0.0879
	0.7-				
	0.6-	\rightarrow	+		
	0.5-				
	B	\			
	0.4- W 0.3-				
	₩ 0.3-	++	. 		
	0.2-		\longrightarrow		
	0.1-				
	0.0-			+	
	0.0 2.5		12.5 15.0 17.5	20.0 22.5 25.0	
			Z (mm)		



Type: Phone measurement (Complete)
Date of measurement: 06/03/2014

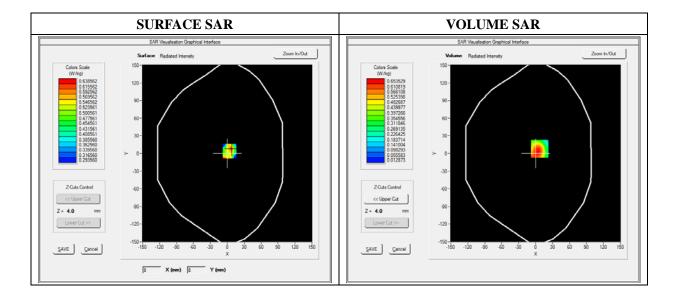
Measurement duration: 12 minutes 3 seconds

E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.30; Calibrated: 03/21/2014

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt	
Phantom	Flat plane	
Device Position	Front	
Band	GPRS1900_4TX	
Channels	Low	
Signal	Duty Cycle: 3.00 (Crest factor: 3.00)	

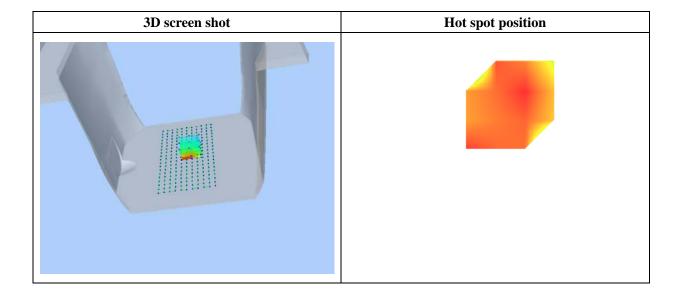
Frequency (MHz)	1850.200000	
Relative Permittivity (real part)	51.361240	
Conductivity (S/m)	1.510000	
Power Variation (%)	0.752100	
Ambient Temperature	21.1	
Liquid Temperature	21.3	



Maximum location: X=7.00, Y=8.00

SAR 10g (W/Kg)	0.321405	
SAR 1g (W/Kg)	0.419191	

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.5300	0.3112	0.1513	0.0770
	0.6-				
	0.5- By 0.4- 0.3- 0.2- 0.1- 0.0- 0.0 2.5		12.5 15.0 17.5 Z (mm)	20.0 22.5 25.0	



Type: Phone measurement (Complete)
Date of measurement: 06/03/2014

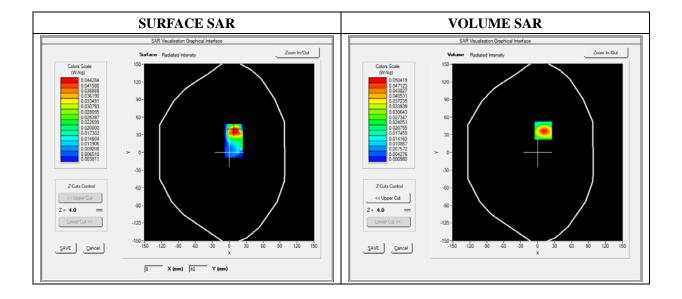
Measurement duration: 12 minutes 3 seconds

E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.30; Calibrated: 03/21/2014

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt	
Phantom	Flat plane	
Device Position	Bottom	
Band	GPRS850_4TX	
Channels	Low	
Signal	Duty Cycle: 3.00 (Crest factor: 3.00)	

