

## TEST REPORT

Ref : TR.183.1.14.SATU.A

**SAR TEST REPORT**  
**ONT35/PSION INC**  
**2100 Meadowvale Blvd**  
**MISSISSAUGA, ONTARIO L5N 7J9, CANADA**

**Testing Performed at SATIMO US**  
**2105 Barrett Park Dr. - Kennesaw, GA**

**June 06, 2014**

*Summary:*

Device under test: OMNII XT15

Serial number:

Highest SAR value: 1.616 W/kg

	<i>Name</i>	<i>Function</i>	<i>Date</i>	<i>Signature</i>
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	<i>Customer Name</i>
<i>Distribution :</i>	-

<i>Issue</i>	<i>Date</i>	<i>Modifications</i>
A	07/02/2014	Initial release

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## 1 INTRODUCTION

This document contains summary the Specific Absorption Rate (SAR) test results for devices tested.

## 2 STATEMENT OF COMPLIANCE

SATIMO USA, Inc. declares under its sole responsibility that the product to which this declaration relates, in in conformity with the appropriate RF exposure standards, recommendations and guidelines. It also declares that the product was tested in accordance with the appropriate measurement standards, guidelines and recommended practices.

## 3 DEVICE UNDER TEST

### 3.1 GENERAL INFORMATION

Device Manufacturer:	-
Device Model:	-
Serial number:	-
Device Category:	Portable transmitter next to body
RF Environment:	General Population/Uncontrolled
Production Unit or Identical Prototype?	-

### 3.2 DEVICE INFORMATION

Tested modes of Operation	403-421 MHz or 435-470 MHz	IEEE 802.11a,b,g,n
Conducted Power (dBm)	30 dBm	18 dBm
TX Frequency Range (MHz)	403-421 or 435-470	2412-5825
Channel number (ARFCN)	-	1-165
Duty Cycle	1/1 for the test (30% in real use)	1/1

Antenna	External for 403-435 MHz and 435-470 Mhz and Internal for IEEE 802.11
Battery	-
Accessories	Holsters (4 different)

## 4 SAR DEFINITION

Specific Absorption Rate is defined as the time derivative (rate) of the incremental energy (dW) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element (dV) of a given density ( $\rho$ ).

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

SAR is expressed in units of watts per kilogram (W/kg). SAR can be related to the electric field at a point by

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

where:

$\sigma$  = conductivity of the tissue (S/m)

$\rho$  = mass density of the tissue (kg/m<sup>3</sup>)

E = rms electric field strength (V/m)

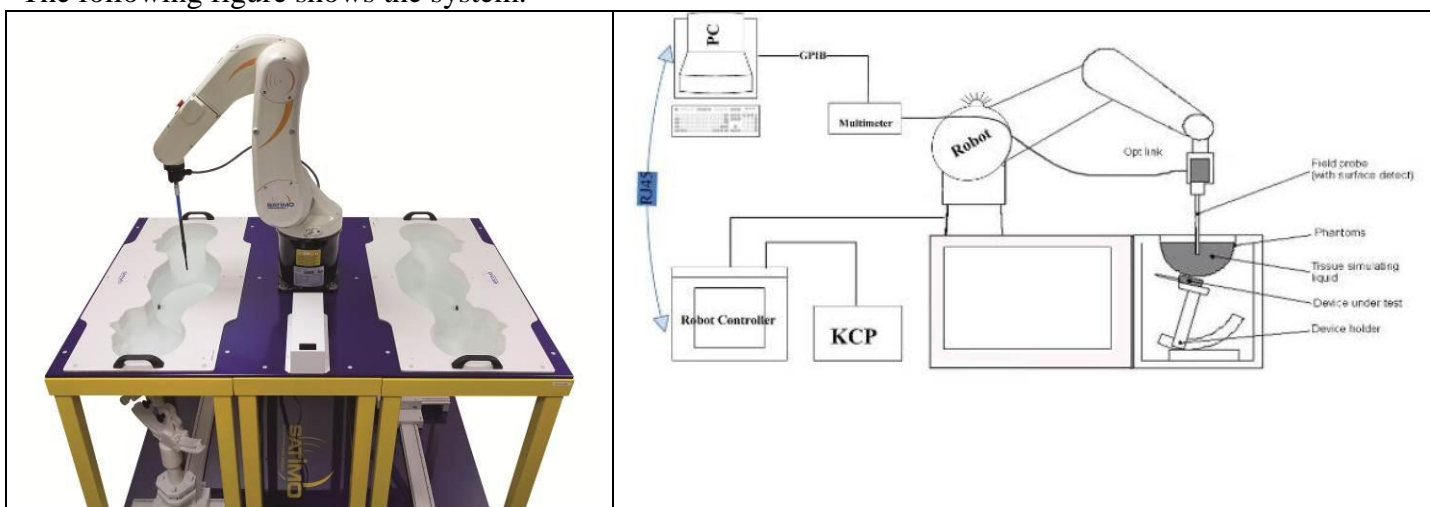
## 5 EQUIPMENT USED

### 5.1 SAR BENCH

Comosar is a system that is able to determine the SAR distribution inside a phantom of human being according to the governing 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.



COMOSAR bench

The mobile phone 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.

## 5.2 PHANTOM

### **For head measurement:**

For the measurements the SAM phantom defined in the IEEE1528:2003 standard is used. The phantom is a polyurethane shell integrated in a low dielectric material table. The thickness of the phantom amounts to 2 mm +/- 0,2 mm (except in the ear region where the thickness increase to 6 mm +/- 0,2 mm). It enables the dosimetric evaluation of device for both left and right head position, as well as body position using the flat part of this phantom.



SAM Phantom

### **For body measurement:**

For the measurements the elliptical phantom defined in the IEC 62209-2 standard is used. The phantom is a polyurethane shell integrated in a low dielectric material table. The thickness of the phantom amounts to 2 mm +/- 0,2 mm. It enables the dosimetric evaluation of device in body position according the IEC 62209-2 standard.



Elliptic Phantom

### 5.3 PROBE

For the measurements the Specific Dosimetric E-Field Probe SSE2 with following specifications is used.

- Dynamic range: 0.01-100 W/kg
- Tip Diameter : 2.6 mm
- Distance between probe tip and sensor center : 1 mm
- Distance between sensor center and the inner phantom surface: 4 mm (repeatability better than +/- 1mm).
- Probe linearity : <0.25 dB
- Axial Isotropy : <0.25 dB
- Spherical Isotropy : <0.50 dB
- Calibration range : 835 to 5800 MHz for head & body simulating liquid
- Angle between probe axis (evaluation axis) and surface normal line : less than 30°



SSE2 probe

### 5.4 DEVICE HOLDER DESCRIPTION

#### **For head measurement**



The SAR value is approximately inversely proportional to the square of the distance between the source and the internal surface of the phantom. For a source at 5 mm distance, a positioning uncertainty of  $\pm 0.5$  mm would produce a SAR uncertainty of  $\pm 20$  %. An accurate device positioning is therefore essential for accurate and repeatable measurements.

This Positioning system allows the translation of the mobile phone along the X, Y and Z axis, as well as the required rotation around the phantom ear, for the 2 positions defined by standards (0° “cheek” position and 15° “tilt” position).

Larger DUTs (i.e. laptops, tablets) cannot be tested using this device holder.

## **For body measurement**



The SAR value is approximately inversely proportional to the square of the distance between the source and the internal surface of the phantom. For a source at 5 mm distance, a positioning uncertainty of  $\pm 0.5$  mm would produce a SAR uncertainty of  $\pm 20$  %. An accurate device positioning is therefore essential for accurate and repeatable measurements.

This Positioning system allows the translation of the mobile phone along the X, Y and Z axis. It is specifically design for larger DUT as laptop or tablet to easily position it according different orientation.



5.5 EQUIPMENT LIST

Equipment Summary Sheet				
Equipment Description	Manufacturer / Model	Identification No.	Current Calibration Date	Next Calibration Date
Phantom	Satimo	SN-29/11-ELLI21	Validated. No cal required.	Validated. No cal required.
COMOSAR Test Bench	Version 3	NA	Validated. No cal required.	Validated. No cal required.
Probe	Satimo	SN 18/11 EPG122	05/2014	05/2015
Open Coaxial Probe	Satimo	SN 35/10 OCPG37	05/2014	05/2015
Network Analyzer	Rhode & Schwarz ZVA	SN100132	02/2013	02/2016
Multimeter	Keithley 2000	1188656	12/2013	12/2016
Signal Generator	Agilent E4438C	MY49070581	12/2013	12/2016
Amplifier	Aethercomm	SN 046	Characterized prior to test. No cal required.	Characterized prior to test. No cal required.
Power Meter	HP E4418A	US38261498	12/2013	12/2016
Power Sensor	HP ECP-E26A	US37181460	12/2013	12/2016
Directional Coupler	Narda 4216-20	01386	Characterized prior to test. No cal required.	Characterized prior to test. No cal required.
Temperature and Humidity Sensor	Control Company	11-661-9	8/2012	8/2015

## 6 ICNIRP EXPOSURE LIMIT

	Uncontrolled environment General Population W/kg	Controlled environment Professional Population W/kg
Spatial peak SAR Brain	2.0	10.0
Spatial average SAR Whole Body	0.08	0.4
Spatial peak SAR Hands, Feet, Ankles, Wrists	4.0	20.0

**Note:** Whole Body SAR is averaged over the entire body, Partial Body SAR in Brain is averaged over any 10 gram of tissue defined as a tissue volume in the shape of a cube, Partial Body SAR in Hands, Feet, Ankles, Wrists is averaged over any 10 gram of tissue defined as a tissue volume in the shape of a cube.

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

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

## 7 ANSI/IEEE EXPOSURE LIMIT

	Uncontrolled environment General Population W/kg	Controlled environment Professional Population W/kg
Spatial peak SAR Brain	1.6	8.0
Spatial average SAR Whole Body	0.08	0.4
Spatial peak SAR Hands, Feet, Ankles, Wrists	4.0	20.0

**Note:** Whole Body SAR is averaged over the entire body, Partial Body SAR in Brain is averaged over any 1 gram of tissue defined as a tissue volume in the shape of a cube, Partial Body SAR in Hands, Feet, Ankles, Wrists is averaged over any 10 gram of tissue defined as a tissue volume in the shape of a cube.

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

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

## 8 MEASUREMENT PROCEDURE

### 8.1 DATA EVALUATION

OPENSAR software automatically executes the following procedure to calculate the field units from the microvolt readings at the probe connector. The parameters used in the evaluation are stored in the configuration modules of the software.

Probe parameters:

- Sensitivity Norm<sub>i</sub>
- Conversion factor ConvF<sub>i</sub>
- Diode compression point DCPI<sub>i</sub>

Media parameters:

- Conductivity  $\sigma$
- Density  $\rho$

The first step of the evaluation is a linearization of the filtered input signal to account for the compression characteristics of the detector diode. The compensation depends on the input signal, the diode type and the DC-transmission factor from the diode to the evaluation electronics. If the exciting field is pulsed, the crest factor of the signal must be known to correctly compensate for peak power. The formula for each channel can be given as:

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

Where  $V_i$  = Compensated signal of channel  $i$  ( $i = 1,2,3$ )

$U_i$  = Input signal of channel  $i$  ( $i = 1,2,3$ )

cf = Crest factor of used signal

DCPI<sub>i</sub> = Diode compression point ( $i = 1,2,3$ )

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

$$E_i = \sqrt{\frac{V_i}{\text{Norm}_i \cdot \text{ConvF}}}$$

Where  $V_i$  = Compensated signal of channel  $i$  ( $i = 1,2,3$ )

Norm<sub>i</sub> = Sensor sensitivity of channel  $i$  ( $i = 1,2,3$ )

ConvF = Sensitivity enhancement in solution

The RMS value of the field components gives the total field strength:

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

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

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

Where SAR = local specific absorption rate in mW/g  
E<sub>tot</sub> = total field strength in V/m  
σ = conductivity in [mho/m] or [siemens/m]  
ρ = equivalent tissue density in g/cm<sup>3</sup>

Note that the density is normally set to 1 to account for actual brain density rather than the density of the simulation liquid.

## 8.2 AREA AND VOLUME SCAN

The following steps are used for each test position

- Establish a call with the maximum output power with a base station simulator. The connection between the mobile and the base station simulator is established via air interface
- Measurement of the local E-field value at a fixed location. This value serves as a reference value for calculating a possible power drift.
- Measurement of the SAR distribution with a grid of 8 to 16 mm \* 8 to 16 mm and a constant distance to the inner surface of the phantom. Since the sensors can not directly measure at the inner phantom surface, the values between the sensors and the inner phantom surface are extrapolated. With these values the area of the maximum SAR is calculated by an interpolation scheme.
- Around this point, a cube of 30 \* 30 \* 30 mm or 32 \* 32 \* 32 mm is assessed by measuring 5 or 8 \* 5 or 8 \* 4 or 5 mm. With these data, the peak spatial-average SAR value can be calculated.

## 8.3 DESCRIPTION OF INTERPOLATION/EXTRAPOLATION SCHEME

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 1 mm 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 10 grams and 1 gram requires a very fine resolution in the three dimensional scanned data array.

An interpolation is using to provide an array of sufficient resolution. The measured and extrapolated SAR values are interpolated on a 1 mm grid with a three dimensional thin plate spline algorithm.

8.4 MEASUREMENT UNCERTAINTY

<b>UNCERTAINTY EVALUATION FOR HANDSET SAR TEST</b>								
<b>Uncertainty Component</b>	Tol. (± %)	Prob. Dist.	Div.	$c_i$ (1 g)	$c_i$ (10 g)	1 g $u_i$ (± %)	10 g $u_i$ (± %)	$v_i$
<b>Measurement System</b>								
Probe Calibration	5,8	N	1	1	1	5,8	5,8	∞
Axial Isotropy	3,5	R	√3	$(1-c_p)^{1/2}$	$(1-c_p)^{1/2}$	1,43	1,43	∞
Hemispherical Isotropy	5,9	R	√3	$\sqrt{C_p}$	$\sqrt{C_p}$	2,41	2,41	∞
Boundary Effect	1	R	√3	1	1	0,58	0,58	∞
Linearity	4,7	R	√3	1	1	2,71	2,71	∞
System Detection Limits	1	R	√3	1	1	0,58	0,58	∞
Readout Electronics	0,5	N	1	1	1	0,50	0,50	∞
Response Time	0	R	√3	1	1	0,00	0,00	∞
Integration Time	1,4	R	√3	1	1	0,81	0,81	∞
RF Ambient Conditions	3	R	√3	1	1	1,73	1,73	∞
Probe Positioner Mechanical Tolerance	1,4	R	√3	1	1	0,81	0,81	∞
Probe Positioning with respect to Phantom Shell	1,4	R	√3	1	1	0,81	0,81	∞
Extrapolation, interpolation and Integration Algorithms for Max. SAR Evaluation	2,3	R	√3	1	1	1,33	1,33	∞
<b>Test sample Related</b>								
Test Sample Positioning	2,6	N	1	1	1	2,60	2,60	N-1
Device Holder Uncertainty	3	N	1	1	1	3,00	3,00	N-1
Output Power Variation - SAR drift measurement	5	R	√3	1	1	2,89	2,89	∞
<b>Phantom and Tissue Parameters</b>								
Phantom Uncertainty (shape and thickness tolerances)	4	R	√3	1	1	2,31	2,31	∞
Liquid Conductivity - deviation from target values	5	R	√3	0,64	0,43	1,85	1,24	∞
Liquid Conductivity - measurement uncertainty	4	N	1	0,64	0,43	2,56	1,72	M
Liquid Permittivity - deviation from target values	5	R	√3	0,6	0,49	1,73	1,41	∞
Liquid Permittivity - measurement uncertainty	5	N	1	0,6	0,49	3,00	2,45	M
<b>Combined Standard Uncertainty</b>		RSS				9,51	9,21	
<b>Expanded Uncertainty (95% CONFIDENCE INTERVAL)</b>		k				19,02	18,41	

## 9 TEST RESULTS

See Annex 1 for device and position pictures

4 different devices (3 operating in the band 403-435 MHz and 1 operating in the band 435-470MHz in addition of WLAN) with 4 different holsters were under test. In order to optimize the number of test, the following procedure was defined:

Step a: In the band 403-435MHz, test of the 3 channel with the device B and holster 3 back facing.

Step b: In the band 403-435MHz, test on the worst channel measured in step a with the 2 other devices using the holster 3 back facing.

Step c: In the band 403-435MHz, test on the worst device measured in the step a and b with the 3 other holsters and different holsters position.

Step d: In the band 435-470MHz, test the device on the worst configuration defined above.

Step e: In the band 435-470MHz, test the device on the second worst configuration defined above.

Step f: In IEEE 802.11 a,b,g,n, test on the worst configuration device/holster found on step a through c and on the side position.

Step g: In IEEE 802.11 a,b,g,n, test on the worst configuration holster found on step c through d and on the side position.

Step h: Test on the right and left head, cheek and tilt position, for the worst device measured in the body position, with no holster, on the different band.

The device is tested using chipset based test mode software to ensure test results are consistent and reliable. For all the measurement, the test mode ensures the device to emit continuously.

