TEST REPORT

Reference No.	:	WTX22X02029842W
FCC ID	:	2A5SSXS11
Applicant	:	Shenzhen Tailefeng Communication Co., Ltd
Address	:	Room 2599, block C, electronic technology building, No. 2070, Shennan Middle Road, Futian District, Shenzhen, Guangdong
Manufacturer		The same as Applicant
Address		The same as Applicant
Product Name	:	WCDMA digital mobile phone
Model No.	:	XS11
Standards	:	FCC Part 2.1093 IEEE Std C95.1: 2019 IEEE Std C95.3: 2002 + Rev. 2008 IEEE 62209-1528: 2020
Date of Receipt sample	:	2022-02-28
Date of Test	:	2022-03-11 to 2022-03-21
Date of Issue	:	2022-03-22
Test Report Form No.	:	WTX_Part2_1093W
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 approver.

Prepared By:

Waltek Testing Group (Shenzhen) Co., Ltd.

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TABLE OF CONTENTS

Report version

Version No.	Date of issue	Description
Rev.00	2022-03-22	Original
/	/	/

1. General Information

1.1 Product Description for Equipment Under Test (EUT)

General Description of EUT:	
Product Name:	WCDMA digital mobile phone
Trade Name:	/
Model No.:	XS11
Adding Model(s):	XS12, S10i, K80, 7S+, S10W, S10T, S10A, S10C, i13, i14, i15, i16, i17, X13, X14, X15, X16, D18, D19, H13, H14, H15, H16
Rated Voltage:	USB Port: DC 5V; Battery: DC 3.7V
Battery:	/
Note: The test data is gathered from a production sample, provided by the manufacturer. The appearance of others models listed in the report is different from main-test model XS11, but the circuit and the electronic construction do not change, declared 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: 33.16dBm, GSM1900: 29.90dBm
Type of Modulation:	GMSK
Type of Antenna:	Integral Antenna
Antenna Gain:	GSM850: -2.1dBi; GSM1900: -1.1dBi
GPRS Class:	Class 12
3G	
Support Networks:	WCDMA, HSDPA, HSUPA
Support Band:	WCDMA Band 2, WCDMA Band 5
Uplink Frequency:	WCDMA Band 2: 1850~1910MHz WCDMA Band 5: 824~849MHz
Downlink Frequency:	WCDMA Band 2: 1930~1990MHz WCDMA Band 5: 869~894MHz
RF Output Power:	WCDMA Band 2: 23.34dBm, WCDMA Band 5: 23.61dBm
Type of Modulation:	BPSK
Antenna Type:	Integral Antenna
Antenna Gain:	WCDMA Band 2: -2.1dBi, WCDMA Band 5: -2.5dBi
WIFI(2.4G)	
Support Standards:	802.11b, 802.11g, 802.11n-HT20/40
Frequency Range:	2412-2462MHz for 11b/g/n(HT20), 2422-2452MHz for 802.11n(HT40)
RF Output Power:	16.70dBm (Conducted)
Type of Modulation:	DBPSK,BPSK,DQPSK,QPSK,16QAM,64QAM
Quantity of Channels:	11 for 802.11b/g/n(HT20); 7 for 802.11n(HT40)
Channel Separation:	5MHz
Type of Antenna:	FPC Antenna
Antenna Gain:	-0.7dBi
Bluetooth	
Bluetooth Version:	V4.2
Frequency Range:	2402-2480MHz
RF Output Power:	5.740dBm (Conducted)
Data Rate:	1Mbps, 2Mbps, 3Mbps
Modulation:	GFSK, π/4 DQPSK, 8DPSK

Quantity of Channels:	79
Channel Separation:	1MHz
Antenna Type:	FPC Antenna
Antenna Gain:	-0.7dBi
Note: The Antenna Gain is provided by the customer and can affect the validity of results.	

1.2 Test Standards

IEEE Std C95.1: 2019, IEEE Std C95.3: 2002 + Rev. 2008, IEEE 62209-1528: 2020, 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 (5mm Gap)	Hotspot (5mm Gap)	SAR_{1g} Limit (W/kg)
	Maximum SAR_{1g} (W/kg)	Maximum SAR_{1g} (W/kg)	Maximum SAR_{1g} (W/kg)	
GSM	**0.846**	0.663	**1.073**	1.6
WCDMA	0.774	**0.677**	0.677	1.6
WLAN 2.4G	0.515	0.402	0.402	1.6
BT	0.027	0.018	0.018	1.6
Simultaneous Transmission	1.184	1.079	**1.475**	1.6

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 IEEE Std C95.1: 2019, and had been tested in accordance with the measurement methods and procedure specified in IEEE 62209-1528: 2020 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 (ρ). The equation description is as below:

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

SAR is expressed in units of Watts per kilogram (W/kg)
SAR measurement can be either related to the temperature elevation in tissue by

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

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

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

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

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

4. SAR Measurement System

4.1 The Measurement System

Comosar is a system that is able to determine the SAR distribution inside a phantom of human being according to different standards. The Comosar system consists of the following items:
- Main computer to control all the system
- 6 axis robot
- Data acquisition system
- Miniature E-field probe
- Phone holder
- Head simulating tissue

The following figure shows the system.

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

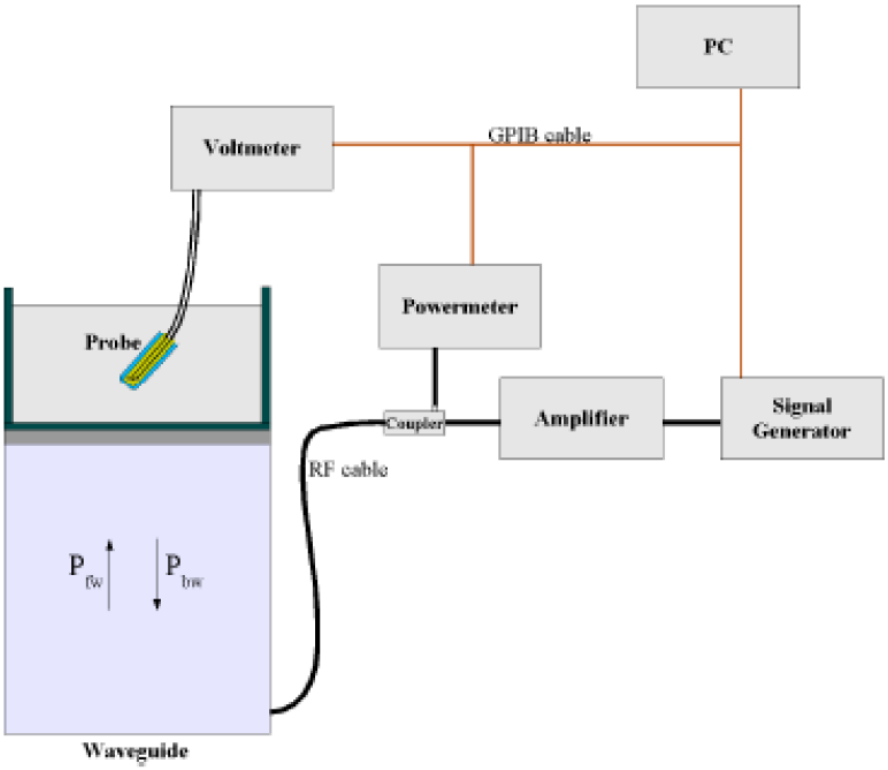
4.2 Probe

For the measurements the Specific Dosimetric E-Field Probe 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.

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

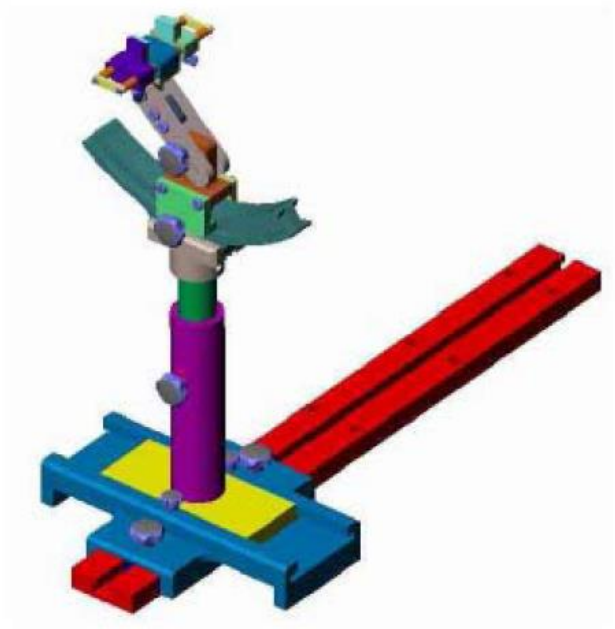
Where:
σ = simulated tissue conductivity,
ρ = Tissue density (1.25 g/cm3 for brain tissue)

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

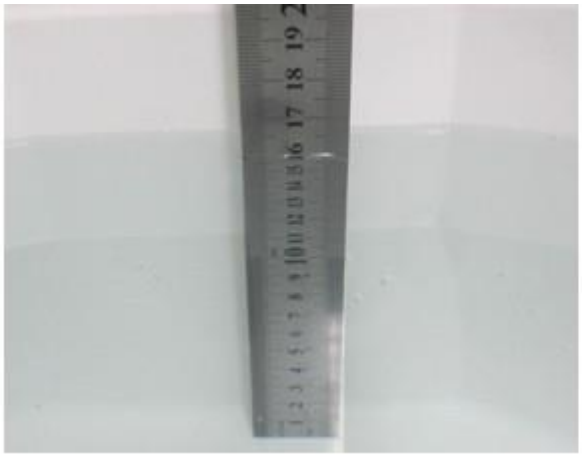
4.6 Test Equipment List

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
E-Field Probe	MVG	SSE2	SN 18/21 EPGO356	2021-07-16	2022-07-15
750MHz Dipole	MVG	SID750	SN 47/12 DIP 0G750-203	2020-03-11	2023-03-10
835MHz Dipole	MVG	SID835	SN 47/12 DIP 0G835-204	2020-03-11	2023-03-10
900MHz Dipole	MVG	SID900	SN 47/12 DIP 0G900-205	2020-03-11	2023-03-10
1800MHz Dipole	MVG	SID1800	SN 47/12 DIP 1G800-206	2020-03-11	2023-03-10
1900MHz Dipole	MVG	SID1900	SN 47/12 DIP 1G900-207	2020-03-11	2023-03-10
2000MHz Dipole	MVG	SID2000	SN 47/12 DIP 2G000-208	2020-03-11	2023-03-10
2300 MHz Dipole	MVG	SID2300	SN 50/20 DIP 2G300-513	2021-01-14	2024-01-13
2450MHz Dipole	MVG	SID2450	SN 13/15 DIP 2G450-364	2020-03-11	2023-03-10
2600MHz Dipole	MVG	SID2600	SN 28/21 DIP 2G600-590	2021-07-16	2024-07-15
3300MHz Dipole	MVG	SID3300	SN 28/21 DIP 3G300-591	2021-07-19	2024-07-18
3500MHz Dipole	MVG	SID3500	SN 28/21 DIP 3G500-592	2021-07-19	2024-07-18
3700MHz Dipole	MVG	SID3700	SN 28/21 DIP 3G700-593	2021-07-19	2024-07-18
3900MHz Dipole	MVG	SID3900	SN 28/21 DIP 3G900-594	2021-07-19	2024-07-18
4200MHz Dipole	MVG	SID4200	SN 28/21 DIP 4G200-595	2021-07-19	2024-07-18
4600MHz Dipole	MVG	SID4600	SN 28/21 DIP 4G600-596	2021-07-19	2024-07-18
4900MHz Dipole	MVG	SID4900	SN 28/21 DIP 4G900-597	2021-07-19	2024-07-18
5 GHz Dipole	MVG	SWG5500	SN 49/16 WGA45	2020-07-03	2023-07-02
Dielectric Probe	SATIMO	SCLMP	SN 47/12 OCPG49	2021-03-27	2022-03-26
SAM Phantom	SATIMO	SAM	SN/ 47/12 SAM95	N/A	N/A
Multi Meter	Keithley	Keithley 2000	4006367	2021-03-27	2022-03-26
Power meter	Keithley	3500	JC-2017-09-001	2021-03-27	2022-03-26
Power meter	Keithley	3500	JC-2017-09-001	2021-03-27	2022-03-26
Power Sensor	HP	11636B	JC-2017-10-002	2021-03-27	2022-03-26
MXG X-Series RF Vector Signal Generato	KEYSIGHT	N5182B	MY57300664	2021-04-14	2022-04-13
Universal Tester	Rohde & Schwarz	CMU200	112315	2021-03-27	2022-03-26
Communications Tester	Rohde & Schwarz	CMW500	148650	2021-03-27	2022-03-26
Network Analyzer	HP	8753C	2901A00831	2021-03-27	2022-03-26
Directional Couplers	Agilent	778D	20160	2021-03-27	2022-03-26

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**	
	Conductivity (σ)	**Permittivity** (ε_r)
150	0.76	52.3
300	0.87	45.3
450	0.87	43.5
750	0.89	41.9
835	**0.90**	**41.5**
900	0.97	41.5
915	0.98	41.5
1450	1.20	40.5
1610	1.29	40.3
1750	1.37	40.1
1800-2000	**1.40**	**40.0**
2450	**1.80**	**39.2**
3000	2.40	38.5
5200	4.66	36.0
5800	5.27	35.3

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 (σ)	Target (σ)	Delta (%)	Reading (ε r)	Target (ε r)	Delta (%)		
835	22.5	0.88	0.90	-2.22	42.38	41.50	2.12	±5	2022-03-21
1800	22.5	1.39	1.40	-0.71	40.71	40.0	1.78	±5	2022-03-21
1900	22.5	1.41	1.40	0.71	40.76	40.0	1.90	±5	2022-03-21
2450	22.5	1.78	1.80	-1.11	39.85	39.20	1.66	±5	2022-03-21

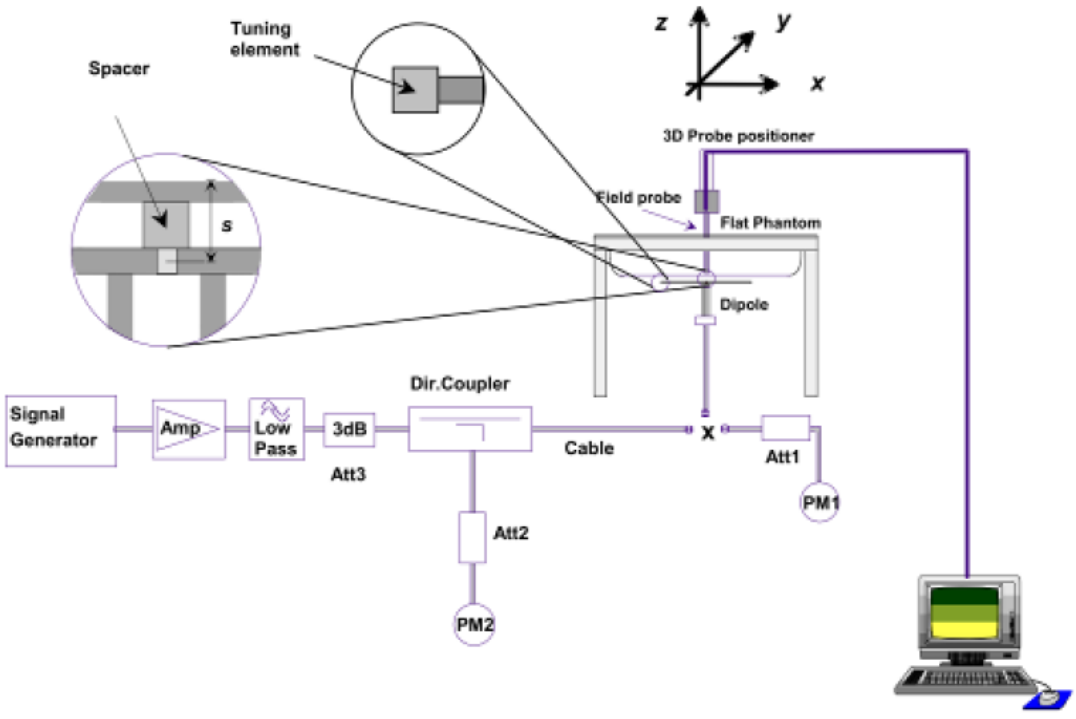
6. SAR Measurement Evaluation

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	Power	Targeted SAR_{1g}	Measured SAR_{1g}	Normalized SAR_{1g}	Tolerance	Date
MHz	(mw)	(W/kg)	(W/kg)	(W/kg)	(%)	
835	250	9.65	2.47	9.88	2.38	2022-03-21
1800	250	38.49	9.46	37.84	-1.69	2022-03-21
1900	250	39.59	9.97	39.88	0.73	2022-03-21
2450	250	53.76	13.56	54.24	0.89	2022-03-21

Remark: Referring to IEEE 62209-1528: 2020, 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.

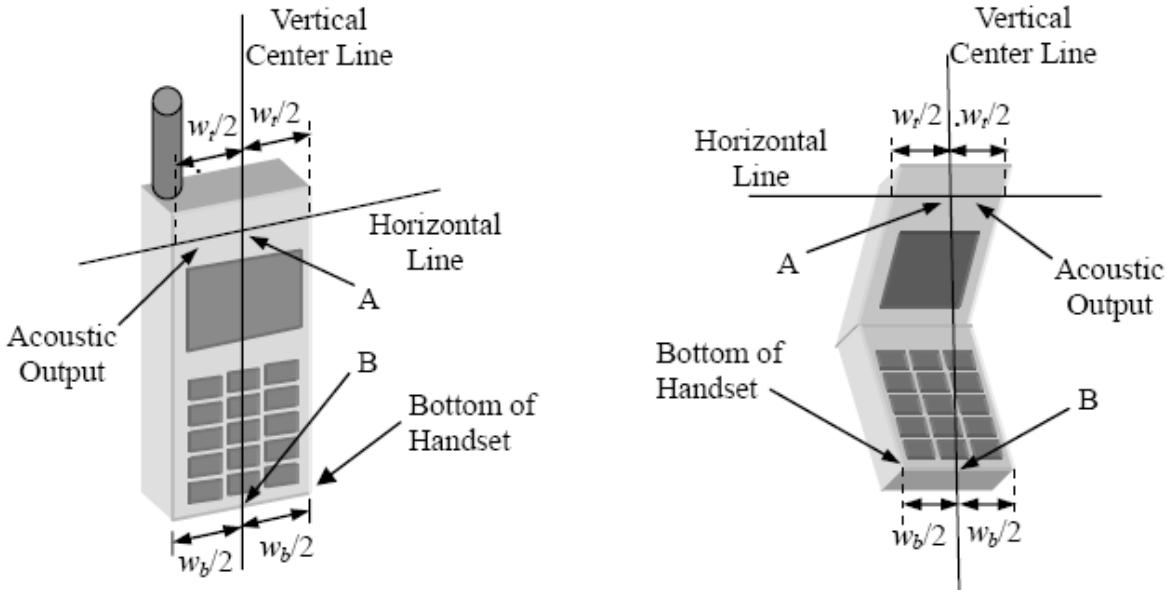


Illustration for Handset Vertical and Horizontal Reference Lines

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).

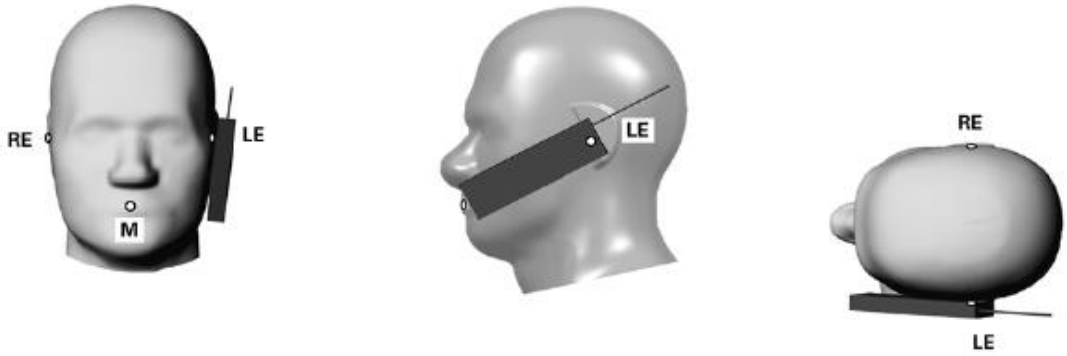


Illustration for Cheek Position

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).

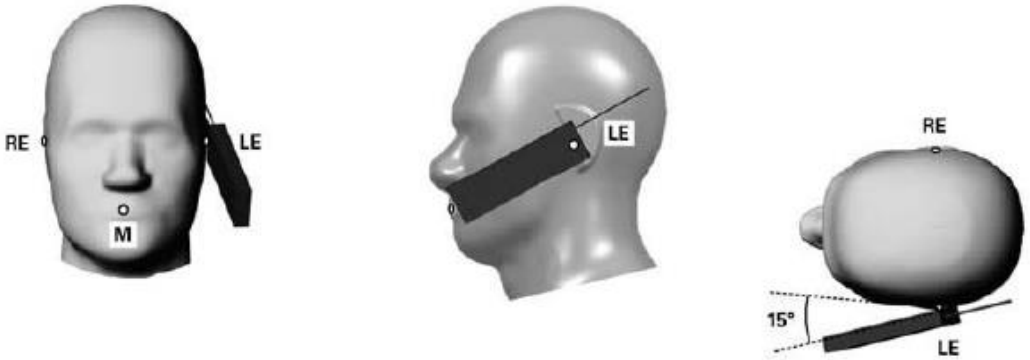


Illustration for Tilted Position

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.

