SAR Test Report

For

Applicant Name:	**Shenzhen Arington Technology Co., Ltd.**
Address:	501, Bldg D, Huawan Industrial Park, No.4159 Baoan Avenue, Baoan District, Shenzhen, China
EUT Name:	Mobile Phone
Model Number:	RS1

Issued By

Company Name:	**BTF Testing Lab (Shenzhen) Co., Ltd.**
Address:	F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China
Report Number:	BTF240522R00701
Test Standards:	47 CFR Part 2.1093 IEC/IEEE 62209-1528: 2020 IEEE C95.1-2019 KDB447498 D04 KDB865664 D01 KDB865664 D02 KDB941225 D05 KDB648474 D04 KDB690783 D01
FCC ID:	2A7QY-RS1
Test Conclusion:	Pass
Test Date:	2024-05-22 to 2024-05-24
Date of Issue:	2024-05-27
Prepared By:	Amenda Zhong / Project Engineer
Date:	2024-05-27
Approved By:	Ryan.CJ / EMC Manager
Date:	2024-05-27

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Revision History		
Version	Issue Date	Revisions Content
R_V0	2024-05-27	Original
Note:	*Once the revision has been made, then previous versions reports are invalid.*	

Table of Contents

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

1. Introduction

1.1 Identification of Testing Laboratory

Company Name:	BTF Testing Lab (Shenzhen) Co., Ltd.
Address:	F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China
Phone Number:	+86-0755-23146130
Fax Number:	+86-0755-23146130

1.2 Identification of the Responsible Testing Location

Test Location:	BTF Testing Lab (Shenzhen) Co., Ltd.
Address:	F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China
Description:	All measurement facilities used to collect the measurement data are located at F101,201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China
FCC Registration Number	518915
Designation Number	CN1330

1.3 Laboratory Condition

Ambient Temperature:	21℃ to 25℃
Ambient Relative Humidity:	48% to 59%
Ambient Pressure:	100 kPa to 102 kPa

1.4 Announcement

(1) The test report reference to the report template version v0.

(2) The test report is invalid if not marked with the signatures of the persons responsible for preparing, reviewing and approving the test report.

(3) The test report is invalid if there is any evidence and/or falsification.

(4) This document may not be altered or revised in any way unless done so by BTF and all revisions are duly noted in the revisions section.

(5) Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.

(6) The laboratory is only responsible for the data released by the laboratory, except for the part provided by the applicant.

2. Product Information

2.1 Application Information

Company Name:	Shenzhen Arington Technology Co., Ltd.
Address:	501, Bldg D, Huawan Industrial Park, No.4159 Baoan Avenue, Baoan District, Shenzhen, China

2.2 Manufacturer Information

Company Name:	Shenzhen Arington Technology Co., Ltd.
Address:	501, Bldg D, Huawan Industrial Park, No.4159 Baoan Avenue, Baoan District, Shenzhen, China

2.3 Factory Information

Company Name:	Shenzhen Arington Technology Co., Ltd.
Address:	501, Bldg D, Huawan Industrial Park, No.4159 Baoan Avenue, Baoan District, Shenzhen, China

2.4 General Description of Equipment under Test (EUT)

EUT Name	Mobile Phone
Under Test Model Name	RS1
Sample No.	BTFSN240522018/2 E1-E2
Software Version	FD09-RS1-OUBAN-168-V1.0-20230628
Hardware Version	FD09_MB_V1.0

2.5 Equipment under Test Ancillary Equipment

Ancillary Equipment 1	Rechargeable Battery	
	Capacity	1000mAh
	Rated Voltage	3.7V

2.6 Technical Information

Network and Wireless connectivity	2G Network GSM/GPRS 850/1900 4G Network FDD LTE Band 2/4/5/7 BT (EDR)

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The requirement for the following technical information of the EUT was tested in this report:

Operating Mode	GSM, LTE, Bluetooth		
Frequency Range	GSM 850	TX: 824 ~ 849 MHz	RX: 869 ~ 894 MHz
	GSM 1900	TX: 1850 ~ 1910 MHz	RX: 1930 ~ 1990 MHz
	LTE Band 2	TX: 1850 ~ 1910 MHz	RX: 1930 ~ 1990 MHz
	LTE Band 4	TX: 1710 ~ 1755 MHz	RX: 2110 ~ 2155 MHz
	LTE Band 5	TX: 824 ~ 849 MHz	RX: 869 ~ 894 MHz
	LTE Band 7	TX: 2500 ~ 2570 MHz	RX: 2620 ~ 2690 MHz
	Bluetooth	2402 ~ 2480 MHz	
Antenna Type	WWAN: PIFA Antenna BT: PIFA Antenna		
Hotspot Function	Not Support		
Power Reduction	Not Support		
Exposure Category	General Population/Uncontrolled exposure		
EUT Stage	Portable Device		
Product	Type		
	☐ Production unit	☒ Identical prototype	

3. Summary of Test Results

3.1 Test Standards

No.	Identity	Document Title
1	47 CFR Part 2.1093	Radiofrequency radiation exposure evaluation: portable devices
2	IEC/IEEE 62209-1528: 2020	Measurement procedure for the assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices - Part 1528: Human models, instrumentation, and procedures (Frequency range of 4 MHz to 10 GHz)
3	IEEE C95.1-2019	IEEE Standard for Safety Levels with Respect to Human Exposure to Electric, Magnetic, and Electromagnetic Fields, 0 Hz to 300 GHz
4	KDB447498 D04	Interim General RF Exposure Guidance v01
5	KDB865664 D01	SAR measurement 100MHz to 6GHz v01r04
6	KDB865664 D02	RF Exposure Reporting v01r02
7	KDB941225 D05	SAR for LTE Devices v02r05
8	KDB648474 D04	Handset SAR v01r03
9	KDB690783 D01	SAR Listings on Grant v01r03

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3.2 Device Category and SAR Limit

This device belongs to portable device category because its radiating structure is allowed to be used within 20 centimeters of the body of the user. Limit for General Population/Uncontrolled exposure should be applied for this device, it is 1.6 W/kg as averaged over any 1 gram of tissue.

Body Position	SAR Value (W/Kg)	
	General Population/ Uncontrolled Exposure	Occupational/ Controlled Exposure
Whole-Body SAR (averaged over the entire body)	0.08	0.4
Partial-Body SAR (averaged over any 1 gram of tissue)	1.60	8.0
SAR for hands, wrists, feet and ankles (averaged over any 10 grams of tissue)	4.0	20.0

NOTE:
General Population/Uncontrolled Exposure: Locations where there is the exposure of individuals who have no knowledge or control of their exposure. General population/uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment- related; for example, in the case of a wireless transmitter that exposes persons in its vicinity.

Occupational/Controlled Exposure: Locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, In general, occupational/controlled exposure limits are applicable to situations in which persons are exposed as a consequence of their employment, who have been made fully aware of the potential for exposure and can exercise control over their exposure. This exposure category is also applicable when the exposure is of a transient nature due to incidental passage through a location where the exposure levels may be higher than the general population/uncontrolled limits, but the exposed person is fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

3.3 Test Result Summary

The maximum results of Specific Absorption Rate (SAR) found during test as bellows:

<Highest Reported standalone SAR Summary>

Exposure Position	Frequency Band	Reported SAR (W/kg)	Equipment Class	Highest Reported SAR (W/kg)
Head 1-g SAR (0 mm Gap)	GSM 850	0.069	PCE	**0.253**
	GSM 1900	0.051		
	LTE Band 2	0.148		
	LTE Band 4	0.176		
	LTE Band 5	0.040		
	LTE Band 7	0.253		
	Bluetooth	0.047	DSS	
Exposure Position	**Frequency Band**	**Reported SAR (W/kg)**	**Equipment Class**	**Highest Reported SAR (W/kg)**
Hotspot(Body) 1-g SAR (10 mm Gap)	GSM 850	0.131	PCE	**0.457**
	GSM 1900	0.142		
	LTE Band 2	0.216		
	LTE Band 4	0.390		
	LTE Band 5	0.052		
	LTE Band 7	0.457		

This device is in compliance with Specific Absorption Rate(SAR) for general population/uncontrolled exposure limits (1.6 W/kg) specified in FCC47 CFR part 2(2.1093) and ANSI/IEEE C95.1-2019, and had been tested in accordance with the measurement methods and procedures specified in IEC/IEEE 62209-1528: 2020.

<Highest Reported Simultaneous SAR>

Exposure Position	Simultaneous Configuration	Highest Reported Simultaneous Transmission SAR (W/kg)	Limit (W/kg)	Verdict
Head 1-g SAR (0 mm Gap)	LTE band 7 +BT	0.300	1.6	Pass
Hotspot(Body) 1-g SAR (10 mm Gap)	LTE band 7 +BT	0.551	1.6	Pass

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3.4 Test Uncertainty

3.4.1 Measurement uncertainly evaluation for SAR test

Measurement uncertainly evaluation for SAR test (300MHz to 6GHz)

Uncertainty Component	Tol (+- %)	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (+- %)	10 g Ui (+-%)	Vi veff
Measurement System								
Probe calibration	5.8	N	1	1	1	5.80	5.80	∞
Axial Isotropy	3.5	R	√3	√0.5	√0.5	1.43	1.43	∞
Hemispherical Isotropy	5.9	R	√3	√0.5	√0.5	2.41	2.41	∞
Boundary effect	1.0	R	√3	1	1	0.58	0.58	∞
Linearity	4.7	R	√3	1	1	2.71	2.71	∞
System detection limits	1.0	R	√3	1	1	0.58	0.58	∞
Modulation response	3.0	R	√3	1	1	1.73	1.73	∞
Readout Electronics	0.5	N	1	1	1	0.50	0.50	∞
Response Time	0	R	√3	1	1	0.00	0.00	∞
Integration Time	1.4	R	√3	1	1	0.81	0.81	∞
RF ambient Conditions - Noise	3.0	R	√3	1	1	1.73	1.73	∞
RF ambient Conditions - Reflections	3.0	R	√3	1	1	1.73	1.73	∞
Probe positioner Mechanical Tolerance	1.4	R	√3	1	1	0.81	0.81	∞
Probe positioning with respect to Phantom Shell	1.4	R	√3	1	1	0.81	0.81	∞
Extrapolation, interpolation and integration Algorithms for Max. SAR Evaluation	2.3	R	√3	1	1	1.33	1.33	∞
Test sample Related								
Test sample positioning	2.6	N	1	1	1	2.60	2.60	11
Device Holder Uncertainty	3.0	N	1	1	1	3.00	3.00	7
Output power Variation - SAR drift measurement	5.0	R	√3	1	1	2.89	2.89	∞
SAR scaling	2.0	R	√3	1	1	1.15	1.15	∞
Phantom and Tissue Parameters								
Phantom Shell Uncertainty - Shape,Thickness and Permittivity	4	R	√3	1	1	2.31	2.31	∞
Uncertainty in SAR correction for deviation in permittivity and conductivity	2.0	N	1	1	0.84	2.00	1.68	∞
Liquid conductivity measurement	4.0	N	1	0.78	0.71	3.12	2.84	5
Liquid permittivity measurement	5.0	N	1	0.23	0.26	1.15	1.30	5
Liquid Conductivity - Temperature Uncertainty	2.5	R	√3	0.78	0.71	1.13	1.02	∞
Liquid permittivity - Temperature Uncertainty	2.5	R	√3	0.23	0.26	0.33	0.38	∞
Combined Standard Uncertainty		RSS				10.47	10.34	
Expanded Uncertainty (95% Confidence interval)		k				20.95	20.69	

* This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

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3.4.2 Measurement uncertainly evaluation for system check

Uncertainty Component	Tol (+- %)	Prob. Dist.	Div.	Ci (1g)	Ci (10 g)	1g Ui (+- %)	10 g Ui (+-%)	Vi veff
Measurement System								
Probe calibration	5.8	N	1	1	1	5.80	5.80	∞
Axial Isotropy	3.5	R	√3	1	1	2.02	2.02	∞
Hemispherical Isotropy	5.9	R	√3	0	0	0.00	0.00	∞
Boundary effect	1	R	√3	1	1	0.58	0.58	∞
Linearity	4.7	R	√3	1	1	2.71	2.71	∞
System detection limits	1	R	√3	1	1	0.58	0.58	∞
Modulation response	0	N	√3	0	0	0.00	0.00	∞
Readout Electronics	0.5	N	1	1	1	0.50	0.50	∞
Response Time	0	R	√3	0	0	0.00	0.00	∞
Integration Time	1.4	R	√3	0	0	0.00	0.00	∞
RF ambient Conditions - Noise	3	R	√3	1	1	1.73	1.73	∞
RF ambient Conditions - Reflections	3	R	√3	1	1	1.73	1.73	∞
Probe positioner Mechanical Tolerance	1.4	R	√3	1	1	0.81	0.81	∞
Probe positioning with respect to Phantom Shell	1.4	R	√3	1	1	0.81	0.81	∞
Extrapolation, interpolation and integration Algorithms for Max. SAR Evaluation	2.3	R	√3	1	1	1.33	1.33	∞
Dipole								
Deviation of experimental source from numerical source	5	N	1	1	1	5.00	5.00	∞
Input Power and SAR driftmeasurement	0.5	R	√3	1	1	0.29	0.29	∞
Dipole Axis to Liquid Dist.	2.0	R	√3	1	1	1.15	1.15	∞
Phantom and Tissue Parameters								
Phantom Shell Uncertainty - Shape,Thickness and Permittivity	4	R	√3	1	1	2.31	2.31	∞
Uncertainty in SAR correction for deviation in permittivity and conductivity	2.0	N	1	1	0.84	2.00	1.68	∞
Liquid conductivity measurement	4	N	1	0.78	0.71	3.12	2.84	5
Liquid permittivity measurement	5.0	N	1	0.23	0.26	1.15	1.30	5
Liquid Conductivity - Temperature Uncertainty	2.5	R	√3	0.78	0.71	1.13	1.02	∞
Liquid permittivity - Temperature Uncertainty	2.5	R	√3	0.23	0.26	0.33	0.38	∞
Combined Standard Uncertainty		RSS				10.16	10.03	
Expanded Uncertainty (95% Confidence interval)		k				20.32	20.06	

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4. Measurement System

4.1 Specific Absorption Rate (SAR) Definition

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.

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:

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

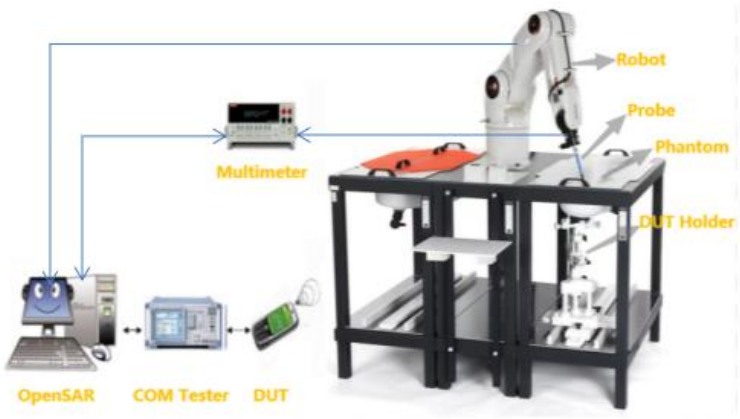
SAR is expressed in units of Watts per kilogram (W/kg) SAR measurement can be related to the electrical field in the tissue by

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

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

4.2 MVG SAR System

4.2.1 SAR system diagram



4.2.2 Robot

A standard high precision 6-axis robot (Denso) with teaches pendant with Scanning System
· It must be able to scan all the volume of the phantom to evaluate the tridimensional distribution of SAR.
· Must be able to set the probe orthogonal of the surface of the phantom (±30°).
· Detects stresses on the probe and stop itself if necessary to keep the integrity of the probe.

4.2.3 E-Field Probe

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

- Dynamic range: 0.01-100 W/kg
- Tip diameter: 2mm for SSE2
- Distance between probe tip and sensor centre: 1mm for SSE2
- Distance between sensor centre and the inner phantom surface: 2mm for f>=4GHz.
- Probe linearity: <0.25dB.
- Axial Isotropy: <0.25dB.
- Spherical Isotropy: <0.50dB.
- Calibration range: 150 to 6000 MHz for head & body simulating liquid
- Angle between probe axis (evaluation axis) and surface normal line: less than 20°.

4.2.4 Phantoms

SAM Phantom

For the measurements the Specific Anthropomorphic Mannequin (SAM) defined by the IEEE SCC-34/SC2 group is used. The probe scanning of the E-Field is done in the 2 halves of the normalized head. The normalized shape of the phantom corresponds to the dimensions of 90% of an adult head size. It enables the dosimetric evaluation of left and right-hand phone usage and includes an additional flat phantom part for the simplified body performance check.The phantom set-up includes a cover, which prevents the evaporation of the liquid.

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The thickness of the phantom amounts to 2 mm±0.2 mm. The materials for the phantom do not affect the radiation of the device under test (DUT) : εr' <5
The head is filled with tissue simulating liquid. The hand do not have to be modeled.

SAM Phantom

TWIN SAM phantom			
	Mechanical	Electrical	
Overall thickness	2±0.2 mm(except ear area)	Relative permittivity	3.4
Dimensions	1000 mm(L) x 500 mm(W) x 200 mm(H)	Loss tangent	0.02
Maximum volume	27 L		
Material	Fiberglass based		

ELLIPTICAL Phantom

The phantom is for Body performance check filled with tissue-equivalent liquid to a depth of at least 150 mm, whose shell material is resistant to damage or reaction with tissue-equivalent liquid chemicals.

The shape of the phantom is an ellipse with length 600mm±5mm and width 400mm±5mm.
The phantom shell is made of low-loss and low-permittivity material, having loss tangent tanδ ≤ 0.05 and relative permittivity:
εr' ≤ 5 for f ≤ 3 GHz
3 ≤εr' ≤ 5 for f > 3 GHz
The thickness of the bottom-wall of the flat phantom is 2.0 mm with a tolerance of ± 0.2 mm.

ELLI Phantom

Technical & mechanical characteristics	
Shell thickness	2 mm ± 0.2 mm
Filling volume	25 L
Dimensions	600 mm x 400 mm x 200mm
Permittivity	4.4
Loss tangent	0.017

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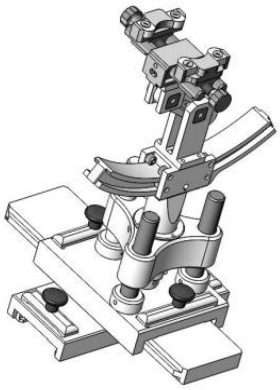
4.2.5 Device Holder



System Material	Permittivity	Loss tangent
Delrin	3.7	0.005

(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
PMMA	2.9	0.028

4.2.6 Simulating Liquid

For SAR measurement of the field distribution inside the phantom, the phantom must be filled with homogeneous tissue simulating liquid to a depth of at least 15 cm. 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. The nominal dielectric values of the tissue simulating liquids in the phantom and the tolerance of 5%.

Head Liquid Depth	Body Liquid Depth
	

The following table gives the recipes for tissue simulating liquid and the theoretical Conductivity/Permittivity.

Head (Reference IEEE1528)								
Frequency (MHz)	Water (%)	Sugar (%)	Cellulose (%)	Salt (%)	Preventol (%)	DGBE (%)	Conductivity σ (S/m)	Permittivity ε
750	41.1	57.0	0.2	1.4	0.2	0	0.89	41.9
835	40.3	57.9	0.2	1.4	0.2	0	0.90	41.5
900	40.3	57.9	0.2	1.4	0.2	0	0.97	41.5
1800, 1900, 2000	55.2	0	0	0.3	0	44.5	1.4	40.0
2450	55.0	0	0	0.1	0	44.9	1.80	39.2
2600	54.9	0	0	0.1	0	45.0	1.96	39.0
Frequency (MHz)	Water (%)	Hexyl Carbitol (%)			Triton X-100 (%)		Conductivity σ (S/m)	Permittivity ε
5200	62.52	17.24			17.24		4.66	36.0
5800	62.52	17.24			17.24		5.27	35.3
Body (From instrument manufacturer)								
Frequency (MHz)	Water (%)	Sugar (%)	Cellulose (%)	Salt (%)	Preventol (%)	DGBE (%)	Conductivity σ (S/m)	Permittivity ε
750	51.7	47.2	0	0.9	0.1	0	0.96	55.5
835	50.8	48.2	0	0.9	0.1	0	0.97	55.2
900	50.8	48.2	0	0.9	0.1	0	1.05	55.0
1800, 1900, 2000	70.2	0	0	0.4	0	29.4	1.52	53.3
2450	68.6	0	0	0.1	0	31.3	1.95	52.7
2600	68.2	0	0	0.1	0	31.7	2.16	52.5
Frequency(MHz)	Water	DGBE (%)			Salt (%)		Conductivity σ (S/m)	Permittivity ε
5200	78.60	21.40			/		5.30	49.00
5800	78.50	21.40			0.1		6.00	48.20

5. System Verification

5.1 Purpose of System 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. The 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.

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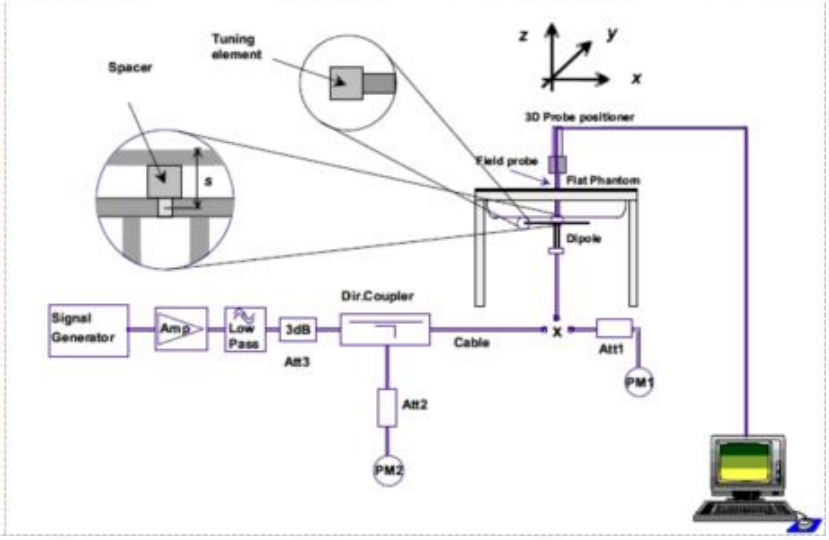
5.2 System Check Setup



6. TEST POSITION CONFIGURATIONS

According to KDB 648474 D04 Handset, handsets are tested for SAR compliance in head, body-worn accessory and other use configurations described in the following subsections.

6.1 Head Exposure Conditions

Head exposure is limited to next to the ear voice mode operations. Head SAR compliance is tested according to the test positions defined in IEEE Std 1528-2013 using the SAM phantom illustrated as below.

6.1.1 Two Imaginary Lines on the Handset

(a) The vertical center line 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 center line 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 center line is not necessarily parallel to the front face of the handset, especially for clamshell handsets, handsets with flip covers, and other irregularly shaped handsets.

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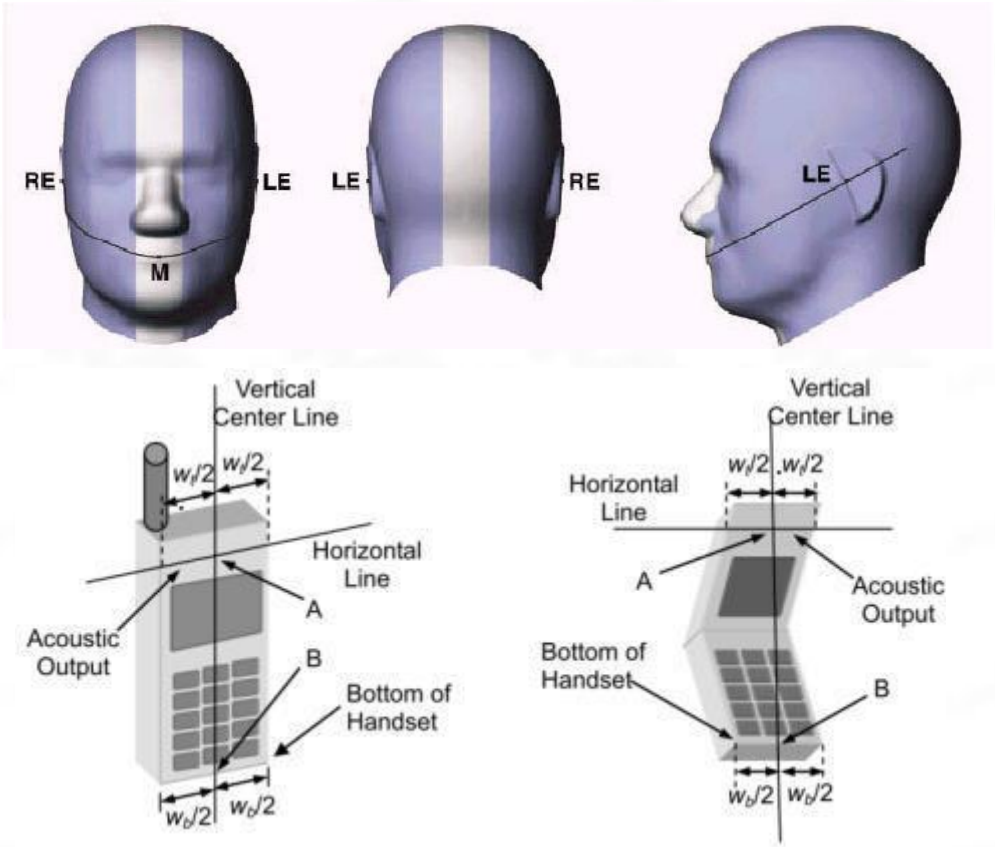


6.1.2 Two Imaginary Lines on the Handset

(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.

