



SAR Test Report

For

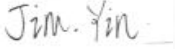
Applicant Name: Xwireless LLC
Address: 11565 Old Georgetown Road, Rockville, MD, USA
EUT Name: Mobile Phone
Brand Name: Vortex
Model Number: CB68

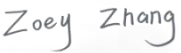
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Company Name: BTF Testing Lab (Shenzhen) Co., Ltd.
Address: F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park,
Tantou Community, Songgang Street, Bao'an District, Shenzhen,
China

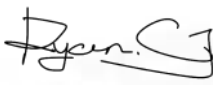
Report Number: BTF240807R00401
Test Standards: FCC 47 CFR§2.1093 IEC/IEEE 62209-1528: 2020
IEEE C95.1-2019 KDB447498 D04 KDB865664 D01
KDB865664 D02 KDB941225 D01 KDB941225 D05
KDB248227 D01 KDB941225 D06 KDB648474 D04
KDB690783 D01
FCC ID: 2ADLJ-Z67

Test Conclusion: Pass
Test Date: 2024-08-26 to 2024-09-06
Date of Issue: 2024-09-09

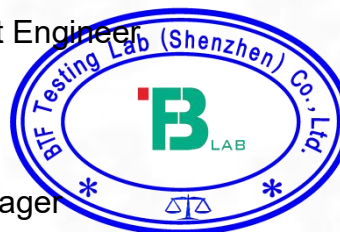
Tested By: 
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Date: 2024-09-09

Approved By: 
Ryan.CJ / EMC Manager

Date: 2024-09-09



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Revision History		
Version	Issue Date	Revisions Content
R_V0	2024-09-09	Original
Note:		Once the revision has been made, then previous versions reports are invalid.

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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°C to 25°C
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:	Xwireless LLC
Address:	11565 Old Georgetown Road, Rockville, MD, USA

2.2 Manufacturer Information

Company Name:	Xwireless LLC
Address:	11565 Old Georgetown Road, Rockville, MD, USA

2.3 Factory Information

Company Name:	ZTECH COMMUNICATION(SZ) CO LTD
Address:	FL 7 BLOCK D BAO' AN ZHIGU INNOVATION PARK YIN' TIAN ROAD NO.4 XI' XIANG STR' BAO' AN DISTRICT SZ CHINA

2.4 General Description of Equipment under Test (EUT)

EUT Name	Mobile Phone
Under Test Model Name	CB68
Sample No.	BTFSN240807014/4 E1-4

2.5 Equipment under Test Ancillary Equipment

Ancillary Equipment 1	Rechargeable Battery	
	Capacity	3000mAh
	Nominal Voltage	4.35V

2.6 Technical Information

Network and Wireless connectivity	2G Network GSM/GPRS/EGPRS 850/1900 3G Network WCDMA/HSDPA/HSUPA Band 2/4/5 4G Network FDD LTE Band 2/4/5/12/13/17/25/66/71 2.4G WIFI 802.11b, 802.11g, 802.11n(HT20) BT (EDR+BLE)
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The requirement for the following technical information of the EUT was tested in this report:

Operating Mode	GSM, WCDMA, LTE, WLAN, Bluetooth		
Frequency Range	GSM 850	TX: 824 ~ 849 MHz	RX: 869 ~ 894 MHz
	GSM 1900	TX: 1850 ~ 1910 MHz	RX: 1930 ~ 1990 MHz
	WCDMA Band 2	TX: 1850 ~ 1910 MHz	RX: 1930 ~ 1990 MHz
	WCDMA Band 4	TX: 1710 ~ 1755 MHz	RX: 2110 ~ 2155 MHz
	WCDMA Band 5	TX: 824 ~ 849 MHz	RX: 869 ~ 894 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 12	TX: 698 ~ 716 MHz	RX: 728 ~ 746 MHz
	LTE Band 13	TX: 777 ~ 787 MHz	RX: 746 ~ 756 MHz
	LTE Band 17	TX: 704 ~ 716 MHz	RX: 734 ~ 746 MHz
	LTE Band 25	TX: 1850 ~ 1915 MHz	RX: 1930 ~ 1995 MHz
	LTE Band 66	TX: 1710 ~ 1780 MHz	RX: 2110 ~ 2200 MHz
	LTE Band 71	TX: 663 ~ 698 MHz	RX: 617 ~ 652 MHz
	802.11b/g/n(HT20)	2412 ~ 2462 MHz 2422 ~ 2452 MHz	
	Bluetooth	2402 ~ 2480 MHz	
Antenna Type	WWAN: PIFA Antenna WLAN: PIFA Antenna BT: PIFA Antenna		
Hotspot Function	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 D01	3G SAR Procedures v03r01
8	KDB941225 D05	SAR for LTE Devices v02r05
9	KDB248227 D01	802.11 Wi-Fi SAR v02r02
10	KDB941225 D06	Hotspot Mode v02r01
11	KDB648474 D04	Handset SAR v01r03
12	KDB690783 D01	SAR Listings on Grant v01r03

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 follows:

<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	0.406	PCE	0.406
	GSM 1900	0.159		
	WCDMA Band II	0.329		
	WCDMA Band IV	0.265		
	WCDMA Band V	0.355		
	LTE Band 2	0.397		
	LTE Band 4	0.260		
	LTE Band 5	0.373		
	LTE Band 12	0.168		
	LTE Band 13	0.280		
	LTE Band 17	0.211		
	LTE Band 25	0.335		
	LTE Band 66	0.340		
	LTE Band 71	0.334		
	WLAN 2.4 GHz	0.115	DTS	
	Bluetooth	0.081	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	0.565	PCE	1.243
	GSM 1900	1.243		
	WCDMA Band II	0.795		
	WCDMA Band IV	0.455		
	WCDMA Band V	0.521		
	LTE Band 2	1.101		
	LTE Band 4	0.521		
	LTE Band 5	0.577		
	LTE Band 12	0.168		
	LTE Band 13	0.383		
	LTE Band 17	0.301		
	LTE Band 25	1.017		
	LTE Band 66	0.090		
	LTE Band 71	0.346		
	WLAN 2.4 GHz	0.117	DTS	

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)	GSM 850 + 2.4G WIFI	0.521	1.6	Pass
Hotspot(Body) 1-g SAR (10 mm Gap)	GPRS 1900 + 2.4G WIFI	1.243	1.6	Pass

3.4 Test Uncertainty

3.4.1 Measurement uncertainty evaluation for SAR test

Measurement uncertainty 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.

3.4.2 Measurement uncertainty 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	$\sqrt{3}$	1	1	2.02	2.02	∞
Hemispherical Isotropy	5.9	R	$\sqrt{3}$	0	0	0.00	0.00	∞
Boundary effect	1	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Linearity	4.7	R	$\sqrt{3}$	1	1	2.71	2.71	∞
System detection limits	1	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Modulation response	0	N	$\sqrt{3}$	0	0	0.00	0.00	∞
Readout Electronics	0.5	N	1	1	1	0.50	0.50	∞
Response Time	0	R	$\sqrt{3}$	0	0	0.00	0.00	∞
Integration Time	1.4	R	$\sqrt{3}$	0	0	0.00	0.00	∞
RF ambient Conditions - Noise	3	R	$\sqrt{3}$	1	1	1.73	1.73	∞
RF ambient Conditions - Reflections	3	R	$\sqrt{3}$	1	1	1.73	1.73	∞
Probe positioner Mechanical Tolerance	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Probe positioning with respect to Phantom Shell	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Extrapolation, interpolation and integration Algorithms for Max. SAR Evaluation	2.3	R	$\sqrt{3}$	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 drift measurement	0.5	R	$\sqrt{3}$	1	1	0.29	0.29	∞
Dipole Axis to Liquid Dist.	2.0	R	$\sqrt{3}$	1	1	1.15	1.15	∞
Phantom and Tissue Parameters								
Phantom Shell Uncertainty - Shape, Thickness and Permittivity	4	R	$\sqrt{3}$	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	$\sqrt{3}$	0.78	0.71	1.13	1.02	∞
Liquid permittivity - Temperature Uncertainty	2.5	R	$\sqrt{3}$	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	

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 ($\pm 30^\circ$).
- 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 $f \geq 4\text{GHz}$.
- Probe linearity: $<0.25\text{dB}$.
- Axial Isotropy: $<0.25\text{dB}$.
- Spherical Isotropy: $<0.50\text{dB}$.
- 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.



SAM Phantom

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

TWIN SAM phantom

	Mechanical	Electrical	
Overall thickness	$2 \pm 0.2\text{ mm}$ (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.



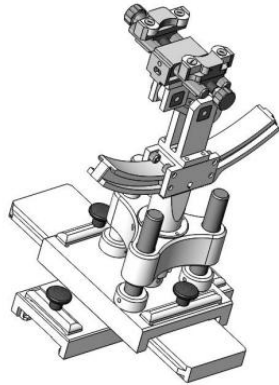
ELLI Phantom

The shape of the phantom is an ellipse with length $600\text{ mm} \pm 5\text{ mm}$ and width $400\text{ mm} \pm 5\text{ mm}$.
The phantom shell is made of low-loss and low-permittivity material, having loss tangent $\tan \delta \leq 0.05$ and relative permittivity:
 $\epsilon_r' \leq 5$ for $f \leq 3\text{ GHz}$
 $3 \leq \epsilon_r' \leq 5$ for $f > 3\text{ GHz}$
The thickness of the bottom-wall of the flat phantom is 2.0 mm with a tolerance of $\pm 0.2\text{ mm}$.

Technical & mechanical characteristics

Shell thickness	$2\text{ mm} \pm 0.2\text{ mm}$
Filling volume	25 L
Dimensions	600 mm x 400 mm x 200 mm
Permittivity	4.4
Loss tangent	0.017

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

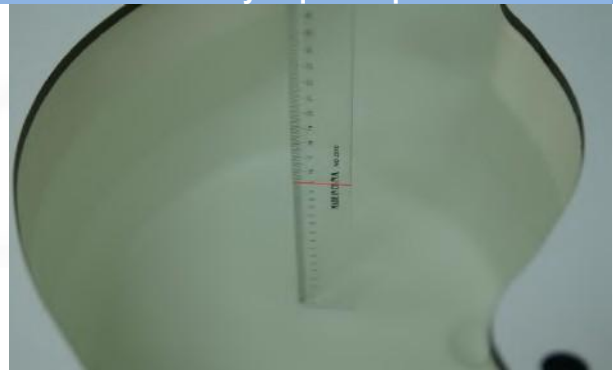
4.2.6 Simulating Liquid

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.

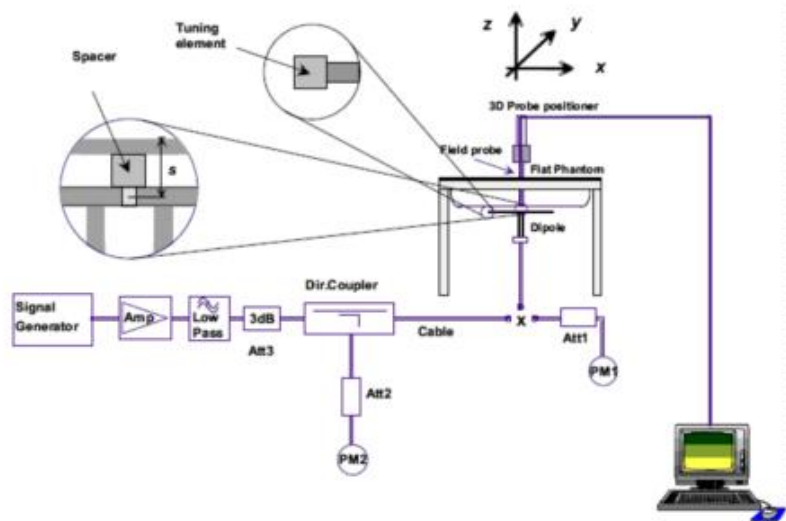
Head (Reference IEEE1528)								
Frequency (MHz)	Water (%)	Sugar (%)	Cellulose (%)	Salt (%)	Preventol (%)	DGBE (%)	Conductivity σ (S/m)	Permittivity ϵ
750	41.1	57.0	0.2	1.4	0.2	0	0.89	41.9
835	40.3	57.9	0.2	1.4	0.2	0	0.90	41.5
900	40.3	57.9	0.2	1.4	0.2	0	0.97	41.5
1800, 1900, 2000	55.2	0	0	0.3	0	44.5	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.

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 IEC IEEE 62209-1528:2020 using the SAM phantom illustrated as below.

6.1.1 Definition of the cheek position

The cheek position is established using steps a) to j) as follows.

- (a) Configure the DUT for voice operation, if necessary. For example, for a DUT with a flip.a)swivel, or slide cover piece, open the cover if this is consistent with voice operation. If the DUT can also be used with the cover closed, both configurations shall be tested.
- (b) Define two imaginary lines on the DUT, the vertical centreline and the horizontal line, relative to the DUT in vertical orientation as shown in Figure 15.
- (c) The vertical centreline passes through two points on the front side of the DUT: the midpoint of the width w of the DUT at the level of the acoustic output (Point A in Figure 15), and the midpoint of the width w_t at the bottom of the DUT (Point B). The horizontal line is perpendicular to the vertical centerline, and passes through the centre of the acoustic output (Figure 15). The two lines intersect at Point A. Note that for many DUTs, Point A coincides with the centre of the acoustic output. However, the acoustic output could be located elsewhere on the horizontal line. Also note that the vertical centreline is not necessarily parallel to the front face of the DUT, especially for clamshell DUTs, DUTs with flip cover pieces, and other irregularly shaped DUTs.
- (d) Position the DUT close to the surface of the phantom such that Point A is on the (virtual) extension of the line passing through points RE (right-ear ear reference point) and LE left-ear ear reference point) on the phantom (see Figure 16a) and Figure 16b)). The plane determined by the vertical centreline and the horizontal line of the DUT shall be parallel to the sagittal plane of the phantom.
- (e) Translate the DUT towards the phantom along the line passing through RE and LE until the DUT touches the ear (see Figure 16c)).
- (f) Rotate the DUT around the (virtual) LE-RE Line until the DUT vertical centreline is in the)reference plane(see Figure 16d)).
- (g) Rotate the DUT around its vertical centreline until the plane established by the DUT vertical centreline and horizontal line is parallel to the N-F line (see Annex G), and then translate the DUT towards the phantom along the LE-RE line until DUT Point A touches the ear at the ERP (ear reference point) (see Figure 16e))
- (h) While keeping Point A on the line passing through RE and LE and maintaining the DUT in contact with the pinna, rotate the DUT about the N-F line until any point on the DUT is in contact with a phantom point below the pinna (cheek) (see Figure 16f)). The physical angles of rotation shall be documented.
- (i) While keeping DUT Point A in contact with the ERP rotate the DUT around a line perpendicular to the plane established by the DUT vertical centreline and horizontal line and passing through DUT Point A, until the DUT vertical centreline is in the reference plane(see Figure 16g)).

- (j) Verify that the cheek position is correct as follows:
- 1) the N-F line is in the plane established by the DUT vertical centreline and horizontal line;
 - 2) DUT Point A touches the pinna at the ERP
 - 3) the DUT vertical centreline is in the reference plane.

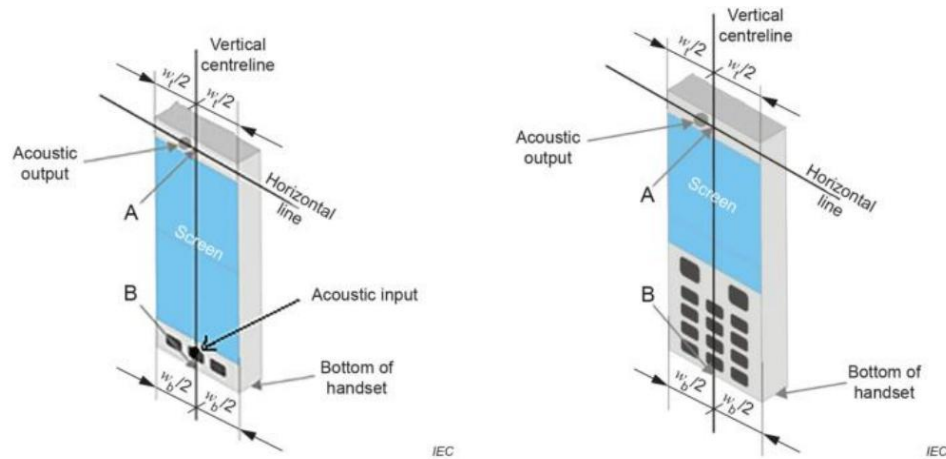
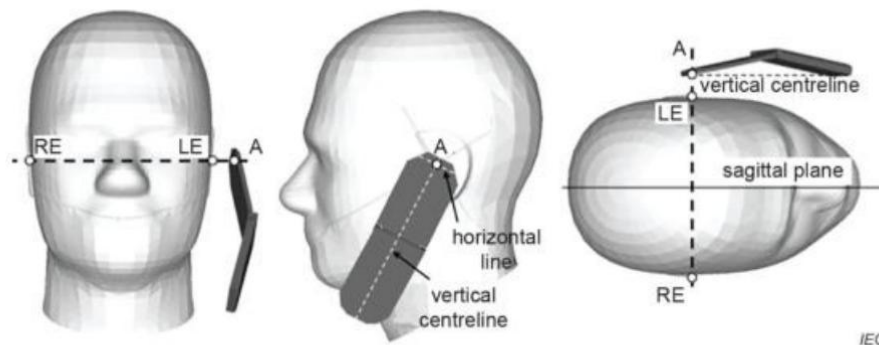


Figure 15 - Vertical and horizontal reference lines and reference points A and B on two example device types: a full touch-screen smart phone (left) and a DUT with a keypad (right)

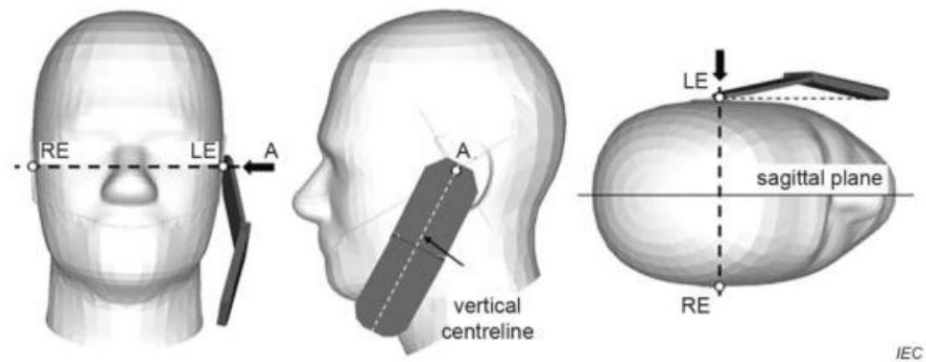


NOTE The reference points for the right-ear ear reference point (RE), left-ear ear reference point (LE), and mouth (M), which establish the reference plane for DUT positioning, are indicated. This device position shall be maintained for the sagittal phantom test set-up shown in Figure G.4.

a) Phone position 1 – cheek position

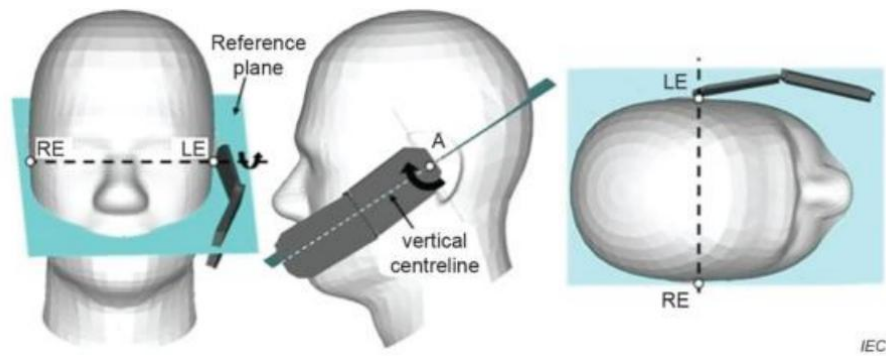


b) One possible DUT position against the head after applying 7.2.4.2.2 c)



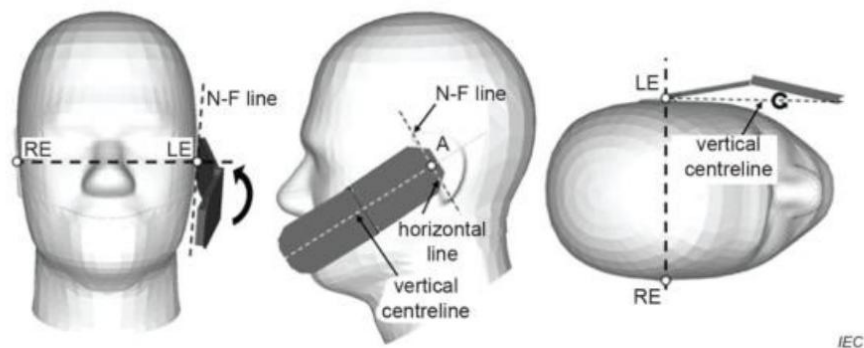
NOTE The black arrows show the direction of translation of the DUT for 7.2.4.2.2 d).

c) DUT position after applying 7.2.4.2.2 d)



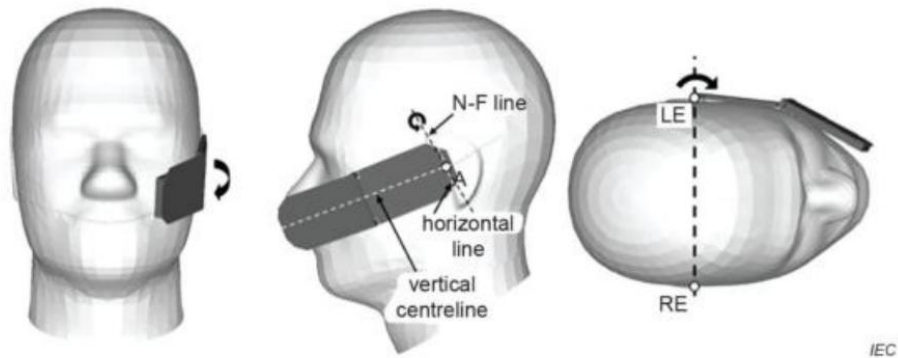
NOTE The curved black arrows show the direction of rotation of the DUT for 7.2.4.2.2 e).

d) DUT position after applying 7.2.4.2.2 e)



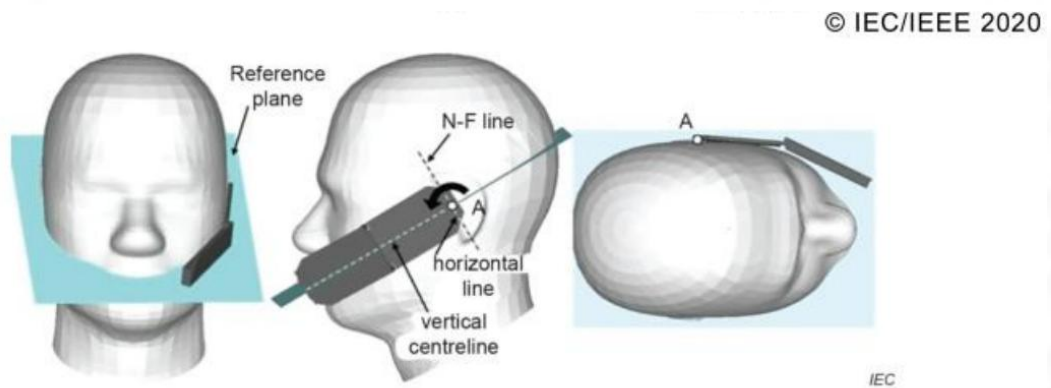
NOTE The curved black arrows show the direction of rotation of the DUT for 7.2.4.2.2 f).

e) DUT position after applying 7.2.4.2.2 f)



NOTE The curved black arrows show the direction of rotation of the DUT for 7.2.4.2.2 g)

f) DUT position after applying 7.2.4.2.2 g)



NOTE The curved black arrows show the direction of rotation of the DUT for 7.2.4.2.2 h).

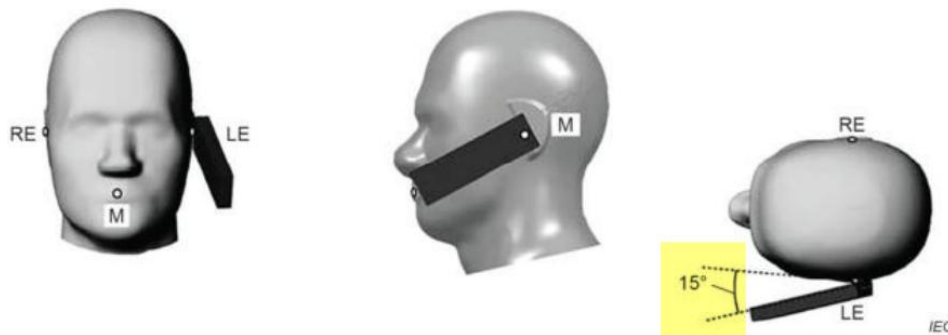
g) DUT position after applying 7.2.4.2.2 h)

Figure 16 – Cheek position of the DUT on the left side of SAM where the device position shall be maintained for the phantom test set-up

6.1.2 Definition of the tilt position

The tilt position is established using steps a) through d) as follows.

- Repeat steps a) through j) of 7.2.4.2.2 to place the DUT in the cheek position)(see Figure16).
- While maintaining the orientation of the DUT, move the DUT away from the pinna along the line passing through RE and LE far enough to allow a rotation of the DUT away from the cheek by 15°.
- Rotate the DUT around the horizontal line by 15°(see Figure 17).
- While maintaining the orientation of the DUT. move the DUT towards the phantom on a line passing through RE and LE until any part of the DUT touches the ear. The tilt position is obtained when the contact is on the pinna. If the contact is at any location other than the pinna, e.g. an extended antenna in contact with the back of the head phantom, the angle of the DUT shall be reduced. in this case, the tilt position is obtained if any part of the DUT is in contact with the pinna and a second point on the DUT is in contact with the phantom,e.g.the antenna in contact with the back of the head.



Key

- M Mouth reference point
- LE Left-ear ear reference point
- RE Right-ear ear reference point

This device position shall be maintained for the phantom test set-up.

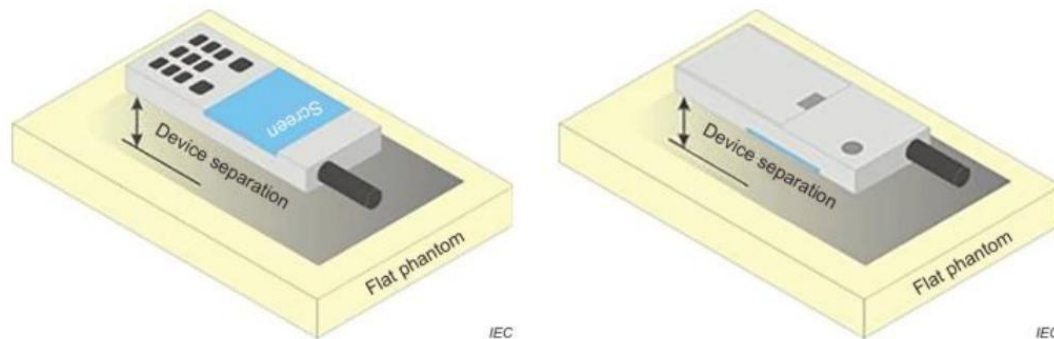
Figure 17 – Tilt position of the DUT on the left side of SAM

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.

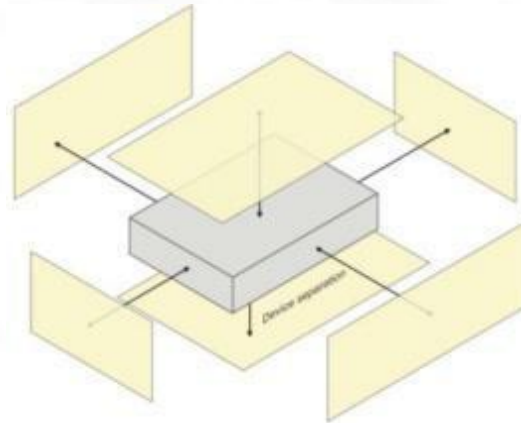
Body-worn accessories that do not contain metallic or conductive components may be tested according to worst-case exposure configurations, typically according to the smallest test separation distance required for the group of body-worn accessories with similar operating and exposure characteristics.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

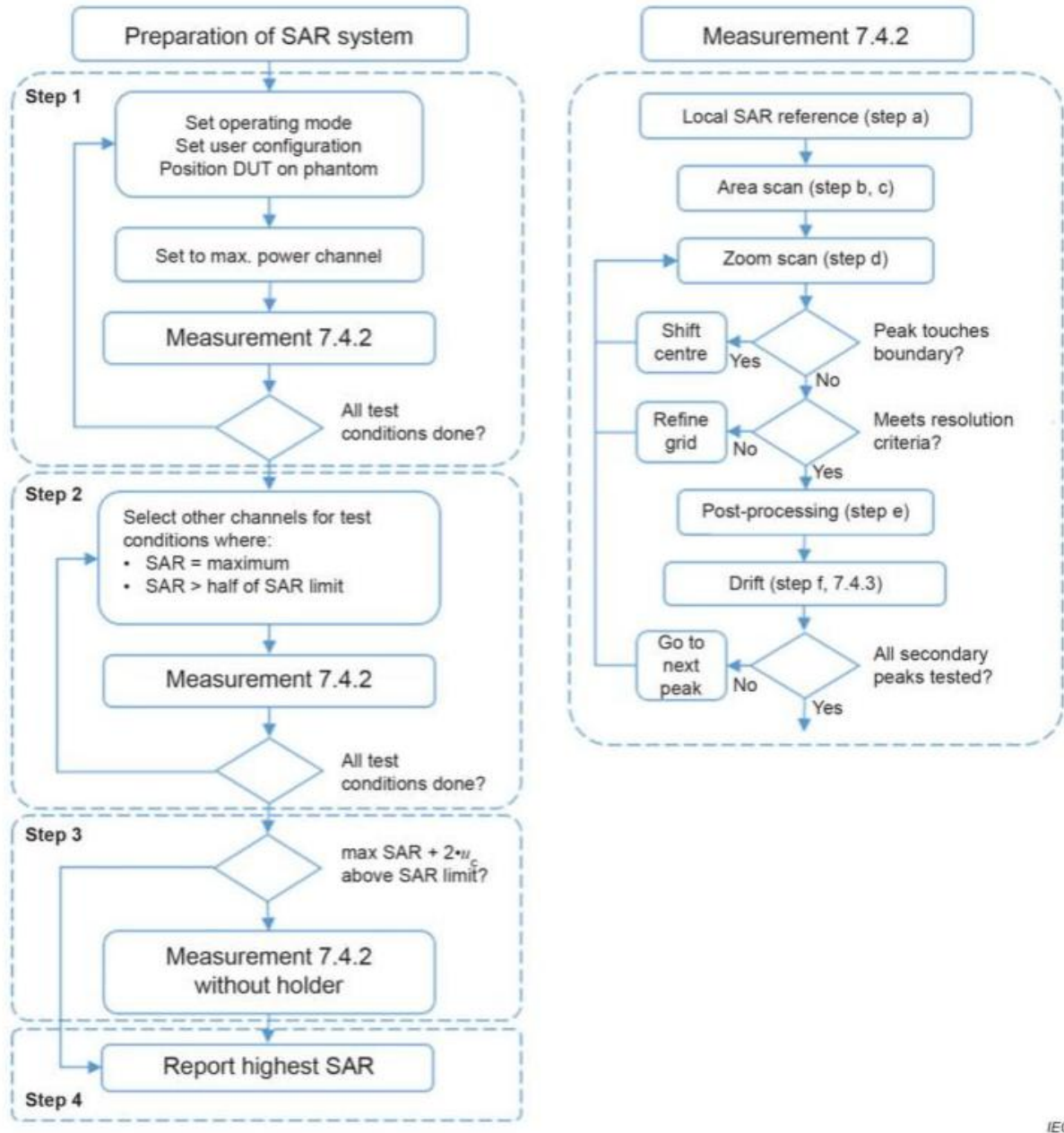
According with FCC KDB 648474 D04, for smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm that provide similar mobile web access and multimedia support found in mini-tablets or UMPC mini-tablets that support voice calls next to the ear, unless it is confirmed 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.

7. Measurement Procedure

7.1 Measurement Process Diagram

Body SAR



IEC

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_n 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.		

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 to 16 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.

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.

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		31.50	31.31	31.36	31.44	-9.03	22.28	22.33	22.41
GPRS (GMSK)	1Tx slot	31.50	31.38	31.32	31.40	-9.03	22.35	22.29	22.37
	2Tx slots	29.50	29.11	29.10	29.18	-6.02	23.09	23.08	23.16
	3Tx slots	27.50	27.16	27.17	27.25	-4.26	22.90	22.91	22.99
	4Tx slots	25.50	24.97	24.97	25.05	-3.01	21.96	21.96	22.04
EGPRS (8PSK)	1Tx slot	25.00	24.47	24.32	24.54	-9.03	15.44	15.29	15.51
	2Tx slots	24.50	24.13	24.06	24.21	-6.02	18.11	18.04	18.19
	3Tx slots	23.00	22.78	22.77	22.99	-4.26	18.52	18.51	18.73
	4Tx slots	21.00	20.18	20.10	20.54	-3.01	17.17	17.09	17.53
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		28.50	28.49	28.26	28.31	-9.03	19.46	19.23	19.28
GPRS (GMSK)	1Tx slot	29.00	28.51	28.21	28.26	-9.03	19.48	19.18	19.23
	2Tx slots	26.00	25.67	25.20	25.06	-6.02	19.65	19.18	19.04
	3Tx slots	24.50	24.04	23.57	23.41	-4.26	19.78	19.31	19.15
	4Tx slots	22.50	22.02	21.51	21.42	-3.01	19.01	18.50	18.41
EGPRS (8PSK)	1Tx slot	25.50	25.08	24.96	24.61	-9.03	16.05	15.93	15.58
	2Tx slots	25.50	25.06	24.75	24.26	-6.02	19.04	18.73	18.24
	3Tx slots	23.50	23.20	23.12	22.48	-4.26	18.94	18.86	18.22
	4Tx slots	21.50	21.01	20.60	20.13	-3.01	18.00	17.59	17.12
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									

8.2 WCDMA

Mode		Maximum Tune-up(dBm)	WCDMA Band II		
			Conducted Power (dBm)		
			CH9262	CH9400	CH9538
			1852.4	1880.0	1907.6
RMC 12.2K		22.00	21.73	21.56	21.51
HSDPA	Subtest-1	21.00	20.73	20.77	20.82
	Subtest-2	21.00	20.78	20.73	20.80
	Subtest-3	21.00	20.83	20.77	20.80
	Subtest-4	21.00	20.81	20.73	20.76
HSUPA	Subtest-1	19.00	18.84	18.72	18.82
	Subtest-2	19.00	18.64	18.70	18.65
	Subtest-3	19.00	18.81	18.23	18.83
	Subtest-4	19.00	18.80	18.74	18.82
	Subtest-5	19.00	18.62	18.71	18.36
Mode		Maximum Tune-up(dBm)	WCDMA Band IV		
			Conducted Power (dBm)		
			CH1312	CH1413	CH1513
			1712.4	1732.6	1752.6
RMC 12.2K		22.50	22.01	22.17	22.18
HSDPA	Subtest-1	21.50	20.82	21.24	21.17
	Subtest-2	21.50	20.80	21.25	21.18
	Subtest-3	21.50	20.77	21.28	21.18
	Subtest-4	21.50	20.73	21.23	21.14
HSUPA	Subtest-1	19.50	18.84	19.29	19.20
	Subtest-2	19.50	18.82	19.28	19.01
	Subtest-3	19.50	18.29	19.03	19.19
	Subtest-4	19.50	18.56	19.31	19.19
	Subtest-5	19.50	18.84	19.13	19.18
Mode		Maximum Tune-up(dBm)	WCDMA Band V		
			Conducted Power (dBm)		
			CH4132	CH4183	CH4233
			826.4	836.6	846.6
RMC 12.2K		22.50	21.99	22.05	22.00
HSDPA	Subtest-1	22.00	21.51	21.15	21.14
	Subtest-2	21.50	21.49	21.16	21.13
	Subtest-3	22.00	21.50	21.16	21.10
	Subtest-4	21.50	21.47	21.12	21.09
HSUPA	Subtest-1	19.50	19.35	19.22	19.00
	Subtest-2	19.50	19.08	19.02	18.72
	Subtest-3	20.00	19.54	19.20	19.22
	Subtest-4	19.50	19.35	19.02	19.04
	Subtest-5	19.50	19.06	18.69	18.76
Per KDB 941225 D01, when the maximum output power and tune-up tolerance specified for production units in a secondary mode is $\leq 1/2$ dB higher than the primary mode (RMC12.2kbps) or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode.					

8.3 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	23.00	22.67	22.35	22.48
			2	23.00	22.63	22.20	22.48
			5	23.00	22.61	22.29	22.45
		3	0	23.00	22.71	22.41	22.45
			2	23.00	22.58	22.46	22.49
			3	23.00	22.65	22.47	22.50
		6	0	22.00	21.64	21.35	21.50
	16QAM	1	0	22.50	22.44	21.69	22.00
			2	23.00	22.51	21.67	22.53
			5	22.50	22.48	21.71	22.02
		3	0	22.00	21.57	21.18	21.67
			2	22.00	21.59	21.22	21.68
			3	22.00	21.58	21.31	21.66
		6	0	21.00	20.79	20.40	20.75
Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	18615	18900	19185
					1851.5MHz	1880.0MHz	1908.5MHz
3MHz	QPSK	1	0	22.00	21.73	21.08	21.44
			7	22.00	21.71	21.26	21.41
			14	22.00	21.68	21.32	21.39
		8	0	22.00	21.66	21.33	21.39
			4	22.00	21.68	21.33	21.38
			7	22.00	21.78	21.33	21.38
		15	0	22.00	21.77	21.33	21.38
	16QAM	1	0	22.00	21.77	21.33	21.37
			7	22.00	21.76	21.32	21.37
			14	22.00	21.75	21.32	21.43
		8	0	22.00	21.76	21.32	21.42
			4	22.00	21.76	21.32	21.42
			7	22.00	21.75	21.32	21.41
		15	0	22.00	21.71	21.32	21.41
Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	18625	18900	19175
					1852.5MHz	1880.0MHz	1907.5MHz
5MHz	QPSK	1	0	23.00	22.64	22.44	22.47
			13	23.00	22.48	22.29	22.56
			24	23.00	22.53	22.29	22.66
		12	0	22.00	21.72	21.31	21.60
			6	22.00	21.53	21.46	21.50
			13	22.00	21.60	21.51	21.54
		25	0	22.00	21.57	21.33	21.45
	16QAM	1	0	22.50	21.75	22.13	21.84
			13	22.50	21.64	22.24	22.01
			24	22.50	21.59	22.22	21.98
		12	0	21.00	20.84	20.47	20.40
			6	21.00	20.62	20.45	20.43
			13	21.00	20.61	20.48	20.45
		25	0	21.00	20.66	20.55	20.56

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	23.00	22.59	22.36	22.31
			25	23.00	22.54	22.37	22.41
			49	23.00	22.51	22.41	22.50
		25	0	22.00	21.60	21.48	21.31
			13	22.00	21.54	21.32	21.40
			25	22.00	21.62	21.55	21.58
		50	0	22.00	21.58	21.44	21.37
	16QAM	1	0	23.00	22.29	21.99	22.56
			25	23.00	22.18	21.87	22.59
			49	23.00	22.13	21.98	22.57
		25	0	21.00	20.67	20.52	20.63
			13	21.00	20.66	20.52	20.64
			25	21.00	20.66	20.55	20.72
		50	0	21.00	20.61	20.42	20.58
Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	18675	18900	19125
					1857.5MHz	1880.0MHz	1902.5MHz
15MHz	QPSK	1	0	23.00	22.52	22.31	22.38
			38	22.50	22.48	22.30	22.44
			74	23.00	22.40	22.24	22.55
		36	0	22.00	21.58	21.34	21.37
			18	22.00	21.62	21.31	21.50
			39	21.50	21.43	21.40	21.49
		75	0	22.00	21.56	21.43	21.43
	16QAM	1	0	23.00	22.23	22.16	22.50
			38	23.00	22.14	22.25	22.59
			74	23.00	22.07	22.21	22.58
		36	0	21.00	20.65	20.49	20.47
			18	21.00	20.55	20.48	20.49
			39	21.00	20.56	20.45	20.59
		75	0	21.00	20.57	20.48	20.60
Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	18700	18900	19100
					1860.0MHz	1880.0MHz	1900.0MHz
20MHz	QPSK	1	0	23.00	22.76	22.44	22.49
			50	23.00	22.74	22.42	22.55
			99	23.00	22.62	22.61	22.63
		50	0	22.00	21.62	21.36	21.29
			25	22.00	21.59	21.36	21.45
			50	22.00	21.52	21.44	21.51
		100	0	22.00	21.53	21.45	21.51
	16QAM	1	0	23.00	22.30	22.50	22.22
			50	22.50	22.16	22.31	22.38
			99	22.50	22.11	22.41	22.42
		50	0	21.00	20.78	20.39	20.50
			25	21.00	20.63	20.45	20.60
			50	21.00	20.70	20.44	20.61
		100	0	23.00	20.55	20.57	20.49

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	23.00	22.54	22.73	22.84
			2	23.00	22.68	22.89	22.88
			5	23.00	22.61	22.86	22.82
		3	0	23.00	22.71	22.74	22.82
			2	23.00	22.71	22.76	22.76
			3	23.00	22.66	22.81	22.71
		6	0	22.00	21.64	21.86	21.88
	16QAM	1	0	23.00	21.88	22.50	22.88
			2	23.00	21.82	22.36	22.88
			5	23.00	21.87	22.41	22.93
		3	0	22.50	21.56	22.06	21.41
			2	22.00	21.52	21.98	21.43
			3	22.00	21.60	21.96	21.44
		6	0	21.50	21.13	21.37	20.93
Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	19965	20175	20385
					1711.5MHz	1732.5MHz	1753.5MHz
3MHz	QPSK	1	0	23.00	22.64	22.73	22.74
			7	23.00	22.60	22.76	22.83
			14	23.00	22.63	22.77	22.72
		8	0	22.00	21.65	21.79	21.82
			4	22.00	21.68	21.78	21.87
			7	22.00	21.72	21.80	21.97
		15	0	22.00	21.66	21.72	21.83
	16QAM	1	0	22.50	21.82	22.49	22.04
			7	22.50	21.78	22.38	21.99
			14	22.50	21.66	22.42	22.15
		8	0	21.50	21.23	21.05	21.37
			4	21.50	21.13	21.39	21.39
			7	21.50	20.90	21.37	21.02
		15	0	21.50	21.06	21.28	21.22
Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	19976	20175	20375
					1712.5MHz	1732.5MHz	1752.5MHz
5MHz	QPSK	1	0	23.00	22.54	22.74	22.72
			13	23.00	22.55	22.76	22.80
			24	23.00	22.57	22.72	22.74
		12	0	22.00	21.64	21.70	21.79
			6	22.00	21.58	21.80	21.82
			13	22.00	21.63	21.74	21.70
		25	0	22.00	21.67	21.67	21.70
	16QAM	1	0	22.50	22.42	22.20	21.90
			13	22.50	22.38	22.20	21.97
			24	22.50	22.43	22.36	21.98
		12	0	21.50	21.06	20.68	20.73
			6	21.50	20.73	21.10	21.17
			13	21.50	20.69	21.09	21.10
		25	0	21.50	20.85	21.11	21.20