The following table reports the results for the tested configuration

BODY MEASUREMENT						
Band	Frequency (Mhz)	Device	Holster	Step	SAR 1g (W/kg)	SAR 10g (W/kg)
403-435	403	B	3 back	a	0.802	0.454
403-435	421	B	3 back	a	0.930	0.507
403-435	435	B	3 back	a	0.539	0.343
403-435	421	A	3 back	b	0.563	0.378
403-435	421	C	3 back	b	1.160	0.805
403-435	421	C	3 front	c	1.586	1.106
403-435	421	C	1 left	c	0.444	0.321
403-435	421	C	1 right	c	0.389	0.284
403-435	421	C	2 left	c	0.320	0.234
403-435	421	C	2 right	c	0.169	0.122
403-435	421	C	4 front	c	0.580	0.423
403-435	421	C	4 back	c	0.333	0.243
435-470	435	D	3 front	d	1.473	1.023
435-470	450	D	3 front	d	1.228	0.850
435-470	470	D	3 front	d	0.944	0.653
435-470	435	D	4 front	e	0.436	0.320

435-470	450	D	4 front	e	0.332	0.244
435-470	470	D	4 front	e	0.377	0.228
IEEE 802.11b	2437 (channel 6, 11 mbps)	C	3 front	f	0.030	0.016
IEEE 802.11b	2437 (channel 6, 11 mbps)	C	3 left	f	0.785	0.365
IEEE 802.11b	2412 (channel 1, 11 mbps)	C	3 left	f	0.512	0.241
IEEE 802.11b	2472 (channel 13, 11 mbps)	C	3 left	f	0.756	0.355
IEEE 802.11g	2437 (channel 6, 54 mbps)	C	3 left	f	0.409	0.192
IEEE 802.11n	2437 (channel 6, 65 mbps)	C	3 left	f	0.551	0.260
IEEE 802.11a	5500 (channel 100, 54 mbps)	C	3 front	f	0.013	0.011
IEEE 802.11a	5500 (channel 100, 54 mbps)	C	3 left	f	0.466	0.189
IEEE 802.11a	5180 (channel 36, 54 mbps)	C	3 left	f	0.306	0.124
IEEE 802.11a	5825 (channel 165, 54 mbps)	C	3 left	f	0.282	0.119
IEEE 802.11n	5500 (channel 100, 65 mbps)	C	3 left	f	0.180	0.079
IEEE 802.11b	2412 (channel 1, 11 mbps)	D	3 left	g	0.493	0.231
IEEE 802.11b	2437 (channel 6, 11 mbps)	D	3 left	g	0.529	0.247
IEEE 802.11b	2472 (channel 13, 11 mbps)	D	3 left	g	0.715	0.332
IEEE 802.11g	2472 (channel 13, 54 mbps)	D	3 left	g	0.385	0.182
IEEE 802.11n	2472 (channel 13, 65 mbps)	D	3 left	g	0.297	0.140
IEEE 802.11a	5500 (channel 100, 54 mbps)	D	3 front	g	0.009	0.008
IEEE 802.11a	5500 (channel 100, 54 mbps)	D	3 left	g	0.479	0.178
IEEE 802.11a	5180 (channel 36, 54 mbps)	D	3 left	g	0.323	0.135
IEEE 802.11a	5825 (channel 165, 54 mbps)	D	3 left	g	0.345	0.141
IEEE 802.11n	5500 (channel 100, 65 mbps)	D	3 left	g	0.295	0.113



HEAD MEASUREMENT						
Band	Frequency (Mhz)	Device	Holster	Position	SAR 1g (W/kg)	SAR 10g (W/kg)
403-435	421	C	-	Right Cheek	0.947	0.670
403-435	421	C	-	Right Tilt	1.442	1.014
403-435	421	C	-	Left Cheek	1.017	0.722
403-435	421	C	-	Left Tilt	1.384	0.966
435-470	435	D	-	Right Cheek	1.096	0.770
435-470	435	D	-	Right Tilt	1.306	0.914
435-470	435	D	-	Left Cheek	1.077	0.759
435-470	435	D	-	Left Tilt	1.465	1.024
IEEE 802.11g	2437 (channel 6, 54 mbps)	C	-	Right Cheek	0.010	0.005
IEEE 802.11g	2437 (channel 6, 54 mbps)	C	-	Right Tilt	0.009	0.006
IEEE 802.11g	2437 (channel 6, 54 mbps)	C	-	Left Cheek	0.022	0.012
IEEE 802.11g	2437 (channel 6, 54 mbps)	C	-	Left Tilt	0.011	0.008
IEEE 802.11g	2472 (channel 13, 54 mbps)	D	-	Right Cheek	0.025	0.012
IEEE 802.11g	2472 (channel 13, 54 mbps)	D	-	Right Tilt	0.007	0.004
IEEE 802.11g	2472 (channel 13, 54 mbps)	D	-	Left Cheek	0.032	0.019
IEEE 802.11g	2472 (channel 13, 54 mbps)	D	-	Left Tilt	0.015	0.009
IEEE 802.11n	5500 (channel 100, 65 mbps)	C	-	Right Cheek	0.009	0.007
IEEE 802.11n	5500 (channel 100, 65 mbps)	C	-	Right Tilt	0.011	0.009
IEEE 802.11n	5500 (channel 100, 65 mbps)	D	-	Right Cheek	0.018	0.013
IEEE 802.11n	5500 (channel 100, 65 mbps)	D	-	Right Tilt	0.011	0.009

The data of those measurements are shown in annex 2.

Combined SAR results (worst case measured)

BODY MEASUREMENT					
Band	Frequency (Mhz)	Device	Holster	SAR 1g (W/kg)	SAR 10g (W/kg)
403-435 + IEEE802.11b	421/2437	C	3 front	1.616	1.122
403-435 + IEEE802.11a	421/5500	C	3 front	1.599	1.117
435-470 + IEEE802.11a	435/5500	D	3 front	1.482	1.031

HEAD MEASUREMENT						
Band	Frequency (Mhz)	Device	Holster	Position	SAR 1g (W/kg)	SAR 10g (W/kg)
403-435 + IEEE802.11g	421/2437	C	-	Right Cheek	0.957	0.675
403-435 + IEEE802.11g	421/2437	C	-	Right Tilt	1.451	1.020
403-435 + IEEE802.11g	421/2437	C	-	Left Cheek	1.039	0.734
403-435 + IEEE802.11g	421/2437	C	-	Left Tilt	1.395	0.974
435-470 + IEEE802.11g	435/2472	D	-	Right Cheek	1.121	0.782
435-470 + IEEE802.11g	435/2472	D	-	Right Tilt	1.313	0.918
435-470 + IEEE802.11g	435/2472	D	-	Left Cheek	1.109	0.778
435-470 + IEEE802.11g	435/2472	D	-	Left Tilt	1.480	1.033
403-435 + IEEE802.11n	421/5500	C	-	Right Cheek	0.956	0.677
403-435 + IEEE802.11n	421/5500	C	-	Right Tilt	1.453	1.023
435-470 + IEEE802.11n	435/5500	D	-	Right Cheek	1.114	0.783
435-470 + IEEE802.11n	435/5500	D	-	Right Tilt	1.317	0.923

ANNEX 1: SETUP PHOTO



**Terminal 1 (back and front)**



**Terminal 2 (back and front)**



**Terminal 3 (back and front)**



**Terminal 4 (back and front)**



**Holster 1**



**Holster 2**



**Holster 3**



**Holster 4**



**Body position with holster 1 – left facing**



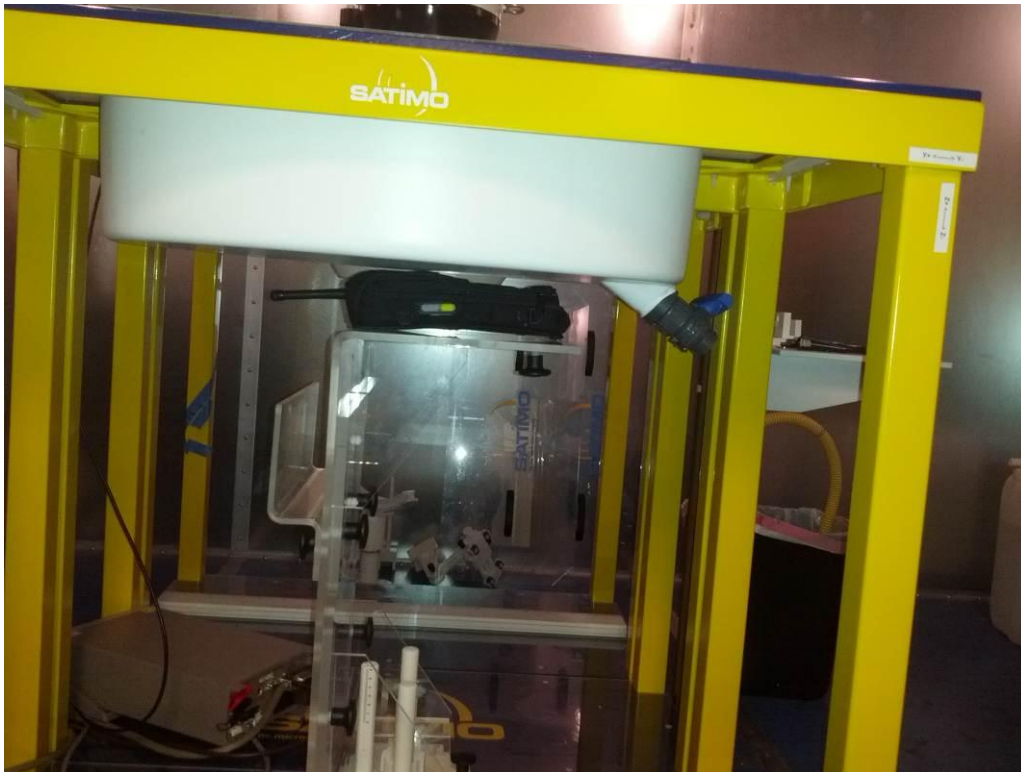
**Body position with holster 1 – right facing**



**Body position with holster 2 – left facing**



**Body position with holster 2 – right facing**

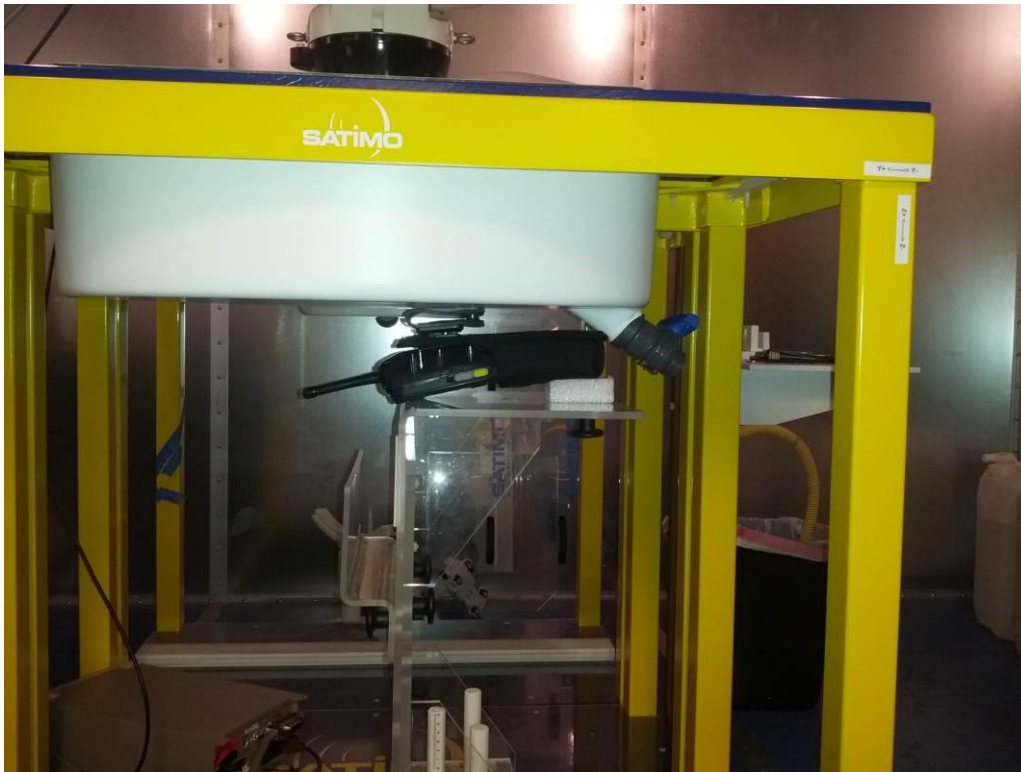


**Body position with holster 3 – Back facing**



**Body position with holster 3 – Front facing**





**Body position with holster 4 – Back facing**



**Body position with holster 4 – Front facing**



**Right Cheek position**



**Right Tilt position**



**Left Cheek position**



**Left Tilt position**

ANNEX 2: SAR MEASUREMENT

**SAR Measurement at 403 MHz (Body)**

Type: Phone measurement

Date of measurement: 07/01/2014

Device position: Body – Device B, holster 3 back

**A. Experimental conditions**

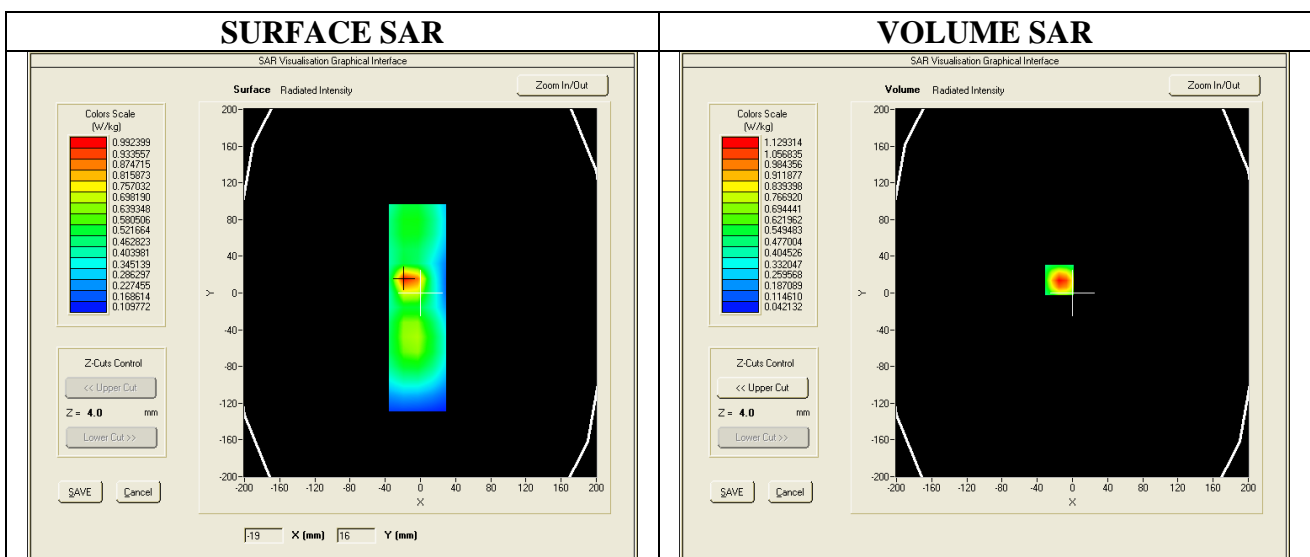
Area Scan	dx=8mm dy=8mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Elliptical Phantom SN 29/11 ELLI21
Probe	SSE2 SN 18/11 EPG122 Sensitivity: 0.89, 0.98, 0.92 $\mu\text{V}/(\text{V}/\text{m})^2$ ConvF: 6.52 DCP: 120, 122, 117 mV
Device Position	Body
Band	CUSTOM
Channels	Low
Signal	CUSTOM (Crest factor: 1.0)

**B. Liquid data & power drift**

Middle Band SAR (Channel -):

Frequency (MHz)	403.00
Relative permittivity (real part)	44.70
Relative permittivity (imaginary part)	40.33
Conductivity (S/m)	0.90
Variation (%)	0.22

**C. SAR Surface And Volume**



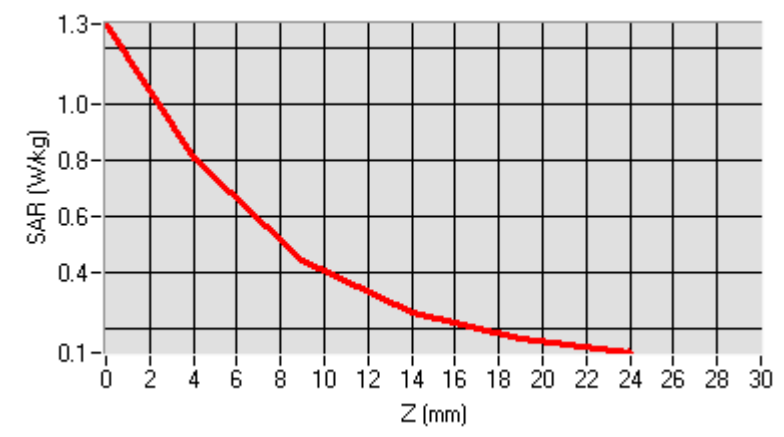
Maximum location: X=-15.00, Y=14.00

SAR Peak: 1.28 W/kg

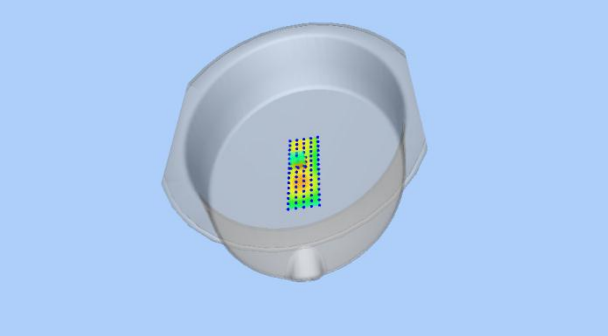
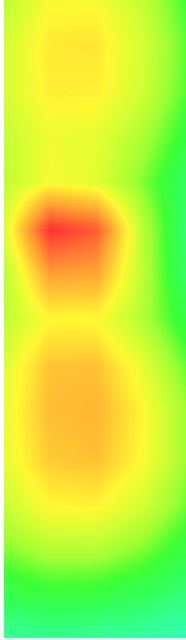
**D. SAR 1g & 10g**

SAR 10g (W/Kg)	0.454
SAR 1g (W/Kg)	0.802

**E. Z Axis Scan**



**F. 3D Image**

3D screen shot	Hot spot position
	

### SAR Measurement at 421 MHz (Body)

Type: Phone measurement

Date of measurement: 07/01/2014

Device position: Body – Device B, holster 3 back

#### A. Experimental conditions

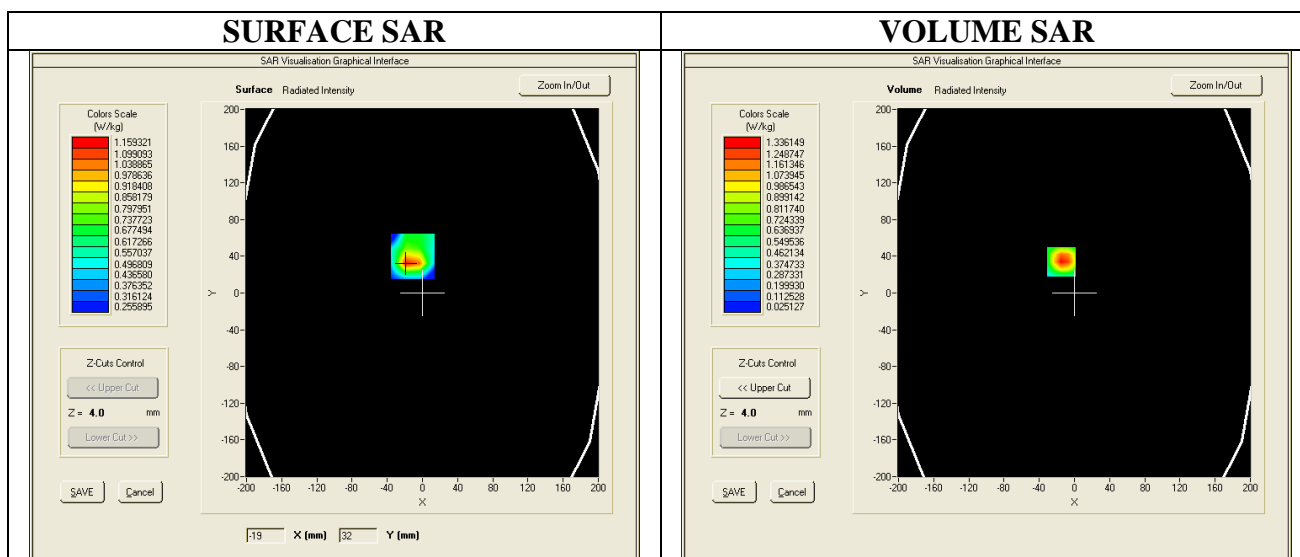
Area Scan	dx=8mm dy=8mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Elliptical Phantom SN 29/11 ELLI21
Probe	SSE2 SN 18/11 EPG122 Sensitivity: 0.89, 0.98, 0.92 $\mu\text{V}/(\text{V}/\text{m})^2$ ConvF: 6.52 DCP: 120, 122, 117 mV
Device Position	Body
Band	CUSTOM
Channels	Middle
Signal	CUSTOM (Crest factor: 1.0)