6.1.3 Titled Position

(a) To position the device in the “cheek” position described above.

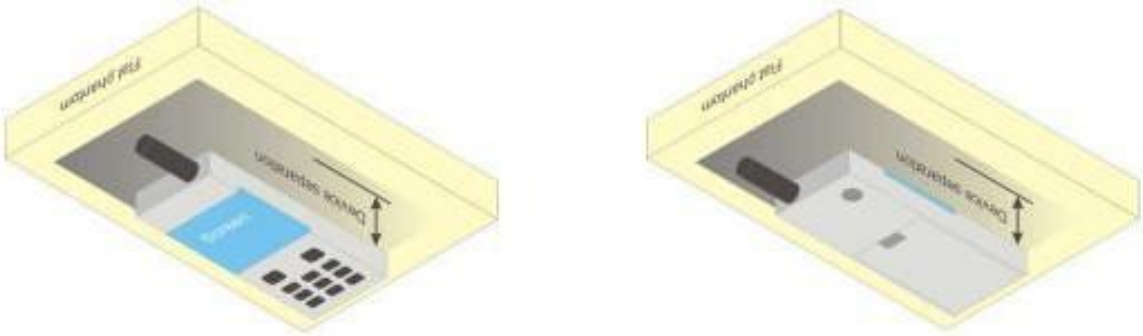
(b) While maintaining the device the reference plane described above and pivoting against the ear, moves it outward away from the mouth by an angle of 15 degrees or until contact with the ear is lost.

6.2 Body-worn Position Conditions

Body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in KDB 447498 are used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode. When the reported SAR for a body-worn accessory.

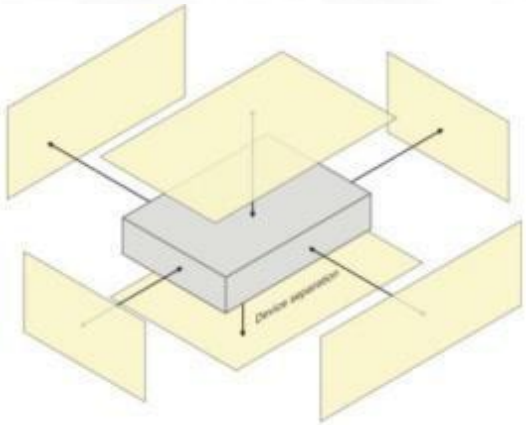
Body-worn accessories that do not contain metallic or conductive components may be tested according to worst-case exposure configurations, typically according to the smallest test separation distance required for the group of body-worn accessories with similar operating and exposure characteristics. All body-worn accessories containing metallic components are tested in conjunction with the host device.

Body-worn accessory SAR compliance is based on a single minimum test separation distance for all wireless and operating modes applicable to each body-worn accessory used by the host, and according to the relevant voice and/or data mode transmissions and operations. If a body-worn accessory supports voice only operations in its normal and expected use conditions, testing of data mode for body-worn compliance is not required. A conservative minimum test separation distance for supporting off-the-shelf body-worn accessories that may be acquired by users of consumer handsets is used to test for body-worn accessory SAR compliance. This distance is determined by the handset manufacturer, according to the requirements of Supplement C 01-01. Devices that are designed to operate on the body of users using lanyards and straps, or without requiring additional body-worn accessories, will be tested using a conservative minimum test separation distance <= 5 mm to support compliance.



6.3 Hotspot Mode Exposure Position Conditions

For handsets that support hotspot mode operations, with wireless router capabilities and various web browsing functions, the relevant hand and body exposure conditions are tested according to the hotspot SAR procedures in KDB 941225. A test separation distance of 10 mm is required between the phantom and all surfaces and edges with a transmitting antenna located within 25 mm from that surface or edge. When the form factor of a handset is smaller than 9 cm x 5 cm, a test separation distance of 5 mm (instead of 10 mm) is required for testing hotspot mode. When the separation distance required for body-worn accessory testing is larger than or equal to that tested for hotspot mode, in the same wireless mode and for the same surface of the phone, the hotspot mode SAR data may be used to support body-worn accessory SAR compliance for that particular configuration (surface).



6.4 Product Specific 10g Exposure Consideration

According with FCC KDB 648474 D04, for smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm that provide similar mobile web access and multimedia support found in mini-tablets or UMPC mini-tablets that support voice calls next to the ear, unless it is confirmed otherwise through KDB inquiries, the following phablet procedures should be applied to evaluate SAR compliance for each applicable wireless modes and frequency band. Devices marketed as phablets, regardless of form factors and operating characteristics must be tested as a phablet to determine SAR compliance;

The UMPC mini-tablet procedures must also be applied to test the SAR of all surfaces and edges with an antenna located at ≤ 25 mm from that surface or edge, in direct contact with a flat phantom, for 10-g extremity SAR according to the body-equivalent tissue dielectric parameters in KDB 865664 to address interactive hand use exposure conditions. The UMPC mini-tablet 1-g SAR at 5 mm is not required. When hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg.

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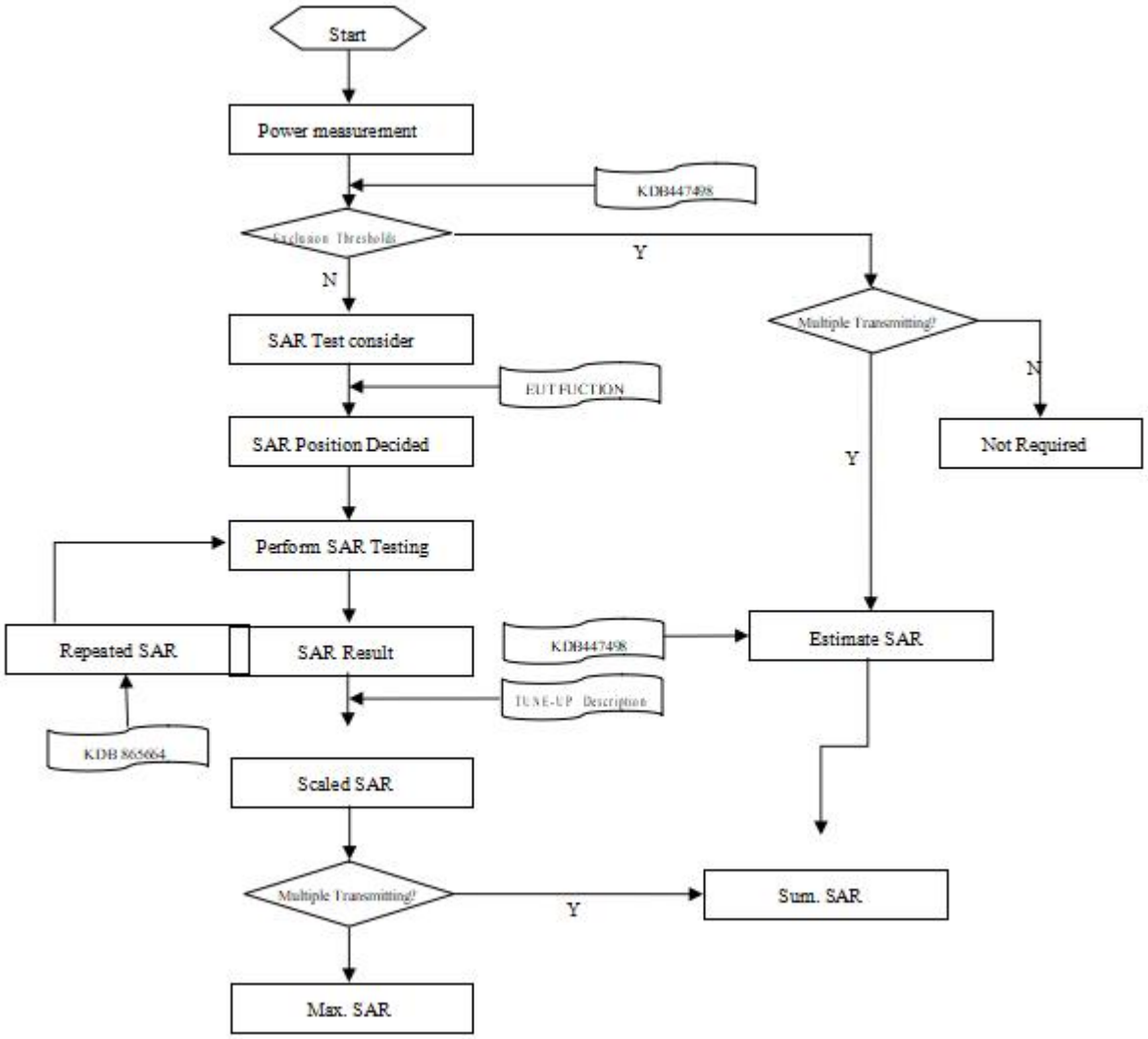
7. Measurement Procedure

7.1 Measurement Process Diagram

Body SAR



7.2 SAR Scan General Requirement

Probe boundary effect error compensation is required for measurements with the probe tip closer than half a probe tip diameter to the phantom surface. Both the probe tip diameter and sensor offset distance must satisfy measurement protocols; to ensure probe boundary effect errors are minimized and the higher fields closest to the phantom surface can be correctly measured and extrapolated to the phantom surface for computing 1 g SAR. Tolerances of the post-processing algorithms must be verified by the test laboratory for the scan resolutions used in the SAR measurements, according to the reference distribution functions specified in IEC/IEEE 62209-1528: 2020.

Table 3 – Area scan parameters

Parameter	DUT transmit frequency being tested	
	$f \leq 3$ GHz	3 GHz < $f \leq 10$ GHz
Maximum distance between the measured points (geometric centre of the sensors) and the inner phantom surface (z_{M1} in Figure 20 in mm)	5 ± 1	$\delta \ln(2)/2 \pm 0,5$ [a]
Maximum spacing between adjacent measured points in mm (see O.8.3.1)[b]	20, or half of the corresponding zoom scan length, whichever is smaller	$60/f$, or half of the corresponding zoom scan length, whichever is smaller
Maximum angle between the probe axis and the phantom surface normal (α in Figure 20)[c]	5° (flat phantom only) 30° (other phantoms)	5° (flat phantom only) 20° (other phantoms)
Tolerance in the probe angle	1°	1°

[a] δ is the penetration depth for a plane-wave incident normally on a planar half-space.

[b] See Clause O.8 on how Δx and Δy may be selected for individual area scan requirements.

[c] The probe angle relative to the phantom surface normal is restricted due to the degradation in the measurement accuracy in fields with steep spatial gradients. The measurement accuracy decreases with increasing probe angle and increasing frequency. This is the reason for the tighter probe angle restriction at frequencies above 3 GHz.

Table 4 – Zoom scan parameters

Parameter	DUT transmit frequency being tested	
	$f \leq 3$ GHz	3 GHz < $f \leq 10$ GHz
Maximum distance between the closest measured points and the phantom surface (z_{M1} in Figure 20 and Table 3, in mm)	5	$\delta \ln(2)/2$ [a]
Maximum angle between the probe axis and the phantom surface normal (α in Figure 20)	5° (flat phantom only) 30° (other phantoms)	5° (flat phantom only) 20° (other phantoms)
Maximum spacing between measured points in the x- and y-directions (Δx and Δy, in mm)	8	$24/f$ [b]
For uniform grids: Maximum spacing between measured points in the direction normal to the phantom shell (Δz_1 in Figure 20, in mm)	5	$10/(f - 1)$
For graded grids: Maximum spacing between the two closest measured points in the direction normal to the phantom shell (Δz_1 in Figure 20, in mm)	4	$12/f$
For graded grids: Maximum incremental increase in the spacing between measured points in the direction normal to the phantom shell ($R_z = \Delta z_2/\Delta z_1$ in Figure 20)	1,5	1,5
Minimum edge length of the zoom scan volume in the x- and y-directions (L_z in O.8.3.2, in mm)	30	22
Minimum edge length of the zoom scan volume in the direction normal to the phantom shell (L_h in O.8.3.2 in mm)	30	22
Tolerance in the probe angle	1°	1°

[a] δ is the penetration depth for a plane-wave incident normally on a planar half-space.

[b] This is the maximum spacing allowed, which might not work for all circumstances.

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7.3 Measurement Procedure

The following steps are used for each test position

a. Establish a call with the maximum output power with a base station simulator. The connection between the mobile and the base station simulator is established via air interface

b. Measurement of the local E-field value at a fixed location. This value serves as a reference value for calculating a possible power drift.

c. Measurement of the SAR distribution with a grid of 8 to 16mm * 8 to16 mm and a constant distance to the inner surface of the phantom. Since the sensors cannot directly measure at the inner phantom surface, the values between the sensors and the inner phantom surface are extrapolated. With these values the area of the maximum SAR is calculated by an interpolation scheme.

d. Around this point, a cube of 30 * 30 * 30 mm or 32 * 32 *32 mm is assessed by measuring 5 or 8 * 5 or 8*4 or 5 mm. With these data, the peak spatial-average SAR value can be calculated.

7.4 Area & Zoom Scan Procedure

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 is performed around the highest E-field value to determine the averaged SAR-distribution over 10 g. Area scan and zoom scan resolution setting follows KDB 865664 D01v01r04 quoted below.

When the 1 g SAR of the highest peak is within 2 dB of the SAR limit, additional zoom scans are required for other peaks within 2 dB of the highest peak that have not been included in any zoom scan to ensure there is no increase in SAR.

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8. Conducted RF Output Power

8.1 GSM

Mode: GSM850		Maximum Tune-up(dBm)	Burst Average Power (dBm)			Division Factors	Frame-Average Power (dBm)		
			CH128	CH190	CH251		CH128	CH190	CH251
			824.2MHz	836.6MHz	848.8MHz		824.2MHz	836.6MHz	848.8MHz
GSM		**32.00**	31.54	**31.62**	31.14	-9.03	22.51	**22.59**	22.11
GPRS (GMSK)	1Tx slot	34.00	33.86	33.75	33.54	-9.03	24.83	24.72	24.51
	2Tx slots	**32.00**	**31.64**	31.55	31.37	-6.02	**25.62**	25.53	25.35
	3Tx slots	30.00	29.74	29.67	29.50	-4.26	25.48	25.41	25.24
	4Tx slots	28.00	27.61	27.55	27.41	-3.01	24.60	24.54	24.40
Mode: GSM1900		**Maximum Tune-up(dBm)**	**Burst Average Power (dBm)**			**Division Factors**	**Frame-Average Power (dBm)**		
			CH512	CH661	CH810		CH512	CH661	CH810
			1850.2MHz	1880.0MHz	1909.8MHz		1850.2MHz	1880.0MHz	1909.8MHz
GSM		**26.50**	26.15	**26.47**	26.15	-9.03	17.12	**17.44**	17.12
GPRS (GMSK)	1Tx slot	26.50	26.18	26.39	26.03	-9.03	17.15	17.36	17.00
	2Tx slots	24.50	24.28	24.18	23.77	-6.02	18.26	18.16	17.75
	3Tx slots	**23.00**	**22.68**	22.56	22.12	-4.26	**18.42**	18.30	17.86
	4Tx slots	21.00	20.51	20.39	19.94	-3.01	17.50	17.38	16.93

Note:
1) Division Factors
To average the power, the division factor is as follows:
1Tx-slot = 1 transmit time slot out of 8 time slots=> conducted power divided by (8/1) => -9.03dB
2Tx-slots = 2 transmit time slots out of 8 time slots=> conducted power divided by (8/2) => -6.02dB
3Tx-slots = 3 transmit time slots out of 8 time slots=> conducted power divided by (8/3) => -4.26dB
4Tx-slots = 4 transmit time slots out of 8 time slots=> conducted power divided by (8/4) => -3.01dB

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8.2 LTE

Band 2

LTE-FDD Band 2				Maximum Tune-up(dBm)	Conducted Power(dBm)		
Bandwidth	Modulation	RB allocation	RB offset		18607	18900	19193
					1850.7MHz	1880.0MHz	1909.3MHz
1.4MHz	QPSK	1	0	24.00	23.06	23.16	23.56
			2	24.00	23.04	23.17	23.51
			5	24.00	23.02	23.21	23.54
		3	0	24.00	23.18	23.41	23.52
			2	24.00	23.30	23.41	23.51
			3	24.00	23.24	23.42	23.65
		6	0	22.50	22.04	22.24	22.45
	16QAM	1	0	22.50	22.37	22.29	22.36
			2	22.50	22.28	22.41	22.28
			5	22.50	22.36	22.28	22.39
		3	0	23.00	21.75	22.31	22.64
			2	23.00	21.76	22.31	22.63
			3	23.00	21.75	22.31	22.66
		6	0	22.00	21.27	21.26	21.80
Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	18615	18900	19185
					1851.5MHz	1880.0MHz	1908.5MHz
3MHz	QPSK	1	0	24.00	23.10	23.13	23.52
			7	24.00	23.13	23.21	23.56
			14	24.00	23.10	23.21	23.58
		8	0	22.50	22.12	22.42	22.36
			4	22.50	22.24	22.43	22.49
			7	22.50	22.10	22.24	22.48
		15	0	22.50	22.20	22.32	22.40
	16QAM	1	0	22.50	22.15	22.37	22.34
			7	22.50	22.20	22.28	22.33
			14	22.50	22.15	22.28	22.38
		8	0	22.00	21.52	21.62	21.59
			4	22.00	21.51	21.61	21.57
			7	22.00	21.48	21.58	21.55
		15	0	22.00	21.27	21.29	21.59
Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	18625	18900	19175
					1852.5MHz	1880.0MHz	1907.5MHz
5MHz	QPSK	1	0	23.50	23.36	23.29	23.28
			13	23.50	23.29	23.38	23.37
			24	23.50	23.26	23.30	23.48
		12	0	22.50	22.26	22.33	22.42
			6	22.50	22.25	22.35	22.36
			13	22.50	22.21	22.37	22.49
		25	0	22.50	22.20	22.37	22.42
	16QAM	1	0	22.50	21.60	22.49	22.12
			13	22.50	21.56	22.47	22.18
			24	22.50	21.68	22.45	22.19
		12	0	22.00	21.37	21.55	21.45
			6	22.00	21.36	21.53	21.45
			13	22.00	21.26	21.60	21.49
		25	0	22.00	21.34	21.51	21.52

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LTE-FDD Band 2				Maximum Tune-up(dBm)	Conducted Power(dBm)		
Bandwidth	Modulation	RB allocation	RB offset		18650	18900	19150
					1855.0MHz	1880.0MHz	1905.0MHz
10MHz	QPSK	1	0	23.50	23.12	23.34	23.22
			25	23.50	23.09	23.37	23.27
			49	23.50	23.10	23.36	23.46
		25	0	22.50	22.21	22.23	22.36
			13	22.50	22.20	22.25	22.29
			25	22.50	22.10	22.29	22.45
		50	0	22.50	22.17	22.38	22.38
	16QAM	1	0	23.00	22.16	22.29	22.87
			25	23.50	22.17	22.27	23.12
			49	23.50	22.17	22.31	23.14
		25	0	22.00	21.21	21.57	21.50
			13	22.00	21.21	21.60	21.51
			25	22.00	21.19	21.57	21.58
Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	18675	18900	19125
					1857.5MHz	1880.0MHz	1902.5MHz
15MHz	QPSK	1	0	23.50	23.20	23.17	23.21
			38	23.50	23.08	23.19	23.41
			74	23.50	23.14	23.03	23.44
		38	0	22.50	22.30	22.38	22.45
			18	22.50	22.26	22.36	22.48
			37	22.50	22.23	22.34	22.47
		75	0	22.50	22.24	22.46	22.41
	16QAM	1	0	23.00	22.27	22.43	22.84
			38	23.50	22.21	22.41	23.09
			74	23.50	22.25	22.35	23.12
		38	0	22.50	22.28	22.37	22.48
			18	22.50	22.24	22.35	22.47
			37	22.50	22.21	22.33	22.46
Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	18700	18900	19100
					1860.0MHz	1880.0MHz	1900.0MHz
20MHz	QPSK	1	0	23.50	23.15	23.49	23.21
			50	23.50	23.08	23.49	23.28
			99	**24.00**	23.19	23.40	**23.57**
		50	0	22.50	22.03	22.31	22.23
			25	22.50	22.17	22.40	22.15
			50	22.50	22.15	22.30	**22.29**
		100	0	22.50	22.07	22.28	22.20
	16QAM	1	0	23.00	21.81	22.87	21.99
			50	23.00	21.83	22.88	22.08
			99	23.00	22.02	22.75	22.27

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Band 4

LTE-FDD Band 4				Maximum Tune-up(dBm)	Conducted Power(dBm)		
Bandwidth	Modulation	RB allocation	RB offset		19957	20175	20393
					1710.7MHz	1732.5MHz	1754.3MHz
1.4MHz	QPSK	1	0	24.50	24.24	23.87	23.87
			2	24.50	24.26	23.82	23.95
			5	24.50	24.20	23.84	23.98
		3	0	24.50	24.32	23.79	23.95
			2	24.50	24.30	23.78	24.06
			3	24.50	24.30	23.84	23.94
		6	0	23.50	23.37	22.84	23.01
	16QAM	1	0	24.00	23.94	22.23	23.13
			2	24.00	23.99	22.16	23.05
			5	24.50	24.01	22.22	23.20
		3	0	23.50	23.16	22.68	22.63
			2	23.50	23.19	22.68	22.72
			3	23.50	23.18	22.63	22.75
		6	0	23.00	22.83	21.96	22.25
Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	19965	20175	20385
					1711.5MHz	1732.5MHz	1753.5MHz
3MHz	QPSK	1	0	24.50	24.06	23.75	23.96
			7	24.50	24.05	23.64	23.75
			14	24.50	24.08	23.68	23.79
		8	0	23.50	23.19	22.65	22.76
			4	23.50	23.19	22.65	22.77
			7	23.50	23.24	22.69	22.77
		15	0	23.50	23.20	22.69	22.81
	16QAM	1	0	23.50	23.15	22.05	22.92
			7	23.50	23.17	21.98	22.91
			14	23.50	23.14	21.97	22.91
		8	0	23.00	22.57	21.92	22.11
			4	23.00	22.56	21.92	22.11
			7	22.50	22.48	21.96	22.11
		15	0	22.50	22.46	21.73	22.08
Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	19975	20175	20375
					1712.5MHz	1732.5MHz	1752.5MHz
5MHz	QPSK	1	0	24.50	24.15	23.65	23.92
			13	24.50	24.19	23.63	23.90
			24	24.50	24.14	23.63	23.96
		12	0	23.50	23.13	22.70	22.90
			6	23.50	23.13	22.70	22.91
			13	23.50	23.11	22.64	22.91
		25	0	23.50	23.19	22.70	22.86
	16QAM	1	0	23.00	22.67	22.89	22.55
			13	23.00	22.73	22.88	22.46
			24	23.00	22.68	22.97	22.47
		12	0	22.50	22.18	21.93	22.01
			6	22.50	22.31	21.91	22.01
			13	22.50	22.24	21.94	22.13
		25	0	22.50	22.33	21.86	22.17

