TEST REPORT

Reference No.	:	WTX20X12093686W
FCC ID	:	2ARO3-W6LITE
Applicant	:	Worldwide telecom limited
Address	:	2F Block C; Shenfang Building, Zhen Hualu, Futian, Shenzhen.
Product Name	:	SmartPhone
Test Model	:	W6 LITE
Standards	:	FCC Part 2.1093 ANSI / IEEE C95.1 : 2005+A1:2010 ANSI / IEEE C95.3 : 2002(R2008) IEEE 1528 :2013
Date of Receipt sample....	:	Dec.04, 2020
Date of Test	:	Dec.07, 2020 to Dec.22, 2020
Date of Issue	:	Dec.23, 2020
Test Result	:	**Pass**

Remarks:
The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

Prepared By:

Waltek Testing Group (Shenzhen) Co., Ltd.

Address: 1/F., Room 101, Building 1, Hongwei Industrial Park, Liuxian 2nd Road,
Block 70 Bao'an District, Shenzhen, Guangdong, China

Tel.: +86-755-33663308

Fax.: +86-755-33663309

Tested by:	Reviewed By:	Approved & Authorized By:
Hubrey Cai / Project Engineer	Lion Cai / RF Manager	Silin Chen / Manager

TABLE OF CONTENTS

1. General Information

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant:	Worldwide telecom limited
Address of applicant:	2F Block C; Shenfang Building, Zhen Hualu, Futian, Shenzhen.
Manufacturer:	Worldwide telecom limited
Address of manufacturer:	2F Block C; Shenfang Building, Zhen Hualu, Futian, Shenzhen.

General Description of EUT:	
Product Name:	SmartPhone
Brand Name:	WOLKI
Model No.:	W6 LITE
Adding Model(s):	/
Rated Voltage:	DC3.8V by Battery
Battery:	2500mAh
Device Category:	Portable Device
Note: The test data is gathered from a production sample provided by the manufacturer.	

Technical Characteristics of EUT:	
2G	
Support Networks:	GSM, GPRS
Support Band:	GSM850/PCS1900
Uplink Frequency:	GSM/GPRS 850: 824~849MHz GSM/GPRS 1900: 1850~1910MHz
Downlink Frequency:	GSM/GPRS 850: 869~894MHz GSM/GPRS 1900: 1930~1990MHz
RF Output Power:	GSM850: 32.35dBm, GSM1900: 29.46dBm
Type of Modulation:	GMSK
Type of Antenna:	Integral Antenna
Antenna Gain:	GSM850: -0.5dBi; GSM1900: 0.5dBi
GPRS/EDGE Class:	Class 12
3G	
Support Networks:	WCDMA, HSDPA, HSUPA
Support Band:	WCDMA Band 2, WCDMA Band 4, 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: 22.18dBm, WCDMA Band 5: 22.78dBm
Type of Modulation:	BPSK
Antenna Type:	Integral Antenna
Antenna Gain:	WCDMA Band 2: 0.5dBi, WCDMA Band 5: -0.5dBi
WIFI(2.4G)	
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:	15.83dBm (Conducted)
Type of Modulation:	CCK, OFDM, QPSK, BPSK, 16QAM, 64QAM
Data Rate:	1-11Mbps, 6-54Mbps, up to 150Mbps
Quantity of Channels:	11 for 802.11b/g/n(HT20) 7 for 802.11n(HT40)
Channel Separation:	5MHz
Antenna Type:	Integral Antenna
Antenna Gain:	0.7dBi
Bluetooth	
Bluetooth Version:	V4.0
Frequency Range:	2402-2480MHz
RF Output Power:	3.91dBm (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:	0.7dBi

1.2 Test Standards

The following report is prepared on behalf of the Worldwide telecom limited in accordance with FCC 47 CFR Part 2.1093, ANSI/IEEE C95.1-2005, ANSI / IEEE C95.3 :2002, IEEE 1528-2013, KDB 447498 D01 v06, KDB 648474 D04 v01r03, KDB 248227 D01 v02r02, KDB 941225 D01 v03r01, KDB 941225 D05 v02r05 , and KDB 865664 D01 v01r04 and KDB 865664 D02 v01r02.

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

Address of the test laboratory
Laboratory: Waltek Testing Group (Shenzhen) Co., Ltd.
Address: 1/F., Room 101, Building 1, Hongwei Industrial Park, Liuxian 2nd Road,Block 70 Bao'an District, Shenzhen, Guangdong, China

FCC – Registration No.: 125990
Waltek Testing Group (Shenzhen) 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. The Designation Number is CN5010.Test Firm Registration Number is 125990.

Industry Canada (IC) Registration No.: 11464A
The 3m Semi-anechoic chamber of Waltek Testing Group (Shenzhen) Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 11464A.

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)	
GSM	**0.379**	**0.913**	**1.129**	1.6
WCDMA	0.289	0.657	0.657	1.6
WLAN 2.4G	0.093	0.156	0.156	1.6
Simultaneous Transmission	0.484	1.069	**1.285**	1.6

Remark:

*The highest reported SAR values for head, body-worn, router(hotspot), and simultaneous transmission conditions are **0.379W/kg, 0.913 W/kg, 1.129W/kg, and 1.285W/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 techiques or numerical modeling. The standard recommends limits for two tiers of groups, occupational/controlled and general population/uncontrolled, based on a person's awareness and ability to exercise control over his or her exposure. In general, occupational/controlled exposure limits are higher than the limits for general population/uncontrolled.

3.2 SAR Definition

The SAR definition is the time derivative (rate) of the incremental energy (dW) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element (dv) of a given density (□). 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, □T is the temperature rise and □t is the exposure duration, or related to the
electrical field in the tissue by

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

Where: □ is the conductivity of the tissue, □ 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

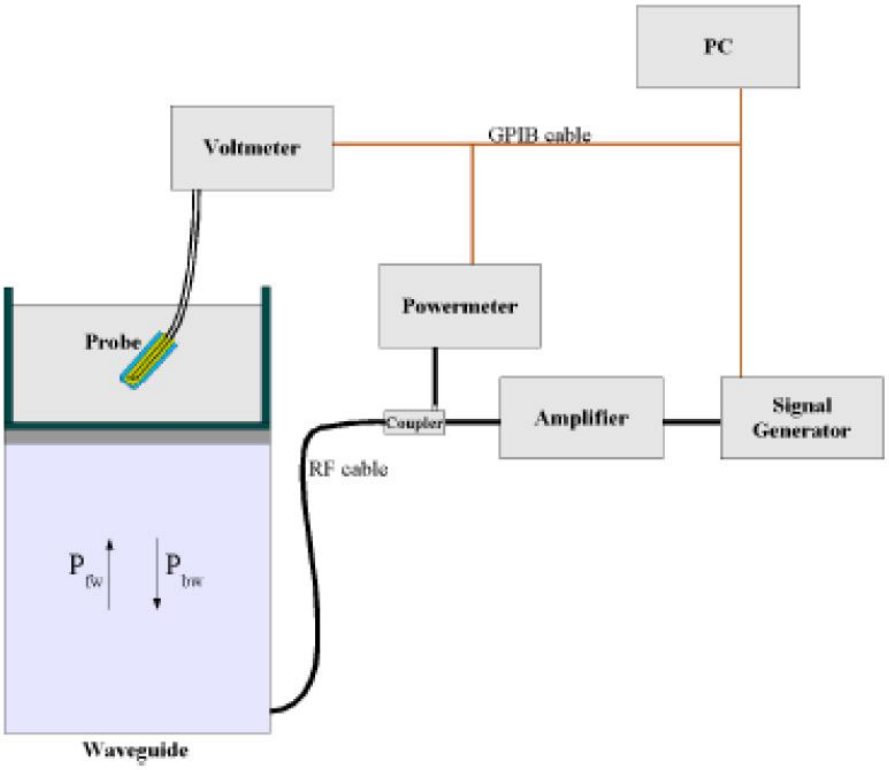
For the measurements the Specific Dosimetric E-Field Probe SSE2 SN 45/15 EPGO280 with following specifications is used

- 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 suface normal line:1ess than 30°

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



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

Where :

Pfw = Forward Power

Pbw = Backward Power

a and b =Waveguide dimensions

I = Skin depth

Keithley configuration:

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

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

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

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

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

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.

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

Where:

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.

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

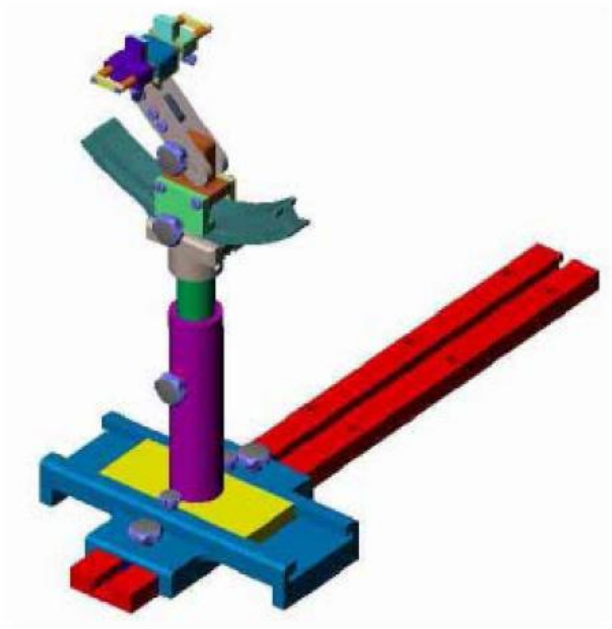
Where:
σ = simulated tissue conductivity,
ρ = Tissue density (1.25 g/cm3 for brain tissue)

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

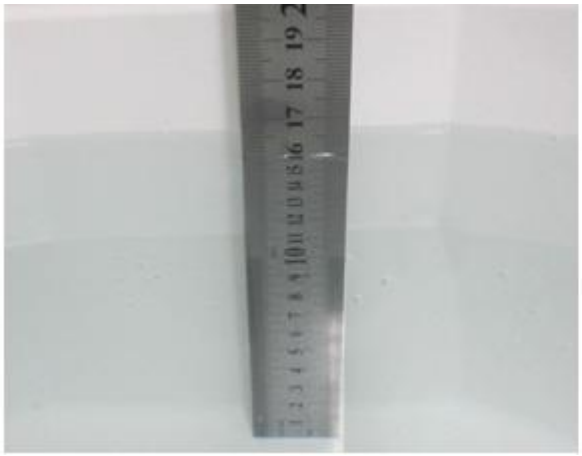
4.6 Test Equipment List

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
E-Field Probe	MVG	SSE5	SN 09/13 EP168	2020-05-22	2021-05-21
835MHz Dipole	MVG	SID835	SN 47/12 DIP 0G835-204	2020-03-11	2021-03-10
1800MHz Dipole	MVG	SID1800	SN 47/12 DIP 1G800-206	2020-03-11	2021-03-10
1900MHz Dipole	MVG	SID1900	SN 47/12 DIP 1G900-207	2020-03-11	2021-03-10
2450MHz Dipole	MVG	SID2450	SN 13/15 DIP 2G450-364	2020-03-11	2021-03-10
Dielectric Probe Kit	MVG	SCLMP	SN 47/12 OCPG49	2020-03-11	2021-03-10
SAM Phantom	MVG	SAM	SN/ 47/12 SAM95	N/A	N/A
MULTIMETER	KEITHLEY	Keithley 2000	4006367	2020-04-28	2021-04-27
Signal Generator	Rohde & Schwarz	SMR20	100047	2020-04-28	2021-04-27
Universal Tester	Rohde & Schwarz	CMU200	112012	2020-04-28	2021-04-27
Communications Test er	Rohde & Schwarz	CMW500	148650	2020-04-28	2021-04-27
Network Analyzer	HP	8753C	2901A00831	2020-04-28	2021-04-27
Directional Couplers	Agilent	778D	20160	2020-04-28	2021-04-27

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 (%)	Sugar (%)	HEC (%)	Preventol (%)	DGBE (%)
Head						
750	41.1	1.4	57.0	0.2	0.3	0
835	40.3	1.4	57.9	0.2	0.2	0
1700-1900	55.2	0.3	0	0	0	44.5
2450	55.0	0.1	0	0	0	44.9
2600	54.9	0.1	0	0	0	45.0

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 (□)	Permittivity ($□_r$)	Conductivity (□)	Permittivity ($□_r$)
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
1750	**1.37**	**40.1**	**1.49**	**53.4**
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
5200	4.66	36.0	5.30	49.0
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. (℃)	Conductivity			Permittivity			Limit (%)	Date
		Reading (□)	Target (□)	Delta (%)	Reading (□r)	Target (□r)	Delta (%)		
835	21.1	0.88	0.90	-2.22	42.08	41.50	1.40	±5	2020-12-07
1900	21.6	1.40	1.40	0.00	39.42	40.00	-1.45	±5	2020-12-22
2450	21.2	1.83	1.80	1.67	39.85	39.20	1.66	±5	2020-12-10

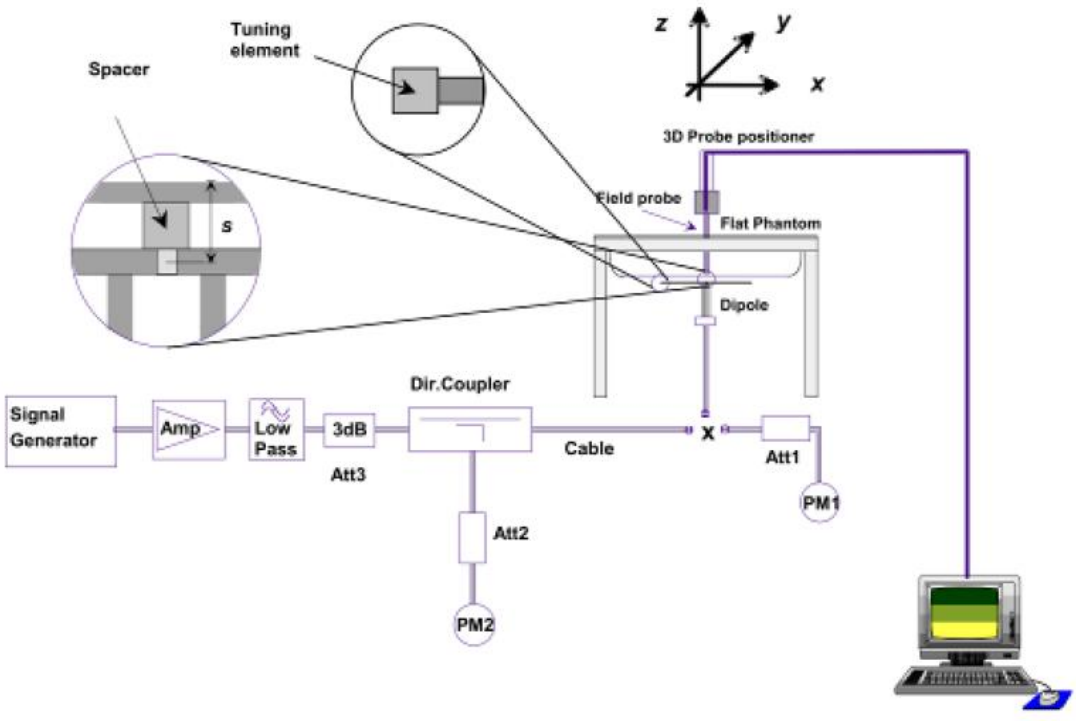
6. SAR Measurement Evaluation

6.1 Purpose of System Performance Check

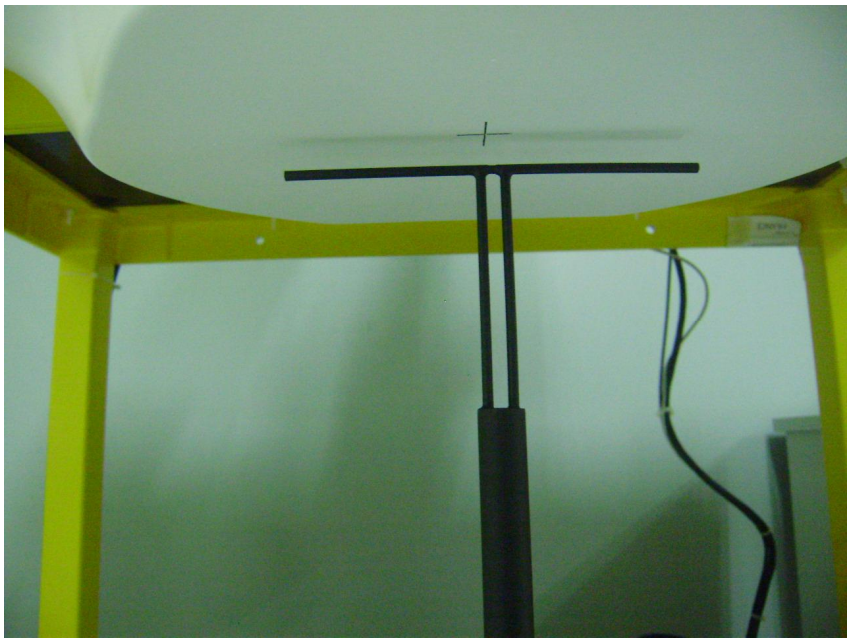
The system performance check verifies that the system operates within its specifications. System and operator errors can be detected and corrected. It is recommended that the system performance check be performed prior to any usage of the system in order to guarantee reproducible results. The system 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 835MHz ,1800MHz, 1900MHz 2450MHz,2600MHz,and 5GHz. 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.
The output power on 5 GHz Waveguide must be calibrated to 20 dBm (100mW) before 5 GHz Waveguide 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	Date
MHz	(W/kg)	(W/kg)	(W/kg)	(%)	
Head					
835	9.65	2.48	9.92	2.80	2020-12-07
1900	39.59	10.05	40.2	1.54	2020-12-22
2450	53.76	13.15	52.60	-2.16	2020-12-10

Remark: Referring to IEEE 1528-2013, Section 8.2, The system check shall be performed at a test frequency that is within ±10% or ±100 MHz of the compliance test mid-band frequency, so the 1750 MHz system verification is made of 1800MHz Dipole.

