

FCC SAR Measurement and Test Report

For

MACATE GROUP CORPORATION

3401 SW 160th AVENUE, SUITE 430, MIRAMAR/FLORIDA, USA

FCC ID: 2AGMA-SGB1G

Test Standards:	FCC Part 2.1093 ANSI / IEEE C95.1 :2005 ANSI / IEEE C95.3 :2002 <u>IEEE 1528 :2013</u>
Product Description:	<u>4G-LTE Smartphone</u>
Tested Model:	<u>SGB1G-W</u>
Report No.:	<u>STR15118239H</u>
Tested Date:	<u>2015-12-07 to 2015-12-11</u>
Issued Date:	<u>2015-12-15</u>
Tested By:	<u>Lucy Wei / Engineer</u> <i>Lucy Wei</i>
Reviewed By:	<u>Silin Chen / EMC Manager</u> <i>Silin Chen</i>
Approved & Authorized By:	<u>Jandy So / PSQ Manager</u> <i>Jandy So</i>
Prepared By:	

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	3
1.1 Product Description for Equipment Under Test (EUT).....	3
1.2 Test Standards	6
1.3 Test Methodology	6
1.4 Test Facility	6
2. Summary of Test Results	8
3. Specific Absorption Rate (SAR).....	9
3.1 Introduction.....	9
3.2 SAR Definition	9
4. SAR Measurement System.....	10
4.1 The Measurement System	10
4.2 Probe	10
4.3 Probe Calibration Process.....	12
4.4 Phantom	13
4.5 Device Holder	13
4.6 Test Equipment List.....	14
5. Tissue Simulating Liquids.....	15
5.1 Composition of Tissue Simulating Liquid.....	15
5.2 Tissue Dielectric Parameters for Head and Body Phantoms	16
5.3 Tissue Calibration Result.....	17
6. SAR Measurement Evaluation	18
6.1 Purpose of System Performance Check.....	18
6.2 System Setup	18
6.3 Validation Results.....	19
7. EUT Testing Position	20
7.1 Define Two Imaginary Lines on The Handset.....	20
7.2 Cheek Position	21
7.3 Tilted Position.....	21
7.4 Body Position	22
7.5 EUT Antenna Position	22
7.6 EUT Testing Position.....	23
8. SAR Measurement Procedures	24
8.1 Measurement Procedures	24
8.2 Spatial Peak SAR Evaluation	24
8.3 Area & Zoom Scan Procedures.....	25
8.4 Volume Scan Procedures.....	25
8.5 SAR Averaged Methods	25
8.6 Power Drift Monitoring	25
9. SAR Test Result	26
9.1 Conducted RF Output Power	26
9.2 Test Results for Standalone SAR Test.....	32
9.3 Simultaneous Multi-band Transmission SAR Analysis	39
10. Measurement Uncertainty	47
10.1 Uncertainty for EUT SAR Test.....	47
10.2 Uncertainty for System Performance Check.....	48
Annex A. Plots of System Performance Check	50
Annex B. Plots of SAR Measurement	66
Annex C. EUT Photos	222
Annex D. Test Setup Photos	224
Annex E. Calibration Certificate.....	228

1. General Information

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant: MACATE GROUP CORPORATION
Address of applicant: 3401 SW 160th AVENUE, SUITE 430,
MIRAMAR/FLORIDA, USA

Manufacturer: COOSEA GROUP(HK) COMPANY LIMITED
Address of manufacturer: UNIT 5-6 16F MULTIFIELD PLAZA 3-7A PRAT
AVENUE TSIM SHA TSUI KL HONGKONG

General Description of EUT:	
Product Name:	4G-LTE Smartphone
Brand Name:	BELÉCI
Model No.:	SGB1G-W
Adding Model(s):	SGB1G-BL
Hardware Version:	V12
Software Version:	KD7LE22A.L1.ORIGINAL.SW.AM.SZ.V0.05
Rated Voltage:	DC 3.8V Li-ion Battery
Battery Capacity:	2150mAh
Device Category:	Portable Device
<i>The EUT Main board support GSM850/900/DCS1800/PCS1900, WCDMA Band 2/5, LTE Band 2/4/5/17 4G-LTE Smartphone. It is intended for speech, Multimedia Message Service (MMS) transmission function. It is equipped with GPRS/EDGE class 12 for GSM850/900/DCS1800/PCS1900, GPS, FM, Bluetooth and Wi-Fi functions. For more information see the following datasheet</i>	
<i>Note: The test data is gathered from a production sample provided by the manufacturer. The appearance of others models listed in the report is different from main-test model SGB1G-W, but the circuit and the electronic construction do not change, declared by the manufacturer.</i>	

Technical Characteristics of EUT:	
2G	
Support Networks:	GSM, GPRS, EDGE
Support Band:	GSM850/PCS1900
Uplink Frequency:	GSM/GPRS/EDGE 850: 824~849MHz GSM/GPRS/EDGE 1900: 1850~1910MHz
Downlink Frequency:	GSM/GPRS/EDGE 850: 869~894MHz GSM/GPRS/EDGE 1900: 1930~1990MHz
Max RF Output Power:	GSM850: 32.18dBm, GSM1900: 29.15dBm
Type of Modulation:	GMSK, 8PSK
Type of Antenna:	Integral Antenna
Antenna Gain:	GSM850: -0.16dBi, GSM1900: 0.8dBi
GPRS/EDGE Class:	Class 12
3G	
Support Networks:	WCDMA, HSDPA, HSUPA
Support Band:	WCDMA Band 2, WCDMA Band 5
Uplink Frequency:	WCDMA Band 2: 1850~1910MHz WCDMA Band 5: 824~849MHz
Downlink Frequency:	WCDMA Band 2: 1930~1990MHz WCDMA Band 5: 869~894MHz
RF Output Power:	WCDMA Band 2: 22.90dBm, WCDMA Band 5: 22.70dBm
Type of Modulation:	BPSK
Antenna Type:	Integral Antenna
Antenna Gain:	WCDMA Band 2: 0.8dBi, WCDMA Band 5: -0.16dBi
4G	
Support Networks:	FDD-LTE
Support Band:	FDD-LTE Band 2, 4, 5, 17
Uplink Frequency:	FDD-LTE Band 2: Tx: 1850-1910MHz, FDD-LTE Band 4: Tx: 1710-1755MHz, FDD-LTE Band 5: Tx: 824-849MHz, FDD-LTE Band 17: Tx: 704-716MHz
Downlink Frequency:	FDD-LTE Band 2: Rx: 1930-1990MHz, FDD-LTE Band 4: Rx: 2110-2155MHz, FDD-LTE Band 5: Rx: 869-894MHz, FDD-LTE Band 17: Rx: 734-746MHz
RF Output Power:	FDD-LTE Band 2: 22.98dBm, FDD-LTE Band 4: 22.88dBm, FDD-LTE Band 5: 24.28dBm, FDD-LTE Band 17: 23.43dBm
Type of Modulation:	QPSK, 16QAM
Antenna Type:	Integral Antenna

Antenna Gain:	FDD-LTE Band 2: 0.8dBi, FDD-LTE Band 4: 0.9dBi, FDD-LTE Band 5: -0.16dBi, FDD-LTE Band 17: -2.1dBi,
WIFI	
Support Standards:	802.11b, 802.11g, 802.11n
Frequency Range:	2412-2462MHz for 11b/g/n(HT20) 2422-2452MHz for 11n(HT40)
RF Output Power:	8.89dBm (Conducted)
Type of Modulation:	CCK, OFDM, QPSK, BPSK, 16QAM, 64QAM
Data Rate:	1-11Mbps, 6-54Mbps, up to 150Mbps
Quantity of Channels:	11/7
Channel Separation:	5MHz
Antenna Type:	Integral Antenna
Antenna Gain:	1.0dBi
Bluetooth	
Bluetooth Version:	V4.0
Frequency Range:	2402-2480MHz
AV Output Power:	2.887dBm (Conducted)
Data Rate:	1Mbps, 2Mbps, 3Mbps
Modulation:	GFSK, Pi/4 QDPSK, 8DPSK
Quantity of Channels:	79/40
Channel Separation:	1MHz/2MHz
Antenna Type:	Integral Antenna
Antenna Gain:	1.0dBi

1.2 Test Standards

The following report is prepared on behalf of the MACATE GROUP CORPORATION in accordance with FCC 47 CFR Part 2.1093, ANSI/IEEE C95.1-2005, ANSI / IEEE C95.3 :2002, IEEE 1528-2013, the following FCC Published RF exposure KDB procedures, and TCB workshop updates:

447498 D01 v06

648474 D04 Handset SAR v01r03

941225 D01 3G SAR Procedures v03

941225 D06 Hotspot mode v02r01

248227 D01 SAR Meas for 802 11abg v02r01

865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04

865664 D02 SAR Reporting v01r02

690783 D01 SAR Listings on Grants v01r03

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 v01r04 and KDB 865664 D02 v01r02. The public notice KDB 447498 D01 v06 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	Head SAR	Body-worn (10mm Gap)	Hotspot (10mm Gap)	SAR _{1g} Limit (W/kg)
	Maximum SAR _{1g} (W/kg)	Maximum SAR _{1g} (W/kg)	Maximum SAR _{1g} (W/kg)	
GSM850	0.238	0.477	1.243	1.6
GSM1900	0.054	0.352	1.268	1.6
WCDMA Band 2	0.295	0.659	0.891	1.6
WCDMA Band 5	0.204	0.321	0.321	1.6
FDD-LTE Band 2	0.205	0.699	0.699	1.6
FDD-LTE Band 4	0.323	0.814	0.974	1.6
FDD-LTE Band 5	0.091	0.165	0.165	1.6
FDD-LTE Band 17	0.088	0.159	0.159	1.6

Remark:

*The highest reported SAR values for head, body-worn accessory, and wireless router(hotspot) are **0.323W/kg, 0.814W/kg, and 1.268W/kg** respectively.*

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 C95.1-2005, and had been tested in accordance with the measurement methods and procedure specified in IEEE 1528-2013 and KDB 865664 D01 v01r04 and KDB 865664 D02 v01r02

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 techniques 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, δT is the temperature rise and δt 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.

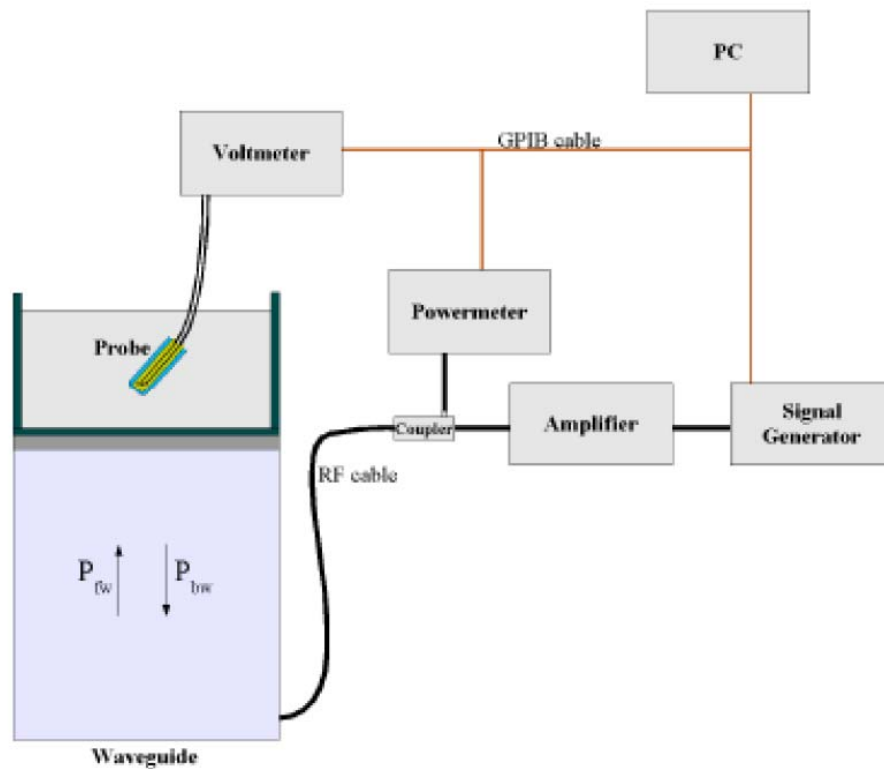
4.2 Probe

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 mm
- Maximum external diameter: 8 mm
- Probe 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 surface normal line: less 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 annex technique using reference guide at the five frequencies.



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

Where :

P_{fw} = Forward Power

P_{bw} = Backward Power

a and b = Waveguide dimensions

l = 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:

$$CF(N)=SAR(N)/V_{lin}(N) \quad (N=1,2,3)$$

The linearised output voltage $V_{lin}(N)$ is obtained from the displayed output voltage $V(N)$ using

$$V_{lin}(N)=V(N)*(1+V(N)/DCP(N)) \quad (N=1,2,3)$$

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:

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

Δt = exposure time (30 seconds),

C = heat capacity of tissue (brain or muscle),

ΔT = 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.

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

Where:

σ = simulated tissue conductivity,

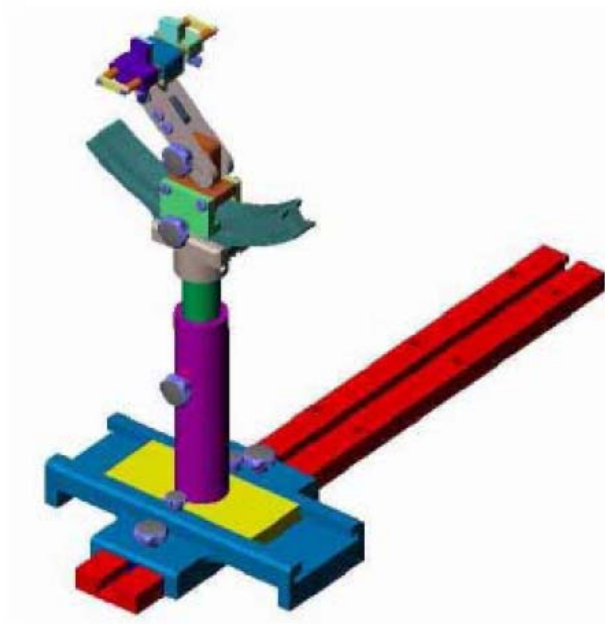
ρ = Tissue density (1.25 g/cm³ for brain tissue)

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	2015-06-03	2016-06-02
750MHz Dipole	SATIMO	SID750	SN 47/12 DIP 0G750-203	2015-03-16	2016-03-15
835MHz Dipole	SATIMO	SID835	SN 47/12 DIP 0G835-204	2015-03-16	2016-03-15
1800MHz Dipole	SATIMO	SID1800	SN 47/12 DIP 1G800-206	2015-03-16	2016-03-15
1900MHz Dipole	SATIMO	SID1900	SN 47/12 DIP 1G900-207	2015-03-16	2016-03-15
Dielectric Probe Kit	SATIMO	SCLMP	SN 47/12 OCPG49	2015-03-16	2016-03-15
SAM Phantom	SATIMO	SAM	SN/ 47/12 SAM95	N/A	N/A
MULTIMETER	KEITHLEY	Keithley 2000	4006367	2015-06-17	2016-06-16
Signal Generator	Rohde & Schwarz	SMR20	100047	2015-06-17	2016-06-16
Universal Tester	Rohde & Schwarz	CMU200	112012	2015-06-17	2016-06-16
Network Analyzer	HP	8753C	2901A00831	2015-06-17	2016-06-16
Data Acquisition Electronics	SATIMO	DAE4	915	2015-06-17	2016-06-16
Directional Couplers	Agilent	778D	20160	2015-06-17	2016-06-16

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 (MHz)	Water (%)	Salt (%)	Triton (%)	HEC (%)	Preventol (%)	DGBE (%)
Head						
750	34.29	1.05	0.00	0.00	64.66	0.00
835	35.34	0.98	0.00	0.00	63.68	0.00
1800	55.19	0.66	30.35	0.00	0.00	13.80
1900	55.26	0.52	30.40	0.00	0.00	13.82
Body						
750	51.75	1.17	0.00	0.00	47.08	0.00
835	52.87	1.07	0.00	0.00	46.10	0.00
1800	70.81	0.52	20.01	0.00	0.00	8.65
1900	69.99	0.41	20.66	0.00	0.00	8.93

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.

Target Frequency (MHz)	Head		Body	
	Conductivity (σ)	Permittivity (ϵ_r)	Conductivity (σ)	Permittivity (ϵ_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
750	0.89	41.9	0.96	55.5
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									
Freq. MHz.	Temp. (°C)	Conductivity			Permittivity			Limit (%)	Date
		Reading (σ)	Target (σ)	Delta (%)	Reading (ϵ_r)	Target (ϵ_r)	Delta (%)		
750	21.2	0.86	0.89	-3.37	41.32	41.90	-1.38	± 5	2015-12-07
835	21.2	0.87	0.90	-3.33	41.11	41.50	-0.94	± 5	2015-12-07
1800	21.3	1.37	1.40	-2.14	39.02	40.0	-2.45	± 5	2015-12-07
1900	21.3	1.38	1.40	-1.43	38.56	40.00	-3.60	± 5	2015-12-07

Body Tissue Simulating Liquid									
Freq. MHz.	Temp. (°C)	Conductivity			Permittivity			Limit (%)	Date
		Reading (σ)	Target (σ)	Delta (%)	Reading (ϵ_r)	Target (ϵ_r)	Delta (%)		
750	21.2	0.93	0.96	-3.12	54.96	55.50	-0.97	± 5	2015-12-07
835	21.2	0.95	0.97	-2.06	54.85	55.20	-0.63	± 5	2015-12-07
1800	21.3	1.46	1.52	-3.95	51.22	53.30	-3.90	± 5	2015-12-07
1900	21.3	1.50	1.52	-1.32	52.42	53.30	-1.65	± 5	2015-12-07

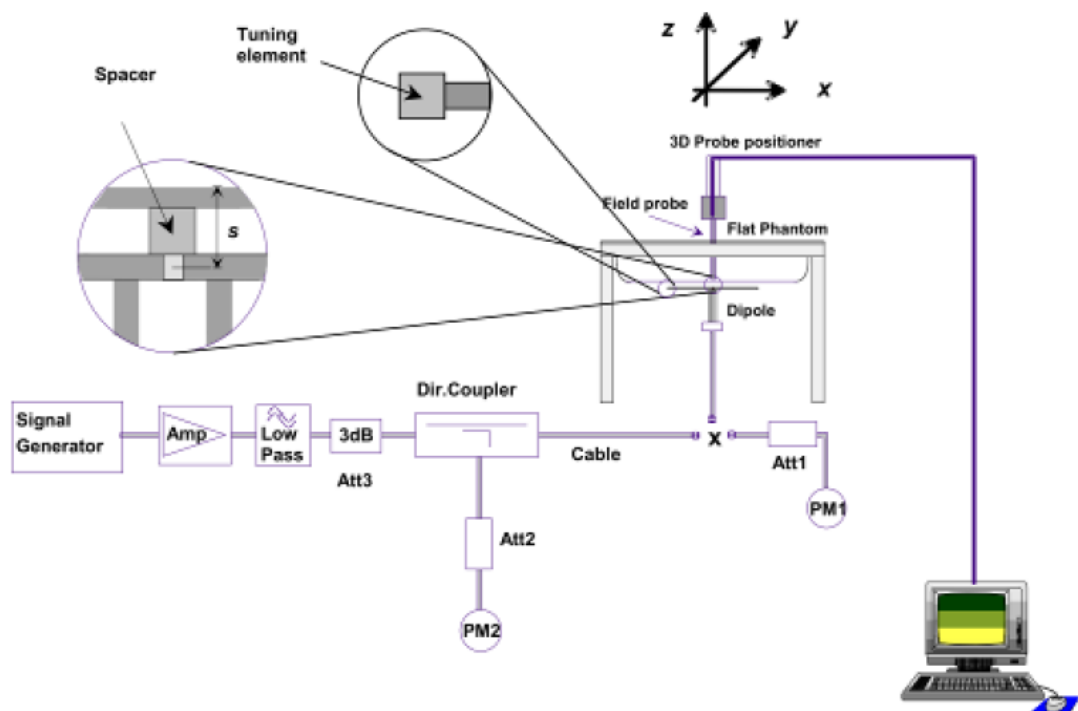
6. SAR Measurement Evaluation

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				
750	8.40	2.13	8.52	1.43
835	9.65	2.41	9.64	-0.10
1800	38.49	9.61	38.44	-0.13
1900	39.59	9.91	39.64	0.13
Body				
750	8.40	2.11	8.44	0.48
835	9.36	2.35	9.40	0.43
1800	38.29	9.58	38.32	0.08
1900	39.01	9.78	39.12	0.28

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.

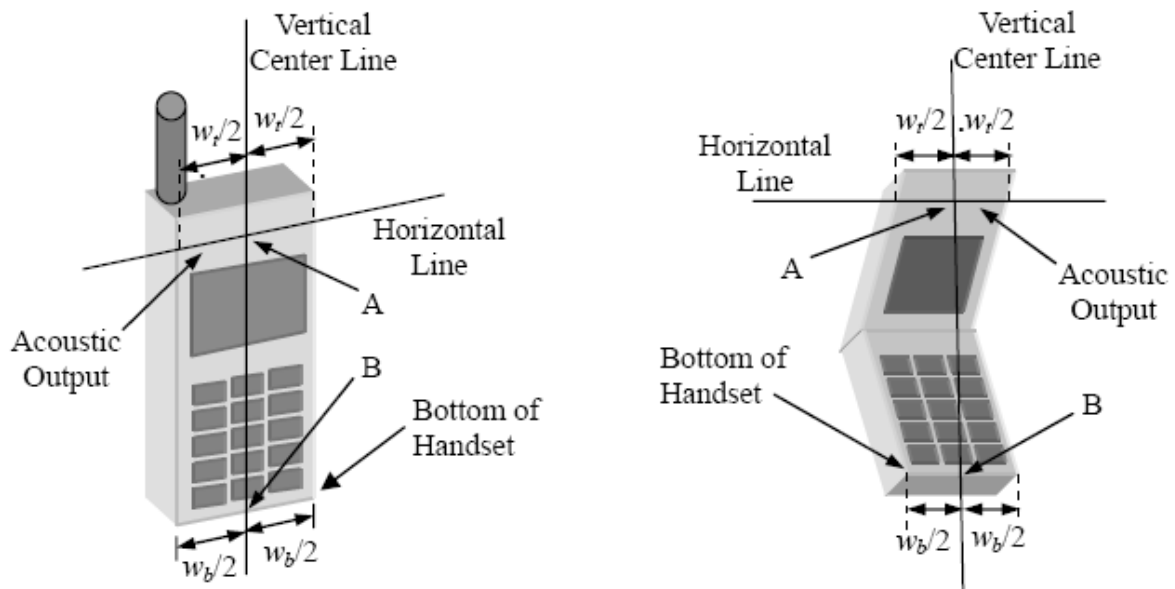


Illustration for Handset Vertical and Horizontal Reference Lines

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).

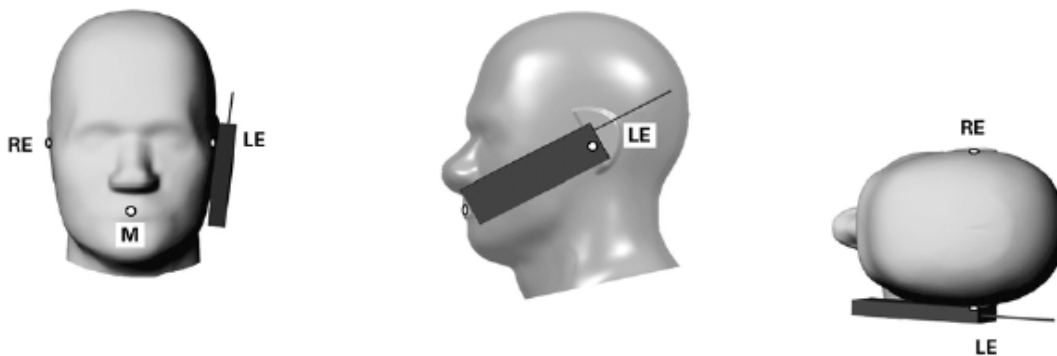


Illustration for Cheek Position

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).

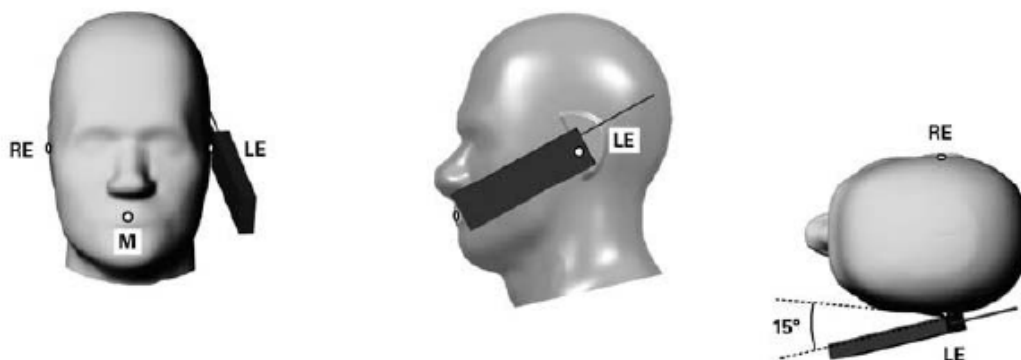


Illustration for Tilted Position

7.4 Body Position

- To position the device parallel to the phantom surface with either keypad up or down.
- To adjust the device parallel to the flat phantom.
- To adjust the distance between the device surface and the flat phantom to 10mm.

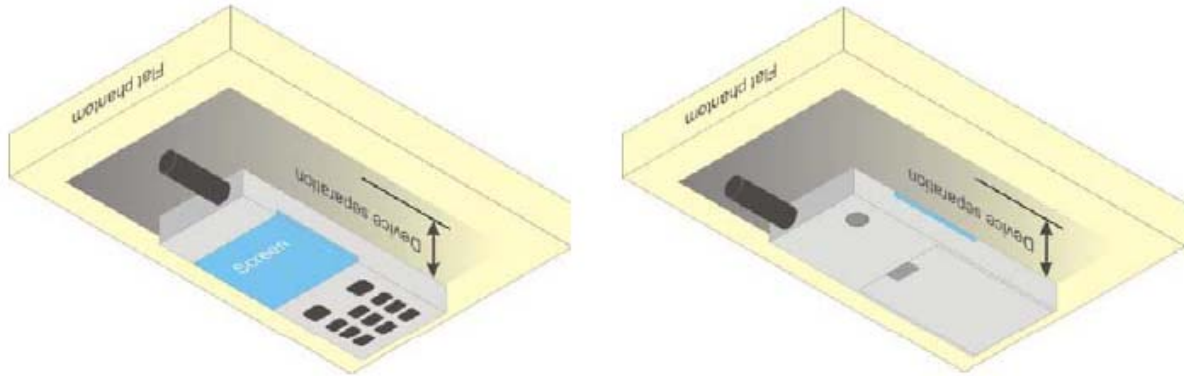
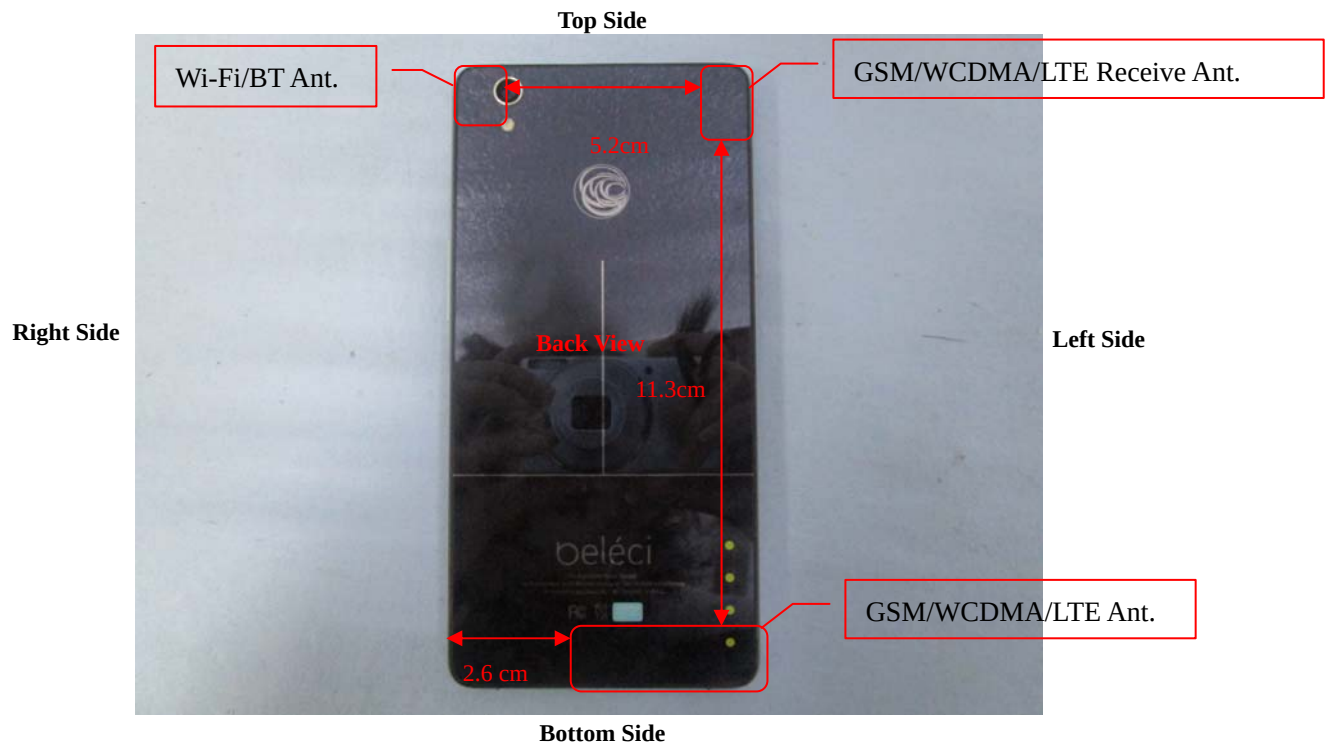


Illustration for Body Position

7.5 EUT Antenna Position



Block Diagram for EUT Antenna Position

7.6 EUT Testing Position

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	No	No	No	No

Hotspot SAR tests, Test distance: 10mm						
Antennas	Front	Back	Right Side	Left Side	Top Side	Bottom Side
WWAN	Yes	Yes	No	Yes	No	Yes
WLAN	No	No	No	No	No	No

Body-worn SAR tests, Test distance: 10mm		
Antennas	Front	Back
WWAN	Yes	Yes
WLAN	No	No

Remark:

1. Referring to KDB 941225 D06, when the overall device length and width are $\geq 9\text{cm} \times 5\text{cm}$, the test separation is 10 mm. SAR must be measured for all sides and surfaces with a transmitting antenna located within 25mm from that surface or edge.

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 from 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	836.6	848.8	1850.2	1880	1909.8
GSM	31.76	31.97	32.18	29.15	28.45	28.81
GPRS (1 slot)	31.93	32.14	31.81	30.27	29.57	28.94
GPRS (2 slots)	31.21	31.28	31.23	29.64	29.52	29.63
GPRS (3 slots)	28.92	28.81	28.52	27.07	27.73	27.84
GPRS (4 slots)	27.54	27.42	27.13	26.48	26.58	25.83
EDGE (1 slot)	26.5	26.55	26.54	26.01	26.57	26.02
EDGE (2 slots)	25.67	25.69	25.02	25.32	25.38	25.47
EDGE (3 slots)	23.96	23.98	24.04	24.77	24.68	24.2
EDGE (4 slots)	22.9	22.8	22.73	22.74	22.77	22.67

GSM - Source-Based Time-Average Power (dBm)						
Band	GSM850			PCS1900		
Channel	128	190	251	512	661	810
Frequency (MHz)	824.2	836.6	848.8	1850.2	1880	1909.8
GSM	22.76	22.97	23.18	20.15	19.45	19.81
GPRS (1 slot)	22.93	23.14	22.81	21.27	20.57	19.94
GPRS (2 slots)	25.21	25.28	25.23	23.64	23.52	23.63
GPRS (3 slots)	24.67	24.56	24.27	22.82	23.48	23.59
GPRS (4 slots)	24.54	24.42	24.13	23.48	23.58	22.83
EDGE (1 slot)	17.50	17.55	17.54	17.01	17.57	17.02
EDGE (2 slots)	19.67	19.69	19.02	19.32	19.38	19.47
EDGE (3 slots)	19.71	19.73	19.79	20.52	20.43	19.95
EDGE (4 slots)	19.90	19.80	19.73	19.74	19.77	19.67

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 (2TX slots) for GSM850 and GSM1900 due to its highest source-based time-average power.
3. Per KDB 447498 D01 v06, 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 Power (dBm)						
Band	WCDMA Band 2			WCDMA Band 5		
Channel	9262	9400	9538	4132	4183	4233
Frequency (MHz)	1852.4	1880.0	1907.6	826.4	836.6	846.6
RMC 12.2k	22.56	22.60	22.90	22.52	22.63	22.70
HSDPA Subtest-1	21.45	21.49	21.76	21.41	21.67	21.64
HSDPA Subtest-2	21.37	21.34	21.54	21.32	21.55	21.45
HSDPA Subtest-3	21.22	21.29	21.39	21.29	21.31	21.29
HSDPA Subtest-4	21.01	21.05	21.21	21.12	21.21	21.18
HSUPA Subtest-1	21.53	21.63	21.94	21.56	21.39	21.57
HSUPA Subtest-2	21.46	21.48	21.74	21.44	21.25	21.48
HSUPA Subtest-3	21.29	21.32	21.63	21.36	21.12	21.37
HSUPA Subtest-4	21.19	21.21	21.48	21.22	21.06	21.22
HSUPA Subtest-5	21.03	21.05	21.21	21.04	21.03	21.14

Remark:

1. For Head SAR, per KDB 941225 D01 v03, 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 v03, RMC 12.2kbps setting is used to evaluate SAR. If HSDPA subset-1 output power is < 1/4 dB higher than RMC, and SAR with RMC 12.2kbps setting is $\leq 1.2\text{W/kg}$, HSDPA SAR evaluation can be excluded.

FDD-LTE Band 2				FDD-LTE Band 4			
Modulation	Bandwidth (MHz)	Channel	Average Power (dBm)	Modulation	Bandwidth (MHz)	Channel	Average Power (dBm)
QPSK	1.4	LCH	22.81	QPSK	1.4	LCH	22.85
		MCH	22.98			MCH	22.86
		HCH	22.69			HCH	22.68
	3	LCH	22.67		3	LCH	22.69
		MCH	22.72			MCH	22.88
		HCH	22.79			HCH	22.46
	5	LCH	22.84		5	LCH	22.77
		MCH	22.82			MCH	22.48
		HCH	22.87			HCH	22.74
	10	LCH	22.80		10	LCH	22.84
		MCH	22.83			MCH	22.73
		HCH	22.83			HCH	22.79
	15	LCH	22.84		15	LCH	22.77
		MCH	22.80			MCH	22.85
		HCH	22.87			HCH	22.85
	20	LCH	22.59		20	LCH	22.86
		MCH	22.88			MCH	22.79
		HCH	22.85			HCH	22.50
16QAM	1.4	LCH	22.78	16QAM	1.4	LCH	22.77
		MCH	22.85			MCH	22.80
		HCH	22.87			HCH	22.86
	3	LCH	22.86		3	LCH	22.85
		MCH	22.57			MCH	22.83
		HCH	22.74			HCH	22.87
	5	LCH	22.85		5	LCH	22.65
		MCH	22.86			MCH	22.81
		HCH	22.82			HCH	22.83
	10	LCH	22.86		10	LCH	22.75
		MCH	22.57			MCH	22.80
		HCH	22.84			HCH	22.78
	15	LCH	22.83		15	LCH	22.85
		MCH	22.76			MCH	22.62
		HCH	22.85			HCH	22.45
	20	LCH	22.72		20	LCH	22.71
		MCH	22.85			MCH	22.76
		HCH	22.87			HCH	22.81

FDD-LTE Band 5				FDD-LTE Band 17			
Modulation	Bandwidth (MHz)	Channel	Average Power (dBm)	Modulation	Bandwidth (MHz)	Channel	Average Power (dBm)
QPSK	1.4	LCH	23.82	QPSK	1.4	LCH	/
		MCH	23.83			MCH	/
		HCH	22.85			HCH	/
	3	LCH	23.81		3	LCH	/
		MCH	23.80			MCH	/
		HCH	22.84			HCH	/
	5	LCH	23.94		5	LCH	22.56
		MCH	23.92			MCH	22.77
		HCH	23.10			HCH	22.83
	10	LCH	23.31		10	LCH	23.38
		MCH	23.51			MCH	23.39
		HCH	23.63			HCH	23.43
16QAM	1.4	LCH	23.95	16QAM	1.4	LCH	/
		MCH	24.25			MCH	/
		HCH	23.05			HCH	/
	3	LCH	23.93		3	LCH	/
		MCH	24.08			MCH	/
		HCH	23.00			HCH	/
	5	LCH	24.20		5	LCH	22.92
		MCH	24.28			MCH	22.89
		HCH	23.43			HCH	22.07
	10	LCH	22.57		10	LCH	22.75
		MCH	22.86			MCH	22.75
		HCH	22.86			HCH	22.86

WLAN - Maximum Average Power				
Test Mode	Data Rate	Channel	Frequency (MHz)	Average Power (dBm)
802.11b	1Mbps	CH 01	2412	8.80
		CH 06	2437	8.60
		CH 11	2462	8.64
802.11g	54Mbps	CH 01	2412	8.50
		CH 06	2437	8.24
		CH 11	2462	8.12
802.11n (20MHz)	MCS7	CH 01	2412	8.64
		CH 06	2437	8.31
		CH 11	2462	7.83
802.11n (40MHz)	MCS7	CH 03	2422	8.50
		CH 06	2437	8.89
		CH 09	2452	8.52

Remark:

WLAN maximum output power is 8.89dBm, and Tune-Up output power is 9.0dBm. Per KDB 447498 D01 v06, the 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$ 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

Tune-Up Power (dBm)	Max. Power (mW)	Distance (mm)	Frequency (GHz)	Result	Limit
9.0	7.94	5	2.437	2.48	3

The exclusion thresholds is $2.48 < 3$, therefore, the RF exposure evaluation is not required.

Bluetooth - Maximum Average Power		
Test Mode	Data Rate	Average Power(dBm)
GFSK	1Mbps	2.882
Pi/4 QDPSK	2Mbps	2.887
8DPSK	3Mbps	2.635

Bluetooth - Maximum Average Power				
Test Mode	Data Rate	Channel	Frequency (MHz)	Average Power (dBm)
BLE	1Mbps	CH 00	2402	-4.76
		CH 19	2440	-5.277
		CH 39	2480	-5.205

Remark:

Bluetooth maximum output power is 2.88dBm, and Tune-Up output power is 3.0dBm. Per KDB 447498 D01 v06, the 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by: $[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f}(\text{GHz})] \leq 3.0$ 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

Tune-Up Power (dBm)	Max. Power (mW)	Distance (mm)	Frequency (GHz)	Result	Limit
3.0	2.0	5	2.441	0.62	3

The exclusion thresholds is $0.62 < 3$, therefore, the RF exposure evaluation is not required.