#### B. Liquid data & power drift

Middle Band SAR (Channel -):

Frequency (MHz)	421.00
Relative permittivity (real part)	44.29
Relative permittivity (imaginary part)	38.61
Conductivity (S/m)	0.90
Variation (%)	-0.22

#### C. SAR Surface And Volume



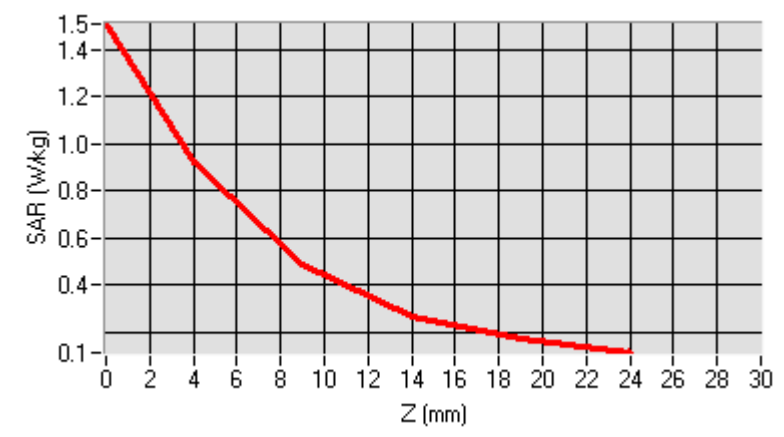
Maximum location: X=-15.00, Y=34.00

SAR Peak: 1.51 W/kg

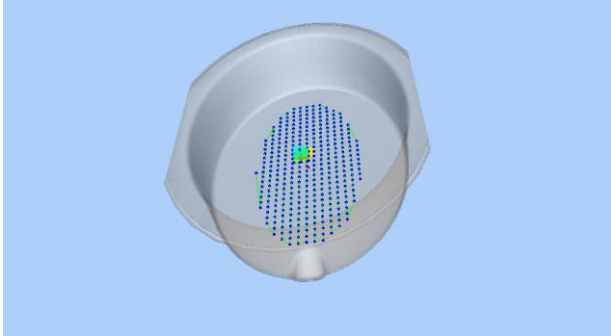

**D. SAR 1g & 10g**

SAR 10g (W/Kg)	0.507
SAR 1g (W/Kg)	0.930

**E. Z Axis Scan**



**F. 3D Image**

3D screen shot	Hot spot position
	

### SAR Measurement at 435 MHz (Body)

Type: Phone measurement

Date of measurement: 07/01/2014

Device position: Body – Device B, holster 3 back

#### A. Experimental conditions

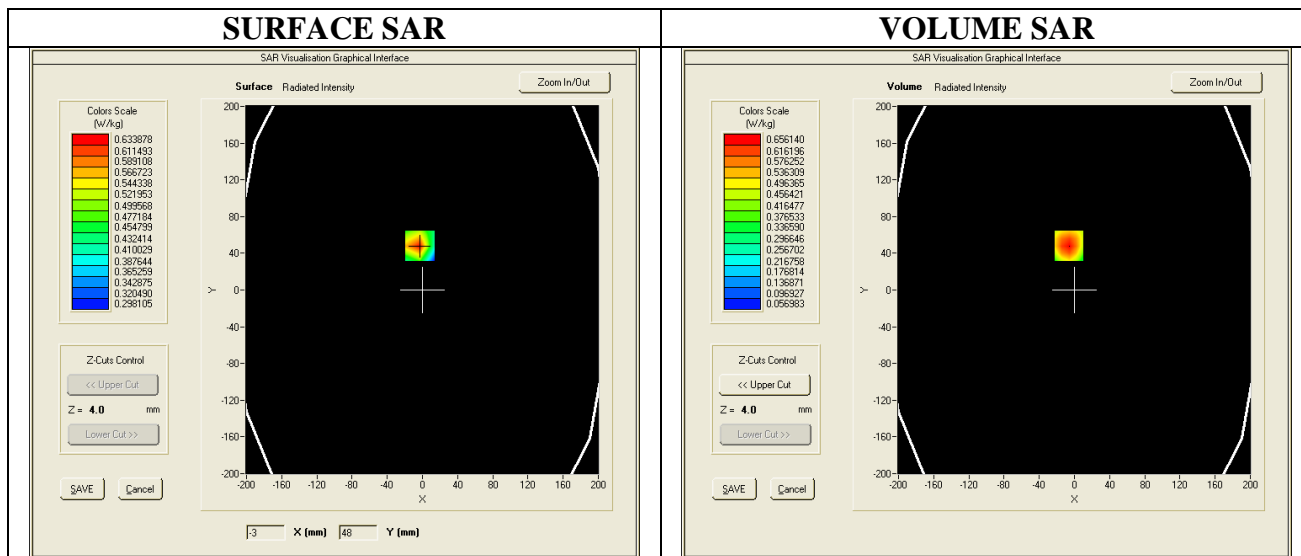
Area Scan	dx=8mm dy=8mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Elliptical Phantom SN 29/11 ELLI21
Probe	SSE2 SN 18/11 EPG122 Sensitivity: 0.89, 0.98, 0.92 $\mu\text{V}/(\text{V/m})^2$ ConvF: 6.52 DCP: 120, 122, 117 mV
Device Position	Body
Band	CUSTOM
Channels	High
Signal	CUSTOM (Crest factor: 1.0)

#### B. Liquid data & power drift

Middle Band SAR (Channel -):

Frequency (MHz)	435.00
Relative permittivity (real part)	44.24
Relative permittivity (imaginary part)	37.66
Conductivity (S/m)	0.91
Variation (%)	-0.31

#### C. SAR Surface And Volume



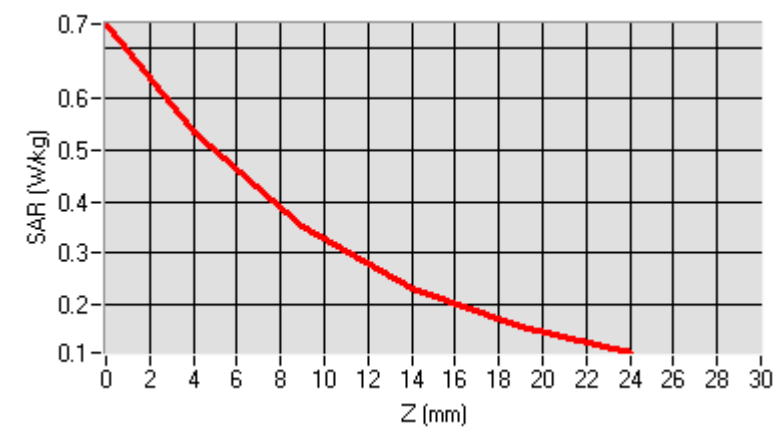
Maximum location: X=-6.00, Y=48.00  
SAR Peak: 0.75 W/kg



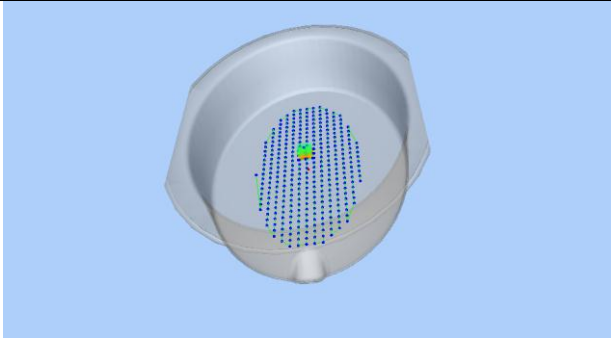

**D. SAR 1g & 10g**

SAR 10g (W/Kg)	0.343
SAR 1g (W/Kg)	0.539

**E. Z Axis Scan**



**F. 3D Image**

3D screen shot	Hot spot position
	

## SAR Measurement at 421 MHz (Body)

Type: Phone measurement

Date of measurement: 07/01/2014

Device position: Body – Device A, holster 3 back

### A. Experimental conditions

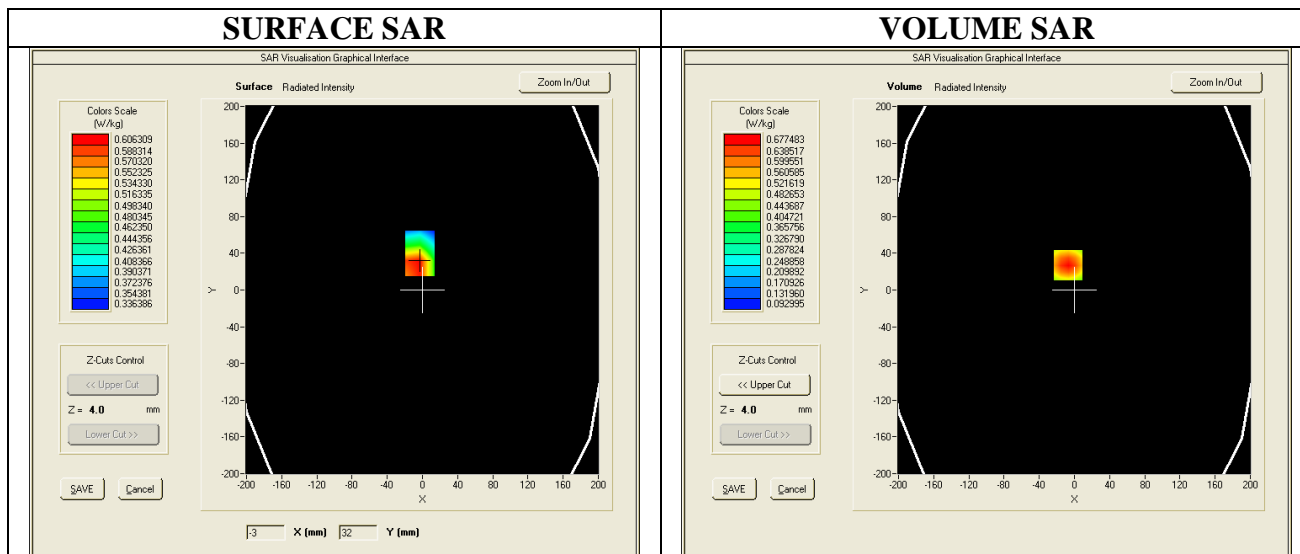
Area Scan	dx=8mm dy=8mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Elliptical Phantom SN 29/11 ELLI21
Probe	SSE2 SN 18/11 EPG122 Sensitivity: 0.89, 0.98, 0.92 $\mu\text{V}/(\text{V}/\text{m})^2$ ConvF: 6.52 DCP: 120, 122, 117 mV
Device Position	Body
Band	CUSTOM
Channels	Middle
Signal	CUSTOM (Crest factor: 1.0)

### B. Liquid data & power drift

Middle Band SAR (Channel -):

Frequency (MHz)	421.00
Relative permittivity (real part)	44.29
Relative permittivity (imaginary part)	38.61
Conductivity (S/m)	0.90
Variation (%)	-0.37

### C. SAR Surface And Volume



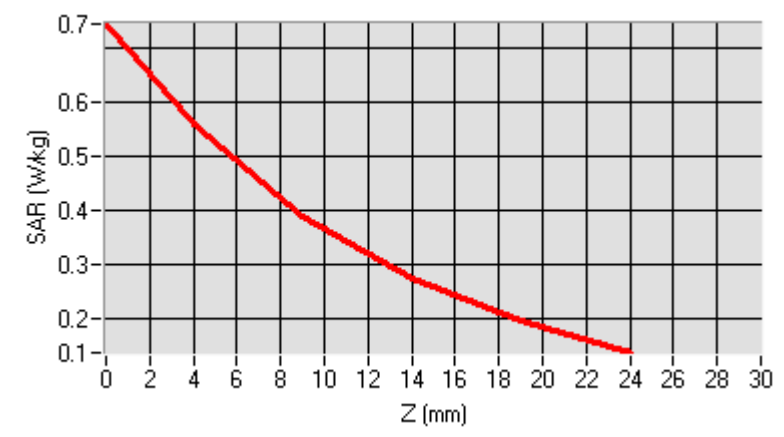
Maximum location: X=-7.00, Y=27.00

SAR Peak: 0.75 W/kg

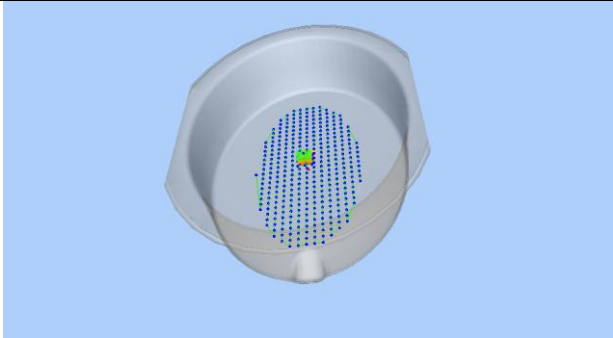

**D. SAR 1g & 10g**

SAR 10g (W/Kg)	0.378
SAR 1g (W/Kg)	0.563

**E. Z Axis Scan**



**F. 3D Image**

3D screen shot	Hot spot position
	

## SAR Measurement at 421 MHz (Body)

Type: Phone measurement

Date of measurement: 07/01/2014

Device position: Body – Device C, holster 3 back

### A. Experimental conditions

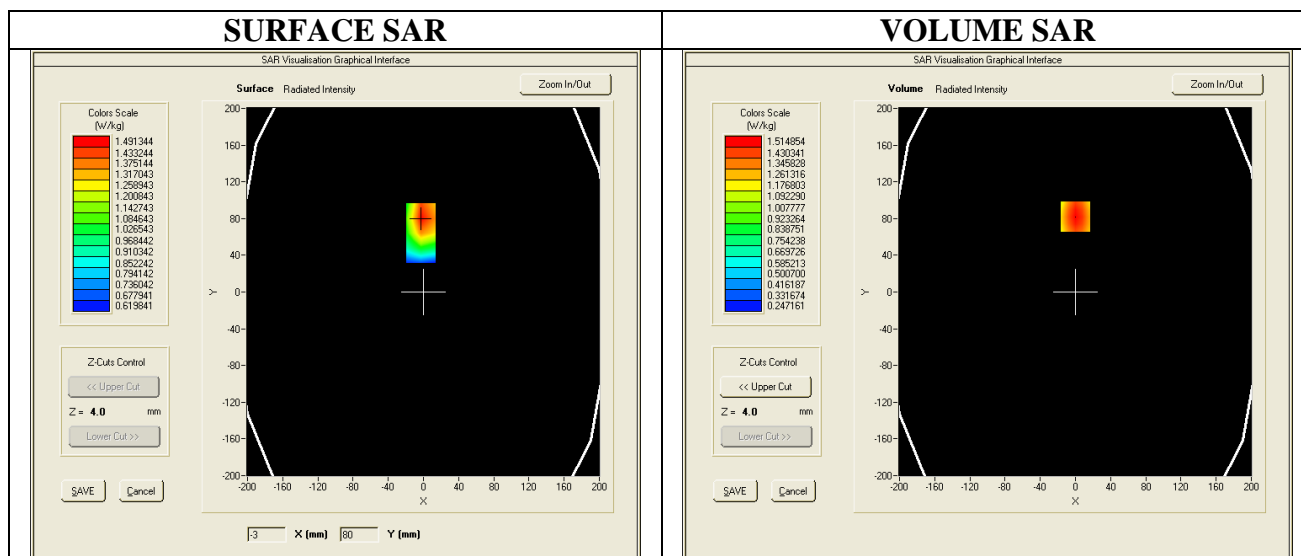
<b>Area Scan</b>	dx=8mm dy=8mm
<b>ZoomScan</b>	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
<b>Phantom</b>	Elliptical Phantom SN 29/11 ELLI21
<b>Probe</b>	SSE2 SN 18/11 EPG122 Sensitivity: 0.89, 0.98, 0.92 $\mu\text{V}/(\text{V}/\text{m})^2$ ConvF: 6.52 DCP: 120, 122, 117 mV
<b>Device Position</b>	Body
<b>Band</b>	CUSTOM
<b>Channels</b>	Middle
<b>Signal</b>	CUSTOM (Crest factor: 1.0)

### B. Liquid data & power drift

Middle Band SAR (Channel -):

<b>Frequency (MHz)</b>	421.00
<b>Relative permittivity (real part)</b>	44.29
<b>Relative permittivity (imaginary part)</b>	38.61
<b>Conductivity (S/m)</b>	0.90
<b>Variation (%)</b>	0.19

### C. SAR Surface And Volume



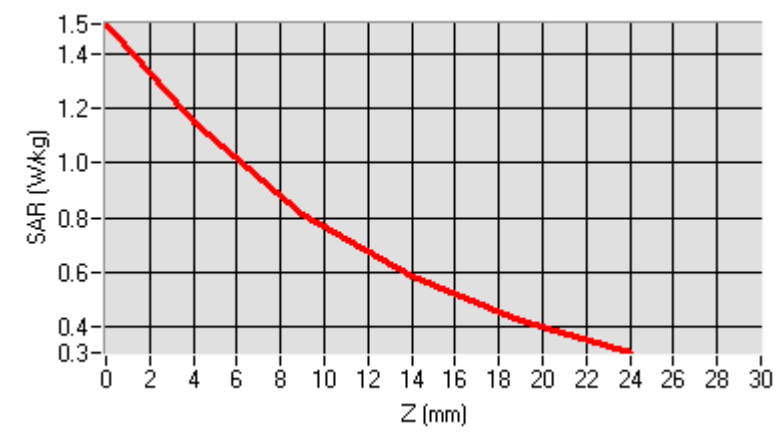
Maximum location: X=0.00, Y=82.00

SAR Peak: 1.51 W/kg

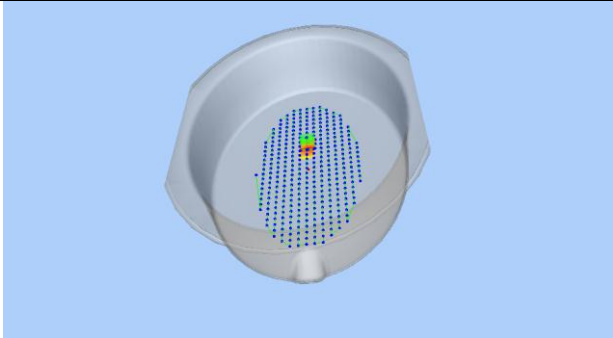

**D. SAR 1g & 10g**

SAR 10g (W/Kg)	0.805
SAR 1g (W/Kg)	1.160

**E. Z Axis Scan**



**F. 3D Image**

3D screen shot	Hot spot position
	

## SAR Measurement at 421 MHz (Body)

Type: Phone measurement

Date of measurement: 07/01/2014

Device position: Body – Device C, holster 3 front

### A. Experimental conditions

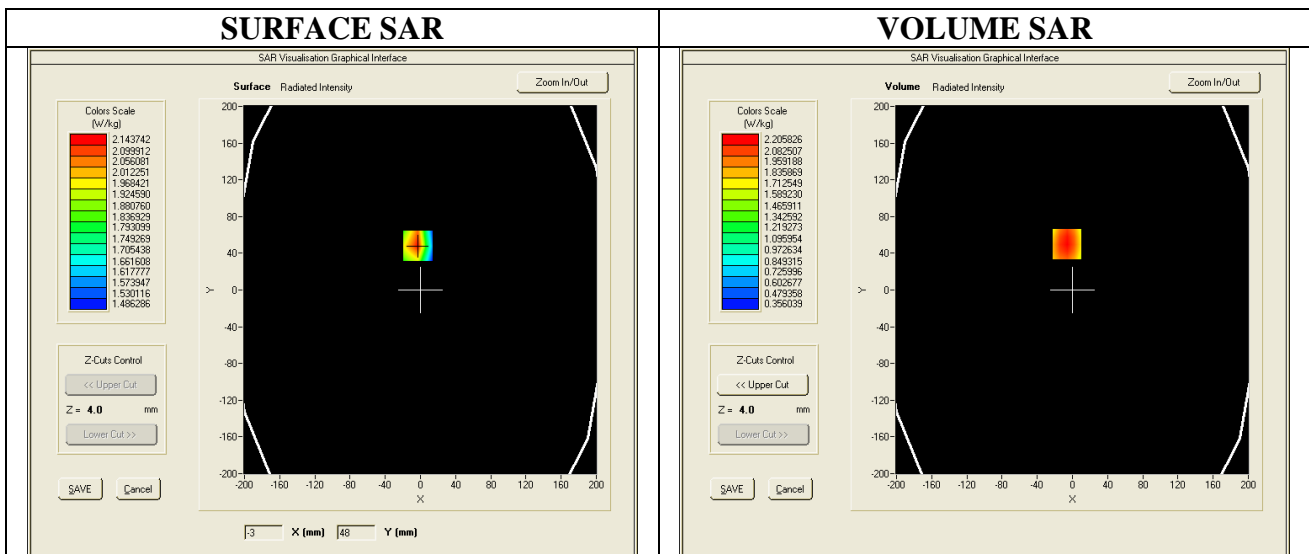
Area Scan	dx=8mm dy=8mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Elliptical Phantom SN 29/11 ELLI21
Probe	SSE2 SN 18/11 EPG122 Sensitivity: 0.89, 0.98, 0.92 $\mu\text{V}/(\text{V/m})^2$ ConvF: 6.52 DCP: 120, 122, 117 mV
Device Position	Body
Band	CUSTOM
Channels	Middle
Signal	CUSTOM (Crest factor: 1.0)

