TEST REPORT

Reference No.	:	WTX23X03056467W
FCC ID	:	2AT2F-ML1009P
Applicant	:	ShenzhenAdreamerEliteCo.,Ltd.
Address	:	Floor4th, Fuannaindustrialpark, No.1qingningroad, qinghulonghuaDist, Shenzhen, China
Manufacturer		ShenzhenAdreamerEliteCo.,Ltd.
Address		Floor4th, Fuannaindustrialpark, No.1qingningroad, qinghulonghuaDist, Shenzhen, China
Product Name	:	Tablet PC
Model No.	:	ML1009P
Standards	:	FCC Part 2.1093 IEEE Std C95.1: 2019 IEEE Std C95.3: 2002 + Rev. 2008 IEEE 1528:2013
Date of Receipt sample	:	2023-03-22
Date of Test	:	2023-03-22 to 2023-03-29
Date of Issue	:	2023-03-30
Test Report Form No.	:	WTX_IEEE_1528_2013W
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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Report version

Version No.	Date of issue	Description
Rev.00	2023-03-30	Original
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1. General Information

1.1 Product Description for Equipment Under Test (EUT)

General Description of EUT:	
Product Name:	Tablet PC
Brand Name:	/
Model No.:	ML1009P
Adding Model(s):	POWER KNOWLEDGE
Rated Voltage:	Input: DC 5V 2A DC 3.8V by battery
Battery Capacity:	/
Software Version:	ML1009P_E863D_KidsPad10_V1.0
Hardware Version:	E30A_V2.0X
Note: The test data is gathered from a production sample provided by the manufacturer.	

Technical Characteristics of EUT:	
2G	
Support Networks:	GSM, GPRS, EDGE
Support Band:	GSM850/PCS1900
Uplink Frequency:	GSM/GPRS/EDGE 850: 824~849MHz GSM/GPRS/EDGE 1900: 1850~1910MHz
Downlink Frequency:	GSM/GPRS/EDGE 850: 869~894MHz GSM/GPRS/EDGE 1900: 1930~1990MHz
Max RF Output Power:	GSM850: 32.30dBm, GSM1900: 27.93dBm EDGE850: 32.31dBm, EDGE1900: 27.94dBm
Type of Modulation:	GMSK, 8PSK
Type of Antenna:	FPC Antenna
Antenna Gain:	GSM850: -0.02dBi; GSM1900: 3.86dBi
GPRS/EDGE Class:	Class 12
3G	
Support Networks:	WCDMA, HSDPA, HSUPA
Support Band:	WCDMA Band 2
Uplink Frequency:	WCDMA Band 2: 1850~1910MHz
Downlink Frequency:	WCDMA Band 2: 1930~1990MHz
RF Output Power:	WCDMA Band 2: 22.01dBm
Type of Modulation:	BPSK, QPSK, 16QAM
Antenna Type:	FPC Antenna
Antenna Gain:	WCDMA Band 2: 3.86dBi

4G	
Support Networks:	FDD-LTE
Support Band:	FDD-LTE Band 2, 12, 17, 66
Uplink Frequency:	FDD-LTE Band 2: Tx: 1850-1910MHz, FDD-LTE Band 12: Tx: 699-716MHz, FDD-LTE Band 17: Tx: 704-716MHz, FDD-LTE Band 66: Tx: 1710-1780MHz
Downlink Frequency:	FDD-LTE Band 2: Rx: 1930-1990MHz, FDD-LTE Band 12: Rx: 729-746MHz, FDD-LTE Band 17: Rx: 734-746MHz, FDD-LTE Band 66: Rx: 2110-2200MHz
RF Output Power:	FDD-LTE Band 2: 21.76dBm, FDD-LTE Band 12: 22.95dBm, FDD-LTE Band 17: 22.76dBm, FDD-LTE Band 66: 22.24dBm,
Type of Modulation:	QPSK, 16QAM
Antenna Type:	FPC Antenna
Antenna Gain:	FDD-LTE Band 2: 3.86dBi, FDD-LTE Band 12: 0.38dBi, FDD-LTE Band 17: 0.38dBi, FDD-LTE Band 66: 3.55dBi
WIFI(2.4GHz)	
Support Standards:	802.11b, 802.11g, 802.11n
Frequency Range:	2412-2462MHz for 11b/g/n(HT20)
RF Output Power:	18.977dBm (Conducted)
Type of Modulation:	DBPSK,BPSK,DQPSK,QPSK,16QAM,64QAM
Quantity of Channels:	11 for 802.11b/g/n(HT20)
Channel Separation:	5MHz
Antenna Type:	FPC Antenna
Antenna Gain:	1.3dBi
Bluetooth	
Bluetooth Version:	V5.0
Frequency Range:	2402-2480MHz
RF Output Power:	8.369dBm (Conducted)
Data Rate:	1Mbps, 2Mbps, 3Mbps
Modulation:	GFSK, π/4 DQPSK, 8DPSK
Quantity of Channels:	79/40
Channel Separation:	1MHz/2MHz
Antenna Type:	FPC Antenna
Antenna Gain:	1.29dBi
Note: The Antenna Gain is provided by the customer and can affect the validity of results.	

1.2 Test Standards

The following report is accordance with FCC 47 CFR Part 2.1093, IEEE Std C95.1: 2019, IEEE Std C95.3: 2002 + Rev. 2008, IEEE 1528:2013, KDB 447498 D01 v06, KDB 648474 D04 v01r03, KDB 248227 D01 v02r02, KDB 941225 D01 v03r01, KDB 941225 D05 v02r05 , and KDB 865664 D01 v01r04 and KDB 865664 D02 v01r02.

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

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product, which is 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	Body (0mm Gap)	SAR_{1g} Limit (W/kg)
	Maximum SAR_{1g} (W/kg)	
GSM	0.547	1.6
WCDMA	0.465	1.6
LTE	**0.994**	1.6
WLAN 2.4GHz	0.339	1.6
Bluetooth	0.163	1.6
Simultaneous Transmission	**1.333**	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 1528:2013 and KDB 865664 D01 v01r04 and KDB 865664 D02 v01r02

3. Specific Absorption Rate (SAR)

3.1 Introduction

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

3.2 SAR Definition

The SAR definition is the time derivative (rate) of the incremental energy (dW) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element (dv) of a given density (ρ). The equation description is as below:

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

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

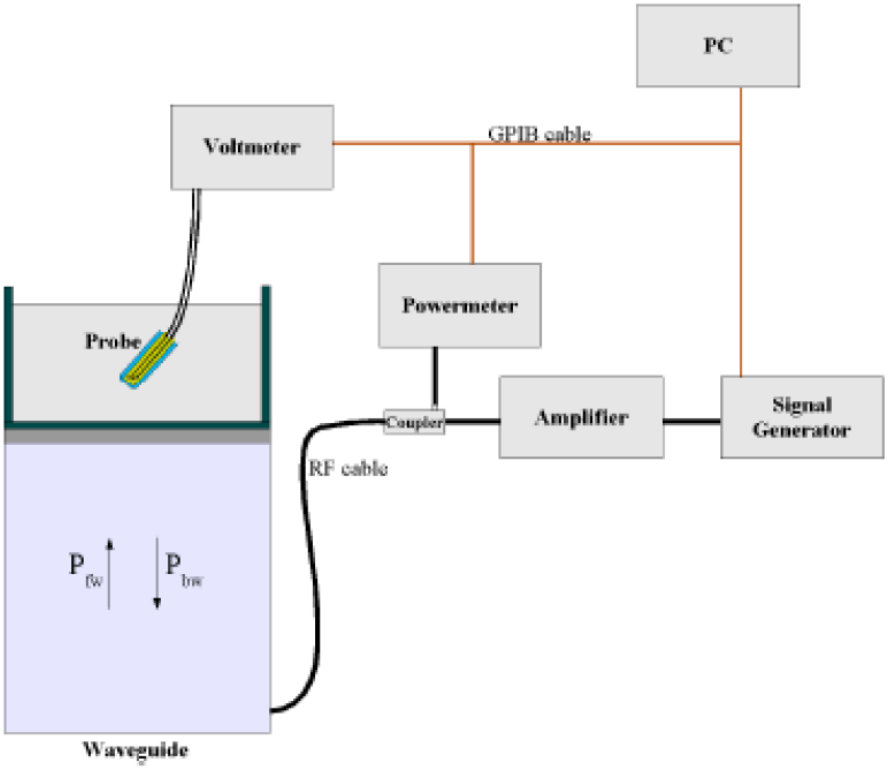
The following figure shows the system.

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 18/21 EPGO356, and refer to the calibration report for probe parameters.

Probe calibration is realized, in compliance with EN 62209-1 and IEEE 1528:2013 STD, with CALISAR, Antenna proprietary calibration system. The calibration is performed with the EN 62209-1 annexes technique using reference guide at the five frequencies.



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

Where :

Pfw = Forward Power

Pbw = Backward Power

a and b =Waveguide dimensions

I = Skin depth

Keithley configuration:

Rate = Medium; Filter = ON; RDGS = 10; Filter type = Moving Average; Range auto after each calibration, a SAR measurement is performed on a validation dipole and compared with a NPL calibrated probe, to verify it. The calibration factors, CF(N), for the 3 sensors corresponding to dipole 1, dipole 2 and dipole 3 are:

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

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

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

where DCP is the diode compression point in mV.

4.3 Probe Calibration Process

Dosimetric Assessment Procedure

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

Free Space Assessment Procedure

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

Temperature Assessment Procedure

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

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

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,

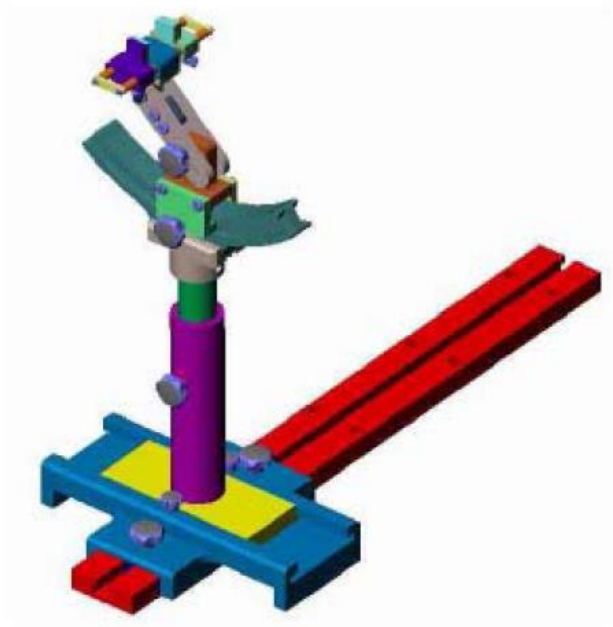
ρ = Tissue density (1.25 g/cm3 for brain tissue)

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

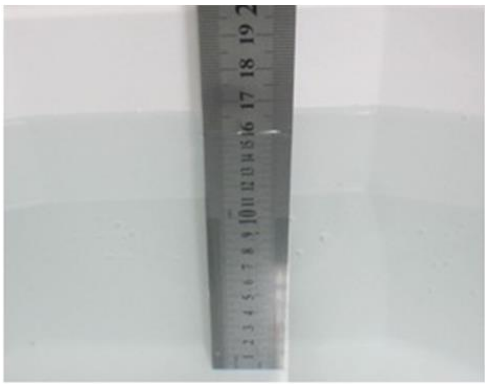
4.6 Test Equipment List

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
E-Field Probe	MVG	SSE2	SN 18/21 EPGO356	2022-07-08	2023-07-07
750MHz Dipole	MVG	SID750	SN 09/15 DIP 0G750-357	2020-08-29	2023-08-28
835MHz Dipole	MVG	SID835	SN 09/15 DIP 0G835-358	2020-08-29	2023-08-28
900MHz Dipole	MVG	SID900	SN 09/15 DIP 0G900-359	2020-08-29	2023-08-28
1800MHz Dipole	MVG	SID1800	SN 09/15 DIP 1G800-360	2020-08-29	2023-08-28
1900MHz Dipole	MVG	SID1900	SN 09/15 DIP 1G900-361	2020-08-29	2023-08-28
2000MHz Dipole	MVG	SID2000	SN 09/15 DIP 2G000-362	2020-08-29	2023-08-28
2300 MHz Dipole	MVG	SID2300	SN 50/20 DIP 2G300-513	2021-01-14	2024-01-13
2450MHz Dipole	MVG	SID2450	SN 09/15 DIP 2G450-363	2020-08-29	2023-08-28
2600MHz Dipole	MVG	SID2600	SN 28/21 DIP 2G600-590	2021-07-16	2024-07-15
5 GHz Dipole	MVG	SWG5500	SN 49/16 WGA45	2020-07-03	2023-07-02
Dielectric Probe	SATIMO	SCLMP	SN 47/12 OCPG49	2023-02-25	2024-02-24
SAM Phantom	SATIMO	SAM	SN/ 47/12 SAM95	N/A	N/A
Multi Meter	Keithley	Keithley 2000	4006367	2023-02-25	2024-02-24
Power meter	Keithley	3500	JC-2017-09-001	2023-02-25	2024-02-24
Power meter	Keithley	3500	JC-2017-09-001	2023-02-25	2024-02-24
Power Sensor	HP	11636B	JC-2017-10-002	2023-02-25	2024-02-24
MXG X-Series RF Vector Signal Generator	KEYSIGHT	N5182B	MY57300664	2023-02-25	2024-02-24
Universal Tester	Rohde & Schwarz	CMU200	112315	2023-02-25	2024-02-24
Universal Radio Communication Tester	Rohde & Schwarz	CMW500	148650	2023-02-25	2024-02-24
Network Analyzer	HP	8753C	2901A00831	2023-02-25	2024-02-24

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/Body SAR

The Composition of Tissue Simulating Liquid

Frequency (MHz)	Water (%)	Salt (%)	Sugar (%)	HEC (%)	Preventol (%)	DGBE (%)
Body						
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

5.2 Tissue Dielectric Parameters for Head and Body Phantoms

According to FCC KDBs, IEEE 1528:2013 and CEI/IEC 62209 standards state that the system validation measurements must be performed using a reference dipole meeting the fore mentioned return loss and mechanical dimension requirements. The validation measurement must be performed against a liquid filled flat phantom, with the phantom constructed as outlined in the fore mentioned standards. Per the standards, the dipole shall be positioned below the bottom of the phantom, with the dipole length centered and parallel to the longest dimension of the flat phantom, with the top surface of the dipole at the described distance from the bottom surface of the phantom.

Target Frequency (MHz)	Head		Body	
	Conductivity (σ)	Permittivity (ε_r)	Conductivity (σ)	Permittivity (ε_r)
150	0.76	52.3	0.80	61.9
300	0.87	45.3	0.92	58.2
450	0.87	43.5	0.94	56.7
750	**0.89**	**41.9**	**0.96**	**55.5**
835	**0.90**	**41.5**	**0.97**	**55.2**
900	0.97	41.5	1.05	55.0
915	0.98	41.5	1.06	55.0
1450	1.20	40.5	1.30	54.0
1610	1.29	40.3	1.40	53.8
1800-2000	**1.40**	**40.0**	**1.52**	**53.3**
2300	1.67	39.5	1.81	52.9
2450	**1.80**	**39.2**	**1.95**	**52.7**
2600	1.96	39.0	2.16	52.5
3000	2.40	38.5	2.73	52.0
5200	4.66	36.0	5.30	49.0
5400	4.86	35.8	5.53	48.7
5600	5.07	35.5	5.77	48.5
5800	5.27	35.3	6.00	48.2

5.3 Tissue Calibration Result

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

Calibration Result for Dielectric Parameters of Tissue Simulating Liquid

Body Tissue Simulating Liquid									
Freq. MHz.	Temp. (℃)	Conductivity			Permittivity			Limit (%)	Date
		Reading (σ)	Target (σ)	Delta (%)	Reading (ε r)	Target (ε r)	Delta (%)		
750	23.2	0.93	0.96	-3.12	54.21	55.5	-2.32	±5	2023-03-29
835	23.2	0.95	0.97	-2.06	53.34	55.2	-3.37	±5	2023-03-29
1800	23.2	1.51	1.52	-0.66	52.11	53.3	-2.23	±5	2023-03-29
1900	23.2	1.50	1.52	-1.32	52.42	53.3	-1.65	±5	2023-03-29
2450	22.5	1.94	1.95	-0.51	53.68	52.7	1.86	±5	2022-03-30

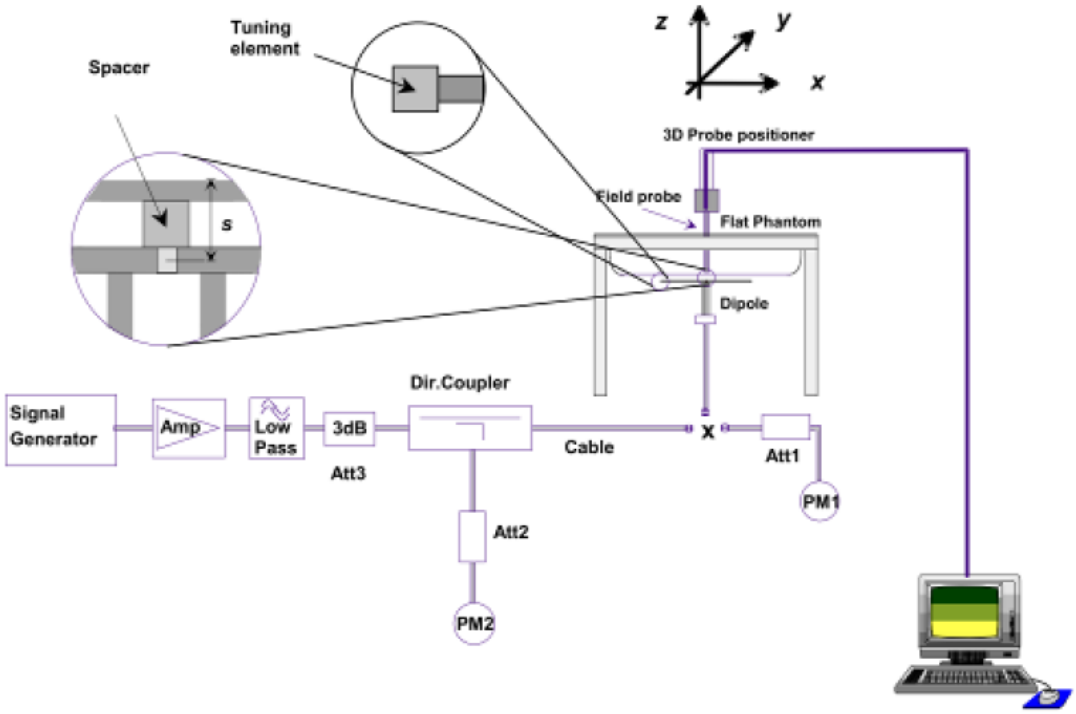
6. SAR Measurement Evaluation

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.