9.2 Test Results for Standalone SAR Test

Head SAR

GSM850 – Head SAR Test									
Plot No.	Mode	Test Position Head	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
1	GSM	Right Cheek	251	848.8	32.18	32.50	1.0765	0.2033	0.2188
2	GSM	Right Tilted	251	848.8	32.18	32.50	1.0765	0.0695	0.0748
3	GSM	Left Cheek	251	848.8	32.18	32.50	1.0765	0.2210	0.2379
4	GSM	Left Tilted	251	848.8	32.18	32.50	1.0765	0.0572	0.0616

GSM1900 – Head SAR Test									
Plot No.	Mode	Test Position Head	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	M Hz					
13	GSM	Right Cheek	512	1850.2	29.15	29.50	1.0839	0.0498	0.0540
14	GSM	Right Tilted	512	1850.2	29.15	29.50	1.0839	0.0124	0.0134
15	GSM	Left Cheek	512	1850.2	29.15	29.50	1.0839	0.0472	0.0512
16	GSM	Left Tilted	512	1850.2	29.15	29.50	1.0839	0.0097	0.0105

WCDMA Band 2 – Head SAR Test									
Plot No.	Mode	Test Position Head	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
25	RMC	Right Cheek	9538	1907.6	22.90	23.00	1.0233	0.2881	0.2948
26	RMC	Right Tilted	9538	1907.6	22.90	23.00	1.0233	0.0482	0.0493
27	RMC	Left Cheek	9538	1907.6	22.90	23.00	1.0233	0.2315	0.2369
28	RMC	Left Tilted	9538	1907.6	22.90	23.00	1.0233	0.0448	0.0458

WCDMA Band 5 – Head SAR Test									
Plot No.	Mode	Test Position Head	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
35	RMC	Right Cheek	4233	846.6	22.70	23.00	1.0715	0.1899	0.2035
36	RMC	Right Tilted	4233	846.6	22.70	23.00	1.0715	0.1560	0.1672
37	RMC	Left Cheek	4233	846.6	22.70	23.00	1.0715	0.1794	0.1922
38	RMC	Left Tilted	4233	846.6	22.70	23.00	1.0715	0.1260	0.1350

LTE Band 2– Head SAR Test								
Plot No.	Mode	Test Position Head	Frequency	Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
	Modulation, Bandwidth		MHz					
43	RMC,QPSK 1.4MHz	Right Cheek	1880.0	22.98	23.00	1.0046	0.2040	0.2049
44	RMC,QPSK 1.4MHz	Right Tilted	1880.0	22.98	23.00	1.0046	0.0407	0.0409
45	RMC,QPSK 1.4MHz	Left Cheek	1880.0	22.98	23.00	1.0046	0.1763	0.1771
46	RMC,QPSK 1.4MHz	Left Tilted	1880.0	22.98	23.00	1.0046	0.0318	0.0319

LTE Band 4– Head SAR Test								
Plot No.	Mode	Test Position Head	Frequency	Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
	Modulation, Bandwidth		MHz					
51	RMC,QPSK 3MHz	Right Cheek	1732.5	22.88	23.0	1.0280	0.3137	0.3225
52	RMC,QPSK 3MHz	Right Tilted	1732.5	22.88	23.0	1.0280	0.0300	0.0308
53	RMC,QPSK 3MHz	Left Cheek	1732.5	22.88	23.0	1.0280	0.1892	0.1945
54	RMC,QPSK 3MHz	Left Tilted	1732.5	22.88	23.0	1.0280	0.0243	0.0250

LTE Band 5– Head SAR Test								
Plot No.	Mode	Test Position Head	Frequency	Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
	Modulation, Bandwidth		MHz					
61	RMC, 16QAM 5MHz	Right Cheek	836.5	24.28	24.5	1.0520	0.0866	0.0911
62	RMC, 16QAM 5MHz	Right Tilted	836.5	24.28	24.5	1.0520	0.0500	0.0526
63	RMC, 16QAM 5MHz	Left Cheek	836.5	24.28	24.5	1.0520	0.0768	0.0808
64	RMC, 16QAM 5MHz	Left Tilted	836.5	24.28	24.5	1.0520	0.0447	0.0470

LTE Band 17– Head SAR Test								
Plot No.	Mode	Test Position Head	Frequency	Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
	Modulation, Bandwidth		MHz					
69	RMC,QPSK 10MHz	Right Cheek	711.0	23.43	23.5	1.0162	0.0866	0.0880
70	RMC,QPSK 10MHz	Right Tilted	711.0	23.43	23.5	1.0162	0.0500	0.0508
71	RMC,QPSK 10MHz	Left Cheek	711.0	23.43	23.5	1.0162	0.0768	0.0780
72	RMC,QPSK 10MHz	Left Tilted	711.0	23.43	23.5	1.0162	0.0448	0.0455

Remark: Per KDB 447498 D01 v06, if the highest output channel SAR for each exposure position ≤ 0.8 W/kg other channels SAR tests are not necessary.

Body-worn SAR

GSM850 – Body SAR Test (Gap: 10mm)									
Plot No.	Mode	Test Position Body	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
5	GSM	Back	251	848.8	32.18	32.50	1.0765	0.4405	0.4742
6	GSM	Front	251	848.8	32.18	32.50	1.0765	0.4433	0.4772

GSM1900 – Body SAR Test (Gap: 10mm)									
Plot No.	Mode	Test Position Body	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
17	GSM	Back	512	1850.2	29.15	29.50	1.0839	0.3246	0.3518
18	GSM	Front	512	1850.2	29.15	29.50	1.0839	0.2774	0.3007

WCDMA Band 2 – Body SAR Test (Gap: 10mm)									
Plot No.	Mode	Test Position Body	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
29	RMC 12.2k	Back Side	9538	1907.6	22.90	23.00	1.0233	0.4701	0.4811
30	RMC 12.2k	Front Side	9538	1907.6	22.90	23.00	1.0233	0.6438	0.6588

WCDMA Band 5 – Body SAR Test (Gap: 10mm)									
Plot No.	Mode	Test Position Body	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
39	RMC 12.2k	Back Side	4233	846.6	22.70	23.00	1.0715	0.2991	0.3205
40	RMC 12.2k	Front Side	4233	846.6	22.70	23.00	1.0715	0.2441	0.2616

LTE Band 2–Body SAR Test (Gap: 10mm)								
Plot No.	Mode	Test Position Head	Frequency	Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
	Modulation, Bandwidth		MHz					
47	RMC,QPSK 1.4MHz	Back Side	1880.0	22.98	23.00	1.0046	0.3974	0.3992
48	RMC,QPSK 1.4MHz	Front Side	1880.0	22.98	23.00	1.0046	0.6953	0.6985

LTE Band 4–Body SAR Test (Gap: 10mm)								
Plot No.	Mode	Test Position Head	Frequency	Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
	Modulation, Bandwidth		MHz					
55	RMC,QPSK 3MHz	Back Side	1732.5	22.88	23.0	1.0280	0.5768	0.5930
56	RMC,QPSK 3MHz	Front Side	1732.5	22.88	23.0	1.0280	0.7918	0.8140

LTE Band 5–Body SAR Test (Gap: 10mm)								
Plot No.	Mode	Test Position Head	Frequency	Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
	Modulation, Bandwidth		MHz					
65	RMC, 16QAM 5MHz	Back Side	836.5	24.28	24.5	1.0520	0.1568	0.1649
66	RMC, 16QAM 5MHz	Front Side	836.5	24.28	24.5	1.0520	0.1281	0.1348

LTE Band 17–Body SAR Test (Gap: 10mm)								
Plot No.	Mode	Test Position Head	Frequency	Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
	Modulation, Bandwidth		MHz					
73	RMC,QPSK 10MHz	Back Side	711.0	23.43	23.5	1.0162	0.1568	0.1593
74	RMC,QPSK 10MHz	Front Side	711.0	23.43	23.5	1.0162	0.1281	0.1302

Remark: Per KDB 447498 D01 v06, if the highest output channel SAR for each exposure position ≤ 0.8 W/kg other channels SAR tests are not necessary.

Hotspot SAR

GSM850 – Body SAR Test (Gap: 10mm)									
Plot No.	Mode	Test Position Body	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
7	GPRS_2TX	Back Side	128	824.2	31.21	31.5	1.0691	1.1623	1.2426
8	GPRS_2TX	Back Side	190	836.6	31.28	31.5	1.0520	1.1408	1.2001
9	GPRS_2TX	Back Side	251	848.8	31.23	31.5	1.0641	1.1423	1.2156
10	GPRS_2TX	Front Side	190	836.6	31.28	31.5	1.0520	0.7604	0.7999
11	GPRS_2TX	Bottom side	190	836.6	31.28	31.5	1.0520	0.4413	0.4642
12	GPRS_2TX	Left side	190	836.6	31.28	31.5	1.0520	0.4394	0.4622

GSM1900 – Body SAR Test (Gap: 10mm)									
Plot No.	Mode	Test Position Body	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
19	GPRS_2TX	Back side	512	1850.2	29.64	30.0	1.0864	1.1206	1.2174
20	GPRS_2TX	Back side	661	1880.0	29.52	30.0	1.1169	1.1356	1.2683
21	GPRS_2TX	Back side	810	1909.8	29.63	30.0	1.0889	1.1420	1.2436
22	GPRS_2TX	Front Side	512	1850.2	29.64	30.0	1.0864	0.5411	0.5879
23	GPRS_2TX	Bottom Side	512	1850.2	29.64	30.0	1.0864	0.5470	0.5943
24	GPRS_2TX	Left side	512	1850.2	29.64	30.0	1.0864	0.1336	0.1451

WCDMA Band 2 – Body SAR Test (Gap: 10mm)									
Plot No.	Mode	Test Position Body	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
29	RMC 12.2k	Back Side	9538	1907.6	22.90	23.0	1.0233	0.4701	0.4811
30	RMC 12.2k	Front Side	9538	1907.6	22.90	23.0	1.0233	0.6438	0.6588
31	RMC 12.2k	Bottom side	9262	1852.4	22.56	23.0	1.1066	0.7216	0.7985
32	RMC 12.2k	Bottom side	9400	1880.0	22.60	23.0	1.0965	0.7812	0.8566
33	RMC 12.2k	Bottom side	9538	1907.6	22.90	23.0	1.0233	0.8710	0.8913
34	RMC 12.2k	Left side	9538	1907.6	22.90	23.0	1.0233	0.3072	0.3144

WCDMA Band 5 – Body SAR Test (Gap: 10mm)									
Plot No.	Mode	Test Position Body	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
39	RMC 12.2k	Back Side	4233	846.6	22.70	23.00	1.0715	0.2991	0.3205
40	RMC 12.2k	Front Side	4233	846.6	22.70	23.00	1.0715	0.2441	0.2616
41	RMC 12.2k	Bottom side	4233	846.6	22.70	23.00	1.0715	0.1572	0.1684
42	RMC 12.2k	Left side	4233	846.6	22.70	23.00	1.0715	0.2745	0.2941

LTE Band 2–Body SAR Test (Gap: 10mm)								
Plot No.	Mode	Test Position Head	Frequency	Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
	Modulation, Bandwidth		MHz					
47	RMC,QPSK 1.4MHz	Back Side	1880.0	22.98	23.00	1.0046	0.3974	0.3992
48	RMC,QPSK 1.4MHz	Front Side	1880.0	22.98	23.00	1.0046	0.6953	0.6985
49	RMC,QPSK 1.4MHz	Bottom side	1880.0	22.98	23.00	1.0046	0.6547	0.6577
50	RMC,QPSK 1.4MHz	Left side	1880.0	22.98	23.00	1.0046	0.1783	0.1791

LTE Band 4–Body SAR Test (Gap: 10mm)								
Plot No.	Mode	Test Position Head	Frequency	Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
	Modulation, Bandwidth		MHz					
55	RMC,QPSK 3MHz	Back Side	1732.5	22.88	23.0	1.0280	0.5768	0.5930
56	RMC,QPSK 3MHz	Front Side	1732.5	22.88	23.0	1.0280	0.7918	0.8140
57	RMC,QPSK 3MHz	Bottom side	1711.5	22.69	23.0	1.0740	0.8305	0.8919
58	RMC,QPSK 3MHz	Bottom side	1732.5	22.88	23.0	1.0280	0.7840	0.8060
59	RMC,QPSK 3MHz	Bottom side	1753.5	22.46	23.0	1.1324	0.8600	0.9739
60	RMC,QPSK 3MHz	Left side	1732.5	22.88	23.0	1.0280	0.1813	0.1864

LTE Band 5–Body SAR Test (Gap: 10mm)								
Plot No.	Mode	Test Position Head	Frequency	Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
	Modulation, Bandwidth		MHz					
65	RMC, 16QAM 5MHz	Back Side	836.5	24.28	24.5	1.0520	0.1568	0.1649
66	RMC, 16QAM 5MHz	Front Side	836.5	24.28	24.5	1.0520	0.1281	0.1348
67	RMC, 16QAM 5MHz	Bottom side	836.5	24.28	24.5	1.0520	0.0397	0.0418
68	RMC, 16QAM 5MHz	Left side	836.5	24.28	24.5	1.0520	0.1405	0.1478

LTE Band 17–Body SAR Test (Gap: 10mm)								
Plot No.	Mode	Test Position Head	Frequency	Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
	Modulation, Bandwidth		MHz					
73	RMC,QPSK 10MHz	Back Side	711.0	23.43	23.5	1.0162	0.1568	0.1593
74	RMC,QPSK 10MHz	Front Side	711.0	23.43	23.5	1.0162	0.1281	0.1302
75	RMC,QPSK 10MHz	Bottom side	711.0	23.43	23.5	1.0162	0.0397	0.0403
76	RMC,QPSK 10MHz	Left side	711.0	23.43	23.5	1.0162	0.1405	0.1428

Remark: Per KDB 447498 D01 v06, if the highest output channel SAR for each exposure position ≤ 0.8 W/kg other channels SAR tests are not necessary.

9.3 Simultaneous Multi-band Transmission SAR Analysis

List of Mode for Simultaneous Multi-band Transmission

No.	Configurations	Head SAR	Body-worn SAR	Hotspot SAR
1	GSM(Voice) + WLAN(Data)	Yes	Yes	-
2	GPRS/ EDGE(Data) + WLAN(Data)	Yes	Yes	Yes
3	WCDMA (Voice)+ WLAN(Data)	Yes	Yes	-
4	HSDPA(Data) + WLAN(Data)	Yes	Yes	Yes
5	HSUPA(Data) + WLAN(Data)	Yes	Yes	Yes
6	LTE(Data) + WLAN(Data)	Yes	Yes	Yes
7	GSM(Voice) + Bluetooth(Data)	Yes	Yes	-
8	GPRS/ EDGE(Data) + Bluetooth(Data)	Yes	Yes	Yes
9	WCDMA(Voice) + Bluetooth(Data)	Yes	Yes	-
10	HSDPA(Data)+ Bluetooth(Data)	Yes	Yes	Yes
11	HSUPA(Data) + Bluetooth(Data)	Yes	Yes	Yes
12	LTE(Data) + Bluetooth(Data)	Yes	Yes	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 D01v06, 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) $^{-\sqrt{f(\text{GHz})/x}}$ W/kg for test separation distances ≤ 50 mm;

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

For simultaneous transmission analysis, WIFI/Bluetooth SAR is estimated per KDB 447498 D01v06 as below:

WLAN:

Tune-Up Power (dBm)	Max. Power (mW)	Distance (mm)	Frequency (GHz)	X	SAR(1g) 5mm	SAR(1g) 10mm
9.0	7.94	5/10	2.437	7.5	0.3305	0.1653

Bluetooth:

Tune-Up Power (dBm)	Max. Power (mW)	Distance (mm)	Frequency (GHz)	X	SAR(1g) 5mm	SAR(1g) 10mm
3.0	2.0	5/10	2.441	7.5	0.0833	0.0417

4. The maximum SAR summation is calculated based on the same configuration and test position.

Head SAR
WWAN and WLAN

	WWAN		WLAN	Summed SAR (W/kg)
Position	Band	Scaled SAR (W/kg)	Scaled SAR (W/kg)	
Right Cheek	GSM850	0.2188	0.3305	0.5493
Right Tilted	GSM850	0.0748	0.3305	0.4053
Left Cheek	GSM850	0.2379	0.3305	0.5684
Left Tilted	GSM850	0.0616	0.3305	0.3921
Right Cheek	GSM1900	0.0540	0.3305	0.3845
Right Tilted	GSM1900	0.0134	0.3305	0.3439
Left Cheek	GSM1900	0.0512	0.3305	0.3817
Left Tilted	GSM1900	0.0105	0.3305	0.341
Right Cheek	WCDMA Band 2	0.2948	0.3305	0.6253
Right Tilted	WCDMA Band 2	0.0493	0.3305	0.3798
Left Cheek	WCDMA Band 2	0.2369	0.3305	0.5674
Left Tilted	WCDMA Band 2	0.0458	0.3305	0.3763
Right Cheek	WCDMA Band 5	0.2035	0.3305	0.534
Right Tilted	WCDMA Band 5	0.1672	0.3305	0.4977
Left Cheek	WCDMA Band 5	0.1922	0.3305	0.5227
Left Tilted	WCDMA Band 5	0.1350	0.3305	0.4655
Right Cheek	LTE Band 2	0.2049	0.3305	0.5354
Right Tilted	LTE Band 2	0.0409	0.3305	0.3714
Left Cheek	LTE Band 2	0.1771	0.3305	0.5076
Left Tilted	LTE Band 2	0.0319	0.3305	0.3624
Right Cheek	LTE Band 4	0.3225	0.3305	0.653
Right Tilted	LTE Band 4	0.0308	0.3305	0.3613
Left Cheek	LTE Band 4	0.1945	0.3305	0.525
Left Tilted	LTE Band 4	0.0250	0.3305	0.3555
Right Cheek	LTE Band 5	0.0911	0.3305	0.4216
Right Tilted	LTE Band 5	0.0526	0.3305	0.3831
Left Cheek	LTE Band 5	0.0808	0.3305	0.4113
Left Tilted	LTE Band 5	0.0470	0.3305	0.3775
Right Cheek	LTE Band 17	0.0880	0.3305	0.4185
Right Tilted	LTE Band 17	0.0508	0.3305	0.3813
Left Cheek	LTE Band 17	0.0780	0.3305	0.4085
Left Tilted	LTE Band 17	0.0455	0.3305	0.376

WWAN and Bluetooth

	WWAN		Bluetooth	Summed SAR (W/kg)
Position	Band	Scaled SAR (W/kg)	Scaled SAR (W/kg)	
Right Cheek	GSM850	0.2188	0.0833	0.3021
Right Tilted	GSM850	0.0748	0.0833	0.1581
Left Cheek	GSM850	0.2379	0.0833	0.3212
Left Tilted	GSM850	0.0616	0.0833	0.1449
Right Cheek	GSM1900	0.0540	0.0833	0.1373
Right Tilted	GSM1900	0.0134	0.0833	0.0967
Left Cheek	GSM1900	0.0512	0.0833	0.1345
Left Tilted	GSM1900	0.0105	0.0833	0.0938
Right Cheek	WCDMA Band 2	0.2948	0.0833	0.3781
Right Tilted	WCDMA Band 2	0.0493	0.0833	0.1326
Left Cheek	WCDMA Band 2	0.2369	0.0833	0.3202
Left Tilted	WCDMA Band 2	0.0458	0.0833	0.1291
Right Cheek	WCDMA Band 5	0.2035	0.0833	0.2868
Right Tilted	WCDMA Band 5	0.1672	0.0833	0.2505
Left Cheek	WCDMA Band 5	0.1922	0.0833	0.2755
Left Tilted	WCDMA Band 5	0.1350	0.0833	0.2183
Right Cheek	LTE Band 2	0.2049	0.0833	0.2882
Right Tilted	LTE Band 2	0.0409	0.0833	0.1242
Left Cheek	LTE Band 2	0.1771	0.0833	0.2604
Left Tilted	LTE Band 2	0.0319	0.0833	0.1152
Right Cheek	LTE Band 4	0.3225	0.0833	0.4058
Right Tilted	LTE Band 4	0.0308	0.0833	0.1141
Left Cheek	LTE Band 4	0.1945	0.0833	0.2778
Left Tilted	LTE Band 4	0.0250	0.0833	0.1083
Right Cheek	LTE Band 5	0.0911	0.0833	0.1744
Right Tilted	LTE Band 5	0.0526	0.0833	0.1359
Left Cheek	LTE Band 5	0.0808	0.0833	0.1641
Left Tilted	LTE Band 5	0.0470	0.0833	0.1303
Right Cheek	LTE Band 17	0.0880	0.0833	0.1713
Right Tilted	LTE Band 17	0.0508	0.0833	0.1341
Left Cheek	LTE Band 17	0.0780	0.0833	0.1613
Left Tilted	LTE Band 17	0.0455	0.0833	0.1288

Body-worn SAR
WWAN and WLAN

	WWAN		WLAN	Summed SAR (W/kg)
Position	Band	Scaled SAR (W/kg)	Scaled SAR (W/kg)	
Back	GSM850	0.4742	0.1653	0.6395
Front	GSM850	0.4772	0.1653	0.6425
Back	GSM1900	0.3518	0.1653	0.5171
Front	GSM1900	0.3007	0.1653	0.466
Back	WCDMA Band 2	0.4811	0.1653	0.6464
Front	WCDMA Band 2	0.6588	0.1653	0.8241
Back	WCDMA Band 5	0.3205	0.1653	0.4858
Front	WCDMA Band 5	0.2616	0.1653	0.4269
Back	LTE Band 2	0.3992	0.1653	0.5645
Front	LTE Band 2	0.6985	0.1653	0.8638
Back	LTE Band 4	0.5930	0.1653	0.7583
Front	LTE Band 4	0.8140	0.1653	0.9793
Back	LTE Band 5	0.1649	0.1653	0.3302
Front	LTE Band 5	0.1348	0.1653	0.3001
Back	LTE Band 17	0.1593	0.1653	0.3246
Front	LTE Band 17	0.1302	0.1653	0.2955

WWAN and Bluetooth

	WWAN		Bluetooth	Summed SAR (W/kg)
Position	Band	Scaled SAR (W/kg)	Scaled SAR (W/kg)	
Back	GSM850	0.4742	0.0417	0.5159
Front	GSM850	0.4772	0.0417	0.5189
Back	GSM1900	0.3518	0.0417	0.3935
Front	GSM1900	0.3007	0.0417	0.3424
Back	WCDMA Band 2	0.4811	0.0417	0.5228
Front	WCDMA Band 2	0.6588	0.0417	0.7005
Back	WCDMA Band 5	0.3205	0.0417	0.3622
Front	WCDMA Band 5	0.2616	0.0417	0.3033
Back	LTE Band 2	0.3992	0.0417	0.4409
Front	LTE Band 2	0.6985	0.0417	0.7402
Back	LTE Band 4	0.5930	0.0417	0.6347
Front	LTE Band 4	0.8140	0.0417	0.8557
Back	LTE Band 5	0.1649	0.0417	0.2066
Front	LTE Band 5	0.1348	0.0417	0.1765
Back	LTE Band 17	0.1593	0.0417	0.201
Front	LTE Band 17	0.1302	0.0417	0.1719

Hotspot SAR

WWAN and WLAN

	WWAN		WLAN	Summed SAR (W/kg)
Position	Band	Scaled SAR (W/kg)	Scaled SAR (W/kg)	
Back	GSM850	1.2426	0.1653	1.4079
Front	GSM850	0.7999	0.1653	0.9652
Top side	GSM850	--	0.1653	0.1653
Bottom side	GSM850	0.4642	0.1653	0.6295
Right side	GSM850	--	0.1653	0.1653
Left side	GSM850	0.4622	0.1653	0.6275
Back	GSM1900	1.2683	0.1653	1.4336
Front	GSM1900	0.5879	0.1653	0.7532
Top side	GSM1900	--	0.1653	0.1653
Bottom side	GSM1900	0.5943	0.1653	0.7596
Right side	GSM1900	--	0.1653	0.1653
Left side	GSM1900	0.1451	0.1653	0.3104
Back	WCDMA Band 2	0.4811	0.1653	0.6464
Front	WCDMA Band 2	0.6588	0.1653	0.8241
Top side	WCDMA Band 2	--	0.1653	0.1653
Bottom side	WCDMA Band 2	0.8913	0.1653	1.0566
Right side	WCDMA Band 2	--	0.1653	0.1653
Left side	WCDMA Band 2	0.3144	0.1653	0.4797
Back	WCDMA Band 5	0.3205	0.1653	0.4858
Front	WCDMA Band 5	0.2616	0.1653	0.4269
Top side	WCDMA Band 5	--	0.1653	0.1653
Bottom side	WCDMA Band 5	0.1684	0.1653	0.3337
Right side	WCDMA Band 5	--	0.1653	0.1653
Left side	WCDMA Band 5	0.2941	0.1653	0.4594
Back	LTE Band 2	0.3992	0.1653	0.5645
Front	LTE Band 2	0.6985	0.1653	0.8638
Top side	LTE Band 2	--	0.1653	0.1653
Bottom side	LTE Band 2	0.6577	0.1653	0.823
Right side	LTE Band 2	--	0.1653	0.1653
Left side	LTE Band 2	0.1791	0.1653	0.3444
Back	LTE Band 4	0.5930	0.1653	0.7583
Front	LTE Band 4	0.8140	0.1653	0.9793
Top side	LTE Band 4	--	0.1653	0.1653
Bottom side	LTE Band 4	0.9739	0.1653	1.1392
Right side	LTE Band 4	--	0.1653	0.1653
Left side	LTE Band 4	0.1864	0.1653	0.3517
Back	LTE Band 5	0.1649	0.1653	0.3302

Front	LTE Band 5	0.1348	0.1653	0.3001
Top side	LTE Band 5	--	0.1653	0.1653
Bottom side	LTE Band 5	0.0418	0.1653	0.2071
Right side	LTE Band 5	--	0.1653	0.1653
Left side	LTE Band 5	0.1478	0.1653	0.3131
Back	LTE Band 17	0.1593	0.1653	0.3246
Front	LTE Band 17	0.1302	0.1653	0.2955
Top side	LTE Band 17	--	0.1653	0.1653
Bottom side	LTE Band 17	0.0403	0.1653	0.2056
Right side	LTE Band 17	--	0.1653	0.1653
Left side	LTE Band 17	0.1428	0.1653	0.3081

WWAN and Bluetooth

	WWAN		Bluetooth	Summed SAR (W/kg)
Position	Band	Scaled SAR (W/kg)	Scaled SAR (W/kg)	
Back	GSM850	1.2426	0.0417	1.2843
Front	GSM850	0.7999	0.0417	0.8416
Top side	GSM850	--	0.0417	0.0417
Bottom side	GSM850	0.4642	0.0417	0.5059
Right side	GSM850	--	0.0417	0.0417
Left side	GSM850	0.4622	0.0417	0.5039
Back	GSM1900	1.2683	0.0417	1.3100
Front	GSM1900	0.5879	0.0417	0.6296
Top side	GSM1900	--	0.0417	0.0417
Bottom side	GSM1900	0.5943	0.0417	0.636
Right side	GSM1900	--	0.0417	0.0417
Left side	GSM1900	0.1451	0.0417	0.1868
Back	WCDMA Band 2	0.4811	0.0417	0.5228
Front	WCDMA Band 2	0.6588	0.0417	0.7005
Top side	WCDMA Band 2	--	0.0417	0.0417
Bottom side	WCDMA Band 2	0.8913	0.0417	0.933
Right side	WCDMA Band 2	--	0.0417	0.0417
Left side	WCDMA Band 2	0.3144	0.0417	0.3561
Back	WCDMA Band 5	0.3205	0.0417	0.3622
Front	WCDMA Band 5	0.2616	0.0417	0.3033
Top side	WCDMA Band 5	--	0.0417	0.0417
Bottom side	WCDMA Band 5	0.1684	0.0417	0.2101
Right side	WCDMA Band 5	--	0.0417	0.0417
Left side	WCDMA Band 5	0.2941	0.0417	0.3358
Back	LTE Band 2	0.3992	0.0417	0.4409
Front	LTE Band 2	0.6985	0.0417	0.7402
Top side	LTE Band 2	--	0.0417	0.0417

Bottom side	LTE Band 2	0.6577	0.0417	0.6994
Right side	LTE Band 2	--	0.0417	0.0417
Left side	LTE Band 2	0.1791	0.0417	0.2208
Back	LTE Band 4	0.5930	0.0417	0.6347
Front	LTE Band 4	0.8140	0.0417	0.8557
Top side	LTE Band 4	--	0.0417	0.0417
Bottom side	LTE Band 4	0.9739	0.0417	1.0156
Right side	LTE Band 4	--	0.0417	0.0417
Left side	LTE Band 4	0.1864	0.0417	0.2281
Back	LTE Band 5	0.1649	0.0417	0.2066
Front	LTE Band 5	0.1348	0.0417	0.1765
Top side	LTE Band 5	--	0.0417	0.0417
Bottom side	LTE Band 5	0.0418	0.0417	0.0835
Right side	LTE Band 5	--	0.0417	0.0417
Left side	LTE Band 5	0.1478	0.0417	0.1895
Back	LTE Band 17	0.1593	0.0417	0.201
Front	LTE Band 17	0.1302	0.0417	0.1719
Top side	LTE Band 17	--	0.0417	0.0417
Bottom side	LTE Band 17	0.0403	0.0417	0.082
Right side	LTE Band 17	--	0.0417	0.0417
Left side	LTE Band 17	0.1428	0.0417	0.1845

Remark: For BT the 1g SAR value is not being captured by the measurement system, the 1g-SAR value is conservatively used for simultaneous transmission analysis.

10. Measurement Uncertainty

10.1 Uncertainty for EUT SAR Test

a	b	c	d	e= f(d,k)	f	g	h= c*f/e	i= c*g/e	k
Uncertainty Component	Sec.	Tol (+- %)	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (+- %)	10g Ui (+- %)	Vi
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	$\sqrt{3}$	$(1_{Cp})^{1/2}$	$(1_{Cp})^{1/2}$	1.02	1.02	∞
Hemispherical Isotropy	E.2.2	4.0	R	$\sqrt{3}$	$(Cp)^{1/2}$	$(Cp)^{1/2}$	1.63	1.63	∞
Boundary effect	E.2.3	1.0	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Linearity	E.2.4	5.0	R	$\sqrt{3}$	1	1	2.89	2.89	∞
System detection limits	E.2.5	1.0	R	$\sqrt{3}$	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	$\sqrt{3}$	1	1	1.73	1.73	∞
Integration Time	E.2.8	2.0	R	$\sqrt{3}$	1	1	1.15	1.15	∞
RF ambient Conditions	E.6.1	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	∞
Probe positioner Mechanical Tolerance	E.6.2	2.0	R	$\sqrt{3}$	1	1	1.15	1.15	∞
Probe positioning with respect to Phantom Shell	E.6.3	0.05	R	$\sqrt{3}$	1	1	0.03	0.03	∞
Extrapolation, interpolation and integration Algorithms for Max. SAR Evaluation	E.5.2	5.0	R	$\sqrt{3}$	1	1	2.89	2.89	∞
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 drift measurement	6.6.2	12.02	R	$\sqrt{3}$	1	1	6.94	6.94	∞
Phantom and Tissue Parameters									
Phantom Uncertainty (Shape and thickness tolerances)	E.3.1	0.05	R	$\sqrt{3}$	1	1	0.03	0.03	∞
Liquid conductivity - deviation from target value	E.3.2	5.00	R	$\sqrt{3}$	0.64	0.43	1.85	1.24	
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	$\sqrt{3}$	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 (95% Confidence interval)			K=2				25.32	24.43	

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. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (+ - %)	10g Ui (+ - %)	Vi
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	$\sqrt{3}$	$(1_{Cp})^{1/2}$	$(1_{Cp})^{1/2}$	1.02	1.02	∞
Hemispherical Isotropy	E.2.2	4.0	R	$\sqrt{3}$	$(Cp)^{1/2}$	$(Cp)^{1/2}$	1.63	1.63	∞
Boundary effect	E.2.3	1.0	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Linearity	E.2.4	5.0	R	$\sqrt{3}$	1	1	2.89	2.89	∞
System detection limits	E.2.5	1.0	R	$\sqrt{3}$	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	$\sqrt{3}$	1	1	1.73	1.73	∞
Integration Time	E.2.8	2.0	R	$\sqrt{3}$	1	1	1.15	1.15	∞
RF ambient Conditions	E.6.1	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	∞
Probe positioner Mechanical Tolerance	E.6.2	2.0	R	$\sqrt{3}$	1	1	1.15	1.15	∞
Probe positioning with respect to Phantom Shell	E.6.3	0.05	R	$\sqrt{3}$	1	1	0.03	0.03	∞
Extrapolation, interpolation and integration Algorithms for Max. SAR Evaluation	E.5.2	5.0	R	$\sqrt{3}$	1	1	2.89	2.89	∞
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 measurement	8,6.6.2	12.02	R	$\sqrt{3}$	1	1	6.94	6.94	∞
Phantom and Tissue Parameters									
Phantom Uncertainty (Shape and thickness tolerances)	E.3.1	0.05	R	$\sqrt{3}$	1	1	0.03	0.03	∞
Liquid conductivity - deviation from target value	E.3.2	5.00	R	$\sqrt{3}$	0.64	0.43	1.85	1.24	

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	$\sqrt{3}$	0.6	0.49	0.13	0.10	
Liquid permittivity measurement uncertainty	-	E.3.3	10.00	N	1	0.6	0.49	6.00	4.90	M
Combined Standard Uncertainty				RSS				12.00	11.50	
Expanded Uncertainty (95% Confidence interval)				K=2				23.39	22.43	

Annex A. Plots of System Performance Check

MEASUREMENT 1

For Head Liquid

Type: Validation measurement (Fast, 75.00 %)

Date of measurement: 12/07/2015

Measurement duration: 7 minutes 21 seconds

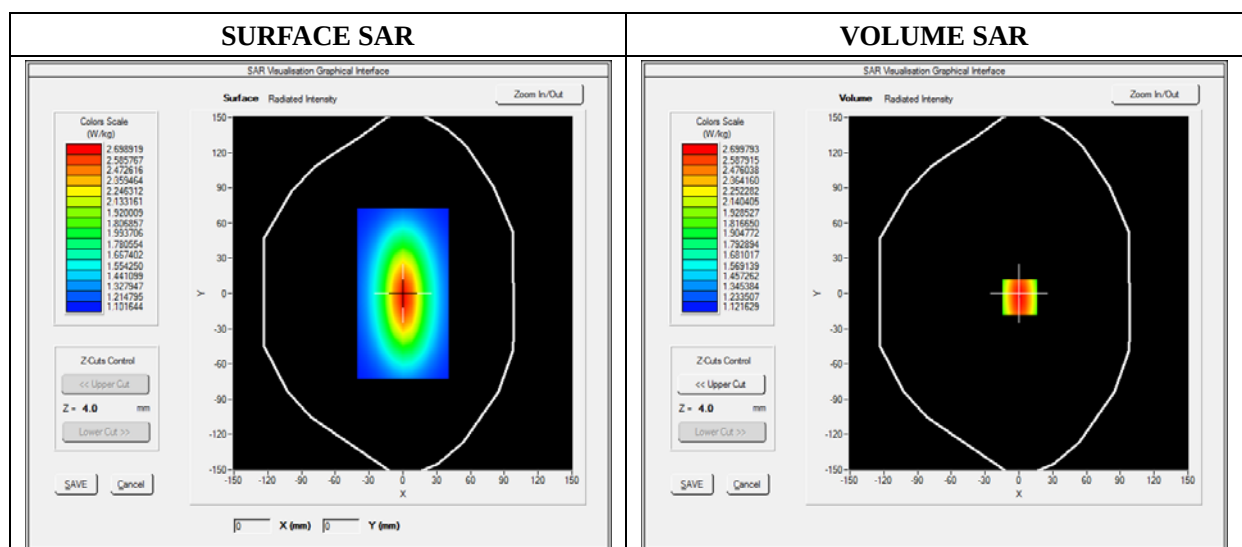
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.99; Calibrated: 06/03/2015

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Phantom	Validation plane
Device Position	Dipole
Band	CW750
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	750.000000
Relative Permittivity (real part)	41.320574
Conductivity (S/m)	0.862373
Power Variation (%)	0.038363
Ambient Temperature	21.1
Liquid Temperature	21.3

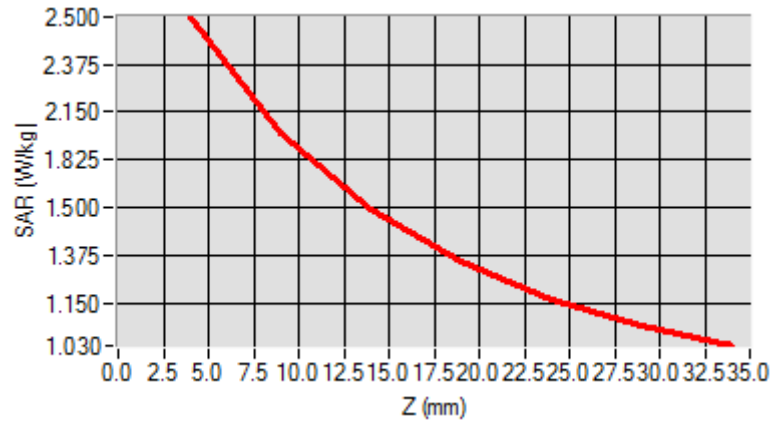


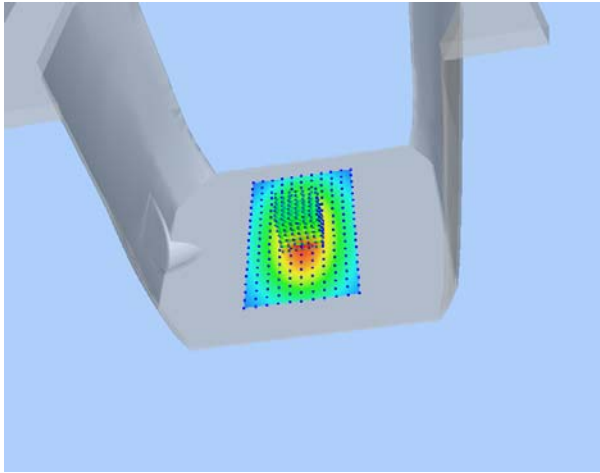
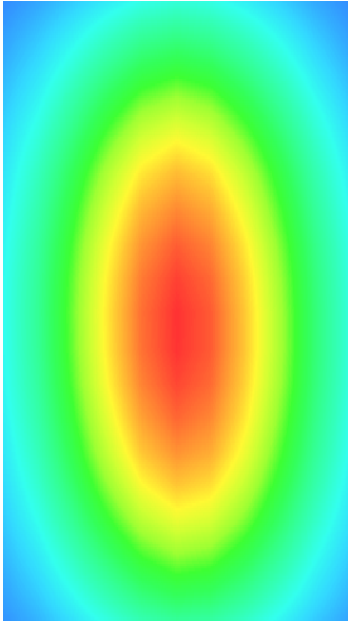
Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	1.042744
SAR 1g (W/Kg)	2.134534