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.

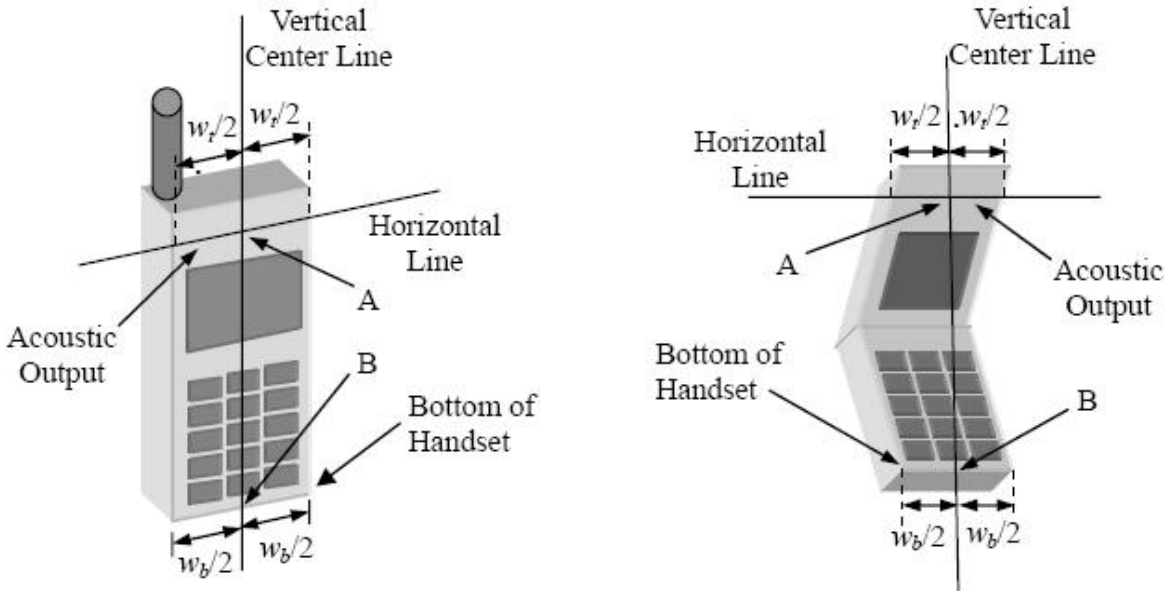


Illustration for Handset Vertical and Horizontal Reference Lines

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).

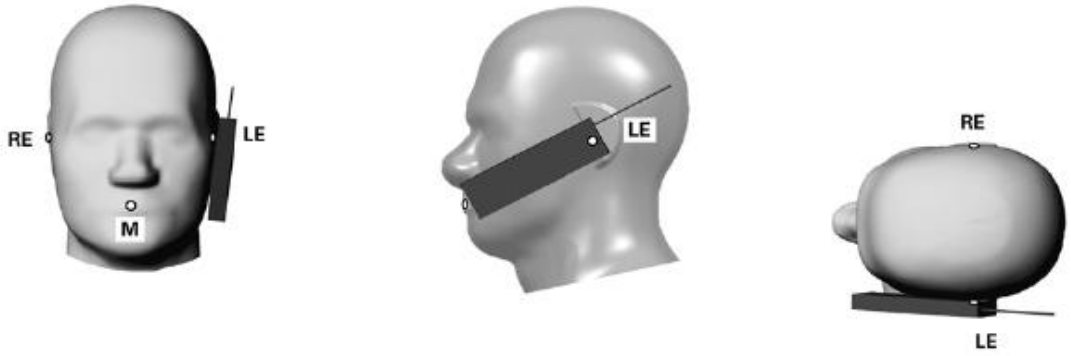


Illustration for Cheek Position

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).

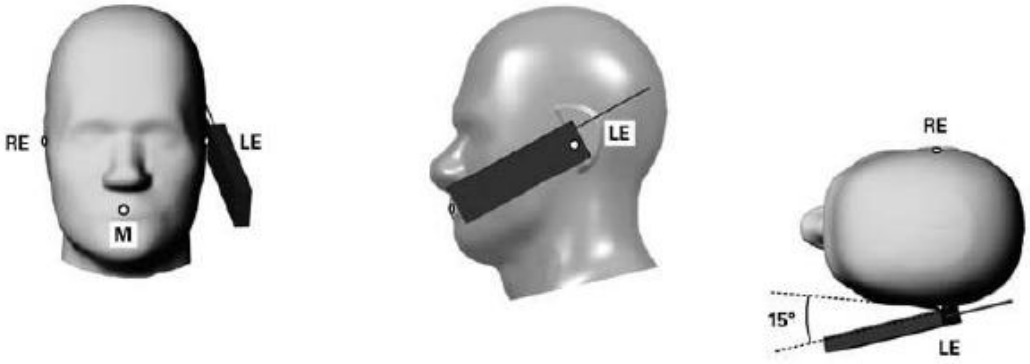


Illustration for Tilted Position

7.4 Body Position

(a) To position the device parallel to the phantom surface with each side.
(b) To adjust the device parallel to the flat phantom.
(c) To adjust the distance between the device surface and the flat phantom to 10mm.

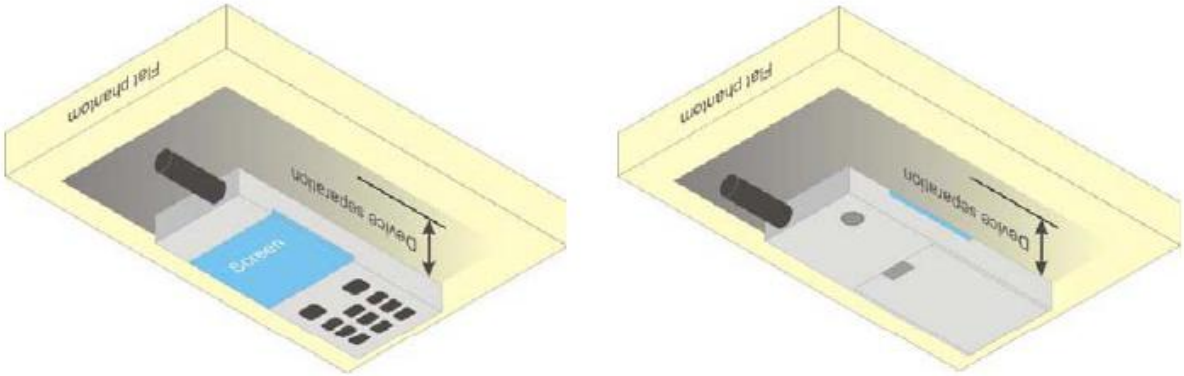
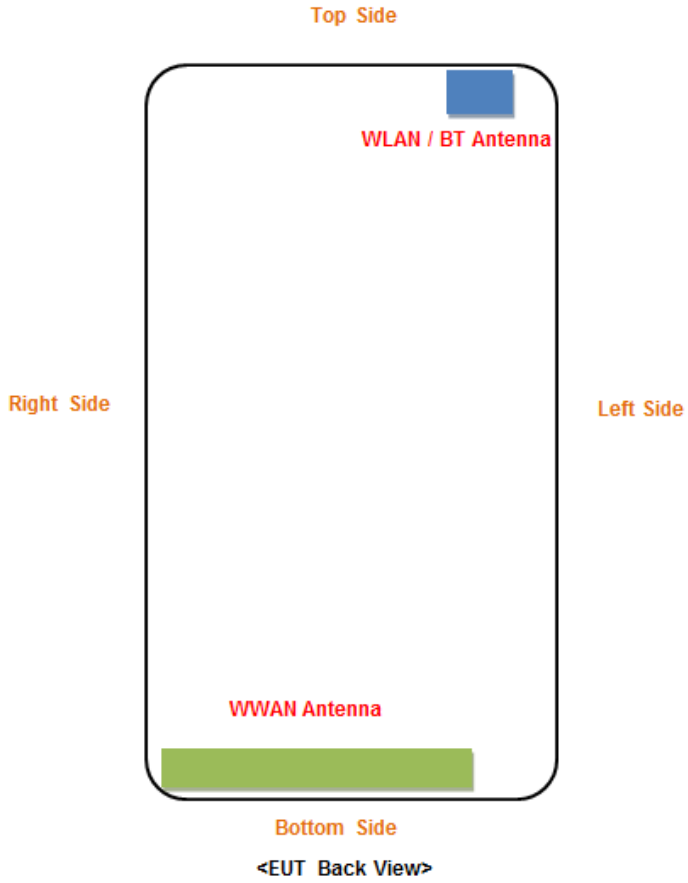


Illustration for Body Position

7.5 EUT Antenna Position



Block Diagram for EUT Antenna Position

Distance of EUT antenna-to-edge/surface(mm), Test distance:10mm						
Antennas	**Front**	**Back**	**Right Side**	**Left Side**	**Top Side**	**Bottom Side**
WWAN	<25	<25	<25	<25	153	<25
WLAN	<25	<25	60	<25	<25	151

7.6 EUT Testing Position

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

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

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

Remark:

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

2. Referring to KDB 648474 D04 Handset SAR v01r03, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg

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 D demonstrates.
(e) Set scan area, grid size and other setting on the SATIMO software.
(f) Measure SAR results for the highest power channel on each testing position.
(g) Find out the largest SAR result on these testing positions of each band
(h) Measure SAR results for other channels in worst SAR testing position if the SAR of highest power channel is larger than 0.8 W/kg

According to the test standard, the recommended procedure for assessing the peak spatial-average SAR value consists of the following steps:
(a) Power reference measurement
(b) Area scan
(c) Zoom scan
(d) Power drift measurement

8.2 Spatial Peak SAR Evaluation

The procedure for spatial peak SAR evaluation has been implemented according to the test standard. It can be conducted for 1g and 10g, as well as for user-specific masses. The SATIMO software includes all numerical procedures necessary to evaluate the spatial peak SAR value.
The base for the evaluation is a "cube" measurement. The measured volume must include the 1g and 10g cubes with the highest averaged SAR values. For that purpose, the center of the measured volume is aligned to the interpolated peak SAR value of a previously performed area scan.
The entire evaluation of the spatial peak values is performed within the post-processing engine. The system always gives the maximum values for the 1g and 10g cubes. The algorithm to find the cube with highest averaged SAR is divided into the following stages:
(a) Extraction of the measured data (grid and values) from the Zoom Scan
(b) Calculation of the SAR value at every measurement point based on all stored data
(c) Generation of a high-resolution mesh within the measured volume
(d) Interpolation of all measured values form the measurement grid to the high-resolution grid
(e) Extrapolation of the entire 3D field distribution to the phantom surface over the distance from sensor to surface
(f) Calculation of the averaged SAR within masses of 1g and 10g

8.3 Area & Zoom Scan Procedures

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

8.4 Volume Scan Procedures

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

8.5 SAR Averaged Methods

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

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

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

8.6 Power Drift Monitoring

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

9. SAR Test Result

9.1 Conducted RF Output Power

GSM - Burst Average Power (dBm)								
Band	GSM850			Tune-up power (dBm)	PCS1900			Tune-up power (dBm)
Channel	128	190	251		512	661	810	
Frequency (MHz)	824.2	836.6	848.8		1850.2	1880	1909.8	
GSM	32.07	32.19	32.30	32.5	29.37	29.31	29.10	29.5
GPRS (1 slot)	32.11	32.22	32.35	32.5	29.46	29.41	29.17	29.5
GPRS (2 slots)	31.09	31.18	31.30	31.5	28.73	28.74	28.48	29.0
GPRS (3 slots)	28.80	28.86	29.00	29.5	27.10	27.22	26.85	27.5
GPRS (4 slots)	27.80	27.88	27.97	28.0	26.24	26.39	25.96	26.5

GSM - Source-Based Time-Average Power (dBm)								
Band	GSM850			Tune-up power (dBm)	PCS1900			Tune-up power (dBm)
Channel	128	190	251		512	661	810	
Frequency (MHz)	824.2	836.6	848.8		1850.2	1880	1909.8	
GSM	23.07	23.19	23.30	23.5	20.37	20.31	20.10	20.5
GPRS (1 slot)	23.11	23.22	23.35	23.5	20.46	20.41	20.17	20.5
GPRS (2 slots)	25.09	25.18	25.30	25.5	22.73	22.74	22.48	23.0
GPRS (3 slots)	24.55	24.61	24.75	25.0	22.85	22.97	22.60	23.0
GPRS (4 slots)	24.80	24.88	24.97	25.0	23.24	23.39	22.96	23.5
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 GPRS (4TX slots) for 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.
5. The DUT do not support Hotspot function.

WCDMA - Average Power (dBm)								
Band	**WCDMA Band II**				**WCDMA Band V**			
Channel	**9262**	**9400**	**9538**	**Tune-up power (dBm)**	**4132**	**4183**	**4233**	**Tune-up power (dBm)**
Frequency (MHz)	**1852.4**	**1880.0**	**1907.6**		**826.4**	**836.4**	**846.6**	
RMC 12.2k	22.18	21.83	21.88	22.5	22.78	22.46	22.28	23.0
HSDPA Subtest-1	21.37	20.97	21.09	21.5	21.49	21.49	21.33	21.5
HSDPA Subtest-2	21.35	20.95	21.05	21.5	21.45	21.45	21.31	21.5
HSDPA Subtest-3	21.36	20.94	21.06	21.5	21.46	21.46	21.30	21.5
HSDPA Subtest-4	21.34	20.94	21.07	21.5	21.47	21.47	21.32	21.5
HSUPA Subtest-1	21.37	21.09	21.06	21.5	21.50	21.52	21.38	22.0
HSUPA Subtest-2	21.35	21.05	21.05	21.5	21.46	21.47	21.35	21.5
HSUPA Subtest-3	21.36	21.07	21.03	21.5	21.47	24.49	21.36	21.5
HSUPA Subtest-4	21.35	21.05	21.04	21.5	21.48	21.48	21.35	21.5
HSUPA Subtest-5	21.34	21.08	21.04	21.5	21.48	21.49	21.37	21.5

Remark:

1. per KDB 941225 D01 v03, The 12.2kbps RMC mode was selected for SAR testing(the primary mode).

2. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤1/4 dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode

WLAN(2.4G) - Maximum Average Power					
Test Mode	**Data Rate**	**Channel**	**Frequency (MHz)**	**Average Power (dBm)**	**Tune-up power (dBm)**
802.11b	1Mbps	CH 01	2412	15.75	16.0
		CH 06	2437	15.83	16.0
		CH 11	2462	15.73	16.0
802.11g	6Mbps	CH 01	2412	12.23	12.5
		CH 06	2437	12.14	12.5
		CH 11	2462	12.22	12.5
802.11n (20MHz)	MCS0	CH 01	2412	11.93	12.0
		CH 06	2437	11.88	12.0
		CH 11	2462	11.95	12.0
802.11n (40MHz)	MCS7	CH 03	2422	11.65	12.0
		CH 06	2437	11.26	11.5
		CH 09	2452	11.31	11.5

Remark:

1. Per KDB 248227 D01 v02r02, For 802.11b DSSS SAR measurements, DSSS SAR procedure applies to fixed exposure test position and initial test position procedure applies to multiple exposure test positions.