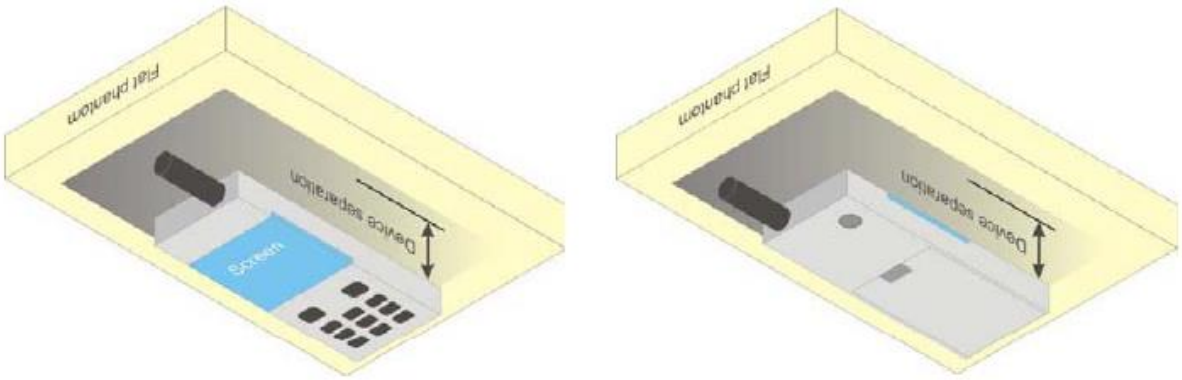
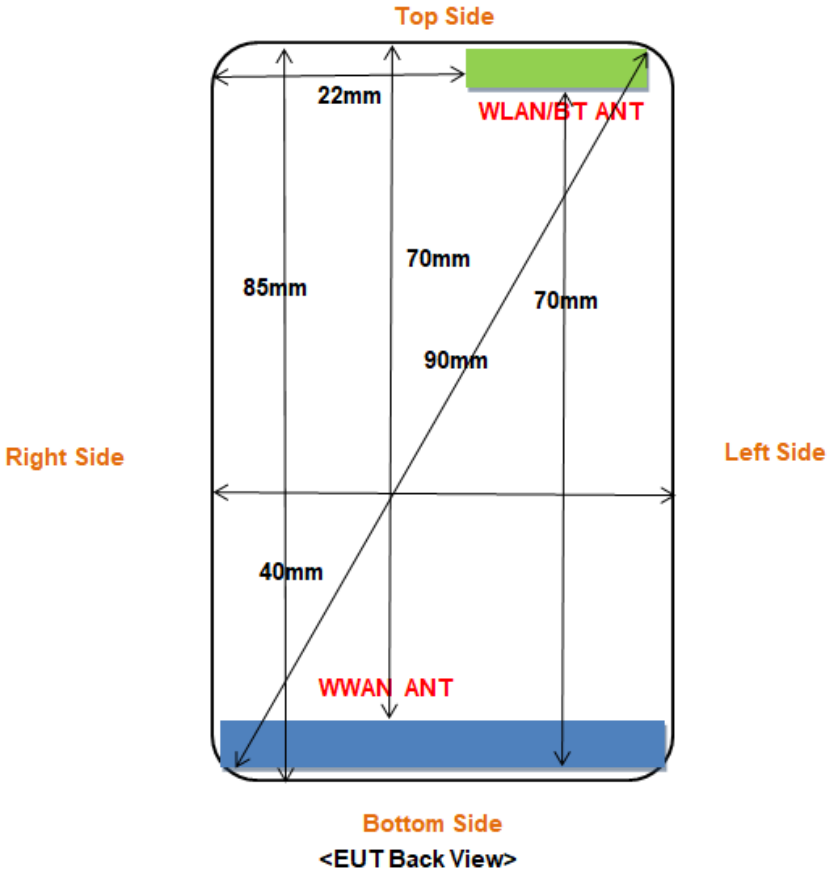


Illustration for Body Position

7.5 EUT Antenna Position



Block Diagram for EUT Antenna Position

Distance of EUT antenna-to-edge/surface(mm), Test distance:5mm						
Antennas	**Front**	**Back**	**Right Side**	**Left Side**	**Top Side**	**Bottom Side**
WWAN	<25	<25	<25	<25	70	<25
WLAN/BT	<25	<25	<25	<25	<25	70

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/BT	Yes	Yes	Yes	Yes

Body SAR tests, Test distance: 5mm						
Antennas	**Front**	**Back**	**Right Side**	**Left Side**	**Top Side**	**Bottom Side**
WWAN	Yes	Yes	Yes	Yes	No	Yes
WLAN/BT	Yes	Yes	Yes	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 5 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	33.09	33.16	**33.16**	33.5	28.51	29.57	**29.90**	30.0
GPRS (1 slot)	33.05	33.10	33.08	33.5	28.47	29.63	29.97	30.0
GPRS (2 slots)	32.11	32.18	**32.19**	32.5	27.60	28.79	29.17	29.5
GPRS (3 slots)	29.94	29.97	29.99	30.0	25.8	27.16	27.55	28.0
GPRS (4 slots)	29.03	29.05	29.03	29.5	24.75	26.24	**26.62**	27.0

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	24.09	24.16	24.16	24.5	19.51	20.57	20.90	21.0
GPRS (1 slot)	24.05	24.10	24.08	24.5	19.47	20.63	20.97	21.0
GPRS (2 slots)	26.11	26.18	**26.19**	26.5	21.60	22.79	23.17	23.5
GPRS (3 slots)	25.69	25.72	25.74	26.0	21.55	22.91	23.30	23.5
GPRS (4 slots)	26.03	26.05	26.03	26.5	21.75	23.24	**23.62**	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	**23.34**	22.92	22.35	23.5	23.30	**23.61**	23.20	24.0
HSDPA Subtest-1	22.57	22.06	21.51	23.0	22.64	22.8	22.46	23.0
HSDPA Subtest-2	22.34	21.90	21.31	22.5	22.51	22.57	22.28	23.0
HSDPA Subtest-3	22.46	21.86	21.27	22.5	22.42	22.60	22.23	23.0
HSDPA Subtest-4	22.44	21.86	21.40	22.5	22.48	22.59	22.3	23.0
HSUPA Subtest-1	22.52	21.8	21.51	23.0	22.47	22.79	22.34	23.0
HSUPA Subtest-2	22.37	21.63	21.41	22.5	22.37	22.56	22.21	23.0
HSUPA Subtest-3	22.33	21.68	21.38	22.5	22.29	22.60	22.19	23.0
HSUPA Subtest-4	22.38	21.67	21.32	22.5	22.33	22.56	22.11	23.0
HSUPA Subtest-5	22.39	21.57	21.33	22.5	22.27	22.58	22.12	23.0

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	15.83	16.0
		CH 06	2437	16.49	16.5
		CH 11	2462	**16.70**	17.0
802.11g	54Mbps	CH 01	2412	14.11	14.5
		CH 06	2437	14.02	14.5
		CH 11	2462	13.88	14.0
802.11n (20MHz)	MCS7	CH 01	2412	14.52	15.0
		CH 06	2437	14.32	14.5
		CH 11	2462	14.14	14.5
802.11n (40MHz)	MCS7	CH 03	2422	12.69	13.0
		CH 06	2437	13.02	13.5
		CH 09	2452	12.88	13.0

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	**5.740**	6.0
Pi/4 QDPSK	2Mbps	5.491	5.5
8DPSK	3Mbps	5.616	6.0

Bluetooth - Maximum Average Power					
Test Mode	**Data Rate**	**Channel**	**Frequency (MHz)**	**Average Power (dBm)**	**Tune-up power (dBm)**
BLE	1Mbps	CH 00	2402	-2.626	-2.5
		CH 19	2440	-2.348	-2.0
		CH 39	2480	-2.317	-2.0

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. 1	GSM	Right Cheek	251	848.8	33.16	33.5	1.081	0.472	**0.510**
	GSM	Right Tilted	251	848.8	33.16	33.5	1.081	0.251	0.271
	GSM	Left Cheek	251	848.8	33.16	33.5	1.081	0.425	0.460
	GSM	Left Tilted	251	848.8	33.16	33.5	1.081	0.233	0.252

GPRS850 – 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					
	GPRS_2TX	Right Cheek	251	848.8	32.19	32.5	1.074	0.616	0.662
	GPRS_2TX	Right Tilted	251	848.8	32.19	32.5	1.074	0.315	0.338
2.	GPRS_2TX	Left Cheek	251	848.8	32.19	32.5	1.074	0.788	**0.846**
	GPRS_2TX	Left Tilted	251	848.8	32.19	32.5	1.074	0.401	0.431

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.	MHz					
3.	GSM	Right Cheek	810	1909.8	29.90	30.0	1.023	0.029	**0.030**
	GSM	Right Tilted	810	1909.8	29.90	30.0	1.023	0.013	0.013
	GSM	Left Cheek	810	1909.8	29.90	30.0	1.023	0.027	0.028
	GSM	Left Tilted	810	1909.8	29.90	30.0	1.023	0.011	0.011

GPRS1900 – 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					
4.	GPRS_4TX	Right Cheek	810	1909.8	26.62	27.0	1.091	0.246	**0.268**
	GPRS_4TX	Right Tilted	810	1909.8	26.62	27.0	1.091	0.139	0.152
	GPRS_4TX	Left Cheek	810	1909.8	26.62	27.0	1.091	0.229	0.250
	GPRS_4TX	Left Tilted	810	1909.8	26.62	27.0	1.091	0.124	0.135

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					
	RMC	Right Cheek	9262	1852.4	23.34	23.5	1.038	0.645	0.669
	RMC	Right Tilted	9262	1852.4	23.34	23.5	1.038	0.317	0.329
5.	RMC	Left Cheek	9262	1852.4	23.34	23.5	1.038	0.746	**0.774**
	RMC	Left Tilted	9262	1852.4	23.34	23.5	1.038	0.365	0.379

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					
6.	RMC	Right Cheek	4183	836.4	23.61	24.0	1.094	0.541	**0.592**
	RMC	Right Tilted	4183	836.4	23.61	24.0	1.094	0.267	0.292
	RMC	Left Cheek	4183	836.4	23.61	24.0	1.094	0.477	0.522
	RMC	Left Tilted	4183	836.4	23.61	24.0	1.094	0.201	0.220

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					
7.	802.11b	Right Cheek	11	2462	16.70	17.0	1.072	0.481	**0.515**
	802.11b	Right Tilted	11	2462	16.70	17.0	1.072	0.193	0.207
	802.11b	Left Cheek	11	2462	16.70	17.0	1.072	0.239	0.256
	802.11b	Left Tilted	11	2462	16.70	17.0	1.072	0.112	0.120

Bluetooth– 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)
			MHz					
8.	Bluetooth	Right Cheek	2480	5.740	6.0	1.062	0.025	**0.027**
	Bluetooth	Right Tilted	2480	5.740	6.0	1.062	0.011	0.012
	Bluetooth	Left Cheek	2480	5.740	6.0	1.062	0.013	0.014
	Bluetooth	Left Tilted	2480	5.740	6.0	1.062	0.008	0.008

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: 5mm)									
Plot No.	**Mode**	**Test Position Body**	**Frequency**		**Output Power (dBm)**	**Rated Limit (dBm)**	**Scaling Factor**	**SAR1g (W/kg)**	**Scaled SAR1g (W/kg)**
			CH.	**MHz**					
9.	GSM	Back	251	848.8	33.16	33.5	1.081	0.613	**0.663**
	GSM	Front	251	848.8	33.16	33.5	1.081	0.374	0.404

GSM1900 – Body SAR Test (Gap: 5mm)									
Plot No.	**Mode**	**Test Position Body**	**Frequency**		**Output Power (dBm)**	**Rated Limit (dBm)**	**Scaling Factor**	**SAR1g (W/kg)**	**Scaled SAR1g (W/kg)**
			CH.	**MHz**					
10.	GSM	Back	810	1909.8	29.90	30.0	1.023	0.021	**0.021**
	GSM	Front	810	1909.8	29.90	30.0	1.023	0.015	0.015

WCDMA Band 2 – Body SAR Test (Gap: 5mm)									
Plot No.	**Mode**	**Test Position Body**	**Frequency**		**Output Power (dBm)**	**Rated Limit (dBm)**	**Scaling Factor**	**SAR1g (W/kg)**	**Scaled SAR1g (W/kg)**
			CH.	**MHz**					
11.	RMC 12.2k	Back Side	9262	1852.4	23.34	23.5	1.038	0.297	**0.308**
	RMC 12.2k	Front Face	9262	1852.4	23.34	23.5	1.038	0.162	0.168

WCDMA Band 5 – Body SAR Test (Gap: 5mm)									
Plot No.	**Mode**	**Test Position Body**	**Frequency**		**Output Power (dBm)**	**Rated Limit (dBm)**	**Scaling Factor**	**SAR1g (W/kg)**	**Scaled SAR1g (W/kg)**
			CH.	**MHz**					
12.	RMC 12.2k	Back Side	4183	836.4	23.61	24.0	1.094	0.619	**0.677**
	RMC 12.2k	Front Side	4183	836.4	23.61	24.0	1.094	0.480	0.525

WLAN 2.4GHz –Body SAR Test(Gap: 5mm)									
Plot No.	**Mode**	**Test Position Body**	**Frequency**		**Output Power (dBm)**	**Rated Limit (dBm)**	**Scaling Factor**	**SAR1g (W/kg)**	**Scaled SAR1g (W/kg)**
			CH.	**MHz**					
13.	802.11b	Back Side	11	2462	16.70	17.0	1.072	0.375	**0.402**
	802.11b	Front Side	11	2462	16.70	17.0	1.072	0.166	0.178

Bluetooth–Body SAR Test(Gap: 5mm)								
Plot No.	Mode	Test Position Head	Frequency MHz	Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
14.	Bluetooth	Back Side	2480	5.740	6.0	1.062	0.017	**0.018**
	Bluetooth	Front Side	2480	5.740	6.0	1.062	0.009	0.010

Hotspot SAR

GPRS850 – Body SAR Test (Gap: 5mm)									
Plot No.	Mode	Test Position Body	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
15.	GPRS_2TX	Back Side	251	848.8	32.19	32.5	1.074	0.999	**1.073**
	GPRS_2TX	Front Side	251	848.8	32.19	32.5	1.074	0.605	0.650
	GPRS_2TX	Right side	251	848.8	32.19	32.5	1.074	0.505	0.542
	GPRS_2TX	Left side	251	848.8	32.19	32.5	1.074	0.167	0.179
	GPRS_2TX	Bottom side	251	848.8	32.19	32.5	1.074	0.610	0.655
	GPRS_2TX	Back Face	128	824.2	32.11	32.5	1.094	0.978	1.070
	GPRS_2TX	Back Face	190	836.6	32.18	32.5	1.076	0.701	0.755

GPRS1900 – Body SAR Test (Gap: 5mm)									
Plot No.	Mode	Test Position Body	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
16.	GPRS_4TX	Back Side	810	1909.8	26.62	27.0	1.091	0.182	**0.199**
	GPRS_4TX	Front Side	810	1909.8	26.62	27.0	1.091	0.124	0.135
	GPRS_4TX	Right side	810	1909.8	26.62	27.0	1.091	0.041	0.045
	GPRS_4TX	Left side	810	1909.8	26.62	27.0	1.091	0.040	0.044
	GPRS_4TX	Bottom side	810	1909.8	26.62	27.0	1.091	0.046	0.050

WCDMA Band 2 – Body SAR Test (Gap: 5mm)									
Plot No.	Mode	Test Position Body	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
17.	RMC 12.2k	Back Side	9262	1852.4	23.34	23.5	1.038	0.297	**0.308**
	RMC 12.2k	Front Side	9262	1852.4	23.34	23.5	1.038	0.162	0.168
	RMC 12.2k	Right side	9262	1852.4	23.34	23.5	1.038	0.063	0.065
	RMC 12.2k	Left side	9262	1852.4	23.34	23.5	1.038	0.079	0.082
	RMC 12.2k	Bottom side	9262	1852.4	23.34	23.5	1.038	0.076	0.079

WCDMA Band 5 – Body SAR Test(Gap: 5mm)									
Plot No.	Mode	Test Position Body	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
18.	RMC 12.2k	Back Side	4183	836.4	23.61	24.0	1.094	0.619	**0.677**
	RMC 12.2k	Front Side	4183	836.4	23.61	24.0	1.094	0.480	0.525
	RMC 12.2k	Right side	4183	836.4	23.61	24.0	1.094	0.178	0.195
	RMC 12.2k	Left side	4183	836.4	23.61	24.0	1.094	0.114	0.125
	RMC 12.2k	Bottom side	4183	836.4	23.61	24.0	1.094	0.218	0.238

WLAN 2.4GHz –Body SAR Test(Gap: 5mm)									
Plot No.	Mode	Test Position Body	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
19.	802.11b	Back Side	11	2462	16.70	17.0	1.072	0.375	**0.402**
	802.11b	Front Side	11	2462	16.70	17.0	1.072	0.166	0.178
	802.11b	Right side	11	2462	16.70	17.0	1.072	0.048	0.051
	802.11b	Left side	11	2462	16.70	17.0	1.072	0.121	0.130
	802.11b	Top side	11	2462	16.70	17.0	1.072	0.087	0.093

Bluetooth–Body SAR Test(Gap: 5mm)								
Plot No.	Mode	Test Position Head	Frequency	Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			MHz					
20.	Bluetooth	Back Side	2480	5.740	6.0	1.062	0.017	**0.018**
	Bluetooth	Front Side	2480	5.740	6.0	1.062	0.009	0.010
	Bluetooth	Right side	2480	5.740	6.0	1.062	0.004	0.004
	Bluetooth	Left side	2480	5.740	6.0	1.062	0.007	0.007
	Bluetooth	Top side	2480	5.740	6.0	1.062	0.008	0.008

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)+ WLAN(2.4G)(Data)	Yes	Yes
3	GSM(Voice/Data) + Bluetooth(Data)	Yes	Yes
4	WCDMA (Voice/Data) + Bluetooth(Data)	Yes	Yes

Remark:

1. GSM and WCDMA share the same antenna, and cannot transmit simultaneously.
2. WLAN and Bluetooth share the same antenna, and cannot transmit simultaneously.
3. 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	0.662	**0.515**	1.177
Right Tilted	GSM	0.338	0.207	0.545
Left Cheek	GSM	**0.846**	0.256	1.102
Left Tilted	GSM	0.431	0.120	0.551
Right Cheek	WCDMA	0.669	**0.515**	**1.184**
Right Tilted	WCDMA	0.329	0.207	0.536
Left Cheek	WCDMA	**0.774**	0.256	1.030
Left Tilted	WCDMA	0.379	0.120	0.499

WWAN and Bluetooth

	WWAN		Bluetooth	Summed SAR (W/kg)
Position	Band	Scaled SAR (W/kg)	Scaled SAR (W/kg)	
Right Cheek	GSM	0.662	**0.027**	0.689
Right Tilted	GSM	0.338	0.012	0.350
Left Cheek	GSM	**0.846**	0.014	**0.860**
Left Tilted	GSM	0.431	0.008	0.439
Right Cheek	WCDMA	0.669	**0.027**	0.696
Right Tilted	WCDMA	0.329	0.012	0.341
Left Cheek	WCDMA	**0.774**	0.014	0.788
Left Tilted	WCDMA	0.379	0.008	0.387

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	**0.663**	**0.402**	1.065
Front	GSM	0.404	0.178	0.582
Back	WCDMA	**0.677**	**0.402**	**1.079**
Front	WCDMA	0.525	0.178	0.703

WWAN and Bluetooth

	WWAN		Bluetooth	Summed SAR (W/kg)
Position	**Band**	**Scaled SAR (W/kg)**	**Scaled SAR (W/kg)**	
Back	GSM	**0.663**	**0.018**	0.681
Front	GSM	0.404	0.010	0.414
Back	WCDMA	**0.677**	**0.018**	**0.695**
Front	WCDMA	0.525	0.010	0.535

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	**1.073**	**0.402**	**1.475**
Front	GSM	0.650	0.178	0.828
Right side	GSM	0.542	0.051	0.593
Left side	GSM	0.179	0.130	0.309
Top side	GSM	--	0.093	0.093
Bottom side	GSM	0.655	--	0.655
Back	WCDMA	**0.677**	**0.402**	1.079
Front	WCDMA	0.525	0.178	0.703
Right side	WCDMA	0.195	0.051	0.246
Left side	WCDMA	0.125	0.130	0.255
Top side	WCDMA	--	0.093	0.093
Bottom side	WCDMA	0.238	--	0.238