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	23.00	22.63	22.72	22.82
			25	23.00	22.71	22.75	22.90
			49	23.00	22.74	22.71	22.83
		25	0	22.00	21.68	21.82	21.68
			13	22.00	21.62	21.85	21.93
			25	22.00	21.68	21.85	21.72
		50	0	22.00	21.68	21.64	21.80
	16QAM	1	0	23.00	22.14	21.88	22.88
			25	23.00	22.16	21.94	22.75
			49	23.00	22.17	21.95	22.74
		25	0	21.50	20.78	20.81	21.14
			13	21.50	20.82	21.17	20.99
			25	21.50	20.84	21.24	21.08
		50	0	21.50	20.72	21.12	21.02
Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	20025	20175	20325
					1717.5MHz	1732.5MHz	1747.5MHz
15MHz	QPSK	1	0	23.00	22.47	22.78	22.71
			38	23.00	22.48	22.85	22.79
			74	23.00	22.57	22.87	22.77
		36	0	22.50	21.71	21.67	22.03
			18	22.00	21.74	21.71	21.80
			39	22.00	21.76	21.82	21.69
		75	0	22.00	21.62	21.82	21.64
	16QAM	1	0	23.00	22.45	22.83	22.06
			38	23.00	22.51	22.95	22.15
			74	22.50	22.49	22.36	22.19
		36	0	21.50	20.78	20.93	21.14
			18	21.50	20.86	21.16	21.09
			39	21.50	21.05	20.90	20.89
		75	0	21.50	20.87	21.17	21.10
Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	20050	20175	20300
					1720.0MHz	1732.5MHz	1745.0MHz
20MHz	QPSK	1	0	23.00	22.68	22.84	22.72
			50	23.00	22.74	22.88	22.84
			99	23.00	22.72	22.95	22.71
		50	0	22.00	21.61	21.89	21.70
			25	22.50	21.68	21.70	22.13
			50	22.00	21.62	21.91	21.89
		100	0	22.00	21.77	21.80	21.98
	16QAM	1	0	23.00	22.10	22.54	22.89
			50	23.50	22.19	22.60	23.09
			99	23.00	22.13	22.57	22.84
		50	0	21.50	20.86	21.08	20.96
			25	21.50	20.86	21.09	21.25
			50	21.50	21.26	20.91	21.10
		100	0	21.50	20.85	21.17	21.06

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	22.00	21.98	21.96	21.12
			2	22.50	22.07	22.12	21.16
			5	22.50	22.13	22.03	21.11
		3	0	22.50	22.11	22.24	21.07
			2	22.50	22.01	22.15	21.17
			3	22.50	22.08	22.18	21.15
		6	0	21.50	21.14	21.11	21.14
	16QAM	1	0	22.00	21.78	21.71	21.13
			2	22.00	21.74	21.83	21.11
			5	22.00	21.79	21.84	21.10
		3	0	21.50	21.08	21.11	21.09
			2	21.50	21.11	21.10	21.09
			3	21.50	21.09	21.04	21.08
		6	0	21.50	20.07	20.14	21.07
Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	20415	20525	20635
					825.5MHz	836.5MHz	847.5MHz
3MHz	QPSK	1	0	22.50	21.99	22.11	22.16
			7	22.50	21.96	22.18	22.15
			14	22.50	22.01	22.09	22.15
		8	0	21.50	21.13	21.08	21.04
			4	21.50	21.17	21.15	20.97
			7	21.50	21.22	21.20	21.13
		15	0	21.50	21.15	21.27	21.01
	16QAM	1	0	22.50	22.06	21.11	22.16
			7	22.50	22.03	21.24	22.09
			14	22.50	21.96	21.32	22.24
		8	0	20.50	20.34	20.27	20.16
			4	20.50	20.32	20.35	20.15
			7	20.50	20.38	20.39	20.28
		15	0	20.50	20.11	20.19	20.11

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	21.50	21.12	21.19	21.11
			13	21.50	21.05	21.09	21.08
			24	21.50	21.02	21.08	21.07
		12	0	21.50	21.01	21.08	21.06
			6	21.50	21.17	21.07	21.06
			13	21.50	21.15	21.06	21.06
		25	0	21.50	21.15	21.06	21.06
	16QAM	1	0	21.50	21.14	21.07	21.05
			13	21.50	21.14	21.22	21.05
			24	21.50	21.13	21.22	21.05
		12	0	21.50	21.13	21.21	21.05
			6	21.50	21.13	21.21	21.05
			13	21.50	21.13	21.21	21.05
		25	0	21.50	21.13	21.21	21.05

Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	20450	20525	20600
					829.0MHz	836.5MHz	844.0MHz
10MHz	QPSK	1	0	22.50	21.91	22.03	22.06
			25	22.50	21.97	22.16	22.04
			49	22.50	22.08	22.13	22.07
		25	0	21.50	21.22	21.15	20.95
			13	21.50	21.21	21.13	20.98
			25	21.50	21.15	21.09	20.98
	16QAM	50	0	21.50	21.18	21.20	21.14
			0	22.50	21.74	21.12	22.35
			25	22.50	21.85	21.20	22.29
		1	49	22.50	21.80	21.18	22.36
			0	20.50	20.12	20.26	20.09
			13	20.50	20.05	20.32	20.17
		25	25	20.50	20.17	20.31	20.14
			0	20.50	20.11	20.16	20.13

Band 12

LTE-FDD Band 12				Maximum Tune-up(dBm)	Conducted Power(dBm)			
Bandwidth	Modulation	RB allocation	RB offset		23017	23095	23173	
					699.7MHz	707.5MHz	715.3MHz	
1.4MHz	QPSK	1	0	22.50	22.09	21.94	21.92	
			2	22.50	22.07	21.92	21.91	
			5	22.00	21.97	21.96	21.97	
		3	0	22.00	21.97	21.95	21.94	
			2	22.50	21.89	21.95	22.04	
			3	22.00	21.92	21.89	21.94	
		6	0	21.50	20.73	21.30	21.00	
		16QAM	1	0	22.00	20.98	20.90	21.97
				2	22.00	20.98	21.33	21.88
	5			22.00	20.92	21.28	21.94	
	3		0	21.50	20.61	21.07	20.85	
			2	21.50	20.59	21.08	20.75	
			3	21.50	20.51	21.04	20.78	
	6	0	20.50	19.94	20.39	20.01		
Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	23025	23095	23165	
					700.5MHz	707.5MHz	714.5MHz	
3MHz	QPSK	1	0	22.50	21.93	21.95	22.01	
			7	22.00	21.91	21.88	21.98	
			14	22.00	21.99	21.88	21.93	
		8	0	21.00	20.87	20.87	20.98	
			4	21.50	20.81	21.35	20.90	
			7	21.50	20.90	21.36	20.97	
		15	0	21.50	20.99	21.30	20.99	
		16QAM	1	0	22.00	21.04	21.49	21.65
				7	22.00	21.12	21.91	21.63
	14			22.00	21.04	21.92	21.59	
	8		0	20.50	20.09	20.06	20.19	
			4	20.50	20.06	20.46	20.18	
			7	20.50	20.05	20.45	20.02	
	15	0	20.50	19.92	20.42	20.02		

Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	23035	23095	23155
					701.5MHz	707.5MHz	713.5MHz
5MHz	QPSK	1	0	22.00	21.87	21.93	21.65
			13	22.00	21.95	21.78	21.81
			24	22.00	21.91	21.71	21.80
		12	0	21.00	20.80	20.94	20.83
			6	21.50	20.99	21.35	20.94
			13	21.50	20.91	21.33	20.88
		25	0	21.50	20.92	21.28	21.02
			0	21.50	21.28	20.58	21.26
			13	21.50	21.21	20.97	21.43
	16QAM	1	24	21.50	21.29	20.54	21.37
			0	20.00	19.77	19.95	19.82
			6	20.50	19.76	20.35	19.95
		12	13	20.50	19.76	20.32	19.95
			0	20.50	19.75	20.40	20.05
			0	20.50	19.75	20.40	20.05
			0	20.50	19.75	20.40	20.05
Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	23060	23095	23130
					704.0MHz	707.5MHz	711.0MHz
10MHz	QPSK	1	0	22.00	21.88	21.84	21.91
			25	22.00	21.83	21.84	21.76
			49	22.00	21.84	21.88	21.84
		25	0	21.50	20.98	20.81	21.20
			13	21.50	20.88	21.32	20.86
			25	21.00	20.73	20.90	21.00
		50	0	21.50	20.88	21.25	20.83
			0	22.00	20.96	21.51	21.60
			25	22.00	20.98	21.77	21.73
	16QAM	1	49	22.00	21.46	21.38	21.75
			0	20.50	20.06	20.11	20.36
			13	20.50	20.06	20.43	19.78
		25	25	20.50	20.12	19.91	20.00
			0	20.50	19.98	20.46	19.78
			0	20.50	19.98	20.46	19.78
			0	20.50	19.98	20.46	19.78

Band 13

LTE-FDD Band 13				Maximum Tune-up(dBm)	Conducted Power(dBm)				
Bandwidth	Modulation	RB allocation	RB offset		23205	23230	23255		
					779.5MHz	782.0MHz	784.5MHz		
5MHz	QPSK	1	0	22.00	21.63	21.62	21.66		
			13	22.00	21.64	21.60	21.57		
			24	22.00	21.55	21.64	21.66		
		12	0	21.00	20.63	20.60	20.79		
			6	21.00	20.64	20.68	20.78		
			13	21.00	20.56	20.82	20.80		
		25	0	21.00	20.63	20.66	20.80		
			16QAM	1	0	21.50	21.19	20.29	21.16
					13	21.50	21.19	20.28	21.25
	24	21.50			21.33	20.40	21.18		
	12	0		20.00	19.61	19.56	19.85		
		6		20.00	19.70	19.67	19.80		
		13		20.00	19.74	19.81	19.80		
	25	0		20.00	19.72	19.77	19.74		

Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	23230
					782.0MHz
10MHz	QPSK	1	0	22.00	21.60
			25	22.00	21.52
			49	22.00	21.72
		25	0	21.00	20.68
			13	21.00	20.60
			25	21.00	20.78
		50	0	21.00	20.66
	16QAM	1	0	21.50	21.29
			25	21.50	21.35
			49	21.50	21.39
		25	0	20.00	19.64
			13	20.00	19.78
			25	20.00	19.88
		50	0	20.00	19.83

Band 17

LTE-FDD Band 17				Maximum Tune-up(dBm)	Conducted Power(dBm)		
Bandwidth	Modulation	RB allocation	RB offset		23755	23790	23825
					706.5MHz	710MHz	713.5MHz
5MHz	QPSK	1	0	22.50	22.06	22.02	22.01
			13	22.50	22.05	21.86	22.14
			24	22.50	22.14	21.81	22.16
		12	0	21.50	21.15	20.89	21.02
			6	21.50	21.19	21.11	21.18
			13	21.50	20.99	21.03	21.12
		25	0	21.50	21.08	21.04	21.10
	16QAM	1	0	22.00	20.62	21.50	21.42
			13	22.00	20.66	21.62	21.53
			24	22.00	20.62	21.53	21.67
		12	0	20.50	20.06	19.98	19.89
			6	20.50	20.12	20.20	20.08
			13	20.50	19.98	19.88	20.18
		25	0	20.50	20.17	20.17	20.10
					23780	23790	23800
Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	709MHz	710MHz	711MHz
10MHz	QPSK	1	0	22.50	22.06	22.03	22.00
			25	22.50	22.00	22.00	22.03
			49	22.50	22.07	22.09	22.03
		25	0	21.50	21.10	20.94	20.93
			13	21.50	21.00	21.02	21.11
			25	21.50	21.13	21.01	21.10
		50	0	21.50	20.97	21.16	21.08
	16QAM	1	0	22.50	21.55	21.36	22.30
			25	22.50	21.52	21.26	22.32
			49	22.50	21.70	21.43	22.26
		25	0	20.50	20.09	20.22	20.06
			13	20.50	20.07	20.35	20.14
			25	20.50	19.97	20.18	20.22
		50	0	20.50	20.07	20.20	20.20

Band 25

LTE-FDD Band 25				Maximum Tune-up(dBm)	Conducted Power(dBm)					
Bandwidth	Modulation	RB allocation	RB offset		26047	26365	26683			
					1850.7MHz	1882.5MHz	1914.3MHz			
1.4MHz	QPSK	1	0	22.60	22.60	22.26	22.46			
			2	22.51	22.51	22.28	22.45			
			5	22.58	22.58	22.26	22.39			
		3	0	22.56	22.56	22.44	22.50			
			2	22.58	22.58	22.34	22.48			
			3	22.51	22.51	22.36	22.54			
		6	0	21.51	21.51	21.34	21.38			
			16QAM	1	0	21.67	21.67	22.12	21.95	
					2	21.66	21.66	22.16	22.05	
	5	21.69			21.69	22.05	21.97			
	3	0		21.45	21.45	21.46	21.29			
		2		21.41	21.41	21.49	21.40			
		3		21.44	21.44	21.51	21.36			
	6	0		20.56	20.56	20.54	20.52			
		Bandwidth		Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	26055	26365	26675
								1851.5MHz	1882.5MHz	1913.5MHz
	3MHz	QPSK	1	0	22.50	22.48	22.33	22.49		
				7	23.00	22.50	22.37	22.50		
14				23.00	22.52	22.37	22.46			
8			0	22.00	21.54	21.36	21.45			
			4	22.00	21.64	21.37	21.41			
			7	22.00	21.61	21.39	21.44			
15			0	22.00	21.60	21.41	21.45			
			16QAM	1	0	23.00	22.65	21.79	21.49	
					7	23.00	22.77	22.01	21.47	
14		22.50			22.31	21.98	21.52			
8		0		21.00	20.63	20.58	20.83			
		4		21.00	20.65	20.71	20.79			
		7		21.00	20.70	20.76	20.73			
15		0		21.00	20.62	20.62	20.59			
		Bandwidth		Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	26065	26365	26665
								1852.5MHz	1882.5MHz	1912.5MHz
5MHz		QPSK	1	0	23.00	22.53	22.44	22.56		
				13	23.00	22.58	22.31	22.64		
	24			23.00	22.49	22.31	22.51			
	12		0	22.00	21.71	21.37	21.51			
			6	22.00	21.74	21.48	21.39			
			13	22.00	21.70	21.46	21.52			
	25		0	22.00	21.65	21.45	21.49			
			16QAM	1	0	22.00	21.37	21.99	21.97	
					13	22.50	21.48	21.99	22.01	
	24	22.50			21.40	22.08	22.09			
	12	0		21.00	20.65	20.52	20.39			
		6		21.00	20.71	20.53	20.55			
		13		21.00	20.67	20.55	20.49			
	25	0		21.00	20.78	20.64	20.53			

LTE-FDD Band 25				Maximum Tune-up(dBm)	Conducted Power(dBm)				
Bandwidth	Modulation	RB allocation	RB offset		26090	26365	26640		
					1855.0MHz	1882.5MHz	1910.0MHz		
10MHz	QPSK	1	0	23.00	22.53	22.32	22.29		
			25	22.50	22.49	22.47	22.45		
			49	23.00	22.55	22.53	22.44		
		25	0	22.00	21.57	21.50	21.44		
			13	22.00	21.65	21.46	21.53		
			25	22.00	21.52	21.50	21.58		
		50	0	22.00	21.70	21.50	21.59		
			16QAM	1	0	23.00	22.40	21.72	22.69
					25	23.00	22.42	21.72	22.68
	49	23.00			22.34	21.89	22.81		
	25	0		21.00	20.71	20.67	20.59		
		13		21.00	20.65	20.68	20.60		
		25		21.00	20.63	20.57	20.71		
	50	0		21.00	20.67	20.54	20.61		
	Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	26115	26365	26615	
						1857.5MHz	1882.5MHz	1907.5MHz	
15MHz	QPSK	1	0	22.50	22.47	22.25	22.26		
			38	23.00	22.53	22.29	22.39		
			74	22.50	22.47	22.47	22.47		
		36	0	22.00	21.59	21.50	21.48		
			18	22.00	21.50	21.54	21.40		
			39	22.00	21.51	21.58	21.56		
		75	0	22.00	21.64	21.53	21.47		
		16QAM	1	0	23.00	22.54	22.18	22.68	
				38	23.00	22.51	22.20	22.70	
	74			23.00	22.38	22.30	22.82		
	36		0	21.00	20.61	20.50	20.80		
			18	21.00	20.61	20.54	20.54		
			39	21.00	20.59	20.55	20.62		
	75		0	21.00	20.64	20.56	20.62		
	Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	26140	26365	26590	
						1860.0MHz	1882.5MHz	1905.0MHz	
20MHz	QPSK	1	0	23.00	22.70	22.46	22.54		
			50	23.00	22.72	22.43	22.55		
			99	23.00	22.58	22.46	22.70		
		50	0	22.00	21.67	21.54	21.48		
			25	22.00	21.50	21.47	21.40		
			50	22.00	21.60	21.51	21.67		
		100	0	22.00	21.59	21.44	21.40		
		16QAM	1	0	23.00	22.18	22.69	22.03	
				50	23.00	22.05	22.61	22.05	
	99			23.00	21.95	22.69	22.13		
	50		0	21.00	20.66	20.44	20.55		
			25	21.00	20.63	20.59	20.76		
			50	21.00	20.61	20.51	20.64		
	100		0	21.00	20.64	20.66	20.79		

Band 66

LTE-FDD Band 66				Maximum Tune-up(dBm)	Conducted Power(dBm)		
Bandwidth	Modulation	RB allocation	RB offset		131979	132322	132665
					1710.7MHz	1745.0MHz	1779.3MHz
1.4MHz	QPSK	1	0	23.00	22.63	22.93	22.82
			2	23.00	22.79	22.85	22.90
			5	23.00	22.81	22.80	22.87
		3	0	23.00	22.67	22.87	22.89
			2	23.00	22.70	22.77	22.89
			3	23.00	22.68	22.72	22.82
		6	0	22.00	21.61	21.75	21.77
	16QAM	1	0	23.00	22.02	22.61	22.20
			2	23.00	21.98	22.67	22.19
			5	23.00	22.12	22.59	22.18
		3	0	22.00	21.70	21.33	21.50
			2	22.00	21.64	21.33	21.55
			3	22.00	21.65	21.36	21.54
		6	0	21.50	20.81	21.23	21.16
					131987	132322	132657
					1711.5MHz	1745.0MHz	1778.5MHz
3MHz	QPSK	1	0	23.00	22.79	22.84	22.76
			7	23.00	22.76	22.68	22.83
			14	23.00	22.83	22.75	22.90
		8	0	22.00	21.57	21.81	21.76
			4	22.00	21.67	21.88	21.79
			7	22.00	21.65	21.87	21.75
		15	0	22.00	21.59	21.85	21.88
	16QAM	1	0	22.50	22.03	21.98	22.49
			7	22.50	22.06	21.90	22.44
			14	22.50	22.03	22.10	22.15
		8	0	21.50	20.68	21.21	21.38
			4	21.50	20.68	21.15	21.10
			7	21.50	20.77	21.13	21.06
		15	0	21.50	20.80	21.07	20.94

Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	131997	132322	132647
					1712.5MHz	1745.0MHz	1777.5MHz
5MHz	QPSK	1	0	23.00	22.67	22.81	22.51
			13	23.00	22.64	22.67	22.64
			24	23.00	22.66	22.63	22.68
		12	0	22.00	21.51	21.91	21.64
			6	22.00	21.75	21.85	21.74
			13	22.50	21.64	22.01	21.87
		25	0	22.00	21.56	21.77	21.61
	16QAM	1	0	22.50	22.17	21.66	22.25
			13	22.50	22.23	21.62	22.19
			24	23.00	22.51	21.97	22.26
		12	0	21.50	20.54	21.14	21.17
			6	21.50	20.58	21.13	21.17
			13	21.50	20.72	21.01	20.92
		25	0	21.50	20.71	21.08	21.20

Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	132022	132322	132622
					1715.0MHz	1745.0MHz	1775.0MHz
10MHz	QPSK	1	0	23.00	22.61	22.83	22.63
			25	23.00	22.57	22.79	22.68
			49	23.00	22.63	22.83	22.83
		25	0	22.00	21.61	21.88	21.80
			13	22.00	21.92	21.81	21.68
			25	22.00	21.68	21.98	21.82
		50	0	22.00	21.95	21.77	21.75
	16QAM	1	0	23.00	22.24	22.95	21.85
			25	23.50	22.62	23.08	21.95
			49	23.00	22.28	22.94	22.03
		25	0	21.50	20.76	21.22	20.85
			13	21.50	21.15	21.16	20.82
			25	21.50	21.15	21.10	21.12
		50	0	21.50	21.09	21.11	20.73

LTE-FDD Band 66				Maximum Tune-up(dBm)	Conducted Power(dBm)		
Bandwidth	Modulation	RB allocation	RB offset		132047	132322	132597
15MHz	QPSK	1	0	23.00	22.60	22.74	22.78
			38	23.00	22.62	22.87	22.87
			74	23.00	22.62	22.85	22.92
		36	0	22.00	21.98	21.74	21.84
			18	22.00	21.74	21.69	21.70
			39	22.00	21.78	21.71	21.70
		75	0	22.00	21.64	21.84	21.75
	16QAM	1	0	22.50	21.69	22.05	22.15
			38	22.50	21.76	22.25	22.18
			74	22.50	21.80	22.44	22.20
		36	0	21.50	21.03	20.78	20.94
			18	21.50	21.10	21.08	20.92
			39	21.50	21.07	21.10	21.14
		75	0	21.50	21.09	21.14	20.96
20MHz	QPSK	1	0	23.00	22.53	22.77	22.61
			50	23.00	22.56	22.77	22.68
			99	23.00	22.66	22.89	22.82
		50	0	22.00	21.95	21.73	21.85
			25	22.00	21.58	21.77	21.83
			50	22.00	21.75	21.76	21.74
		100	0	22.00	21.66	21.70	21.80
	16QAM	1	0	22.50	22.33	22.42	21.99
			50	23.00	22.40	22.50	22.01
			99	22.50	22.46	22.23	22.11
		50	0	21.50	21.02	20.73	20.91
			25	21.50	21.08	21.00	20.93
			50	21.50	21.11	21.09	20.84
		100	0	21.50	21.11	21.12	20.93

Band 71

LTE-FDD Band 71				Maximum Tune-up(dBm)	Conducted Power(dBm)		
Bandwidth	Modulation	RB allocation	RB offset		133147	133297	133447
					665.5MHz	680.5MHz	695.5MHz
5MHz	QPSK	1	0	21.98	21.98	21.73	21.89
			13	21.87	21.87	21.70	21.71
			24	21.93	21.93	21.75	21.71
		12	0	21.01	21.01	20.87	20.87
			6	20.94	20.94	20.86	20.92
			13	20.94	20.94	20.96	20.77
		25	0	20.91	20.91	20.86	20.95
	16QAM	1	0	21.46	21.46	21.02	21.26
			13	21.47	21.47	20.94	21.30
			24	21.49	21.49	20.93	21.19
		12	0	19.79	19.79	19.80	20.06
			6	19.81	19.81	19.77	20.12
			13	19.84	19.84	19.79	20.12
		25	0	19.75	19.75	19.90	20.06
Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	133172	133297	133422
					668.0MHz	680.5MHz	693.0MHz
10MHz	QPSK	1	0	21.86	21.86	21.91	21.80
			25	21.89	21.89	21.75	21.86
			49	21.89	21.89	21.86	21.88
		25	0	20.77	20.77	20.87	20.91
			13	20.92	20.92	20.75	20.93
			25	20.85	20.85	20.84	20.90
		50	0	20.88	20.88	20.86	20.92
	16QAM	1	0	21.24	21.24	21.23	21.38
			25	21.11	21.11	21.23	21.37
			49	21.10	21.10	21.45	21.25
		25	0	19.78	19.78	19.94	20.50
			13	19.94	19.94	19.92	20.57
			25	19.94	19.94	19.97	20.02
		50	0	19.98	19.98	19.86	20.47

Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	133197	133297	133397
					670.5MHz	680.5MHz	690.5MHz
15MHz	QPSK	1	0	22.00	21.91	21.89	21.91
			38	22.00	21.76	21.78	21.93
			74	22.00	21.83	21.90	21.85
		36	0	21.00	20.81	20.86	20.98
			18	21.00	20.77	20.73	20.96
			39	21.00	20.96	20.83	20.90
		75	0	21.00	20.72	20.83	20.95
	16QAM	1	0	22.50	21.06	21.63	22.01
			38	22.50	21.04	21.71	22.05
			74	22.50	21.08	21.81	22.01
		36	0	20.00	19.86	19.88	19.88
			18	20.50	19.76	19.80	20.37
			39	20.50	20.03	19.87	19.90
		75	0	20.50	19.90	19.87	20.38

Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	133222	133322	133372
					673.0MHz	683.0MHz	688.0MHz
20MHz	QPSK	1	0	22.00	21.84	21.80	21.84
			50	22.00	21.75	21.68	21.84
			99	22.00	21.88	21.86	21.89
		50	0	21.00	20.75	20.90	20.80
			25	21.00	20.80	20.94	20.93
			50	21.50	20.97	21.07	20.83
		100	0	21.00	20.85	20.80	20.98
	16QAM	1	0	22.00	21.73	21.19	21.64
			50	22.00	21.74	20.90	21.60
			99	22.00	21.79	21.06	21.71
		50	0	20.00	20.00	19.98	19.89
			25	20.00	19.85	19.90	19.97
			50	20.50	19.91	20.01	20.43
		100	0	20.50	19.71	19.82	20.08

8.4 Wi-Fi

Band (GHz)	Mode	Channel	Freq. (MHz)	Average Power (dBm)	Maximum Tune-up(dBm)	SAR Test Require.
2.4g Wifi (2.4~2.4835)	802.11b	1	2412	13.66	14.00	No
		6	2437	13.42	13.50	No
		11	2462	15.44	15.50	Yes
	802.11g	1	2412	12.10	12.50	No
		6	2437	12.34	12.50	No
		11	2462	14.07	14.50	No
	802.11n(HT20)	1	2412	12.48	12.50	No
		6	2437	12.90	13.00	No
		11	2462	14.38	14.50	No

Note: SAR is not required for the following 2.4 GHz OFDM conditions as the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is $\leq 1.2\text{W/kg}$.

8.5 Bluetooth

EDR	Mode	Maximum Tune-up(dBm)	Average Conducted Output Power (dBm)		
			0	39	78
			2402MHz	2441MHz	2480MHz
			6.14	7.13	5.74
BLE	Mode	Maximum Tune-up(dBm)	6.22	6.63	5.62
			6.50	6.95	5.83
			0	20	39
			2402MHz	2440MHz	2480MHz
BLE	1Mbps	2.00	-1.62	1.74	1.28

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
39	2.441	7.50	5.62	0	2.75	Yes
39	2.441	7.50	5.62	10	10.28	No

Note

- 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:

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

where

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

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

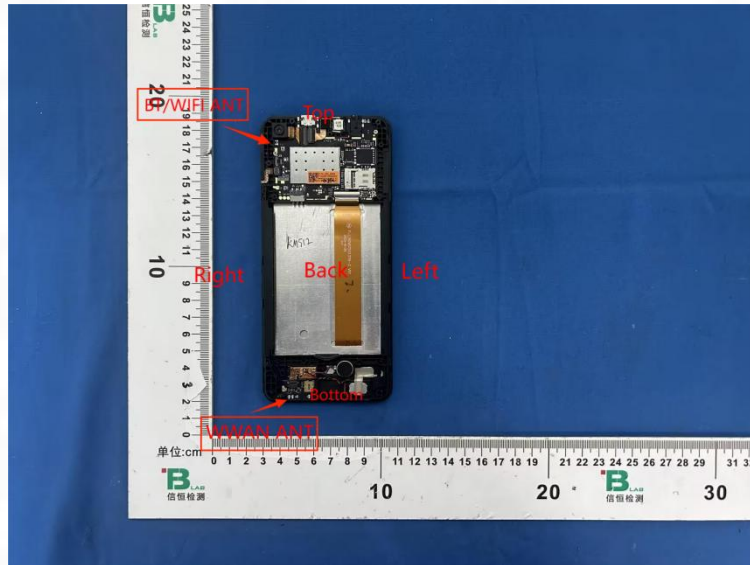
and f is in GHz, d is the separation distance (cm), and $ERP_{20\text{cm}}$ is per Formula (B.1).

- *When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine estimated SAR.
- Per KDB 248227 D01 v02r02, choose the highest output power channel to test SAR and determine further SAR exclusion.
 - The output power of all data rate were prescan, just the worst case (the lowest data rate) of all mode were shown in report.

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9. Test Exclusion Consideration

Antenna information:



WWAN Main Antenna	GSM/WCDMA/LTE TX/RX
WLAN/BT Antenna	WLAN/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	60	<25	165	<25
BT/Wifi	<25	<25	63	<25	<25	155
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/Wifi	Yes	Yes	No	Yes	Yes	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:

$$(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm}) \cdot [\sqrt{f(\text{GHz})} / x]$$

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	39	2.441	7.50	5.62	Estimated SAR(W/kg)	0.117

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	251	848.8	2.320	0.341	100.00	1.000	31.44	31.50	1.014	0.346	/
	Left Tilt	251	848.8	-4.690	0.282	100.00	1.000	31.44	31.50	1.014	0.286	/
	Right Cheek	251	848.8	-1.720	0.400	100.00	1.000	31.44	31.50	1.014	0.406	1#
	Right Tilt	251	848.8	2.820	0.312	100.00	1.000	31.44	31.50	1.014	0.316	/
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	251	848.8	2.340	0.382	100.00	1.000	31.44	31.50	1.014	0.387	/
	Back	251	848.8	-1.770	0.471	100.00	1.000	31.44	31.50	1.014	0.478	/
	Right	251	848.8	0.570	0.144	100.00	1.000	31.44	31.50	1.014	0.146	/
	Bottom	251	848.8	-3.240	0.281	100.00	1.000	31.44	31.50	1.014	0.285	/
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	251	848.8	4.840	0.415	100.00	1.000	29.18	29.50	1.076	0.447	/
	Back	251	848.8	1.260	0.525	100.00	1.000	29.18	29.50	1.076	0.565	2#
	Right	251	848.8	-0.780	0.186	100.00	1.000	29.18	29.50	1.076	0.200	/
	Bottom	251	848.8	-2.210	0.302	100.00	1.000	29.18	29.50	1.076	0.325	/

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	512	1850.2	2.330	0.131	100.00	1.000	28.49	28.50	1.002	0.131	/
	Left Tilt	512	1850.2	-4.970	0.098	100.00	1.000	28.49	28.50	1.002	0.098	/
	Right Cheek	512	1850.2	2.910	0.159	100.00	1.000	28.49	28.50	1.002	0.159	3#
	Right Tilt	512	1850.2	1.040	0.117	100.00	1.000	28.49	28.50	1.002	0.117	/
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	512	1850.2	3.430	0.301	100.00	1.000	28.49	28.50	1.002	0.302	/
	Back	512	1850.2	-0.760	0.421	100.00	1.000	28.49	28.50	1.002	0.422	/
	Right	512	1850.2	2.890	0.197	100.00	1.000	28.49	28.50	1.002	0.197	/
	Bottom	512	1850.2	-1.530	0.797	100.00	1.000	28.49	28.50	1.002	0.799	/
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	0.850	0.637	100.00	1.000	24.04	24.50	1.112	0.708	/
	Back	512	1850.2	-3.270	0.815	100.00	1.000	24.04	24.50	1.112	0.906	/
	Right	512	1850.2	-1.660	0.379	100.00	1.000	24.04	24.50	1.112	0.421	/
	Bottom	512	1850.2	-3.430	1.118	100.00	1.000	24.04	24.50	1.112	1.243	4#
	Bottom	661	1880.0	2.110	0.975	100.00	1.000	23.57	24.00	1.104	1.076	/
	Bottom	810	1909.8	-4.250	0.874	100.00	1.000	23.41	23.50	1.021	0.892	/
	Bottom(Repeated)	512	1850.2	-1.650	1.097	100.00	1.000	24.04	24.50	1.112	1.220	/

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.
WCDMA Band 2 (RMC*)	Left Cheek	9262	1852.4	3.240	0.268	100.00	1.000	21.73	22.00	1.064	0.285	/
	Left Tilt	9262	1852.4	-4.880	0.203	100.00	1.000	21.73	22.00	1.064	0.216	/
	Right Cheek	9262	1852.4	-4.430	0.309	100.00	1.000	21.73	22.00	1.064	0.329	5#
	Right Tilt	9262	1852.4	1.720	0.247	100.00	1.000	21.73	22.00	1.064	0.263	/
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.
WCDMA Band 2 (RMC*)	Front	9262	1852.4	1.330	0.408	100.00	1.000	21.73	22.00	1.064	0.434	/
	Back	9262	1852.4	-0.960	0.556	100.00	1.000	21.73	22.00	1.064	0.592	/

	Right	9262	1852.4	3.200	0.243	100.00	1.000	21.73	22.00	1.064	0.259	/
	Bottom	9262	1852.4	-4.940	0.747	100.00	1.000	21.73	22.00	1.064	0.795	6#

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.
WCDMA Band 4 (RMC*)	Left Cheek	1513	1752.6	2.590	0.192	100.00	1.000	22.18	22.50	1.076	0.207	/
	Left Tilt	1513	1752.6	-0.880	0.148	100.00	1.000	22.18	22.50	1.076	0.159	/
	Right Cheek	1513	1752.6	-3.560	0.246	100.00	1.000	22.18	22.50	1.076	0.265	7#
	Right Tilt	1513	1752.6	4.040	0.170	100.00	1.000	22.18	22.50	1.076	0.183	/
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.
WCDMA Band 4 (RMC*)	Front	1513	1752.6	-0.810	0.224	100.00	1.000	22.18	22.50	1.076	0.241	/
	Back	1513	1752.6	1.420	0.259	100.00	1.000	22.18	22.50	1.076	0.279	/
	Right	1513	1752.6	-3.750	0.167	100.00	1.000	22.18	22.50	1.076	0.180	/
	Bottom	1513	1752.6	1.650	0.423	100.00	1.000	22.18	22.50	1.076	0.455	8#

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.
WCDMA Band 5 (RMC*)	Left Cheek	4183	836.6	3.730	0.278	100.00	1.000	22.05	22.50	1.109	0.308	/
	Left Tilt	4183	836.6	-4.210	0.186	100.00	1.000	22.05	22.50	1.109	0.206	/
	Right Cheek	4183	836.6	0.210	0.320	100.00	1.000	22.05	22.50	1.109	0.355	9#
	Right Tilt	4183	836.6	1.310	0.214	100.00	1.000	22.05	22.50	1.109	0.237	/
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.
WCDMA Band 5 (RMC*)	Front	4183	836.6	2.630	0.317	100.00	1.000	22.05	22.50	1.109	0.352	/
	Back	4183	836.6	-1.560	0.470	100.00	1.000	22.05	22.50	1.109	0.521	10#
	Right	4183	836.6	-0.450	0.174	100.00	1.000	22.05	22.50	1.109	0.193	/
	Bottom	4183	836.6	-3.150	0.230	100.00	1.000	22.05	22.50	1.109	0.255	/

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	18700	1860.0	1.430	0.322	100.00	1.000	22.76	23.00	1.057	0.340	/
		Left Tilt	18700	1860.0	-0.540	0.269	100.00	1.000	22.76	23.00	1.057	0.284	/
		Right Cheek	18700	1860.0	-4.170	0.376	100.00	1.000	22.76	23.00	1.057	0.397	11#
		Right Tilt	18700	1860.0	2.990	0.291	100.00	1.000	22.76	23.00	1.057	0.308	/
	50%RB	Left Cheek	18700	1860.0	-0.470	0.298	100.00	1.000	21.62	22.00	1.091	0.325	/
		Left Tilt	18700	1860.0	3.240	0.225	100.00	1.000	21.62	22.00	1.091	0.245	/
		Right Cheek	18700	1860.0	-0.070	0.342	100.00	1.000	21.62	22.00	1.091	0.373	/
		Right Tilt	18700	1860.0	2.500	0.271	100.00	1.000	21.62	22.00	1.091	0.296	/
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	18700	1860.0	4.450	0.652	100.00	1.000	22.76	23.00	1.057	0.689	/
		Back	18700	1860.0	-0.260	0.729	100.00	1.000	22.76	23.00	1.057	0.771	/
		Right	18700	1860.0	-3.740	0.397	100.00	1.000	22.76	23.00	1.057	0.420	/
		Bottom	18700	1860.0	-3.310	1.042	100.00	1.000	22.76	23.00	1.057	1.101	12#
		Bottom	18900	1880.0	2.620	0.725	100.00	1.000	22.44	22.50	1.014	0.735	/
		Bottom	19100	1900.0	0.660	0.796	100.00	1.000	22.49	22.50	1.002	0.798	/
		Bottom(Repeated)	18700	1860.0	-4.090	0.993	100.00	1.000	22.76	23.00	1.057	1.050	/
	50%RB	Front	18700	1860.0	1.410	0.582	100.00	1.000	21.62	22.00	1.091	0.635	/
		Back	18700	1860.0	-0.980	0.635	100.00	1.000	21.62	22.00	1.091	0.693	/
		Right	18700	1860.0	-2.770	0.311	100.00	1.000	21.62	22.00	1.091	0.339	/
		Bottom	18700	1860.0	-0.500	0.904	100.00	1.000	21.62	22.00	1.091	0.986	/

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	20175	1732.5	3.540	0.218	100.00	1.000	22.95	23.00	1.012	0.221	/	
		Left Tilt	20175	1732.5	-0.370	0.176	100.00	1.000	22.95	23.00	1.012	0.178	/	
		Right Cheek	20175	1732.5	-2.690	0.257	100.00	1.000	22.95	23.00	1.012	0.260	13#	
		Right Tilt	20175	1732.5	-1.430	0.195	100.00	1.000	22.95	23.00	1.012	0.197	/	
	50%RB	Left Cheek	20175	1732.5	0.860	0.189	100.00	1.000	21.91	22.00	1.021	0.193	/	
		Left Tilt	20175	1732.5	-1.040	0.123	100.00	1.000	21.91	22.00	1.021	0.126	/	
		Right Cheek	20175	1732.5	2.550	0.217	100.00	1.000	21.91	22.00	1.021	0.222	/	
		Right Tilt	20175	1732.5	-4.360	0.162	100.00	1.000	21.91	22.00	1.021	0.165	/	
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	20175	1732.5	0.540	0.382	100.00	1.000	22.95	23.00	1.012	0.387	/	
		Back	20175	1732.5	2.530	0.411	100.00	1.000	22.95	23.00	1.012	0.416	/	
		Right	20175	1732.5	-1.910	0.294	100.00	1.000	22.95	23.00	1.012	0.298	/	
		Bottom	20175	1732.5	4.690	0.515	100.00	1.000	22.95	23.00	1.012	0.521	14#	
	50%RB	Front	20175	1732.5	2.370	0.285	100.00	1.000	21.91	22.00	1.021	0.291	/	
		Back	20175	1732.5	-3.860	0.336	100.00	1.000	21.91	22.00	1.021	0.343	/	
		Right	20175	1732.5	2.210	0.203	100.00	1.000	21.91	22.00	1.021	0.207	/	
		Bottom	20175	1732.5	-4.220	0.475	100.00	1.000	21.91	22.00	1.021	0.485	/	
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	20525	836.5	-2.730	0.322	100.00	1.000	22.16	22.50	1.081	0.348	/	
		Left Tilt	20525	836.5	1.330	0.265	100.00	1.000	22.16	22.50	1.081	0.286	/	
		Right Cheek	20525	836.5	4.390	0.345	100.00	1.000	22.16	22.50	1.081	0.373	15#	
		Right Tilt	20525	836.5	2.910	0.296	100.00	1.000	22.16	22.50	1.081	0.320	/	
	50%RB	Left Cheek	20525	836.5	-0.410	0.289	100.00	1.000	21.15	21.50	1.084	0.313	/	
		Left Tilt	20525	836.5	2.860	0.231	100.00	1.000	21.15	21.50	1.084	0.250	/	
		Right Cheek	20525	836.5	0.950	0.308	100.00	1.000	21.15	21.50	1.084	0.334	/	
		Right Tilt	20525	836.5	-2.320	0.264	100.00	1.000	21.15	21.50	1.084	0.286	/	
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	20525	836.5	2.680	0.396	100.00	1.000	22.16	22.50	1.081	0.428	/	
		Back	20525	836.5	4.910	0.534	100.00	1.000	22.16	22.50	1.081	0.577	16#	
		Right	20525	836.5	-4.540	0.142	100.00	1.000	22.16	22.50	1.081	0.154	/	
		Bottom	20525	836.5	2.660	0.277	100.00	1.000	22.16	22.50	1.081	0.299	/	
	50%RB	Front	20525	836.5	-0.790	0.304	100.00	1.000	21.15	21.50	1.084	0.330	/	
		Back	20525	836.5	3.830	0.428	100.00	1.000	21.15	21.50	1.084	0.464	/	
		Right	20525	836.5	-1.610	0.101	100.00	1.000	21.15	21.50	1.084	0.109	/	
		Bottom	20525	836.5	-2.740	0.216	100.00	1.000	21.15	21.50	1.084	0.234	/	
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 12 (BW: 10MHz)	1RB	Left Cheek	23130	711.0	1.770	0.124	100.00	1.000	21.91	22.00	1.021	0.127	/	
		Left Tilt	23130	711.0	-0.260	0.080	100.00	1.000	21.91	22.00	1.021	0.082	/	
		Right Cheek	23130	711.0	4.420	0.165	100.00	1.000	21.91	22.00	1.021	0.168	17#	
		Right Tilt	23130	711.0	2.890	0.092	100.00	1.000	21.91	22.00	1.021	0.094	/	
	50%RB	Left Cheek	23130	711.0	2.360	0.102	100.00	1.000	21.20	21.50	1.072	0.109	/	
		Left Tilt	23130	711.0	-1.930	0.058	100.00	1.000	21.20	21.50	1.072	0.062	/	
		Right Cheek	23130	711.0	4.550	0.150	100.00	1.000	21.20	21.50	1.072	0.161	/	
		Right Tilt	23130	711.0	-1.820	0.074	100.00	1.000	21.20	21.50	1.072	0.079	/	
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 12 (BW: 10MHz)	1RB	Front	23130	711.0	1.480	0.207	100.00	1.000	21.91	22.00	1.021	0.211	/	
		Back	23130	711.0	-0.550	0.250	100.00	1.000	21.91	22.00	1.021	0.255	18#	

		Right	23130	711.0	-3.350	0.113	100.00	1.000	21.91	22.00	1.021	0.115	/
		Bottom	23130	711.0	2.910	0.172	100.00	1.000	21.91	22.00	1.021	0.176	/
	50%RB	Front	23130	711.0	-2.440	0.180	100.00	1.000	21.20	21.50	1.072	0.193	/
		Back	23130	711.0	4.860	0.212	100.00	1.000	21.20	21.50	1.072	0.227	/
		Right	23130	711.0	0.350	0.098	100.00	1.000	21.20	21.50	1.072	0.105	/
		Bottom	23130	711.0	-1.020	0.139	100.00	1.000	21.20	21.50	1.072	0.149	/

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 13 (BW: 10MHz)	1RB	Left Cheek	23230	782.0	3.090	0.237	100.00	1.000	21.72	22.00	1.067	0.253	/
		Left Tilt	23230	782.0	-4.210	0.188	100.00	1.000	21.72	22.00	1.067	0.201	/
		Right Cheek	23230	782.0	-2.740	0.262	100.00	1.000	21.72	22.00	1.067	0.280	19#
		Right Tilt	23230	782.0	3.250	0.202	100.00	1.000	21.72	22.00	1.067	0.216	/
	50%RB	Left Cheek	23230	782.0	1.990	0.204	100.00	1.000	20.78	21.00	1.052	0.215	/
		Left Tilt	23230	782.0	-2.180	0.159	100.00	1.000	20.78	21.00	1.052	0.167	/
		Right Cheek	23230	782.0	0.790	0.229	100.00	1.000	20.78	21.00	1.052	0.241	/
		Right Tilt	23230	782.0	-2.100	0.181	100.00	1.000	20.78	21.00	1.052	0.190	/

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 13 (BW: 10MHz)	1RB	Front	23230	782.0	1.940	0.291	100.00	1.000	21.72	22.00	1.067	0.310	/
		Back	23230	782.0	-3.210	0.359	100.00	1.000	21.72	22.00	1.067	0.383	20#
		Right	23230	782.0	2.050	0.178	100.00	1.000	21.72	22.00	1.067	0.190	/
		Bottom	23230	782.0	-4.200	0.262	100.00	1.000	21.72	22.00	1.067	0.280	/
	50%RB	Front	23230	782.0	3.690	0.258	100.00	1.000	20.78	21.00	1.052	0.271	/
		Back	23230	782.0	2.170	0.310	100.00	1.000	20.78	21.00	1.052	0.326	/
		Right	23230	782.0	-3.220	0.136	100.00	1.000	20.78	21.00	1.052	0.143	/
		Bottom	23230	782.0	0.630	0.215	100.00	1.000	20.78	21.00	1.052	0.226	/

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 17 (BW: 10MHz)	1RB	Left Cheek	23790	710.0	-1.220	0.161	100.00	1.000	22.09	22.50	1.099	0.177	/
		Left Tilt	23790	710.0	4.530	0.117	100.00	1.000	22.09	22.50	1.099	0.129	/
		Right Cheek	23790	710.0	-4.450	0.192	100.00	1.000	22.09	22.50	1.099	0.211	21#
		Right Tilt	23790	710.0	0.310	0.148	100.00	1.000	22.09	22.50	1.099	0.163	/
	50%RB	Left Cheek	23790	710.0	2.710	0.142	100.00	1.000	21.02	21.50	1.117	0.159	/
		Left Tilt	23790	710.0	-0.900	0.097	100.00	1.000	21.02	21.50	1.117	0.108	/
		Right Cheek	23790	710.0	3.820	0.173	100.00	1.000	21.02	21.50	1.117	0.193	/
		Right Tilt	23790	710.0	-3.970	0.118	100.00	1.000	21.02	21.50	1.117	0.132	/

