SAR Test Report

For

Applicant Name:	**Shenzhen DOOGEE Hengtong Technology CO., LTD**
Address:	B, 2/F, Building A4, Silicon Valley Power Digital Industrial Park, No. 22, Dafu Industrial Zone, Guanlan Aobei Community, Guanlan Street, Longhua New District, Shenzhen, Guangdong, China
EUT Name:	Smart Phone
Brand Name:	DOOGEE
Model Number:	N50, N50S, N50Pro

Issued By

Company Name:	**BTF Testing Lab (Shenzhen) Co., Ltd.**
Address:	F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China
Report Number:	BTF-SZ230313R1-002
Test Standards:	EN 50566: 2017 EN 50360: 2017 EN 62479: 2010 EN 50663: 2017 IEC/IEEE 62209-1528: 2020
Test Conclusion:	Pass
Test Date:	2023-03-14 to 2023-03-16
Date of Issue:	2023-09-26
Prepared By:	Monica Zhou / Project Engineer
Date:	2023-03-17
Approved By:	Ryan.CJ / EMC Manager
Date:	2023-03-17

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Revision History		
Version	Issue Date	Revisions Content
R_V0	2023-03-17	Original
R_V1	2023-09-26	Add the model N50S, N50Pro
Note:	There is no difference except the name of the models	

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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

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

1.3 Laboratory Condition

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

1.4 Announcement

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

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

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

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

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

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

2. Product Information

2.1 Application Information

Company Name:	Shenzhen DOOGEE Hengtong Technology CO., LTD
Address:	B, 2/F, Building A4, Silicon Valley Power Digital Industrial Park, No. 22, Dafu Industrial Zone, Guanlan Aobei Community, Guanlan Street, Longhua New District, Shenzhen, Guangdong, China

2.2 Manufacturer Information

Company Name:	Shenzhen DOOGEE Hengtong Technology CO., LTD
Address:	B, 2/F, Building A4, Silicon Valley Power Digital Industrial Park, No. 22, Dafu Industrial Zone, Guanlan Aobei Community, Guanlan Street, Longhua New District, Shenzhen, Guangdong, China

2.3 Factory Information

Company Name:	Shenzhen DOOGEE Hengtong Technology CO., LTD
Address:	B, 2/F, Building A4, Silicon Valley Power Digital Industrial Park, No. 22, Dafu Industrial Zone, Guanlan Aobei Community, Guanlan Street, Longhua New District, Shenzhen, Guangdong, China

2.4 General Description of Equipment under Test (EUT)

EUT Name	Smart Phone
Under Test Model Name	N50
Hardware Version	SC6007_MB_V1.1.0
Software and Firmware Version	DOOGEE-N50-EEA-Android13.0-20230216

2.5 Equipment under Test Ancillary Equipment

Ancillary Equipment 1	Rechargeable Battery	
	Capacity	4200mAh
	Rated Voltage	3.87V

2.6 Technical Information

Network and Wireless connectivity	2G Network GSM/GPRS/EGPRS 900/1800 MHz 3G Network WCDMA/HSDPA/HSUPA Band 1/8 4G Network FDD LTE Band 1/3/7/8/20/28 TDD LTE Band 38/40 2.4G WIFI 802.11b, 802.11g, 802.11n(HT20/HT40) 5G WIFI 802.11a, 802.11n(HT20/HT40), 802.11ac(VHT20/VHT40/VHT80) 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 900	Tx: 880 MHz ~ 915 MHz	Rx: 925 MHz ~ 960 MHz
	GSM 1800	Tx: 1710 MHz ~ 1785 MHz	Rx: 1805 MHz ~ 1880 MHz
	WCDMA band 1	Tx: 1920 MHz ~ 1980 MHz	Rx: 2110 MHz ~ 2170 MHz
	WCDMA band 8	Tx: 880 MHz ~ 915 MHz	Rx: 925 MHz ~ 960 MHz
	LTE Band 1	Tx: 1920 ~ 1980 MHz	Rx: 2110 ~ 2170 MHz
	LTE Band 3	Tx: 1710 ~ 1785 MHz	Rx: 1805 ~ 1880 MHz
	LTE Band 7	Tx: 2500 ~ 2570 MHz	Rx: 2620 ~ 2690 MHz
	LTE Band 8	Tx: 880 ~ 915 MHz	Rx: 925 ~ 960 MHz
	LTE band 20	Tx: 832 MHz ~ 862 MHz	Rx: 791 MHz ~ 821 MHz
	LTE Band 28	Tx: 703 ~ 748 MHz	Rx: 758 ~ 803 MHz
	LTE Band 38	2570 ~ 2620 MHz	
	LTE Band 40	2300 ~ 2400 MHz	
	802.11b/g/n(HT20)	2412 MHz ~ 2472 MHz	
	802.11n(HT40)	2422 MHz ~ 2462 MHz	
	802.11a 802.11n(HT20/HT40) 802.11ac(VHT20/VHT40/VTH80)	5150 ~ 5250 MHz	
		5725 ~ 5850 MHz	
	Bluetooth	2402 MHz ~ 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	

Note: This Co-license is based on report BTF-SZ230313R-002, the new models N50S, N50Pro in Co-license are the same as original model N50, no further test need.

This report all test information, test data, test photos and EUT photos refer to original report BTF-SZ230313R-002.

3. Summary of Test Results

3.1 Test Standards

No.	Identity	Document Title
1	EN 50566: 2017	Product standard to demonstrate the compliance of wireless communication devices with the basic restrictions and exposure limit values related to human exposure to electromagnetic fields in the frequency range from 30 MHz to 6 GHz: hand-held and body mounted devices in close proximity to the human body (30 MHz - 6 GHz)
2	EN 50360: 2017	Product standard to demonstrate the compliance of wireless communication devices, with the basic restrictions and exposure limit values related to human exposure to electromagnetic fields in the frequency range from 300 MHz to 6 GHz: devices used next to the ear
3	EN 62479: 2010	Assessment of the compliance of low power electronic and electrical equipment with the basic restrictions related to human exposure to electromagnetic fields (10 MHz to 300 GHz)
4	EN 50663: 2017	Generic standard for assessment of low power electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (10 MHz- 300 GHz)
5	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)
6	1999/519/EC	Council Recommendation of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz)

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

According to 1999/519/EC the limit for General Population/ Uncontrolled exposure should be applied for this device, it is 2.0 W/kg as averaged over any 10 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)	2.0	10.0
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.

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3.3 Test Result Summary

<Highest Reported Standalone SAR>

Frequency Band		Maximum Reported SAR (W/kg) -10 g		
		Head SAR (0mm gap)	Body SAR (5mm gap)	Limb SAR (0mm gap)
WWAN	GSM 900	0.207	0.674	1.033
	GSM 1800	0.036	0.532	0.697
	WCDMA Band 1	0.088	0.370	0.851
	WCDMA Band 8	0.196	0.379	0.569
	LTE Band 1	0.100	0.494	1.152
	LTE Band 3	0.052	**0.999**	1.467
	LTE Band 7	0.085	0.624	1.573
	LTE Band 8	0.235	0.541	0.774
	LTE Band 20	0.202	0.375	0.508
	LTE Band 28	0.182	0.338	0.625
	LTE Band 38	0.042	0.370	1.088
	LTE Band 40	0.092	0.543	**1.652**
WLAN	2.4g Wifi	0.121	0.120	0.327
	5.2g Wifi	**0.935**	0.386	0.670
	5.8g Wifi	0.612	0.238	0.411
Limits (W/kg)		2.0	2.0	4.0
Test Verdict		Pass	Pass	Pass

<Highest Reported Simultaneous SAR>

Exposure Position	Simultaneous Configuration	Highest Reported Simultaneous Transmission SAR (W/kg)	Limit (W/kg)	Verdict
Head 10g SAR (0mm gap)	LTE B8 + 2.4G WIFI	0.356	2.0	Pass
Body 10g SAR (5mm gap)	LTE B3 + 5.2G WIFI	1.302	2.0	Pass
Limb 10g SAR (0mm gap)	LTE B40 + 2.4G WIFI	1.979	4.0	Pass

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3.4 Test Uncertainty

3.4.1 Measurement uncertainly evaluation for SAR test

The following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in IEC/IEEE 62209-1528: 2020. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

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

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

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3.4.2 Measurement uncertainly evaluation for system check

This measurement uncertainty budget is suggested by IEC/IEEE 62209-1528: 2020. The breakdown of the individual uncertainties is as follows:

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

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4. Measurement System

4.1 Specific Absorption Rate (SAR) Definition

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

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

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

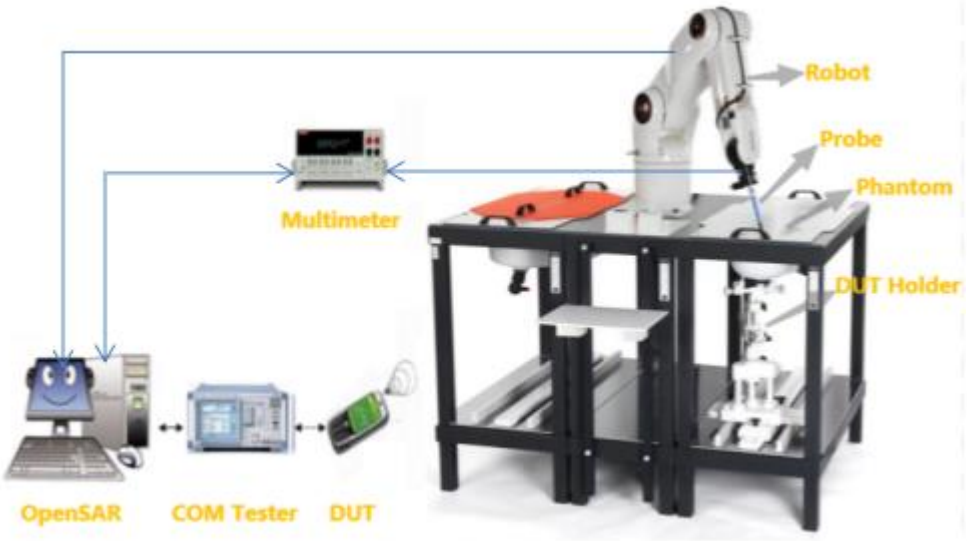
SAR is expressed in units of Watts per kilogram (W/kg) SAR measurement can be related to the electrical field in the tissue by

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

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

4.2 MVG SAR System

4.2.1 SAR system diagram



4.2.2 Robot

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

4.2.3 E-Field Probe

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

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

4.2.4 Phantoms

SAM Phantom

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

SAM Phantom

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

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

ELLIPTICAL Phantom

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

ELLI Phantom

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

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

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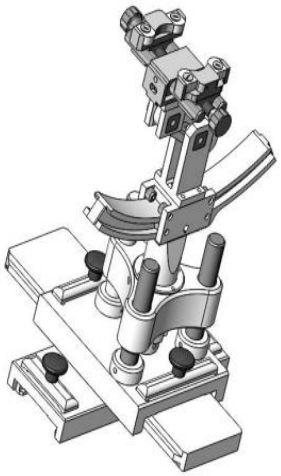
4.2.5 Device Holder



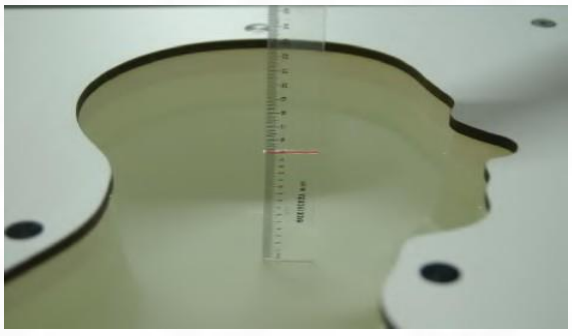
System Material	Permittivity	Loss tangent
Delrin	3.7	0.005

(The positioning system allows obtaining cheek and tilting position with a very good accuracy. In compliance with CENELEC, the tilt angle uncertainty is lower than 1°.)

System Material	Permittivity	Loss tangent
PMMA	2.9	0.028

4.2.6 Simulating Liquid

For SAR measurement of the field distribution inside the phantom, the phantom must be filled with homogeneous tissue simulating liquid to a depth of at least 15 cm. For head SAR testing, the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15 cm. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15 cm. The nominal dielectric values of the tissue simulating liquids in the phantom and the tolerance of 5%.

Head Liquid Depth	Body Liquid Depth
	

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

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

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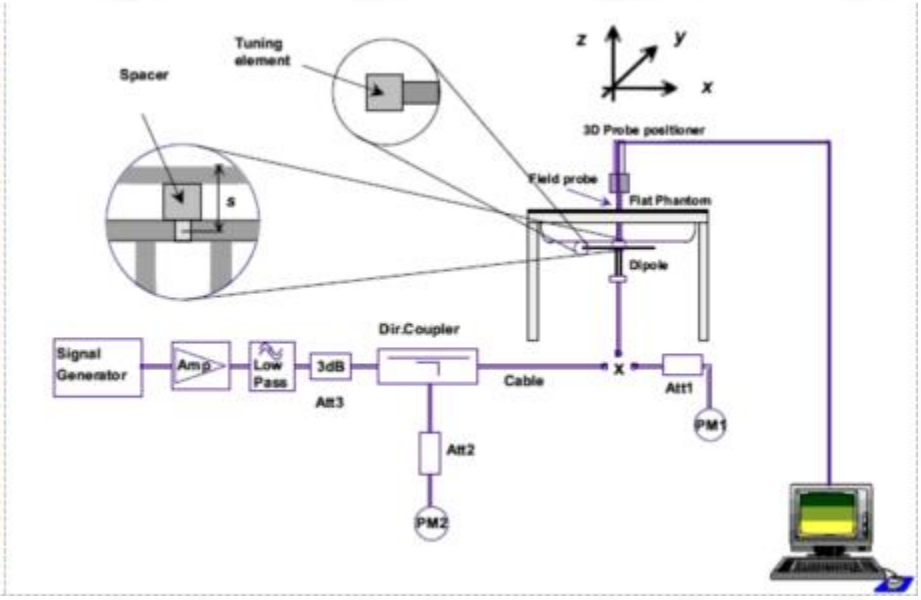
5. System Verification

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 IEC/IEEE 62209-1528: 2020, handsets are tested for SAR compliance in head, body-worn accessory and other use configurations described in the following subsections.

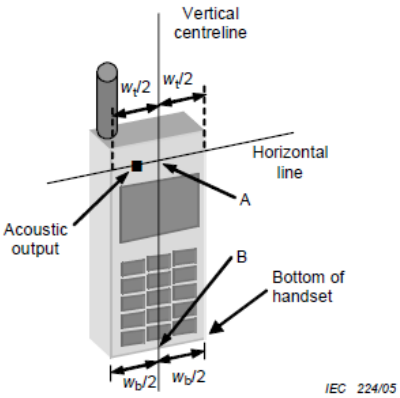
6.1 Head Position

The wireless device define two imaginary lines on the handset, the vertical centreline and the horizontal line, for the handset in vertical orientation as shown in Figures 5a and 5b.

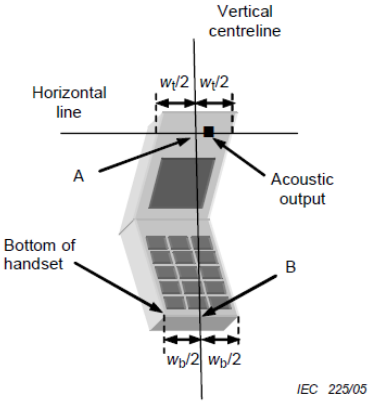
The vertical centreline passes through two points on the front side of the handset: the midpoint of the width W_t of the handset at the level of the acoustic output (point A in Figures 5a and 5b), and the midpoint of the width W_b of the bottom of the handset (point B).

The horizontal line is perpendicular to the vertical centreline and passes through the centre of the acoustic output (see Figures 5a and 5b). The two lines intersect at point A.

Note that for many handsets, point A coincides with the centre of the acoustic output. However, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical centreline is not necessarily parallel to the front face of the handset (see Figure 5b), especially for clam-shell handsets, handsets with flip cover pieces, and other irregularly shaped handsets.



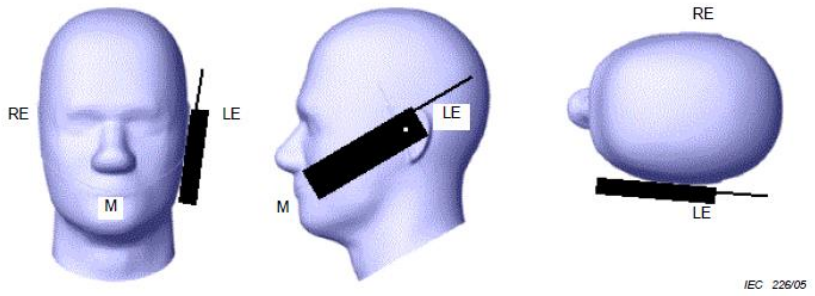
Figures 5a



Figures 5b

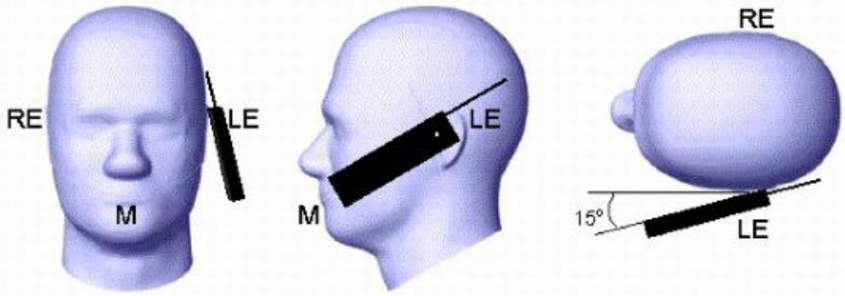
W_t	Width of the handset at the level of the acoustic
W_b	Width of the bottom of the handset
A	Midpoint of the width wt of the handset at the level of the acoustic output
B	Midpoint of the width wb of the bottom of the handset

Cheek position



Cheek position of the wireless device on the left side of SAM

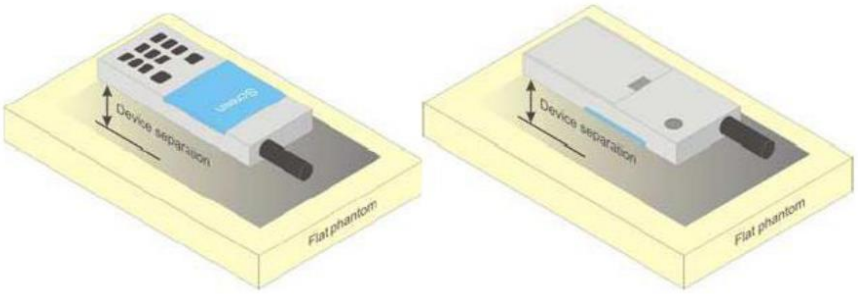
Tilt position



Tilt position of the wireless device on the left side of SAM

6.2 Body Position

A typical example of a body-worn device is a mobile phone, wireless enabled PDA or other battery operated wireless device with the ability to transmit while mounted on a person's body using a carry accessory approved by the wireless device manufacturer.
If the user instructions provided by the manufacturer specify intended use with a carry accessory (belt-clip, holster, carry-case or similar), the device shall be placed as intended in that carry accessory and the carry accessory shall be placed in the intended orientation against the flat phantom.
If the intended use is not specified in the user instructions, the device shall be tested with all its surfaces directly against the flat phantom. The details of the device position, especially contact points to the surface of the phantom, shall be documented in the measurement report. If testing for one or more surfaces is omitted, this shall be documented with an associated rationale in the measurement report.



Test positions for body-worn devices

6.3 Limb Position Conditions

Limb-worn devices are strapped to the arm or leg of the user while transmitting.
These are similar to a body-worn device.
To assess this type of device, the following applies.
a. The test positions of devices used with body-worn accessories shall be applied.
b. The device shall be placed against the phantom such that the measured SAR is a conservative exposure (e.g. by opening or removing the strap as shown in Figure, if applicable).

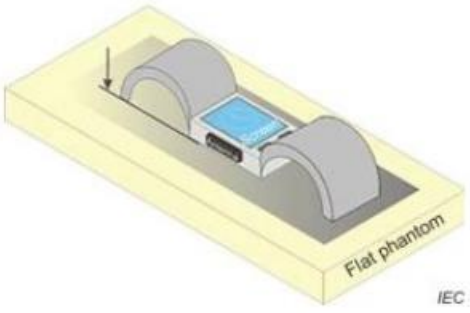
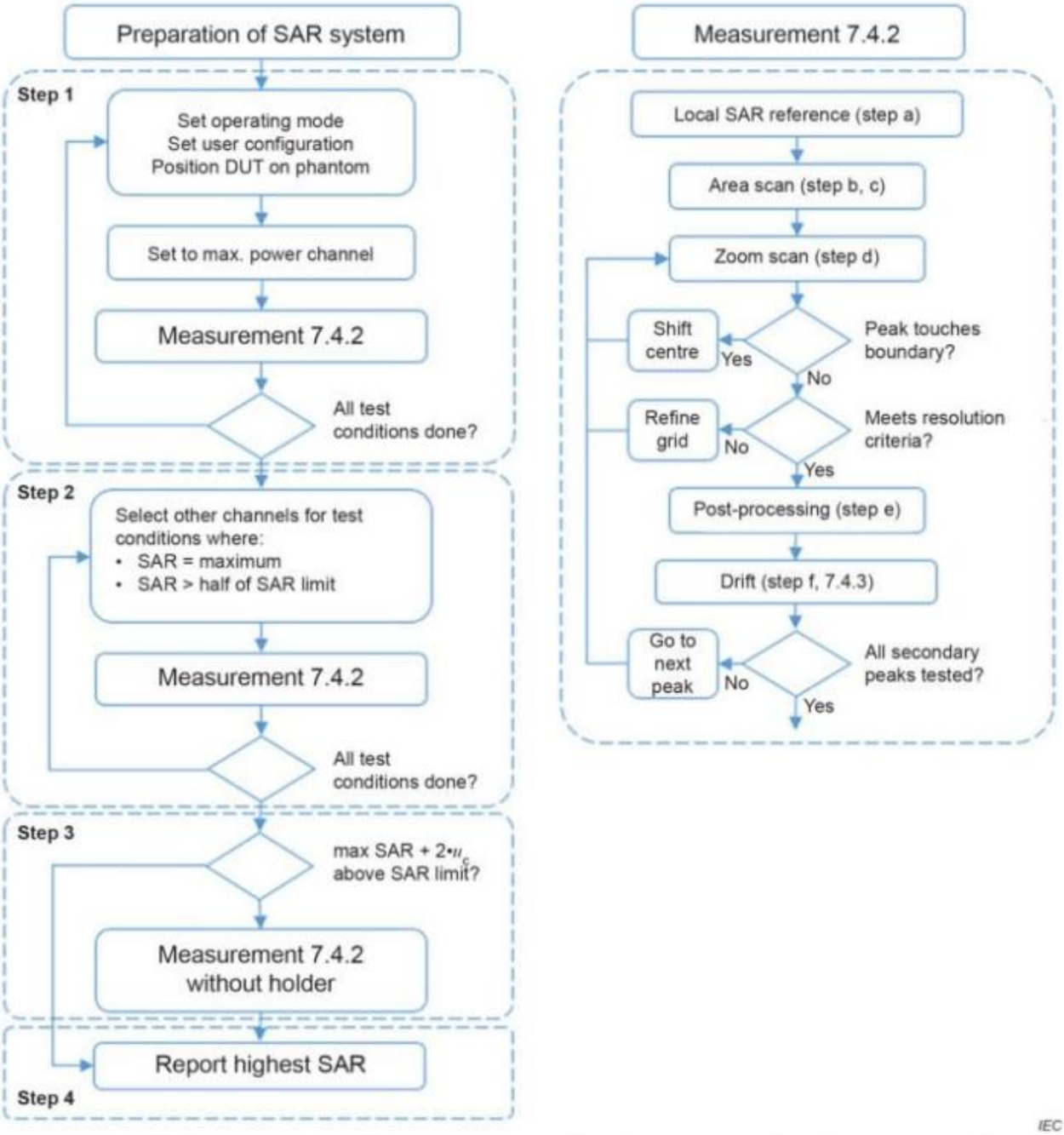


Figure 12 – Test position for limb-worn devices

7. Measurement Procedure

7.1 Measurement Process Diagram

Body SAR



7.2 Measurement Procedure

The following procedure shall be performed for each of the test conditions:
a. Measure the local SAR at a test point within 8 mm of the phantom inner surface that is closest to the DUT. The test point can be close to the ear;

b. Measure the SAR distribution within the phantom (area scan procedure). The SAR distribution is scanned along the inside surface of one side of the phantom head, at least for an area larger than the projection of the handset and antenna. The spatial grid step shall be less than 20 mm. The resolution accuracy can also be tested using the reference functions of 7.2.4. If surface scanning is used, then the distance between the geometrical center of the probe dipoles and the inner surface of the phantom shall be 8,0 mm or less (±1,0 mm). At all measurement points, the angle of the probe with respect to the line normal to the surface is recommended but not required to be less than 30°;

c. From the scanned SAR distribution, identify the position of the maximum SAR value, as well as the positions of any local maxima with SAR values within 2 dB of the maximum value that are not within the zoom-scan volume; Additional peaks shall be measured only when the primary peak is within 2 dB of the SAR limit (i.e., 1 W/kg for a 1,6 W/kg 1 g limit, or 1,26 W/kg for a 2 W/kg 10 g limit). This is consistent with the 2 dB threshold already stated;

d. Measure SAR with a grid step of 8 mm or less in a volume with a minimum size of 30 mm by 30 mm and 30 mm in depth (zoom scan procedure). The grid step in the vertical direction shall be 5 mm or less (see C.3.3). Separate grids shall be centred on each of the local SAR maxima found in step c). Uncertainties due to field distortion between the media boundary and the dielectric cover/case of the probe should also be minimized, which is achieved if the distance between the phantom surface and physical tip of the probe is larger than half of the probe tip diameter. Other methods may utilize correction procedures for these boundary effects that enable high precision measurements closer than half the probe diameter. At all measurement points, the angle of the probe with respect to the line normal to the surface is recommended but not required to be less than 30°;

e. Use interpolation and extrapolation procedures defined described in IEC/IEEE 62209-1528: 2020, Annex C to determine the local SAR values at the spatial resolution needed for mass averaging;

f. The local SAR should be measured at exactly the same location as used in a). The absolute value of the measurement drift, i.e., the difference between the SAR measured in f) and a), shall be recorded in the uncertainty budget. It is recommended that the drift be kept within ±5 %. If this is not possible, even with repeat testing, additional information, e.g., data for local SAR versus time, should be used to demonstrate that the output power applied during the test is appropriate for testing the device. Power reference measurements can be taken after each zoom scan, if more than one zoom scan is needed. However, the drift should always be recorded as the difference between the device initial state with fully charged battery and all subsequent measurements using that battery.

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7.3 Area & Zoom Scan Procedure

For handsets operating above 300 MHz evaluated with the homogeneous head model, the SAR distribution is measured on a two-dimensional coarse grid at a fixed separation distance of less than 8 mm from the surface of the phantom shell. The scan region should cover all areas that are exposed and encompassed by the projection of the handset. In order to maintain a fixed distance of less than 8 mm from the surface to within ±1 mm, as required by the measurement protocol, the exact shape and dimensions of the phantom inner surface shall be known, pre-calibrated, or preferably detected during the SAR measurement with a mechanical or optical surface-detection mechanism that meets the probe positioning requirements. This evaluation technique determines the maximum spacing between the grid points, i.e., it has been found that a 20 mm × 20 mm grid is usually sufficient to achieve the required precision if two staggered one-dimensional cubic splines [55] are used to locate the maximum SAR location;

The maximum local SAR is evaluated on an interpolated grid at 1 mm to 2 mm resolution during the zoom scan. A zoom-scan volume of 32 mm x 32 mm x 30 mm, consisting of 5 x 5 x 7 points with the centre at the peak SAR location determined during the area scan, can be chosen. Although a scan resolution of 8 mm is sufficient for directions parallel to the surface, 5 mm is needed in the direction normal to the surface of the phantom to achieve the required extrapolation accuracy.

7.4 Test Reduction Procedure

IEC/IEEE 62209-1528: 2020 provides a reproducible and conservative measurement methodology to measure the SAR of handheld and body-mounted wireless communication devices, which can be used to determine compliance of such equipment with the human exposure basic restrictions. Clearly, there is a point where the power generated by wireless devices is at such a level that it is incapable of exceeding the basic restriction. Measurements following the procedure of IEC/IEEE 62209-1528: 2020 might then not be necessary.
There may be DUTs that generate power at such a level that it is incapable of exceeding the basic restriction of the respective exposure guideline. That level can be determined by a variety of techniques which do not require the actual exposure level measurements. Determining this level would speed up the process without compromising technical accuracy. EN 62479 proposes techniques for such purposes and may be applied.

7.4.1 Example 1

The maximum power level, Pmax, m, that can be transmitted by a device before the SAR averaged over a mass, m, exceeds a given limit, SAR_{lim} can be defined. Any device transmitting at power levels below $P_{max,m}$ can then be excluded from SAR testing. The lowest possible value for $P_{max,m}$ is:

$$P_{max,m} = SAR_{lim} \times m$$

For example, an exposure limit of SAR_{lim} = 2 W/kg and an averaging mass of m = 10 g give a total transmitting power of $P_{max,m}$ = 20 mW that would conservatively meet this exposure limit. For an exposure limit of SAR_{lim} = 1.6 W /kg and an averaging mass of m = 1 g, a total transmitting power of $P_{max,m}$ = 1.6 mW would conservatively meet the exposure limit.
This assessment is based on the unrealistic assumption that all of the conducted power is radiated by the antenna and then absorbed in the body (i.e. none of the power is transmitted for communication) and all of the absorbed power is concentrated in the averaging mass.
EN 62479 gives less restrictive power thresholds that may be applied in certain cases.

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7.4.2 Example 2

Simultaneous multi-band transmission means that the device can transmit multiple transmission modes at the same time, e.g., a WCDMA transmission at 2GHz and a WLAN transmission at 2.45GHz. The time-averaged output power of a secondary transmitter (i.e. the lower power transmitter, e.g. Bluetooth, WLAN) may be much lower than that of the primary transmitter can be excluded from SAR testing when used alone. However, when the primary and secondary transmitter are used together, the SAR limit may still be exceeded. A means of determining the threshold power for the secondary transmitter that allows it to be excluded from SAR testing is needed.
One way of determining the threshold power level available to the secondary transmitter ($P_{available}$) is to calculate it from the measured peak spatial-average SAR of the primary transmitter (SAR_1) according to the equation:

$$P_{available} = P_{th,m} \times (SAR_{lim}-SAR_1)/SAR_{lim}$$

Where:

$P_{th,m}$ is the threshold exclusion power level taken from EN 62479 Annex B for the frequency of the secondary transmitter at the separation distance used in the testing.

If the output power of the secondary transmitter is less than $P_{available}$, SAR measurement for the secondary transmitter is not necessary.

The above formula can be easily generalized to the case where more than two transmitters are communicating simultaneously. If there are N simultaneous transmitters and the peak spatial-average SAR of the first N-1 transmitter are known (SAR_i), then the threshold power level available to the Nth transmitter can be found from

$$P_{available} = P_{max,m} \times (SAR_{lim} - \sum_{i=1}^{N-1} SAR_i) / SAR_{lim}$$

Alternatively, $P_{th,m}$ can be replaced by $P_{max,m}$, which is an easier approach but leads to more restrictive power threshold.