2. Per KDB 248227 D01 v02r02, For 802.11b DSSS SAR measurements ,when the reported SAR of the highest measured maximum output power channel (see 3.1) for the exposure configuration is ≤ 0.8 W/kg, no further SAR testing is required for 802.11b DSSS in that exposure configuration. When the reported SAR is > 0.8 W/kg, SAR is required for that exposure configuration using the next highest measured output power channel. When any reported SAR is > 1.2 W/kg, SAR is required for the third channel; i.e., all channels require testing.

3 .For OFDM modes (802.11g/n), SAR is not required when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and it is <= 1.2W/kg.

4. Per KDB 248227 D01 v02r02, When multiple channel bandwidth configurations in a frequency band have the same specified maximum output power, the initial test configuration is determined by applying the following steps sequentially.

1) The largest channel bandwidth configuration is selected among the multiple configurations in a frequency band with the same specified maximum output power.

2) If multiple configurations have the same specified maximum output power and largest channel bandwidth, the lowest order modulation among the largest channel bandwidth configurations is selected.

3) If multiple configurations have the same specified maximum output power, largest channel bandwidth and lowest order modulation, the lowest data rate configuration among these configurations is selected.

4) When multiple transmission modes (802.11a/g/n/ac) have the same specified maximum output power, largest channel bandwidth, lowest order modulation and lowest data rate, the lowest order 802.11 mode is selected; i.e., 802.11a is chosen over 802.11n then 802.11ac or 802.11g is chosen over 802.11n.

Bluetooth - Maximum Average Power			
Test Mode	**Data Rate**	**Average Power(dBm)**	**Tune-up power (dBm)**
GFSK	1Mbps	3.91	4.0
Pi/4 QDPSK	2Mbps	3.82	4.0
8DPSK	3Mbps	3.82	4.0

Bluetooth - Maximum Average Power					
Test Mode	**Data Rate**	**Channel**	**Frequency (MHz)**	**Average Power (dBm)**	**Tune-up power (dBm)**
BLE	1Mbps	CH 00	2402	-3.17	-3.0
		CH 19	2440	-4.02	-4.0
		CH 39	2480	-5.29	-5.0

Remark:

Bluetooth maximum output power is 3.820dBm and Maximum Tune-Up output power is 4.0dBm,. 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:

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] · [√f(GHz)] ≤ 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

Bluetooth:

Tune-Up Power (dBm)	Max. Power (mW)	Distance (mm)	Frequency (GHz)	Result	Limit
4.0	2.51	5	2.480	0.79	3

The exclusion thresholds is 0.79< 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	32.30	32.5	1.047	0.272	0.285
2.	GSM	Right Tilted	251	848.8	32.30	32.5	1.047	0.128	0.134
3.	GSM	Left Cheek	251	848.8	32.30	32.5	1.047	0.362	0.379
4.	GSM	Left Tilted	251	848.8	32.30	32.5	1.047	0.155	0.162

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					
5.	GSM	Right Cheek	512	1850.2	29.37	29.5	1.030	0.256	0.264
6.	GSM	Right Tilted	512	1850.2	29.37	29.5	1.030	0.118	0.122
7.	GSM	Left Cheek	512	1850.2	29.37	29.5	1.030	0.171	0.176
8.	GSM	Left Tilted	512	1850.2	29.37	29.5	1.030	0.080	0.082

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					
9.	RMC	Right Cheek	9262	1852.4	22.18	22.5	1.076	0.106	0.114
10.	RMC	Right Tilted	9262	1852.4	22.18	22.5	1.076	0.048	0.052
11.	RMC	Left Cheek	9262	1852.4	22.18	22.5	1.076	0.019	0.020
12.	RMC	Left Tilted	9262	1852.4	22.18	22.5	1.076	0.010	0.011

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					
13.	RMC	Right Cheek	4132	826.4	22.78	23.0	1.052	0.223	0.235
14.	RMC	Right Tilted	4132	826.4	22.78	23.0	1.052	0.102	0.107
15.	RMC	Left Cheek	4132	826.4	22.78	23.0	1.052	0.275	0.289
16.	RMC	Left Tilted	4132	826.4	22.78	23.0	1.052	0.121	0.127

WLAN 2.4GHz – 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					
17.	802.11b	Right Cheek	06	2437	15.83	16.0	1.040	0.089	0.093
18.	802.11b	Right Tilted	06	2437	15.83	16.0	1.040	0.076	0.079
19.	802.11b	Left Cheek	06	2437	15.83	16.0	1.040	0.079	0.082
20.	802.11b	Left Tilted	06	2437	15.83	16.0	1.040	0.070	0.073

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					
21.	GSM	Back	251	848.8	32.30	32.5	1.047	0.566	0.593
22.	GSM	Front	251	848.8	32.30	32.5	1.047	0.201	0.210

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					
23.	GSM	Back	512	1850.2	29.37	29.5	1.030	0.880	0.907
24.	**GSM**	**Back**	**512**	**1850.2**	**29.37**	**29.5**	**1.030**	**0.865**	**0.891**
25.	GSM	Back	661	1880.0	29.31	29.5	1.045	0.808	0.844
26.	GSM	Back	810	1909.8	29.10	29.5	1.096	0.833	0.913
27.	GSM	Front	512	1850.2	29.37	29.5	1.030	0.380	0.392

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					
28.	RMC 12.2k	Back Side	9262	1852.4	22.18	22.5	1.076	0.197	0.212
29.	RMC 12.2k	Front Face	9262	1852.4	22.18	22.5	1.076	0.120	0.129

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					
30.	RMC 12.2k	Back Side	4132	826.4	22.78	23.0	1.052	0.625	0.657
31.	RMC 12.2k	Front Side	4132	826.4	22.78	23.0	1.052	0.353	0.371

WLAN 2.4GHz –Body SAR Test									
Plot No.	Mode	Test Position Body	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
32.	802.11b	Back Side	06	2437	15.83	16.0	1.040	0.150	0.156
33.	802.11b	Front Side	06	2437	15.83	16.0	1.040	0.053	0.055

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					
34.	GPRS_2TX	Back Side	251	848.8	31.30	31.5	1.047	0.636	0.666
35.	GPRS_2TX	Front Side	251	848.8	31.30	31.5	1.047	0.290	0.304
36.	GPRS_2TX	Right side	251	848.8	31.30	31.5	1.047	0.146	0.153
37.	GPRS_2TX	Left side	251	848.8	31.30	31.5	1.047	0.061	0.064
38.	GPRS_2TX	Bottom side	251	848.8	31.30	31.5	1.047	0.312	0.327

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					
39.	GPRS_4TX	Back Side	661	1880.0	26.39	26.5	1.026	0.995	1.021
40.	GPRS_4TX	Back Side	512	1850.2	26.24	26.5	1.062	1.063	1.129
41.	**GPRS_4TX**	**Back Side**	**512**	**1850.2**	**26.24**	**26.5**	**1.062**	**1.025**	**1.088**
42.	GPRS_4TX	Back Side	810	1909.8	25.96	26.5	1.132	0.898	1.017
43.	GPRS_4TX	Front Side	661	1880.0	26.39	26.5	1.026	0.330	0.338
44.	GPRS_4TX	Right side	661	1880.0	26.39	26.5	1.026	0.479	0.491
45.	GPRS_4TX	Left side	661	1880.0	26.39	26.5	1.026	0.181	0.186
46.	GPRS_4TX	Bottom side	661	1880.0	26.39	26.5	1.026	1.056	1.083
47.	**GPRS_4TX**	**Bottom side**	**661**	**1880.0**	**26.39**	**26.5**	**1.026**	**1.018**	**1.044**
48.	GPRS_4TX	Bottom side	512	1850.2	26.24	26.5	1.062	0.950	1.009
49.	GPRS_4TX	Bottom side	810	1909.8	25.96	26.5	1.132	0.986	1.117

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					
50.	RMC 12.2k	Back Side	9262	1852.4	22.18	22.5	1.076	0.197	0.212
51.	RMC 12.2k	Front Face	9262	1852.4	22.18	22.5	1.076	0.120	0.129
52.	RMC 12.2k	Right side	9262	1852.4	22.18	22.5	1.076	0.195	0.210
53.	RMC 12.2k	Left side	9262	1852.4	22.18	22.5	1.076	0.030	0.032
54.	RMC 12.2k	Bottom Side	9262	1852.4	22.18	22.5	1.076	0.267	0.287

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					

55.	RMC 12.2k	Back Side	4132	826.4	22.78	23.0	1.052	0.625	0.657
56.	RMC 12.2k	Front Side	4132	826.4	22.78	23.0	1.052	0.353	0.371
57.	RMC 12.2k	Right side	4132	826.4	22.78	23.0	1.052	0.253	0.266
58.	RMC 12.2k	Left side	4132	826.4	22.78	23.0	1.052	0.077	0.081
59.	RMC 12.2k	Bottom side	4132	826.4	22.78	23.0	1.052	0.523	0.550

WLAN 2.4GHz –Body SAR Test									
Plot No.	Mode	Test Position Body	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
60.	802.11b	Back Side	06	2437	15.83	16.0	1.040	0.150	0.156
61.	802.11b	Front Side	06	2437	15.83	16.0	1.040	0.053	0.055
62.	802.11b	Left side	06	2437	15.83	16.0	1.040	0.010	0.010
63.	802.11b	Top side	06	2437	15.83	16.0	1.040	0.100	0.104

Repeated SAR

Mode	Test Position Body	Frequency		SAR1g (W/kg)	Repeated SAR		Ratio	
		CH.	MHz		1	2	1	2
GSM 1900	Back	512	1850.2	0.880	0.865	/	1.02	/
GPRS1900_4TX	Back Side	512	1850.2	1.063	1.025	/	1.04	/
GPRS1900_4TX	Bottom side	661	1880.0	1.056	1.018	/	1.04	/

Remark:

1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg; steps 2) through 4) do not apply.

2) When the original highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.

3) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).

4) Perform a third repeated measurement only if the original, first or second repeated measurement is ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

9.3 Simultaneous Multi-band Transmission SAR Analysis

List of Mode for Simultaneous Multi-band Transmission

No.	Configurations	Head SAR	Body SAR
1	GSM(Voice/Data) + WLAN(2.4G)(Data)	Yes	Yes
2	WCDMA (Voice/Data)+ (2.4G)(Data)	Yes	Yes
3	GSM(Voice/Data) + Bluetooth(Data)	Yes	Yes
4	WCDMA (Voice/Data) + Bluetooth(Data)	Yes	Yes

Remark:

1. GSM ,WCDMA and LTE 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 D01 v06, 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)]·[√f(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, Bluetooth SAR is estimated per KDB 447498 D01 v06 as below:

Bluetooth:

Tune-Up Power (dBm)	Max. Power (mW)	Distance (mm)	Frequency (GHz)	X	SAR(1g) 5mm	SAR(1g) 10mm
4.0	2.51	5/10	2.480	7.5	0.105	0.053

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

Head SAR

WWAN and WLAN

	WWAN		WLAN(2.4G)	Summed SAR (W/kg)
Position	Band	Scaled SAR (W/kg)	Scaled SAR (W/kg)	
Right Cheek	GSM	0.285	0.093	0.378
Right Tilted	GSM	0.134	0.079	0.213
Left Cheek	GSM	0.379	0.082	0.461
Left Tilted	GSM	0.162	0.073	0.235
Right Cheek	WCDMA	0.235	0.093	0.328
Right Tilted	WCDMA	0.107	0.079	0.186
Left Cheek	WCDMA	0.289	0.082	0.371
Left Tilted	WCDMA	0.127	0.073	0.200

WWAN and Bluetooth

	WWAN		Bluetooth	Summed SAR (W/kg)
Position	Band	Scaled SAR (W/kg)	Scaled SAR (W/kg)	
Right Cheek	GSM	0.285	0.105	0.390
Right Tilted	GSM	0.134	0.105	0.239
Left Cheek	GSM	0.379	0.105	0.484
Left Tilted	GSM	0.162	0.105	0.267
Right Cheek	WCDMA	0.235	0.105	0.340
Right Tilted	WCDMA	0.107	0.105	0.212
Left Cheek	WCDMA	0.289	0.105	0.394
Left Tilted	WCDMA	0.127	0.105	0.232

Body-worn SAR

WWAN and WLAN

	WWAN		WLAN(2.4G)	Summed SAR (W/kg)
Position	Band	Scaled SAR (W/kg)	Scaled SAR (W/kg)	
Back	GSM	0.913	0.156	1.069
Front	GSM	0.392	0.055	0.447
Back	WCDMA	0.657	0.156	0.813
Front	WCDMA	0.371	0.055	0.426

WWAN and Bluetooth

	WWAN		Bluetooth	Summed SAR (W/kg)
Position	Band	Scaled SAR (W/kg)	Scaled SAR (W/kg)	
Back	GSM	0.913	0.053	0.966
Front	GSM	0.392	0.053	0.445
Back	WCDMA	0.657	0.053	0.710
Front	WCDMA	0.371	0.053	0.424

Hotspot SAR

WWAN and WLAN

	WWAN		WLAN(2.4G)	Summed SAR (W/kg)
Position	Band	Scaled SAR (W/kg)	Scaled SAR (W/kg)	
Back	GSM	1.129	0.156	1.285
Front	GSM	0.338	0.055	0.393
Right side	GSM	0.491	/	0.491
Left side	GSM	0.186	0.010	0.196
Top side	GSM	/	0.104	0.104
Bottom side	GSM	1.117	/	1.117
Back	WCDMA	0.657	0.156	0.813
Front	WCDMA	0.371	0.055	0.426
Right side	WCDMA	0.266	/	0.266
Left side	WCDMA	0.081	0.010	0.091
Top side	WCDMA	/	0.104	0.104
Bottom side	WCDMA	0.550	/	0.550

WWAN and Bluetooth

	WWAN		Bluetooth	Summed SAR (W/kg)
Position	Band	Scaled SAR (W/kg)	Scaled SAR (W/kg)	
Back	GSM	1.129	0.053	1.182
Front	GSM	0.338	0.053	0.391
Right side	GSM	0.491	/	0.491
Left side	GSM	0.186	0.053	0.239
Top side	GSM	/	0.053	0.053
Bottom side	GSM	1.117	/	1.117
Back	WCDMA	0.657	0.053	0.710
Front	WCDMA	0.371	0.053	0.424
Right side	WCDMA	0.266	/	0.266
Left side	WCDMA	0.081	0.053	0.134
Top side	WCDMA	/	0.053	0.053
Bottom side	WCDMA	0.550	/	0.550

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	7.00	7.00	□□
Axial Isotropy	E.2.2	2.5	R	□□□	(1_Cp)^1/2	(1_Cp)^1/2	1.02	1.02	□□
Hemispherical Isotropy	E.2.2	4.0	R	□□□	(Cp)^1/2	(Cp)^1/2	1.63	1.63	□□
Boundary effect	E.2.3	1.0	R	□□□	1	1	0.58	0.58	□□
Linearity	E.2.4	5.0	R	□□□	1	1	2.89	2.89	□□
System detection limits	E.2.5	1.0	R	□□□	1	1	0.58	0.58	□□
Readout Electronics	E.2.6	0.02	N	□□	1	1	0.02	0.02	□□
Reponse Time	E.2.7	3.0	R	□□□	1	1	1.73	1.73	□□
Integration Time	E.2.8	2.0	R	□□□	1	1	1.15	1.15	□□
RF ambient Conditions – Noise	E.6.1	3.0	R	□□□	1	1	1.73	1.73	□□
RF ambient Conditions - Reflections	E.6.1	3.0	R	□□□	1	1	1.73	1.73	□□
Probe positioner Mechanical Tolerance	E.6.2	2.0	R	□□□	1	1	1.15	1.15	□□
Probe positioning with respect to Phantom Shell	E.6.3	0.05	R	□□□	1	1	0.03	0.03	□□
Extrapolation, interpolation and integration Algoritms for Max. SAR Evaluation	E.5	5.0	R	□□□	1	1	2.89	2.89	□□
Test Sample Related□									
Test sample positioning	E.4.2	0.03	N	□□	1	1	0.03	0.03	□□□
Device Holder Uncertainty	E.4.1	5.00	N	□□	1	1	5.00	5.00	□
Output power Variation - SAR drift measurement	E.2.9	12.02	R	□□□	1	1	6.94	6.94	□□
SAR scaling	E6.5	0.0	R	□□□	1	1	0.0	0.0	□□
Phantom and Tissue Parameters□									
Phantom Uncertainty (Shape and thickness tolerances)	E.3.1	0.05	R	□□□	1	1	0.03	0.03	□□
Uncertainty in SAR correction for deviations in permittivity and conductivity	E3.2	1.9	R	□□□	1	0.84	1.10	0.90	□□