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 17 (BW: 10MHz)	1RB	Front	23790	710.0	2.410	0.235	100.00	1.000	22.09	22.50	1.099	0.258	/
		Back	23790	710.0	0.030	0.274	100.00	1.000	22.09	22.50	1.099	0.301	22#
		Right	23790	710.0	-0.750	0.110	100.00	1.000	22.09	22.50	1.099	0.121	/
		Bottom	23790	710.0	3.340	0.193	100.00	1.000	22.09	22.50	1.099	0.212	/
	50%RB	Front	23790	710.0	-2.720	0.182	100.00	1.000	21.02	21.50	1.117	0.203	/
		Back	23790	710.0	-3.550	0.231	100.00	1.000	21.02	21.50	1.117	0.258	/
		Right	23790	710.0	2.300	0.098	100.00	1.000	21.02	21.50	1.117	0.109	/
		Bottom	23790	710.0	4.470	0.139	100.00	1.000	21.02	21.50	1.117	0.155	/

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 25 (BW: 20MHz)	1RB	Left Cheek	26140	1860.0	-3.940	0.275	100.00	1.000	22.72	23.00	1.067	0.293	/
		Left Tilt	26140	1860.0	0.580	0.219	100.00	1.000	22.72	23.00	1.067	0.234	/
		Right Cheek	26140	1860.0	-1.060	0.314	100.00	1.000	22.72	23.00	1.067	0.335	23#
		Right Tilt	26140	1860.0	-2.780	0.251	100.00	1.000	22.72	23.00	1.067	0.268	/
	50%RB	Left Cheek	26140	1860.0	3.260	0.247	100.00	1.000	21.67	22.00	1.079	0.267	/

		Left Tilt	26140	1860.0	1.910	0.189	100.00	1.000	21.67	22.00	1.079	0.204	/
		Right Cheek	26140	1860.0	-3.420	0.282	100.00	1.000	21.67	22.00	1.079	0.304	/
		Right Tilt	26140	1860.0	0.360	0.213	100.00	1.000	21.67	22.00	1.079	0.230	/
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 25 (BW: 20MHz)	1RB	Front	26140	1860.0	4.810	0.576	100.00	1.000	22.72	23.00	1.067	0.615	/
		Back	26140	1860.0	-3.720	0.706	100.00	1.000	22.72	23.00	1.067	0.753	/
		Right	26140	1860.0	2.560	0.323	100.00	1.000	22.72	23.00	1.067	0.345	/
		Bottom	26140	1860.0	3.500	0.953	100.00	1.000	22.72	23.00	1.067	1.017	24#
		Bottom	26365	1882.5	1.660	0.885	100.00	1.000	22.43	22.50	1.016	0.899	/
		Bottom	26590	1905.0	-3.190	0.906	100.00	1.000	22.55	23.00	1.109	1.005	/
		Bottom(Repeated)	26140	1860.0	-0.870	0.928	100.00	1.000	22.72	23.00	1.067	0.990	/
	50%RB	Front	26140	1860.0	1.790	0.483	100.00	1.000	21.67	22.00	1.079	0.521	/
		Back	26140	1860.0	-0.310	0.601	100.00	1.000	21.67	22.00	1.079	0.648	/
		Right	26140	1860.0	2.630	0.287	100.00	1.000	21.67	22.00	1.079	0.310	/
		Bottom	26140	1860.0	-4.800	0.825	100.00	1.000	21.67	22.00	1.079	0.890	/

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 66 (BW: 20MHz)	1RB	Left Cheek	132322	1745.0	0.990	0.302	100.00	1.000	22.89	23.00	1.026	0.310	/
		Left Tilt	132322	1745.0	-1.410	0.235	100.00	1.000	22.89	23.00	1.026	0.241	/
		Right Cheek	132322	1745.0	1.560	0.331	100.00	1.000	22.89	23.00	1.026	0.340	25#
		Right Tilt	132322	1745.0	2.790	0.276	100.00	1.000	22.89	23.00	1.026	0.283	/
	50%RB	Left Cheek	132322	1745.0	-0.520	0.289	100.00	1.000	21.77	22.00	1.054	0.305	/
		Left Tilt	132322	1745.0	3.470	0.207	100.00	1.000	21.77	22.00	1.054	0.218	/
		Right Cheek	132322	1745.0	2.830	0.315	100.00	1.000	21.77	22.00	1.054	0.332	/
		Right Tilt	132322	1745.0	-3.440	0.248	100.00	1.000	21.77	22.00	1.054	0.261	/

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 66 (BW: 20MHz)	1RB	Front	132322	1745.0	1.500	0.064	100.00	1.000	22.89	23.00	1.026	0.066	/
		Back	132322	1745.0	2.980	0.071	100.00	1.000	22.89	23.00	1.026	0.073	/
		Right	132322	1745.0	-1.130	0.050	100.00	1.000	22.89	23.00	1.026	0.051	/
		Bottom	132572	1770.0	2.250	0.088	100.00	1.000	22.89	23.00	1.026	0.090	26#
	50%RB	Front	132322	1745.0	2.740	0.053	100.00	1.000	21.77	22.00	1.054	0.056	/
		Back	132322	1745.0	-3.920	0.062	100.00	1.000	21.77	22.00	1.054	0.065	/
		Right	132322	1745.0	4.450	0.039	100.00	1.000	21.77	22.00	1.054	0.041	/
		Bottom	132322	1745.0	-2.080	0.081	100.00	1.000	21.77	22.00	1.054	0.085	/

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 71 (BW: 20MHz)	1RB	Left Cheek	133372	688.0	2.590	0.265	100.00	1.000	21.89	22.00	1.026	0.272	/
		Left Tilt	133372	688.0	-0.420	0.211	100.00	1.000	21.89	22.00	1.026	0.216	/
		Right Cheek	133372	688.0	2.150	0.326	100.00	1.000	21.89	22.00	1.026	0.334	27#
		Right Tilt	133372	688.0	-3.960	0.246	100.00	1.000	21.89	22.00	1.026	0.252	/
	50%RB	Left Cheek	133372	688.0	-1.240	0.235	100.00	1.000	20.93	21.00	1.016	0.239	/
		Left Tilt	133372	688.0	4.600	0.178	100.00	1.000	20.93	21.00	1.016	0.181	/
		Right Cheek	133372	688.0	3.320	0.279	100.00	1.000	20.93	21.00	1.016	0.283	/
		Right Tilt	133372	688.0	-2.040	0.214	100.00	1.000	20.93	21.00	1.016	0.217	/

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 71 (BW: 20MHz)	1RB	Front	133372	688.0	2.860	0.306	100.00	1.000	21.89	22.00	1.026	0.314	/
		Back	133372	688.0	3.690	0.337	100.00	1.000	21.89	22.00	1.026	0.346	28#
		Right	133372	688.0	-0.840	0.198	100.00	1.000	21.89	22.00	1.026	0.203	/
		Bottom	133372	688.0	1.460	0.265	100.00	1.000	21.89	22.00	1.026	0.272	/

	50%RB	Front	133372	688.0	-3.970	0.264	100.00	1.000	20.93	21.00	1.016	0.268	/
		Back	133372	688.0	-2.680	0.309	100.00	1.000	20.93	21.00	1.016	0.314	/
		Right	133372	688.0	1.400	0.169	100.00	1.000	20.93	21.00	1.016	0.172	/
		Bottom	133372	688.0	-3.850	0.228	100.00	1.000	20.93	21.00	1.016	0.232	/

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.
2.4g (2.4~2.4835) 802.11b	Left Cheek	11	2462	-3.340	0.099	100.00	1.000	15.44	15.50	1.014	0.100	/
	Left Tilt	11	2462	0.760	0.075	100.00	1.000	15.44	15.50	1.014	0.076	/
	Right Cheek	11	2462	2.450	0.113	100.00	1.000	15.44	15.50	1.014	0.115	29#
	Right Tilt	11	2462	4.480	0.086	100.00	1.000	15.44	15.50	1.014	0.087	/
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.
2.4g (2.4~2.4835) 802.11b	Front	11	2462	3.350	0.102	100.00	1.000	15.44	15.50	1.014	0.103	/
	Back	11	2462	4.630	0.115	100.00	1.000	15.44	15.50	1.014	0.117	30#
	Right	11	2462	2.520	0.063	100.00	1.000	15.44	15.50	1.014	0.064	/
	Top	11	2462	-3.710	0.088	100.00	1.000	15.44	15.50	1.014	0.089	/
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	39	2441	3.600	0.062	100.00	1.000	7.13	7.50	1.089	0.068	/
	Left Tilt	39	2441	-2.980	0.041	100.00	1.000	7.13	7.50	1.089	0.045	/
	Right Cheek	39	2441	4.060	0.074	100.00	1.000	7.13	7.50	1.089	0.081	31#
	Right Tilt	39	2441	4.210	0.053	100.00	1.000	7.13	7.50	1.089	0.058	/

Note:

- The maximum SAR Value of each test band is marked bold.
- SAR plot is provided only for the highest measured SAR in each exposure configuration, wireless mode and frequency band combination.
- Per KDB 447498 D04 v01, for each exposure position, if the highest output power channel Reported SAR $\leq 0.8W/kg$, other channels SAR testing is not necessary.
- 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.
- 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.
- Per KDB 447498 D04 v01, the report SAR is measured SAR value adjusted for maximum tune-up tolerance. Scaling Factor = $10^{[(\text{tune-up limit power (dBm)} - \text{Ave. power power (dBm)})/10]}$, where tune-up limit is the maximum rated power among all production units.
Reported SAR(W/kg)=Measured SAR (W/kg)*Scaling Factor.

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 $1.118 > 0.80$ W/kg, repeated measurement is as below.

Mode	Position	Ch.	Freq. (MHz)	1g Meas SAR (W/kg)	the ratio of largest to smallest SAR for the original and first repeated measurements
GPRS 1900	Bottom	512	1850.2	1.118	1.019
	Bottom(Repeated)	512	1850.2	1.097	
LTE Band 2	Bottom	18700	1860.0	1.042	1.049
	Bottom(Repeated)	18700	1860.0	0.993	
LTE Band 25	Bottom	26140	1860.0	0.953	1.027
	Bottom(Repeated)	26140	1860.0	0.928	

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 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+WIFI(2.4g)	Yes	Yes
2	WWAN+BT	Yes	Yes

12.2 Sum SAR of Simultaneous Transmission

Head

Band	Test Position	Scaled			Σ SAR (W/kg) WWAN + WIFI 2.4G	Σ SAR (W/kg) WWAN + BT	SPLSR	Remark
		WWAN	WIFI 2.4G	Bluetooth				
GSM 850	Left Cheek	0.346	0.100	0.068	0.446	0.414	N/A	N/A
	Left Tilt	0.286	0.076	0.045	0.362	0.331	N/A	N/A
	Right Cheek	0.406	0.115	0.081	0.521	0.487	N/A	N/A
	Right Tilt	0.316	0.087	0.058	0.403	0.374	N/A	N/A

Hotspot(body-worn)

Band	Test Position	Scaled			Σ SAR (W/kg) WWAN + WIFI 2.4G	Σ SAR (W/kg) WWAN + BT	SPLSR	Remark
		WWAN	WIFI 2.4G	Bluetooth				
GPRS 1900+3slots	Front	0.708	0.103	0.117	0.811	0.825	N/A	N/A
	Back	0.906	0.117	0.117	1.023	1.023	N/A	N/A
	Right	0.421	0.064	0.117	0.485	0.538	N/A	N/A
	Top	/	0.089	0.117	0.089	0.117	N/A	N/A
	Bottom	1.243	/	/	1.243	1.243	N/A	N/A

13. Test Equipment List

Description	Manufacturer	Model	Serial No./Version	Cal. Date	Cal. Due
E-Field Probe	MVG	SSE2	04/22 EPG0365	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
750MHz Validation Dipole	MVG	SID750	07/22 DIP 0G750-655	2023/02/06	2025/02/05
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
LIMESAR Dielectric Probe	MVG	SCLMP	06/22 OCPG88	2024/02/02	2025/02/01
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	/	/	2023/11/16	2024/11/15
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.

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)	ϵ_r		σ (s/m)		Delta (ϵ_r)	Delta (σ)	Limit	Temp (°C)	Date
	Target	Measured	Target	Measured					
750	41.90	41.80	0.89	0.86	-0.24%	-3.37%	±5%	20.0	26/8/2024
835	41.50	41.41	0.90	0.87	-0.22%	-3.33%	±5%	20.0	28/8/2024
1800	40.00	39.91	1.40	1.37	-0.23%	-2.14%	±5%	20.0	30/8/2024
1900	40.00	39.88	1.40	1.41	-0.30%	0.71%	±5%	20.0	3/9/2024
2450	39.20	39.08	1.80	1.81	-0.31%	0.56%	±5%	20.0	5/9/2024

NOTE: The dielectric parameters of the tissue-equivalent liquid should be measured under similar ambient conditions and within 2 °C 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).

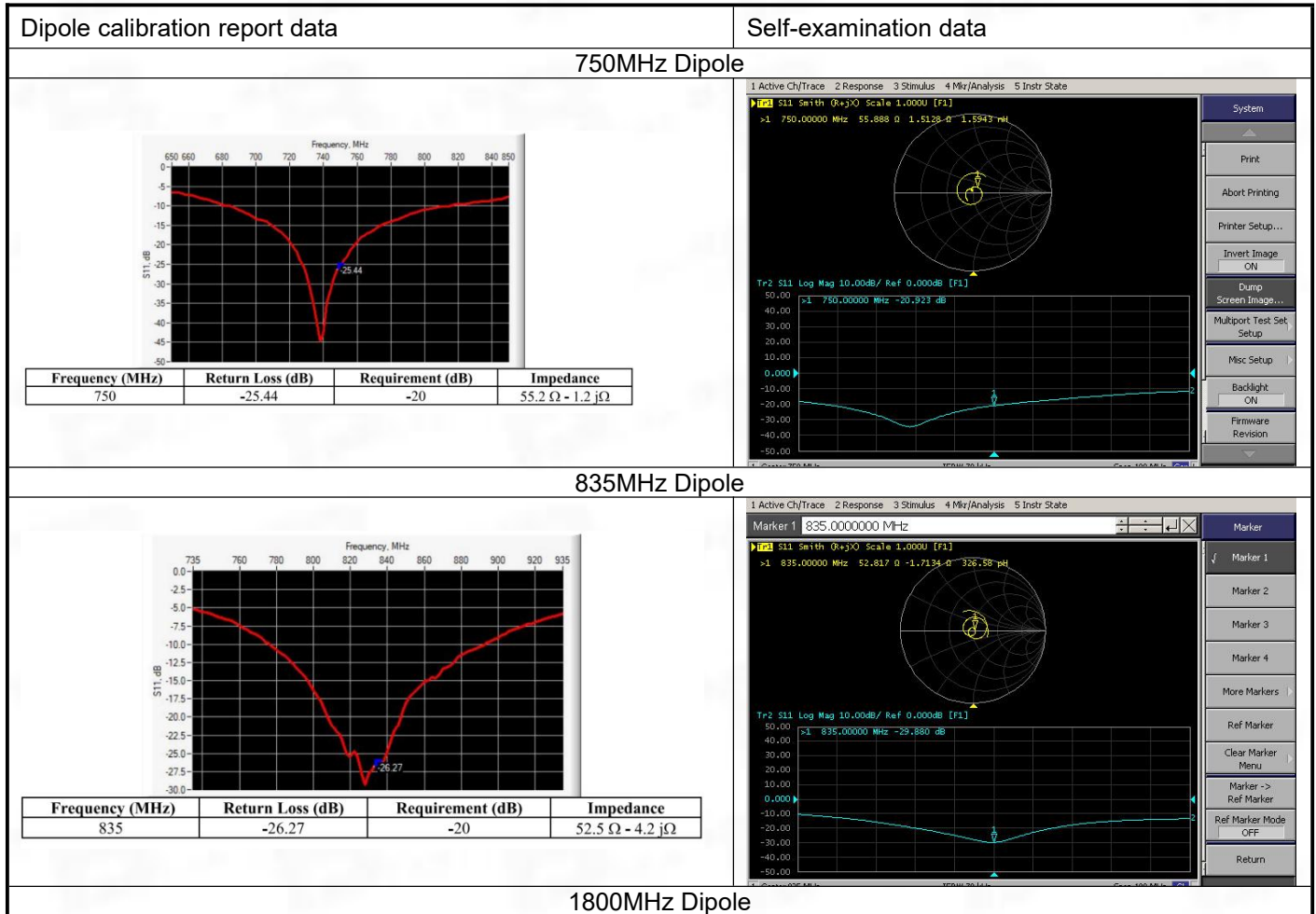
Frequency (MHz)	Input Power (mW)	10g SAR (W/Kg)	1g SAR (W/Kg)	10g SAR 1W input power normalized (W/Kg)	1g SAR 1W input power normalized (W/Kg)	10g SAR Standard target (1W) (W/Kg)	1g SAR Standard target (1W) (W/Kg)	1g SAR Deviation	10g SAR Deviation
750	16	0.092	0.138	5.75	8.63	5.55	8.49	3.60%	1.59%
835	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	54.4	-7.80%	-8.89%

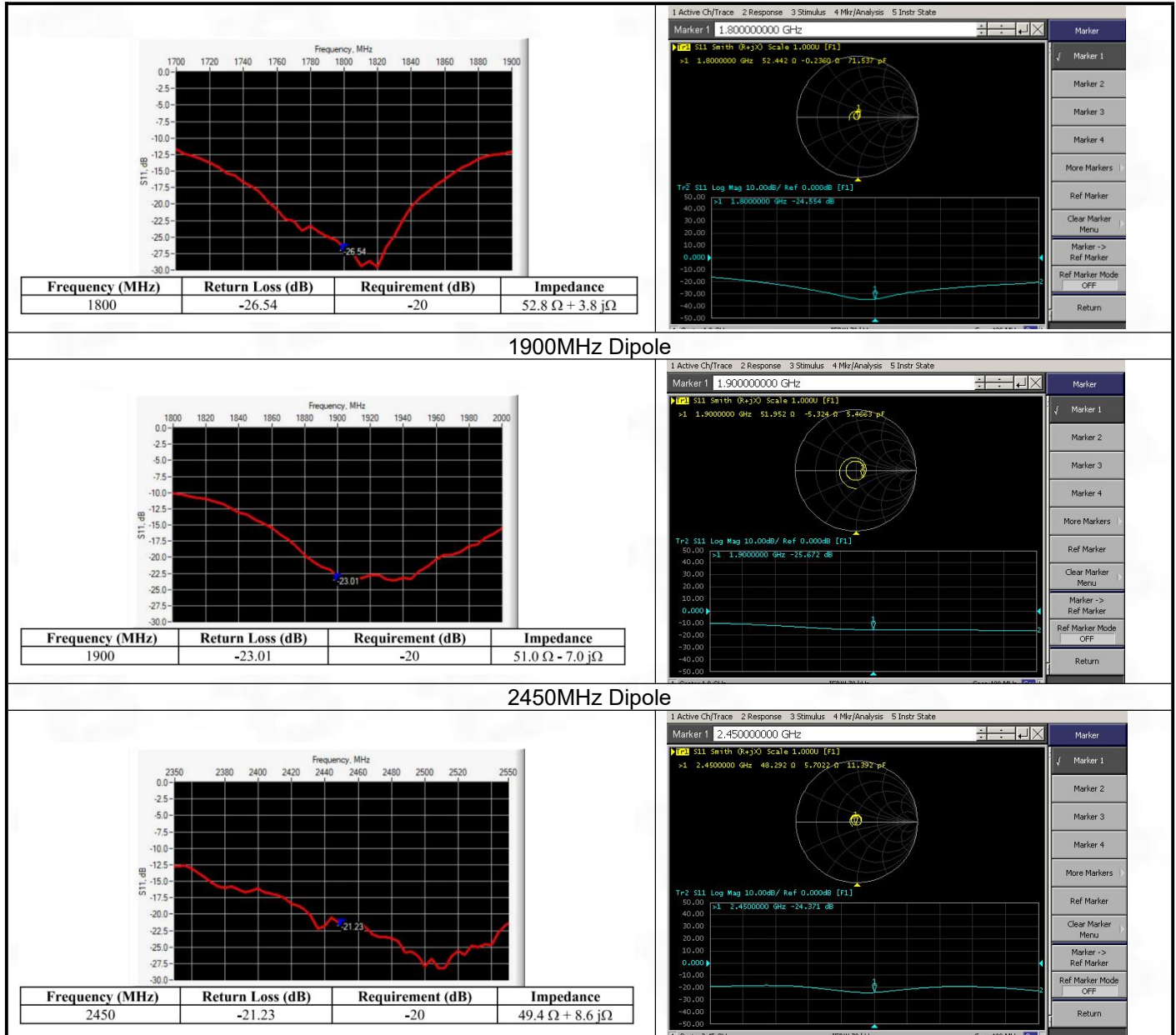
ANNEX C SAR Dipole Calibrations

Justification for Extended SAR Dipole Calibrations

Referring to KDB 865664D01V01r04, if dipoles are verified in return loss ($\leq -20\text{dB}$, within 20% of prior calibration) and in impedance (within 5 ohm of prior calibration), the annual calibration is not necessary and the calibration interval can be extended. While calibration intervals not exceed 3 years.

Frequency (MHz)	Return loss(dB)		Impedance(Ω)				error range (%)		Results	Date of Measure ment
	measurement	target	measurement		target		Return loss(±20%)	Impedance(±5 Ω)	(P/F)	
			real part	imaginary part	real part	imaginary part				
CW750	-20.92	-25.44	55.89	1.5	55.2	-1.2	-17.77%	3.4	P	2/5/2024
CW835	-29.88	-26.27	52.8	-1.7	52.5	-4.2	13.74%	2.8	P	2/5/2024
CW1800	-24.55	-26.54	52.4	-0.2	52.8	+3.8	-7.50%	4.4	P	2/5/2024
CW1900	-25.67	-23.01	51.9	-5.3	51.0	-7.0	11.56%	2.6	P	2/5/2024
CW2450	-24.37	-21.23	48.3	5.7	49.4	+8.6	14.79%	4.0	P	2/5/2024





System Performance Check Data (750 MHz)

System check at 750 MHz

Date of measurement: 26/8/2024

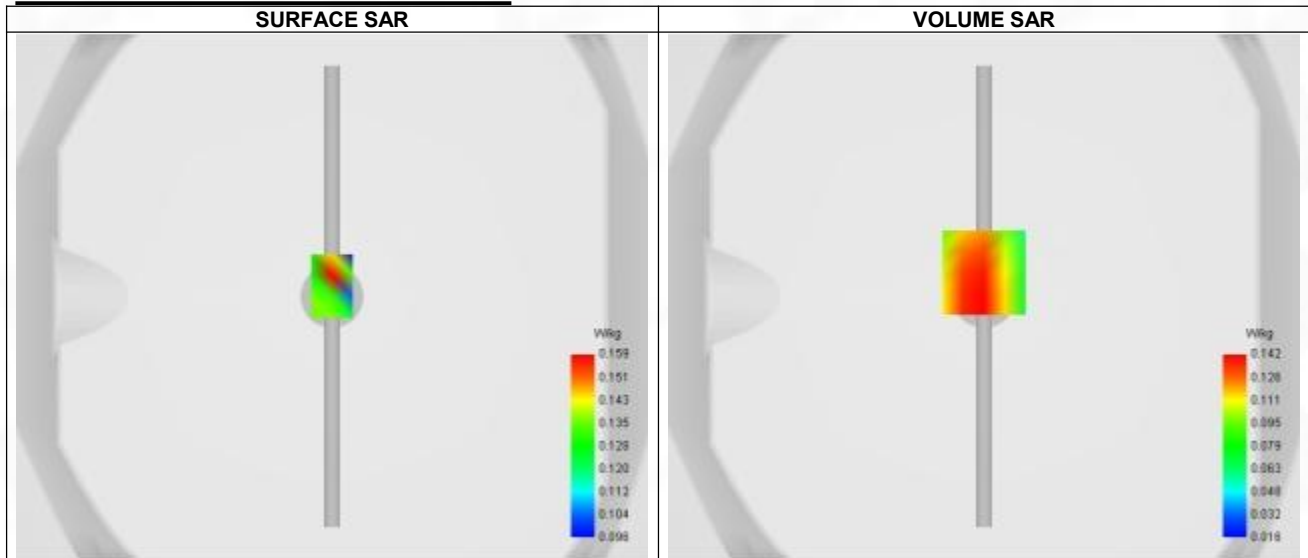
A. Experimental conditions.

Probe	SN 04/22 EPG0365
ConvF	1.65
Area Scan	dx=8mm dy=8mm, Adaptive 1 max
Zoom Scan	5x5x7, dx=8mm dy=8mm dz=5mm, Complete
Phantom	Validation plane
Device Position	Dipole
Band	CW750
Channels	Middle
Signal	CW

B. Permittivity

Frequency (MHz)	750.000
Relative permittivity (real part)	41.800
Relative permittivity (imaginary part)	21.460
Conductivity (S/m)	0.860

C. SAR Surface and Volume



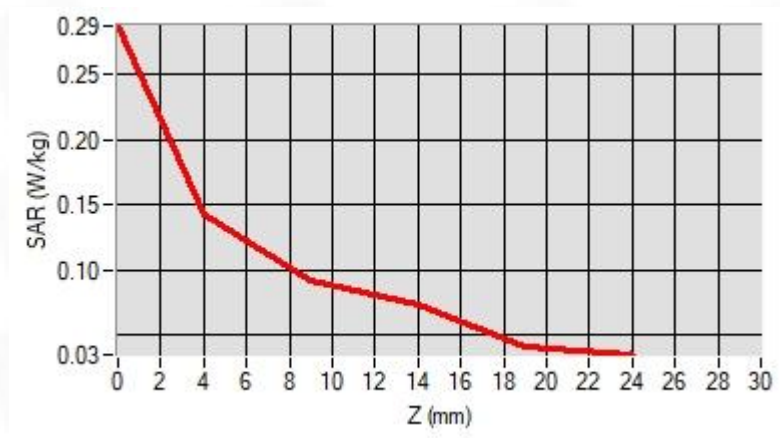
Maximum location: X=0.00, Y=9.00 ; SAR Peak: 0.20 W/kg

D. SAR 1g & 10g

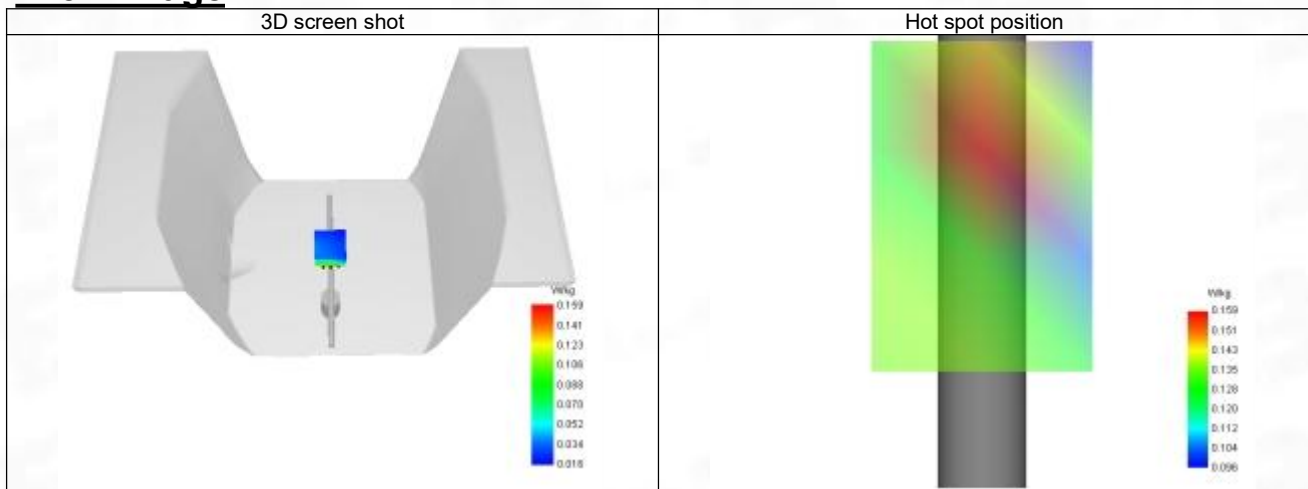
SAR 10g (W/Kg)	0.092
SAR 1g (W/Kg)	0.138
Variation (%)	-2.190
Horizontal validation criteria: minimum distance (mm)	9.285
Vertical validation criteria: SAR ratio M2/M1 (%)	64.79%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.287	0.142	0.092	0.073	0.042



F. 3D Image



System Performance Check Data (835 MHz)

System check at 835 MHz

Date of measurement: 28/8/2024

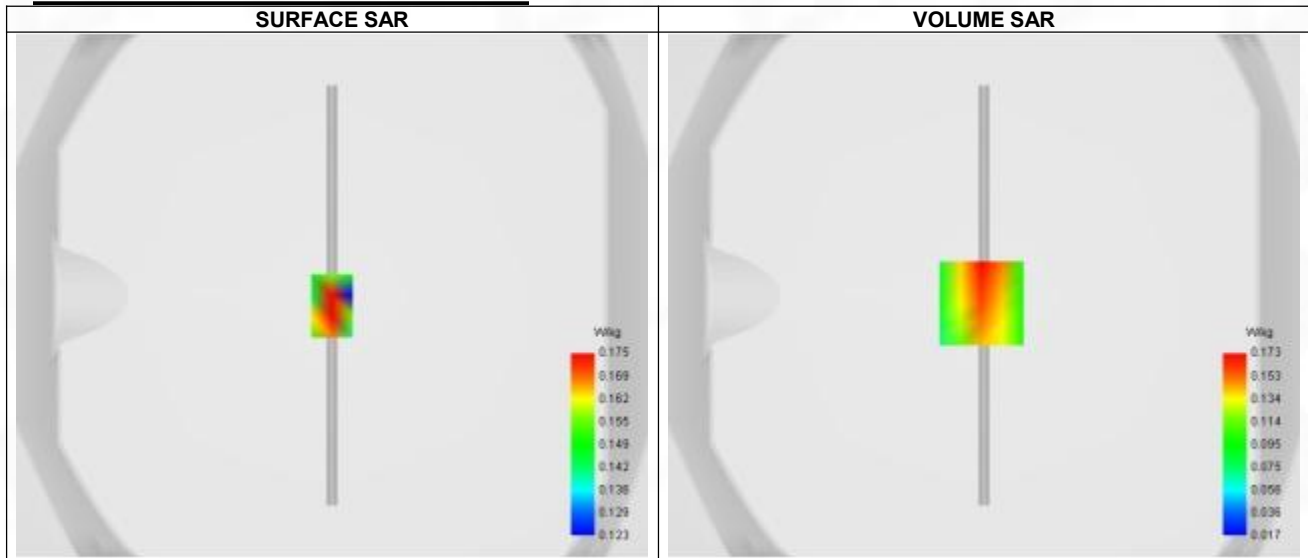
A. Experimental conditions.

Probe	SN 04/22 EPG0365
ConvF	1.68
Area Scan	dx=8mm dy=8mm, Adaptive 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. Permittivity

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

C. SAR Surface and Volume



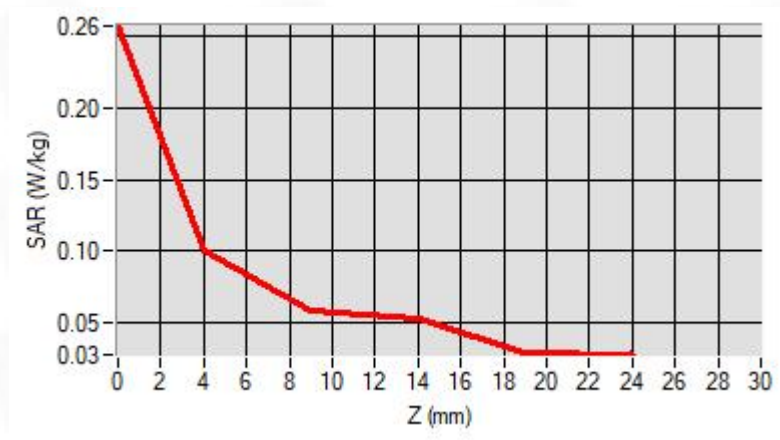
Maximum location: X=-1.00, Y=-3.00 ; SAR Peak: 0.26 W/kg

D. SAR 1g & 10g

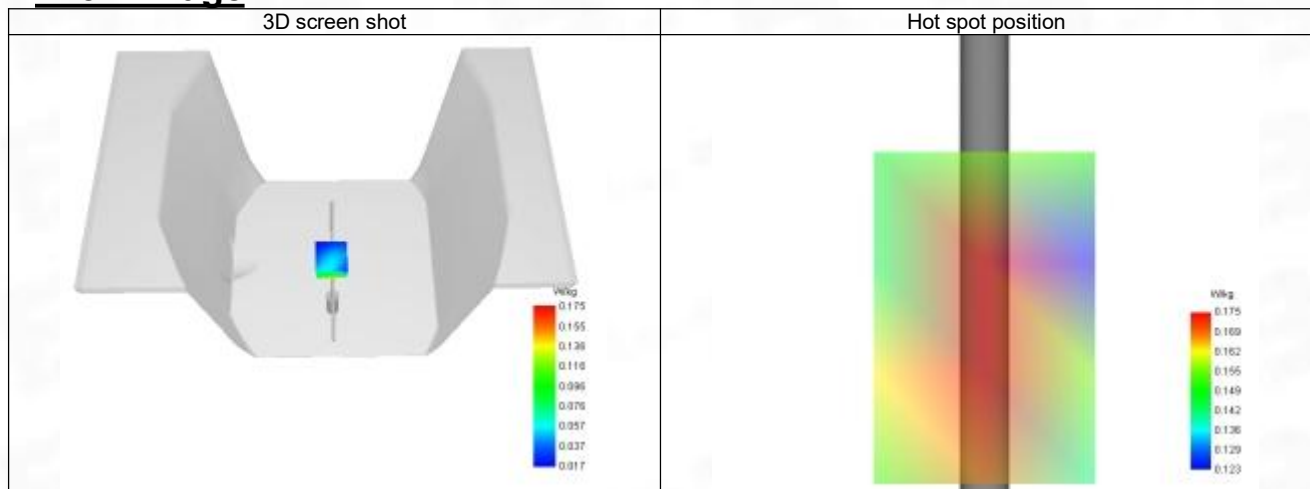
SAR 10g (W/Kg)	0.106
SAR 1g (W/Kg)	0.163
Variation (%)	-3.390
Horizontal validation criteria: minimum distance (mm)	8.487
Vertical validation criteria: SAR ratio M2/M1 (%)	66.47%

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



F. 3D Image



System Performance Check Data (1800 MHz)

System check at 1800 MHz

Date of measurement: 30/8/2024

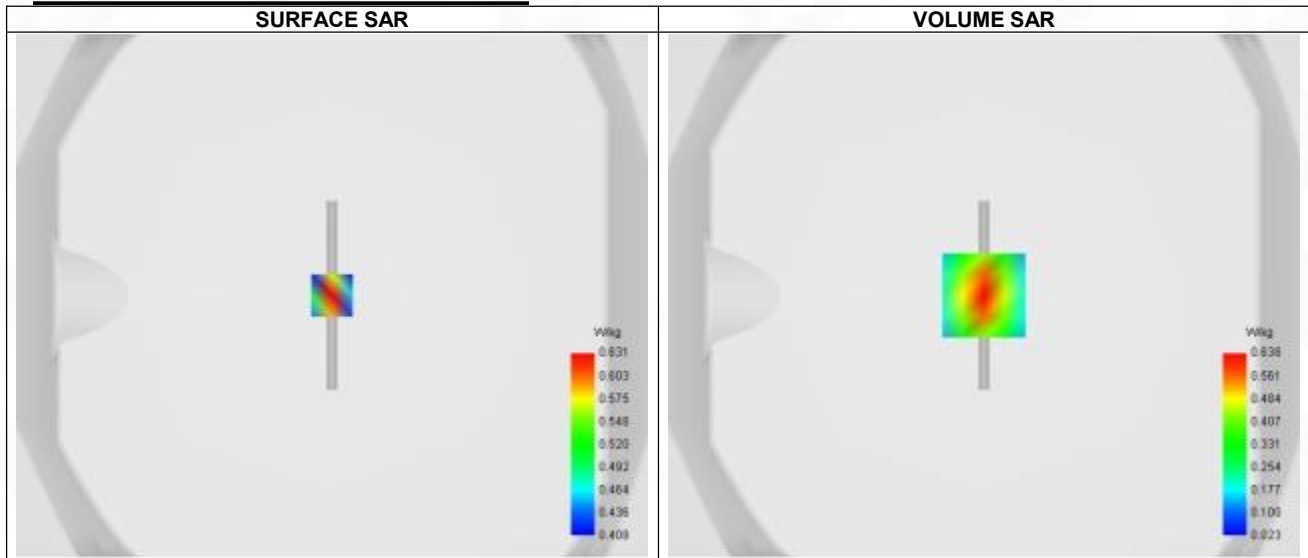
A. Experimental conditions.

Probe	SN 04/22 EPG0365
ConvF	1.96
Area Scan	dx=8mm dy=8mm, Adaptive 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. Permittivity

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

C. SAR Surface and Volume



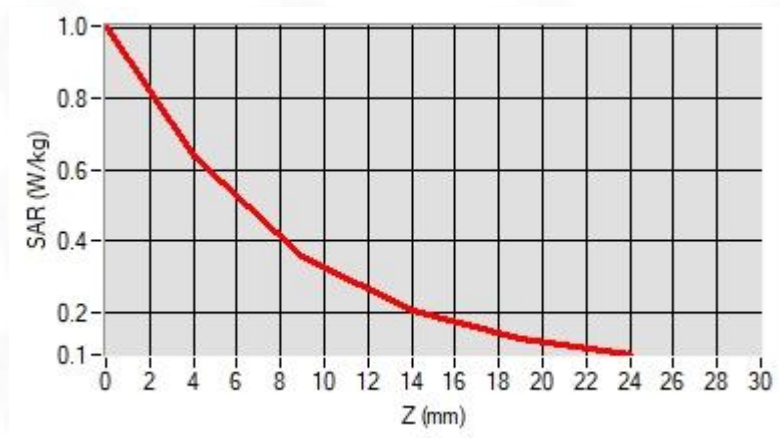
Maximum location: X=0.00, Y=0.00 ; SAR Peak: 1.00 W/kg

D. SAR 1g & 10g

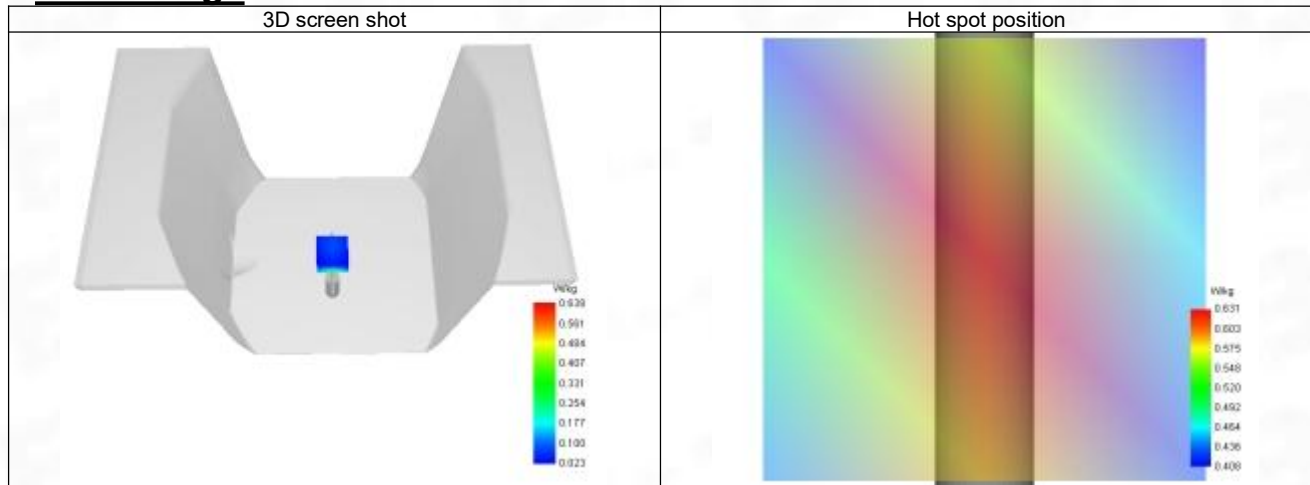
SAR 10g (W/Kg)	0.312
SAR 1g (W/Kg)	0.588
Variation (%)	-0.250
Horizontal validation criteria: minimum distance (mm)	8.698
Vertical validation criteria: SAR ratio M2/M1 (%)	55.80%

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



F. 3D Image



System Performance Check Data (1900 MHz)

System check at 1900 MHz

Date of measurement: 3/9/2024

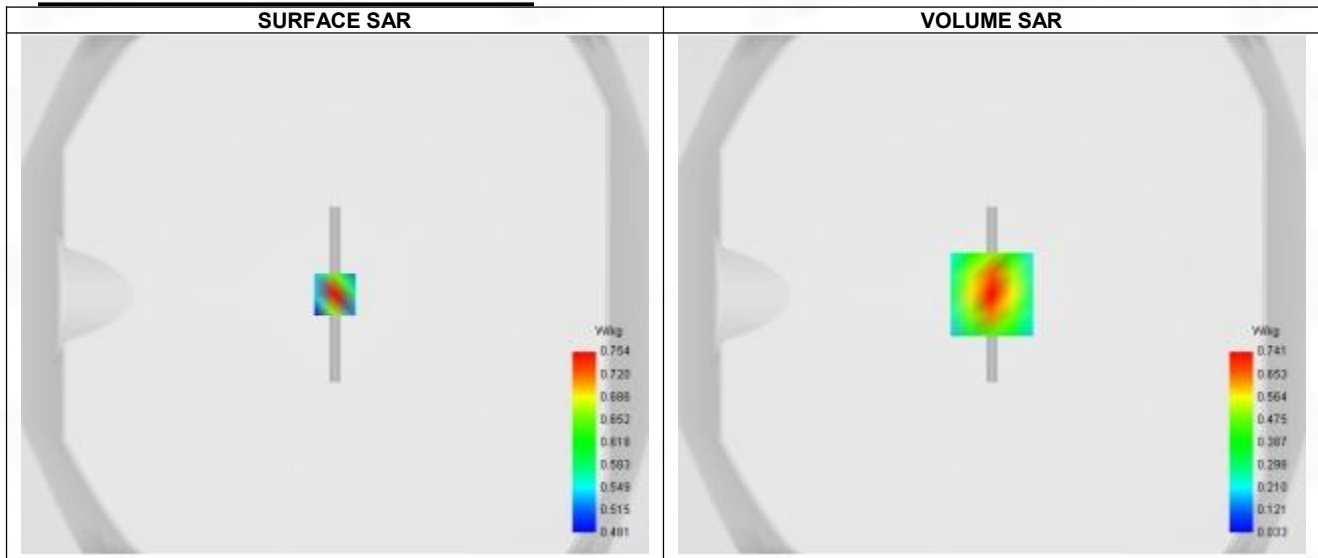
A. Experimental conditions.