### B. Liquid data & power drift

Middle Band SAR (Channel -):

Frequency (MHz)	421.00
Relative permittivity (real part)	44.29
Relative permittivity (imaginary part)	38.61
Conductivity (S/m)	0.90
Variation (%)	-0.28

### C. SAR Surface And Volume



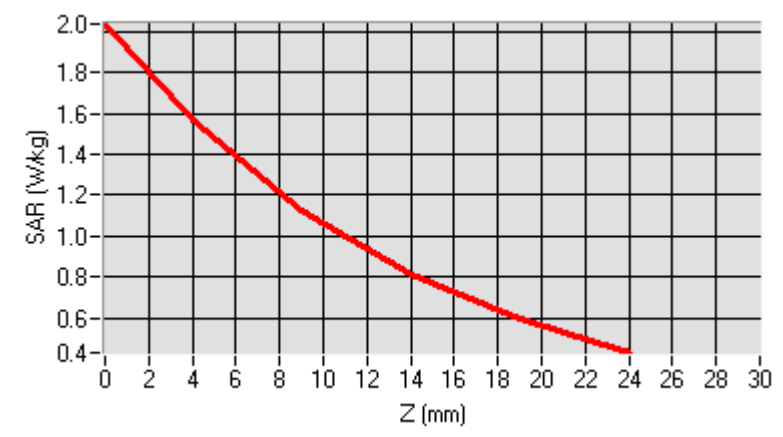
Maximum location: X=-6.00, Y=50.00

SAR Peak: 2.04 W/kg

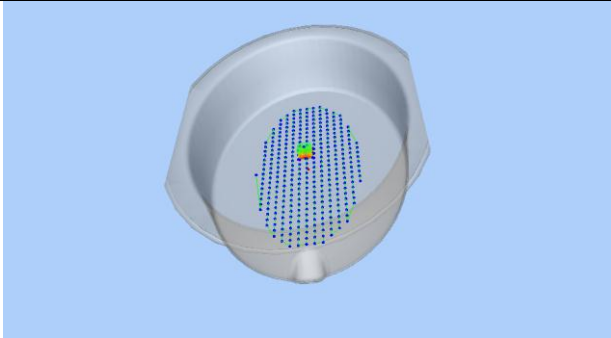

**D. SAR 1g & 10g**

SAR 10g (W/Kg)	1.106
SAR 1g (W/Kg)	1.586

**E. Z Axis Scan**



**F. 3D Image**

3D screen shot	Hot spot position
	

## SAR Measurement at 421 MHz (Body)

Type: Phone measurement

Date of measurement: 07/01/2014

Device position: Body – Device C, holster 1 side left

### A. Experimental conditions

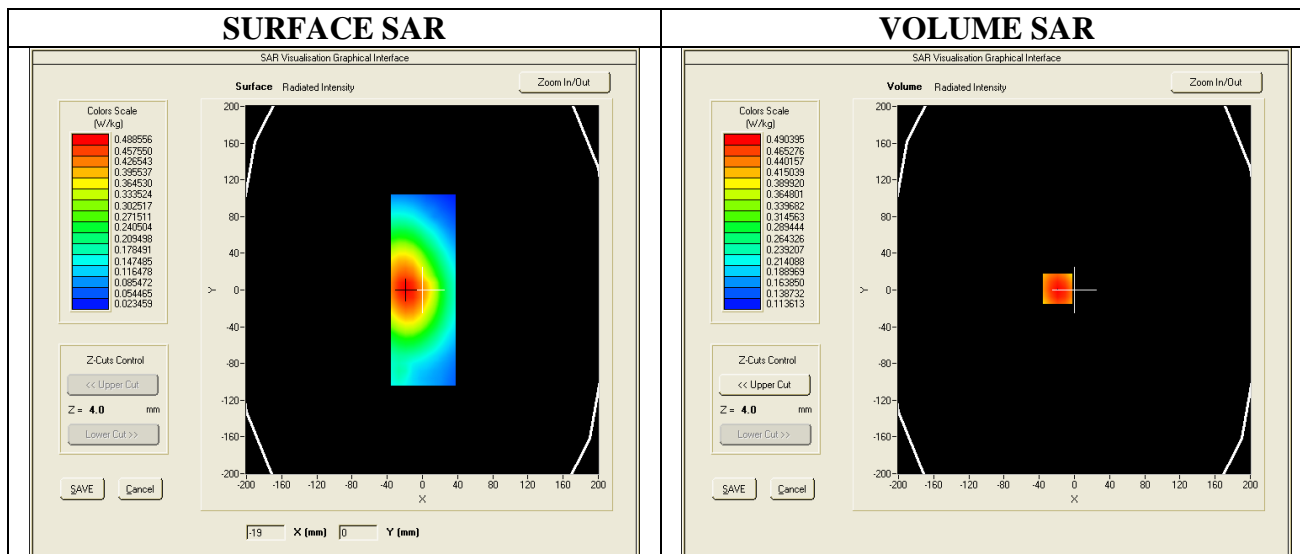
Area Scan	dx=8mm dy=8mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Elliptical Phantom SN 29/11 ELLI21
Probe	SSE2 SN 18/11 EPG122 Sensitivity: 0.89, 0.98, 0.92 $\mu\text{V}/(\text{V}/\text{m})^2$ ConvF: 6.52 DCP: 120, 122, 117 mV
Device Position	Body
Band	CUSTOM
Channels	Middle
Signal	CUSTOM (Crest factor: 1.0)

### B. Liquid data & power drift

Middle Band SAR (Channel -):

Frequency (MHz)	421.00
Relative permittivity (real part)	44.29
Relative permittivity (imaginary part)	38.61
Conductivity (S/m)	0.90
Variation (%)	-0.47

### C. SAR Surface And Volume



Maximum location: X=-19.00, Y=1.00

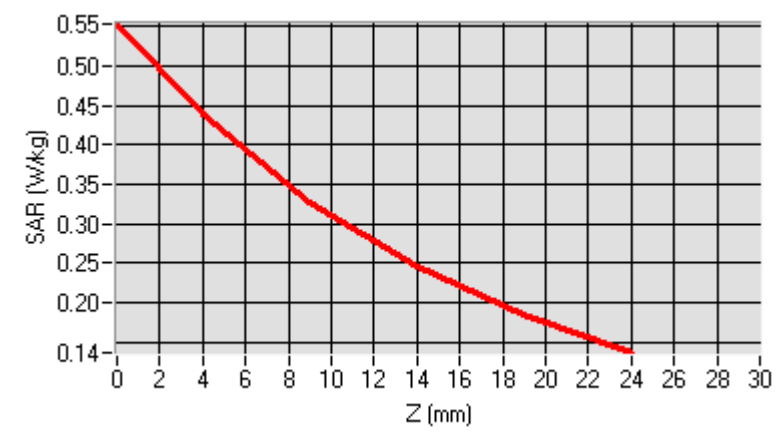
SAR Peak: 0.55 W/kg



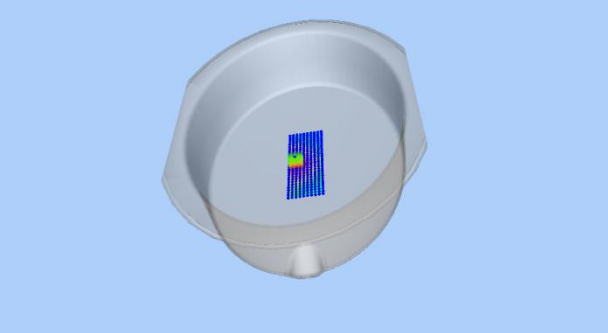

**D. SAR 1g & 10g**

SAR 10g (W/Kg)	0.321
SAR 1g (W/Kg)	0.444

**E. Z Axis Scan**



**F. 3D Image**

3D screen shot	Hot spot position
	

## SAR Measurement at 421 MHz (Body)

Type: Phone measurement

Date of measurement: 07/01/2014

Device position: Body – Device C, holster 1 side right

### A. Experimental conditions

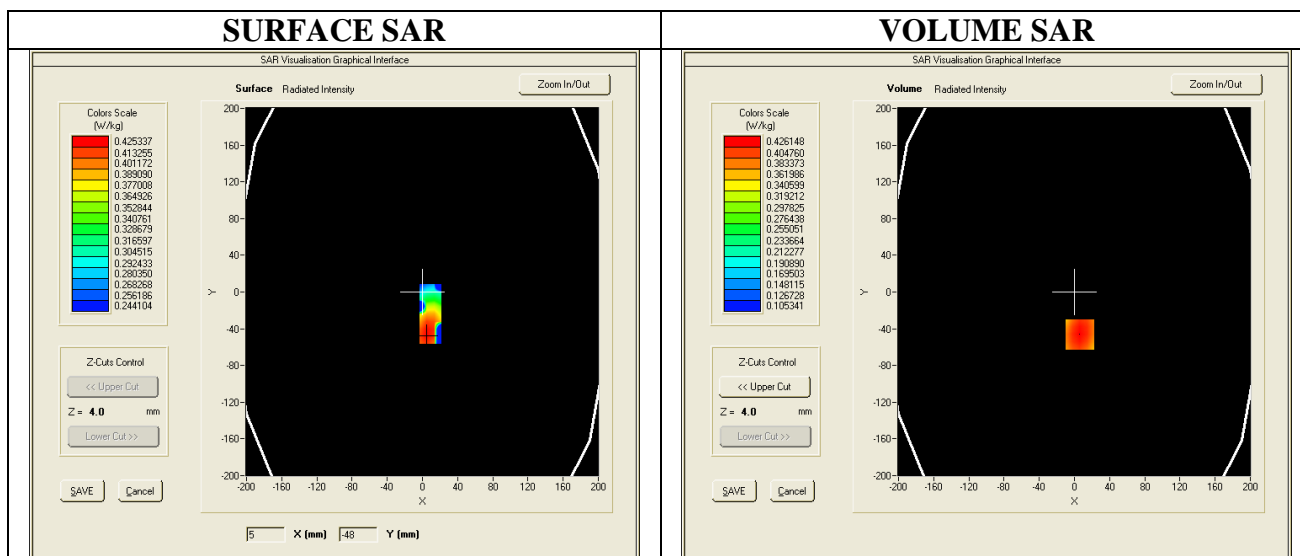
Area Scan	dx=8mm dy=8mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Elliptical Phantom SN 29/11 ELLI21
Probe	SSE2 SN 18/11 EPG122 Sensitivity: 0.89, 0.98, 0.92 $\mu\text{V}/(\text{V}/\text{m})^2$ ConvF: 6.52 DCP: 120, 122, 117 mV
Device Position	Body
Band	CUSTOM
Channels	Middle
Signal	CUSTOM (Crest factor: 1.0)

### B. Liquid data & power drift

Middle Band SAR (Channel -):

Frequency (MHz)	421.00
Relative permittivity (real part)	44.29
Relative permittivity (imaginary part)	38.61
Conductivity (S/m)	0.90
Variation (%)	-0.38

### C. SAR Surface And Volume



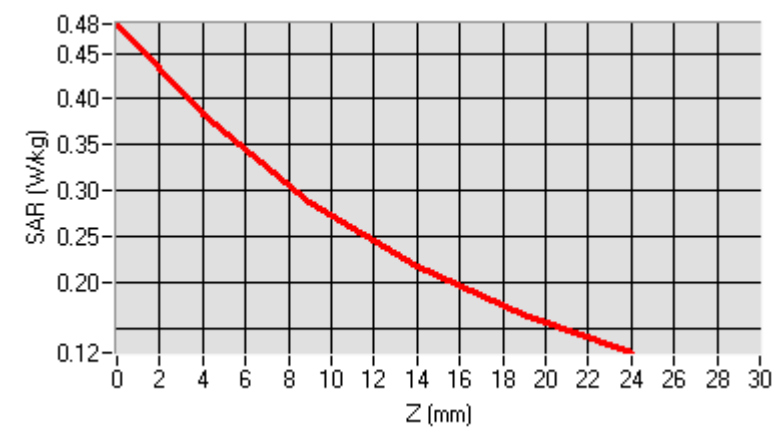
Maximum location: X=6.00, Y=-46.00

SAR Peak: 0.48 W/kg

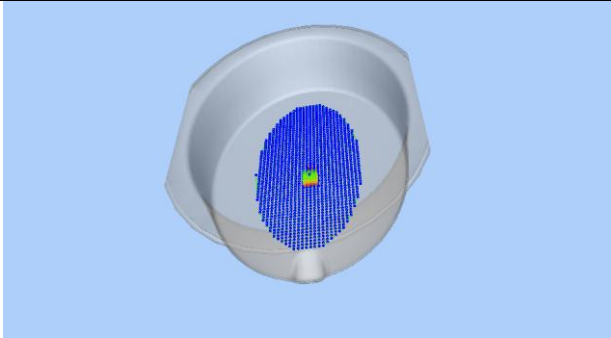

**D. SAR 1g & 10g**

SAR 10g (W/Kg)	0.284
SAR 1g (W/Kg)	0.389

**E. Z Axis Scan**



**F. 3D Image**

3D screen shot	Hot spot position
	

## SAR Measurement at 421 MHz (Body)

Type: Phone measurement

Date of measurement: 07/01/2014

Device position: Body – Device C, holster 2 side left

### A. Experimental conditions

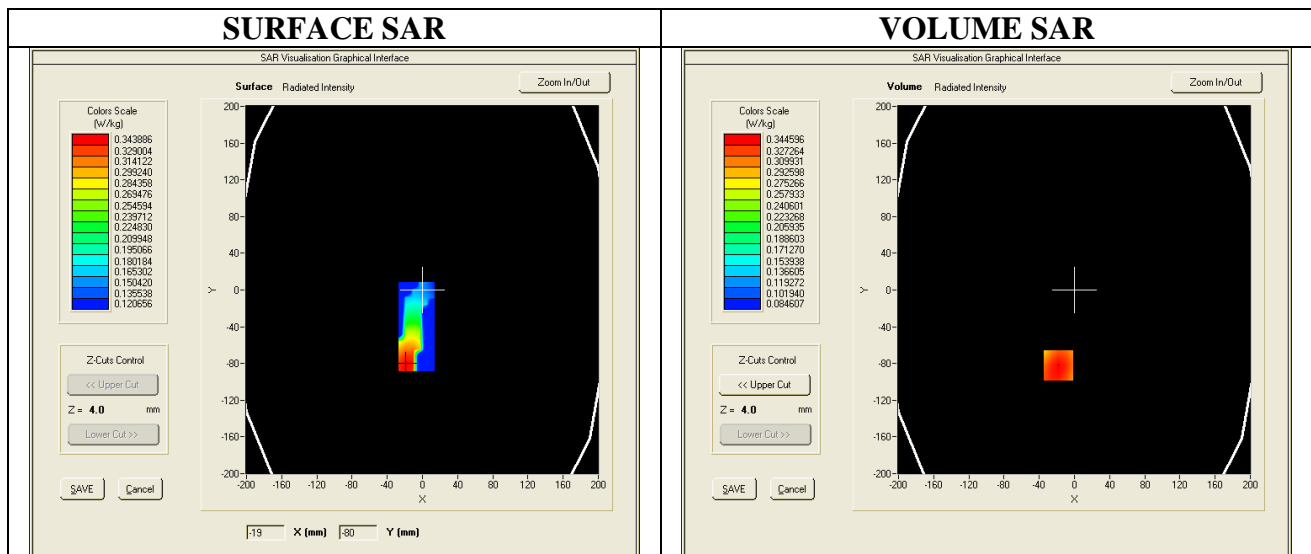
<b>Area Scan</b>	dx=8mm dy=8mm
<b>ZoomScan</b>	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
<b>Phantom</b>	Elliptical Phantom SN 29/11 ELLI21
<b>Probe</b>	SSE2 SN 18/11 EPG122 Sensitivity: 0.89, 0.98, 0.92 $\mu\text{V}/(\text{V}/\text{m})^2$ ConvF: 6.52 DCP: 120, 122, 117 mV
<b>Device Position</b>	Body
<b>Band</b>	CUSTOM
<b>Channels</b>	Middle
<b>Signal</b>	CUSTOM (Crest factor: 1.0)

### B. Liquid data & power drift

Middle Band SAR (Channel -):

<b>Frequency (MHz)</b>	421.00
<b>Relative permittivity (real part)</b>	44.29
<b>Relative permittivity (imaginary part)</b>	38.61
<b>Conductivity (S/m)</b>	0.90
<b>Variation (%)</b>	-0.12