Liquid conductivity - deviation from target value	E.3.2	5.00	R	□□□	0.64	0.43	1.85	1.24	□□
Liquid conductivity - measurement uncertainty	E.3.3	5.00	N	□□	0.64	0.43	3.20	2.15	□□
Liquid permittivity - deviation from target value	E.3.2	0.37	R	□□□	0.6	0.49	0.13	0.10	□□
Liquid permittivity - measurement uncertainty	E.3.3	10.00	N	□□	0.6	0.49	6.00	4.90	□□
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	7.00	7.00	□□
Axial Isotropy	E.2.2	2.5	R	□□□	(1_Cp)^1/2	(1_Cp)^1/2	1.02	1.02	□□
Hemispherical Isotropy	E.2.2	4.0	R	□□□	(Cp)^1/2	(Cp)^1/2	1.63	1.63	□□
Boundary effect	E.2.3	1.0	R	□□□	1	1	0.58	0.58	□□
Linearity	E.2.4	5.0	R	□□□	1	1	2.89	2.89	□□
System detection limits	E.2.5	1.0	R	□□□	1	1	0.58	0.58	□□
Modulation response	E.2.5	0	R	□□□	0	0	0.0	0.0	□□
Readout Electronics	E.2.6	0.02	N	□□	1	1	0.02	0.02	□□
Reponse Time	E.2.7	3.0	R	□□□	1	1	1.73	1.73	□□
Integration Time	E.2.8	2.0	R	□□□	1	1	1.15	1.15	□□
RF ambient Conditions – Noise	E.6.1	3.0	R	□□□	1	1	1.73	1.73	□□
RF ambient Conditions - Reflections	E.6.1	3.0	R	□□□	1	1	1.73	1.73	□□
Probe positioner Mechanical Tolerance	E.6.2	2.0	R	□□□	1	1	1.15	1.15	□□
Probe positioning with respect to Phantom Shell	E.6.3	0.05	R	□□□	1	1	0.03	0.03	□□
Extrapolation, interpolation and integration Algoritms for Max. SAR Evaluation	E.5.2	5.0	R	□□□	1	1	2.89	2.89	□□
Dipole□									
Dipole axis to liquid Distance	8,E.4.2	1.00	N	□□□	1	1	0.58	0.58	□□□

Input power and SAR drift measurement	8,6.6.2	12.02	R	□□□	1	1	6.94	6.94	□□
Deviation of experimental dipole from numerical dipole	E.6.4	5.5	R	□□□	1	1	3.20	3.20	□□
Phantom and Tissue Parameters□									
Phantom Uncertainty (Shape and thickness tolerances)	E.3.1	0.05	R	□□□	1	1	0.03	0.03	□□
Uncertainty in SAR correction for deviations in permittivity and conductivity	E3.2	2.0	R	□□□	1	0.84	1.10	1.10	□□
Liquid conductivity - deviation from target value	E.3.2	5.00	R	□□□	0.64	0.43	1.85	1.24	□
Liquid conductivity - measurement uncertainty	E.3.3	5.00	N	□□	0.64	0.43	3.20	2.15	□
Liquid permittivity - deviation from target value	E.3.2	0.37	R	□□□	0.6	0.49	0.13	0.10	□
Liquid permittivity - measurement uncertainty	E.3.3	10.00	N	□□	0.6	0.49	6.00	4.90	□□
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

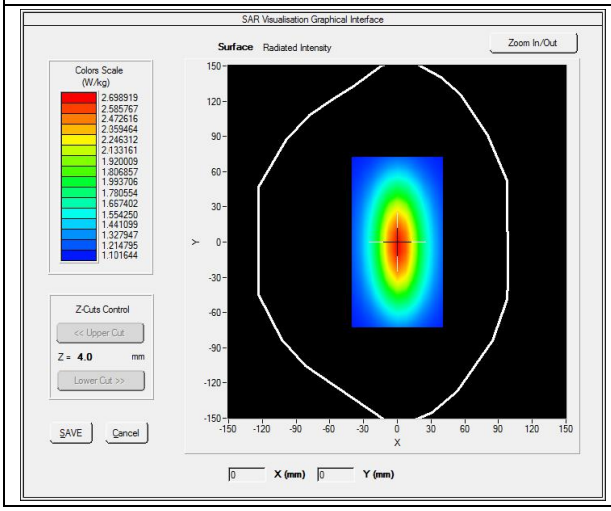
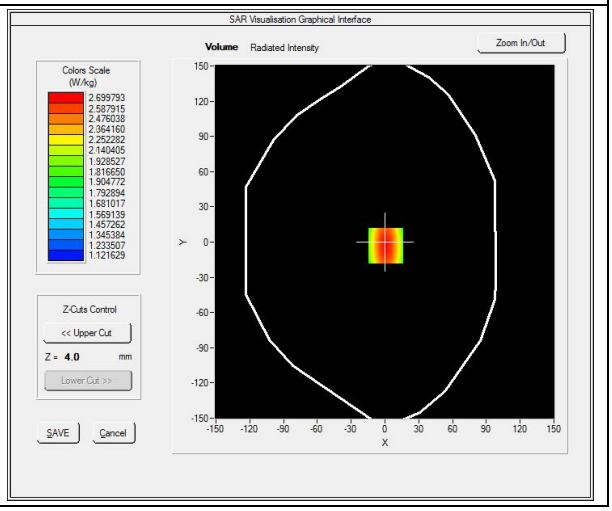
Type: Validation measurement (Fast, 75.00 %)
Measurement duration: 7 minutes 21 seconds

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)	42.081324
Conductivity (S/m)	0.883715
Power Variation (%)	-1.320000
Ambient Temperature	21.1
Liquid Temperature	21.1

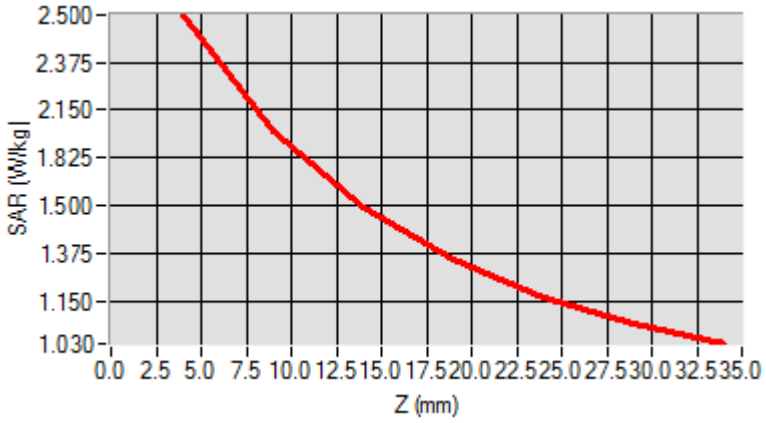
SURFACE SAR	VOLUME SAR
	

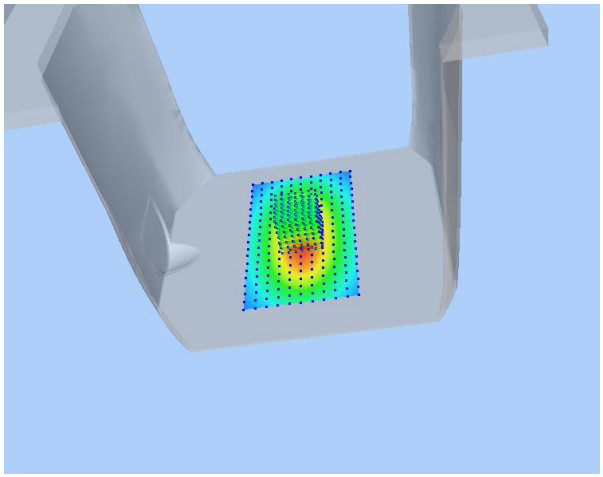
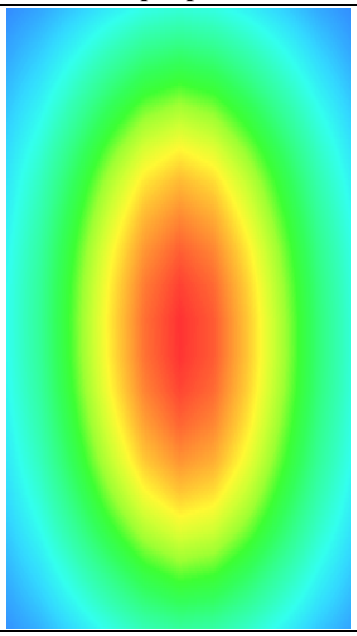
Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	1.604198
SAR 1g (W/Kg)	2.481253

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 2

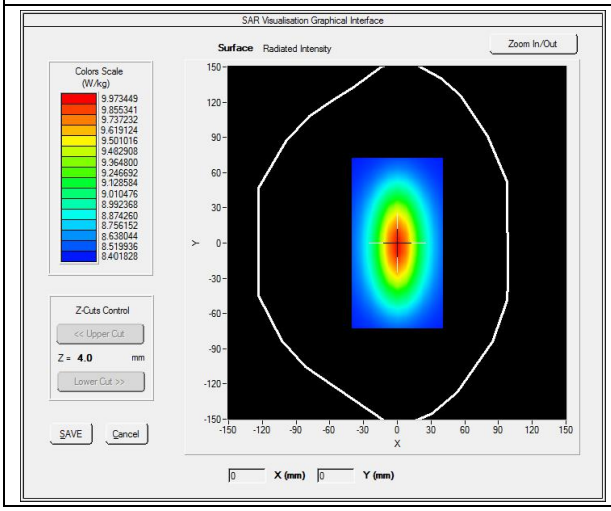
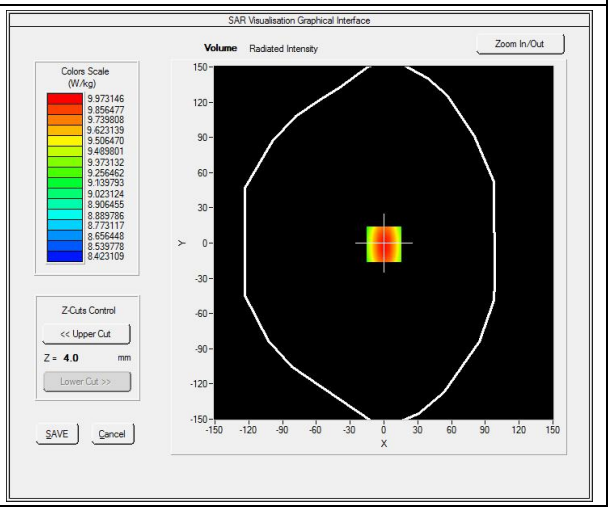
Type: Validation measurement (Fast, 75.00 %)
Measurement duration: 12 minutes 21 seconds

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)	39.421025
Conductivity (S/m)	1.397006
Power Variation (%)	-1.050000
Ambient Temperature	21.6
Liquid Temperature	21.6

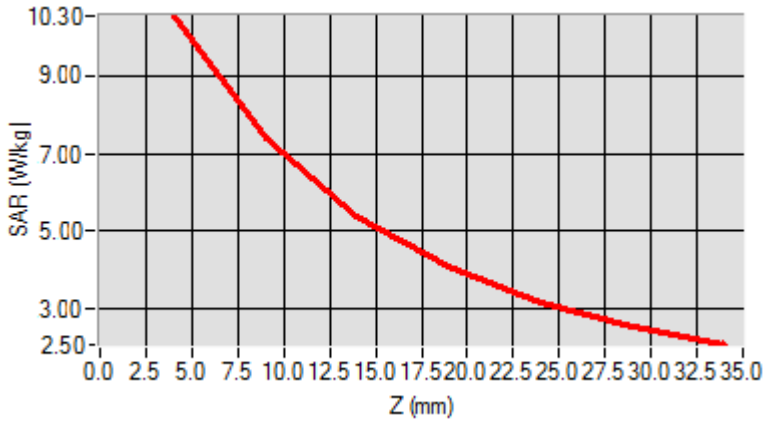
SURFACE SAR	VOLUME SAR
	

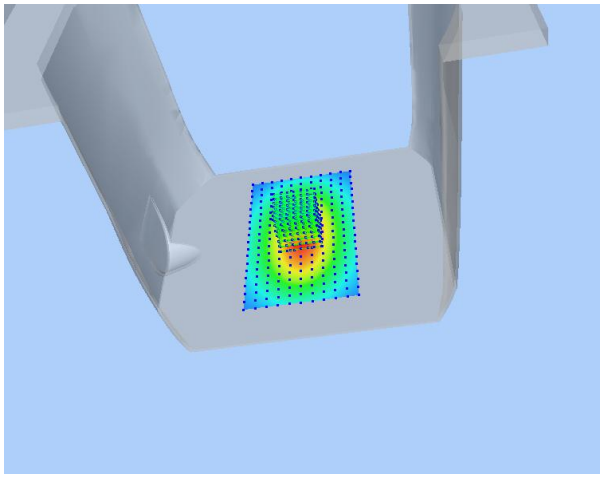
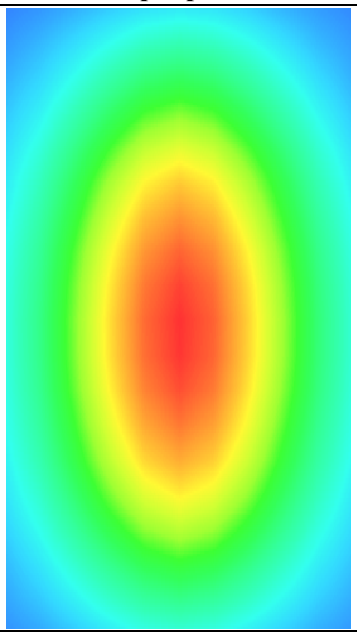
Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	5.242504
SAR 1g (W/Kg)	10.050236

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 3

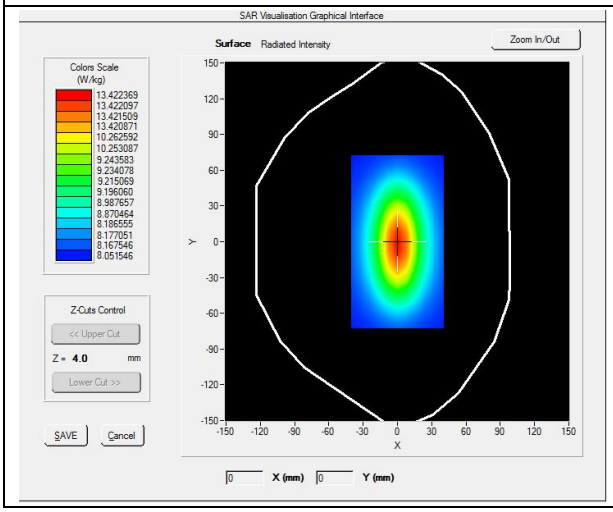
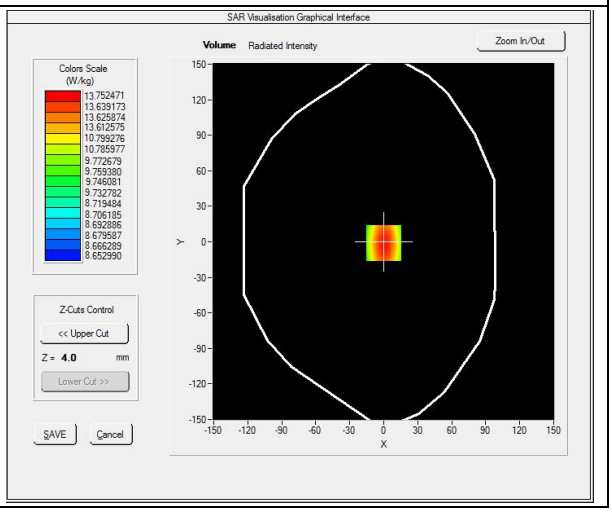
Type: Validation measurement (Fast, 75.00 %)
Measurement duration: 12 minutes 21 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Phantom	Validation plane
Device Position	Dipole
Band	CW2450
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	2450.000000
Relative Permittivity (real part)	39.852784
Conductivity (S/m)	1.832106
Power Variation (%)	-1.280000
Ambient Temperature	21.2
Liquid Temperature	21.2