WWAN and Bluetooth

	WWAN		Bluetooth	Summed SAR (W/kg)
Position	**Band**	**Scaled SAR (W/kg)**	**Scaled SAR (W/kg)**	
Back	GSM	**1.073**	**0.018**	**1.091**
Front	GSM	0.650	0.010	0.660
Right side	GSM	0.542	0.004	0.546
Left side	GSM	0.179	0.007	0.186
Top side	GSM	--	0.008	0.008
Bottom side	GSM	0.655	--	0.655
Back	WCDMA	**0.677**	**0.018**	0.695
Front	WCDMA	0.525	0.010	0.535
Right side	WCDMA	0.195	0.004	0.199
Left side	WCDMA	0.125	0.007	0.132
Top side	WCDMA	--	0.008	0.008
Bottom side	WCDMA	0.238	--	0.238

10. Measurement Uncertainty

10.1 Uncertainty for SAR Test

a	b	c	d	e= f(d,k)	f	g	h= c*f/e	i= c*g/e	k
Uncertainty Component	**Sec.**	**Tol (+- %)**	**Prob. Dist.**	**Div.**	**Ci (1g)**	**Ci (10g)**	**1g Ui (+-%)**	**10g Ui (+-%)**	**Vi**
Measurement System									
Probe calibration	E.2.1	7.0	N	1	1	1	7.00	7.00	∝
Axial Isotropy	E.2.2	2.5	R	√3	(1_Cp)^1/2	(1_Cp)^1/2	1.02	1.02	∝
Hemispherical Isotropy	E.2.2	4.0	R	√3	(Cp)^1/2	(Cp)^1/2	1.63	1.63	∝
Boundary effect	E.2.3	1.0	R	√3	1	1	0.58	0.58	∝
Linearity	E.2.4	5.0	R	√3	1	1	2.89	2.89	∝
System detection limits	E.2.5	1.0	R	√3	1	1	0.58	0.58	∝
Readout Electronics	E.2.6	0.02	N	1	1	1	0.02	0.02	∝
Reponse Time	E.2.7	3.0	R	√3	1	1	1.73	1.73	∝
Integration Time	E.2.8	2.0	R	√3	1	1	1.15	1.15	∝
RF ambient Conditions – Noise	E.6.1	0	R	√3	1	1	1.73	1.73	∝
RF ambient Conditions - Reflections	E.6.1	0	R	√3	1	1	1.73	1.73	∝
Probe positioner Mechanical Tolerance	E.6.2	2.0	R	√3	1	1	1.15	1.15	∝
Probe positioning with respect to Phantom Shell	E.6.3	0.05	R	√3	1	1	0.03	0.03	∝
Extrapolation, interpolation and integration Algoritms for Max. SAR Evaluation	E.5	5.0	R	√3	1	1	2.89	2.89	∝
Test Sample Related									
Test sample positioning	E.4.2	0.03	N	1	1	1	0.03	0.03	N–1
Device Holder Uncertainty	E.4.1	5.00	N	1	1	1	5.00	5.00	
Output power Variation - SAR drift measurement	E.2.9	12.02	R	√3	1	1	6.94	6.94	∝
SAR scaling	E6.5	0.0	R	√3	1	1	0.0	0.0	∝
Phantom and Tissue Parameters									
Phantom Uncertainty (Shape and thickness tolerances)	E.3.1	0.05	R	√3	1	1	0.03	0.03	∝
Uncertainty in SAR correction for deviations in permittivity and conductivity	E3.2	1.9	R	√3	1	0.84	1.10	0.90	∝

Liquid conductivity - deviation from target value	E.3.2	5.00	R	√3	0.64	0.43	1.85	1.24	∝
Liquid conductivity - measurement uncertainty	E.3.3	5.00	N	1	0.64	0.43	3.20	2.15	∝
Liquid permittivity - deviation from target value	E.3.2	0.37	R	√3	0.6	0.49	0.13	0.10	∝
Liquid permittivity - measurement uncertainty	E.3.3	10.00	N	1	0.6	0.49	6.00	4.90	∝
Combined Standard Uncertainty			RSS				10.20	10.00	
Expanded Uncertainty (95% Confidence interval)			K=2				20.40	20.00	

Annex A. Plots of System Performance Check

MEASUREMENT 1

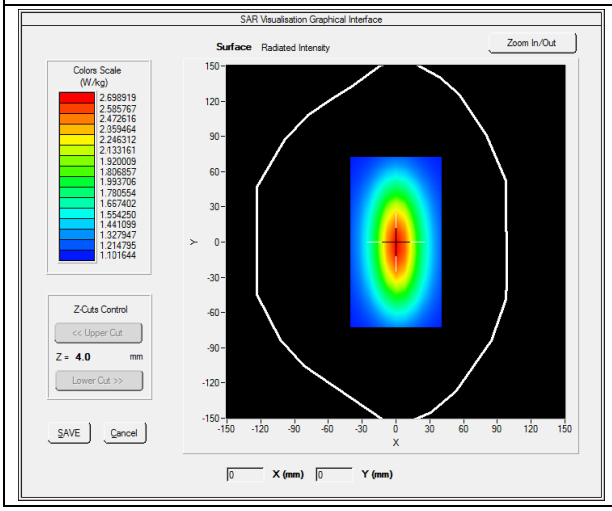
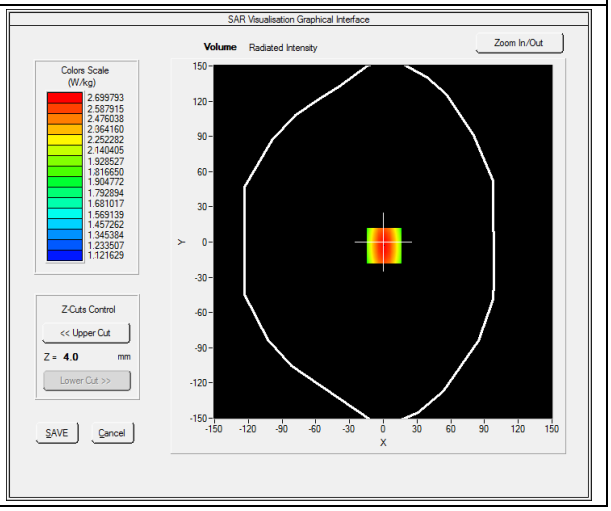
Type: Validation measurement (Fast, 75.00 %)
Measurement duration: 12 minutes 21 seconds
E-field Probe: SSE2 - SN 18/21 EPGO356; ConvF: 1.71; Calibrated: 2021-07-16

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)	42.382156
Conductivity (S/m)	0.880439
Power Variation (%)	1.420000
Ambient Temperature	22.8
Liquid Temperature	22.8

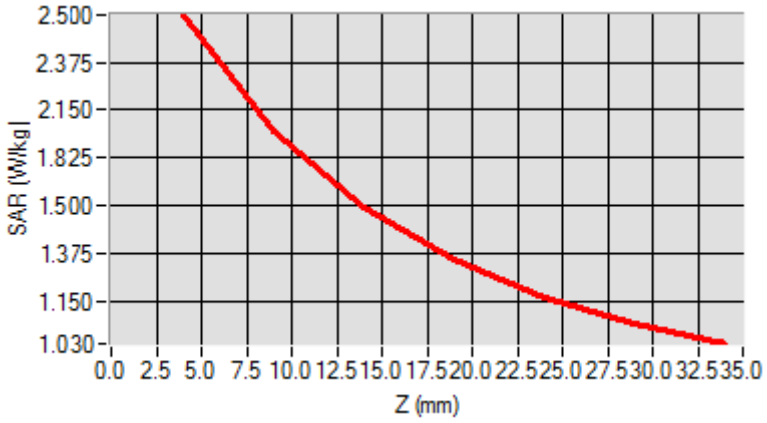
SURFACE SAR	VOLUME SAR
	

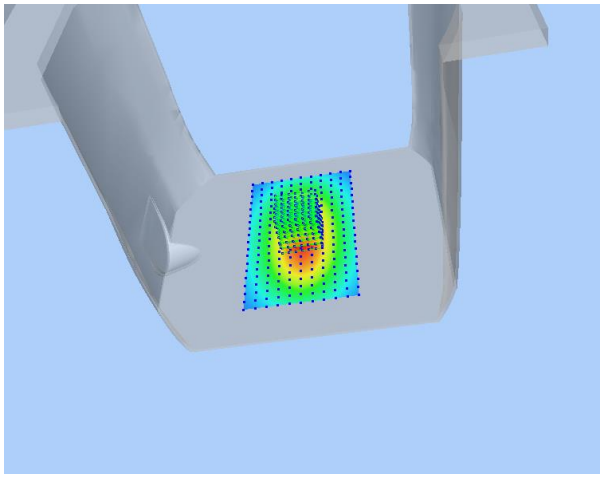
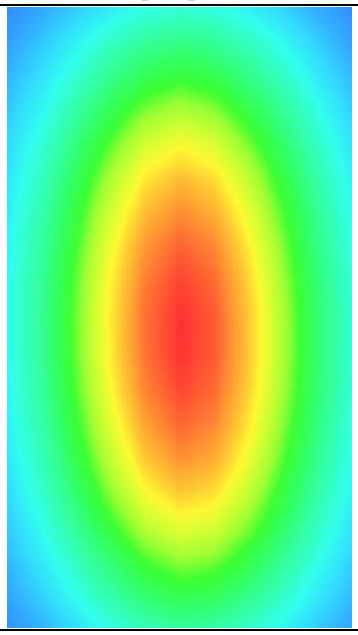
Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	1.581074
SAR 1g (W/Kg)	2.470352

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

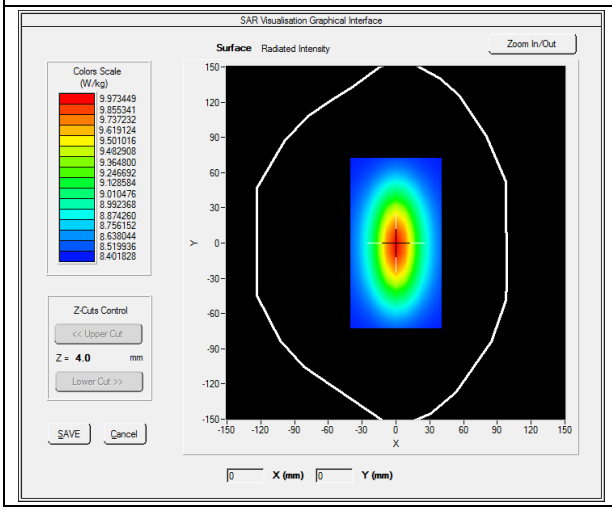
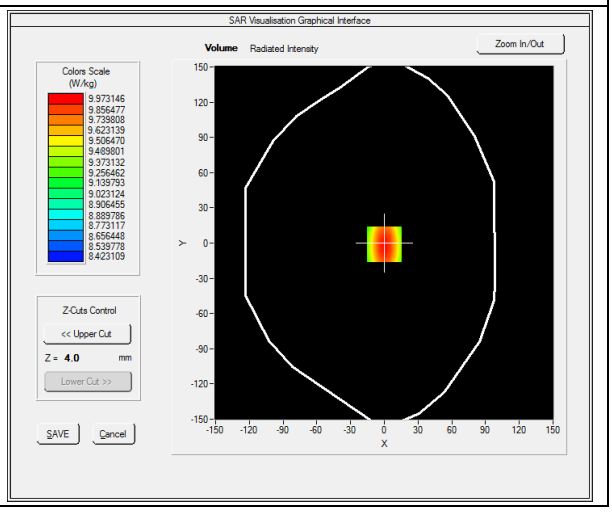
Measurement duration: 12 minutes 21 seconds
E-field Probe: SSE2 - SN 18/21 EPGO356; ConvF: 2.11; Calibrated: 2021-07-16

A. Experimental conditions

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

B. SAR Measurement Results

Frequency (MHz)	1800.000000
Relative Permittivity (real part)	40.713090
Conductivity (S/m)	1.392510
Power Variation (%)	1.041232
Ambient Temperature	22.0
Liquid Temperature	22.2

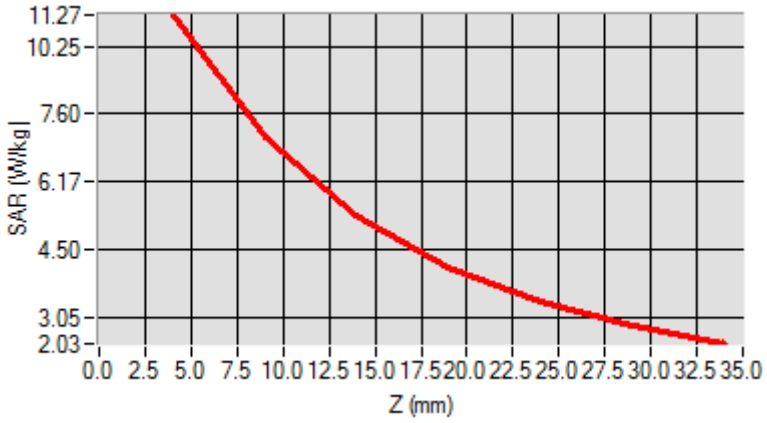
SURFACE SAR	VOLUME SAR
	

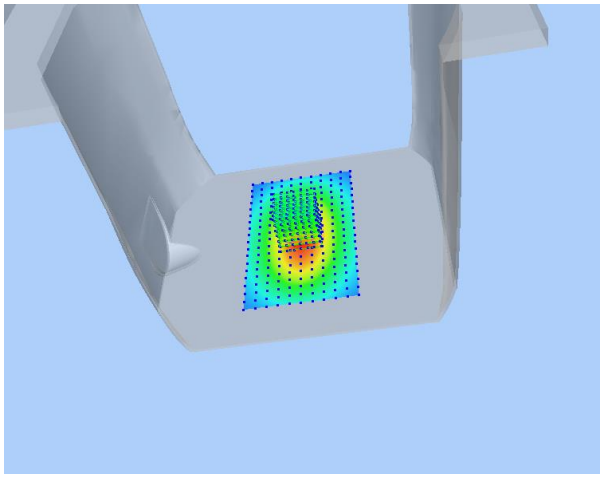
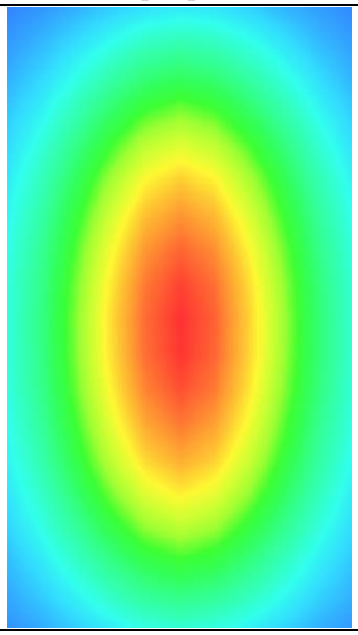
Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	5.081252
SAR 1g (W/Kg)	9.461217

Z Axis Scan

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



3D screen shot	Hot spot position
	

MEASUREMENT 3

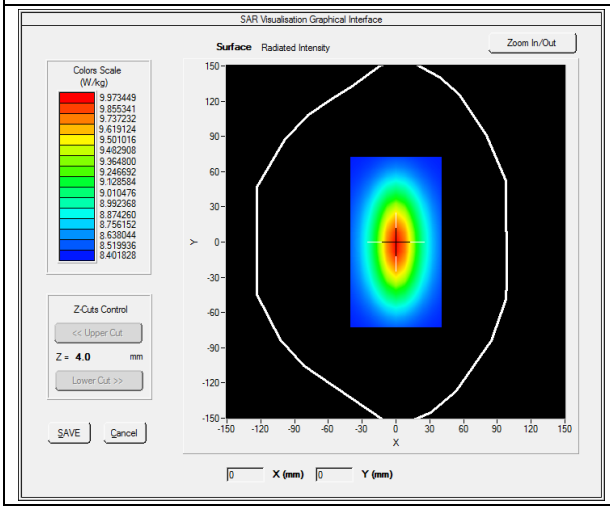
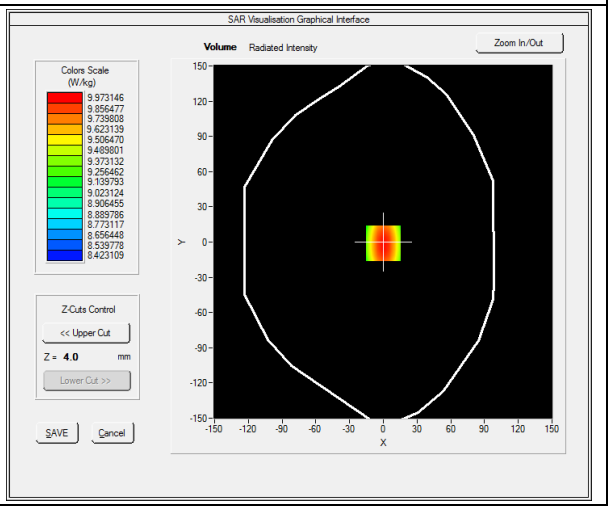
Type: Validation measurement (Fast, 75.00 %)
Measurement duration: 12 minutes 21 seconds
E-field Probe: SSE2 - SN 18/21 EPGO356; ConvF: 2.21; Calibrated: 2021-07-16

A. Experimental conditions

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

B. SAR Measurement Results

Frequency (MHz)	1900.000000
Relative Permittivity (real part)	40.764379
Conductivity (S/m)	1.413746
Power Variation (%)	-1.710000
Ambient Temperature	22.5
Liquid Temperature	22.5

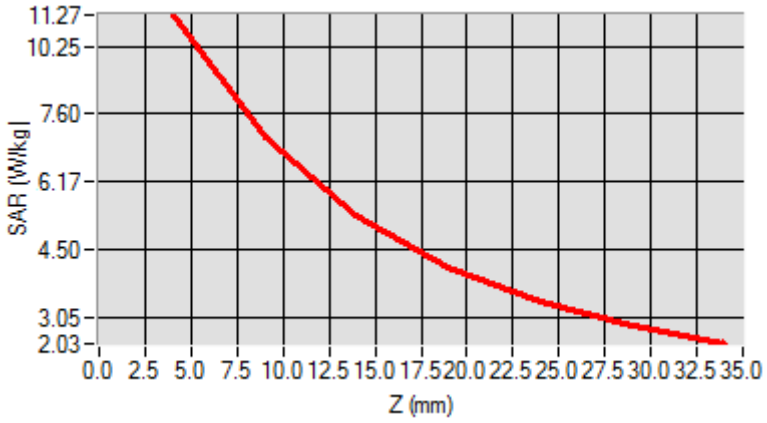
SURFACE SAR	VOLUME SAR
	

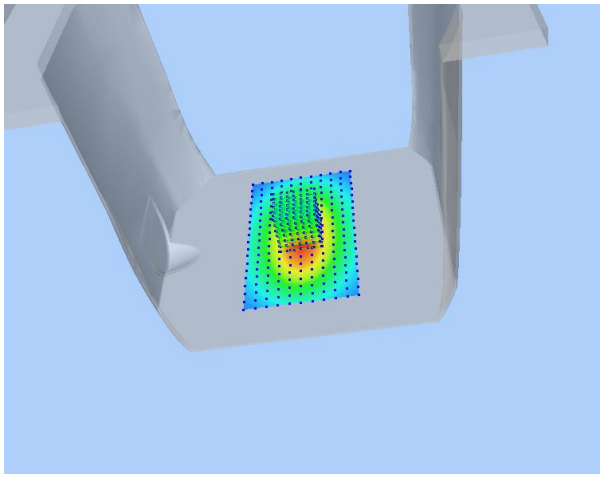
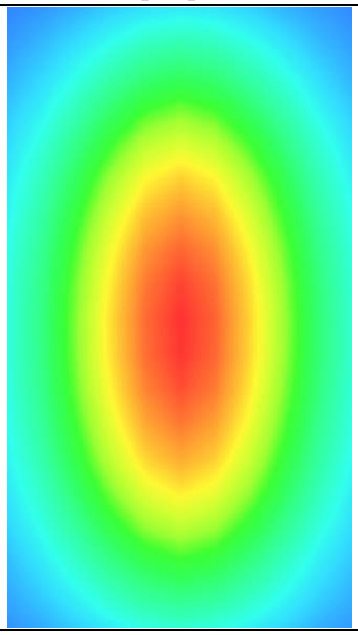
Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	5.281504
SAR 1g (W/Kg)	9.970523

Z Axis Scan

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



3D screen shot	Hot spot position
	

MEASUREMENT 4

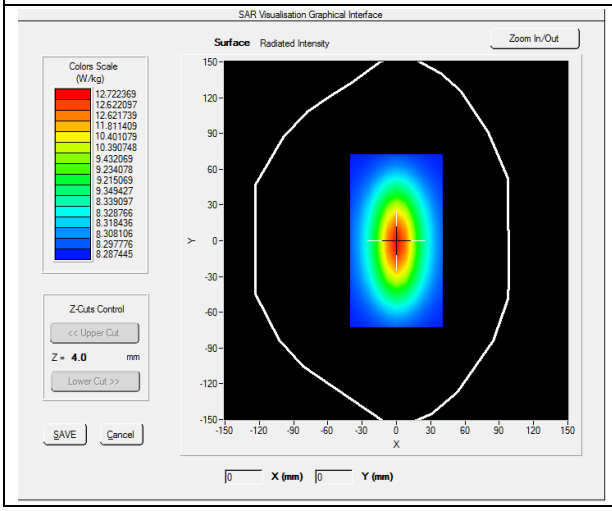
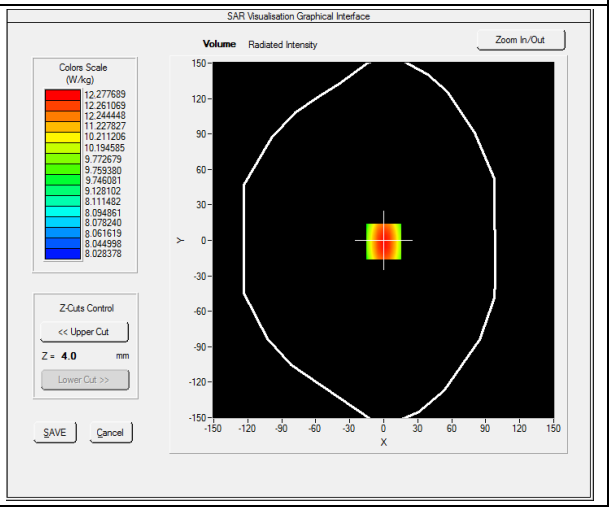
Type: Validation measurement (Fast, 75.00 %)
Measurement duration: 12 minutes 21 seconds
E-field Probe: SSE2 - SN 18/21 EPGO356; ConvF: 2.29; Calibrated: 2021-07-16