Probe	SN 04/22 EPG0365
ConvF	2.24
Area Scan	dx=8mm dy=8mm, Adaptive 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. Permittivity

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

C. SAR Surface and Volume



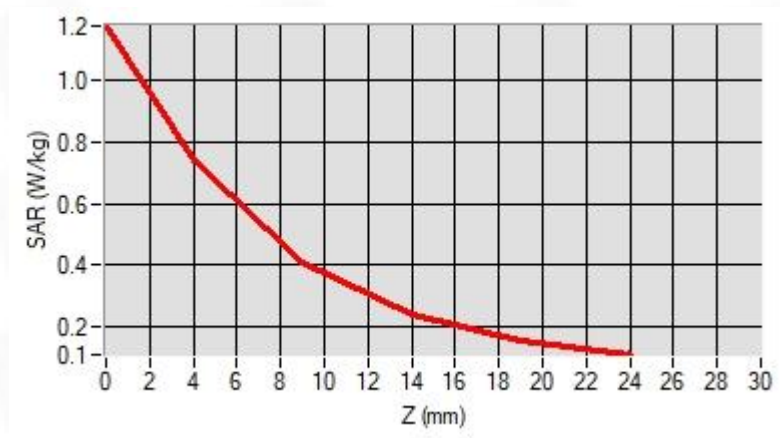
Maximum location: X=0.00, Y=0.00 ; SAR Peak: 1.18 W/kg

D. SAR 1g & 10g

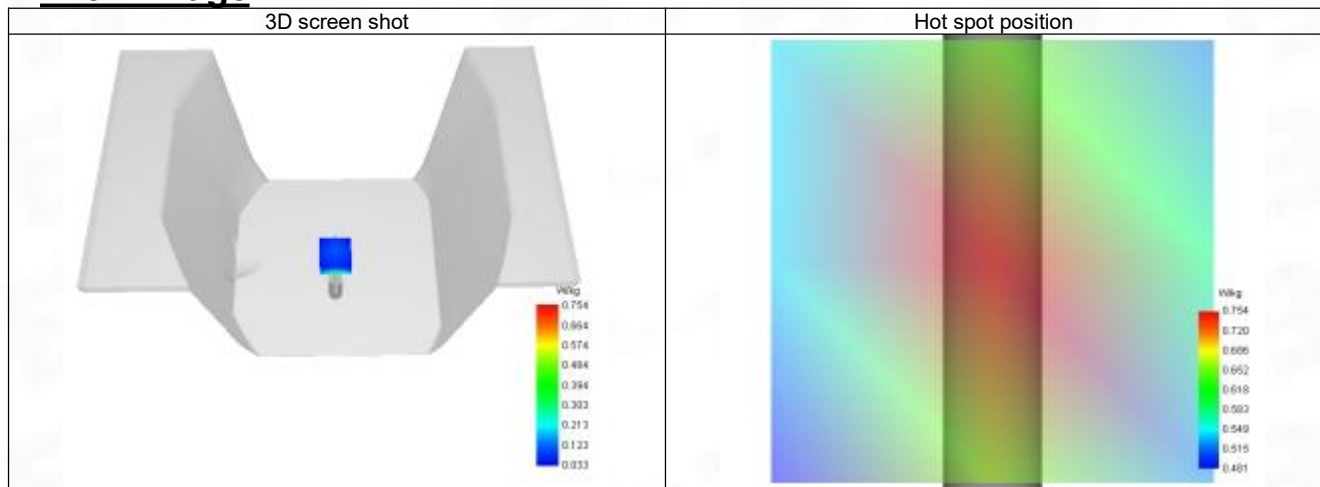
SAR 10g (W/Kg)	0.322
SAR 1g (W/Kg)	0.630
Variation (%)	-2.080
Horizontal validation criteria: minimum distance (mm)	8.699
Vertical validation criteria: SAR ratio M2/M1 (%)	52.96%

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



F. 3D Image



System Performance Check Data (2450 MHz)

System check at 2450 MHz

Date of measurement: 5/9/2024

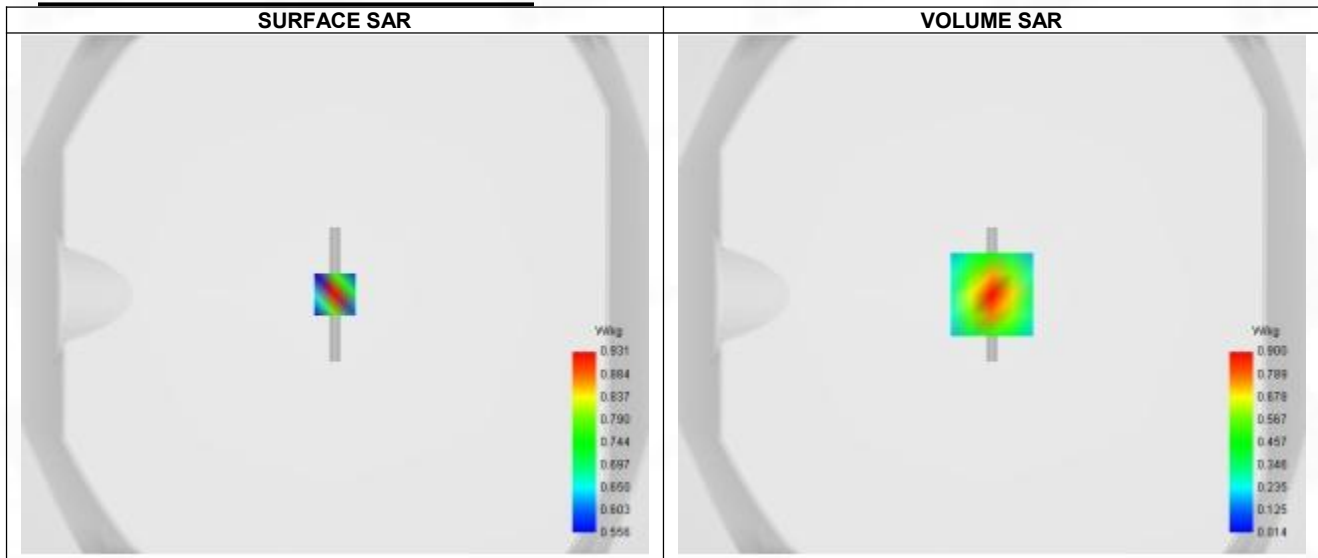
A. Experimental conditions.

Probe	SN 04/22 EPG0365
ConvF	2.36
Area Scan	dx=8mm dy=8mm, Adaptive 1 max
Zoom Scan	5x5x7, dx=8mm dy=8mm dz=5mm, Complete
Phantom	Validation plane
Device Position	Dipole
Band	CW2450
Channels	Middle
Signal	CW

B. Permittivity

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

C. SAR Surface and Volume



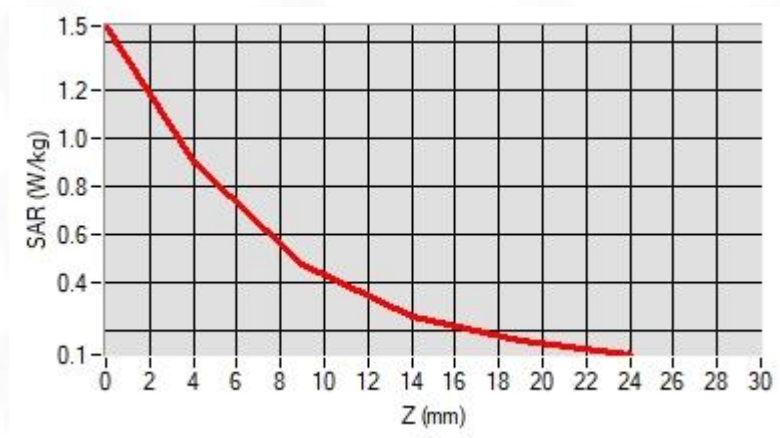
Maximum location: X=0.00, Y=0.00 ; SAR Peak: 1.47 W/kg

D. SAR 1g & 10g

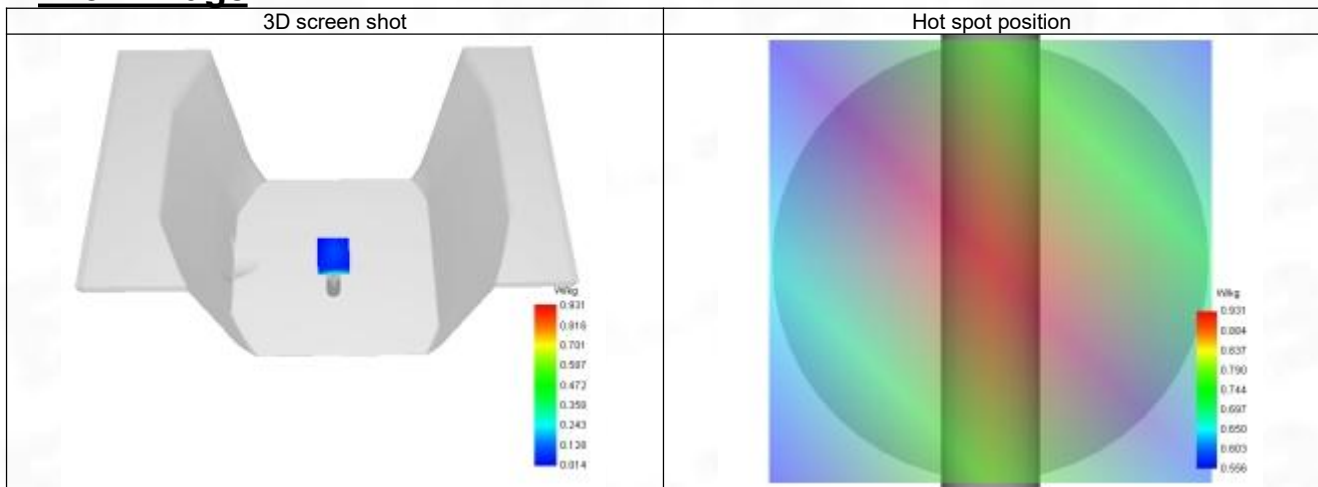
SAR 10g (W/Kg)	0.352
SAR 1g (W/Kg)	0.793
Variation (%)	-2.570
Horizontal validation criteria: minimum distance (mm)	9.787
Vertical validation criteria: SAR ratio M2/M1 (%)	53.00%

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



F. 3D Image



ANNEX D Test Data

1-Head with front position in dist. 0mm on Channel 251 in GSM850 voice

SAR Measurement at GSM850 (Cheek, Right)

Date of measurement: 28/8/2024

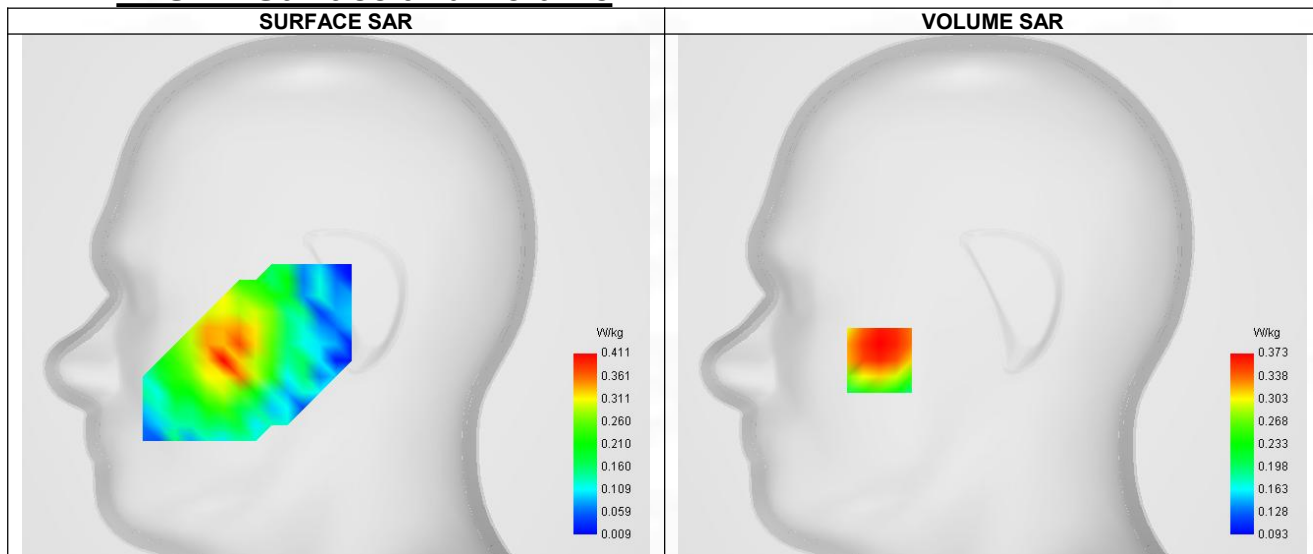
A. Experimental conditions.

Probe	SN 04/22 EPG0365
ConvF	1.68
Area Scan	dx=8mm dy=8mm, Adaptive 1 max
Zoom Scan	5x5x7, dx=8mm dy=8mm dz=5mm, Complete
Phantom	Right head
Device Position	Cheek
Band	GSM850
Channels	Higher (251)
Signal	TDMA (GSM)
Modulation	GMSK

B. Permittivity

Frequency (MHz)	848.800
Relative permittivity (real part)	41.389
Relative permittivity (imaginary part)	19.413
Conductivity (S/m)	0.877

C. SAR Surface and Volume



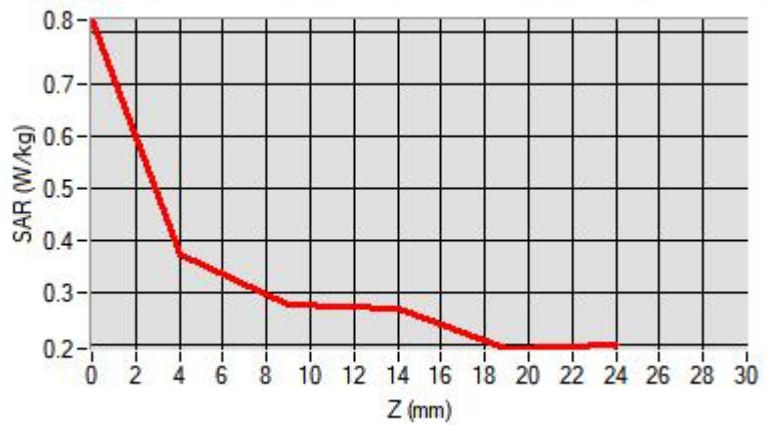
Maximum location: X=-56.00, Y=-32.00 ; SAR Peak: 0.46 W/kg

D. SAR 1g & 10g

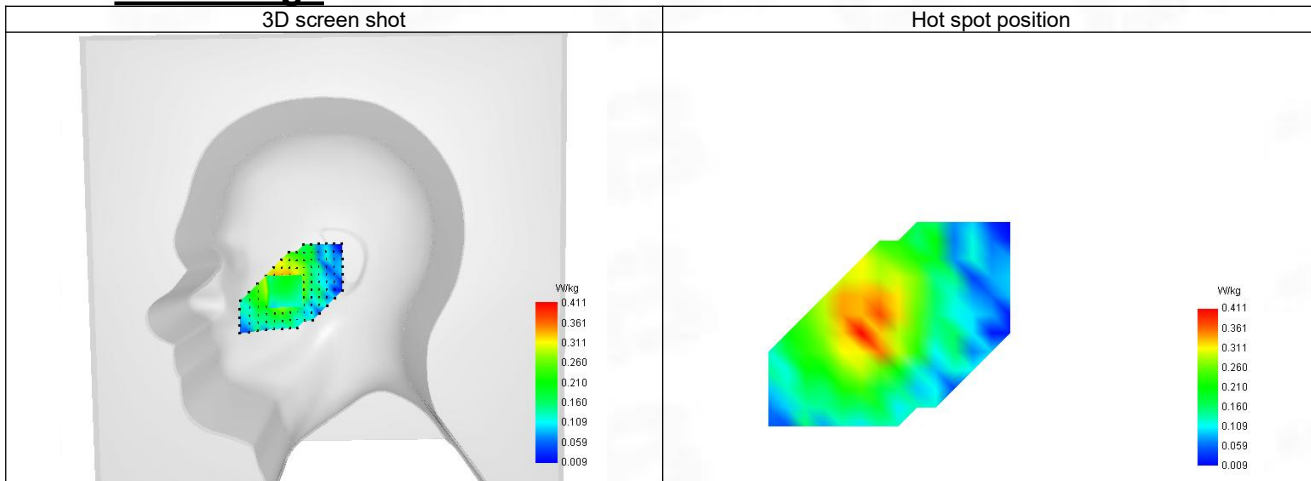
SAR 10g (W/Kg)	0.313
SAR 1g (W/Kg)	0.400
Variation (%)	-1.720
Horizontal validation criteria: minimum distance (mm)	8.268
Vertical validation criteria: SAR ratio M2/M1 (%)	73.99%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.823	0.373	0.276	0.270	0.194



F. 3D Image



2-Body with back position in dist. 10mm on Channel 251 in GPRS850+2slots

SAR Measurement at GPRS850 (Body, Validation Plane)

Date of measurement: 28/8/2024

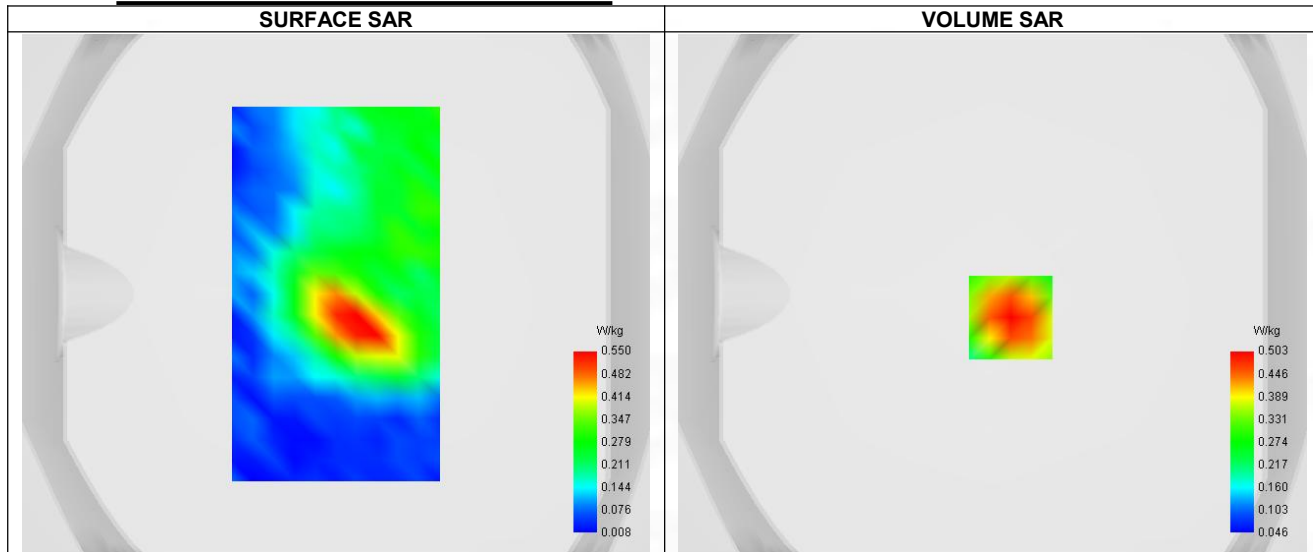
A. Experimental conditions.

Probe	SN 04/22 EPG0365
ConvF	1.68
Area Scan	dx=8mm dy=8mm, Adaptive 1 max
Zoom Scan	5x5x7, dx=8mm dy=8mm dz=5mm, Complete
Phantom	Validation plane
Device Position	Body
Band	GPRS850
Channels	Higher (251)
Signal	TDMA (GPRS)
Modulation	GMSK (CS-1)
TX-slots	2

B. Permittivity

Frequency (MHz)	848.800
Relative permittivity (real part)	41.389
Relative permittivity (imaginary part)	19.413
Conductivity (S/m)	0.877

C. SAR Surface and Volume



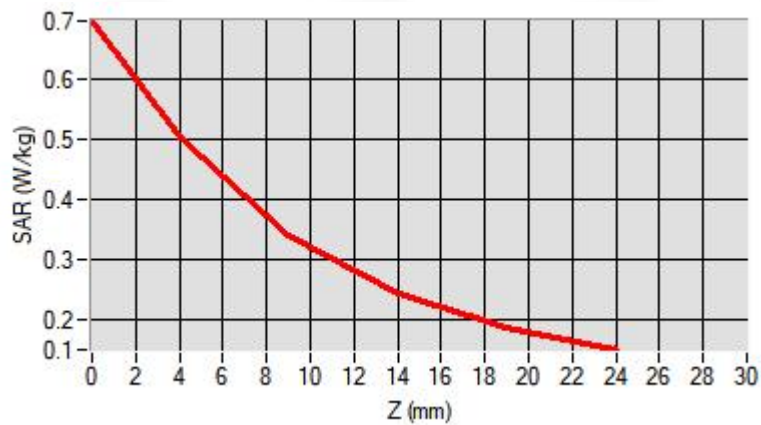
Maximum location: X=7.00, Y=-9.00 ; SAR Peak: 0.70 W/kg

D. SAR 1g & 10g

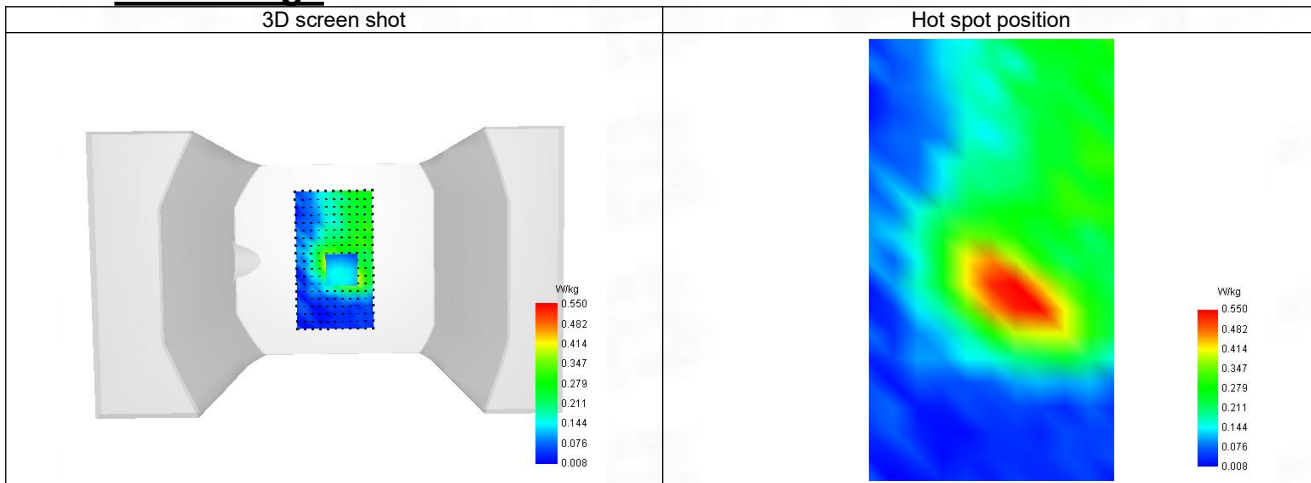
SAR 10g (W/Kg)	0.342
SAR 1g (W/Kg)	0.525
Variation (%)	1.260
Horizontal validation criteria: minimum distance (mm)	8.338
Vertical validation criteria: SAR ratio M2/M1 (%)	67.59%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.697	0.503	0.340	0.242	0.187



F. 3D Image



3-Head with front position in dist. 0mm on Channel 512 in GSM1900 voice

SAR Measurement at GSM1900 (Cheek, Right)

Date of measurement: 30/8/2024

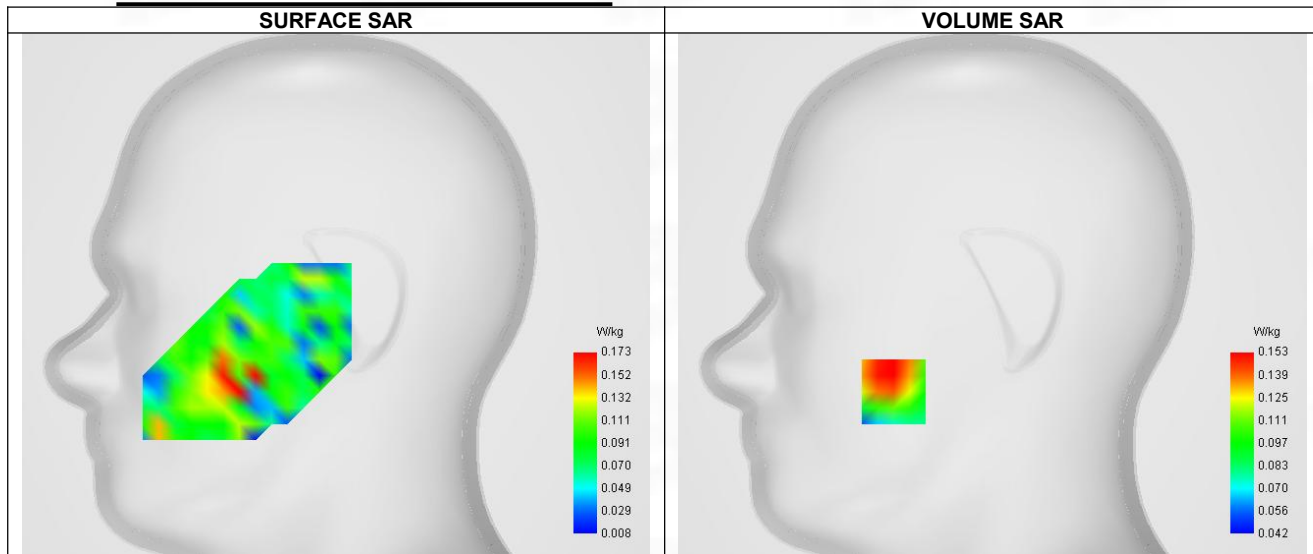
A. Experimental conditions.

Probe	SN 04/22 EPG0365
ConvF	1.96
Area Scan	dx=8mm dy=8mm, Adaptive 1 max
Zoom Scan	5x5x7, dx=8mm dy=8mm dz=5mm, Complete
Phantom	Right head
Device Position	Cheek
Band	GSM1900
Channels	Lower (512)
Signal	TDMA (GSM)
Modulation	GMSK

B. Permittivity

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

C. SAR Surface and Volume



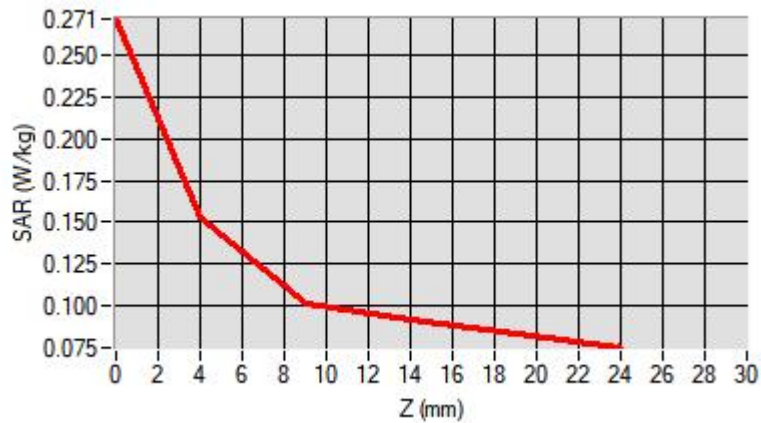
Maximum location: X=-49.00, Y=-48.00 ; SAR Peak: 0.20 W/kg

D. SAR 1g & 10g

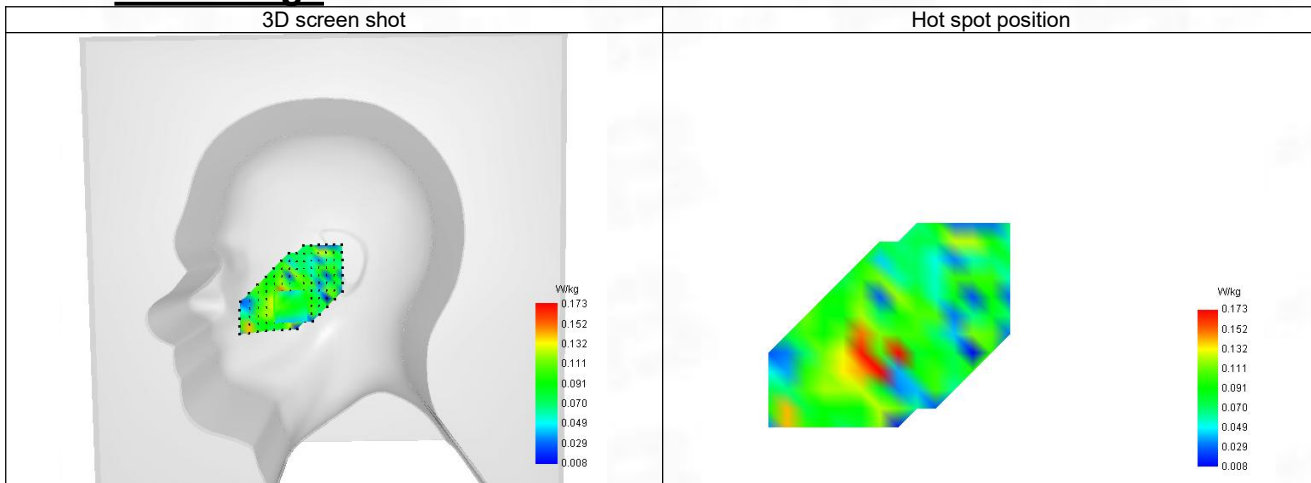
SAR 10g (W/Kg)	0.121
SAR 1g (W/Kg)	0.159
Variation (%)	2.910
Horizontal validation criteria: minimum distance (mm)	8.503
Vertical validation criteria: SAR ratio M2/M1 (%)	66.67%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.271	0.153	0.102	0.092	0.084



F. 3D Image



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

SAR Measurement at GPRS1900 (Body, Validation Plane)

Date of measurement: 30/8/2024

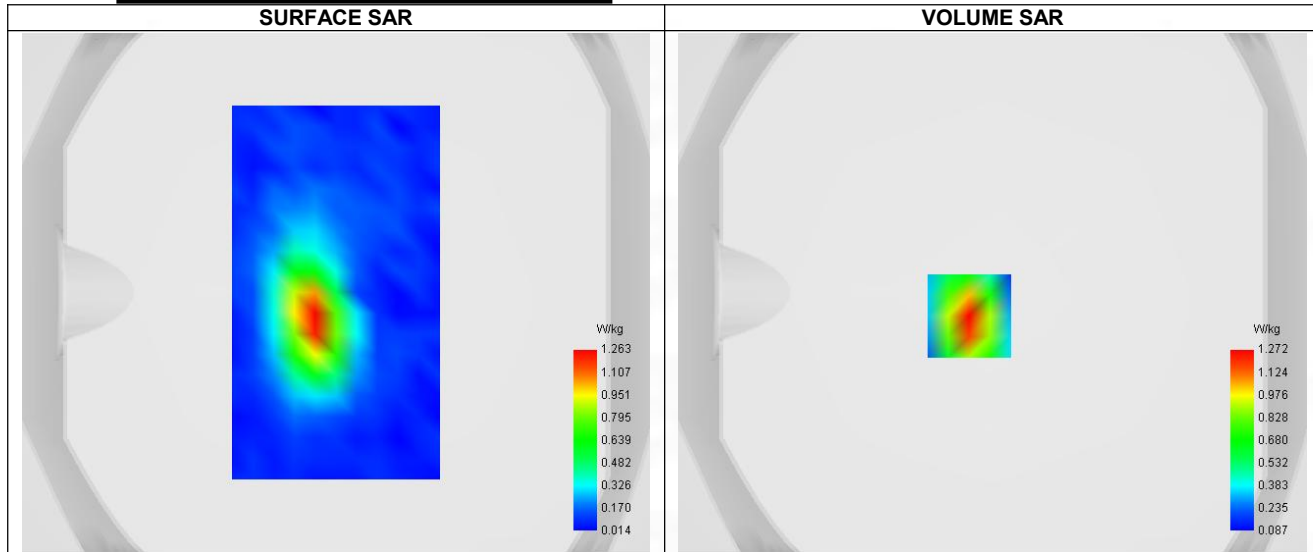
A. Experimental conditions.

Probe	SN 04/22 EPG0365
ConvF	1.96
Area Scan	dx=8mm dy=8mm, Adaptive 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. Permittivity

Frequency (MHz)	1850.200
Relative permittivity (real part)	39.895
Relative permittivity (Imaginary part)	13.734
Conductivity (S/m)	1.390

C. SAR Surface and Volume



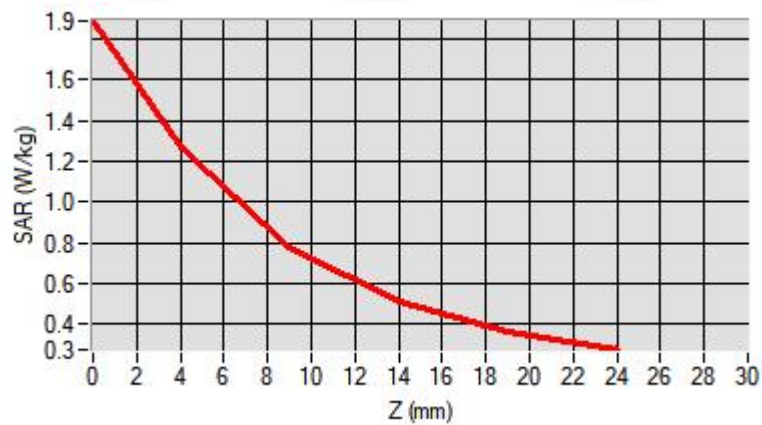
Maximum location: X=-9.00, Y=-9.00 ; SAR Peak: 1.90 W/kg

D. SAR 1g & 10g

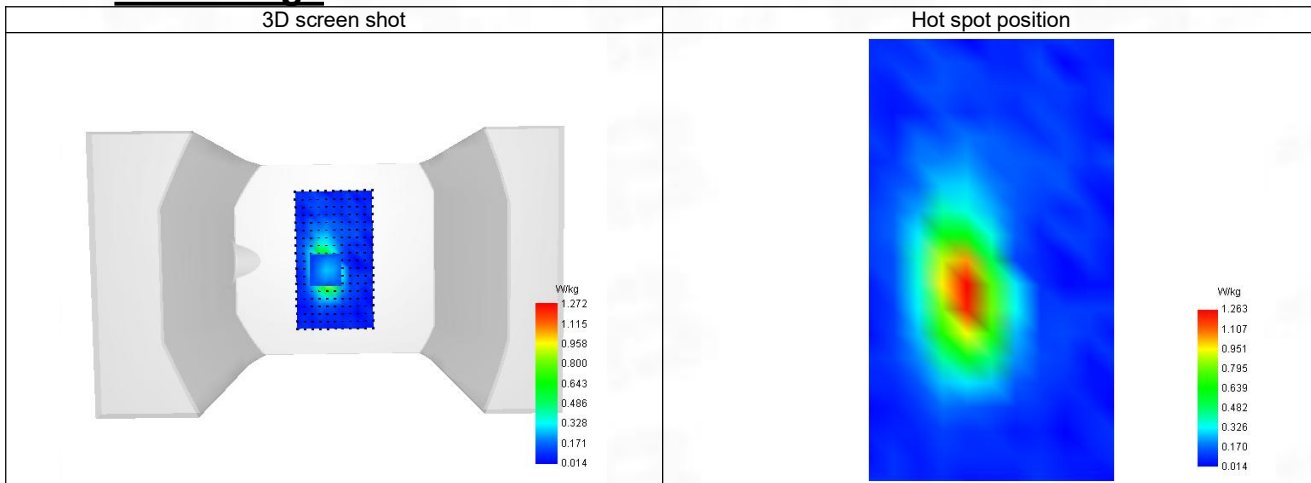
SAR 10g (W/Kg)	0.671
SAR 1g (W/Kg)	1.118
Variation (%)	-3.430
Horizontal validation criteria: minimum distance (mm)	8.348
Vertical validation criteria: SAR ratio M2/M1 (%)	61.32%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.890	1.272	0.780	0.507	0.363



F. 3D Image



5-Head with front position in dist. 0mm on Channel 9262 in WCDMA Band 2

SAR Measurement at Band 2 (1900) (Cheek, Right)

Date of measurement: 30/8/2024

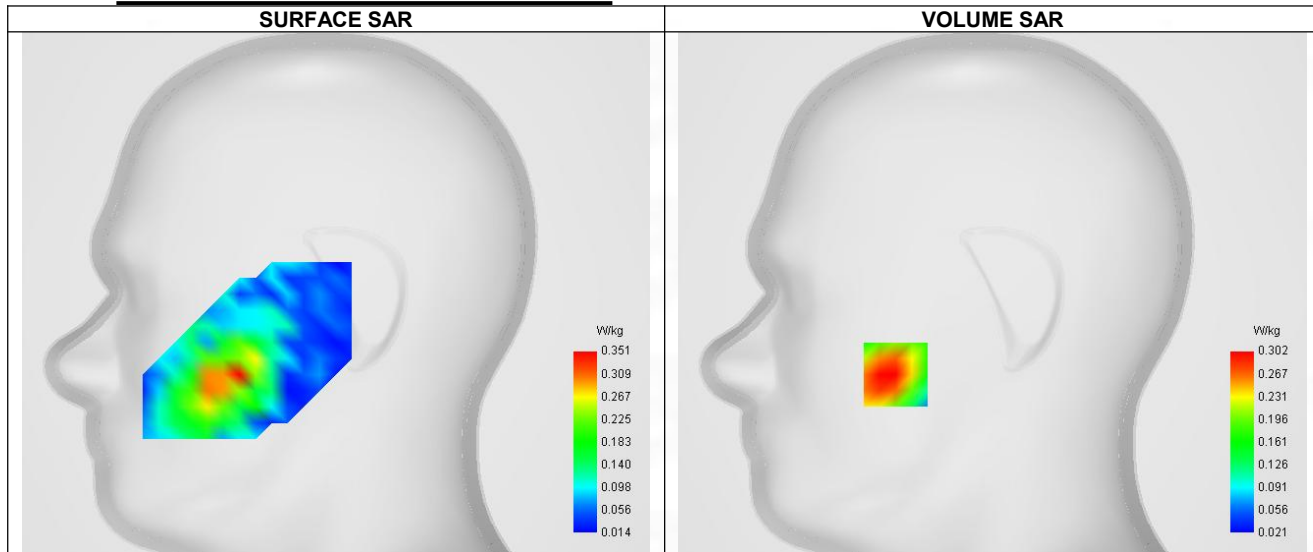
A. Experimental conditions.

Probe	SN 04/22 EPG0365
ConvF	1.96
Area Scan	dx=8mm dy=8mm, Adaptive 1 max
Zoom Scan	5x5x7, dx=8mm dy=8mm dz=5mm, Complete
Phantom	Right head
Device Position	Cheek
Band	Band 2 (1900)
Channels	Lower (9262)
Signal	WCDMA
Mode	Release 99
Connection Type	RMC, 12.2 kbps

B. Permittivity

Frequency (MHz)	1852.400
Relative permittivity (real part)	39.894
Relative permittivity (imaginary part)	13.718
Conductivity (S/m)	1.391

C. SAR Surface and Volume



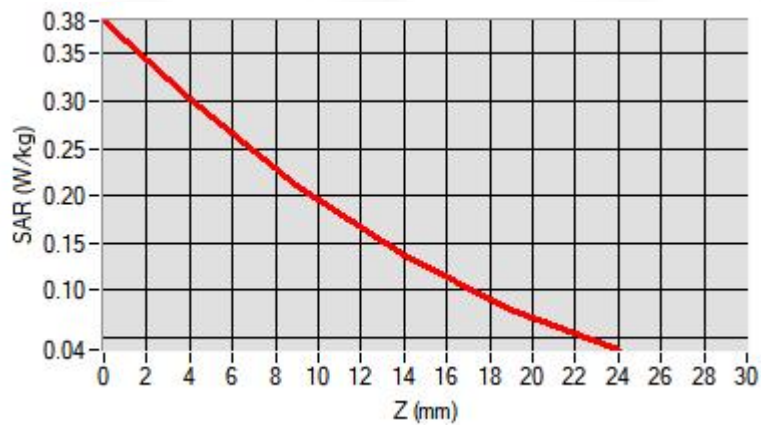
Maximum location: X=-48.00, Y=-40.00 ; SAR Peak: 0.39 W/kg

D. SAR 1g & 10g

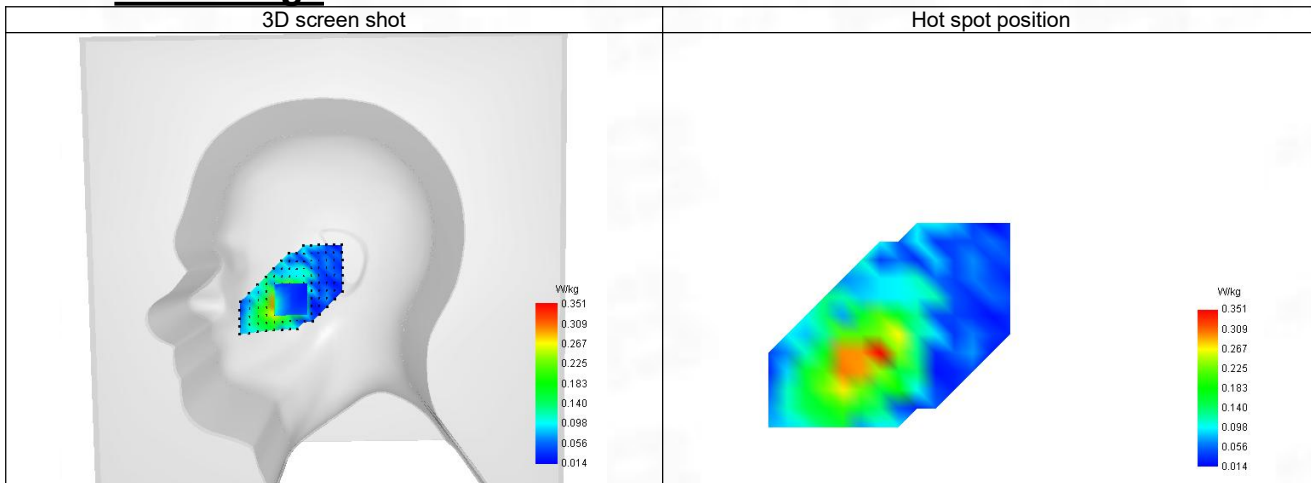
SAR 10g (W/Kg)	0.197
SAR 1g (W/Kg)	0.309
Variation (%)	-4.430
Horizontal validation criteria: minimum distance (mm)	8.419
Vertical validation criteria: SAR ratio M2/M1 (%)	70.20%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.385	0.302	0.212	0.138	0.080



F. 3D Image



6-Body with bottom position in dist. 10mm on Channel 9262 in WCDMA Band 2

SAR Measurement at Band 2 (1900) (Body, Validation Plane)

Date of measurement: 30/8/2024

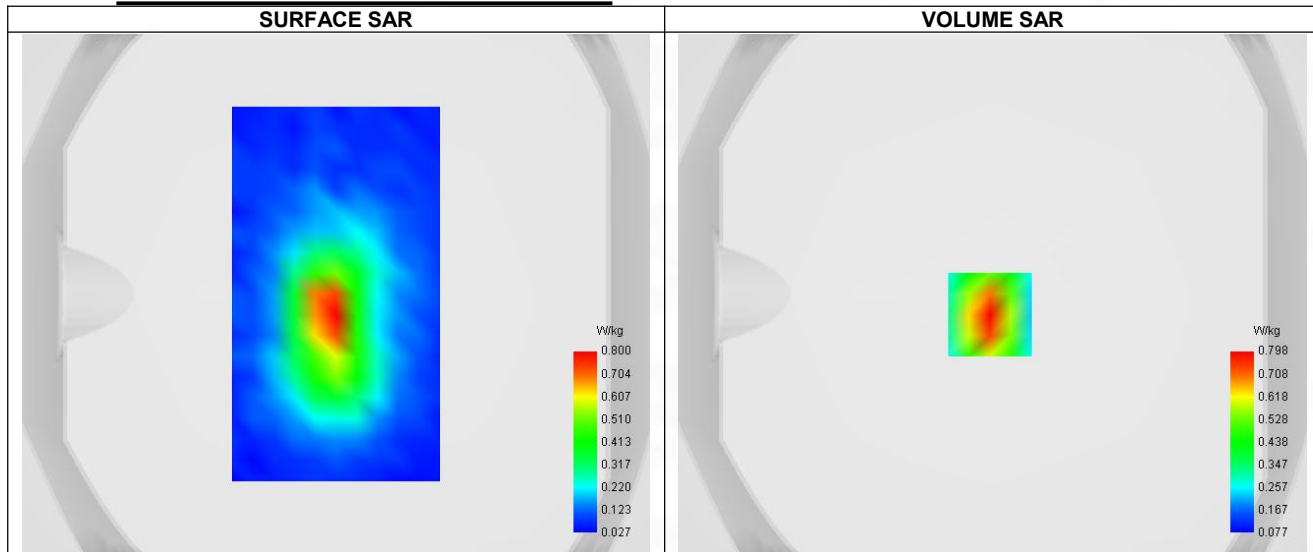
A. Experimental conditions.