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LTE-FDD Band 4				Maximum Tune-up(dBm)	Conducted Power(dBm)		
Bandwidth	Modulation	RB allocation	RB offset		20000	20175	20350
					1715.0MHz	1732.5MHz	1750.0MHz
10MHz	QPSK	1	0	24.50	24.17	23.87	24.01
			25	24.50	24.23	23.73	24.13
			49	24.50	24.15	23.84	24.15
		25	0	23.50	23.22	22.91	23.06
			13	23.50	23.18	22.89	22.96
			25	23.50	23.23	22.85	23.00
		50	0	23.50	23.14	22.72	23.05
	16QAM	1	0	24.00	23.94	22.91	22.82
			25	24.00	23.87	22.89	22.83
			49	24.00	23.82	23.01	22.86
		25	0	22.50	22.41	21.94	22.13
			13	22.50	22.40	21.95	22.14
			25	22.50	22.30	21.94	22.31
Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	20025	20175	20325
					1717.5MHz	1732.5MHz	1747.5MHz
15MHz	QPSK	1	0	24.50	24.25	23.92	23.61
			38	24.50	24.09	23.75	23.69
			74	24.00	23.96	23.76	23.77
		38	0	23.50	23.05	22.99	22.98
			18	23.50	23.04	22.86	22.97
			37	23.50	23.10	22.85	22.97
		75	0	23.50	23.07	22.76	22.85
	16QAM	1	0	24.00	23.89	22.99	22.92
			38	24.00	23.79	22.92	22.94
			74	24.00	23.66	23.02	23.09
		38	0	23.50	23.04	22.86	22.98
			18	23.50	23.03	22.85	22.98
			37	23.50	23.23	22.85	22.97
Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	20050	20175	20300
					1720.0MHz	1732.5MHz	1745.0MHz
20MHz	QPSK	1	0	**24.50**	**24.14**	23.99	23.77
			50	24.00	23.94	23.78	23.94
			99	24.00	23.79	23.83	23.98
		50	0	23.50	23.07	22.84	22.87
			25	23.50	**23.19**	22.90	22.76
			50	23.00	22.88	22.83	23.00
		100	0	23.50	23.13	22.82	22.91
	16QAM	1	0	23.50	22.99	23.48	22.43
			50	23.50	22.80	23.21	22.45
			99	23.50	22.67	23.38	22.62

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

Band 5

LTE-FDD Band 5				Maximum Tune-up(dBm)	Conducted Power(dBm)		
Bandwidth	Modulation	RB allocation	RB offset		20407	20525	20643
					824.7MHz	836.5MHz	848.3MHz
1.4MHz	QPSK	1	0	25.00	24.17	24.29	24.80
			2	25.00	24.18	24.43	24.69
			5	25.00	24.16	24.42	24.76
		3	0	25.00	24.34	24.53	24.79
			2	25.00	24.34	24.42	24.79
			3	25.00	24.32	24.43	24.70
		6	0	24.00	23.30	23.47	23.66
	16QAM	1	0	24.50	23.43	22.70	24.11
			2	24.50	23.39	22.77	24.02
			5	24.50	23.35	22.75	24.14
		3	0	24.00	22.78	23.32	23.54
			2	24.00	22.74	23.31	23.66
			3	24.00	22.71	23.22	23.57
		6	0	23.50	22.69	22.49	23.29
Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	20415	20525	20635
					825.5MHz	836.5MHz	847.5MHz
3MHz	QPSK	1	0	25.00	24.25	24.47	24.56
			7	25.00	24.13	24.51	24.67
			14	25.00	24.25	24.38	24.65
		8	0	23.50	23.32	23.27	23.44
			4	24.00	23.33	23.28	23.55
			7	23.50	23.37	23.42	23.47
		15	0	24.00	23.30	23.50	23.55
	16QAM	1	0	24.00	23.38	22.75	23.61
			7	24.00	23.29	22.82	23.79
			14	24.00	23.38	22.70	23.83
		8	0	23.00	22.87	22.53	22.51
			4	23.00	22.86	22.55	22.52
			7	23.00	22.60	22.65	22.96
		15	0	23.00	22.67	22.47	22.60

LTE-FDD Band 5				Maximum Tune-up(dBm)	Conducted Power(dBm)		
Bandwidth	Modulation	RB allocation	RB offset		20425	20525	20625
					826.5MHz	836.5MHz	846.5MHz
5MHz	QPSK	1	0	25.00	24.49	24.43	24.52
			12	24.50	24.44	24.40	24.47
			24	24.50	24.47	24.46	24.48
		12	0	24.00	23.29	23.45	23.63
			6	24.00	23.27	23.45	23.57
			13	23.50	23.24	23.48	23.48
		25	0	24.00	23.33	23.60	23.37
	16QAM	1	0	24.00	22.55	23.55	23.15
			12	24.00	22.57	23.68	23.09
			24	24.00	22.57	23.71	23.22
		12	0	23.00	22.67	22.57	22.54
			6	23.00	22.66	22.58	22.55
			13	23.00	22.22	22.59	22.58
		25	0	23.00	22.36	22.61	22.58

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	20450	20525	20600
					829.0MHz	836.5MHz	844.0MHz
10MHz	QPSK	1	0	24.50	24.30	24.08	24.49
			25	25.00	24.11	24.49	24.70
			49	**25.00**	24.19	24.59	**24.82**
		25	0	24.00	23.16	23.55	23.46
			13	23.50	23.11	23.46	23.48
			25	24.00	23.27	23.48	**23.61**
		50	0	24.00	23.24	23.50	23.59
	16QAM	1	0	23.50	23.00	22.91	23.38
			25	24.00	22.93	23.36	23.54
			49	24.00	23.00	23.48	23.63
		25	0	23.00	22.14	22.66	22.74
			13	23.00	22.24	22.56	22.71
			25	23.00	22.16	22.66	22.76

Band 7

LTE-FDD Band 7				Maximum Tune-up(dBm)	Conducted Power(dBm)		
Bandwidth	Modulation	RB allocation	RB offset		20775	21100	21425
					2502.5MHz	2535MHz	2567.5MHz
5MHz	QPSK	1	0	23.00	22.51	22.47	22.73
			12	23.00	22.57	22.48	22.69
			24	23.00	22.53	22.44	22.68
		12	0	22.00	21.54	21.52	21.72
			6	22.00	21.56	21.54	21.73
			13	22.00	21.59	21.63	21.73
		25	0	22.00	21.64	21.66	21.69
	16QAM	1	0	22.50	21.79	22.38	21.92
			12	22.50	21.71	22.39	21.93
			24	22.50	21.75	22.35	21.92
		12	0	21.00	20.70	20.83	20.80
			6	21.00	20.78	20.86	20.89
			13	21.00	20.77	20.82	20.78
		25	0	21.00	20.87	20.85	20.86
Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	20800	21100	21400
					2505MHz	2535MHz	2565MHz
10MHz	QPSK	1	0	23.00	22.68	22.55	22.87
			24	23.50	22.59	22.58	23.02
			49	23.00	22.75	22.56	22.84
		25	0	22.00	21.74	21.71	21.79
			12	22.00	21.62	21.79	21.76
			25	22.00	21.62	21.71	21.83
		50	0	22.00	21.63	21.75	21.82
	16QAM	1	0	23.00	22.76	22.42	22.29
			24	23.00	22.77	22.30	22.32
			49	23.00	22.99	22.36	22.19
		25	0	21.50	20.93	20.77	21.13
			12	21.50	20.99	20.85	21.14
			25	21.50	21.04	20.81	21.06

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

LTE-FDD Band 7				Maximum Tune-up(dBm)	Conducted Power(dBm)		
Bandwidth	Modulation	RB allocation	RB offset		20825	21100	21375
					2507.5MHz	2535MHz	2562.5MHz
15MHz	QPSK	1	0	23.00	22.46	22.33	22.56
			38	23.00	22.48	22.19	22.58
			74	23.00	22.68	22.18	22.51
		38	0	22.00	21.74	21.62	21.64
			18	22.00	21.76	21.65	21.71
			37	22.00	21.75	21.67	21.71
		75	0	22.00	21.69	21.64	21.78
	16QAM	1	0	23.00	22.26	22.24	22.91
			38	23.00	22.40	22.10	22.83
			74	23.00	22.52	22.12	22.69
		38	0	22.00	21.73	21.73	21.71
			18	22.00	21.76	21.66	21.71
			37	22.00	21.75	21.67	21.71
Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	20850	21100	21350
					2510MHz	2535MHz	2560MHz
20MHz	QPSK	1	0	**23.00**	22.71	22.82	**22.85**
			49	23.00	22.63	22.57	22.75
			99	23.00	22.78	22.59	22.79
		50	0	22.00	21.63	21.71	21.77
			25	22.00	21.51	21.68	21.72
			50	22.00	21.79	21.49	**21.83**
		100	0	22.00	21.79	21.71	21.72
	16QAM	1	0	23.00	21.64	22.97	22.22
			49	23.00	21.75	22.66	22.16
			99	23.00	21.89	22.79	22.13

8.3 Bluetooth

EDR	Mode	Maximum Tune-up(dBm)	Average Conducted Output Power (dBm)		
			0	39	78
			2402MHz	2441MHz	2480MHz
	GFSK	5.50	5.22	5.25	4.28
	π/4QPSK	**6.50**	4.68	5.00	**6.32**
	8DPSK	6.00	4.63	5.66	5.15

Channel	Frequency (GHz)	Max. Tune-up Power (dBm)	Max. Power (mW)	Test distance (mm)	Exclusion thresholds for 1-g SAR(mW)	RF exposure evaluation required
78	2.480	6.50	4.47	0	2.72	Yes
78	2.480	6.50	4.47	10	10.17	No

Note

1. Per KDB 447498 D04 Interim General RF Exposure Guidance v01, the 1-g SAR test exclusion thresholds for 300 MHz to 6 GHz at *test separation distances* ≤ 40 cm are determined by:

$$P_{\text{th}}\,(\text{mW}) = \begin{cases} ERP_{20\,\text{cm}}(d/20\,\text{cm})^{x} & d \le 20\,\text{cm} \\ ERP_{20\,\text{cm}} & 20\,\text{cm} < d \le 40\,\text{cm} \end{cases} \quad \text{(B.2)}$$

where

$$x = -\log_{10}\left(\frac{60}{ERP_{20\,\text{cm}}\sqrt{f}}\right)$$

and f is in GHz, d is the separation distance (cm), and $ERP_{20\text{cm}}$ is per Formula (B.1).

$$P_{\text{th}}\,(\text{mW}) = ERP_{20\,\text{cm}}\,(\text{mW}) = \begin{cases} 2040f & 0.3\ \text{GHz} \le f < 1.5\ \text{GHz} \\ 3060 & 1.5\ \text{GHz} \le f \le 6\ \text{GHz} \end{cases} \quad \text{(B.1)}$$

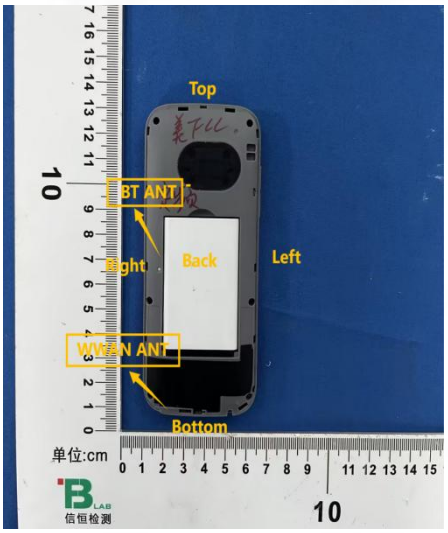
*When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine estimated SAR.

2. Per KDB 248227 D01 v02r02, choose the highest output power channel to test SAR and determine further SAR exclusion.
3. The output power of all data rate were prescan, just the worst case (the lowest data rate) of all mode were shown in report.

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

9. Test Exclusion Consideration

Antenna information:



WWAN Main Antenna	GSM/LTE TX/RX
BT Antenna	BT TX/RX

Note:
1. KDB 447498 D04v01, particular DUT edges were not required to be evaluated for SAR if the antenna-to-edge distance is greater than 2.5cm.
2. Per KDB648474 D04,10-g extremity SAR is not required when Body-Worn mode 1-g reported SAR<1.2W/Kg.

Distance of The Antenna to the EUT surface and edge (mm)						
Antenna	Front Side (mm)	Back Side (mm)	Left Edge (mm)	Right Edge (mm)	Top Edge (mm)	Bottom Edge (mm)
WWAN	<25	<25	41	<25	115	<25
BT	<25	<25	45	<25	56	64
Positions for SAR tests: Hotspot mode						
Antenna	Front Side (mm)	Back Side (mm)	Left Edge (mm)	Right Edge (mm)	Top Edge (mm)	Bottom Edge (mm)
WWAN	Yes	Yes	No	Yes	No	Yes
BT	Yes	Yes	No	Yes	No	No

9.1 SAR Test Exclusion Consideration Table

Per KDB 447498 requires when the standalone SAR test exclusion of section 4.3.1 is applied to an antenna that transmits simultaneously with other antennas, the standalone SAR must be estimated according to the following format 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.
0.4 W/Kg for 1-g SAR and 1.0 W/kg for 10-g SAR, when the test separation distances is > 50 mm

Mode	Channel	Frequency (GHz)	Max tune-up power (dBm)	Max. Power (mW)	Exposure Position	Body-worn
					Test Dist.(mm)	10
BT	78	2.480	6.50	4.47	Estimated SAR(W/kg)	0.094

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

10. Test Result

Head(0mm gap)												
Mode	Position	Ch.	Freq. (MHz)	Power Drift (%)	1g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)	Meas. No.
GSM 850 (voice)	Left Cheek	190	836.6	2.590	0.058	100.00	1.000	31.62	32.00	1.091	0.063	/
	Left Tilt	190	836.6	1.230	0.042	100.00	1.000	31.62	32.00	1.091	0.046	/
	Right Cheek	190	836.6	4.540	0.063	100.00	1.000	31.62	32.00	1.091	**0.069**	1#
	Right Tilt	190	836.6	-2.350	0.046	100.00	1.000	31.62	32.00	1.091	0.050	/
Body(10mm Gap)												
Mode	Position	Ch.	Freq. (MHz)	Power Drift (%)	1g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)	Meas. No.
GSM 850 (voice)	Front	190	836.6	-1.190	0.083	100.00	1.000	31.62	32.00	1.091	0.091	/
	Back	190	836.6	-1.250	0.101	100.00	1.000	31.62	32.00	1.091	0.110	/
	Right	190	836.6	-3.000	0.074	100.00	1.000	31.62	32.00	1.091	0.081	/
	Bottom	190	836.6	1.350	0.067	100.00	1.000	31.62	32.00	1.091	0.073	/
Body(hotspot open, 10mm Gap)												
Mode	Position	Ch.	Freq. (MHz)	Power Drift (%)	1g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)	Meas. No.
GPRS 850+2slots	Front	128	824.2	2.120	0.088	100.00	1.000	31.64	32.00	1.086	0.096	/
	Back	128	824.2	-1.360	0.121	100.00	1.000	31.64	32.00	1.086	**0.131**	2#
	Right	128	824.2	-3.210	0.078	100.00	1.000	31.64	32.00	1.086	0.085	/
	Bottom	128	824.2	0.900	0.070	100.00	1.000	31.64	32.00	1.086	0.076	/

Head(0mm gap)												
Mode	Position	Ch.	Freq. (MHz)	Power Drift (%)	1g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)	Meas. No.
GSM 1900 (voice)	Left Cheek	661	1880.0	-1.190	0.047	100.00	1.000	26.47	26.50	1.007	0.047	/
	Left Tilt	661	1880.0	-1.180	0.026	100.00	1.000	26.47	26.50	1.007	0.026	/
	Right Cheek	661	1880.0	2.410	0.051	100.00	1.000	26.47	26.50	1.007	**0.051**	3#
	Right Tilt	661	1880.0	4.810	0.030	100.00	1.000	26.47	26.50	1.007	0.030	/
Body(hotspot open, 10mm Gap)												
Mode	Position	Ch.	Freq. (MHz)	Power Drift (%)	1g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)	Meas. No.
GSM 1900 (voice)	Front	661	1880.0	1.670	0.042	100.00	1.000	26.47	26.50	1.007	0.042	/
	Back	661	1880.0	-3.560	0.046	100.00	1.000	26.47	26.50	1.007	0.046	/
	Right	661	1880.0	1.180	0.035	100.00	1.000	26.47	26.50	1.007	0.035	/
	Bottom	661	1880.0	-2.620	0.030	100.00	1.000	26.47	26.50	1.007	0.030	/
Body(hotspot open, 10mm Gap)												
Mode	Position	Ch.	Freq. (MHz)	Power Drift (%)	1g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)	Meas. No.
GPRS 1900+3slots	Front	512	1850.2	-3.090	0.090	100.00	1.000	22.68	23.00	1.076	0.097	/
	Back	512	1850.2	-1.460	0.132	100.00	1.000	22.68	23.00	1.076	**0.142**	4#
	Right	512	1850.2	1.800	0.083	100.00	1.000	22.68	23.00	1.076	0.089	/
	Bottom	512	1850.2	-3.410	0.076	100.00	1.000	22.68	23.00	1.076	0.082	/

Head(0mm gap)													
Mode	Channel Type	Position	Ch.	Freq. (MHz)	Power Drift (%)	1g Meas SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)	Meas. No.
Band 2 (BW: 20MHz)	1RB	Left Cheek	19100	1900.0	-0.790	0.130	100.00	1.000	23.57	24.00	1.104	0.144	/
		Left Tilt	19100	1900.0	3.870	0.067	100.00	1.000	23.57	24.00	1.104	0.074	/
		Right Cheek	19100	1900.0	-3.560	0.134	100.00	1.000	23.57	24.00	1.104	**0.148**	5#
		Right Tilt	19100	1900.0	-0.790	0.072	100.00	1.000	23.57	24.00	1.104	0.079	/
	50%RB	Left Cheek	19100	1900.0	0.870	0.118	100.00	1.000	22.29	22.50	1.050	0.124	/
		Left Tilt	19100	1900.0	-3.820	0.056	100.00	1.000	22.29	22.50	1.050	0.059	/
		Right Cheek	19100	1900.0	1.440	0.123	100.00	1.000	22.29	22.50	1.050	0.129	/
		Right Tilt	19100	1900.0	0.990	0.061	100.00	1.000	22.29	22.50	1.050	0.064	/

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

Body(hotspot open, 10mm Gap)													
Mode	Channel Type	Position	Ch.	Freq. (MHz)	Power Drift (%)	1g Meas SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)	Meas. No.
Band 2 (BW: 20MHz)	1RB	Front	19100	1900.0	-1.970	0.171	100.00	1.000	23.57	24.00	1.104	0.189	/
		Back	19100	1900.0	0.840	0.196	100.00	1.000	23.57	24.00	1.104	**0.216**	6#
		Right	19100	1900.0	1.790	0.152	100.00	1.000	23.57	24.00	1.104	0.168	/
		Bottom	19100	1900.0	-3.570	0.133	100.00	1.000	23.57	24.00	1.104	0.147	/
	50%RB	Front	19100	1900.0	-3.330	0.158	100.00	1.000	22.29	22.50	1.050	0.166	/
		Back	19100	1900.0	-3.720	0.178	100.00	1.000	22.29	22.50	1.050	0.187	/
		Right	19100	1900.0	-1.700	0.136	100.00	1.000	22.29	22.50	1.050	0.143	/
		Bottom	19100	1900.0	1.320	0.119	100.00	1.000	22.29	22.50	1.050	0.125	/

Head(0mm gap)													
Mode	Channel Type	Position	Ch.	Freq. (MHz)	Power Drift (%)	1g Meas SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)	Meas. No.
Band 4 (BW: 20MHz)	1RB	Left Cheek	20050	1720.0	1.530	0.156	100.00	1.000	24.14	24.50	1.086	0.169	/
		Left Tilt	20050	1720.0	4.190	0.082	100.00	1.000	24.14	24.50	1.086	0.089	/
		Right Cheek	20050	1720.0	0.890	0.162	100.00	1.000	24.14	24.50	1.086	**0.176**	7#
		Right Tilt	20050	1720.0	-1.260	0.089	100.00	1.000	24.14	24.50	1.086	0.097	/
	50%RB	Left Cheek	20050	1720.0	-3.780	0.146	100.00	1.000	23.19	23.50	1.076	0.157	/
		Left Tilt	20050	1720.0	2.680	0.073	100.00	1.000	23.19	23.50	1.076	0.079	/
		Right Cheek	20050	1720.0	0.050	0.152	100.00	1.000	23.19	23.50	1.076	0.164	/
		Right Tilt	20050	1720.0	1.170	0.079	100.00	1.000	23.19	23.50	1.076	0.085	/
Body(hotspot open, 10mm Gap)													
Mode	Channel Type	Position	Ch.	Freq. (MHz)	Power Drift (%)	1g Meas SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)	Meas. No.
Band 4 (BW: 20MHz)	1RB	Front	20050	1720.0	-0.350	0.323	100.00	1.000	24.14	24.50	1.086	0.351	/
		Back	20050	1720.0	3.870	0.359	100.00	1.000	24.14	24.50	1.086	**0.390**	8#
		Right	20050	1720.0	-3.800	0.304	100.00	1.000	24.14	24.50	1.086	0.330	/
		Bottom	20050	1720.0	-1.170	0.284	100.00	1.000	24.14	24.50	1.086	0.308	/
	50%RB	Front	20050	1720.0	-2.880	0.305	100.00	1.000	23.19	23.50	1.076	0.328	/
		Back	20050	1720.0	-3.670	0.322	100.00	1.000	23.19	23.50	1.076	0.346	/
		Right	20050	1720.0	-1.970	0.285	100.00	1.000	23.19	23.50	1.076	0.307	/
		Bottom	20050	1720.0	-3.530	0.261	100.00	1.000	23.19	23.50	1.076	0.281	/

Head(0mm gap)													
Mode	Channel Type	Position	Ch.	Freq. (MHz)	Power Drift (%)	1g Meas SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)	Meas. No.
Band 5 (BW: 10MHz)	1RB	Left Cheek	20600	844.0	-0.900	0.035	100.00	1.000	24.82	25.00	1.042	0.036	/
		Left Tilt	20600	844.0	3.870	0.018	100.00	1.000	24.82	25.00	1.042	0.019	/
		Right Cheek	20600	844.0	-2.170	0.038	100.00	1.000	24.82	25.00	1.042	**0.040**	9#
		Right Tilt	20600	844.0	-2.360	0.021	100.00	1.000	24.82	25.00	1.042	0.022	/
	50%RB	Left Cheek	20600	844.0	1.320	0.028	100.00	1.000	23.61	24.00	1.094	0.031	/
		Left Tilt	20600	844.0	-3.790	0.015	100.00	1.000	23.61	24.00	1.094	0.016	/
		Right Cheek	20600	844.0	-0.410	0.032	100.00	1.000	23.61	24.00	1.094	0.035	/
		Right Tilt	20600	844.0	1.020	0.018	100.00	1.000	23.61	24.00	1.094	0.020	/
Body(hotspot open, 10mm Gap)													
Mode	Channel Type	Position	Ch.	Freq. (MHz)	Power Drift (%)	1g Meas SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)	Meas. No.
Band 5 (BW: 10MHz)	1RB	Front	20600	844.0	-3.350	0.042	100.00	1.000	24.82	25.00	1.042	0.044	/
		Back	20600	844.0	1.600	0.050	100.00	1.000	24.82	25.00	1.042	**0.052**	10#
		Right	20600	844.0	-0.250	0.037	100.00	1.000	24.82	25.00	1.042	0.039	/
		Bottom	20600	844.0	-2.940	0.032	100.00	1.000	24.82	25.00	1.042	0.033	/
	50%RB	Front	20600	844.0	0.480	0.036	100.00	1.000	23.61	24.00	1.094	0.039	/
		Back	20600	844.0	-4.900	0.043	100.00	1.000	23.61	24.00	1.094	0.047	/
		Right	20600	844.0	-0.820	0.030	100.00	1.000	23.61	24.00	1.094	0.033	/
		Bottom	20600	844.0	0.540	0.024	100.00	1.000	23.61	24.00	1.094	0.026	/

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Head(0mm gap)													
Mode	Channel Type	Position	Ch.	Freq. (MHz)	Power Drift (%)	1g Meas SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)	Meas. No.
Band 7 (BW: 20MHz)	1RB	Left Cheek	21350	2560.0	2.260	0.240	100.00	1.000	22.85	23.00	1.035	0.248	/
		Left Tilt	21350	2560.0	1.320	0.132	100.00	1.000	22.85	23.00	1.035	0.137	/
		Right Cheek	21350	2560.0	4.010	0.244	100.00	1.000	22.85	23.00	1.035	**0.253**	11#
		Right Tilt	21350	2560.0	-3.460	0.136	100.00	1.000	22.85	23.00	1.035	0.141	/
	50%RB	Left Cheek	21350	2560.0	-1.910	0.223	100.00	1.000	21.83	22.00	1.040	0.232	/
		Left Tilt	21350	2560.0	-4.820	0.118	100.00	1.000	21.83	22.00	1.040	0.123	/
		Right Cheek	21350	2560.0	-2.480	0.231	100.00	1.000	21.83	22.00	1.040	0.240	/
		Right Tilt	21350	2560.0	1.170	0.122	100.00	1.000	21.83	22.00	1.040	0.127	/
Body(hotspot open, 10mm Gap)													
Mode	Channel Type	Position	Ch.	Freq. (MHz)	Power Drift (%)	1g Meas SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)	Meas. No.
Band 7 (BW: 20MHz)	1RB	Front	21350	2560.0	-2.820	0.412	100.00	1.000	22.85	23.00	1.035	0.426	/
		Back	21350	2560.0	-1.110	0.442	100.00	1.000	22.85	23.00	1.035	**0.457**	12#
		Right	21350	2560.0	-2.400	0.384	100.00	1.000	22.85	23.00	1.035	0.397	/
		Bottom	21350	2560.0	-4.040	0.362	100.00	1.000	22.85	23.00	1.035	0.375	/
	50%RB	Front	21350	2560.0	-2.750	0.391	100.00	1.000	21.83	22.00	1.040	0.407	/
		Back	21350	2560.0	-2.930	0.423	100.00	1.000	21.83	22.00	1.040	0.440	/
		Right	21350	2560.0	-2.860	0.363	100.00	1.000	21.83	22.00	1.040	0.378	/
		Bottom	21350	2560.0	0.690	0.340	100.00	1.000	21.83	22.00	1.040	0.354	/

Head(0mm gap)												
Mode	Position	Ch.	Freq. (MHz)	Power Drift (%)	1g Meas SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)	Meas. No.
Bluetooth	Left Cheek	78	2480	0.670	0.042	100.00	1.000	6.32	6.50	1.042	0.044	/
	Left Tilt	78	2480	0.530	0.021	100.00	1.000	6.32	6.50	1.042	0.022	/
	Right Cheek	78	2480	-1.760	0.045	100.00	1.000	6.32	6.50	1.042	**0.047**	13#
	Right Tilt	78	2480	0.990	0.025	100.00	1.000	6.32	6.50	1.042	0.026	/

Note:

1. The maximum SAR Value of each test band is marked bold.
2. SAR plot is provided only for the highest measured SAR in each exposure configuration, wireless mode and frequency band combination.
3. Per KDB 447498 D04 v01, for each exposure position, if the highest output power channel Reported SAR ≤ 0.8W/kg, other channels SAR testing is not necessary.
4. Per KDB 447498 D04 v01, head/body-worn use is evaluated with the device positioned at 0mm/10 mm from a head/flat phantom respectively filled with head tissue-equivalent medium.
5. Per KDB Publication 941225 D06 where SAR test considerations for handsets (L x W ≥ 9 cm x 5 cm) are based on a composite test separation distance of 10 mm from the front, back and edges of the device with antennas 2.5 cm or closer to the edge of the device, determined from general mixed use conditions for this type of devices. Since the hotspot SAR results may overlap with the body-worn accessory SAR requirements, the more conservative configurations can be considered, thus excluding some body-worn accessory SAR tests.
6. Per KDB 447498 D04 v01, the report SAR is measured SAR value adjusted for maximum tune-up tolerance. Scaling Factor=10^[(tune-up limit power(dBm) - Ave.power power (dBm))/10], where tune-up limit is the maximum rated power among all production units.
   Reported SAR(W/kg)=Measured SAR (W/kg)*Scaling Factor.