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	2.3634	1.8023	1.4523	1.2514	1.1005	1.0245



3D screen shot	Hot spot position
	

MEASUREMENT 2

For Head Liquid

Type: Validation measurement (Fast, 75.00 %)

Date of measurement: 12/07/2015

Measurement duration: 7 minutes 21 seconds

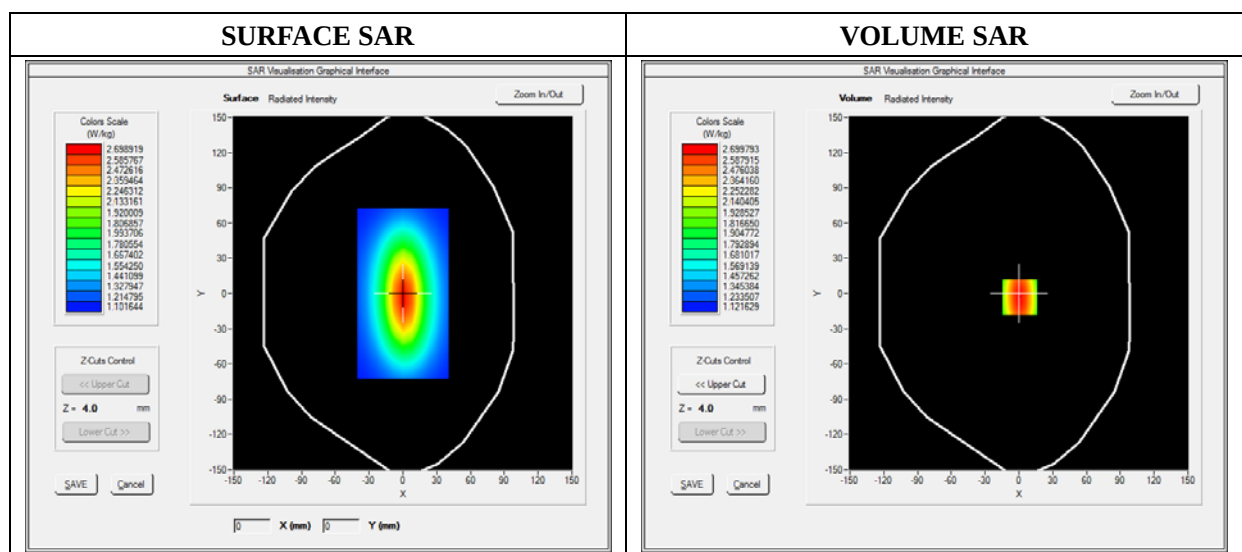
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.93; Calibrated: 06/03/2015

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Phantom	Validation plane
Device Position	Dipole
Band	CW835
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	835.000000
Relative Permittivity (real part)	41.110245
Conductivity (S/m)	0.871245
Power Variation (%)	0.038437
Ambient Temperature	21.1
Liquid Temperature	21.3

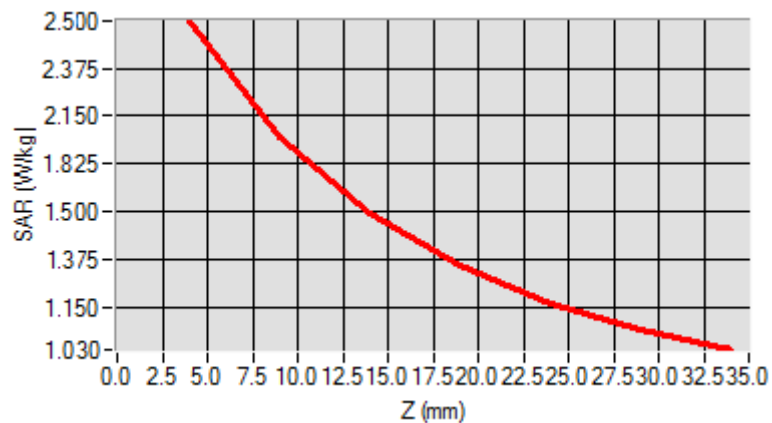


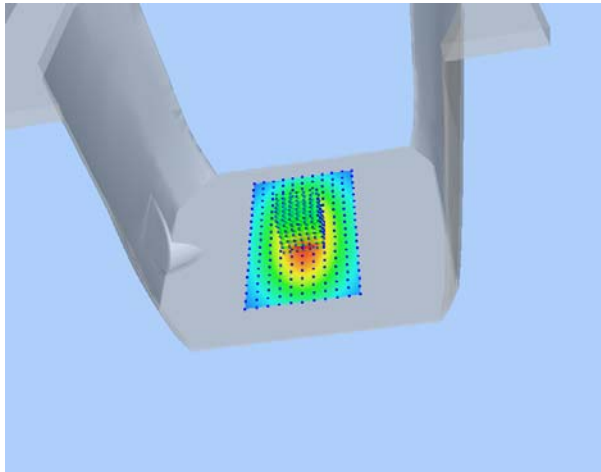
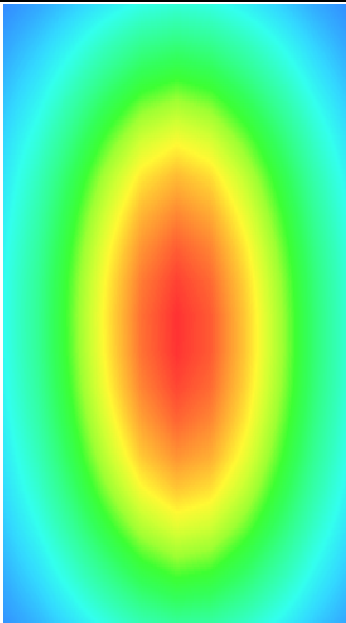
Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	1.129489
SAR 1g (W/Kg)	2.411253

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	2.4900	1.8942	1.4811	1.3541	1.1123	1.0539



3D screen shot	Hot spot position
	

MEASUREMENT 3

For Head Liquid

Type: Validation measurement (Fast, 75.00 %)

Date of measurement: 12/07/2015

Measurement duration: 12 minutes 21 seconds

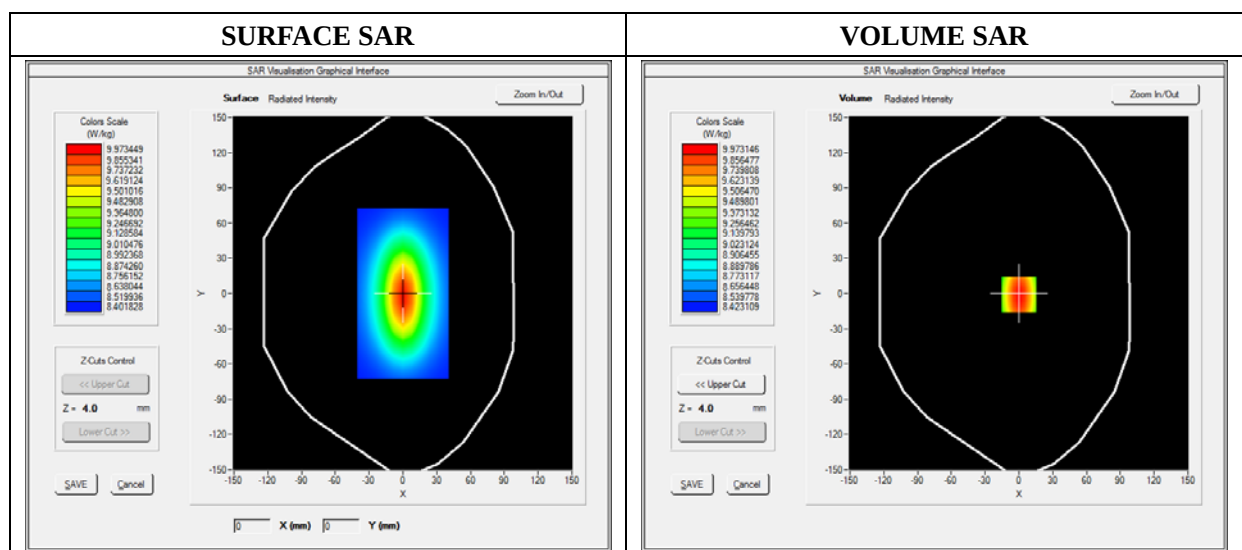
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 5.84; Calibrated: 06/03/2015

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Phantom	Validation plane
Device Position	Dipole
Band	CW1800
Signal	CW (Crest factor: 1.0)

B. SAR Measurement Results

Frequency (MHz)	1800.000000
Relative Permittivity (real part)	39.024890
Conductivity (S/m)	1.371250
Power Variation (%)	1.401232
Ambient Temperature	21.1
Liquid Temperature	21.2

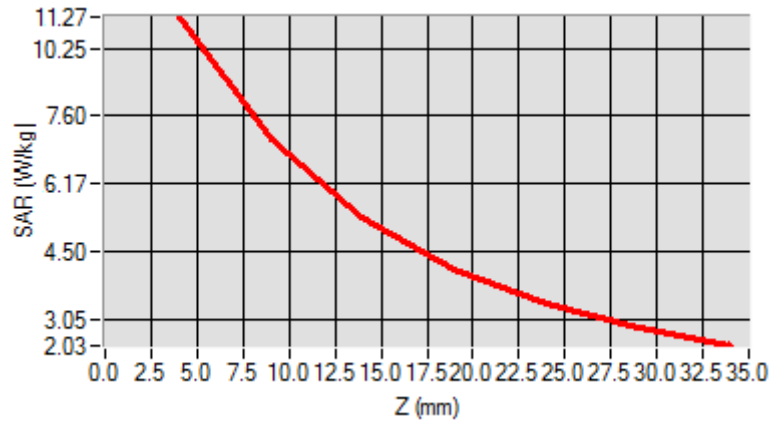


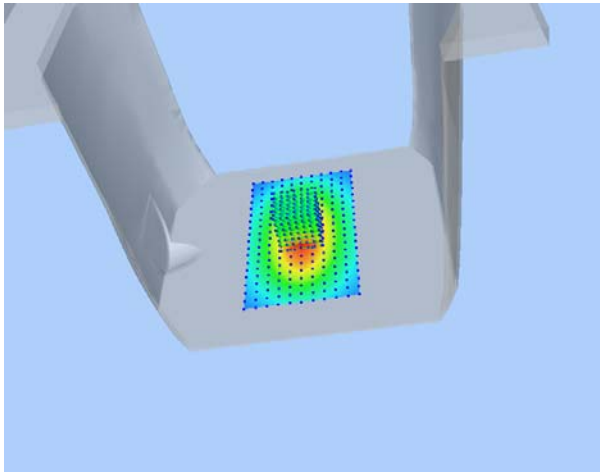
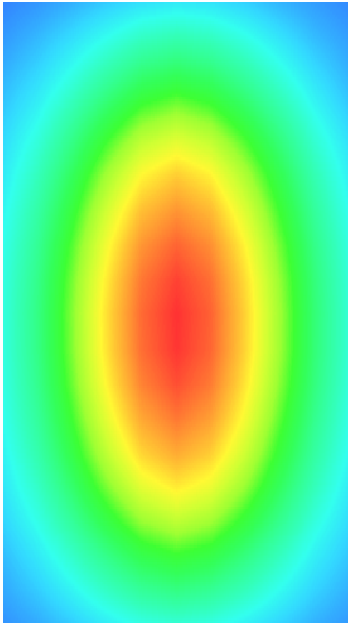
Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	5.171252
SAR 1g (W/Kg)	9.611250

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	10.3455	7.1125	5.1026	3.425	3.0242	2.1125



3D screen shot	Hot spot position
	

MEASUREMENT 4

For Head Liquid

Type: Validation measurement (Fast, 75.00 %)

Date of measurement: 12/07/2015

Measurement duration: 12 minutes 21 seconds

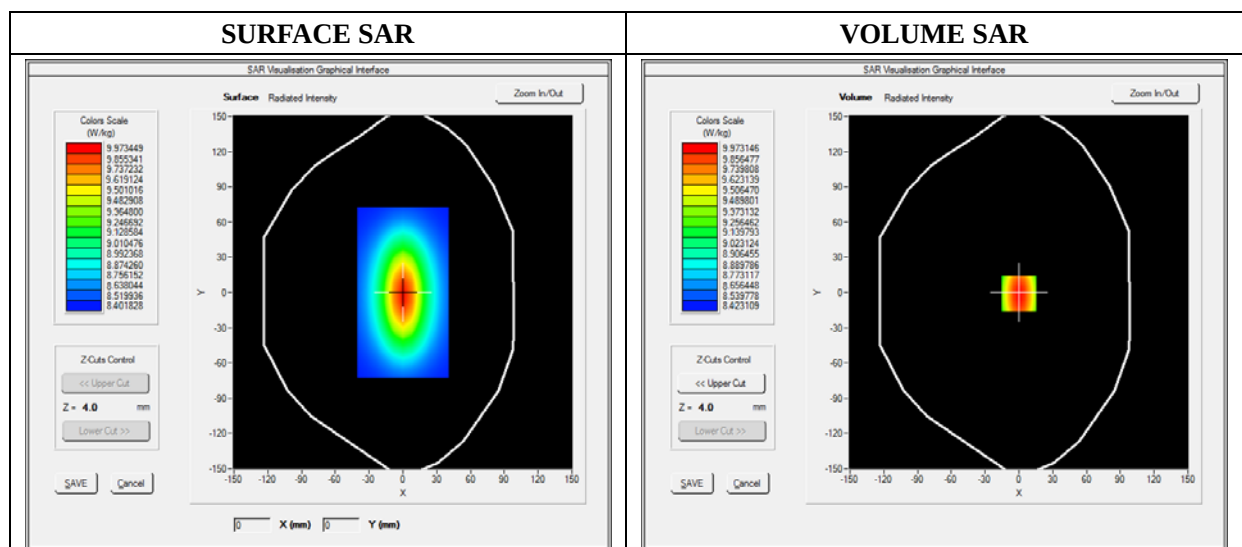
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.35; Calibrated: 06/03/2015

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Phantom	Validation plane
Device Position	Dipole
Band	CW1900
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	1900.000000
Relative Permittivity (real part)	38.560124
Conductivity (S/m)	1.380369
Power Variation (%)	1.022540
Ambient Temperature	21.1
Liquid Temperature	21.3

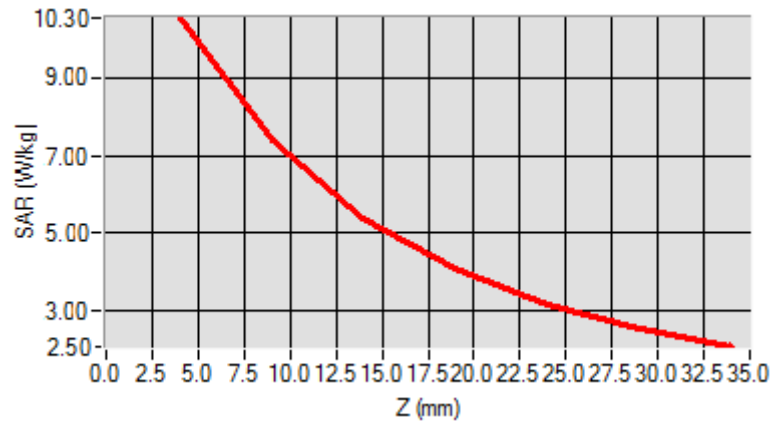


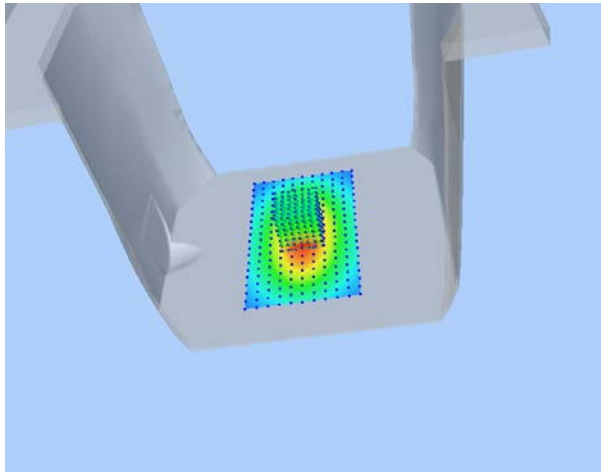
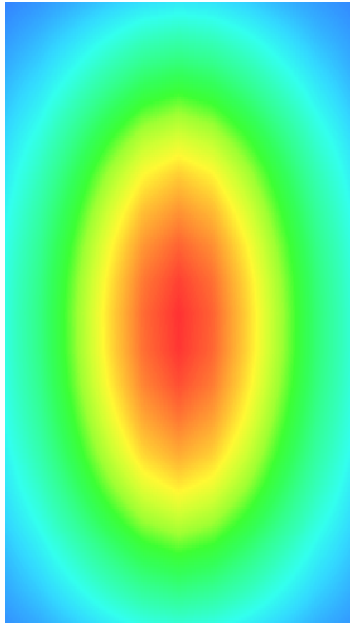
Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	7.174526
SAR 1g (W/Kg)	9.913214

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	10.2354	6.8400	5.0121	4.1189	3.0522	2.8424



3D screen shot	Hot spot position
	

MEASUREMENT 5

For Body Liquid

Type: Validation measurement (Fast, 75.00 %)

Date of measurement: 12/07/2015

Measurement duration: 12 minutes 21 seconds

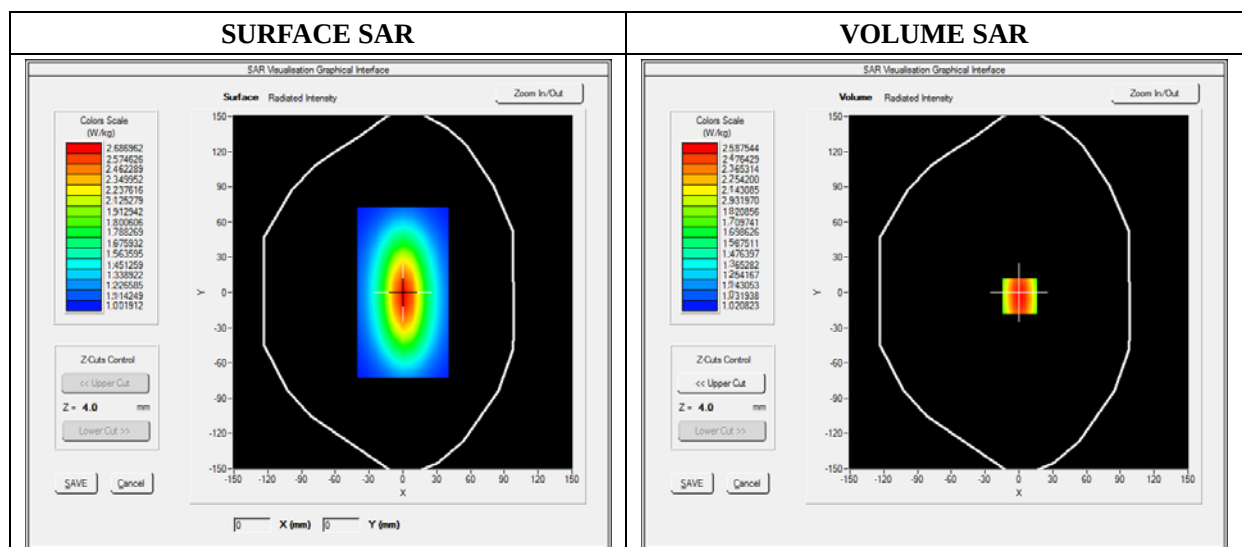
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 7.28; Calibrated: 06/03/2015

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Phantom	Validation plane
Device Position	Dipole
Band	CW750
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	750.000000
Relative Permittivity (real part)	54.964739
Conductivity (S/m)	0.9310484
Power Variation (%)	0.034745
Ambient Temperature	21.1
Liquid Temperature	21.3

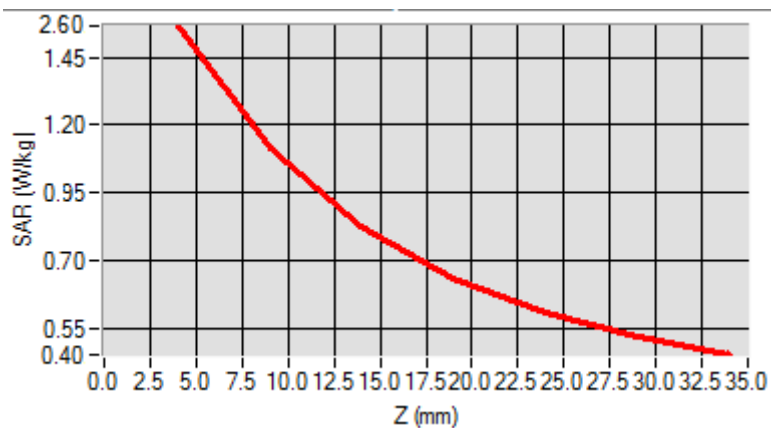


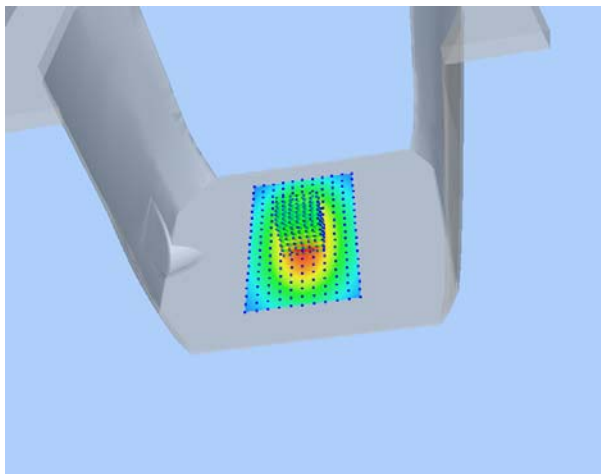
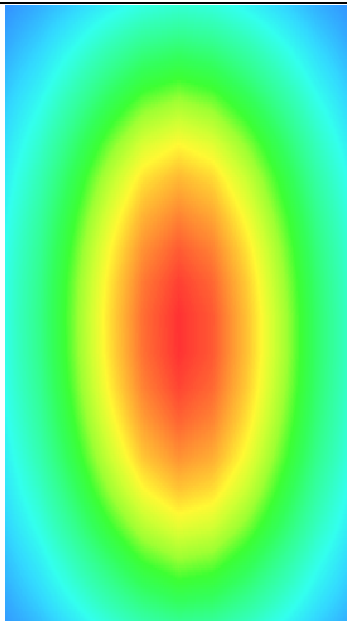
Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	1.000865
SAR 1g (W/Kg)	2.114211

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	2.5132	1.1087	0.8214	0.5160	0.4875	0.4864



3D screen shot	Hot spot position
	

MEASUREMENT 6

For Body Liquid

Type: Validation measurement (Fast, 75.00 %)

Date of measurement: 12/07/2015

Measurement duration: 12 minutes 21 seconds

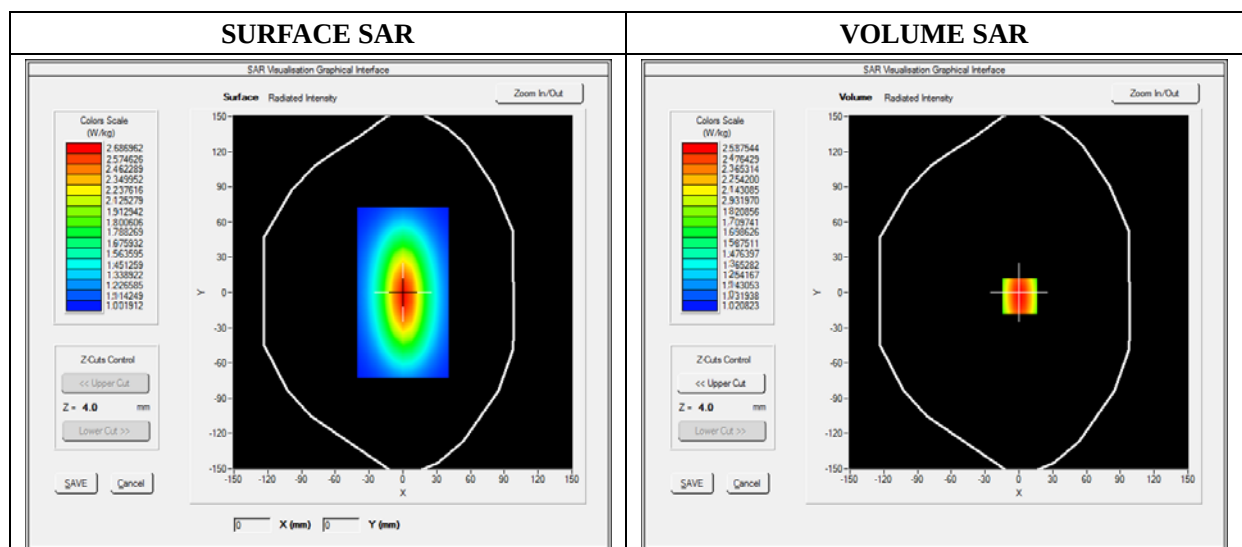
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 7.13; Calibrated: 06/03/2015

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Phantom	Validation plane
Device Position	Dipole
Band	CW835
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	835.000000
Relative Permittivity (real part)	54.851214
Conductivity (S/m)	0.951454
Power Variation (%)	0.901472
Ambient Temperature	21.1
Liquid Temperature	21.3

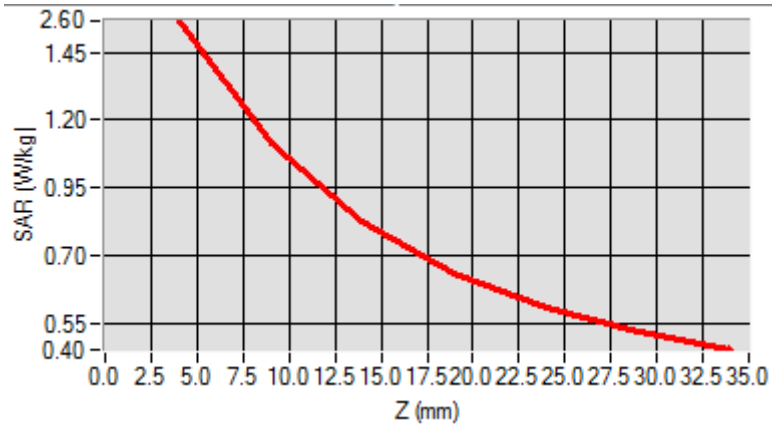


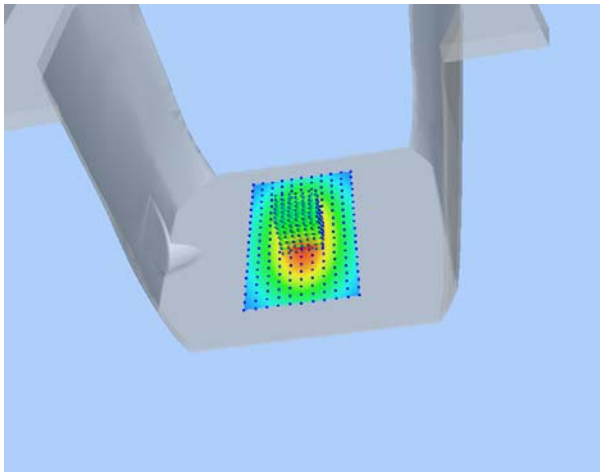
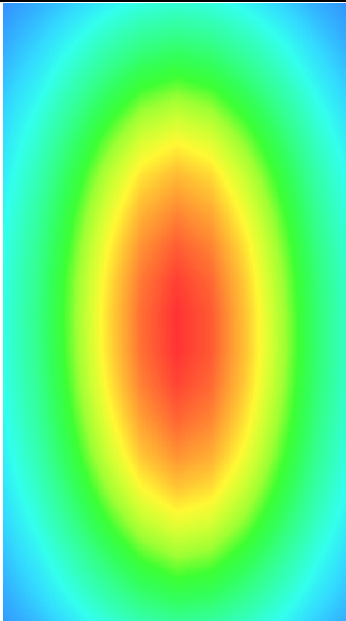
Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	1.028956
SAR 1g (W/Kg)	2.354211

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	2.5789	1.1300	0.8795	0.5940	0.5011	0.5100



3D screen shot	Hot spot position
	

MEASUREMENT 7

For Body Liquid

Type: Validation measurement (Fast, 75.00 %)

Date of measurement: 12/07/2015

Measurement duration: 12 minutes 21 seconds

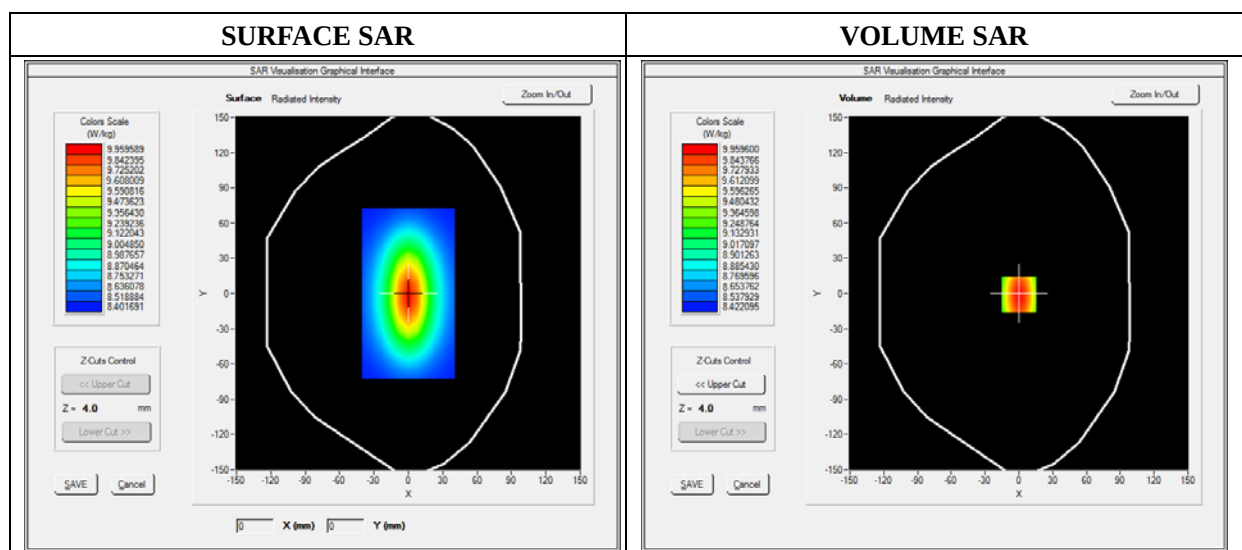
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.06; Calibrated: 06/03/2015

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Phantom	Validation plane
Device Position	Dipole
Band	CW1800
Signal	CW (Crest factor: 1.0)

B. SAR Measurement Results

Frequency (MHz)	1800.000000
Relative Permittivity (real part)	51.224510
Conductivity (S/m)	1.461261
Power Variation (%)	0.845690
Ambient Temperature	21.1
Liquid Temperature	21.2

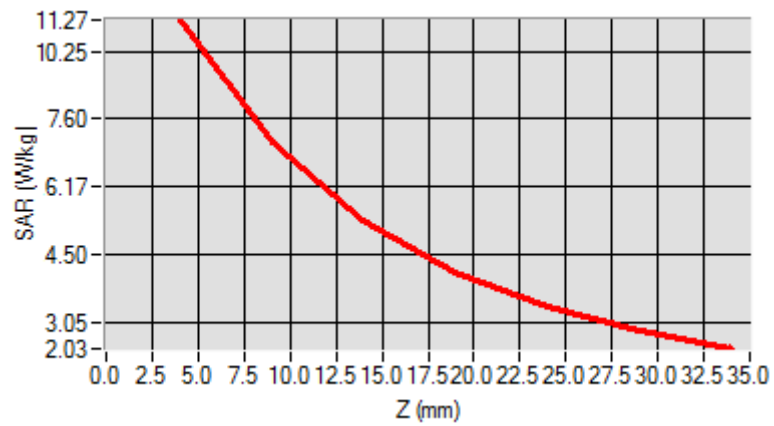


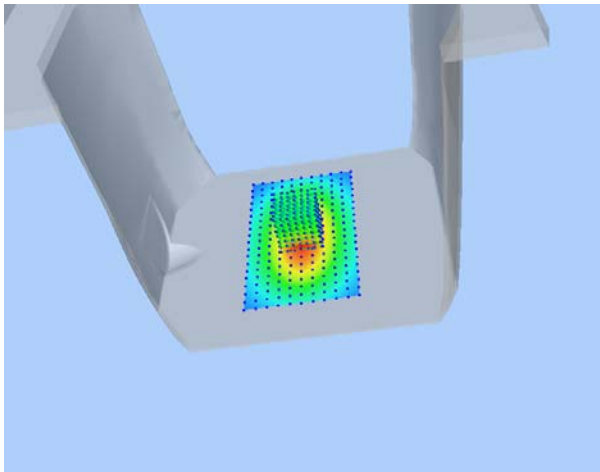
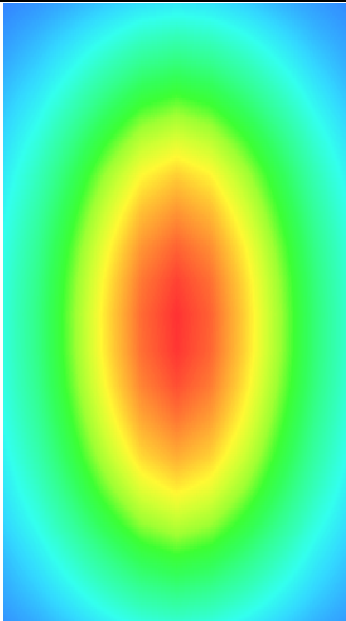
Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	5.221202
SAR 1g (W/Kg)	9.582560

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	11.2425	9.4123	8.0345	6.9125	6.3092	3.9460



3D screen shot	Hot spot position
	

MEASUREMENT 8

For Body Liquid

Type: Validation measurement (Fast, 75.00 %)

Date of measurement: 12/07/2015

Measurement duration: 12 minutes 21 seconds

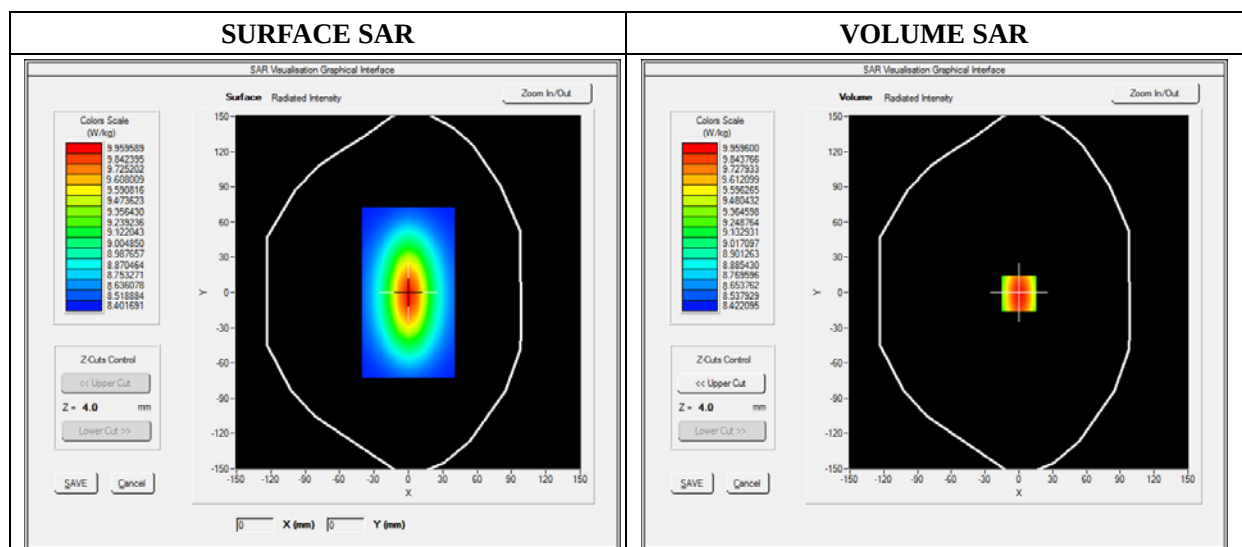
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.55; Calibrated: 06/03/2015

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Phantom	Validation plane
Device Position	Dipole
Band	CW1900
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	1900.000000
Relative Permittivity (real part)	52.420415
Conductivity (S/m)	1.501966
Power Variation (%)	0.541872
Ambient Temperature	21.1
Liquid Temperature	21.3

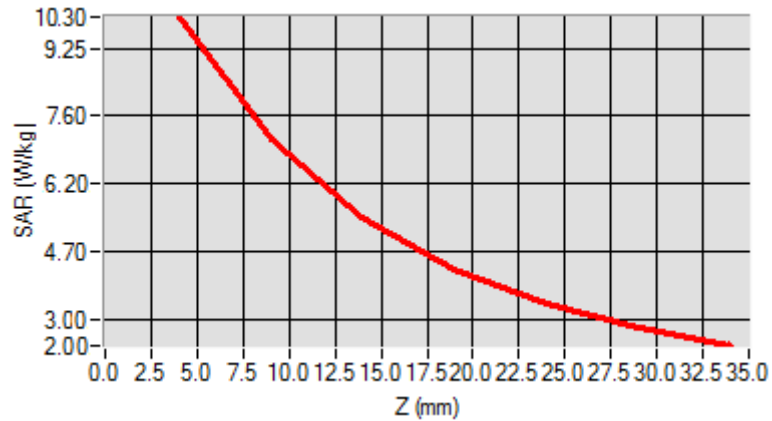


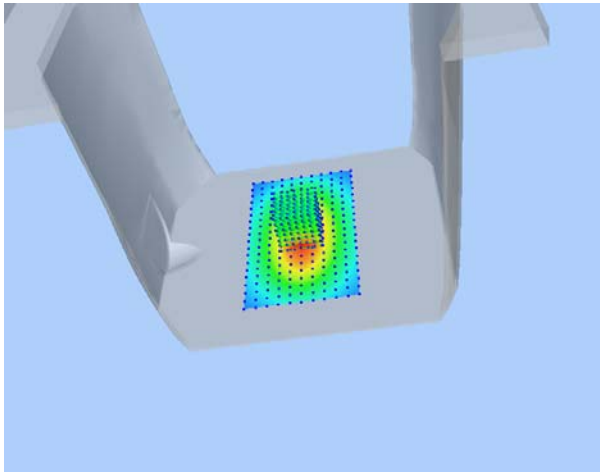
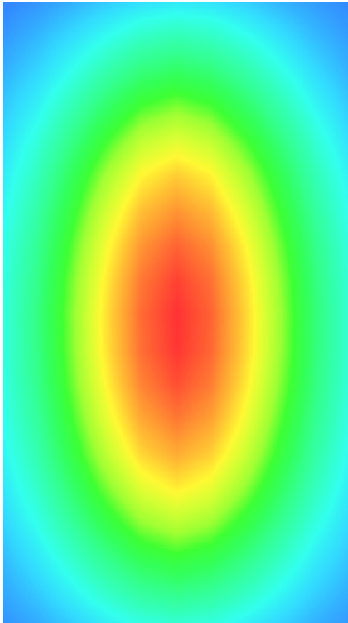
Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	5.134651
SAR 1g (W/Kg)	9.781550