Probe	SN 04/22 EPG0365
ConvF	1.96
Area Scan	dx=8mm dy=8mm, Adaptive 1 max
Zoom Scan	5x5x7, dx=8mm dy=8mm dz=5mm, Complete
Phantom	Validation plane
Device Position	Body
Band	Band 2 (1900)
Channels	Lower (9262)
Signal	WCDMA
Mode	Release 99
Connection Type	RMC, 12.2 kbps

B. Permittivity

Frequency (MHz)	1852.400
Relative permittivity (real part)	39.894
Relative permittivity (imaginary part)	13.718
Conductivity (S/m)	1.391

C. SAR Surface and Volume



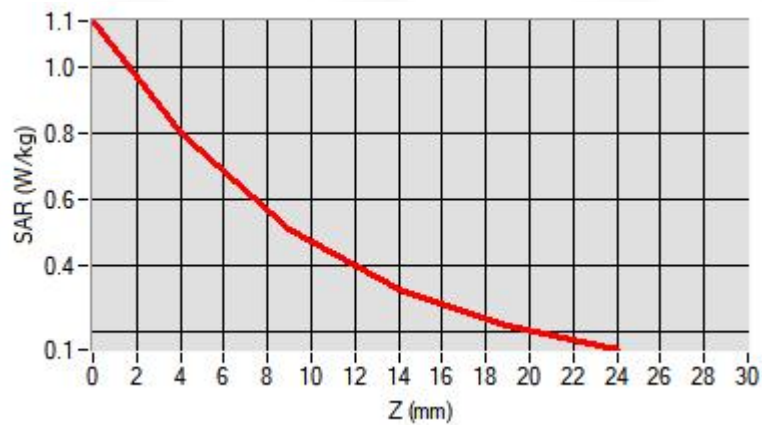
Maximum location: X=-1.00, Y=-8.00 ; SAR Peak: 1.14 W/kg

D. SAR 1g & 10g

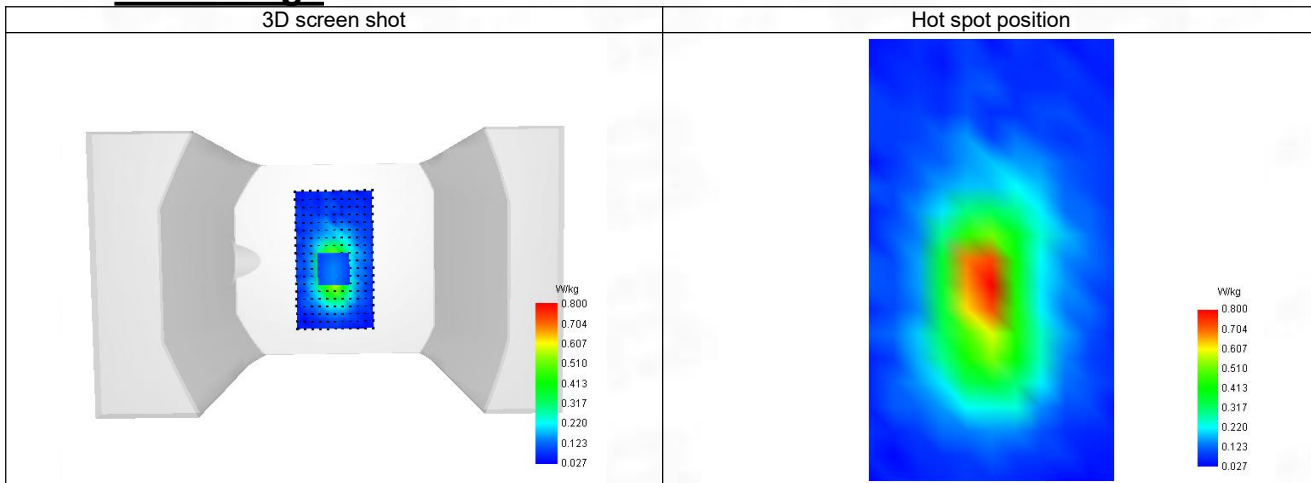
SAR 10g (W/Kg)	0.402
SAR 1g (W/Kg)	0.747
Variation (%)	-4.940
Horizontal validation criteria: minimum distance (mm)	8.259
Vertical validation criteria: SAR ratio M2/M1 (%)	63.53%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.141	0.798	0.507	0.328	0.220



F. 3D Image



7-Head with front position in dist. 0mm on Channel 1513 in WCDMA Band 4

SAR Measurement at Band 4 (1700) (Cheek, Right)

Date of measurement: 30/8/2024

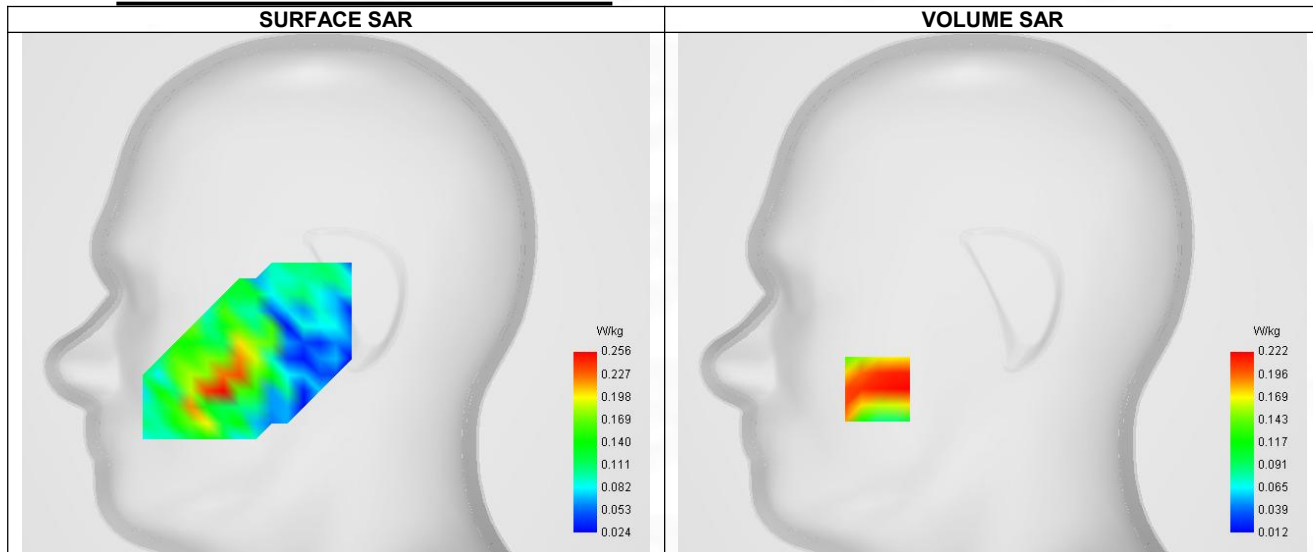
A. Experimental conditions.

Probe	SN 04/22 EPG0365
ConvF	1.96
Area Scan	dx=8mm dy=8mm, Adaptive 1 max
Zoom Scan	5x5x7, dx=8mm dy=8mm dz=5mm, Complete
Phantom	Right head
Device Position	Cheek
Band	Band 4 (1700)
Channels	Higher (1513)
Signal	WCDMA
Mode	Release 99
Connection Type	RMC, 12.2 kbps

B. Permittivity

Frequency (MHz)	1752.600
Relative permittivity (real part)	39.984
Relative permittivity (imaginary part)	14.355
Conductivity (S/m)	1.345

C. SAR Surface and Volume



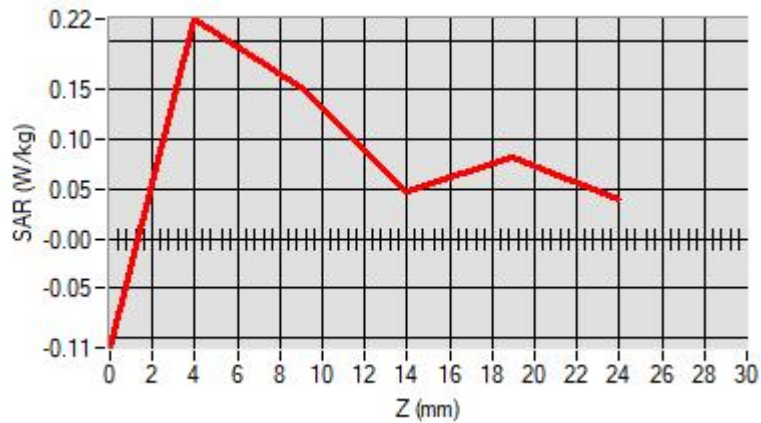
Maximum location: X=-57.00, Y=-47.00 ; SAR Peak: 0.43 W/kg

D. SAR 1g & 10g

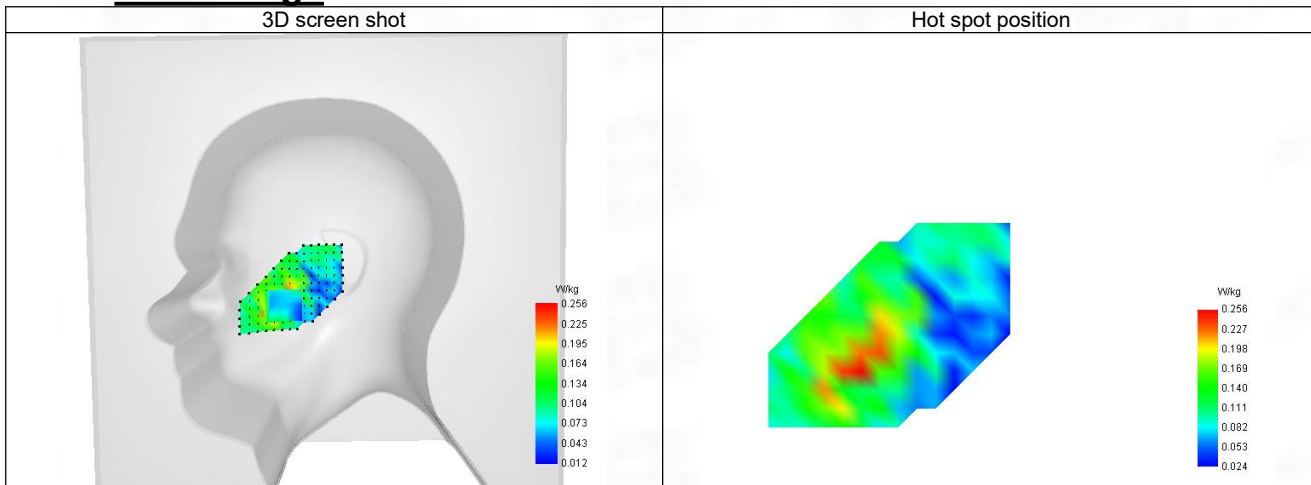
SAR 10g (W/Kg)	0.162
SAR 1g (W/Kg)	0.246
Variation (%)	-3.560
Horizontal validation criteria: minimum distance (mm)	8.179
Vertical validation criteria: SAR ratio M2/M1 (%)	68.92%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	-0.110	0.222	0.153	0.048	0.081



F. 3D Image



8-Body with bottom position in dist. 10mm on Channel 1513 in WCDMA Band 4

SAR Measurement at Band 4 (1700) (Body, Validation Plane)

Date of measurement: 30/8/2024

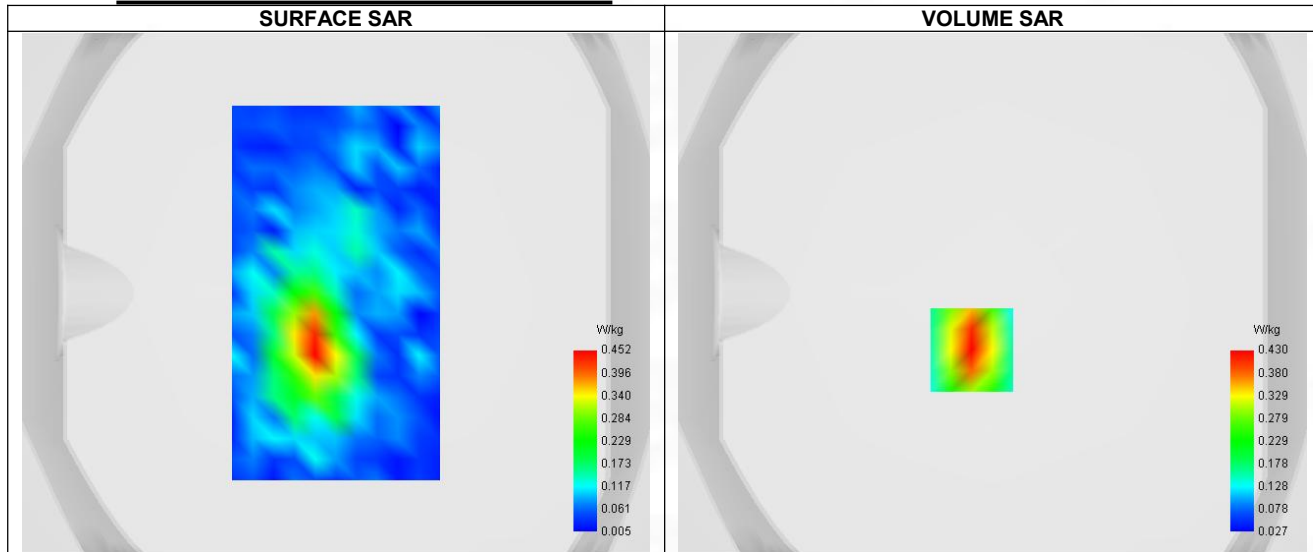
A. Experimental conditions.

Probe	SN 04/22 EPG0365
ConvF	1.96
Area Scan	dx=8mm dy=8mm, Adaptive 1 max
Zoom Scan	5x5x7, dx=8mm dy=8mm dz=5mm, Complete
Phantom	Validation plane
Device Position	Body
Band	Band 4 (1700)
Channels	Higher (1513)
Signal	WCDMA
Mode	Release 99
Connection Type	RMC, 12.2 kbps

B. Permittivity

Frequency (MHz)	1752.600
Relative permittivity (real part)	39.984
Relative permittivity (imaginary part)	14.355
Conductivity (S/m)	1.345

C. SAR Surface and Volume



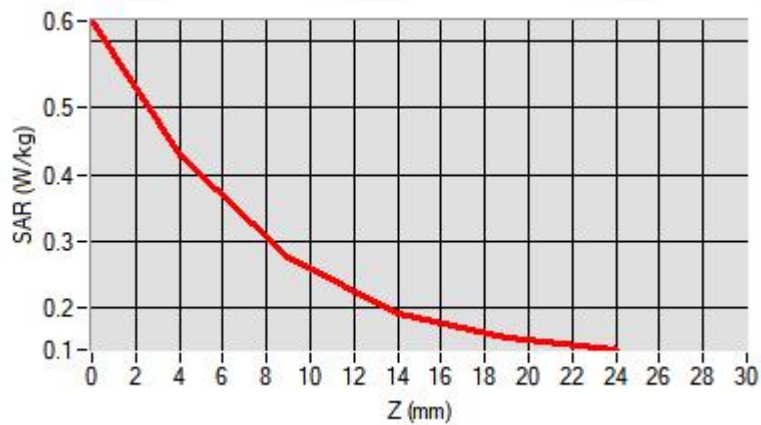
Maximum location: X=-8.00, Y=-22.00 ; SAR Peak: 0.64 W/kg

D. SAR 1g & 10g

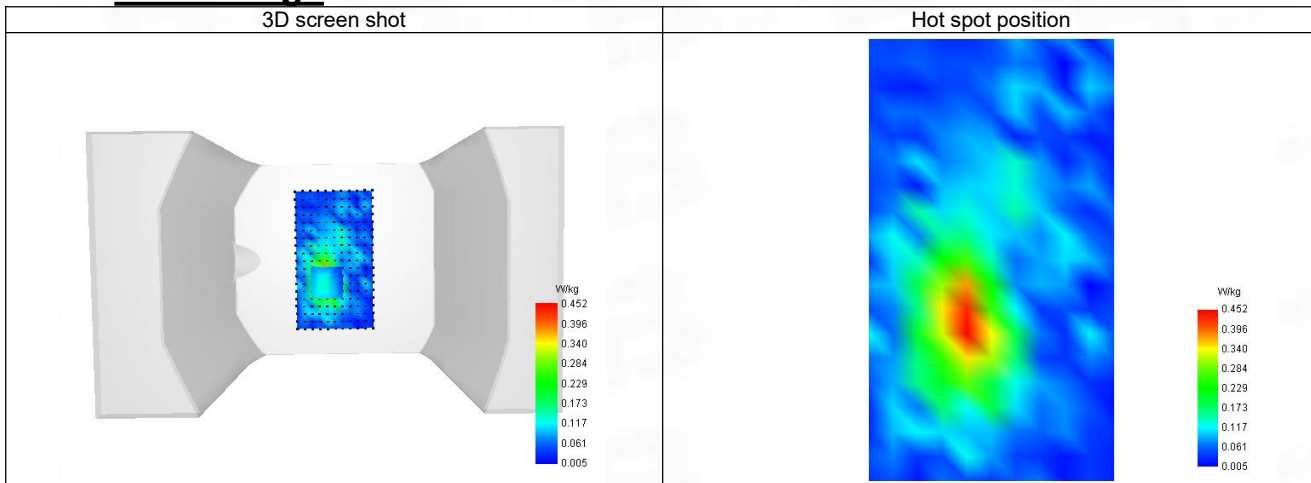
SAR 10g (W/Kg)	0.255
SAR 1g (W/Kg)	0.423
Variation (%)	1.650
Horizontal validation criteria: minimum distance (mm)	8.632
Vertical validation criteria: SAR ratio M2/M1 (%)	63.72%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.630	0.430	0.274	0.192	0.155



F. 3D Image



9-Head with front position in dist. 0mm on Channel 4183 in WCDMA Band 5

SAR Measurement at Band 5 (850) (Cheek, Right)

Date of measurement: 28/8/2024

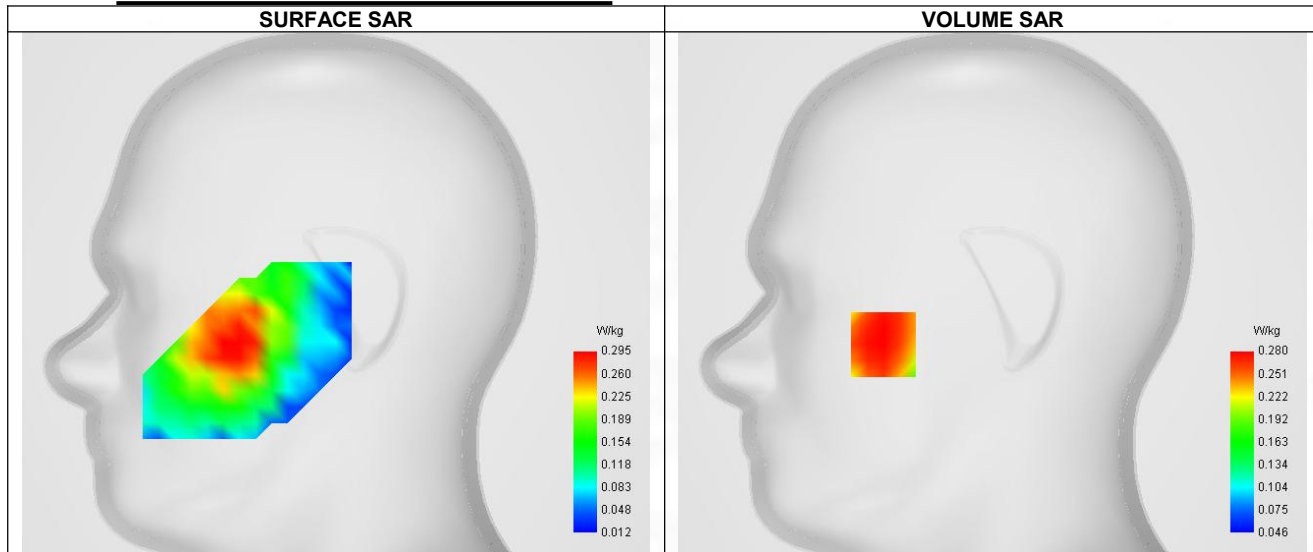
A. Experimental conditions.

Probe	SN 04/22 EPG0365
ConvF	1.68
Area Scan	dx=8mm dy=8mm, Adaptive 1 max
Zoom Scan	5x5x7, dx=8mm dy=8mm dz=5mm, Complete
Phantom	Right head
Device Position	Cheek
Band	Band 5 (850)
Channels	Middle (4183)
Signal	WCDMA
Mode	Release 99
Connection Type	RMC, 12.2 kbps

B. Permittivity

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

C. SAR Surface and Volume



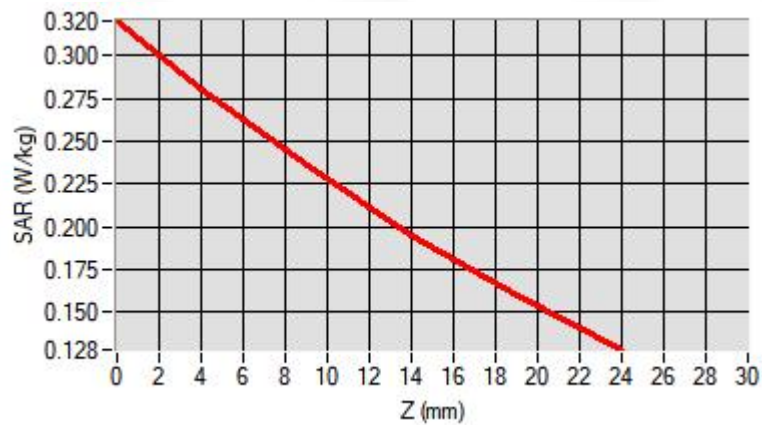
Maximum location: X=-54.00, Y=-25.00 ; SAR Peak: 0.43 W/kg

D. SAR 1g & 10g

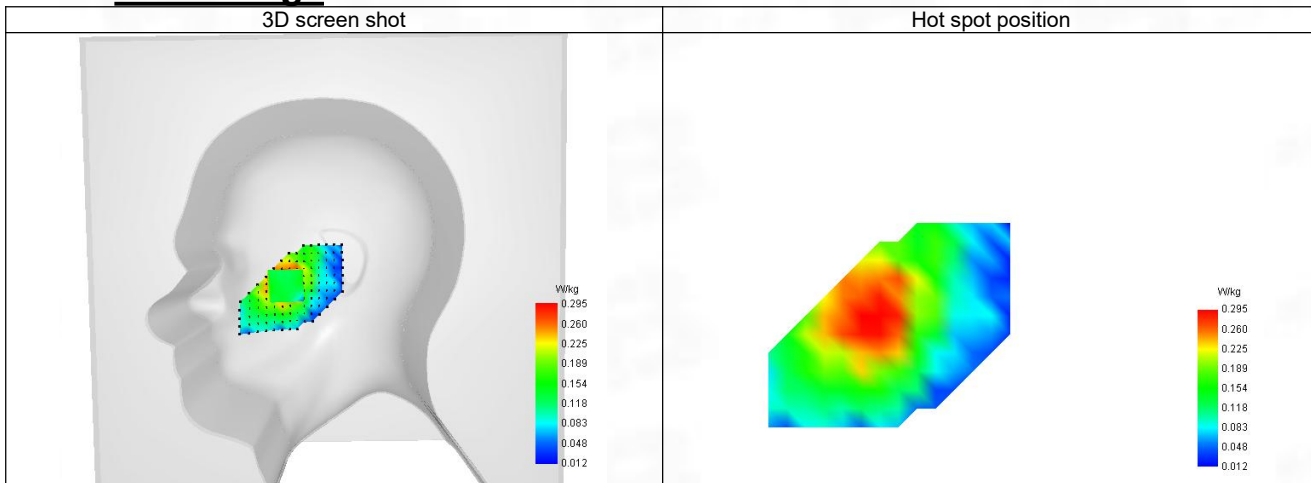
SAR 10g (W/Kg)	0.243
SAR 1g (W/Kg)	0.320
Variation (%)	0.210
Horizontal validation criteria: minimum distance (mm)	8.395
Vertical validation criteria: SAR ratio M2/M1 (%)	84.29%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.320	0.280	0.236	0.195	0.160



F. 3D Image



10-Body with back position in dist. 10mm on Channel 4183 in WCDMA Band 5

SAR Measurement at Band 5 (850) (Body, Validation Plane)

Date of measurement: 28/8/2024

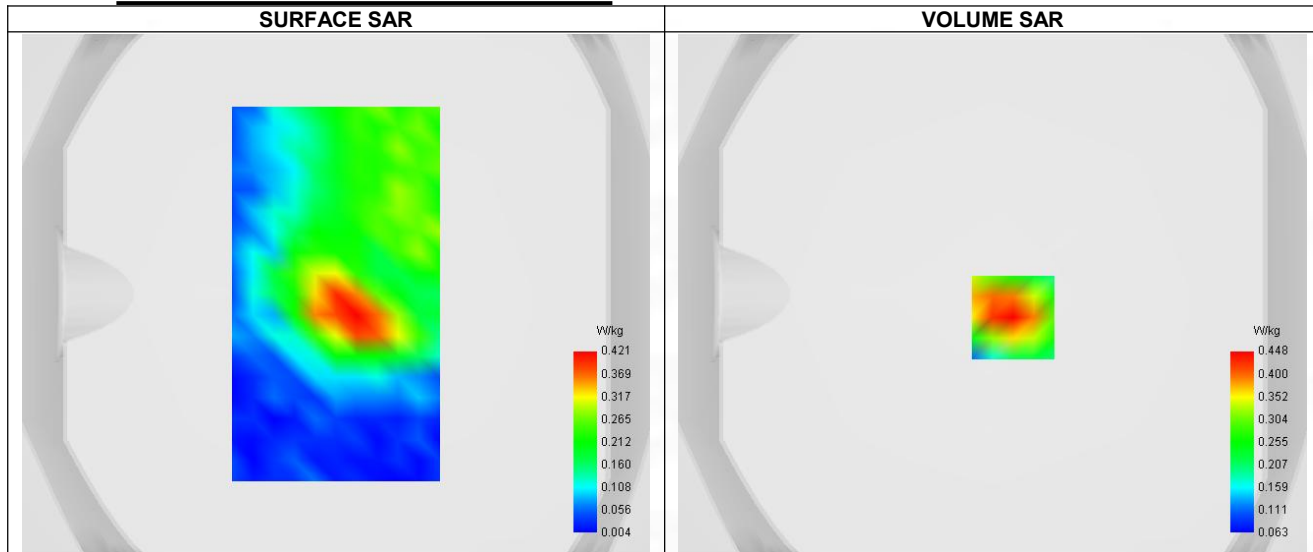
A. Experimental conditions.

Probe	SN 04/22 EPG0365
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	Band 5 (850)
Channels	Middle (4183)
Signal	WCDMA
Mode	Release 99
Connection Type	RMC, 12.2 kbps

B. Permittivity

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

C. SAR Surface and Volume



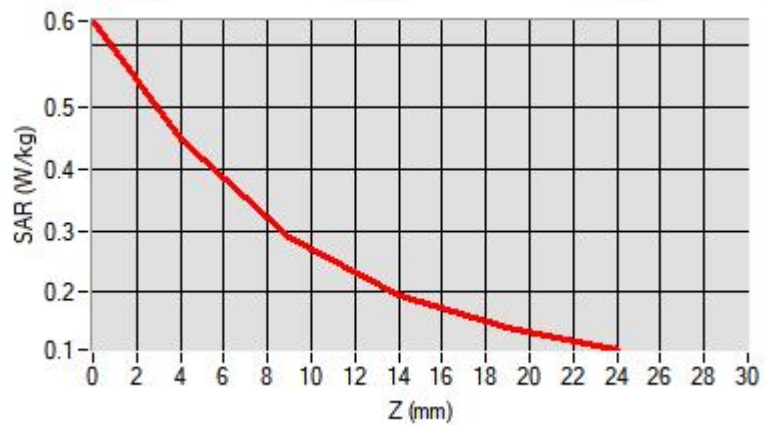
Maximum location: X=8.00, Y=-9.00 ; SAR Peak: 0.65 W/kg

D. SAR 1g & 10g

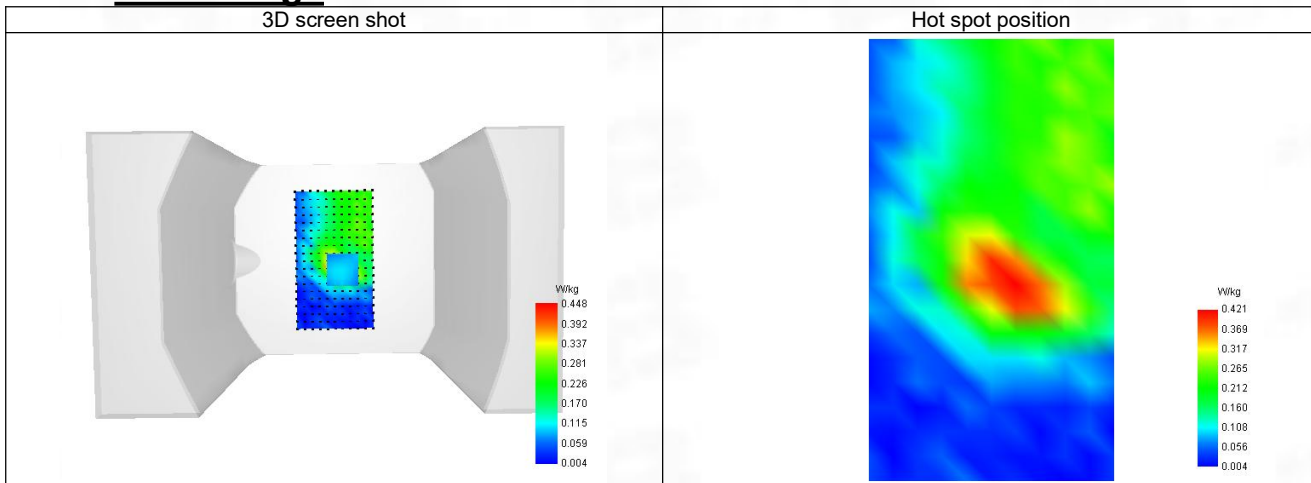
SAR 10g (W/Kg)	0.285
SAR 1g (W/Kg)	0.470
Variation (%)	-1.560
Horizontal validation criteria: minimum distance (mm)	8.492
Vertical validation criteria: SAR ratio M2/M1 (%)	64.51%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.639	0.448	0.289	0.196	0.142



F. 3D Image



11-Head with front position in dist. 0mm on Channel 18700 in LTE band 2

SAR Measurement at LTE band 2 (Cheek, Right)

Date of measurement: 30/8/2024

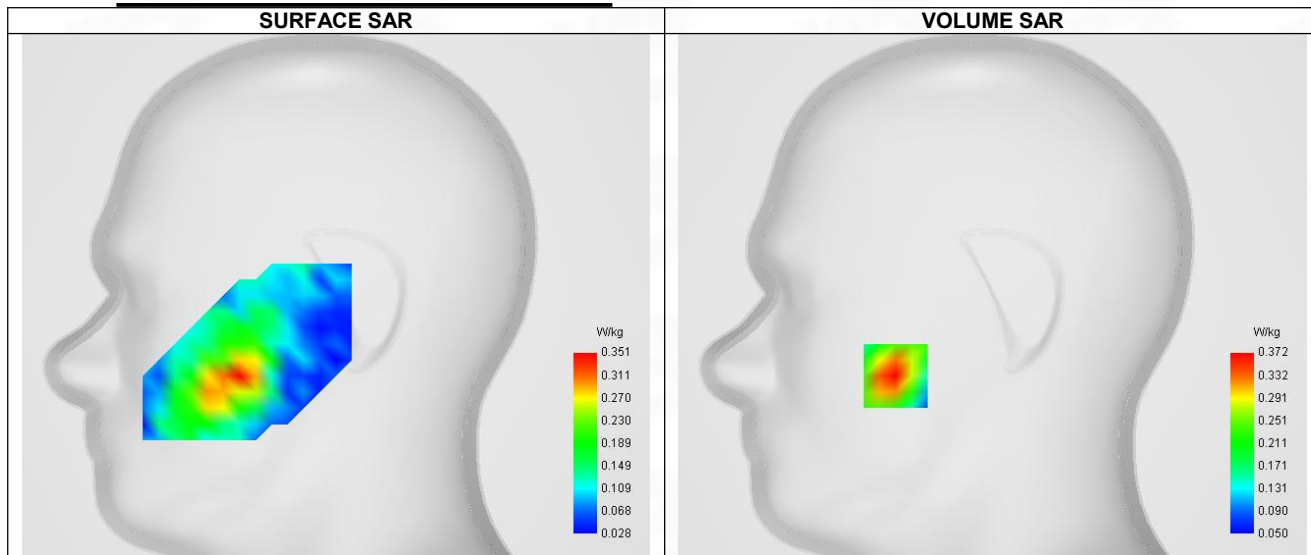
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	1.96
Area Scan	dx=8mm dy=8mm, Adaptive 1 max
Zoom Scan	5x5x7, dx=8mm dy=8mm dz=5mm, Complete
Phantom	Right head
Device Position	Cheek
Band	LTE band 2
Channels	Lower (18700)
Signal	LTE FDD
Cell Bandwidth	20 Mhz
Modulation	SC-OFDM - QPSK
RB offset	0
RB size	1

B. Permittivity

Frequency (MHz)	1851.090
Relative permittivity (real part)	39.895
Relative permittivity (imaginary part)	13.727
Conductivity (S/m)	1.390

C. SAR Surface and Volume



Maximum location: X=-48.00, Y=-40.00 ; SAR Peak: 0.57 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.232
SAR 1g (W/Kg)	0.376
Variation (%)	-4.170
Horizontal validation criteria: minimum distance (mm)	8.772
Vertical validation criteria: SAR ratio M2/M1 (%)	61.02%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
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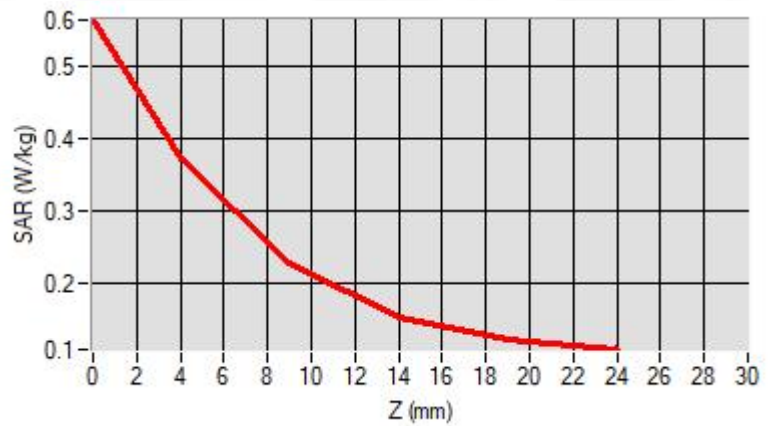
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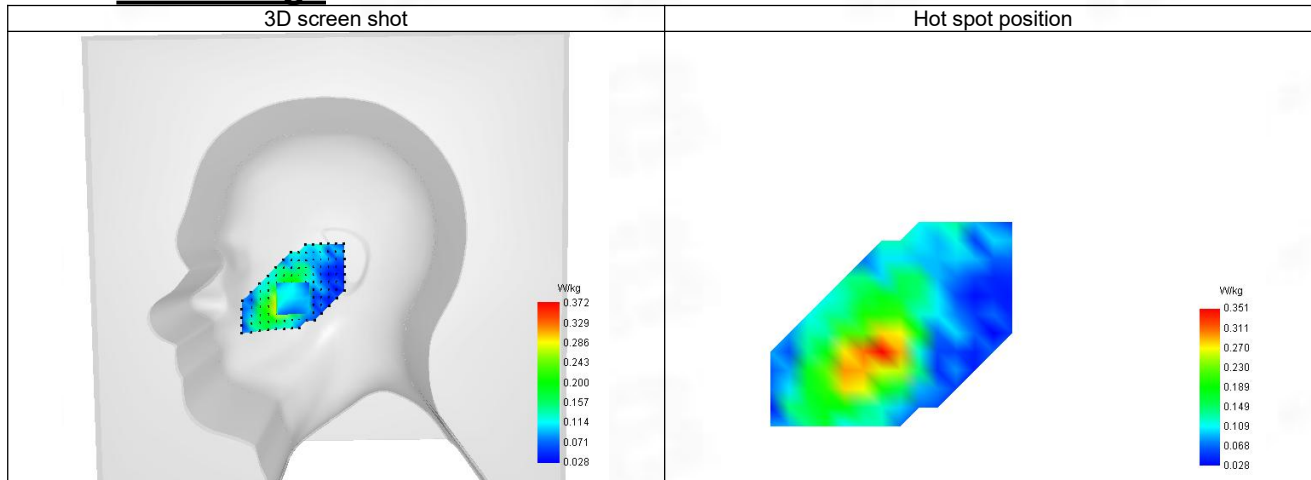
BTF Testing Lab (Shenzhen) Co., Ltd.

F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

SAR (W/Kg)	0.563	0.372	0.227	0.153	0.122
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F. 3D Image



12-Body with bottom position in dist. 10mm on Channel 18700 in LTE band 2

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

Date of measurement: 30/8/2024

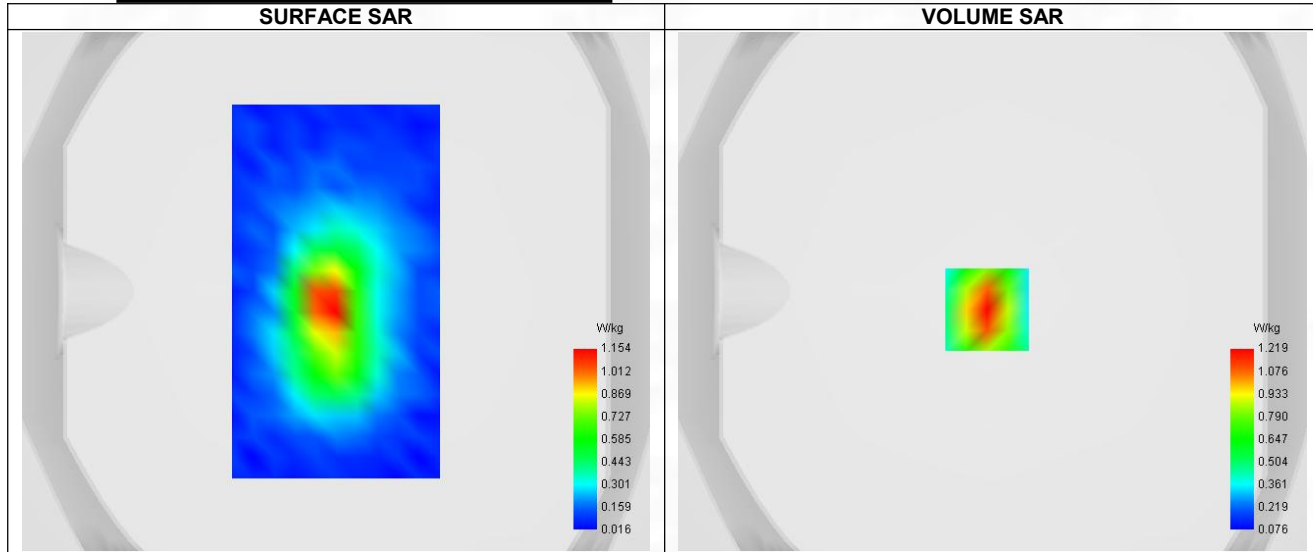
A. Experimental conditions.

Probe	SN 04/22 EPG0365
ConvF	1.96
Area Scan	dx=8mm dy=8mm, Adaptive 1 max
Zoom Scan	5x5x7, dx=8mm dy=8mm dz=5mm, Complete
Phantom	Validation plane
Device Position	Body
Band	LTE band 2
Channels	Lower (18700)
Signal	LTE FDD
Cell Bandwidth	20 Mhz
Modulation	SC-OFDM - QPSK
RB offset	0
RB size	1

B. Permittivity

Frequency (MHz)	1851.090
Relative permittivity (real part)	39.895
Relative permittivity (imaginary part)	13.727
Conductivity (S/m)	1.390

C. SAR Surface and Volume



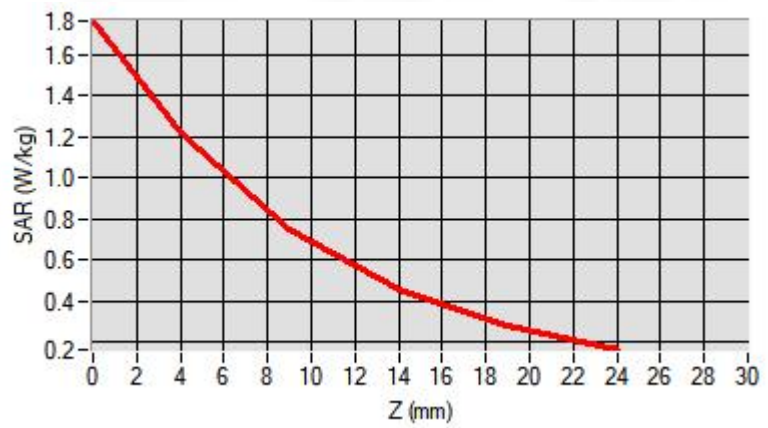
Maximum location: X=-2.00, Y=-7.00 ; SAR Peak: 1.76 W/kg

D. SAR 1g & 10g

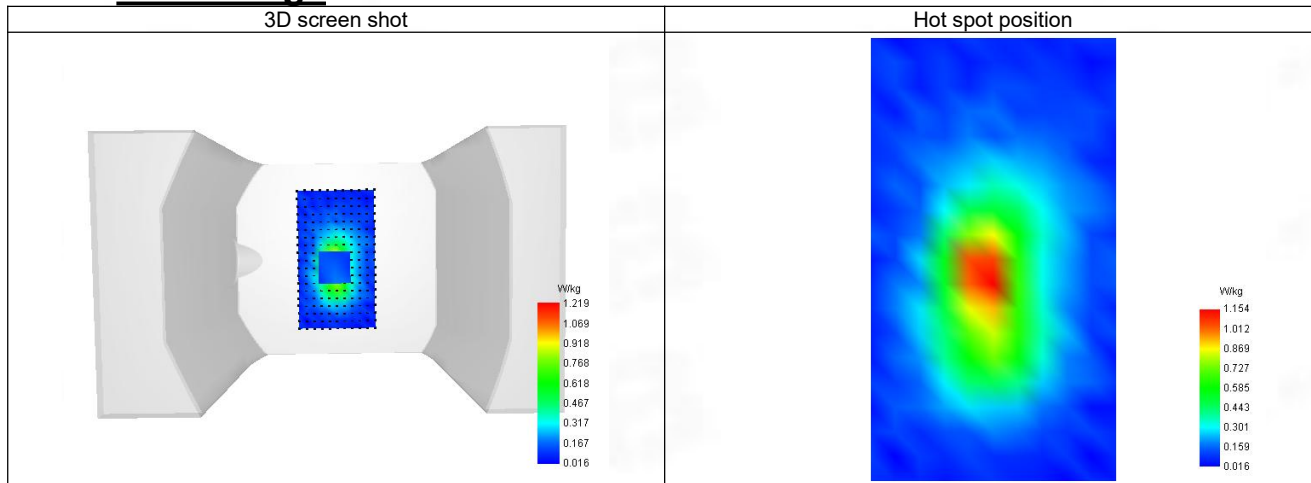
SAR 10g (W/Kg)	0.657
SAR 1g (W/Kg)	1.042
Variation (%)	-3.310
Horizontal validation criteria: minimum distance (mm)	8.529
Vertical validation criteria: SAR ratio M2/M1 (%)	61.69%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.766	1.219	0.752	0.461	0.283



F. 3D Image



13-Head with front position in dist. 0mm on Channel 20175 in LTE band 4

SAR Measurement at LTE band 4 (Cheek, Right)

Date of measurement: 2/9/2024

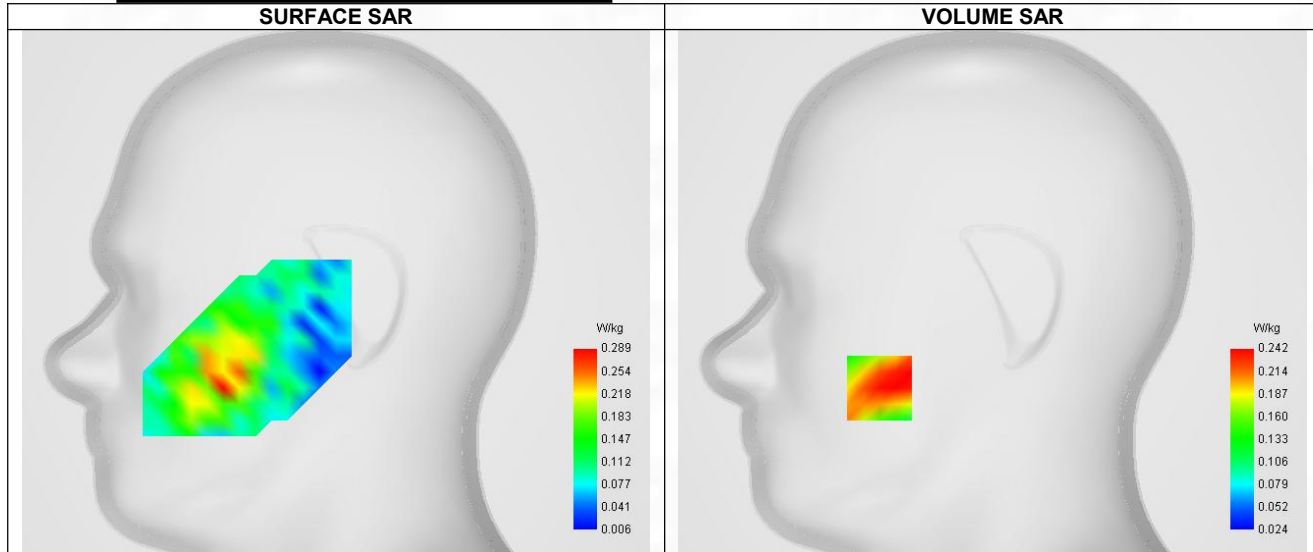
A. Experimental conditions.