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11. SAR Measurement Variability

According to KDB 865664 D01, SAR measurement variability was assessed for each frequency band, which is determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. When both head and body tissue-equivalent media are required for SAR measurements in a frequency band, the variability measurement procedures should be applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue-equivalent medium. Alternatively, if the highest measured SAR for both head and body tissue-equivalent media are ≤ 1.45 W/kg and the ratio of these highest SAR values, i.e., largest divided by smallest value, is ≤ 1.10, the highest SAR configuration for either head or body tissue-equivalent medium may be used to perform the repeated measurement. These additional measurements are repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device should be returned to ambient conditions (normal room temperature) with the battery fully charged before it is re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

SAR repeated measurement procedure:

1. When the highest measured SAR is < 0.80 W/kg, repeated measurement is not required.
2. When the highest measured SAR is >= 0.80 W/kg, repeat that measurement once.
3. 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, perform a second repeated measurement.
4. If the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20, and the original, first or second repeated measurement is >= 1.5 W/kg, perform a third repeated measurement.

Note: For 1g SAR, the highest measured 1g SAR is 0.442 < 0.80 W/kg, repeated measurement is not required.

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12. Simultaneous Transmission

Simultaneous transmission SAR test exclusion is determined for each operating configuration and exposure condition according to the reported standalone SAR of each applicable simultaneous transmitting antenna. When the sum of SAR 1g of all simultaneously transmitting antennas in an operating mode and exposure condition combination is within the SAR limit (SAR 1g 1.6 W/kg), the simultaneous transmission SAR is not required. When the sum of SAR 1g is greater than the SAR limit (SAR 1g 1.6 W/kg), SAR test exclusion is determined by the SAR to Peak Location Ratio (SPLSR).

12.1 Simultaneous Transmission Mode Considerations

Simultaneous transmission SAR test exclusion is determined for each operating configuration and exposure condition according to the reported standalone SAR of each applicable simultaneous transmitting antenna. The device has 2 Tx antennas, WWAN main antenna, Wifi/BT antenna supports 2.4G/5G Wi-Fi and BT. The 2 antennas can always transmit simultaneously. The work mode combination is showed as below table.

Application Simultaneous Transmission information:

NO.	Configuration	Head	Body-worn
1	WWAN+BT	Yes	Yes

12.2 Sum SAR of Simultaneous Transmission

Head

Band	Test Position	Channel Type	Scaled		Σ SAR (W/kg) WWAN + BT	SPLSR	Remark
			WWAN	Bluetooth			
LTE band 7	Left Cheek	1RB	0.248	0.044	0.292	N/A	N/A
	Left Tilt		0.137	0.022	0.159	N/A	N/A
	Right Cheek		**0.253**	**0.047**	**0.300**	N/A	N/A
	Right Tilt		0.141	0.026	0.167	N/A	N/A
	Left Cheek	50%RB	0.232	0.044	0.276	N/A	N/A
	Left Tilt		0.123	0.022	0.145	N/A	N/A
	Right Cheek		0.24	0.047	0.287	N/A	N/A
	Right Tilt		0.127	0.026	0.153	N/A	N/A

Hotspot(body-worn)

Band	Test Position	Channel Type	Scaled		Σ SAR (W/kg) WWAN + BT	SPLSR	Remark
			WWAN	Bluetooth			
LTE band 7	Front	1RB	0.426	0.094	0.520	N/A	N/A
	Back		**0.457**	0.094	**0.551**	N/A	N/A
	Right		0.397	0.094	0.491	N/A	N/A
	Bottom		0.375	/	0.375	N/A	N/A
	Front	50%RB	0.407	0.094	0.501	N/A	N/A
	Back		0.44	0.094	0.534	N/A	N/A
	Right		0.378	0.094	0.472	N/A	N/A
	Bottom		0.354	/	0.354	N/A	N/A

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13. Test Equipment List

Description	Manufacturer	Model	Serial No./Version	Cal. Date	Cal. Due
E-Field Probe	MVG	SSE2	04/22 EPGO365	2024/02/06	2025/02/05
6 1/2 Digital Multimeter	Keithley	DMM6500	4527164	2023/11/16	2024/11/15
Wideband Radio Communication Tester	ROHDE & SCHWARZ	CMW500	161997	2023/11/16	2024/11/15
MXG Vector Signal Generator	Agilent	N5182A	MY46240163	2023/11/16	2024/11/15
E-Series Avg. Power Sensor	KEYSIGHT	E9300A	MY55050017	2024/03/20	2025/03/19
EPM Series Power Meter	KEYSIGHT	E4418B	MY41293435	2024/03/20	2025/03/19
10dB Attenuator	MIDWEST MICROWAVE	263-10dB	/	2024/03/20	2025/03/19
Coupler	MERRIMAC	CWM-10R-10.8G	LOT-83391	2024/03/20	2025/03/19
835MHz Validation Dipole	MVG	SID835	07/22 DIP 0G835-656	2023/02/06	2025/02/05
1800MHz Validation Dipole	MVG	SID1800	07/22 DIP 1G800-657	2023/02/06	2025/02/05
1900MHz Validation Dipole	MVG	SID1900	07/22 DIP 1G900-658	2023/02/06	2025/02/05
2450MHz Validation Dipole	MVG	SID2450	07/22 DIP 2G450-662	2023/02/06	2025/02/05
2600MHz Validation Dipole	MVG	SID2600	07/22 DIP 2G600-663	2023/02/06	2025/02/05
LIMESAR Dielectric Probe	MVG	SCLMP	06/22 OCPG88	/	/
ENA Series Network Analyzer	Agilent	E5071B	MY42301221	2023/11/16	2024/11/15
Thermometer	Riters	DT-232	21A11	2024/03/20	2025/03/19
Antenna network emulator	MVG	ANTA 74	07/22 ANTA 74	/	/
SAM Phantom	MVG	SAM	07/22 SAM149	/	/
Mobile Phone Positioning System	MVG	MSH 118	07/22 MSH 118	/	/
Mechanical Calibration Kit	PNA	/	/	/	/
Open SAR test software	MVG	/	V5.3.5	/	/

Note: For dipole antennas, BTF has adopted 3 years as calibration intervals, and on annual basis, every measurement dipole has been evaluated and is in compliance with the following criteria:

1. There is no physical damage on the dipole;
2. System validation with specific dipole is within 10% of calibrated value;
3. Return-loss in within 20% of calibrated measurement.
4. Impedance (real or imaginary parts) in within 5 Ohms of calibrated measurement.

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ANNEX A Simulating Liquid Verification Result

The dielectric parameters of the liquids were verified prior to the SAR evaluation using an SCLMP Dielectric Probe Kit.

Dielectric performance of tissue simulating liquid									
Frequency (MHz)	εr		σ(s/m)		Delta (εr)	Delta (σ)	Limit	Temp (℃)	Date
	Target	Measured	Target	Measured					
835	41.50	41.41	0.90	0.87	0.22%	3.33%	±5%	20.0	22/5/2024
1800	40.00	39.91	1.40	1.37	0.23%	2.14%	±5%	20.0	23/5/2024
1900	40.00	39.88	1.40	1.41	0.30%	-0.71%	±5%	20.0	23/5/2024
2450	39.20	39.08	1.80	1.81	0.31%	-0.56%	±5%	20.0	24/5/2024
2600	39.00	38.88	1.96	1.97	0.31%	-0.51%	±5%	20.0	24/5/2024
NOTE: The dielectric parameters of the tissue-equivalent liquid should be measured under similar ambient conditions and within 2 ℃ of the conditions expected during the SAR evaluation to satisfy protocol requirements.									

ANNEX B System Check Result

Comparing to the original SAR value provided by MVG, the validation data should be within its specification of 10 %(for 10 g).

Frequency (MHz)	Input Power (mW)	10g SAR (W/Kg)	1g SAR (W/Kg)	10g SAR 1W input power normalized (W/Kg)	1g SAR 1W input power normalized (W/Kg)	10g SAR Standard target (1W) (W/Kg)	1g SAR Standard target (1W) (W/Kg)	1g SAR Deviation	10g SAR Deviation
835	16	0.106	0.163	6.63	10.19	6.17	9.79	7.37%	4.06%
1800	16	0.312	0.588	19.50	36.75	20.61	39.33	-5.39%	-6.56%
1900	16	0.322	0.630	20.13	39.38	20.70	40.97	-2.78%	-3.89%
2450	16	0.352	0.793	22.00	49.56	23.86	54.40	-7.80%	-8.89%
2600	16	0.421	0.866	26.31	54.13	24.48	57.14	7.49%	-5.28%

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System Performance Check Data (835 MHz)

System check at 835 MHz

Date of measurement: 22/5/2024

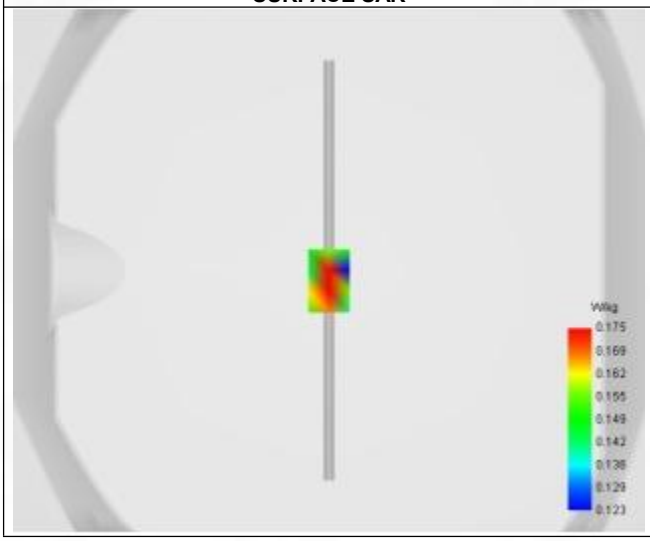
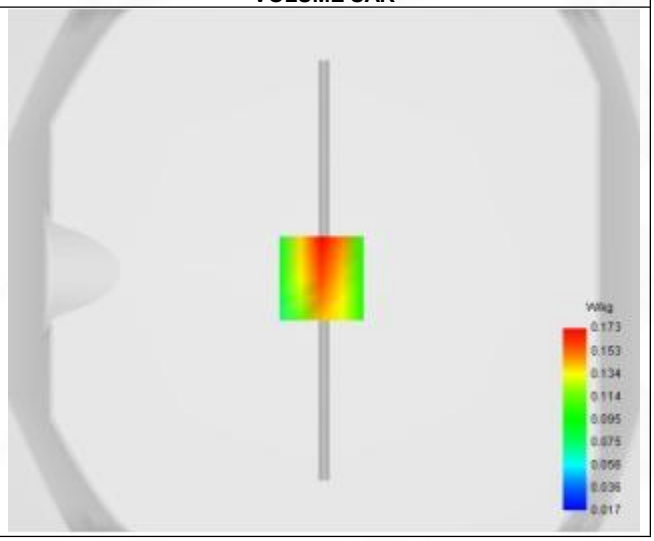
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	1.68
Area Scan	dx=8mm dy=8mm, Adaptative 1 max
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Dipole
Band	CW835
Channels	Middle
Signal	CW

B. Permitivity

Frequency (MHz)	835.000
Relative permitivity (real part)	41.410
Relative permitivity (imaginary part)	19.490
Conductivity (S/m)	0.870

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=-1.00, Y=-3.00 ; SAR Peak: 0.26 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.106
SAR 1g (W/Kg)	0.163
Variation (%)	-3.390
Horizontal validation criteria: minimum distance (mm)	8.487
Vertical validation criteria: SAR ratio M2/M1 (%)	66.47%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.059	0.173	0.115	0.061	0.072

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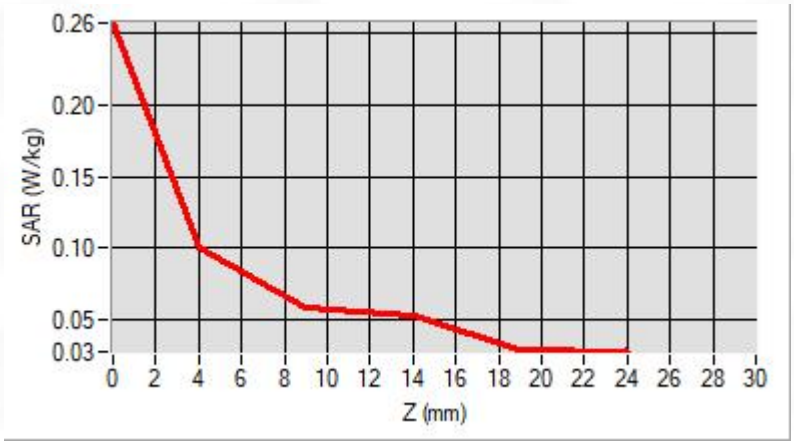
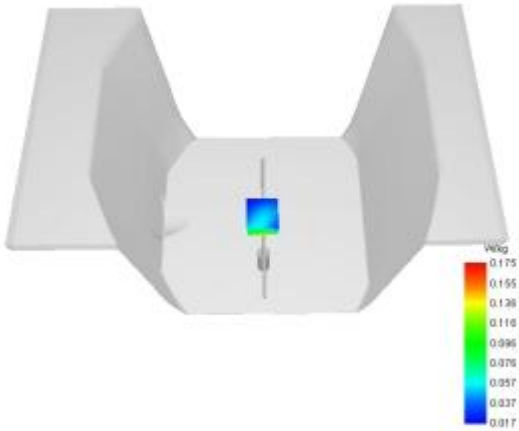
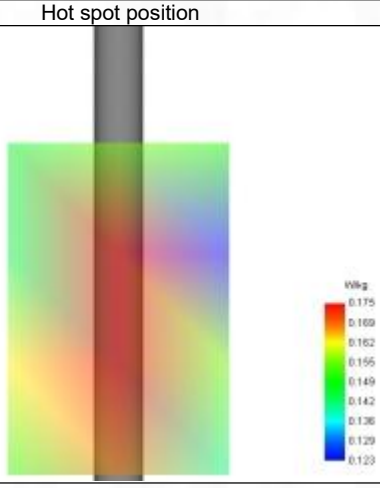


F. 3D Image

3D screen shot	Hot spot position
	

System Performance Check Data (1800 MHz)

System check at 1800 MHz

Date of measurement: 23/5/2024

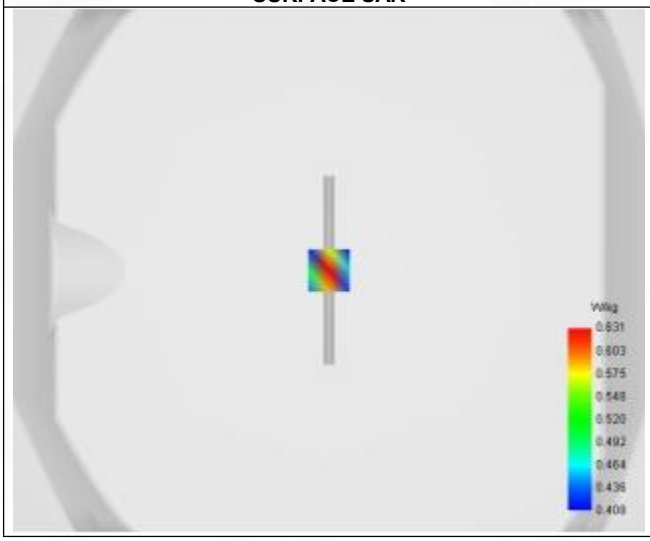
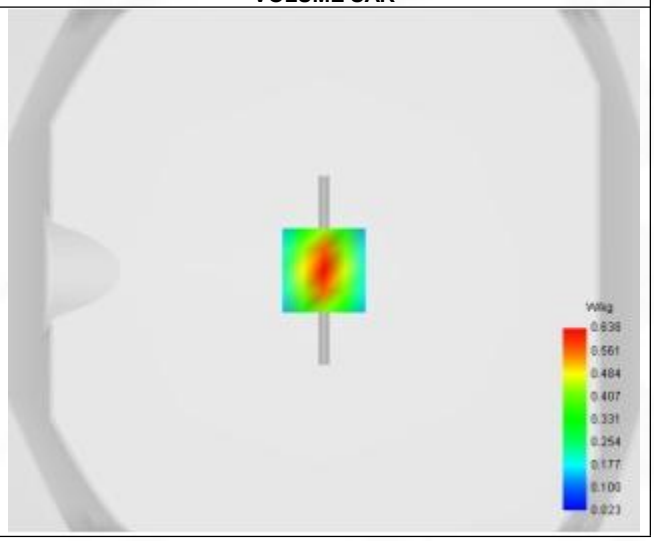
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	1.96
Area Scan	dx=8mm dy=8mm, Adaptative 1 max
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Dipole
Band	CW1800
Channels	Middle
Signal	CW

B. Permitivity

Frequency (MHz)	1800.000
Relative permitivity (real part)	39.910
Relative permitivity (imaginary part)	14.090
Conductivity (S/m)	1.370

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=0.00, Y=0.00 ; SAR Peak: 1.00 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.312
SAR 1g (W/Kg)	0.588
Variation (%)	-0.250
Horizontal validation criteria: minimum distance (mm)	8.698
Vertical validation criteria: SAR ratio M2/M1 (%)	55.80%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.003	0.638	0.356	0.204	0.127

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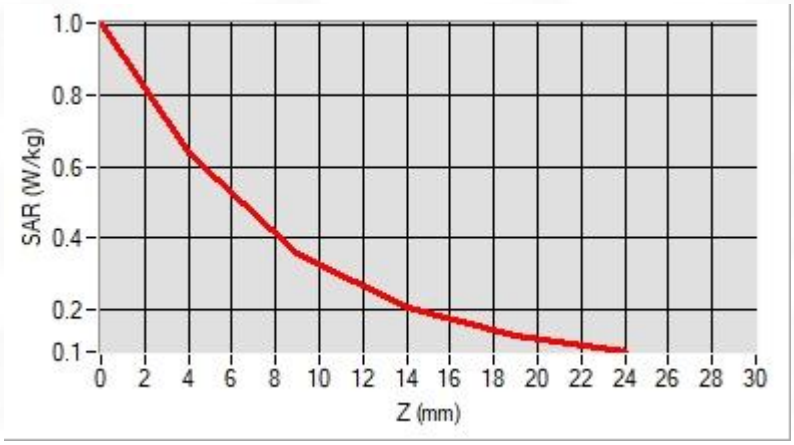
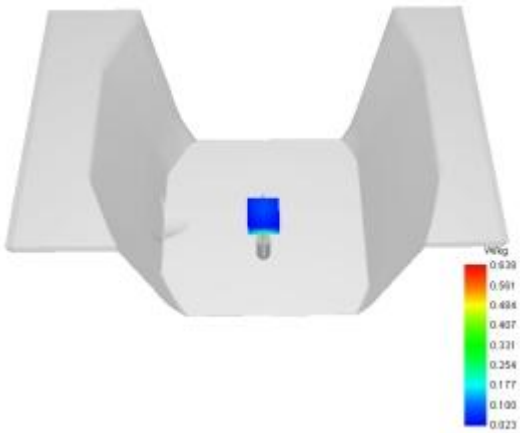
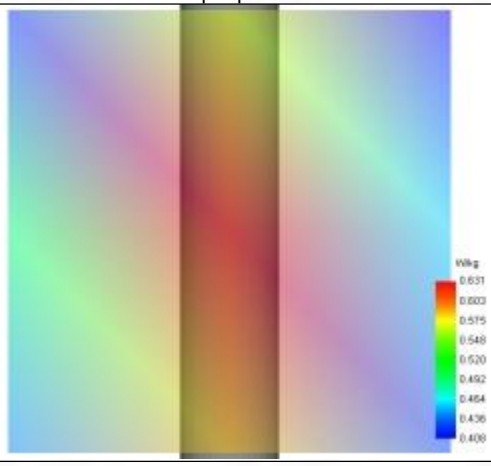


F. 3D Image

3D screen shot	Hot spot position
	

System Performance Check Data (1900 MHz)

System check at 1900 MHz

Date of measurement: 23/5/2024

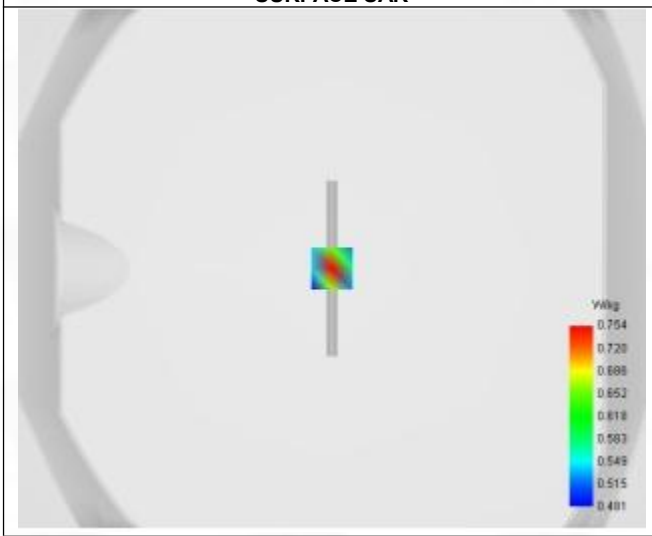
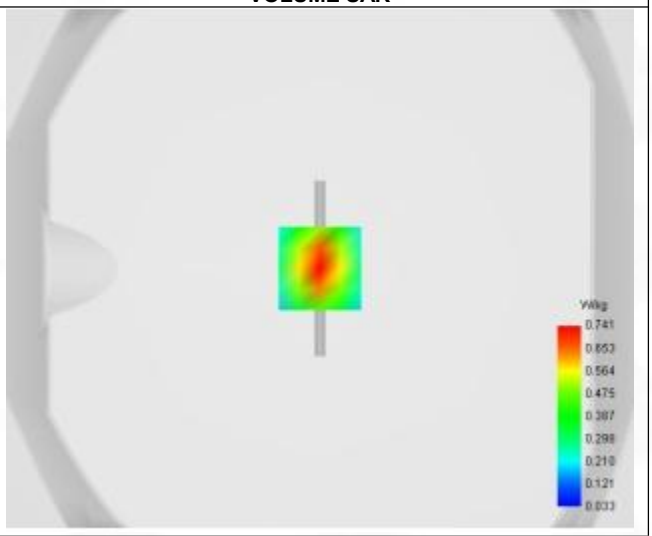
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	2.24
Area Scan	dx=8mm dy=8mm, Adaptative 1 max
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Dipole
Band	CW1900
Channels	Middle
Signal	CW