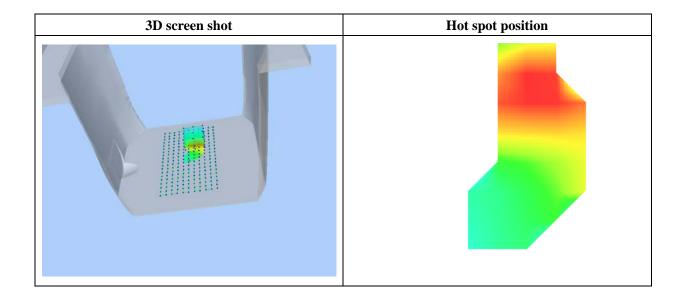
Frequency (MHz)	1850.200000
Relative Permittivity (real part)	51.361240
Conductivity (S/m)	1.510000
Power Variation (%)	0.752100
Ambient Temperature	21.1
Liquid Temperature	21.3



Maximum location: X=-35.00, Y=-17.00

SAR 10g (W/Kg)	0.127772	
SAR 1g (W/Kg)	0.175245	

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.1828	0.1360	0.1058	0.0867
	0.18-				
	0.10	$\mathbb{N} + \mathbb{N}$			
	0.16-				
	W/W/S W/W/W/W/W/W/W/W/W/W/W/W/W/W/W/W/W/		+		
	을 0.12-	\rightarrow	\longrightarrow		
	0.10-		\sim		
	0.10-				
	0.07-	111			
	0.0 2.5	5.0 7.5 10.0	12.5 15.0 17.5	20.0 22.5 25.0	
			Z (mm)		



Type: Phone measurement (Complete)
Date of measurement: 06/03/2014

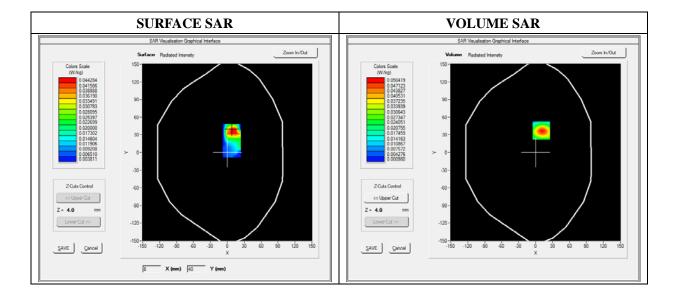
Measurement duration: 12 minutes 3 seconds

E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.30; Calibrated: 03/21/2014

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt	
Phantom	Flat plane	
Device Position	Right side	
Band	GPRS850_4TX	
Channels	Low	
Signal	Duty Cycle: 3.00 (Crest factor: 3.00)	

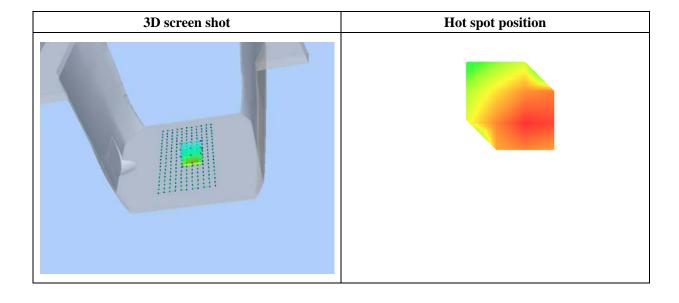
Frequency (MHz)	1850.200000
Relative Permittivity (real part)	51.361240
Conductivity (S/m)	1.510000
Power Variation (%)	0.752100
Ambient Temperature	21.1
Liquid Temperature	21.3



Maximum location: X=-50.00, Y=-53.00

SAR 10g (W/Kg)	0.019811
SAR 1g (W/Kg)	0.036541

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.0388	0.0202	0.0103	0.0054
	0.039-				
	0.035-	$\overline{}$			
	0.030-				
	9 0.025-				
	₹ 0,020-				
	0.025- 0.020- 8 0.015-				
	0.010-				
	0.010				
	0.003				
	0.0 2	5 5.0 7.5 10.0	12.5 15.0 17.5	20.0 22.5 25.0	
			Z (mm)		