6.3 Validation Results

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

Frequency	Targeted SAR_{1g}	Measured SAR_{1g}	Normalized SAR_{1g}	Tolerance	Date
MHz	(W/kg)	(W/kg)	(W/kg)	(%)	
Body					
750	8.59	2.18	8.72	1.51	2023-03-29
835	9.78	2.51	10.04	2.66	2023-03-29
1800	38.90	9.46	37.84	-2.72	2023-03-29
1900	40.01	9.91	39.64	-0.92	2023-03-29
2450	53.67	12.59	50.36	-6.17	2022-03-27

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

Targeted and Measurement SAR

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

7. EUT Testing Position

7.1 Define Two Imaginary Lines on The Handset

(a) The vertical centerline passes through two points on the front side of the handset - the midpoint of the width w_t of the handset at the level of the acoustic output, and the midpoint of the width w_b of the bottom of the handset.

(b) The horizontal line is perpendicular to the vertical centerline and passes through the center of the acoustic output. The horizontal line is also tangential to the face of the handset at point A.

(c) The two lines intersect at point A. Note that for many handsets, point A coincides with the center of the acoustic output; however, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical centerline is not necessarily parallel to the front face of the handset, especially for clamshell handsets, handsets with flip covers, and other irregularly shaped handsets.

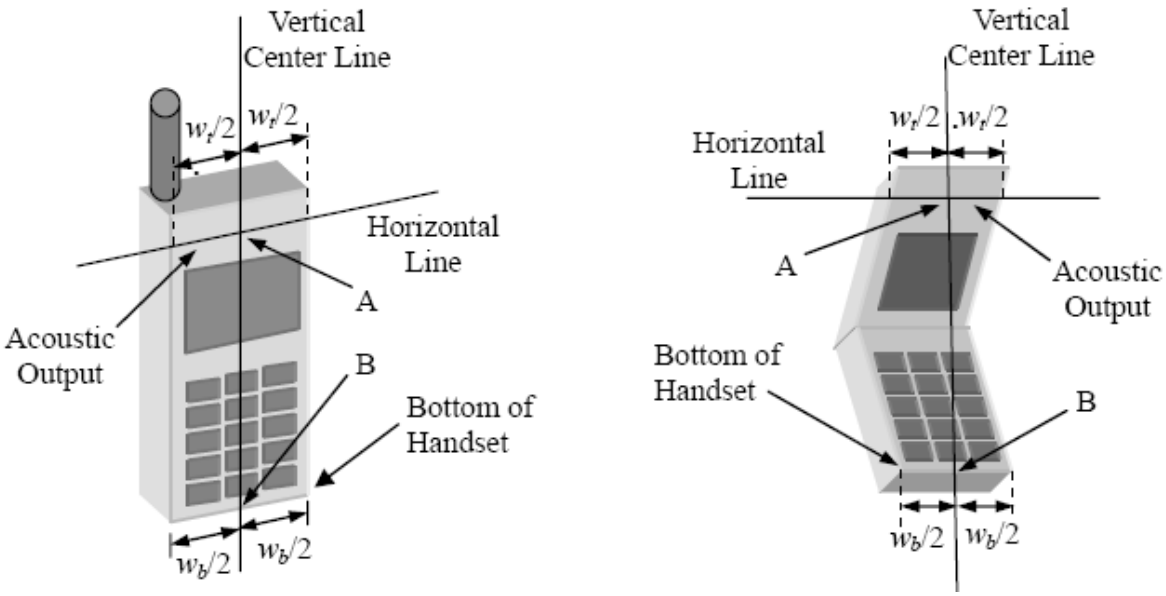


Illustration for Handset Vertical and Horizontal Reference Lines

7.2 Cheek Position

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

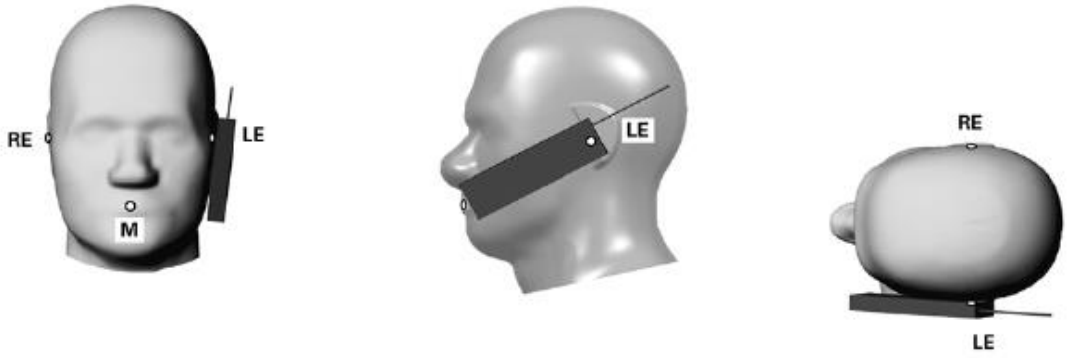


Illustration for Cheek Position

7.3 Tilted Position

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

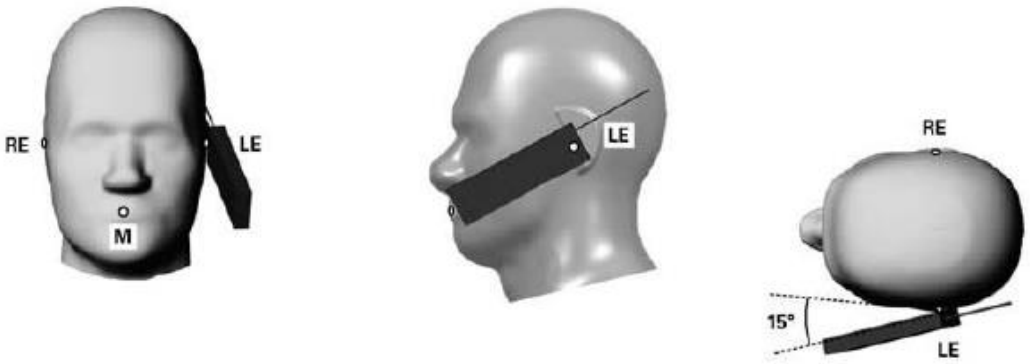


Illustration for Tilted Position

7.4 Body Position

(a) To position the device parallel to the phantom surface with each side.
(b) To adjust the device parallel to the flat phantom.
(c) To adjust the distance between the device surface and the flat phantom to 0mm.

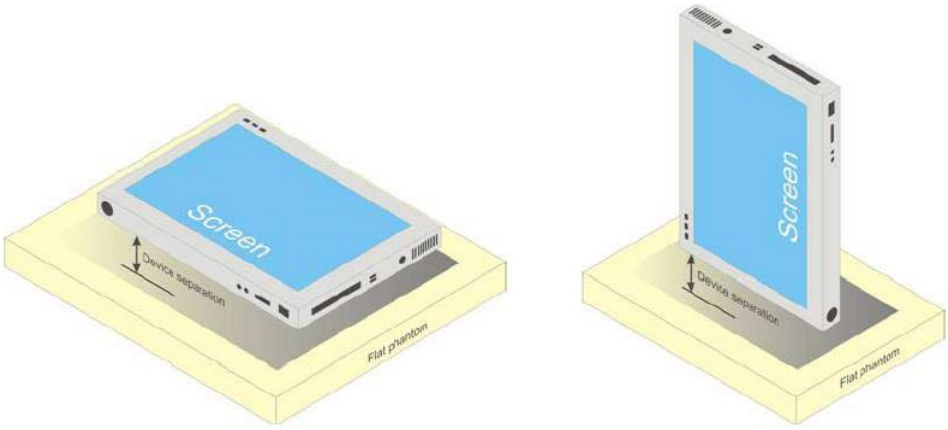
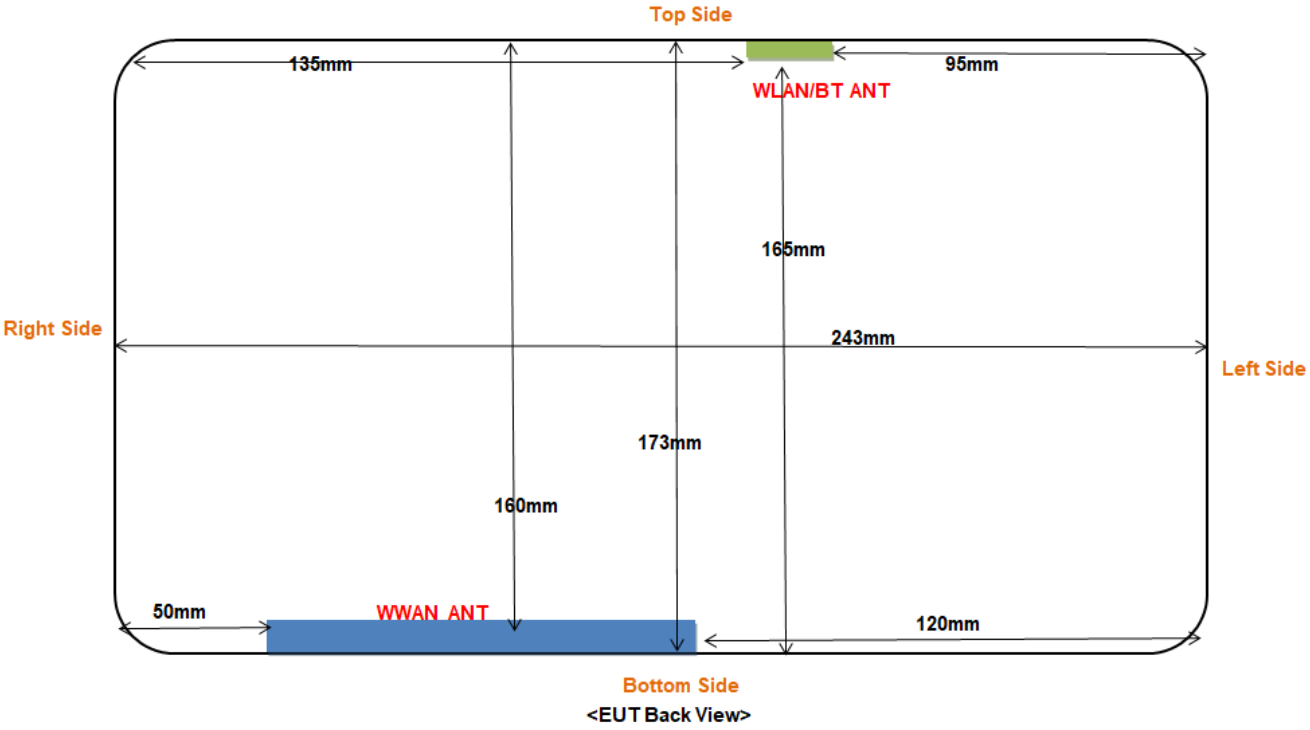


Illustration for Body Position

7.5 EUT Antenna Position



Block Diagram for EUT Antenna Position

Distance of EUT antenna-to-edge/surface(mm), Test distance:0mm						
Antennas	Back side	Front side	Left Edge	Right Edge	Top Edge	Bottom Edge
WWAN	<25	<25	120	50	160	<25
WLAN/BT	<25	<25	95	135	<25	165

7.6 EUT Testing Position

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:

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

Remark:

1. Referring to KDB 941225 D06, for larger tablets with a display or overall diagonal dimension > 20 cm, the SAR procedures in KDB Publication 616217 D04 are required.
2. Referring to KDB 616217 D04 v01r02, KDB 248227 D01 v02r02 and KDB 447498 D01 v06, this device is overall diagonal dimension(>20cm) tablet, tested in direct contact (no gap) with flat phantom. SAR must be measured for all sides and surfaces with a transmitting antenna located within 25mm from that surface or edge.
3. Referring to KDB 616217 D04 v01r02, Exposures from antennas through the front (top) surface of the display section of a full-size tablet, away from the edges, are generally limited to the user's hands. Exposures to hands for typical consumer transmitters used in tablets are not expected to exceed the extremity SAR limit; therefore, SAR evaluation for the front surface of tablet display screens are generally not necessary.

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

8. SAR Measurement Procedures

8.1 Measurement Procedures

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

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

8.2 Spatial Peak SAR Evaluation

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

8.3 Area & Zoom Scan Procedures

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

8.4 Volume Scan Procedures

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

8.5 SAR Averaged Methods

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

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

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

8.6 Power Drift Monitoring

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

9. SAR Test Result

9.1 Conducted RF Output Power

GSM - Burst Average Power (dBm)								
Band	**GSM850**			**Tune-up power (dBm)**	**PCS1900**			**Tune-up power (dBm)**
Channel	**128**	**190**	**251**		**512**	**661**	**810**	
Frequency (MHz)	**824.2**	**836.6**	**848.8**		**1850.2**	**1880**	**1909.8**	
GSM	32.30	**32.30**	32.17	32.5	27.90	**27.93**	27.73	28.0
GPRS (1 slot)	25.07	25.78	25.34	26.0	25.73	25.37	25.51	26.0
GPRS (2 slots)	25.49	26.03	25.58	26.0	25.45	25.29	25.8	26.0
GPRS (3 slots)	23.81	**24.66**	24.16	25.0	24.20	**24.55**	24.53	25.0
GPRS (4 slots)	21.18	22.15	21.33	22.5	21.54	21.93	22.42	22.5
EDGE (1 slot)	32.30	32.31	32.17	32.5	27.93	27.94	27.74	28.0
EDGE (2 slots)	30.46	30.33	30.06	30.5	25.78	25.52	25.18	26.0
EDGE (3 slots)	28.34	28.21	27.97	28.5	23.98	23.77	23.43	24.0
EDGE (4 slots)	25.66	25.64	25.47	26.0	21.92	21.68	21.32	22.0

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	23.30	23.30	23.17	23.5	18.90	18.93	18.73	19.0
GPRS (1 slot)	16.07	16.78	16.34	27.0	16.73	16.37	16.51	17.0
GPRS (2 slots)	19.49	20.03	19.58	20.5	19.45	19.29	19.80	20.0
GPRS (3 slots)	19.56	**20.41**	19.91	20.5	19.95	**20.30**	20.28	20.5
GPRS (4 slots)	18.18	19.15	18.33	19.5	18.54	18.93	19.42	19.5
EDGE (1 slot)	23.30	23.31	23.17	23.5	18.93	18.94	18.74	19.0
EDGE (2 slots)	24.46	24.33	24.06	24.5	19.78	19.52	19.18	20.0
EDGE (3 slots)	24.09	23.96	23.72	24.5	19.73	19.52	19.18	20.0
EDGE (4 slots)	22.66	22.64	22.47	23.0	18.92	18.68	18.32	19.0
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 Body SAR testing, GPRS should be evaluated; therefore the EUT was set in GPRS (3TX slots) for GSM850 and GPRS (3TX slots) for GSM1900 due to its highest source-based time-average power.
2. Per KDB 447498 D01 v06, the maximum output power channel is used for SAR testing and for further SAR

test reduction.

3. The DUT do not support DTM function.

4. The DUT do not support Hotspot function.

WCDMA - Average Power (dBm)								
Band	**WCDMA Band II**							
Channel	**9262**	**9400**	**9538**	**Tune-up power (dBm)**				
Frequency (MHz)	**1852.4**	**1880.0**	**1907.6**					
RMC 12.2k	21.44	**21.46**	21.34	21.5				
HSDPA Subtest-1	21.33	**22.01**	21.68	22.5				
HSDPA Subtest-2	21.07	21.63	21.41	22.0				
HSDPA Subtest-3	20.79	21.55	21.07	22.0				
HSDPA Subtest-4	20.34	21.25	20.99	22.0				
HSUPA Subtest-1	21.17	21.67	21.34	22.0				
HSUPA Subtest-2	21.23	21.83	21.48	22.0				
HSUPA Subtest-3	21.11	21.39	20.97	22.0				
HSUPA Subtest-4	21.18	21.82	21.46	22.0				
HSUPA Subtest-5	21.07	21.52	21.11	22.0				

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.