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Dipole
Band	CW2450
Signal	CW (Crest factor: 1.0)

B. SAR Measurement Results

Frequency (MHz)	2450.000000
Relative Permittivity (real part)	39.850317
Conductivity (S/m)	1.783504
Power Variation (%)	-1.220000
Ambient Temperature	22.3
Liquid Temperature	22.3

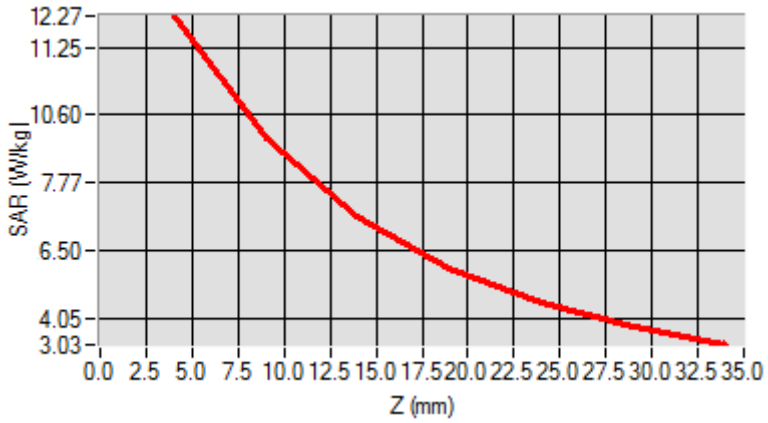
SURFACE SAR	VOLUME SAR
	

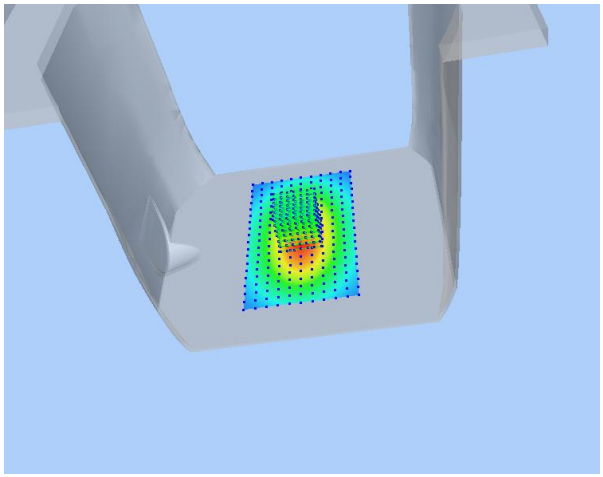
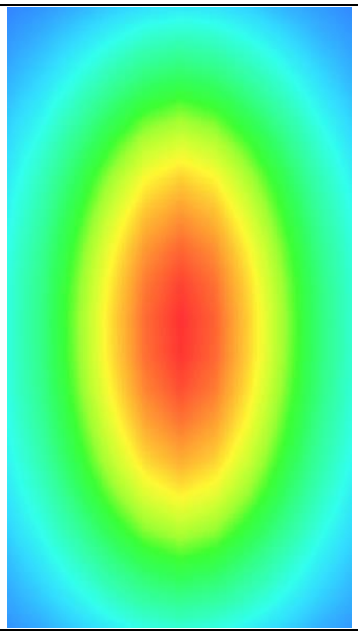
Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	6.053726
SAR 1g (W/Kg)	13.561382

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	12.2365	10.3321	8.4512	6.4365	5.6123	3.5621



3D screen shot	Hot spot position
	

Annex B. Plots of SAR Measurement

MEASUREMENT 1

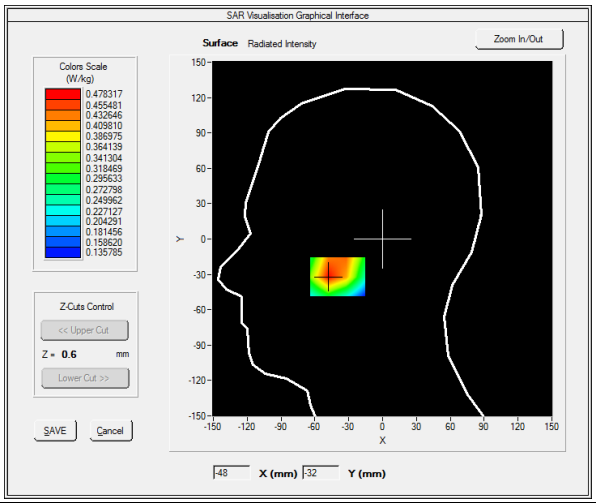
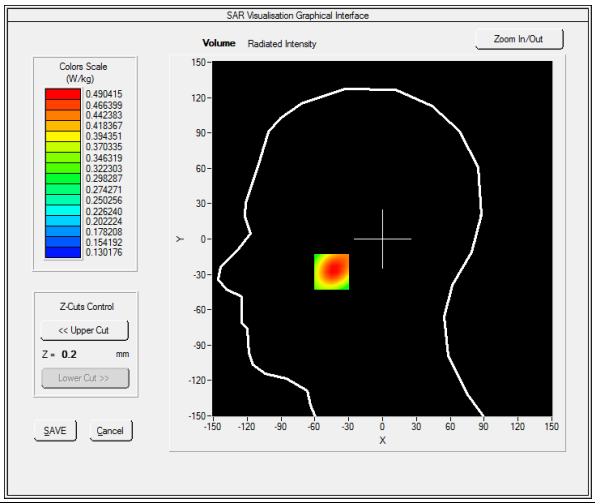
Type: Phone measurement (Complete)
Date of measurement: 2022-03-21
Measurement duration: 12 minutes 3 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Phantom	Right head
Device Position	Cheek
Band	GSM850
Channels	High
Signal	TDMA (Crest factor: 8.0)

B. SAR Measurement Results

Frequency (MHz)	848.800000
Relative Permittivity (real part)	42.380415
Conductivity (S/m)	0.884808
Power Variation (%)	-0.640000
Ambient Temperature	22.8
Liquid Temperature	22.8

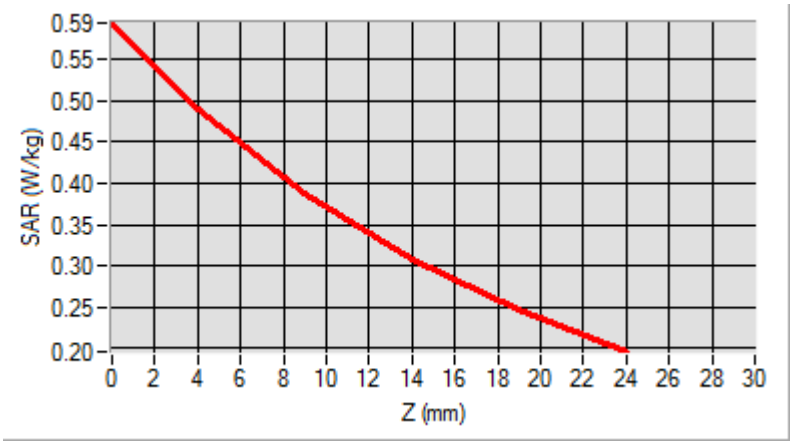
SURFACE SAR	VOLUME SAR
	

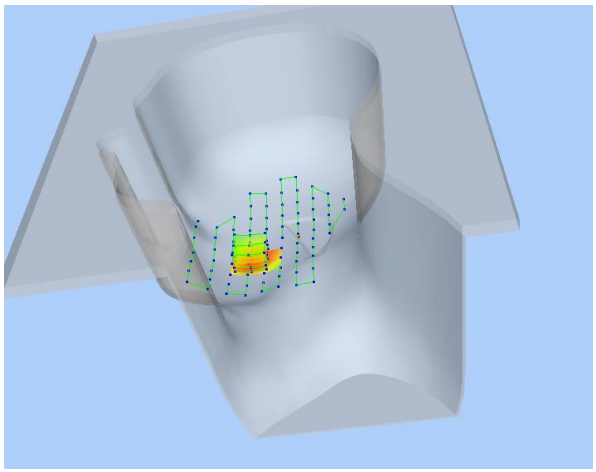
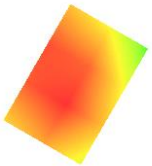
Maximum location: X=-45.00, Y=-28.00

SAR Peak: 0.60 W/kg

SAR 10g (W/Kg)	0.353541
SAR 1g (W/Kg)	0.471544

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.5936	0.4904	0.3870	0.3076	0.2464



3D screen shot	Hot spot position
	

MEASUREMENT 2

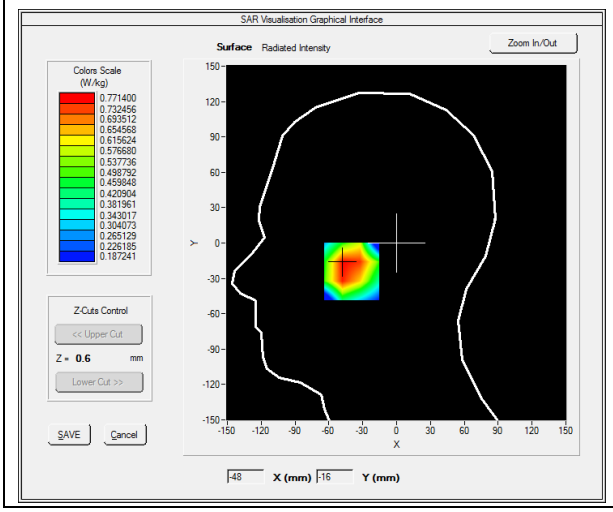
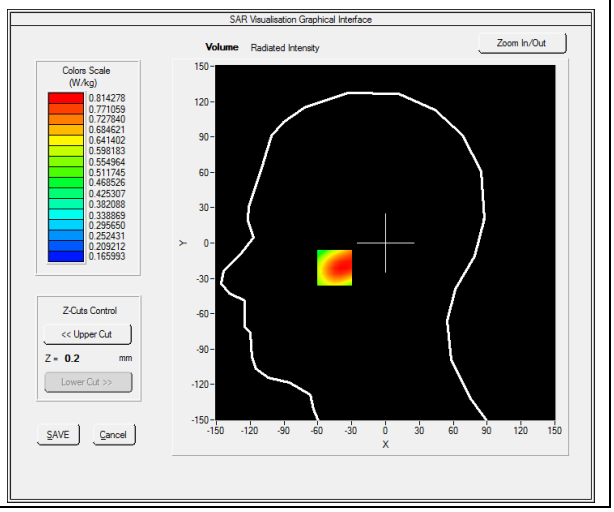
Type: Phone measurement (Complete)
Date of measurement: 2022-03-21
Measurement duration: 12 minutes 3 seconds

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt
Phantom	Left head
Device Position	Cheek
Band	GPRS850_2TX
Channels	High
Signal	Duty Cycle: 1:4

B. SAR Measurement Results

Frequency (MHz)	848.800000
Relative Permittivity (real part)	42.380415
Conductivity (S/m)	0.884808
Power Variation (%)	1.530000
Ambient Temperature	22.8
Liquid Temperature	22.8

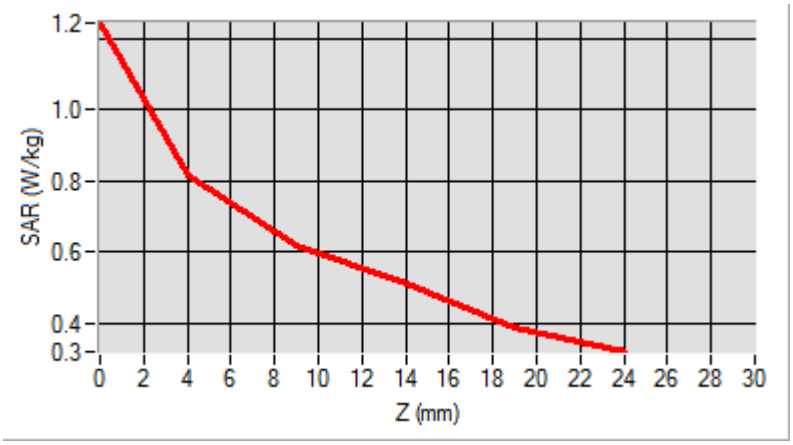
SURFACE SAR	VOLUME SAR
	

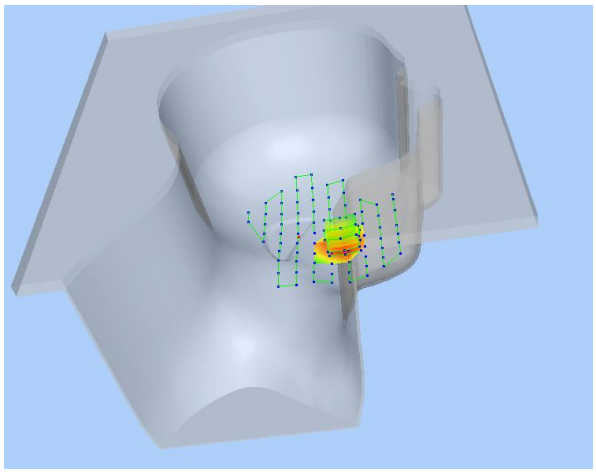
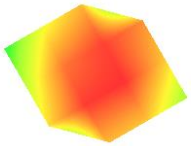
Maximum location: X=-45.00, Y=-21.00

SAR Peak: 1.06 W/kg

SAR 10g (W/Kg)	0.582647
SAR 1g (W/Kg)	0.788372

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.2449	0.8143	0.6175	0.5143	0.3878



3D screen shot	Hot spot position
	

MEASUREMENT 3

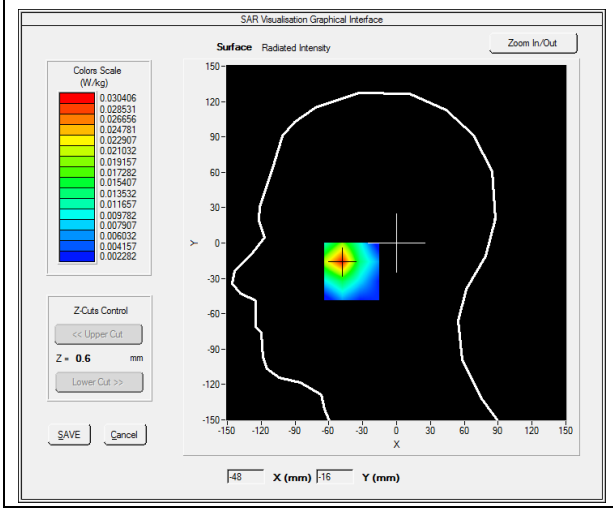
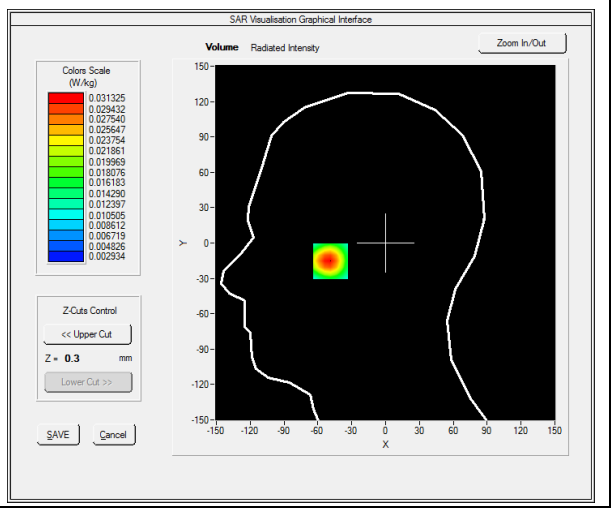
Type: Phone measurement (Complete)
Date of measurement: 2022-03-21
Measurement duration: 12 minutes 21 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Phantom	Right head
Device Position	Cheek
Band	GSM1900
Channels	High
Signal	TDMA (Crest factor: 8.0)

B. SAR Measurement Results

Frequency (MHz)	1909.800000
Relative Permittivity (real part)	40.761854
Conductivity (S/m)	1.414017
Power Variation (%)	-0.520000
Ambient Temperature	22.8
Liquid Temperature	22.8

SURFACE SAR	VOLUME SAR
	

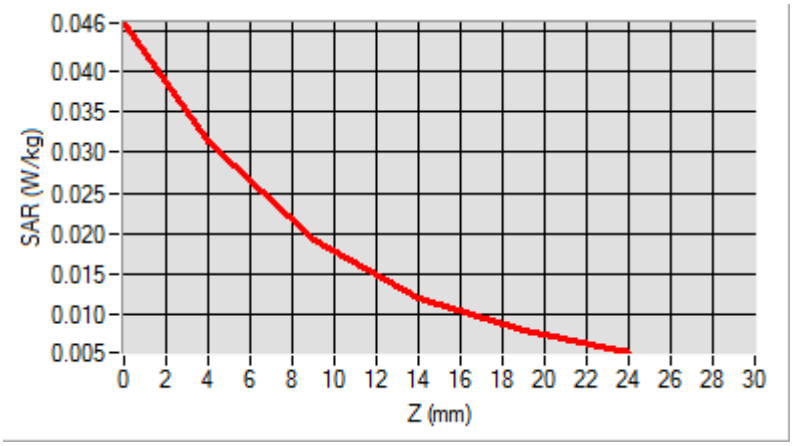
Maximum location: X=-49.00, Y=-15.00

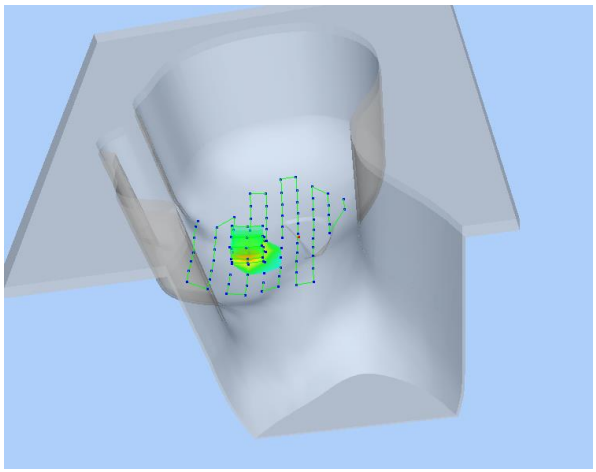
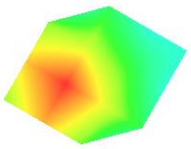
SAR Peak: 0.05 W/kg

SAR 10g (W/Kg)	**0.016672**

SAR 1g (W/Kg)	0.029033

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0460	0.0313	0.0192	0.0121	0.0080



3D screen shot	Hot spot position
	

MEASUREMENT 4

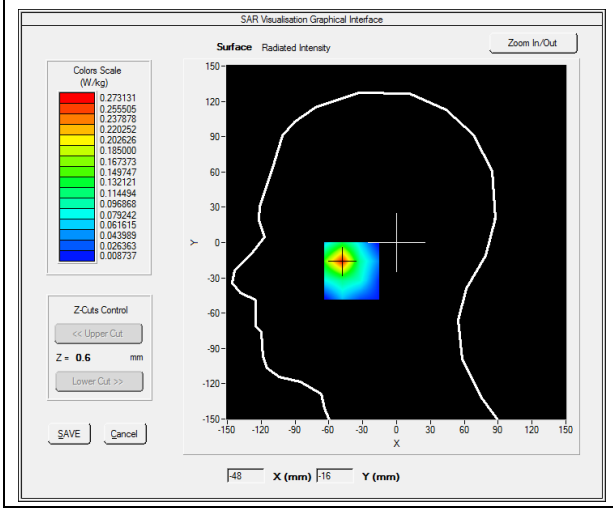
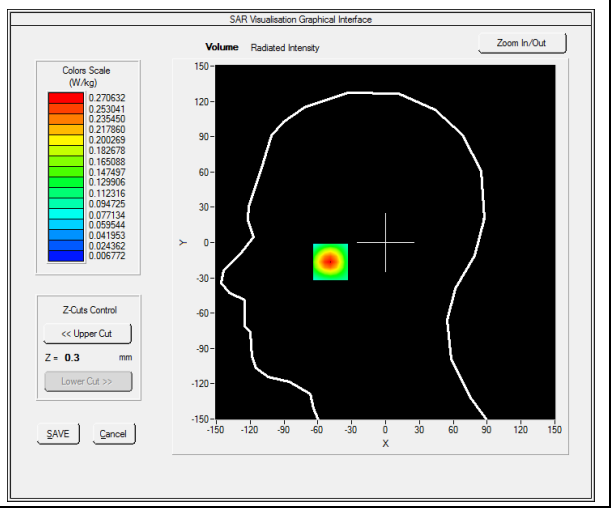
Type: Phone measurement (Complete)
Date of measurement: 2022-03-21
Measurement duration: 12 minutes 3 seconds