Type: Phone measurement (Complete)
Date of measurement: 06/03/2014

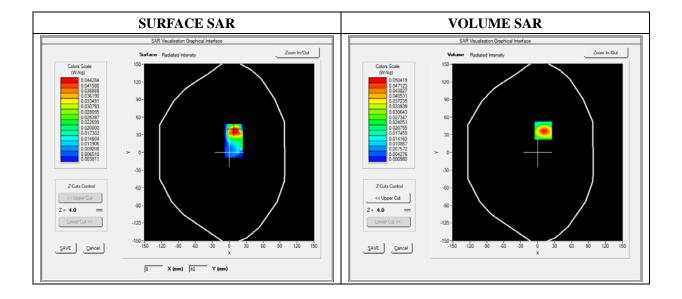
Measurement duration: 12 minutes 3 seconds

E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.30; Calibrated: 03/21/2014

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt	
Phantom	Flat plane	
Device Position	Left side	
Band	GPRS850_4TX	
Channels	Low	
Signal	Duty Cycle: 3.00 (Crest factor: 3.00)	

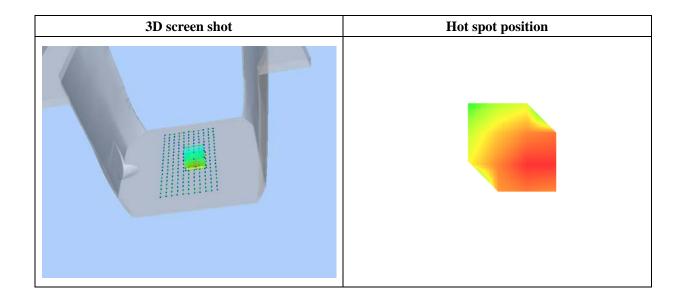
Frequency (MHz)	1850.200000
Relative Permittivity (real part)	51.361240
Conductivity (S/m)	1.510000
Power Variation (%)	0.752100
Ambient Temperature	21.1
Liquid Temperature	21.3



Maximum location: X=-8.00, Y=-8.00

SAR 10g (W/Kg)	0.040029	
SAR 1g (W/Kg)	0.072854	

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	(W/Kg) 0.0000	V/Kg) 0.0000 0.0782 0.04	0.0423	0.0230	0.0131
	0.08- 0.07- 0.06- 0.05- 0.04- 0.03- 0.02- 0.01- 0.0 2.5	5 5.0 7.5 10.0	12.5 15.0 17.5 Z (mm)	20.0 22.5 25.0	



Type: Phone measurement (Complete)
Date of measurement: 06/03/2014

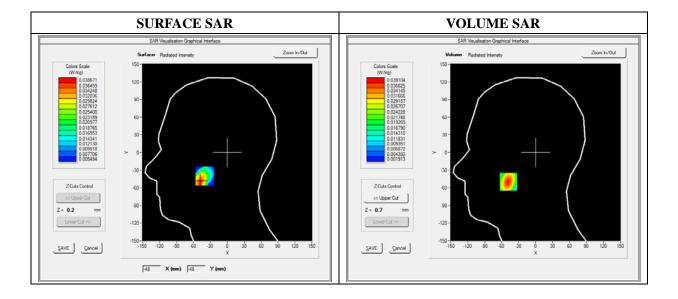
Measurement duration: 12 minutes 3 seconds

E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.25; Calibrated: 03/21/2014

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt	
Phantom	Right head	
Device Position	Cheek	
Band	WCDMA850_RMC	
Channels	High	
Signal	Duty Cycle: 1.00 (Crest factor: 1.0)	

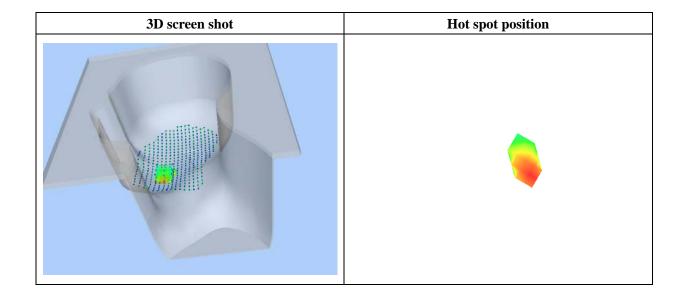
Frequency (MHz)	846.600000
Relative Permittivity (real part)	40.0200000
Conductivity (S/m)	0.910000
Power Variation (%)	1.810000
Ambient Temperature	21.1
Liquid Temperature	21.3