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	10.2031	6.43001	4.9011	4.5325	3.1201	2.5024



3D screen shot	Hot spot position
	

Annex B. Plots of SAR Measurement

<u>TYPE</u>	<u>BAND</u>	<u>PARAMETERS</u>
Phone	GSM850	<u>Measurement 1:</u> Right Head with Cheek device position on High Channel in GSM mode
Phone	GSM850	<u>Measurement 2:</u> Right Head with Tilt device position on High Channel in GSM mode
Phone	GSM850	<u>Measurement 3:</u> Left Head with Cheek device position on High Channel in GSM mode
Phone	GSM850	<u>Measurement 4:</u> Left Head with Tilt device position on High Channel in GSM mode
Phone	GSM850	<u>Measurement 5:</u> Flat Plane with Back(Body-worn) device position on High Channel in GSM mode
Phone	GSM850	<u>Measurement 6:</u> Flat Plane with Front(Body-worn) device position on High Channel in GSM mode
Phone	GPRS850_2TX	<u>Measurement 7:</u> Flat Plane with Back device position on Low Channel in GPRS mode
Phone	GPRS850_2TX	<u>Measurement 8:</u> Flat Plane with Back device position on Middle Channel in GPRS mode
Phone	GPRS850_2TX	<u>Measurement 9:</u> Flat Plane with Back device position on High Channel in GPRS mode
Phone	GPRS850_2TX	<u>Measurement 10:</u> Flat Plane with Front device position on Middle Channel in GPRS mode
Phone	GPRS850_2TX	<u>Measurement 11:</u> Flat Plane with Bottom side device position on Middle Channel in GPRS mode
Phone	GPRS850_2TX	<u>Measurement 12:</u> Flat Plane with Left side device position on Middle Channel in GPRS mode
Phone	GSM1900	<u>Measurement 13:</u> Right Head with Cheek device position on Low Channel in GSM mode
Phone	GSM1900	<u>Measurement 14:</u> Right Head with Tilt device position on Low Channel in GSM mode
Phone	GSM1900	<u>Measurement 15:</u> Left Head with Cheek device position on Low Channel in GSM mode
Phone	GSM1900	<u>Measurement 16:</u> Left Head with Tilt device position on Low Channel in GSM mode
Phone	GSM1900	<u>Measurement 17:</u> Flat Plane with Back(Body-worn) device position on Low Channel in GSM mode
Phone	GSM1900	<u>Measurement 18:</u> Flat Plane with Front(Body-worn) device position on Low Channel in GSM mode
Phone	GPRS1900_2TX	<u>Measurement 19:</u> Flat Plane with Back device position on Low Channel in GPRS mode

Phone	GPRS1900_2TX	Measurement 20: Flat Plane with Back side device position on Middle Channel in GPRS mode
Phone	GPRS1900_2TX	Measurement 21: Flat Plane with Back side device position on High Channel in GPRS mode
Phone	GPRS1900_2TX	Measurement 22: Flat Plane with Front device position on Low Channel in GPRS mode
Phone	GPRS1900_2TX	Measurement 23: Flat Plane with Bottom side device position on Low Channel in GPRS mode
Phone	GPRS1900_2TX	Measurement 24: Flat Plane with Left side device position on Low Channel in GPRS mode
Phone	WCDMA1900_RMC	Measurement 25: Right Head with Cheek device position on High Channel in WCDMA mode
Phone	WCDMA1900_RMC	Measurement 26: Right Head with Tilt device position on High Channel in WCDMA mode
Phone	WCDMA1900_RMC	Measurement 27: Left Head with Cheek device position on High Channel in WCDMA mode
Phone	WCDMA1900_RMC	Measurement 28: Left Head with Tilt device position on High Channel in WCDMA mode
Phone	WCDMA1900_RMC	Measurement 29: Flat Plane with Back device position on High Channel in WCDMA mode
Phone	WCDMA1900_RMC	Measurement 30: Flat Plane with Front device position on High Channel in WCDMA mode
Phone	WCDMA1900_RMC	Measurement 31: Flat Plane with Bottom side device position on Low Channel in WCDMA mode
Phone	WCDMA1900_RMC	Measurement 32: Flat Plane with Bottom side device position on Middle Channel in WCDMA mode
Phone	WCDMA1900_RMC	Measurement 33: Flat Plane with Bottom side device position on High Channel in WCDMA mode
Phone	WCDMA1900_RMC	Measurement 34: Flat Plane with Left side device position on High Channel in WCDMA mode
Phone	WCDMA850_RMC	Measurement 35: Right Head with Cheek device position on High Channel in WCDMA mode
Phone	WCDMA850_RMC	Measurement 36: Right Head with Tilt device position on High Channel in WCDMA mode
Phone	WCDMA850_RMC	Measurement 37: Left Head with Cheek device position on High Channel in WCDMA mode
Phone	WCDMA850_RMC	Measurement 38: Left Head with Tilt device position on High Channel in WCDMA mode
Phone	WCDMA850_RMC	Measurement 39: Flat Plane with Back device position on High Channel in WCDMA mode
Phone	WCDMA850_RMC	Measurement 40: Flat Plane with Front device position on High Channel in WCDMA mode
Phone	WCDMA850_RMC	Measurement 41: Flat Plane with Bottom side device

		position on High Channel in WCDMA mode
Phone	WCDMA850_RMC	<u>Measurement 42:</u> Flat Plane with Left side device position on High Channel in WCDMA mode
Phone	LTE Band 2_RMC	<u>Measurement 43:</u> Right Head with Cheek device position on Middle Channel in LTE mode
Phone	LTE Band 2_RMC	<u>Measurement 44:</u> Right Head with Tilt device position on Middle Channel in LTE mode
Phone	LTE Band 2_RMC	<u>Measurement 45:</u> Left Head with Cheek device position on Middle Channel in LTE mode
Phone	LTE Band 2_RMC	<u>Measurement 46:</u> Left Head with Tilt device position on Middle Channel in LTE mode
Phone	LTE Band 2_RMC	<u>Measurement 47:</u> Flat Plane with Back device position on Middle Channel in LTE mode
Phone	LTE Band 2_RMC	<u>Measurement 48:</u> Flat Plane with Front device position on Middle Channel in LTE mode
Phone	LTE Band 2_RMC	<u>Measurement 49:</u> Flat Plane with Bottom side device position on Middle Channel in LTE mode
Phone	LTE Band 2_RMC	<u>Measurement 50:</u> Flat Plane with Left side device position on Middle Channel in LTE mode
Phone	LTE Band 4_RMC	<u>Measurement 51:</u> Right Head with Cheek device position on Middle Channel in LTE mode
Phone	LTE Band 4_RMC	<u>Measurement 52:</u> Right Head with Tilt device position on Middle Channel in LTE mode
Phone	LTE Band 4_RMC	<u>Measurement 53:</u> Left Head with Cheek device position on Middle Channel in LTE mode
Phone	LTE Band 4_RMC	<u>Measurement 54:</u> Left Head with Tilt device position on Middle Channel in LTE mode
Phone	LTE Band 4_RMC	<u>Measurement 55:</u> Flat Plane with Back device position on Middle Channel in LTE mode
Phone	LTE Band 4_RMC	<u>Measurement 56:</u> Flat Plane with Front device position on Middle Channel in LTE mode
Phone	LTE Band 4_RMC	<u>Measurement 57:</u> Flat Plane with Bottom side device position on Low Channel in LTE mode
Phone	LTE Band 4_RMC	<u>Measurement 58:</u> Flat Plane with Bottom side device position on Middle Channel in LTE mode
Phone	LTE Band 4_RMC	<u>Measurement 59:</u> Flat Plane with Bottom side device position on High Channel in LTE mode
Phone	LTE Band 4_RMC	<u>Measurement 60:</u> Flat Plane with Left side device position on Middle Channel in LTE mode
Phone	LTE Band 5_RMC	<u>Measurement 61:</u> Right Head with Cheek device position on Middle Channel in LTE mode
Phone	LTE Band 5_RMC	<u>Measurement 62:</u> Right Head with Tilt device position on Middle Channel in LTE mode
Phone	LTE Band 5_RMC	<u>Measurement 63:</u> Left Head with Cheek device position

		on Middle Channel in LTE mode
Phone	LTE Band 5_RMC	<u>Measurement 64:</u> Left Head with Tilt device position on Middle Channel in LTE mode
Phone	LTE Band 5_RMC	<u>Measurement 65:</u> Flat Plane with Back device position on Middle Channel in LTE mode
Phone	LTE Band 5_RMC	<u>Measurement 66:</u> Flat Plane with Front device position on Middle Channel in LTE mode
Phone	LTE Band 5_RMC	<u>Measurement 67:</u> Flat Plane with Bottom side device position on Middle Channel in LTE mode
Phone	LTE Band 5_RMC	<u>Measurement 68:</u> Flat Plane with Left side device position on Middle Channel in LTE mode
Phone	LTE Band 17_RMC	<u>Measurement 69:</u> Right Head with Cheek device position on High Channel in LTE mode
Phone	LTE Band 17_RMC	<u>Measurement 70:</u> Right Head with Tilt device position on High Channel in LTE mode
Phone	LTE Band 17_RMC	<u>Measurement 71:</u> Left Head with Cheek device position on High Channel in LTE mode
Phone	LTE Band 17_RMC	<u>Measurement 72:</u> Left Head with Tilt device position on High Channel in LTE mode
Phone	LTE Band 17_RMC	<u>Measurement 73:</u> Flat Plane with Back device position on High Channel in LTE mode
Phone	LTE Band 17_RMC	<u>Measurement 74:</u> Flat Plane with Front device position on High Channel in LTE mode
Phone	LTE Band 17_RMC	<u>Measurement 75:</u> Flat Plane with Bottom side device position on High Channel in LTE mode
Phone	LTE Band 17_RMC	<u>Measurement 76:</u> Flat Plane with Left side device position on High Channel in LTE mode

MEASUREMENT 1

Type: Phone measurement (Complete)

Date of measurement: 12/07/2015

Measurement duration: 12 minutes 3 seconds

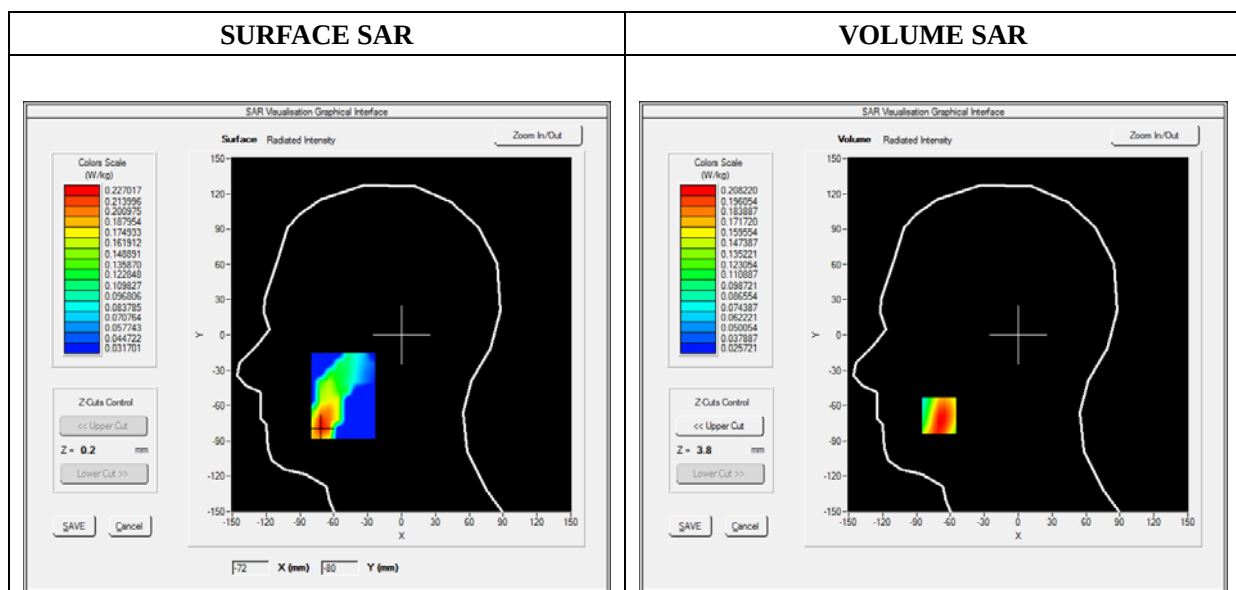
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.93; Calibrated: 06/03/2015

A. Experimental conditions

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

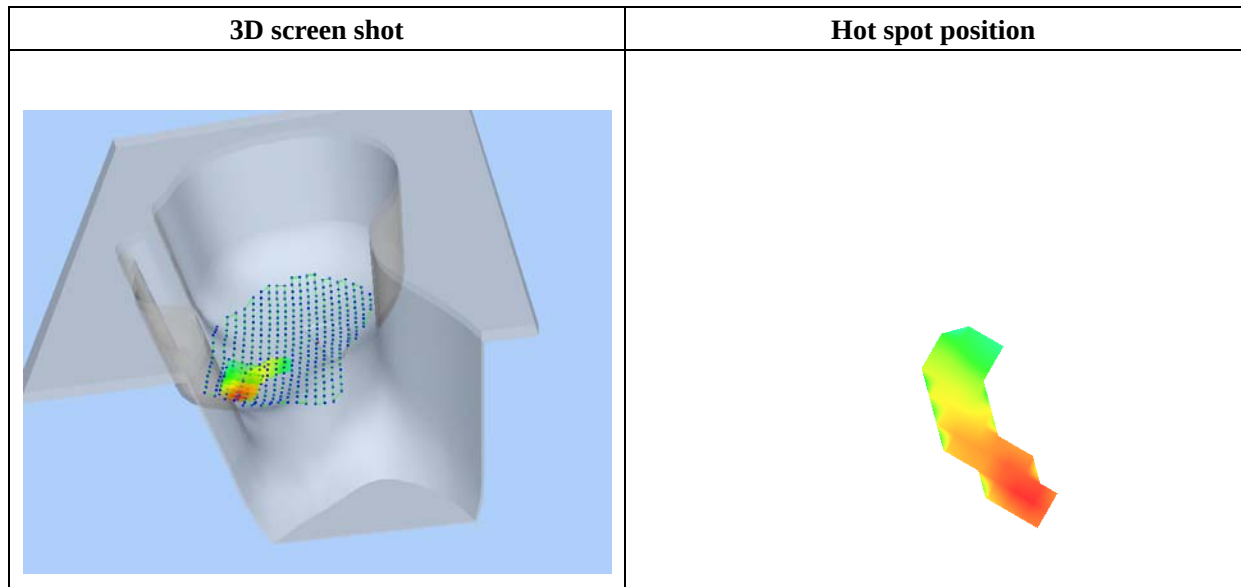
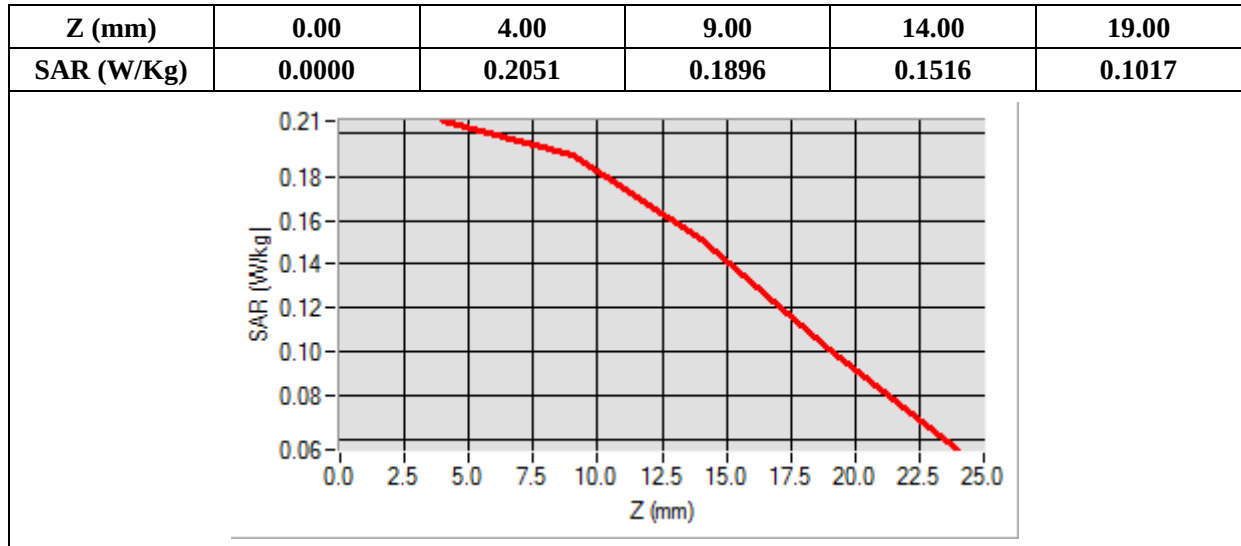
B. SAR Measurement Results

Frequency (MHz)	848.800000
Relative Permittivity (real part)	41.110245
Conductivity (S/m)	0.871245
Power Variation (%)	1.564544
Ambient Temperature	21.1
Liquid Temperature	21.3



Maximum location: X=-70.00, Y=-69.00

SAR 10g (W/Kg)	0.161853
SAR 1g (W/Kg)	0.203255



MEASUREMENT 2

Type: Phone measurement (Complete)

Date of measurement: 12/07/2015

Measurement duration: 12 minutes 3 seconds

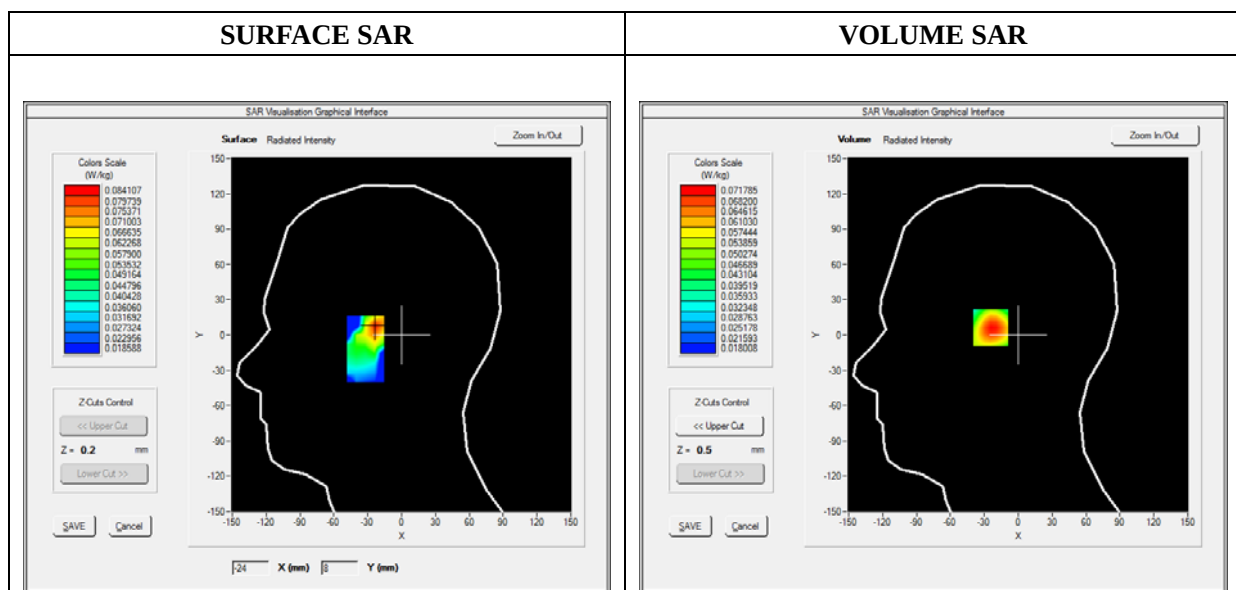
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.93; Calibrated: 06/03/2015

A. Experimental conditions

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

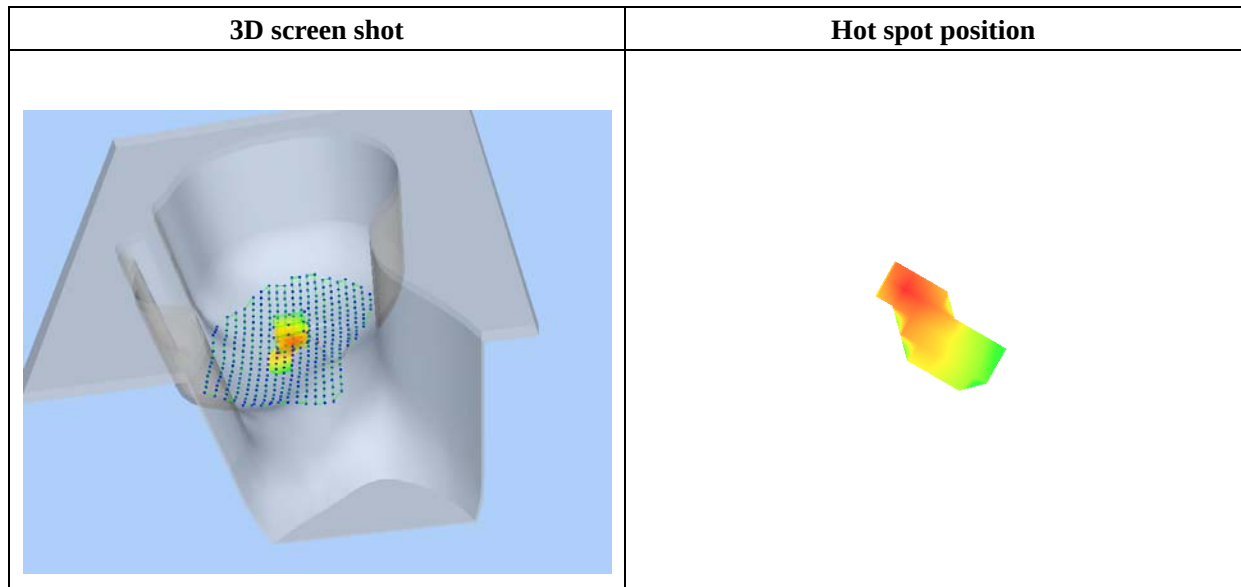
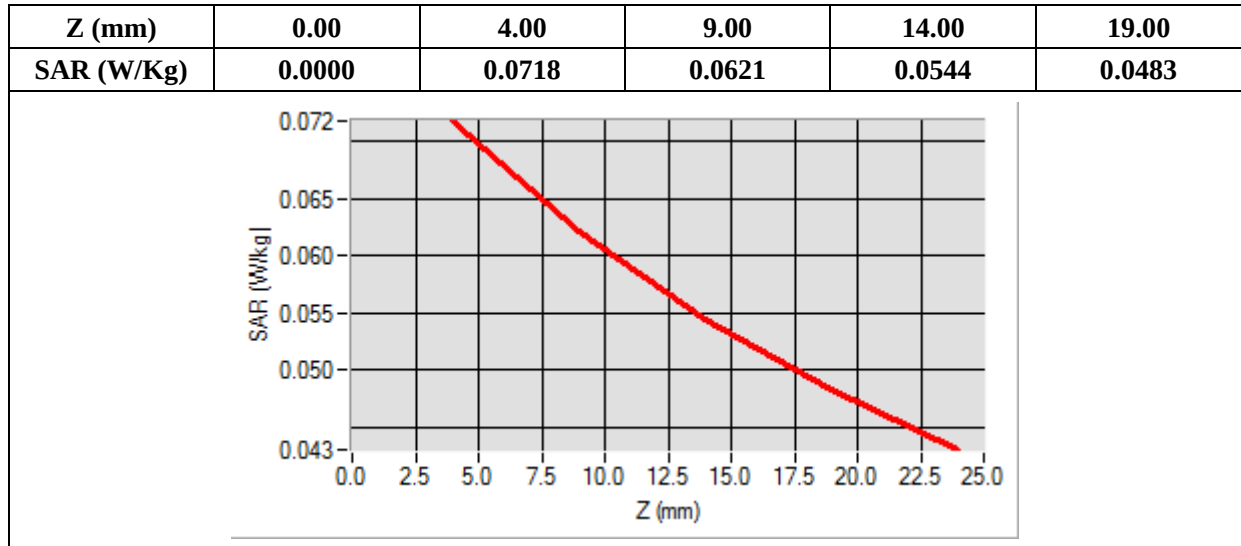
B. SAR Measurement Results

Frequency (MHz)	848.800000
Relative Permittivity (real part)	41.110245
Conductivity (S/m)	0.871245
Power Variation (%)	2.533224
Ambient Temperature	21.1
Liquid Temperature	21.3



Maximum location: X=-23.00, Y=7.00

SAR 10g (W/Kg)	0.058390
SAR 1g (W/Kg)	0.069490



MEASUREMENT 3

Type: Phone measurement (Complete)

Date of measurement: 12/07/2015

Measurement duration: 11 minutes 48 seconds

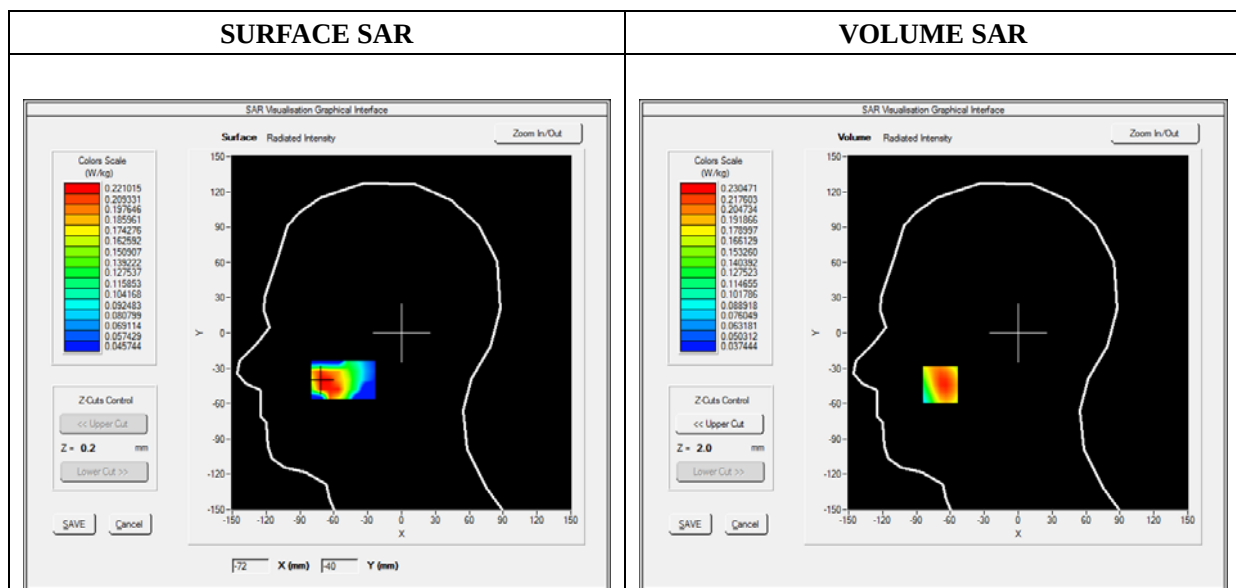
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.93; Calibrated: 06/03/2015

A. Experimental conditions

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

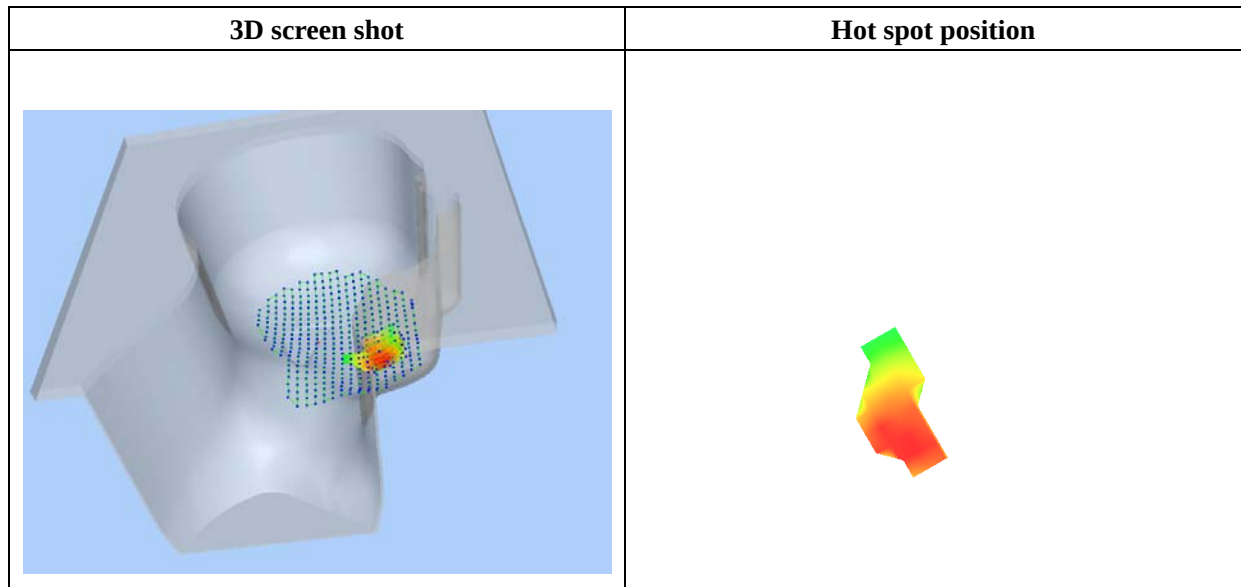
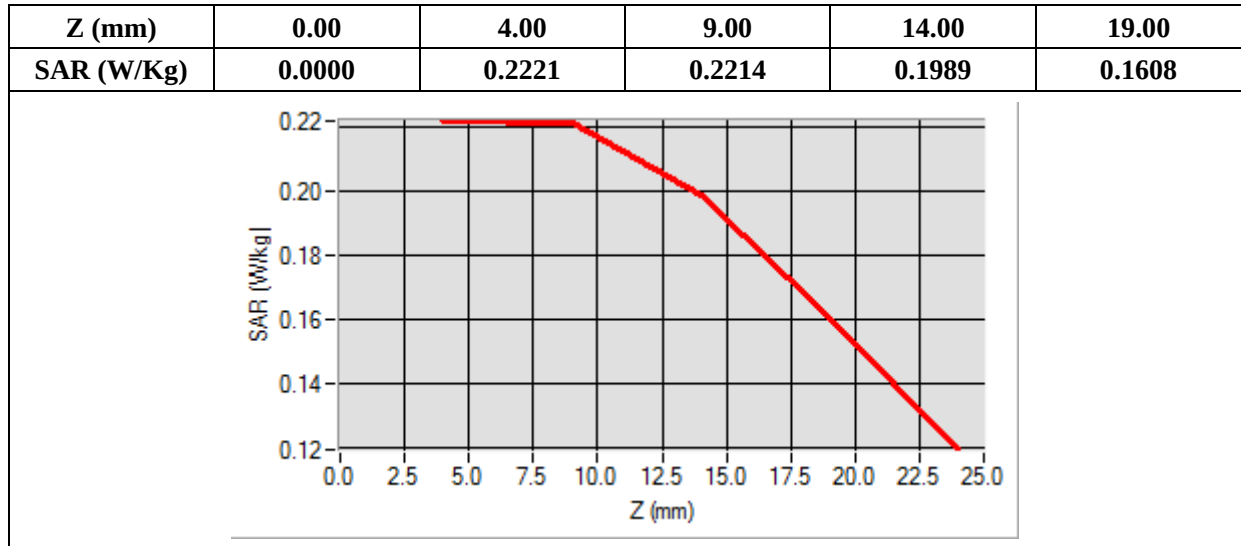
B. SAR Measurement Results

Frequency (MHz)	848.800000
Relative Permittivity (real part)	41.110245
Conductivity (S/m)	0.871245
Power Variation (%)	1.144536
Ambient Temperature	21.1
Liquid Temperature	21.3



Maximum location: X=-69.00, Y=-44.00

SAR 10g (W/Kg)	0.196612
SAR 1g (W/Kg)	0.220995



MEASUREMENT 4

Type: Phone measurement (Complete)

Date of measurement: 12/07/2015

Measurement duration: 12 minutes 3 seconds

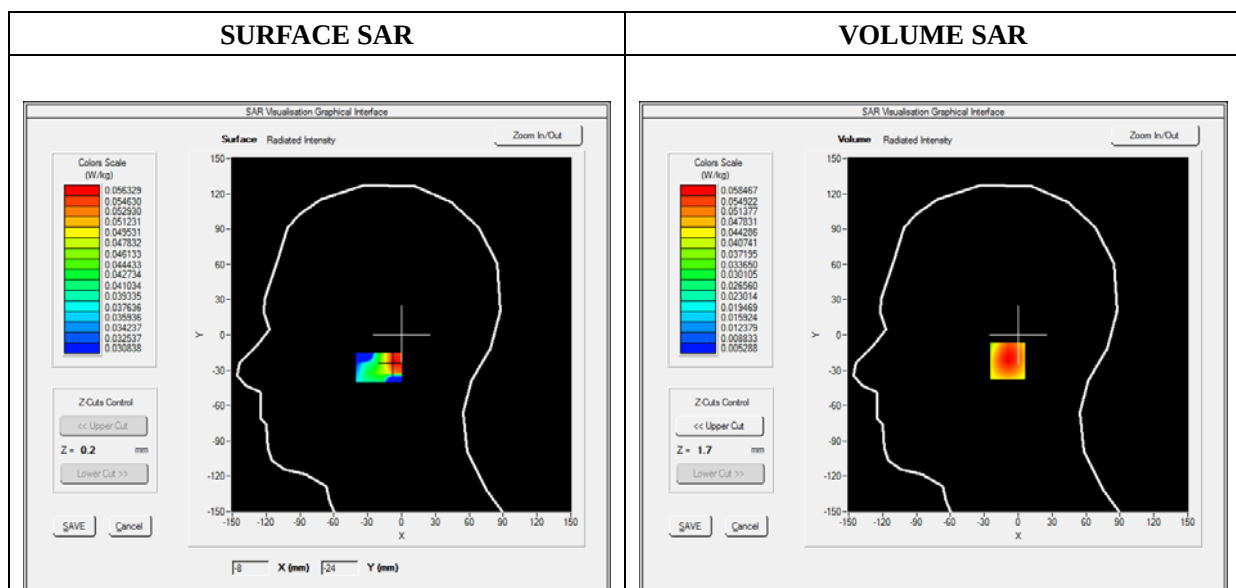
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.93; Calibrated: 06/03/2015

A. Experimental conditions

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

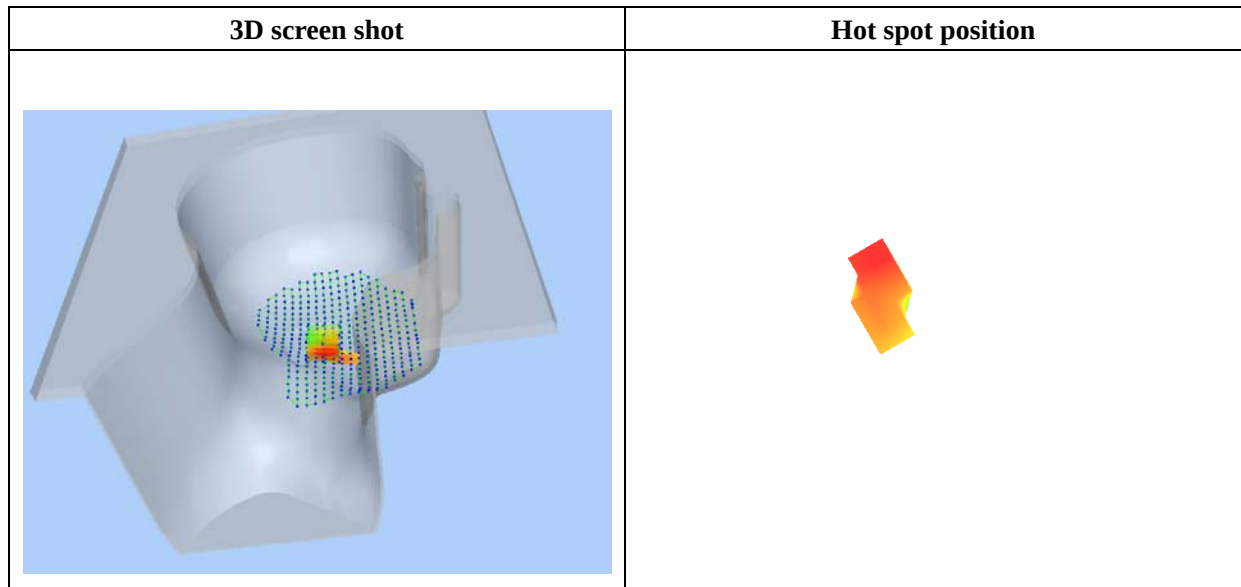
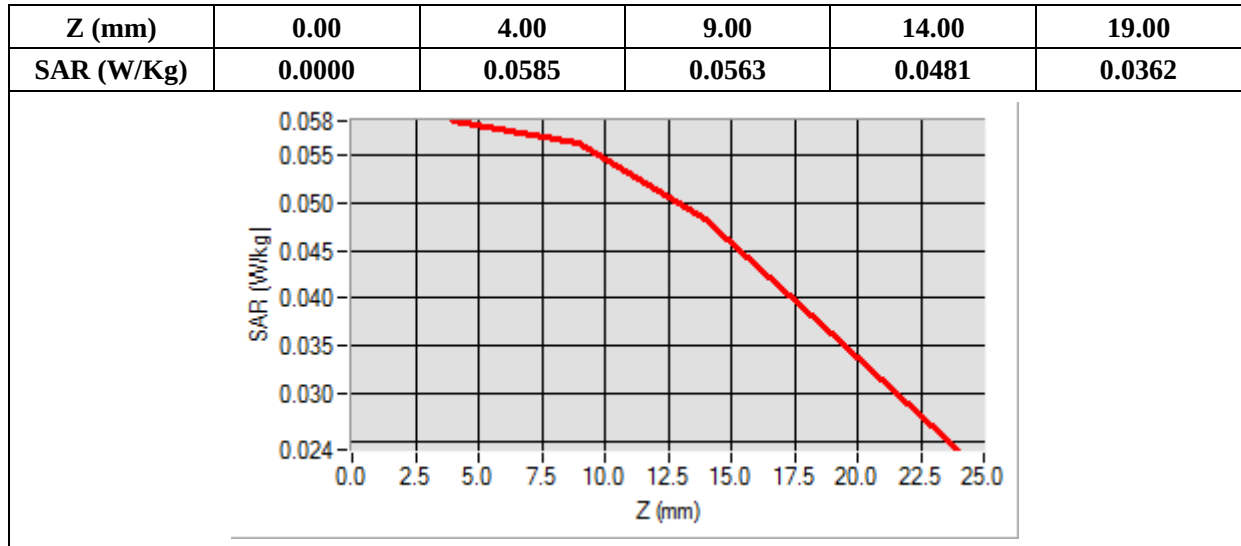
B. SAR Measurement Results