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8. Conducted RF Output Power

2G

Mode: GSM900		Maximum Tune-up(dBm)	Burst Average Power (dBm)			Division Factors	Frame-Average Power (dBm)		
			CH975	CH60	CH124		CH975	CH60	CH124
			880.2MHz	902.0MHz	914.8MHz		880.2MHz	902.0MHz	914.8MHz
GSM		**35.00**	34.28	33.96	**34.83**	-9.03	25.25	24.93	**25.80**
GPRS (GMSK)	1Tx slot	34.00	33.07	33.51	31.85	-9.03	24.04	24.48	22.82
	2Tx slots	35.00	34.44	34.71	34.15	-6.02	28.42	28.69	28.13
	3Tx slots	35.00	34.29	33.84	34.70	-4.26	30.03	29.58	30.44
	4Tx slots	**35.00**	34.47	**34.71**	34.19	-3.01	31.46	**31.70**	31.18
EGPRS (8PSK)	1Tx slot	24.00	21.99	23.65	23.08	-9.03	12.96	14.62	14.05
	2Tx slots	24.00	22.09	23.67	23.04	-6.02	16.07	17.65	17.02
	3Tx slots	24.00	22.00	23.76	23.07	-4.26	17.74	19.50	18.81
	4Tx slots	24.00	22.10	23.61	23.16	-3.01	19.09	20.60	20.15

Mode: GSM1800		Maximum Tune-up(dBm)	Burst Average Power (dBm)			Division Factors	Frame-Average Power (dBm)		
			CH512	CH700	CH885		CH512	CH700	CH885
			1710.2MHz	1747.8MHz	1784.8MHz		1710.2MHz	1747.8MHz	1784.8MHz
GSM		**27.00**	26.20	25.09	**26.64**	-9.03	17.17	16.06	17.61
GPRS (GMSK)	1Tx slot	26.00	25.16	25.47	25.81	-9.03	16.13	16.44	16.78
	2Tx slots	25.50	24.44	25.15	24.25	-6.02	18.42	19.13	18.23
	3Tx slots	25.50	24.36	25.15	24.22	-4.26	20.10	20.89	19.96
	4Tx slots	**25.50**	24.23	**25.27**	24.28	-3.01	21.22	**22.26**	21.27
EGPRS (8PSK)	1Tx slot	21.50	21.13	20.73	20.83	-9.03	12.10	11.70	11.80
	2Tx slots	21.50	21.18	20.87	20.71	-6.02	15.16	14.85	14.69
	3Tx slots	21.50	21.03	20.87	20.67	-4.26	16.77	16.61	16.41
	4Tx slots	21.50	21.05	20.94	20.77	-3.01	18.04	17.93	17.76

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

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3G

Mode		Maximum Tune-up(dBm)	WCDMA Band I		
			Conducted Power (dBm)		
			CH9612	CH9750	CH9888
			1922.4MHz	1950.0MHz	1977.6MHz
RMC 12.2K		**25.00**	24.52	24.23	**24.65**
HSDPA	Subtest-1	25.00	22.05	24.63	22.01
	Subtest-2	25.00	21.90	24.58	21.97
	Subtest-3	25.00	21.89	24.64	21.96
	Subtest-4	25.00	22.00	24.51	22.06
HSUPA	Subtest-1	24.00	23.67	22.70	22.56
	Subtest-2	24.00	23.62	22.52	22.61
	Subtest-3	24.00	23.62	22.56	22.55
	Subtest-4	24.00	23.50	22.54	22.58
	Subtest-5	24.00	23.58	22.50	22.69
Mode		Maximum Tune-up(dBm)	WCDMA Band VIII		
			Conducted Power (dBm)		
			CH2712	CH2788	CH2863
			882.4MHz	897.6MHz	912.6MHz
RMC 12.2K		**25.00**	24.38	**24.72**	23.67
HSDPA	Subtest-1	25.00	24.61	22.39	22.05
	Subtest-2	25.00	24.60	22.54	21.90
	Subtest-3	25.00	24.65	22.44	21.89
	Subtest-4	25.00	24.66	22.58	22.00
HSUPA	Subtest-1	24.50	23.36	24.24	23.67
	Subtest-2	24.50	23.59	24.23	23.62
	Subtest-3	24.50	23.46	24.43	23.62
	Subtest-4	24.50	23.58	24.32	23.50
	Subtest-5	24.50	23.39	24.40	23.58

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4G

LTE-FDD Band 1				Maximum Tune-up(dBm)	Conducted Power(dBm)		
Bandwidth	Modulation	RB allocation	RB offset		18025	18300	18575
					1922.5MHz	1950MHz	1977.5MHz
5MHz	QPSK	1	0	24.00	23.10	23.61	22.98
			12	24.50	23.41	22.43	24.20
			24	24.00	23.38	23.61	23.71
		12	0	23.00	22.80	22.51	22.87
			6	23.50	22.60	21.66	23.37
			13	24.00	23.53	22.70	22.81
		25	0	23.50	22.69	21.74	23.46
	16QAM	1	0	24.00	23.10	23.52	22.99
			12	24.00	22.81	21.86	23.58
			24	24.50	23.43	23.84	24.04
		12	0	23.50	22.70	22.39	23.17
			6	23.00	22.03	21.11	22.77
			13	24.00	23.56	22.60	22.86
		25	0	23.00	22.11	21.19	22.86
Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	18050	18300	18550
					1925MHz	1950MHz	1975MHz
10MHz	QPSK	1	0	24.50	23.44	22.47	24.24
			24	24.50	23.35	22.38	24.14
			49	24.50	23.39	22.42	24.19
		25	0	23.50	22.71	21.77	23.48
			12	23.50	22.55	21.61	23.31
			25	23.50	22.48	21.54	23.24
		50	0	23.50	22.63	21.69	23.40
	16QAM	1	0	24.00	22.84	21.89	23.62
			24	24.00	22.75	21.80	23.52
			49	24.00	22.79	21.84	23.57
		25	0	23.00	22.13	21.21	22.88
			12	23.00	21.97	21.06	22.72
			25	23.00	21.90	20.99	22.65
		50	0	23.00	22.05	21.13	22.80

LTE-FDD Band 1				Maximum Tune-up(dBm)	Conducted Power(dBm)		
Bandwidth	Modulation	RB allocation	RB offset		18075	18300	18525
					1927.5MHz	1950MHz	1972.5MHz
15MHz	QPSK	1	0	24.50	23.46	22.49	24.26
			38	24.50	23.37	22.40	24.17
			74	24.50	23.41	22.44	24.21
		38	0	24.00	22.74	21.79	23.51
			18	23.50	22.57	21.63	23.34
			37	23.50	22.50	21.57	23.27
		75	0	23.50	22.65	21.71	23.42
	16QAM	1	0	24.00	22.86	21.91	23.64
			38	24.00	22.77	21.82	23.55
			74	24.00	22.81	21.87	23.59
		38	0	23.00	22.15	21.23	22.91
			18	23.00	21.99	21.08	22.74
			37	23.00	21.93	21.01	22.67
		75	0	23.00	22.07	21.16	22.82

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Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	18100	18300	18500
					1930MHz	1950MHz	1970MHz
20MHz	QPSK	1	0	**24.50**	23.55	22.57	**24.35**
			49	24.50	23.46	22.48	24.25
			99	24.00	22.68	23.98	23.30
		50	0	24.00	23.69	22.48	23.52
			25	23.50	22.65	21.71	23.42
			50	23.50	23.14	23.42	23.12
		100	0	24.00	22.74	21.79	23.51
	16QAM	1	0	24.50	23.38	22.65	24.09
			49	24.00	22.85	21.90	23.63
			99	24.00	22.46	23.79	23.08
		50	0	24.00	23.71	22.56	23.65
			25	23.00	22.07	21.15	22.82
			50	24.00	23.12	23.59	22.92
		100	0	23.00	22.15	21.23	22.91

LTE-FDD Band 3				Maximum Tune-up(dBm)	Conducted Power(dBm)		
Bandwidth	Modulation	RB allocation	RB offset		19207	19575	19943
					1710.7MHz	1747.5MHz	1784.3MHz
1.4MHz	QPSK	1	0	24.50	24.10	23.03	22.84
			2	23.50	23.30	22.70	23.15
			5	24.50	24.18	23.31	23.01
		3	0	23.00	22.90	22.16	22.49
			1	23.00	22.50	21.93	22.36
			3	23.50	22.68	23.33	22.42
		6	0	23.00	22.58	22.01	22.44
	16QAM	1	0	24.50	24.10	23.15	22.94
			2	23.00	22.70	22.12	22.56
			5	24.50	24.09	23.33	23.00
		3	0	23.00	22.59	22.08	22.67
			1	22.00	21.92	21.36	21.78
			3	23.50	22.51	23.42	22.53
		6	0	22.50	22.01	21.44	21.87
Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	19215	19575	19935
					1711.5MHz	1747.5MHz	1783.5MHz
3MHz	QPSK	1	0	23.50	23.41	22.81	23.26
			8	23.50	23.32	22.72	23.17
			14	23.50	23.36	22.77	23.21
		8	0	23.00	22.69	22.11	22.54
			4	23.00	22.52	21.95	22.38
			7	22.50	22.45	21.88	22.31
		15	0	23.00	22.60	22.03	22.46
	16QAM	1	0	23.00	22.81	22.23	22.67
			8	23.00	22.72	22.14	22.58
			14	23.00	22.76	22.18	22.62
		8	0	22.00	22.11	21.54	21.96
			4	22.00	21.94	21.38	21.80
			7	22.00	21.88	21.32	21.74
		15	0	22.50	22.03	21.46	21.88

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LTE-FDD Band 3				Maximum Tune-up(dBm)	Conducted Power(dBm)		
Bandwidth	Modulation	RB allocation	RB offset		19225	19575	19925
					1712.5MHz	1747.5MHz	1782.5MHz
5MHz	QPSK	1	0	24.00	22.53	23.94	22.46
			12	23.50	23.33	22.74	23.19
			24	24.00	23.85	22.21	22.81
		12	0	25.00	23.01	24.95	23.10
			6	23.00	22.54	21.96	22.39
			13	23.50	22.25	22.00	23.42
		25	0	23.00	22.62	22.04	22.47
	16QAM	1	0	24.00	22.24	23.82	22.38
			12	23.00	22.74	22.15	22.59
			24	24.00	23.87	22.24	23.04
		12	0	23.50	23.12	22.03	23.11
			6	22.00	21.96	21.40	21.82
			13	22.50	22.35	22.24	23.32
		25	0	22.50	22.04	21.48	21.90
Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	19250	19575	19900
					1715MHz	1747.5MHz	1780MHz
10MHz	QPSK	1	0	23.50	23.44	22.84	23.29
			24	23.50	23.35	22.75	23.20
			49	23.50	23.39	22.79	23.24
		25	0	23.00	22.71	22.13	22.57
			12	23.00	22.55	21.97	22.40
			25	22.50	22.48	21.90	22.33
		50	0	23.00	22.63	22.05	22.49
	16QAM	1	0	23.00	22.84	22.25	22.69
			24	23.00	22.75	22.17	22.60
			49	23.00	22.79	22.21	22.64
		25	0	22.50	22.13	21.56	21.99
			12	22.00	21.97	21.41	21.83
			25	22.00	21.90	21.34	21.76
		50	0	22.50	22.05	21.49	21.91

LTE-FDD Band 3				Maximum Tune-up(dBm)	Conducted Power(dBm)		
Bandwidth	Modulation	RB allocation	RB offset		19275	19575	19875
					1717.5MHz	1747.5MHz	1777.5MHz
15MHz	QPSK	1	0	23.50	23.40	22.80	23.25
			38	23.50	23.31	22.71	23.16
			74	23.50	23.23	22.28	22.91
		38	0	24.00	23.59	22.28	23.07
			18	23.00	22.51	21.93	22.36
			37	24.00	23.35	22.41	23.54
		75	0	23.00	22.59	22.01	22.45
	16QAM	1	0	23.50	23.18	22.77	23.16
			38	23.00	22.71	22.13	22.56
			74	23.50	23.30	22.32	23.08
		38	0	24.00	23.55	22.15	23.06
			18	22.00	21.93	21.37	21.79
			37	23.50	23.44	22.32	23.46
		75	0	22.50	22.01	21.45	21.87

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Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	19300	19575	19850
					1720MHz	1747.5MHz	1775MHz
20MHz	QPSK	1	0	**23.50**	**23.47**	22.87	23.32
			49	23.50	23.38	22.78	23.23
			99	23.50	23.42	22.82	23.27
		50	0	23.00	22.74	22.16	22.60
			25	23.00	22.58	22.00	22.43
			50	23.00	22.51	21.93	22.36
		100	0	23.00	22.66	22.08	22.51
	16QAM	1	0	23.00	22.87	22.28	22.72
			49	23.00	22.78	22.19	22.63
			99	23.00	22.82	22.24	22.67
		50	0	22.50	22.16	21.59	22.02
			25	22.00	22.00	21.43	21.86
			50	22.00	21.93	21.37	21.79
		100	0	22.50	22.08	21.51	21.94

LTE-FDD Band 7				Maximum Tune-up(dBm)	Conducted Power(dBm)		
Bandwidth	Modulation	RB allocation	RB offset		20775	21100	21425
					2502.5MHz	2535MHz	2567.5MHz
5MHz	QPSK	1	0	24.50	23.39	24.15	23.88
			12	23.00	22.08	22.08	22.51
			24	24.00	23.88	22.86	23.53
		12	0	24.00	22.68	23.75	22.76
			6	22.00	21.33	21.33	21.74
			13	24.50	22.79	24.13	23.49
		25	0	22.00	21.41	21.41	21.82
	16QAM	1	0	24.00	23.31	22.81	23.78
			12	22.00	21.52	21.52	21.93
			24	24.00	23.62	23.29	22.91
		12	0	23.50	23.25	23.07	22.61
			6	21.50	20.78	20.78	21.18
			13	23.50	23.08	23.26	23.22
		25	0	21.50	20.86	20.86	21.26
Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	20800	21100	21400
					2505MHz	2535MHz	2565MHz
10MHz	QPSK	1	0	23.00	22.12	22.12	22.54
			24	22.50	22.03	22.03	22.45
			49	23.00	22.07	22.07	22.50
		25	0	22.00	21.43	21.43	21.85
			12	22.00	21.27	21.27	21.69
			25	22.00	21.21	21.21	21.62
		50	0	22.00	21.35	21.35	21.77
	16QAM	1	0	22.00	21.55	21.55	21.97
			24	22.00	21.46	21.46	21.88
			49	22.00	21.50	21.50	21.92
		25	0	21.50	20.88	20.88	21.29
			12	21.50	20.73	20.73	21.13
			25	21.50	20.67	20.67	21.07
		50	0	21.50	20.81	20.81	21.21

LTE-FDD Band 7				Maximum Tune-up(dBm)	Conducted Power(dBm)		
Bandwidth	Modulation	RB allocation	RB offset		20825	21100	21375
					2507.5MHz	2535MHz	2562.5MHz
15MHz	QPSK	1	0	23.00	22.14	22.14	22.57
			38	22.50	22.05	22.05	22.48
			74	23.00	22.09	22.09	22.52
		38	0	22.00	21.45	21.45	21.87
			18	22.00	21.30	21.30	21.71
			37	22.00	21.23	21.23	21.64
		75	0	22.00	21.38	21.38	21.79
	16QAM	1	0	22.00	21.57	21.57	21.99
			38	22.00	21.49	21.49	21.90
			74	22.00	21.53	21.53	21.94
		38	0	21.50	20.90	20.90	21.31
			18	21.50	20.75	20.75	21.15
			37	21.50	20.69	20.69	21.09
		75	0	21.50	20.83	20.83	21.23
Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	20850	21100	21350
					2510MHz	2535MHz	2560MHz
20MHz	QPSK	1	0	23.00	22.22	22.22	22.65
			49	23.00	22.13	22.13	22.56
			99	**23.50**	22.79	**23.22**	22.79
		50	0	24.50	22.99	23.57	24.20
			25	22.00	21.37	21.37	21.79
			50	24.00	23.86	23.87	22.66
		100	0	22.00	21.45	21.45	21.87
	16QAM	1	0	25.00	24.89	23.29	23.19
			49	22.00	21.56	21.56	21.98
			99	23.00	22.90	22.37	22.91
		50	0	24.00	23.54	23.28	22.86
			25	21.50	20.83	20.83	21.23
			50	24.00	22.42	23.51	23.27
		100	0	21.50	20.90	20.90	21.31

LTE-FDD Band 8				Maximum Tune-up(dBm)	Conducted Power(dBm)		
Bandwidth	Modulation	RB allocation	RB offset		21457	21625	21793
					880.7MHz	897.5MHz	914.3MHz
1.4MHz	QPSK	1	0	23.50	23.47	22.16	23.40
			2	25.00	24.62	22.45	22.58
			5	24.00	23.36	22.26	23.70
		3	0	24.00	23.11	23.51	22.46
			1	24.00	23.78	21.68	21.81
			3	24.00	22.32	23.66	23.85
		6	0	24.00	23.86	21.76	21.89
	16QAM	1	0	23.50	22.14	22.35	23.04
			2	24.00	23.99	21.88	22.00
			5	24.50	23.81	24.17	23.11
		3	0	25.00	23.56	24.73	22.56
			1	23.50	23.17	21.13	21.25
			3	24.00	23.89	23.26	22.40
		6	0	23.50	23.25	21.21	21.33

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Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	21465	21625	21785
					881.5MHz	897.5MHz	913.5MHz
3MHz	QPSK	1	0	25.00	24.66	22.49	22.61
			8	25.00	24.56	22.40	22.52
			14	25.00	24.60	22.44	22.57
		8	0	24.00	23.89	21.79	21.91
			4	24.00	23.72	21.63	21.75
			7	24.00	23.64	21.56	21.69
		15	0	24.00	23.80	21.71	21.83
	16QAM	1	0	24.50	24.02	21.91	22.03
			8	24.00	23.93	21.82	21.95
			14	24.00	23.97	21.86	21.99
		8	0	23.50	23.28	21.23	21.35
			4	23.50	23.11	21.07	21.20
			7	23.50	23.04	21.01	21.13
		15	0	23.50	23.19	21.15	21.27

LTE-FDD Band 8				Maximum Tune-up(dBm)	Conducted Power(dBm)		
Bandwidth	Modulation	RB allocation	RB offset		21475	21625	21775
					882.5MHz	897.5MHz	912.5MHz
5MHz	QPSK	1	0	25.00	24.68	22.51	22.64
			12	25.00	24.58	22.42	22.55
			24	24.00	22.94	23.76	22.80
		12	0	24.50	23.61	23.37	24.10
			6	24.00	23.74	21.65	21.78
			13	24.00	23.73	23.81	22.96
		25	0	24.00	23.83	21.73	21.86
	16QAM	1	0	25.00	24.68	22.78	23.31
			12	24.00	23.95	21.84	21.97
			24	23.50	23.33	23.08	22.87
		12	0	23.50	23.32	23.05	22.92
			6	23.50	23.13	21.10	21.22
			13	24.00	22.90	23.46	23.50
		25	0	23.50	23.22	21.17	21.30
Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	21500	21625	21750
					885MHz	897.5MHz	910MHz
10MHz	QPSK	1	0	**25.00**	**24.77**	22.59	22.72
			24	25.00	24.67	22.50	22.63
			49	25.00	24.72	22.54	22.67
		25	0	24.00	24.00	21.89	22.01
			12	24.00	23.83	21.73	21.85
			25	24.00	23.75	21.66	21.79
		50	0	24.00	23.91	21.81	21.94
	16QAM	1	0	24.50	24.14	22.01	22.14
			24	24.50	24.04	21.92	22.05
			49	24.50	24.08	21.96	22.09
		25	0	23.50	23.39	21.33	21.45
			12	23.50	23.22	21.17	21.29
			25	23.50	23.14	21.11	21.23
		50	0	23.50	23.30	21.25	21.37

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LTE-FDD Band 20				Maximum Tune-up(dBm)	Conducted Power(dBm)		
Bandwidth	Modulation	RB allocation	RB offset		24175	24300	24425
					834.5MHz	847MHz	859.5MHz
5MHz	QPSK	1	0	25.00	22.97	22.27	24.65
			12	24.50	24.17	22.89	21.89
			24	23.50	22.15	22.01	23.14
		12	0	25.00	24.99	22.27	22.21
			6	23.50	23.34	22.11	21.14
			13	23.50	23.32	22.87	22.85
		25	0	23.50	23.43	22.19	21.21
	16QAM	1	0	23.00	22.44	22.66	22.43
			12	24.00	23.55	22.30	21.32
			24	23.50	23.37	22.62	22.56
		12	0	24.50	24.37	23.51	22.79
			6	23.00	22.75	21.54	20.59
			13	25.00	22.67	22.97	24.86
		25	0	23.00	22.83	21.62	20.67
Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	24200	24300	24400
					837MHz	847MHz	857MHz
10MHz	QPSK	1	0	24.50	24.21	22.92	21.92
			24	24.50	24.11	22.83	21.83
			49	24.50	24.16	22.87	21.87
		25	0	23.50	23.46	22.21	21.24
			12	23.50	23.28	22.05	21.08
			25	23.50	23.21	21.98	21.02
		50	0	23.50	23.37	22.13	21.16
	16QAM	1	0	24.00	23.59	22.34	21.36
			24	23.50	23.49	22.25	21.27
			49	24.00	23.54	22.29	21.31
		25	0	23.00	22.85	21.64	20.69
			12	23.00	22.69	21.48	20.54
			25	23.00	22.62	21.42	20.48
		50	0	23.00	22.77	21.56	20.62

LTE-FDD Band 20				Maximum Tune-up(dBm)	Conducted Power(dBm)		
Bandwidth	Modulation	RB allocation	RB offset		24225	24300	24375
					839.5MHz	847MHz	854.5MHz
15MHz	QPSK	1	0	24.50	24.23	22.95	21.94
			38	24.50	24.14	22.86	21.85
			74	24.50	24.18	22.90	21.89
		38	0	23.50	23.48	22.23	21.26
			18	23.50	23.31	22.07	21.10
			37	23.50	23.24	22.01	21.04
		75	0	23.50	23.40	22.15	21.18
	16QAM	1	0	24.00	23.61	22.36	21.38
			38	24.00	23.52	22.27	21.29
			74	24.00	23.56	22.31	21.33
		38	0	23.00	22.88	21.66	20.71
			18	23.00	22.71	21.51	20.56
			37	23.00	22.64	21.44	20.50
		75	0	23.00	22.80	21.59	20.64

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Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	24250	24300	24350
					842MHz	847MHz	852MHz
20MHz	QPSK	1	0	**24.50**	**24.32**	23.03	22.02
			49	24.50	24.22	22.94	21.93
			99	23.50	23.38	22.83	23.20
		50	0	23.00	22.14	22.94	22.36
			25	23.50	23.39	22.15	21.18
			50	25.00	22.21	24.92	22.03
		100	0	23.50	23.48	22.23	21.26
	16QAM	1	0	24.50	22.65	22.17	24.22
			49	24.00	23.60	22.35	21.37
			99	23.00	22.18	22.46	22.66
		50	0	23.50	23.13	22.28	22.81
			25	23.00	22.79	21.58	20.64
			50	23.50	22.28	23.46	22.66
		100	0	23.00	22.88	21.66	20.71

LTE-FDD Band 28				Maximum Tune-up(dBm)	Conducted Power(dBm)		
Bandwidth	Modulation	RB allocation	RB offset		27225	27375	27645
					704.50MHz	719.50MHz	746.50MHz
3MHz	QPSK	1	0	25.00	22.90	22.24	24.64
			8	25.00	24.01	23.02	24.77
			14	25.00	22.10	24.93	22.98
		8	0	22.50	22.23	22.33	22.01
			4	24.00	23.18	22.23	23.92
			7	23.50	23.40	22.84	22.86
		15	0	24.50	23.27	22.32	24.01
	16QAM	1	0	23.00	22.45	22.84	22.59
			8	24.50	23.39	22.43	24.14
			14	23.50	23.32	22.55	22.42
		8	0	24.50	24.41	23.41	22.79
			4	23.50	22.59	21.66	23.31
			7	25.00	22.79	22.95	24.92
		15	0	23.50	22.67	21.74	23.40
Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	27235	27385	27635
					705.50MHz	720.50MHz	745.50MHz
5MHz	QPSK	1	0	25.00	24.12	23.13	24.89
			12	25.00	24.02	23.04	24.79
			24	25.00	24.07	23.08	24.83
		12	0	24.50	23.37	22.41	24.11
			6	24.00	23.20	22.25	23.94
			13	24.00	23.13	22.18	23.86
		25	0	24.50	23.28	22.33	24.03
	16QAM	1	0	24.50	23.50	22.54	24.25
			12	24.50	23.40	22.45	24.15
			24	24.50	23.45	22.49	24.20
		12	0	24.00	22.77	21.84	23.50
			6	23.50	22.60	21.68	23.32
			13	23.50	22.53	21.61	23.25
		25	0	23.50	22.69	21.76	23.41

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LTE-FDD Band 28				Maximum Tune-up(dBm)	Conducted Power(dBm)		
Bandwidth	Modulation	RB allocation	RB offset		27260	27410	27610
					708.00MHz	723.00MHz	743.00MHz
10MHz	QPSK	1	0	25.00	24.13	23.14	24.90
			24	25.00	24.03	23.05	24.80
			49	25.00	24.08	23.09	24.84
		25	0	24.50	23.38	22.42	24.12
			12	24.00	23.21	22.26	23.95
			25	24.00	23.14	22.19	23.88
		50	0	24.50	23.30	22.34	24.04
	16QAM	1	0	24.50	23.51	22.55	24.26
			24	24.50	23.42	22.46	24.16
			49	24.50	23.46	22.50	24.21
		25	0	24.00	22.78	21.85	23.51
			12	23.50	22.61	21.69	23.33
			25	23.50	22.55	21.62	23.26
		50	0	23.50	22.70	21.77	23.42
Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	27285	27460	27585
					710.50MHz	728.00MHz	740.50MHz
15MHz	QPSK	1	0	25.00	24.09	23.10	24.85
			38	25.00	23.99	23.01	24.75
			74	25.00	24.04	23.05	24.80
		38	0	24.50	23.34	22.38	24.08
			18	24.00	23.17	22.22	23.91
			37	24.00	23.10	22.15	23.83
		75	0	24.00	23.25	22.30	24.00
	16QAM	1	0	24.50	23.47	22.51	24.22
			38	24.50	23.38	22.42	24.12
			74	24.50	23.42	22.46	24.17
		38	0	23.50	22.74	21.81	23.47
			18	23.50	22.57	21.65	23.29
			37	23.50	22.51	21.58	23.22
		75	0	23.50	22.66	21.73	23.38
Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	27310	27460	27560
					713.00MHz	728.00MHz	738.00MHz
20MHz	QPSK	1	0	**25.00**	24.16	23.17	**24.93**
			49	25.00	24.06	23.08	24.83
			99	23.50	23.33	22.83	23.30
		50	0	23.50	22.22	23.16	22.47
			25	24.00	23.24	22.29	23.98
			50	22.50	22.11	22.04	22.14
		100	0	24.50	23.33	22.37	24.07
	16QAM	1	0	24.50	22.81	22.27	24.24
			49	24.50	23.45	22.49	24.19
			99	23.00	22.35	22.50	22.47
		50	0	23.50	23.10	22.33	22.89
			25	23.50	22.64	21.72	23.37
			50	24.00	22.39	23.54	22.56
		100	0	23.50	22.73	21.80	23.45

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LTE-TDD Band 38				Maximum Tune-up(dBm)	Conducted Power(dBm)		
Bandwidth	Modulation	RB allocation	RB offset		37775	38000	38225
					2572.50MHz	2595.00MHz	2617.50MHz
5MHz	QPSK	1	0	24.50	23.59	22.93	24.07
			12	23.50	21.99	23.06	22.73
			24	25.00	23.15	24.88	24.88
		12	0	25.00	22.91	22.29	24.82
			6	22.50	21.23	22.27	21.95
			13	25.00	23.91	22.82	24.95
		25	0	22.50	21.31	22.35	22.03
	16QAM	1	0	23.00	22.45	22.82	22.15
			12	22.50	21.42	22.47	22.15
			24	24.00	23.49	23.90	22.48
		12	0	23.00	22.94	22.92	22.87
			6	22.00	20.69	21.70	21.39
			13	25.00	22.70	24.84	23.11
		25	0	22.00	20.76	21.78	21.47
Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	37800	38000	38200
					2575.00MHz	2595.00MHz	2615.00MHz
10MHz	QPSK	1	0	23.50	22.02	23.09	22.76
			24	23.00	21.93	23.00	22.67
			49	23.50	21.97	23.04	22.72
		25	0	22.50	21.33	22.38	22.06
			12	22.50	21.18	22.21	21.90
			25	22.50	21.11	22.14	21.83
		50	0	22.50	21.26	22.30	21.98
	16QAM	1	0	23.00	21.45	22.50	22.18
			24	22.50	21.37	22.41	22.09
			49	22.50	21.41	22.45	22.13
		25	0	22.00	20.79	21.80	21.49
			12	22.00	20.64	21.64	21.34
			25	22.00	20.57	21.58	21.27
		50	0	22.00	20.71	21.72	21.41

LTE-TDD Band 38				Maximum Tune-up(dBm)	Conducted Power(dBm)		
Bandwidth	Modulation	RB allocation	RB offset		37825	38000	38175
					2577.50MHz	2595.00MHz	2612.50MHz
15MHz	QPSK	1	0	23.50	22.04	23.12	22.79
			38	23.50	21.95	23.02	22.70
			74	23.50	21.99	23.07	22.74
		38	0	22.50	21.36	22.40	22.08
			18	22.50	21.20	22.24	21.92
			37	22.50	21.14	22.17	21.85
		75	0	22.50	21.28	22.32	22.00
	16QAM	1	0	23.00	21.48	22.52	22.20
			38	22.50	21.39	22.43	22.11
			74	22.50	21.43	22.48	22.16
		38	0	22.00	20.81	21.82	21.51
			18	22.00	20.66	21.67	21.36
			37	22.00	20.59	21.60	21.29
		75	0	22.00	20.73	21.75	21.44

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Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	37850	38000	38150
					2580.00MHz	2595.00MHz	2610.00MHz
20MHz	QPSK	1	0	23.50	22.12	23.20	22.87
			49	23.50	22.03	23.11	22.78
			99	**24.00**	22.86	23.44	**23.83**
		50	0	25.00	24.58	23.58	22.65
			25	22.50	21.28	22.32	22.00
			50	25.00	23.99	23.30	24.96
		100	0	22.50	21.36	22.40	22.08
	16QAM	1	0	24.50	24.15	22.09	23.16
			49	23.00	21.47	22.51	22.19
			99	25.00	24.33	24.71	23.11
		50	0	24.50	24.41	22.23	22.88
			25	22.00	20.73	21.74	21.43
			50	24.00	23.62	23.53	23.59
		100	0	22.00	20.81	21.82	21.51

LTE-TDD Band 40				Maximum Tune-up(dBm)	Conducted Power(dBm)		
Bandwidth	Modulation	RB allocation	RB offset		38675	39150	39625
					2662.50MHz	2710.00MHz	2757.50MHz
5MHz	QPSK	1	0	24.00	23.13	23.68	23.15
			12	23.50	22.91	23.43	22.29
			24	25.00	23.33	24.88	22.80
		12	0	25.00	22.42	23.38	24.59
			6	23.00	22.12	22.62	21.53
			13	23.00	22.47	22.23	22.62
		25	0	23.00	22.21	22.71	21.61
	16QAM	1	0	25.00	24.58	23.63	24.76
			12	23.00	22.32	22.83	21.72
			24	23.50	23.13	23.25	22.21
		12	0	23.00	22.26	22.39	22.88
			6	22.50	21.56	22.04	20.98
			13	25.00	23.28	24.77	24.44
		25	0	22.50	21.64	22.13	21.06
Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	38700	39150	39600
					2665.00MHz	2710.00MHz	2755.00MHz
10MHz	QPSK	1	0	23.50	22.94	23.46	22.33
			24	23.50	22.85	23.37	22.24
			49	23.50	22.89	23.41	22.28
		25	0	23.00	22.23	22.73	21.63
			12	23.00	22.07	22.57	21.48
			25	23.00	22.00	22.50	21.41
		50	0	23.00	22.15	22.65	21.56
	16QAM	1	0	23.00	22.36	22.86	21.75
			24	23.00	22.27	22.77	21.67
			49	23.00	22.31	22.81	21.71
		25	0	22.50	21.66	22.15	21.08
			12	22.00	21.50	21.99	20.92
			25	22.00	21.44	21.92	20.86
		50	0	22.50	21.58	22.07	21.00

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LTE-TDD Band 40				Maximum Tune-up(dBm)	Conducted Power(dBm)		
Bandwidth	Modulation	RB allocation	RB offset		38725	39150	39575
					2667.50MHz	2710.00MHz	2752.50MHz
15MHz	QPSK	1	0	23.50	22.97	23.48	22.35
			38	23.50	22.87	23.39	22.26
			74	23.50	22.92	23.43	22.30
		38	0	23.00	22.25	22.76	21.66
			18	23.00	22.09	22.59	21.50
			37	23.00	22.02	22.52	21.43
		75	0	23.00	22.17	22.67	21.58
	16QAM	1	0	23.00	22.38	22.88	21.78
			38	23.00	22.29	22.79	21.69
			74	23.00	22.33	22.83	21.73
		38	0	22.50	21.68	22.17	21.10
			18	22.50	21.53	22.01	20.95
			37	22.00	21.46	21.94	20.88
		75	0	22.50	21.61	22.09	21.02
Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	38750	39150	39550
					2670.00MHz	2710.00MHz	2750.00MHz
20MHz	QPSK	1	0	24.00	23.05	23.57	22.43
			49	23.50	22.96	23.48	22.34
			99	**24.00**	**24.00**	22.83	22.74
		50	0	23.50	22.91	23.09	23.33
			25	23.00	22.17	22.67	21.58
			50	25.00	22.51	23.73	24.71
		100	0	23.00	22.25	22.76	21.66
	16QAM	1	0	25.00	23.12	24.68	22.19
			49	23.00	22.37	22.87	21.77
			99	24.00	22.32	22.27	23.55
		50	0	25.00	22.83	24.73	23.79
			25	22.50	21.60	22.09	21.02
			50	23.50	22.61	23.45	23.39
		100	0	22.50	21.68	22.17	21.10

2.4g Wi-Fi

Band (GHz)	Mode	Maximum Tune-up(dBm)	EIRP(dBm)		
			1	7	13
			2412MHz	2442MHz	2472MHz
2.4 (2.4~2.4835)	802.11b	**16.00**	15.47	**15.50**	14.50
	802.11g	16.00	15.63	15.05	15.00
	802.11n(HT20)	15.50	14.39	15.39	14.94
	Mode	Maximum Tune-up(dBm)	3	7	11
			2422MHz	2442MHz	2462MHz
	802.11n(HT40)	15.50	15.02	14.36	14.61

Notes:
For WiFi 2.4GHz, SAR tests at higher order modulations (including 802.11g/n) were not required since the maximum average output power for each of these configurations is not more than 1/4dB higher than the tested channel for the lowest data rate of 802.11b mode; When 802.11g/n SAR test is required, 802.11g/n SAR was evaluated based on the highest 802.11b SAR configuration in each exposure condition.

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5g Wi-Fi

Band (GHz)	Mode	Channel	Freq. (MHz)	EIRP(dBm)	Maximum Tune-up(dBm)	SAR Test Require.
U-NII-1 (5.150~5.250)	802.11a	36	5180	14.00	14.00	No
		40	5200	14.12	14.50	No
		48	5240	14.26	14.50	No
	802.11n(HT20)	36	5180	13.86	14.00	No
		40	5200	14.36	14.50	No
		48	5240	13.71	14.00	No
	802.11ac(VHT20)	36	5180	13.44	13.50	No
		40	5200	14.15	14.50	No
		48	5240	13.48	13.50	No
	802.11n(HT40)	38	5190	13.12	13.50	No
		46	5230	13.67	14.00	No
	802.11ac(VHT40)	38	5190	14.45	14.50	No
		46	5230	14.32	14.50	No
	802.11ac(VHT80)	42	5210	**14.37**	**14.50**	Yes

Note:
1) For WiFi 5G 802.11a/n/ac SAR tests, a communication link is set up with the test mode software for WiFi mode test. The EUT is operated at the RF continuous emission mode. Each channel should be tested at the lowest data rate.
2) When multiple channel bandwidth configurations in a frequency band have the same maximum tune-up output power, the test configuration is determined by applying the following steps sequentially.
a. The largest channel bandwidth configuration is selected among the multiple configurations in a frequency band with the same maximum tune-up output power.
b. When multiple transmission modes (802.11a/g/n/ac) have the same maximum tune-up output power, largest channel bandwidth, lowest order modulation, the lowest order 802.11 mode is selected; i.e., 802.11a is chosen over 802.11n then 802.11ac.