Maximum location: X=-48.00, Y=-50.00

SAR 10g (W/Kg)	0.021401
SAR 1g (W/Kg)	0.035973

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.0391	0.0260	0.0171	0.0111
	0.039-				
	0.035-	\longrightarrow			
	0.030-	\rightarrow			
	SAP 0.025				
	§ 0.025				
	0.015				
	0.010-		- 		
	0.007- 0.0 2.	5 5.0 7.5 10.0	12.5 15.0 17.5	20.0 22.5 25.0	
			Z (mm)		



Type: Phone measurement (Complete)
Date of measurement: 06/03/2014

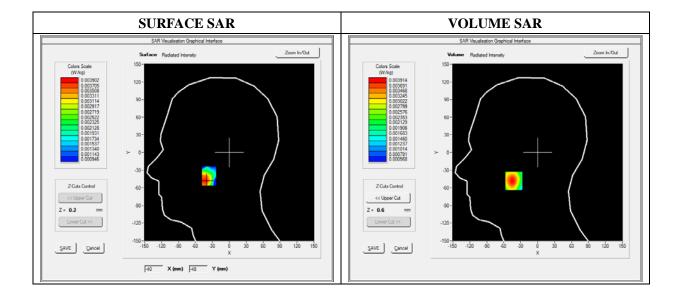
Measurement duration: 12 minutes 3 seconds

E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.25; Calibrated: 03/21/2014

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt	
Phantom	Right head	
Device Position	Tilt	
Band	WCDMA850_ RMC	
Channels	High	
Signal	Duty Cycle: 1.00 (Crest factor: 1.0)	

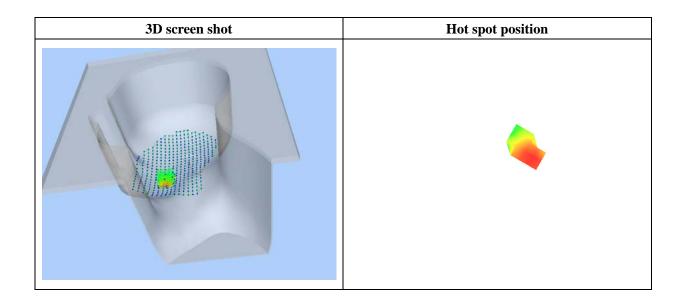
Frequency (MHz)	846.600000
Relative Permittivity (real part)	40.0200000
Conductivity (S/m)	0.910000
Power Variation (%)	1.810000
Ambient Temperature	21.1
Liquid Temperature	21.3



Maximum location: X=-42.00, Y=-48.00

SAR 10g (W/Kg)	0.002265	
SAR 1g (W/Kg)	0.003704	

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.0039	0.0025	0.0017	0.0011
	0.0039-				
	0.0035-		+		
	0.0030-	\longrightarrow	+		
	₹ 0.0025				
	0.0025- W 0.0020-		$\downarrow \downarrow \downarrow \downarrow$		
	0.0015-				
	0.0008 -	5 5.0 7.5 10.0	0 12.5 15.0 17.5	20.0 22.5 25.0	
			Z (mm)		



Type: Phone measurement (Complete)
Date of measurement: 06/03/2014

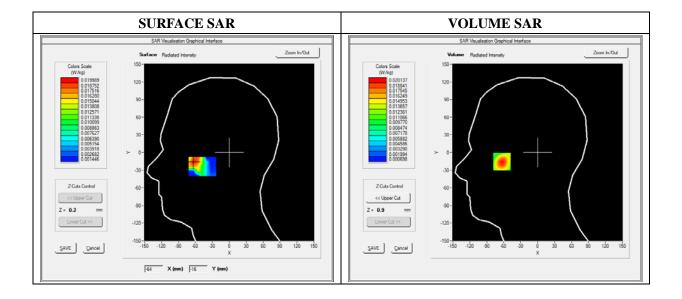
Measurement duration: 12 minutes 3 seconds