Probe	SN 04/22 EPG0365
ConvF	1.96
Area Scan	dx=8mm dy=8mm, Adaptive 1 max
Zoom Scan	5x5x7, dx=8mm dy=8mm dz=5mm, Complete
Phantom	Right head
Device Position	Cheek
Band	LTE band 4
Channels	Middle (20175)
Signal	LTE FDD
Cell Bandwidth	20 Mhz
Modulation	SC-OFDM - QPSK
RB offset	99
RB size	1

B. Permittivity

Frequency (MHz)	1741.410
Relative permittivity (real part)	40.001
Relative permittivity (imaginary part)	14.418
Conductivity (S/m)	1.340

C. SAR Surface and Volume



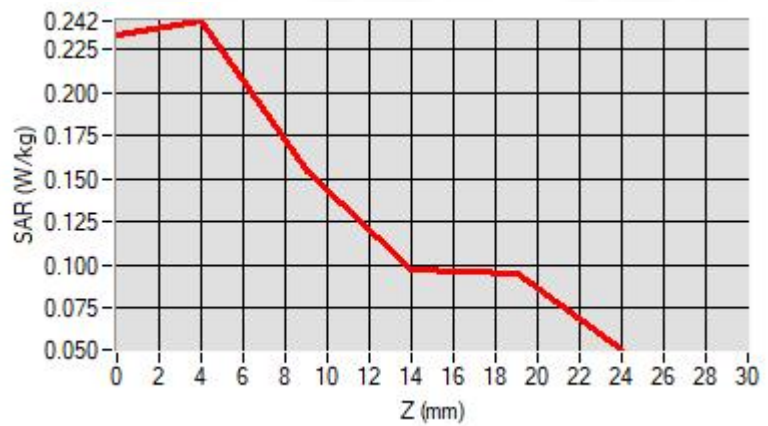
Maximum location: X=-56.00, Y=-48.00 ; SAR Peak: 0.39 W/kg

D. SAR 1g & 10g

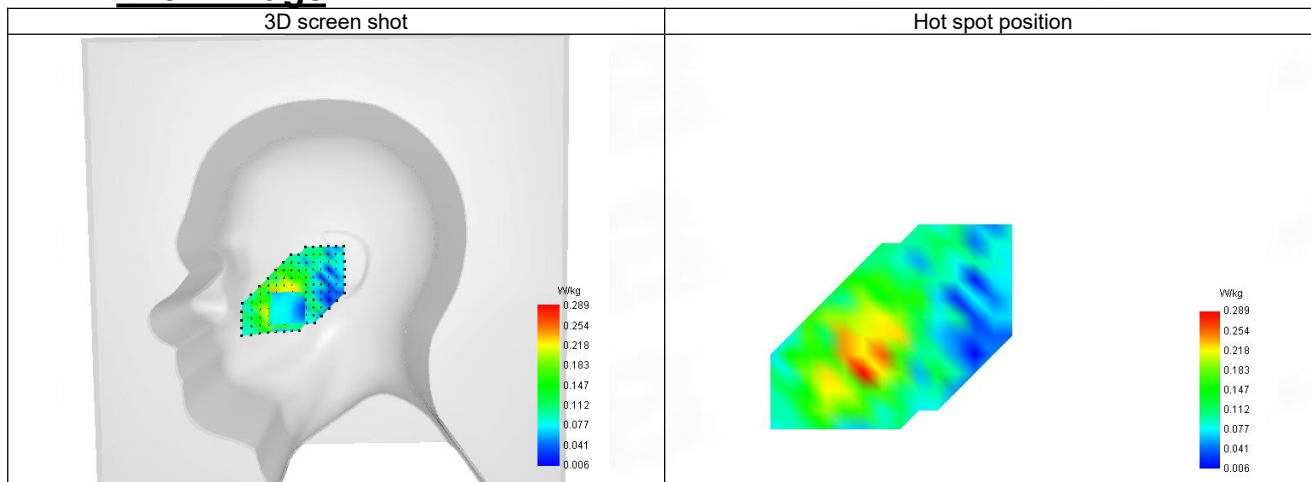
SAR 10g (W/Kg)	0.171
SAR 1g (W/Kg)	0.257
Variation (%)	-2.690
Horizontal validation criteria: minimum distance (mm)	8.652
Vertical validation criteria: SAR ratio M2/M1 (%)	64.05%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.233	0.242	0.155	0.097	0.095



F. 3D Image



14-Body with bottom position in dist. 10mm on Channel 20175 in LTE band 4

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

Date of measurement: 2/9/2024

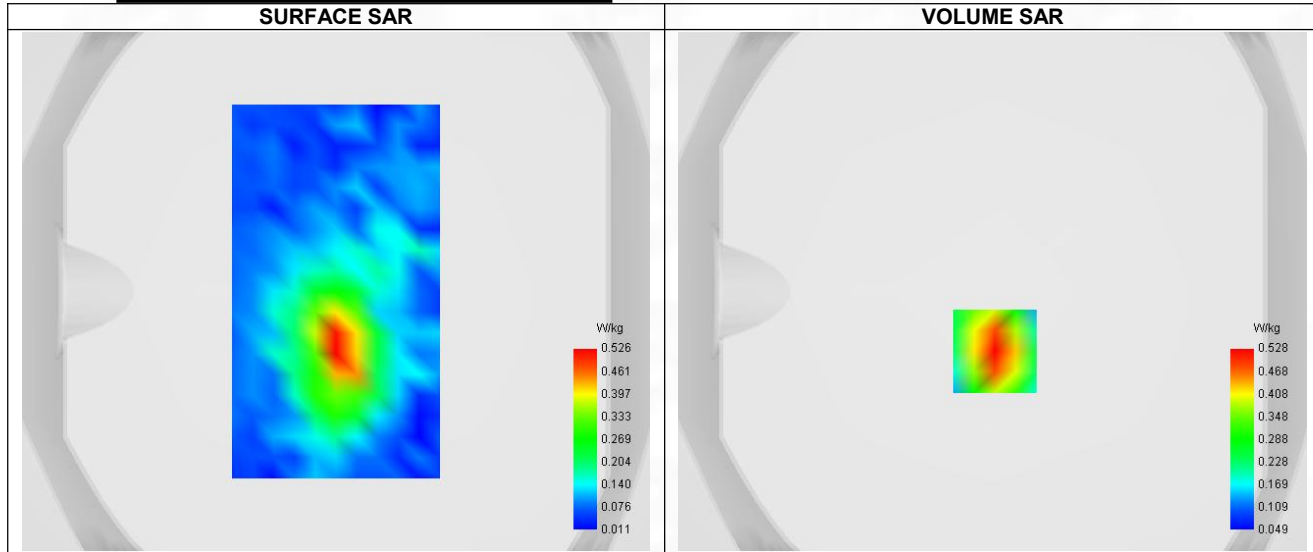
A. Experimental conditions.

Probe	SN 04/22 EPG0365
ConvF	1.96
Area Scan	dx=8mm dy=8mm, Adaptive 1 max
Zoom Scan	5x5x7, dx=8mm dy=8mm dz=5mm, Complete
Phantom	Validation plane
Device Position	Body
Band	LTE band 4
Channels	Middle (20175)
Signal	LTE FDD
Cell Bandwidth	20 Mhz
Modulation	SC-OFDM - QPSK
RB offset	99
RB size	1

B. Permittivity

Frequency (MHz)	1741.410
Relative permittivity (real part)	40.001
Relative permittivity (imaginary part)	14.418
Conductivity (S/m)	1.340

C. SAR Surface and Volume



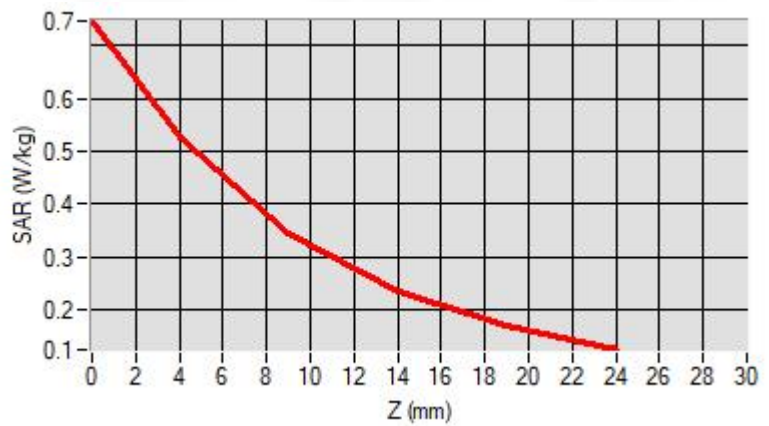
Maximum location: X=1.00, Y=-23.00 ; SAR Peak: 0.75 W/kg

D. SAR 1g & 10g

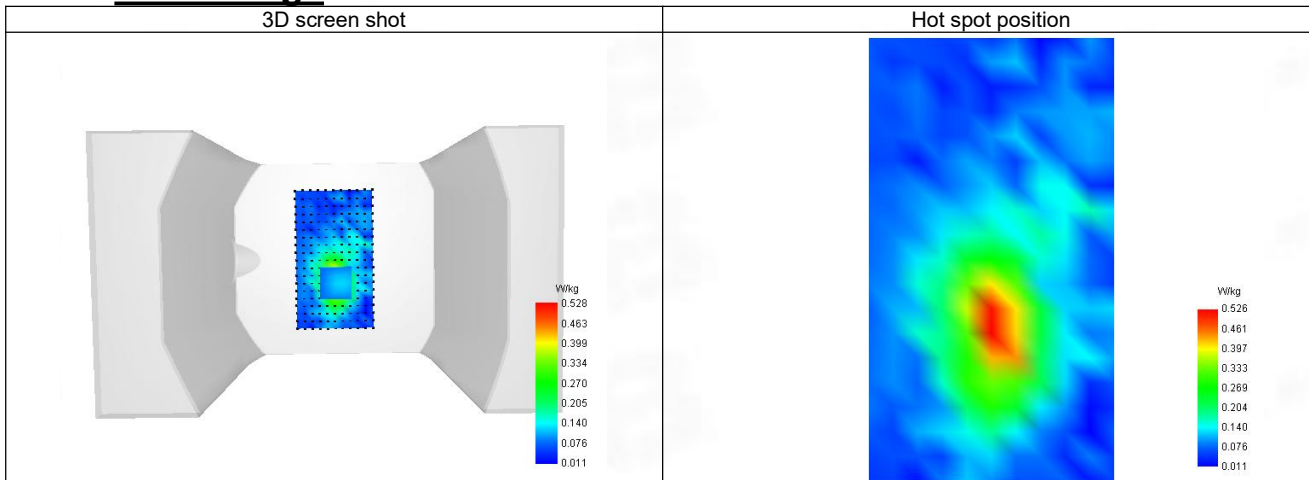
SAR 10g (W/Kg)	0.307
SAR 1g (W/Kg)	0.515
Variation (%)	4.690
Horizontal validation criteria: minimum distance (mm)	8.536
Vertical validation criteria: SAR ratio M2/M1 (%)	65.15%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.747	0.528	0.344	0.233	0.168



F. 3D Image



15-Head with front position in dist. 0mm on Channel 20525 in LTE band 5

SAR Measurement at LTE band 5 (Cheek, Right)

Date of measurement: 28/8/2024

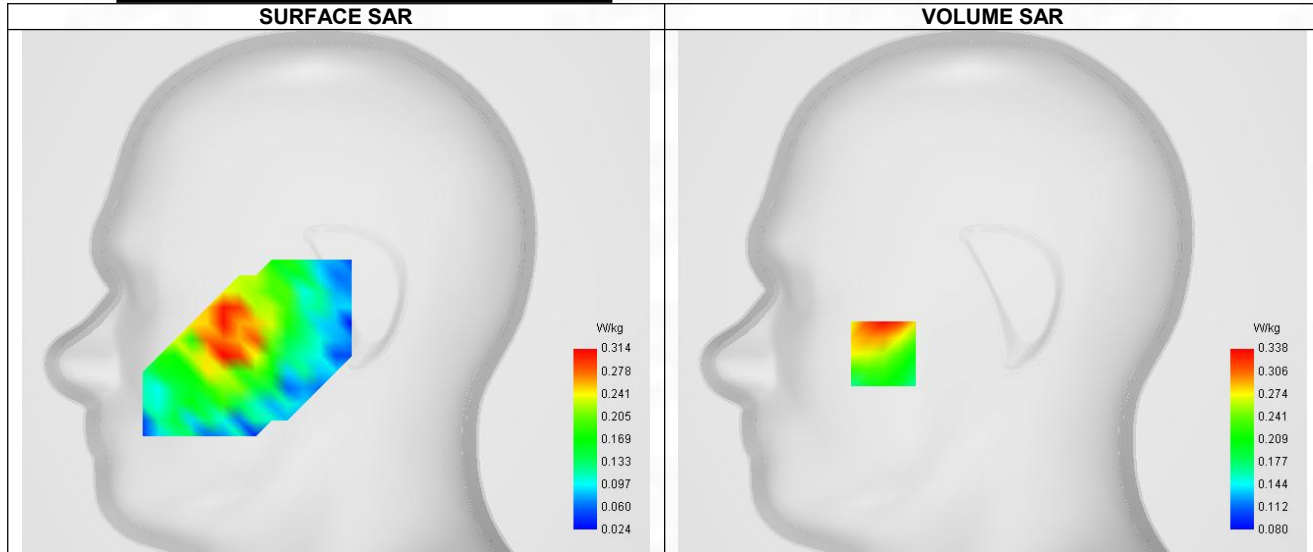
A. Experimental conditions.

Probe	SN 04/22 EPG0365
ConvF	1.68
Area Scan	dx=8mm dy=8mm, Adaptive 1 max
Zoom Scan	5x5x7, dx=8mm dy=8mm dz=5mm, Complete
Phantom	Right head
Device Position	Cheek
Band	LTE band 5
Channels	Middle (20525)
Signal	LTE FDD
Cell Bandwidth	10 Mhz
Modulation	SC-OFDM - QPSK
RB offset	25
RB size	1

B. Permittivity

Frequency (MHz)	836.590
Relative permittivity (real part)	41.408
Relative permittivity (imaginary part)	19.481
Conductivity (S/m)	0.871

C. SAR Surface and Volume



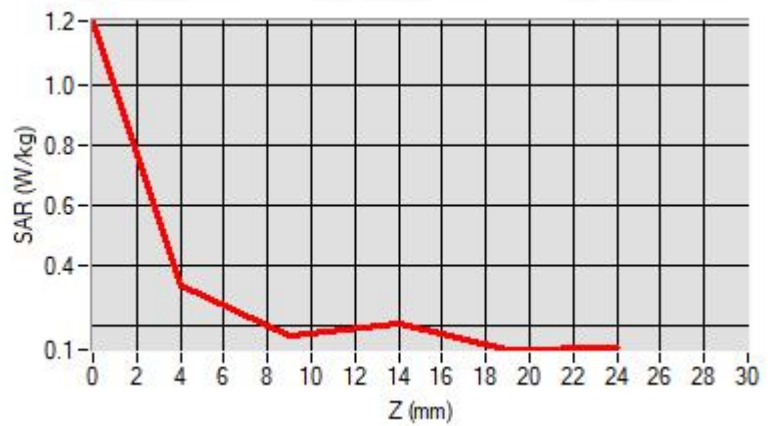
Maximum location: X=-54.00, Y=-31.00 ; SAR Peak: 0.42 W/kg

D. SAR 1g & 10g

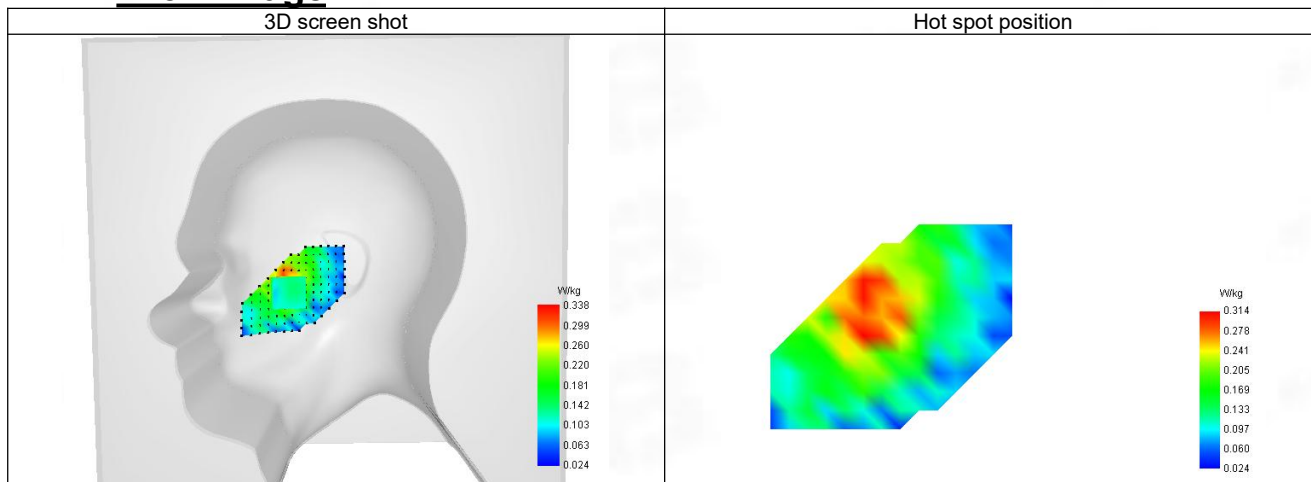
SAR 10g (W/Kg)	0.250
SAR 1g (W/Kg)	0.345
Variation (%)	4.390
Horizontal validation criteria: minimum distance (mm)	8.348
Vertical validation criteria: SAR ratio M2/M1 (%)	48.82%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.217	0.338	0.165	0.206	0.121



F. 3D Image



16-Body with back position in dist. 10mm on Channel 20525 in LTE band 5

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

Date of measurement: 28/8/2024

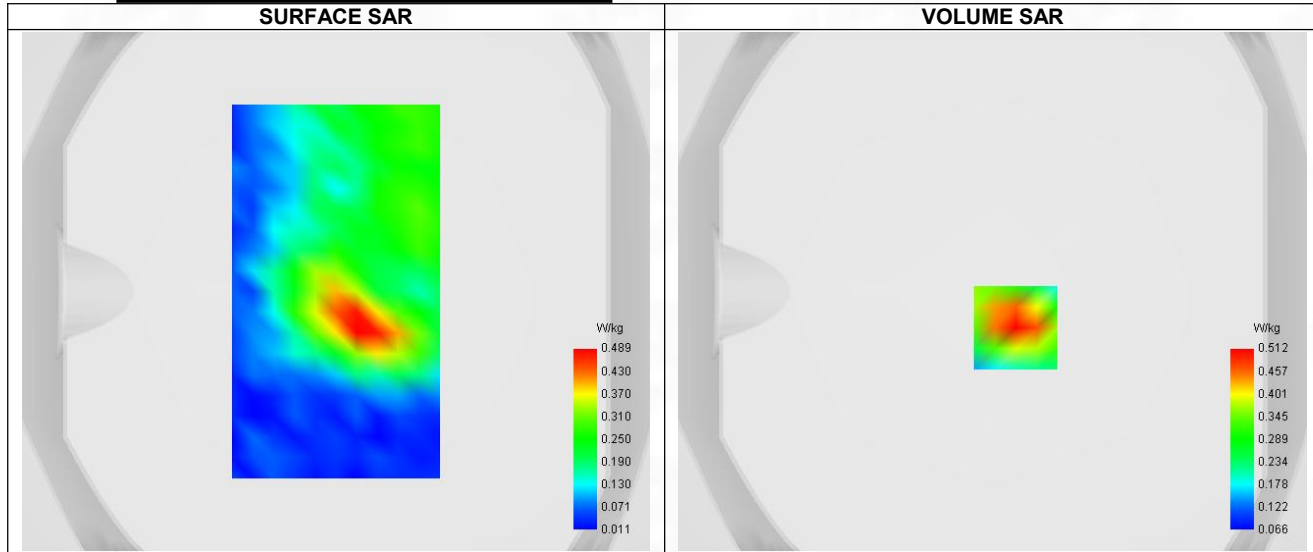
A. Experimental conditions.

Probe	SN 04/22 EPG0365
ConvF	1.68
Area Scan	dx=8mm dy=8mm, Adaptive 1 max
Zoom Scan	5x5x7, dx=8mm dy=8mm dz=5mm, Complete
Phantom	Validation plane
Device Position	Body
Band	LTE band 5
Channels	Middle (20525)
Signal	LTE FDD
Cell Bandwidth	10 Mhz
Modulation	SC-OFDM - QPSK
RB offset	25
RB size	1

B. Permittivity

Frequency (MHz)	836.590
Relative permittivity (real part)	41.408
Relative permittivity (imaginary part)	19.481
Conductivity (S/m)	0.871

C. SAR Surface and Volume

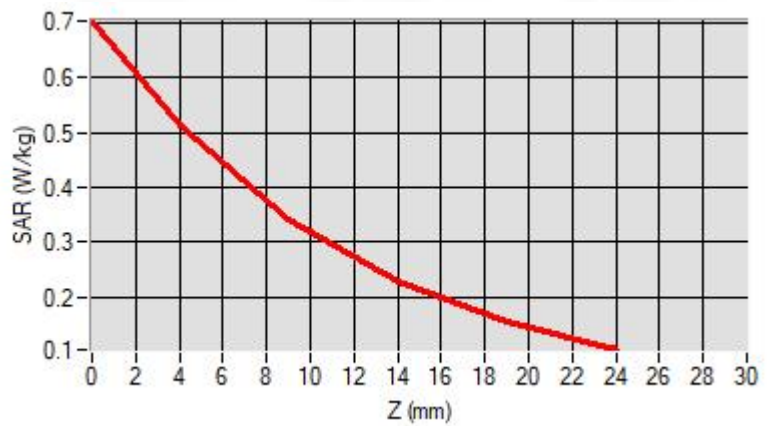


D. SAR 1g & 10g

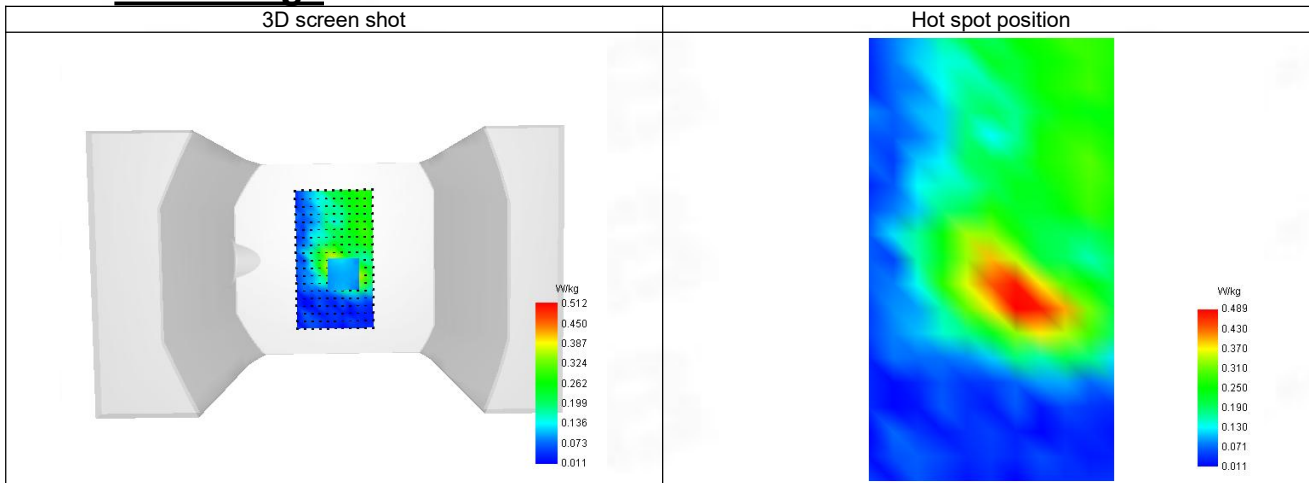
SAR 10g (W/Kg)	0.325
SAR 1g (W/Kg)	0.534
Variation (%)	4.910
Horizontal validation criteria: minimum distance (mm)	8.611
Vertical validation criteria: SAR ratio M2/M1 (%)	66.80%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.704	0.512	0.342	0.229	0.156



F. 3D Image



17-Head with front position in dist. 0mm on Channel 23130 in LTE band 12

SAR Measurement at LTE band 12 (Cheek, Right)

Date of measurement: 26/8/2024

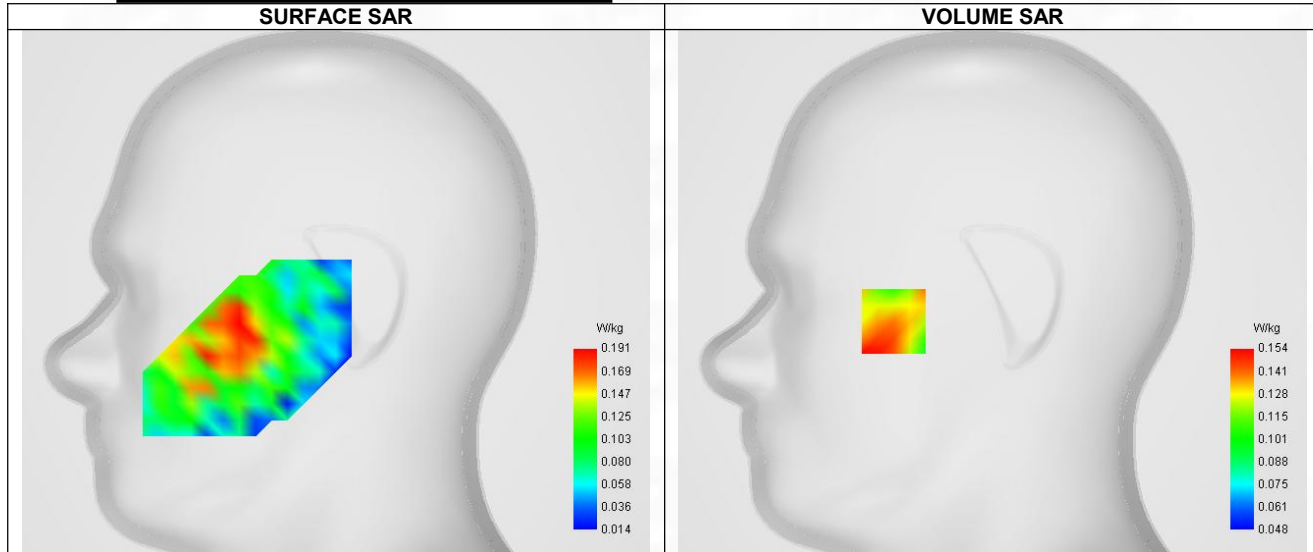
A. Experimental conditions.

Probe	SN 04/22 EPG0365
ConvF	1.65
Area Scan	dx=8mm dy=8mm, Adaptive 1 max
Zoom Scan	5x5x7, dx=8mm dy=8mm dz=5mm, Complete
Phantom	Right head
Device Position	Cheek
Band	LTE band 12
Channels	Higher (23130)
Signal	LTE FDD
Cell Bandwidth	10 Mhz
Modulation	SC-OFDM - QPSK
RB offset	0
RB size	1

B. Permittivity

Frequency (MHz)	706.590
Relative permittivity (real part)	41.999
Relative permittivity (imaginary part)	22.466
Conductivity (S/m)	0.855

C. SAR Surface and Volume

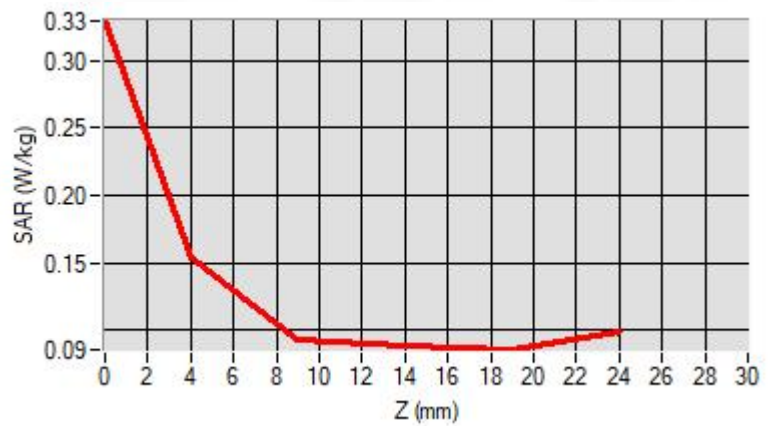


D. SAR 1g & 10g

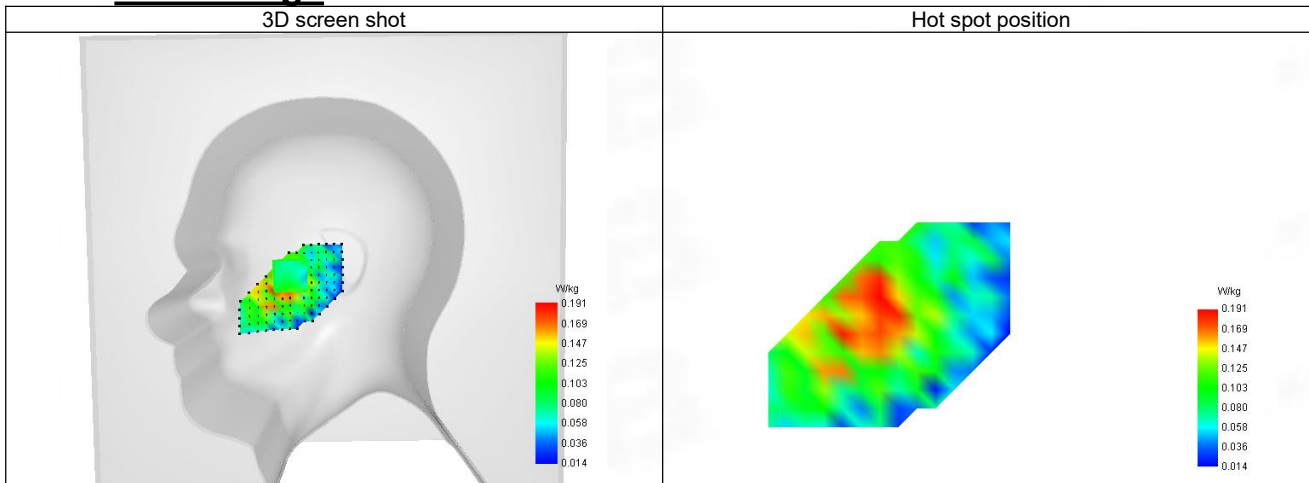
SAR 10g (W/Kg)	0.134
SAR 1g (W/Kg)	0.165
Variation (%)	4.420
Horizontal validation criteria: minimum distance (mm)	8.408
Vertical validation criteria: SAR ratio M2/M1 (%)	60.39%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.329	0.154	0.093	0.089	0.085



F. 3D Image



18-Body with back position in dist. 10mm on Channel 23130 in LTE band 12

SAR Measurement at LTE band 12 (Body, Validation Plane)

Date of measurement: 26/8/2024

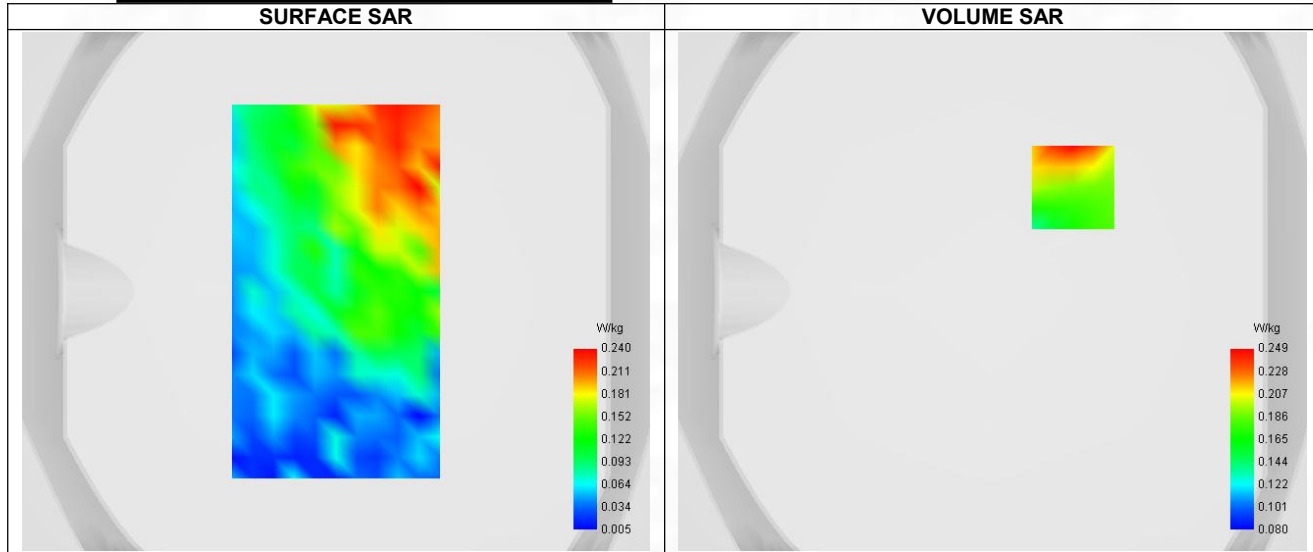
A. Experimental conditions.

Probe	SN 04/22 EPG0365
ConvF	1.65
Area Scan	dx=8mm dy=8mm, Adaptive 1 max
Zoom Scan	5x5x7, dx=8mm dy=8mm dz=5mm, Complete
Phantom	Validation plane
Device Position	Body
Band	LTE band 12
Channels	Higher (23130)
Signal	LTE FDD
Cell Bandwidth	10 Mhz
Modulation	SC-OFDM - QPSK
RB offset	0
RB size	1

B. Permittivity

Frequency (MHz)	706.590
Relative permittivity (real part)	41.999
Relative permittivity (imaginary part)	22.466
Conductivity (S/m)	0.855

C. SAR Surface and Volume



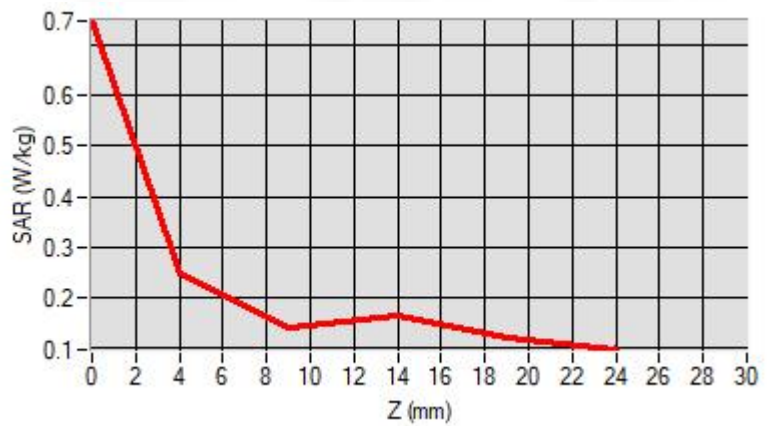
Maximum location: X=31.00, Y=40.00 ; SAR Peak: 0.30 W/kg

D. SAR 1g & 10g

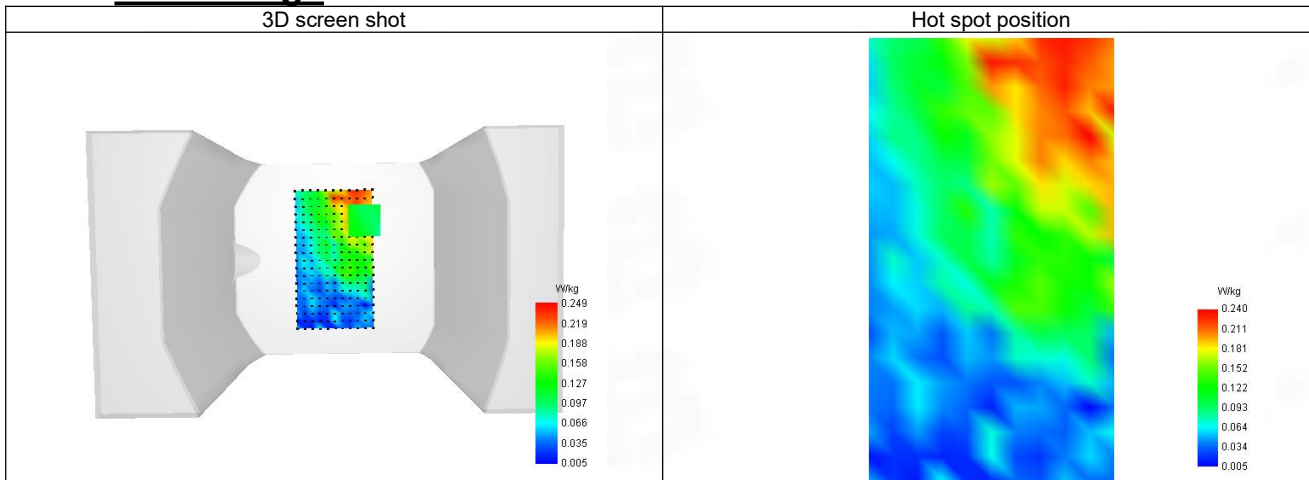
SAR 10g (W/Kg)	0.181
SAR 1g (W/Kg)	0.250
Variation (%)	-0.550
Horizontal validation criteria: minimum distance (mm)	8.725
Vertical validation criteria: SAR ratio M2/M1 (%)	56.22%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.748	0.249	0.140	0.163	0.121



F. 3D Image



19-Head with front position in dist. 0mm on Channel 23230 in LTE band 13

SAR Measurement at LTE band 13 (Cheek, Right)

Date of measurement: 26/8/2024

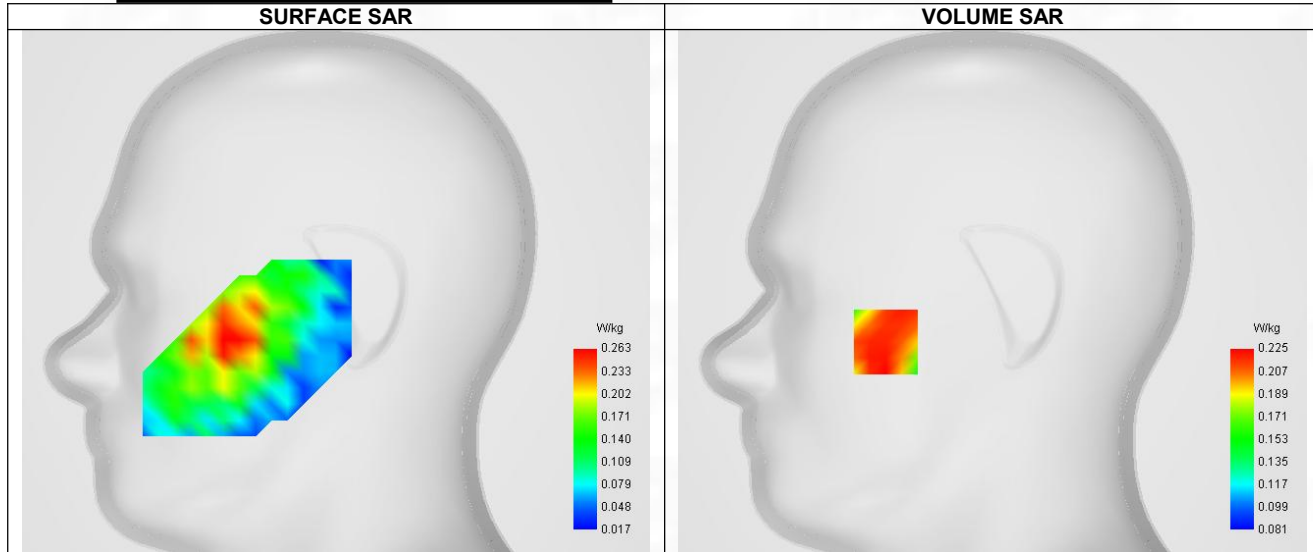
A. Experimental conditions.

Probe	SN 04/22 EPG0365
ConvF	1.65
Area Scan	dx=8mm dy=8mm, Adaptive 1 max
Zoom Scan	5x5x7, dx=8mm dy=8mm dz=5mm, Complete
Phantom	Right head
Device Position	Cheek
Band	LTE band 13
Channels	Middle (23230)
Signal	LTE FDD
Cell Bandwidth	10 Mhz
Modulation	SC-OFDM - QPSK
RB offset	49
RB size	1

B. Permittivity

Frequency (MHz)	786.410
Relative permittivity (real part)	41.633
Relative permittivity (imaginary part)	20.616
Conductivity (S/m)	0.864

C. SAR Surface and Volume



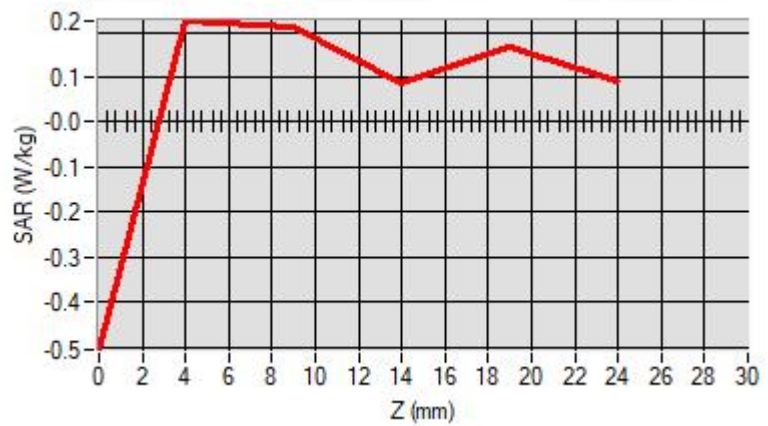
Maximum location: X=-53.00, Y=-25.00 ; SAR Peak: 0.37 W/kg

D. SAR 1g & 10g

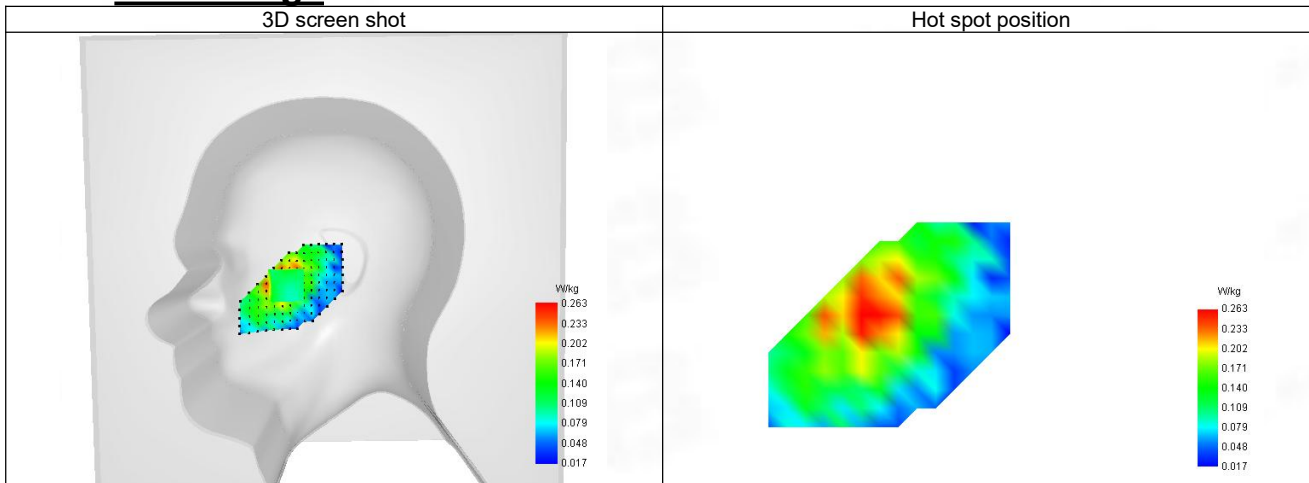
SAR 10g (W/Kg)	0.194
SAR 1g (W/Kg)	0.262
Variation (%)	-2.740
Horizontal validation criteria: minimum distance (mm)	8.295
Vertical validation criteria: SAR ratio M2/M1 (%)	95.11%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	-0.506	0.225	0.214	0.086	0.166



F. 3D Image



20-Body with back position in dist. 10mm on Channel 23230 in LTE band 13

SAR Measurement at LTE band 13 (Body, Validation Plane)

Date of measurement: 26/8/2024

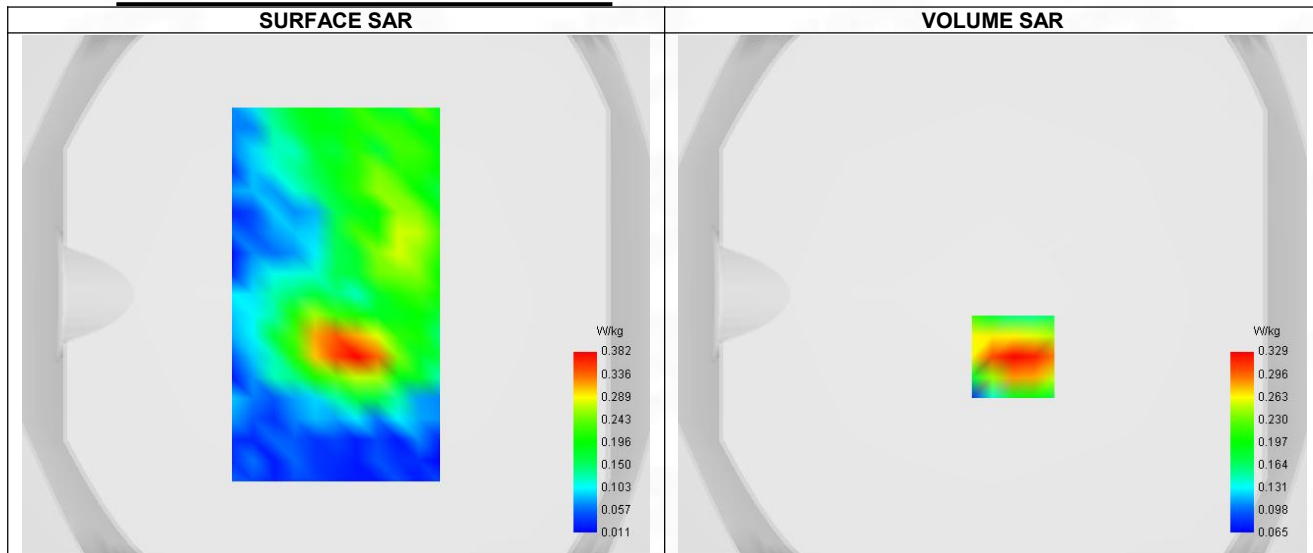
A. Experimental conditions.