Band (GHz)	Mode	Channel	Freq. (MHz)	EIRP(dBm)	Maximum Tune-up(dBm)	SAR Test Require.
U-NII-3 (5.725~5.850)	802.11a	149	5745	12.80	13.00	No
		157	5785	13.21	13.50	No
		165	5825	13.45	13.50	No
	802.11n(HT20)	149	5745	12.32	12.50	No
		157	5785	12.85	13.00	No
		165	5825	12.98	13.00	No
	802.11ac(VHT20)	149	5745	12.96	13.00	No
		157	5785	12.96	13.00	No
		165	5825	13.01	13.50	No
	802.11n(HT40)	151	5755	13.19	13.50	No
		159	5795	**13.79**	**14.00**	Yes
	802.11ac(VHT40)	151	5755	13.19	13.50	No
		159	5795	13.54	14.00	No
	802.11ac(VHT80)	155	5775	12.93	13.00	No

Note:
3) For WiFi 5G 802.11a/n/ac SAR tests, a communication link is set up with the test mode software for WiFi mode test. The EUT is operated at the RF continuous emission mode. Each channel should be tested at the lowest data rate.
4) When multiple channel bandwidth configurations in a frequency band have the same maximum tune-up output power, the test configuration is determined by applying the following steps sequentially.
b. The largest channel bandwidth configuration is selected among the multiple configurations in a frequency band with the same maximum tune-up output power.
b. When multiple transmission modes (802.11a/g/n/ac) have the same maximum tune-up output power, largest channel bandwidth, lowest order modulation, the lowest order 802.11 mode is selected; i.e., 802.11a is chosen over 802.11n then 802.11ac.

Bluetooth

	Mode	**Maximum Tune-up(dBm)**	EIRP(dBm)		
			0	39	78
			2402MHz	2441MHz	2480MHz
EDR	GFSK	**7.50**	6.15	5.84	**7.18**
	π/4QPSK	6.00	5.37	4.75	5.59
	8DPSK	6.00	5.91	5.36	4.17
	Mode	**Maximum Tune-up(dBm)**	EIRP(dBm)		
			0	19	39
BLE			2402MHz	2440MHz	2480MHz
	GFSK(1Mbps)	-3.00	-1.70	-1.54	-2.52
	GFSK(2Mbps)	-3.00	-2.17	-1.85	-2.75

Note: Because the output power(eirp) of Bluetooth of the EUT is less than 20mW(13dBm), so standalone SAR are exempt according EN62479.

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9. Test Result

General Notes:

The maximum SAR Value of each test band is marked bold.

The SAR test shall be performed at the high, middle and low frequency channels of each operating mode. If the SAR measured at mid-band channel for each test configuration is at least 3.0 dB lower than the SAR limit (<1.0 W/kg), testing at the high and low channels is optional apart for the worst case configuration.

SAR plot is provided only for the highest measured SAR in each exposure configuration, wireless mode and frequency band combination.

2G

Head(0mm gap)													
Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	10g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	Meas. No.
GSM 900 (Voice)	Left Cheek	0	124	914.8	-1.690	0.178	100.00	1.000	34.83	35.00	1.040	0.185	/
	Left Tilt	0	124	914.8	-3.210	0.107	100.00	1.000	34.83	35.00	1.040	0.111	/
	Right Cheek	0	124	914.8	-0.990	0.199	100.00	1.000	34.83	35.00	1.040	**0.207**	1#
	Right Tilt	0	124	914.8	2.530	0.106	100.00	1.000	34.83	35.00	1.040	0.110	/
Body(5mm gap)													
Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	10g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	Meas. No.
GPRS 900+4slots	Front	5	60	902.0	-3.830	0.262	100.00	1.000	34.71	35.00	1.069	0.280	/
	Back	5	60	902.0	0.350	0.630	100.00	1.000	34.71	35.00	1.069	**0.674**	2#
Limb(0mm gap)													
Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	10g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	Meas. No.
GPRS 900+4slots	Back	0	60	902.0	1.060	0.966	100.00	1.000	34.71	35.00	1.069	**1.033**	3#

Note:

1. The distance of the Head/Limb test is 0mm, and the Body test is 5mm respectively.

2. If the SAR measured at mid-band channel for each test configuration is at least 3.0 dB lower than the SAR limit (< 1 W/kg), testing at the high and low channels is optional, apart from the worst case configuration.

3. Refer to ANNEX C for the detailed test data for each test configuration.

Head(0mm gap)													
Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	10g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	Meas. No.
GSM 1800 (Voice)	Left Cheek	0	885	1784.8	1.900	0.032	100.00	1.000	26.64	27.00	1.086	0.035	/
	Left Tilt	0	885	1784.8	0.090	0.027	100.00	1.000	26.64	27.00	1.086	0.029	/
	Right Cheek	0	885	1784.8	3.260	0.033	100.00	1.000	26.64	27.00	1.086	**0.036**	4#
	Right Tilt	0	885	1784.8	-2.220	0.030	100.00	1.000	26.64	27.00	1.086	0.033	/
Body(5mm gap)													
Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	10g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	Meas. No.
GPRS 1800+4slots	Front	5	700	1747.8	-1.880	0.161	100.00	1.000	25.27	25.50	1.054	0.170	/
	Back	5	700	1747.8	-0.820	0.505	100.00	1.000	25.27	25.50	1.054	**0.532**	5#

Limb(0mm gap)													
Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	10g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	Meas. No.
GPRS 1800+4slots	Back	0	700	1747.8	-4.480	0.661	100.00	1.000	25.27	25.50	1.054	**0.697**	6#

Note:

1. The distance of the Head/Limb test is 0mm, and the Body test is 5mm respectively.

2. If the SAR measured at mid-band channel for each test configuration is at least 3.0 dB lower than the SAR limit (< 1 W/kg), testing at the high and low channels is optional, apart from the worst case configuration.

3. Refer to ANNEX C for the detailed test data for each test configuration.

3G

Head(0mm gap)													
Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	10g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	Meas. No.
Band 1 RMC 12.2K	Left Cheek	0	9888	1977.6	-2.030	0.079	100.00	1.000	24.65	25.00	1.084	0.086	/
	Left Tilt	0	9888	1977.6	1.500	0.056	100.00	1.000	24.65	25.00	1.084	0.061	/
	Right Cheek	0	9888	1977.6	-2.880	0.081	100.00	1.000	24.65	25.00	1.084	**0.088**	7#
	Right Tilt	0	9888	1977.6	2.240	0.059	100.00	1.000	24.65	25.00	1.084	0.064	/
Body(5mm gap)													
Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	10g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	Meas. No.
Band 1 RMC 12.2K	Front	5	9888	1977.6	-3.740	0.308	100.00	1.000	24.65	25.00	1.084	0.334	/
	Back	5	9888	1977.6	1.030	0.341	100.00	1.000	24.65	25.00	1.084	**0.370**	8#
Limb(0mm gap)													
Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	10g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	Meas. No.
Band 1 RMC 12.2K	Back	0	9888	1977.6	-2.220	0.785	100.00	1.000	24.65	25.00	1.084	**0.851**	9#

Note:

1. The distance of the Head/Limb test is 0mm, and the Body test is 5mm respectively.

2. If the SAR measured at mid-band channel for each test configuration is at least 3.0 dB lower than the SAR limit (< 1 W/kg), testing at the high and low channels is optional, apart from the worst case configuration.

3. Refer to ANNEX C for the detailed test data for each test configuration.

Head(0mm gap)													
Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	10g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	Meas. No.
Band 8 RMC 12.2K	Left Cheek	0	2788	897.6	1.200	0.181	100.00	1.000	24.72	25.00	1.067	0.193	/
	Left Tilt	0	2788	897.6	-2.660	0.098	100.00	1.000	24.72	25.00	1.067	0.105	/
	Right Cheek	0	2788	897.6	-1.220	0.184	100.00	1.000	24.72	25.00	1.067	**0.196**	10#
	Right Tilt	0	2788	897.6	-1.950	0.103	100.00	1.000	24.72	25.00	1.067	0.110	/
Body(5mm gap)													
Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	10g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	Meas. No.
Band 8 RMC 12.2K	Front	5	2788	897.6	-3.080	0.261	100.00	1.000	24.72	25.00	1.067	0.278	/
	Back	5	2788	897.6	1.610	0.355	100.00	1.000	24.72	25.00	1.067	**0.379**	11#

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Limb(0mm gap)													
Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	10g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	Meas . No.
Band 8 RMC 12.2K	Back	0	2788	897.6	-1.480	0.533	100.00	1.000	24.72	25.00	1.067	**0.569**	12#

Note:

1. The distance of the Head/Limb test is 0mm, and the Body test is 5mm respectively.

2. If the SAR measured at mid-band channel for each test configuration is at least 3.0 dB lower than the SAR limit (< 1 W/kg), testing at the high and low channels is optional, apart from the worst case configuration.

3. Refer to ANNEX C for the detailed test data for each test configuration.

4G

Head(0mm gap)													
Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	10g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	Meas. No.
Band 1 (RB allocation/offset 1#0 BW: 20MHz)	Left Cheek	0	18500	1970	-1.007	0.094	100.00	1.000	24.35	24.50	1.035	0.097	/
	Left Tilt	0	18500	1970	0.088	0.070	100.00	1.000	24.35	24.50	1.035	0.072	/
	Right Cheek	0	18500	1970	-2.630	0.097	100.00	1.000	24.35	24.50	1.035	**0.100**	13#
	Right Tilt	0	18500	1970	-1.500	0.072	100.00	1.000	24.35	24.50	1.035	0.075	/
Body(5mm gap)													
Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	10g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	Meas. No.
Band 1 (RB allocation/offset 1#0 BW: 20MHz)	Front	5	18500	1970	1.450	0.470	100.00	1.000	24.35	24.50	1.035	0.486	/
	Back	5	18500	1970	-1.320	0.477	100.00	1.000	24.35	24.50	1.035	**0.494**	14#
Limb(0mm gap)													
Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	10g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	Meas. No.
Band 1 (RB allocation/offset 1#0 BW: 20MHz)	Back	0	18500	1970	-3.800	1.113	100.00	1.000	24.35	24.50	1.035	**1.152**	15#

Note:

1. The distance of the Head/Limb test is 0mm, and the Body test is 5mm respectively.

2. If the SAR measured at mid-band channel for each test configuration is at least 3.0 dB lower than the SAR limit (< 1 W/kg), testing at the high and low channels is optional, apart from the worst case configuration.

3. Refer to ANNEX C for the detailed test data for each test configuration.

Head(0mm gap)													
Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	10g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	Meas. No.
Band 3 (RB allocation/offset 1#0 BW: 20MHz)	Left Cheek	0	19300	1720	0.551	0.049	100.00	1.000	23.47	23.50	1.007	0.049	/
	Left Tilt	0	19300	1720	1.220	0.041	100.00	1.000	23.47	23.50	1.007	0.041	/
	Right Cheek	0	19300	1720	-1.120	0.052	100.00	1.000	23.47	23.50	1.007	**0.052**	16#
	Right Tilt	0	19300	1720	-1.000	0.044	100.00	1.000	23.47	23.50	1.007	0.044	/
Body(5mm gap)													

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Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	10g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	Meas. No.
Band 3 (RB allocation/offset 1#0 BW: 20MHz)	Front	5	19300	1720	-2.470	0.542	100.00	1.000	23.47	23.50	1.007	0.546	/
	Back	5	19300	1720	-1.350	0.992	100.00	1.000	23.47	23.50	1.007	**0.999**	17#
Limb(0mm gap)													
Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	10g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	Meas. No.
Band 3 (RB allocation/offset 1#0 BW: 20MHz)	Back	0	19300	1720	-1.300	1.457	100.00	1.000	23.47	23.50	1.007	**1.467**	18#

Note:

1. The distance of the Head/Limb test is 0mm, and the Body test is 5mm respectively.

2. If the SAR measured at mid-band channel for each test configuration is at least 3.0 dB lower than the SAR limit (< 1 W/kg), testing at the high and low channels is optional, apart from the worst case configuration.

3. Refer to ANNEX C for the detailed test data for each test configuration.

Head(0mm gap)													
Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	10g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	Meas. No.
Band 7 (RB allocation/offset 1#99 BW: 20MHz)	Left Cheek	0	21100	2535	-1.023	0.078	100.00	1.000	23.22	23.50	1.067	0.083	/
	Left Tilt	0	21100	2535	0.653	0.050	100.00	1.000	23.22	23.50	1.067	0.053	/
	Right Cheek	0	21100	2535	-2.300	0.080	100.00	1.000	23.22	23.50	1.067	**0.085**	19#
	Right Tilt	0	21100	2535	-1.360	0.050	100.00	1.000	23.22	23.50	1.067	0.053	/
Body(5mm gap)													
Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	10g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	Meas. No.
Band 7 (RB allocation/offset 1#99 BW: 20MHz)	Front	5	21100	2535	-1.740	0.529	100.00	1.000	23.22	23.50	1.067	0.564	/
	Back	5	21100	2535	-4.560	0.585	100.00	1.000	23.22	23.50	1.067	**0.624**	20#
Limb(0mm gap)													
Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	10g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	Meas. No.
Band 7 (RB allocation/offset 1#99 BW: 20MHz)	Back	0	21100	2535	-3.010	1.474	100.00	1.000	23.22	23.50	1.067	**1.573**	21#

Note:

1. The distance of the Head/Limb test is 0mm, and the Body test is 5mm respectively.

2. If the SAR measured at mid-band channel for each test configuration is at least 3.0 dB lower than the SAR limit (< 1 W/kg), testing at the high and low channels is optional, apart from the worst case configuration.

3. Refer to ANNEX C for the detailed test data for each test configuration.

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Head(0mm gap)

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	10g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	Meas. No.
Band 8 (RB allocation/offset 1#0 BW: 10MHz)	Left Cheek	0	21500	885	-1.023	0.215	100.00	1.000	24.77	25.00	1.054	0.227	/
	Left Tilt	0	21500	885	0.653	0.100	100.00	1.000	24.77	25.00	1.054	0.105	/
	Right Cheek	0	21500	885	-3.010	0.223	100.00	1.000	24.77	25.00	1.054	**0.235**	22#
	Right Tilt	0	21500	885	-0.950	0.103	100.00	1.000	24.77	25.00	1.054	0.109	/

Body(5mm gap)

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	10g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	Meas. No.
Band 8 (RB allocation/offset 1#0 BW: 10MHz)	Front	5	21500	885	-3.490	0.331	100.00	1.000	24.77	25.00	1.054	0.349	/
	Back	5	21500	885	0.680	0.513	100.00	1.000	24.77	25.00	1.054	**0.541**	23#

Limb(0mm gap)

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	10g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	Meas. No.
Band 8 (RB allocation/offset 1#0 BW: 10MHz)	Back	0	21500	885	-1.400	0.734	100.00	1.000	24.77	25.00	1.054	**0.774**	24#

Note:

1. The distance of the Head/Limb test is 0mm, and the Body test is 5mm respectively.

2. If the SAR measured at mid-band channel for each test configuration is at least 3.0 dB lower than the SAR limit (< 1 W/kg), testing at the high and low channels is optional, apart from the worst case configuration.

3. Refer to ANNEX C for the detailed test data for each test configuration.

Head(0mm gap)

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	10g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	Meas. No.
Band 20 (RB allocation/offset 1#0 BW: 20MHz)	Left Cheek	0	24250	842	2.511	0.190	100.00	1.000	24.32	24.50	1.042	0.198	/
	Left Tilt	0	24250	842	0.802	0.108	100.00	1.000	24.32	24.50	1.042	0.113	/
	Right Cheek	0	24250	842	-1.910	0.194	100.00	1.000	24.32	24.50	1.042	**0.202**	25#
	Right Tilt	0	24250	842	1.380	0.111	100.00	1.000	24.32	24.50	1.042	0.116	/

Body(5mm gap)

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	10g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	Meas. No.
Band 20 (RB allocation/offset 1#0 BW: 20MHz)	Front	5	24250	842	-2.140	0.266	100.00	1.000	24.32	24.50	1.042	0.277	/
	Back	5	24250	842	3.130	0.360	100.00	1.000	24.32	24.50	1.042	**0.375**	26#

Limb(0mm gap)

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	10g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	Meas. No.
Band 20 (RB allocation/offset 1#0 BW: 20MHz)	Back	0	24250	842	-4.700	0.488	100.00	1.000	24.32	24.50	1.042	**0.508**	27#

Note:

1. The distance of the Head/Limb test is 0mm, and the Body test is 5mm respectively.

2. If the SAR measured at mid-band channel for each test configuration is at least 3.0 dB lower than the SAR limit (< 1 W/kg), testing at the high and low channels is optional, apart from the worst case configuration.

3. Refer to ANNEX C for the detailed test data for each test configuration.

Head(0mm gap)

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	10g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	Meas. No.
Band 28 (RB allocation/offset 1#0 BW: 20MHz)	Left Cheek	0	27560	738	2.511	0.177	100.00	1.000	24.93	25.00	1.016	0.180	/
	Left Tilt	0	27560	738	0.802	0.095	100.00	1.000	24.93	25.00	1.016	0.097	/
	Right Cheek	0	27560	738	3.710	0.179	100.00	1.000	24.93	25.00	1.016	**0.182**	28#
	Right Tilt	0	27560	738	2.900	0.097	100.00	1.000	24.93	25.00	1.016	0.099	/

Body(5mm gap)

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	10g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	Meas. No.
Band 28 (RB allocation/offset 1#0 BW: 20MHz)	Front	5	27560	738	-4.170	0.183	100.00	1.000	24.93	25.00	1.016	0.186	/
	Back	5	27560	738	-2.970	0.333	100.00	1.000	24.93	25.00	1.016	**0.338**	29#

Limb(0mm gap)

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	10g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	Meas. No.
Band 28 (RB allocation/offset 1#0 BW: 20MHz)	Back	0	27560	738	-1.100	0.615	100.00	1.000	24.93	25.00	1.016	**0.625**	30#

Note:

1. The distance of the Head/Limb test is 0mm, and the Body test is 5mm respectively.

2. If the SAR measured at mid-band channel for each test configuration is at least 3.0 dB lower than the SAR limit (< 1 W/kg), testing at the high and low channels is optional, apart from the worst case configuration.

3. Refer to ANNEX C for the detailed test data for each test configuration.

Head(0mm gap)

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	10g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	Meas. No.
Band 38 (RB allocation/offset 1#99 BW: 20MHz)	Left Cheek	0	38150	2610	2.511	0.038	100.00	1.000	23.83	24.00	1.040	0.040	/
	Left Tilt	0	38150	2610	0.802	0.026	100.00	1.000	23.83	24.00	1.040	0.027	/
	Right Cheek	0	38150	2610	-2.250	0.040	100.00	1.000	23.83	24.00	1.040	**0.042**	31#
	Right Tilt	0	38150	2610	-1.980	0.027	100.00	1.000	23.83	24.00	1.040	0.028	/

Body(5mm gap)

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	10g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	Meas. No.
Band 38 (RB allocation/offset 1#99 BW: 20MHz)	Front	5	38150	2610	4.160	0.283	100.00	1.000	23.83	24.00	1.040	0.294	/
	Back	5	38150	2610	1.270	0.356	100.00	1.000	23.83	24.00	1.040	**0.370**	32#

Limb(0mm gap)

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	10g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	Meas. No.
Band 38 (RB allocation/offset 1#99 BW: 20MHz)	Back	0	38150	2610	-1.100	1.046	100.00	1.000	23.83	24.00	1.040	**1.088**	33#

Note:

1. The distance of the Head/Limb test is 0mm, and the Body test is 5mm respectively.

2. If the SAR measured at mid-band channel for each test configuration is at least 3.0 dB lower than the SAR limit (< 1 W/kg), testing at the high and low channels is optional, apart from the worst case configuration.

3. Refer to ANNEX C for the detailed test data for each test configuration.

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Head(0mm gap)													
Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	10g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	Meas. No.
Band 40 (RB allocation/offset 1#99 BW: 20MHz)	Left Cheek	0	38750	2670	2.511	0.090	100.00	1.000	24.00	24.00	1.000	0.090	/
	Left Tilt	0	38750	2670	0.802	0.062	100.00	1.000	24.00	24.00	1.000	0.062	/
	Right Cheek	0	38750	2670	2.940	0.092	100.00	1.000	24.00	24.00	1.000	**0.092**	34#
	Right Tilt	0	38750	2670	1.530	0.063	100.00	1.000	24.00	24.00	1.000	0.063	/
Body(5mm gap)													
Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	10g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	Meas. No.
Band 40 (RB allocation/offset 1#99 BW: 20MHz)	Front	5	38750	2670	4.460	0.377	100.00	1.000	24.00	24.00	1.000	0.377	/
	Back	5	38750	2670	-2.890	0.543	100.00	1.000	24.00	24.00	1.000	**0.543**	35#
Limb(0mm gap)													
Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	10g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	Meas. No.
Band 40 (RB allocation/offset 1#99 BW: 20MHz)	Back	0	38750	2670	2.700	1.652	100.00	1.000	24.00	24.00	1.000	**1.652**	36#

Note:

1. The distance of the Head/Limb test is 0mm, and the Body test is 5mm respectively.

2. If the SAR measured at mid-band channel for each test configuration is at least 3.0 dB lower than the SAR limit (< 1 W/kg), testing at the high and low channels is optional, apart from the worst case configuration.

3. Refer to ANNEX C for the detailed test data for each test configuration.

Wifi

Head(0mm gap)													
Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	10g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	Meas. No.
802.11 b (2.4~2.4835)	Left Cheek	0	7	2442	1.550	0.106	100.00	1.000	15.50	16.00	1.122	0.119	/
	Left Tilt	0	7	2442	0.390	0.086	100.00	1.000	15.50	16.00	1.122	0.096	/
	Right Cheek	0	7	2442	-4.170	0.108	100.00	1.000	15.50	16.00	1.122	**0.121**	37#
	Right Tilt	0	7	2442	0.450	0.089	100.00	1.000	15.50	16.00	1.122	0.100	/
Body(5mm gap)													
Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	10g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	Meas. No.
802.11 b (2.4~2.4835)	Front	5	7	2442	-3.030	0.106	100.00	1.000	15.50	16.00	1.122	0.119	/
	Back	5	7	2442	-1.210	0.107	100.00	1.000	15.50	16.00	1.122	**0.120**	38#
Limb(0mm gap)													
Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	10g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	Meas. No.
802.11 b (2.4~2.4835)	Back	0	7	2442	1.270	0.291	100.00	1.000	15.50	16.00	1.122	**0.327**	39#

Note:

1. The distance of the Head/Limb test is 0mm, and the Body test is 5mm respectively.

2. If the SAR measured at mid-band channel for each test configuration is at least 3.0 dB lower than the SAR limit (< 1 W/kg), testing at the high and low channels is optional, apart from the worst case configuration.

3. Refer to ANNEX C for the detailed test data for each test configuration.

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Head(0mm gap)

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	10g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	Meas. No.
U-NII-1 (5.150~5.250) 802.11ac(VHT80)	Left Cheek	0	42	5210	1.550	0.905	100.00	1.000	14.37	14.50	1.030	0.932	/
	Left Tilt	0	42	5210	0.390	0.892	100.00	1.000	14.37	14.50	1.030	0.919	/
	Right Cheek	0	42	5210	-2.210	0.908	100.00	1.000	14.37	14.50	1.030	**0.935**	40#
	Right Tilt	0	42	5210	2.120	0.896	100.00	1.000	14.37	14.50	1.030	0.923	/

Body(5mm gap)

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	10g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	Meas. No.
U-NII-1 (5.150~5.250) 802.11ac(VHT80)	Front	5	42	5210	3.730	0.375	100.00	1.000	14.37	14.50	1.030	**0.386**	41#
	Back	5	42	5210	-1.720	0.294	100.00	1.000	14.37	14.50	1.030	0.303	/

Limb(0mm gap)

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	10g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	Meas. No.
U-NII-1 (5.150~5.250) 802.11ac(VHT80)	Back	0	42	5210	0.610	0.650	100.00	1.000	14.37	14.50	1.030	**0.670**	42#

Note:

1. The distance of the Head/Limb test is 0mm, and the Body test is 5mm respectively.

2. If the SAR measured at mid-band channel for each test configuration is at least 3.0 dB lower than the SAR limit (< 1 W/kg), testing at the high and low channels is optional, apart from the worst case configuration.

3. Refer to ANNEX C for the detailed test data for each test configuration.

Head(0mm gap)

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	10g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	Meas. No.
U-NII-3 (5.725~5.850) 802.11n(HT40)	Left Cheek	0	159	5795	1.550	0.580	100.00	1.000	13.79	14.00	1.050	0.609	/
	Left Tilt	0	159	5795	0.390	0.562	100.00	1.000	13.79	14.00	1.050	0.590	/
	Right Cheek	0	159	5795	-4.650	0.583	100.00	1.000	13.79	14.00	1.050	**0.612**	43#
	Right Tilt	0	159	5795	-2.660	0.566	100.00	1.000	13.79	14.00	1.050	0.594	/

Body(5mm gap)

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	10g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	Meas. No.
U-NII-3 (5.725~5.850) 802.11n(HT40)	Front	5	159	5795	2.690	0.227	100.00	1.000	13.79	14.00	1.050	**0.238**	44#
	Back	5	159	5795	1.130	0.206	100.00	1.000	13.79	14.00	1.050	0.216	/

Limb(0mm gap)

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (%)	10g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	Meas. No.
U-NII-3 (5.725~5.850) 802.11n(HT40)	Back	0	159	5795	2.950	0.391	100.00	1.000	13.79	14.00	1.050	**0.411**	45#

Note:

1. The distance of the Head/Limb test is 0mm, and the Body test is 5mm respectively.

2. If the SAR measured at mid-band channel for each test configuration is at least 3.0 dB lower than the SAR limit (< 1 W/kg), testing at the high and low channels is optional, apart from the worst case configuration.

3. Refer to ANNEX C for the detailed test data for each test configuration.

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10. Simultaneous Transmission

The device contain transmitters (GSM/WCDMA/LTE & Bluetooth/Wifi) can transmit multiple transmission modes at the same time, determining the threshold power level available to the secondary transmitter (Pavailable) is to calculate it from the measured peak spatial-average SAR of the primary transmitter (SAR1) according to the equation:

Pavailable = Pth,m·(SARlim - SAR1)/SARlim
where Pth,m is the threshold exclusion power level taken from Annex B of IEC 62479 for the frequency of the secondary transmitter at the separation distance used in the testing.

f GHz	*BW* %	*Exemple d'interface air*	P_{max}' mW			
			s = 5 mm		*s* = 25 mm	
			m = 1 g	*m* = 10 g	*m* = 1 g	*m* = 10 g
2,442	3,4	802.11b	7,3	32	130	328
5,250	3,8	WiMAX	6,8	53	258	845
5,788	1,3	WiMAX	6,2	52	164	564

According to the test result, we could know the maximum SAR of Head is 0.935 W/Kg, so

Pavailable1 =32mW x (2.0-0.935)/2.0= 17.04 mW
Pavailable2 =53mW x (2.0-0.935)/2.0= 28.22 mW
Pavailable3 =52mW x (2.0-0.935)/2.0= 27.69 mW

According to the test result, we could know the maximum SAR of body-worn is 0.999 W/Kg, so

Pavailable1' =32mW x (2.0-0.999)/2.0= 16.02 mW
Pavailable2' =53mW x (2.0-0.999)/2.0= 26.53 mW
Pavailable3' =52mW x (2.0-0.999)/2.0= 26.03 mW

According to the test result, we could know the maximum SAR of Limb is 1.652 W/Kg, so

Pavailable1'' =32mW x (4.0-1.652)/4.0= 18.78 mW
Pavailable2'' =53mW x (4.0-1.652)/4.0= 31.11 mW
Pavailable3'' =52mW x (4.0-1.652)/4.0= 30.52 mW

The maximum power of BT is 7.50 dBm = 5.62 mw < Pavailable1 & Pavailable1' & Pavailable1''
So the SAR measurement for the secondary transmitter of BT is not necessary;
The maximum power of 2.4g Wifi is 16.00 dBm = 39.81 mw > Pavailable1 & Pavailable1' & Pavailable1''
So the SAR measurement for the secondary transmitter of 2.4g Wifi is necessary;
The maximum power of 5.2g Wifi is 14.50 dBm = 28.18 mw < Pavailable2 & Pavailable2'', but > Pavailable2'
So the body-worn SAR measurement for the secondary transmitter of 5.2g Wifi is necessary.
The maximum power of 5.8g Wifi is 14.00 dBm = 25.12 mW < Pavailable3' & Pavailable3'' & Pavailable3
So the SAR measurement for the secondary transmitter of 5.8g is not necessary;

Application Simultaneous Transmission information:

Combination No.	Simultaneous Tx Mode
1	WWAN + WIFI

10.1 Sum SAR of Simultaneous Transmission

10.1.1 Head Simultaneous Transmission SAR Evaluation for WWAN Antenna and WLAN antenna

Band	Position	Standalone SAR(Reported SAR 10-g (W/Kg))		Sum SAR10-g (W/Kg) WWAN+WLAN-2.4g	SAR10-g Limit (W/Kg)	Simultaneous Meas. Required
		WWAN	WLAN-2.4g			
GSM 900	Left Cheek	0.185	0.119	0.304	2.0	no
	Left Tilt	0.111	0.096	0.207	2.0	no
	Right Cheek	**0.207**	**0.121**	0.328	2.0	no
	Right Tilt	0.110	0.100	0.210	2.0	no
GSM 1800	Left Cheek	0.035	0.119	0.154	2.0	no
	Left Tilt	0.029	0.096	0.125	2.0	no
	Right Cheek	**0.036**	**0.121**	0.157	2.0	no
	Right Tilt	0.033	0.100	0.133	2.0	no
WCDMA Band 1	Left Cheek	0.086	0.119	0.205	2.0	no
	Left Tilt	0.061	0.096	0.157	2.0	no
	Right Cheek	**0.088**	**0.121**	0.209	2.0	no
	Right Tilt	0.064	0.100	0.164	2.0	no
WCDMA Band 8	Left Cheek	0.193	0.119	0.312	2.0	no
	Left Tilt	0.105	0.096	0.201	2.0	no
	Right Cheek	**0.196**	**0.121**	0.317	2.0	no
	Right Tilt	0.110	0.100	0.210	2.0	no
LTE band 1	Left Cheek	0.097	0.119	0.216	2.0	no
	Left Tilt	0.072	0.096	0.168	2.0	no
	Right Cheek	**0.100**	**0.121**	0.221	2.0	no
	Right Tilt	0.075	0.100	0.175	2.0	no
LTE band 3	Left Cheek	0.049	0.119	0.168	2.0	no
	Left Tilt	0.041	0.096	0.137	2.0	no
	Right Cheek	**0.052**	**0.121**	0.173	2.0	no
	Right Tilt	0.044	0.100	0.144	2.0	no
LTE band 7	Left Cheek	0.083	0.119	0.202	2.0	no
	Left Tilt	0.053	0.096	0.149	2.0	no
	Right Cheek	**0.085**	**0.121**	0.206	2.0	no
	Right Tilt	0.053	0.100	0.153	2.0	no
LTE band 8	Left Cheek	0.227	0.119	0.346	2.0	no
	Left Tilt	0.105	0.096	0.201	2.0	no
	Right Cheek	**0.235**	**0.121**	**0.356**	2.0	no
	Right Tilt	0.109	0.100	0.209	2.0	no
LTE band 20	Left Cheek	0.198	0.119	0.317	2.0	no
	Left Tilt	0.113	0.096	0.209	2.0	no
	Right Cheek	**0.202**	**0.121**	0.323	2.0	no
	Right Tilt	0.116	0.100	0.216	2.0	no
LTE band 28	Left Cheek	0.180	0.119	0.299	2.0	no
	Left Tilt	0.097	0.096	0.193	2.0	no
	Right Cheek	**0.182**	**0.121**	0.303	2.0	no
	Right Tilt	0.099	0.100	0.199	2.0	no
LTE band 38	Left Cheek	0.040	0.119	0.159	2.0	no
	Left Tilt	0.027	0.096	0.123	2.0	no
	Right Cheek	**0.042**	**0.121**	0.163	2.0	no
	Right Tilt	0.028	0.100	0.128	2.0	no
LTE band 40	Left Cheek	0.090	0.119	0.209	2.0	no
	Left Tilt	0.062	0.096	0.158	2.0	no
	Right Cheek	**0.092**	**0.121**	0.213	2.0	no
	Right Tilt	0.063	0.100	0.163	2.0	no

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10.1.2 Body-Worn Simultaneous Transmission SAR Evaluation for WWAN Antenna and WLAN antenna

Band	Position	Standalone SAR(Reported SAR 10-g (W/Kg))			Sum SAR10-g (W/Kg) WWAN+WALN-2.4g	Sum SAR10-g (W/Kg) WWAN+WALN-5.2g	SAR10-g Limit (W/Kg)	Simultaneous Meas. Required
		WWAN	WLAN-2.4g	WLAN-5.2g				
GSM 900	Front	0.280	0.119	**0.386**	0.399	0.666	2.0	no
	Back	**0.674**	**0.120**	0.303	0.794	0.977	2.0	no
GSM 1800	Front	0.170	0.119	**0.386**	0.289	0.556	2.0	no
	Back	**0.532**	**0.120**	0.303	0.652	0.835	2.0	no
WCDMA Band 1	Front	0.334	0.119	**0.386**	0.453	0.720	2.0	no
	Back	**0.370**	**0.120**	0.303	0.490	0.673	2.0	no
WCDMA Band 8	Front	0.278	0.119	**0.386**	0.397	0.664	2.0	no
	Back	**0.379**	**0.120**	0.303	0.499	0.682	2.0	no
LTE band 1	Front	0.486	0.119	**0.386**	0.605	0.872	2.0	no
	Back	**0.494**	**0.120**	0.303	0.614	0.797	2.0	no
LTE band 3	Front	0.546	0.119	**0.386**	0.665	0.932	2.0	no
	Back	**0.999**	**0.120**	0.303	1.119	**1.302**	2.0	no
LTE band 7	Front	0.564	0.119	**0.386**	0.683	0.950	2.0	no
	Back	**0.624**	**0.120**	0.303	0.744	0.927	2.0	no
LTE band 8	Front	0.349	0.119	**0.386**	0.468	0.735	2.0	no
	Back	**0.541**	**0.120**	0.303	0.661	0.844	2.0	no
LTE band 20	Front	0.277	0.119	**0.386**	0.396	0.663	2.0	no
	Back	**0.375**	**0.120**	0.303	0.495	0.678	2.0	no
LTE band 28	Front	0.186	0.119	**0.386**	0.305	0.572	2.0	no
	Back	**0.338**	**0.120**	0.303	0.458	0.641	2.0	no
LTE band 38	Front	0.294	0.119	**0.386**	0.413	0.680	2.0	no
	Back	**0.370**	**0.120**	0.303	0.490	0.673	2.0	no
LTE band 40	Front	0.377	0.119	**0.386**	0.496	0.763	2.0	no
	Back	**0.543**	**0.120**	0.303	0.663	0.846	2.0	no

10.1.3 Limb Simultaneous Transmission SAR Evaluation for WWAN Antenna and WLAN antenna

Band	Position	Standalone SAR(Reported SAR 10-g (W/Kg))		Sum SAR10-g (W/Kg) WWAN+WALN-2.4g	SAR10-g Limit (W/Kg)	Simultaneous Meas. Required
		WWAN	WLAN-2.4g			
GSM 900	Back	1.033	0.327	1.360	4.0	no
GSM 1800	Back	0.697	0.327	1.024	4.0	no
WCDMA Band 1	Back	0.851	0.327	1.178	4.0	no
WCDMA Band 8	Back	0.569	0.327	0.896	4.0	no
LTE band 1	Back	1.152	0.327	1.479	4.0	no
LTE band 3	Back	1.467	0.327	1.794	4.0	no
LTE band 7	Back	1.573	0.327	1.900	4.0	no
LTE band 8	Back	0.774	0.327	1.101	4.0	no
LTE band 20	Back	0.508	0.327	0.835	4.0	no
LTE band 28	Back	0.625	0.327	0.952	4.0	no
LTE band 38	Back	1.088	0.327	1.415	4.0	no
LTE band 40	Back	1.652	0.327	**1.979**	4.0	no

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11. Test Equipment List

Description	Manufacturer	Model	Serial No./Version	Cal. Date	Cal. Due
E-Field Probe	MVG	SSE2	04/22 EPGO365	2023/02/06	2024/02/05
6 1/2 Digital Multimeter	Keithley	DMM6500	4527164	2022/11/24	2023/11/23
Wideband Radio Communication Tester	ROHDE & SCHWARZ	CMW500	161997	2022/11/24	2023/11/23
MXG Vector Signal Generator	Agilent	N5182A	MY46240163	2022/11/24	2023/11/23
E-Series Avg. Power Sensor	KEYSIGHT	E9300A	MY55050017	2022/03/26	2023/03/25
EPM Series Power Meter	KEYSIGHT	E4418B	MY41293435	2022/03/26	2023/03/25
10dB Attenuator	MIDWEST MICROWAVE	263-10dB	/	2022/03/26	2023/03/25
Coupler	MERRIMAC	CWM-10R-10.8G	LOT-83391	2022/03/26	2023/03/25
750MHz Validation Dipole	MVG	SID750	07/22 DIP 0G835-655	2023/02/06	2024/02/05
835MHz Validation Dipole	MVG	SID835	07/22 DIP 0G835-656	2023/02/06	2024/02/05
1800MHz Validation Dipole	MVG	SID1800	07/22 DIP 1G800-657	2023/02/06	2024/02/05
1900MHz Validation Dipole	MVG	SID1900	07/22 DIP 1G900-658	2023/02/06	2024/02/05
2450MHz Validation Dipole	MVG	SID2450	07/22 DIP 2G450-662	2023/02/06	2024/02/05
2600MHz Validation Dipole	MVG	SID2600	07/22 DIP 2G600-663	2023/02/06	2024/02/05
5200MHz-5800MHz Validation Dipole	MVG	SID5000	07/22 DIP5G000-670	2023/02/06	2024/02/05
LIMESAR Dielectric Probe	MVG	SCLMP	06/22 OCPG88	/	/
ENA Series Network Analyzer	Agilent	E5071B	MY42301221	2022/11/24	2023/11/23
Thermometer	Riters	DT-232	21A11	2022/03/26	2023/03/25
Antenna network emulator	MVG	ANTA 74	07/22 ANTA 74	/	/
SAM Phantom	MVG	SAM	07/22 SAM149	/	/
Mobile Phone Positioning System	MVG	MSH 118	07/22 MSH 118	/	/
Mechanical Calibration Kit	PNA	/	/	/	/
Open SAR test software	MVG	/	V5.3.5	/	/

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

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

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ANNEX A Simulating Liquid Verification Result

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

Dielectric performance of tissue simulating liquid									
Frequency	εr		σ(s/m)		Delta	Delta	Limit	Temp	Date
(MHz)	Target	Measured	Target	Measured	(εr)	(σ)		(℃)	
750	41.90	41.80	0.89	0.86	0.24%	3.37%	±5%	20.0	14/3/2023
835	41.50	41.41	0.90	0.87	0.22%	3.33%	±5%	20.0	14/3/2023
1800	40.00	39.91	1.40	1.37	0.23%	2.14%	±5%	20.0	15/3/2023
1900	40.00	39.88	1.40	1.41	0.30%	-0.71%	±5%	20.0	15/3/2023
2450	39.20	39.08	1.80	1.81	0.31%	-0.56%	±5%	20.0	16/3/2023
2600	39.00	38.88	1.96	1.97	0.31%	-0.51%	±5%	20.0	16/3/2023
5200	36.00	35.88	4.66	4.70	0.33%	-0.86%	±5%	20.0	16/3/2023
5800	35.30	35.18	5.27	5.31	0.34%	-0.76%	±5%	20.0	16/3/2023
NOTE: The dielectric parameters of the tissue-equivalent liquid should be measured under similar ambient conditions and within 2 ℃ of the conditions expected during the SAR evaluation to satisfy protocol requirements.									