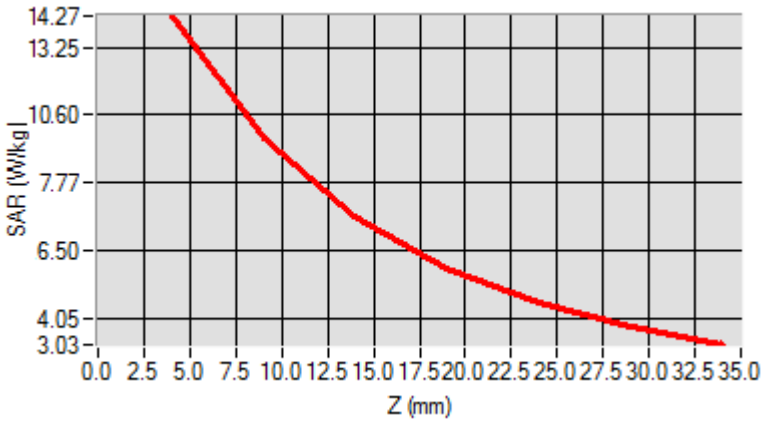
SURFACE SAR	VOLUME SAR
	

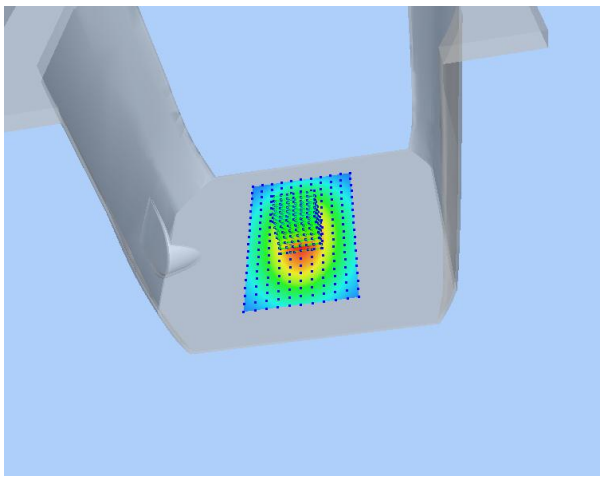
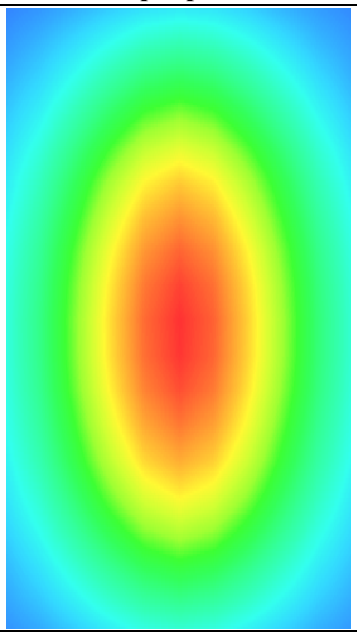
Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	6.180427
SAR 1g (W/Kg)	13.152457

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	14.1034	12.0012	10.2624	7.4715	5.9022	4.5114



3D screen shot	Hot spot position
	

Annex B. Plots of SAR Measurement

TYPE	BAND	PARAMETERS
Phone	**GSM850**	Measurement 3: Left Head with Cheek device position on High Channel in GSM mode
Phone	**GSM1900**	Measurement 5: Right Head with Cheek device position on Low Channel in GSM mode
Phone	**WCDMA1900_RMC**	Measurement 9: Right Head with Cheek device position on Low Channel in WCDMA mode
Phone	**WCDMA850_RMC**	Measurement 15: Left Head with Cheek device position on Low Channel in WCDMA mode
Phone	**WiFi_802.11b**	Measurement 17: Right Head with Cheek device position on Middle Channel in 802.11b mode
Phone	**GSM850**	Measurement 21: Flat Plane with Back device position on High Channel in GSM mode
Phone	**GSM1900**	Measurement 26: Flat Plane with Back device position on High Channel in GSM mode
Phone	**WCDMA1900_RMC**	Measurement 28: Flat Plane with Back side device position on Low Channel in WCDMA mode
Phone	**WCDMA850_RMC**	Measurement 30/55: Flat Plane with Back side device position on Low Channel in WCDMA mode
Phone	**WiFi_802.11b**	Measurement 32/60: Flat Plane with Back side device position on Middle Channel in 802.11b mode
Phone	**GPRS850**	Measurement 34: Flat Plane with Back device position on High Channel in GPRS mode
Phone	**GPRS1900**	Measurement 40: Flat Plane with Back device position on Low Channel in GPRS mode
Phone	**WCDMA1900_RMC**	Measurement 54: Flat Plane with Bottom side device position on Low Channel in WCDMA mode
Remark: SAR plot is showed the highest measured SAR in each exposure configuration, wireless mode and frequency band combination.		

MEASUREMENT 3

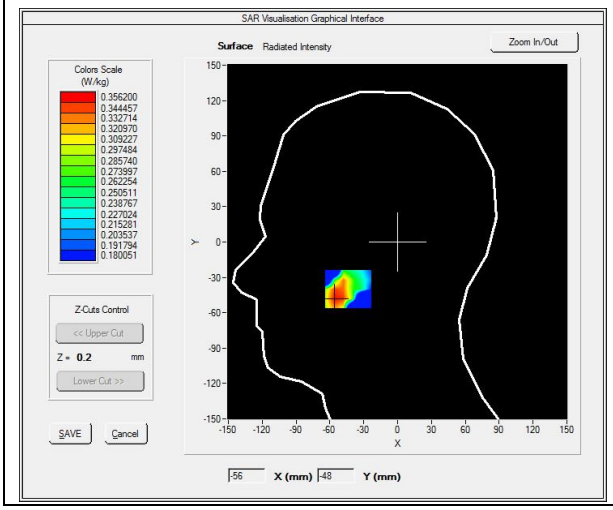
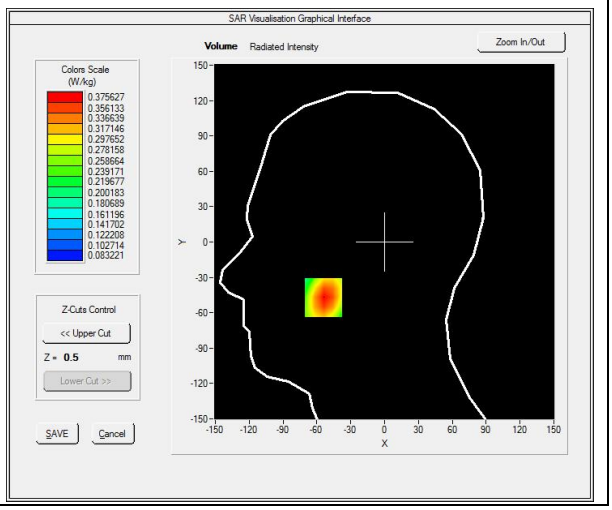
Type: Phone measurement (Complete)
Date of measurement: 2020-12-07
Measurement duration: 11 minutes 48 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
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)	41.947536
Conductivity (S/m)	0.892158
Power Variation (%)	-1.590000
Ambient Temperature	21.1
Liquid Temperature	21.1

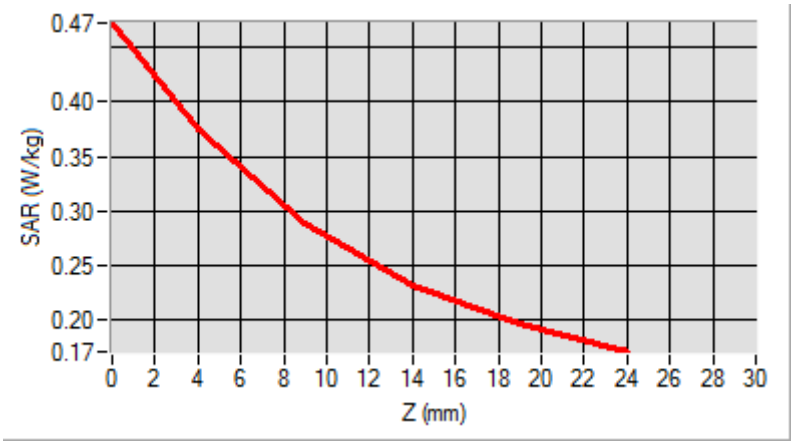
SURFACE SAR	VOLUME SAR
	

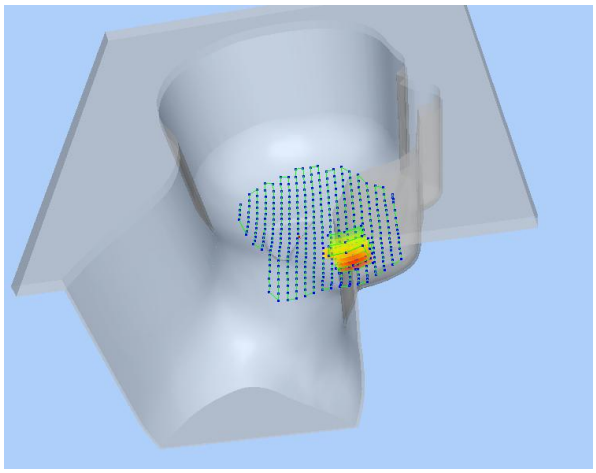
Maximum location: X=-54.00, Y=-47.00

SAR Peak: 0.47 W/kg

SAR 10g (W/Kg)	0.274646
SAR 1g (W/Kg)	0.361971

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.4717	0.3756	0.2889	0.2324	0.1970



3D screen shot	Hot spot position
	

MEASUREMENT 5

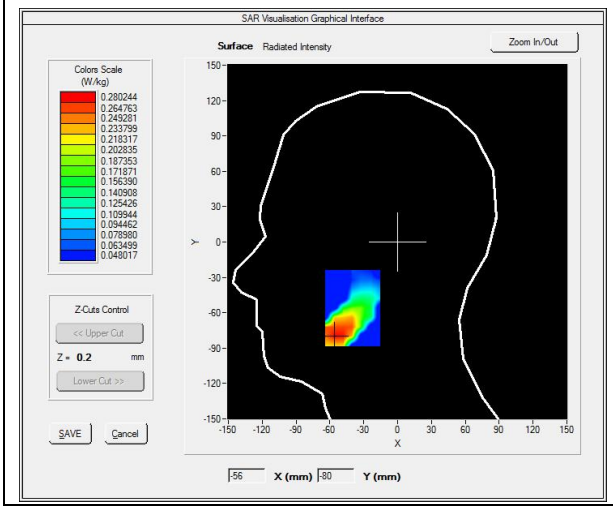
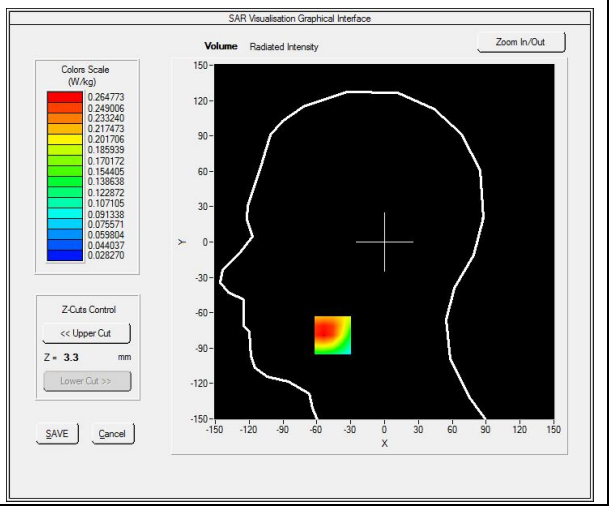
Type: Phone measurement (Complete)
Date of measurement: 2020-12-22
Measurement duration: 11 minutes 48 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
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)	39.602680
Conductivity (S/m)	1.388604
Power Variation (%)	-1.540000
Ambient Temperature	21.6
Liquid Temperature	21.6

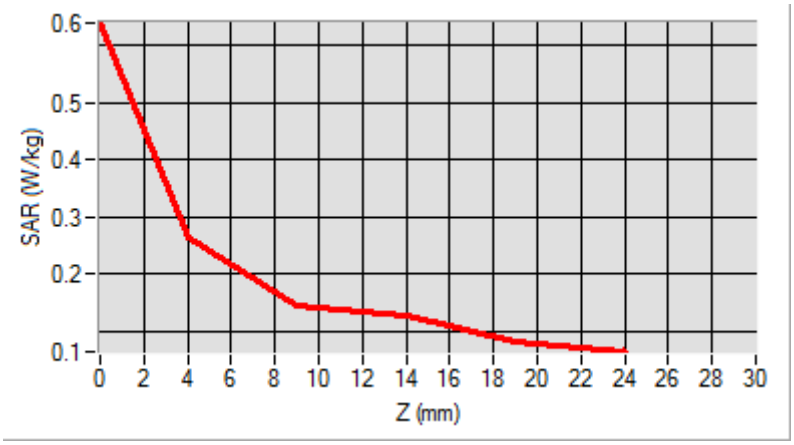
SURFACE SAR	VOLUME SAR
	

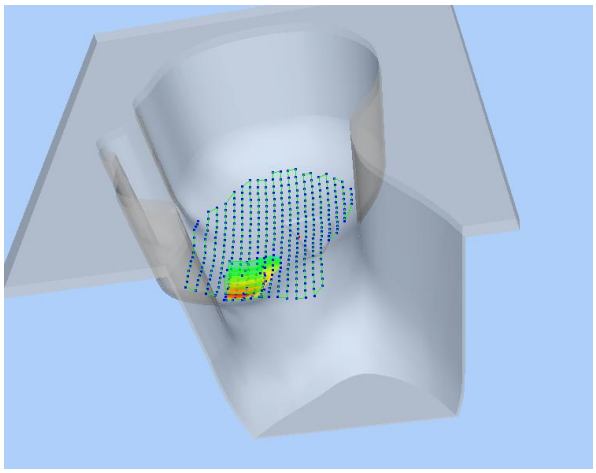
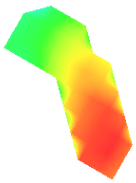
Maximum location: X=-46.00, Y=-79.00

SAR Peak: 0.37 W/kg

SAR 10g (W/Kg)	0.166580
SAR 1g (W/Kg)	0.256148

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.6405	0.2648	0.1442	0.1255	0.0794



3D screen shot	Hot spot position
	

MEASUREMENT 9

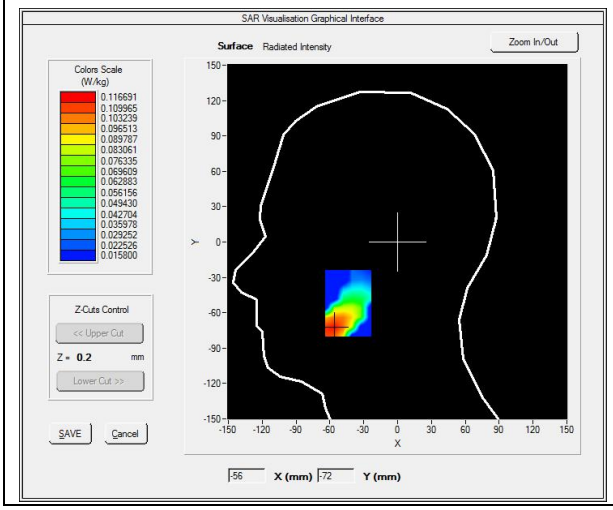
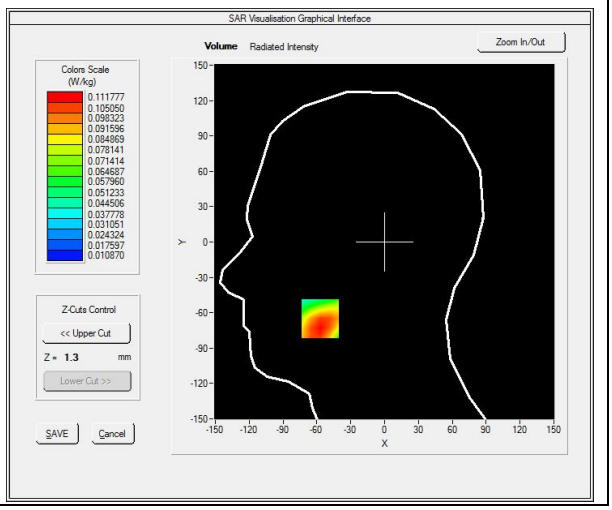
Type: Phone measurement (Complete)
Date of measurement: 2020-12-22
Measurement duration: 12 minutes 3 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Phantom	Right head
Device Position	Cheek
Band	WCDMA1900_RMC
Channels	Low
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	1852.400000
Relative Permittivity (real part)	39.602680
Conductivity (S/m)	1.388604
Power Variation (%)	-1.040000
Ambient Temperature	21.6
Liquid Temperature	21.6