### C. SAR Surface And Volume



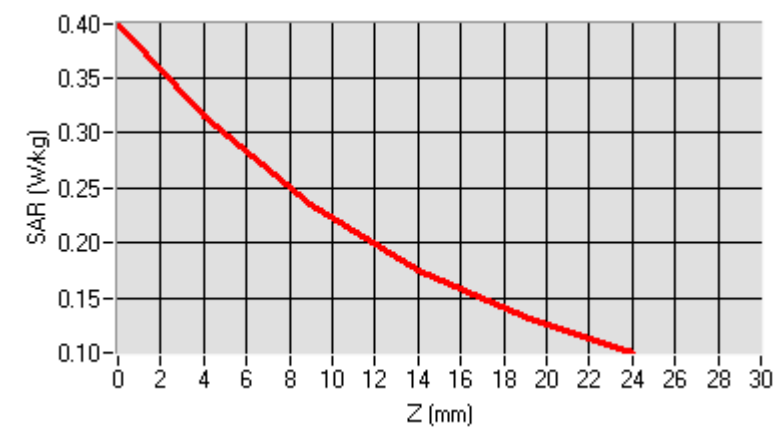
Maximum location: X=-18.00, Y=-82.00

SAR Peak: 0.40 W/kg

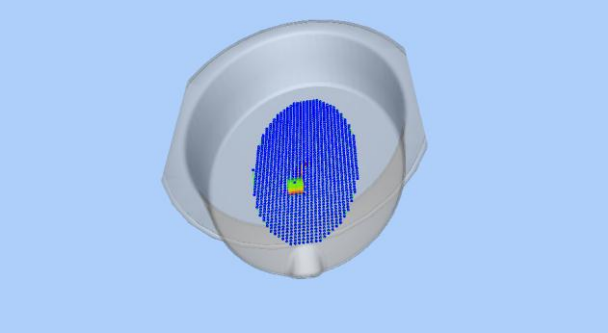

**D. SAR 1g & 10g**

SAR 10g (W/Kg)	0.234
SAR 1g (W/Kg)	0.320

**E. Z Axis Scan**



**F. 3D Image**

3D screen shot	Hot spot position
	

## SAR Measurement at 421 MHz (Body)

Type: Phone measurement

Date of measurement: 07/01/2014

Device position: Body – Device C, holster 2 side right

### A. Experimental conditions

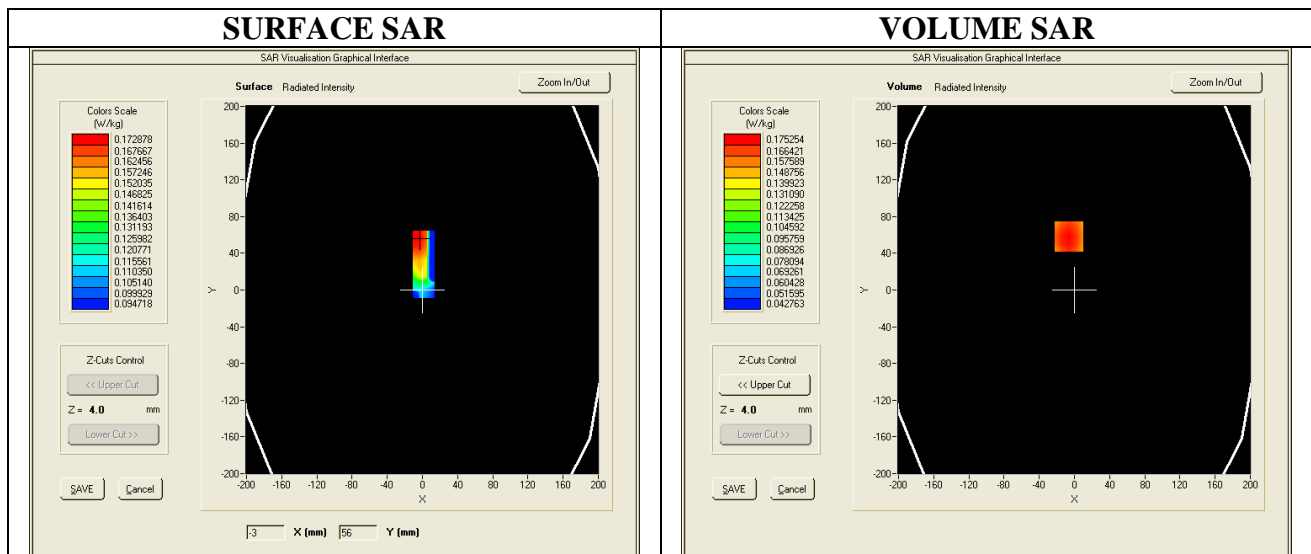
<b>Area Scan</b>	dx=8mm dy=8mm
<b>ZoomScan</b>	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
<b>Phantom</b>	Elliptical Phantom SN 29/11 ELLI21
<b>Probe</b>	SSE2 SN 18/11 EPG122 Sensitivity: 0.89, 0.98, 0.92 $\mu\text{V}/(\text{V}/\text{m})^2$ ConvF: 6.52 DCP: 120, 122, 117 mV
<b>Device Position</b>	Body
<b>Band</b>	CUSTOM
<b>Channels</b>	Middle
<b>Signal</b>	CUSTOM (Crest factor: 1.0)

### B. Liquid data & power drift

Middle Band SAR (Channel -):

<b>Frequency (MHz)</b>	421.00
<b>Relative permittivity (real part)</b>	44.29
<b>Relative permittivity (imaginary part)</b>	38.61
<b>Conductivity (S/m)</b>	0.90
<b>Variation (%)</b>	-2.07

### C. SAR Surface And Volume



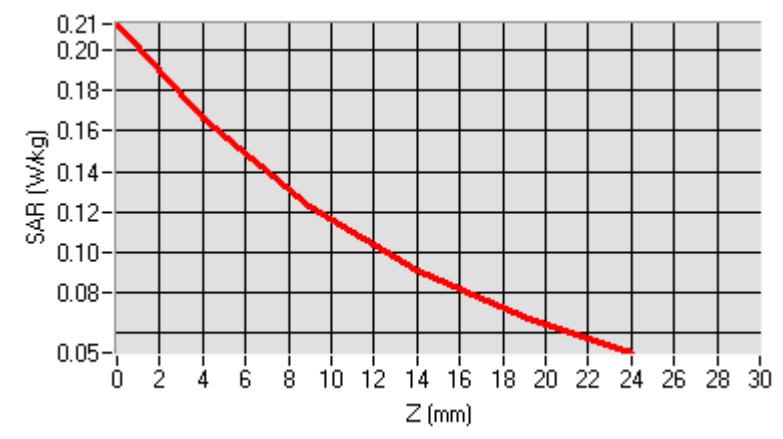
Maximum location: X=-6.00, Y=58.00

SAR Peak: 0.21 W/kg

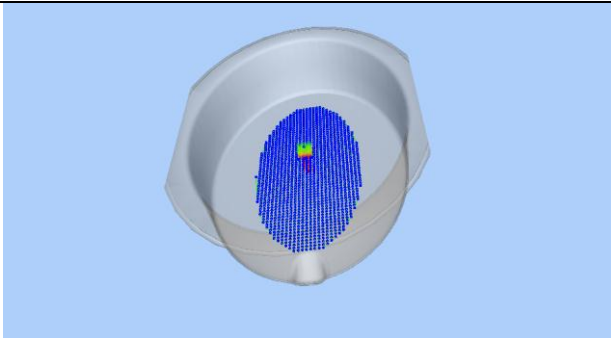

**D. SAR 1g & 10g**

SAR 10g (W/Kg)	0.122
SAR 1g (W/Kg)	0.169

**E. Z Axis Scan**



**F. 3D Image**

3D screen shot	Hot spot position
	

## SAR Measurement at 421 MHz (Body)

Type: Phone measurement

Date of measurement: 07/01/2014

Device position: Body – Device C, holster 4 front

### A. Experimental conditions

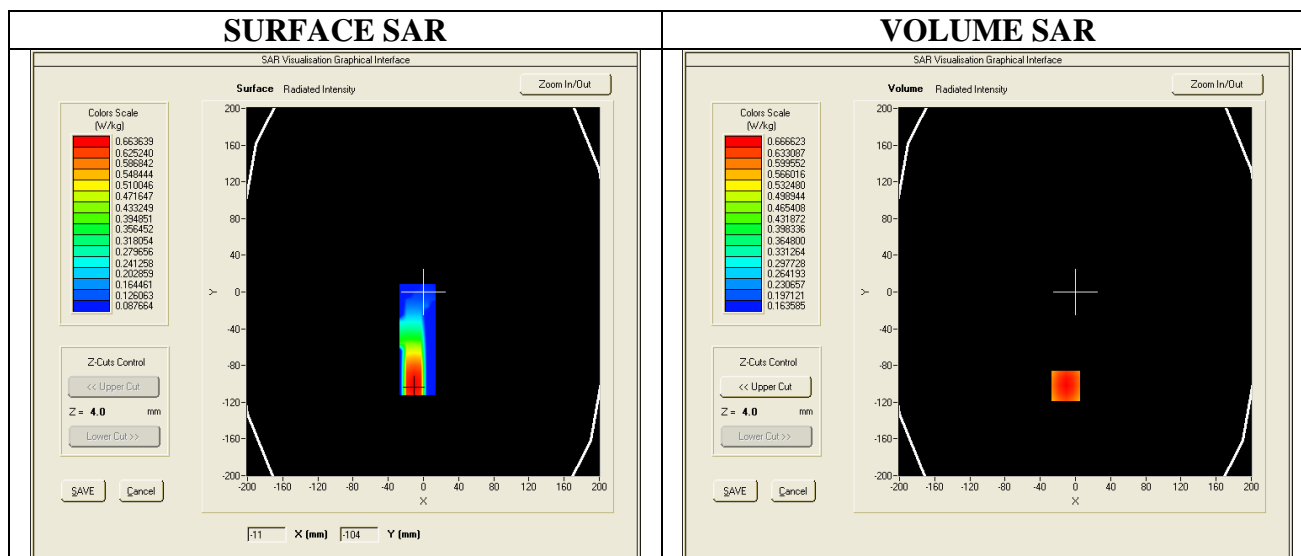
<b>Area Scan</b>	dx=8mm dy=8mm
<b>ZoomScan</b>	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
<b>Phantom</b>	Elliptical Phantom SN 29/11 ELLI21
<b>Probe</b>	SSE2 SN 18/11 EPG122 Sensitivity: 0.89, 0.98, 0.92 $\mu\text{V}/(\text{V/m})^2$ ConvF: 6.52 DCP: 120, 122, 117 mV
<b>Device Position</b>	Body
<b>Band</b>	CUSTOM
<b>Channels</b>	Middle
<b>Signal</b>	CUSTOM (Crest factor: 1.0)

### B. Liquid data & power drift

Middle Band SAR (Channel -):

<b>Frequency (MHz)</b>	421.00
<b>Relative permittivity (real part)</b>	44.29
<b>Relative permittivity (imaginary part)</b>	38.61
<b>Conductivity (S/m)</b>	0.90
<b>Variation (%)</b>	-2.07

### C. SAR Surface And Volume



Maximum location: X=-11.00, Y=-102.00

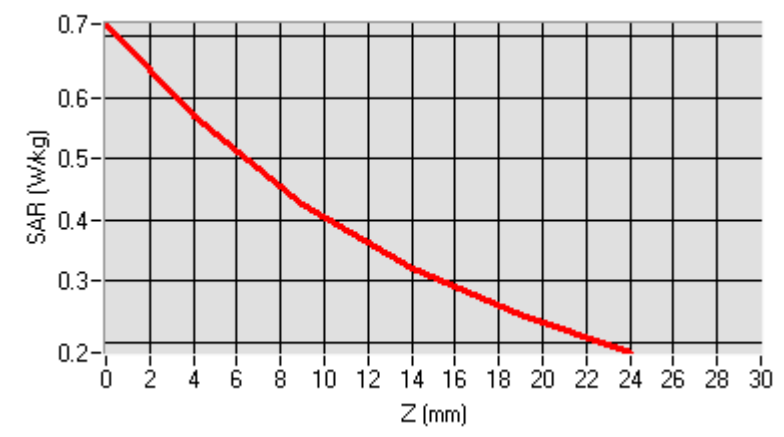
SAR Peak: 0.72 W/kg



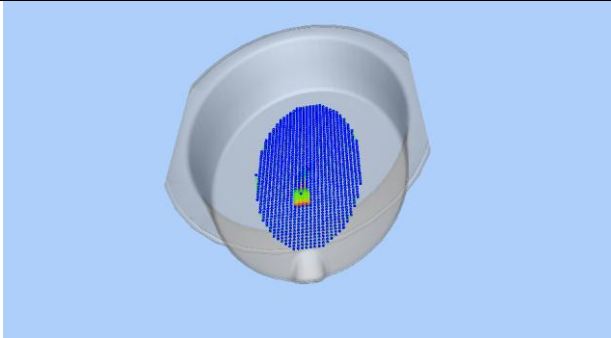

**D. SAR 1g & 10g**

SAR 10g (W/Kg)	0.423
SAR 1g (W/Kg)	0.580

**E. Z Axis Scan**



**F. 3D Image**

3D screen shot	Hot spot position
	

## SAR Measurement at 421 MHz (Body)

Type: Phone measurement

Date of measurement: 07/01/2014

Device position: Body – Device C, holster 4 back

### A. Experimental conditions

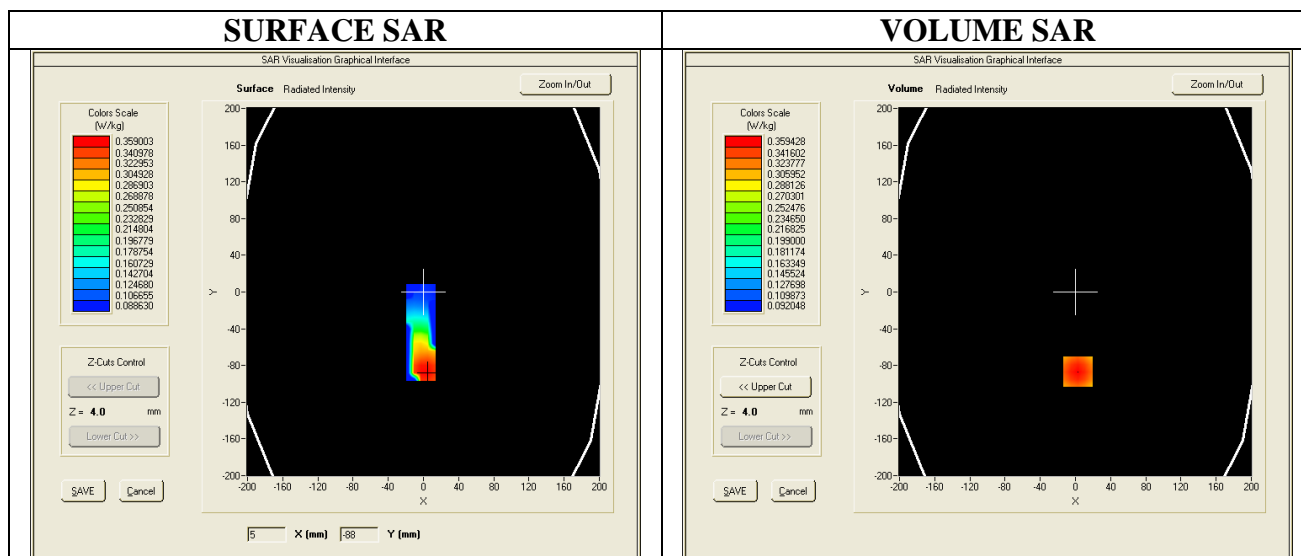
<b>Area Scan</b>	dx=8mm dy=8mm
<b>ZoomScan</b>	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
<b>Phantom</b>	Elliptical Phantom SN 29/11 ELLI21
<b>Probe</b>	SSE2 SN 18/11 EPG122 Sensitivity: 0.89, 0.98, 0.92 $\mu\text{V}/(\text{V}/\text{m})^2$ ConvF: 6.52 DCP: 120, 122, 117 mV
<b>Device Position</b>	Body
<b>Band</b>	CUSTOM
<b>Channels</b>	Middle
<b>Signal</b>	CUSTOM (Crest factor: 1.0)

### B. Liquid data & power drift

Middle Band SAR (Channel -):

<b>Frequency (MHz)</b>	421.00
<b>Relative permittivity (real part)</b>	44.29
<b>Relative permittivity (imaginary part)</b>	38.61
<b>Conductivity (S/m)</b>	0.90
<b>Variation (%)</b>	-0.11

### C. SAR Surface And Volume



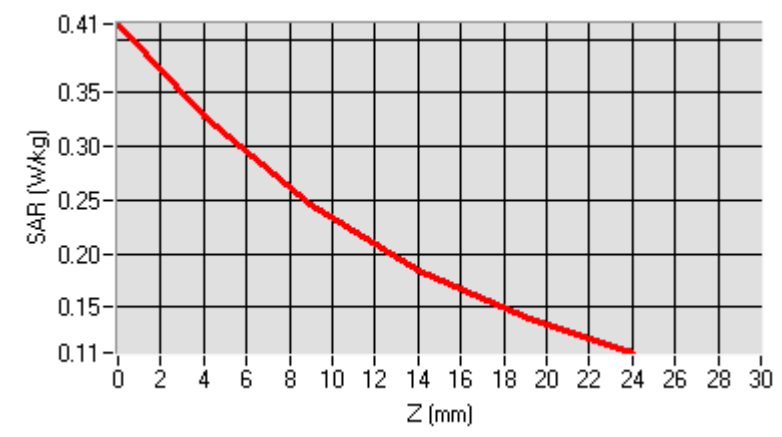
Maximum location: X=3.00, Y=-87.00

SAR Peak: 0.41 W/kg

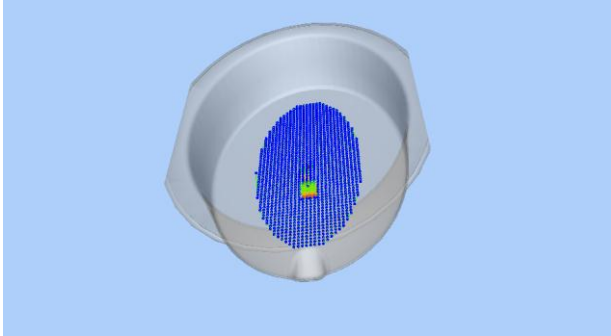

**D. SAR 1g & 10g**

SAR 10g (W/Kg)	0.243
SAR 1g (W/Kg)	0.333

**E. Z Axis Scan**



**F. 3D Image**

3D screen shot	Hot spot position
	

### SAR Measurement at 435 MHz (Body)

Type: Phone measurement

Date of measurement: 07/01/2014

Device position: Body – Device D, holster 3 front

#### A. Experimental conditions

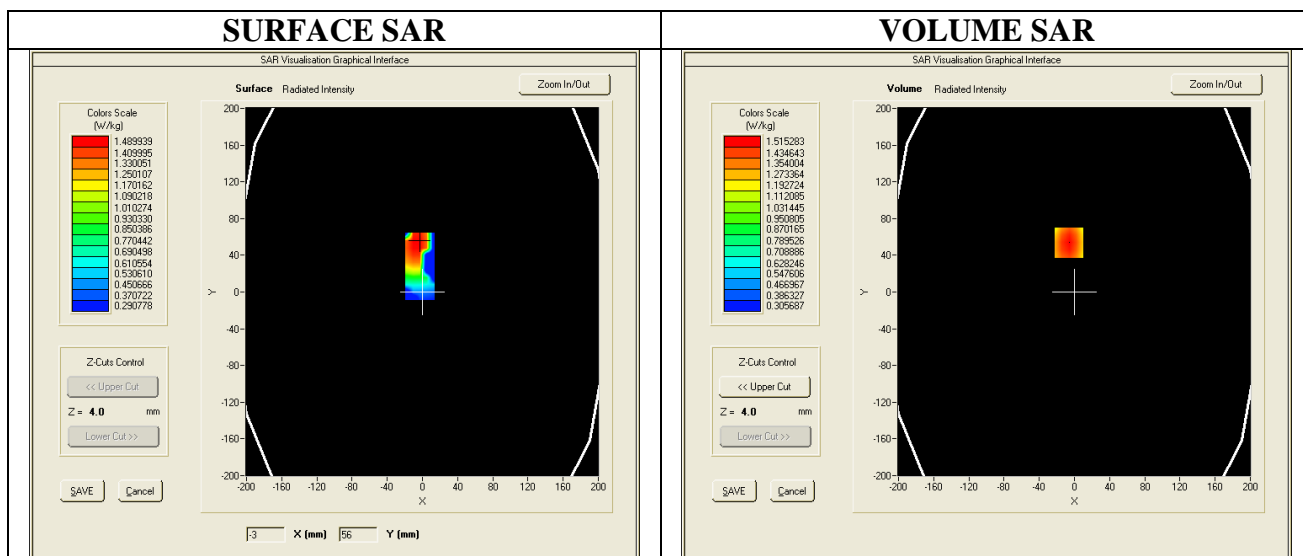
Area Scan	dx=8mm dy=8mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Elliptical Phantom SN 29/11 ELLI21
Probe	SSE2 SN 18/11 EPG122 Sensitivity: 0.89, 0.98, 0.92 $\mu\text{V}/(\text{V}/\text{m})^2$ ConvF: 6.52 DCP: 120, 122, 117 mV
Device Position	Body
Band	CUSTOM
Channels	Low
Signal	CUSTOM (Crest factor: 1.0)