ANNEX B System Check Result

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

Frequency (MHz)	Input Power (mW)	1g SAR (W/Kg)	10g SAR (W/Kg)	1g SAR 1W input power normalized (W/Kg)	10g SAR 1W input power normalized (W/Kg)	1g SAR Standard target (1W) (W/Kg)	10g SAR Standard target (1W) (W/Kg)	1g SAR Deviation	10g SAR Deviation
750	16	0.138	0.092	8.63	5.75	8.25	5.38	4.55%	6.88%
835	16	0.163	0.106	10.19	6.63	9.79	6.17	4.06%	7.37%
1800	16	0.588	0.312	36.75	19.50	39.33	20.61	-6.56%	-5.39%
1900	16	0.630	0.322	39.38	20.13	40.97	20.7	-3.89%	-2.78%
2450	16	0.793	0.352	49.56	22.00	54.4	23.86	-8.89%	-7.80%
2600	16	0.866	0.421	54.13	26.31	57.14	24.48	-5.28%	7.49%
5200	13	0.998	0.294	76.77	22.62	73.88	21.29	3.91%	6.23%
5800	13	1.023	0.280	78.69	21.54	74.21	21.5	6.04%	0.18%

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System Performance Check Data (750 MHz)

System check at 750 MHz

Date of measurement: 14/3/2023

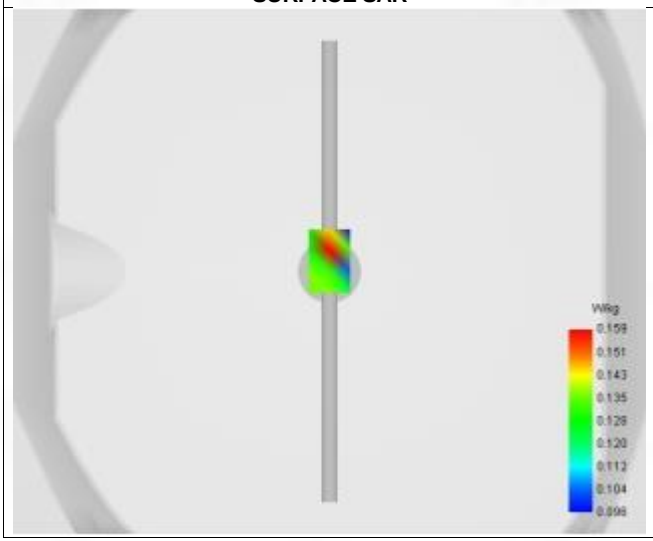
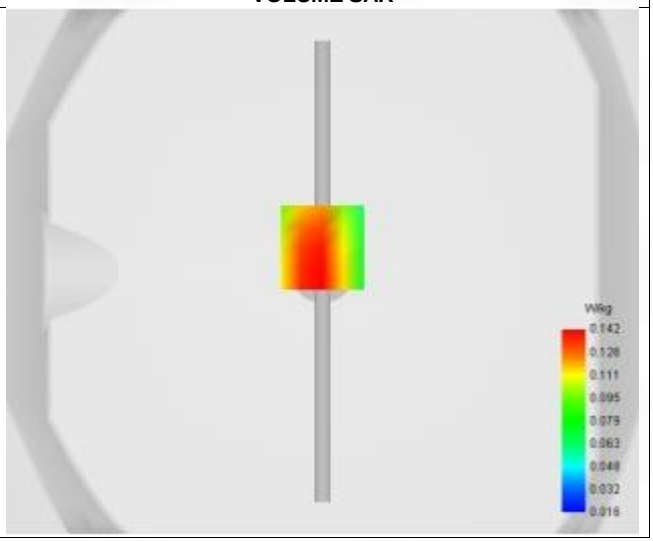
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	1.65
Area Scan	dx=8mm dy=8mm, Adaptative 1 max
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Dipole
Band	CW750
Channels	Middle
Signal	CW

B. Permitivity

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

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

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)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

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

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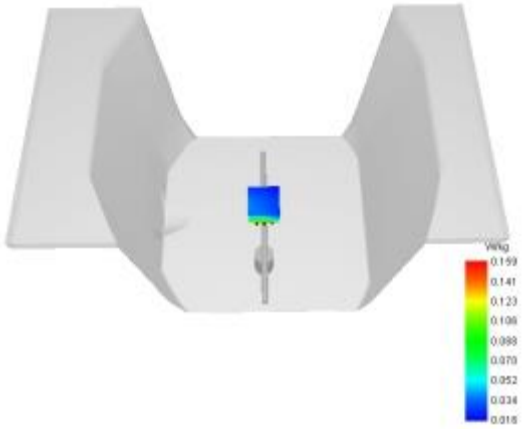
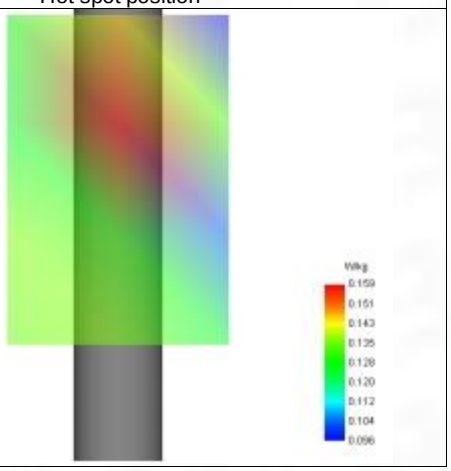
F. 3D Image

3D screen shot	Hot spot position
	

System Performance Check Data (835 MHz)

System check at 835 MHz

Date of measurement: 14/3/2023

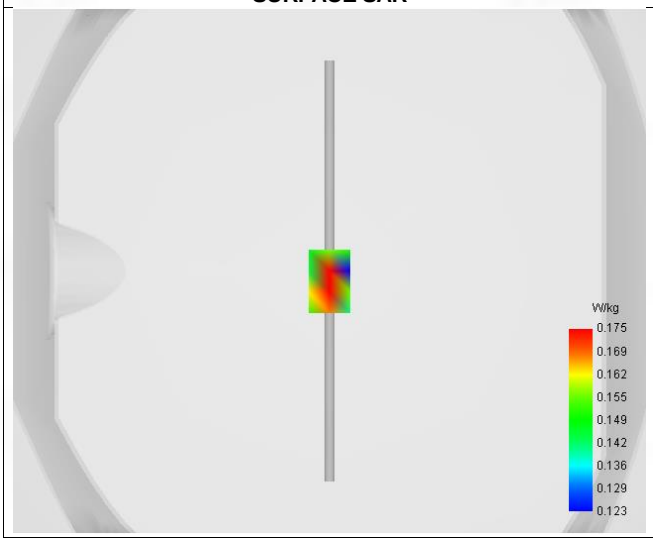
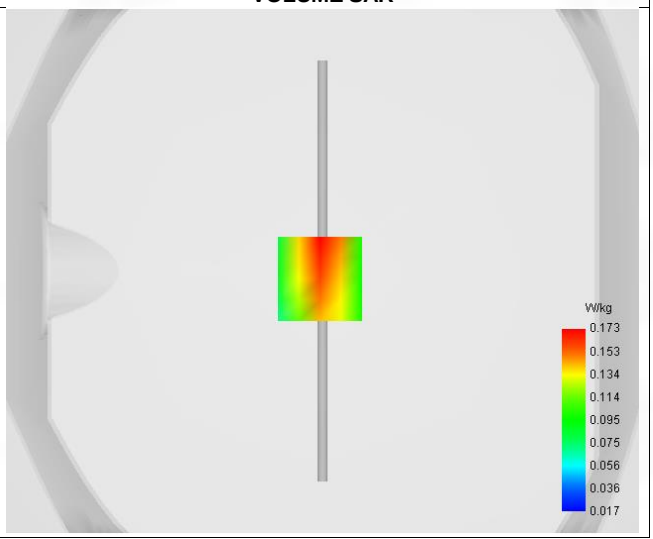
A. Experimental conditions.

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

B. Permitivity

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

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

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

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.106
SAR 1g (W/Kg)	0.163
Variation (%)	-3.390
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

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

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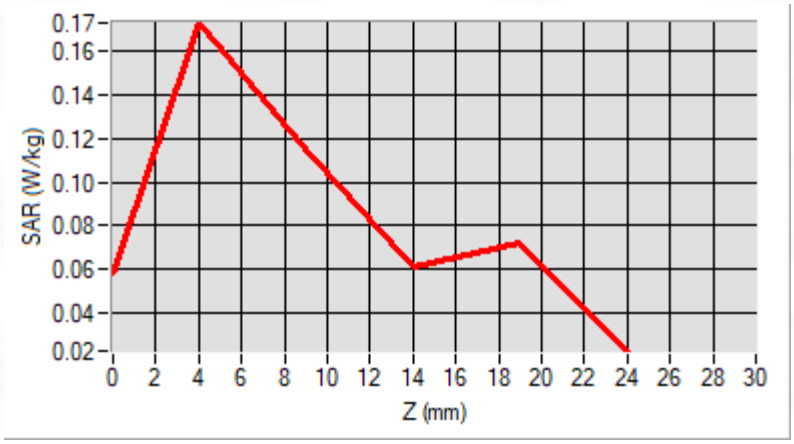
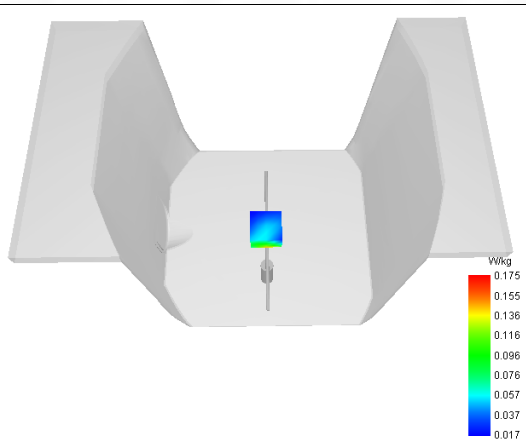
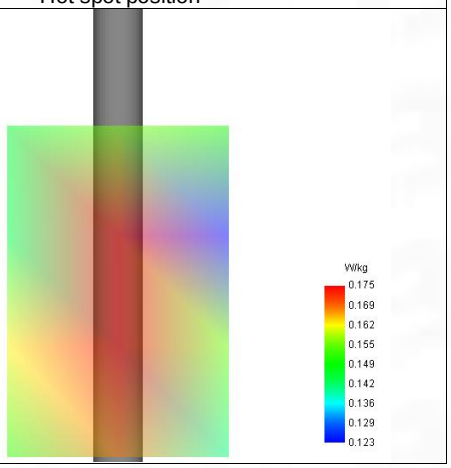


F. 3D Image

3D screen shot	Hot spot position
	

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System Performance Check Data (1800 MHz)

System check at 1800 MHz

Date of measurement: 15/3/2023

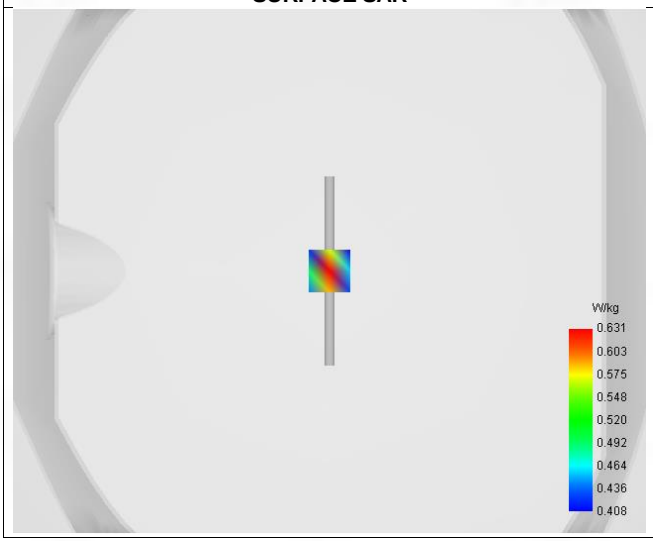
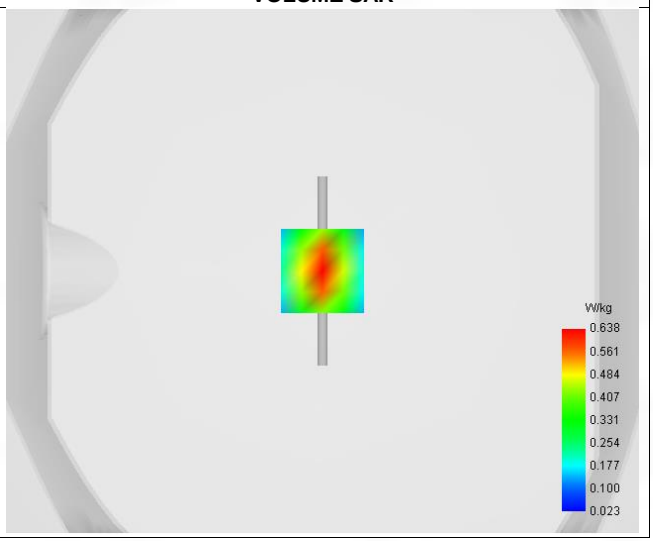
A. Experimental conditions.

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

B. Permitivity

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

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

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

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.312
SAR 1g (W/Kg)	0.588
Variation (%)	-0.250
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

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

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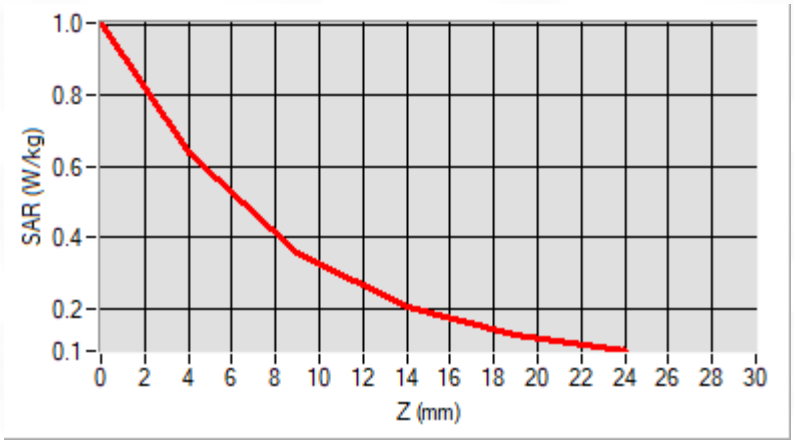
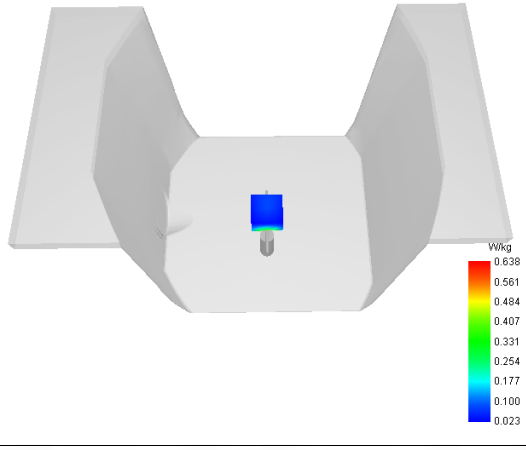
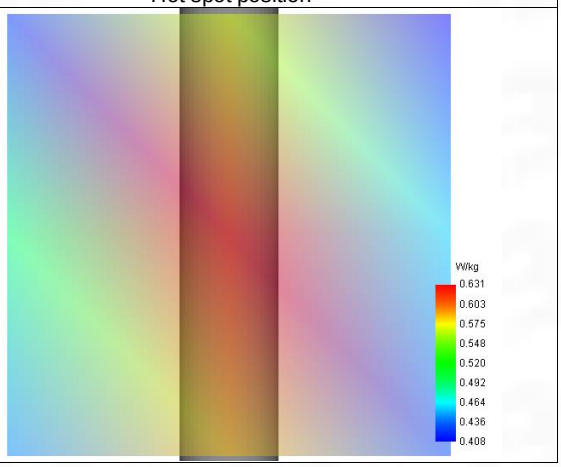


F. 3D Image

3D screen shot	Hot spot position
	

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System Performance Check Data (1900 MHz)

System check at 1900 MHz

Date of measurement: 15/3/2023

A. Experimental conditions.

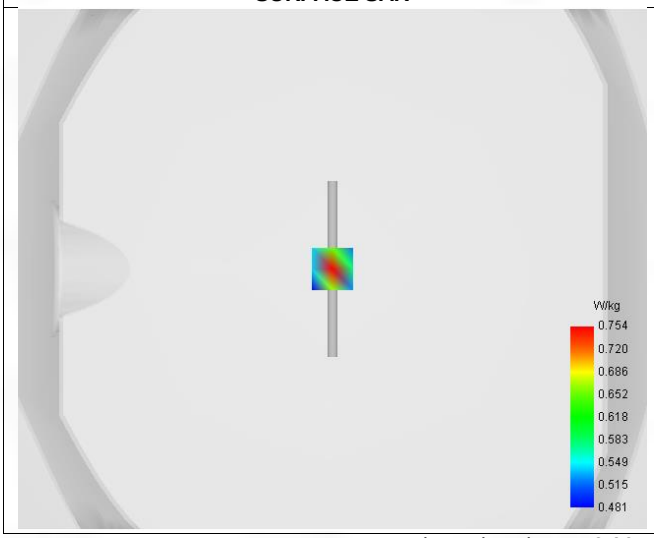
Probe	SN 04/22 EPGO365
ConvF	2.24
Area Scan	dx=8mm dy=8mm, Adaptative 1 max
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Dipole
Band	CW1900
Channels	Middle
Signal	CW

B. Permitivity

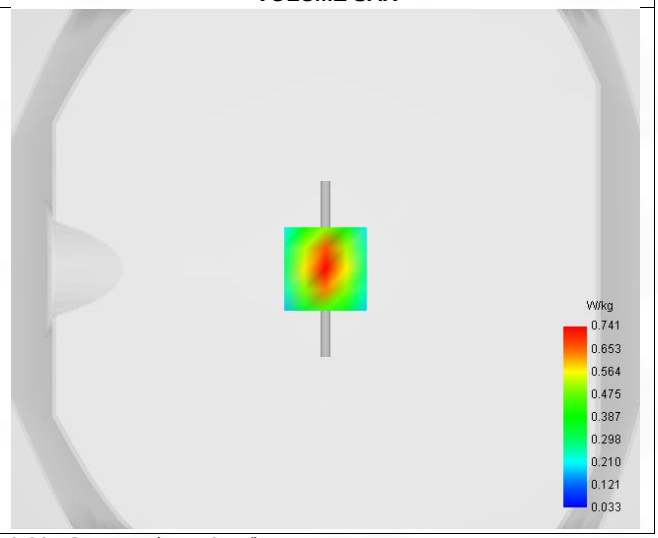
Frequency (MHz)	1900.000
Relative permitivity (real part)	39.880
Relative permitivity (imaginary part)	13.380
Conductivity (S/m)	1.410

C. SAR Surface and Volume

SURFACE SAR



VOLUME SAR



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

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.322
SAR 1g (W/Kg)	0.630
Variation (%)	-2.080
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

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

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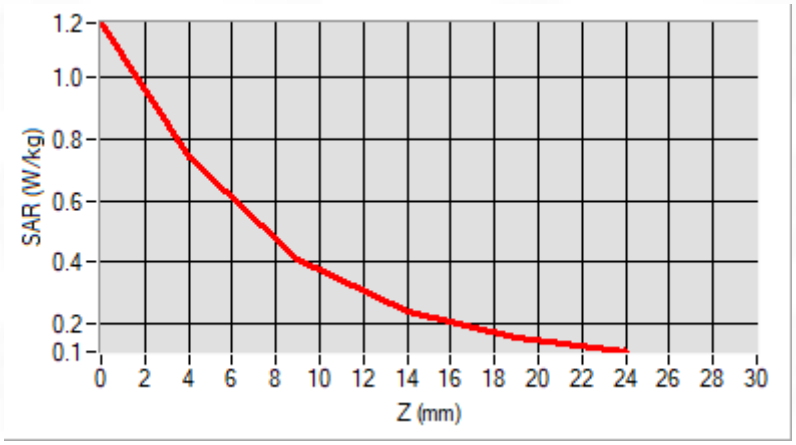
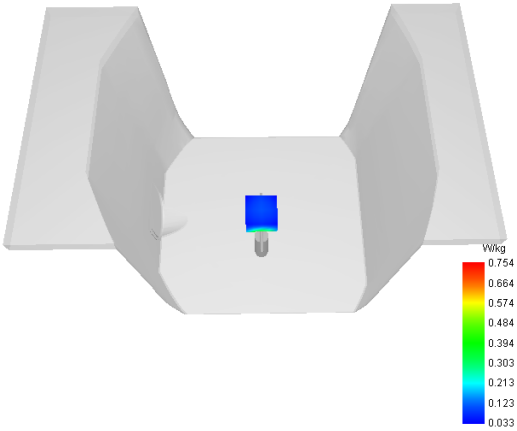
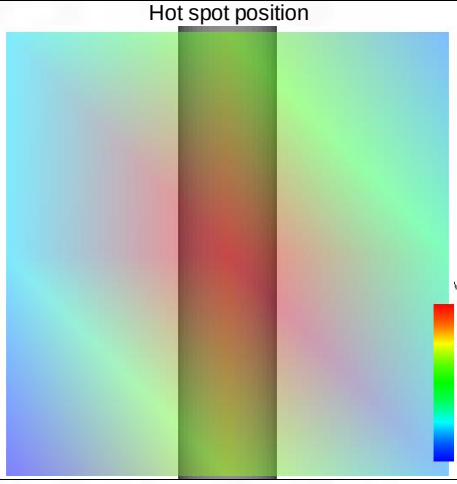


F. 3D Image

3D screen shot	Hot spot position
	

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System Performance Check Data (2450 MHz)

System check at 2450 MHz

Date of measurement: 16/3/2023

A. Experimental conditions.

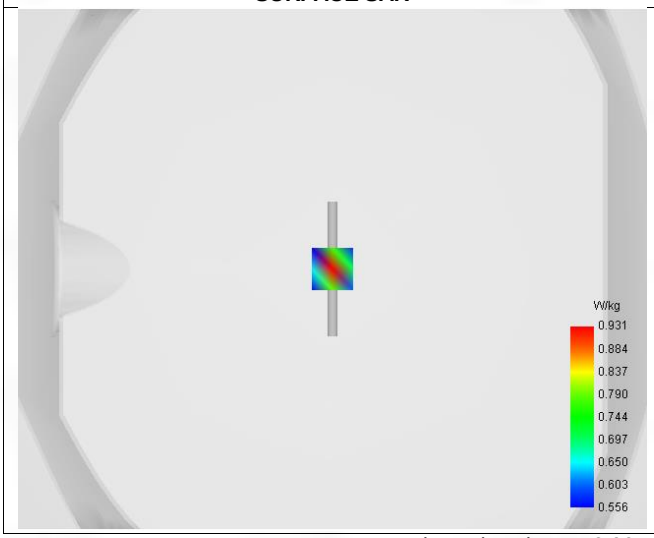
Probe	SN 04/22 EPGO365
ConvF	2.36
Area Scan	dx=8mm dy=8mm, Adaptative 1 max
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Dipole
Band	CW2450
Channels	Middle
Signal	CW

B. Permitivity

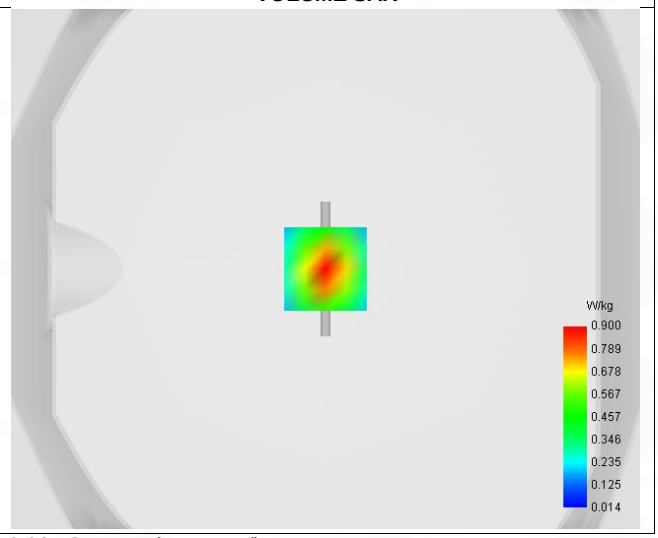
Frequency (MHz)	2450.000
Relative permitivity (real part)	39.080
Relative permitivity (imaginary part)	13.340
Conductivity (S/m)	1.810

C. SAR Surface and Volume

SURFACE SAR



VOLUME SAR



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

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.352
SAR 1g (W/Kg)	0.793
Variation (%)	-2.570
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

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

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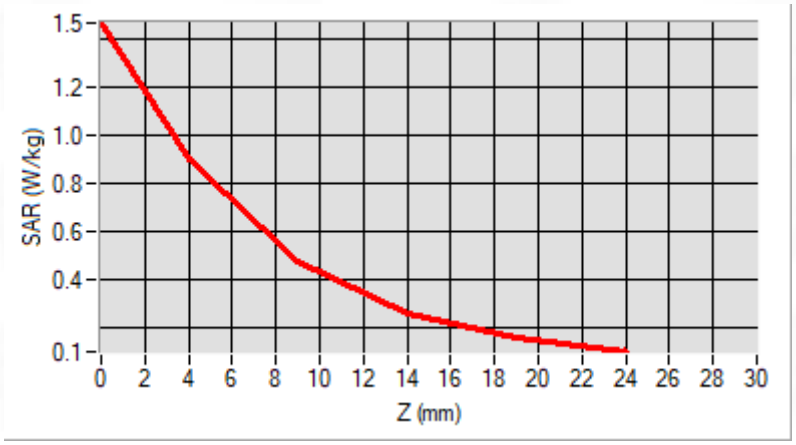
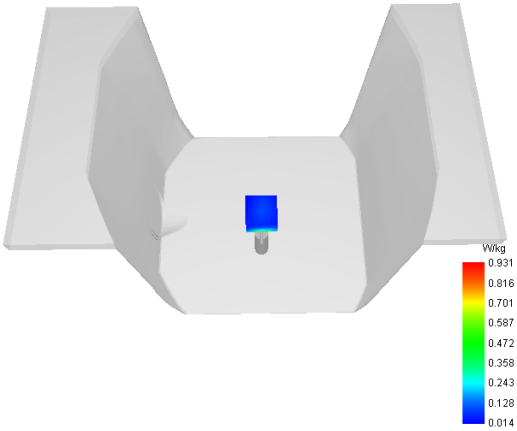
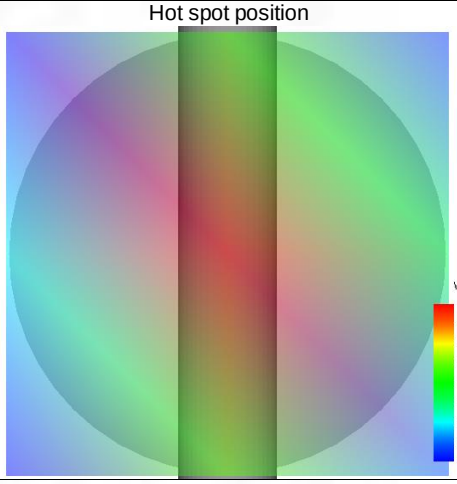


F. 3D Image

3D screen shot	Hot spot position
	

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System Performance Check Data (2600 MHz)

System check at 2600 MHz

Date of measurement: 16/3/2023

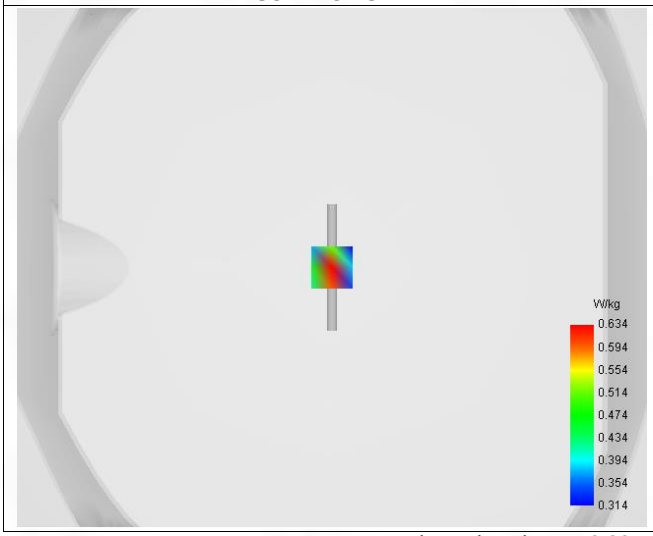
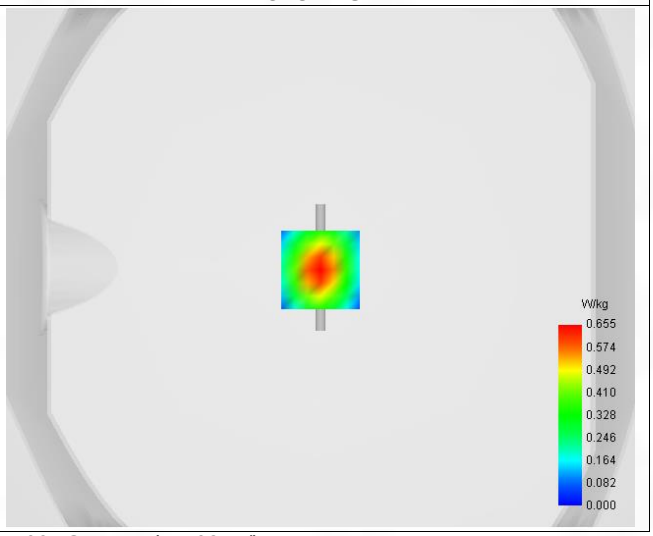
A. Experimental conditions.