Frequency (MHz)	848.800000
Relative Permittivity (real part)	41.110245
Conductivity (S/m)	0.871245
Power Variation (%)	1.045578
Ambient Temperature	21.1
Liquid Temperature	21.3



Maximum location: X=-6.00, Y=-22.00

SAR 10g (W/Kg)	0.048234
SAR 1g (W/Kg)	0.057162



MEASUREMENT 5

Type: Phone measurement (Complete)

Date of measurement: 12/07/2015

Measurement duration: 12 minutes 3 seconds

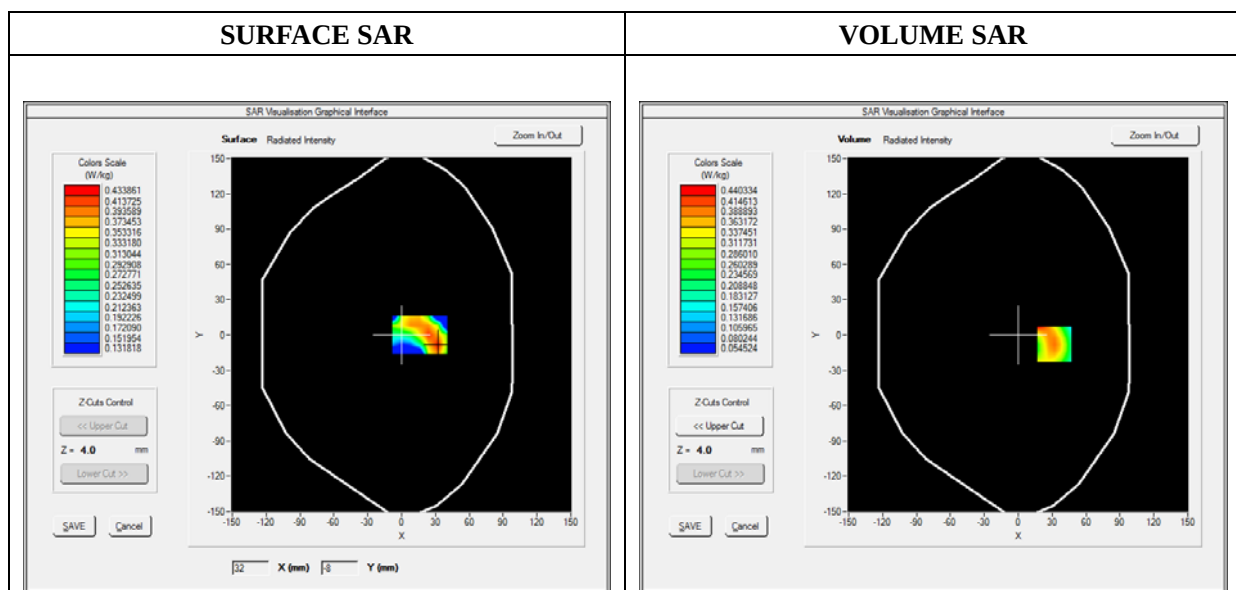
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 7.13; Calibrated: 06/03/2015

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt
Phantom	Flat Plane
Device Position	Back(Body-worn)
Band	GSM850
Channels	High
Signal	TDMA (Crest factor: 8.0)

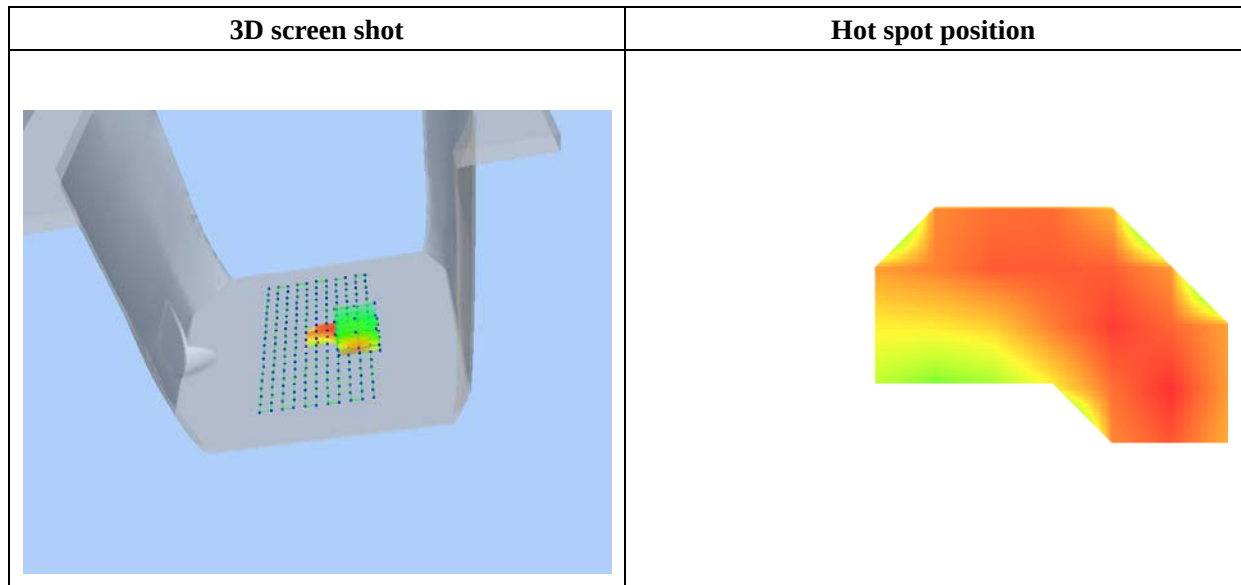
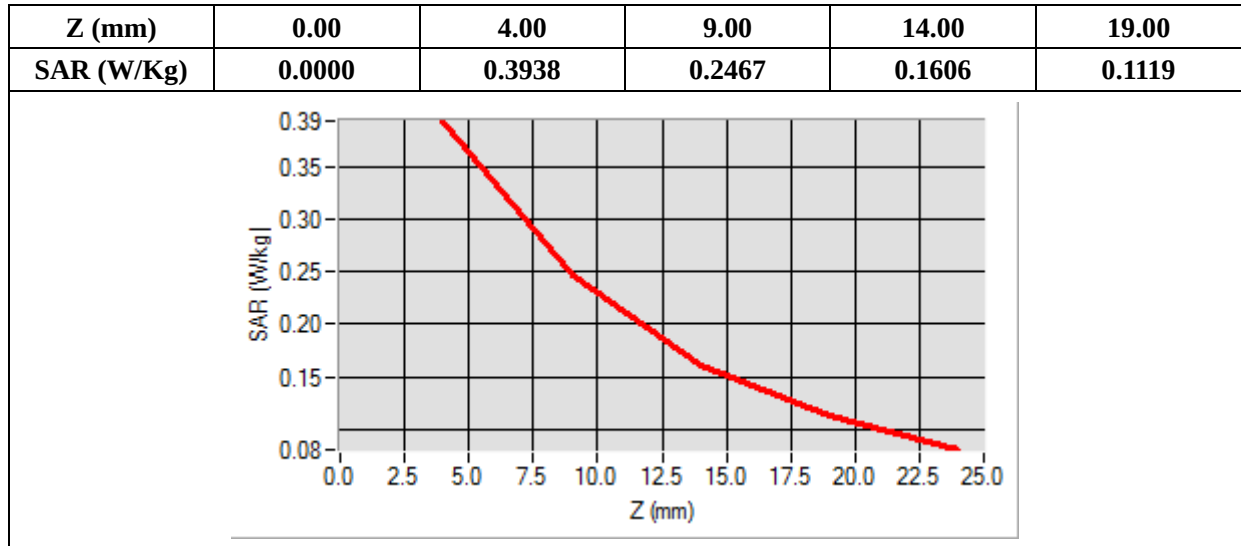
B. SAR Measurement Results

Frequency (MHz)	848.800000
Relative Permittivity (real part)	54.851214
Conductivity (S/m)	0.951454
Power Variation (%)	0.901472
Ambient Temperature	21.1
Liquid Temperature	21.3



Maximum location: X=32.00, Y=-8.00

SAR 10g (W/Kg)	0.279648
SAR 1g (W/Kg)	0.440518



MEASUREMENT 6

Type: Phone measurement (Complete)

Date of measurement: 12/07/2015

Measurement duration: 12 minutes 3 seconds

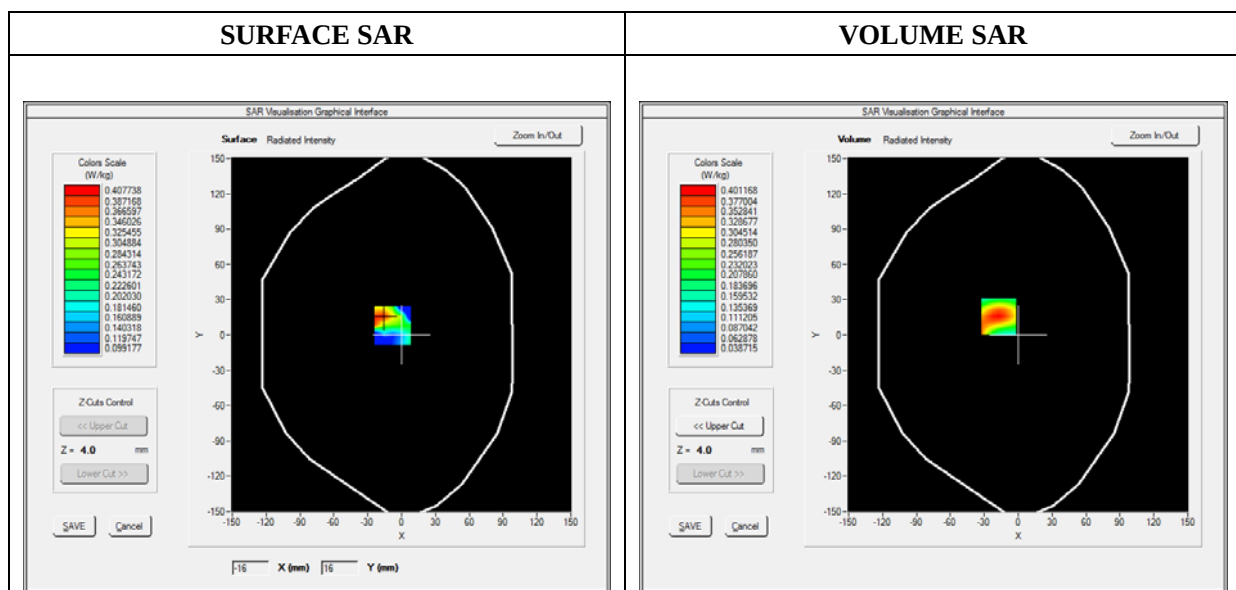
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 7.13; Calibrated: 06/03/2015

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt
Phantom	Flat Plane
Device Position	Front(Body-worn)
Band	GSM850
Channels	High
Signal	TDMA (Crest factor: 8.0)

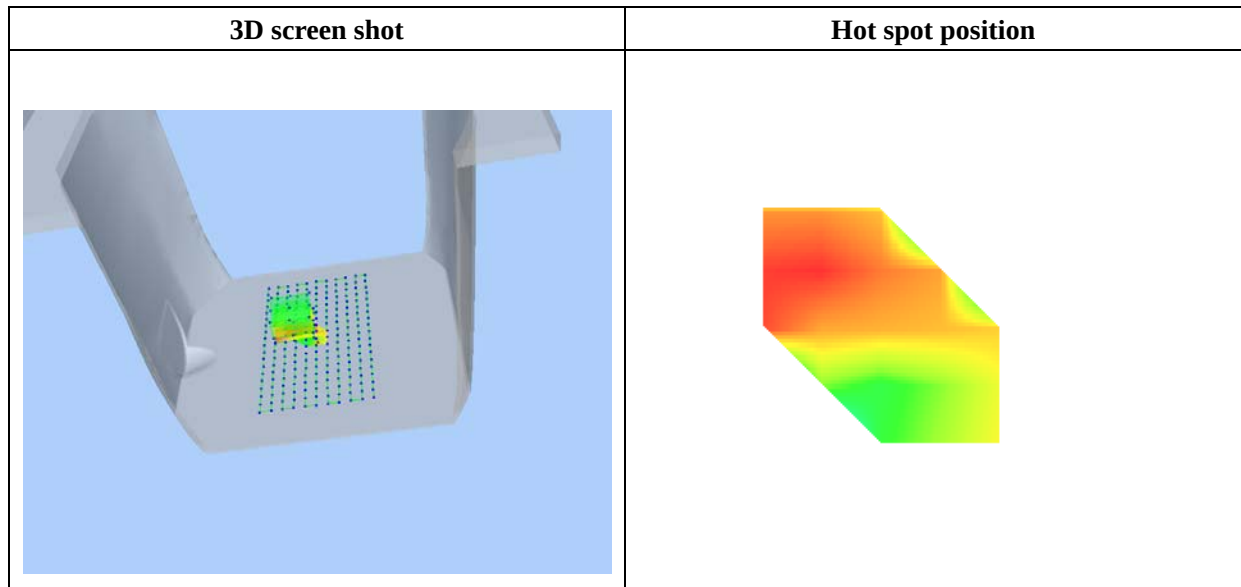
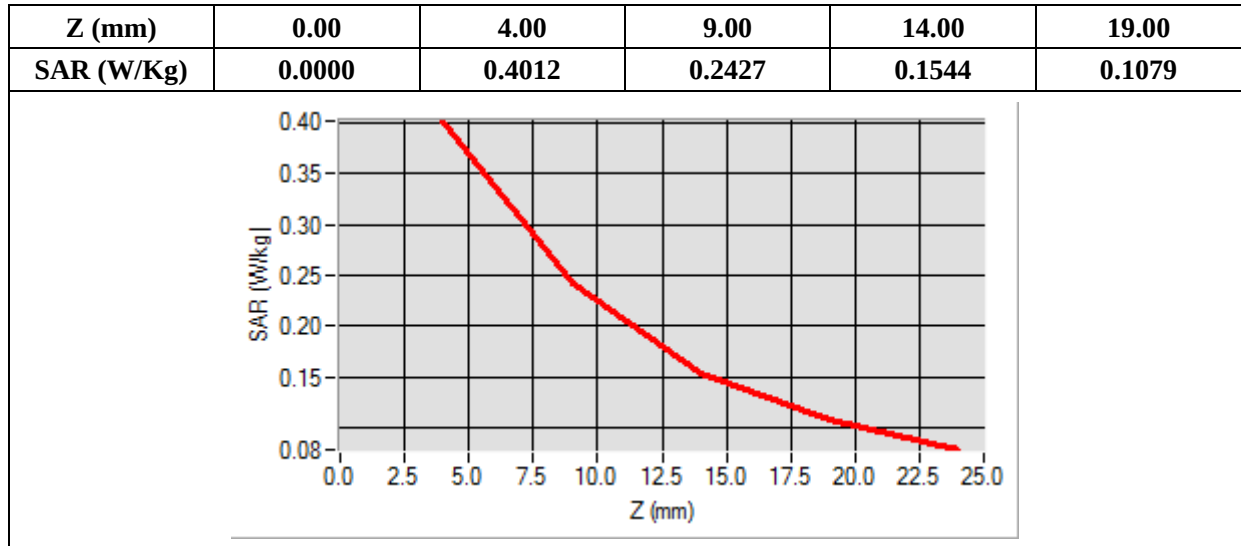
B. SAR Measurement Results

Frequency (MHz)	848.800000
Relative Permittivity (real part)	54.851214
Conductivity (S/m)	0.951454
Power Variation (%)	1.483222
Ambient Temperature	21.1
Liquid Temperature	21.3



Maximum location: X=-17.00, Y=16.00

SAR 10g (W/Kg)	0.266363
SAR 1g (W/Kg)	0.443341



MEASUREMENT 7

Type: Phone measurement (Complete)

Date of measurement: 12/07/2015

Measurement duration: 12 minutes 3 seconds

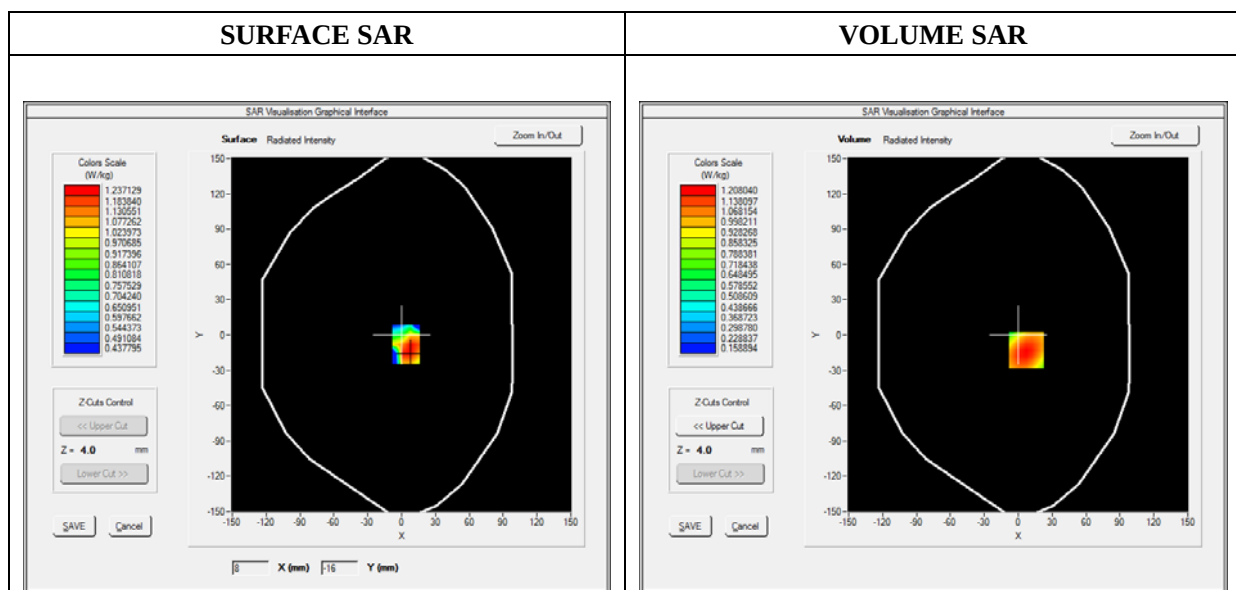
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 7.13; Calibrated: 06/03/2015

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt
Phantom	Flat plane
Device Position	Back
Band	GPRS850_2TX
Channels	Low
Signal	Duty Cycle: 1:4

B. SAR Measurement Results

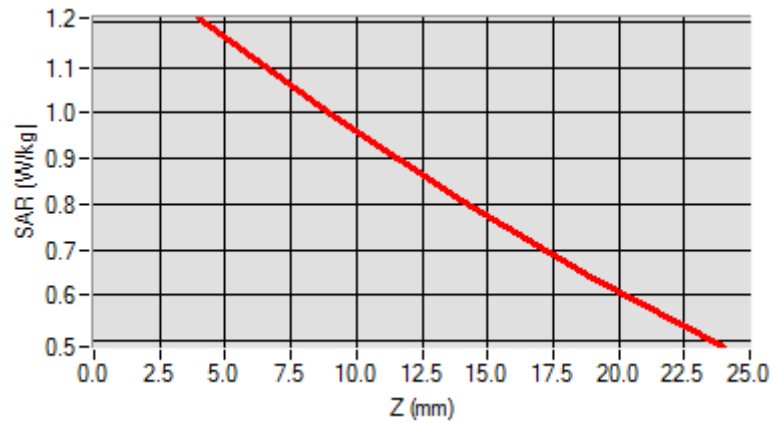
Frequency (MHz)	824.200012
Relative Permittivity (real part)	54.851214
Conductivity (S/m)	0.951454
Power Variation (%)	0.901472
Ambient Temperature	21.1
Liquid Temperature	21.3

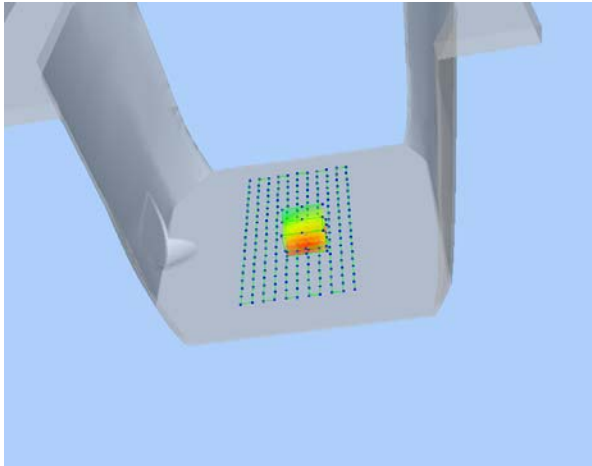


Maximum location: X=7.00, Y=-13.00

SAR 10g (W/Kg)	0.900047
SAR 1g (W/Kg)	1.162271

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	1.2080	0.9987	0.8088	0.6384



3D screen shot	Hot spot position
	

MEASUREMENT 8

Type: Phone measurement (Complete)

Date of measurement: 12/07/2015

Measurement duration: 12 minutes 3 seconds

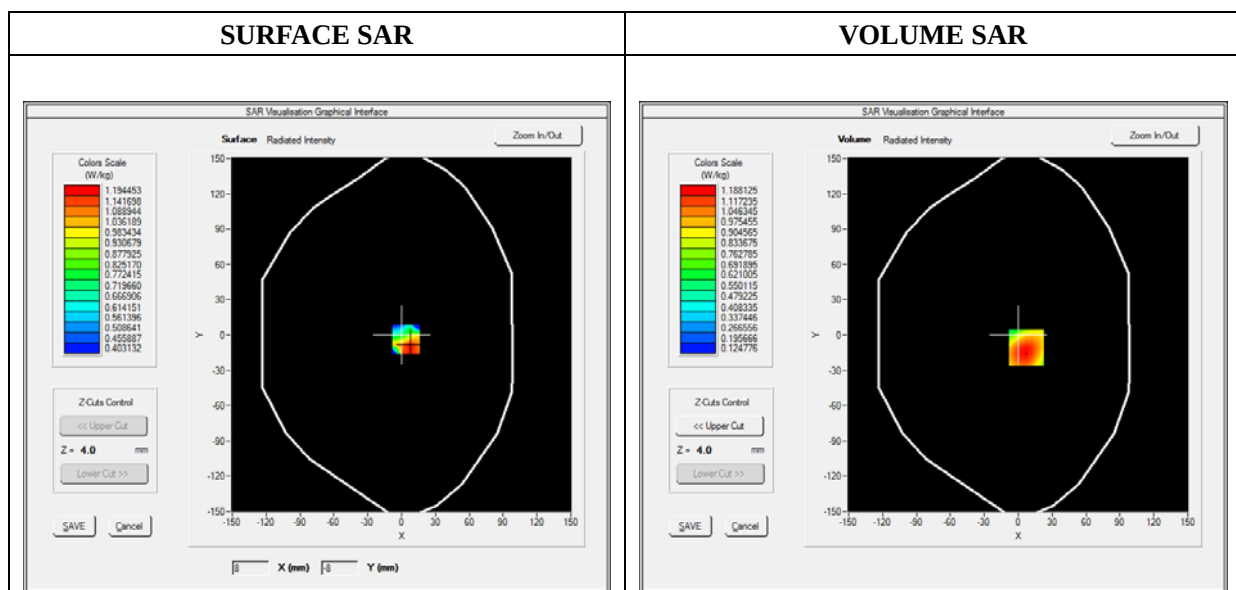
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 7.13; Calibrated: 06/03/2015

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt
Phantom	Flat plane
Device Position	Back
Band	GPRS850_2TX
Channels	Middle
Signal	Duty Cycle: 1:4

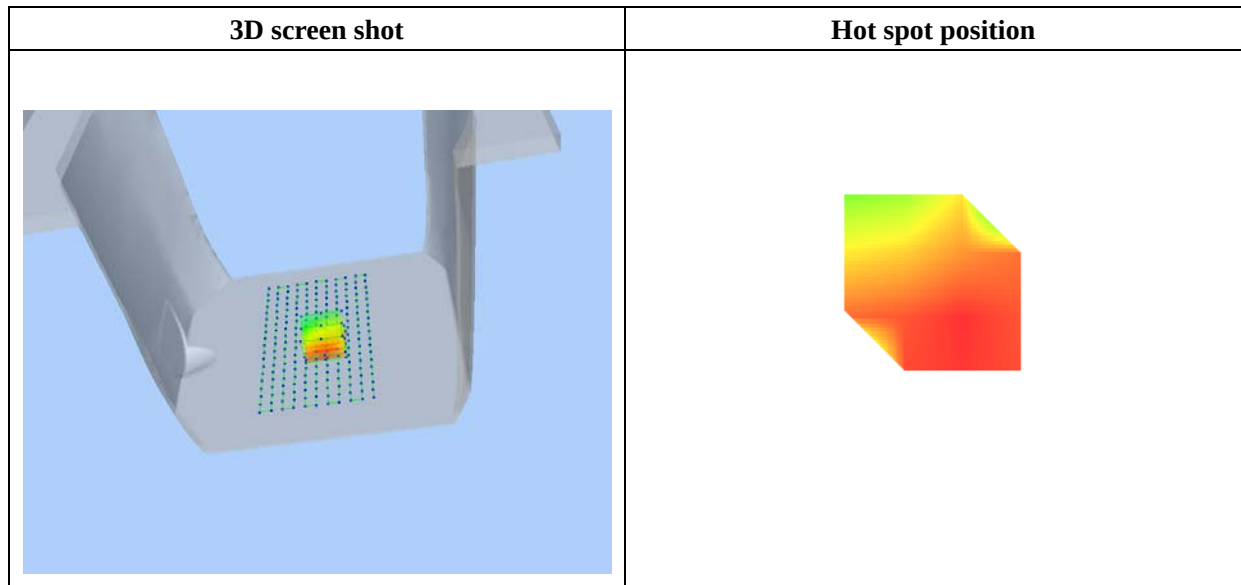
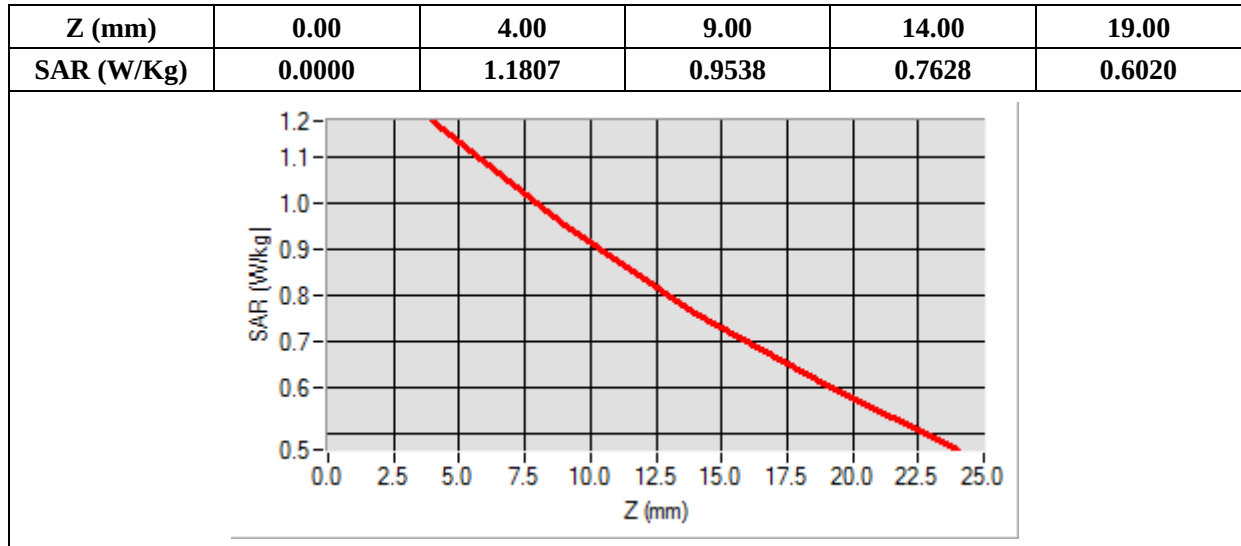
B. SAR Measurement Results

Frequency (MHz)	836.600000
Relative Permittivity (real part)	54.851214
Conductivity (S/m)	0.951454
Power Variation (%)	0.643748
Ambient Temperature	21.1
Liquid Temperature	21.3



Maximum location: X=7.00, Y=-11.00

SAR 10g (W/Kg)	0.862059
SAR 1g (W/Kg)	1.140764



MEASUREMENT 9

Type: Phone measurement (Complete)

Date of measurement: 12/07/2015

Measurement duration: 12 minutes 3 seconds

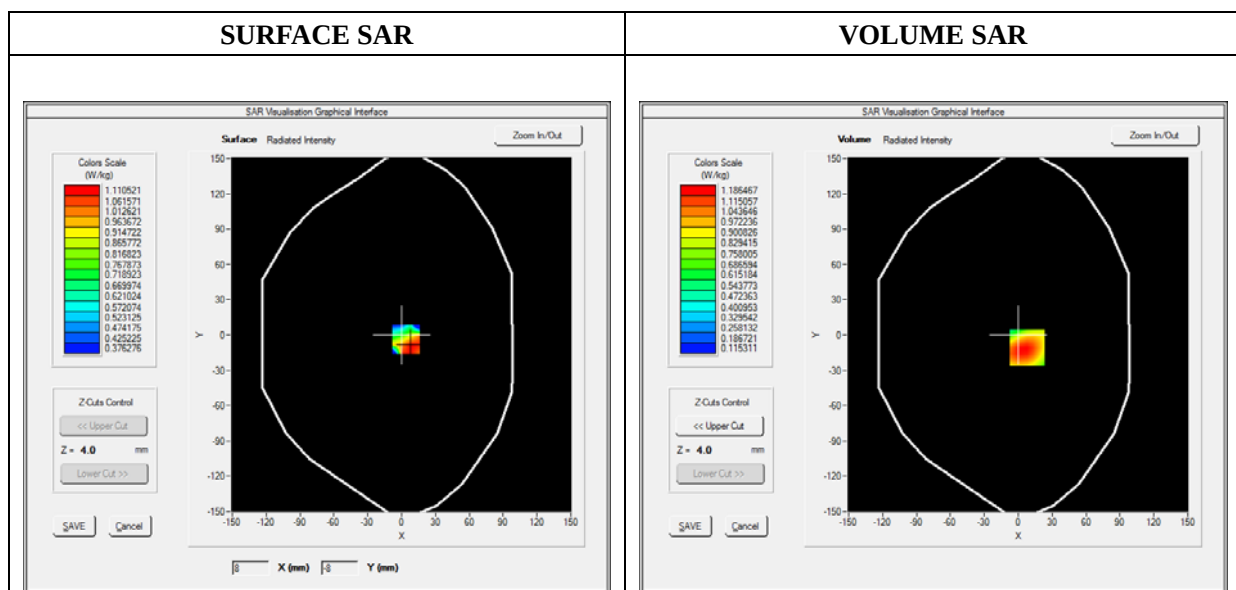
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 7.13; Calibrated: 06/03/2015

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt
Phantom	Flat plane
Device Position	Back
Band	GPRS850_2TX
Channels	High
Signal	Duty Cycle: 1:4

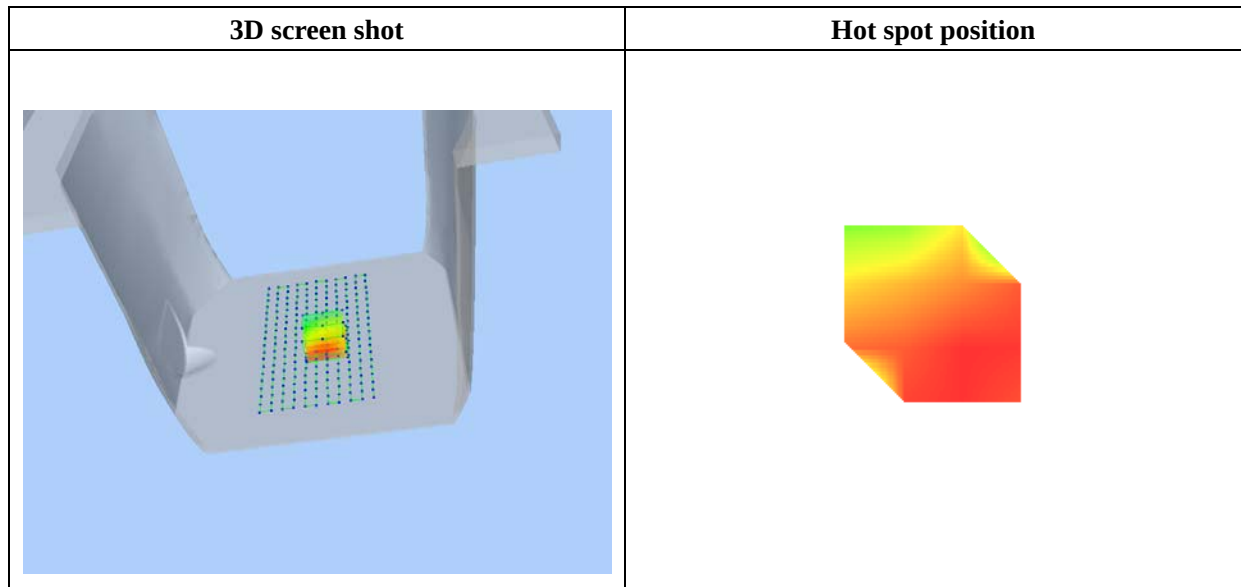
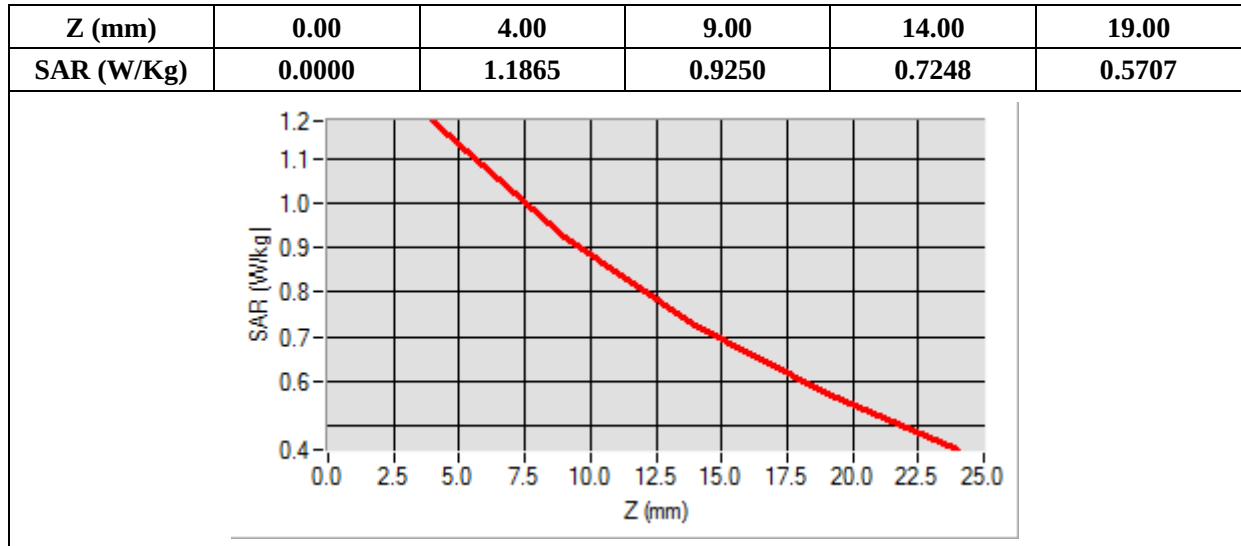
B. SAR Measurement Results

Frequency (MHz)	848.799988
Relative Permittivity (real part)	54.851214
Conductivity (S/m)	0.951454
Power Variation (%)	0.894569
Ambient Temperature	21.1
Liquid Temperature	21.3



Maximum location: X=8.00, Y=-11.00

SAR 10g (W/Kg)	0.834850
SAR 1g (W/Kg)	1.142269



MEASUREMENT 10

Type: Phone measurement (Complete)

Date of measurement: 12/07/2015

Measurement duration: 12 minutes 3 seconds

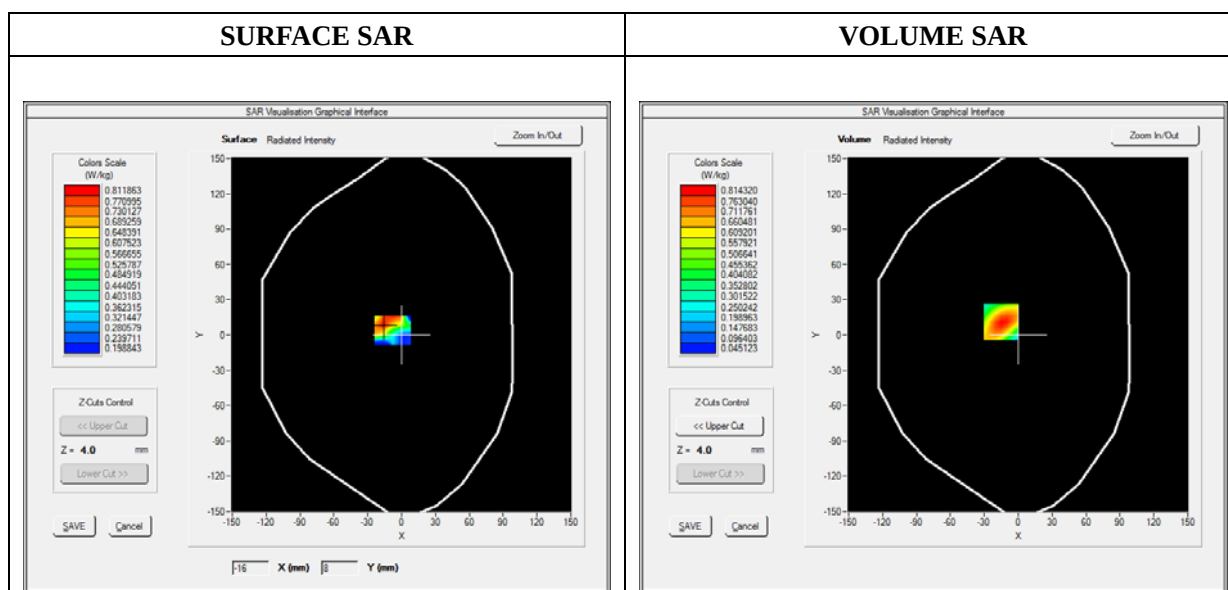
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 7.13; Calibrated: 06/03/2015