A. Experimental conditions

Area Scan	sam_direct_droit2_surf8mm.txt
Phantom	Right head
Device Position	Cheek
Band	GPRS1900_4TX
Channels	High
Signal	Duty Cycle: 1:2

B. SAR Measurement Results

Frequency (MHz)	1909.800000
Relative Permittivity (real part)	40.761854
Conductivity (S/m)	1.414017
Power Variation (%)	1.130000
Ambient Temperature	22.8
Liquid Temperature	22.8

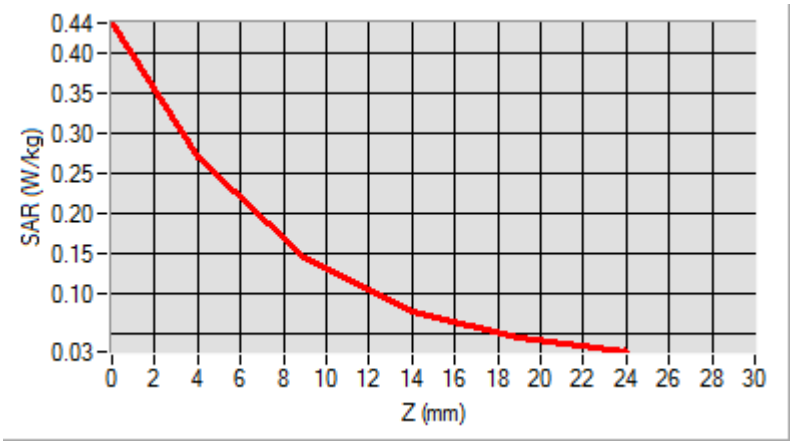
SURFACE SAR	**VOLUME SAR**
	

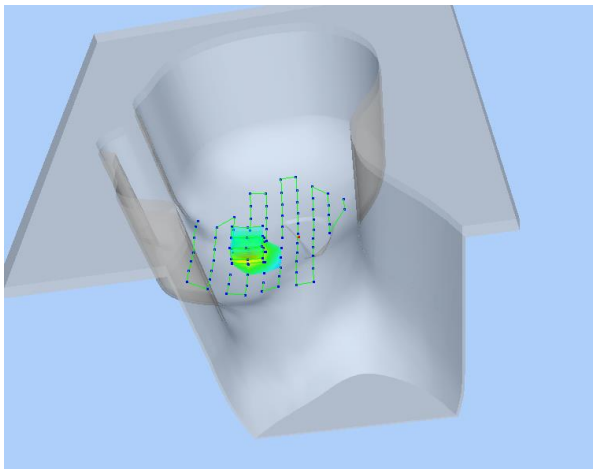
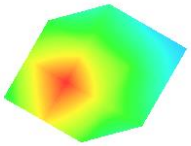
Maximum location: X=-49.00, Y=-16.00

SAR Peak: 0.44 W/kg

SAR 10g (W/Kg)	0.126299
SAR 1g (W/Kg)	0.245814

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.4387	0.2706	0.1435	0.0772	0.0446



3D screen shot	Hot spot position
	

MEASUREMENT 5

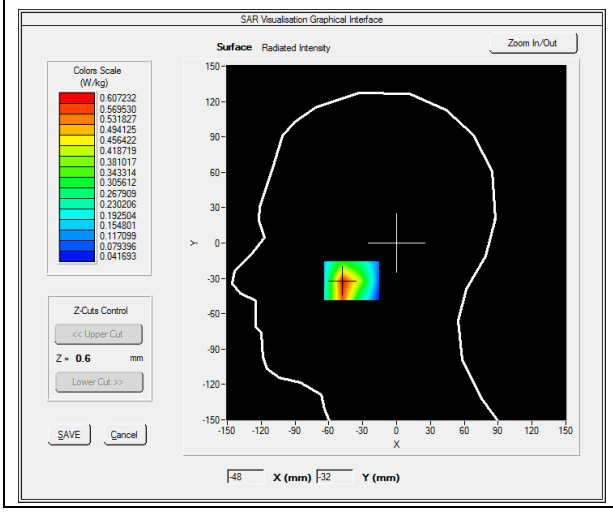
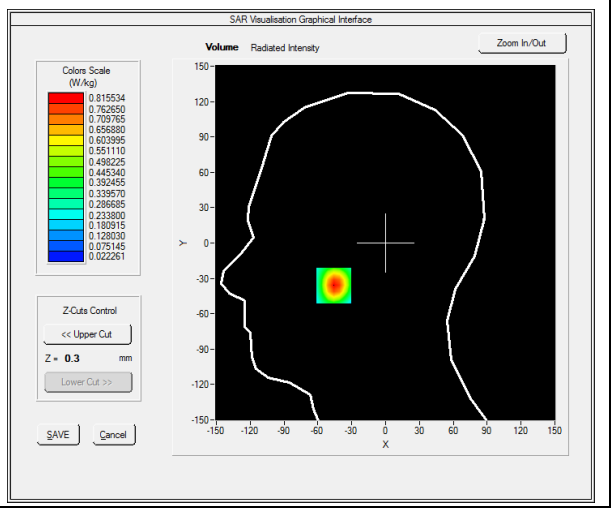
Type: Phone measurement (Complete)
Date of measurement: 2022-03-21
Measurement duration: 12 minutes 21 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Phantom	Left 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)	40.761854
Conductivity (S/m)	1.414017
Power Variation (%)	-1.400000
Ambient Temperature	22.8
Liquid Temperature	22.8

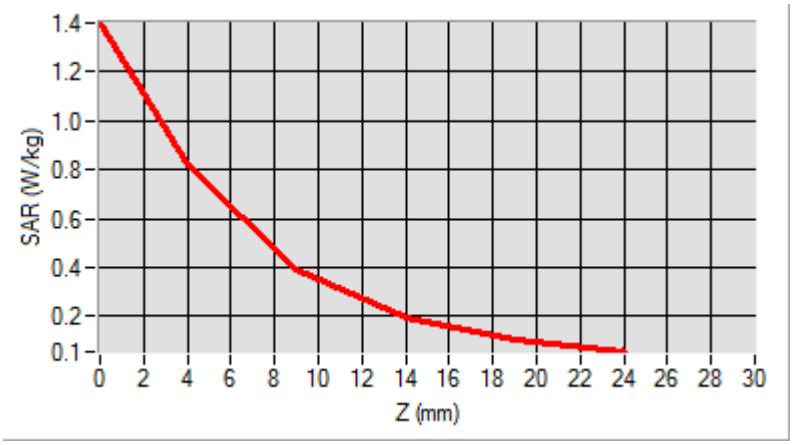
SURFACE SAR	VOLUME SAR
	

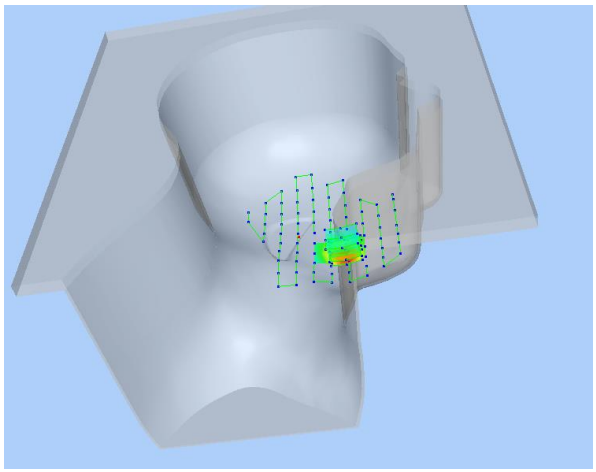
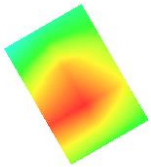
Maximum location: X=-46.00, Y=-36.00

SAR Peak: 1.40 W/kg

SAR 10g (W/Kg)	0.366815
SAR 1g (W/Kg)	0.746081

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.4010	0.8155	0.3942	0.1904	0.1003



3D screen shot	Hot spot position
	

MEASUREMENT 6

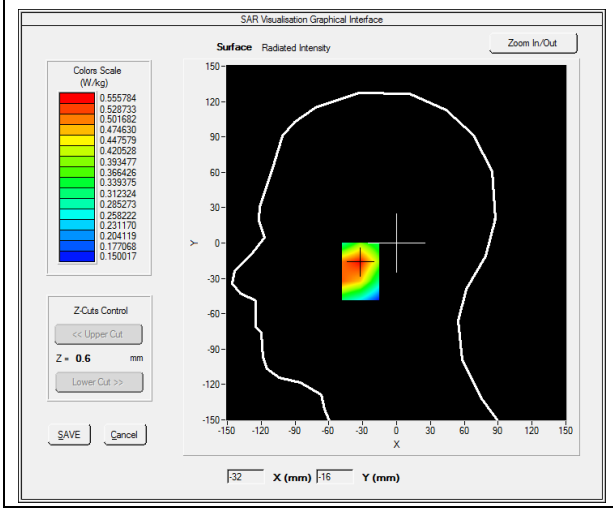
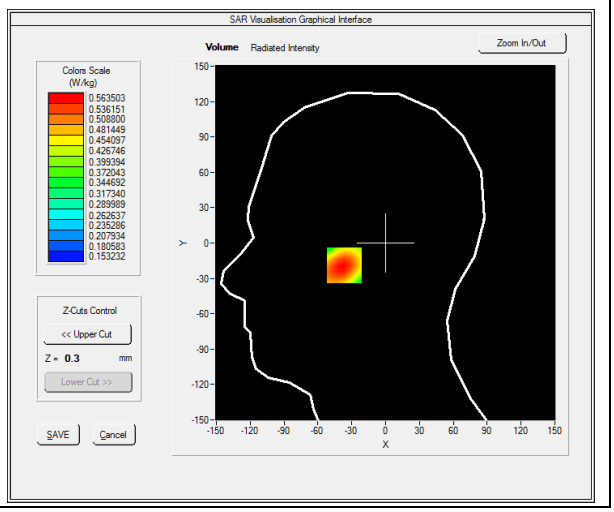
Type: Phone measurement (Complete)
Date of measurement: 2022-03-21
Measurement duration: 12 minutes 3 seconds

A. Experimental conditions

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

B. SAR Measurement Results

Frequency (MHz)	836.400000
Relative Permittivity (real part)	42.382328
Conductivity (S/m)	0.882169
Power Variation (%)	-1.350000
Ambient Temperature	22.8
Liquid Temperature	22.8

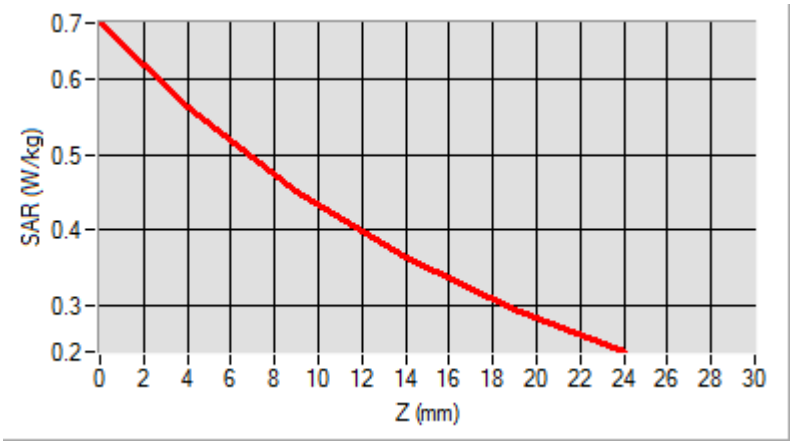
SURFACE SAR	VOLUME SAR
	

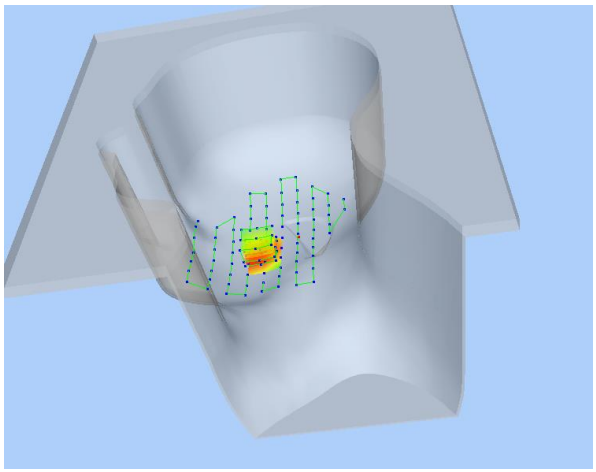
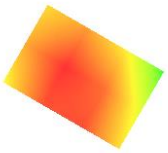
Maximum location: X=-36.00, Y=-19.00

SAR Peak: 0.68 W/kg

SAR 10g (W/Kg)	0.408129
SAR 1g (W/Kg)	0.541239

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.6749	0.5635	0.4507	0.3631	0.2948



3D screen shot	Hot spot position
	

MEASUREMENT 7

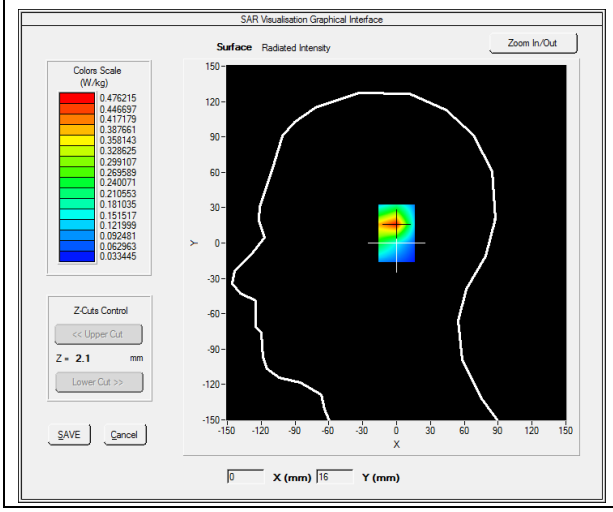
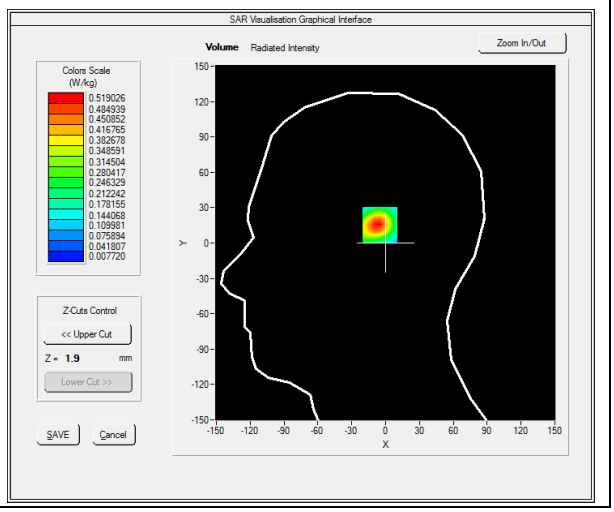
Type: Phone measurement (Complete)
Date of measurement: 2022-03-21
Measurement duration: 12 minutes 21 seconds

A. Experimental conditions

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

B. SAR Measurement Results

Frequency (MHz)	2462.000000
Relative Permittivity (real part)	39.850212
Conductivity (S/m)	1.781248
Power Variation (%)	-1.760000
Ambient Temperature	22.8
Liquid Temperature	22.8

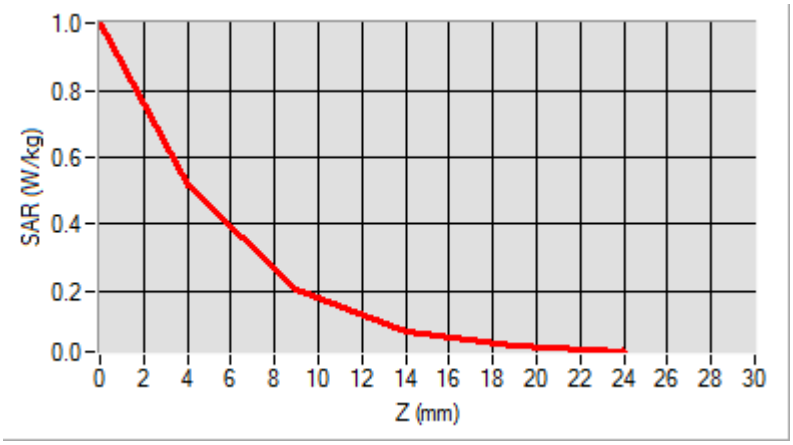
SURFACE SAR	VOLUME SAR
	

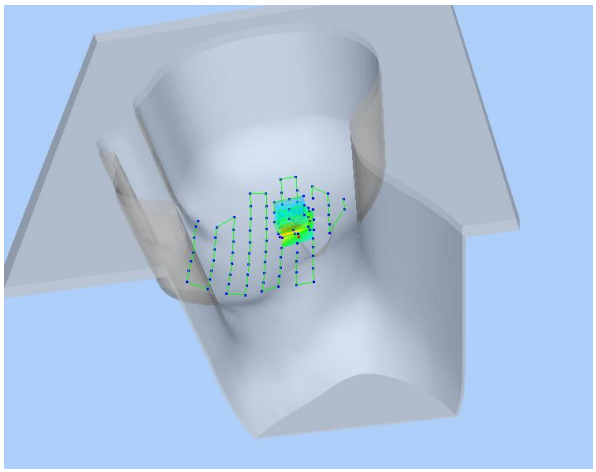
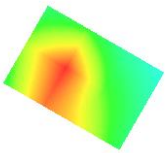
Maximum location: X=-3.00, Y=16.00

SAR Peak: 1.01 W/kg

SAR 10g (W/Kg)	0.218741
SAR 1g (W/Kg)	0.480762

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.0016	0.5190	0.2061	0.0795	0.0364



3D screen shot	Hot spot position
	

MEASUREMENT 8

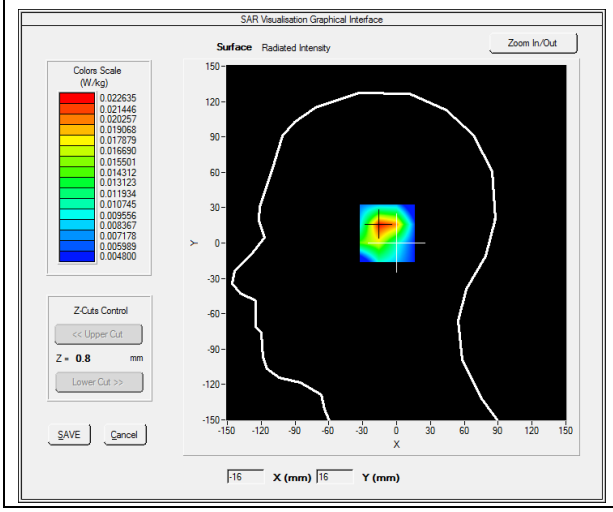
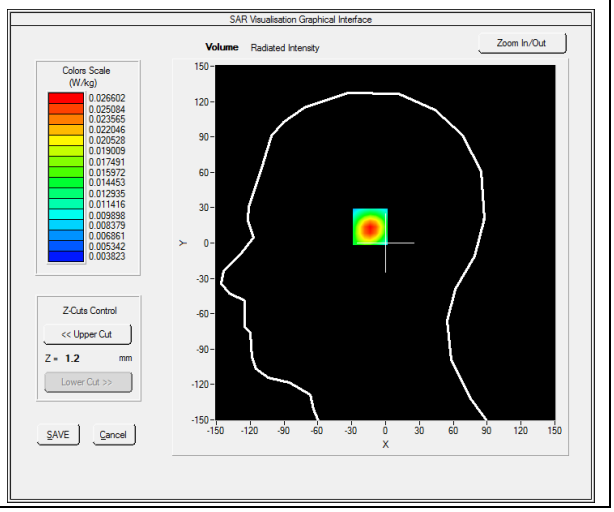
Type: Phone measurement (Complete)
Date of measurement: 2022-03-21
Measurement duration: 12 minutes 21 seconds

A. Experimental conditions

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

B. SAR Measurement Results

Frequency (MHz)	2480.000000
Relative Permittivity (real part)	39.852129
Conductivity (S/m)	1.782448
Power Variation (%)	1.060000
Ambient Temperature	22.8
Liquid Temperature	22.8