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

B. Permitivity

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

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

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

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.421
SAR 1g (W/Kg)	0.866
Variation (%)	2.980
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

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

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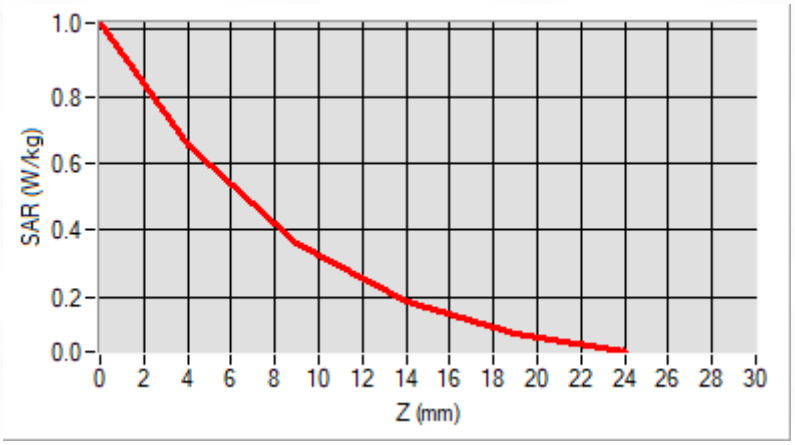
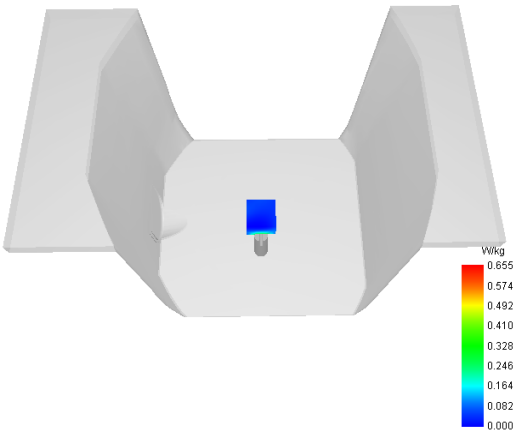
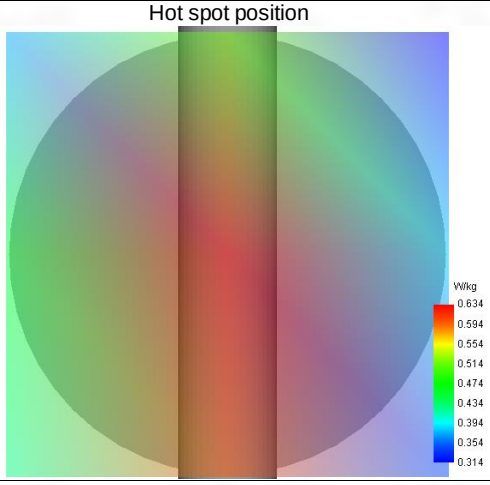


F. 3D Image

3D screen shot	Hot spot position
	

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System Performance Check Data (5200 MHz)

System check at 5200 MHz

Date of measurement: 16/3/2023

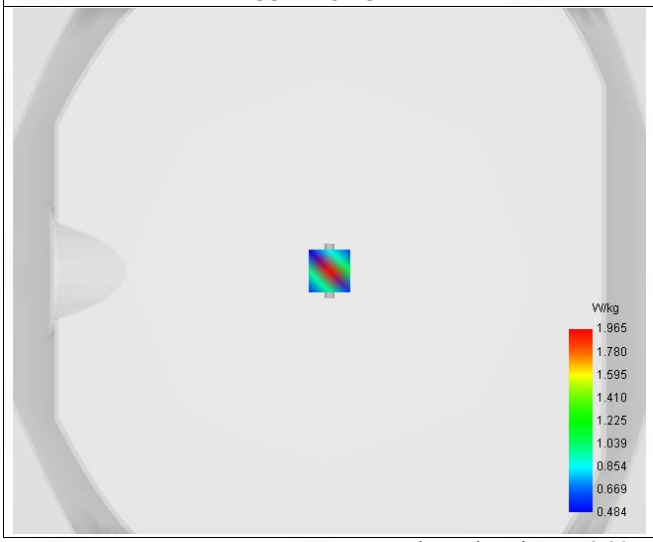
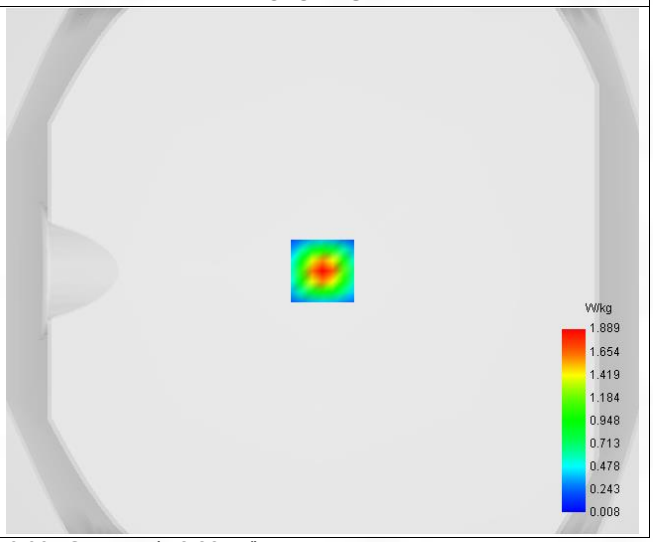
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	2.24
Area Scan	dx=8mm dy=8mm, Adaptative 1 max
Zoom Scan	7x7x12,dx=4mm dy=4mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Dipole
Band	CW5200
Channels	Middle
Signal	CW

B. Permitivity

Frequency (MHz)	5200.000
Relative permitivity (real part)	35.880
Relative permitivity (imaginary part)	16.250
Conductivity (S/m)	4.700

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=0.00, Y=0.00 ; SAR Peak: 3.38 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.294
SAR 1g (W/Kg)	0.998
Variation (%)	-3.400
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00
SAR (W/Kg)	3.268	1.889	1.021	0.523	0.266	0.142	0.085	0.060	0.052

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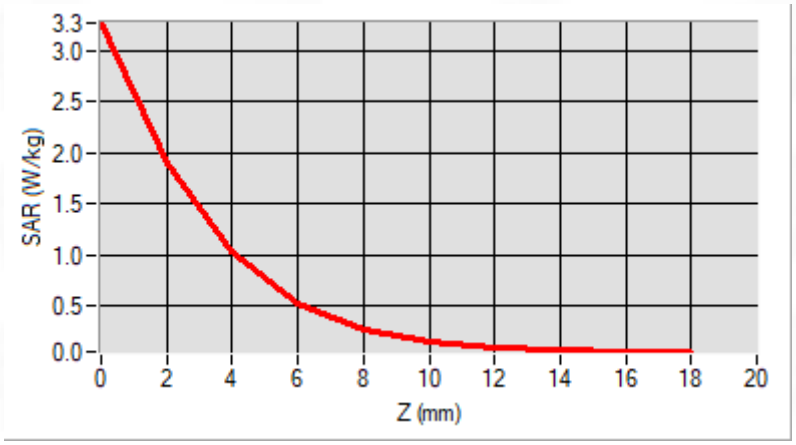
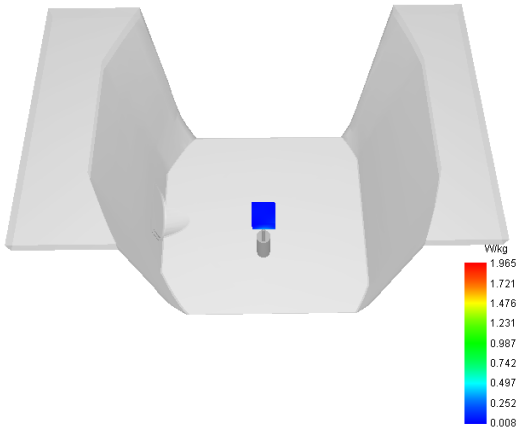
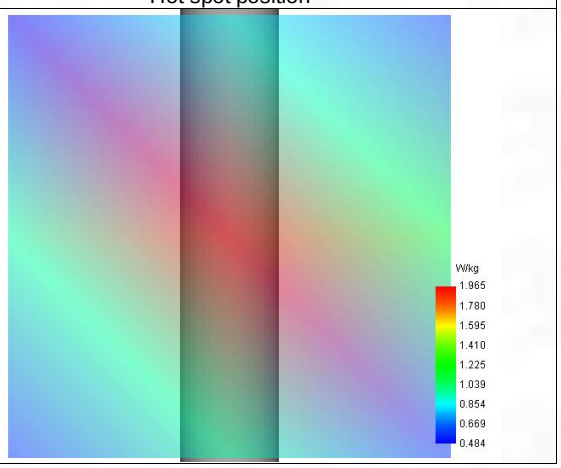


F. 3D Image

3D screen shot	Hot spot position
	

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System Performance Check Data (5800 MHz)

System check at 5800 MHz

Date of measurement: 16/3/2023

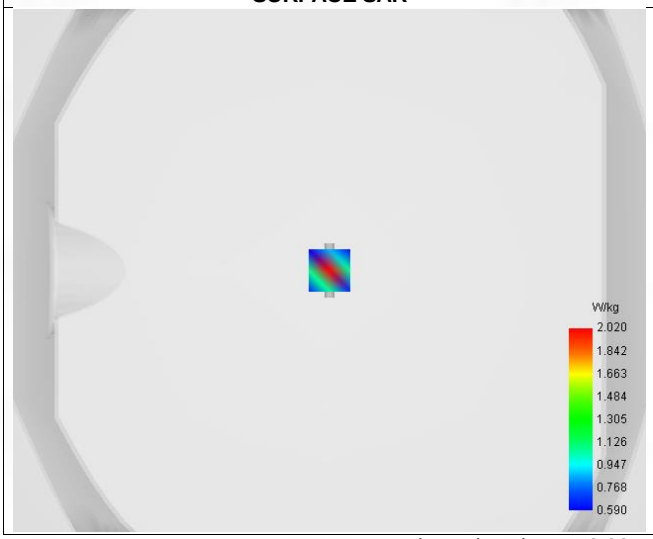
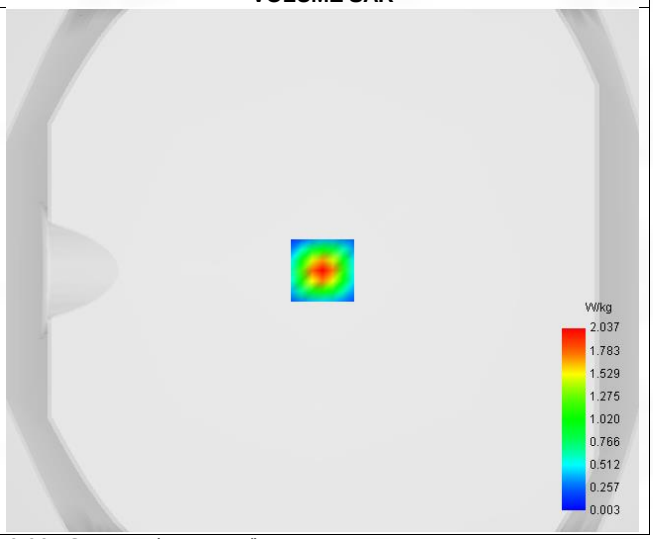
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	2.04
Area Scan	dx=8mm dy=8mm, Adaptative 1 max
Zoom Scan	7x7x12,dx=4mm dy=4mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Dipole
Band	CW5800
Channels	Middle
Signal	CW

B. Permitivity

Frequency (MHz)	5800.000
Relative permitivity (real part)	35.180
Relative permitivity (imaginary part)	16.480
Conductivity (S/m)	5.310

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=0.00, Y=0.00 ; SAR Peak: 4.17 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.280
SAR 1g (W/Kg)	1.023
Variation (%)	0.490
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00
SAR (W/Kg)	3.948	2.037	0.915	0.361	0.135	0.055	0.033	0.037	0.059

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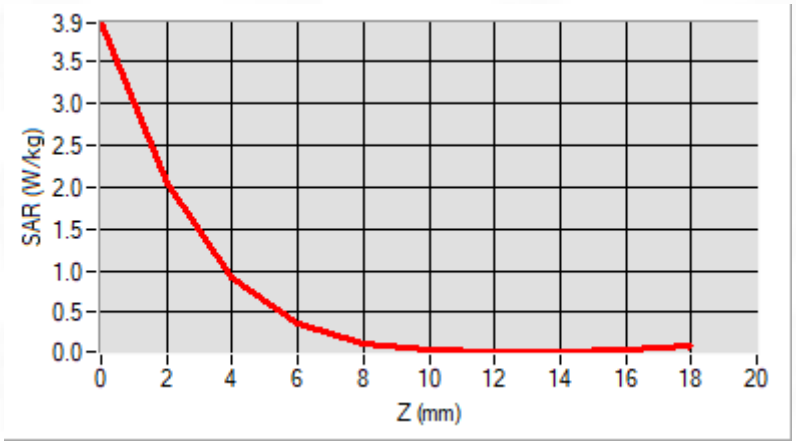
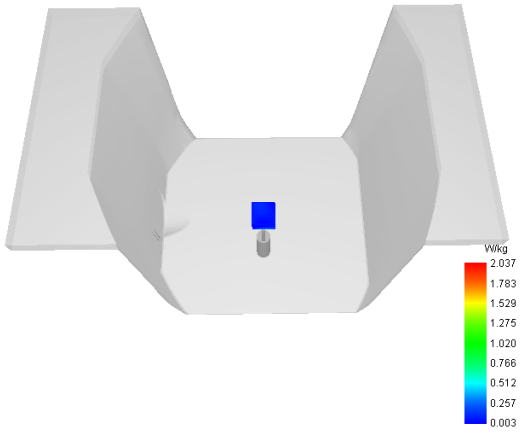
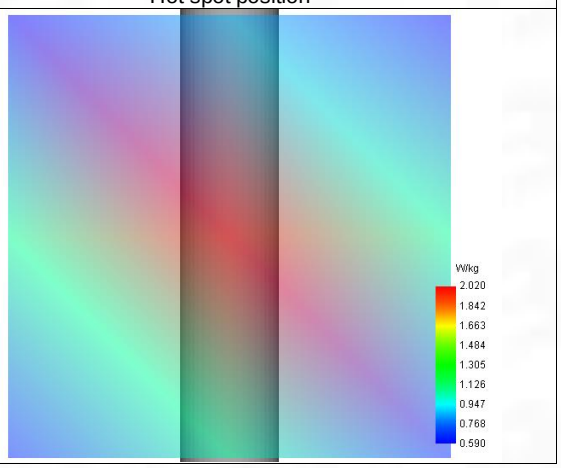


F. 3D Image

3D screen shot	Hot spot position
	

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ANNEX C Test Data

1-Head with front position in dist. 0mm on Channel 124 in GSM 900 voice

SAR Measurement at GSM900 (Cheek, Right)

Date of measurement: 14/3/2023

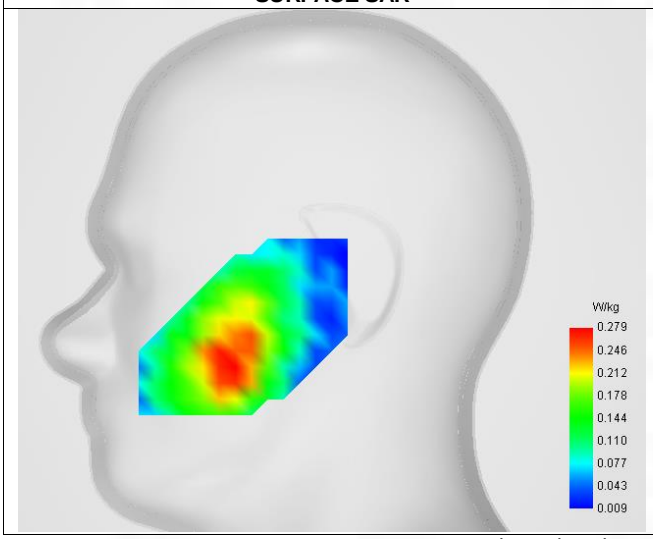
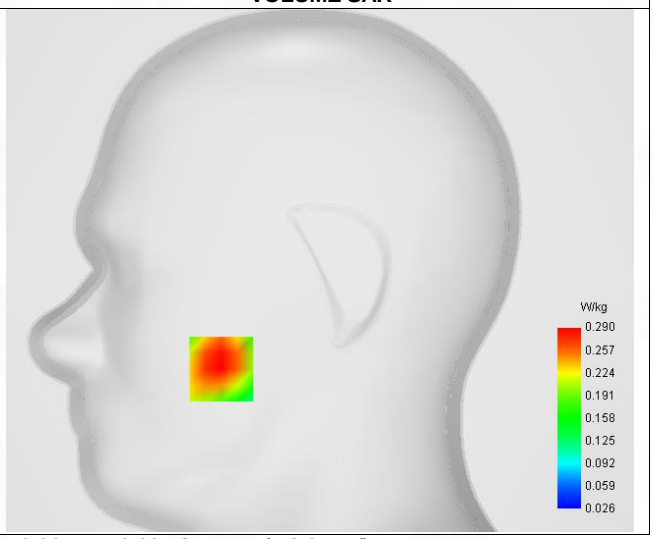
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	1.68
Area Scan	sam_direct_droit2_surf8mm.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Right head
Device Position	Cheek
Band	GSM900
Channels	Higher (124)
Signal	TDMA (GSM)
Modulation	GMSK

B. Permitivity

Frequency (MHz)	914.800
Relative permitivity (real part)	41.286
Relative permitivity (imaginary part)	19.614
Conductivity (S/m)	0.911

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=-49.00, Y=-49.00 ; SAR Peak: 0.37 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.199
SAR 1g (W/Kg)	0.281
Variation (%)	-0.990
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

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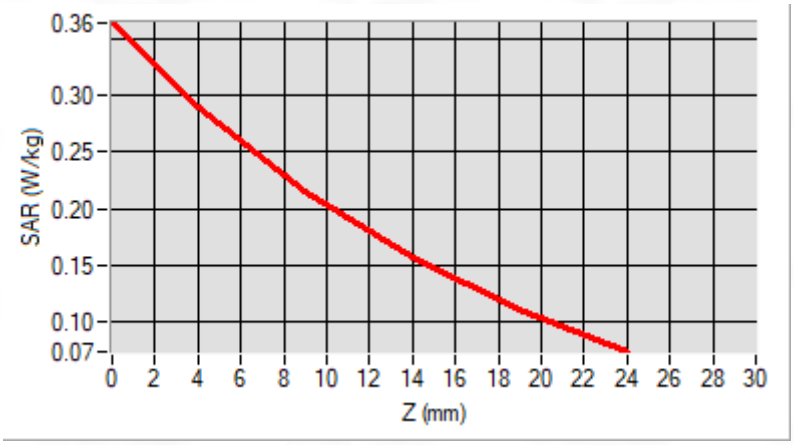
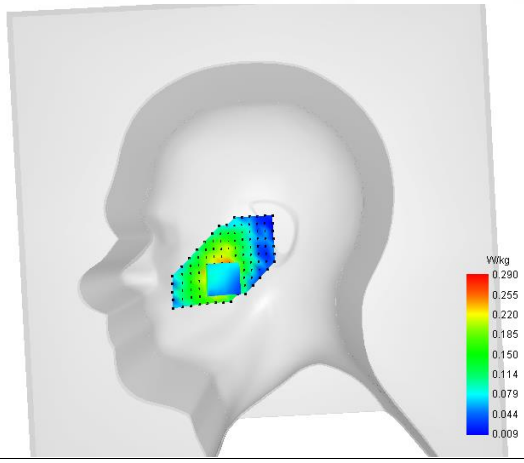
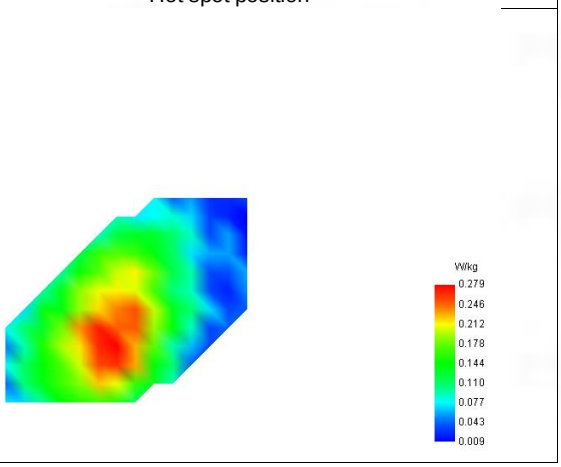
Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.364	0.290	0.215	0.156	0.110



F. 3D Image

3D screen shot	Hot spot position
	

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2-Body with Back position in dist. 5mm on Channel 60 in GPRS900+4slots

SAR Measurement at GPRS900 (Body, Validation Plane)

Date of measurement: 14/3/2023

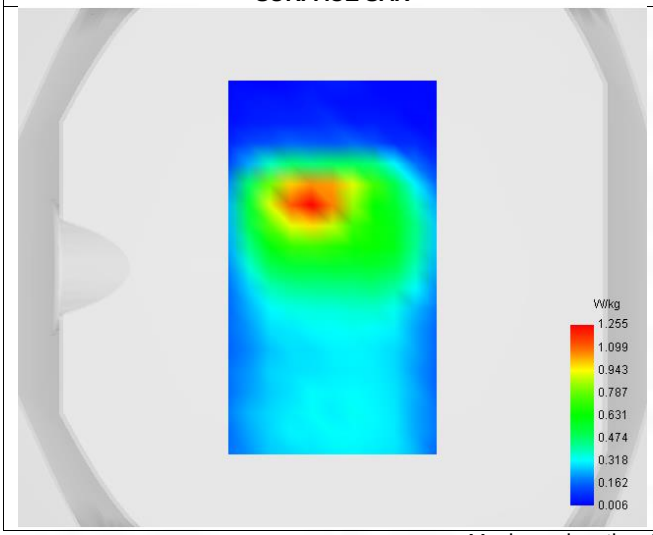
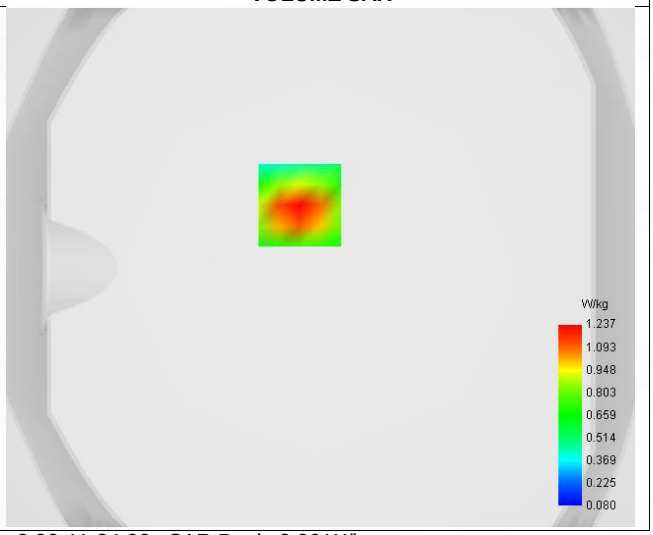
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	1.68
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	GSM900
Channels	Middle (60)
Signal	TDMA (GPRS)
Modulation	GMSK (CS-1)
TX-slots	4

B. Permitivity

Frequency (MHz)	902.000
Relative permitivity (real part)	41.306
Relative permitivity (imaginary part)	19.594
Conductivity (S/m)	0.905

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=-8.00, Y=24.00 ; SAR Peak: 2.06 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.630
SAR 1g (W/Kg)	1.162
Variation (%)	0.350
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	2.040	1.237	0.647	0.354	0.221

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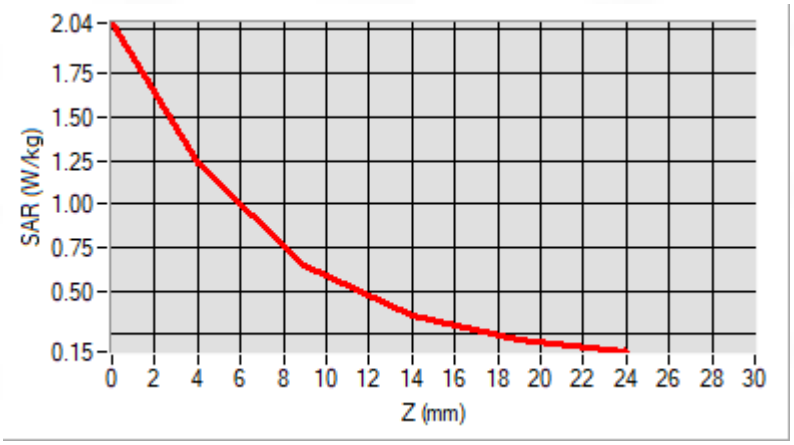
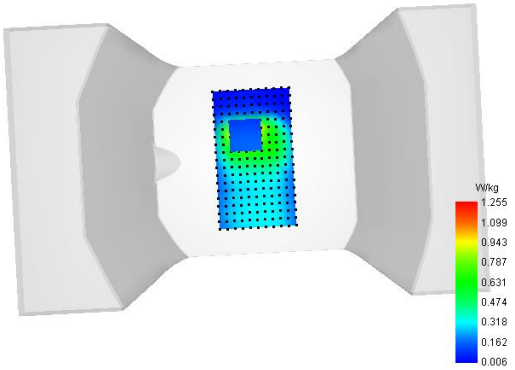
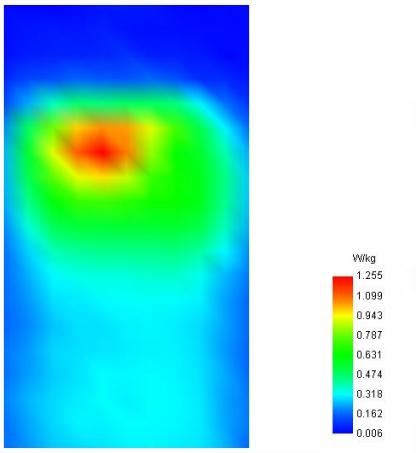


F. 3D Image

3D screen shot	Hot spot position
	

3-Limb with Back position in dist. 0mm on Channel 60 in GPRS900+4slots

SAR Measurement at GPRS900 (Body, Validation Plane)

Date of measurement: 14/3/2023

A. Experimental conditions.

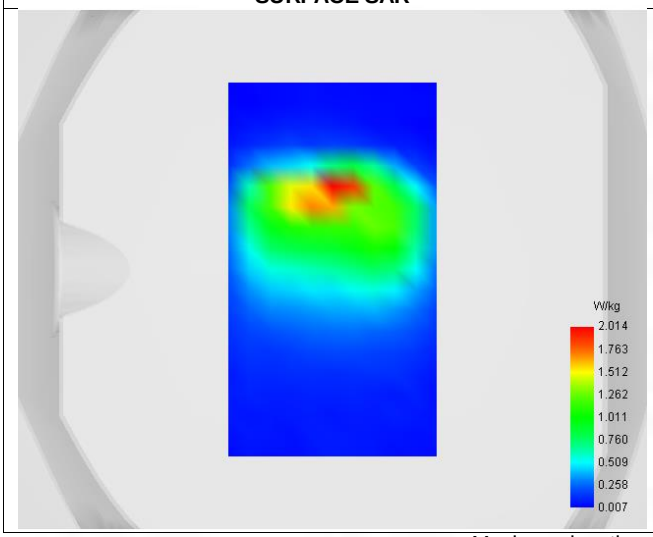
Probe	SN 04/22 EPGO365
ConvF	1.68
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	GSM900
Channels	Middle (60)
Signal	TDMA (GPRS)
Modulation	GMSK (CS-1)
TX-slots	4

B. Permitivity

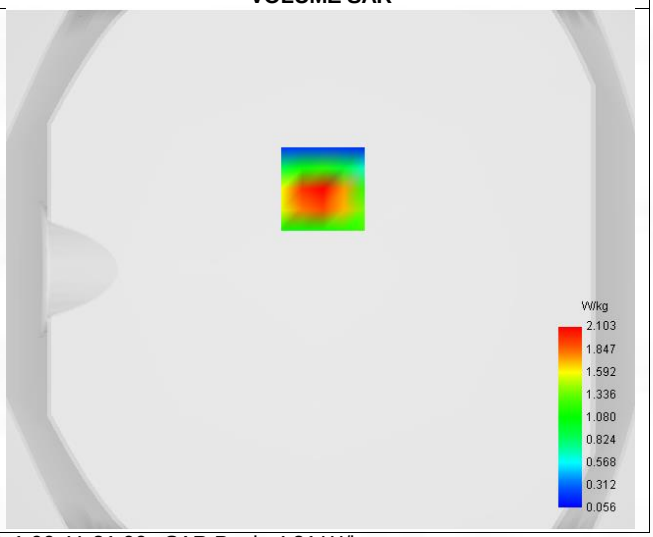
Frequency (MHz)	902.000
Relative permitivity (real part)	41.306
Relative permitivity (imaginary part)	19.594
Conductivity (S/m)	0.905

C. SAR Surface and Volume

SURFACE SAR



VOLUME SAR



Maximum location: X=1.00, Y=31.00 ; SAR Peak: 4.31 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.966
SAR 1g (W/Kg)	2.036
Variation (%)	1.060
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	4.153	2.103	0.817	0.330	0.185

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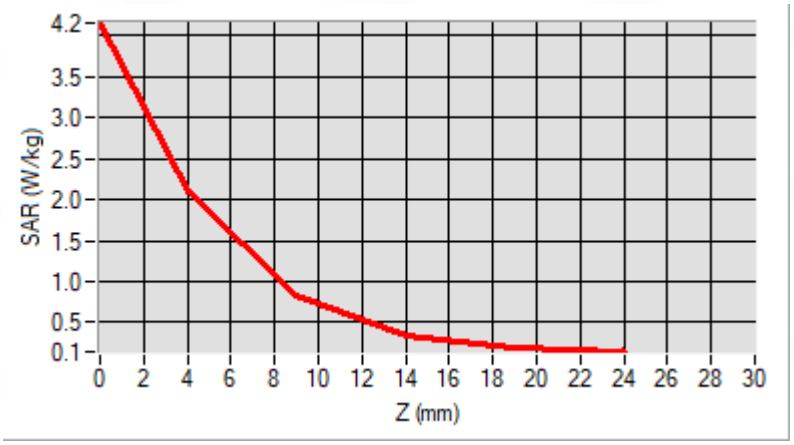
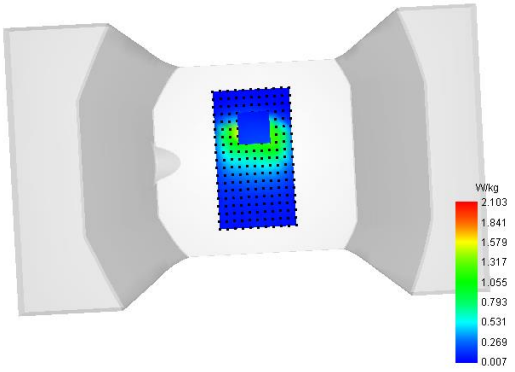
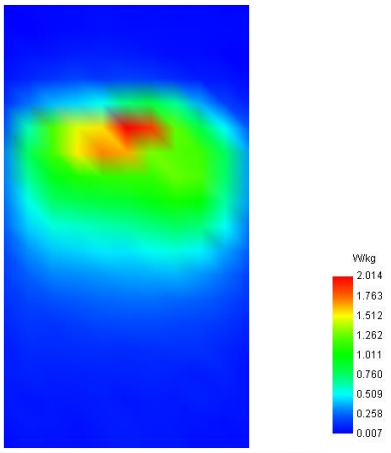


F. 3D Image

3D screen shot	Hot spot position
	

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4-Head with front position in dist. 0mm on Channel 885 in GSM 1800 voice

SAR Measurement at GSM1800 (Cheek, Right)

Date of measurement: 15/3/2023

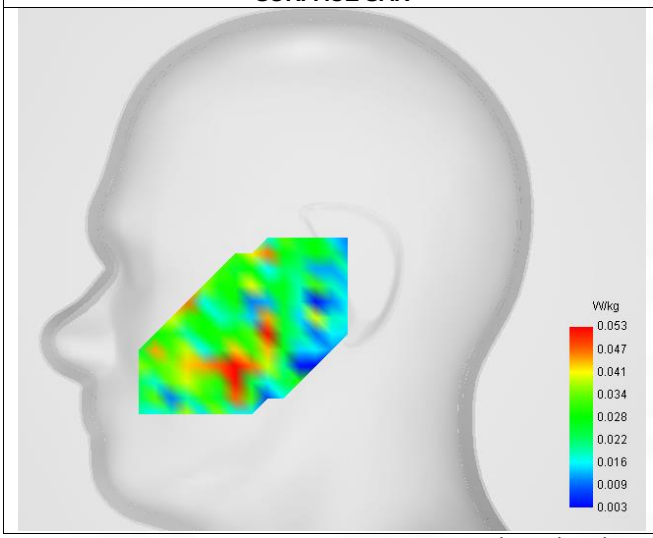
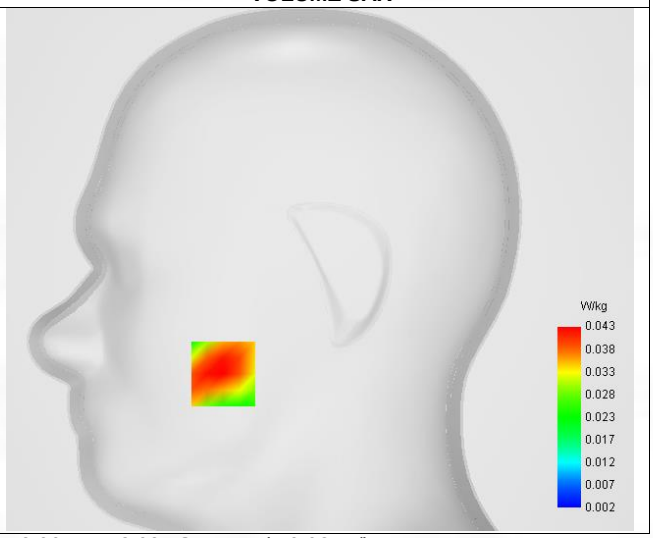
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	1.96
Area Scan	sam_direct_droit2_surf8mm.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Right head
Device Position	Cheek
Band	GSM1800
Channels	Higher (885)
Signal	TDMA (GSM)
Modulation	GMSK

B. Permitivity

Frequency (MHz)	1784.800
Relative permitivity (real part)	39.934
Relative permitivity (imaginary part)	14.066
Conductivity (S/m)	1.362

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=-48.00, Y=-52.00 ; SAR Peak: 0.08 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.033
SAR 1g (W/Kg)	0.045
Variation (%)	3.260
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.050	0.043	0.036	0.031	0.026