Probe	SN 04/22 EPG0365
ConvF	1.63
Area Scan	dx=8mm dy=8mm, Adaptive 1 max
Zoom Scan	5x5x7, dx=8mm dy=8mm dz=5mm, Complete
Phantom	Validation plane
Device Position	Body
Band	LTE band 13
Channels	Middle (23230)
Signal	LTE FDD
Cell Bandwidth	10 Mhz
Modulation	SC-OFDM - QPSK
RB offset	49
RB size	1

B. Permittivity

Frequency (MHz)	786.410
Relative permittivity (real part)	41.633
Relative permittivity (imaginary part)	20.616
Conductivity (S/m)	0.864

C. SAR Surface and Volume



Maximum location: X=8.00, Y=-24.00 ; SAR Peak: 0.47 W/kg

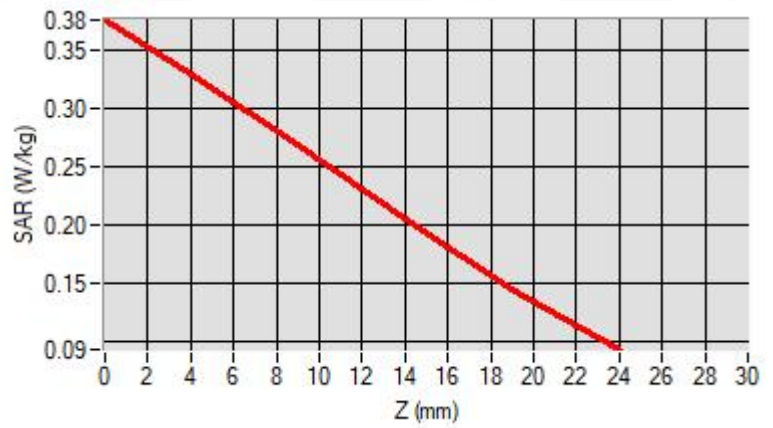
D. SAR 1g & 10g

SAR 10g (W/Kg)	0.243
SAR 1g (W/Kg)	0.359
Variation (%)	-3.210
Horizontal validation criteria: minimum distance (mm)	8.416
Vertical validation criteria: SAR ratio M2/M1 (%)	81.46%

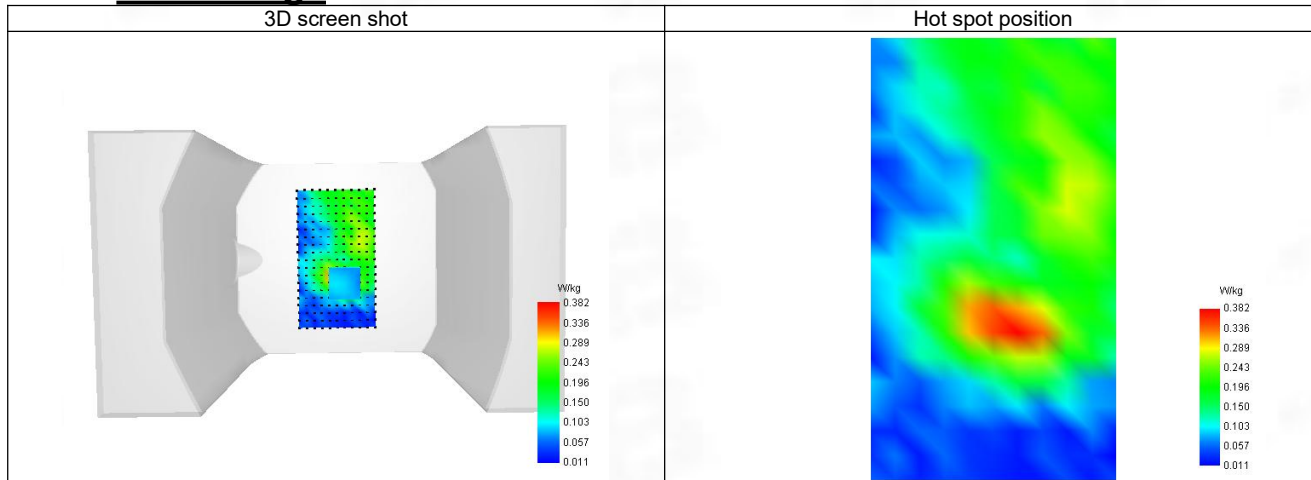
E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
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SAR (W/Kg)	0.375	0.329	0.268	0.206	0.146
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F. 3D Image



21-Head with front position in dist. 0mm on Channel 23790 in LTE band 17

SAR Measurement at LTE band 17 (Cheek, Right)

Date of measurement: 26/8/2024

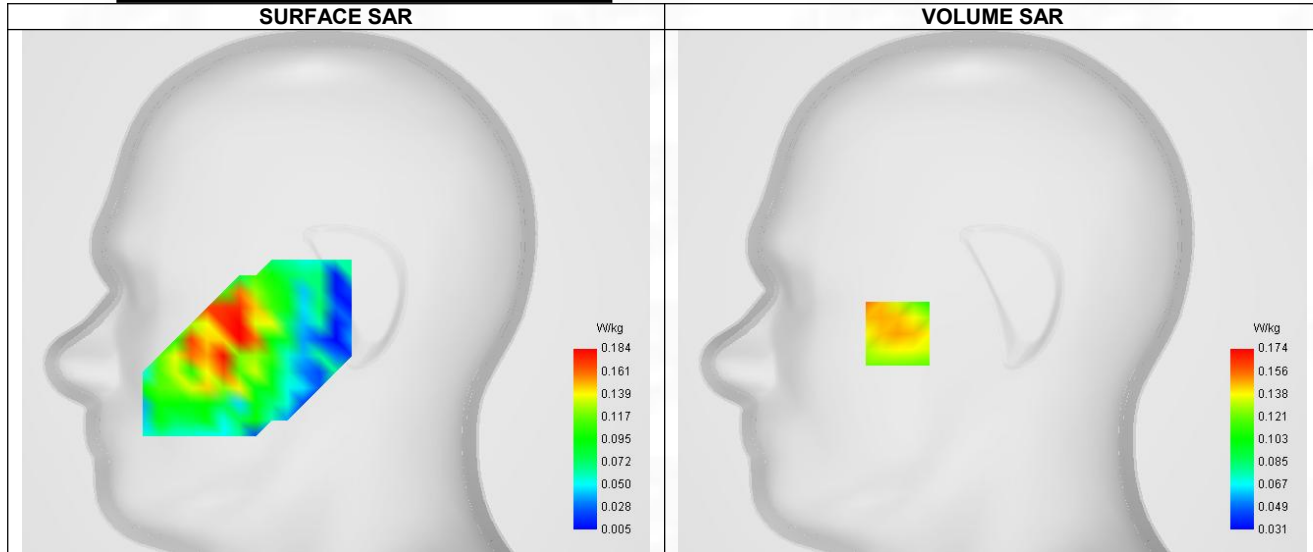
A. Experimental conditions.

Probe	SN 04/22 EPG0365
ConvF	1.65
Area Scan	dx=8mm dy=8mm, Adaptive 1 max
Zoom Scan	5x5x7, dx=8mm dy=8mm dz=5mm, Complete
Phantom	Right head
Device Position	Cheek
Band	LTE band 17
Channels	Middle (23790)
Signal	LTE FDD
Cell Bandwidth	10 Mhz
Modulation	SC-OFDM - QPSK
RB offset	49
RB size	1

B. Permittivity

Frequency (MHz)	714.410
Relative permittivity (real part)	41.963
Relative permittivity (imaginary part)	22.285
Conductivity (S/m)	0.856

C. SAR Surface and Volume



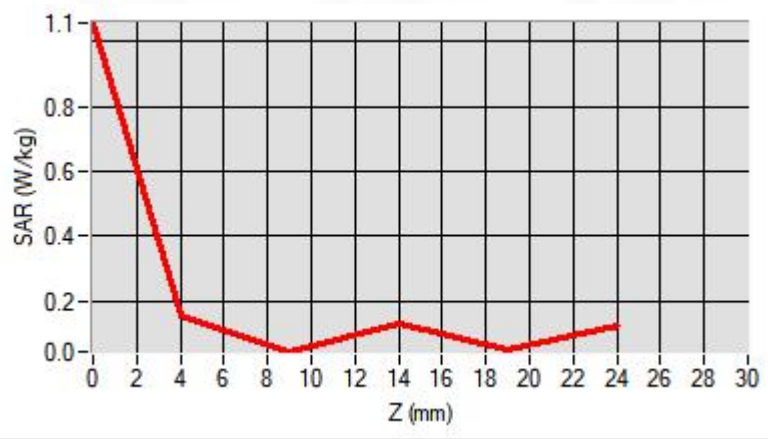
Maximum location: X=-47.00, Y=-21.00 ; SAR Peak: 0.28 W/kg

D. SAR 1g & 10g

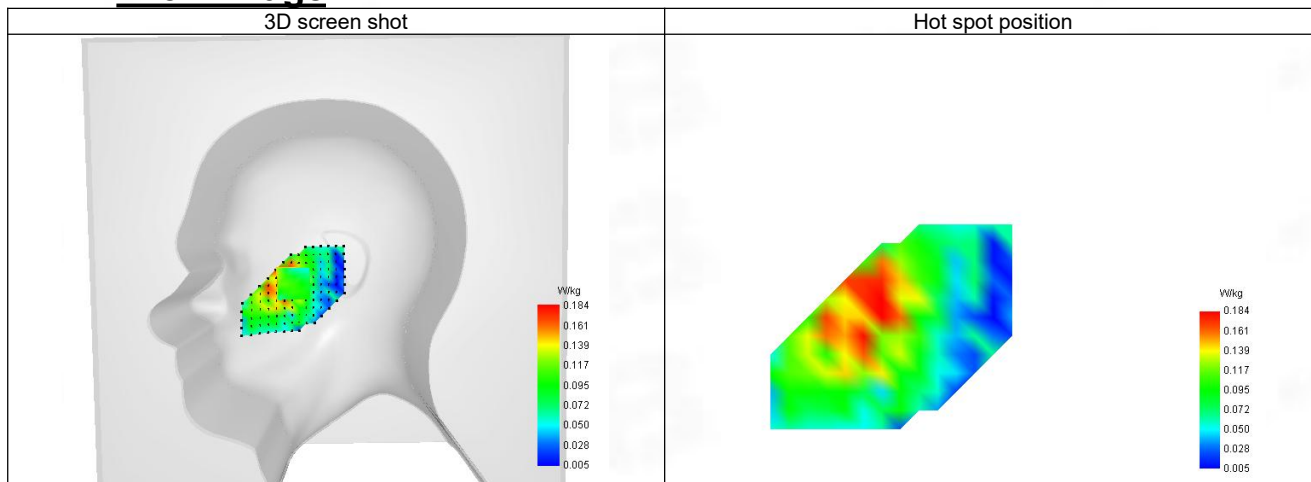
SAR 10g (W/Kg)	0.164
SAR 1g (W/Kg)	0.192
Variation (%)	-4.450
Horizontal validation criteria: minimum distance (mm)	8.632
Vertical validation criteria: SAR ratio M2/M1 (%)	29.03%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.057	0.155	0.045	0.129	0.050



F. 3D Image



22-Body with back position in dist. 10mm on Channel 23790 in LTE band 17

SAR Measurement at LTE band 17 (Body, Validation Plane)

Date of measurement: 26/8/2024

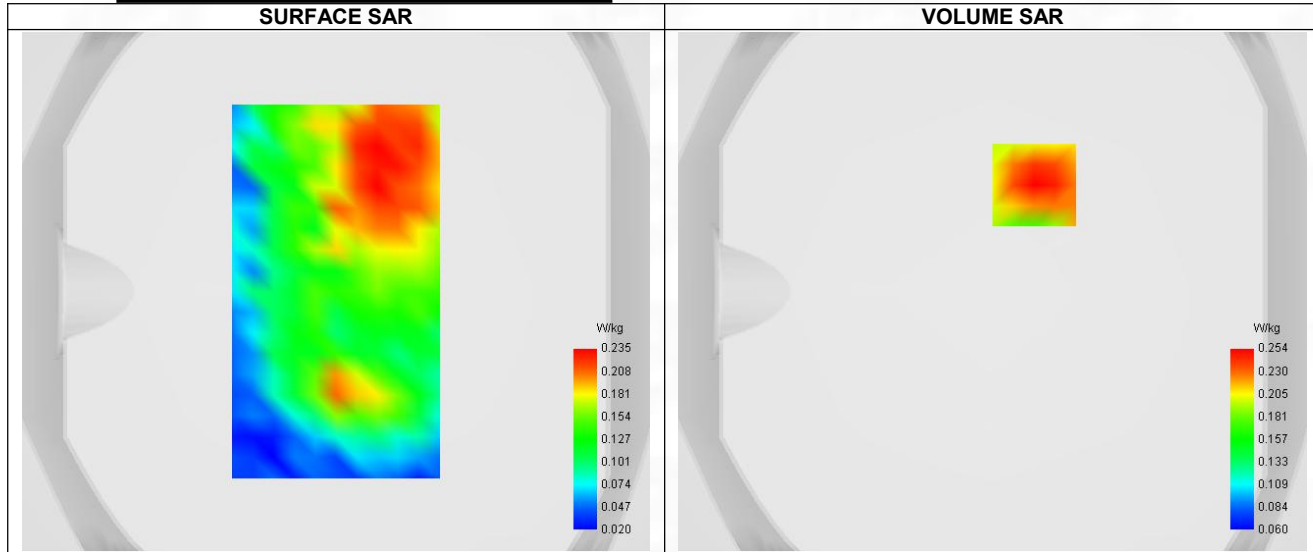
A. Experimental conditions.

Probe	SN 04/22 EPG0365
ConvF	1.65
Area Scan	dx=8mm dy=8mm, Adaptive 1 max
Zoom Scan	5x5x7, dx=8mm dy=8mm dz=5mm, Complete
Phantom	Validation plane
Device Position	Body
Band	LTE band 17
Channels	Middle (23790)
Signal	LTE FDD
Cell Bandwidth	10 Mhz
Modulation	SC-OFDM - QPSK
RB offset	49
RB size	1

B. Permittivity

Frequency (MHz)	714.410
Relative permittivity (real part)	41.963
Relative permittivity (imaginary part)	22.285
Conductivity (S/m)	0.856

C. SAR Surface and Volume

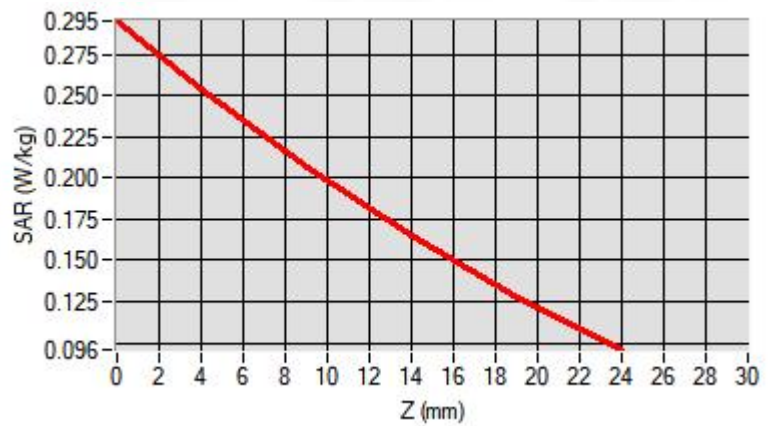


D. SAR 1g & 10g

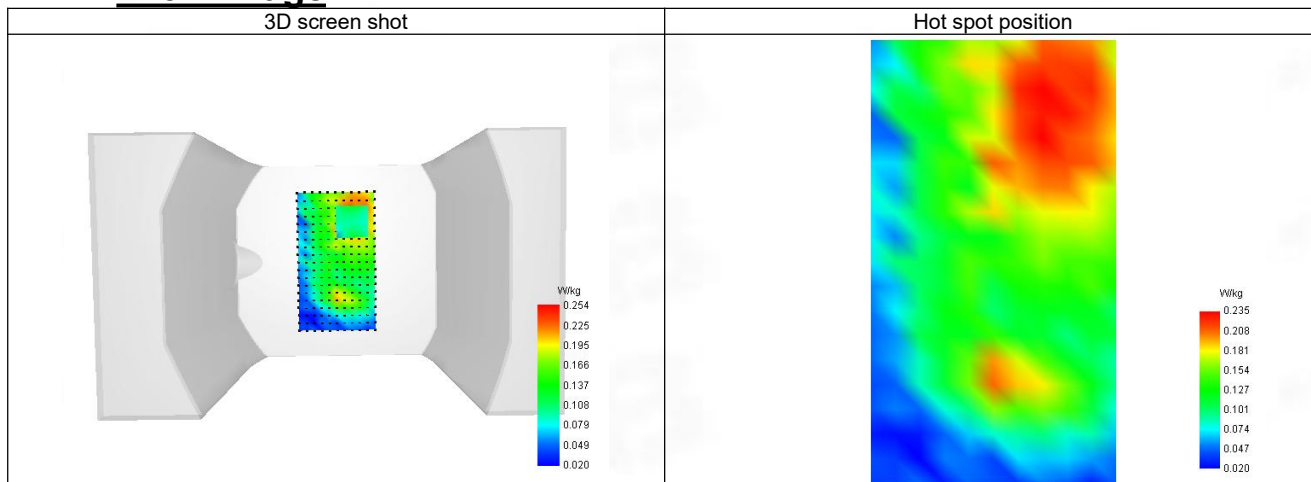
SAR 10g (W/Kg)	0.201
SAR 1g (W/Kg)	0.274
Variation (%)	0.030
Horizontal validation criteria: minimum distance (mm)	8.509
Vertical validation criteria: SAR ratio M2/M1 (%)	81.50%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.295	0.254	0.207	0.165	0.128



F. 3D Image



23-Head with front position in dist. 0mm on Channel 26140 in LTE band 25

SAR Measurement at LTE band 25 (Cheek, Right)

Date of measurement: 3/9/2024

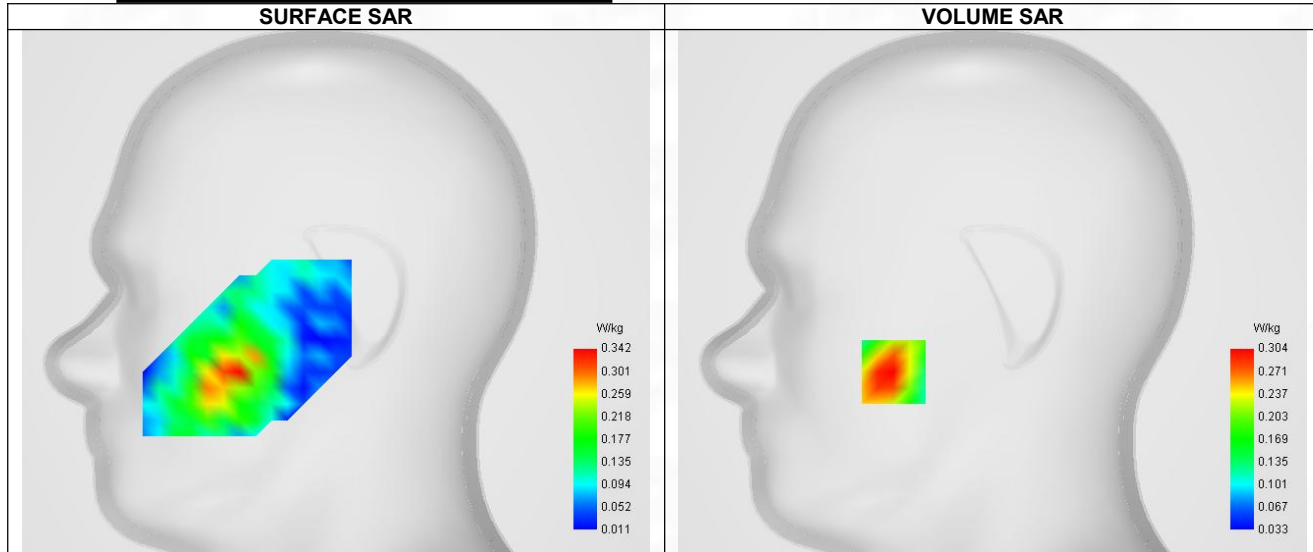
A. Experimental conditions.

Probe	SN 04/22 EPG0365
ConvF	2.24
Area Scan	dx=8mm dy=8mm, Adaptive 1 max
Zoom Scan	5x5x7, dx=8mm dy=8mm dz=5mm, Complete
Phantom	Right head
Device Position	Cheek
Band	LTE band 25
Channels	Lower (26140)
Signal	LTE FDD
Cell Bandwidth	20 Mhz
Modulation	SC-OFDM - QPSK
RB offset	50
RB size	1

B. Permittivity

Frequency (MHz)	1860.090
Relative permittivity (real part)	39.892
Relative permittivity (imaginary part)	13.663
Conductivity (S/m)	1.394

C. SAR Surface and Volume



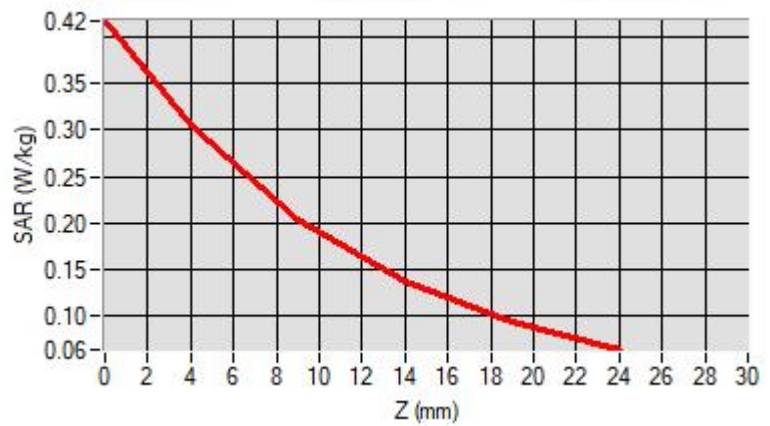
Maximum location: X=-49.00, Y=-40.00 ; SAR Peak: 0.45 W/kg

D. SAR 1g & 10g

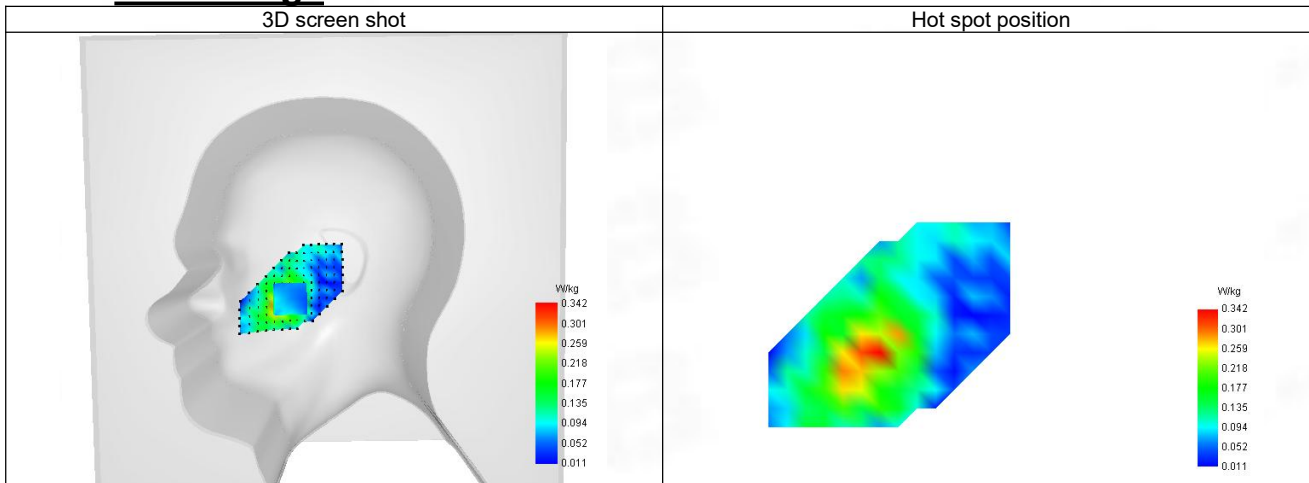
SAR 10g (W/Kg)	0.194
SAR 1g (W/Kg)	0.314
Variation (%)	-1.060
Horizontal validation criteria: minimum distance (mm)	8.596
Vertical validation criteria: SAR ratio M2/M1 (%)	67.11%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.417	0.304	0.204	0.138	0.094



F. 3D Image



24-Body with bottom position in dist. 10mm on Channel 26140 in LTE band 25

SAR Measurement at LTE band 25 (Body, Validation Plane)

Date of measurement: 3/9/2024

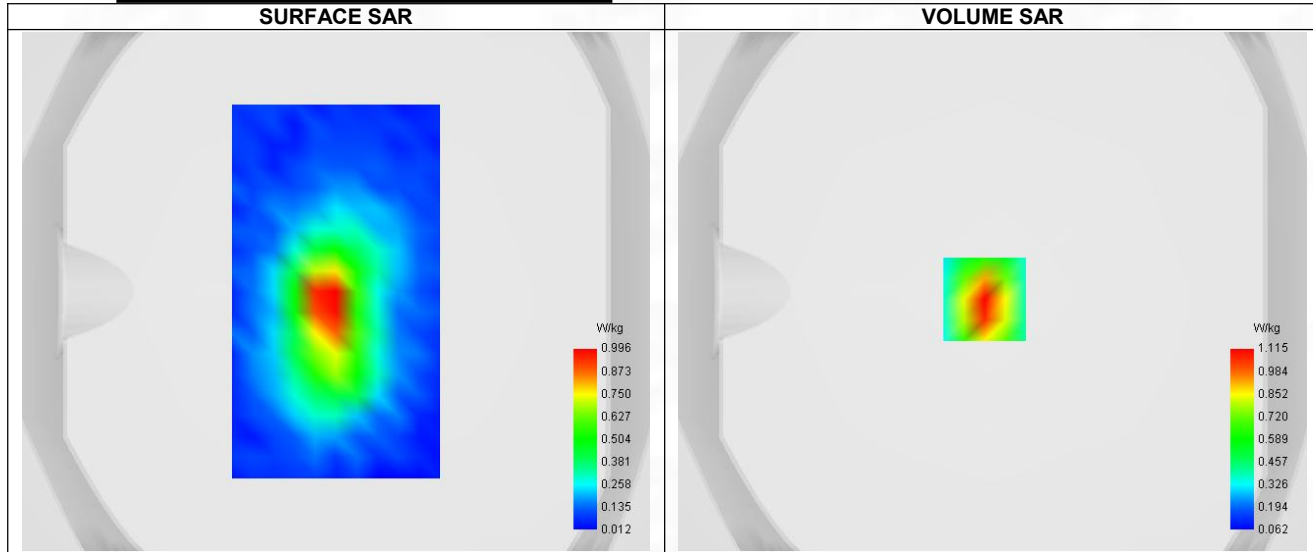
A. Experimental conditions.

Probe	SN 04/22 EPG0365
ConvF	2.24
Area Scan	dx=8mm dy=8mm, Adaptive 1 max
Zoom Scan	5x5x7, dx=8mm dy=8mm dz=5mm, Complete
Phantom	Validation plane
Device Position	Body
Band	LTE band 25
Channels	Lower (26140)
Signal	LTE FDD
Cell Bandwidth	20 Mhz
Modulation	SC-OFDM - QPSK
RB offset	50
RB size	1

B. Permittivity

Frequency (MHz)	1860.090
Relative permittivity (real part)	39.892
Relative permittivity (imaginary part)	13.663
Conductivity (S/m)	1.394

C. SAR Surface and Volume



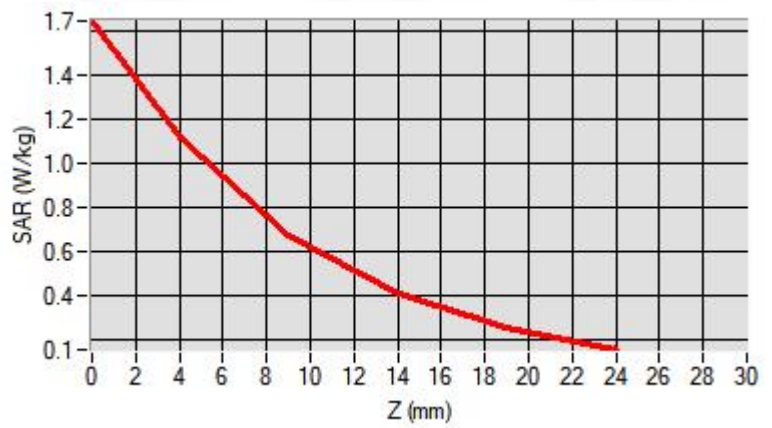
Maximum location: X=-3.00, Y=-3.00 ; SAR Peak: 1.66 W/kg

D. SAR 1g & 10g

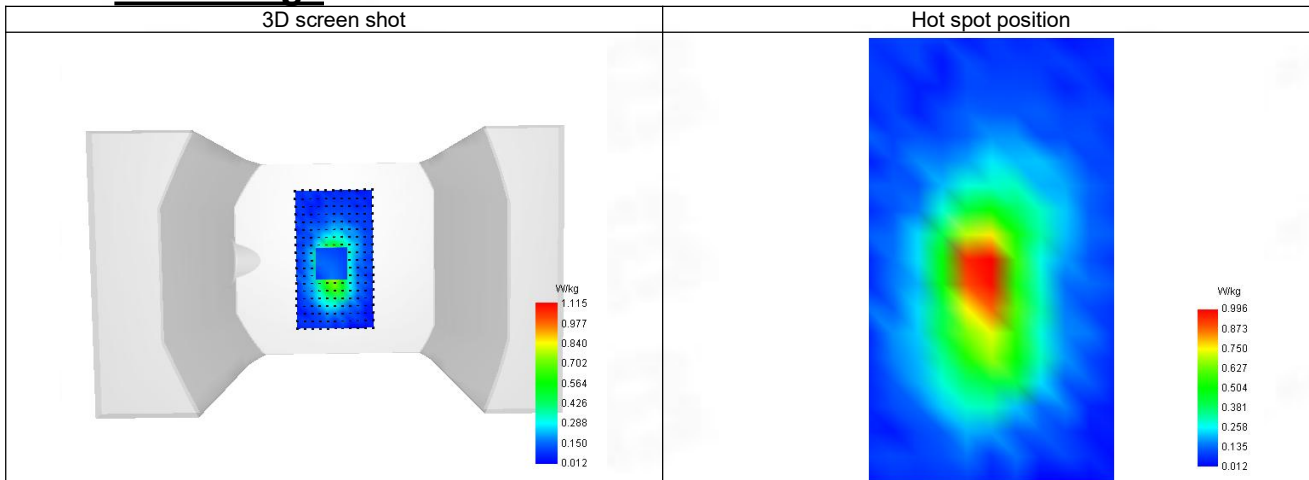
SAR 10g (W/Kg)	0.542
SAR 1g (W/Kg)	0.953
Variation (%)	3.500
Horizontal validation criteria: minimum distance (mm)	8.198
Vertical validation criteria: SAR ratio M2/M1 (%)	60.27%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.650	1.115	0.672	0.406	0.250



F. 3D Image



25-Head with front position in dist. 0mm on Channel 132322 in LTE band 66

SAR Measurement at LTE band 66 (Cheek, Right)

Date of measurement: 2/9/2024

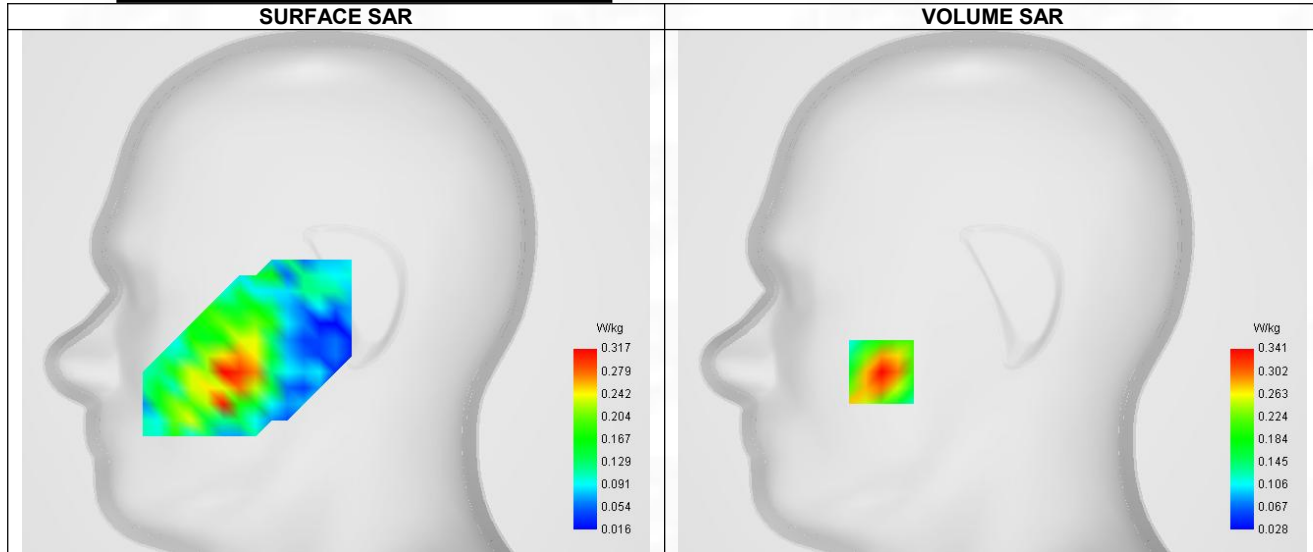
A. Experimental conditions.

Probe	SN 04/22 EPG0365
ConvF	1.96
Area Scan	dx=8mm dy=8mm, Adaptive 1 max
Zoom Scan	5x5x7, dx=8mm dy=8mm dz=5mm, Complete
Phantom	Right head
Device Position	Cheek
Band	LTE band 66
Channels	Middle (132322)
Signal	LTE FDD
Cell Bandwidth	20 Mhz
Modulation	SC-OFDM - QPSK
RB offset	99
RB size	1

B. Permittivity

Frequency (MHz)	1753.910
Relative permittivity (real part)	39.982
Relative permittivity (imaginary part)	14.348
Conductivity (S/m)	1.346

C. SAR Surface and Volume



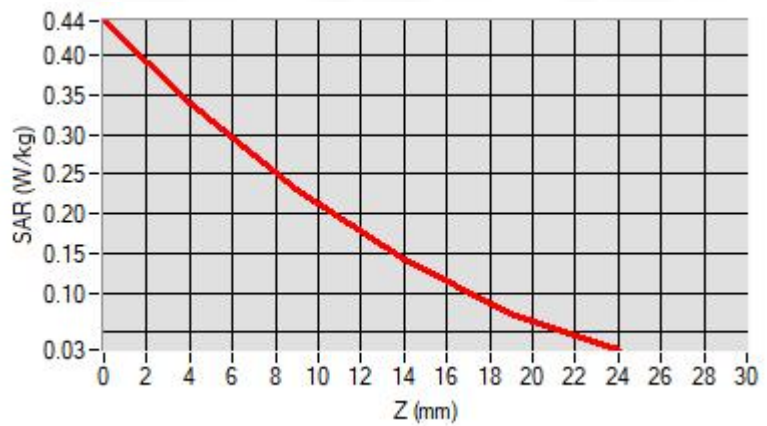
Maximum location: X=-55.00, Y=-40.00 ; SAR Peak: 0.46 W/kg

D. SAR 1g & 10g

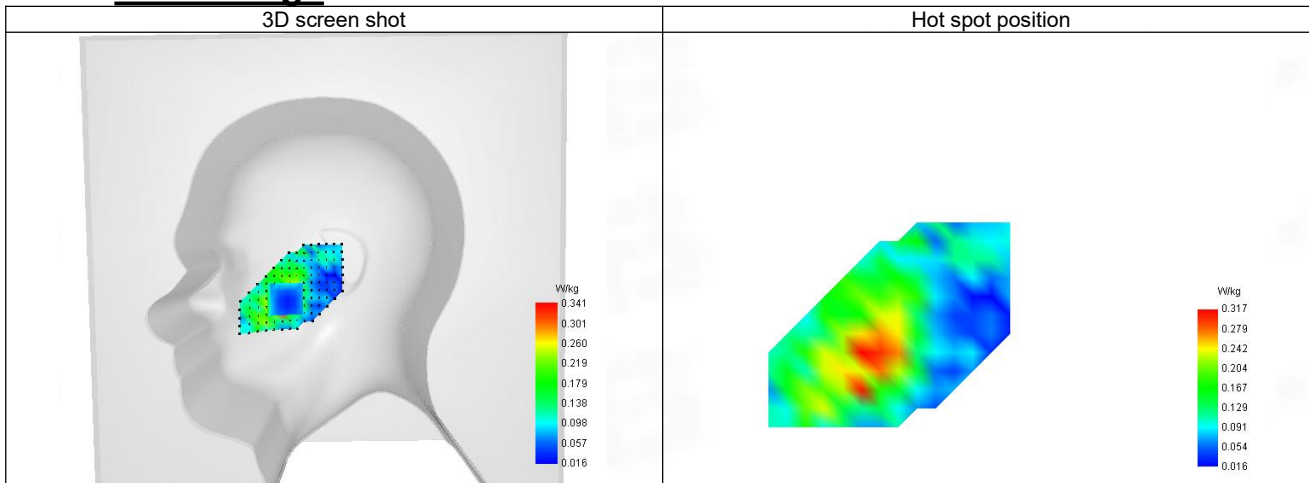
SAR 10g (W/Kg)	0.196
SAR 1g (W/Kg)	0.331
Variation (%)	1.560
Horizontal validation criteria: minimum distance (mm)	8.409
Vertical validation criteria: SAR ratio M2/M1 (%)	67.74%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.444	0.341	0.231	0.141	0.073



F. 3D Image



26-Body with bottom position in dist. 10mm on Channel 132322 in LTE band 66

SAR Measurement at LTE band 66 (Body, Validation Plane)

Date of measurement: 2/9/2024

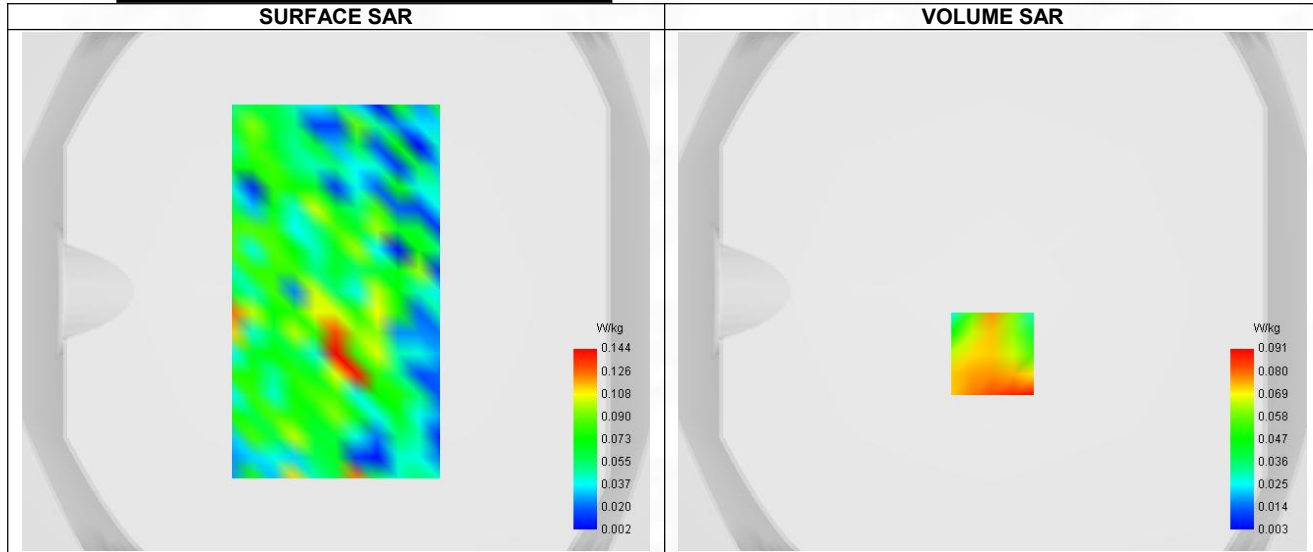
A. Experimental conditions.