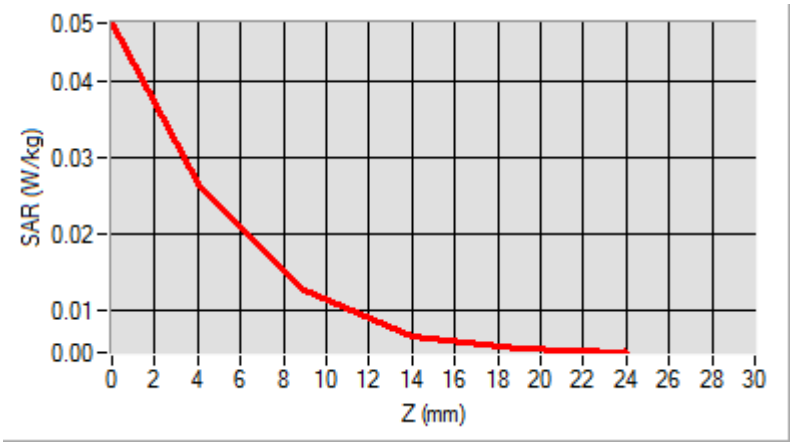
SURFACE SAR	VOLUME SAR
	

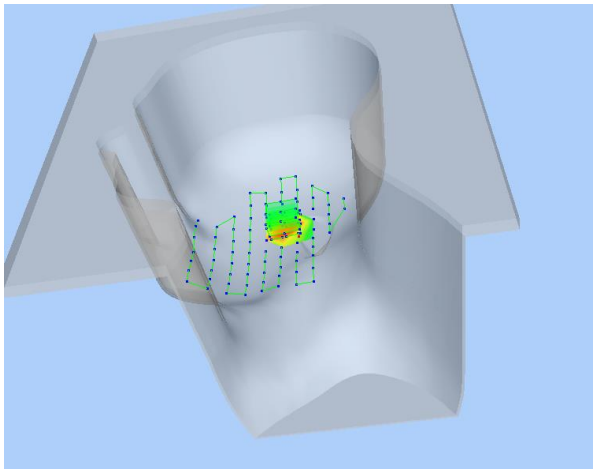
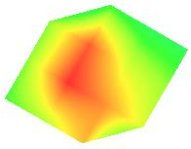
Maximum location: X=-12.00, Y=14.00

SAR Peak: 0.05 W/kg

SAR 10g (W/Kg)	0.013136
SAR 1g (W/Kg)	0.024724

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0477	0.0266	0.0125	0.0067	0.0049



3D screen shot	Hot spot position
	

MEASUREMENT 9

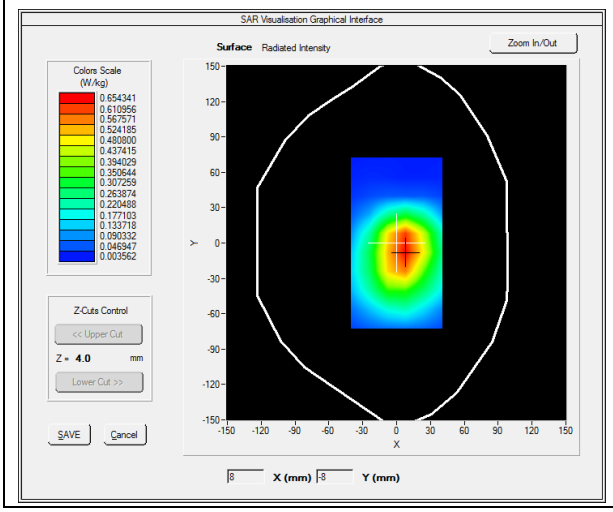
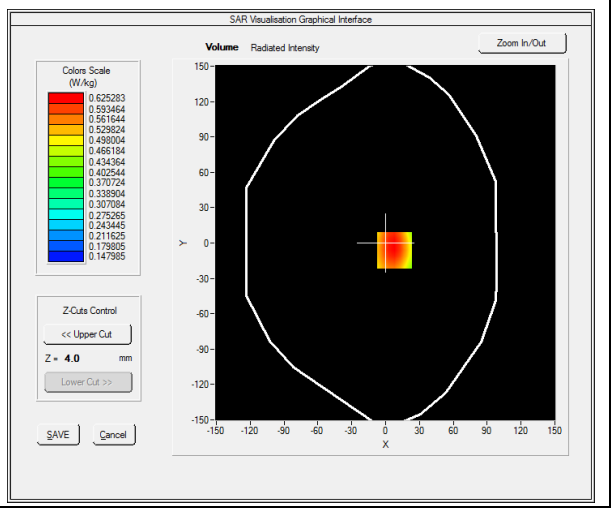
Type: Phone measurement (Complete)
Date of measurement: 2022-03-21
Measurement duration: 12 minutes 3 seconds

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)	42.380415
Conductivity (S/m)	0.884808
Power Variation (%)	1.560000
Ambient Temperature	22.8
Liquid Temperature	22.8

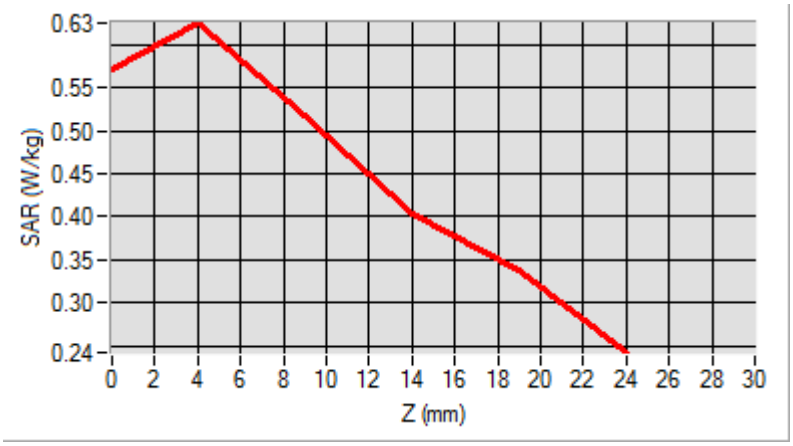
SURFACE SAR	VOLUME SAR
	

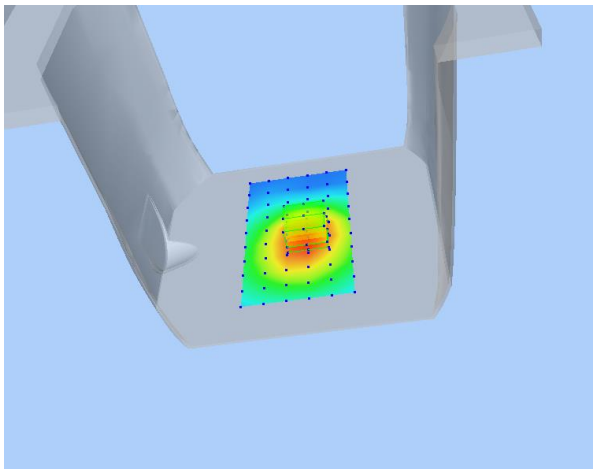
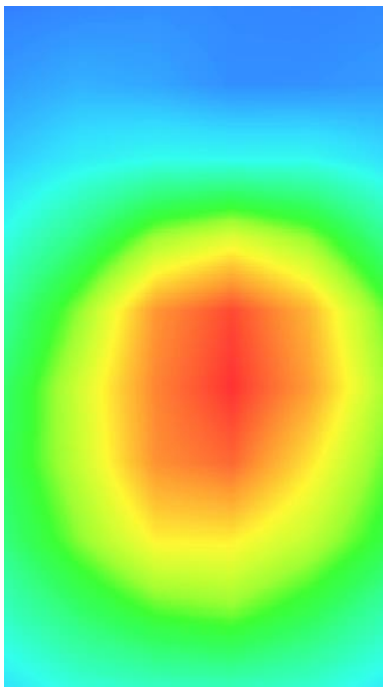
Maximum location: X=8.00, Y=-6.00

SAR Peak: 0.79 W/kg

SAR 10g (W/Kg)	0.472565
SAR 1g (W/Kg)	0.613159

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.5721	0.6253	0.5188	0.4034	0.3391



3D screen shot	Hot spot position
	

MEASUREMENT 10

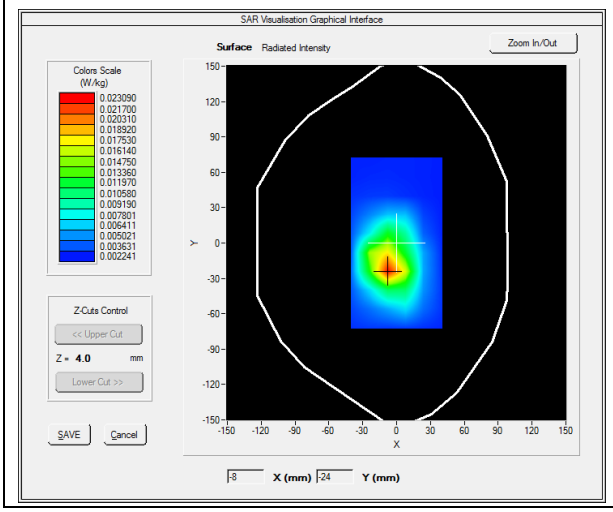
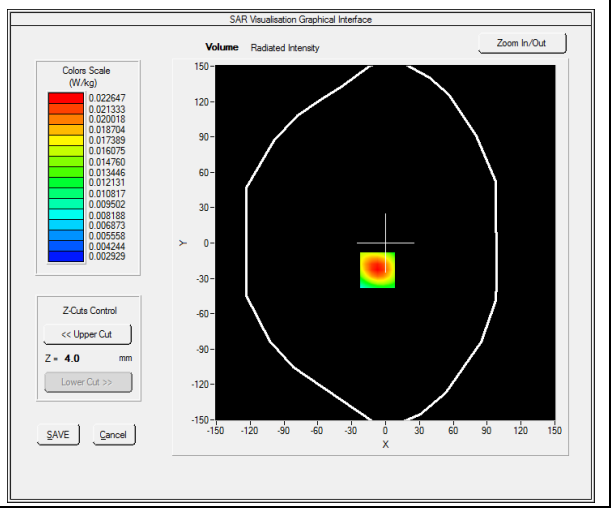
Type: Phone measurement (Complete)
Date of measurement: 2022-03-21
Measurement duration: 12 minutes 21 seconds

A. 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)	40.761854
Conductivity (S/m)	1.414017
Power Variation (%)	0.430000
Ambient Temperature	22.8
Liquid Temperature	22.8

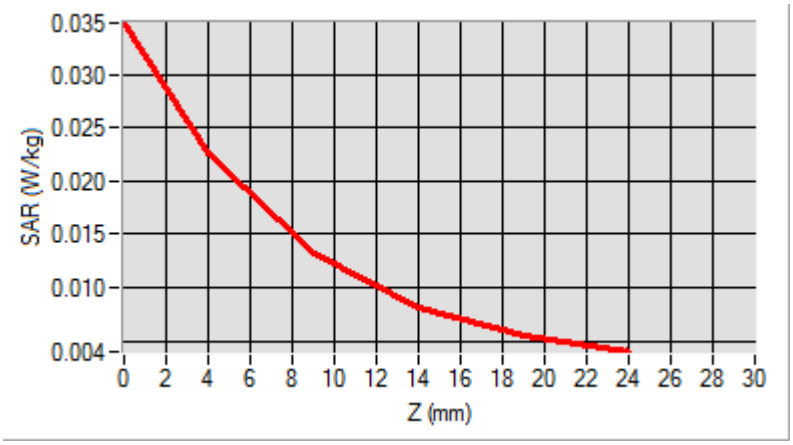
SURFACE SAR	VOLUME SAR
	

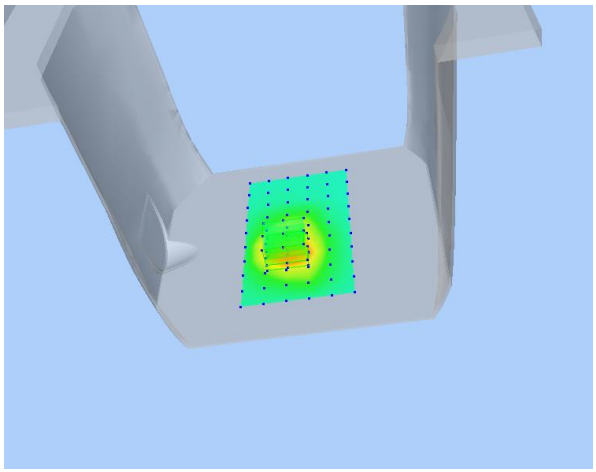
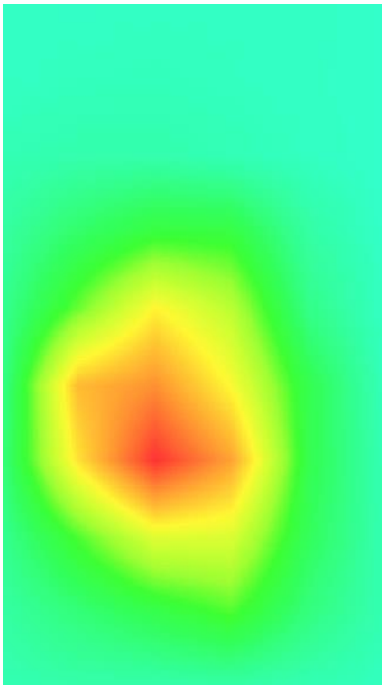
Maximum location: X=-7.00, Y=-23.00

SAR Peak: 0.04 W/kg

SAR 10g (W/Kg)	0.012641
SAR 1g (W/Kg)	0.021350

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0348	0.0226	0.0132	0.0081	0.0055



3D screen shot	Hot spot position
	

MEASUREMENT 11/17

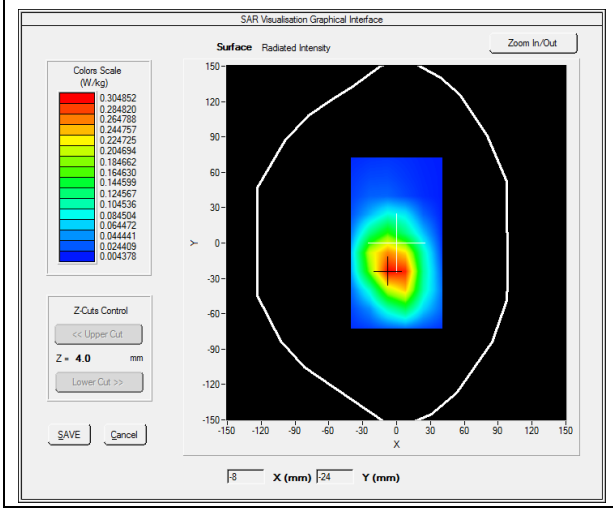
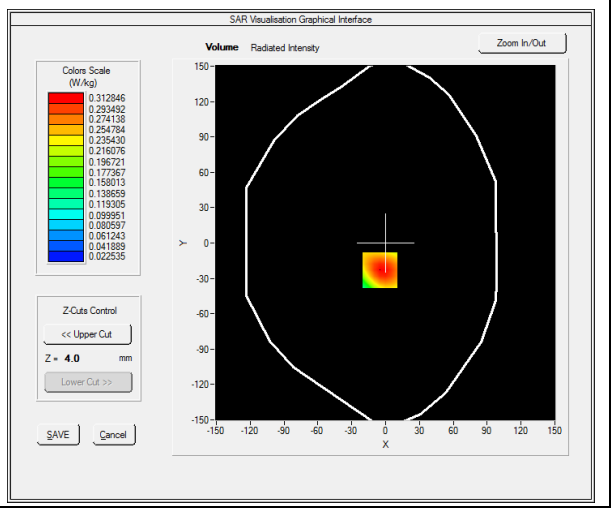
Type: Phone measurement (Complete)
Date of measurement: 2022-03-21
Measurement duration: 12 minutes 21 seconds

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)	40.761854
Conductivity (S/m)	1.414017
Power Variation (%)	0.110000
Ambient Temperature	22.8
Liquid Temperature	22.8

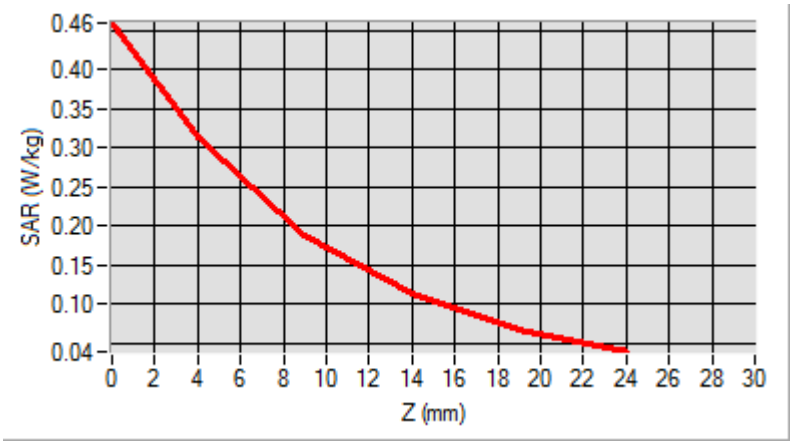
SURFACE SAR	VOLUME SAR
	

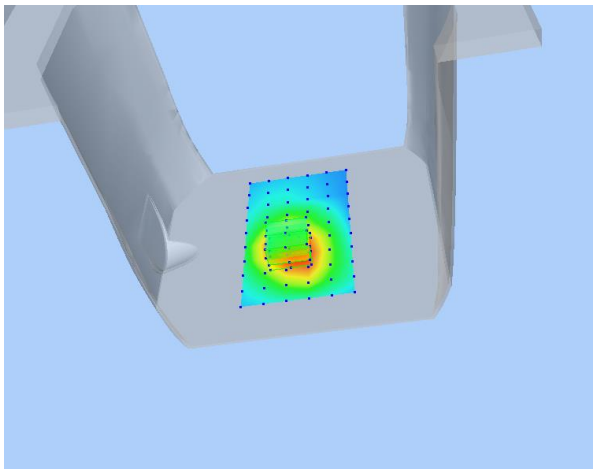
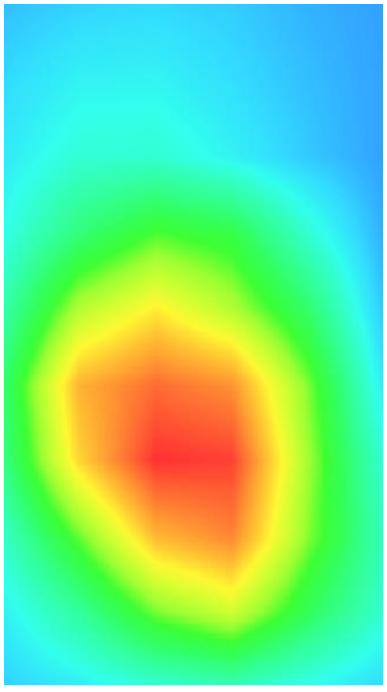
Maximum location: X=-5.00, Y=-23.00

SAR Peak: 0.46 W/kg

SAR 10g (W/Kg)	0.180759
SAR 1g (W/Kg)	0.297264

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.4602	0.3128	0.1891	0.1137	0.0688



3D screen shot	Hot spot position
	

MEASUREMENT 12/18

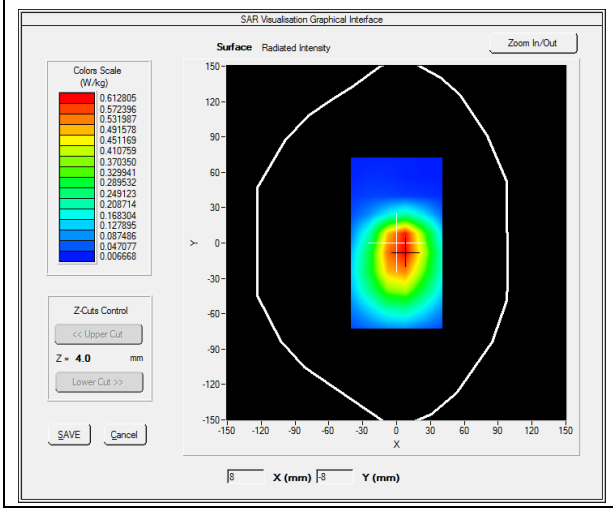
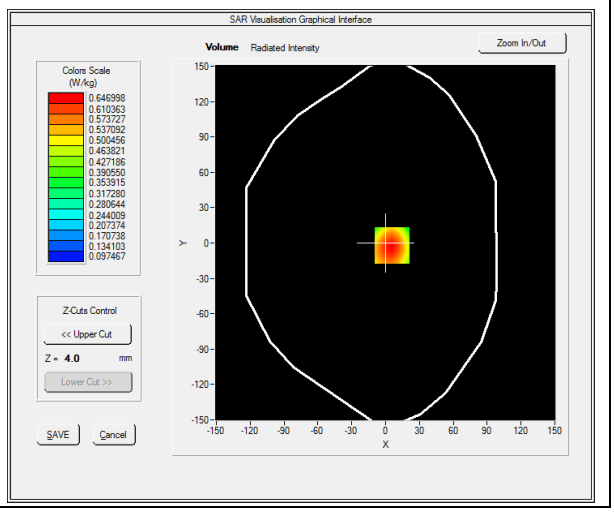
Type: Phone measurement (Complete)
Date of measurement: 2022-03-21
Measurement duration: 12 minutes 3 seconds

A. Experimental conditions

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

B. SAR Measurement Results

Frequency (MHz)	836.400000
Relative Permittivity (real part)	42.382328
Conductivity (S/m)	0.882169
Power Variation (%)	-1.040000
Ambient Temperature	22.8
Liquid Temperature	22.8