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt
Phantom	Flat plane
Device Position	Front
Band	GPRS850_2TX
Channels	Middle
Signal	Duty Cycle: 1:4

B. SAR Measurement Results

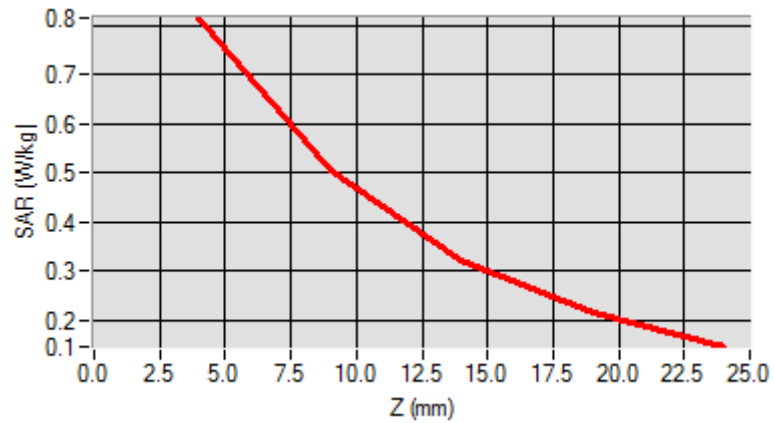
Frequency (MHz)	836.600000
Relative Permittivity (real part)	54.851214
Conductivity (S/m)	0.951454
Power Variation (%)	0.757758
Ambient Temperature	21.1
Liquid Temperature	21.3

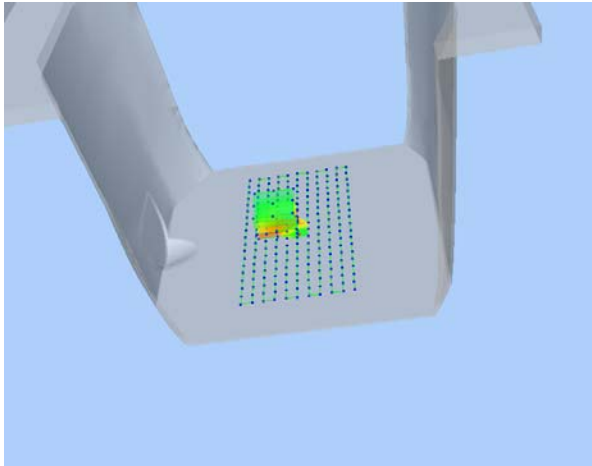
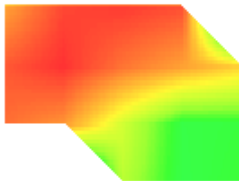


Maximum location: X=-15.00, Y=11.00

SAR 10g (W/Kg)	0.460693
SAR 1g (W/Kg)	0.760442

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.8143	0.5047	0.3214	0.2160



3D screen shot	Hot spot position
	

MEASUREMENT 11

Type: Phone measurement (Complete)

Date of measurement: 12/07/2015

Measurement duration: 12 minutes 3 seconds

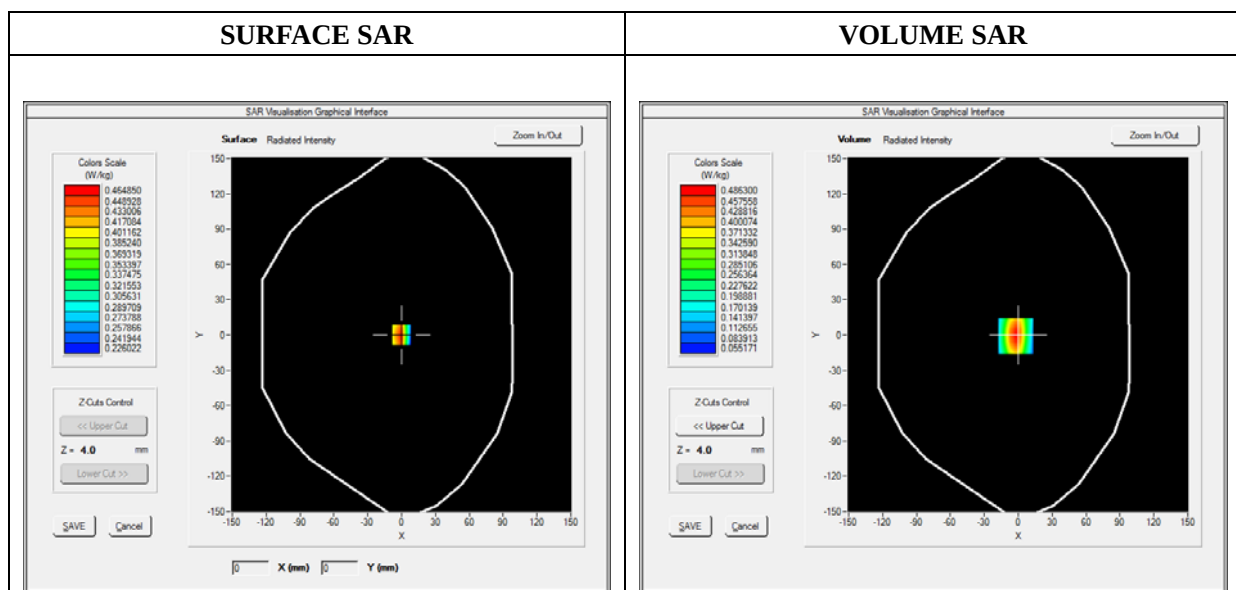
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 7.13; Calibrated: 06/03/2015

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt
Phantom	Flat plane
Device Position	Bottom
Band	GPRS850_2TX
Channels	Middle
Signal	Duty Cycle: 1:4

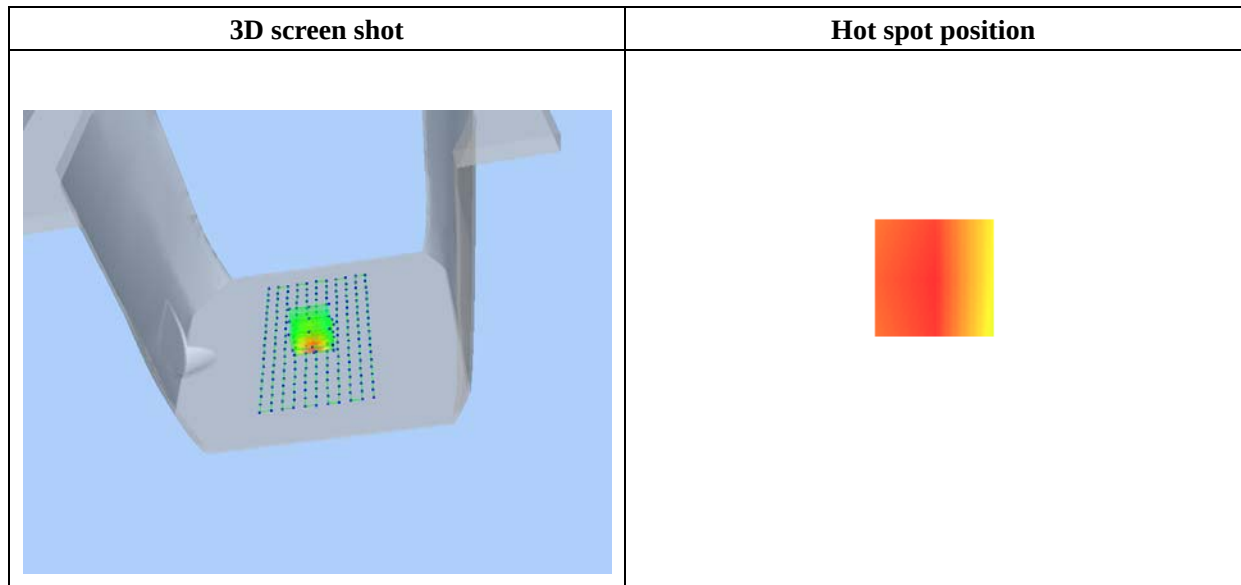
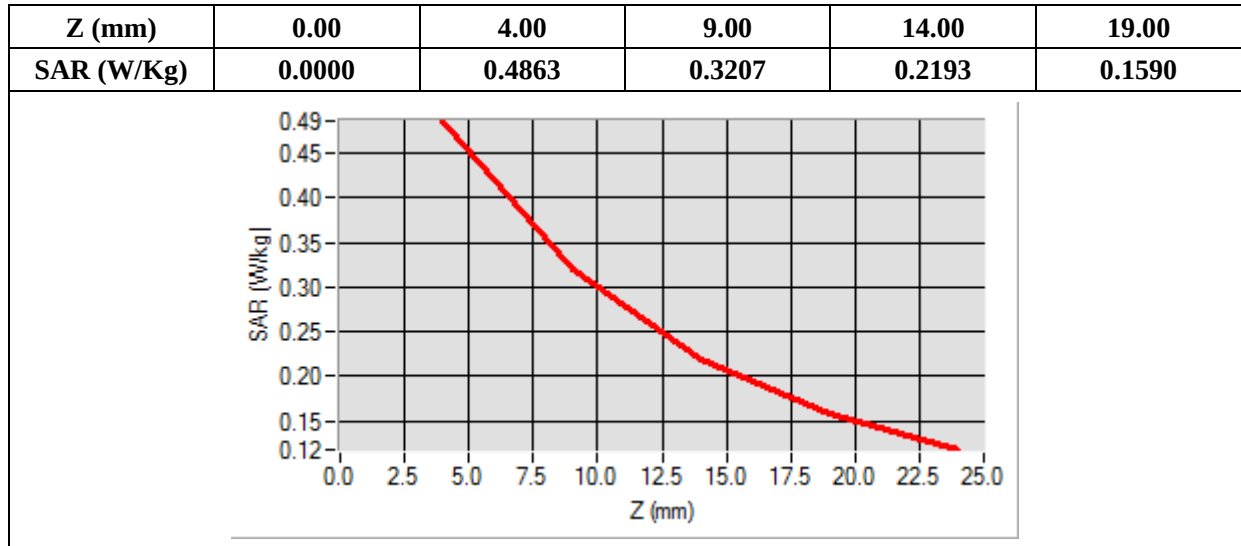
B. SAR Measurement Results

Frequency (MHz)	836.600000
Relative Permittivity (real part)	54.851214
Conductivity (S/m)	0.951454
Power Variation (%)	2.103734
Ambient Temperature	21.1
Liquid Temperature	21.3



Maximum location: X=-2.00, Y=-1.00

SAR 10g (W/Kg)	0.265885
SAR 1g (W/Kg)	0.441334



MEASUREMENT 12

Type: Phone measurement (Complete)

Date of measurement: 12/07/2015

Measurement duration: 12 minutes 3 seconds

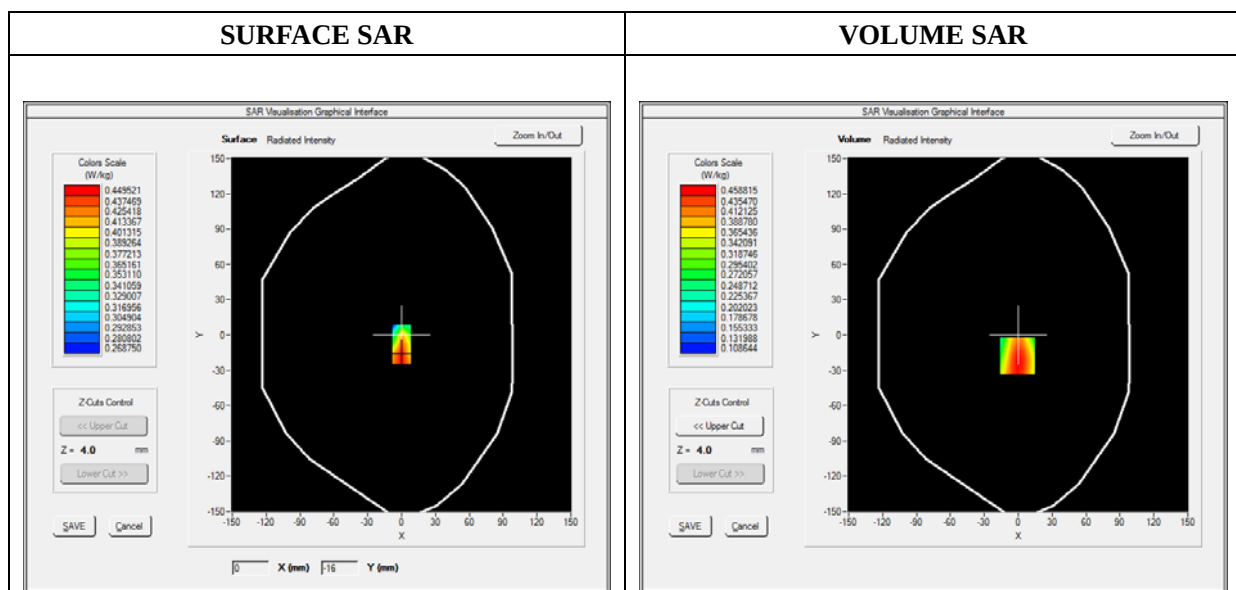
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 7.13; Calibrated: 06/03/2015

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt
Phantom	Flat plane
Device Position	Left side
Band	GPRS850_2TX
Channels	Middle
Signal	Duty Cycle: 1:4

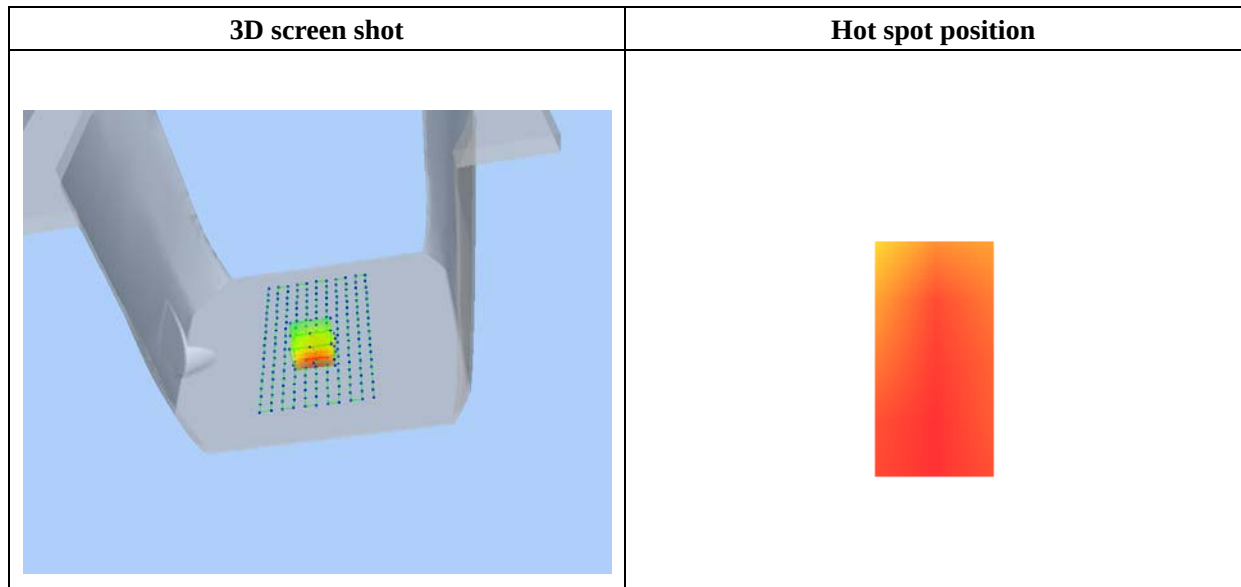
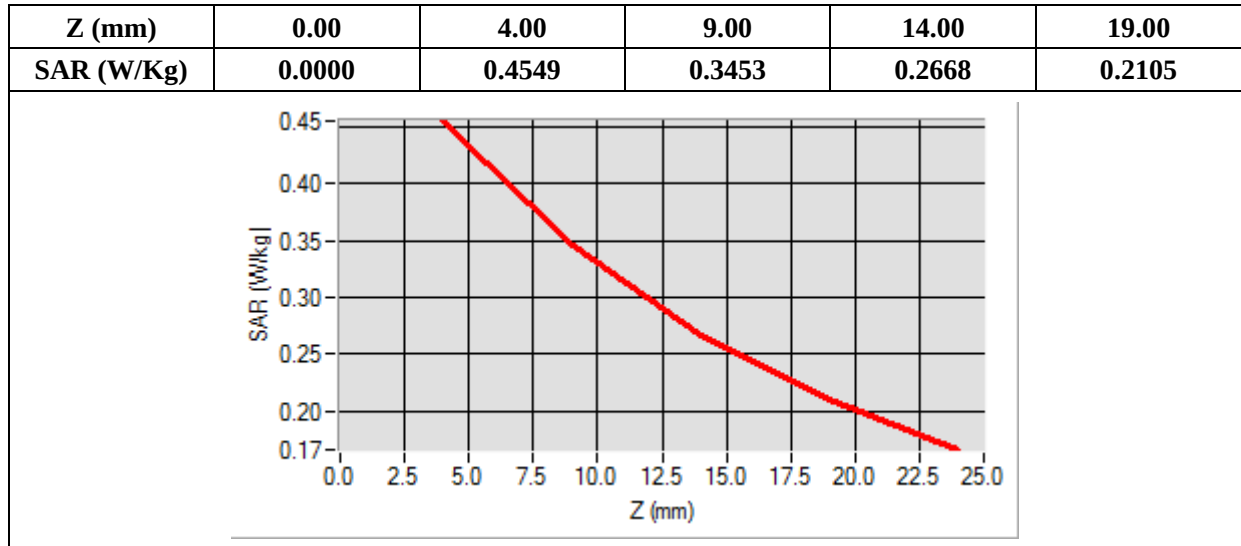
B. SAR Measurement Results

Frequency (MHz)	836.600000
Relative Permittivity (real part)	54.851214
Conductivity (S/m)	0.951454
Power Variation (%)	1.446333
Ambient Temperature	21.1
Liquid Temperature	21.3



Maximum location: X=-1.00, Y=-18.00

SAR 10g (W/Kg)	0.321924
SAR 1g (W/Kg)	0.439405



MEASUREMENT 13

Type: Phone measurement (Complete)

Date of measurement: 12/07/2015

Measurement duration: 12 minutes 3 seconds

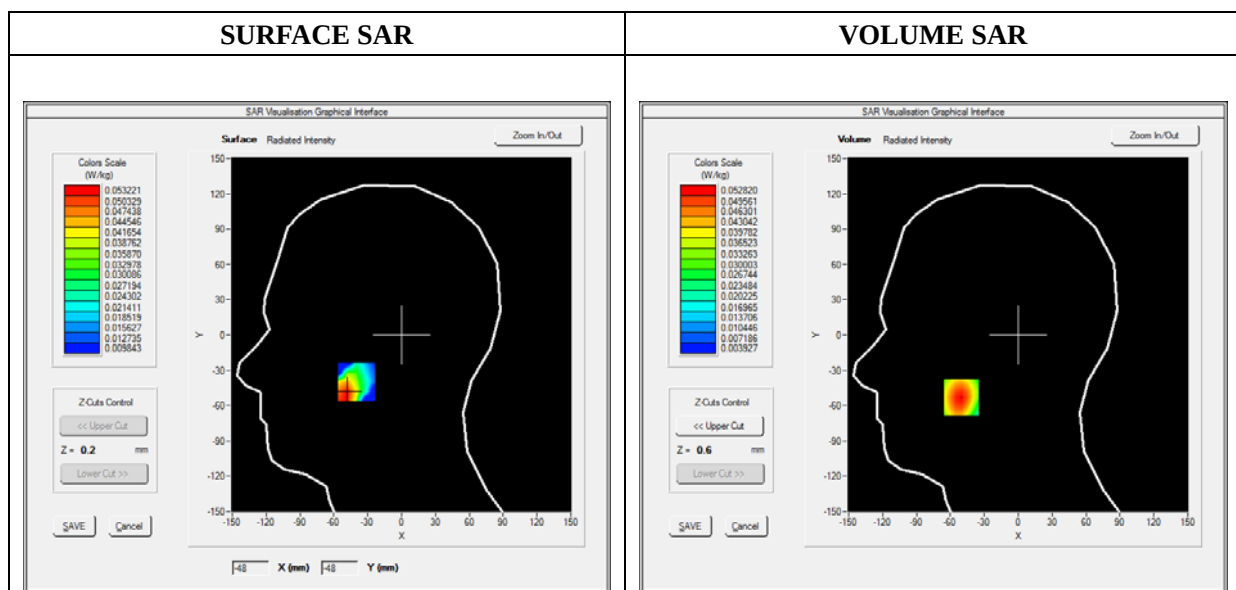
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.35; Calibrated: 06/03/2015

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)

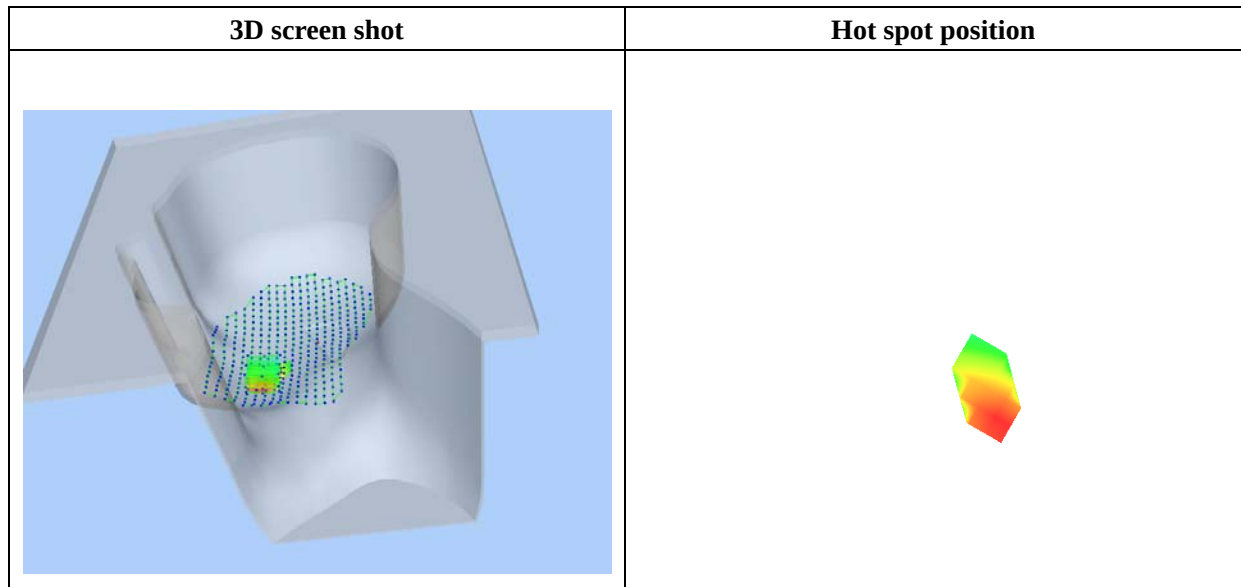
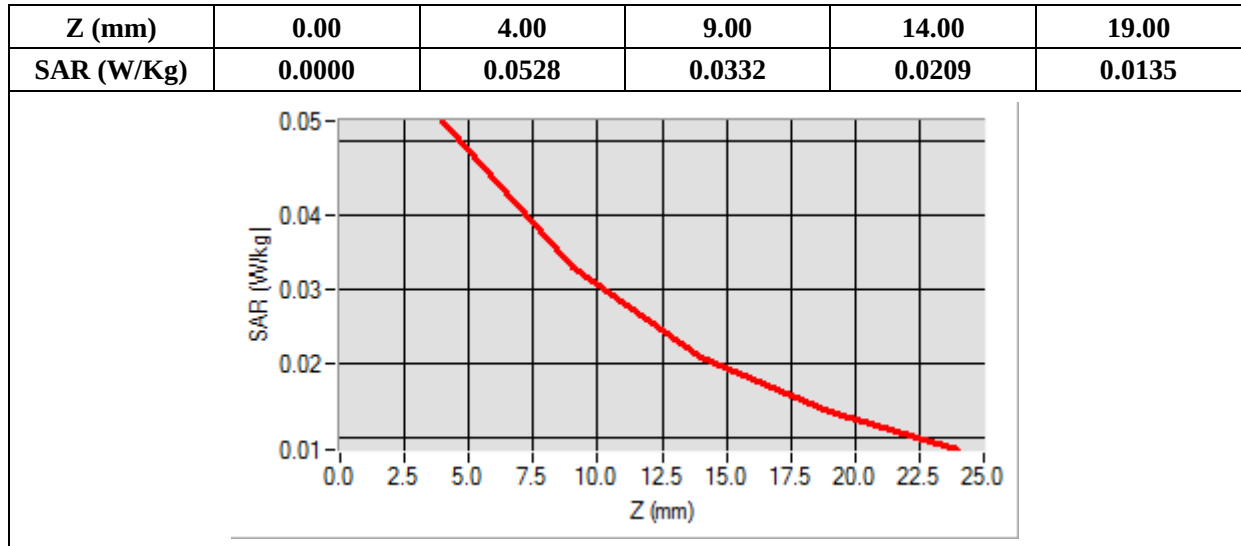
B. SAR Measurement Results

Frequency (MHz)	1850.200000
Relative Permittivity (real part)	38.560124
Conductivity (S/m)	1.380369
Power Variation (%)	1.314523
Ambient Temperature	21.1
Liquid Temperature	21.3



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

SAR 10g (W/Kg)	0.031017
SAR 1g (W/Kg)	0.049796



MEASUREMENT 14

Type: Phone measurement (Complete)

Date of measurement: 12/07/2015

Measurement duration: 12 minutes 3 seconds

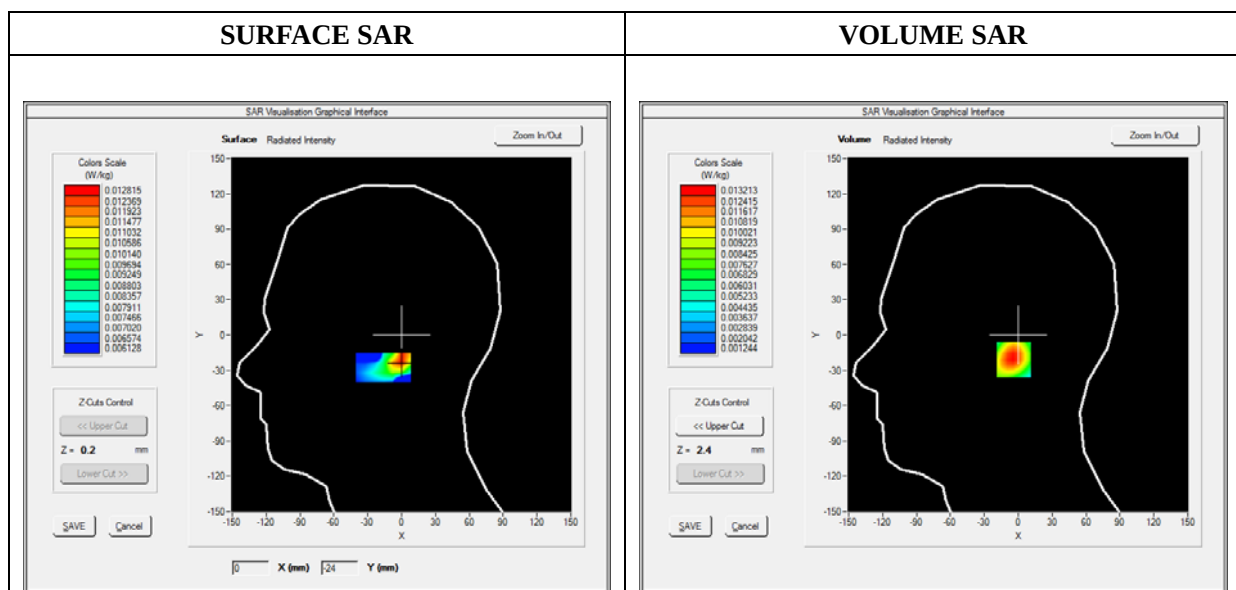
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.35; Calibrated: 06/03/2015

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)

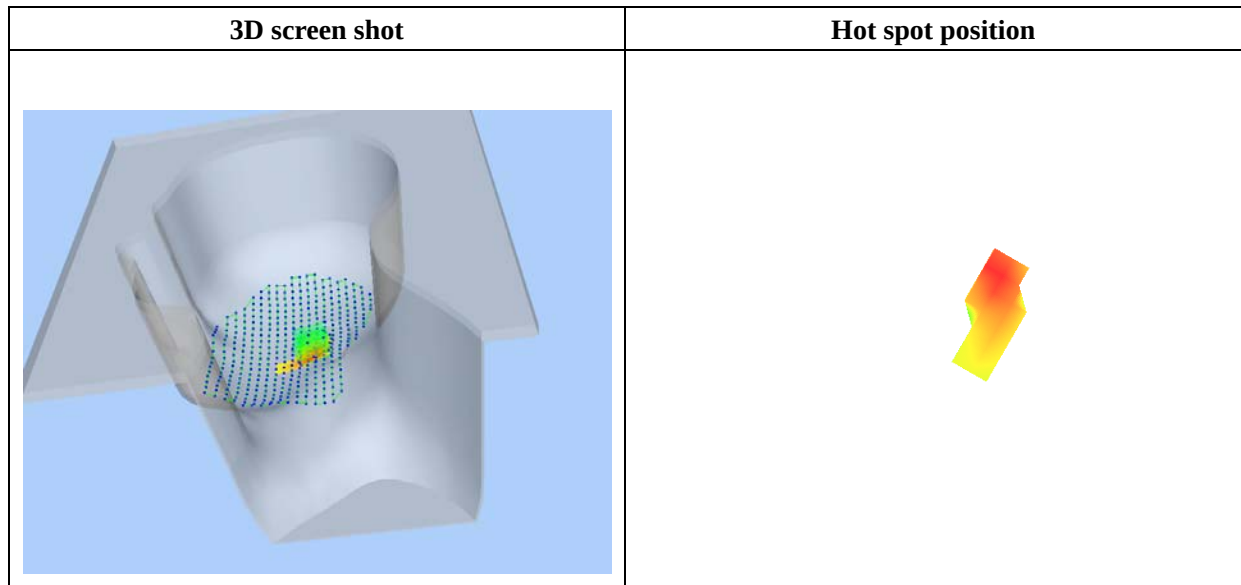
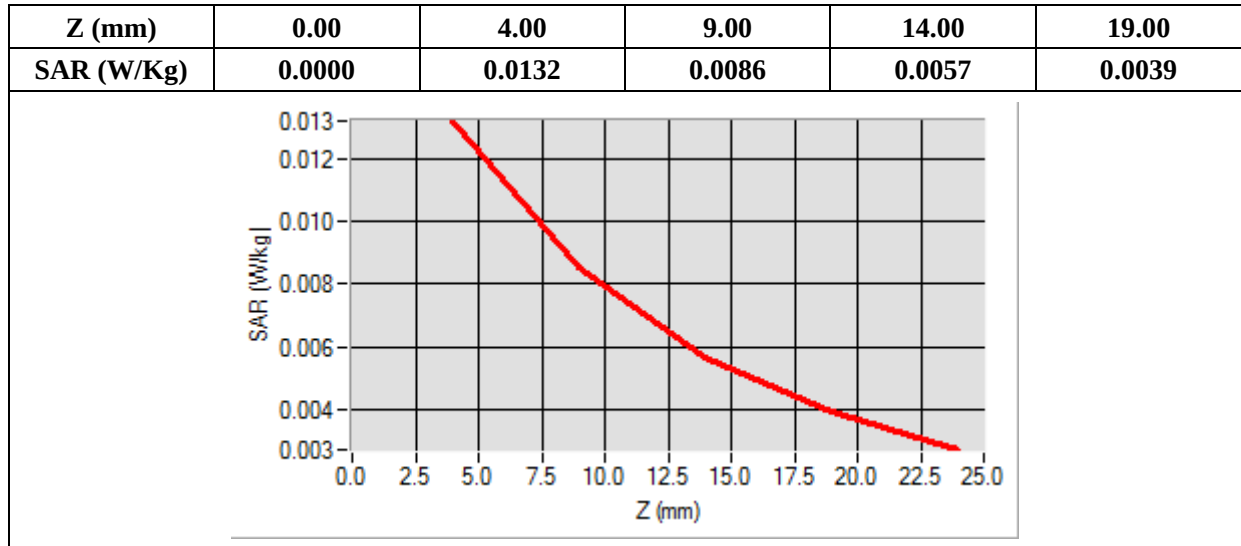
B. SAR Measurement Results

Frequency (MHz)	1850.200000
Relative Permittivity (real part)	38.560124
Conductivity (S/m)	1.380369
Power Variation (%)	1.104384
Ambient Temperature	21.1
Liquid Temperature	21.3



Maximum location: X=0.00, Y=-21.00

SAR 10g (W/Kg)	0.007562
SAR 1g (W/Kg)	0.012377



MEASUREMENT 15

Type: Phone measurement (Complete)

Date of measurement: 12/07/2015

Measurement duration: 11 minutes 48 seconds

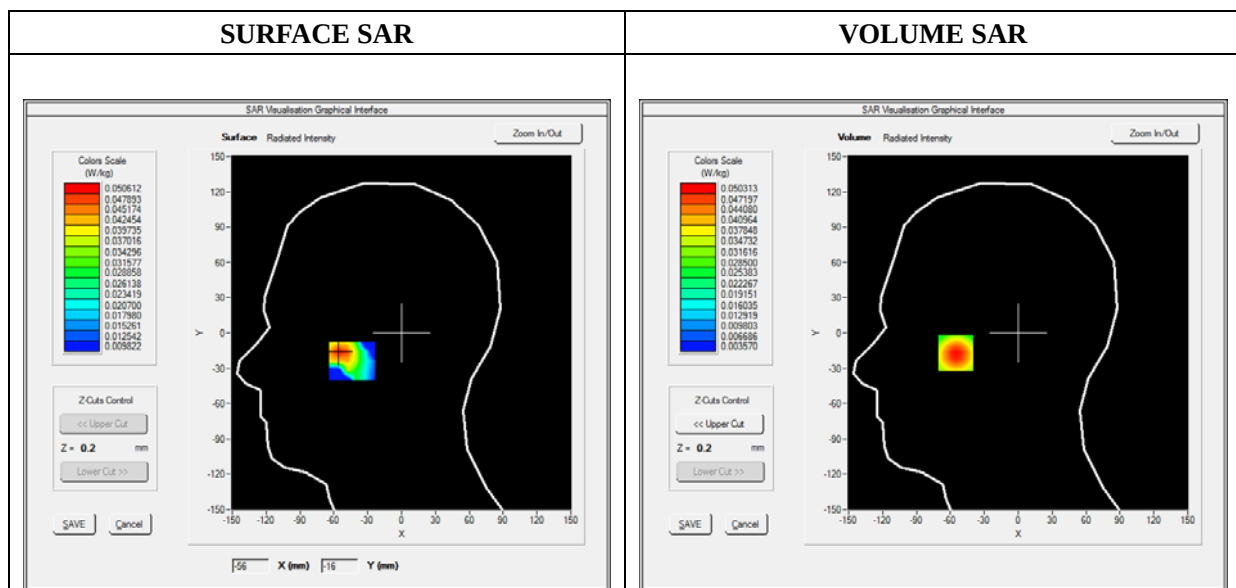
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.35; Calibrated: 06/03/2015

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)

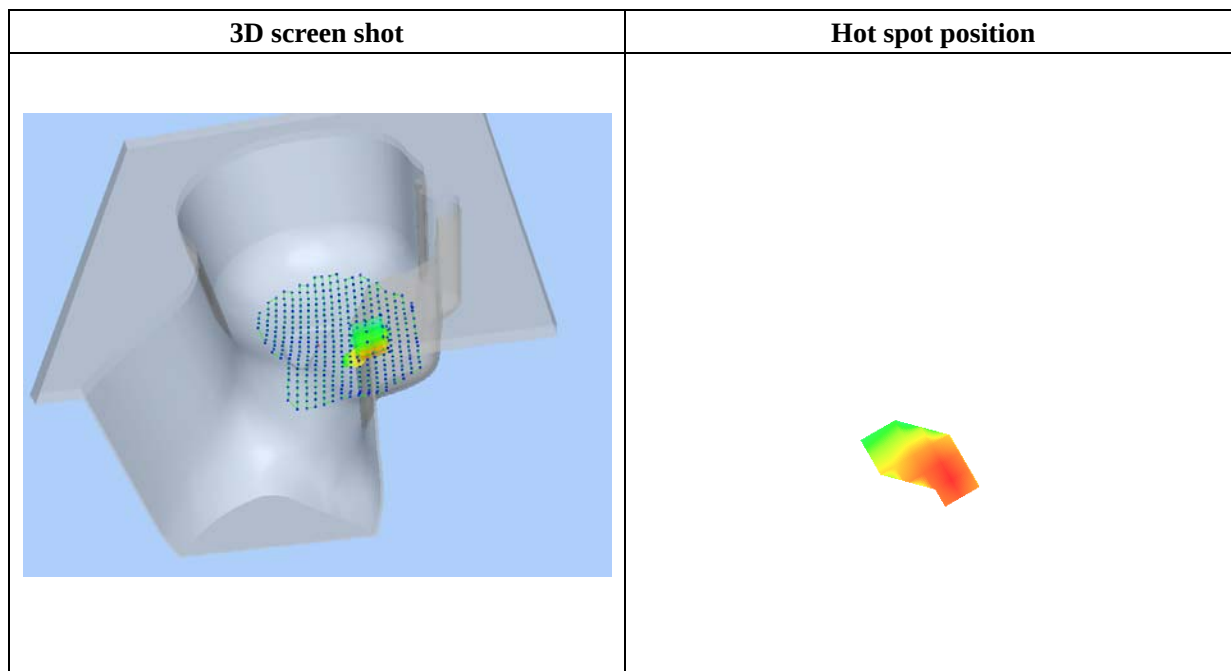
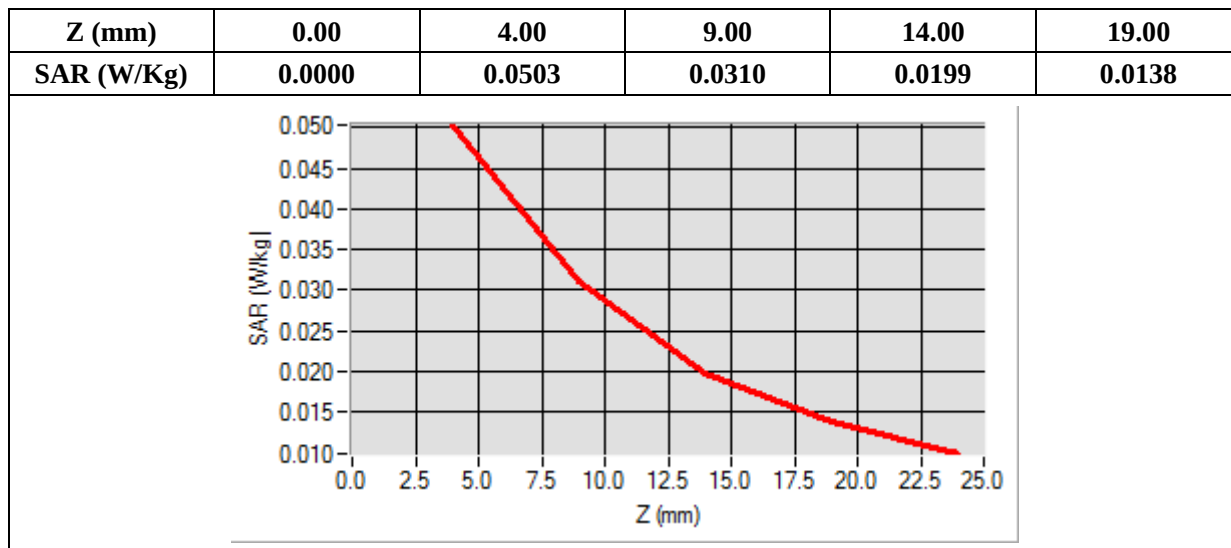
B. SAR Measurement Results