B. Permitivity

Frequency (MHz)	1900.000
Relative permitivity (real part)	39.880
Relative permitivity (imaginary part)	13.380
Conductivity (S/m)	1.410

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=0.00, Y=0.00 ; SAR Peak: 1.18 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.322
SAR 1g (W/Kg)	0.630
Variation (%)	-2.080
Horizontal validation criteria: minimum distance (mm)	8.699
Vertical validation criteria: SAR ratio M2/M1 (%)	52.96%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.201	0.759	0.402	0.239	0.156

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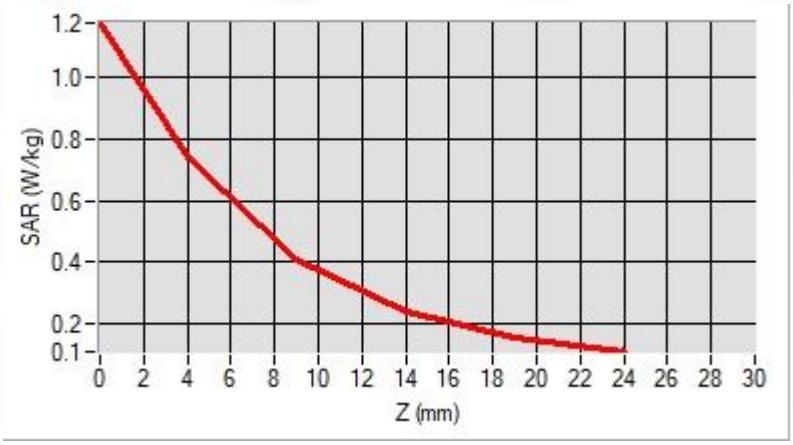
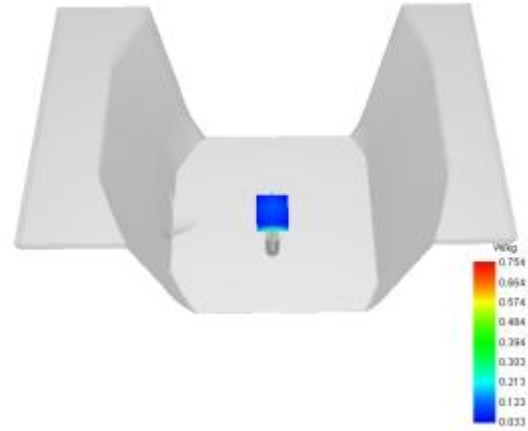
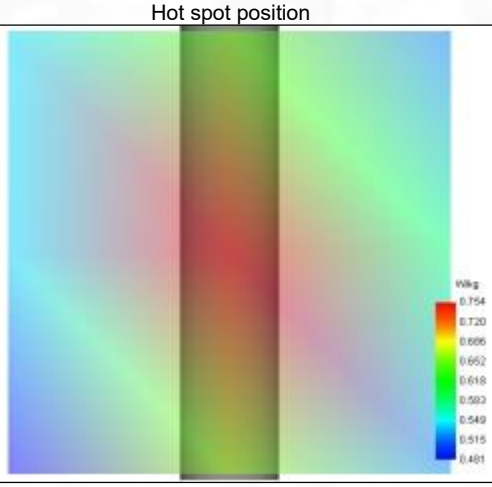


F. 3D Image

3D screen shot	Hot spot position
	

System Performance Check Data (2450 MHz)

System check at 2450 MHz

Date of measurement: 24/5/2024

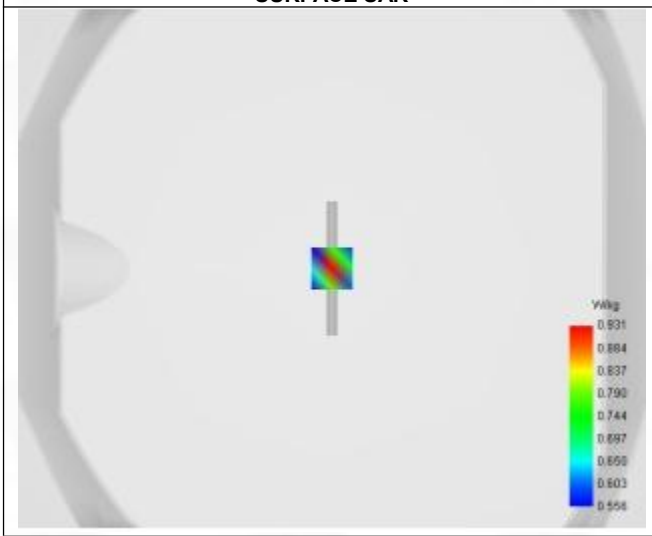
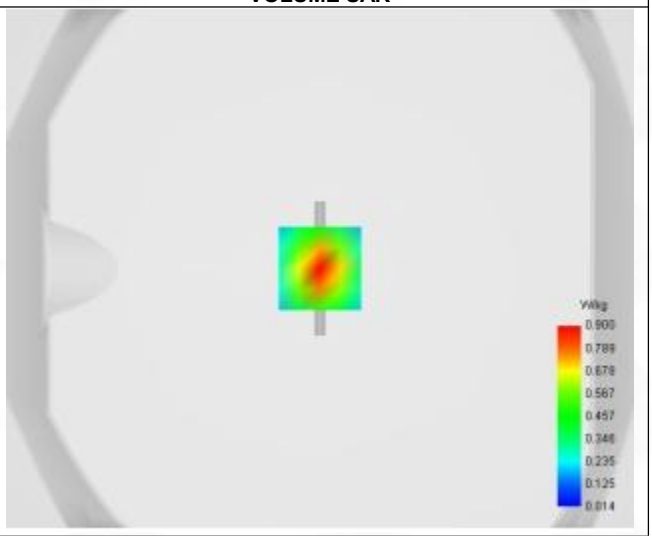
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	2.36
Area Scan	dx=8mm dy=8mm, Adaptative 1 max
Zoom Scan	5x5x7,dx=5mm dy=5mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Dipole
Band	CW2450
Channels	Middle
Signal	CW

B. Permitivity

Frequency (MHz)	2450.000
Relative permitivity (real part)	39.080
Relative permitivity (imaginary part)	13.340
Conductivity (S/m)	1.810

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=0.00, Y=0.00 ; SAR Peak: 1.47 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.352
SAR 1g (W/Kg)	0.793
Variation (%)	-2.570
Horizontal validation criteria: minimum distance (mm)	9.787
Vertical validation criteria: SAR ratio M2/M1 (%)	53.00%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.466	0.900	0.477	0.261	0.158

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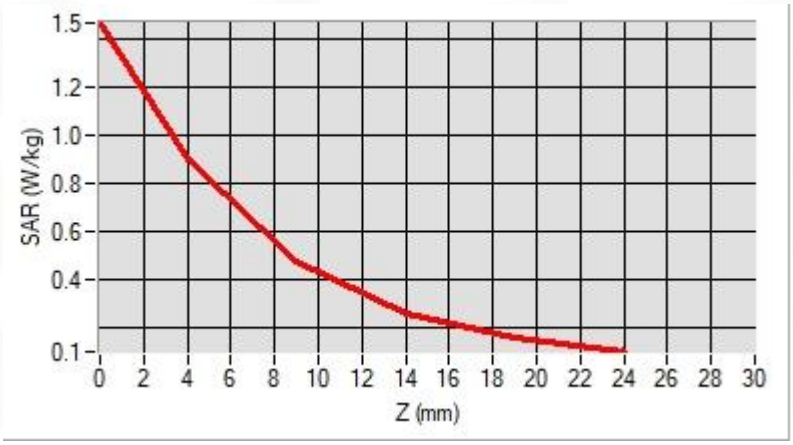
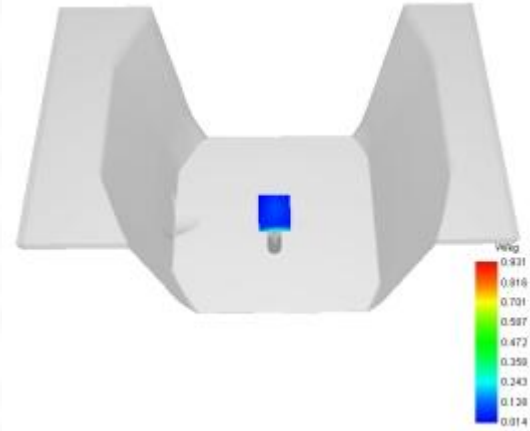
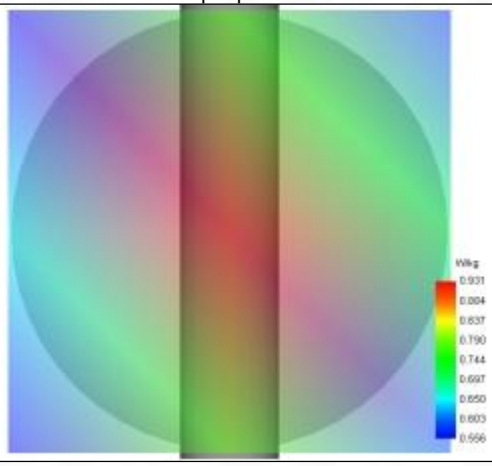


F. 3D Image

3D screen shot	Hot spot position
	

System Performance Check Data (2600 MHz)

System check at 2600 MHz

Date of measurement: 24/5/2024

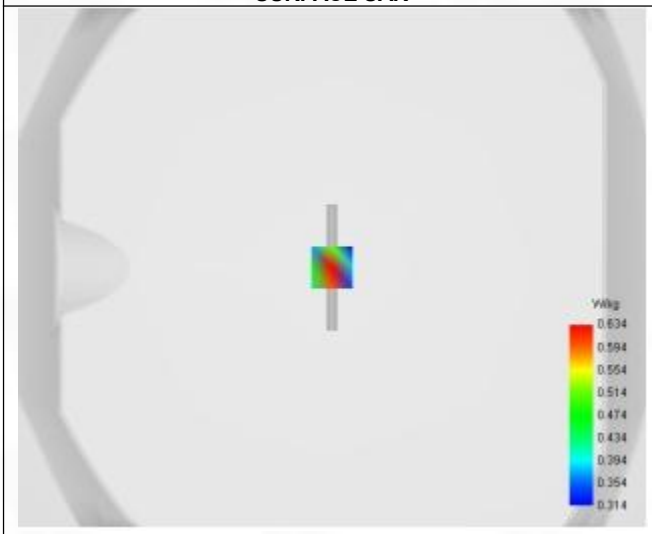
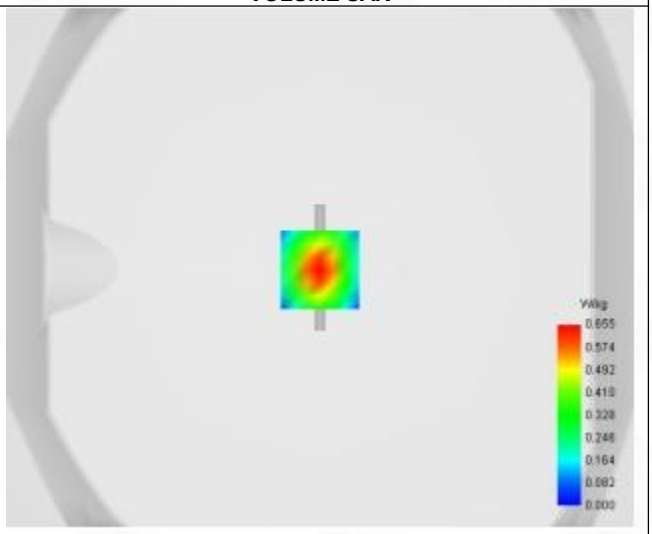
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	2.40
Area Scan	dx=8mm dy=8mm, Adaptative 1 max
Zoom Scan	5x5x7,dx=5mm dy=5mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Dipole
Band	CW2600
Channels	Middle
Signal	CW

B. Permitivity

Frequency (MHz)	2600.000
Relative permitivity (real part)	38.880
Relative permitivity (imaginary part)	12.690
Conductivity (S/m)	1.970

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=0.00, Y=-1.00 ; SAR Peak: 1.02 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.421
SAR 1g (W/Kg)	0.866
Variation (%)	2.980
Horizontal validation criteria: minimum distance (mm)	9.362
Vertical validation criteria: SAR ratio M2/M1 (%)	54.81%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.020	0.655	0.359	0.187	0.091

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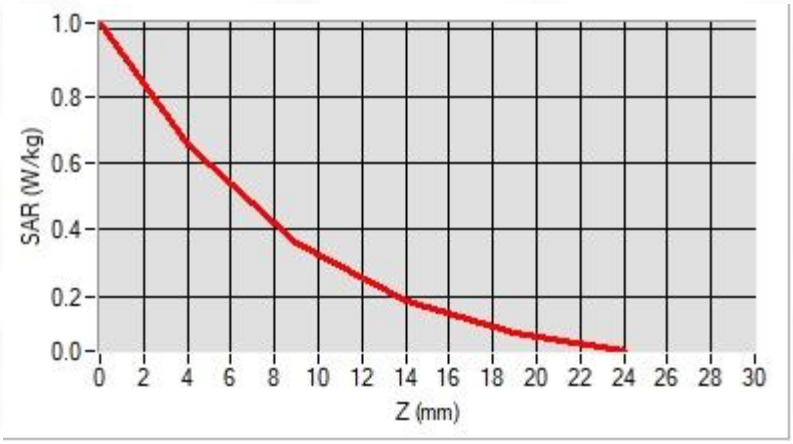
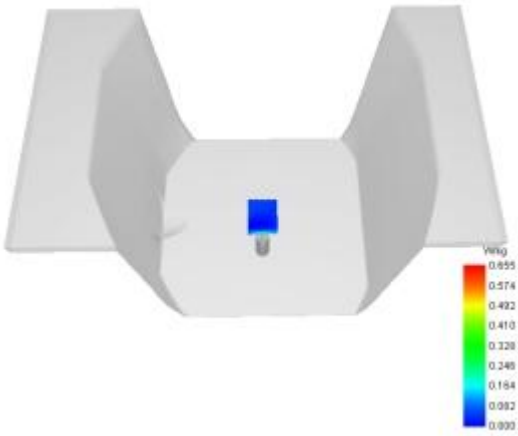
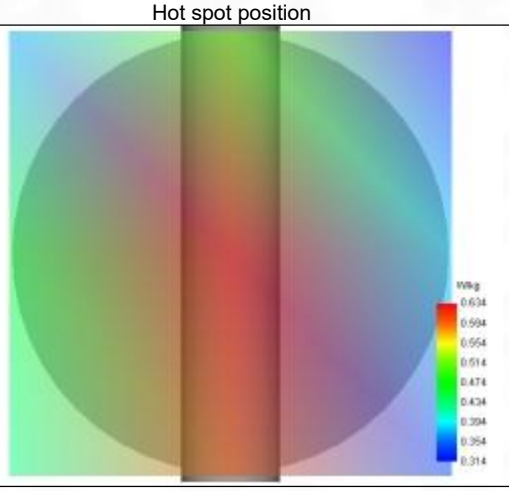


F. 3D Image

3D screen shot	Hot spot position
	

ANNEX C Test Data

1-Head with front position in dist. 0mm on Channel 190 in GSM850 voice

SAR Measurement at GSM850 (Cheek, Right)

Date of measurement: 22/5/2024

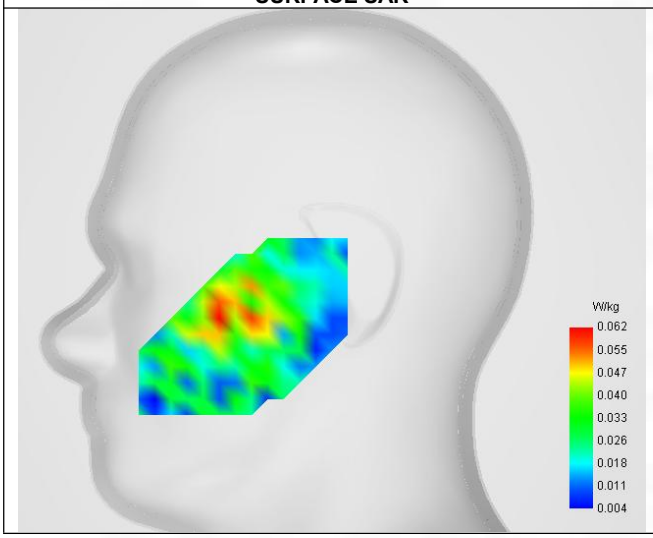
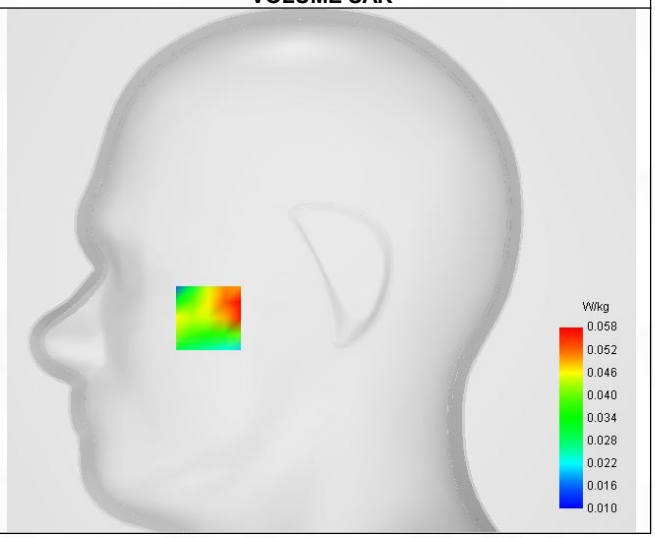
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	1.68
Area Scan	dx=8mm dy=8mm, Adaptative 1 max
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Right head
Device Position	Cheek
Band	GSM850
Channels	Middle (190)
Signal	TDMA (GSM)
Modulation	GMSK

B. Permitivity

Frequency (MHz)	836.600
Relative permitivity (real part)	41.408
Relative permitivity (imaginary part)	19.481
Conductivity (S/m)	0.871

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=-56.00, Y=-24.00 ; SAR Peak: 0.12 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.046
SAR 1g (W/Kg)	0.063
Variation (%)	4.540
Horizontal validation criteria: minimum distance (mm)	8.652
Vertical validation criteria: SAR ratio M2/M1 (%)	36.21%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.130	0.058	0.021	0.013	0.016

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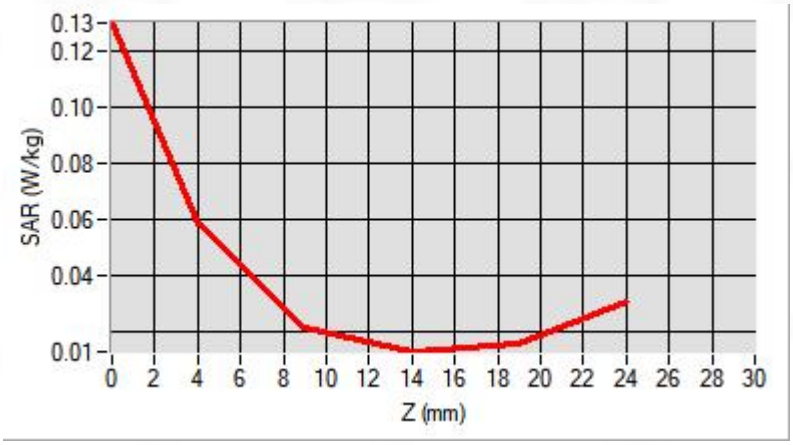
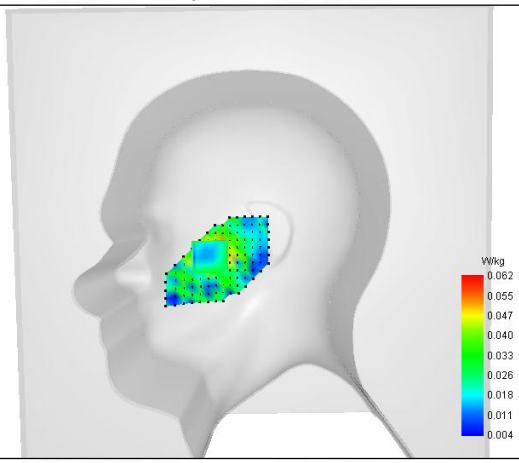
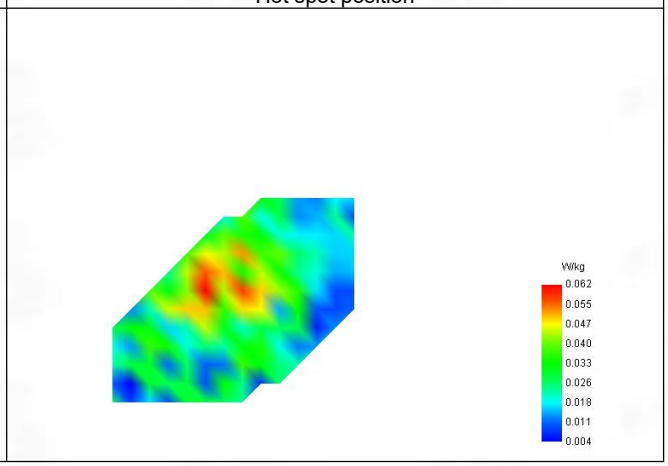


F. 3D Image

3D screen shot	Hot spot position
	

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2-Body with back position in dist. 10mm on Channel 128 in GPRS850+2slots

SAR Measurement at GPRS850 (Body, Validation Plane)

Date of measurement: 22/5/2024

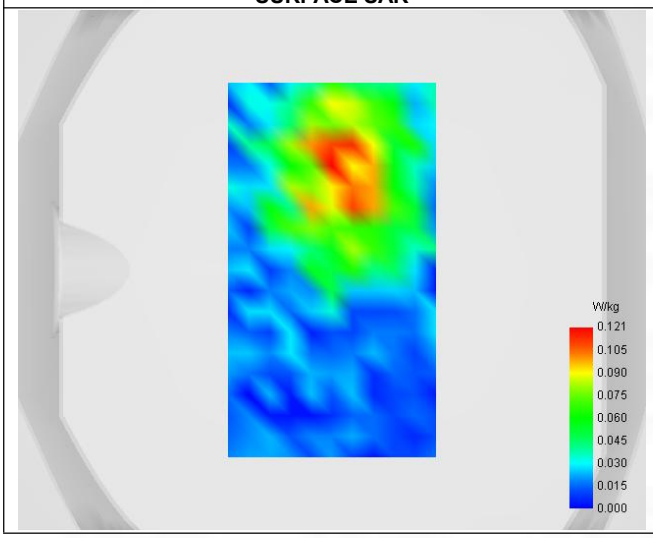
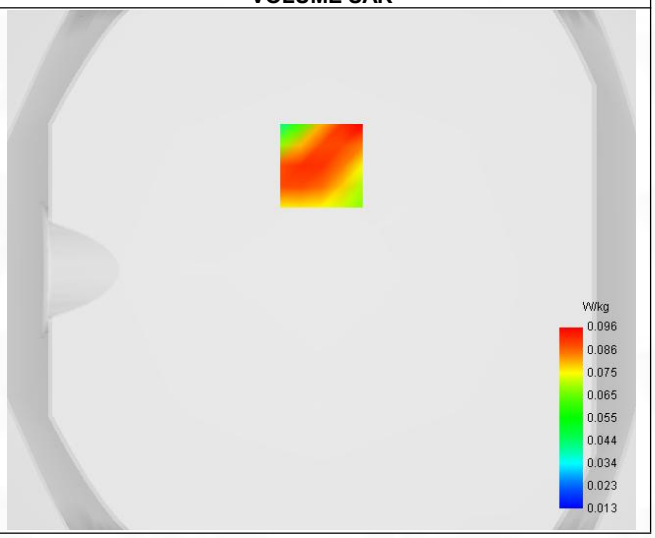
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	1.68
Area Scan	dx=8mm dy=8mm, Adaptative 1 max
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	GPRS850
Channels	Lower (128)
Signal	TDMA (GPRS)
Modulation	GMSK (CS-1)
TX-slots	2

B. Permitivity

Frequency (MHz)	824.200
Relative permitivity (real part)	41.460
Relative permitivity (imaginary part)	19.740
Conductivity (S/m)	0.869

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=0.00, Y=40.00 ; SAR Peak: 0.16 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.074
SAR 1g (W/Kg)	0.121
Variation (%)	-1.360
Horizontal validation criteria: minimum distance (mm)	8.598
Vertical validation criteria: SAR ratio M2/M1 (%)	60.42%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.122	0.096	0.058	0.035	0.032