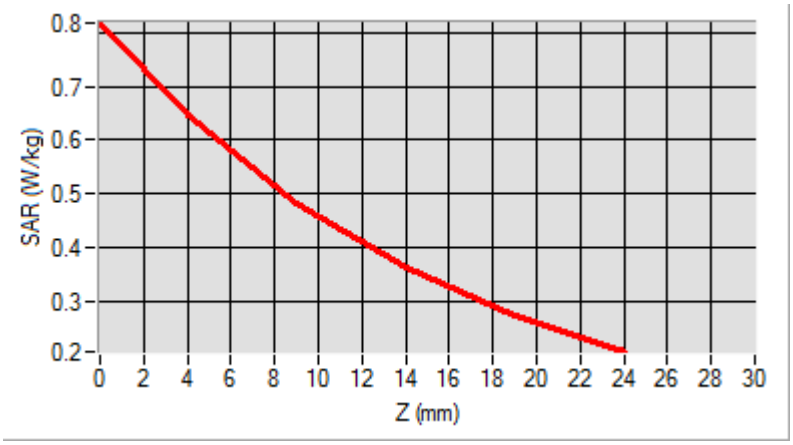
SURFACE SAR	VOLUME SAR
	

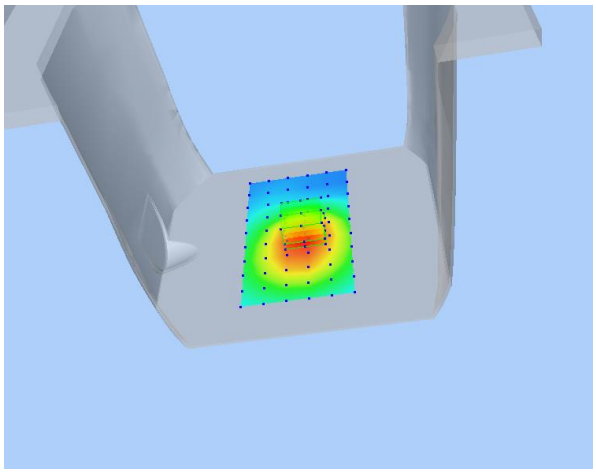
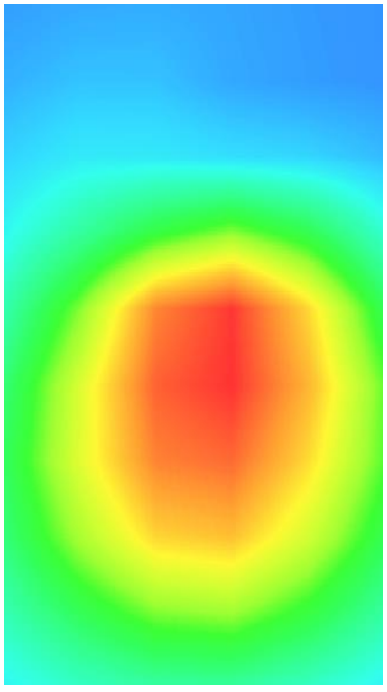
Maximum location: X=6.00, Y=-2.00

SAR Peak: 0.82 W/kg

SAR 10g (W/Kg)	0.444738
SAR 1g (W/Kg)	0.619406

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.8188	0.6470	0.4818	0.3614	0.2737



3D screen shot	Hot spot position
	

MEASUREMENT 13/19

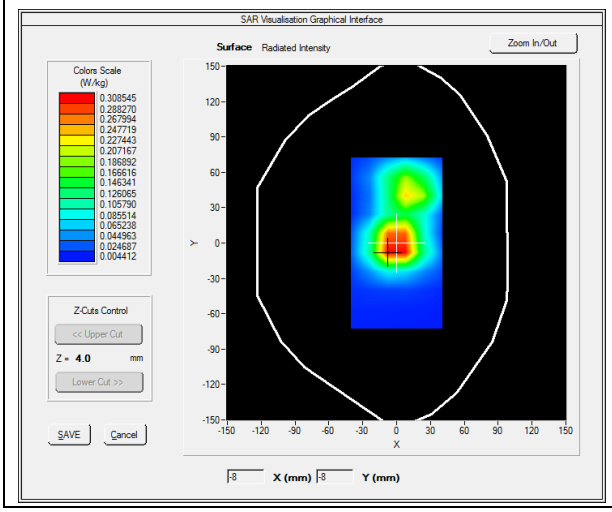
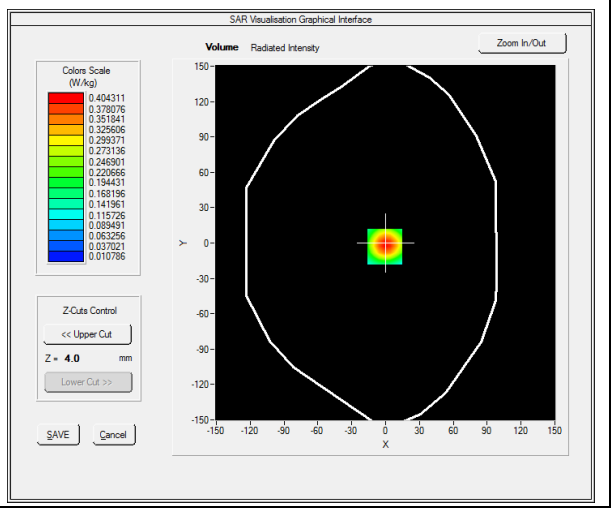
Type: Phone measurement (Complete)
Date of measurement: 2022-03-21
Measurement duration: 12 minutes 21 seconds

A. Experimental conditions

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

B. SAR Measurement Results

Frequency (MHz)	2462.000000
Relative Permittivity (real part)	39.850212
Conductivity (S/m)	1.781248
Power Variation (%)	1.680000
Ambient Temperature	22.8
Liquid Temperature	22.8

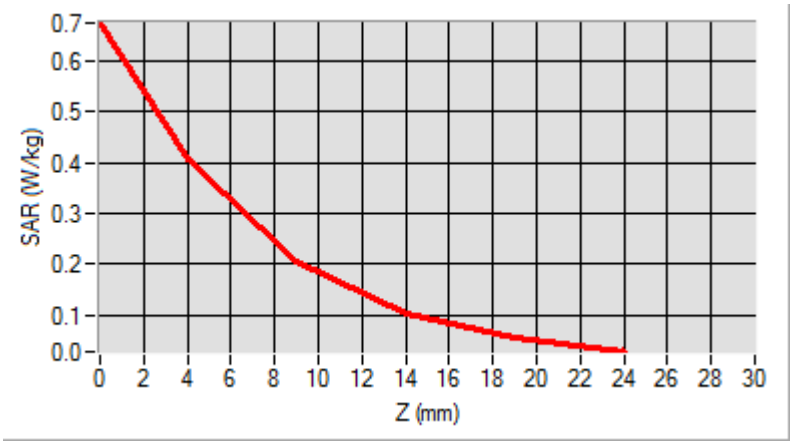
SURFACE SAR	VOLUME SAR
	

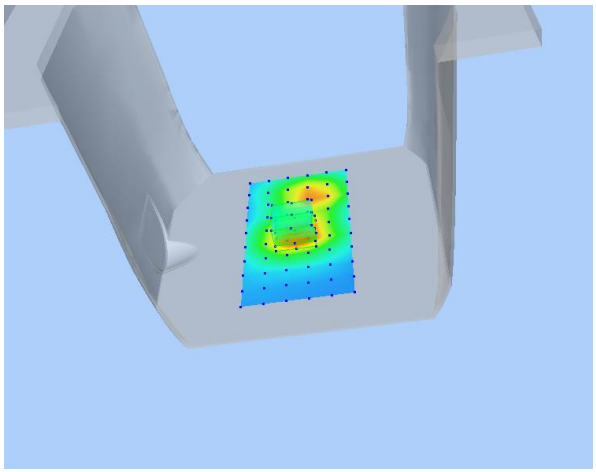
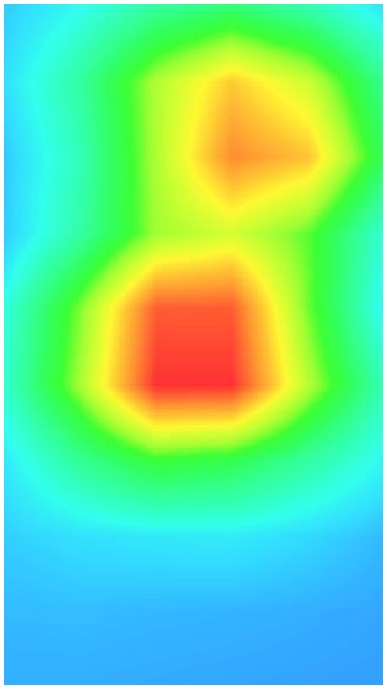
Maximum location: X=-1.00, Y=-3.00

SAR Peak: 0.68 W/kg

SAR 10g (W/Kg)	0.189315
SAR 1g (W/Kg)	0.374800

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.6741	0.4043	0.2040	0.1021	0.0538



3D screen shot	Hot spot position
	

MEASUREMENT 14/20

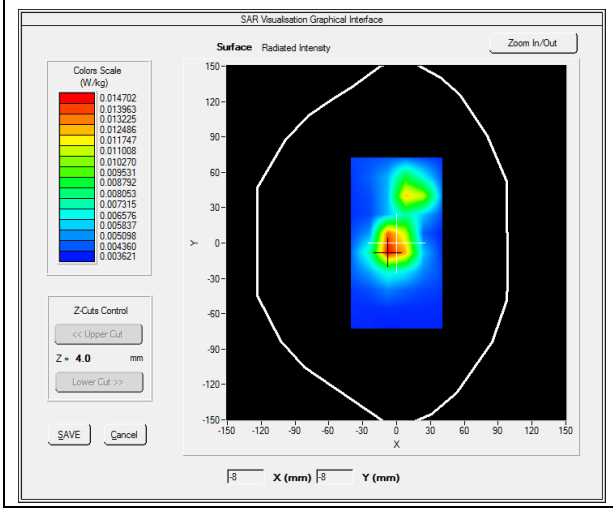
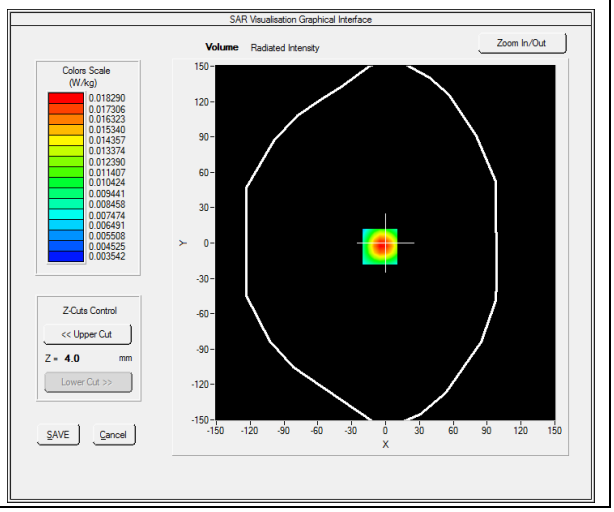
Type: Phone measurement (Complete)
Date of measurement: 2022-03-21
Measurement duration: 12 minutes 21 seconds

A. Experimental conditions

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

B. SAR Measurement Results

Frequency (MHz)	2480.000000
Relative Permittivity (real part)	39.852129
Conductivity (S/m)	1.782448
Power Variation (%)	-1.980000
Ambient Temperature	22.8
Liquid Temperature	22.8

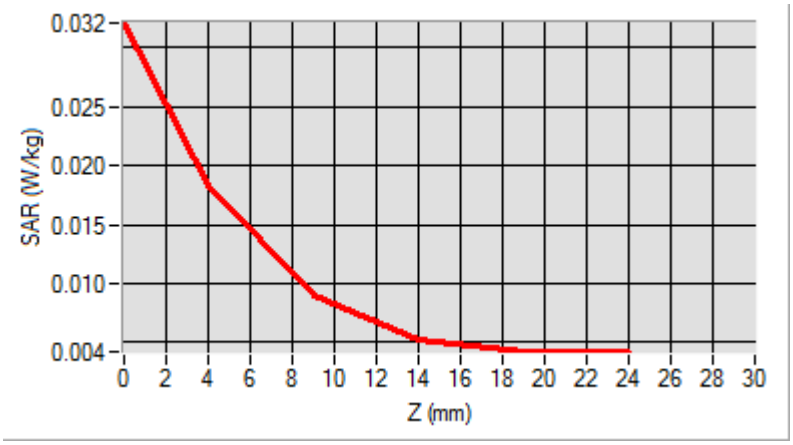
SURFACE SAR	VOLUME SAR
	

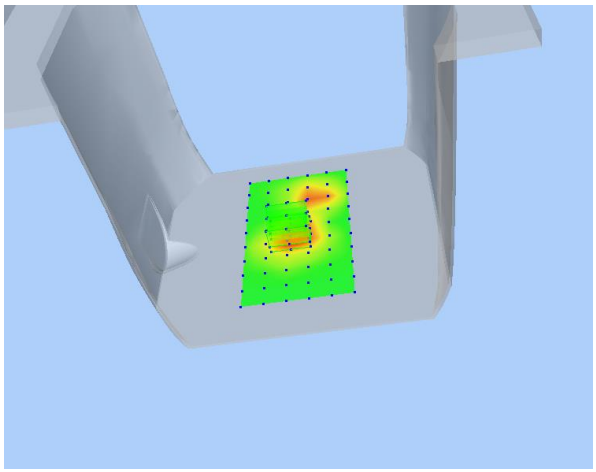
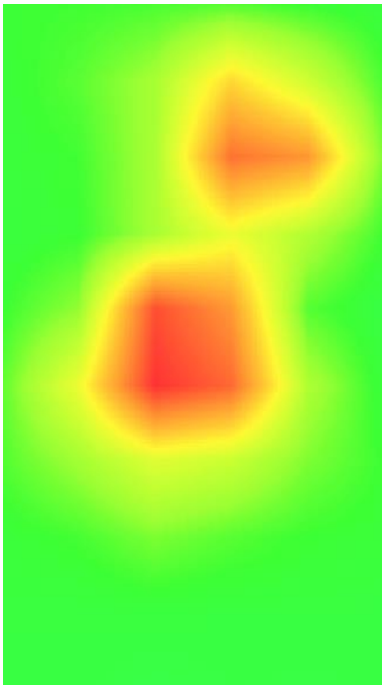
Maximum location: X=-5.00, Y=-3.00

SAR Peak: 0.03 W/kg

SAR 10g (W/Kg)	0.009630
SAR 1g (W/Kg)	0.017319

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0321	0.0183	0.0090	0.0053	0.0042



3D screen shot	Hot spot position
	

MEASUREMENT 15

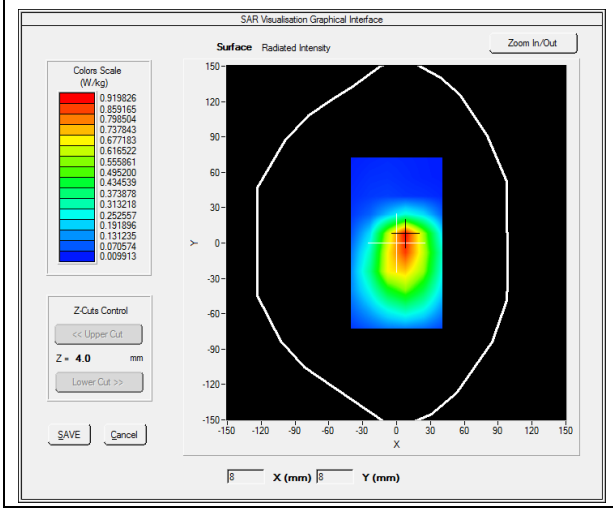
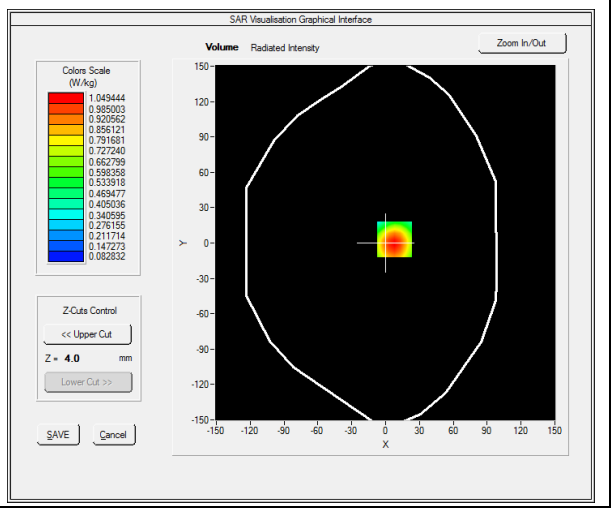
Type: Phone measurement (Complete)
Date of measurement: 2022-03-21
Measurement duration: 12 minutes 3 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Phantom	Flat plane
Device Position	Back
Band	GPRS850_2TX
Channels	High
Signal	Duty Cycle 1:4

B. SAR Measurement Results

Frequency (MHz)	848.800000
Relative Permittivity (real part)	42.380415
Conductivity (S/m)	0.884808
Power Variation (%)	0.910000
Ambient Temperature	22.8
Liquid Temperature	22.8

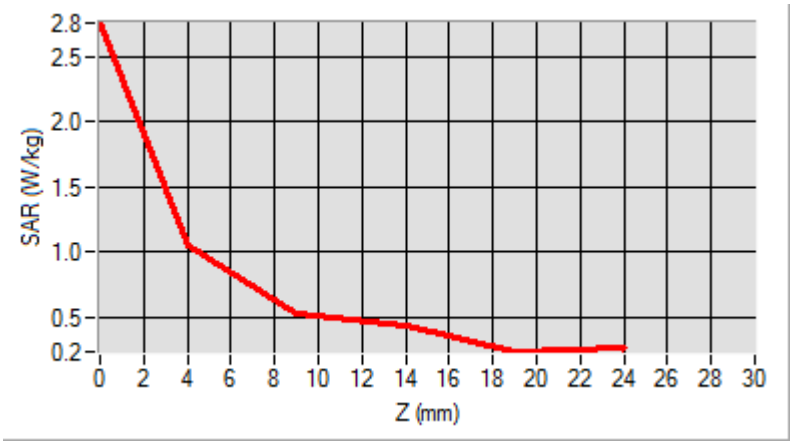
SURFACE SAR	VOLUME SAR
	

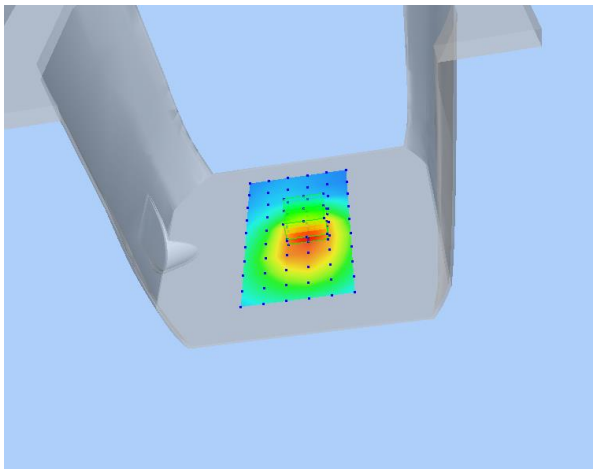
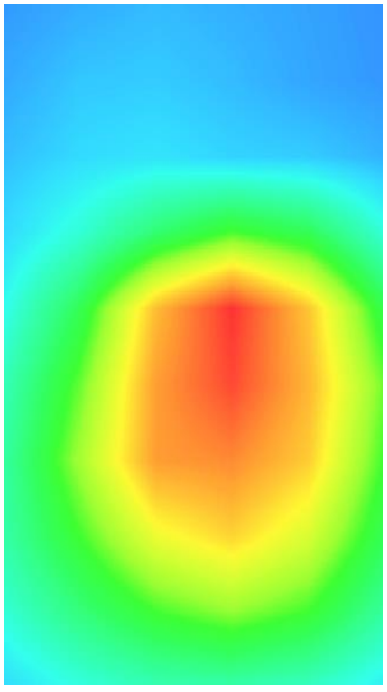
Maximum location: X=8.00, Y=3.00

SAR Peak: 1.59 W/kg

SAR 10g (W/Kg)	0.631139
SAR 1g (W/Kg)	0.999192

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	2.7585	1.0494	0.5255	0.4438	0.2382