Band2:

Band2 - Channel Bandwidth=Lowest (1.4MHz)						
Condition	**Modulation**	**Channel**	**RB allocation**		**Average Power (dBm)**	**Verdict**
			RB Size	**RB Offset**		
Normal	QPSK	Low range	1	0	21.62	Pass
				max	21.59	Pass
			Partial	0	21.49	Pass
				max	21.47	Pass
		Mid range	1	0	21.33	Pass
				max	21.34	Pass
			Partial	0	21.45	Pass
				max	21.38	Pass
		High range	1	0	21.47	Pass
				max	21.39	Pass
			Partial	0	21.40	Pass
				max	21.37	Pass

Band2 - Channel Bandwidth=Lowest (5MHz)						
Condition	**Modulation**	**Channel**	**RB allocation**		**Average Power (dBm)**	**Verdict**
			RB Size	**RB Offset**		
Normal	QPSK	Low range	1	0	21.35	Pass
				max	21.24	Pass
			Partial	0	20.45	Pass
				max	20.42	Pass
		Mid range	1	0	21.46	Pass
				max	21.54	Pass
			Partial	0	20.34	Pass
				max	20.51	Pass
		High range	1	0	21.23	Pass
				max	21.21	Pass
			Partial	0	20.33	Pass
				max	20.35	Pass

Band2 - Channel Bandwidth=Lowest (20MHz)						
Condition	Modulation	Channel	RB allocation		Average Power (dBm)	Verdict
			RB Size	RB Offset		
Normal	QPSK	Low range	1	0	21.51	Pass
				max	21.52	Pass
			Partial	0	20.35	Pass
				max	20.3	Pass
		Mid range	1	0	21.37	Pass
				max	**21.76**	Pass
			Partial	0	20.29	Pass
				max	20.37	Pass
		High range	1	0	21.59	Pass
				max	21.46	Pass
			Partial	0	20.42	Pass
				max	20.46	Pass

Band12:

Band12 - Channel Bandwidth=Lowest (1.4MHz)						
Condition	Modulation	Channel	RB allocation		Average Power (dBm)	Verdict
			RB Size	RB Offset		
Normal	QPSK	Low range	1	0	**22.95**	Pass
				max	22.82	Pass
			Partial	0	22.86	Pass
				max	22.75	Pass
		Mid range	1	0	22.68	Pass
				max	22.77	Pass
			Partial	0	22.63	Pass
				max	22.60	Pass
		High range	1	0	22.74	Pass
				max	22.90	Pass
			Partial	0	22.69	Pass
				max	22.71	Pass

Band12 - Channel Bandwidth=Lowest (5MHz)						
Condition	Modulation	Channel	RB allocation		Average Power (dBm)	Verdict
			RB Size	RB Offset		
Normal	QPSK	Low range	1	0	22.77	Pass
				max	22.75	Pass
			Partial	0	22.75	Pass
				max	22.75	Pass
		Mid range	1	0	21.05	Pass
				max	21.06	Pass
			Partial	0	21.06	Pass
				max	21.06	Pass
		High range	1	0	22.45	Pass
				max	22.58	Pass
			Partial	0	21.67	Pass
				max	21.60	Pass

Band12 - Channel Bandwidth=Lowest (10MHz)						
Condition	Modulation	Channel	RB allocation		Average Power (dBm)	Verdict
			RB Size	RB Offset		
Normal	QPSK	Low range	1	0	22.66	Pass
				max	22.52	Pass
			Partial	0	21.73	Pass
				max	21.60	Pass
		Mid range	1	0	**22.72**	Pass
				max	22.67	Pass
			Partial	0	21.72	Pass
				max	21.6	Pass
		High range	1	0	22.48	Pass
				max	22.50	Pass
			Partial	0	22.56	Pass
				max	22.55	Pass

Band17:

Band17 - Channel Bandwidth=Lowest (5MHz)						
Condition	**Modulation**	**Channel**	**RB allocation**		**Average Power (dBm)**	**Verdict**
			RB Size	**RB Offset**		
Normal	QPSK	Low range	1	0	22.49	Pass
				max	22.5	Pass
			Partial	0	22.39	Pass
				max	22.39	Pass
		Mid range	1	0	22.6	Pass
				max	22.61	Pass
			Partial	0	22.63	Pass
				max	22.65	Pass
		High range	1	0	20.95	Pass
				max	20.96	Pass
			Partial	0	20.95	Pass
				max	20.94	Pass

Band17 - Channel Bandwidth=Lowest (10MHz)						
Condition	**Modulation**	**Channel**	**RB allocation**		**Average Power (dBm)**	**Verdict**
			RB Size	**RB Offset**		
Normal	QPSK	Low range	1	0	22.72	Pass
				max	**22.76**	Pass
			Partial	0	22.74	Pass
				max	22.72	Pass
		Mid range	1	0	22.56	Pass
				max	22.52	Pass
			Partial	0	21.66	Pass
				max	21.67	Pass
		High range	1	0	22.56	Pass
				max	22.53	Pass
			Partial	0	22.53	Pass
				max	22.61	Pass

Band66:

Band66 - Channel Bandwidth=Lowest (1.4MHz)						
Condition	**Modulation**	**Channel**	**RB allocation**		**Average Power (dBm)**	**Verdict**
			RB Size	**RB Offset**		
Normal	QPSK	Low range	1	0	22.01	Pass
				max	22.06	Pass
			Partial	0	21.93	Pass
				max	21.95	Pass
		Mid range	1	0	21.94	Pass
				max	21.94	Pass
			Partial	0	22.08	Pass
				max	22.07	Pass
		High range	1	0	21.85	Pass
				max	21.90	Pass
			Partial	0	21.99	Pass
				max	21.95	Pass

Band66 - Channel Bandwidth=Lowest (5MHz)						
Condition	**Modulation**	**Channel**	**RB allocation**		**Average Power (dBm)**	**Verdict**
			RB Size	**RB Offset**		
Normal	QPSK	Low range	1	0	21.95	Pass
				max	21.94	Pass
			Partial	0	21.02	Pass
				max	21.01	Pass
		Mid range	1	0	22.04	Pass
				max	22.15	Pass
			Partial	0	21.03	Pass
				max	21.15	Pass
		High range	1	0	21.86	Pass
				max	21.86	Pass
			Partial	0	20.93	Pass
				max	20.96	Pass

Band66 - Channel Bandwidth=Lowest (20MHz)						
Condition	Modulation	Channel	RB allocation		Average Power (dBm)	Verdict
			RB Size	RB Offset		
Normal	QPSK	Low range	1	0	22.03	Pass
				max	22.12	Pass
			Partial	0	21.04	Pass
				max	21.17	Pass
		Mid range	1	0	22.13	Pass
				max	**22.24**	Pass
			Partial	0	21.03	Pass
				max	21.13	Pass
		High range	1	0	22.22	Pass
				max	22.12	Pass
			Partial	0	21.15	Pass
				max	20.91	Pass

Remark:

1. Per KDB941225 D05 v02r05, Start with the largest channel bandwidth then measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power among RB offsets at the upper edge, middle, and lower edge of each required test channel. When the reported SAR is≤ 0.8 W/kg, testing of the remaining RB offset configurations and required test channels is not required for 1 RB allocation; otherwise, SAR is required for the remaining required test channels and only for the RB offset configuration with the highest output power for that channel. 6 When the reported SAR of a required test channel is > 1.45 W/kg, SAR is required for all three RB offset configurations for that required test channel.
2. Per KDB941225 D05 v02r05, the procedures required for 1 RB allocation in 5.2.1 are applied to measure the SAR for QPSK with 50% RB allocation.
3. Per KDB941225 D05 v02r05, for QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations, and the highest reported SAR for 1 RB and 50% RB allocation in 5.2.1 and 5.2.2 are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
4. Per KDB941225 D05 v02r05, for each modulation besides QPSK; e.g., 16-QAM, 64-QAM, apply the QPSK procedures in 5.2.1, 5.2.2, and 5.2.3 to determine the QAM configurations that may need SAR measurement. For each configuration identified as required for testing, SAR is required only when the highest maximum output power for the configuration in the higher order modulation is > ½ dB higher than the same configuration in QPSK or when the reported SAR for the QPSK configuration is > 1.45 W/kg.

WLAN(2.4GHz)					
Test Mode	**Data Rate**	**Channel**	**Frequency (MHz)**	**Conducted Power (dBm)**	**Tune-up power (dBm)**
802.11b	11Mbps	CH 01	2412	15.642	16.0
		CH 06	2437	**18.321**	18.5
		CH 11	2462	15.864	16.0
802.11g	54Mbps	CH 01	2412	14.469	14.5
		CH 06	2437	**18.977**	19.0
		CH 11	2462	15.754	16.0
802.11n (20MHz)	MCS7	CH 01	2412	15.658	16.0
		CH 06	2437	18.449	18.5
		CH 11	2462	16.382	16.5

Remark:

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

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

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

Bluetooth			
Test Mode	**Data Rate**	**Conducted Power (dBm)**	**Tune-up power (dBm)**
GFSK	1Mbps	8.338	8.5
4*π4DQPSK	2Mbps	8.239	8.5
8DPSK	3Mbps	**8.369**	8.5

Bluetooth					
Test Mode	**Data Rate**	**Channel**	**Frequency (MHz)**	**Conducted Power (dBm)**	**Tune-up power (dBm)**
BLE	1Mbps	CH 00	2402	0.027	0.5
		CH 19	2440	**1.758**	2.0
		CH 39	2480	1.413	1.5

Remark:

The GSM/WCDMA/LTE/WIFI/BT Output power are provided by Shenzhen CTB testing technology Co., LTD.

9.2 Test Results for Standalone SAR Test

Body SAR

GSM850 – Body SAR Test (Gap: 0mm)									
Plot No.	Mode	Test Position Body	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
	GSM	Back Face	190	836.6	32.30	32.5	1.047	0.449	0.470
1.	GPRS_3TX	Back Face	190	836.6	24.66	25.0	1.081	0.506	**0.547**
	GPRS_3TX	Bottom Side	190	836.6	24.66	25.0	1.081	0.418	0.452

GSM1900 – Body SAR Test (Gap: 0mm)									
Plot No.	Mode	Test Position Body	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
	GSM	Back Face	661	1880	27.93	28.0	1.016	0.313	0.318
2.	GPRS_3TX	Back Face	661	1880	24.55	25.0	1.109	0.483	**0.536**
	GPRS_3TX	Bottom Side	661	1880	24.55	25.0	1.109	0.345	0.383

WCDMA Band 2 – Body SAR Test (Gap: 0mm)									
Plot No.	Mode	Test Position Body	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
	RMC 12.2k	Back Face	9400	1880.0	21.46	21.5	1.009	0.426	0.430
	RMC 12.2k	Bottom Side	9400	1880.0	21.46	21.5	1.009	0.327	0.330
3.	HSDPA Subtest-1	Back Face	9400	1880.0	22.01	22.5	1.119	0.415	**0.465**
	HSDPA Subtest-1	Bottom Side	9400	1880.0	22.01	22.5	1.119	0.311	0.348

LTE Band 2–Body SAR Test (Gap: 0mm)								
Plot No.	Mode	Test Position Body	Frequency	Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
	Modulation, Bandwidth, RB		MHz					
4.	QPSK 20MHz 1RB	Back Face	1880	21.76	22.0	1.057	0.674	**0.712**
	QPSK 20MHz 1RB	Bottom Side	1880	21.76	22.0	1.057	0.543	0.574
	QPSK 20MHz 50%RB	Back Face	1880	21.76	22.0	1.057	0.555	0.587
	QPSK 20MHz 50%RB	Bottom Side	1880	21.76	22.0	1.057	0.498	0.526

LTE Band 12–Body SAR Test (Gap: 0mm)								
Plot No.	**Mode**	**Test Position Body**	**Frequency**	**Output Power (dBm)**	**Rated Limit (dBm)**	**Scaling Factor**	**SAR1g (W/kg)**	**Scaled SAR1g (W/kg)**
	Modulation, Bandwidth, RB		**MHz**					
	QPSK 1.4MHz 1RB	Back Face	699.7	22.95	23.0	1.012	0.362	0.366
	QPSK 1.4MHz 1RB	Bottom Side	699.7	22.95	23.0	1.012	0.216	0.219
	QPSK 1.4MHz 50%RB	Back Face	699.7	22.95	23.0	1.012	0.328	0.332
	QPSK 1.4MHz 50%RB	Bottom Side	699.7	22.95	23.0	1.012	0.201	0.203
5.	QPSK 10MHz 1RB	Back Face	707.5	22.72	23.0	1.067	0.496	**0.529**
	QPSK 10MHz 1RB	Bottom Side	707.5	22.72	23.0	1.067	0.356	0.380
	QPSK 10MHz 50%RB	Back Face	707.5	22.72	23.0	1.067	0.415	0.443
	QPSK 10MHz 50%RB	Bottom Side	707.5	22.72	23.0	1.067	0.325	0.347

LTE Band 17–Body SAR Test (Gap: 0mm)								
Plot No.	**Mode**	**Test Position Body**	**Frequency**	**Output Power (dBm)**	**Rated Limit (dBm)**	**Scaling Factor**	**SAR1g (W/kg)**	**Scaled SAR1g (W/kg)**
	Modulation, Bandwidth, RB		**MHz**					
6.	QPSK 10MHz 1RB	Back Face	709	22.76	23.0	1.057	0.489	**0.517**
	QPSK 10MHz 1RB	Bottom Side	709	22.76	23.0	1.057	0.321	0.339
	QPSK 10MHz 50%RB	Back Face	709	22.76	23.0	1.057	0.369	0.390
	QPSK 10MHz 50%RB	Bottom Side	709	22.76	23.0	1.057	0.235	0.248

LTE Band 66–Body SAR Test (Gap: 0mm)								
Plot No.	Mode	Test Position Body	Frequency	Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
	Modulation, Bandwidth, RB		MHz					
	QPSK 20MHz 1RB	Back Face	1745	22.24	22.5	1.062	0.838	0.890
	QPSK 20MHz 1RB	Bottom Side	1745	22.24	22.5	1.062	0.685	0.727
	QPSK 20MHz 1RB	Back Face	1720	22.12	22.5	1.091	0.783	0.855
7.	QPSK 20MHz 1RB	Back Face	1775	22.22	22.5	1.067	0.932	**0.994**
	QPSK 20MHz 50%RB	Back Face	1745	22.24	22.5	1.062	0.789	0.838
	QPSK 20MHz 50%RB	Bottom Side	1745	22.24	22.5	1.062	0.546	0.580
	QPSK 20MHz 50%RB	Back Face	1720	22.12	22.5	1.091	0.698	0.762
	QPSK 20MHz 50%RB	Back Face	1775	22.22	22.5	1.067	0.852	0.909

WLAN 2.4GHz –Body SAR Test (Gap: 0mm)									
Plot No.	Mode	Test Position Body	Frequency		Output Power (dBm)	Rated Limit (dBm)	Scaling Factor	SAR1g (W/kg)	Scaled SAR1g (W/kg)
			CH.	MHz					
8.	802.11b	Back Face	CH 06	2437	18.321	18.5	1.042	0.325	**0.339**
	802.11b	Top Side	CH 06	2437	18.321	18.5	1.042	0.206	0.215
	802.11g	Back Face	CH 06	2437	18.977	19.0	1.005	0.297	0.299
	802.11g	Top Side	CH 06	2437	18.977	19.0	1.005	0.143	0.144

Bluetooth–Body SAR Test (Gap: 0mm)									
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.	8DPSK	Back Face	39	2441	8.369	8.5	1.031	0.158	**0.163**
	8DPSK	Top Side	39	2441	8.369	8.5	1.031	0.055	0.057

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.

Repeated SAR

LTE Band 66–Body SAR Test (Gap: 0mm)							
Mode Modulation, Bandwidth, RB	Test Position Body	Frequency	SAR1g (W/kg)	Repeated SAR		Ratio	
		MHz		1	2	1	2
QPSK 20MHz 1RB	Back Face	1745	0.838	0.825	/	1.016	/
QPSK 20MHz 1RB	Back Face	1775	0.932	0.918	/	1.015	/
QPSK 20MHz 50%RB	Back Face	1775	0.852	0.846	/	1.007	/

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	Body SAR
1	**GSM(Voice/Data) + WLAN(2.4GHz)(Data)**	Yes
2	**WCDMA (Voice/Data)+ WLAN(2.4GHz)(Data)**	Yes
3	**LTE(Data) + WLAN(2.4GHz)(Data)**	Yes
4	**GSM(Voice/Data) + Bluetooth(Data)**	Yes
5	**WCDMA (Voice/Data) + Bluetooth(Data)**	Yes
6	**LTE(Data) + Bluetooth(Data)**	Yes

Remark:

1. GSM, WCDMA and LTE share the same antenna, and cannot transmit simultaneously.
2. WLAN and Bluetooth share the same antenna, and cannot transmit simultaneously.
3. According to the KDB 447498 D01 v06, when standalone SAR test exclusion applies to an antenna that transmits simultaneously with other antennas, the standalone SAR must be estimated according to following to determine simultaneous transmission SAR test exclusion:
(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)]·[√f(GHz)/x] W/kg for test separation distances ≤ 50 mm;
where x = 7.5 for 1-g SAR, and x = 18.75 for 10-g SAR.
4. The maximum SAR summation is calculated based on the same configuration and test position.