Frequency (MHz)	1850.200000
Relative Permittivity (real part)	38.560124
Conductivity (S/m)	1.380369
Power Variation (%)	1.442440
Ambient Temperature	21.1
Liquid Temperature	21.3



Maximum location: X=-55.00, Y=-16.00

SAR 10g (W/Kg)	0.028734
SAR 1g (W/Kg)	0.047244



MEASUREMENT 16

Type: Phone measurement (Complete)

Date of measurement: 12/07/2015

Measurement duration: 12 minutes 3 seconds

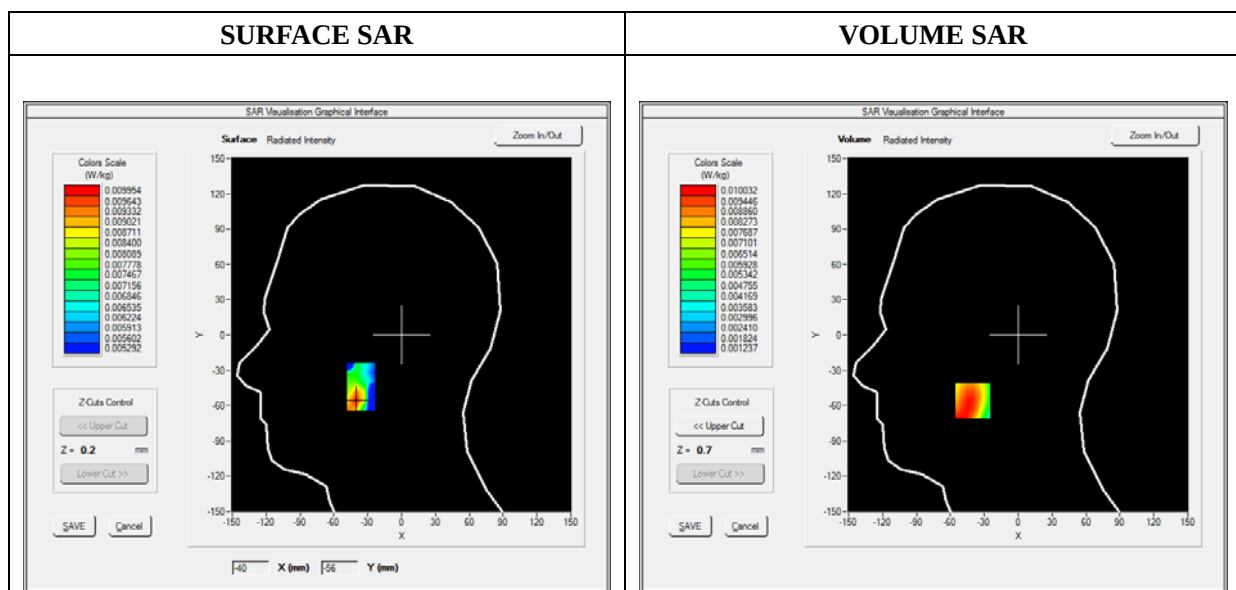
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.35; Calibrated: 06/03/2015

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)

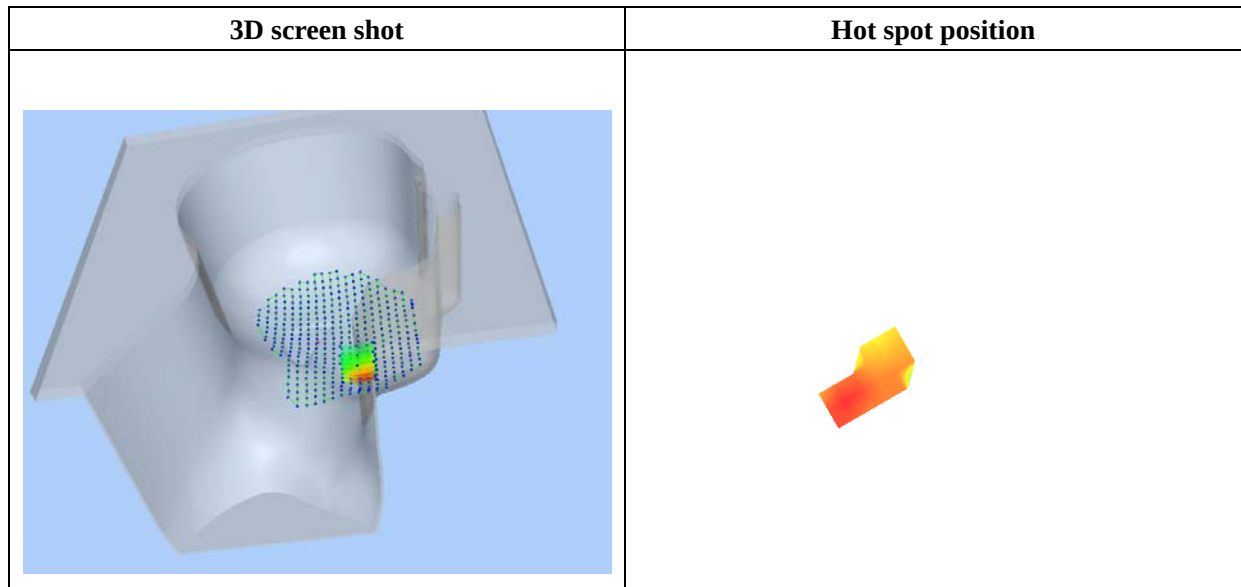
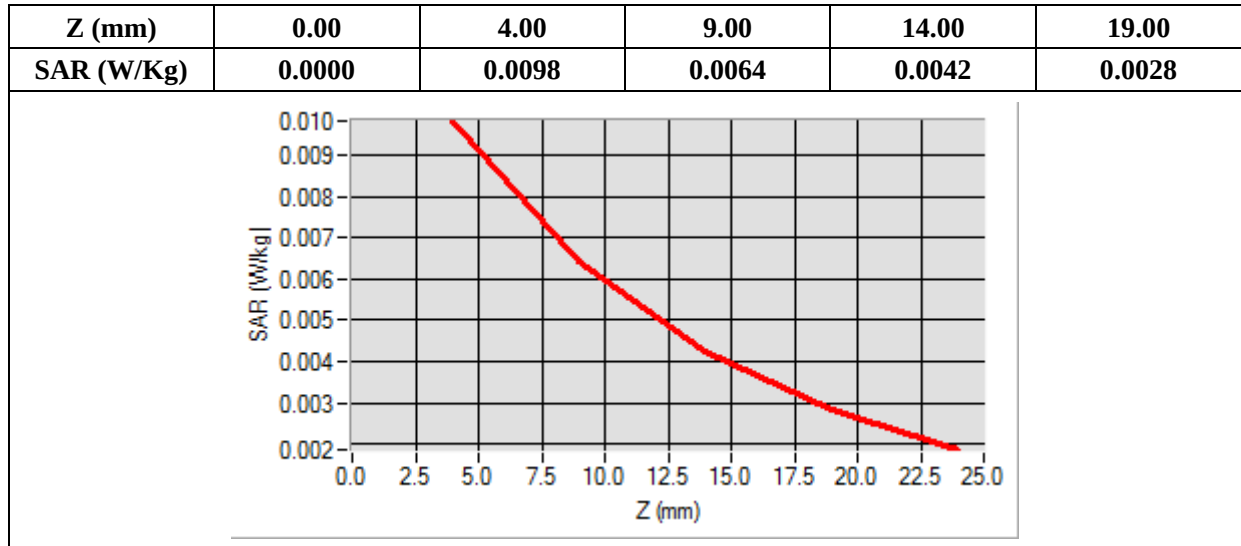
B. SAR Measurement Results

Frequency (MHz)	1850.200000
Relative Permittivity (real part)	38.560124
Conductivity (S/m)	1.380369
Power Variation (%)	1.543453
Ambient Temperature	21.1
Liquid Temperature	21.3



Maximum location: X=-40.00, Y=-56.00

SAR 10g (W/Kg)	0.006517
SAR 1g (W/Kg)	0.009668



MEASUREMENT 17

Type: Phone measurement (Complete)

Date of measurement: 12/07/2015

Measurement duration: 12 minutes 3 seconds

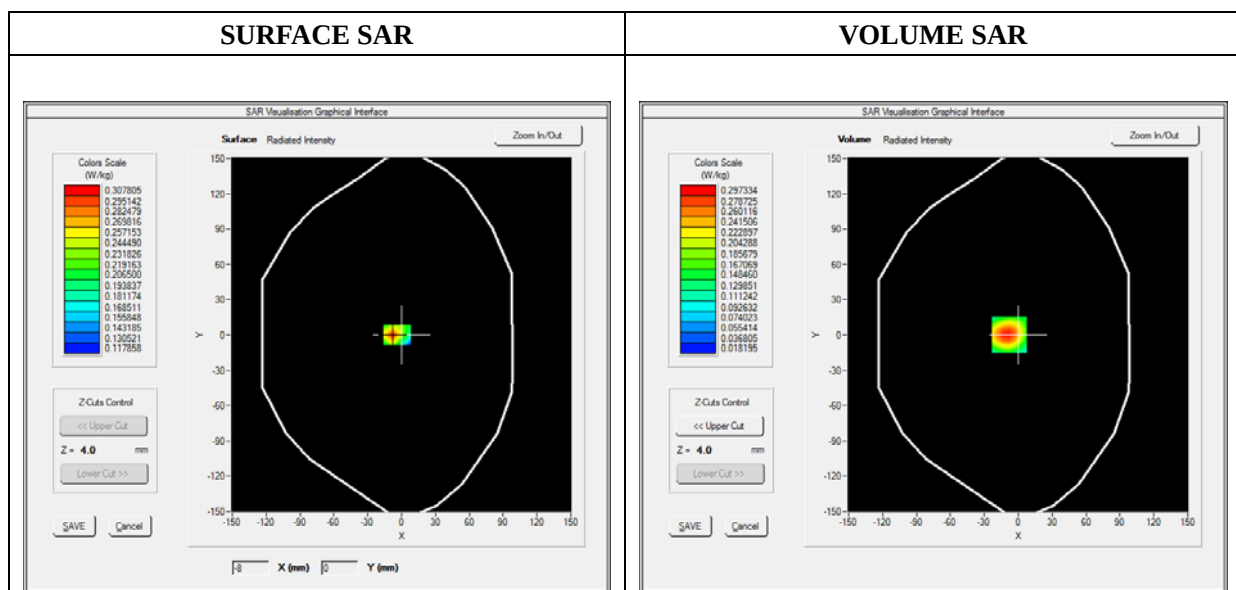
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.55; Calibrated: 06/03/2015

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt
Phantom	Flat Plane
Device Position	Back(Body-worn)
Band	GSM1900
Channels	Low
Signal	TDMA (Crest factor: 8.0)

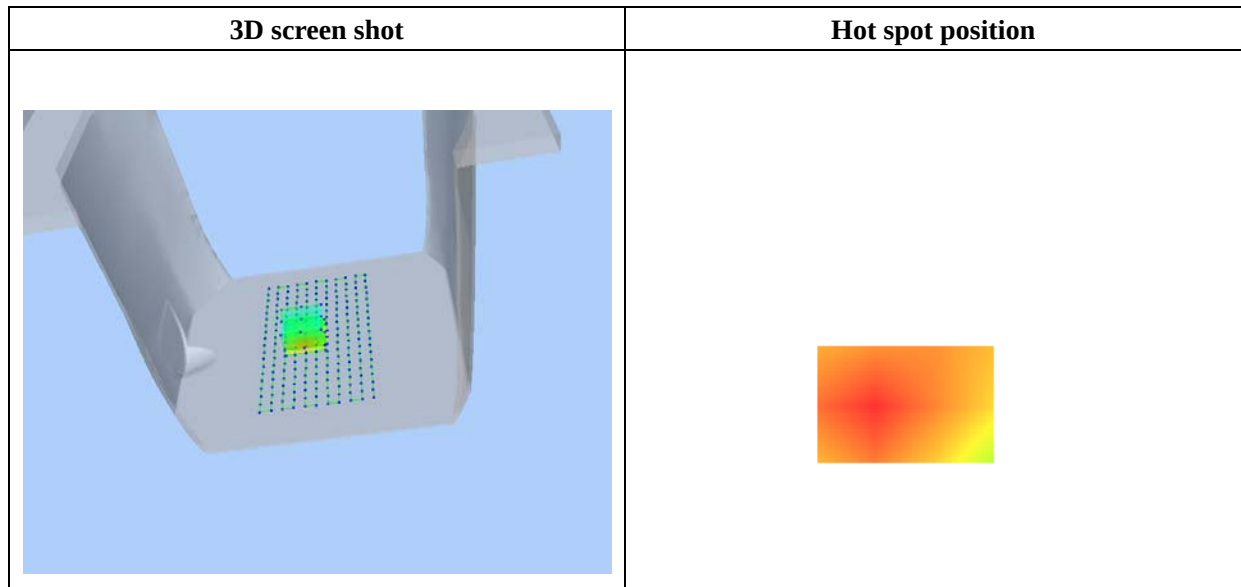
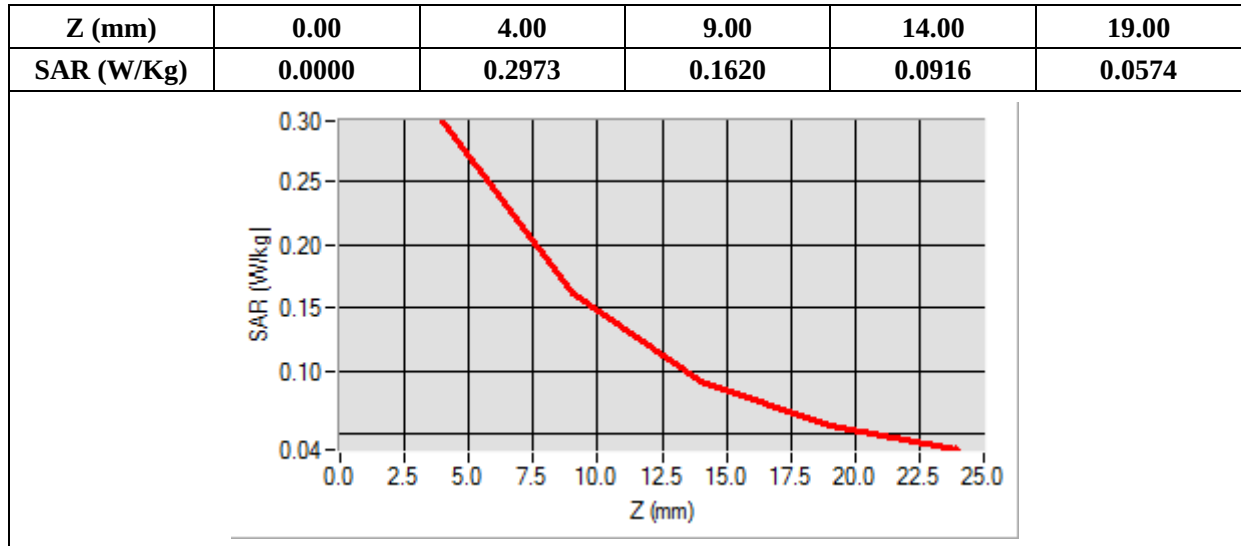
B. SAR Measurement Results

Frequency (MHz)	1850.200000
Relative Permittivity (real part)	52.420415
Conductivity (S/m)	1.501966
Power Variation (%)	1.474622
Ambient Temperature	21.1
Liquid Temperature	21.3



Maximum location: X=-8.00, Y=0.00

SAR 10g (W/Kg)	0.176390
SAR 1g (W/Kg)	0.324620



MEASUREMENT 18

Type: Phone measurement (Complete)

Date of measurement: 12/07/2015

Measurement duration: 12 minutes 3 seconds

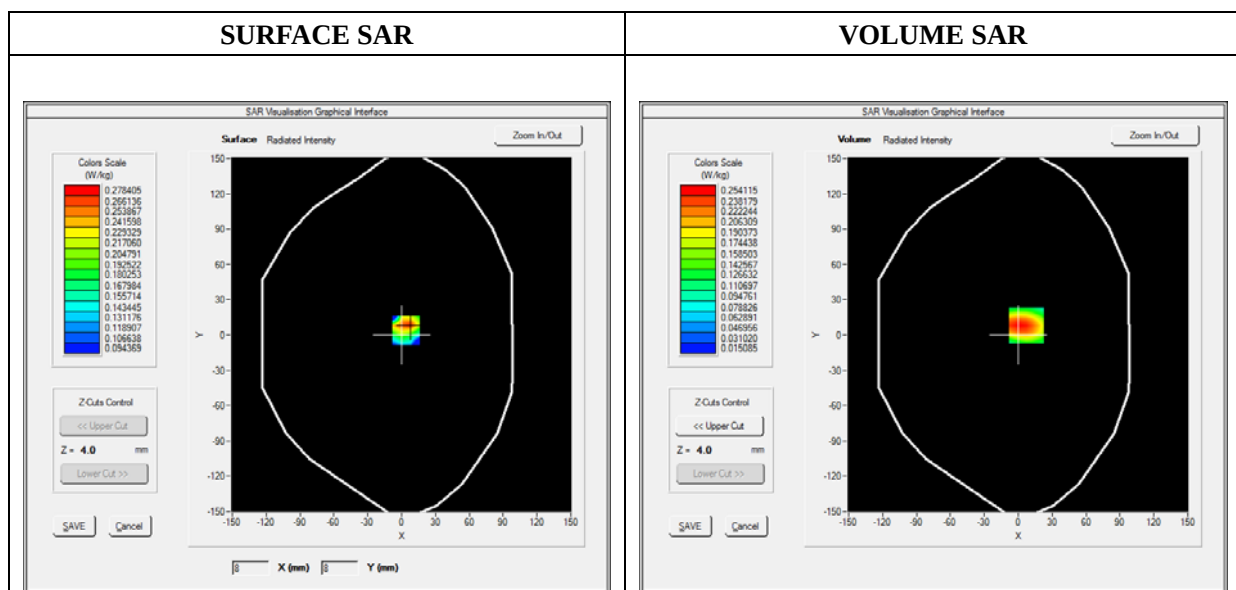
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.55; Calibrated: 06/03/2015

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt
Phantom	Flat Plane
Device Position	Front(Body-worn)
Band	GSM1900
Channels	Low
Signal	TDMA (Crest factor: 8.0)

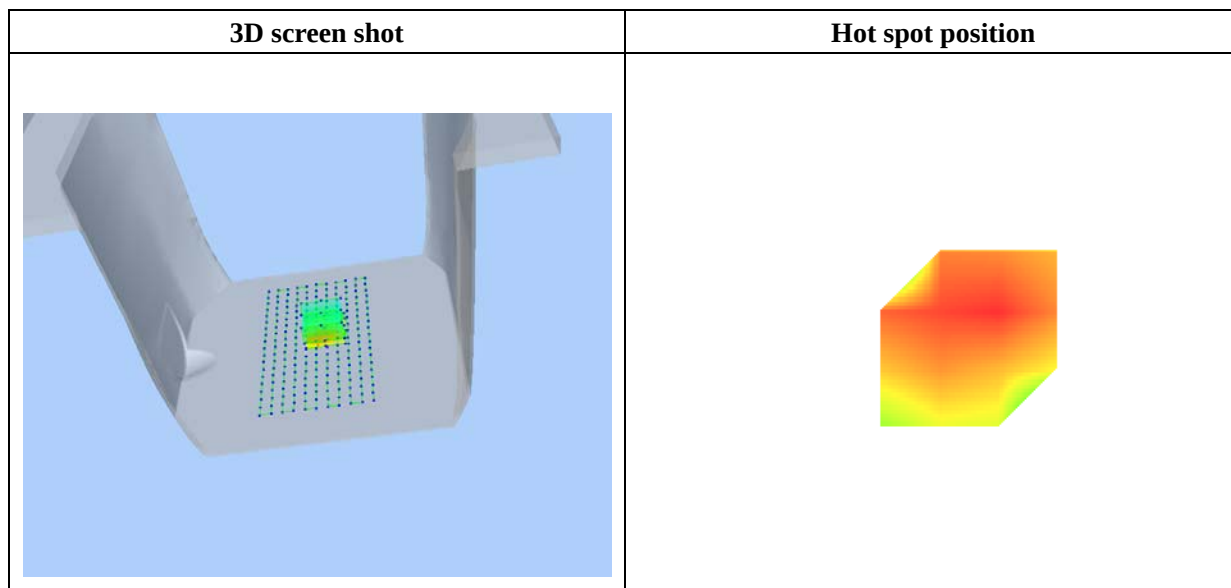
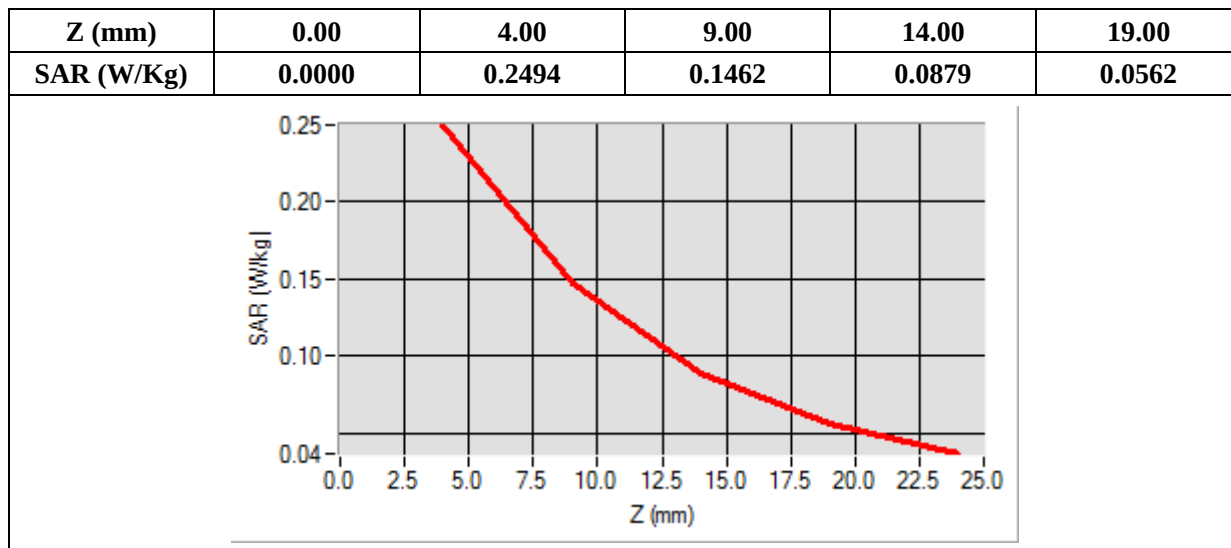
B. SAR Measurement Results

Frequency (MHz)	1850.200000
Relative Permittivity (real part)	52.420415
Conductivity (S/m)	1.501966
Power Variation (%)	0.553453
Ambient Temperature	21.1
Liquid Temperature	21.3



Maximum location: X=7.00, Y=8.00

SAR 10g (W/Kg)	0.159098
SAR 1g (W/Kg)	0.277426



MEASUREMENT 19

Type: Phone measurement (Complete)

Date of measurement: 12/07/2015

Measurement duration: 12 minutes 3 seconds

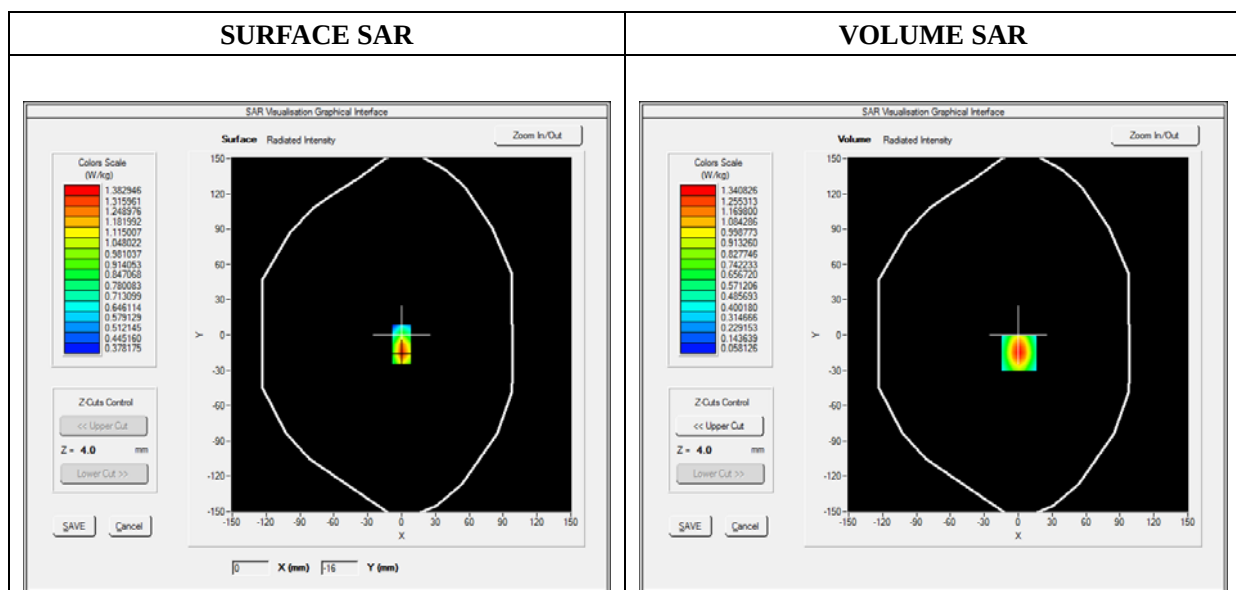
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.55; Calibrated: 06/03/2015

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt
Phantom	Flat plane
Device Position	Back
Band	GPRS1900_2TX
Channels	Low
Signal	Duty Cycle: 1:4

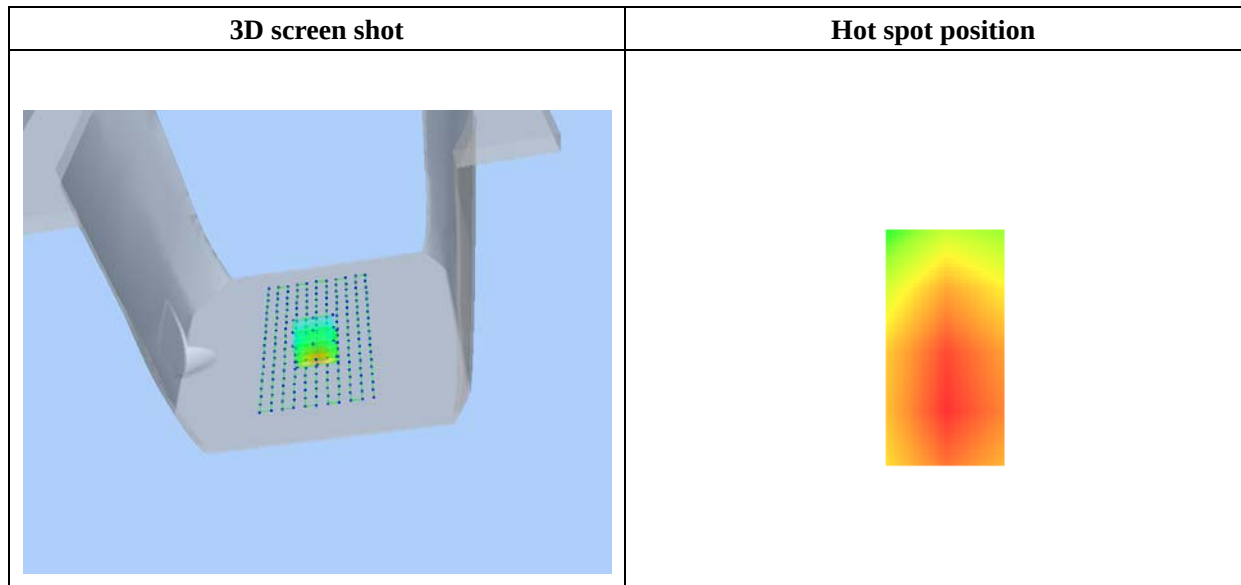
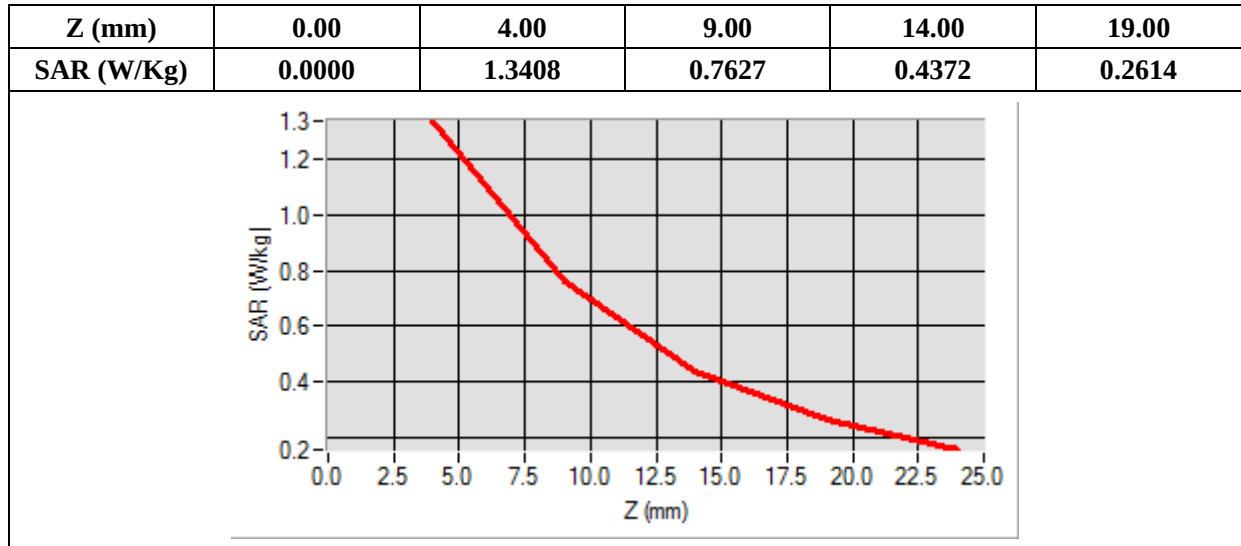
B. SAR Measurement Results

Frequency (MHz)	1850.200000
Relative Permittivity (real part)	52.420415
Conductivity (S/m)	1.501966
Power Variation (%)	2.547247
Ambient Temperature	21.1
Liquid Temperature	21.3



Maximum location: X=1.00, Y=-15.00

SAR 10g (W/Kg)	0.649157
SAR 1g (W/Kg)	1.120645



MEASUREMENT 20

Type: Phone measurement (Complete)

Date of measurement: 12/07/2015

Measurement duration: 12 minutes 3 seconds

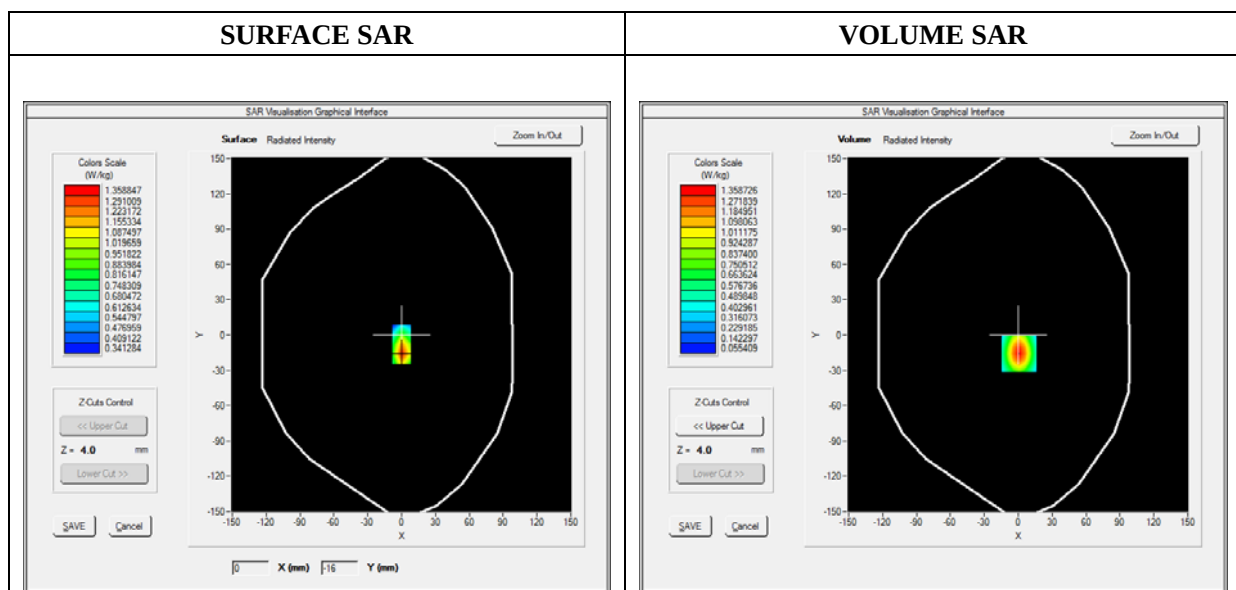
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.55; Calibrated: 06/03/2015

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt
Phantom	Flat plane
Device Position	Back
Band	GPRS1900_2TX
Channels	Middle
Signal	Duty Cycle: 1:4

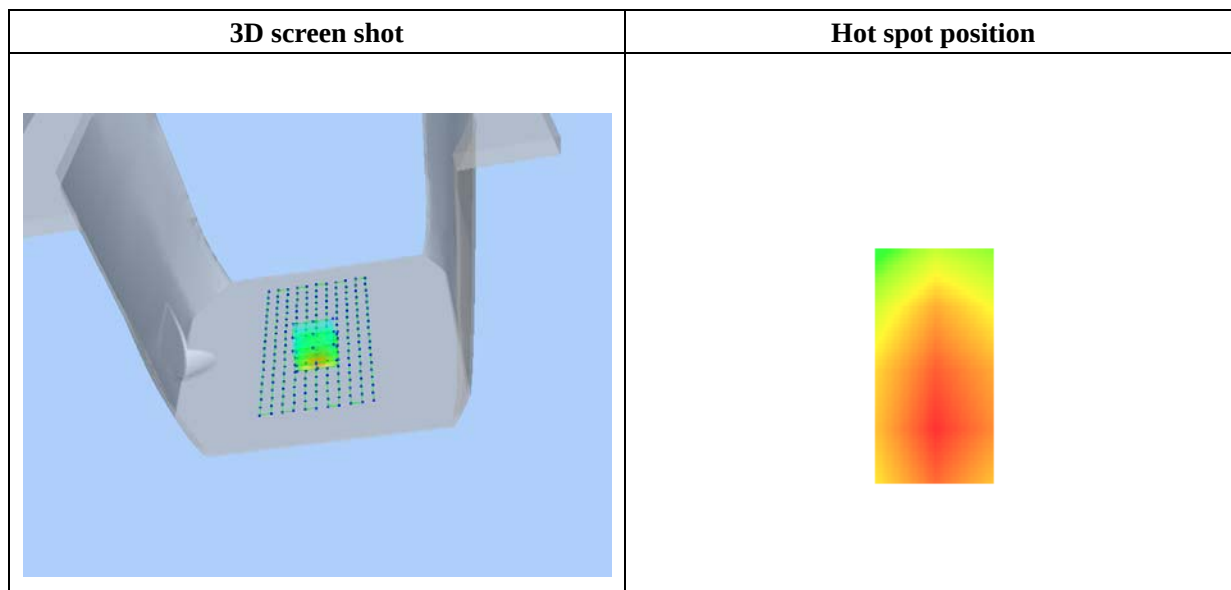
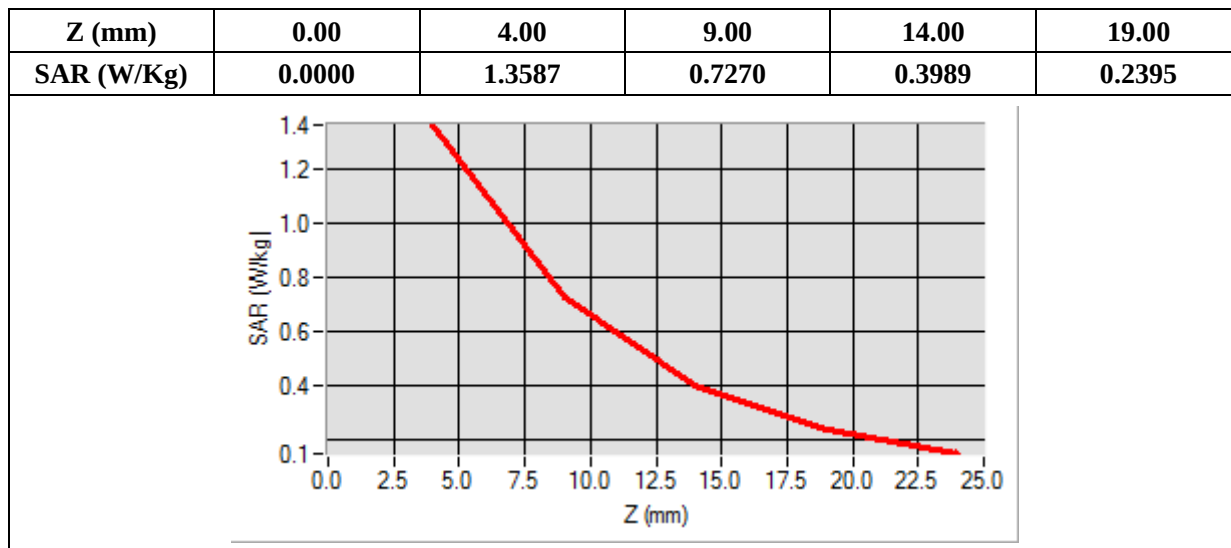
B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative Permittivity (real part)	52.420415
Conductivity (S/m)	1.501966
Power Variation (%)	2.956378
Ambient Temperature	21.1
Liquid Temperature	21.3