Probe	SN 04/22 EPG0365
ConvF	1.79
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 66
Channels	Middle (132322)
Signal	LTE FDD
Cell Bandwidth	20 Mhz
Modulation	SC-OFDM - QPSK
RB offset	99
RB size	1

B. Permittivity

Frequency (MHz)	1753.910
Relative permittivity (real part)	39.982
Relative permittivity (imaginary part)	14.348
Conductivity (S/m)	1.346

C. SAR Surface and Volume



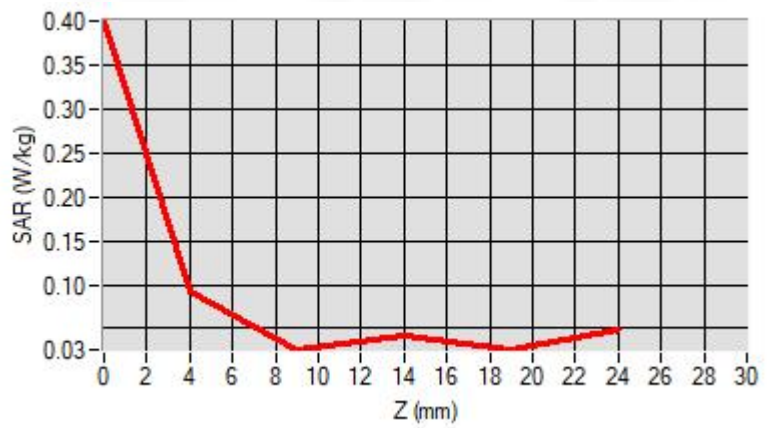
Maximum location: X=0.00, Y=-24.00 ; SAR Peak: 0.14 W/kg

D. SAR 1g & 10g

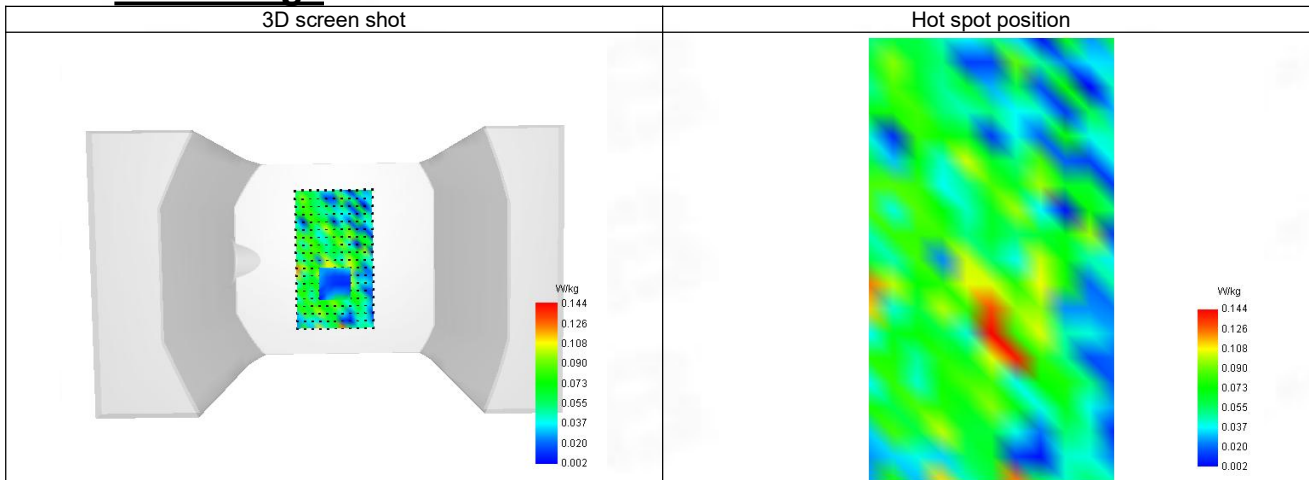
SAR 10g (W/Kg)	0.062
SAR 1g (W/Kg)	0.088
Variation (%)	2.250
Horizontal validation criteria: minimum distance (mm)	8.715
Vertical validation criteria: SAR ratio M2/M1 (%)	28.57%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.401	0.091	0.026	0.043	0.026



F. 3D Image



27-Head with front position in dist. 0mm on Channel 133372 in LTE band 71

SAR Measurement at LTE band 71 (Cheek, Right)

Date of measurement: 27/8/2024

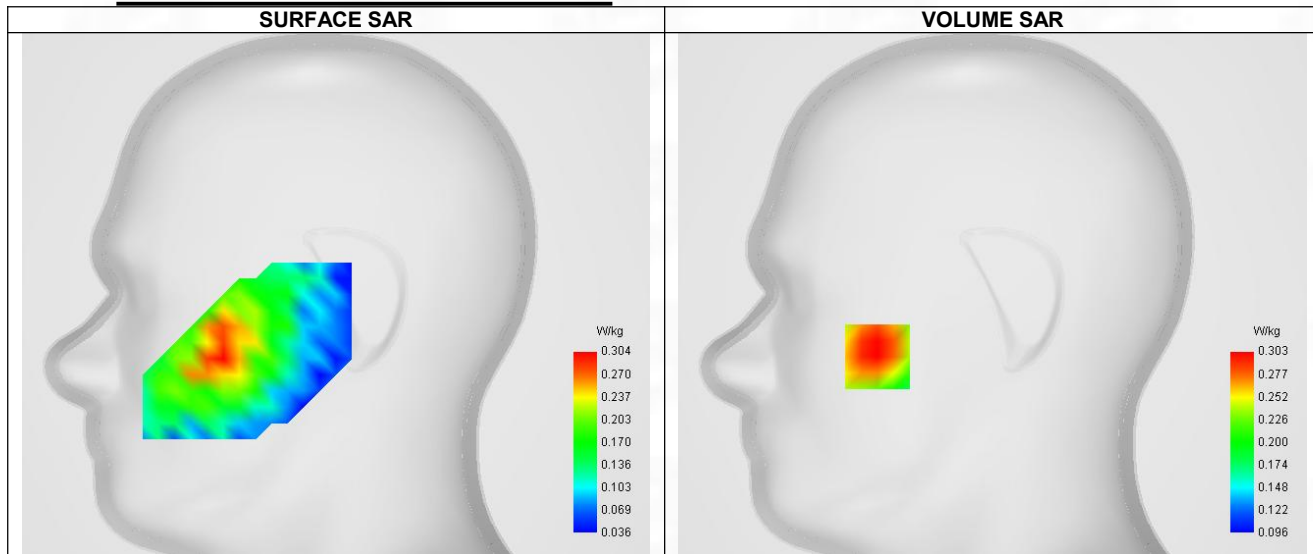
A. Experimental conditions.

Probe	SN 04/22 EPG0365
ConvF	1.65
Area Scan	dx=8mm dy=8mm, Adaptive 1 max
Zoom Scan	5x5x7, dx=8mm dy=8mm dz=5mm, Complete
Phantom	Right head
Device Position	Cheek
Band	LTE band 71
Channels	Higher (133372)
Signal	LTE FDD
Cell Bandwidth	20 Mhz
Modulation	SC-OFDM - QPSK
RB offset	99
RB size	1

B. Permittivity

Frequency (MHz)	696.910
Relative permittivity (real part)	42.044
Relative permittivity (imaginary part)	22.690
Conductivity (S/m)	0.854

C. SAR Surface and Volume



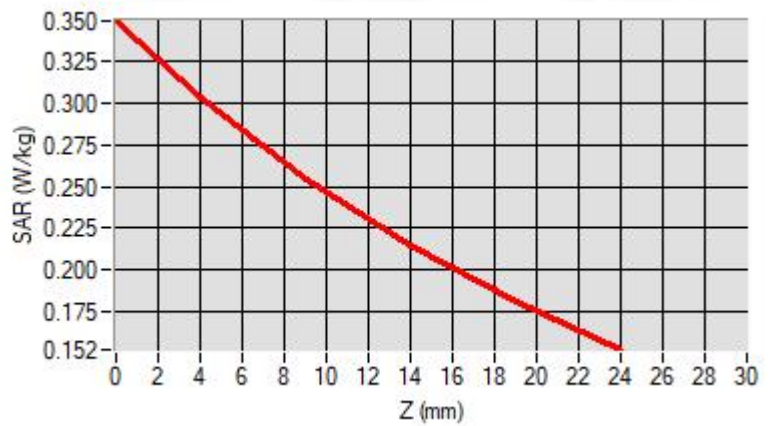
Maximum location: X=-57.00, Y=-31.00 ; SAR Peak: 0.35 W/kg

D. SAR 1g & 10g

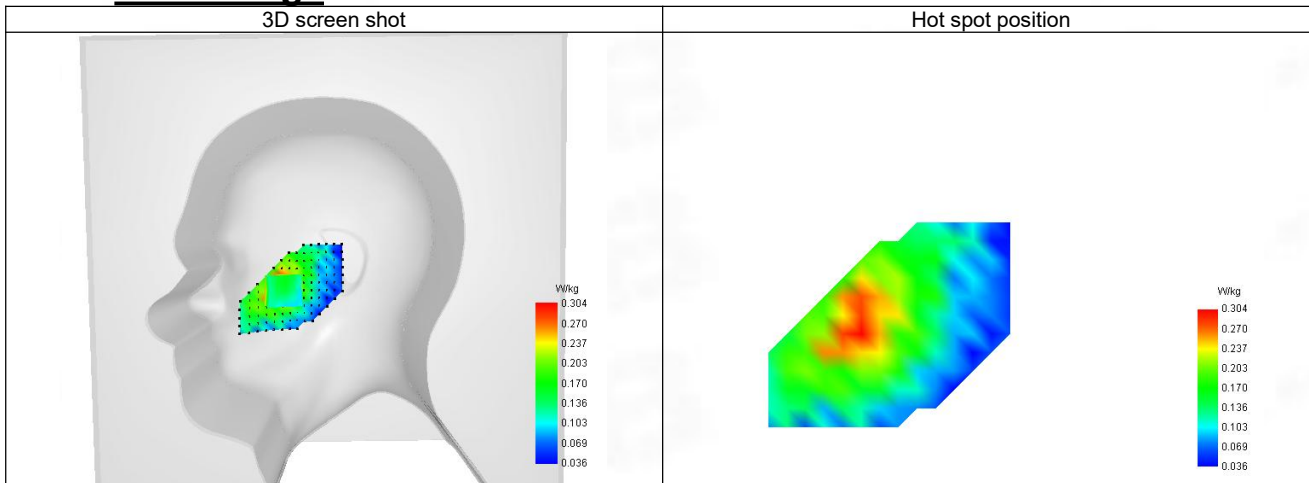
SAR 10g (W/Kg)	0.253
SAR 1g (W/Kg)	0.326
Variation (%)	2.150
Horizontal validation criteria: minimum distance (mm)	8.297
Vertical validation criteria: SAR ratio M2/M1 (%)	83.83%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.350	0.303	0.254	0.214	0.181



F. 3D Image



28-Body with back position in dist. 10mm on Channel 133372 in LTE band 71

SAR Measurement at LTE band 71 (Body, Validation Plane)

Date of measurement: 27/8/2024

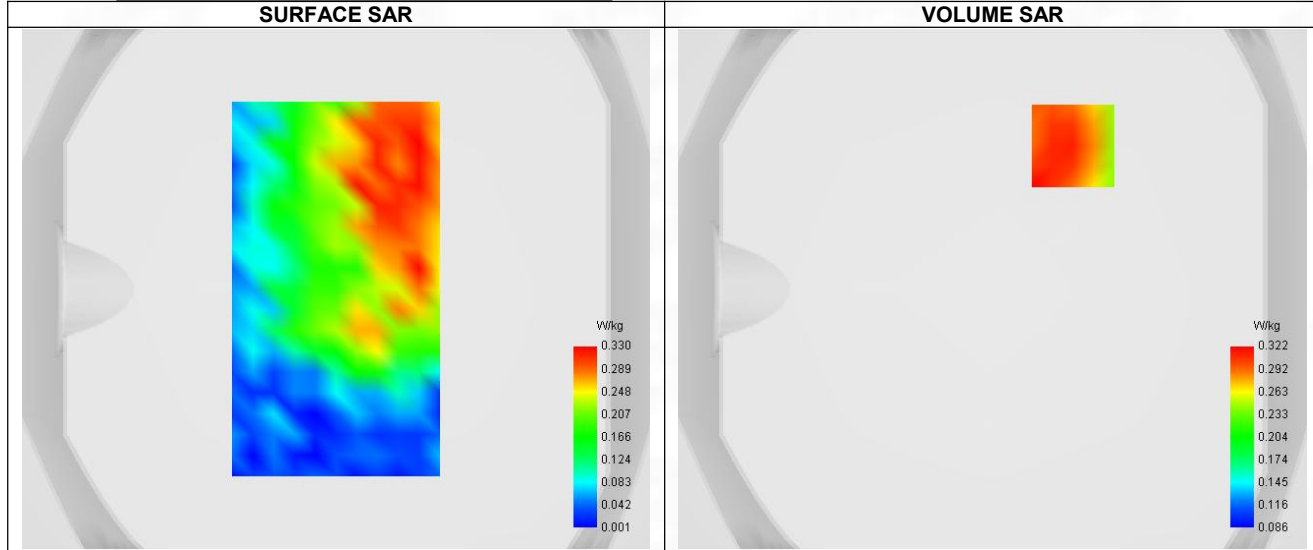
A. Experimental conditions.

Probe	SN 04/22 EPG0365
ConvF	1.65
Area Scan	dx=8mm dy=8mm, Adaptive 1 max
Zoom Scan	5x5x7, dx=8mm dy=8mm dz=5mm, Complete
Phantom	Validation plane
Device Position	Body
Band	LTE band 71
Channels	Higher (133372)
Signal	LTE FDD
Cell Bandwidth	20 Mhz
Modulation	SC-OFDM - QPSK
RB offset	99
RB size	1

B. Permittivity

Frequency (MHz)	696.910
Relative permittivity (real part)	42.044
Relative permittivity (imaginary part)	22.690
Conductivity (S/m)	0.854

C. SAR Surface and Volume



D. SAR 1g & 10g

SAR 10g (W/Kg)	0.258
SAR 1g (W/Kg)	0.337
Variation (%)	3.690
Horizontal validation criteria: minimum distance (mm)	8.473
Vertical validation criteria: SAR ratio M2/M1 (%)	61.18%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
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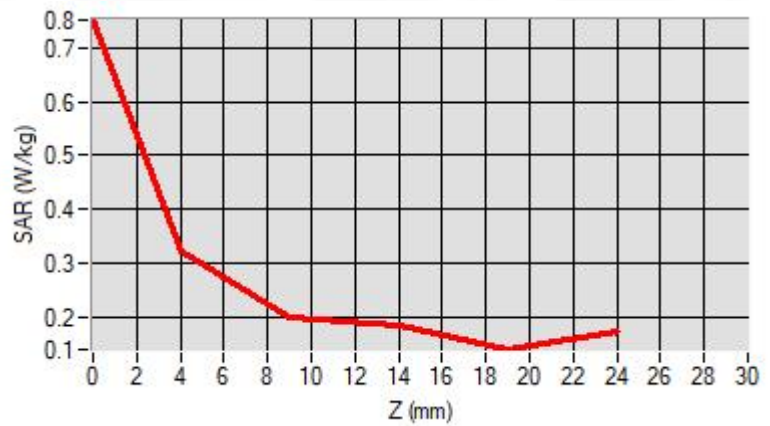
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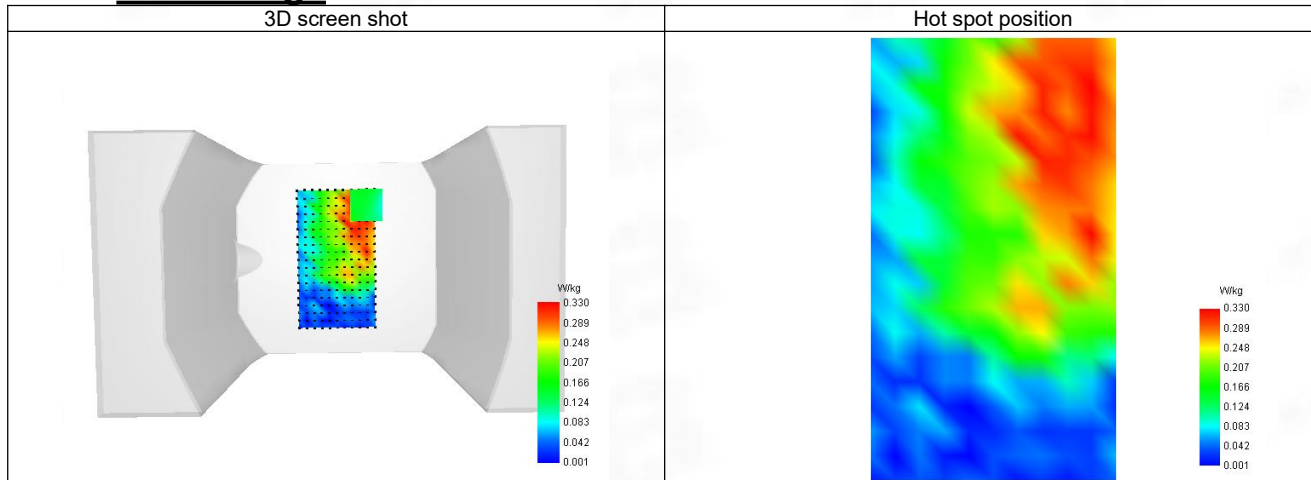
BTF Testing Lab (Shenzhen) Co., Ltd.

F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

SAR (W/Kg)	0.751	0.322	0.197	0.183	0.139
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F. 3D Image



29-Head with front position in dist. 0mm on Channel 11 in IEEE 802.11b ISM

SAR Measurement at IEEE 802.11b ISM (Cheek, Right)

Date of measurement: 5/9/2024

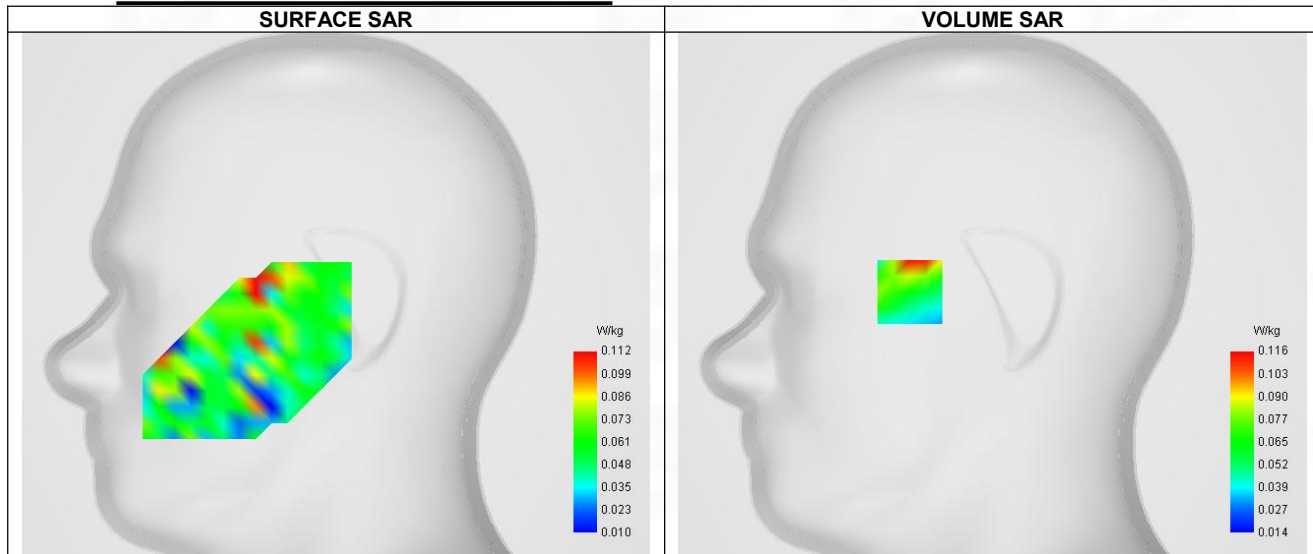
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	2.36
Area Scan	dx=8mm dy=8mm, Adaptive 1 max
Zoom Scan	5x5x7, dx=8mm dy=8mm dz=5mm, Complete
Phantom	Right head
Device Position	Cheek
Band	IEEE 802.11b ISM
Channels	Higher (11)
Signal	IEEE 802.11

B. Permittivity

Frequency (MHz)	2462.000
Relative permittivity (real part)	39.064
Relative permittivity (imaginary part)	13.288
Conductivity (S/m)	1.823

C. SAR Surface and Volume



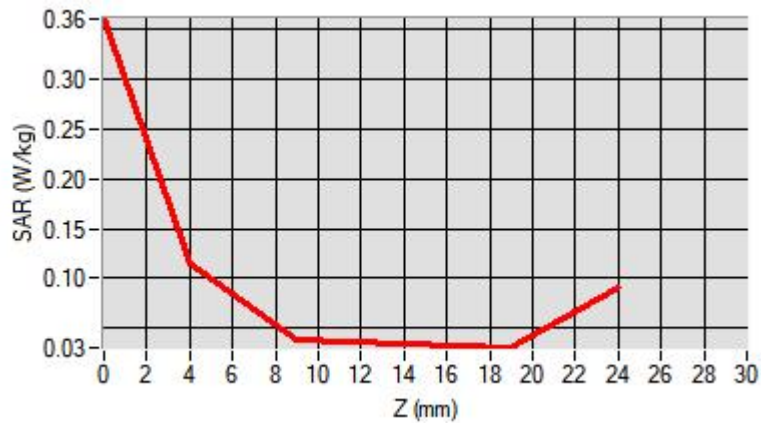
Maximum location: X=-41.00, Y=1.00 ; SAR Peak: 0.24 W/kg

D. SAR 1g & 10g

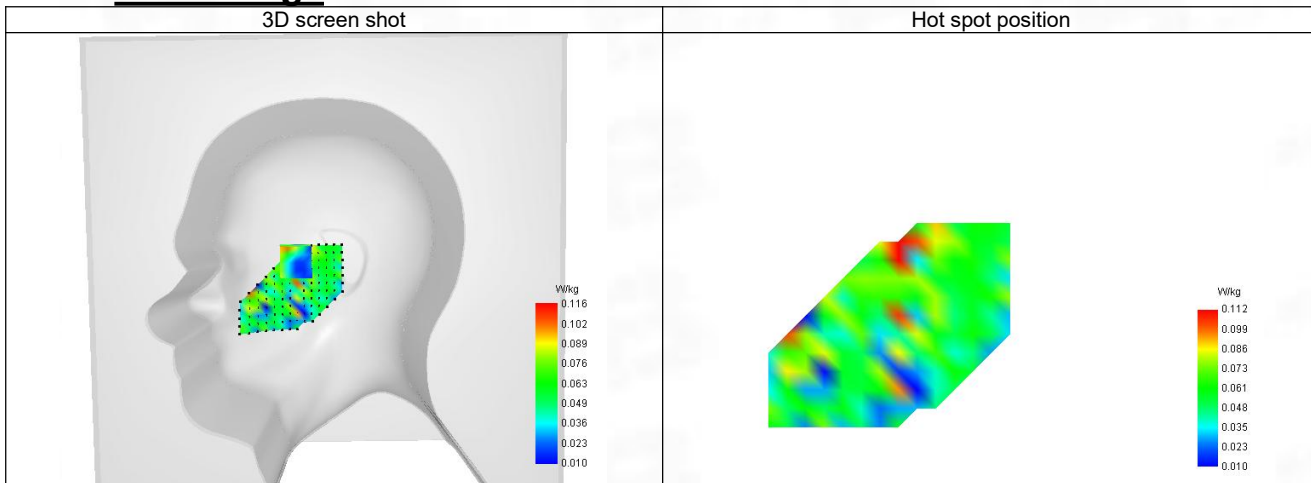
SAR 10g (W/Kg)	0.075
SAR 1g (W/Kg)	0.113
Variation (%)	2.450
Horizontal validation criteria: minimum distance (mm)	8.348
Vertical validation criteria: SAR ratio M2/M1 (%)	33.62%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.360	0.116	0.039	0.034	0.031



F. 3D Image



30-Body with back position in dist. 10mm on Channel 11 in IEEE 802.11b ISM

SAR Measurement at IEEE 802.11b ISM (Body, Validation Plane)

Date of measurement: 5/9/2024

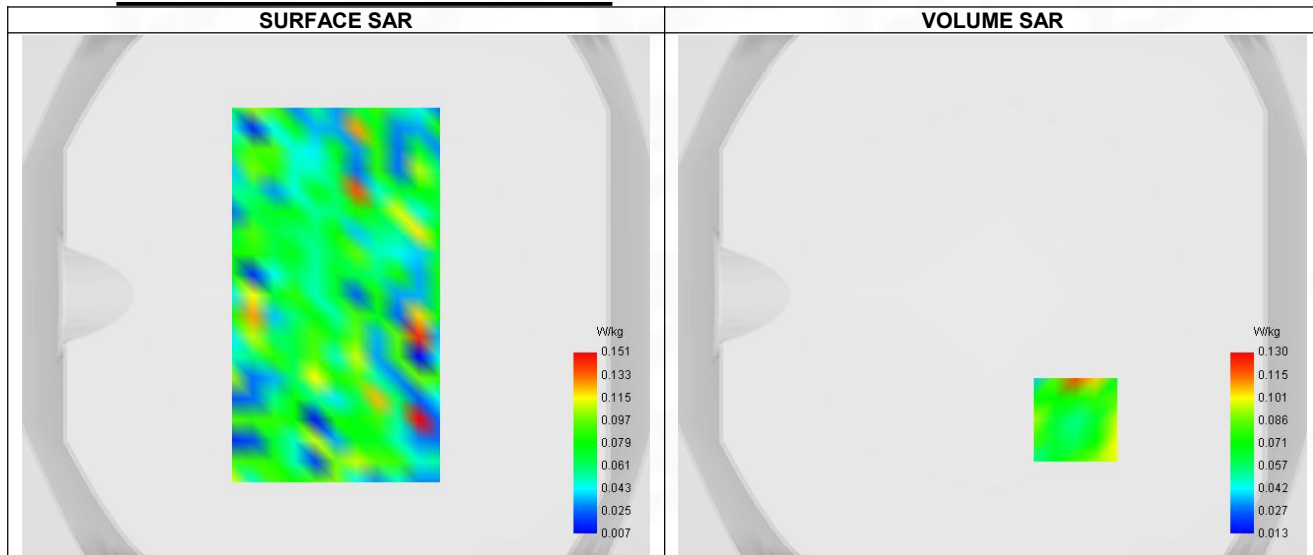
A. Experimental conditions.

Probe	SN 04/22 EPG0365
ConvF	2.36
Area Scan	dx=8mm dy=8mm, Adaptive 1 max
Zoom Scan	5x5x7, dx=8mm dy=8mm dz=5mm, Complete
Phantom	Validation plane
Device Position	Body
Band	IEEE 802.11b ISM
Channels	Higher (11)
Signal	IEEE 802.11

B. Permittivity

Frequency (MHz)	2462.000
Relative permittivity (real part)	39.064
Relative permittivity (imaginary part)	13.288
Conductivity (S/m)	1.823

C. SAR Surface and Volume

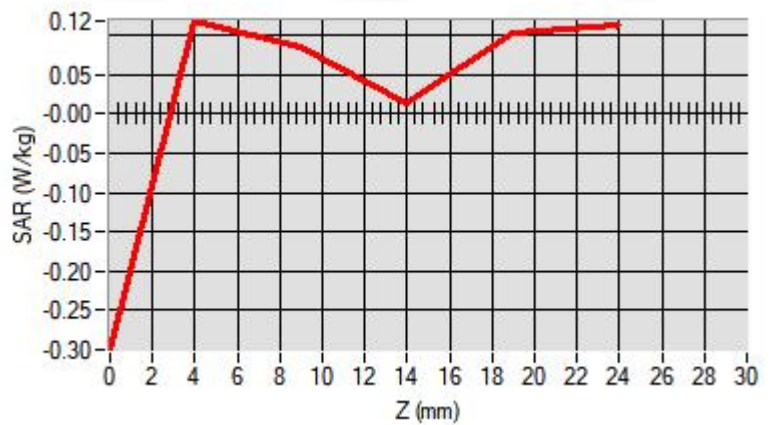


D. SAR 1g & 10g

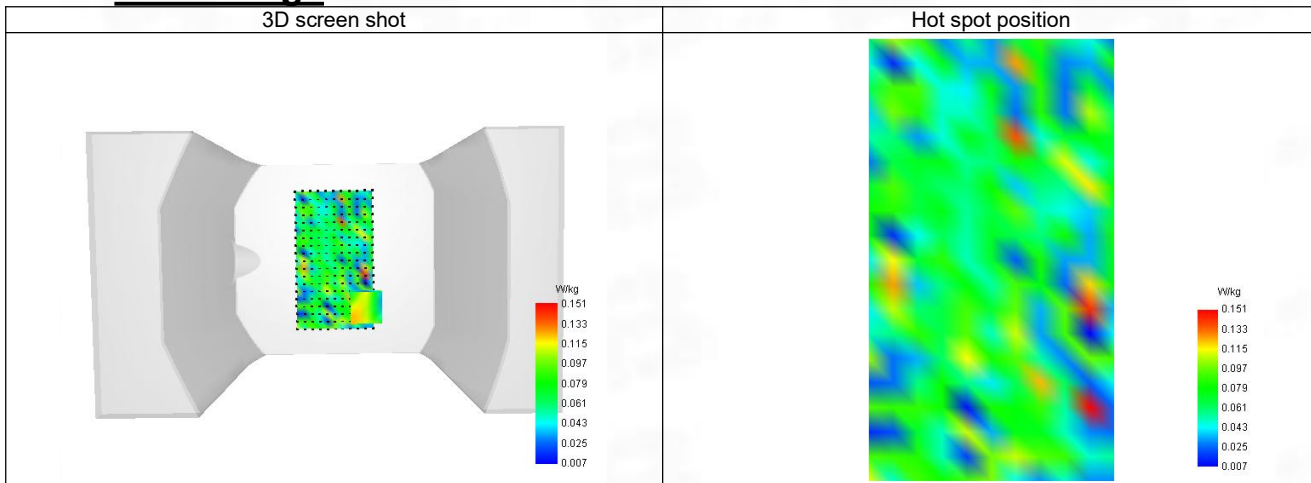
SAR 10g (W/Kg)	0.082
SAR 1g (W/Kg)	0.115
Variation (%)	4.630
Horizontal validation criteria: minimum distance (mm)	8.114
Vertical validation criteria: SAR ratio M2/M1 (%)	72.03%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	-0.300	0.118	0.085	0.013	0.101



F. 3D Image



31-Head with front position in dist. 0mm on Channel 39 in Bluetooth

SAR Measurement at Bluetooth (Cheek, Right)

Date of measurement: 5/9/2024

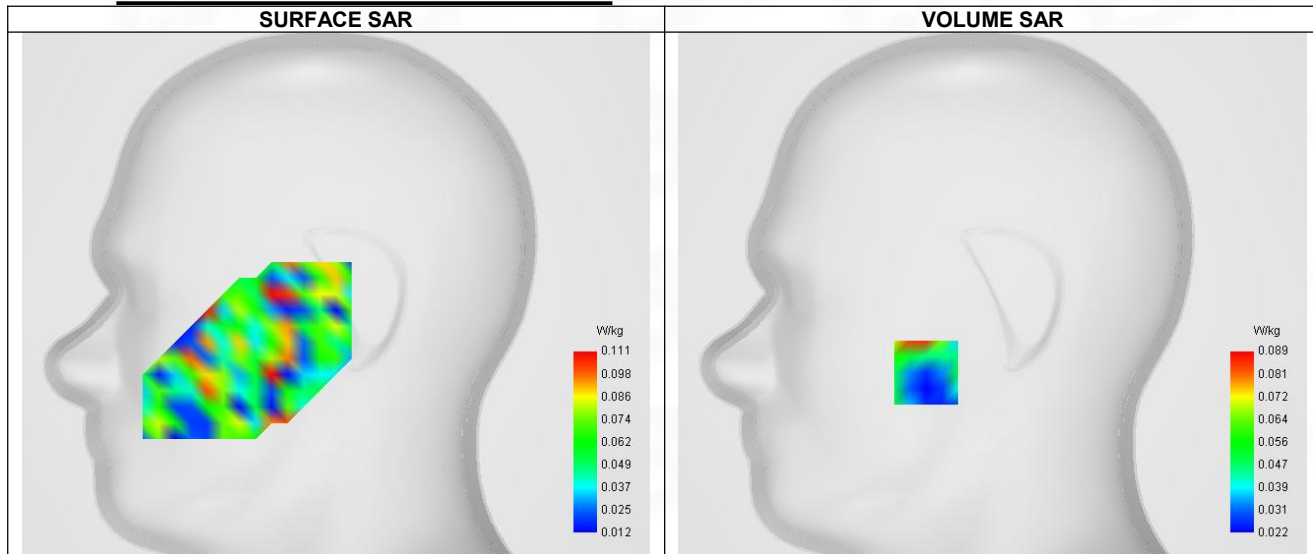
A. Experimental conditions.

Probe	SN 04/22 EPG0365
ConvF	2.36
Area Scan	dx=8mm dy=8mm, Adaptive 1 max
Zoom Scan	5x5x7, dx=8mm dy=8mm dz=5mm, Complete
Phantom	Right head
Device Position	Cheek
Band	Bluetooth
Channels	Middle (39)
Signal	Bluetooth

B. Permittivity

Frequency (MHz)	2441.000
Relative permittivity (real part)	39.093
Relative permittivity (imaginary part)	13.341
Conductivity (S/m)	1.803

C. SAR Surface and Volume



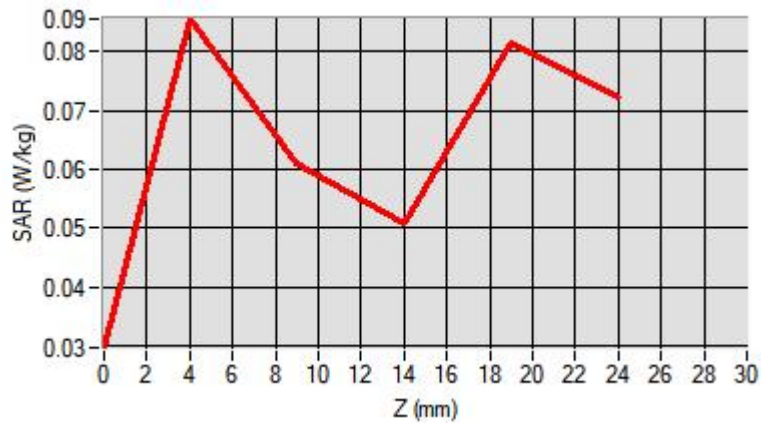
Maximum location: X=-33.00, Y=-39.00 ; SAR Peak: 0.13 W/kg

D. SAR 1g & 10g

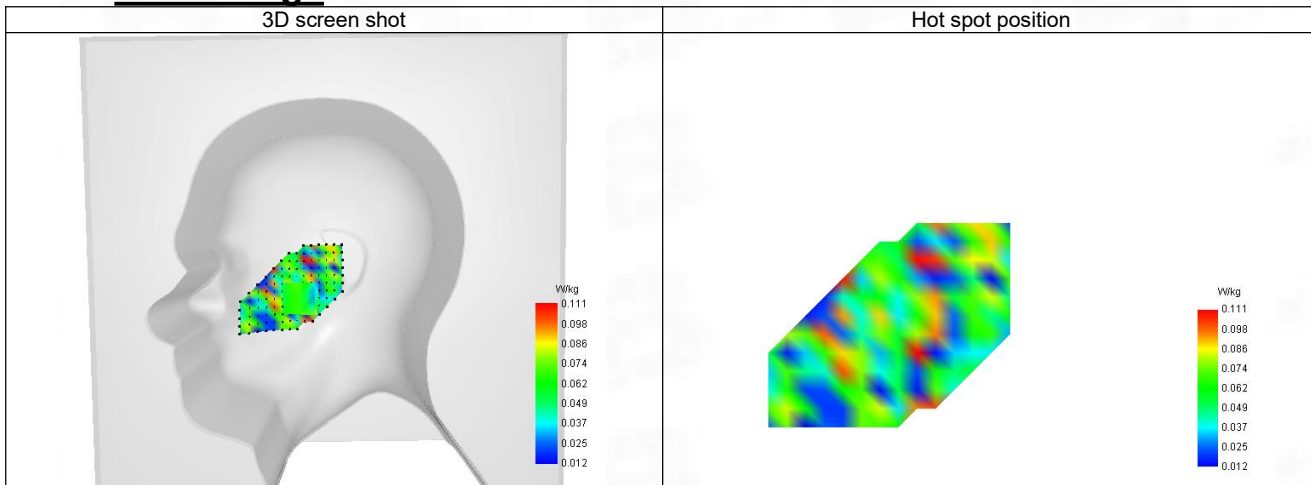
SAR 10g (W/Kg)	0.059
SAR 1g (W/Kg)	0.074
Variation (%)	4.060
Horizontal validation criteria: minimum distance (mm)	8.229
Vertical validation criteria: SAR ratio M2/M1 (%)	70.93%

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.030	0.086	0.061	0.051	0.081

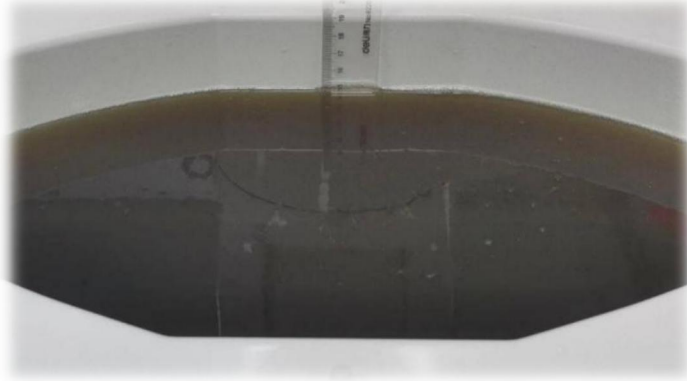


F. 3D Image

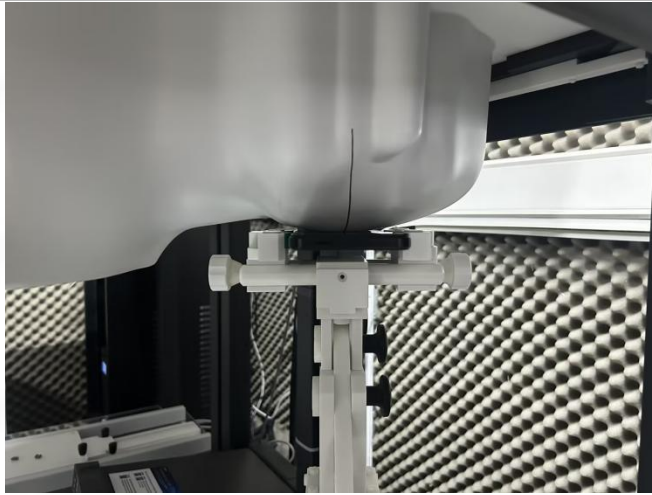


ANNEX E SAR Test Setup Photos

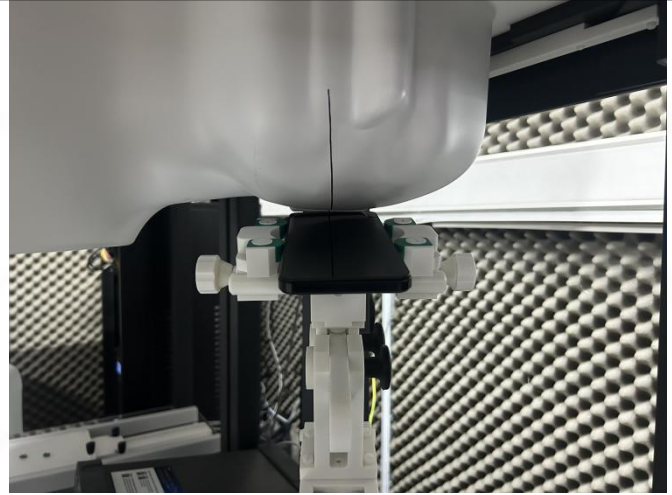
Reference Photo: simulation liquid depth 15cm



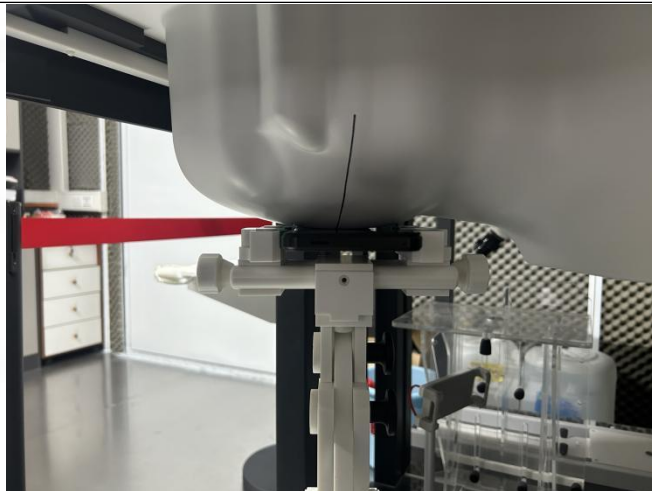
Reference Photos



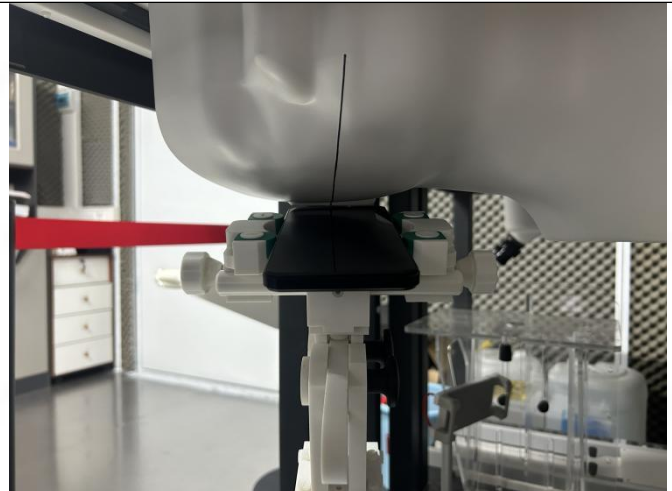
Left Head - Cheek



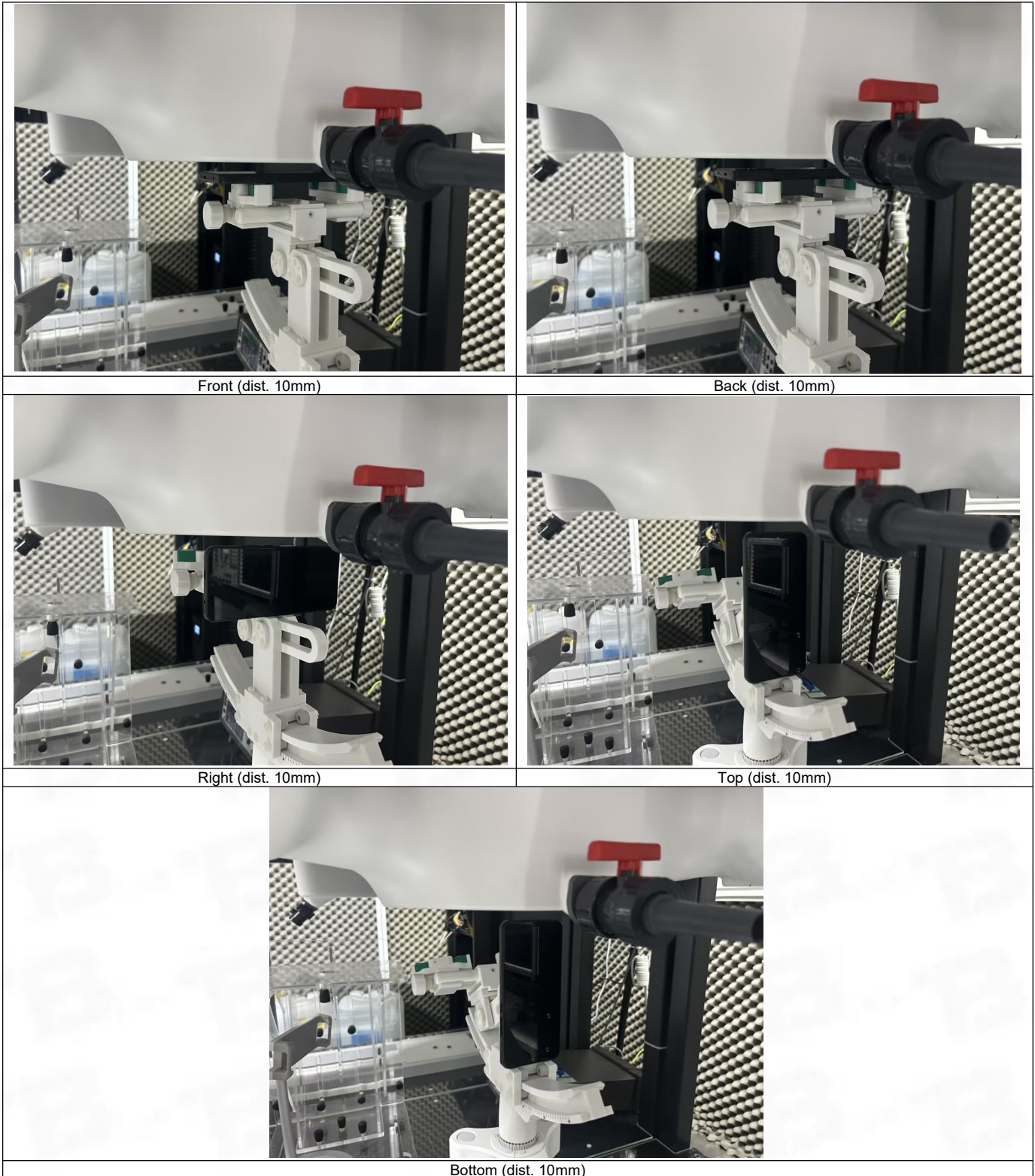
Left Head - Tilt



Right Head - Cheek



Right Head - Tilt



ANNEX F EUT External and Internal Photos

Please refer to RF Report.

ANNEX G Calibration Information

Please refer to the document "Calibration.pdf".



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