#### B. Liquid data & power drift

Middle Band SAR (Channel -):

Frequency (MHz)	435.00
Relative permittivity (real part)	44.24
Relative permittivity (imaginary part)	37.66
Conductivity (S/m)	0.91
Variation (%)	-0.34

#### C. SAR Surface And Volume

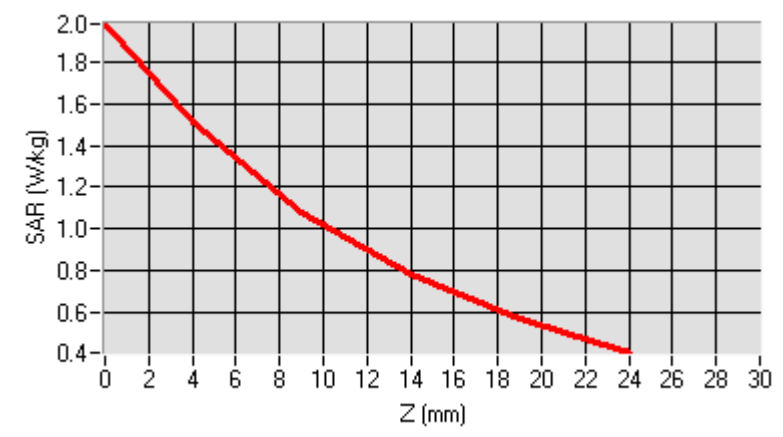


Maximum location: X=-6.00, Y=54.00  
SAR Peak: 1.98 W/kg

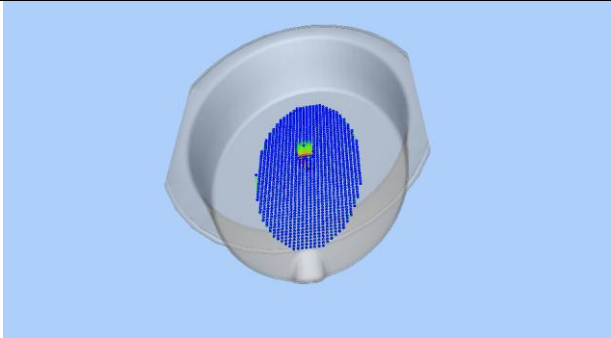

**D. SAR 1g & 10g**

SAR 10g (W/Kg)	1.023
SAR 1g (W/Kg)	1.473

**E. Z Axis Scan**



**F. 3D Image**

3D screen shot	Hot spot position
	

### SAR Measurement at 450 MHz (Body)

Type: Phone measurement

Date of measurement: 07/01/2014

Device position: Body – Device D, holster 3 front

#### A. Experimental conditions

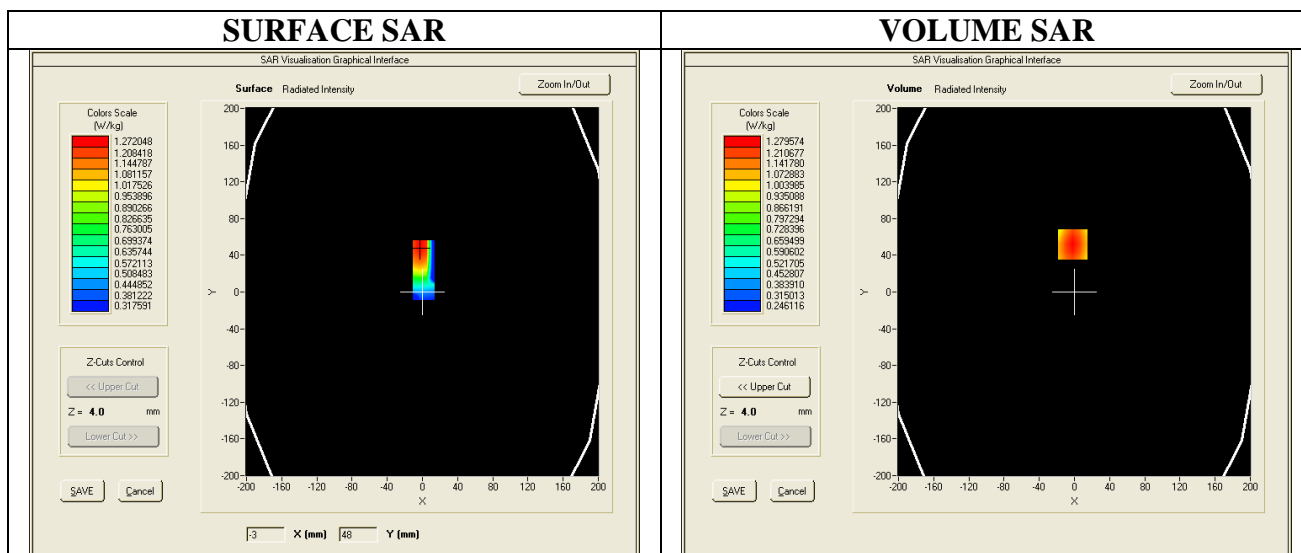
Area Scan	dx=8mm dy=8mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Elliptical Phantom SN 29/11 ELLI21
Probe	SSE2 SN 18/11 EPG122 Sensitivity: 0.89, 0.98, 0.92 $\mu\text{V}/(\text{V}/\text{m})^2$ ConvF: 6.52 DCP: 120, 122, 117 mV
Device Position	Body
Band	CUSTOM
Channels	Middle
Signal	CUSTOM (Crest factor: 1.0)

#### B. Liquid data & power drift

Middle Band SAR (Channel -):

Frequency (MHz)	450.00
Relative permittivity (real part)	44.21
Relative permittivity (imaginary part)	36.41
Conductivity (S/m)	0.91
Variation (%)	0.61

#### C. SAR Surface And Volume

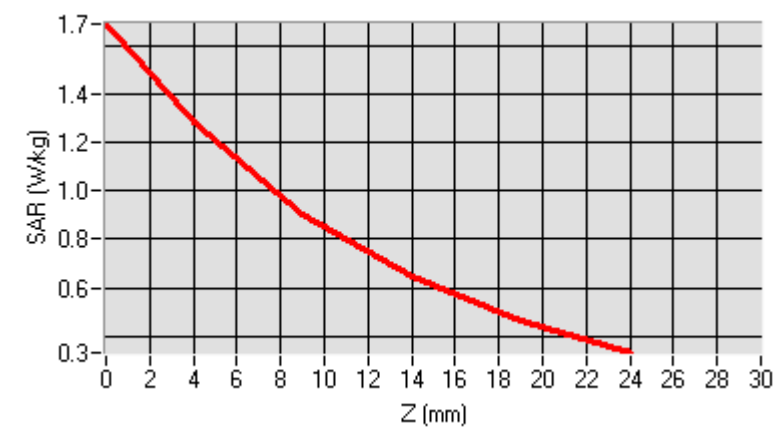


Maximum location: X=-2.00, Y=52.00  
SAR Peak: 1.69 W/kg

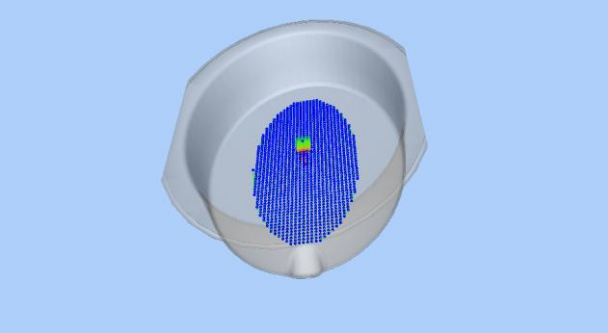

**D. SAR 1g & 10g**

SAR 10g (W/Kg)	0.850
SAR 1g (W/Kg)	1.228

**E. Z Axis Scan**



**F. 3D Image**

3D screen shot	Hot spot position
	

## SAR Measurement at 470 MHz (Body)

Type: Phone measurement

Date of measurement: 07/01/2014

Device position: Body – Device D, holster 3 front

### A. Experimental conditions

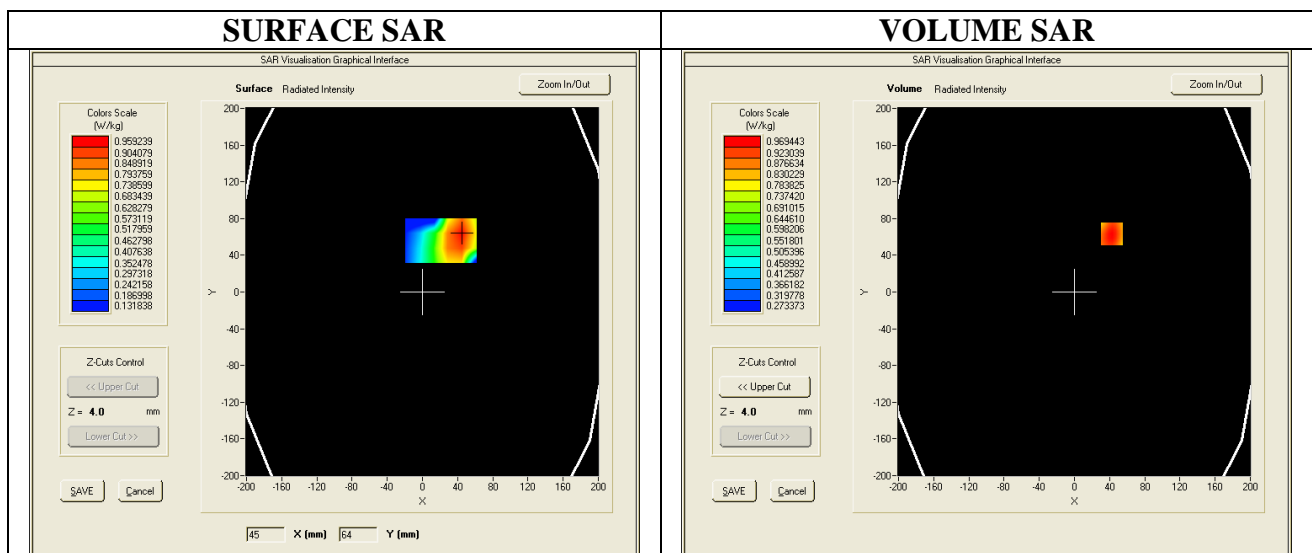
<b>Area Scan</b>	dx=8mm dy=8mm
<b>ZoomScan</b>	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
<b>Phantom</b>	Elliptical Phantom SN 29/11 ELLI21
<b>Probe</b>	SSE2 SN 18/11 EPG122 Sensitivity: 0.89, 0.98, 0.92 $\mu\text{V}/(\text{V}/\text{m})^2$ ConvF: 6.52 DCP: 120, 122, 117 mV
<b>Device Position</b>	Body
<b>Band</b>	CUSTOM
<b>Channels</b>	High
<b>Signal</b>	CUSTOM (Crest factor: 1.0)

### B. Liquid data & power drift

Middle Band SAR (Channel -):

<b>Frequency (MHz)</b>	470.00
<b>Relative permittivity (real part)</b>	43.62
<b>Relative permittivity (imaginary part)</b>	34.28
<b>Conductivity (S/m)</b>	0.90
<b>Variation (%)</b>	-0.31

### C. SAR Surface And Volume



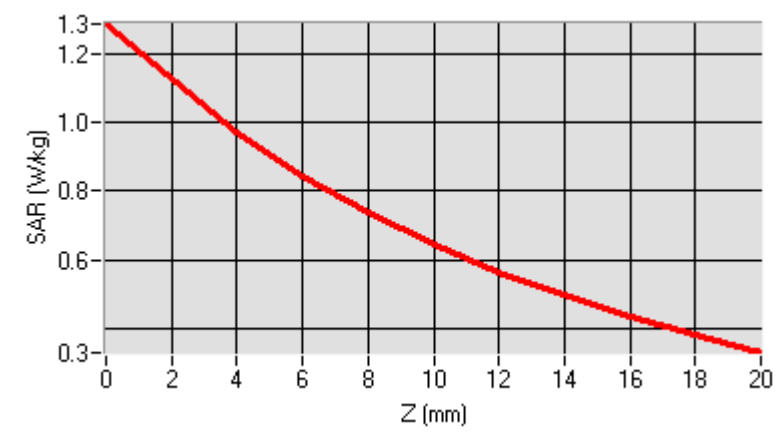
Maximum location: X=43.00, Y=63.00  
SAR Peak: 1.29 W/kg



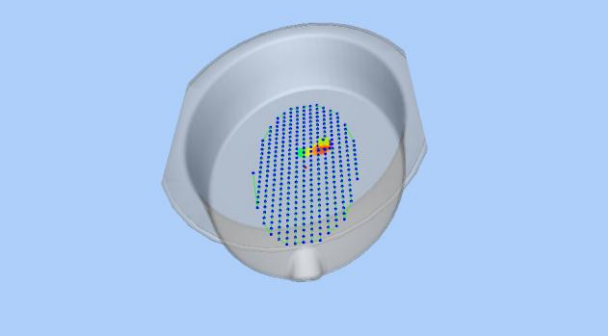
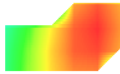
**D. SAR 1g & 10g**

SAR 10g (W/Kg)	0.653
SAR 1g (W/Kg)	0.944

**E. Z Axis Scan**



**F. 3D Image**

3D screen shot	Hot spot position
	

## SAR Measurement at 435 MHz (Body)

Type: Phone measurement

Date of measurement: 07/01/2014

Device position: Body – Device D, holster 4 front

### A. Experimental conditions

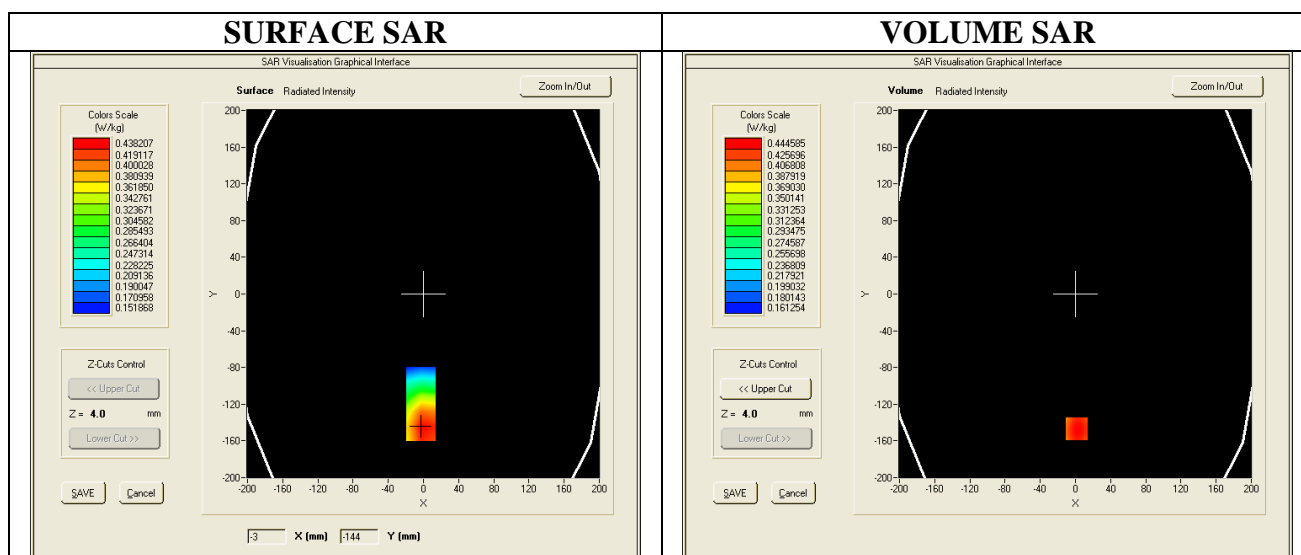
Area Scan	dx=8mm dy=8mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Elliptical Phantom SN 29/11 ELLI21
Probe	SSE2 SN 18/11 EPG122 Sensitivity: 0.89, 0.98, 0.92 $\mu\text{V}/(\text{V}/\text{m})^2$ ConvF: 6.52 DCP: 120, 122, 117 mV
Device Position	Body
Band	CUSTOM
Channels	Low
Signal	CUSTOM (Crest factor: 1.0)

### B. Liquid data & power drift

Middle Band SAR (Channel -):

Frequency (MHz)	435.00
Relative permittivity (real part)	44.24
Relative permittivity (imaginary part)	37.66
Conductivity (S/m)	0.91
Variation (%)	-0.80