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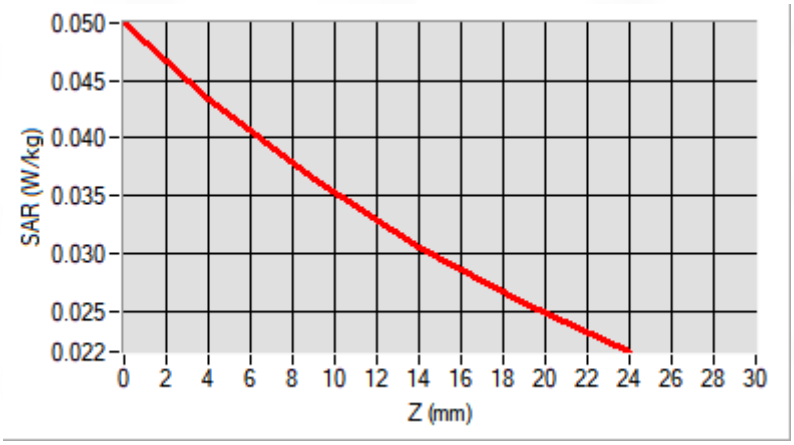
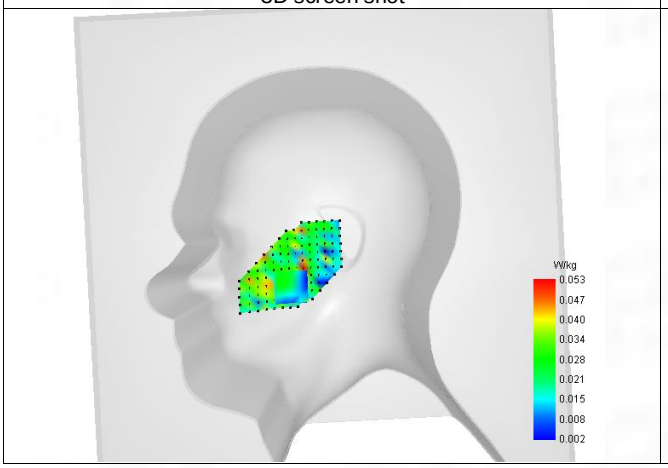
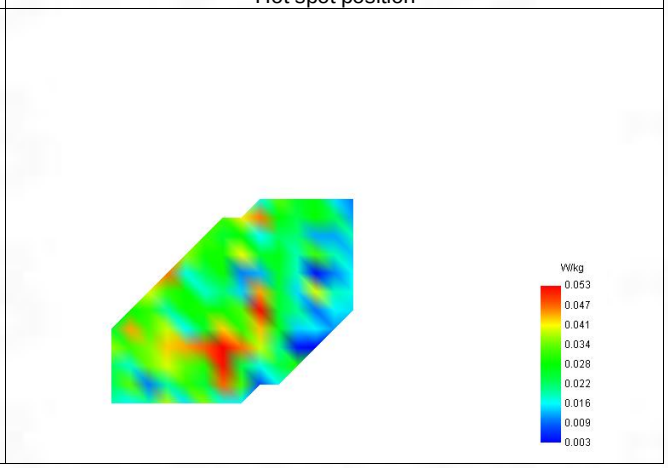


F. 3D Image

3D screen shot	Hot spot position
	

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5-Body with Back position in dist. 5mm on Channel 700 in GPRS1800+4slots

SAR Measurement at GPRS1800 (Body, Validation Plane)

Date of measurement: 15/3/2023

A. Experimental conditions.

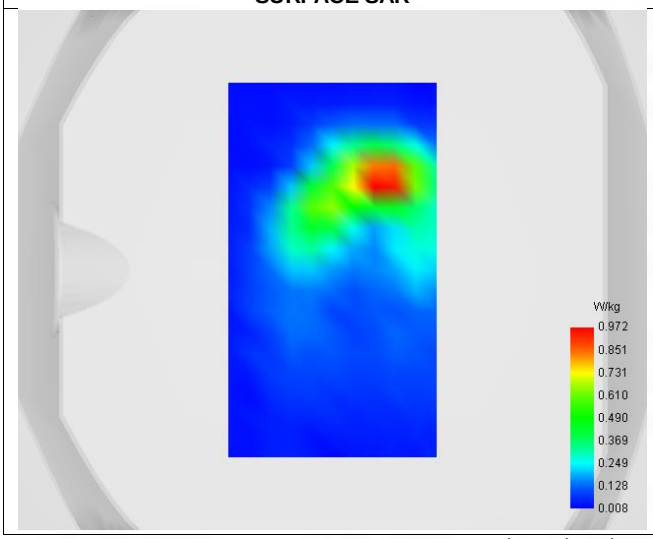
Probe	SN 04/22 EPGO365
ConvF	1.96
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	GPRS1800
Channels	Middle (700)
Signal	TDMA (GPRS)
Modulation	GMSK (CS-1)
TX-slots	4

B. Permitivity

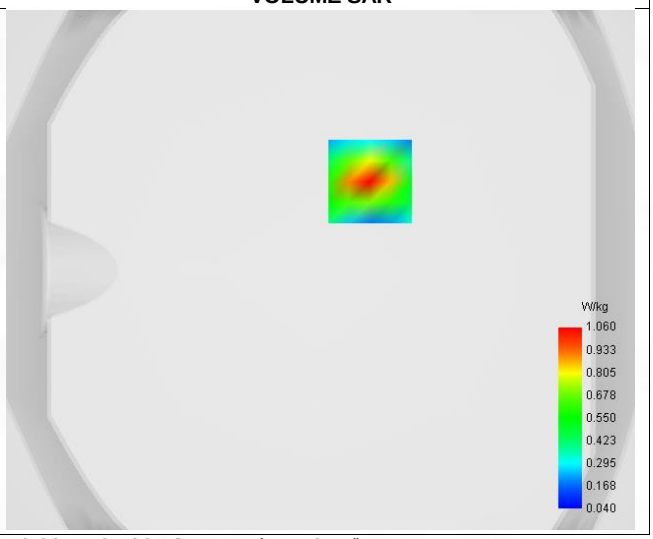
Frequency (MHz)	1747.800
Relative permitivity (real part)	39.991
Relative permitivity (imaginary part)	14.009
Conductivity (S/m)	1.343

C. SAR Surface and Volume

SURFACE SAR



VOLUME SAR



Maximum location: X=19.00, Y=34.00 ; SAR Peak: 1.59 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.505
SAR 1g (W/Kg)	0.966
Variation (%)	-0.820
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.584	1.060	0.628	0.370	0.221

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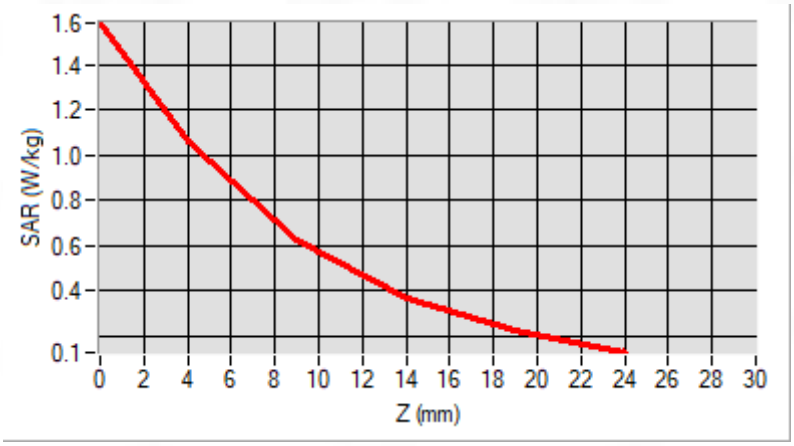
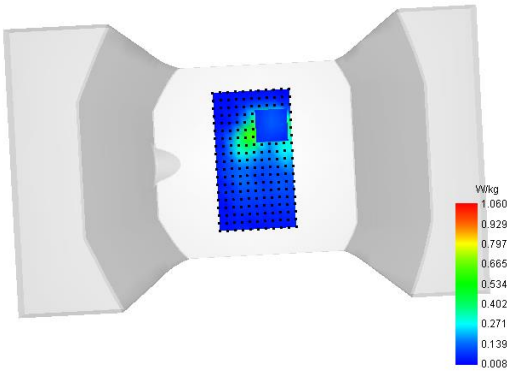
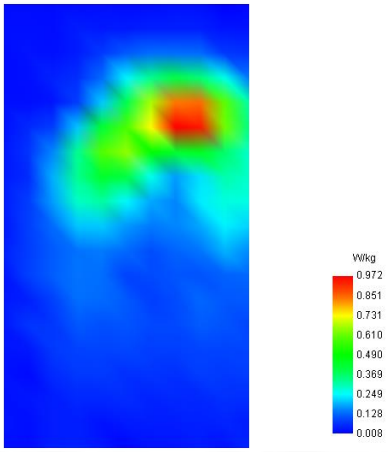


F. 3D Image

3D screen shot	Hot spot position
	

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6-Limb with Back position in dist. 0mm on Channel 700 in GPRS1800+4slots

SAR Measurement at GPRS1800 (Body, Validation Plane)

Date of measurement: 15/3/2023

A. Experimental conditions.

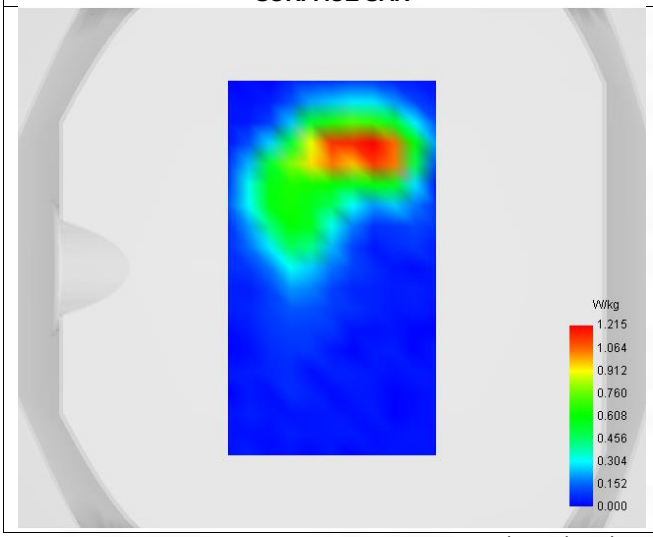
Probe	SN 04/22 EPGO365
ConvF	1.96
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	GPRS1800
Channels	Middle (700)
Signal	TDMA (GPRS)
Modulation	GMSK (CS-1)
TX-slots	4

B. Permitivity

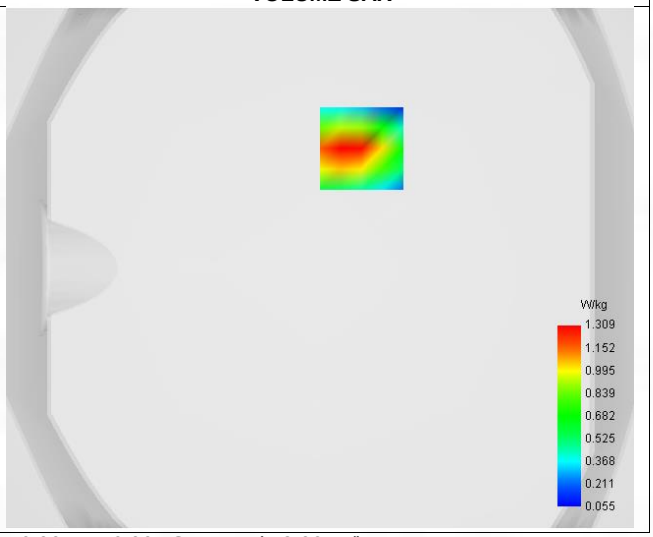
Frequency (MHz)	1747.800
Relative permitivity (real part)	39.991
Relative permitivity (imaginary part)	14.009
Conductivity (S/m)	1.343

C. SAR Surface and Volume

SURFACE SAR



VOLUME SAR



Maximum location: X=16.00, Y=46.00 ; SAR Peak: 2.09 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.661
SAR 1g (W/Kg)	1.240
Variation (%)	-4.480
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	3.187	1.309	0.572	0.397	0.195

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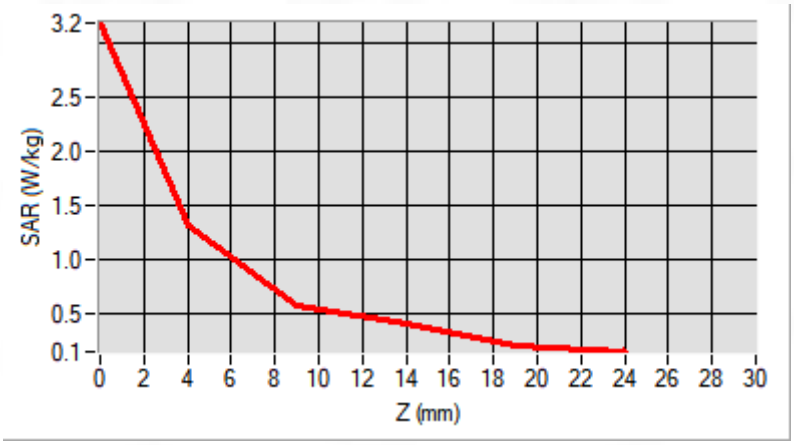
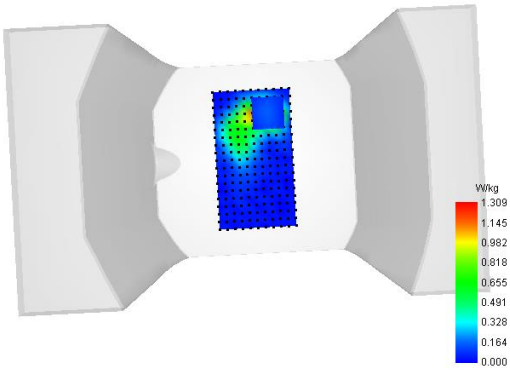
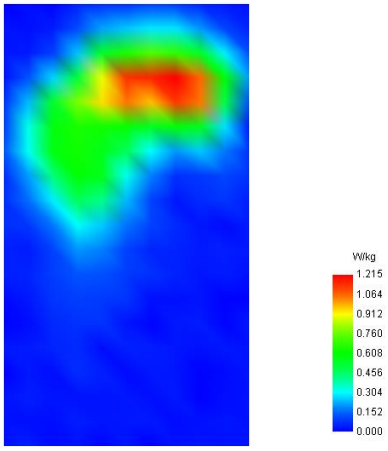


F. 3D Image

3D screen shot	Hot spot position
	

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7-Head with front position in dist. 0mm on Channel 9888 in WCDMA Band 1

SAR Measurement at Band 1 (UMTS) (Cheek, Right)

Date of measurement: 15/3/2023

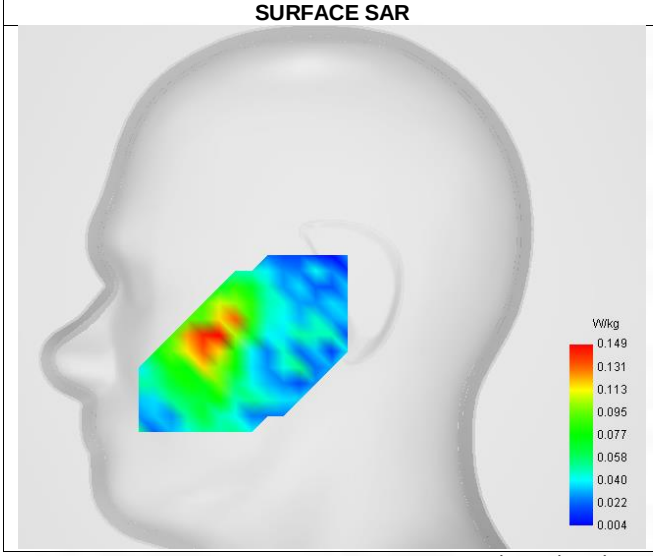
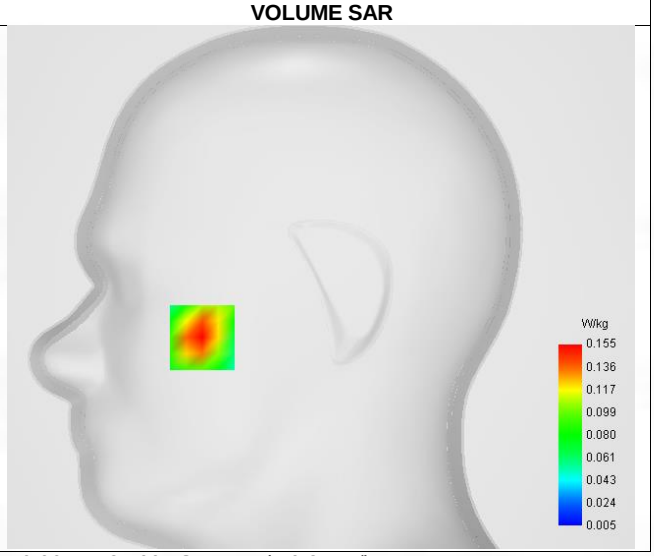
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	2.33
Area Scan	sam_direct_droit2_surf8mm.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Right head
Device Position	Cheek
Band	Band 1 (UMTS)
Channels	Higher (9888)
Signal	WCDMA
Mode	Release 99
Connection Type	RMC, 12.2 kbps

B. Permitivity

Frequency (MHz)	1977.600
Relative permitivity (real part)	39.767
Relative permitivity (imaginary part)	13.493
Conductivity (S/m)	1.466

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=-59.00, Y=-25.00 ; SAR Peak: 0.27 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.081
SAR 1g (W/Kg)	0.147
Variation (%)	-2.880
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.259	0.155	0.080	0.046	0.032

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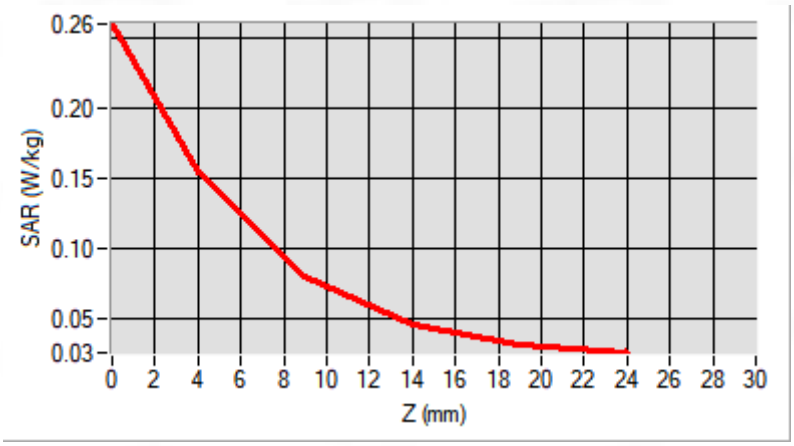
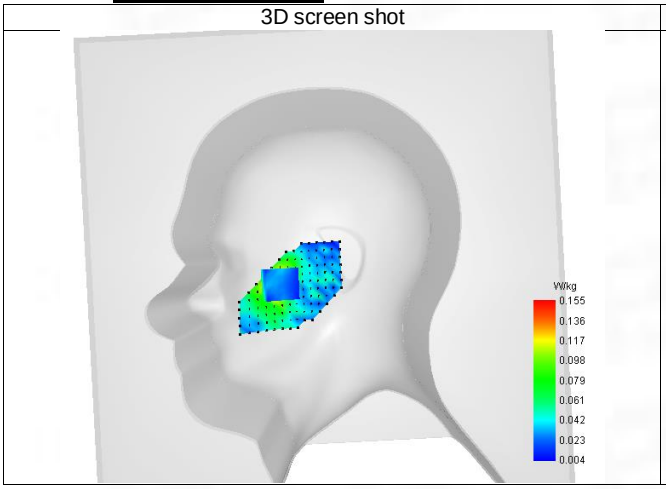
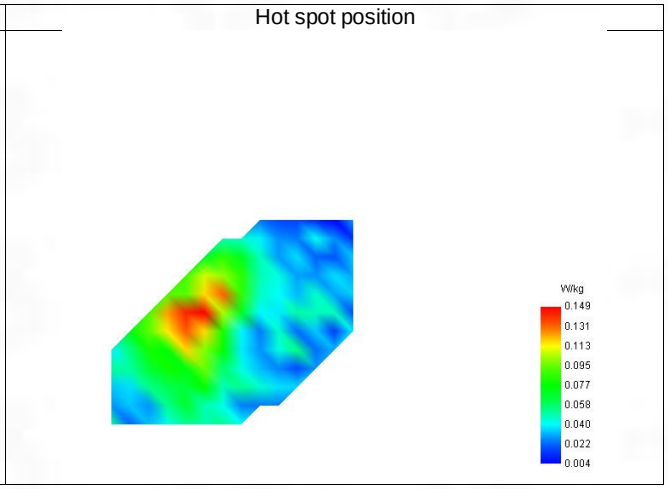


F. 3D Image

3D screen shot	Hot spot position
	

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8-Body with back position in dist. 5mm on Channel 9888 in WCDMA Band 1

SAR Measurement at Band 1 (UMTS) (Body, Validation Plane)

Date of measurement: 15/3/2023

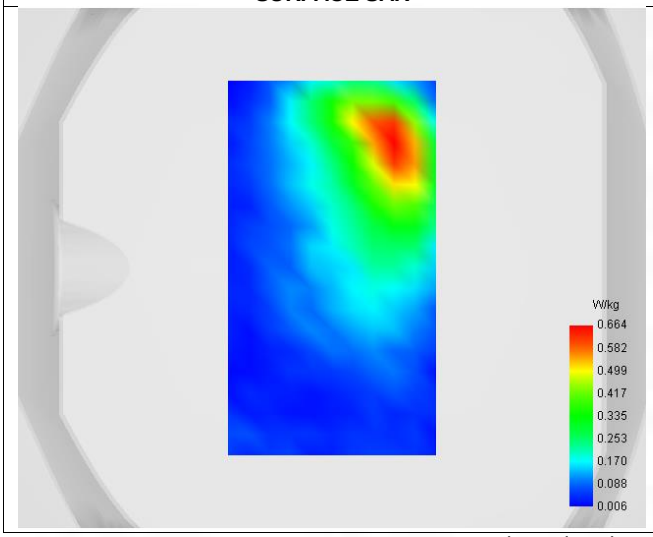
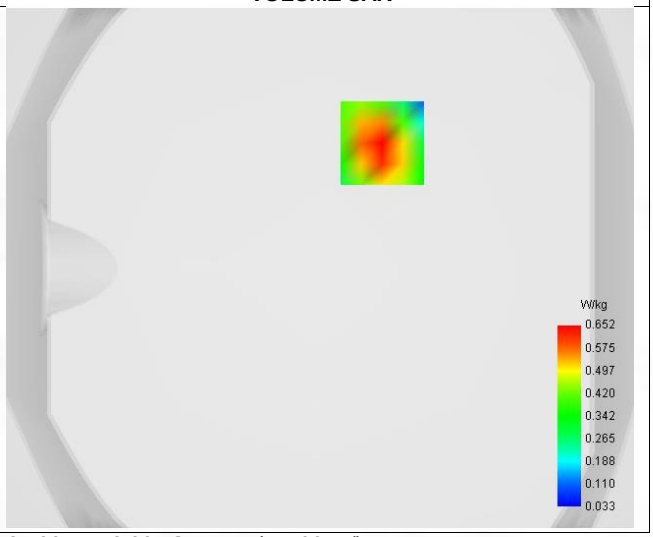
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	2.33
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	Band 1 (UMTS)
Channels	Higher (9888)
Signal	WCDMA
Mode	Release 99
Connection Type	RMC, 12.2 kbps

B. Permitivity

Frequency (MHz)	1977.600
Relative permitivity (real part)	39.767
Relative permitivity (imaginary part)	13.493
Conductivity (S/m)	1.466

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=24.00, Y=48.00 ; SAR Peak: 1.00 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.341
SAR 1g (W/Kg)	0.614
Variation (%)	1.030
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.999	0.652	0.369	0.204	0.111

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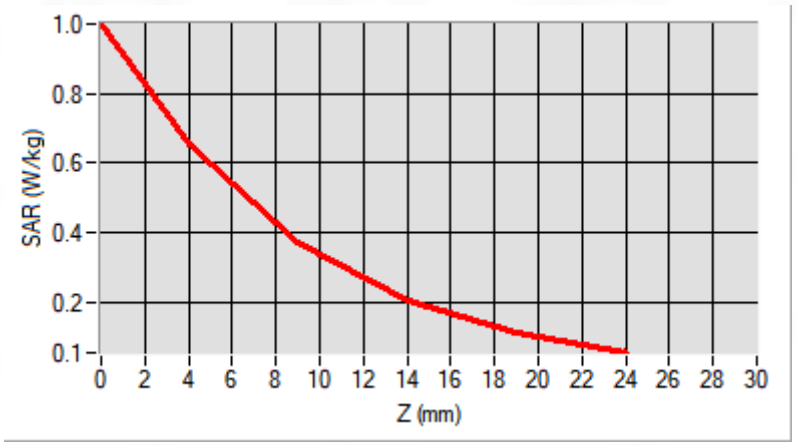
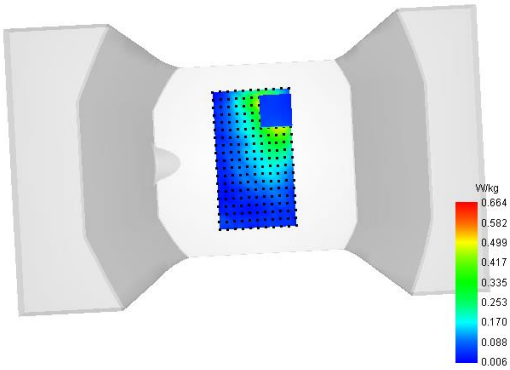
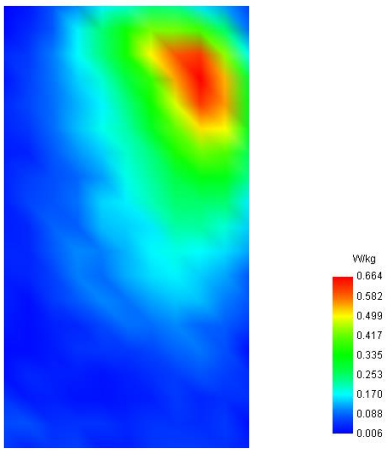


F. 3D Image

3D screen shot	Hot spot position
	

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9-Limb with Back position in dist. 0mm on Channel 9888 in WCDMA Band 1

SAR Measurement at Band 1 (UMTS) (Body, Validation Plane)

Date of measurement: 15/3/2023

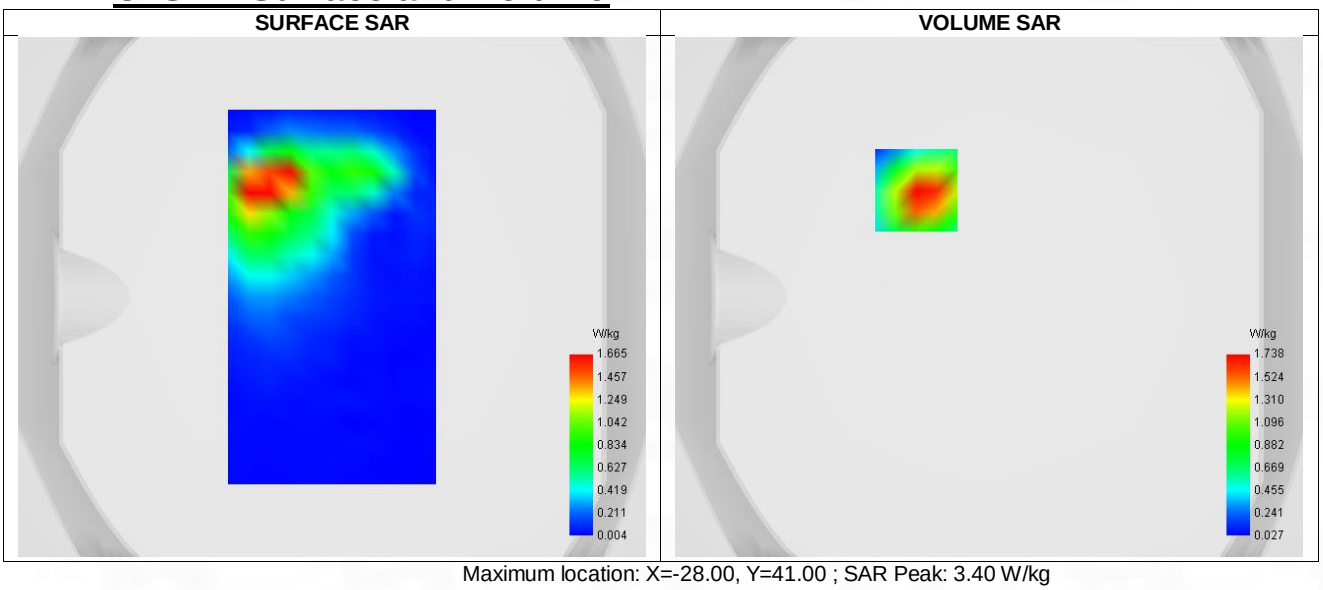
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	2.33
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	Band 1 (UMTS)
Channels	Higher (9888)
Signal	WCDMA
Mode	Release 99
Connection Type	RMC, 12.2 kbps

B. Permitivity

Frequency (MHz)	1977.600
Relative permitivity (real part)	39.767
Relative permitivity (imaginary part)	13.493
Conductivity (S/m)	1.466

C. SAR Surface and Volume



Maximum location: X=-28.00, Y=41.00 ; SAR Peak: 3.40 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.785
SAR 1g (W/Kg)	1.674
Variation (%)	-2.220
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	3.322	1.738	0.706	0.287	0.143

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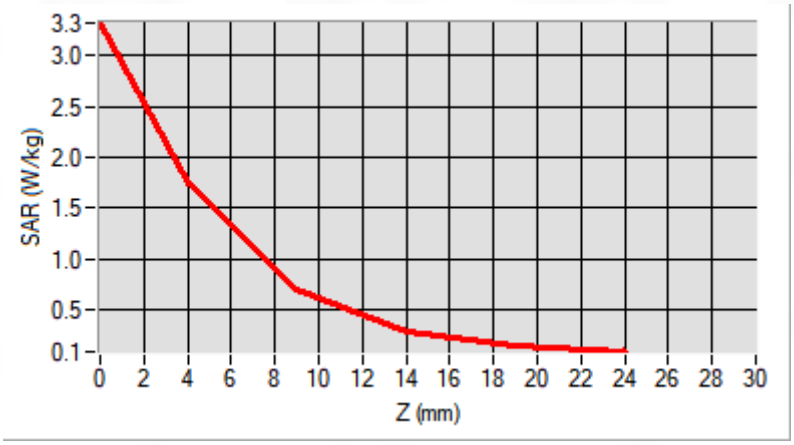
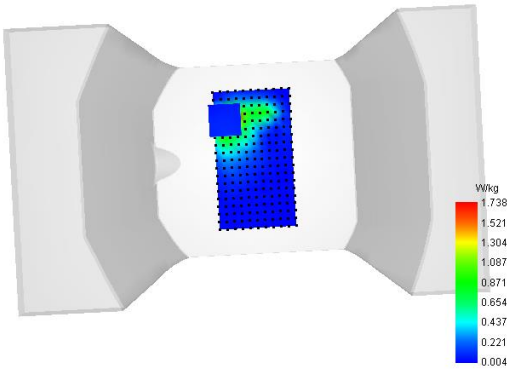
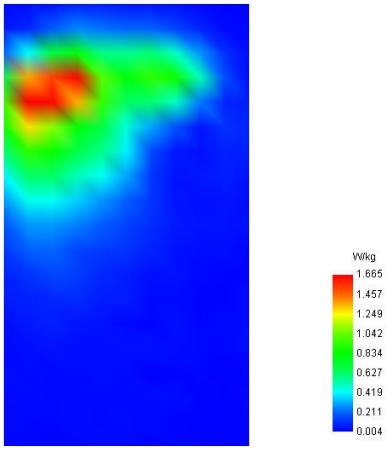


F. 3D Image

3D screen shot	Hot spot position
	

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10-Head with front position in dist. 0mm on Channel 2788 in WCDMA Band 8

SAR Measurement at Band 8 (900) (Cheek, Right)

Date of measurement: 14/3/2023

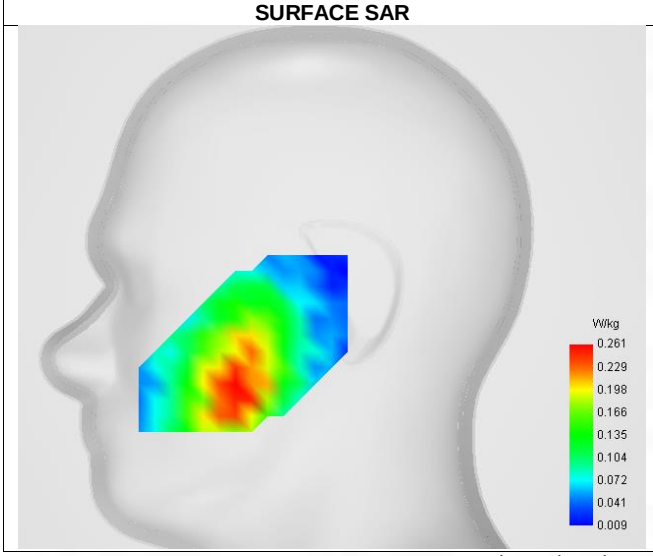
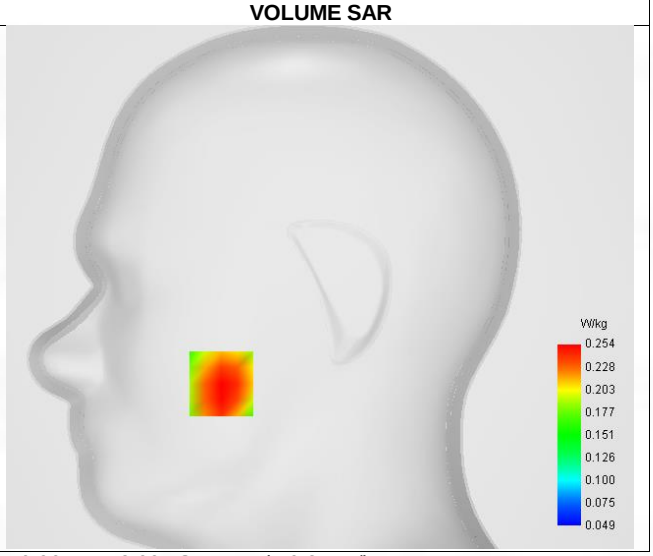
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	1.68
Area Scan	sam_direct_droit2_surf8mm.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Right head
Device Position	Cheek
Band	Band 8 (900)
Channels	Middle (2788)
Signal	WCDMA
Mode	Release 99
Connection Type	RMC, 12.2 kbps