Body SAR

WWAN and WLAN

	WWAN		WLAN(2.4GHz)	Summed SAR (W/kg)
Position	**Band**	**Scaled SAR (W/kg)**	**Scaled SAR (W/kg)**	
Back	GSM	**0.547**	**0.339**	0.886
Front	GSM	--	--	--
Right side	GSM	--	--	--
Left side	GSM	--	--	--
Bottom side	GSM	0.452	--	0.452
Top side	GSM	--	0.215	0.215
Back	WCDMA	**0.465**	**0.339**	0.804
Front	WCDMA	--	--	--
Right side	WCDMA	--	--	--
Left side	WCDMA	--	--	--
Bottom side	WCDMA	0.348	--	0.348
Top side	WCDMA	--	0.215	0.215
Back	LTE	**0.994**	**0.339**	**1.333**
Front	LTE	--	--	--
Right side	LTE	--	--	--
Left side	LTE	--	--	--
Bottom side	LTE	0.727	--	0.348
Top side	LTE	--	0.215	0.215

WWAN and Bluetooth

	WWAN		Bluetooth	Summed SAR (W/kg)
Position	**Band**	**Scaled SAR (W/kg)**	**Scaled SAR (W/kg)**	
Back	GSM	**0.547**	**0.163**	0.710
Front	GSM	--	--	--
Right side	GSM	--	--	--
Left side	GSM	--	--	--
Bottom side	GSM	0.452	--	0.452
Top side	GSM	--	0.057	0.057
Back	WCDMA	**0.465**	**0.163**	0.628
Front	WCDMA	--	--	--
Right side	WCDMA	--	--	--
Left side	WCDMA	--	--	--
Bottom side	WCDMA	0.348	--	0.348
Top side	WCDMA	--	0.057	0.057
Back	LTE	**0.994**	**0.163**	**1.157**
Front	LTE	--	--	--
Right side	LTE	--	--	--
Left side	LTE	--	--	--
Bottom side	LTE	0.727	--	0.727
Top side	LTE	--	0.057	0.057

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	7.00	7.00	
Axial Isotropy	E.2.2	2.5	R		(1_Cp)^1/	(1_Cp)^1/2	1.02	1.02	
Hemispherical Isotropy	E.2.2	4.0	R		(Cp)^1/2	(Cp)^1/2	1.63	1.63	
Boundary effect	E.2.3	1.0	R		1	1	0.58	0.58	
Linearity	E.2.4	5.0	R		1	1	2.89	2.89	
System detection limits	E.2.5	1.0	R		1	1	0.58	0.58	
Readout Electronics	E.2.6	0.02	N		1	1	0.02	0.02	
Reponse Time	E.2.7	3.0	R		1	1	1.73	1.73	
Integration Time	E.2.8	2.0	R		1	1	1.15	1.15	
RF ambient Conditions –	E.6.1	0	R		1	1	1.73	1.73	
RF ambient Conditions - Reflections	E.6.1	0	R		1	1	1.73	1.73	
Probe positioner Mechanical Tolerance	E.6.2	2.0	R		1	1	1.15	1.15	
Probe positioning with respect to Phantom Shell	E.6.3	0.05	R		1	1	0.03	0.03	
Extrapolation, interpolation and integration Algoritms for Max. SAR Evaluation	E.5	5.0	R		1	1	2.89	2.89	
Test Sample Related									
Test sample positioning	E.4.2	0.03	N		1	1	0.03	0.03	
Device Holder Uncertainty	E.4.1	5.00	N		1	1	5.00	5.00	
Output power Variation - SAR drift measurement	E.2.9	12.02	R		1	1	6.94	6.94	
SAR scaling	E6.5	0.0	R		1	1	0.0	0.0	
Phantom and Tissue Parameters									
Phantom Uncertainty (Shape and thickness tolerances)	E.3.1	0.05	R		1	1	0.03	0.03	

Uncertainty in SAR correction for deviations in permittivity and conductivity	E3.2	1.9	R		1	0.84	1.10	0.90	
Liquid conductivity - deviation from target value	E.3.2	5.00	R		0.64	0.43	1.85	1.24	
Liquid conductivity - measurement uncertainty	E.3.3	5.00	N		0.64	0.43	3.20	2.15	
Liquid permittivity - deviation from target value	E.3.2	0.37	R		0.6	0.49	0.13	0.10	
Liquid permittivity - measurement uncertainty	E.3.3	10.00	N		0.6	0.49	6.00	4.90	
Combined Standard Uncertainty			RSS				10.20	10.00	
Expanded Uncertainty (95% Confidence interval)			K=2				20.40	20.00	

Annex A. Plots of System Performance Check

MEASUREMENT 1

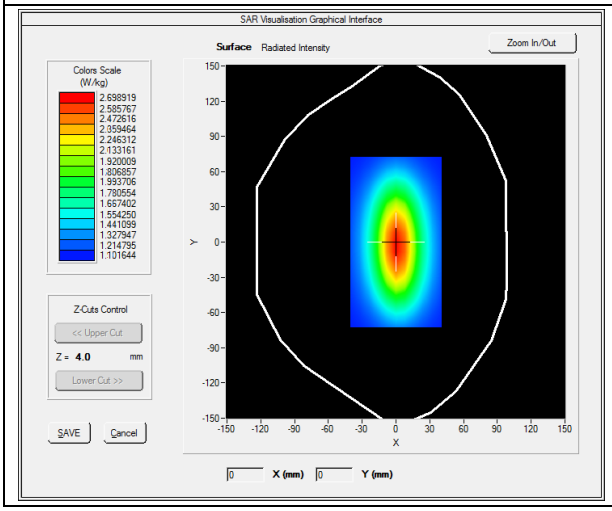
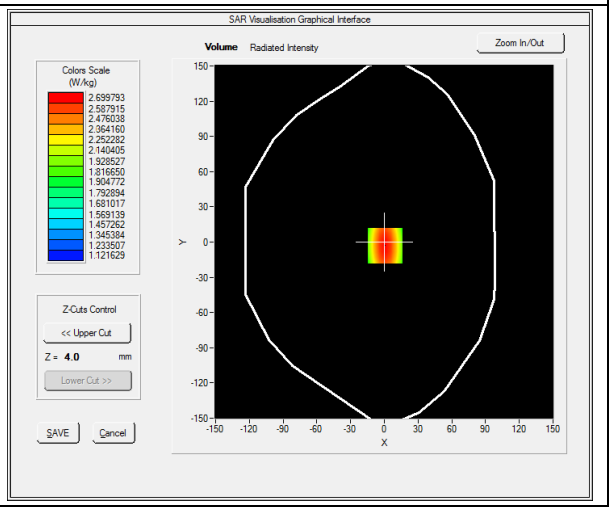
Type: Validation measurement (Fast, 75.00 %)
Date of measurement: 2023-03-29
Measurement duration: 7 minutes 21 seconds
E-field Probe: SSE2 - SN 18/21 EPGO356; ConvF: 1.76; Calibrated: 2022-07-08

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=5mm dy=5mm dz=4mm
Phantom	Validation plane
Device Position	Dipole
Band	CW750
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	750.000000
Relative Permittivity (real part)	54.211057
Conductivity (S/m)	0.932583
Power Variation (%)	0.383631
Ambient Temperature	23.2
Liquid Temperature	23.2

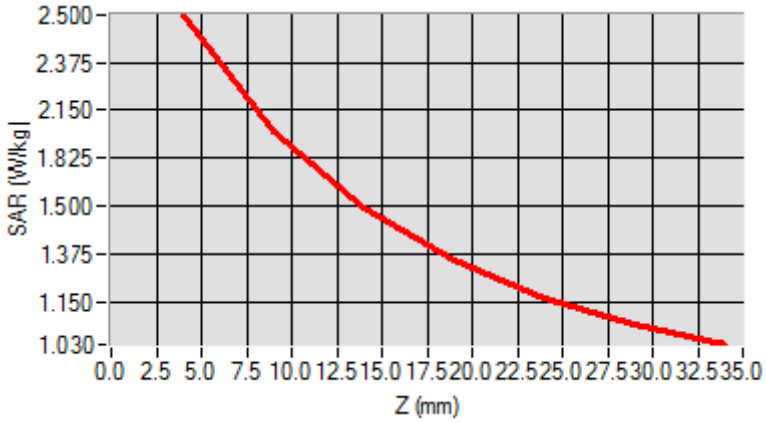
SURFACE SAR	VOLUME SAR
	

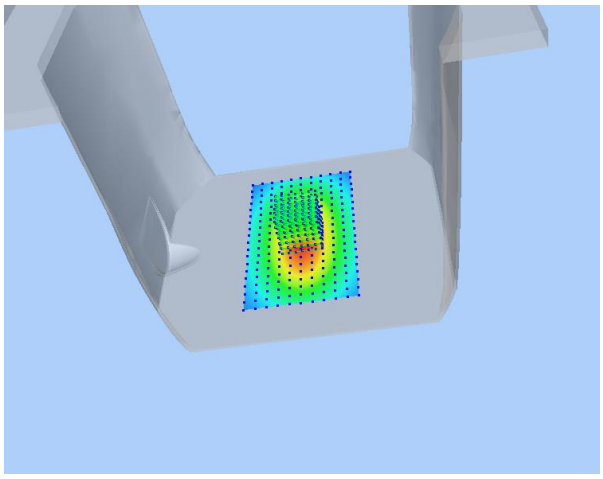
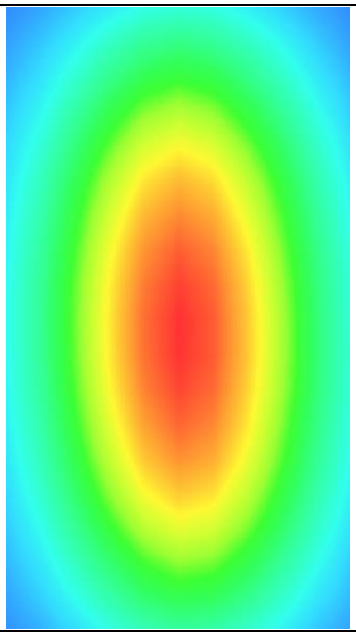
Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	1.042744
SAR 1g (W/Kg)	2.180534

Z Axis Scan

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



3D screen shot	Hot spot position
	

MEASUREMENT 2

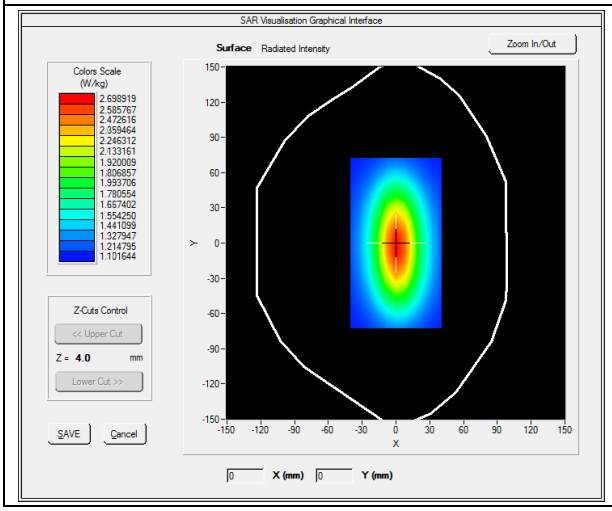
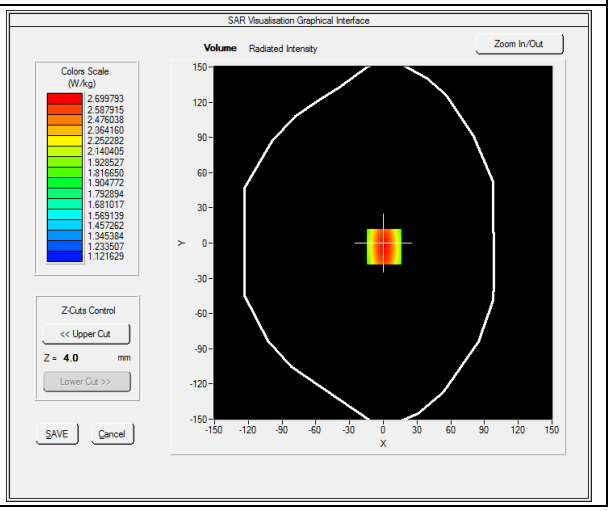
Type: Validation measurement (Fast, 75.00 %)
Date of measurement: 2023-03-29
Measurement duration: 7 minutes 21 seconds
E-field Probe: SSE2 - SN 18/21 EPGO356; ConvF: 1.78; Calibrated: 2022-07-08

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=5mm dy=5mm dz=4mm
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)	53.340245
Conductivity (S/m)	0.951245
Power Variation (%)	0.428437
Ambient Temperature	23.2
Liquid Temperature	23.2

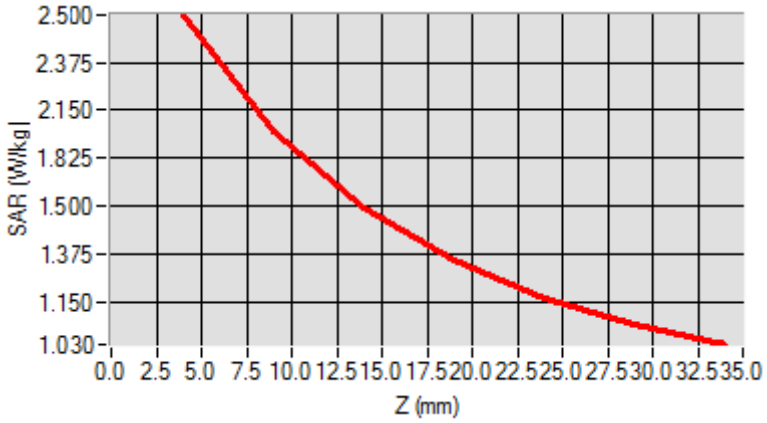
SURFACE SAR	VOLUME SAR
	

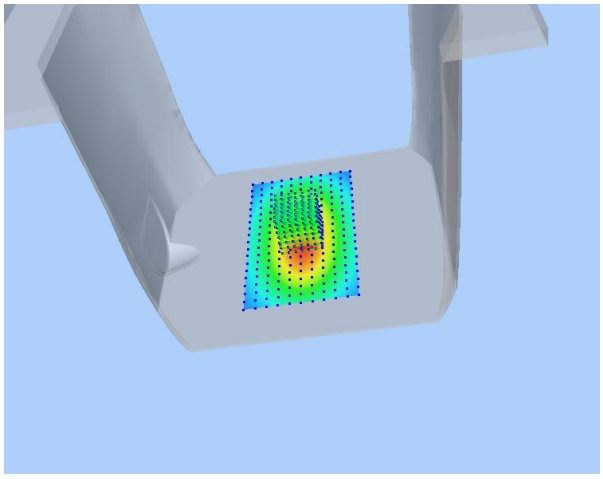
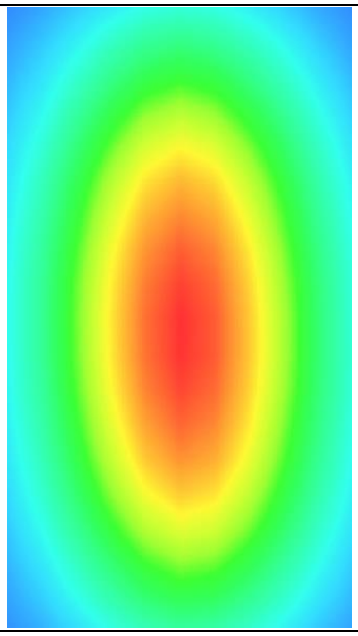
Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	1.519489
SAR 1g (W/Kg)	2.511253

Z Axis Scan

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



3D screen shot	Hot spot position
	

MEASUREMENT 3

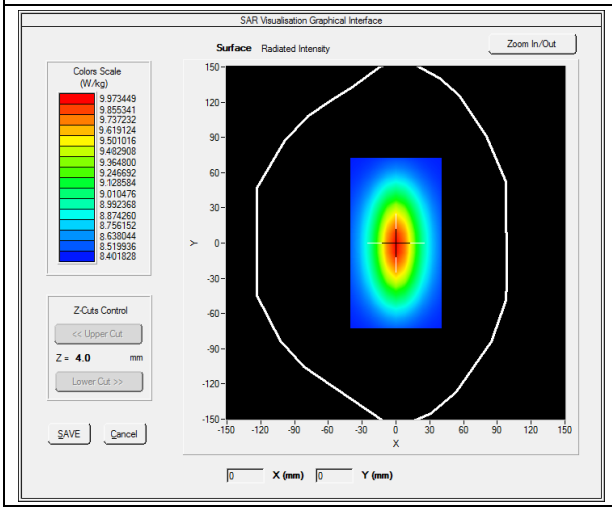
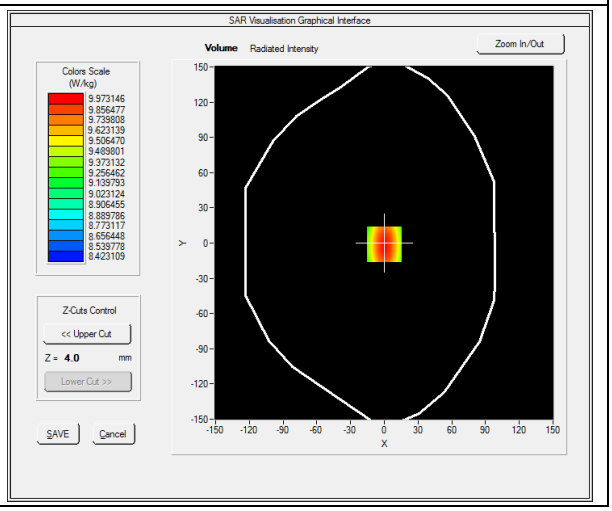
Type: Validation measurement (Fast, 75.00 %)
Date of measurement: 2023-03-29
Measurement duration: 12 minutes 21 seconds
E-field Probe: SSE2 - SN 18/21 EPGO356; ConvF: 2.15; Calibrated: 2022-07-08

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=5mm dy=5mm dz=4mm
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)	52.111090
Conductivity (S/m)	1.512510
Power Variation (%)	1.041232
Ambient Temperature	23.2
Liquid Temperature	23.2