### C. SAR Surface And Volume

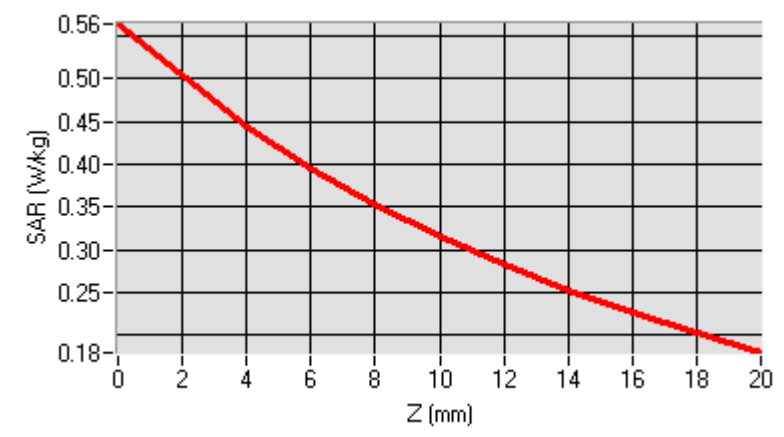


Maximum location: X=1.00, Y=-147.00  
SAR Peak: 0.57 W/kg

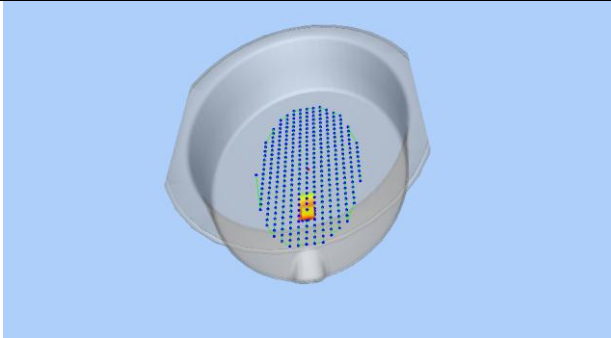

**D. SAR 1g & 10g**

SAR 10g (W/Kg)	0.320
SAR 1g (W/Kg)	0.436

**E. Z Axis Scan**



**F. 3D Image**

3D screen shot	Hot spot position
	

## SAR Measurement at 450 MHz (Body)

Type: Phone measurement

Date of measurement: 07/01/2014

Device position: Body – Device D, holster 4 front

### A. Experimental conditions

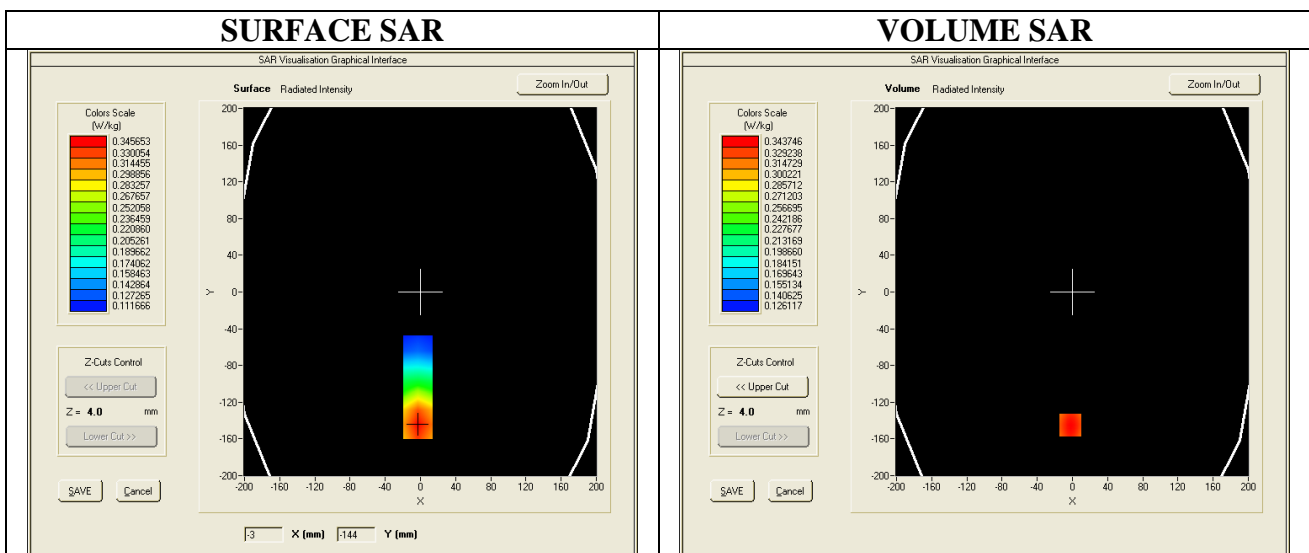
Area Scan	dx=8mm dy=8mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Elliptical Phantom SN 29/11 ELLI21
Probe	SSE2 SN 18/11 EPG122 Sensitivity: 0.89, 0.98, 0.92 $\mu\text{V}/(\text{V}/\text{m})^2$ ConvF: 6.52 DCP: 120, 122, 117 mV
Device Position	Body
Band	CUSTOM
Channels	Middle
Signal	CUSTOM (Crest factor: 1.0)

### B. Liquid data & power drift

Middle Band SAR (Channel -):

Frequency (MHz)	450.00
Relative permittivity (real part)	44.21
Relative permittivity (imaginary part)	36.41
Conductivity (S/m)	0.91
Variation (%)	-0.52

### C. SAR Surface And Volume

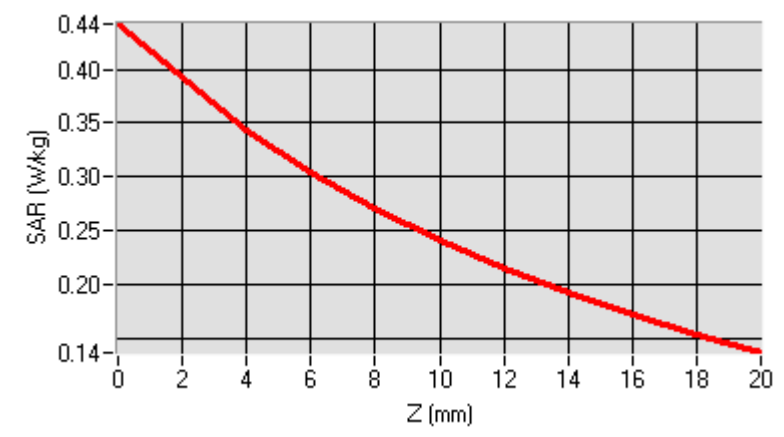


Maximum location: X=-2.00, Y=-145.00  
SAR Peak: 0.44 W/kg

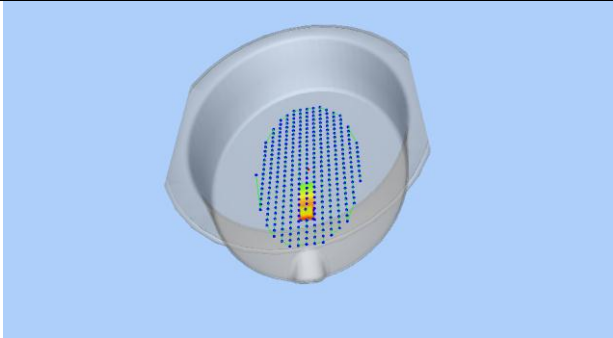

**D. SAR 1g & 10g**

SAR 10g (W/Kg)	0.244
SAR 1g (W/Kg)	1.332

**E. Z Axis Scan**



**F. 3D Image**

3D screen shot	Hot spot position
	

## SAR Measurement at 470 MHz (Body)

Type: Phone measurement

Date of measurement: 07/01/2014

Device position: Body – Device D, holster 4 front

### A. Experimental conditions

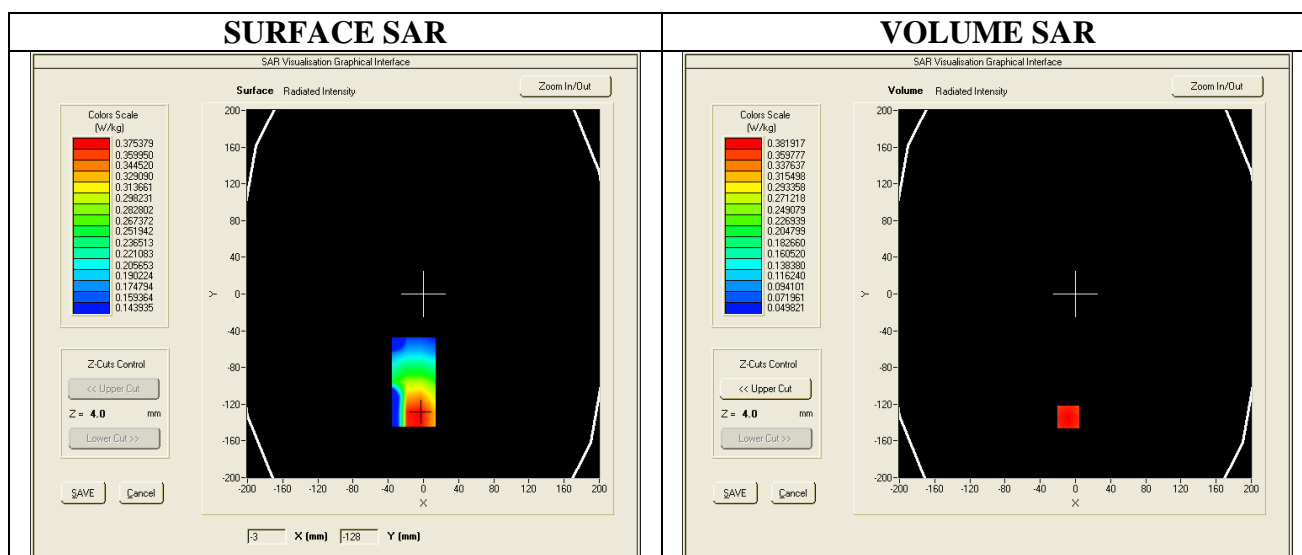
<b>Area Scan</b>	dx=8mm dy=8mm
<b>ZoomScan</b>	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
<b>Phantom</b>	Elliptical Phantom SN 29/11 ELLI21
<b>Probe</b>	SSE2 SN 18/11 EPG122 Sensitivity: 0.89, 0.98, 0.92 $\mu\text{V}/(\text{V}/\text{m})^2$ ConvF: 6.52 DCP: 120, 122, 117 mV
<b>Device Position</b>	Body
<b>Band</b>	CUSTOM
<b>Channels</b>	High
<b>Signal</b>	CUSTOM (Crest factor: 1.0)

### B. Liquid data & power drift

Middle Band SAR (Channel -):

<b>Frequency (MHz)</b>	470.00
<b>Relative permittivity (real part)</b>	43.62
<b>Relative permittivity (imaginary part)</b>	34.28
<b>Conductivity (S/m)</b>	0.90
<b>Variation (%)</b>	-0.76

### C. SAR Surface And Volume

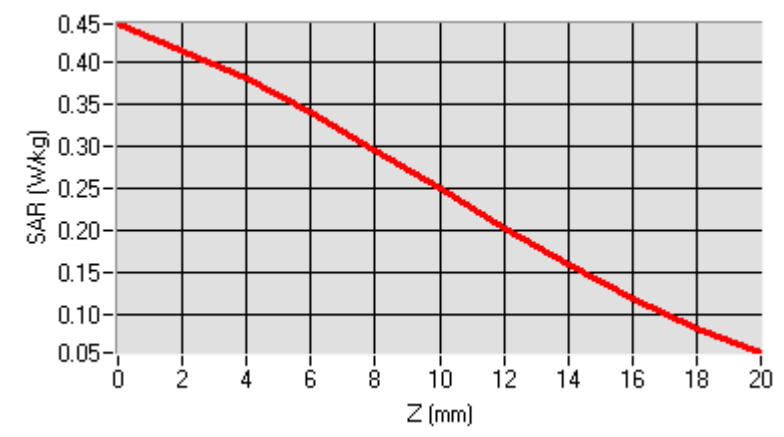


Maximum location: X=-8.00, Y=-134.00  
SAR Peak: 0.61 W/kg

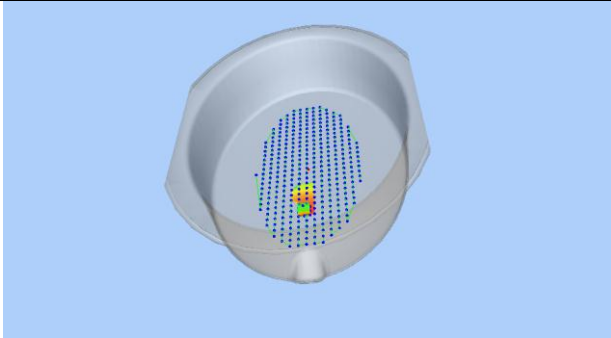

**D. SAR 1g & 10g**

SAR 10g (W/Kg)	0.228
SAR 1g (W/Kg)	0.377

**E. Z Axis Scan**



**F. 3D Image**

3D screen shot	Hot spot position
	

## SAR Measurement at IEEE 802.11b band (Body)

Type: Phone measurement

Date of measurement: 07/01/2014

Device position: Body – Device C, holster 3 front

### A. Experimental conditions

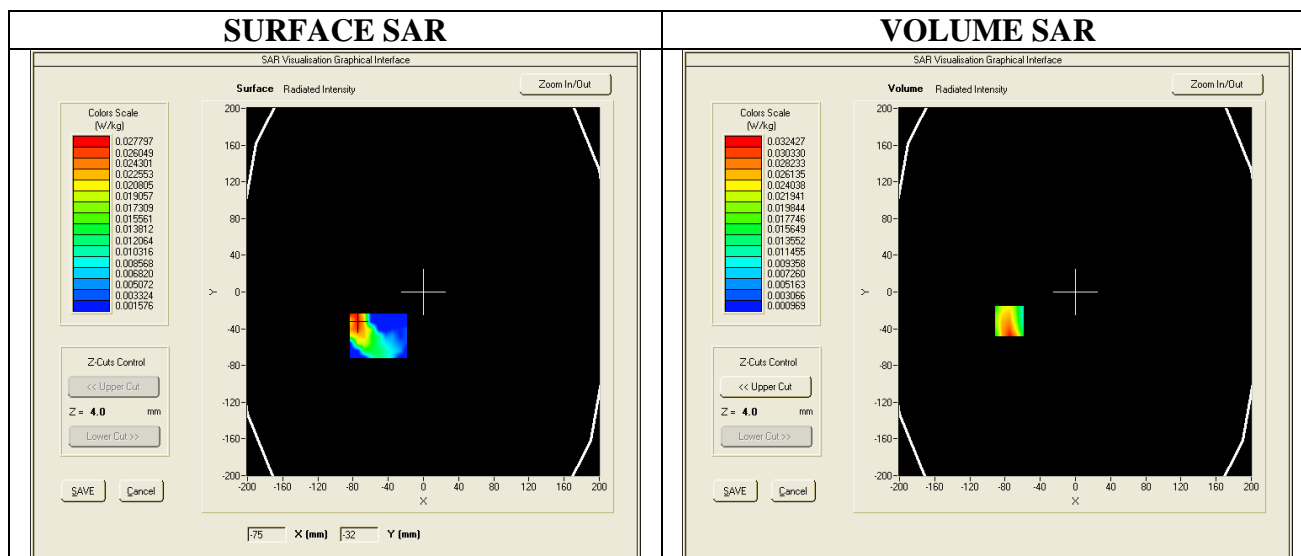
<b>Area Scan</b>	dx=8mm dy=8mm
<b>ZoomScan</b>	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
<b>Phantom</b>	Elliptical Phantom SN 29/11 ELLI21
<b>Probe</b>	SSE2 SN 18/11 EPG122 Sensitivity: 0.89, 0.98, 0.92 $\mu\text{V}/(\text{V}/\text{m})^2$ ConvF: 4.90 DCP: 120, 122, 117 mV
<b>Device Position</b>	Body
<b>Band</b>	IEEE 802.11b
<b>Channels</b>	Middle
<b>Signal</b>	DSSS (Crest factor: 1.0)

### B. Liquid data & power drift

Middle Band SAR (Channel 6):

<b>Frequency (MHz)</b>	2437.00
<b>Relative permittivity (real part)</b>	44.24
<b>Relative permittivity (imaginary part)</b>	14.07
<b>Conductivity (S/m)</b>	1.90
<b>Variation (%)</b>	-3.21

### C. SAR Surface And Volume



Maximum location: X=-75.00, Y=-32.00

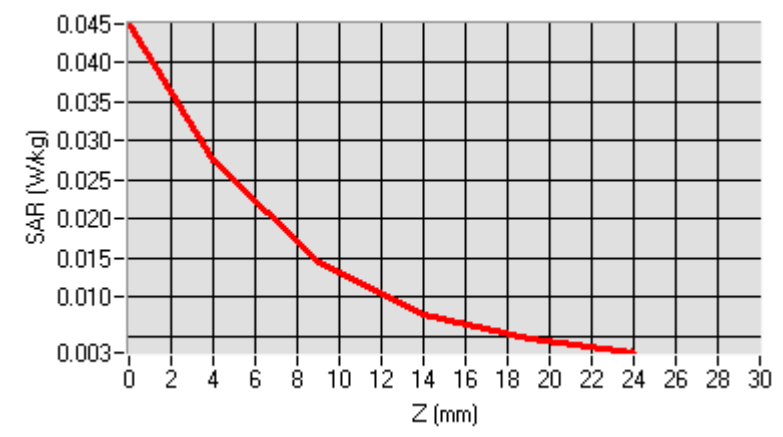
SAR Peak: 0.05 W/kg



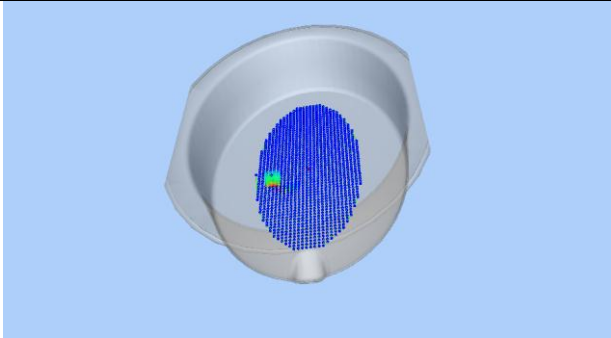

**D. SAR 1g & 10g**

SAR 10g (W/Kg)	0.016
SAR 1g (W/Kg)	0.030

**E. Z Axis Scan**



**F. 3D Image**

3D screen shot	Hot spot position
	

## SAR Measurement at IEEE 802.11b band (Body)

Type: Phone measurement

Date of measurement: 07/01/2014

Device position: Body – Device C, holster 3 side left

### A. Experimental conditions

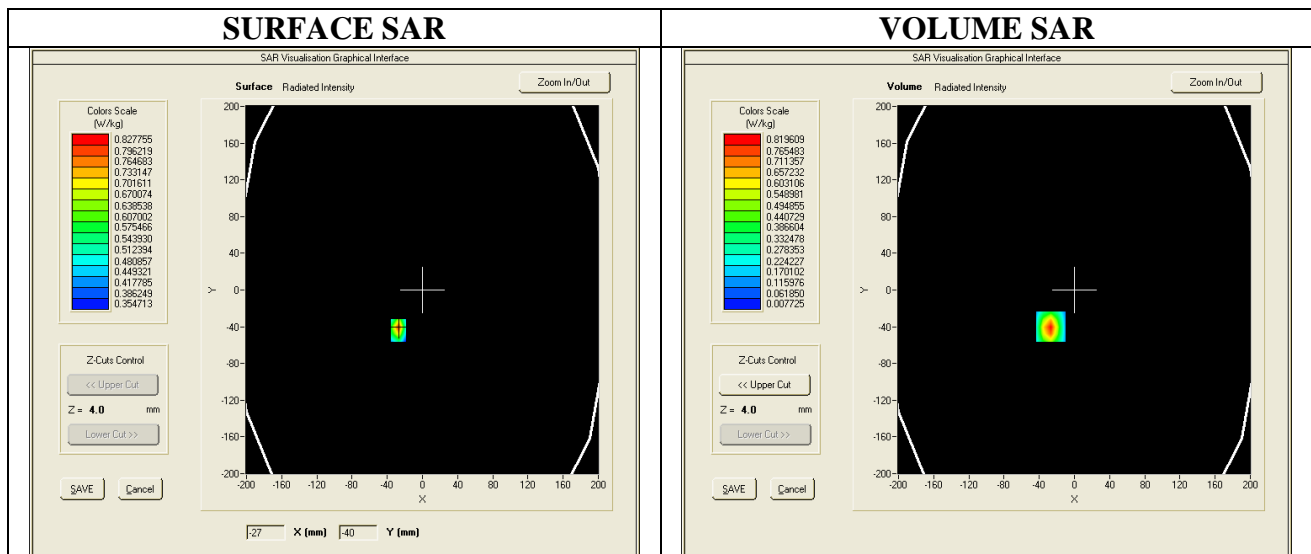
<b>Area Scan</b>	dx=8mm dy=8mm
<b>ZoomScan</b>	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
<b>Phantom</b>	Elliptical Phantom SN 29/11 ELLI21
<b>Probe</b>	SSE2 SN 18/11 EPG122 Sensitivity: 0.89, 0.98, 0.92 $\mu\text{V}/(\text{V}/\text{m})^2$ ConvF: 4.90 DCP: 120, 122, 117 mV
<b>Device Position</b>	Body
<b>Band</b>	IEEE 802.11b
<b>Channels</b>	Middle
<b>Signal</b>	DSSS (Crest factor: 1.0)