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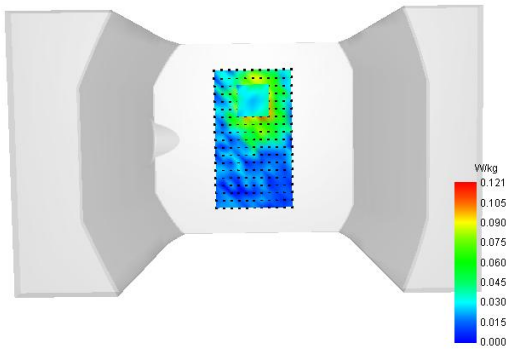
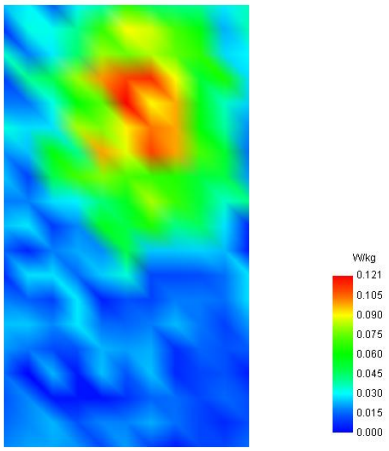
F. 3D Image

3D screen shot	Hot spot position
	

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3-Head with front position in dist. 0mm on Channel 661 in GSM1900 voice

SAR Measurement at GSM1900 (Cheek, Right)

Date of measurement: 23/5/2024

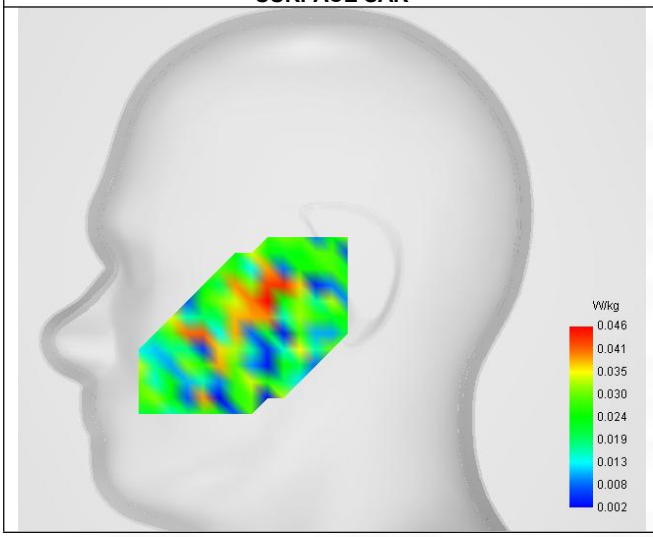
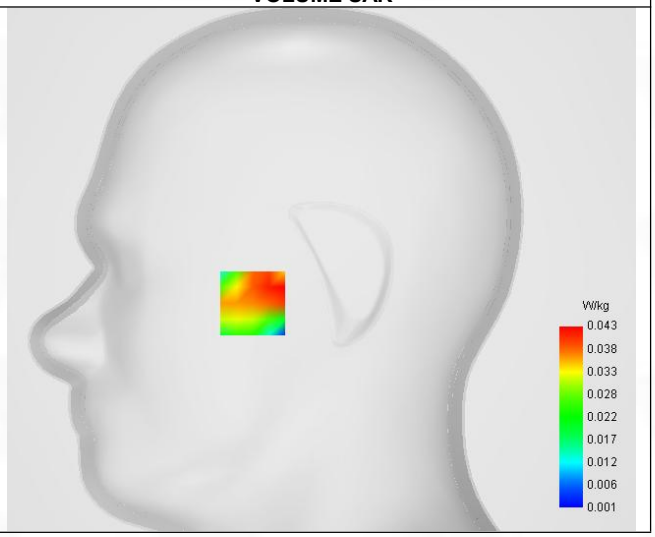
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	2.24
Area Scan	dx=8mm dy=8mm, Adaptative 1 max
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Right head
Device Position	Cheek
Band	GSM1900
Channels	Middle (661)
Signal	TDMA (GSM)
Modulation	GMSK

B. Permitivity

Frequency (MHz)	1880.000
Relative permitivity (real part)	39.886
Relative permitivity (imaginary part)	13.522
Conductivity (S/m)	1.402

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=-34.00, Y=-17.00 ; SAR Peak: 0.13 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.035
SAR 1g (W/Kg)	0.051
Variation (%)	2.410
Horizontal validation criteria: minimum distance (mm)	9.362
Vertical validation criteria: SAR ratio M2/M1 (%)	69.77%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	-0.051	0.043	0.030	0.007	0.025

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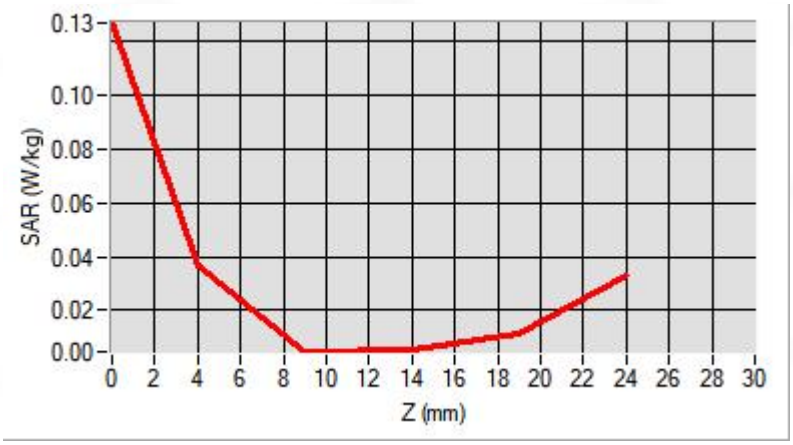
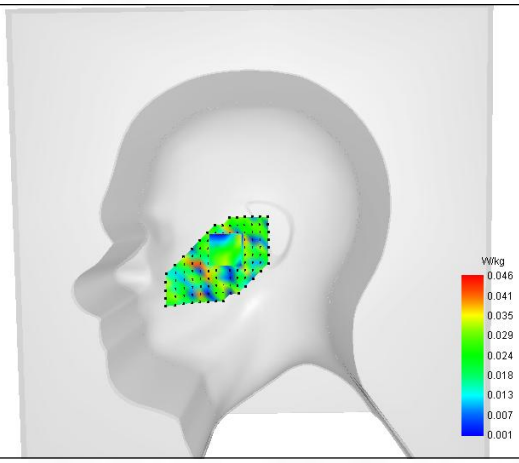
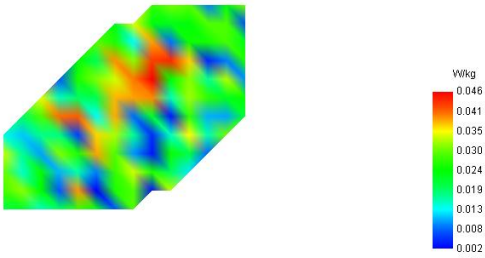


F. 3D Image

3D screen shot	Hot spot position
	

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4-Body with back position in dist. 10mm on Channel 512 in GPRS1900+3slots

SAR Measurement at GPRS1900 (Body, Validation Plane)

Date of measurement: 23/5/2024

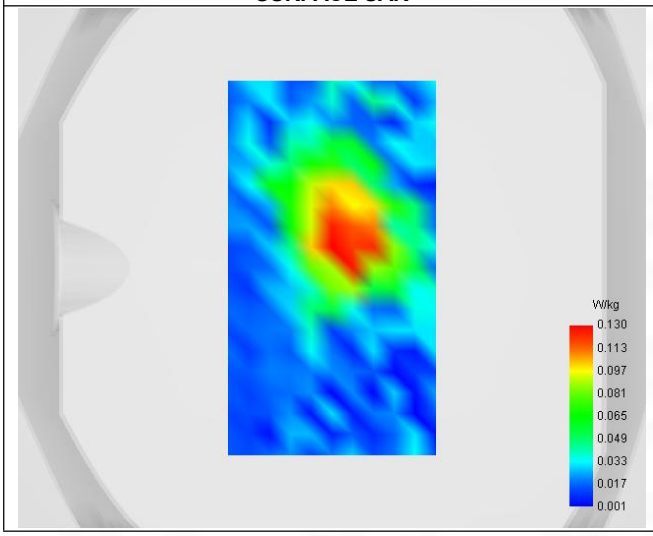
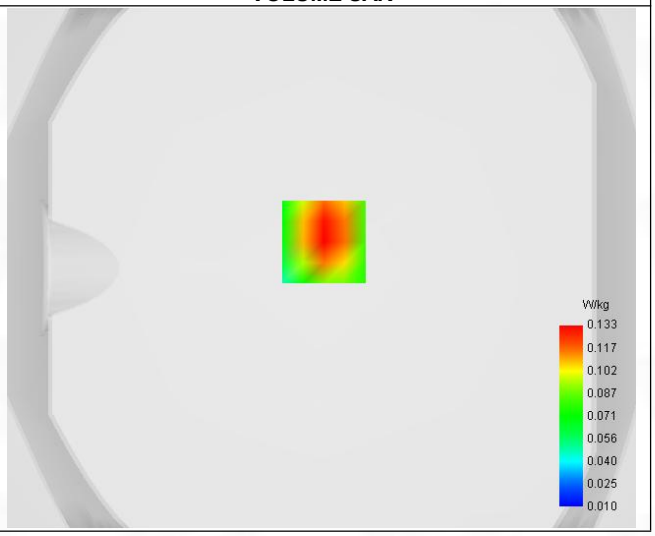
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	2.24
Area Scan	dx=8mm dy=8mm, Adaptative 1 max
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	GPRS1900
Channels	Lower (512)
Signal	TDMA (GPRS)
Modulation	GMSK (CS-1)
TX-slots	3

B. Permitivity

Frequency (MHz)	1850.200
Relative permitivity (real part)	39.895
Relative permitivity (imaginary part)	13.734
Conductivity (S/m)	1.390

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=1.00, Y=10.00 ; SAR Peak: 0.22 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.077
SAR 1g (W/Kg)	0.132
Variation (%)	-1.460
Horizontal validation criteria: minimum distance (mm)	9.478
Vertical validation criteria: SAR ratio M2/M1 (%)	50.38%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.224	0.133	0.067	0.035	0.020

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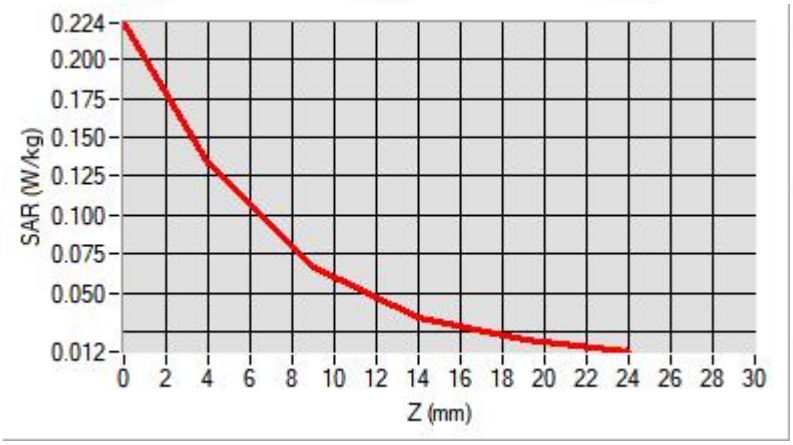
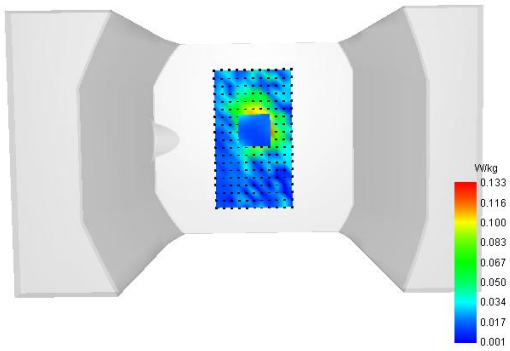
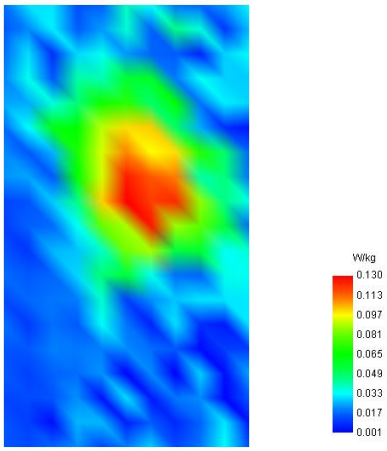


F. 3D Image

3D screen shot	Hot spot position
	

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5-Head with front position in dist. 0mm on Channel 19100 in LTE band 2

SAR Measurement at LTE band 2 (Cheek, Right)

Date of measurement: 23/5/2024

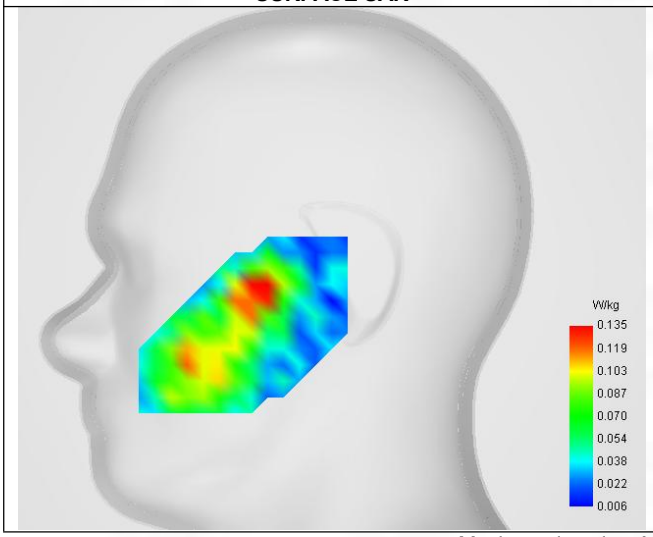
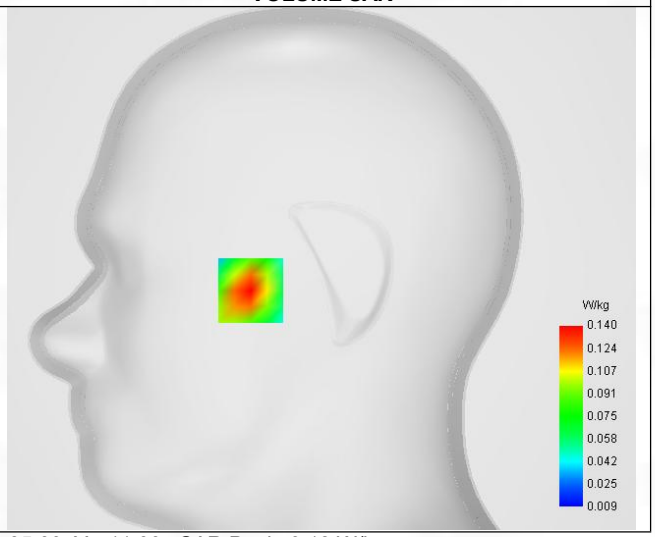
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	2.24
Area Scan	dx=8mm dy=8mm, Adaptative 1 max
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Right head
Device Position	Cheek
Band	LTE band 2
Channels	Higher (19100)
Signal	LTE FDD
Cell Bandwidth	20 Mhz
Modulation	SC-OFDM - QPSK
RB offset	99
RB size	1

B. Permitivity

Frequency (MHz)	1908.910
Relative permitivity (real part)	39.867
Relative permitivity (imaginary part)	13.379
Conductivity (S/m)	1.416

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=-35.00, Y=-11.00 ; SAR Peak: 0.18 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.085
SAR 1g (W/Kg)	0.134
Variation (%)	-3.560
Horizontal validation criteria: minimum distance (mm)	10.362
Vertical validation criteria: SAR ratio M2/M1 (%)	73.57%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00

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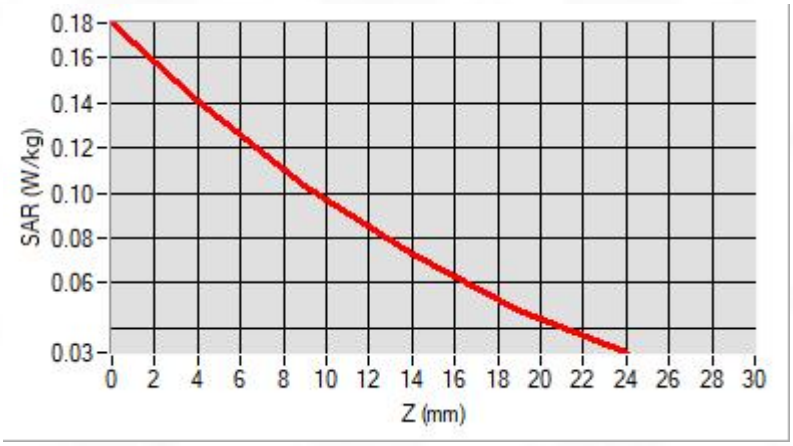
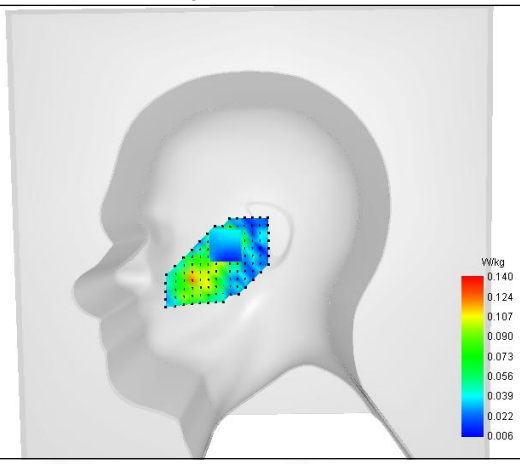
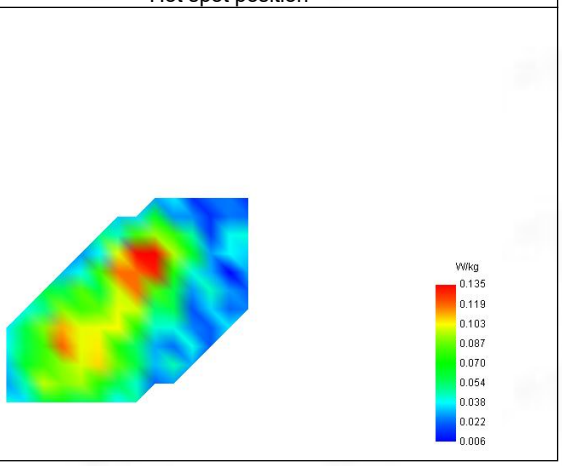
SAR (W/Kg)	0.175	0.140	0.103	0.073	0.048



F. 3D Image

3D screen shot	Hot spot position
	

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6-Body with back position in dist. 10mm on Channel 19100 in LTE band 2

SAR Measurement at LTE band 2 (Body, Validation Plane)

Date of measurement: 23/5/2024

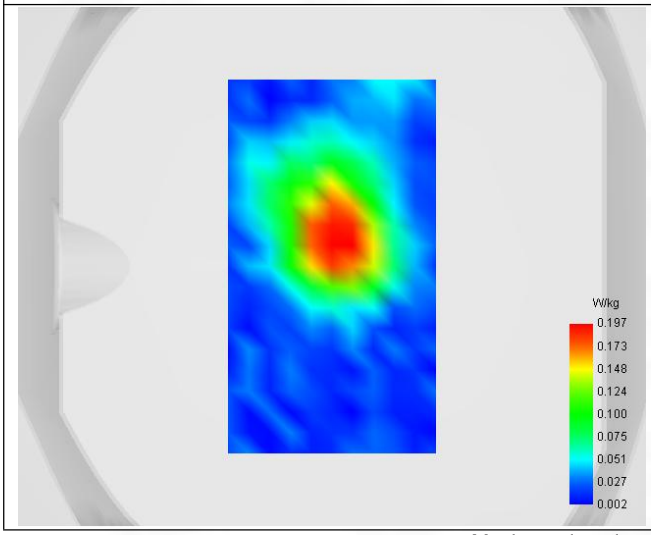
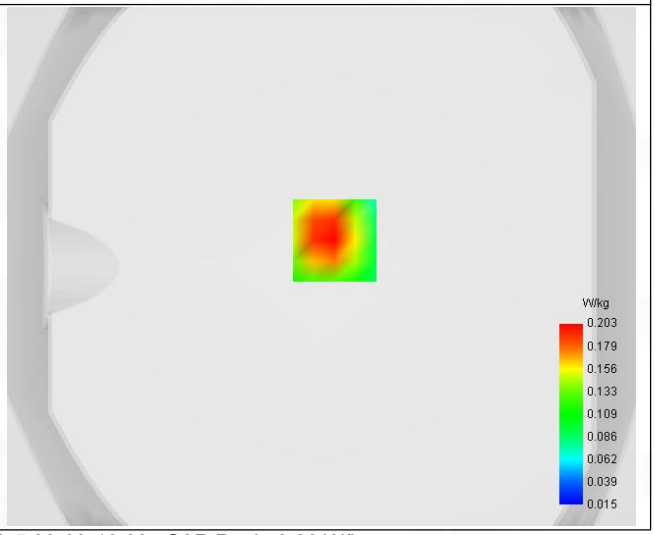
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	2.24
Area Scan	dx=8mm dy=8mm, Adaptative 1 max
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	LTE band 2
Channels	Higher (19100)
Signal	LTE FDD
Cell Bandwidth	20 Mhz
Modulation	SC-OFDM - QPSK
RB offset	99
RB size	1

B. Permitivity

Frequency (MHz)	1908.910
Relative permitivity (real part)	39.867
Relative permitivity (imaginary part)	13.379
Conductivity (S/m)	1.416

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=5.00, Y=10.00 ; SAR Peak: 0.26 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.125
SAR 1g (W/Kg)	0.196
Variation (%)	0.840
Horizontal validation criteria: minimum distance (mm)	9.715
Vertical validation criteria: SAR ratio M2/M1 (%)	62.56%

E. Z Axis Scan

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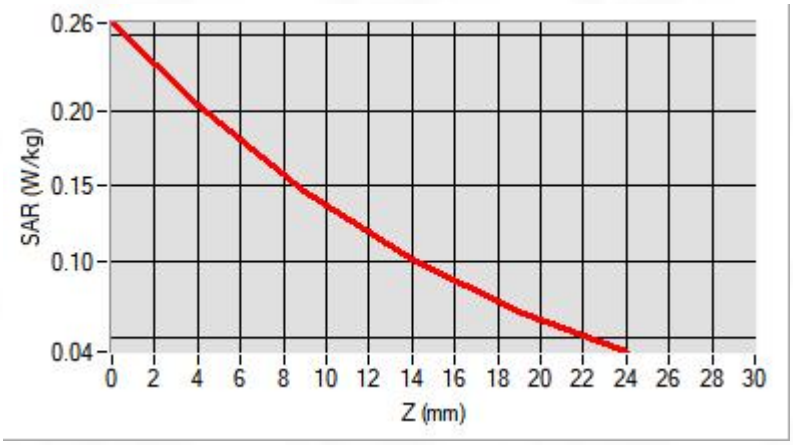
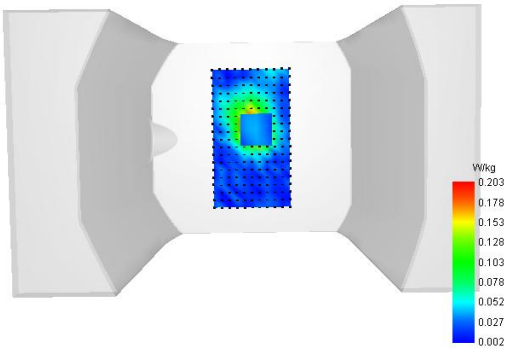
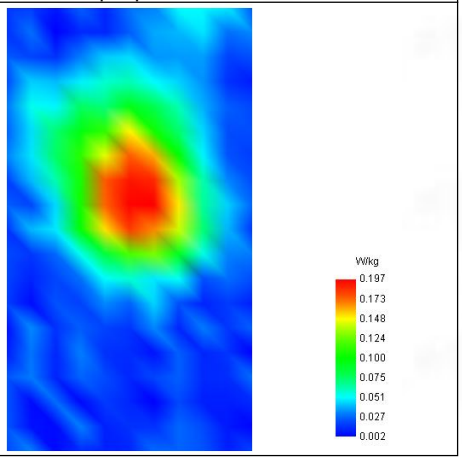
Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.258	0.203	0.127	0.102	0.068



F. 3D Image

3D screen shot	Hot spot position
	

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7-Head with front position in dist. 0mm on Channel 20050 in LTE band 4

SAR Measurement at LTE band 4 (Cheek, Right)