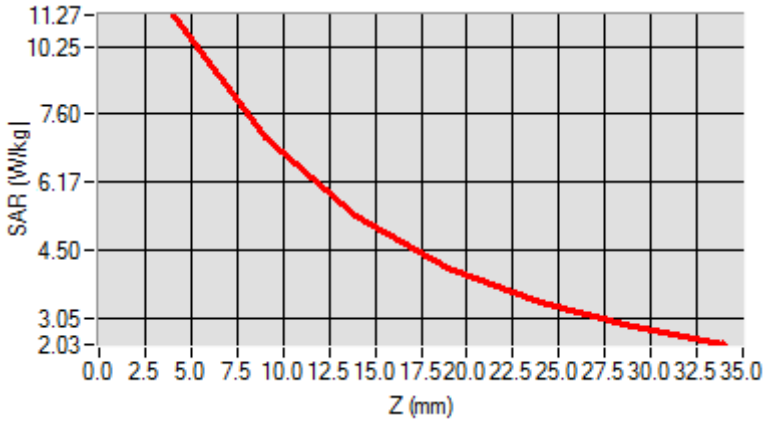
SURFACE SAR	VOLUME SAR
	

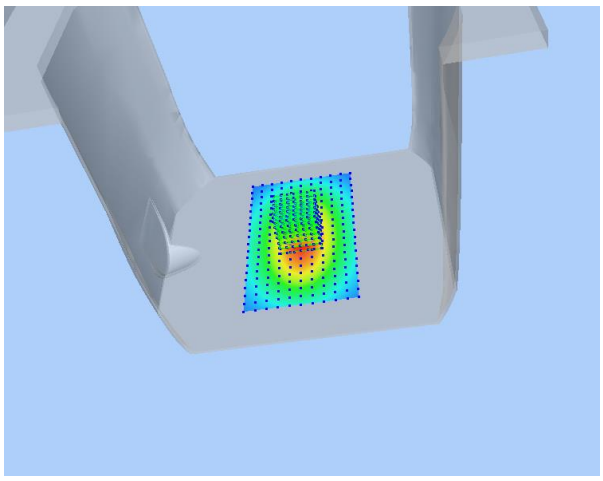
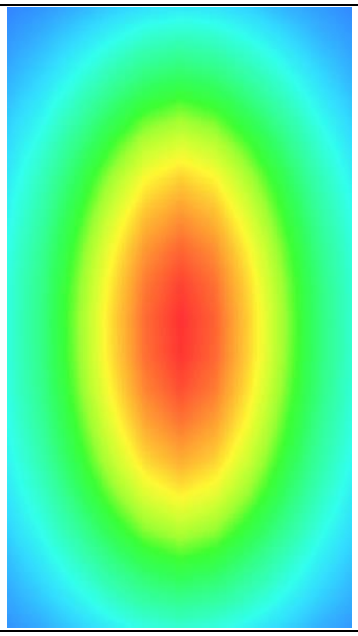
Maximum location: X=0.00, Y=0.00

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 4

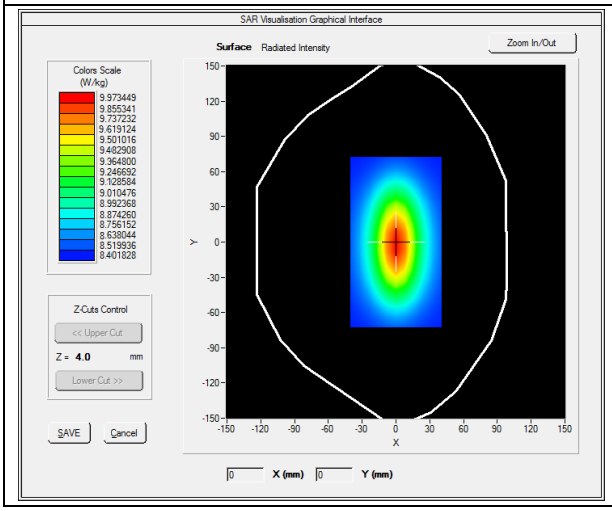
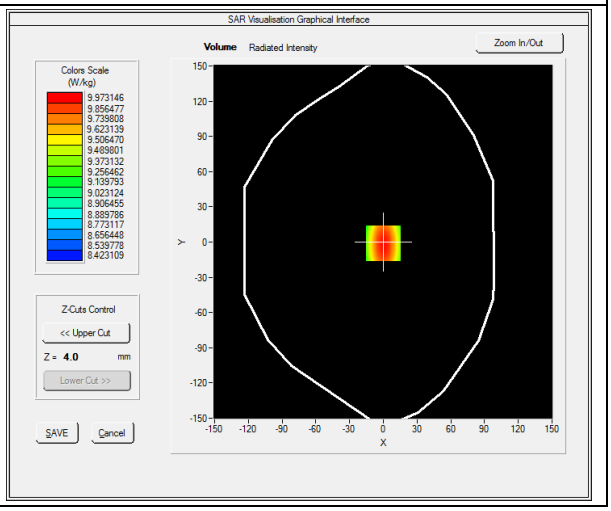
Type: Validation measurement (Fast, 75.00 %)
Date of measurement: 2023-03-29
Measurement duration: 12 minutes 21 seconds
E-field Probe: SSE2 - SN 18/21 EPGO356; ConvF: 2.30; Calibrated: 2022-07-08

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=5mm dy=5mm dz=4mm
Phantom	Validation plane
Device Position	Dipole
Band	CW1900
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	1900.000000
Relative Permittivity (real part)	52.421245
Conductivity (S/m)	1.503607
Power Variation (%)	1.022540
Ambient Temperature	23.2
Liquid Temperature	23.2

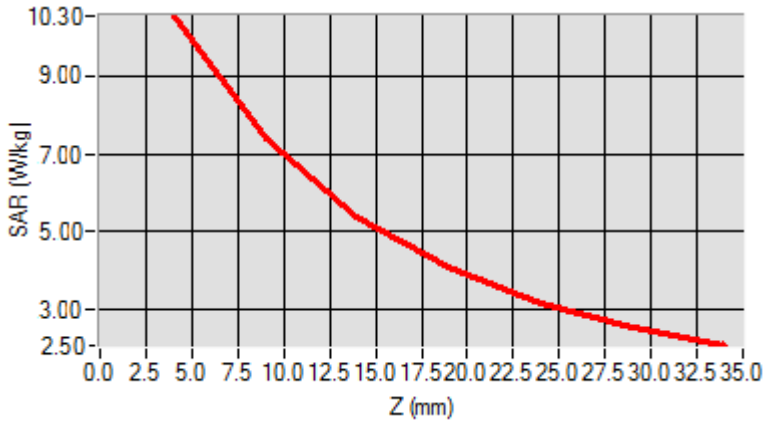
SURFACE SAR	VOLUME SAR
	

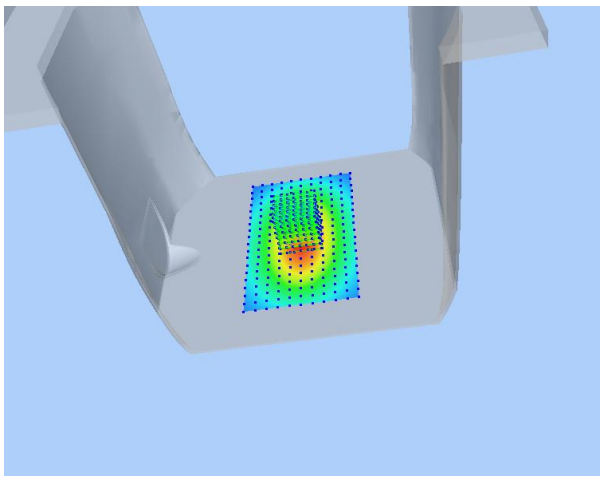
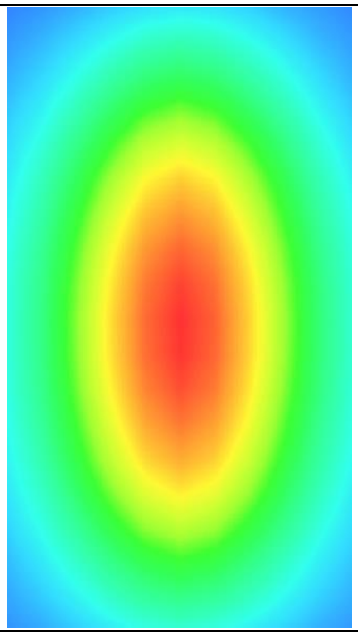
Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	5.174526
SAR 1g (W/Kg)	9.913214

Z Axis Scan

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



3D screen shot	Hot spot position
	

MEASUREMENT 5

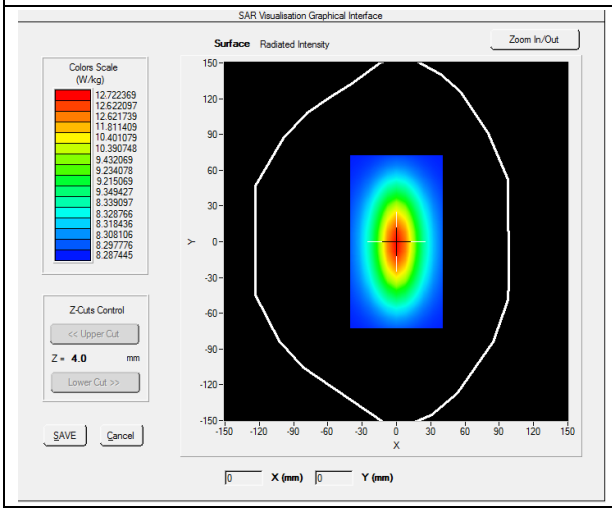
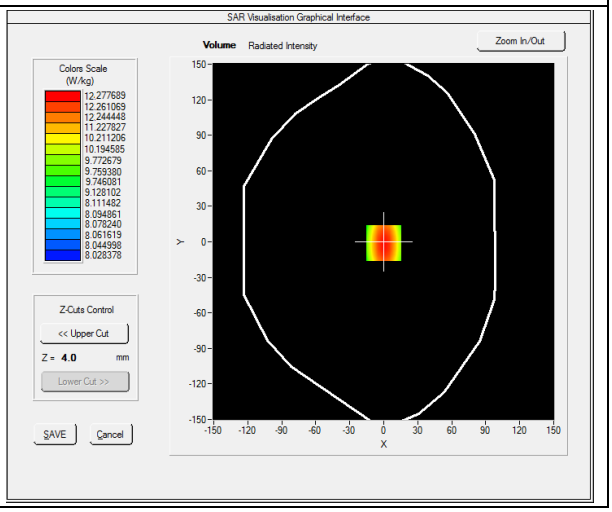
Type: Validation measurement (Fast, 75.00 %)
Date of measurement: 2023-03-30
Measurement duration: 12 minutes 21 seconds
E-field Probe: SSE2 - SN 18/21 EPGO356; ConvF: 2.60; Calibrated: 2022-07-08

A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=5mm dy=5mm dz=4mm
Phantom	Validation plane
Device Position	Dipole
Band	CW2450
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	2450.000000
Relative Permittivity (real part)	53.682128
Conductivity (S/m)	1.942655
Power Variation (%)	1.369745
Ambient Temperature	22.5
Liquid Temperature	22.5

SURFACE SAR	VOLUME SAR
	

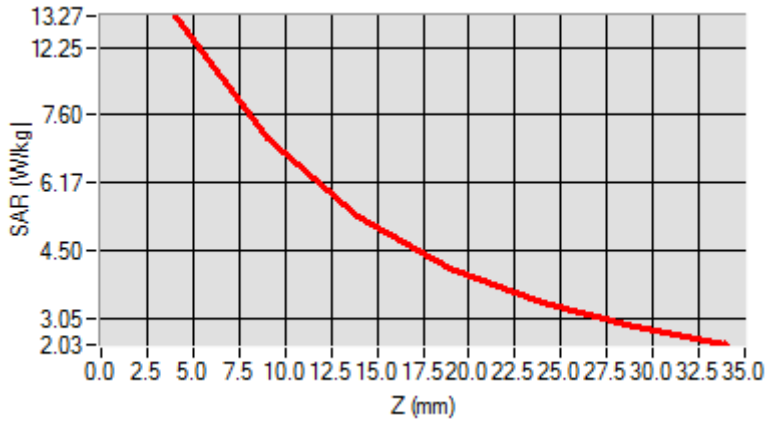
Maximum location: X=0.00, Y=0.00

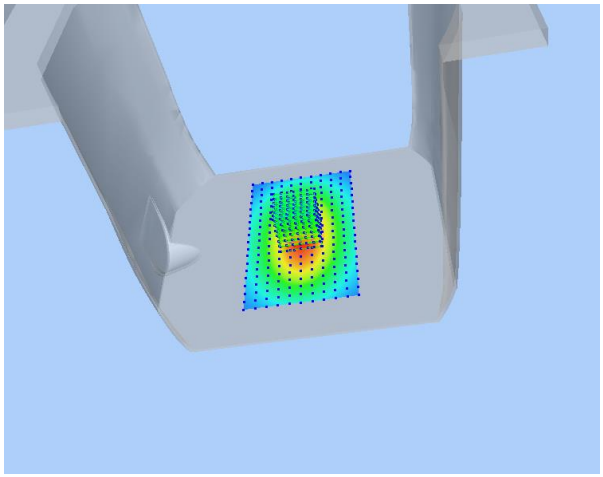
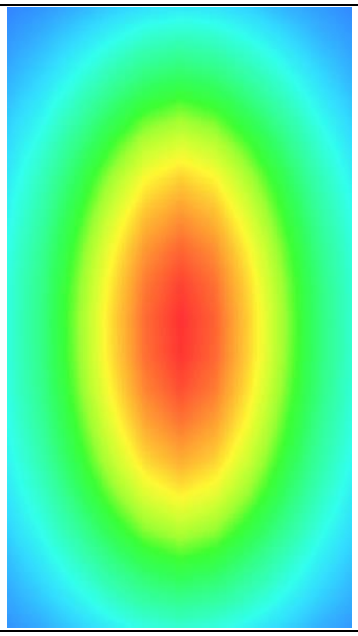
SAR 10g (W/Kg)	**6.119522**

SAR 1g (W/Kg)	12.592360

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	13.1911	11.7951	9.2945	8.5400	6.3712	4.6225



3D screen shot	Hot spot position
	

Annex B. Plots of SAR Measurement

MEASUREMENT 1

Type: Phone measurement (Complete)
Date of measurement: 2023-03-29
Measurement duration: 11 minutes 48 seconds

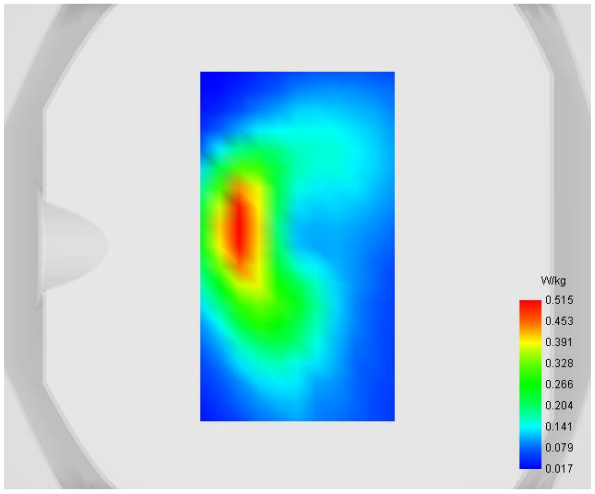
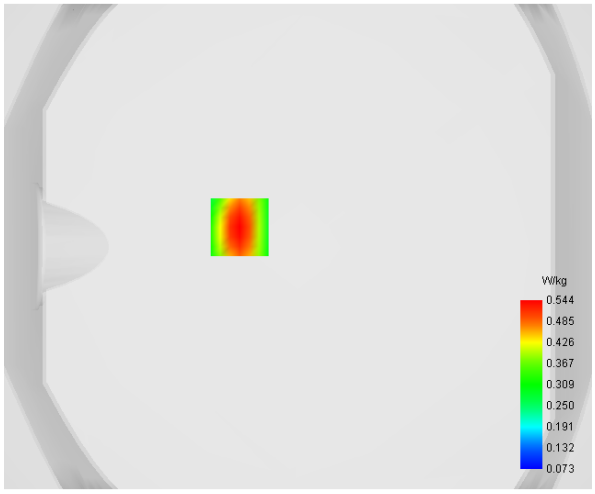
A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=4mm dy=4mm dz=2mm
Phantom	Flat Plane
Device Position	Back
Band	GPRS8500_3TX
Channels	Middle
Signal	Duty Cycle: 1:2.66

B. SAR Measurement Results

Frequency (MHz)	836.600000
Relative Permittivity (real part)	53.340245
Conductivity (S/m)	0.951245
Power Variation (%)	1.074536
Ambient Temperature	23.2
Liquid Temperature	23.2

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

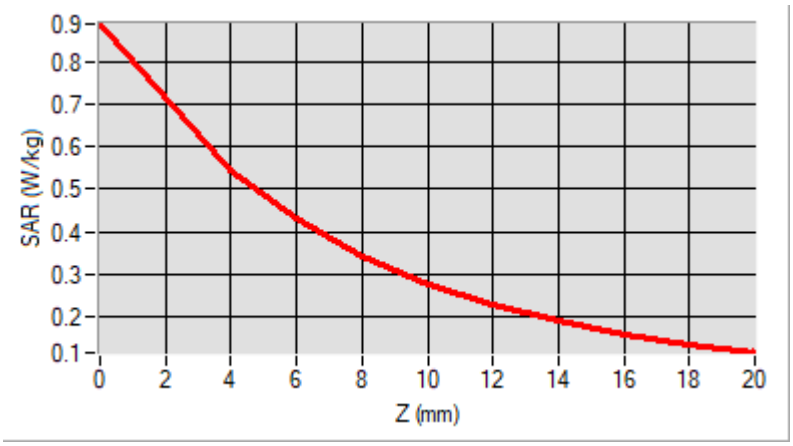
Maximum location: X=-24.00, Y=8.00

D. SAR 1g & 10g

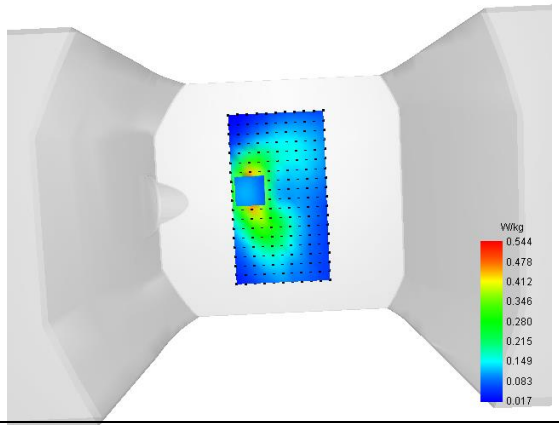
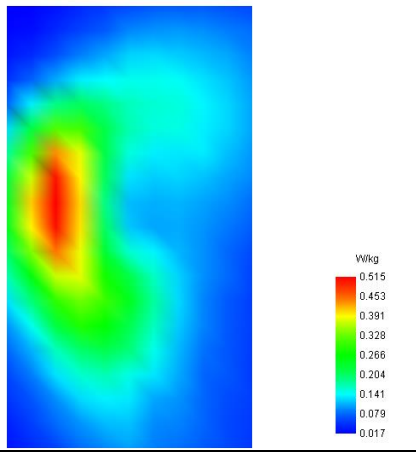
SAR 10g (W/Kg)	**0.285954**
SAR 1g (W/Kg)	**0.506389**