3D screen shot	Hot spot position
	

MEASUREMENT 16

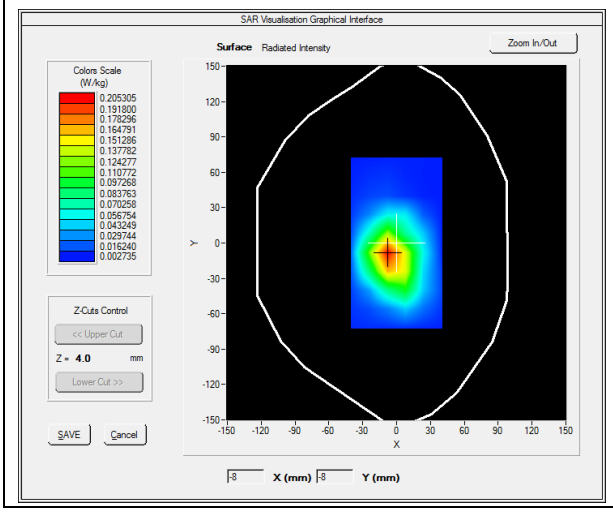
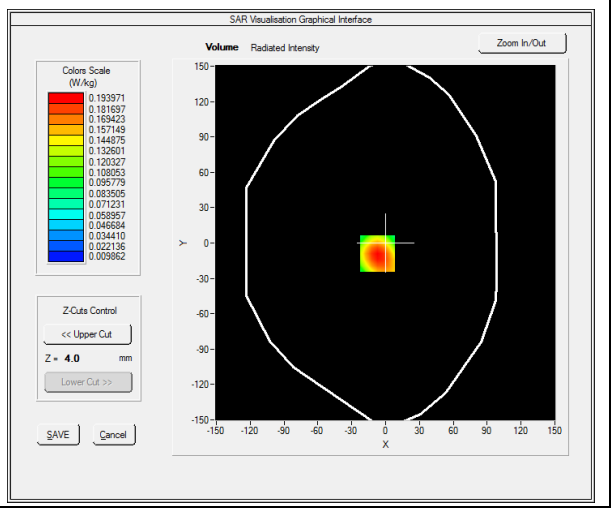
Type: Phone measurement (Complete)
Date of measurement: 2022-03-21
Measurement duration: 12 minutes 21 seconds

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Phantom	Flat plane
Device Position	Back
Band	GPRS1900_4TX
Channels	Low
Signal	Duty Cycle 1:2

B. SAR Measurement Results

Frequency (MHz)	1909.800000
Relative Permittivity (real part)	40.761854
Conductivity (S/m)	1.414017
Power Variation (%)	-1.210000
Ambient Temperature	22.8
Liquid Temperature	22.8

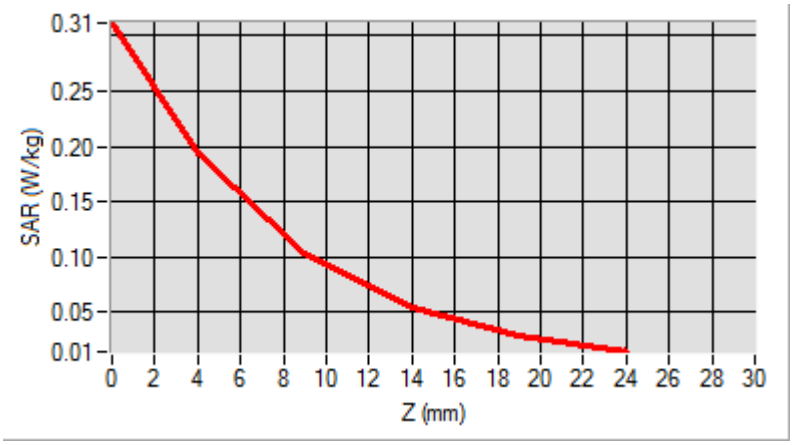
SURFACE SAR	VOLUME SAR
	

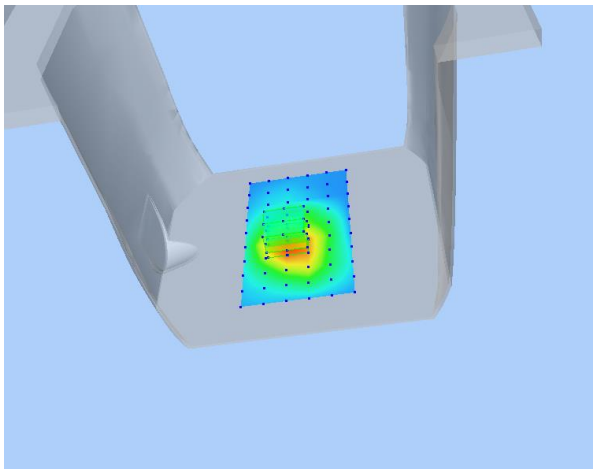
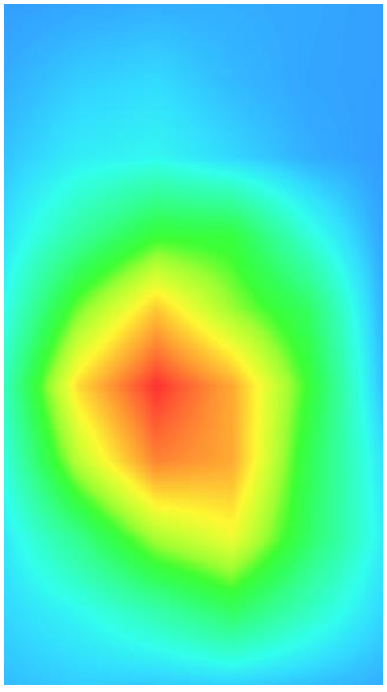
Maximum location: X=-7.00, Y=-9.00

SAR Peak: 0.31 W/kg

SAR 10g (W/Kg)	0.102385
SAR 1g (W/Kg)	0.182265

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.3115	0.1940	0.1031	0.0539	0.0286



3D screen shot	Hot spot position
	

Annex C. EUT Photos

EUT View Front

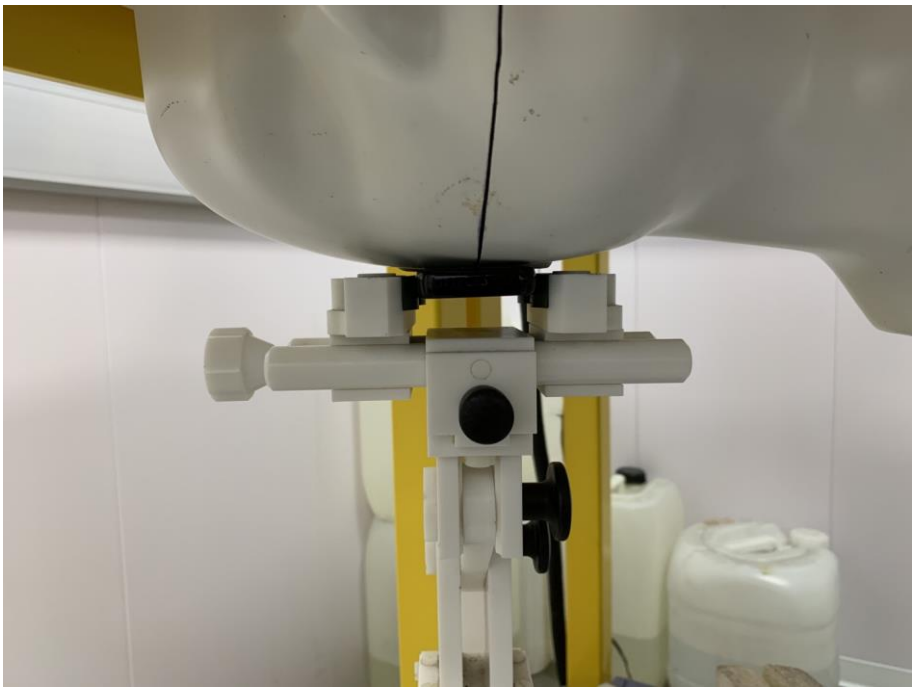
EUT View Back

Antenna View

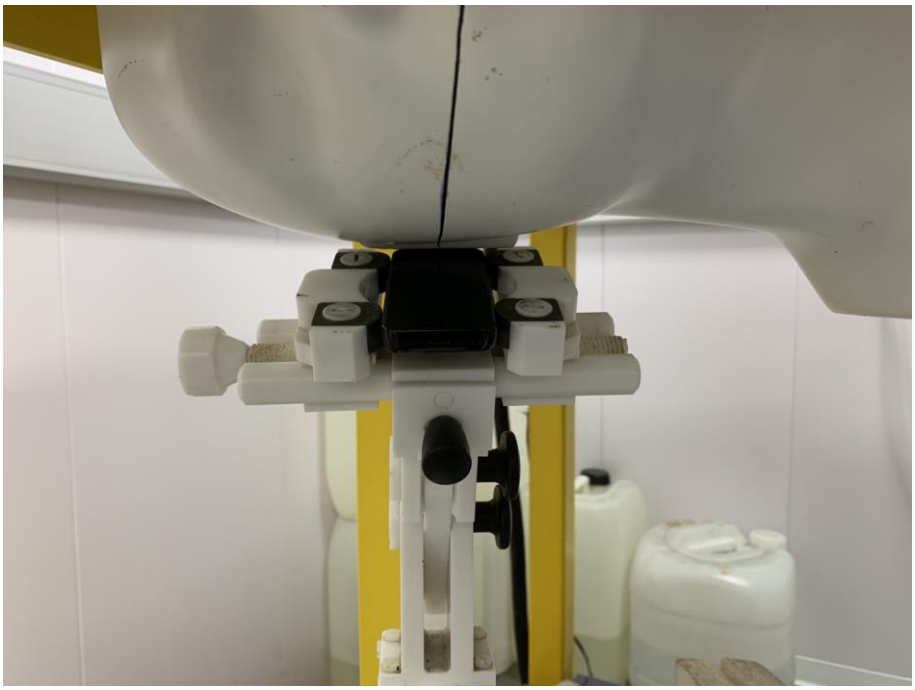
Annex D. Test Setup Photos

Head Exposure Conditions

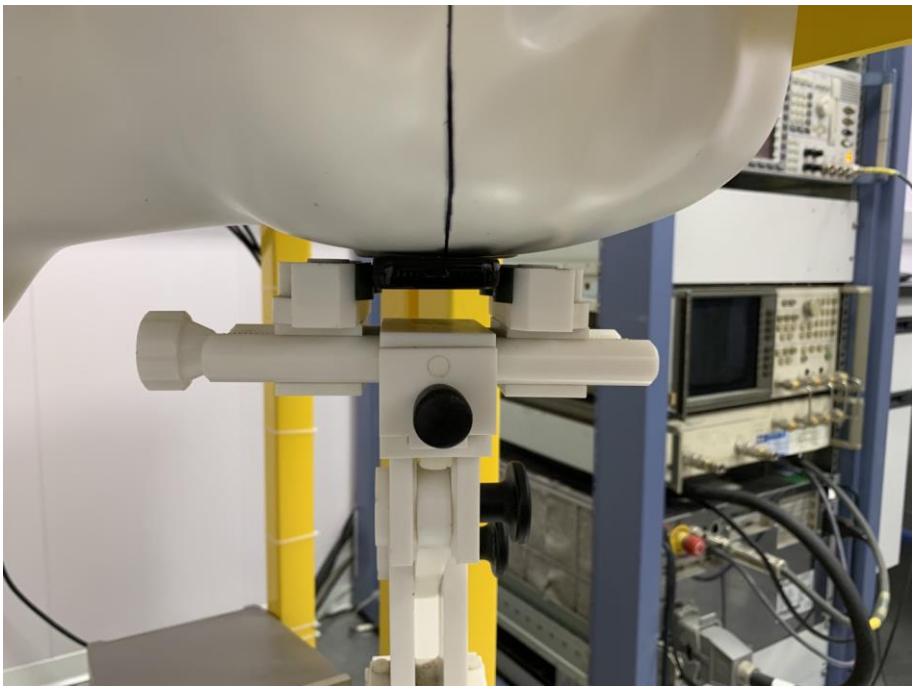
Right Cheek



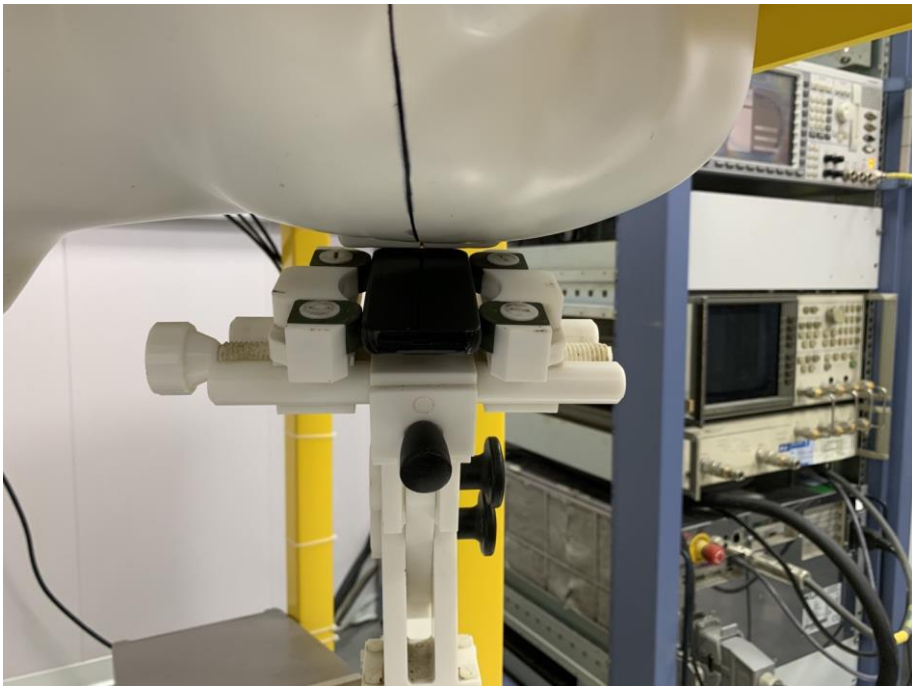
Tilt



Left Cheek



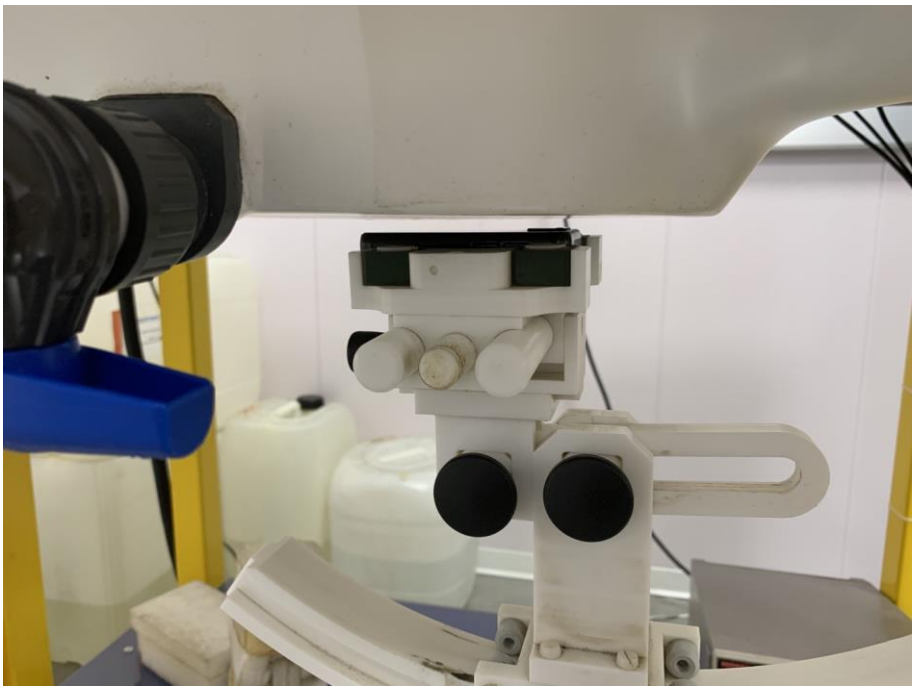
Tilt



Body mode Exposure Conditions
Test distance: 5mm

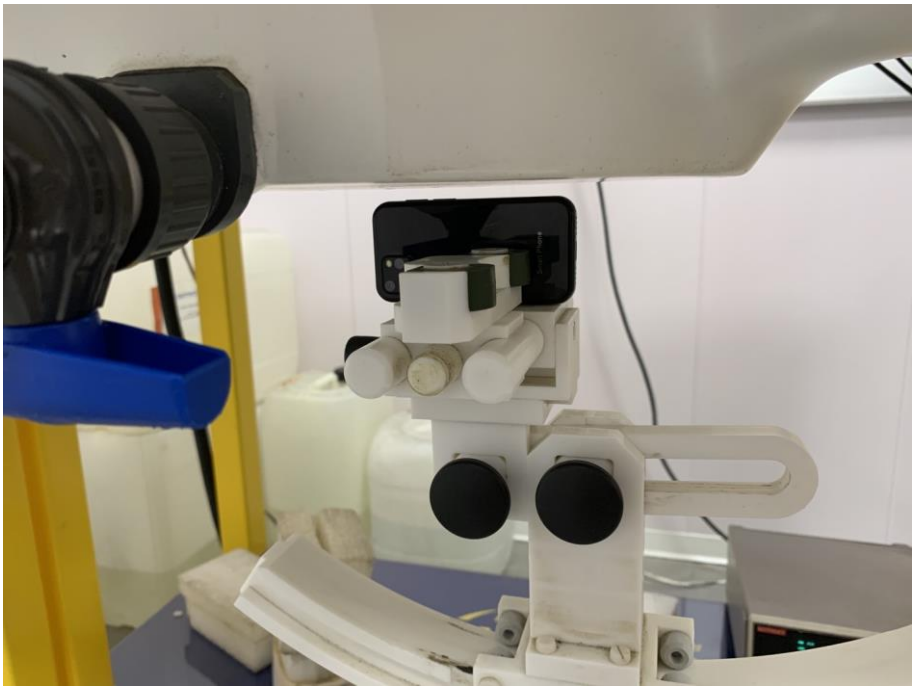
Body Front

Body Back

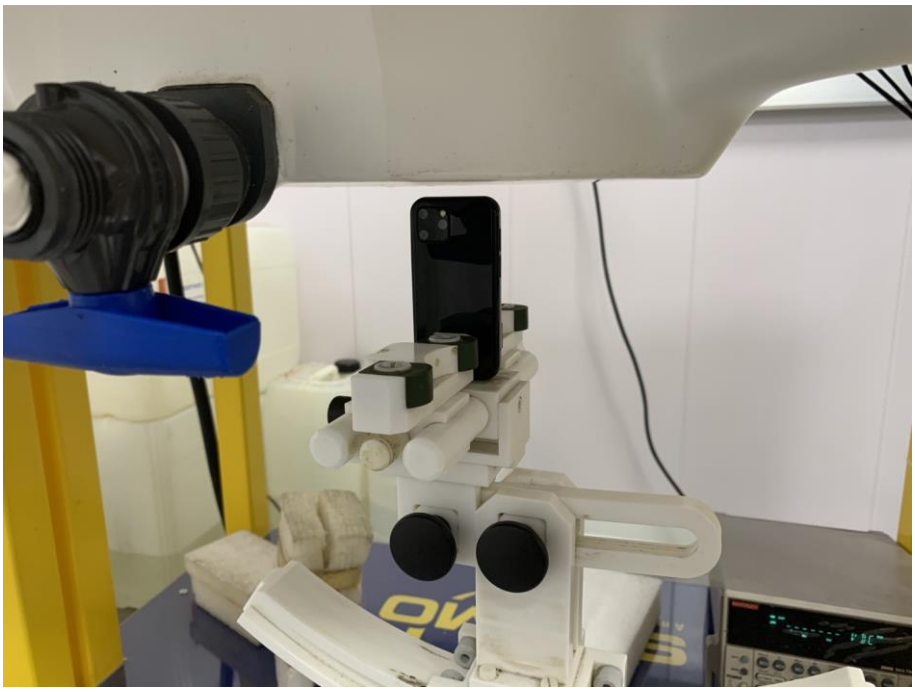


Body Right

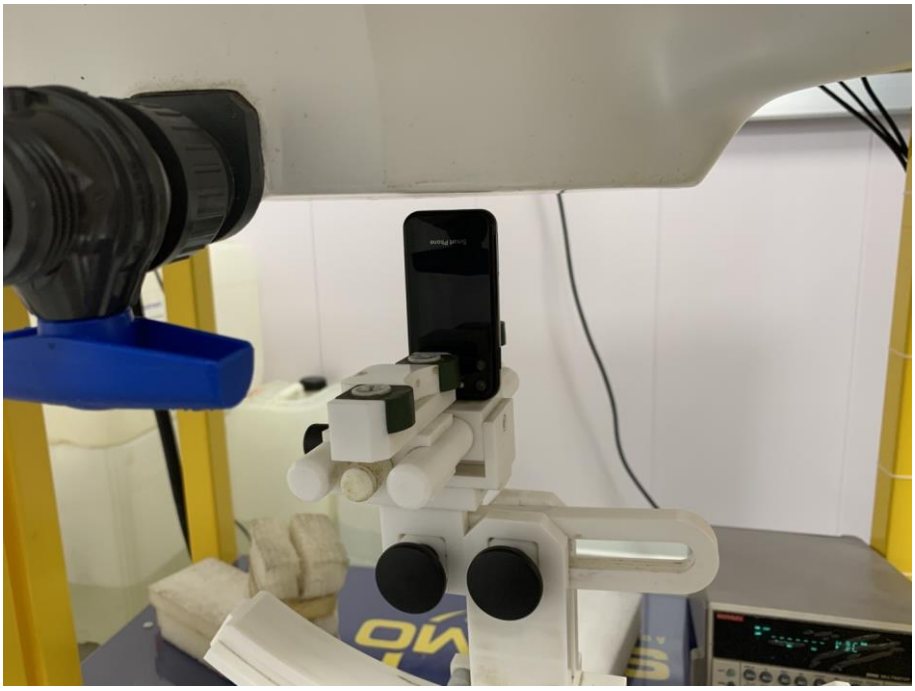
Body Left



Body Top



Body Bottom



Annex E. Calibration Certificate

Please refer to the exhibit for the calibration certificate

******* END OF REPORT *******