Maximum location: X=1.00, Y=-16.00

SAR 10g (W/Kg)	0.637088
SAR 1g (W/Kg)	1.135577



MEASUREMENT 21

Type: Phone measurement (Complete)

Date of measurement: 12/07/2015

Measurement duration: 12 minutes 3 seconds

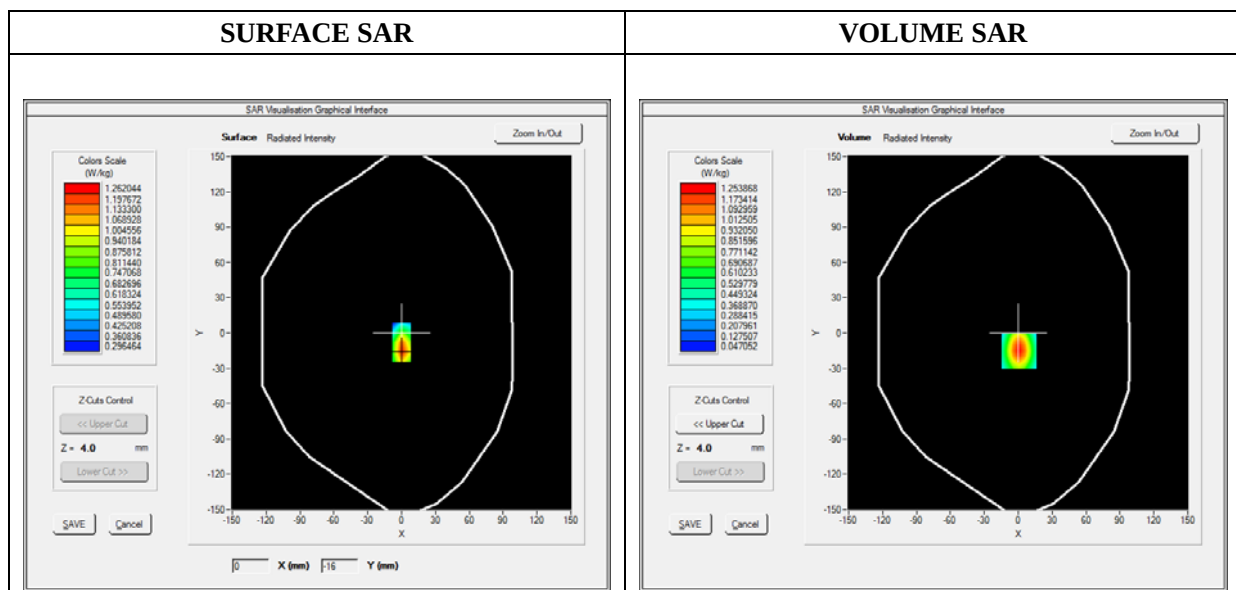
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.55; Calibrated: 06/03/2015

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt
Phantom	Flat plane
Device Position	Back
Band	GPRS1900_2TX
Channels	High
Signal	Duty Cycle: 1:4

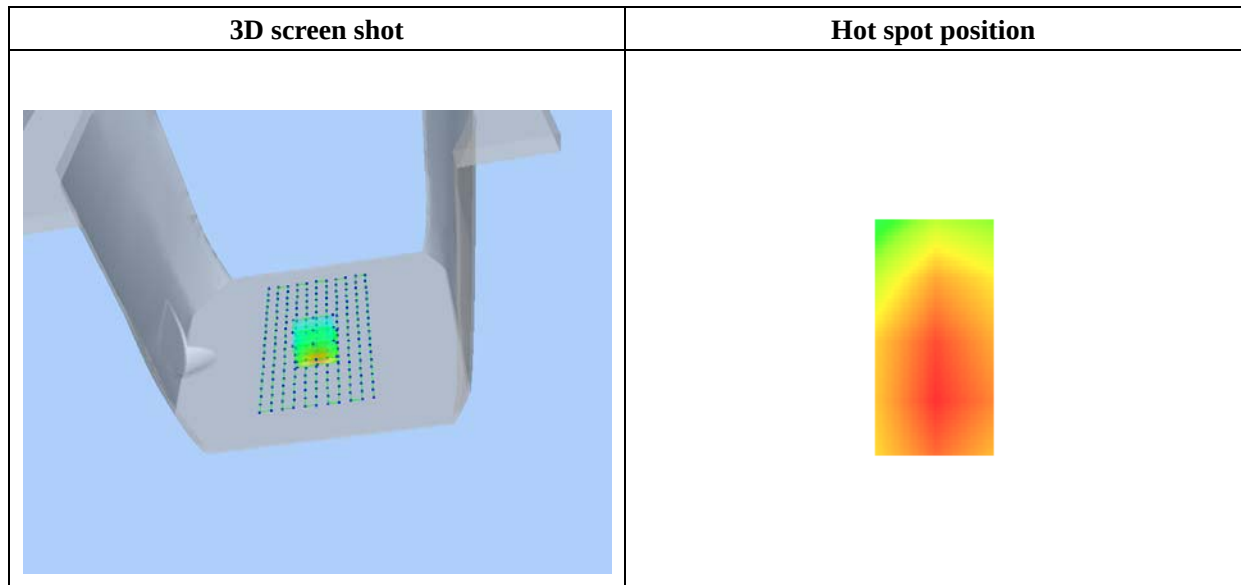
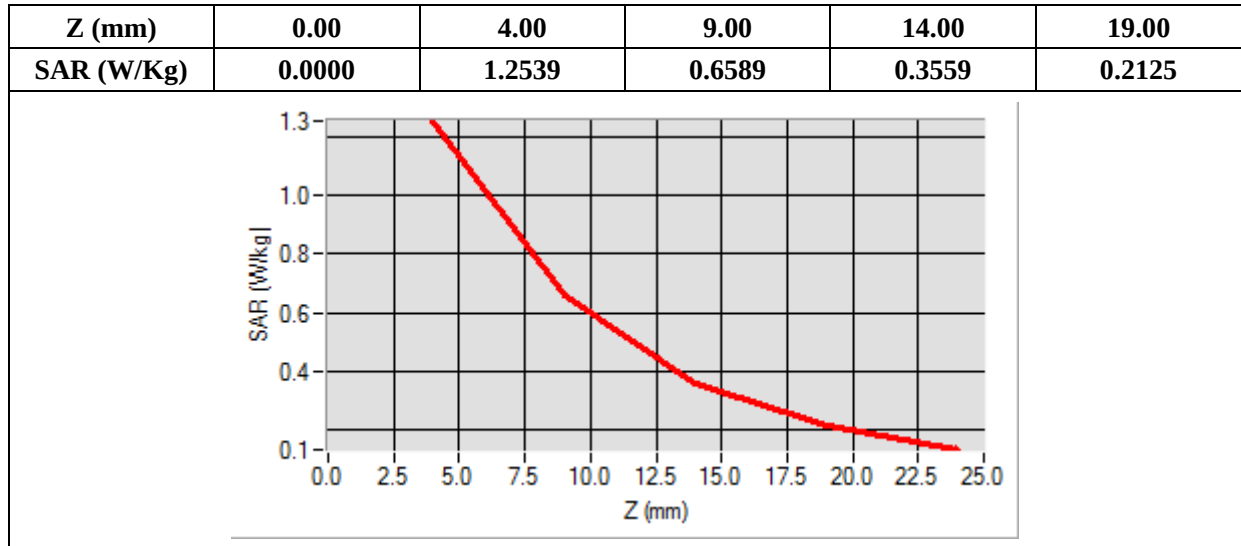
B. SAR Measurement Results

Frequency (MHz)	1909.800000
Relative Permittivity (real part)	52.420415
Conductivity (S/m)	1.501966
Power Variation (%)	2.053264
Ambient Temperature	21.1
Liquid Temperature	21.3



Maximum location: X=1.00, Y=-15.00

SAR 10g (W/Kg)	0.587955
SAR 1g (W/Kg)	1.142002



MEASUREMENT 22

Type: Phone measurement (Complete)

Date of measurement: 12/07/2015

Measurement duration: 12 minutes 3 seconds

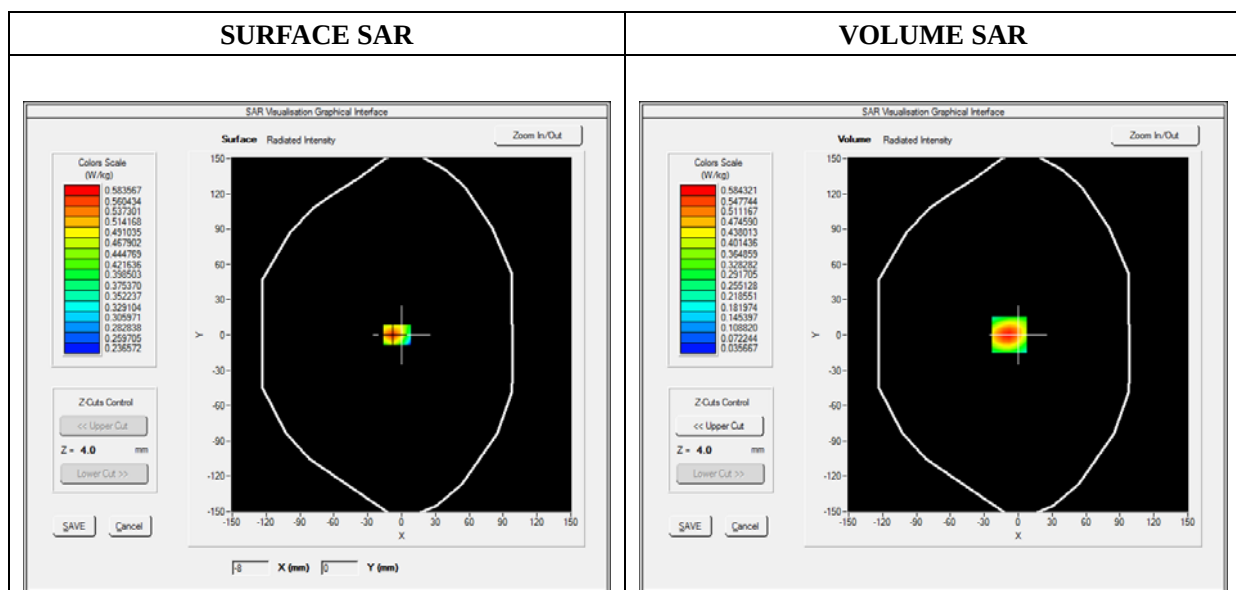
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.55; Calibrated: 06/03/2015

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt
Phantom	Flat plane
Device Position	Front
Band	GPRS1900_2TX
Channels	Low
Signal	Duty Cycle: 1:4

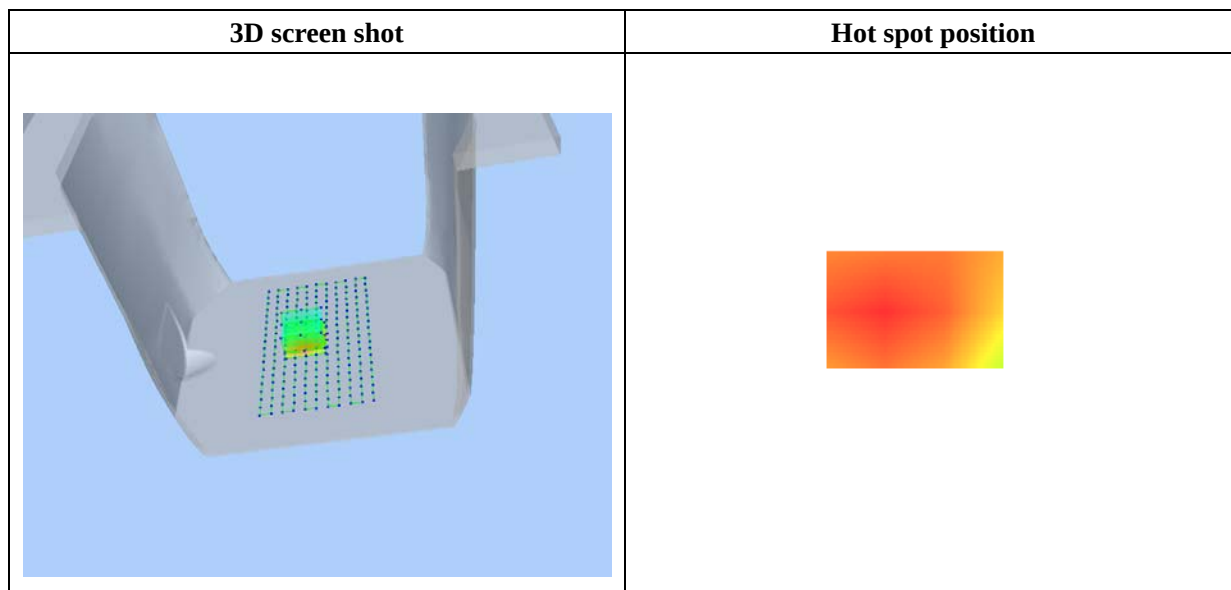
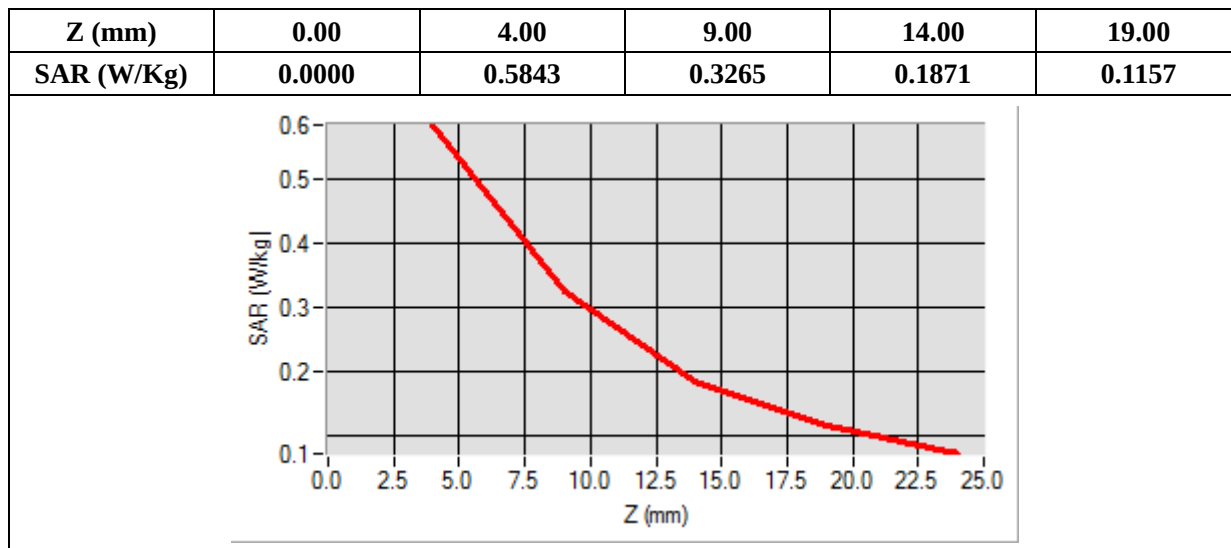
B. SAR Measurement Results

Frequency (MHz)	1850.200000
Relative Permittivity (real part)	52.420415
Conductivity (S/m)	1.501966
Power Variation (%)	1.534645
Ambient Temperature	21.1
Liquid Temperature	21.3



Maximum location: X=-8.00, Y=0.00

SAR 10g (W/Kg)	0.299847
SAR 1g (W/Kg)	0.541095



MEASUREMENT 23

Type: Phone measurement (Complete)

Date of measurement: 12/07/2015

Measurement duration: 12 minutes 3 seconds

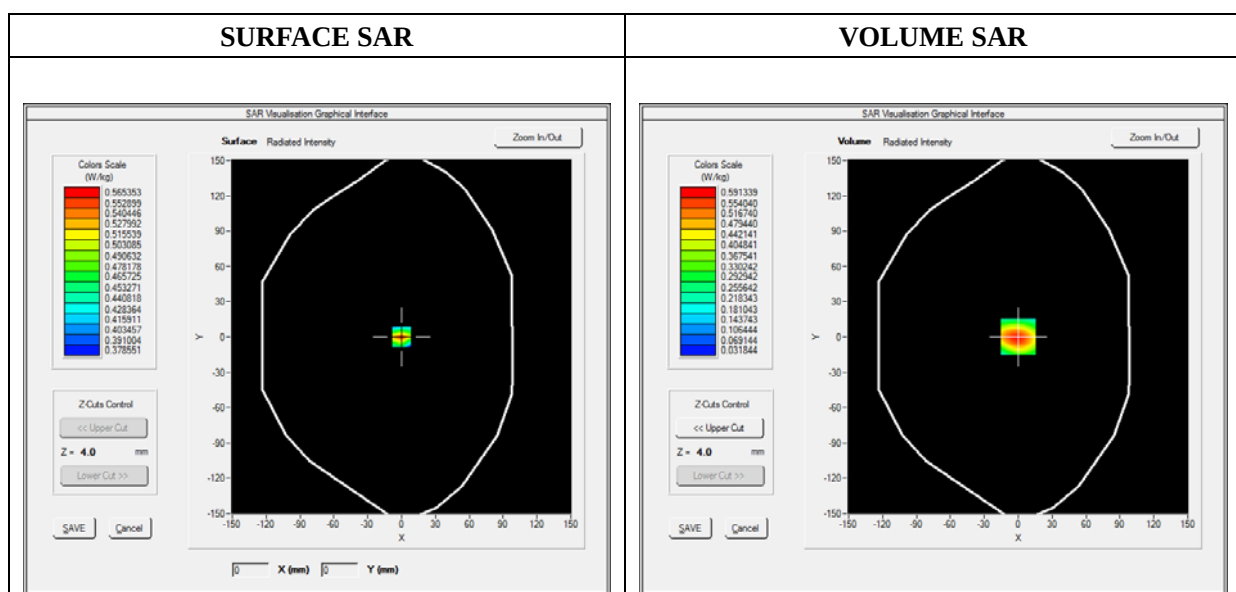
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.55; Calibrated: 06/03/2015

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt
Phantom	Flat plane
Device Position	Bottom
Band	GPRS1900_2TX
Channels	Low
Signal	Duty Cycle: 1:4

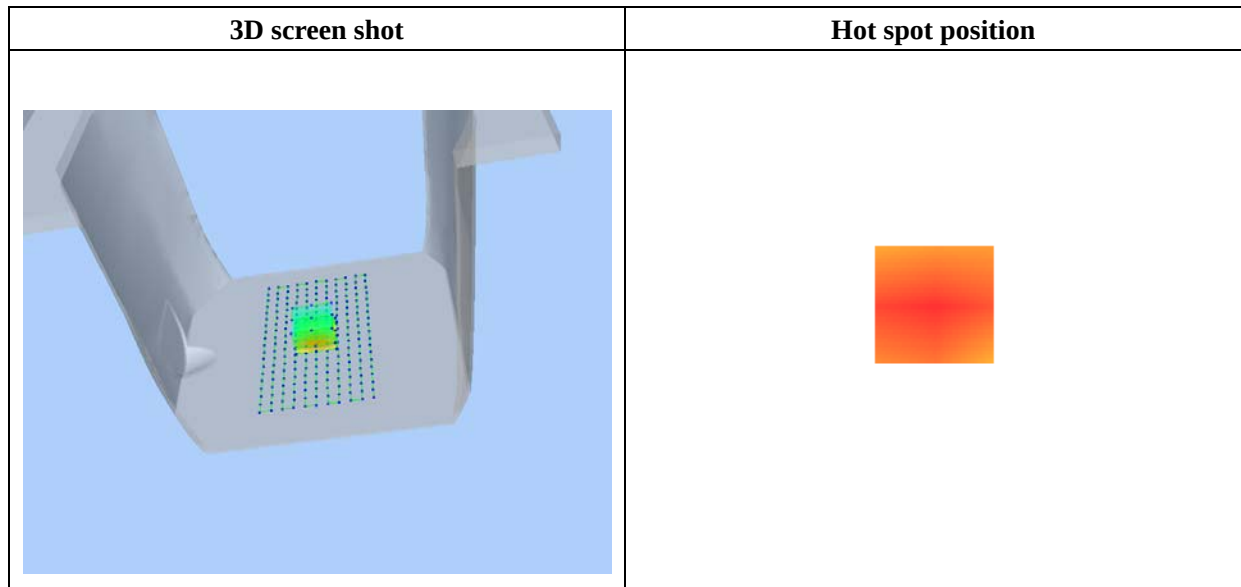
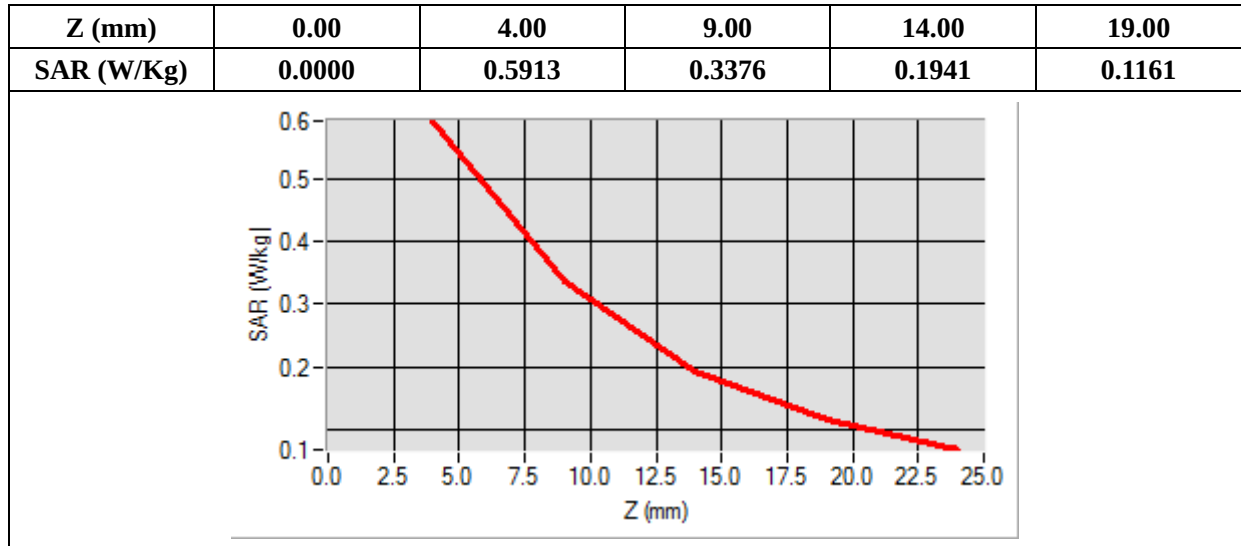
B. SAR Measurement Results

Frequency (MHz)	1850.200000
Relative Permittivity (real part)	52.420415
Conductivity (S/m)	1.501966
Power Variation (%)	0.967457
Ambient Temperature	21.1
Liquid Temperature	21.3



Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	0.300631
SAR 1g (W/Kg)	0.546963



MEASUREMENT 24

Type: Phone measurement (Complete)

Date of measurement: 12/07/2015

Measurement duration: 12 minutes 3 seconds

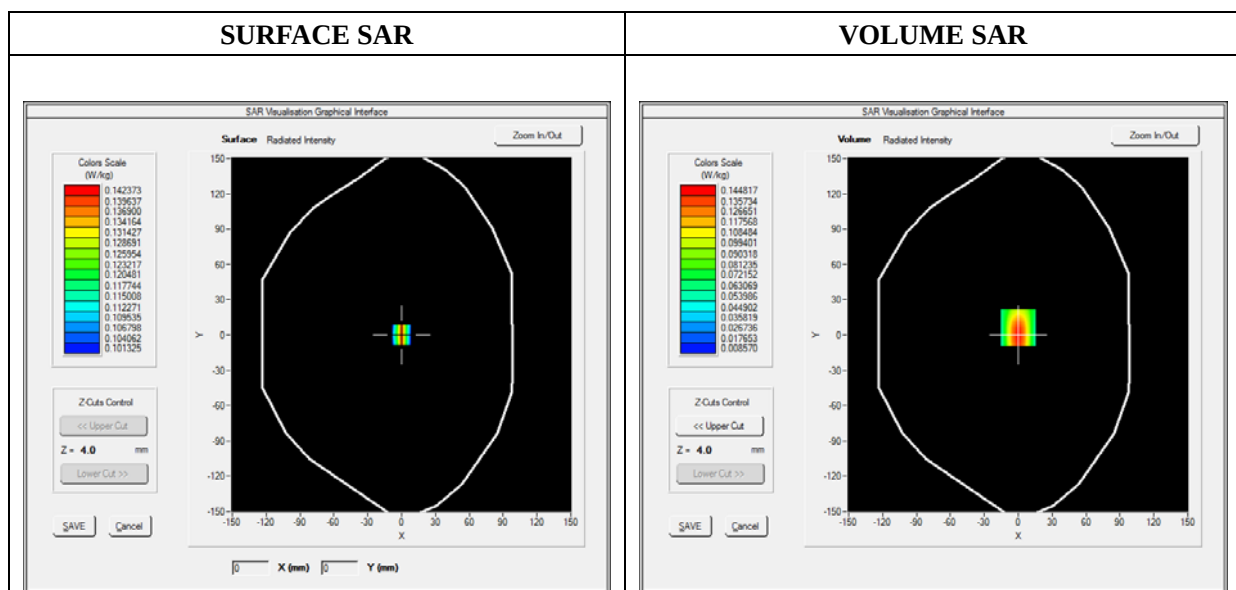
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.55; Calibrated: 06/03/2015

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt
Phantom	Flat plane
Device Position	Left side
Band	GPRS1900_2TX
Channels	Low
Signal	Duty Cycle: 1:4

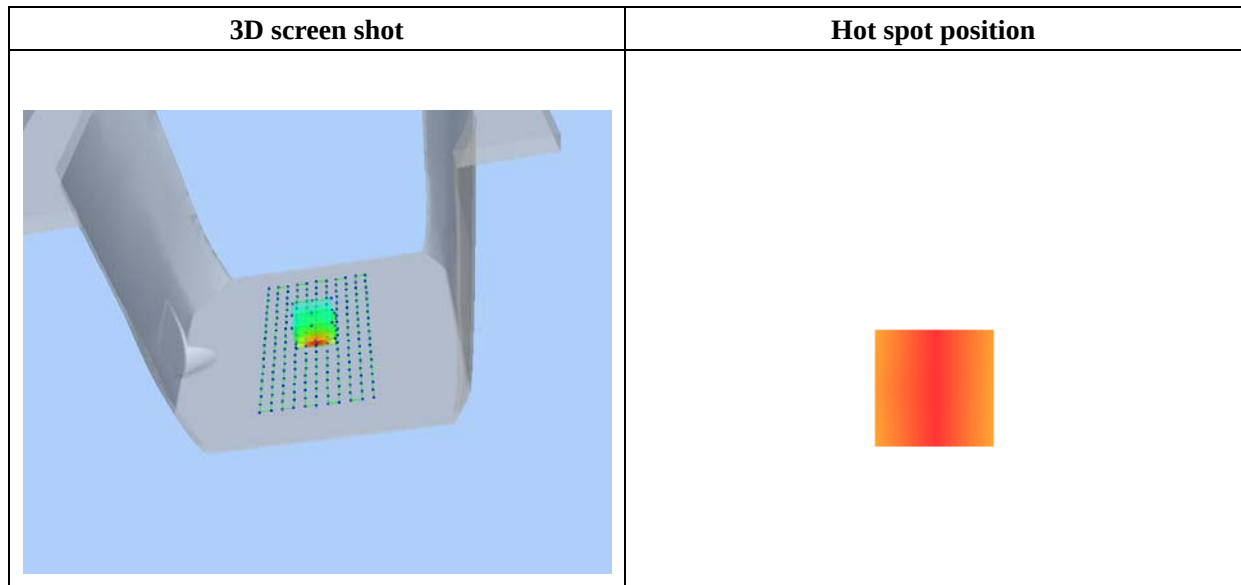
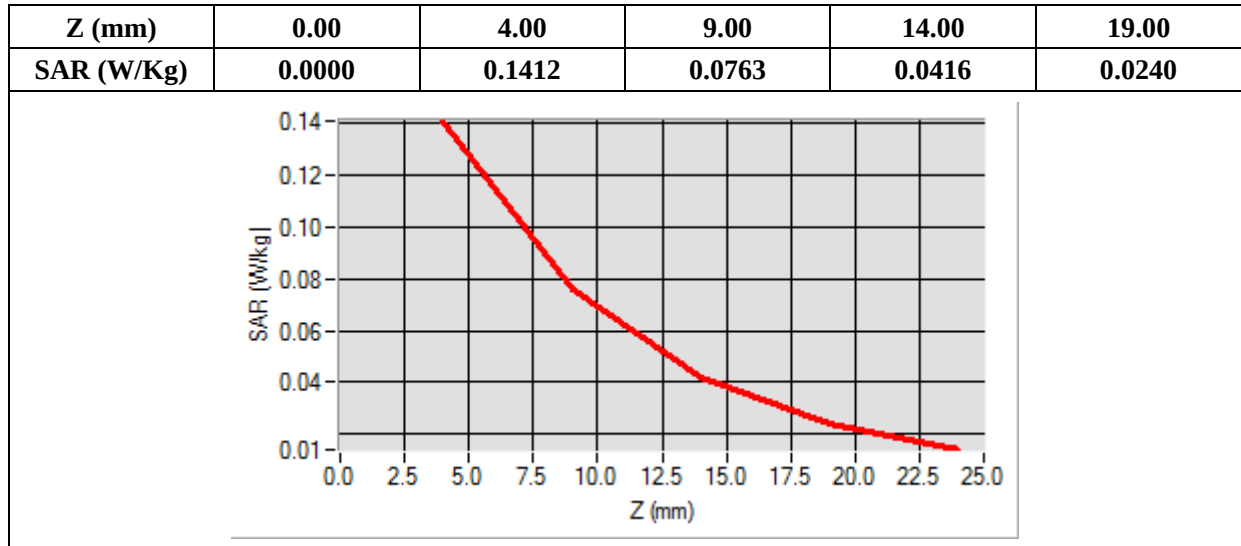
B. SAR Measurement Results

Frequency (MHz)	1850.200000
Relative Permittivity (real part)	52.420415
Conductivity (S/m)	1.501966
Power Variation (%)	1.957265
Ambient Temperature	21.1
Liquid Temperature	21.3



Maximum location: X=0.00, Y=6.00

SAR 10g (W/Kg)	0.071592
SAR 1g (W/Kg)	0.133563



MEASUREMENT 25

Type: Phone measurement (Complete)

Date of measurement: 12/07/2015

Measurement duration: 12 minutes 3 seconds

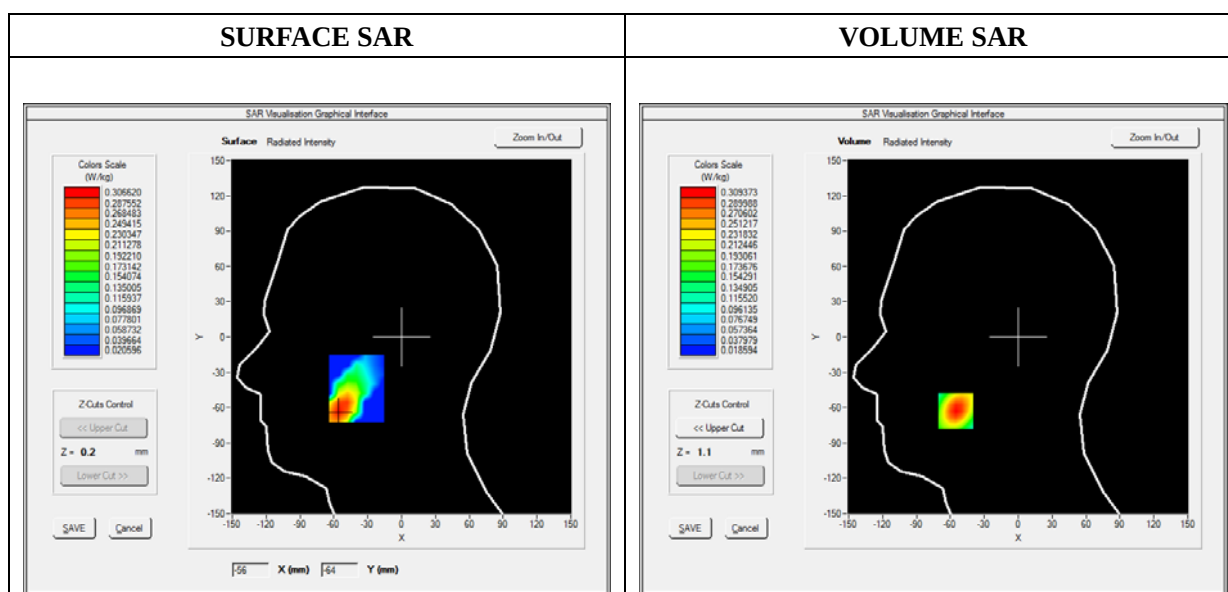
E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.35; Calibrated: 06/03/2015

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt
Phantom	Right head
Device Position	Cheek
Band	WCDMA1900_RMC
Channels	High
Signal	Duty Cycle 1:1

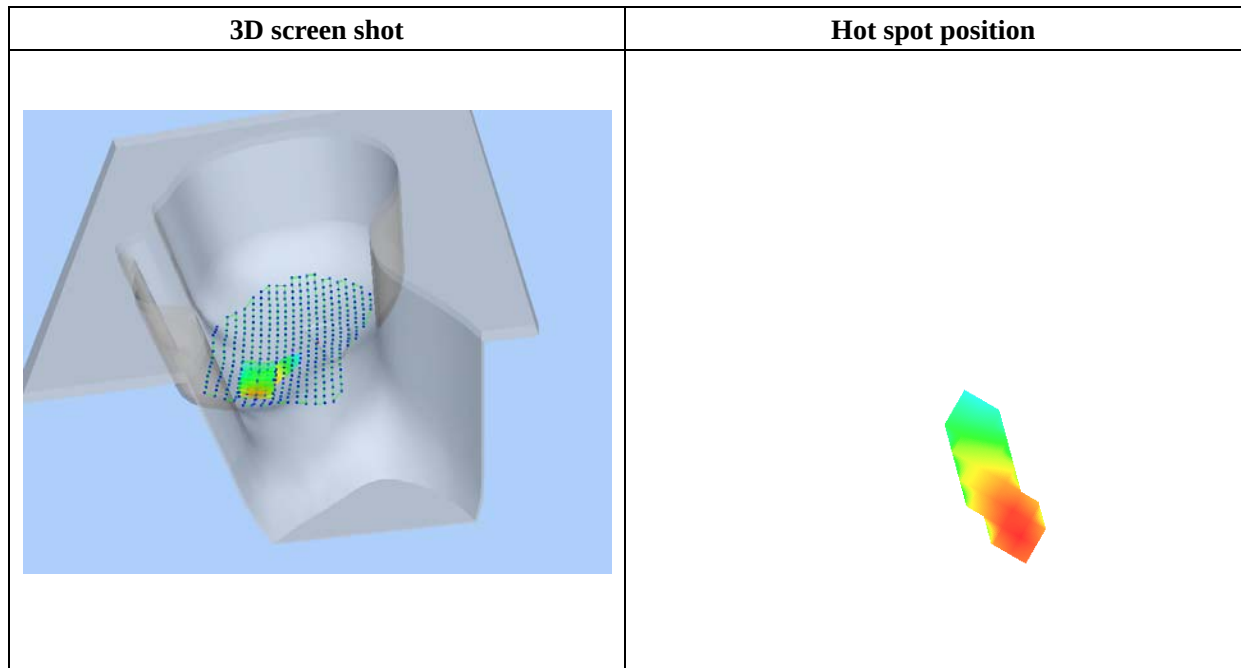
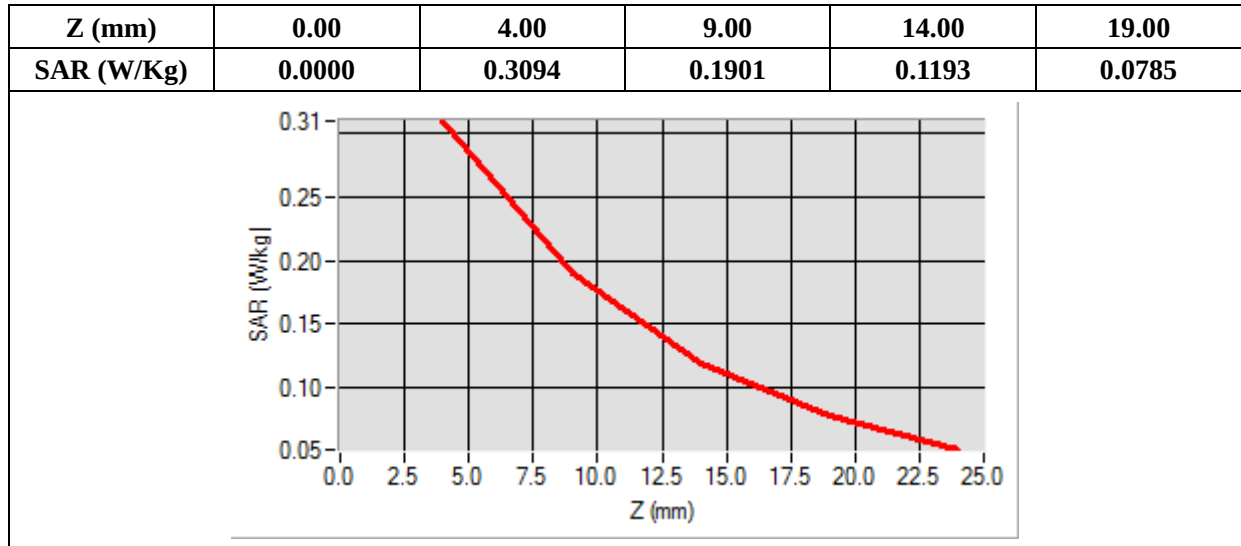
B. SAR Measurement Results

Frequency (MHz)	1907.600000
Relative Permittivity (real part)	38.560124
Conductivity (S/m)	1.380369
Power Variation (%)	1.524540
Ambient Temperature	21.1
Liquid Temperature	21.3



Maximum location: X=-55.00, Y=-63.00

SAR 10g (W/Kg)	0.169889
SAR 1g (W/Kg)	0.288052



MEASUREMENT 26

Type: Phone measurement (Complete)

Date of measurement: 12/07/2015

Measurement duration: 12 minutes 3 seconds

E-field Probe: SSE5 - SN 09/13 EP168; ConvF: 6.35; Calibrated: 06/03/2015

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt
Phantom	Right head
Device Position	Tilt
Band	WCDMA1900_RMC
Channels	High
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	1907.600000
Relative Permittivity (real part)	38.560124
Conductivity (S/m)	1.380369
Power Variation (%)	1.324565
Ambient Temperature	21.1
Liquid Temperature	21.3