B. Permitivity

Frequency (MHz)	897.600
Relative permitivity (real part)	41.313
Relative permitivity (imaginary part)	19.587
Conductivity (S/m)	0.902

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=-49.00, Y=-48.00 ; SAR Peak: 0.34 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.184
SAR 1g (W/Kg)	0.246
Variation (%)	-1.220
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.333	0.254	0.187	0.148	0.128

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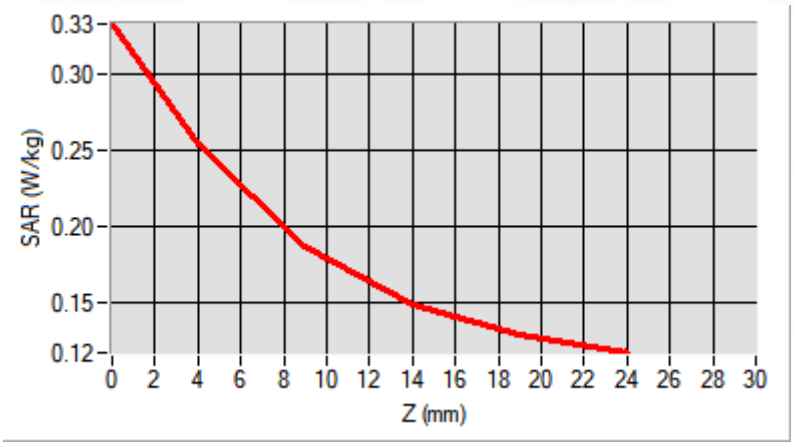
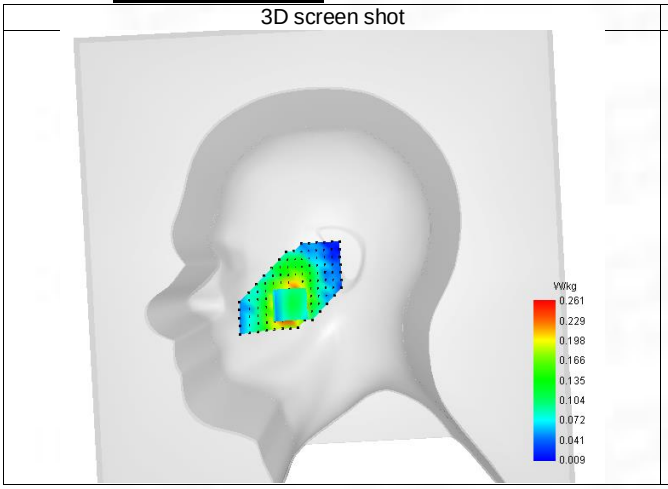
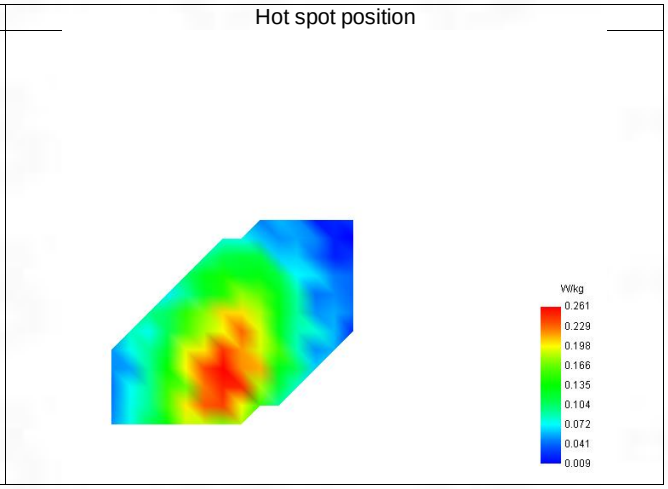


F. 3D Image

3D screen shot	Hot spot position
	

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11-Body with back position in dist. 5mm on Channel 2788 in WCDMA Band 8

SAR Measurement at Band 8 (900) (Body, Validation Plane)

Date of measurement: 14/3/2023

A. Experimental conditions.

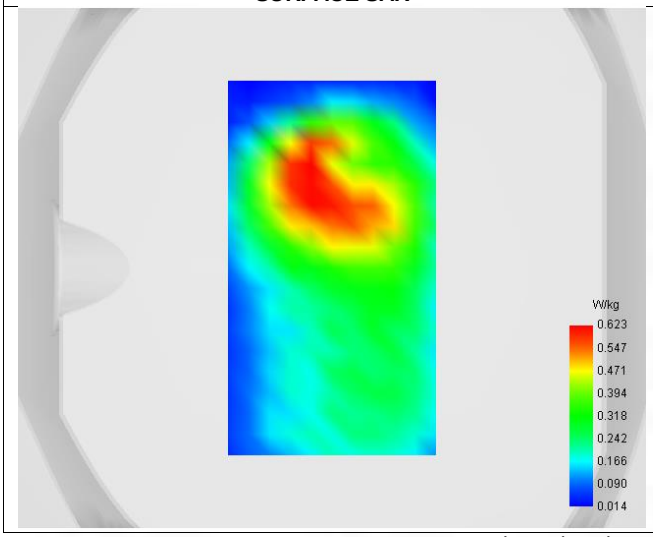
Probe	SN 04/22 EPGO365
ConvF	1.68
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	Band 8 (900)
Channels	Middle (2788)
Signal	WCDMA
Mode	Release 99
Connection Type	RMC, 12.2 kbps

B. Permitivity

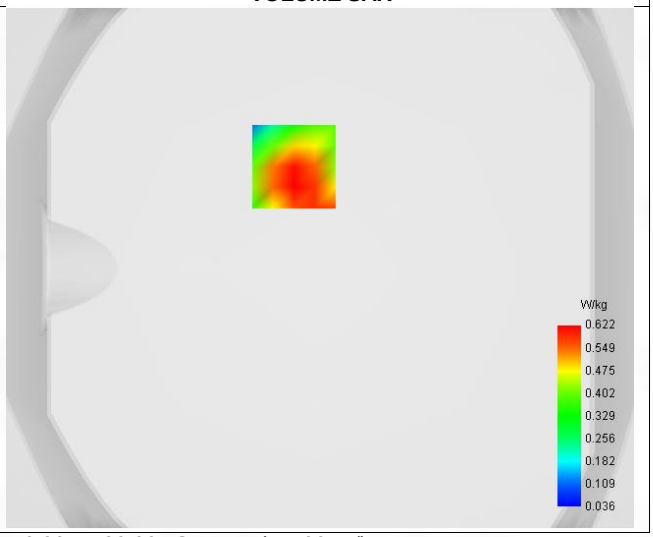
Frequency (MHz)	897.600
Relative permitivity (real part)	41.313
Relative permitivity (imaginary part)	19.587
Conductivity (S/m)	0.902

C. SAR Surface and Volume

SURFACE SAR



VOLUME SAR



Maximum location: X=-10.00, Y=39.00 ; SAR Peak: 1.00 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.355
SAR 1g (W/Kg)	0.603
Variation (%)	1.610
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.683	0.622	0.274	0.218	0.098

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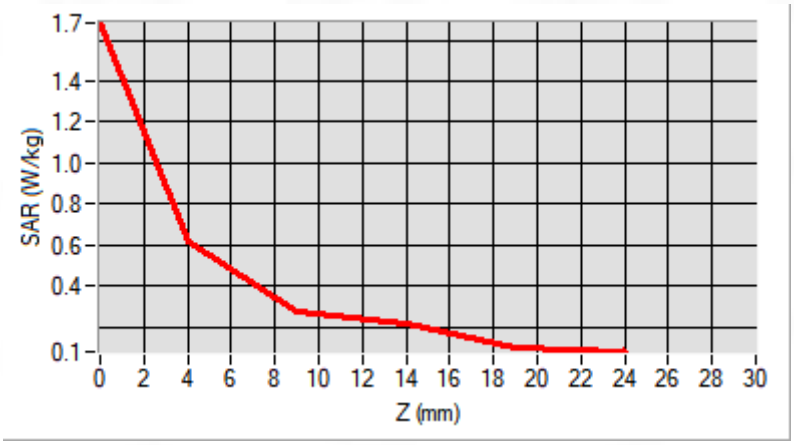
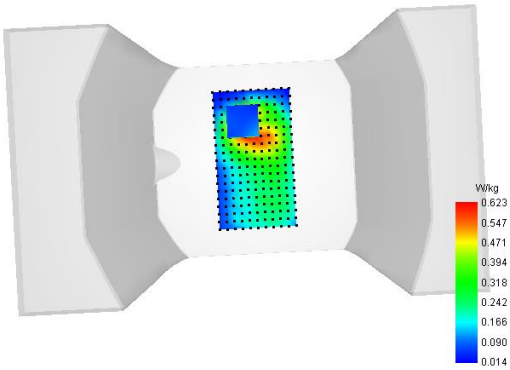
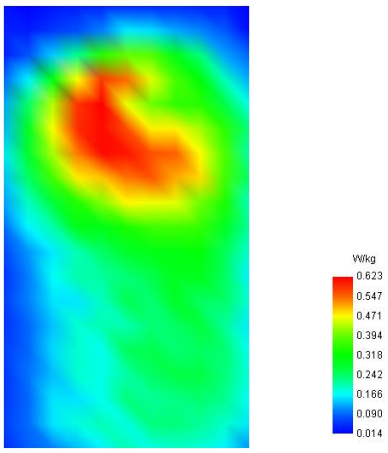


F. 3D Image

3D screen shot	Hot spot position
	

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12-Limb with Back position in dist. 0mm on Channel 2788 in WCDMA Band 8

SAR Measurement at Band 8 (900) (Body, Validation Plane)

Date of measurement: 14/3/2023

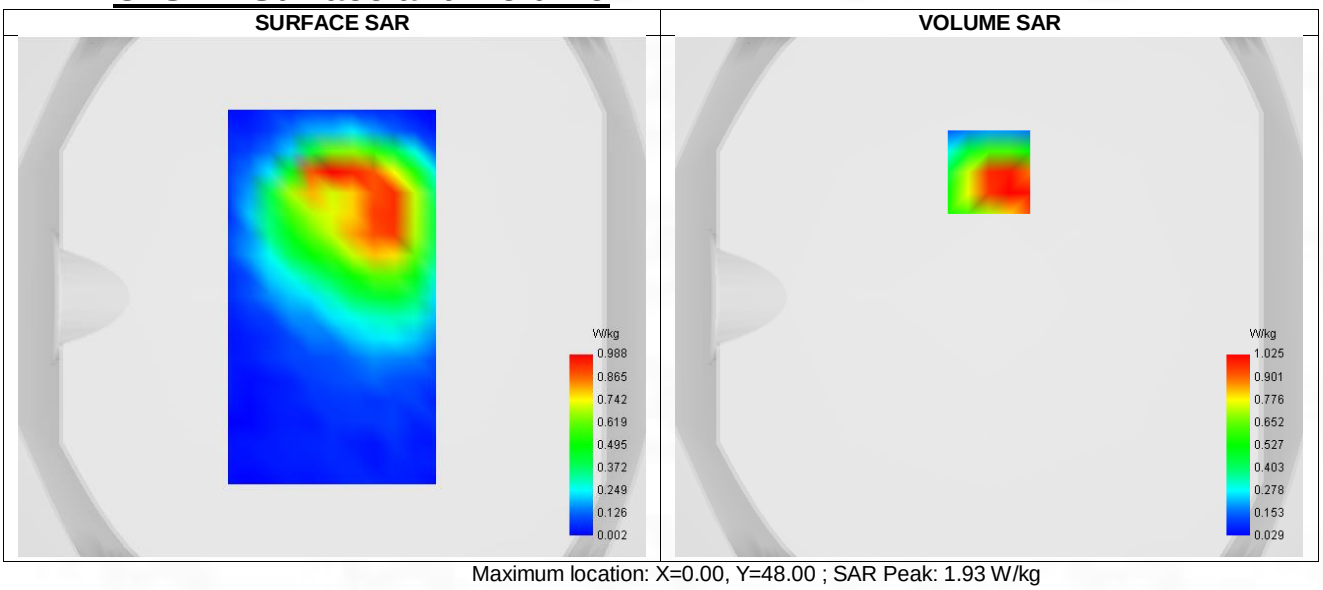
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	1.68
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	Band 8 (900)
Channels	Middle (2788)
Signal	WCDMA
Mode	Release 99
Connection Type	RMC, 12.2 kbps

B. Permitivity

Frequency (MHz)	897.600
Relative permitivity (real part)	41.313
Relative permitivity (imaginary part)	19.587
Conductivity (S/m)	0.902

C. SAR Surface and Volume



Maximum location: X=0.00, Y=48.00 ; SAR Peak: 1.93 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.533
SAR 1g (W/Kg)	1.022
Variation (%)	-1.480
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	3.827	1.025	0.243	0.268	0.084

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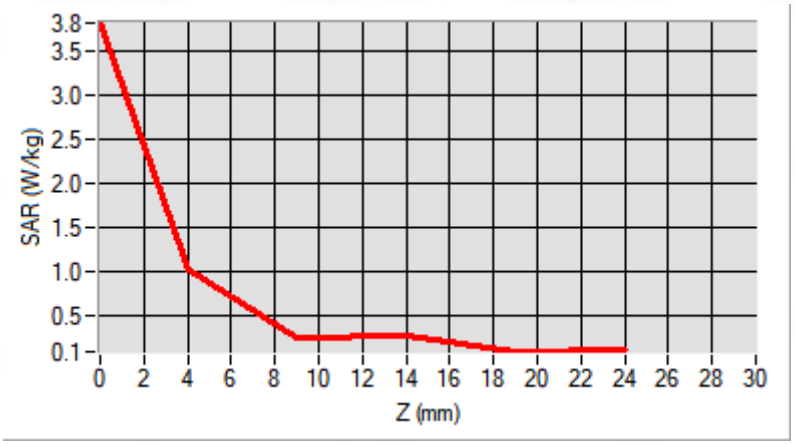
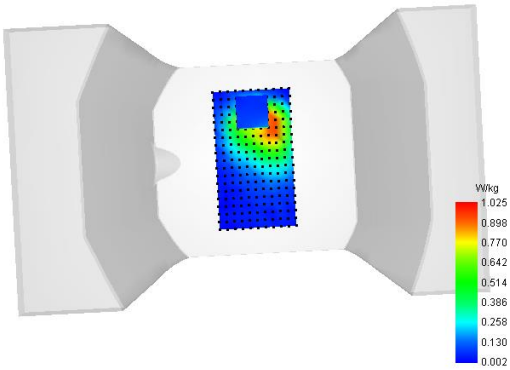
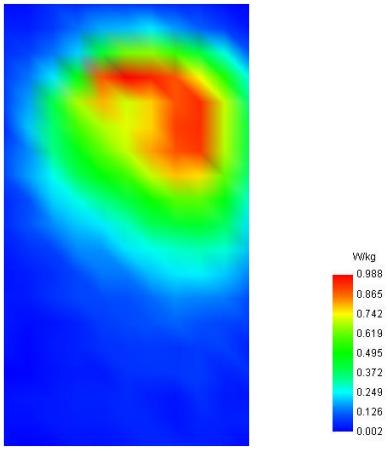


F. 3D Image

3D screen shot	Hot spot position
	

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13-Head with front position in dist. 0mm on Channel 18500 in LTE Band 1

SAR Measurement at LTE band 1 (Cheek, Right)

Date of measurement: 15/3/2023

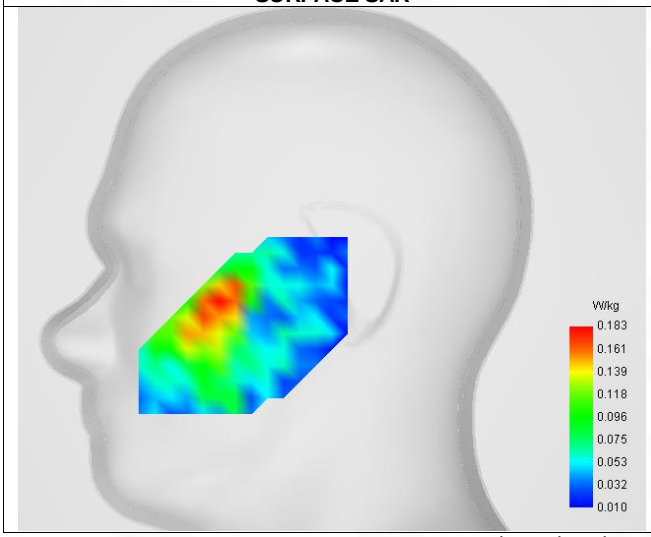
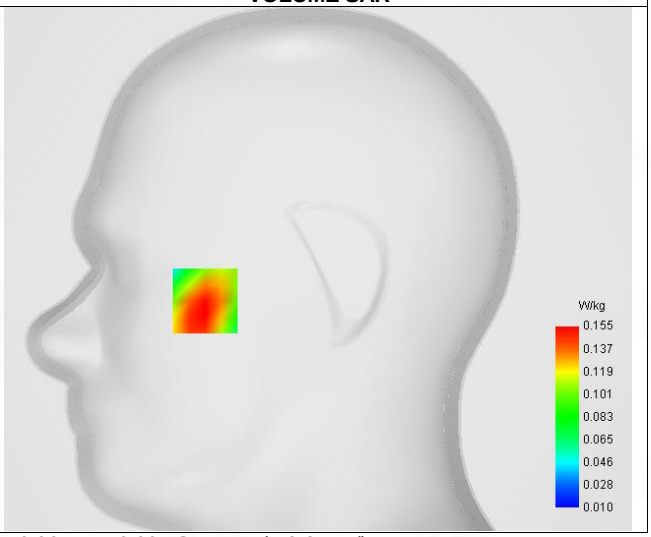
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	2.33
Area Scan	sam_direct_droit2_surf8mm.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Right head
Device Position	Cheek
Band	LTE band 1
Channels	Higher (18500)
Signal	LTE FDD
Cell Bandwidth	20 Mhz
Modulation	SC-OFDM - QPSK
RB offset	0
RB size	1

B. Permitivity

Frequency (MHz)	1961.090
Relative permitivity (real part)	39.791
Relative permitivity (imaginary part)	13.469
Conductivity (S/m)	1.454

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=-56.00, Y=-16.00 ; SAR Peak: 0.24 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.097
SAR 1g (W/Kg)	0.153
Variation (%)	-2.630
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

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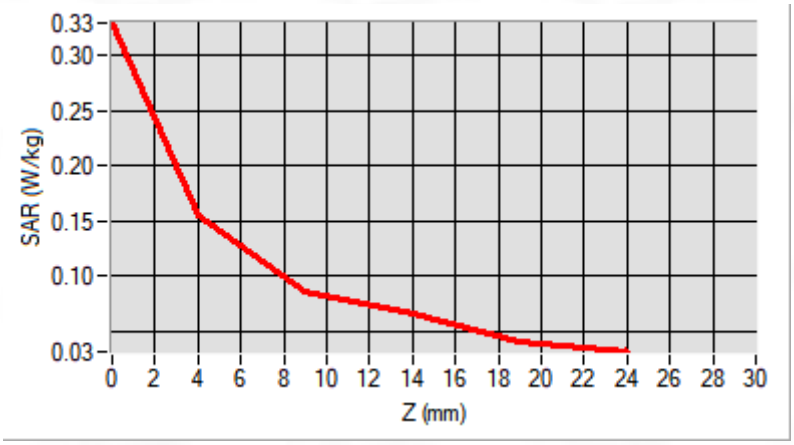
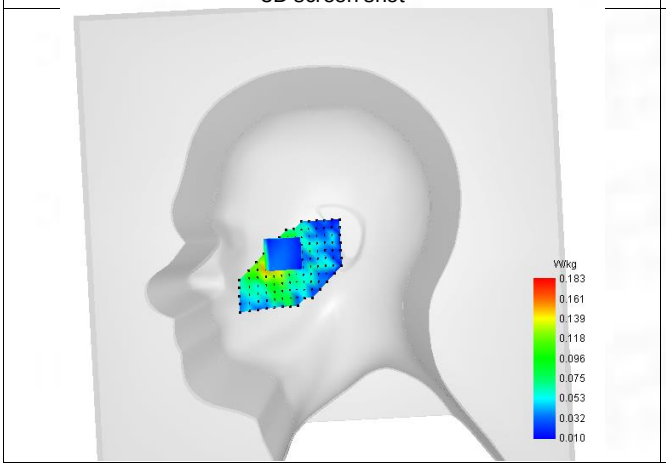
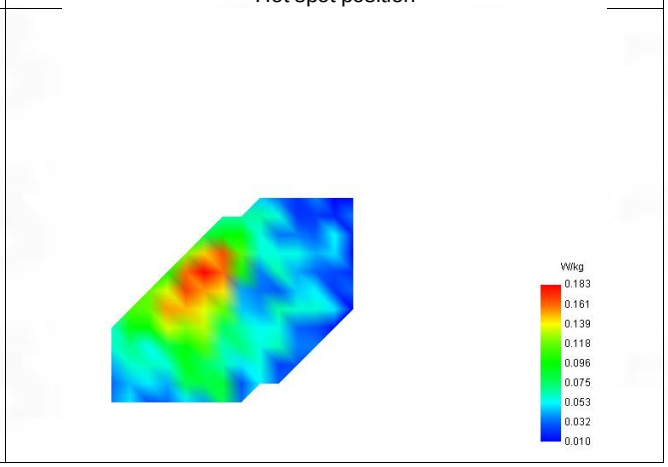
Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.330	0.155	0.086	0.066	0.041



F. 3D Image

3D screen shot	Hot spot position
	

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14-Body with back position in dist. 5mm on Channel 18500 in LTE Band 1

SAR Measurement at LTE band 1 (Body, Validation Plane)

Date of measurement: 15/3/2023

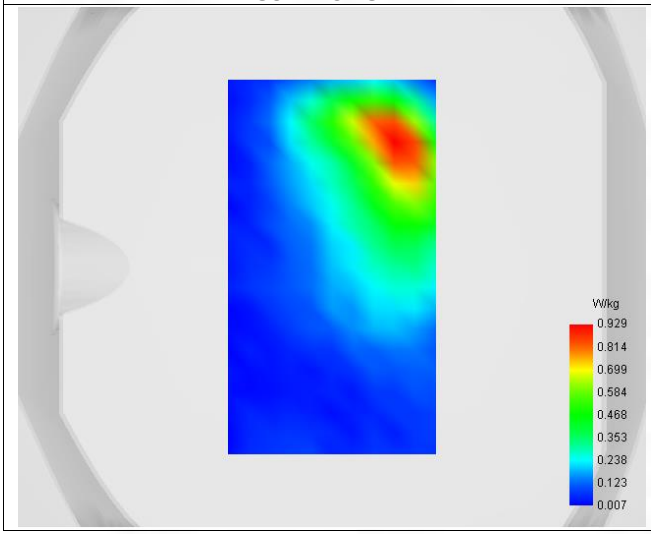
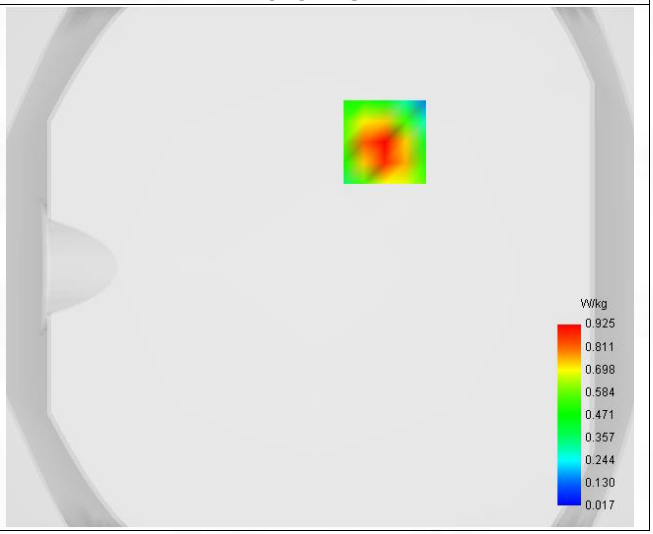
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	2.33
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	LTE band 1
Channels	Higher (18500)
Signal	LTE FDD
Cell Bandwidth	20 Mhz
Modulation	SC-OFDM - QPSK
RB offset	0
RB size	1

B. Permitivity

Frequency (MHz)	1961.090
Relative permitivity (real part)	39.791
Relative permitivity (imaginary part)	13.469
Conductivity (S/m)	1.454

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=25.00, Y=48.00 ; SAR Peak: 1.50 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.477
SAR 1g (W/Kg)	0.876
Variation (%)	-1.320
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

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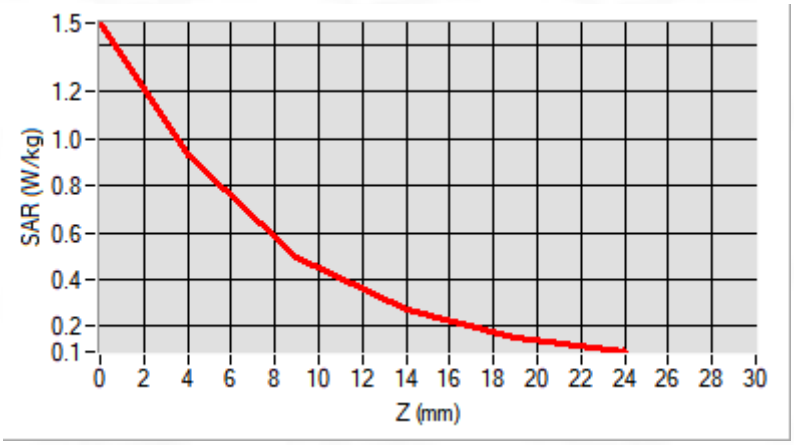
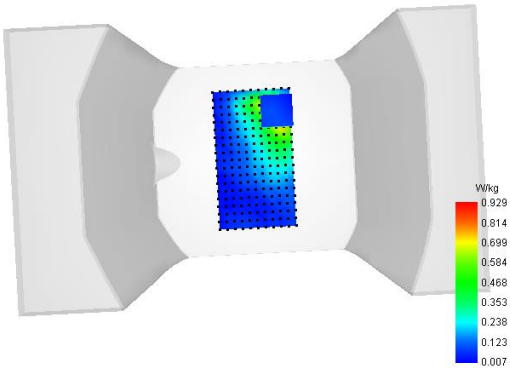
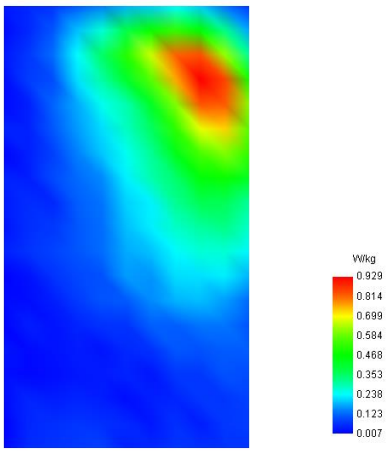
Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.491	0.925	0.495	0.269	0.157



F. 3D Image

3D screen shot	Hot spot position
	

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15-Limb with Back position in dist. 0mm on Channel 18500 in LTE Band 1

SAR Measurement at LTE band 1 (Body, Validation Plane)

Date of measurement: 15/3/2023

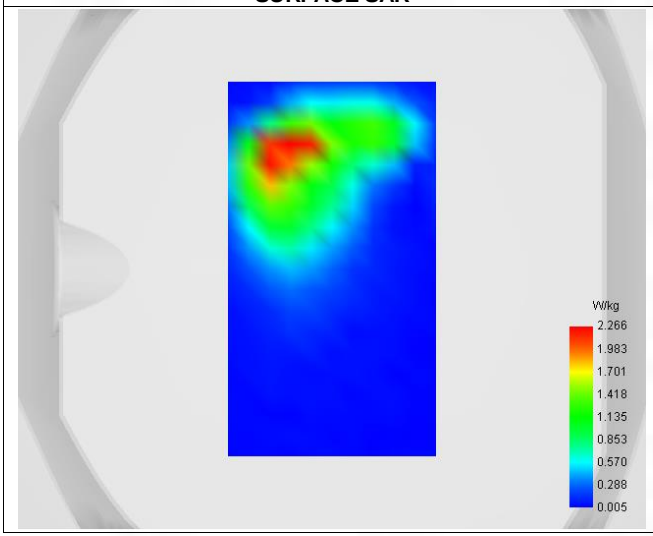
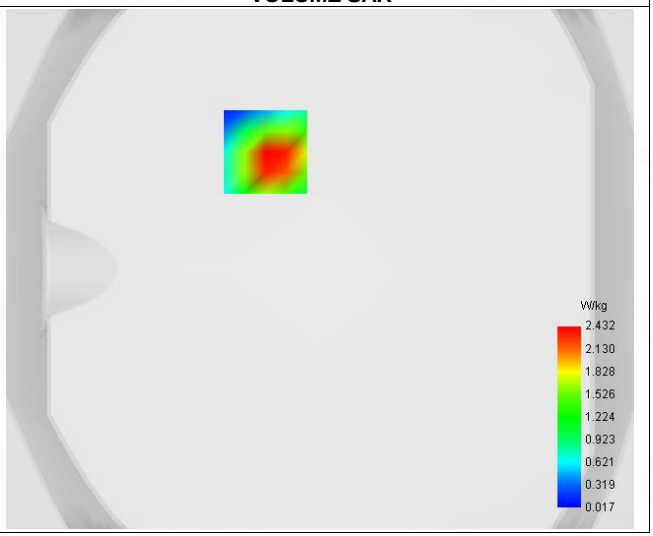
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	2.33
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	LTE band 1
Channels	Higher (18500)
Signal	LTE FDD
Cell Bandwidth	20 Mhz
Modulation	SC-OFDM - QPSK
RB offset	0
RB size	1

B. Permitivity

Frequency (MHz)	1961.090
Relative permitivity (real part)	39.791
Relative permitivity (imaginary part)	13.469
Conductivity (S/m)	1.454

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=-21.00, Y=45.00 ; SAR Peak: 5.23 W/kg

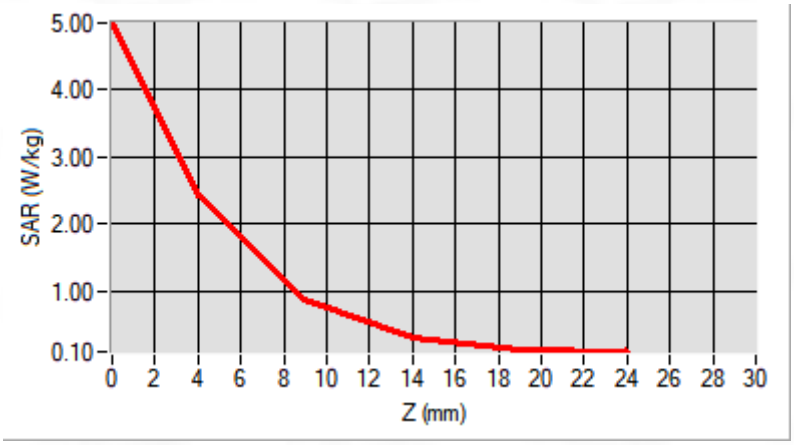
D. SAR 1g & 10g

SAR 10g (W/Kg)	1.113
SAR 1g (W/Kg)	2.440
Variation (%)	-3.800
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

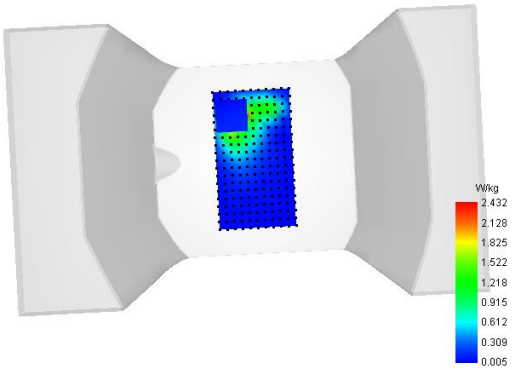
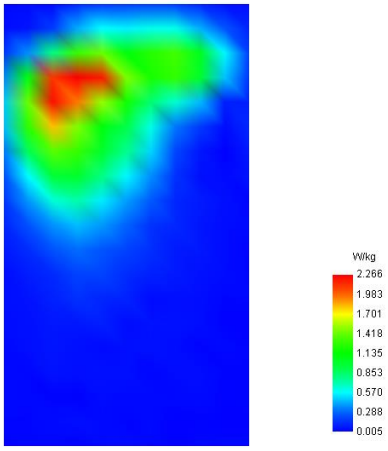
E. Z Axis Scan

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

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	4.998	2.432	0.866	0.302	0.145



F. 3D Image

3D screen shot	Hot spot position
	

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16-Head with front position in dist. 0mm on Channel 19300 in LTE Band 3

SAR Measurement at LTE band 3 (Cheek, Right)

Date of measurement: 15/3/2023

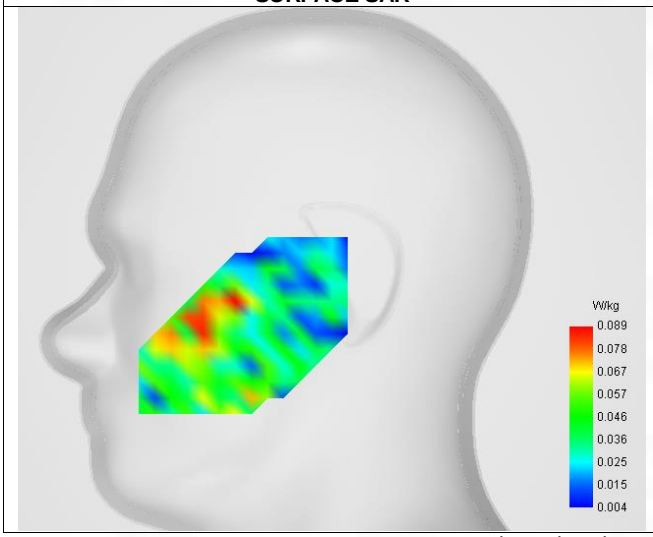
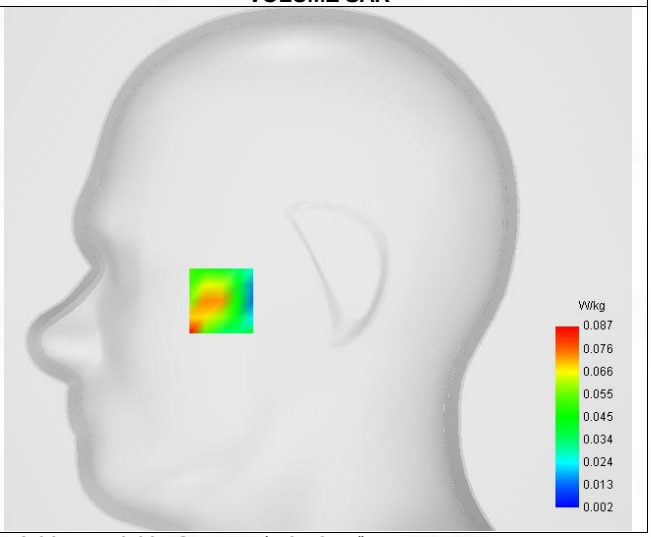
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	1.96
Area Scan	sam_direct_droit2_surf8mm.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Right head
Device Position	Cheek
Band	LTE band 3
Channels	Lower (19300)
Signal	LTE FDD
Cell Bandwidth	20 Mhz
Modulation	SC-OFDM - QPSK
RB offset	0
RB size	1