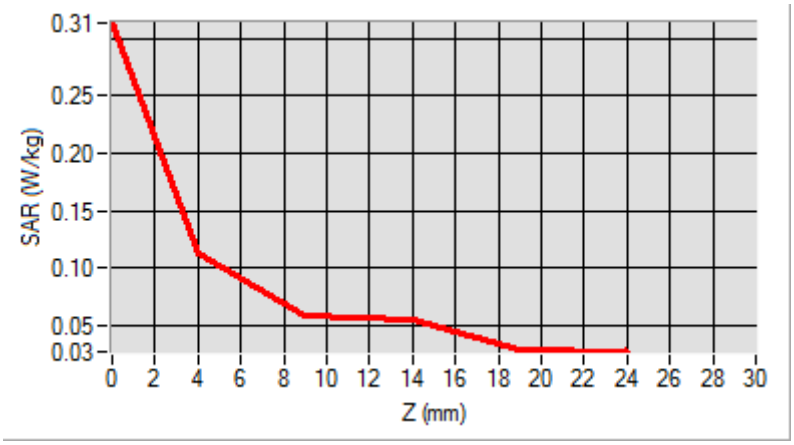
SURFACE SAR	VOLUME SAR
	

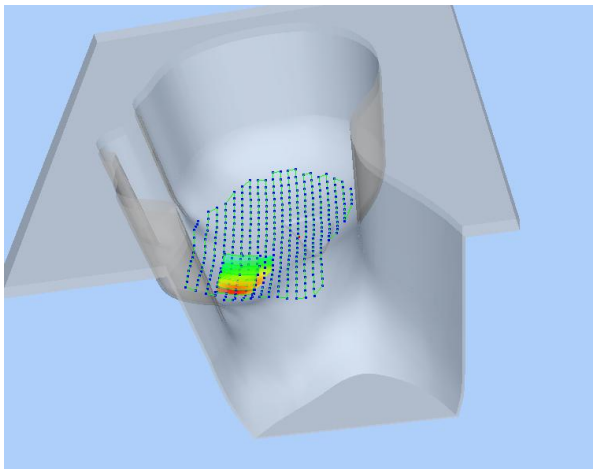
Maximum location: X=-57.00, Y=-65.00

SAR Peak: 0.15 W/kg

SAR 10g (W/Kg)	0.071097
SAR 1g (W/Kg)	0.106299

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.3137	0.1118	0.0585	0.0551	0.0294



3D screen shot	Hot spot position
	

MEASUREMENT 15

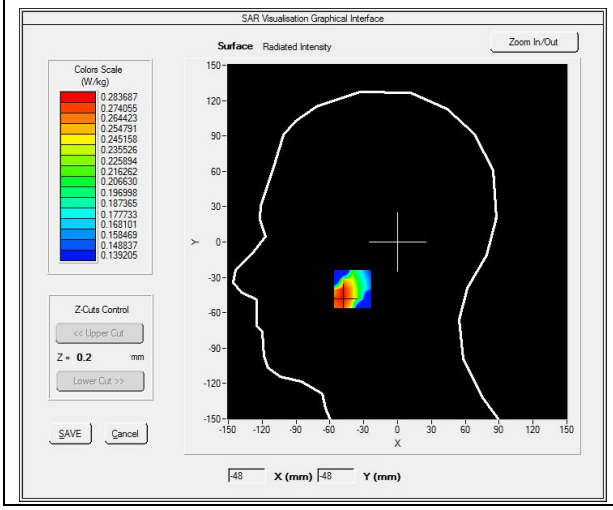
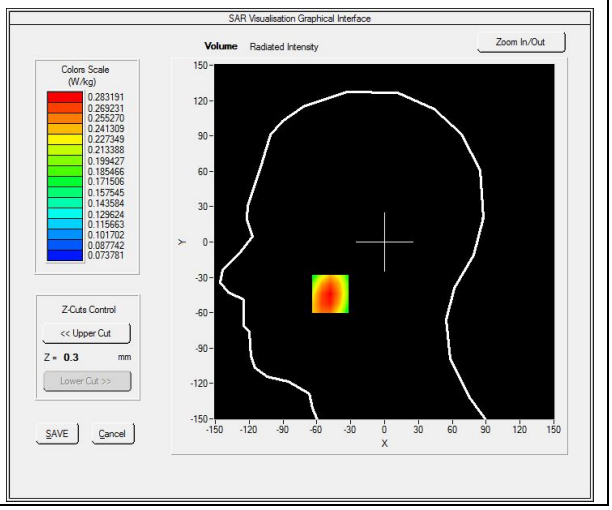
Type: Phone measurement (Complete)
Date of measurement: 2020-12-07
Measurement duration: 12 minutes 3 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Phantom	Left head
Device Position	Cheek
Band	WCDMA850_RMC
Channels	Low
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	826.400000
Relative Permittivity (real part)	42.107540
Conductivity (S/m)	0.875083
Power Variation (%)	-0.680000
Ambient Temperature	21.1
Liquid Temperature	21.1

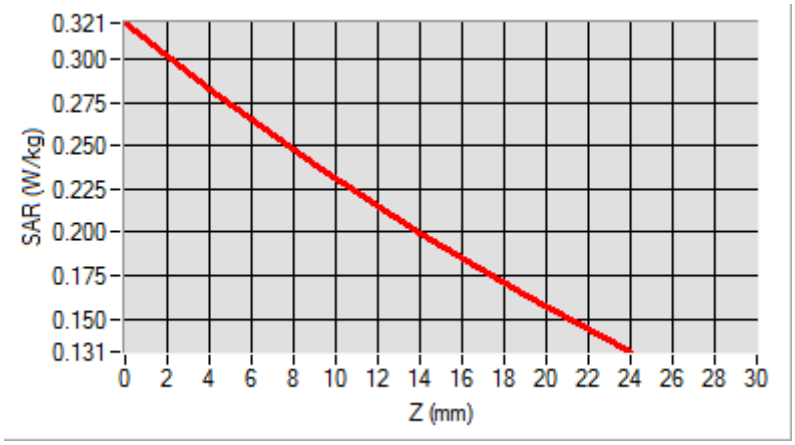
SURFACE SAR	VOLUME SAR
	

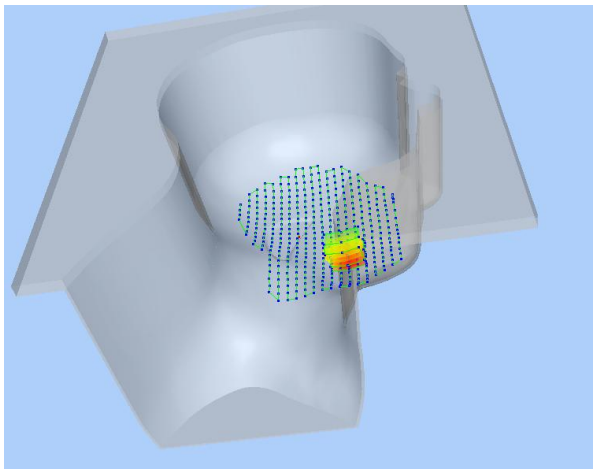
Maximum location: X=-48.00, Y=-44.00

SAR Peak: 0.32 W/kg

SAR 10g (W/Kg)	**0.216292**
SAR 1g (W/Kg)	**0.274716**

Z (mm)	**0.00**	**4.00**	**9.00**	**14.00**	**19.00**
SAR (W/Kg)	**0.3213**	**0.2832**	**0.2392**	**0.1993**	**0.1632**



3D screen shot	**Hot spot position**
	

MEASUREMENT 17

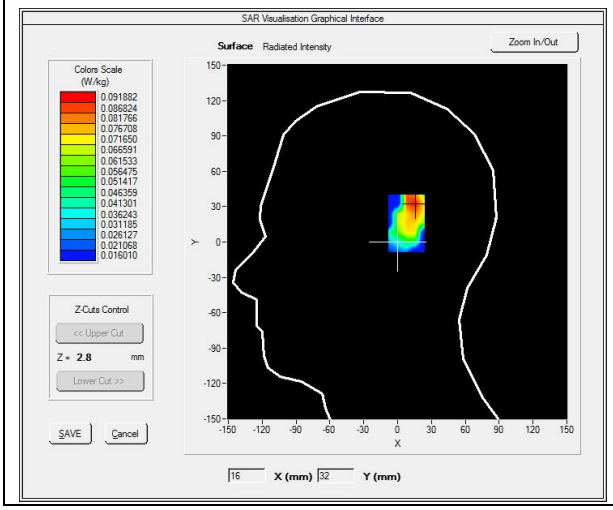
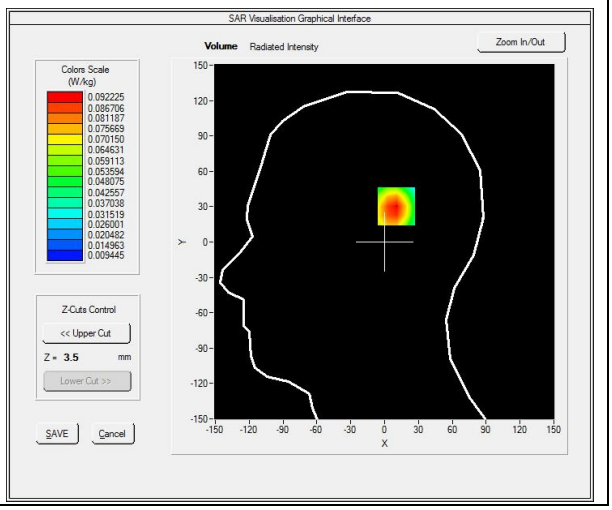
Type: Phone measurement (Complete)
Date of measurement: 2020-12-10
Measurement duration: 12 minutes 3 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Phantom	Right head
Device Position	Cheek
Band	WiFi_802.11b
Channels	Middle
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	2437.000000
Relative Permittivity (real part)	39.940248
Conductivity (S/m)	1.827132
Power Variation (%)	0.080000
Ambient Temperature	21.2
Liquid Temperature	21.2

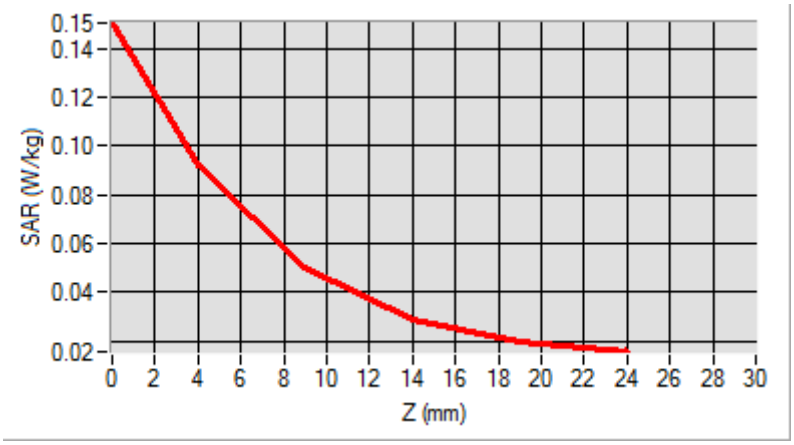
SURFACE SAR	VOLUME SAR
	

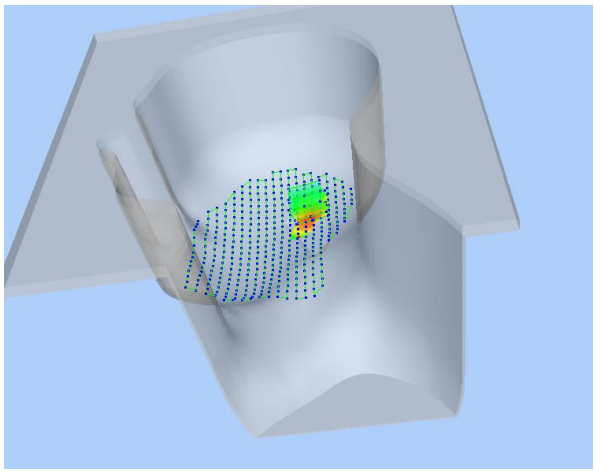
Maximum location: X=15.00, Y=32.00

SAR Peak: 0.15 W/kg

SAR 10g (W/Kg)	0.051078
SAR 1g (W/Kg)	0.088759

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.1503	0.0922	0.0497	0.0290	0.0201



3D screen shot	Hot spot position
	

MEASUREMENT 21

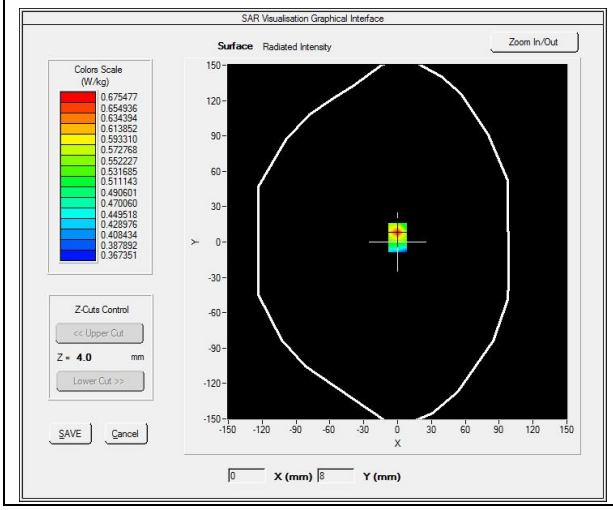
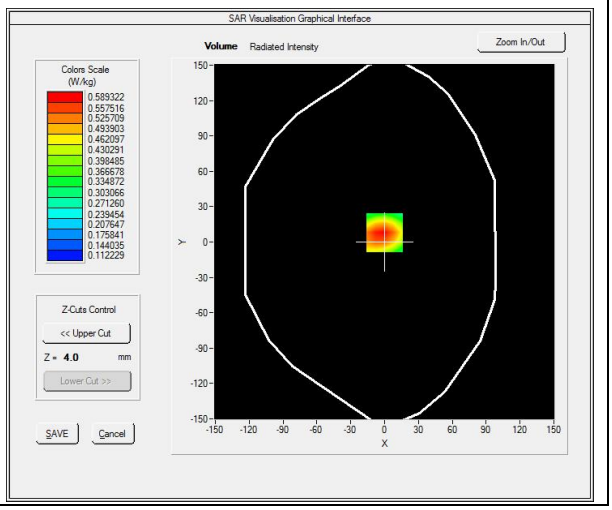
Type: Phone measurement (Complete)
Date of measurement: 2020-12-07
Measurement duration: 11 minutes 48 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Phantom	Flat plane
Device Position	Back
Band	GSM850
Channels	High
Signal	TDMA (Crest factor: 8.0)

B. SAR Measurement Results

Frequency (MHz)	848.800000
Relative Permittivity (real part)	41.947536
Conductivity (S/m)	0.892158
Power Variation (%)	-1.630000
Ambient Temperature	21.1
Liquid Temperature	21.1

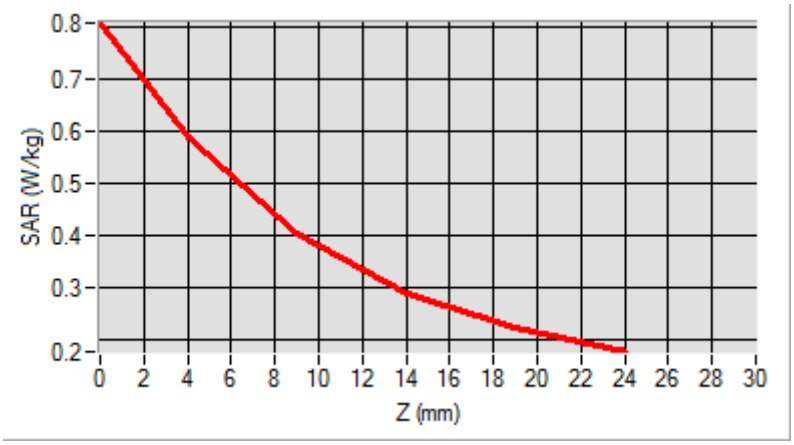
SURFACE SAR	VOLUME SAR
	

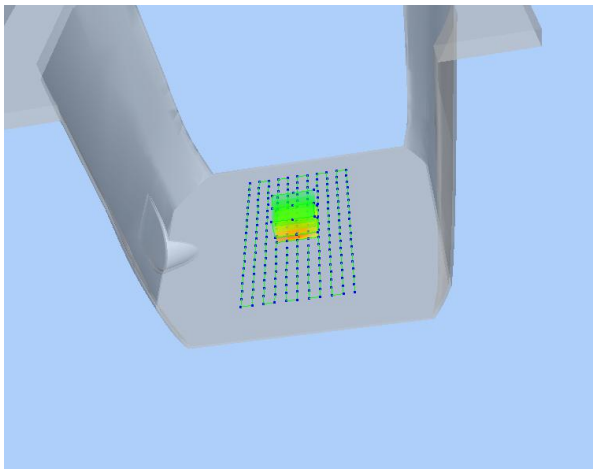
Maximum location: X=0.00, Y=8.00

SAR Peak: 0.82 W/kg

SAR 10g (W/Kg)	0.377133
SAR 1g (W/Kg)	0.565775

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.8080	0.5893	0.4028	0.2886	0.2212