E. Z Axis Scan

Z (mm)	**0.00**	**4.00**	**6.00**	**8.00**	**10.00**	**12.00**	**14.00**	**16.00**	**18.00**
SAR (W/Kg)	**0.8879**	**0.5441**	**0.4288**	**0.3405**	**0.2748**	**0.2257**	**0.1884**	**0.1592**	**0.1354**



F. 3D Image

3D screen shot	**Hot spot position**
	

MEASUREMENT 2

Type: Phone measurement (Complete)
Date of measurement: 2023-03-29
Measurement duration: 11 minutes 48 seconds

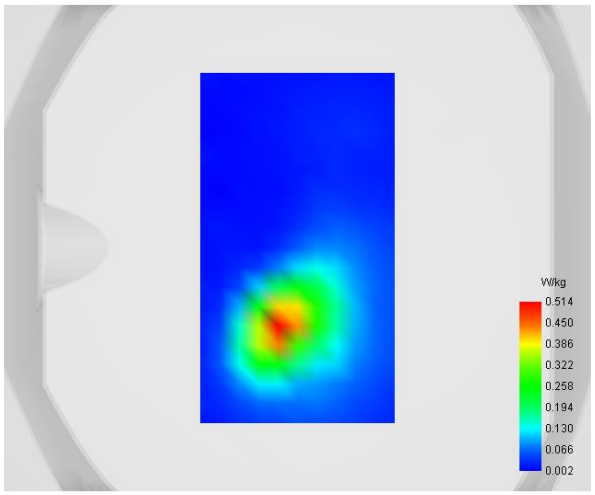
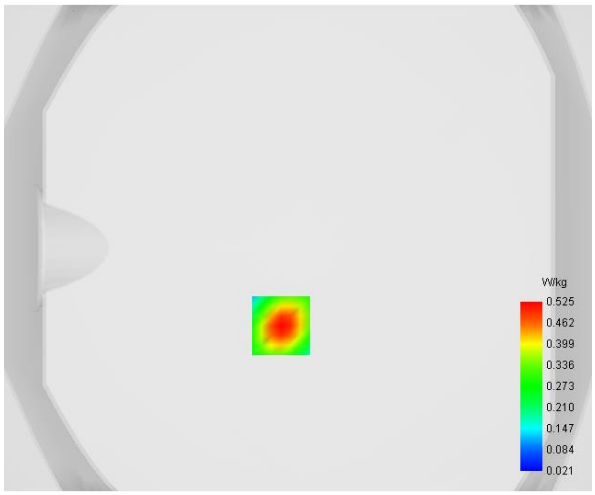
A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=4mm dy=4mm dz=2mm
Phantom	Flat Plane
Device Position	Back
Band	GPRS1800_3TX
Channels	Middle
Signal	Duty Cycle: 1:2.66

B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative Permittivity (real part)	52.111249
Conductivity (S/m)	1.513698
Power Variation (%)	-0.150000
Ambient Temperature	23.2
Liquid Temperature	23.2

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

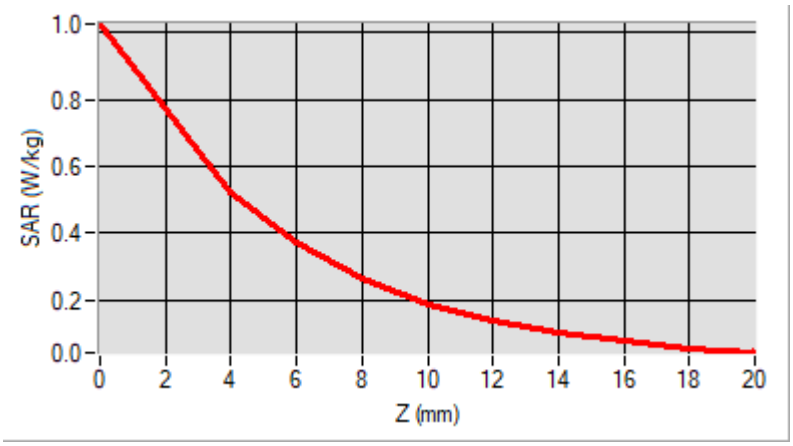
Maximum location: X=-7.00, Y=-32.00

D. SAR 1g & 10g

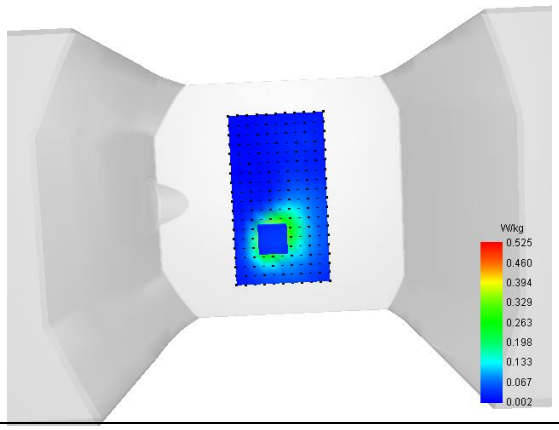
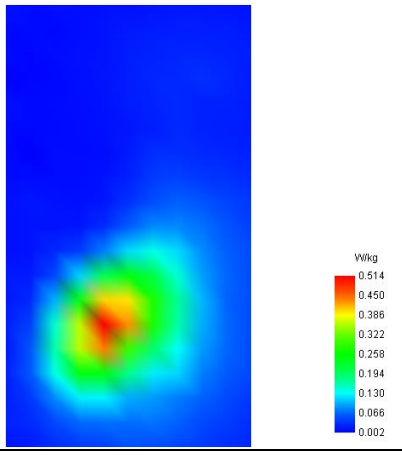
SAR 10g (W/Kg)	**0.218913**
SAR 1g (W/Kg)	**0.483229**

E. Z Axis Scan

Z (mm)	**0.00**	**4.00**	**6.00**	**8.00**	**10.00**	**12.00**	**14.00**	**16.00**	**18.00**
SAR (W/Kg)	**1.0243**	**0.5249**	**0.3715**	**0.2622**	**0.1877**	**0.1368**	**0.1017**	**0.0769**	**0.0585**



F. 3D Image

3D screen shot	**Hot spot position**
	

MEASUREMENT 3

Type: Phone measurement (Complete)
Date of measurement: 2023-03-29
Measurement duration: 12 minutes 3 seconds

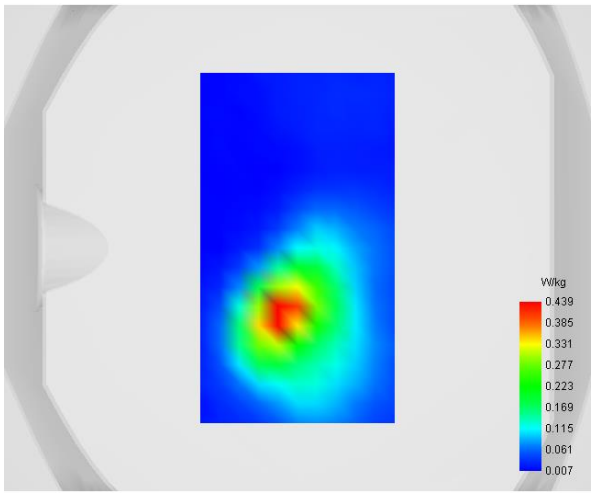
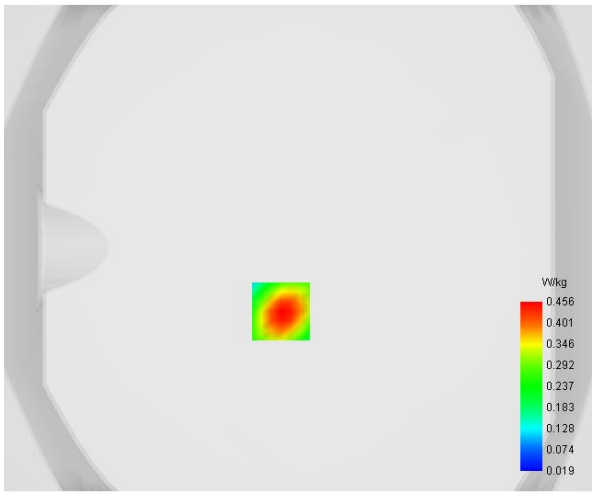
A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=4mm dy=4mm dz=2mm
Phantom	Flat Plane
Device Position	Back
Band	WCDMA1900_ HSDPA Subtest-1
Channels	Middle
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative Permittivity (real part)	52.111249
Conductivity (S/m)	1.513698
Power Variation (%)	1.820000
Ambient Temperature	23.2
Liquid Temperature	23.2

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

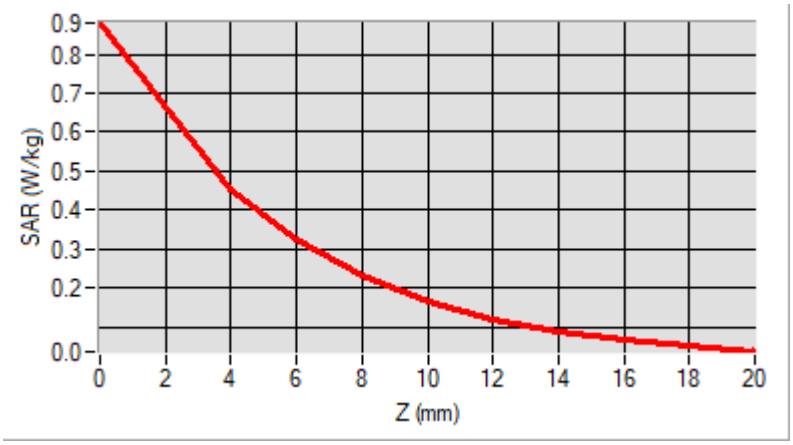
Maximum location: X=-7.00, Y=-26.00

D. SAR 1g & 10g

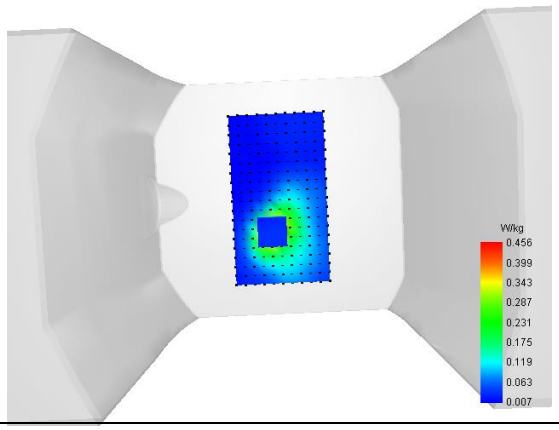
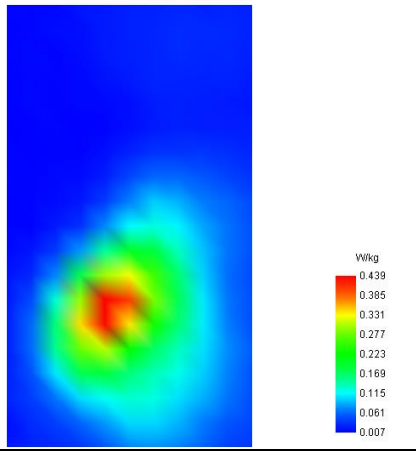
SAR 10g (W/Kg)	**0.189114**
SAR 1g (W/Kg)	**0.415315**

E. Z Axis Scan

Z (mm)	**0.00**	**4.00**	**6.00**	**8.00**	**10.00**	**12.00**	**14.00**	**16.00**	**18.00**
SAR (W/Kg)	**0.8807**	**0.4456**	**0.3239**	**0.2253**	**0.1622**	**0.1174**	**0.0861**	**0.0657**	**0.0491**



F. 3D Image

3D screen shot	**Hot spot position**
	

MEASUREMENT 4

Type: Phone measurement (Complete)
Date of measurement: 2023-03-29
Measurement duration: 12 minutes 3 seconds

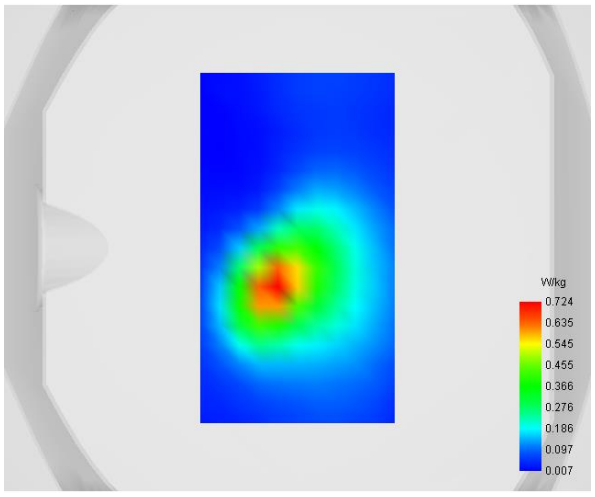
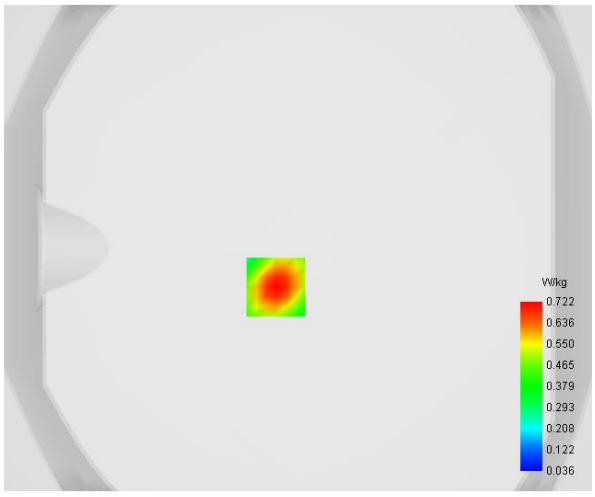
A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=4mm dy=4mm dz=2mm
Phantom	Flat Plane
Device Position	Back
Band	LTE Band 2
Channels	QPSK, 20MHz, 1RB, Middle
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative Permittivity (real part)	52.111249
Conductivity (S/m)	1.513698
Power Variation (%)	1.340000
Ambient Temperature	23.2
Liquid Temperature	23.2

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

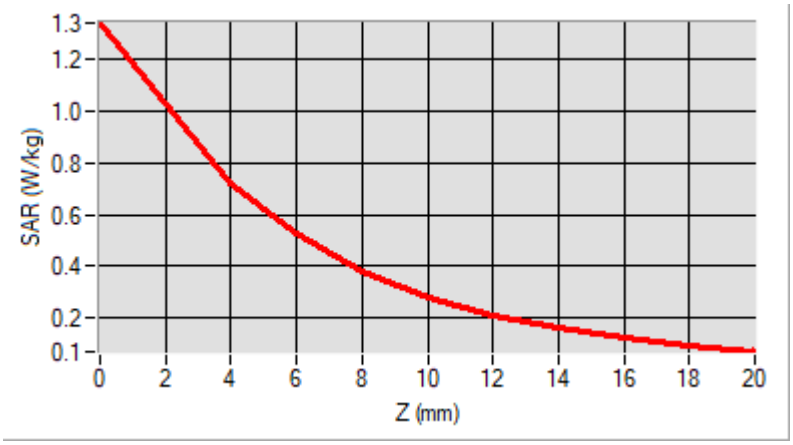
Maximum location: X=-9.00, Y=-16.00

D. SAR 1g & 10g

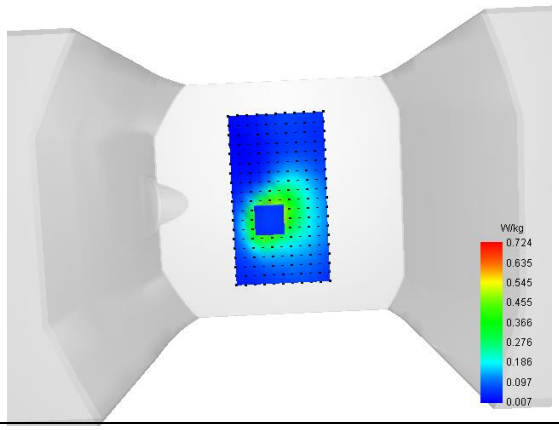
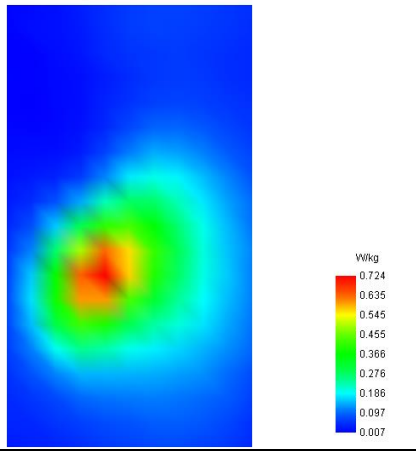
SAR 10g (W/Kg)	**0.327532**
SAR 1g (W/Kg)	**0.673967**