Date of measurement: 23/5/2024

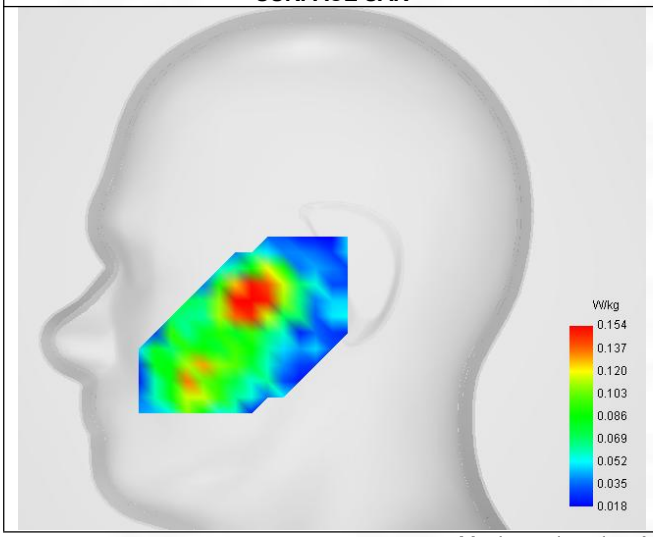
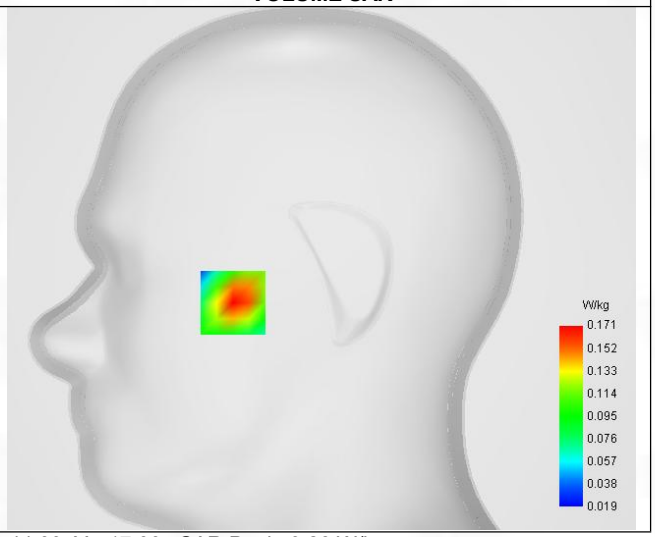
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	1.96
Area Scan	dx=8mm dy=8mm, Adaptative 1 max
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Right head
Device Position	Cheek
Band	LTE band 4
Channels	Lower (20050)
Signal	LTE FDD
Cell Bandwidth	20 Mhz
Modulation	SC-OFDM - QPSK
RB offset	0
RB size	1

B. Permitivity

Frequency (MHz)	1711.090
Relative permitivity (real part)	40.048
Relative permitivity (imaginary part)	14.588
Conductivity (S/m)	1.324

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=-44.00, Y=-17.00 ; SAR Peak: 0.26 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.101
SAR 1g (W/Kg)	0.162
Variation (%)	0.890
Horizontal validation criteria: minimum distance (mm)	8.529
Vertical validation criteria: SAR ratio M2/M1 (%)	60.82%

E. Z Axis Scan

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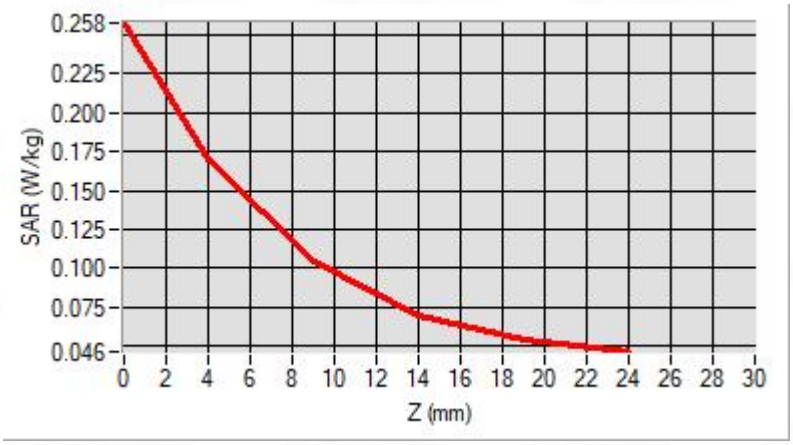
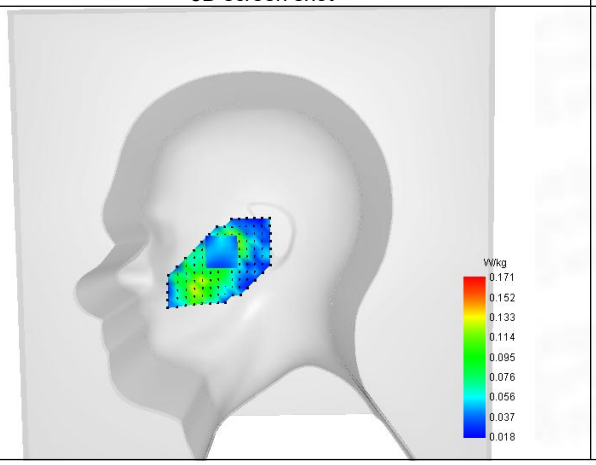
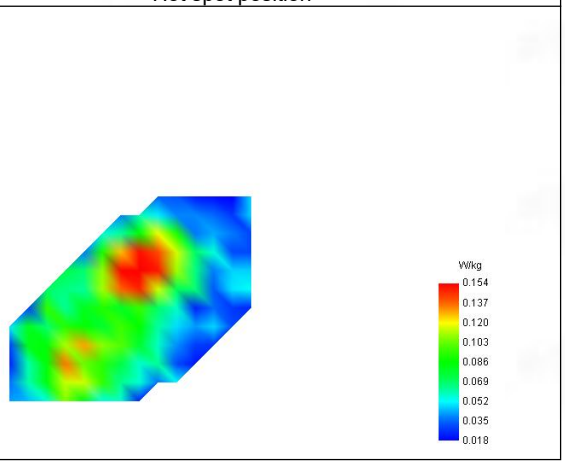
Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.258	0.171	0.104	0.070	0.054



F. 3D Image

3D screen shot	Hot spot position
	

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8-Body with back position in dist. 10mm on Channel 20050 in LTE band 4

SAR Measurement at LTE band 4 (Body, Validation Plane)

Date of measurement: 23/5/2024

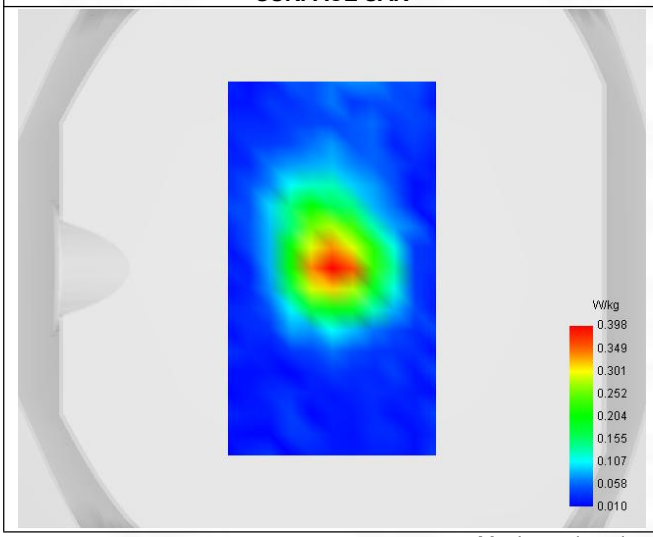
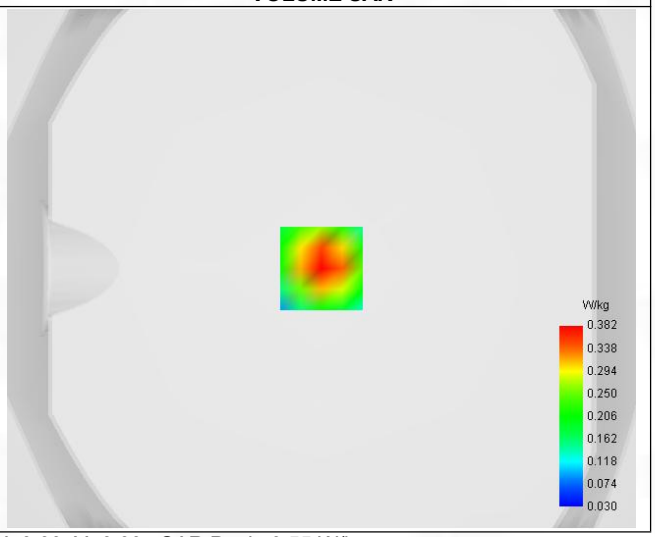
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	1.96
Area Scan	dx=8mm dy=8mm, Adaptative 1 max
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	LTE band 4
Channels	Lower (20050)
Signal	LTE FDD
Cell Bandwidth	20 Mhz
Modulation	SC-OFDM - QPSK
RB offset	0
RB size	1

B. Permitivity

Frequency (MHz)	1711.090
Relative permitivity (real part)	40.048
Relative permitivity (imaginary part)	14.588
Conductivity (S/m)	1.324

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=0.00, Y=0.00 ; SAR Peak: 0.55 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.212
SAR 1g (W/Kg)	0.359
Variation (%)	3.870
Horizontal validation criteria: minimum distance (mm)	8.648
Vertical validation criteria: SAR ratio M2/M1 (%)	63.35%

E. Z Axis Scan

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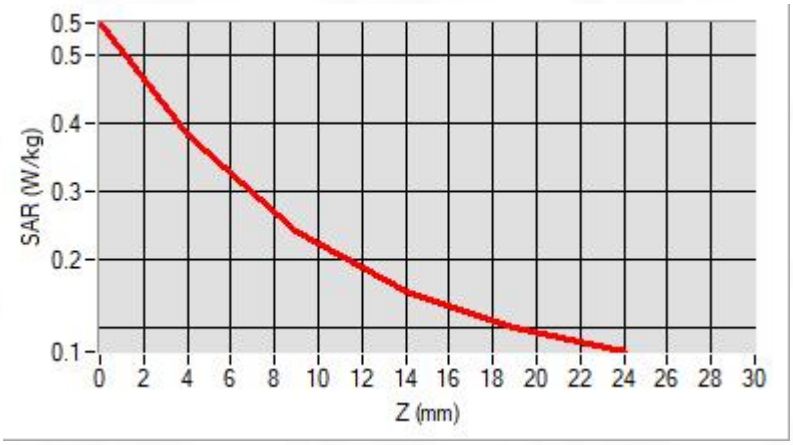
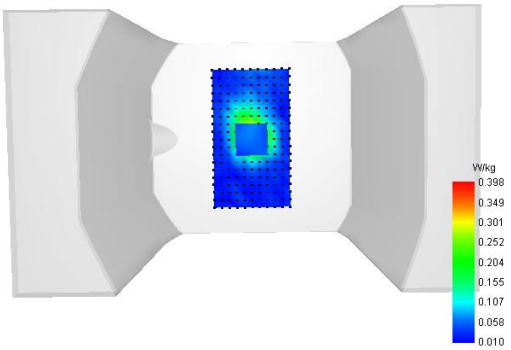
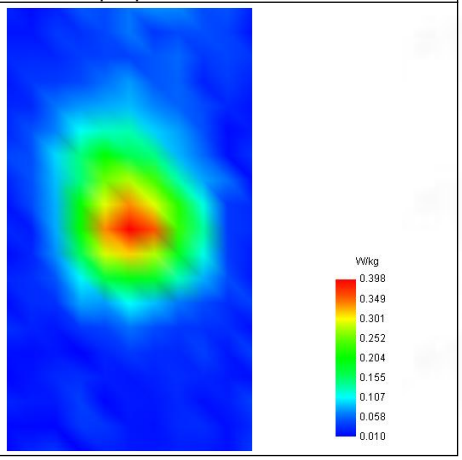
Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.547	0.382	0.242	0.155	0.102



F. 3D Image

3D screen shot	Hot spot position
	

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9-Head with front position in dist. 0mm on Channel 20600 in LTE band 5

SAR Measurement at LTE band 5 (Cheek, Right)

Date of measurement: 22/5/2024

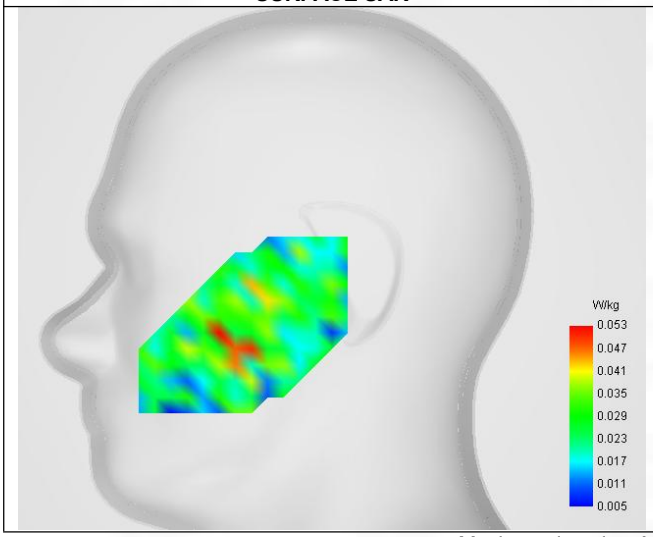
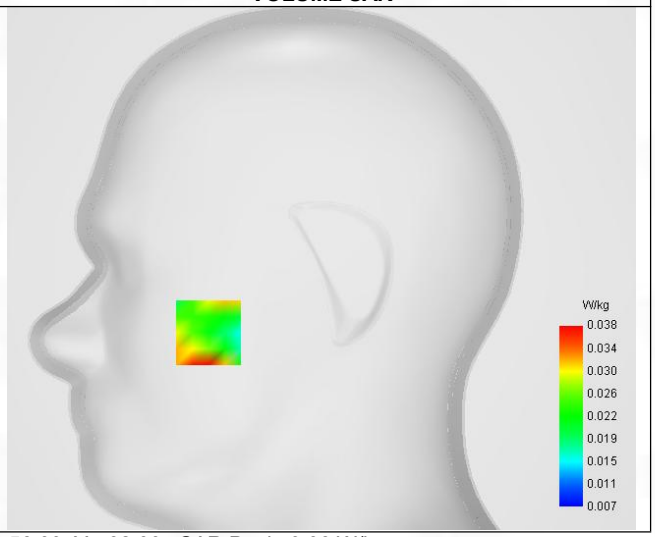
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	1.68
Area Scan	dx=8mm dy=8mm, Adaptative 1 max
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Right head
Device Position	Cheek
Band	LTE band 5
Channels	Higher (20600)
Signal	LTE FDD
Cell Bandwidth	10 Mhz
Modulation	SC-OFDM - QPSK
RB offset	49
RB size	1

B. Permitivity

Frequency (MHz)	848.410
Relative permitivity (real part)	41.389
Relative permitivity (imaginary part)	19.415
Conductivity (S/m)	0.877

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=-56.00, Y=-32.00 ; SAR Peak: 0.06 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.025
SAR 1g (W/Kg)	0.038
Variation (%)	-2.170
Horizontal validation criteria: minimum distance (mm)	9.245
Vertical validation criteria: SAR ratio M2/M1 (%)	71.05%

E. Z Axis Scan

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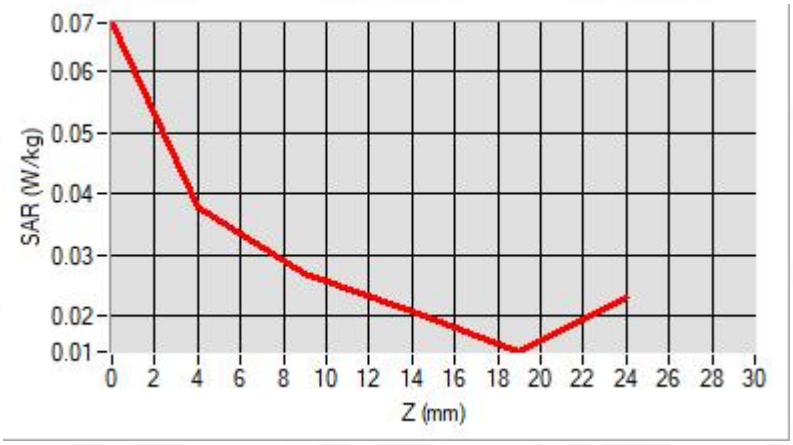
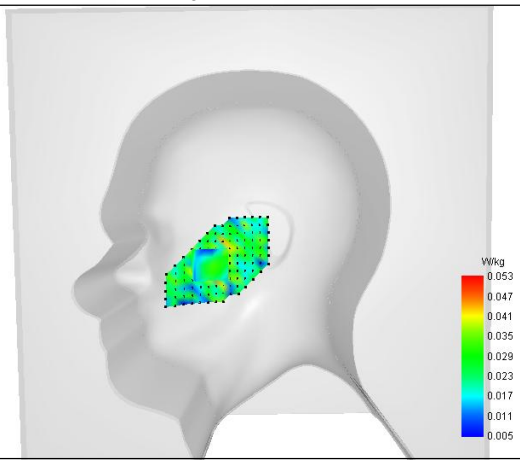
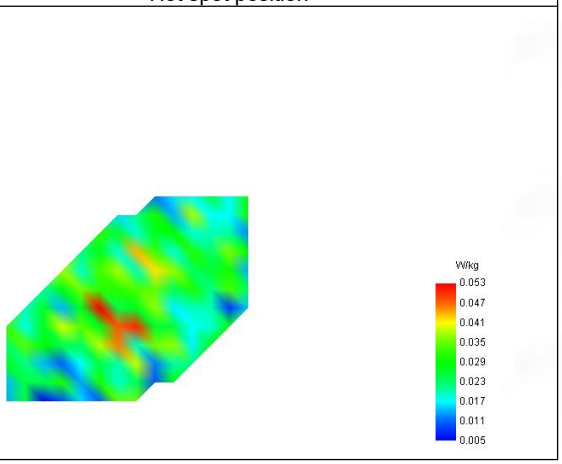
Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.068	0.038	0.027	0.021	0.014



F. 3D Image

3D screen shot	Hot spot position
	

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10-Body with back position in dist. 10mm on Channel 20600 in LTE band 5

SAR Measurement at LTE band 5 (Body, Validation Plane)

Date of measurement: 22/5/2024

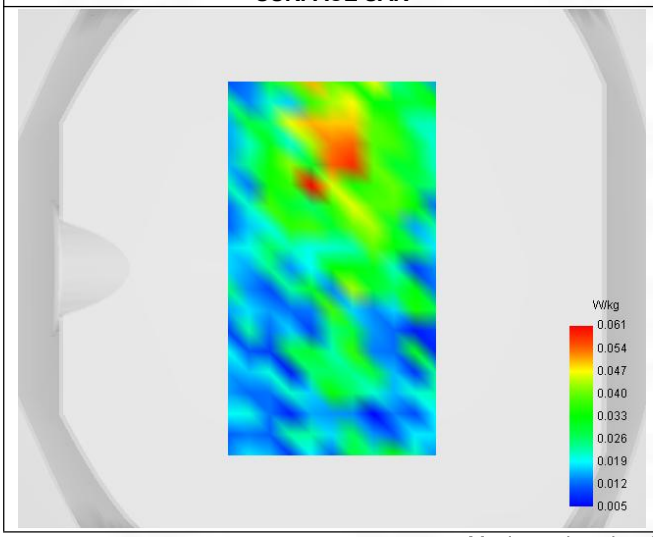
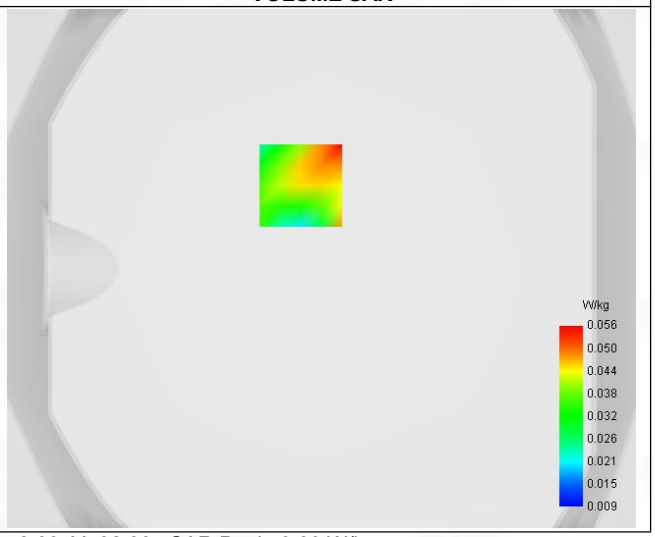
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	1.68
Area Scan	dx=8mm dy=8mm, Adaptative 1 max
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	LTE band 5
Channels	Higher (20600)
Signal	LTE FDD
Cell Bandwidth	10 Mhz
Modulation	SC-OFDM - QPSK
RB offset	49
RB size	1

B. Permitivity

Frequency (MHz)	848.410
Relative permitivity (real part)	41.389
Relative permitivity (imaginary part)	19.415
Conductivity (S/m)	0.877

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=-8.00, Y=32.00 ; SAR Peak: 0.09 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.035
SAR 1g (W/Kg)	0.050
Variation (%)	1.600
Horizontal validation criteria: minimum distance (mm)	9.251
Vertical validation criteria: SAR ratio M2/M1 (%)	42.86%

E. Z Axis Scan

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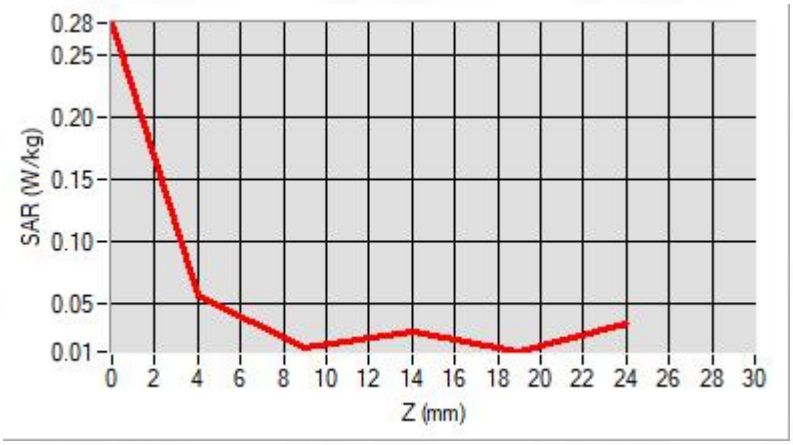
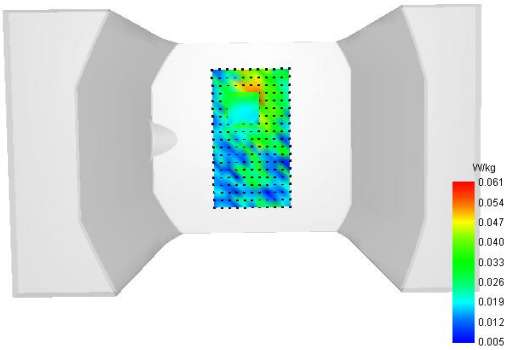
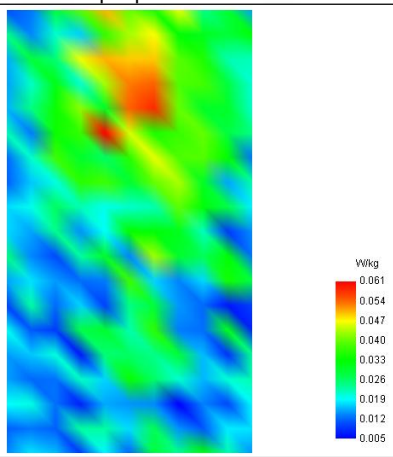
Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.275	0.056	0.024	0.026	0.010



F. 3D Image

3D screen shot	Hot spot position
	

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11-Head with front position in dist. 0mm on Channel 21350 in LTE band 7

SAR Measurement at LTE band 7 (Cheek, Right)