3D screen shot	Hot spot position
	

MEASUREMENT 26

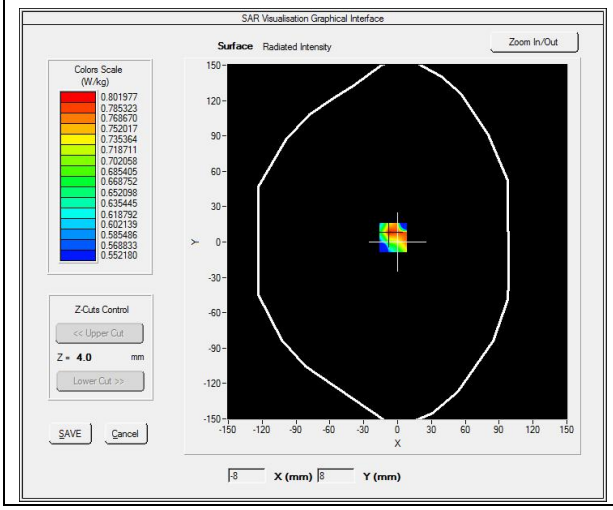
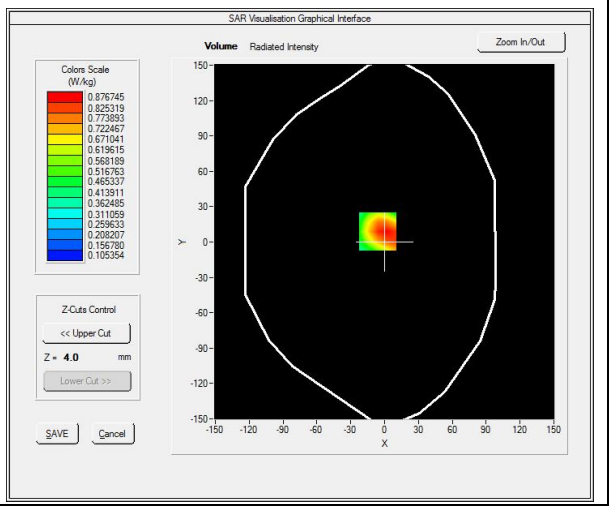
Type: Phone measurement (Complete)
Date of measurement: 2020-12-22
Measurement duration: 11 minutes 48 seconds

B. Experimental conditions

Area Scan	dx=8mm dy=8mm
Phantom	Flat plane
Device Position	Back
Band	GSM1900
Channels	High
Signal	TDMA (Crest factor: 8.0)

B. SAR Measurement Results

Frequency (MHz)	1909.800000
Relative Permittivity (real part)	39.421025
Conductivity (S/m)	1.397006
Power Variation (%)	-1.450000
Ambient Temperature	21.6
Liquid Temperature	21.6

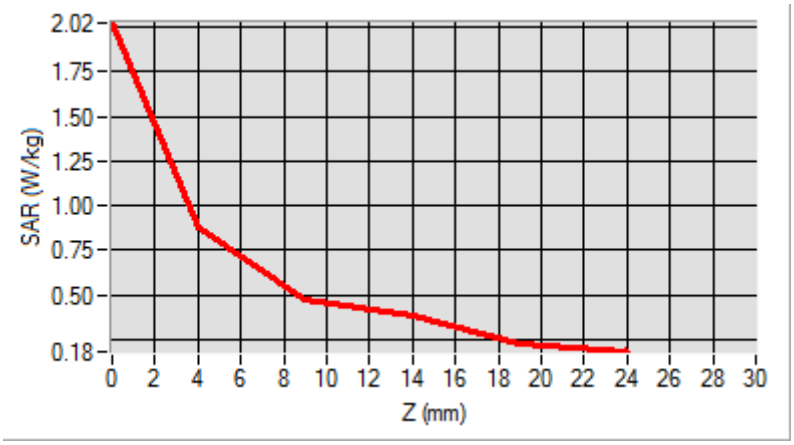
SURFACE SAR	VOLUME SAR
	

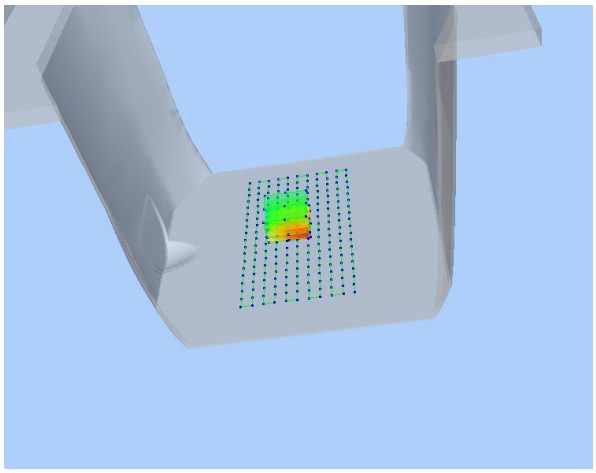
Maximum location: X=-6.00, Y=9.00

SAR Peak: 1.23 W/kg

SAR 10g (W/Kg)	0.535730
SAR 1g (W/Kg)	0.832952

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	2.0246	0.8767	0.4749	0.3830	0.2263



3D screen shot	Hot spot position
	

MEASUREMENT 28

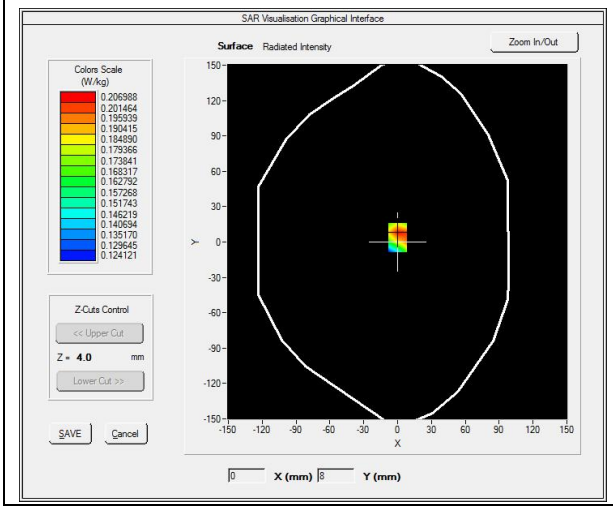
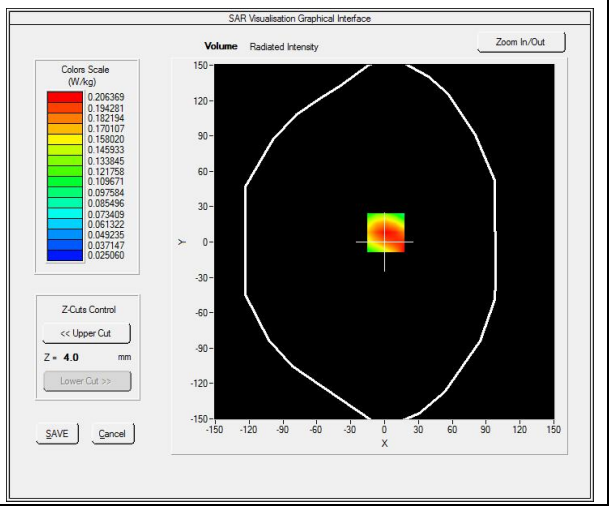
Type: Phone measurement (Complete)
Date of measurement: 2020-12-22
Measurement duration: 12 minutes 3 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Phantom	Flat plane
Device Position	Back
Band	WCDMA1900_RMC
Channels	Low
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	1852.400000
Relative Permittivity (real part)	39.602680
Conductivity (S/m)	1.388604
Power Variation (%)	-0.770000
Ambient Temperature	21.6
Liquid Temperature	21.6

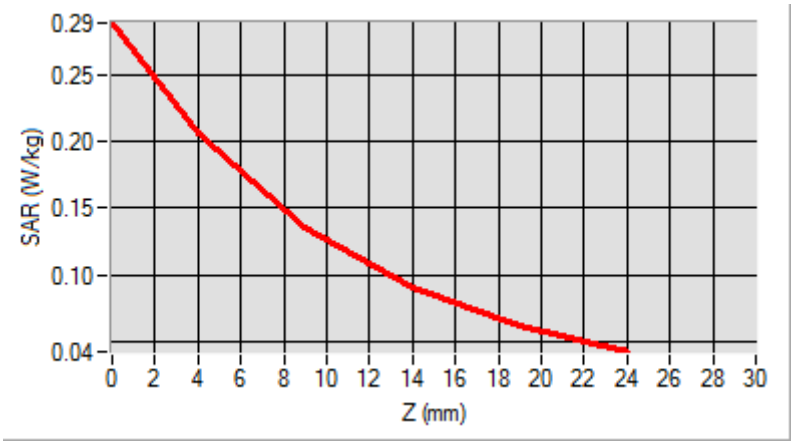
SURFACE SAR	VOLUME SAR
	

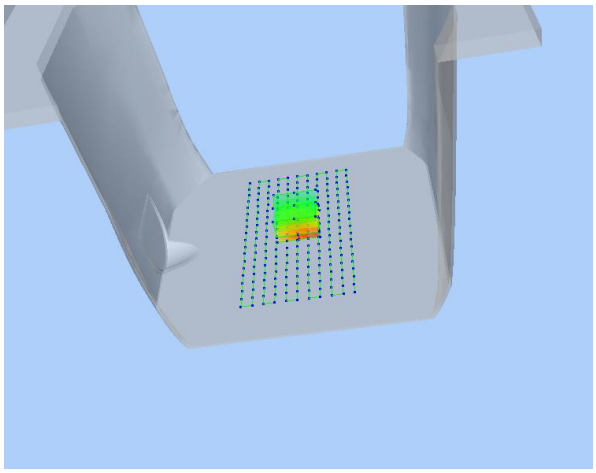
Maximum location: X=1.00, Y=8.00

SAR Peak: 0.29 W/kg

SAR 10g (W/Kg)	0.125736
SAR 1g (W/Kg)	0.196727

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.2888	0.2064	0.1350	0.0899	0.0618



3D screen shot	Hot spot position
	

MEASUREMENT 30/55

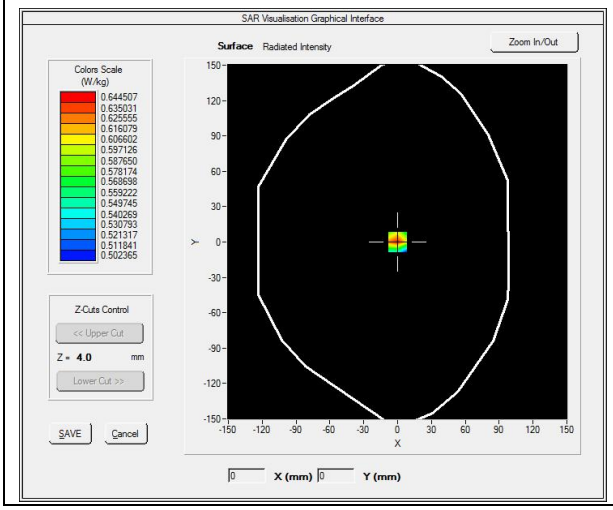
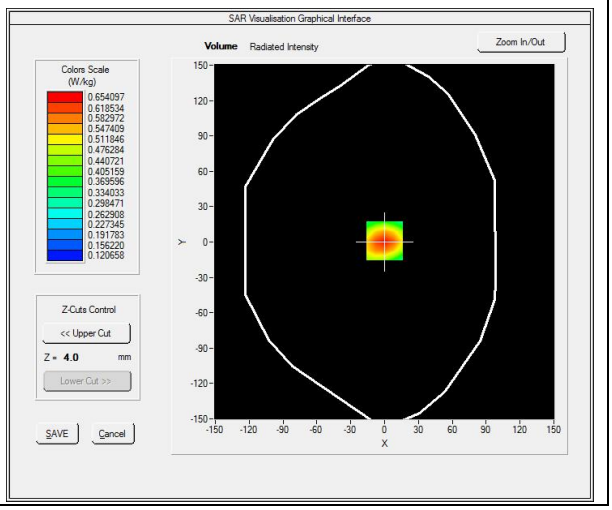
Type: Phone measurement (Complete)
Date of measurement: 2020-12-07
Measurement duration: 12 minutes 3 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Phantom	Flat plane
Device Position	Back
Band	WCDMA850_RMC
Channels	Low
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	826.400000
Relative Permittivity (real part)	42.107540
Conductivity (S/m)	0.875083
Power Variation (%)	-0.970000
Ambient Temperature	21.1
Liquid Temperature	21.1

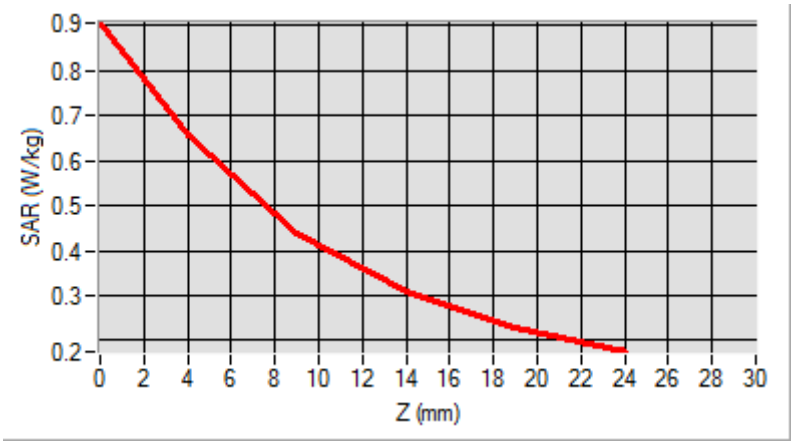
SURFACE SAR	VOLUME SAR
	

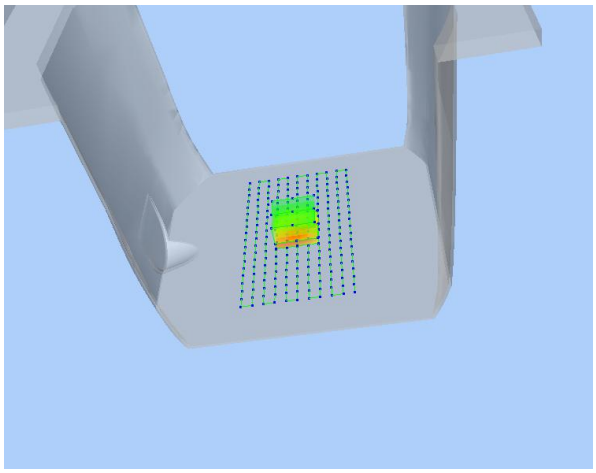
Maximum location: X=0.00, Y=1.00

SAR Peak: 0.91 W/kg

SAR 10g (W/Kg)	0.411322
SAR 1g (W/Kg)	0.625268

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.9051	0.6541	0.4399	0.3082	0.2294



3D screen shot	Hot spot position
	

MEASUREMENT 32/60

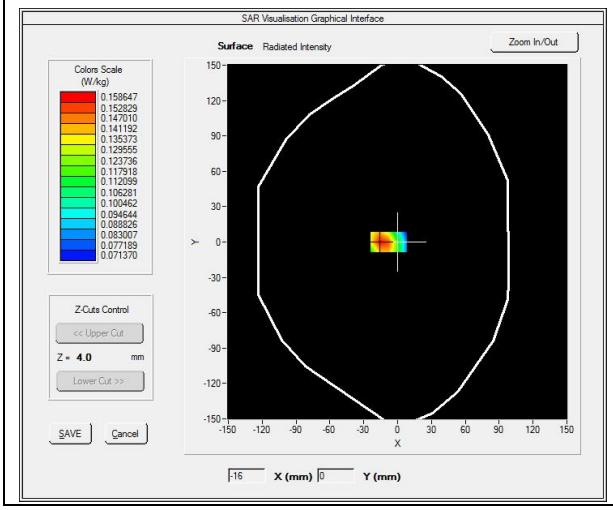
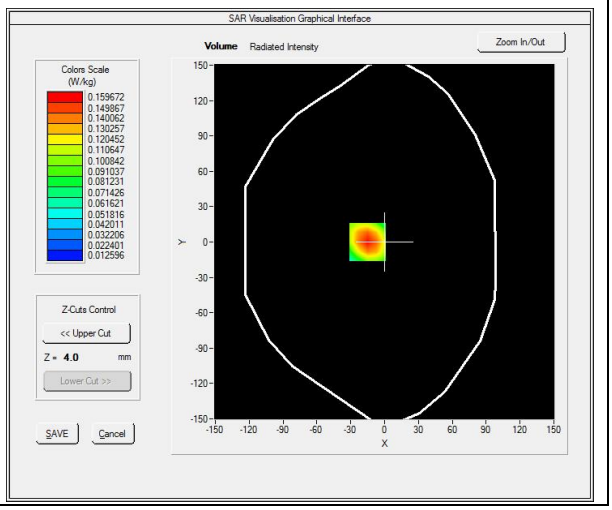
Type: Phone measurement (Complete)
Date of measurement: 2020-12-10
Measurement duration: 12 minutes 3 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Phantom	Flat plane
Device Position	Back
Band	WiFi_802.11b
Channels	Middle
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	2437.000000
Relative Permittivity (real part)	39.940248
Conductivity (S/m)	1.827132
Power Variation (%)	-0.240000
Ambient Temperature	21.2
Liquid Temperature	21.2