E. Z Axis Scan

Z (mm)	**0.00**	**4.00**	**6.00**	**8.00**	**10.00**	**12.00**	**14.00**	**16.00**	**18.00**
SAR (W/Kg)	**1.3430**	**0.7216**	**0.5249**	**0.3810**	**0.2797**	**0.2080**	**0.1567**	**0.1191**	**0.0903**



F. 3D Image

3D screen shot	**Hot spot position**
	

MEASUREMENT 5

Type: Phone measurement (Complete)
Date of measurement: 2023-03-29
Measurement duration: 12 minutes 3 seconds

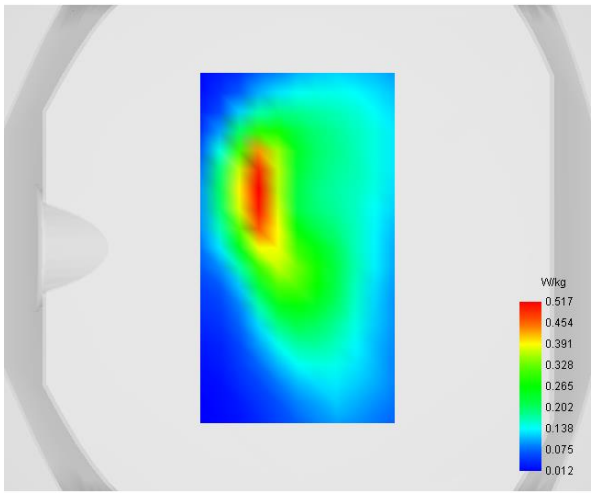
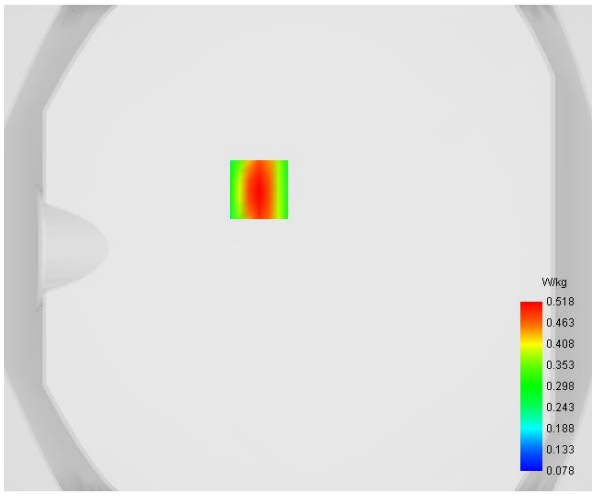
A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=4mm dy=4mm dz=2mm
Phantom	Flat Plane
Device Position	Back
Band	LTE Band 12
Channels	QPSK 10MHz 1RB, Middle
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	707.500000
Relative Permittivity (real part)	54.212275
Conductivity (S/m)	0.930987
Power Variation (%)	0.080000
Ambient Temperature	23.2
Liquid Temperature	23.2

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

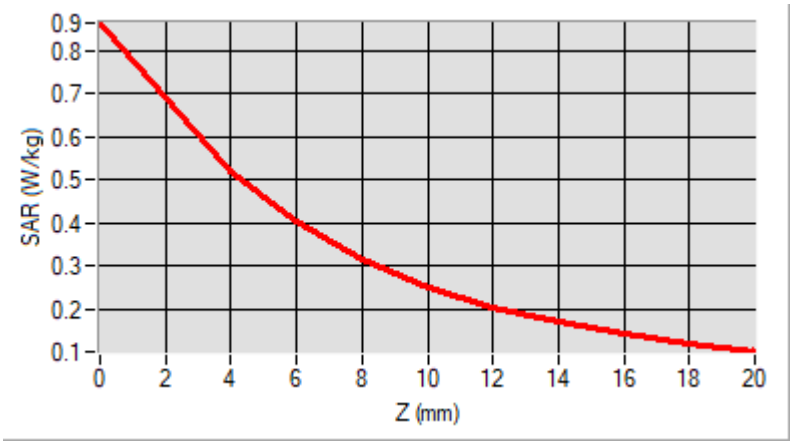
Maximum location: X=-16.00, Y=24.00

D. SAR 1g & 10g

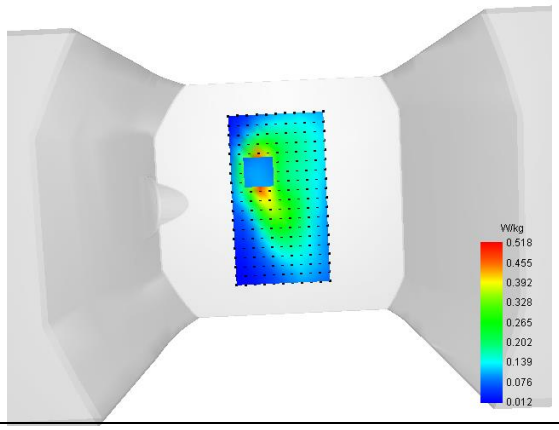
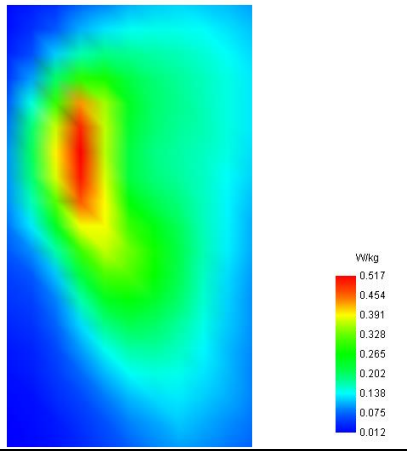
SAR 10g (W/Kg)	**0.277205**
SAR 1g (W/Kg)	**0.495710**

E. Z Axis Scan

Z (mm)	**0.00**	**4.00**	**6.00**	**8.00**	**10.00**	**12.00**	**14.00**	**16.00**	**18.00**
SAR (W/Kg)	**0.8634**	**0.5181**	**0.4037**	**0.3169**	**0.2531**	**0.2060**	**0.1706**	**0.1433**	**0.1213**



F. 3D Image

3D screen shot	**Hot spot position**
	

MEASUREMENT 6

Type: Phone measurement (Complete)
Date of measurement: 2023-03-29
Measurement duration: 12 minutes 3 seconds

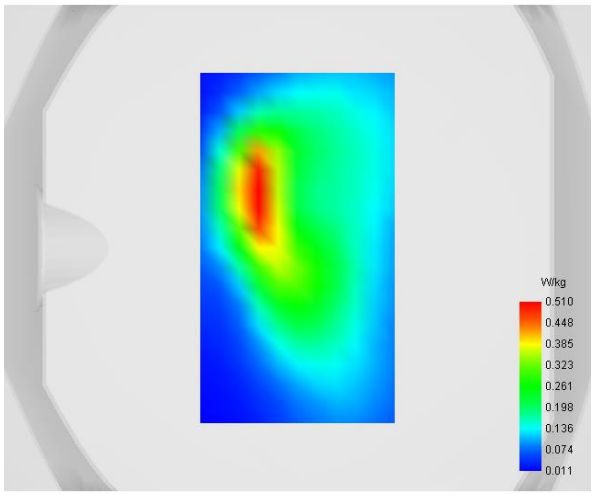
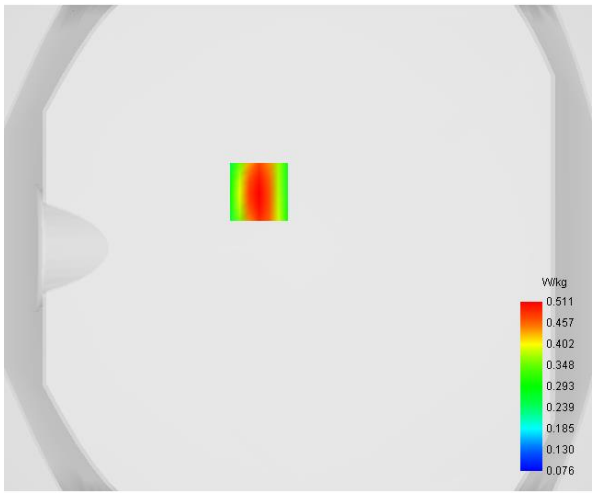
A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=4mm dy=4mm dz=2mm
Phantom	Flat Plane
Device Position	Back
Band	LTE Band 17
Channels	QPSK, 10MHz, 1RB, Low
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	709.000000
Relative Permittivity (real part)	54.210245
Conductivity (S/m)	0.931245
Power Variation (%)	-0.870000
Ambient Temperature	23.2
Liquid Temperature	23.2

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

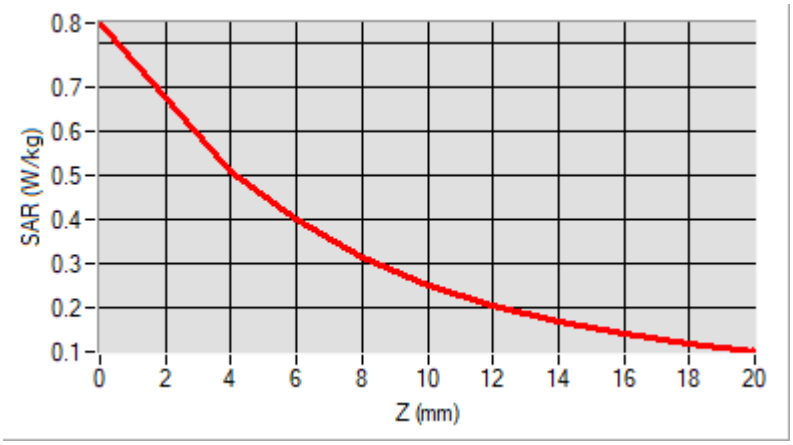
Maximum location: X=-16.00, Y=23.00

D. SAR 1g & 10g

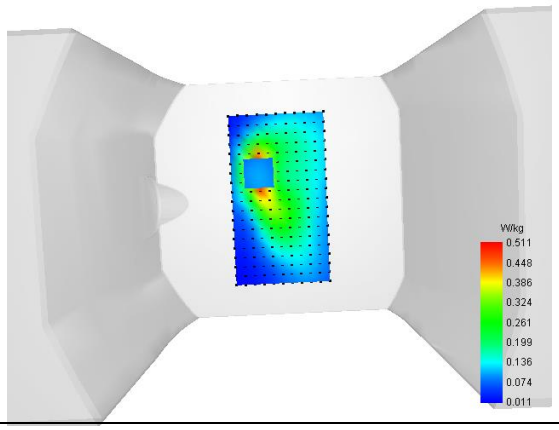
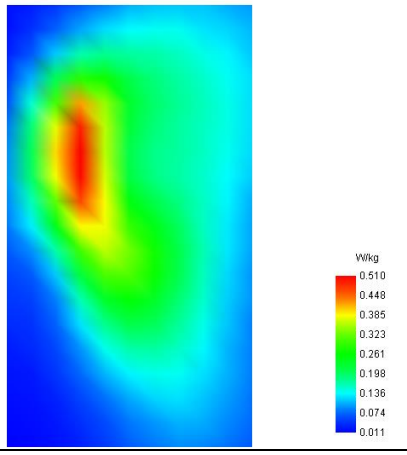
SAR 10g (W/Kg)	**0.272531**
SAR 1g (W/Kg)	**0.489167**

E. Z Axis Scan

Z (mm)	**0.00**	**4.00**	**6.00**	**8.00**	**10.00**	**12.00**	**14.00**	**16.00**	**18.00**
SAR (W/Kg)	**0.8430**	**0.5109**	**0.4001**	**0.3155**	**0.2530**	**0.2064**	**0.1711**	**0.1437**	**0.1214**



F. 3D Image

3D screen shot	**Hot spot position**
	

MEASUREMENT 7

Type: Phone measurement (Complete)
Date of measurement: 2023-03-29
Measurement duration: 12 minutes 3 seconds

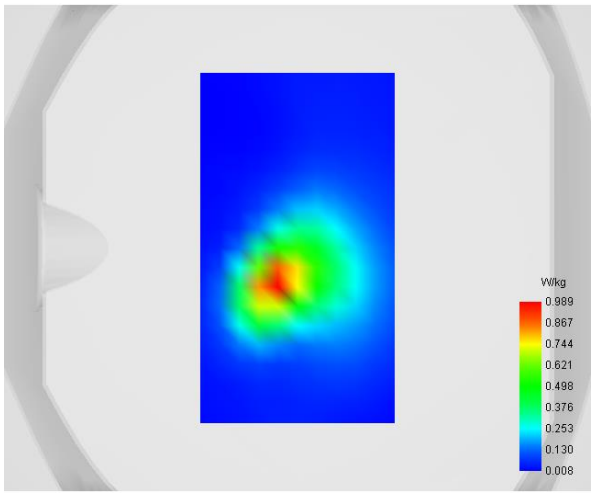
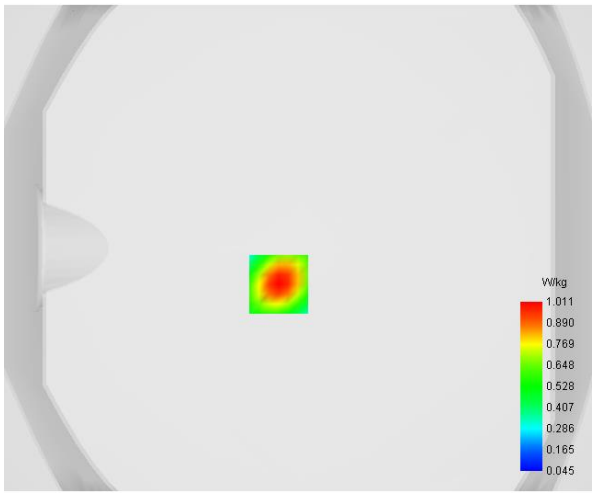
A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=4mm dy=4mm dz=2mm
Phantom	Flat Plane
Device Position	Front
Band	LTE Band 66
Channels	QPSK, 20MHz, 1RB, High
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	1775.000000
Relative Permittivity (real part)	52.112667
Conductivity (S/m)	1.510182
Power Variation (%)	-0.700000
Ambient Temperature	23.2
Liquid Temperature	23.2

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

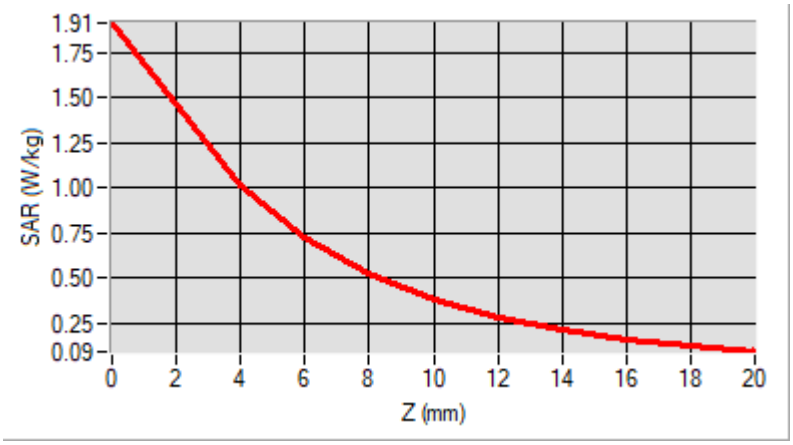
Maximum location: X=-8.00, Y=-15.00

D. SAR 1g & 10g

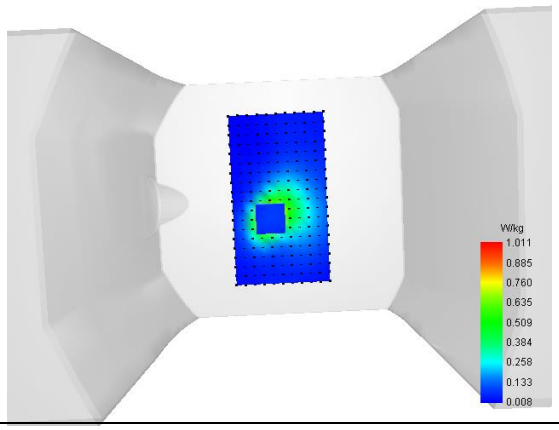
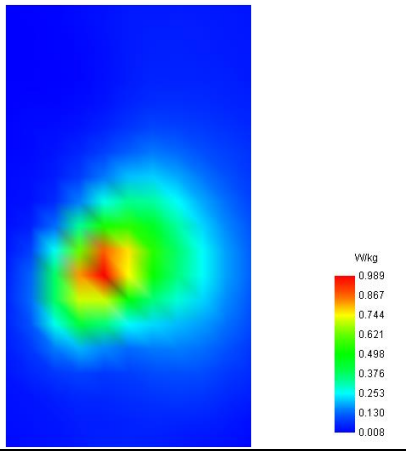
SAR 10g (W/Kg)	**0.434664**
SAR 1g (W/Kg)	**0.932334**

E. Z Axis Scan

Z (mm)	**0.00**	**4.00**	**6.00**	**8.00**	**10.00**	**12.00**	**14.00**	**16.00**	**18.00**
SAR (W/Kg)	**1.9113**	**1.0107**	**0.7284**	**0.5237**	**0.3810**	**0.2813**	**0.2107**	**0.1596**	**0.1209**



F. 3D Image

3D screen shot	**Hot spot position**
	

MEASUREMENT 8

Type: Phone measurement (Complete)
Date of measurement: 2023-03-30
Measurement duration: 12 minutes 3 seconds