Date of measurement: 24/5/2024

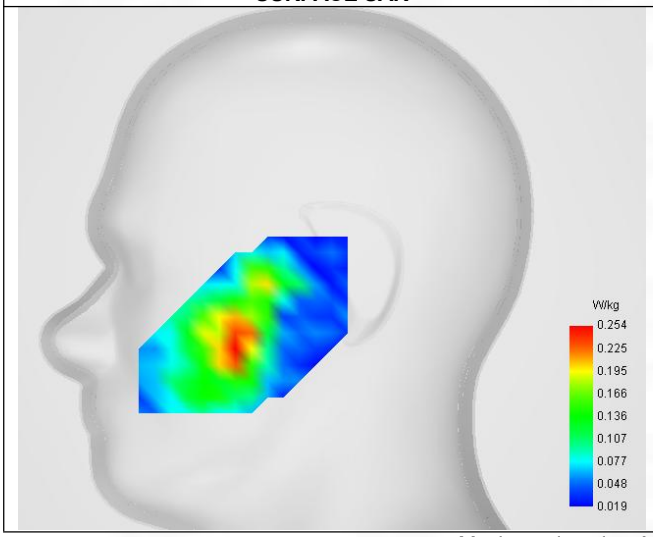
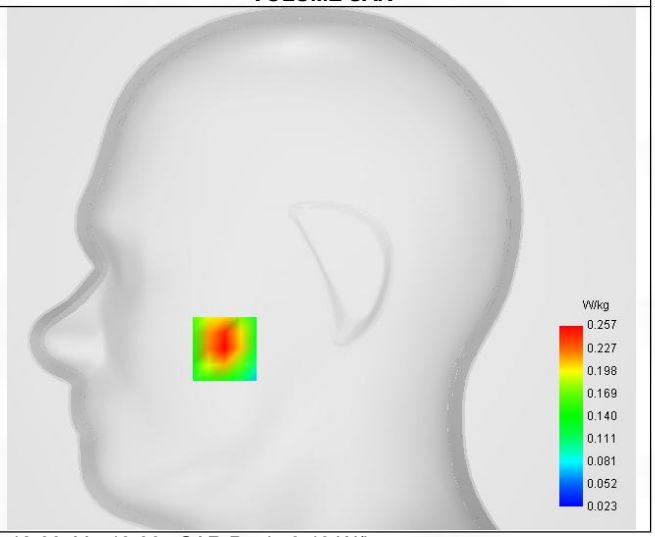
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	2.40
Area Scan	dx=8mm dy=8mm, Adaptative 1 max
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Right head
Device Position	Cheek
Band	LTE band 7
Channels	Higher (21350)
Signal	LTE FDD
Cell Bandwidth	20 Mhz
Modulation	SC-OFDM - QPSK
RB offset	0
RB size	1

B. Permitivity

Frequency (MHz)	2551.090
Relative permitivity (real part)	38.945
Relative permitivity (imaginary part)	12.902
Conductivity (S/m)	1.918

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=-48.00, Y=-40.00 ; SAR Peak: 0.40 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.145
SAR 1g (W/Kg)	0.244
Variation (%)	4.010
Horizontal validation criteria: minimum distance (mm)	8.197
Vertical validation criteria: SAR ratio M2/M1 (%)	57.98%

E. Z Axis Scan

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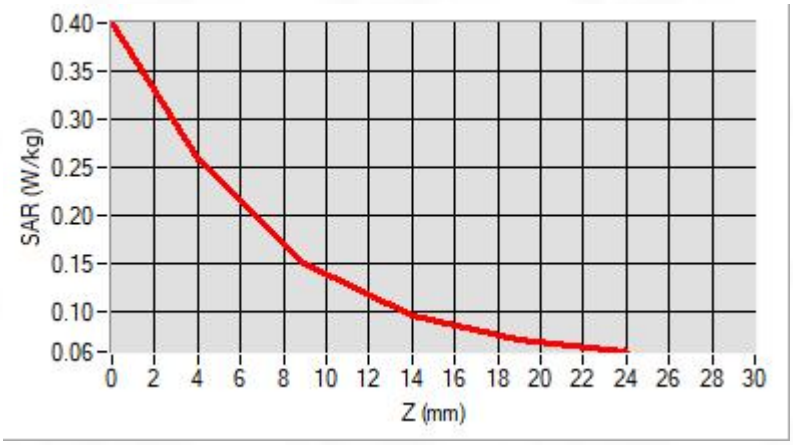
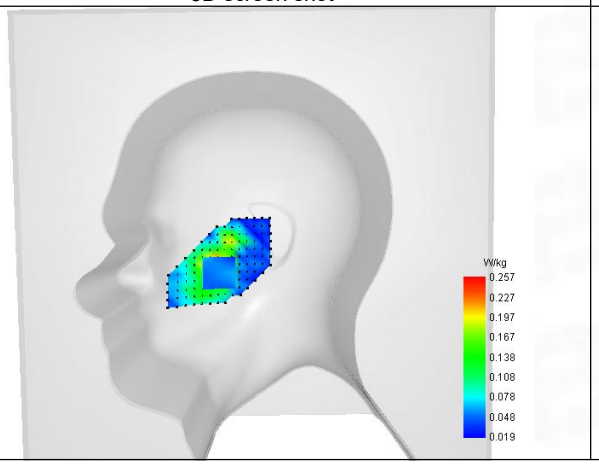
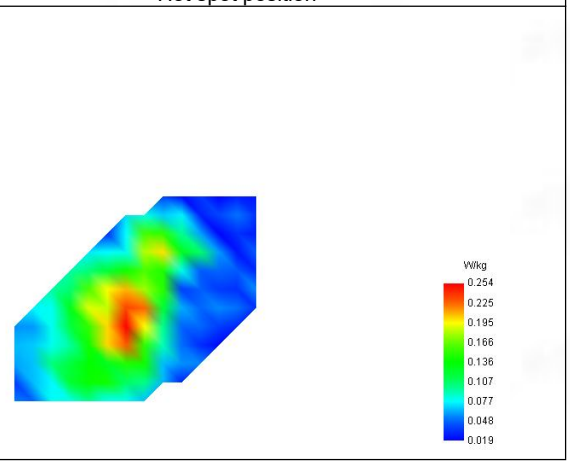
Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.399	0.257	0.149	0.094	0.070



F. 3D Image

3D screen shot	Hot spot position
	

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12-Body with back position in dist. 10mm on Channel 21350 in LTE band 7

SAR Measurement at LTE band 7 (Body, Validation Plane)

Date of measurement: 24/5/2024

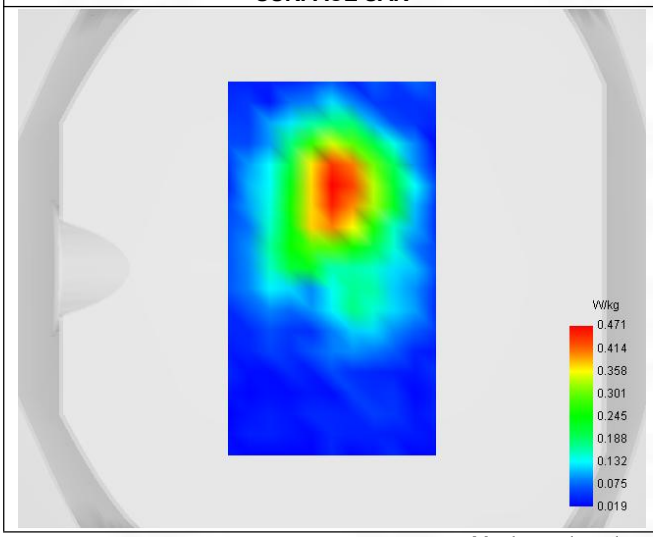
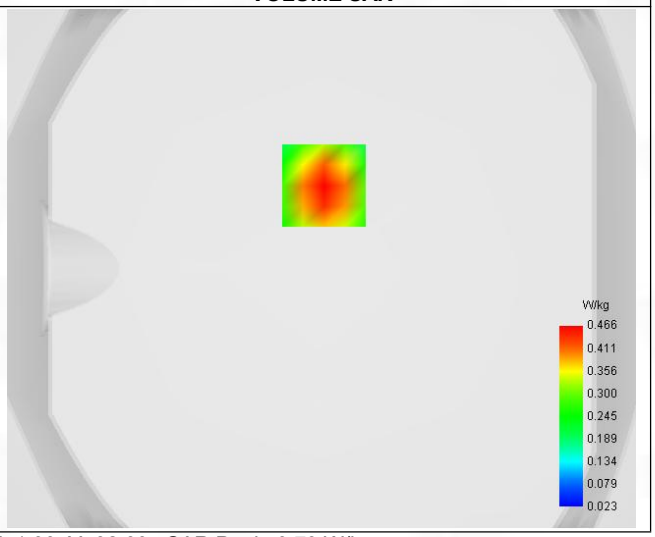
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	2.40
Area Scan	dx=8mm dy=8mm, Adaptative 1 max
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	LTE band 7
Channels	Higher (21350)
Signal	LTE FDD
Cell Bandwidth	20 Mhz
Modulation	SC-OFDM - QPSK
RB offset	0
RB size	1

B. Permitivity

Frequency (MHz)	2551.090
Relative permitivity (real part)	38.933
Relative permitivity (imaginary part)	13.333
Conductivity (S/m)	1.884

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=1.00, Y=32.00 ; SAR Peak: 0.73 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.255
SAR 1g (W/Kg)	0.442
Variation (%)	-1.110
Horizontal validation criteria: minimum distance (mm)	8.599
Vertical validation criteria: SAR ratio M2/M1 (%)	57.30%

E. Z Axis Scan

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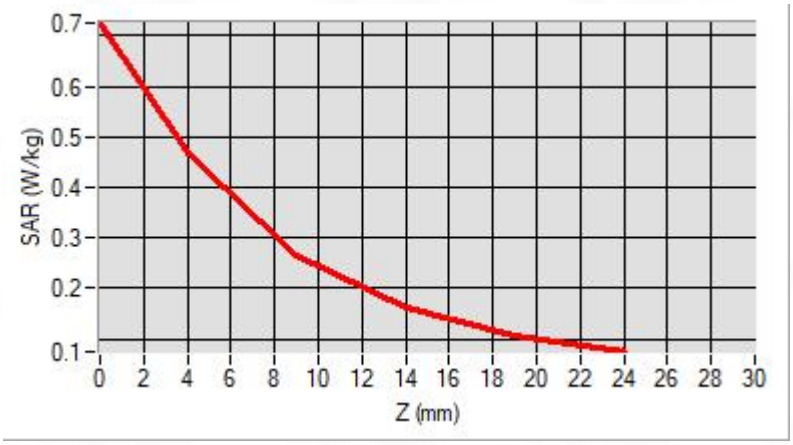
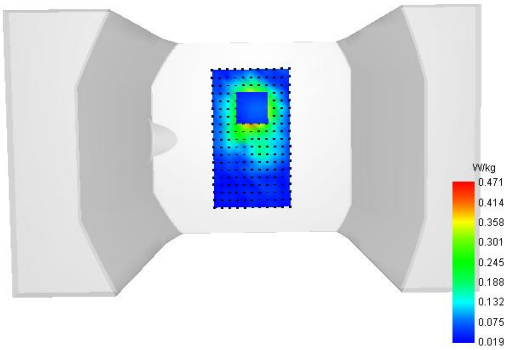
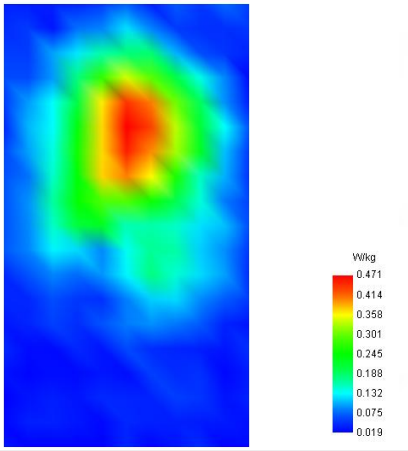
Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.725	0.466	0.267	0.160	0.106



F. 3D Image

3D screen shot	Hot spot position
	

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13-Head with front position in dist. 0mm on Channel 78 in Bluetooth

SAR Measurement at Bluetooth (Cheek, Right)

Date of measurement: 24/5/2024

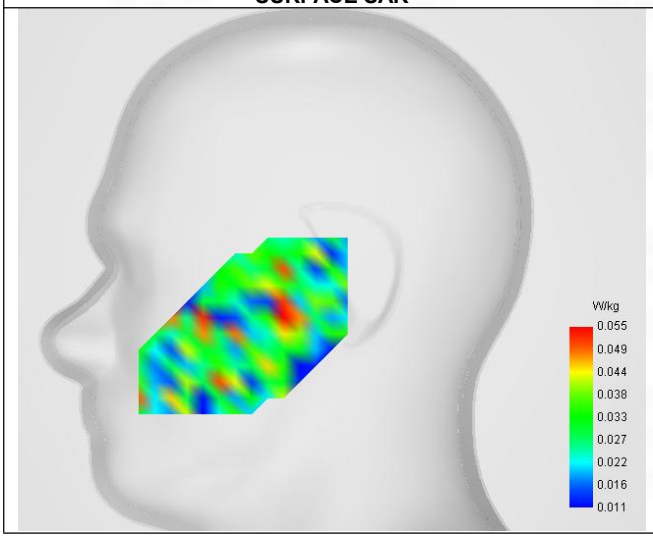
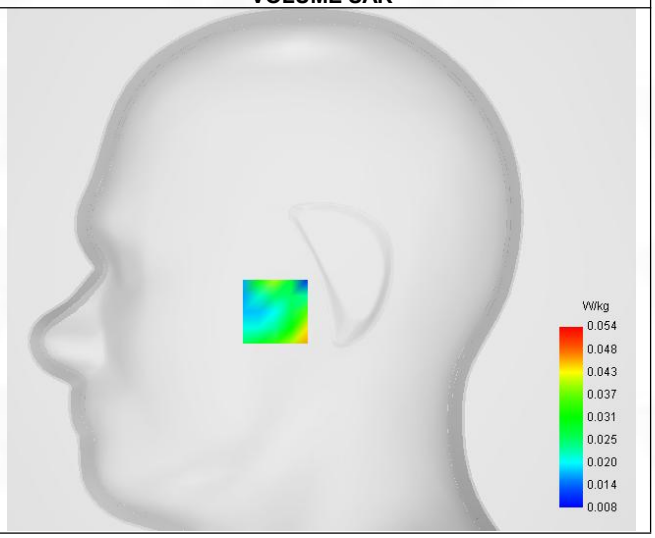
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	2.36
Area Scan	dx=8mm dy=8mm, Adaptative 1 max
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Right head
Device Position	Cheek
Band	Bluetooth
Channels	Higher (78)
Signal	Bluetooth

B. Permitivity

Frequency (MHz)	2480.000
Relative permitivity (real part)	39.040
Relative permitivity (imaginary part)	13.210
Conductivity (S/m)	1.842

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=-23.00, Y=-21.00 ; SAR Peak: 0.22 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.029
SAR 1g (W/Kg)	0.045
Variation (%)	-1.760
Horizontal validation criteria: minimum distance (mm)	9.562
Vertical validation criteria: SAR ratio M2/M1 (%)	41.30%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.016	0.046	0.019	0.008	0.032

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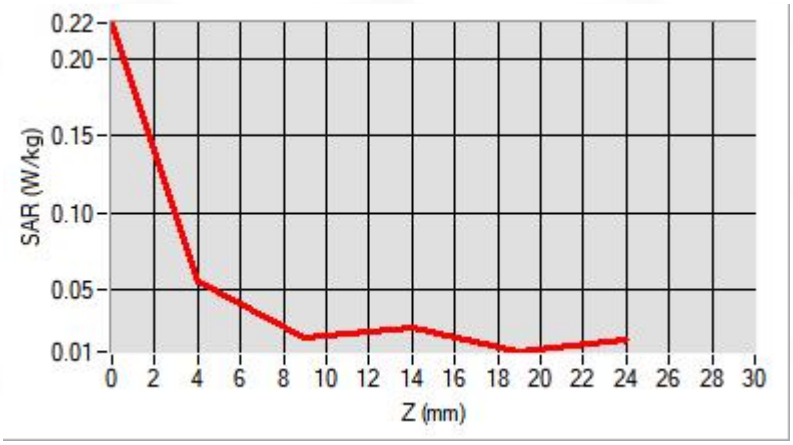
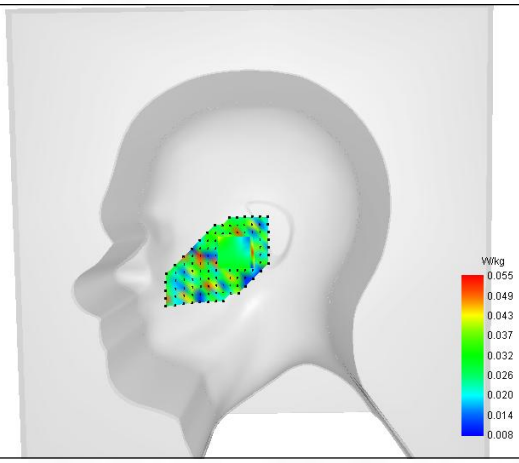
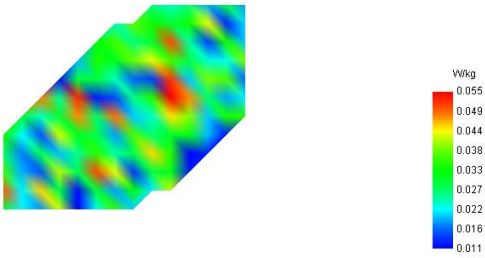


F. 3D Image

3D screen shot	Hot spot position
	

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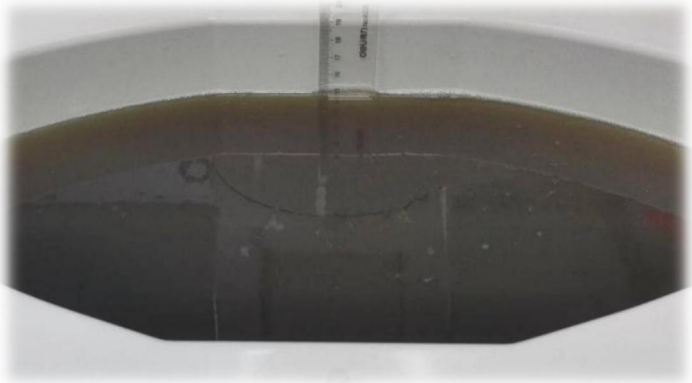
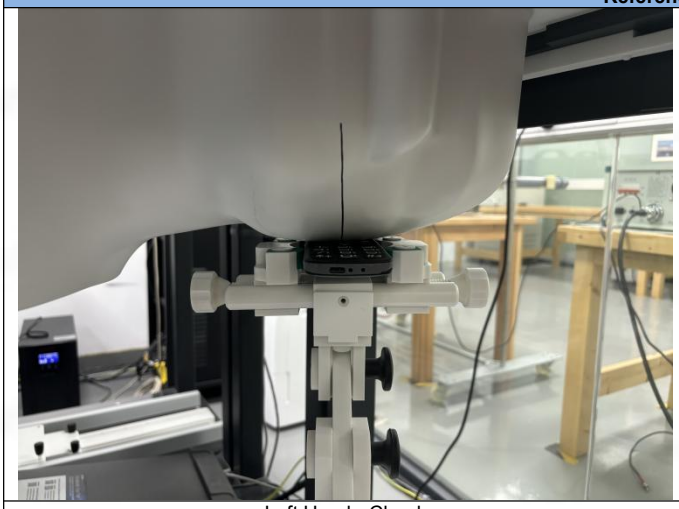
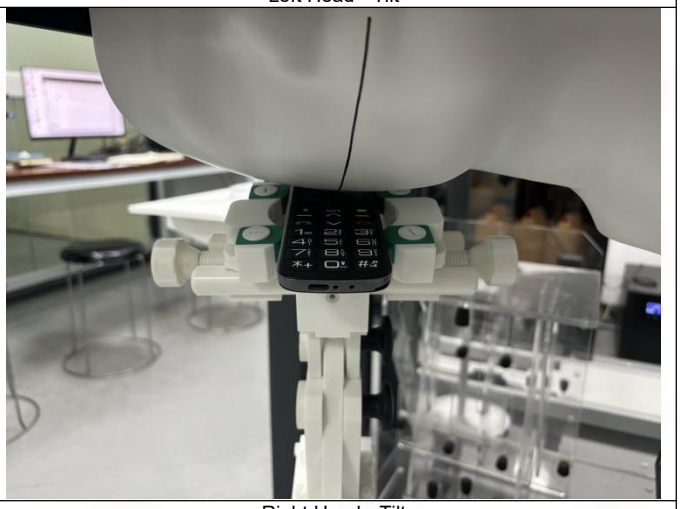
ANNEX D SAR Test Setup Photos

Reference Photo: simulation liquid depth 15cm


Reference Photos	
	
Left Head - Cheek	Left Head - Tilt
	
Right Head - Cheek	Right Head - Tilt

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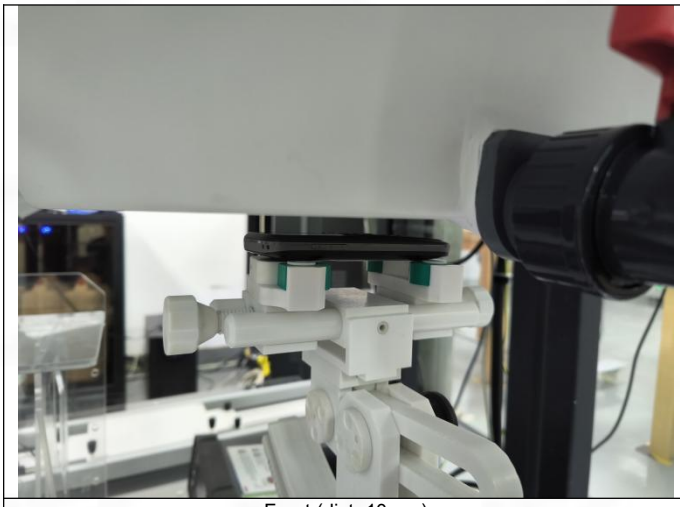
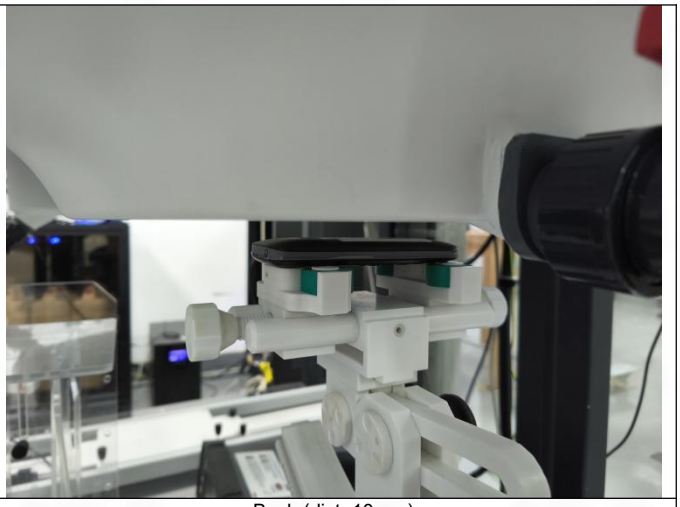
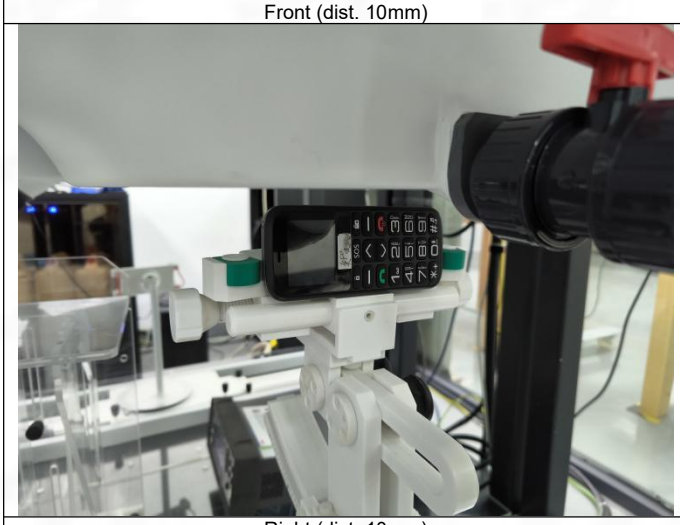
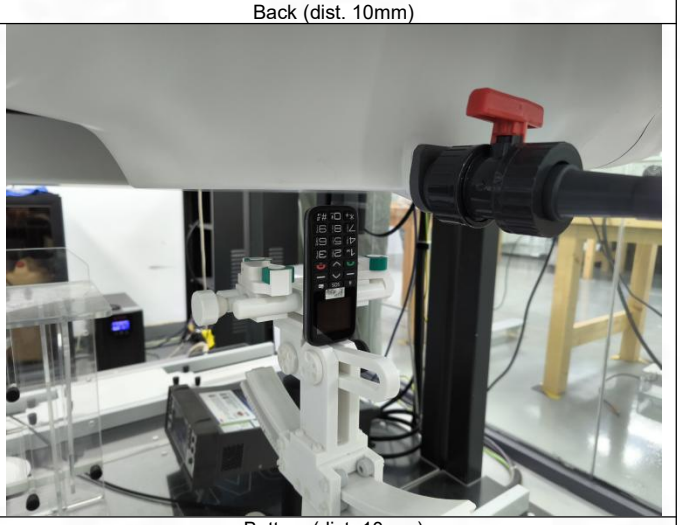

Front (dist. 10mm)


Back (dist. 10mm)


Right (dist. 10mm)


Bottom (dist. 10mm)

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ANNEX E EUT External and Internal Photos

Please refer to RF Report.

ANNEX F Calibration Information

Please refer to the document “Calibration.pdf”.

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--END OF REPORT--