E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.25; Calibrated: 03/21/2014

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt	
Phantom	Left head	
Device Position	Cheek	
Band	WCDMA850_RMC	
Channels	High	
Signal	Duty Cycle: 1.00 (Crest factor: 1.0)	

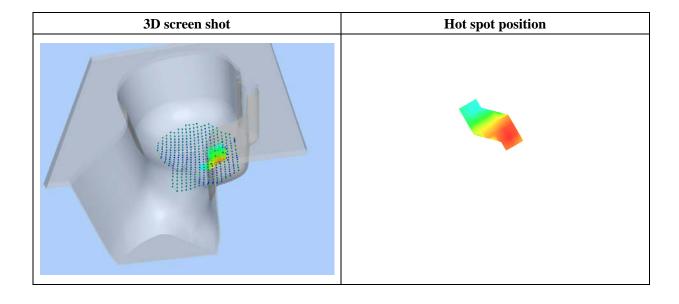
Frequency (MHz)	846.600000		
Relative Permittivity (real part)	40.0200000		
Conductivity (S/m)	0.910000		
Power Variation (%)	1.810000		
Ambient Temperature	21.1		
Liquid Temperature	21.3		



Maximum location: X=-63.00, Y=-15.00

SAR 10g (W/Kg)	0.011244	
SAR 1g (W/Kg)	0.018685	

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	W/Kg) 0.0000	/Kg) 0.0000 0.0201 0.0132	0.0132	0.0086	0.0055
	0.020-				
	0.018-	\longrightarrow			
	0.016-	$+$ \vee $+$			
	▼ 0.014- ▼ 0.012-	-			
	₹ 0.012-	\rightarrow			
	K 0.010-		+		
	0.008				
	0.006-				
	0.003	5 50 75 100	105 150 175	20.0 22.5 25.0	
	0.0 2.	5 5.0 7.5 10.0) 12.5 15.0 17.5 Z (mm)	20.0 22.5 25.0	



Type: Phone measurement (Complete)
Date of measurement: 06/03/2014

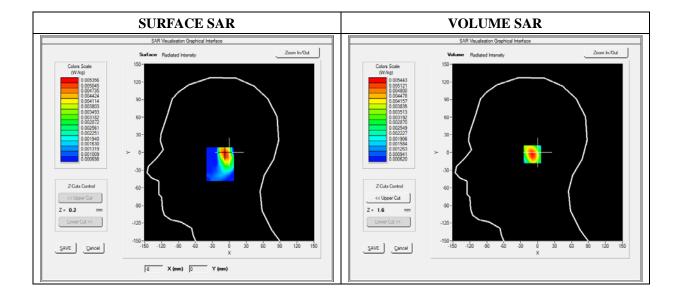
Measurement duration: 12 minutes 3 seconds

E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.25; Calibrated: 03/21/2014

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt	
Phantom	Left head	
Device Position	Tilt	
Band	WCDMA850_RMC	
Channels	High	
Signal	Duty Cycle: 1.00 (Crest factor: 1.0)	

Frequency (MHz)	846.600000		
Relative Permittivity (real part)	40.0200000		
Conductivity (S/m)	0.910000		
Power Variation (%)	1.810000		
Ambient Temperature	21.1		
Liquid Temperature	21.3		



Maximum location: X=-7.00, Y=-3.00

SAR 10g (W/Kg)	0.002788	
SAR 1g (W/Kg)	0.005003	

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.0054	0.0031	0.0018	0.0011
	0.005 - 0.005 -	\downarrow			
	<u></u> 0.004 -	\rightarrow			
	0.004 - Wkg	++			
	0.002				
	0.001 - 0.0 2.	5 5.0 7.5 10.0	12.5 15.0 17.5	20.0 22.5 25.0	
			Z (mm)		