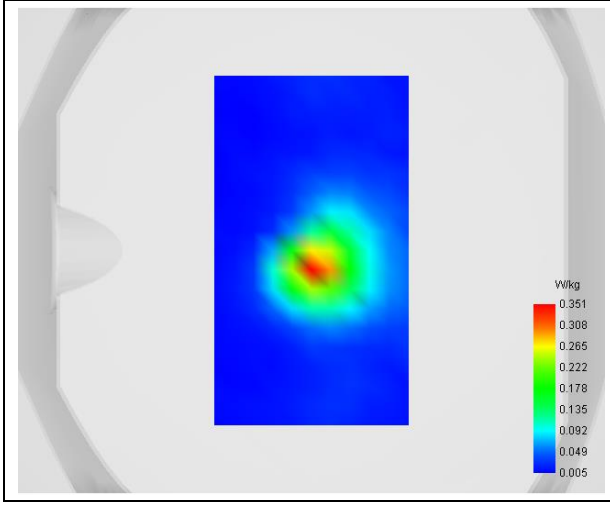
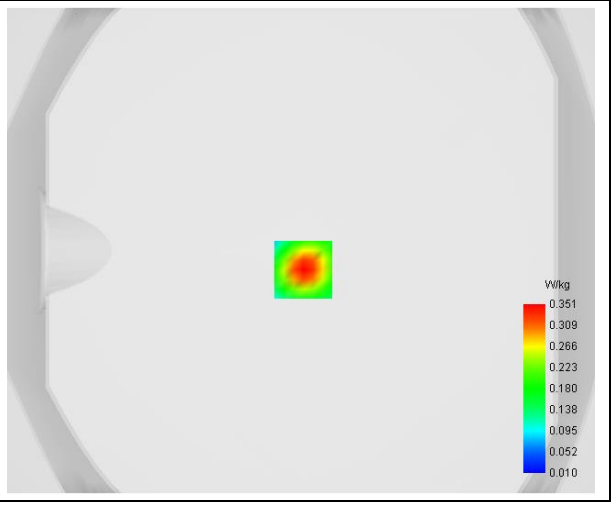
A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=4mm dy=4mm dz=2mm
Phantom	Flat Plane
Device Position	Back
Band	WiFi_802.11b
Channels	Middle
Signal	Duty Cycle 1:1

B. SAR Measurement Results

Frequency (MHz)	2437.000000
Relative Permittivity (real part)	53.682192
Conductivity (S/m)	1.942558
Power Variation (%)	2.403721
Ambient Temperature	22.5
Liquid Temperature	22.5

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

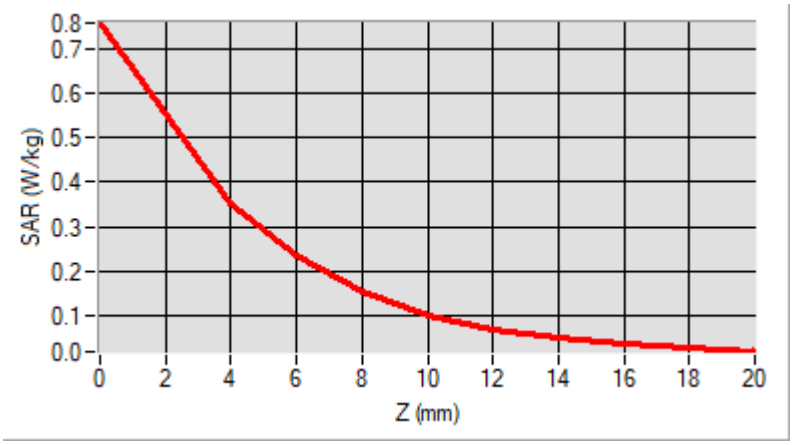
Maximum location: X=1.00, Y=-8.00

D. SAR 1g & 10g

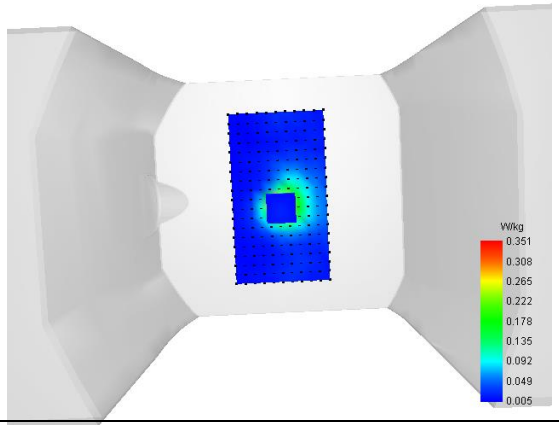
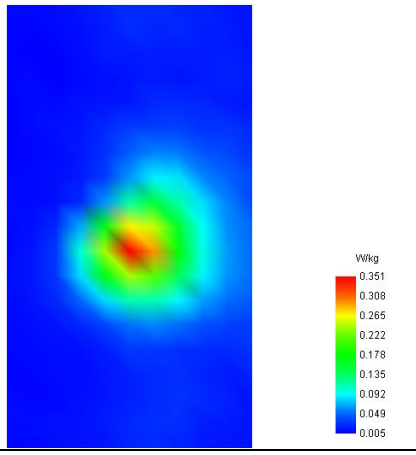
SAR 10g (W/Kg)	**0.133834**
SAR 1g (W/Kg)	**0.324820**

E. Z Axis Scan

Z (mm)	**0.00**	**4.00**	**6.00**	**8.00**	**10.00**	**12.00**	**14.00**	**16.00**	**18.00**
SAR (W/Kg)	**0.7567**	**0.3513**	**0.2334**	**0.1537**	**0.1026**	**0.0702**	**0.0495**	**0.0361**	**0.0268**



F. 3D Image

3D screen shot	**Hot spot position**
	

MEASUREMENT 9

Type: Phone measurement (Complete)
Date of measurement: 2023-03-30
Measurement duration: 12 minutes 3 seconds

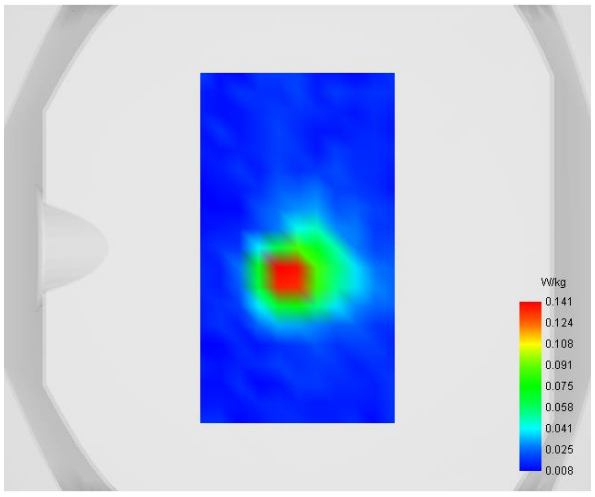
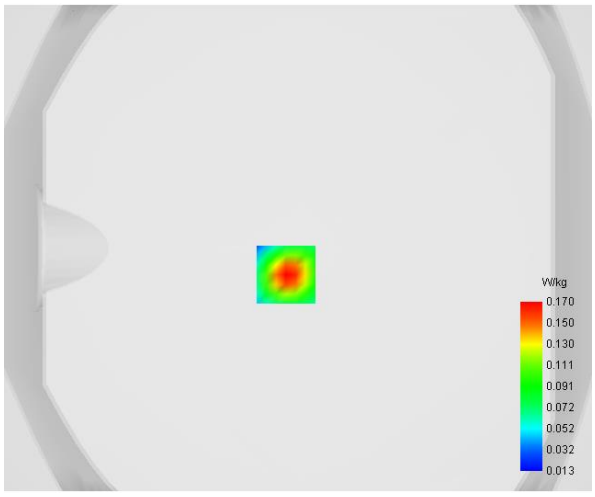
A. Experimental conditions

Area Scan	dx=8mm dy=8mm
Zoom Scan	dx=4mm dy=4mm dz=2mm
Phantom	Flat Plane
Device Position	Back
Band	BT_8DPSK
Channels	Middle
Signal	Duty Cycle: 1:1

B. SAR Measurement Results

Frequency (MHz)	2441.000000
Relative Permittivity (real part)	53.682911
Conductivity (S/m)	1.941483
Power Variation (%)	0.542660
Ambient Temperature	22.5
Liquid Temperature	22.5

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

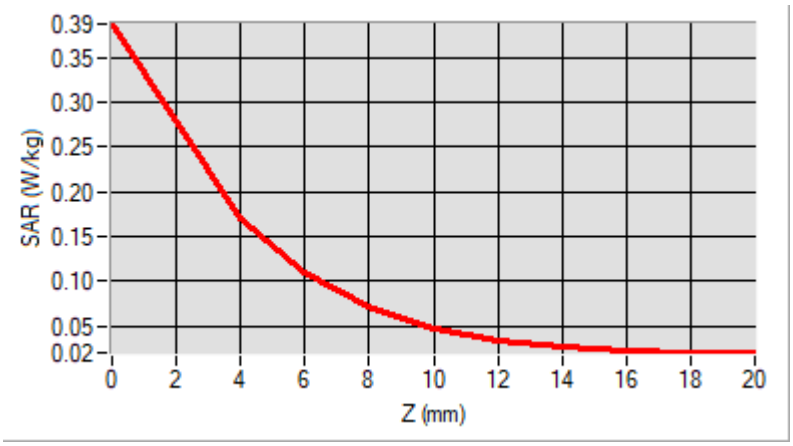
Maximum location: X=-5.00, Y=-11.00

D. SAR 1g & 10g

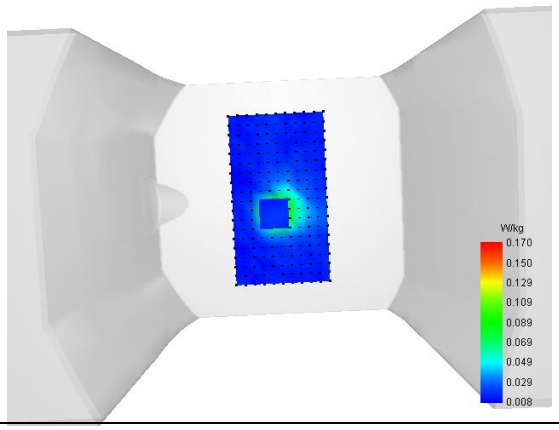
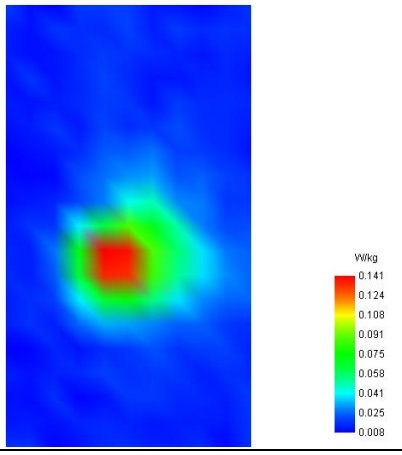
SAR 10g (W/Kg)	**0.067356**
SAR 1g (W/Kg)	**0.157715**

E. Z Axis Scan

Z (mm)	**0.00**	**4.00**	**6.00**	**8.00**	**10.00**	**12.00**	**14.00**	**16.00**	**18.00**
SAR (W/Kg)	**0.3879**	**0.1698**	**0.1095**	**0.0709**	**0.0480**	**0.0347**	**0.0272**	**0.0233**	**0.0213**

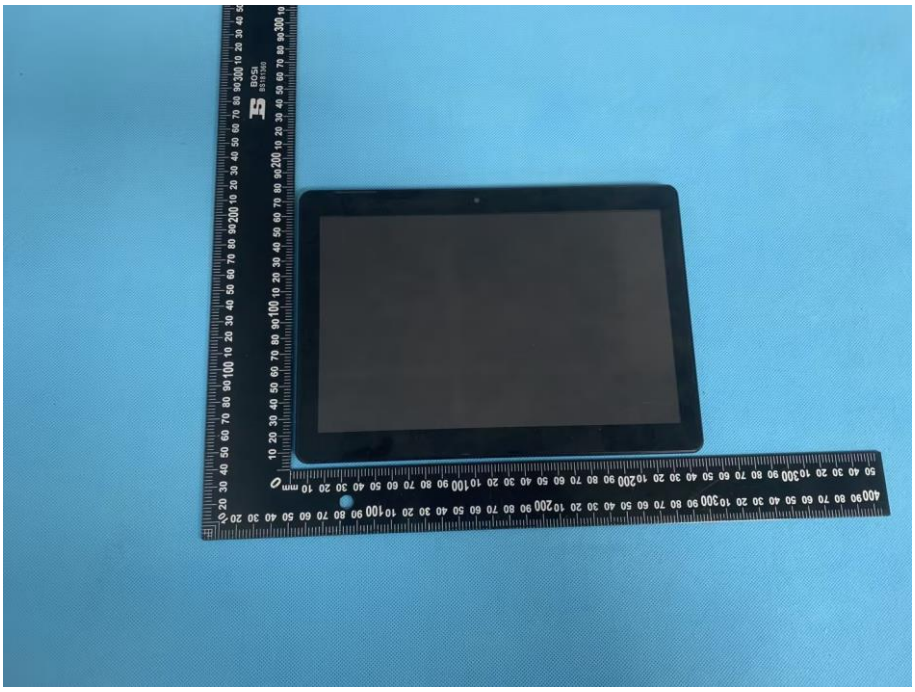


F. 3D Image

3D screen shot	**Hot spot position**
	

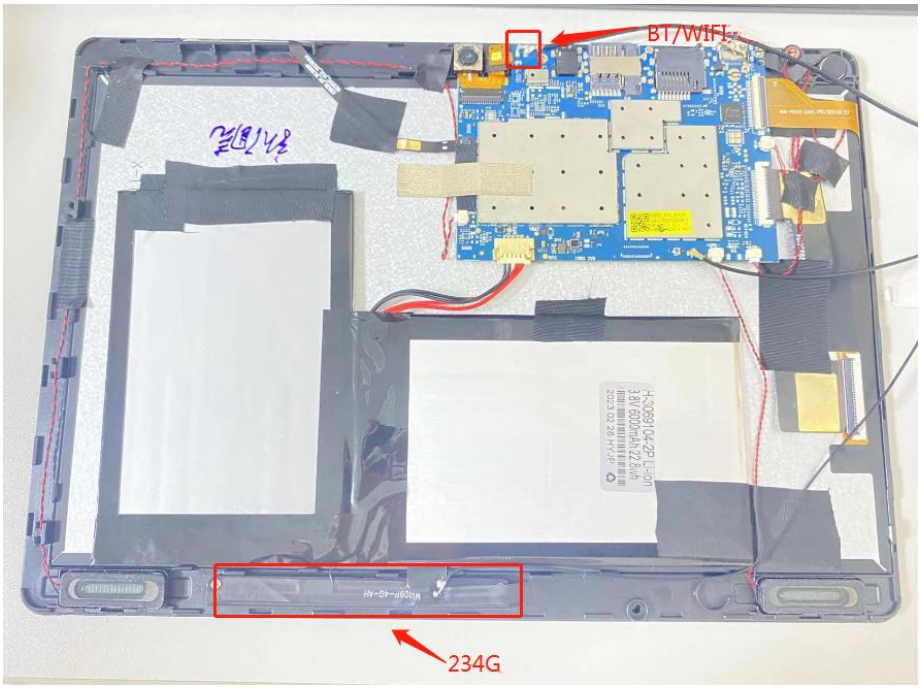
Annex C. EUT Photos

EUT View 1



EUT View 2

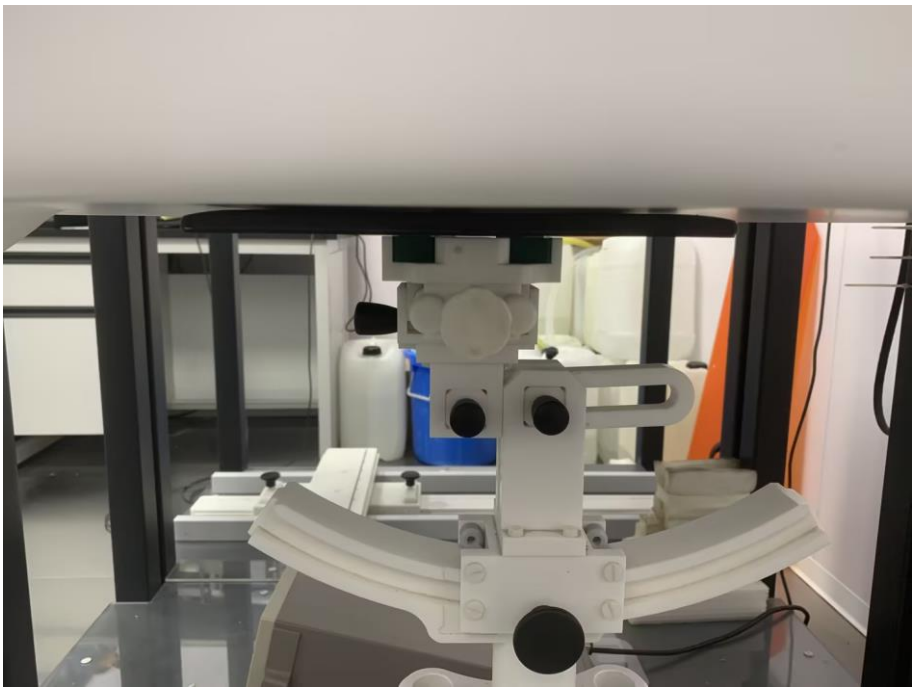
Antenna View



Annex D. Test Setup Photos

Body mode Exposure Conditions
Test distance: 0mm

Body Back



Body Top

Body Bottom

Annex E. Calibration Certificate

Please refer to the exhibit for the calibration certificate

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