### B. Liquid data & power drift

Middle Band SAR (Channel 6):

<b>Frequency (MHz)</b>	2437.00
<b>Relative permittivity (real part)</b>	44.24
<b>Relative permittivity (imaginary part)</b>	14.07
<b>Conductivity (S/m)</b>	1.90
<b>Variation (%)</b>	-1.36

### C. SAR Surface And Volume



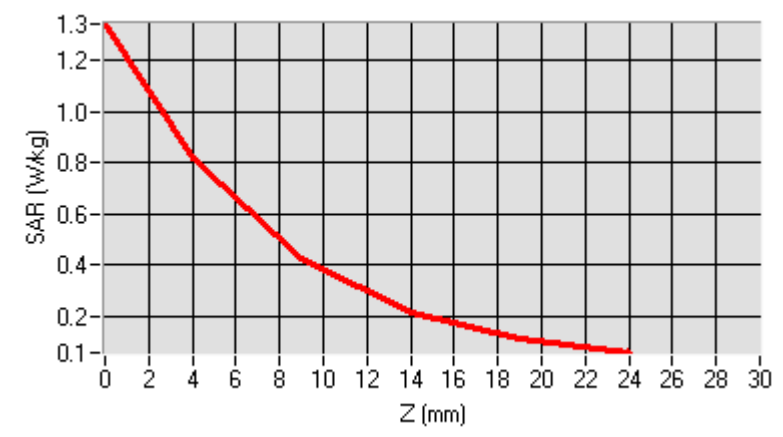
Maximum location: X=-27.00, Y=-40.00

SAR Peak: 1.35 W/kg

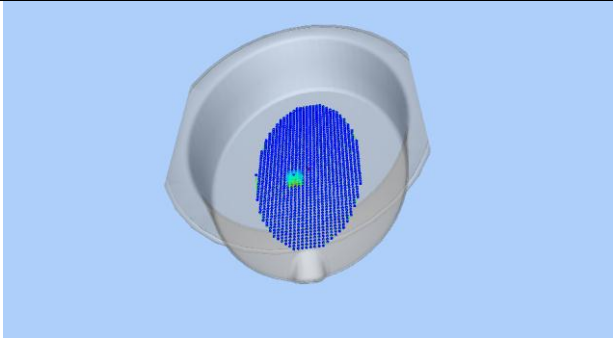

**D. SAR 1g & 10g**

SAR 10g (W/Kg)	0.365
SAR 1g (W/Kg)	0.785

**E. Z Axis Scan**



**F. 3D Image**

3D screen shot	Hot spot position
	

## SAR Measurement at IEEE 802.11b band (Body)

Type: Phone measurement

Date of measurement: 07/01/2014

Device position: Body – Device C, holster 3 side left

### A. Experimental conditions

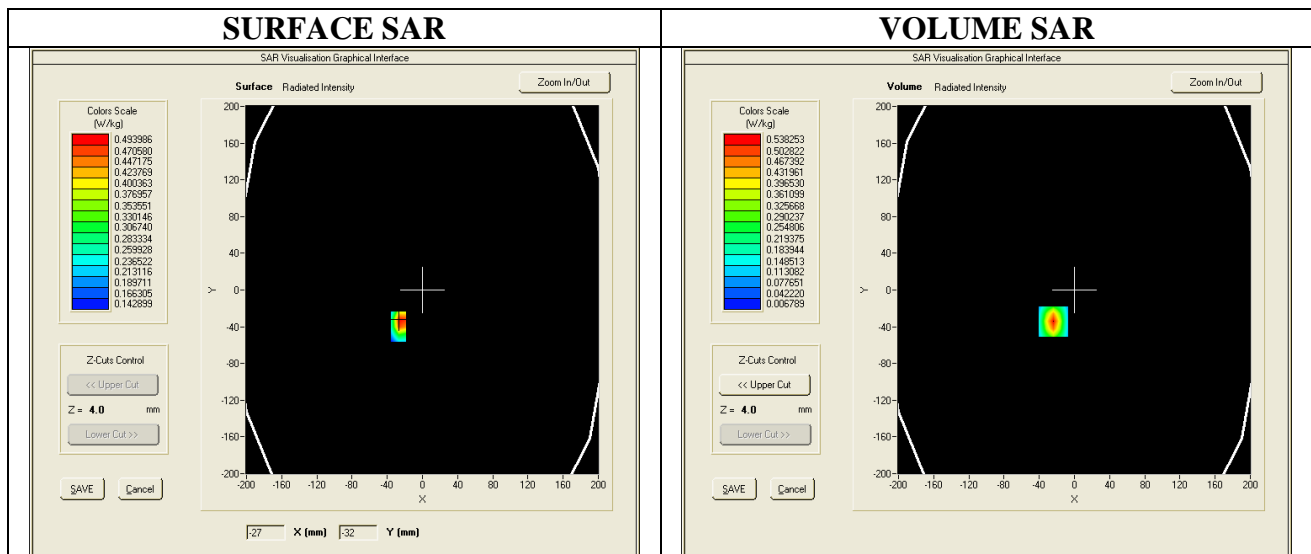
<b>Area Scan</b>	dx=8mm dy=8mm
<b>ZoomScan</b>	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
<b>Phantom</b>	Elliptical Phantom SN 29/11 ELLI21
<b>Probe</b>	SSE2 SN 18/11 EPG122 Sensitivity: 0.89, 0.98, 0.92 $\mu\text{V}/(\text{V}/\text{m})^2$ ConvF: 4.90 DCP: 120, 122, 117 mV
<b>Device Position</b>	Body
<b>Band</b>	IEEE 802.11b
<b>Channels</b>	Low
<b>Signal</b>	DSSS (Crest factor: 1.0)

### B. Liquid data & power drift

Middle Band SAR (Channel 1):

<b>Frequency (MHz)</b>	2412.00
<b>Relative permittivity (real part)</b>	38.72
<b>Relative permittivity (imaginary part)</b>	13.89
<b>Conductivity (S/m)</b>	1.86
<b>Variation (%)</b>	-1.45

### C. SAR Surface And Volume



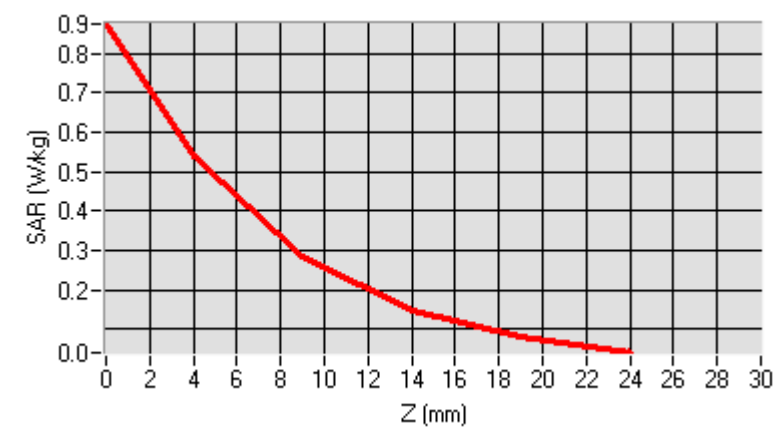
Maximum location: X=-24.00, Y=-34.00

SAR Peak: 0.87 W/kg

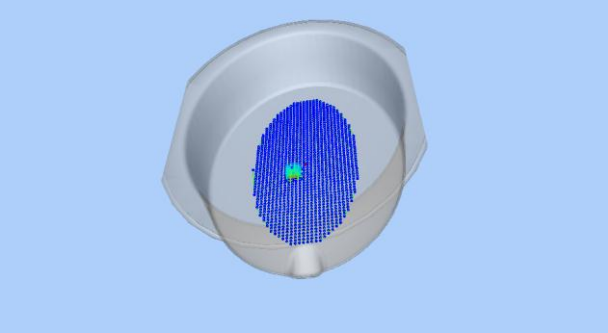

**D. SAR 1g & 10g**

SAR 10g (W/Kg)	0.241
SAR 1g (W/Kg)	0.512

**E. Z Axis Scan**



**F. 3D Image**

3D screen shot	Hot spot position
	

## SAR Measurement at IEEE 802.11b band (Body)

Type: Phone measurement

Date of measurement: 07/01/2014

Device position: Body – Device C, holster 3 side left

### A. Experimental conditions

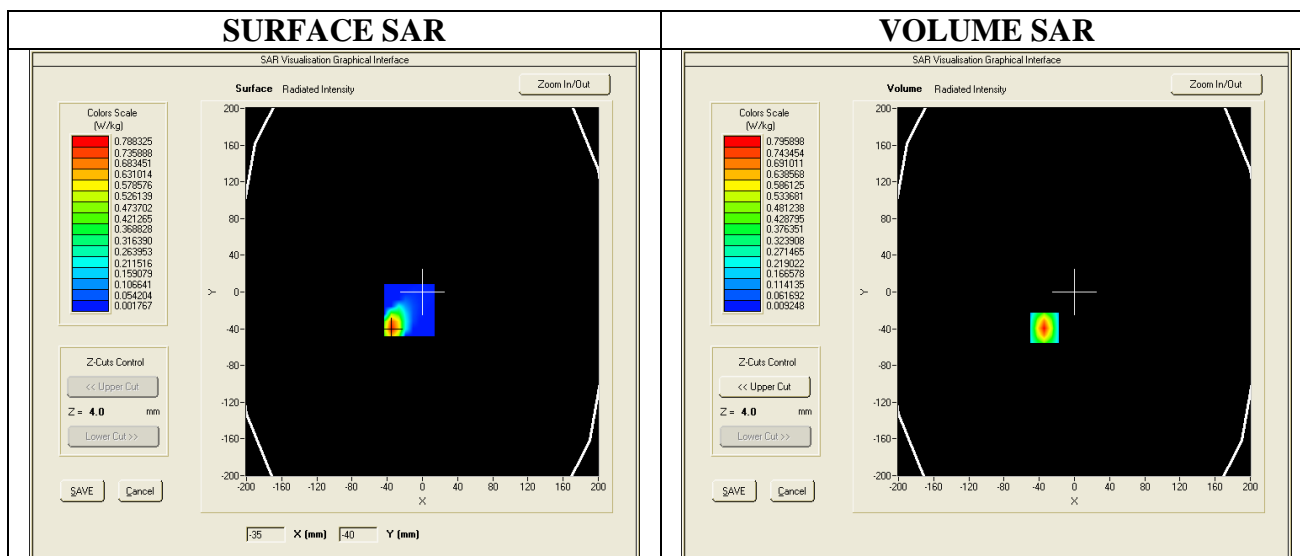
Area Scan	dx=8mm dy=8mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Elliptical Phantom SN 29/11 ELLI21
Probe	SSE2 SN 18/11 EPG122 Sensitivity: 0.89, 0.98, 0.92 $\mu\text{V}/(\text{V}/\text{m})^2$ ConvF: 4.90 DCP: 120, 122, 117 mV
Device Position	Body
Band	IEEE 802.11b
Channels	High
Signal	DSSS (Crest factor: 1.0)

### B. Liquid data & power drift

Middle Band SAR (Channel 13):

Frequency (MHz)	2472.00
Relative permittivity (real part)	38.51
Relative permittivity (imaginary part)	13.81
Conductivity (S/m)	1.90
Variation (%)	-1.76

### C. SAR Surface And Volume



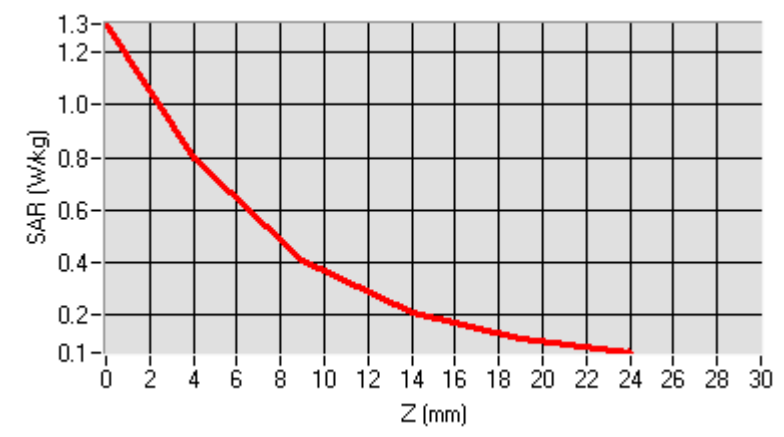
Maximum location: X=-34.00, Y=-39.00

SAR Peak: 1.31 W/kg

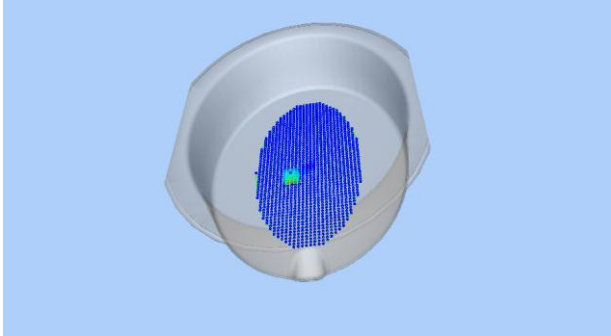

**D. SAR 1g & 10g**

SAR 10g (W/Kg)	0.355
SAR 1g (W/Kg)	0.756

**E. Z Axis Scan**



**F. 3D Image**

3D screen shot	Hot spot position
	

## SAR Measurement at IEEE 802.11g band (Body)

Type: Phone measurement

Date of measurement: 07/01/2014

Device position: Body – Device C, holster 3 side left

### A. Experimental conditions

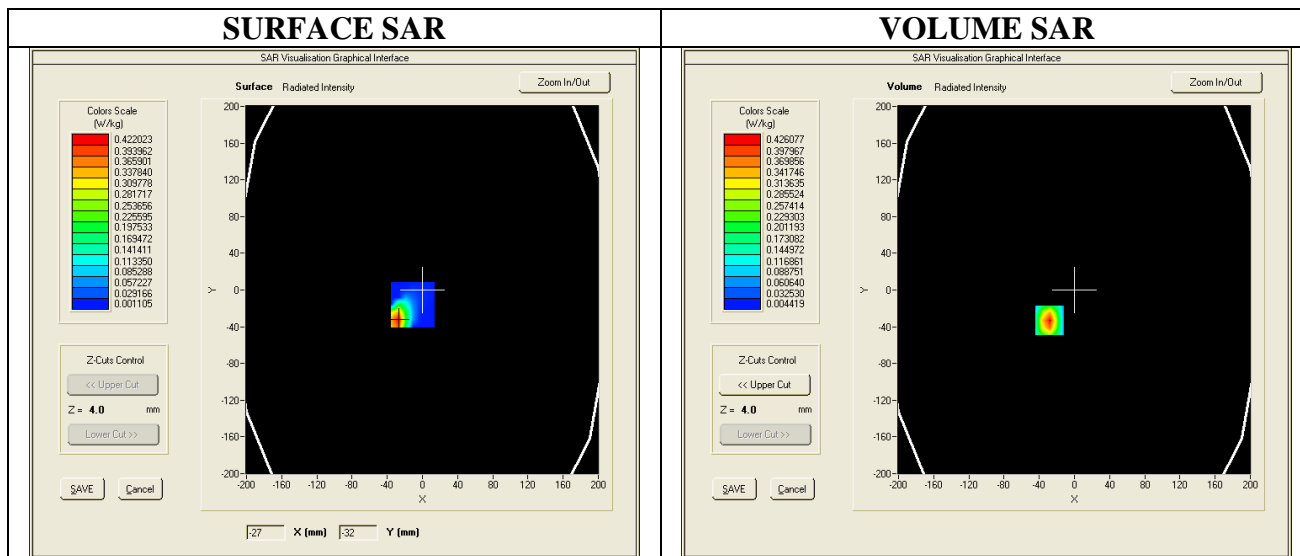
Area Scan	dx=8mm dy=8mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Elliptical Phantom SN 29/11 ELLI21
Probe	SSE2 SN 18/11 EPG122 Sensitivity: 0.89, 0.98, 0.92 $\mu\text{V}/(\text{V}/\text{m})^2$ ConvF: 4.90 DCP: 120, 122, 117 mV
Device Position	Body
Band	IEEE 802.11g
Channels	Middle
Signal	OFDM (Crest factor: 1.0)

### B. Liquid data & power drift

Middle Band SAR (Channel 6):

Frequency (MHz)	2437.00
Relative permittivity (real part)	44.24
Relative permittivity (imaginary part)	14.07
Conductivity (S/m)	1.90
Variation (%)	-3.11

### C. SAR Surface And Volume



Maximum location: X=-28.00, Y=-33.00

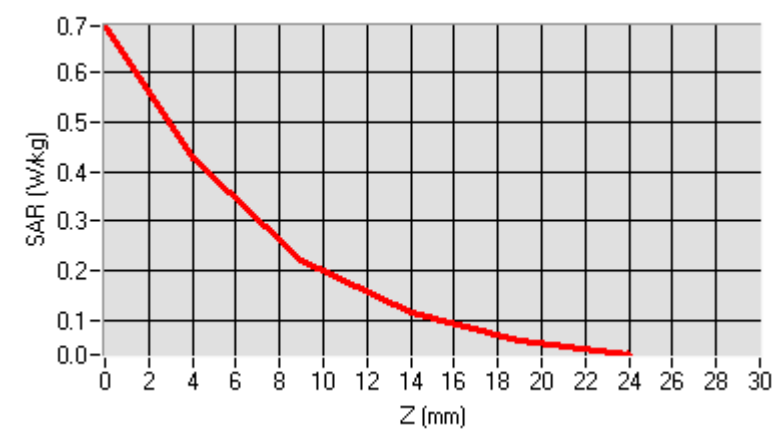
SAR Peak: 0.70 W/kg



**D. SAR 1g & 10g**

SAR 10g (W/Kg)	0.192
SAR 1g (W/Kg)	0.409

**E. Z Axis Scan**



**F. 3D Image**

3D screen shot	Hot spot position