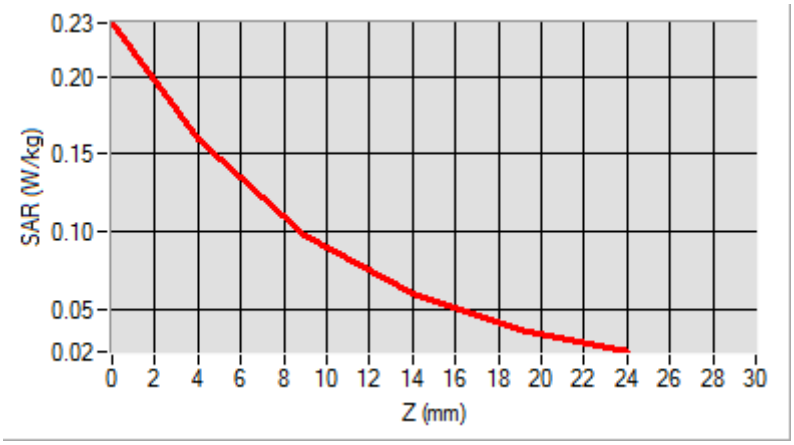
SURFACE SAR	VOLUME SAR
	

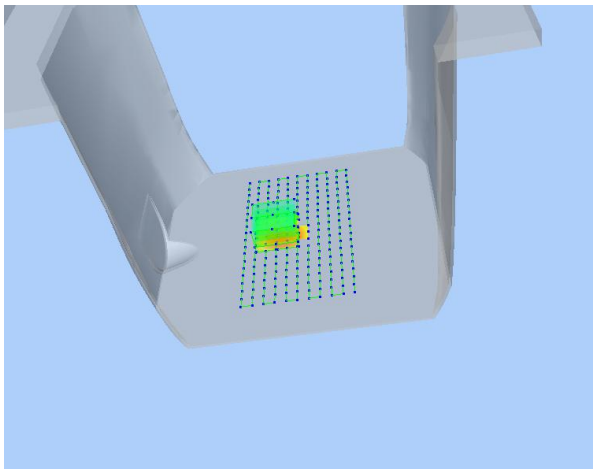
Maximum location: X=-15.00, Y=0.00

SAR Peak: 0.23 W/kg

SAR 10g (W/Kg)	0.088686
SAR 1g (W/Kg)	0.150300

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.2347	0.1597	0.0970	0.0591	0.0368



3D screen shot	Hot spot position
	

MEASUREMENT 34

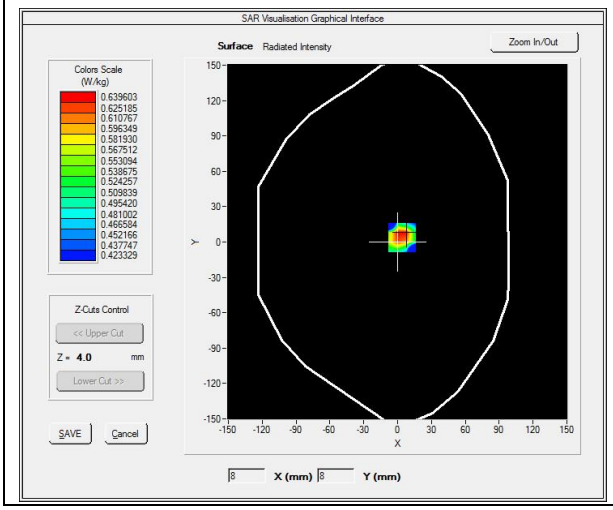
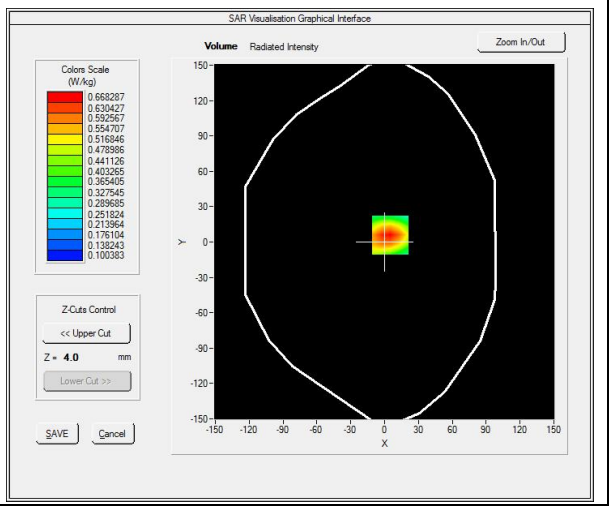
Type: Phone measurement (Complete)
Date of measurement: 2020-12-07
Measurement duration: 11 minutes 48 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Phantom	Flat plane
Device Position	Back
Band	GPRS850_2tx
Channels	High
Signal	TDMA (Crest factor: 8.0)

B. SAR Measurement Results

Frequency (MHz)	848.800000
Relative Permittivity (real part)	41.947536
Conductivity (S/m)	0.892158
Power Variation (%)	1.510000
Ambient Temperature	21.1
Liquid Temperature	21.1

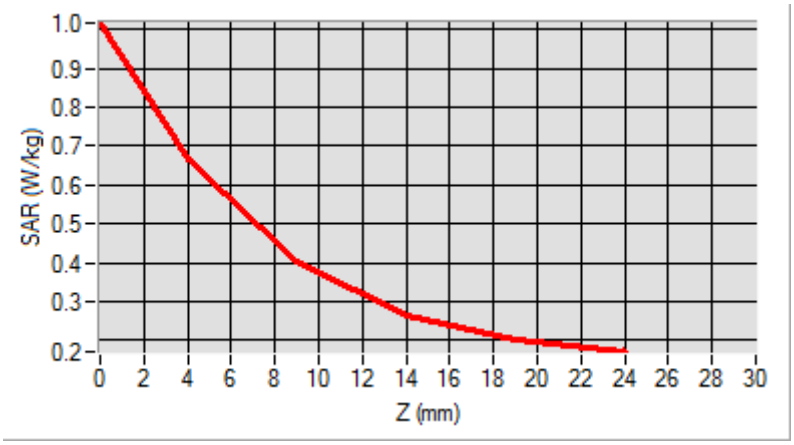
SURFACE SAR	VOLUME SAR
	

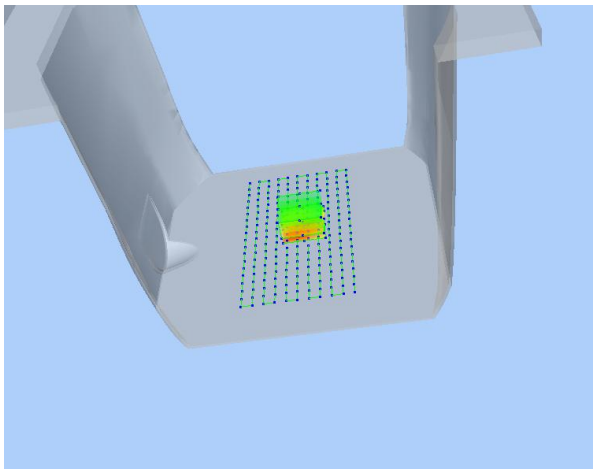
Maximum location: X=5.00, Y=6.00

SAR Peak: 1.02 W/kg

SAR 10g (W/Kg)	0.399780
SAR 1g (W/Kg)	0.636224

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.0165	0.6683	0.4022	0.2651	0.2028



3D screen shot	Hot spot position
	

MEASUREMENT 40

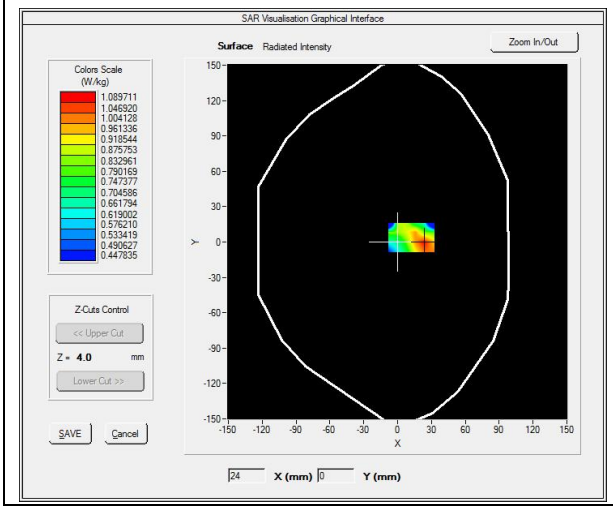
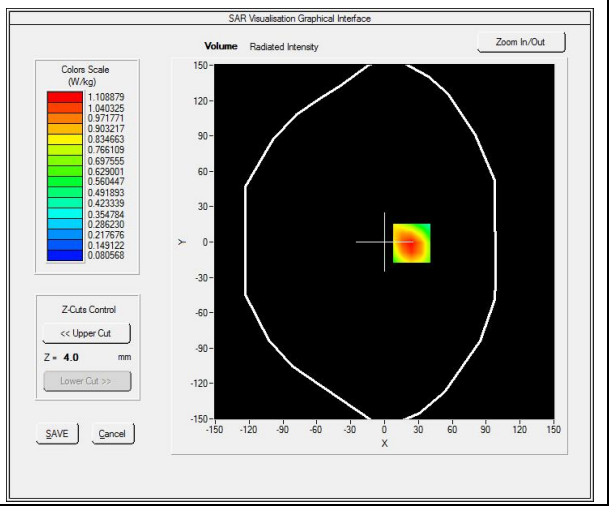
Type: Phone measurement (Complete)
Date of measurement: 2020-12-22
Measurement duration: 11 minutes 48 seconds

C. Experimental conditions

Area Scan	dx=8mm dy=8mm
Phantom	Flat plane
Device Position	Back
Band	GPRS1900_4TX
Channels	Low
Signal	TDMA (Crest factor: 8.0)

B. SAR Measurement Results

Frequency (MHz)	1850.200000
Relative Permittivity (real part)	39.602680
Conductivity (S/m)	1.388604
Power Variation (%)	-0.290000
Ambient Temperature	21.6
Liquid Temperature	21.6

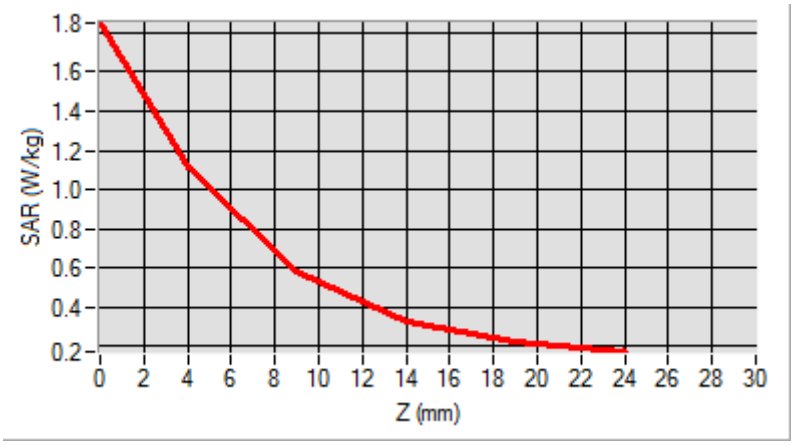
SURFACE SAR	VOLUME SAR
	

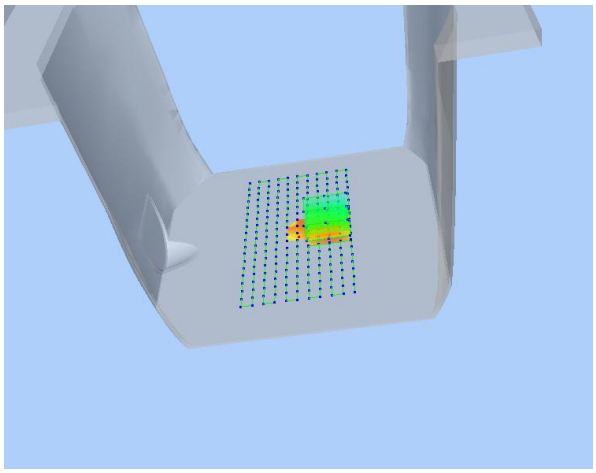
Maximum location: X=24.00, Y=-1.00

SAR Peak: 1.85 W/kg

SAR 10g (W/Kg)	0.610901
SAR 1g (W/Kg)	1.063146

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.8500	1.1089	0.5775	0.3260	0.2222



3D screen shot	Hot spot position
	

MEASUREMENT 54

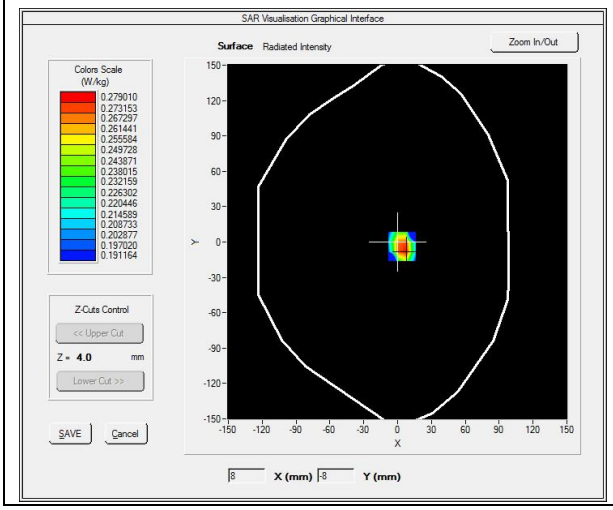
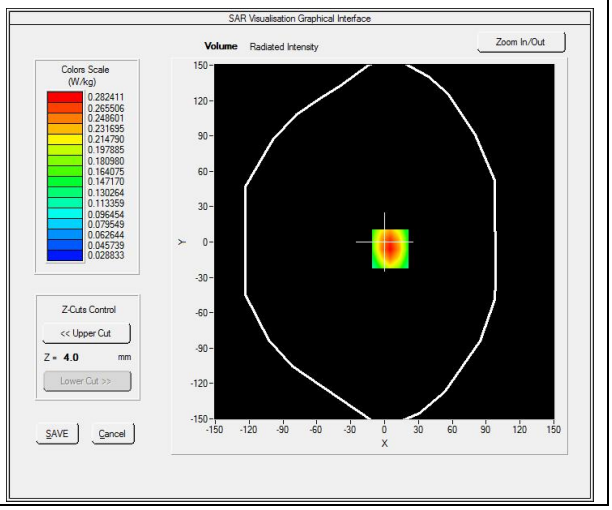
Type: Phone measurement (Complete)
Date of measurement: 2020-12-22
Measurement duration: 12 minutes 3 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Phantom	Flat plane
Device Position	Bottom
Band	WCDMA1900_RMC
Channels	Low
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	1852.400000
Relative Permittivity (real part)	39.602680
Conductivity (S/m)	1.388604
Power Variation (%)	-0.270000
Ambient Temperature	21.6
Liquid Temperature	21.6

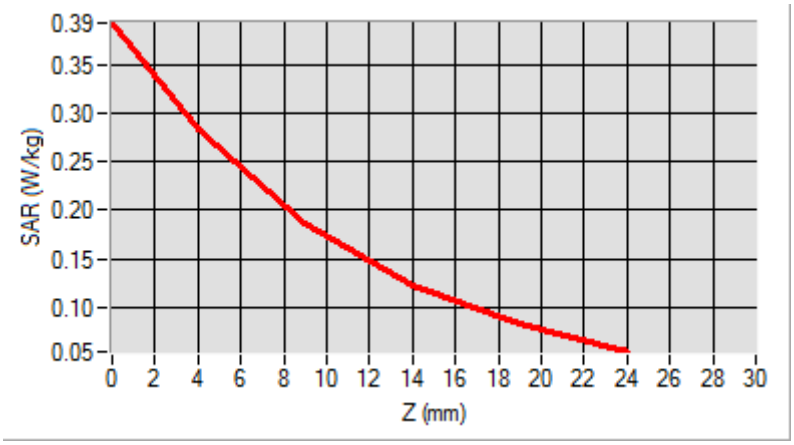
SURFACE SAR	VOLUME SAR
	

Maximum location: X=5.00, Y=-6.00

SAR Peak: 0.39 W/kg

SAR 10g (W/Kg)	0.165765
SAR 1g (W/Kg)	0.266518

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.3925	0.2824	0.1856	0.1229	0.0828



3D screen shot	Hot spot position