B. Permitivity

Frequency (MHz)	1711.090
Relative permitivity (real part)	40.048
Relative permitivity (imaginary part)	13.952
Conductivity (S/m)	1.324

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=-48.00, Y=-16.00 ; SAR Peak: 0.18 W/kg

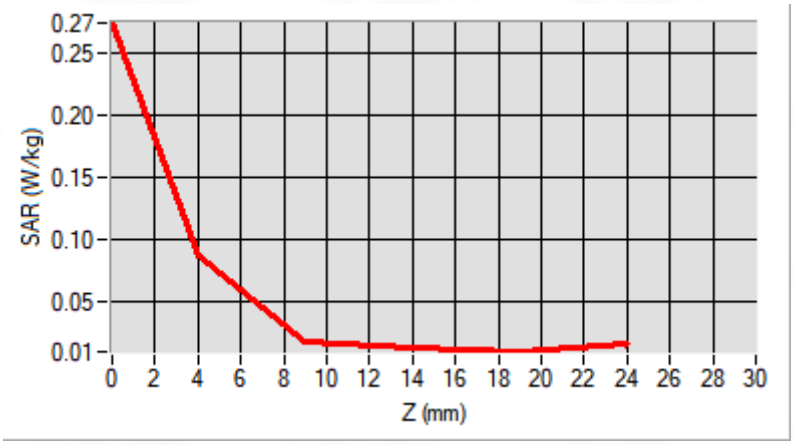
D. SAR 1g & 10g

SAR 10g (W/Kg)	0.052
SAR 1g (W/Kg)	0.076
Variation (%)	-1.120
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

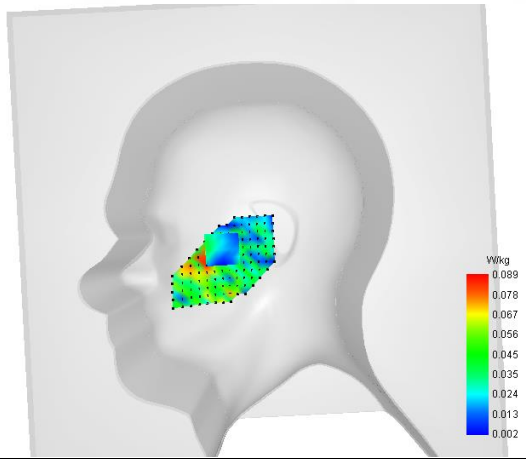
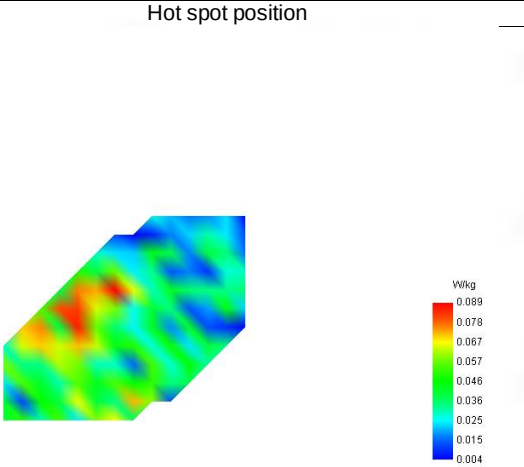
E. Z Axis Scan

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

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.275	0.087	0.019	0.014	0.010



F. 3D Image

3D screen shot	Hot spot position
	

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17-Body with front position in dist. 5mm on Channel 19300 in LTE Band 3

SAR Measurement at LTE band 3 (Body, Validation Plane)

Date of measurement: 15/3/2023

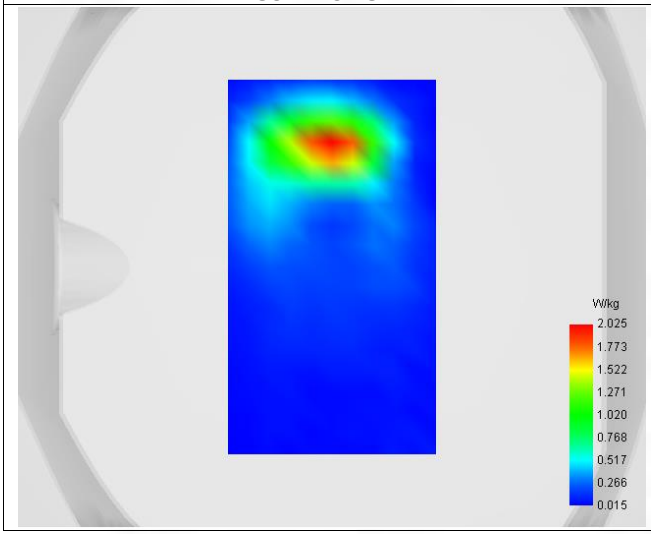
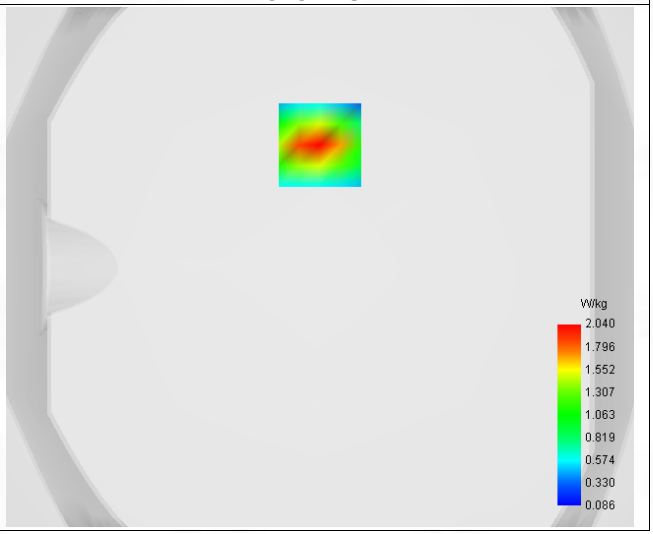
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	1.96
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	LTE band 3
Channels	Lower (19300)
Signal	LTE FDD
Cell Bandwidth	20 Mhz
Modulation	SC-OFDM - QPSK
RB offset	0
RB size	1

B. Permitivity

Frequency (MHz)	1711.090
Relative permitivity (real part)	40.048
Relative permitivity (imaginary part)	13.952
Conductivity (S/m)	1.324

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=0.00, Y=47.00 ; SAR Peak: 3.13 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.992
SAR 1g (W/Kg)	1.879
Variation (%)	-1.350
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

BTF Testing Lab (Shenzhen) Co., Ltd.
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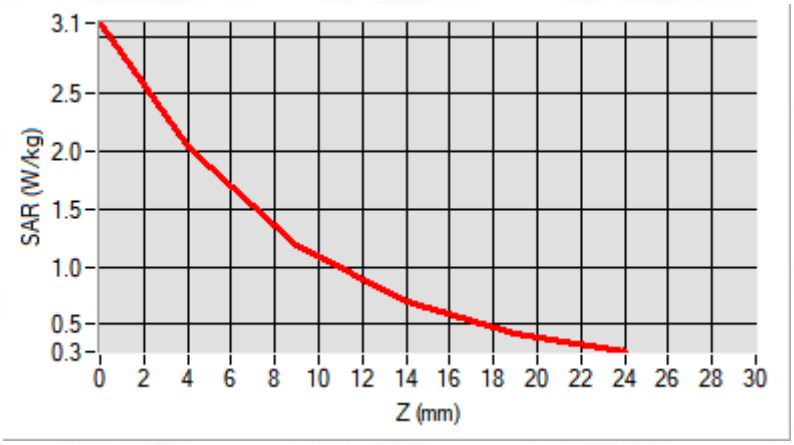
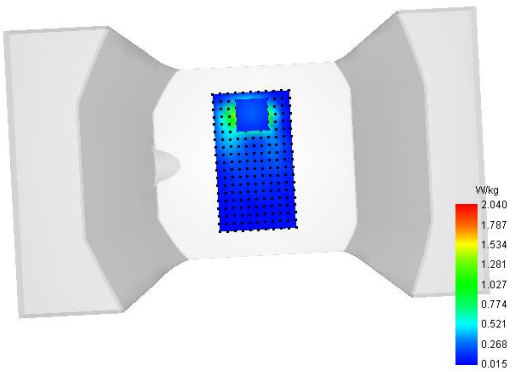
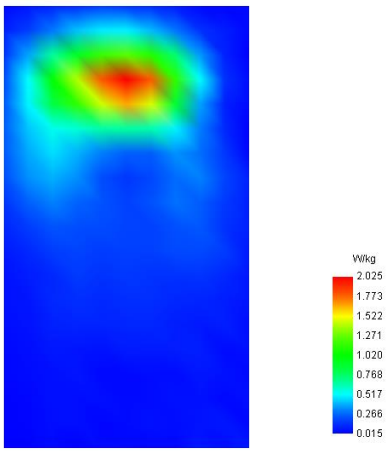
Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	3.114	2.040	1.182	0.695	0.429



F. 3D Image

3D screen shot	Hot spot position
	

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18-Limb with Back position in dist. 0mm on Channel 19300 in LTE Band 3

SAR Measurement at LTE band 3 (Body, Validation Plane)

Date of measurement: 15/3/2023

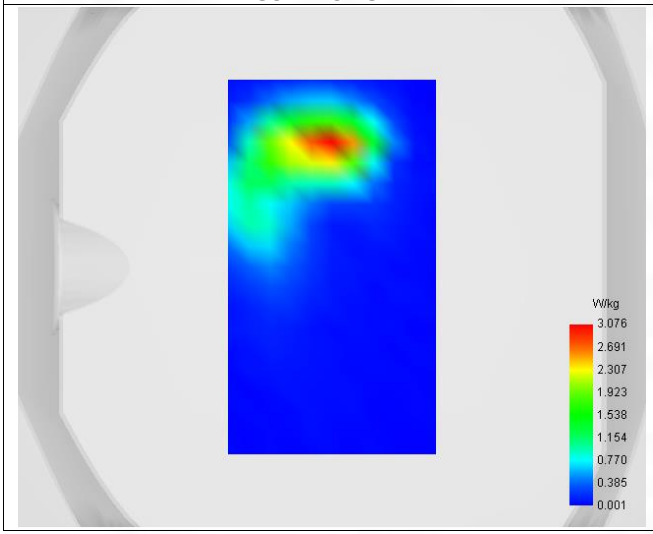
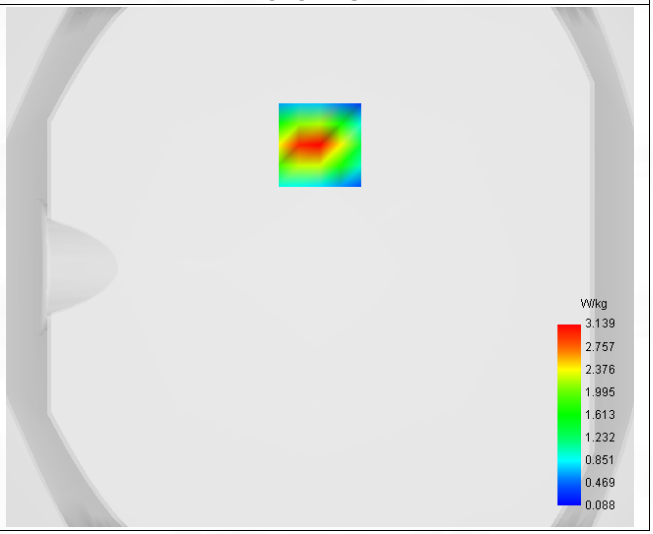
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	1.96
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	LTE band 3
Channels	Lower (19300)
Signal	LTE FDD
Cell Bandwidth	20 Mhz
Modulation	SC-OFDM - QPSK
RB offset	0
RB size	1

B. Permitivity

Frequency (MHz)	1711.090
Relative permitivity (real part)	40.048
Relative permitivity (imaginary part)	13.952
Conductivity (S/m)	1.324

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=0.00, Y=47.00 ; SAR Peak: 5.14 W/kg

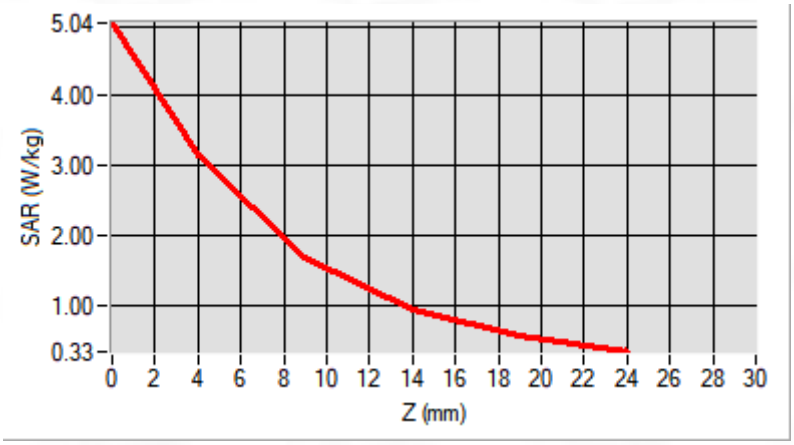
D. SAR 1g & 10g

SAR 10g (W/Kg)	1.457
SAR 1g (W/Kg)	2.913
Variation (%)	-1.300
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

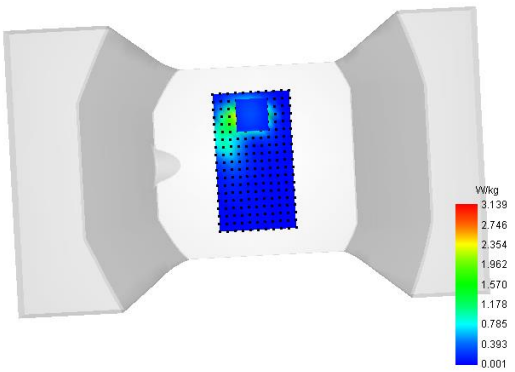
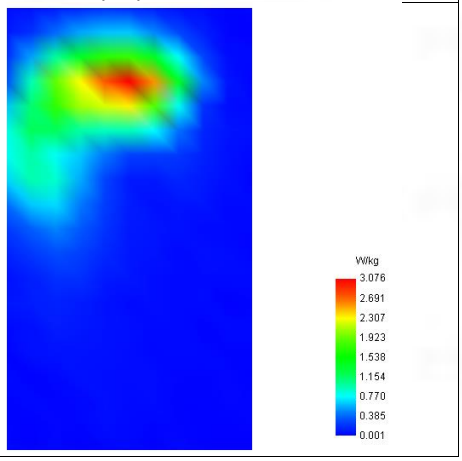
E. Z Axis Scan

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

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	5.044	3.139	1.688	0.923	0.543



F. 3D Image

3D screen shot	Hot spot position
	

BTF Testing Lab (Shenzhen) Co., Ltd.
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19-Head with front position in dist. 0mm on Channel 21100 in LTE Band 7

SAR Measurement at LTE band 7 (Cheek, Right)

Date of measurement: 16/3/2023

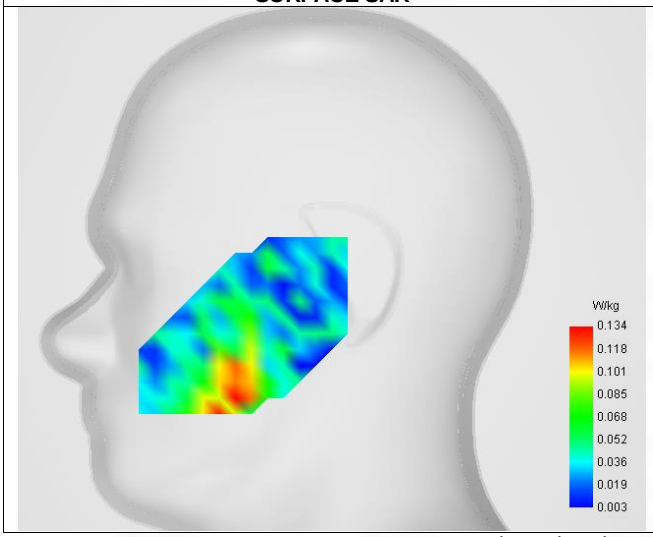
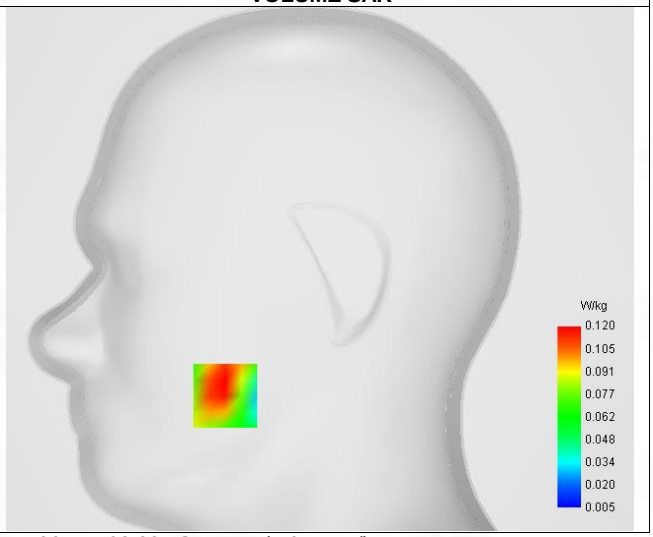
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	2.40
Area Scan	sam_direct_droit2_surf8mm.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Right head
Device Position	Cheek
Band	LTE band 7
Channels	Middle (21100)
Signal	LTE FDD
Cell Bandwidth	20 Mhz
Modulation	SC-OFDM - QPSK
RB offset	99
RB size	1

B. Permitivity

Frequency (MHz)	2543.910
Relative permitivity (real part)	38.955
Relative permitivity (imaginary part)	12.933
Conductivity (S/m)	1.910

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=-47.00, Y=-63.00 ; SAR Peak: 0.17 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.080
SAR 1g (W/Kg)	0.115
Variation (%)	-2.300
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

BTF Testing Lab (Shenzhen) Co., Ltd.
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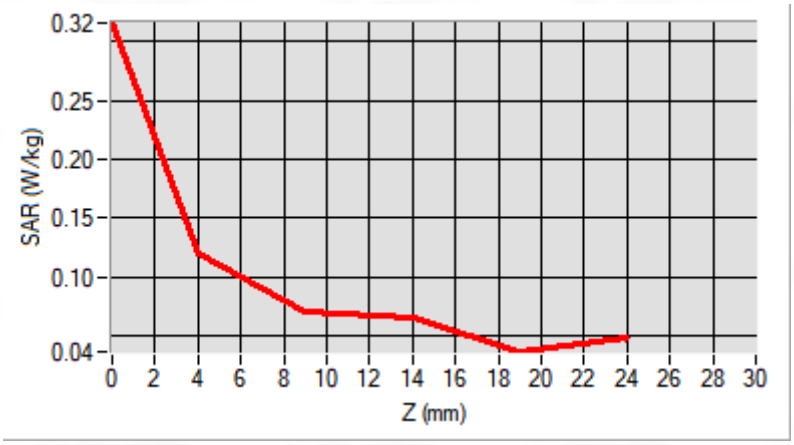
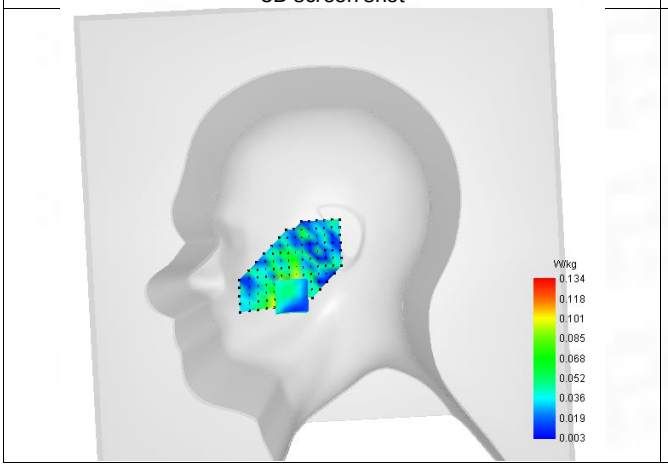
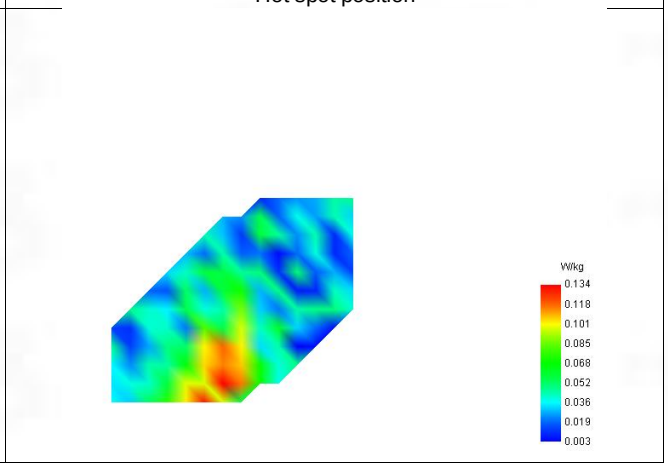
Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.316	0.120	0.072	0.066	0.037



F. 3D Image

3D screen shot	Hot spot position
	

BTF Testing Lab (Shenzhen) Co., Ltd.
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20-Body with back position in dist. 5mm on Channel 21100 in LTE Band 7

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

Date of measurement: 16/3/2023

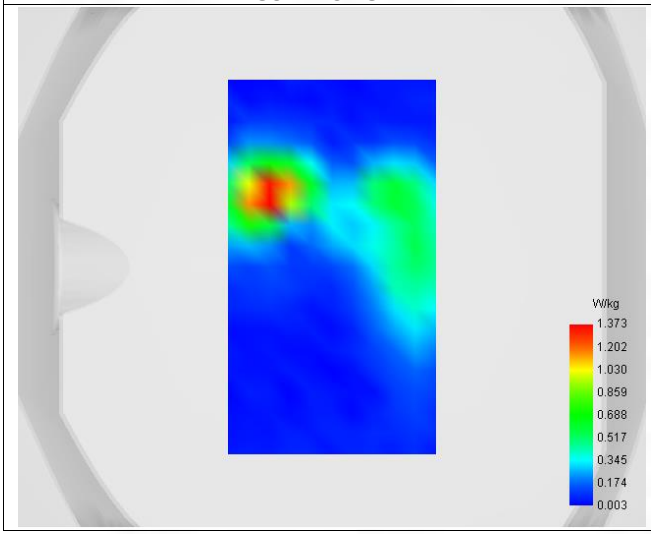
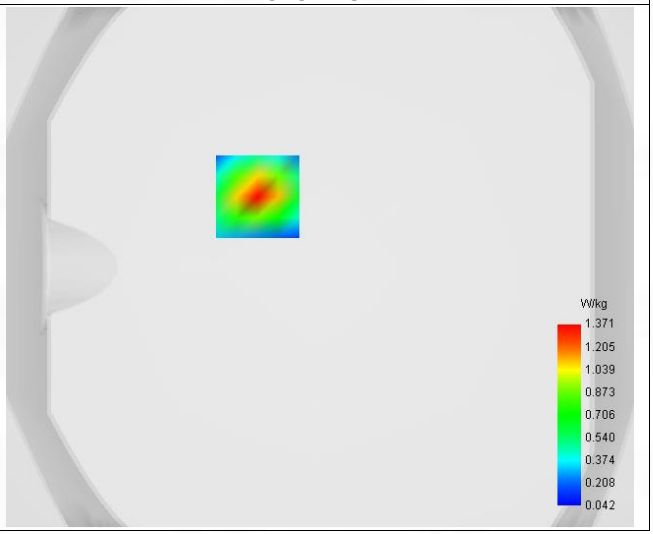
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	2.40
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	LTE band 7
Channels	Middle (21100)
Signal	LTE FDD
Cell Bandwidth	20 Mhz
Modulation	SC-OFDM - QPSK
RB offset	99
RB size	1

B. Permitivity

Frequency (MHz)	2543.910
Relative permitivity (real part)	38.955
Relative permitivity (imaginary part)	12.933
Conductivity (S/m)	1.910

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=-24.00, Y=27.00 ; SAR Peak: 2.24 W/kg

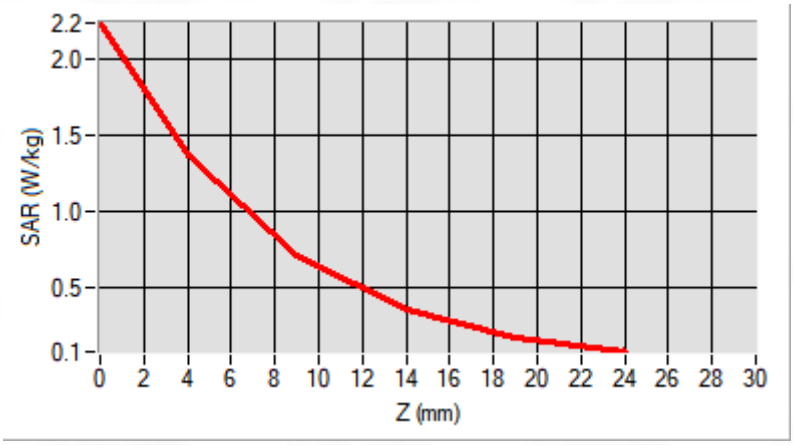
D. SAR 1g & 10g

SAR 10g (W/Kg)	0.585
SAR 1g (W/Kg)	1.247
Variation (%)	-4.560
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

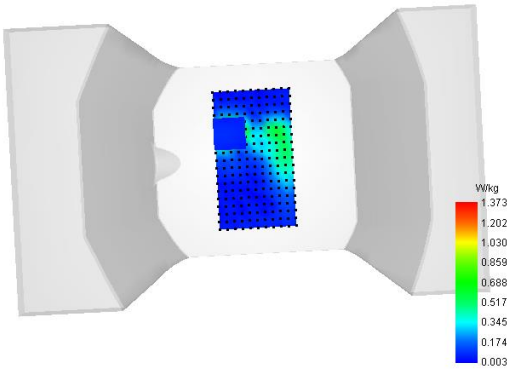
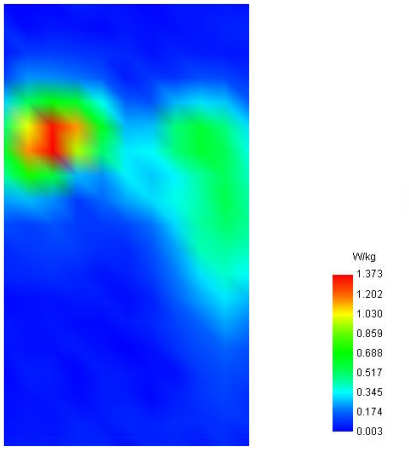
E. Z Axis Scan

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

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	2.237	1.371	0.709	0.358	0.181



F. 3D Image

3D screen shot	Hot spot position
	

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21-Limb with Back position in dist. 0mm on Channel 21100 in LTE Band 7

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

Date of measurement: 16/3/2023

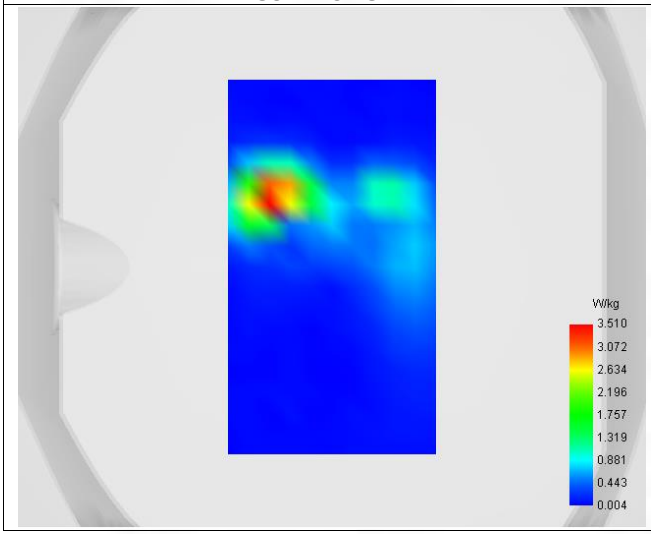
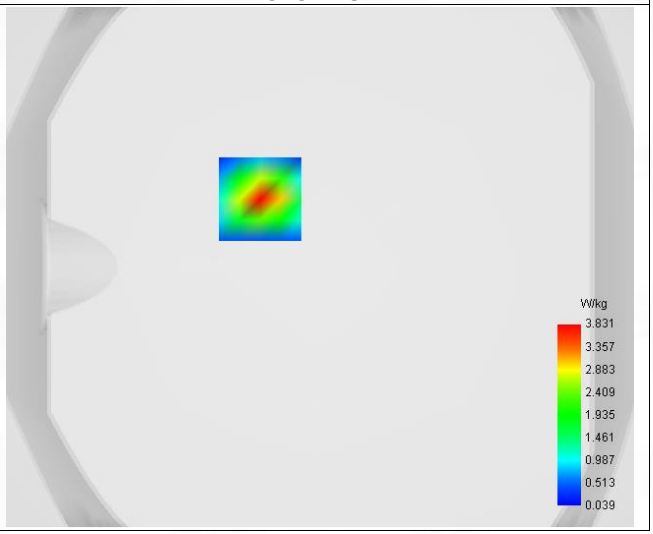
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	2.40
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	LTE band 7
Channels	Middle (21100)
Signal	LTE FDD
Cell Bandwidth	20 Mhz
Modulation	SC-OFDM - QPSK
RB offset	99
RB size	1

B. Permitivity

Frequency (MHz)	2543.910
Relative permitivity (real part)	38.955
Relative permitivity (imaginary part)	12.933
Conductivity (S/m)	1.910

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=-23.00, Y=26.00 ; SAR Peak: 6.77 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	1.474
SAR 1g (W/Kg)	3.438
Variation (%)	-3.010
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

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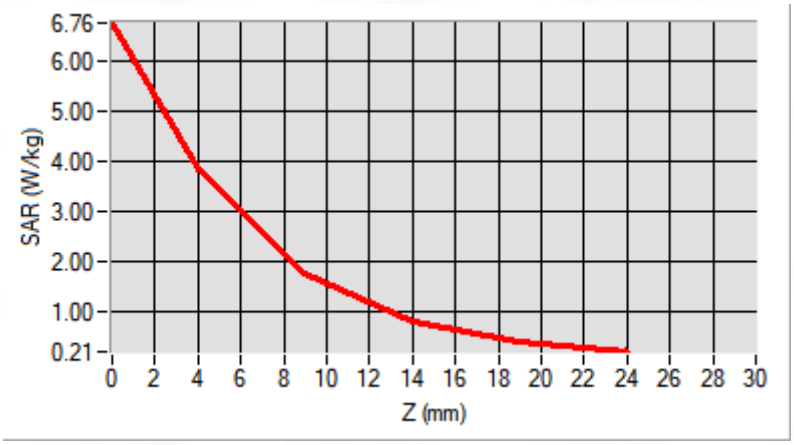
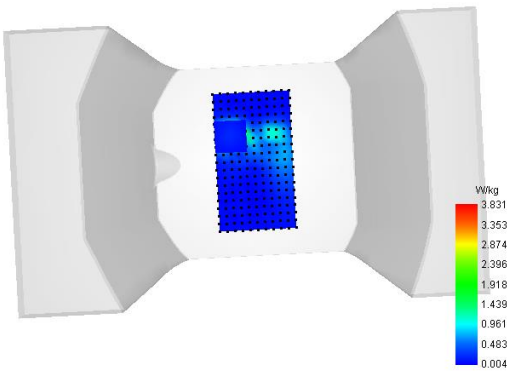
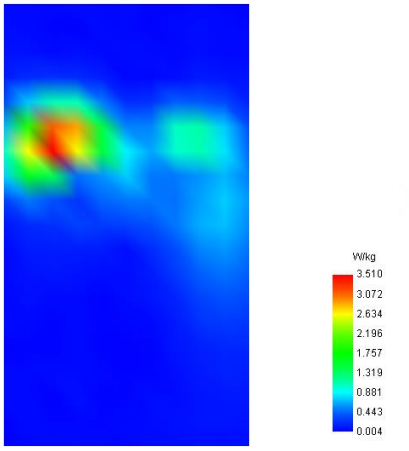
Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	6.758	3.831	1.771	0.811	0.406



F. 3D Image

3D screen shot	Hot spot position
	

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22-Head with front position in dist. 0mm on Channel 21500 in LTE Band 8

SAR Measurement at LTE band 8 (Cheek, Right)

Date of measurement: 14/3/2023

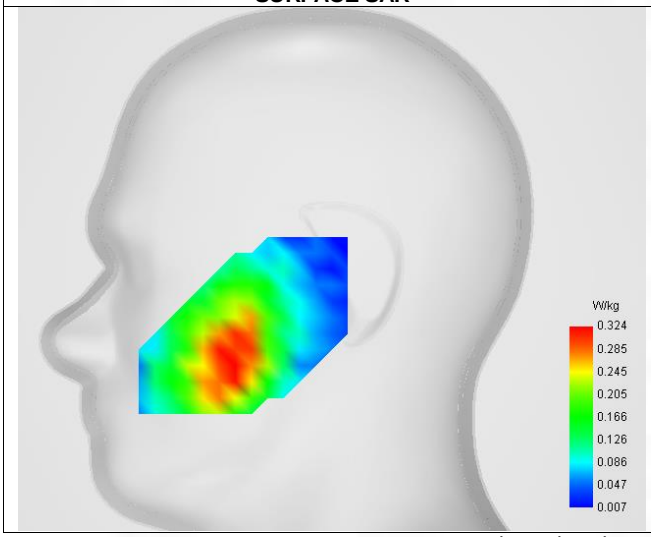
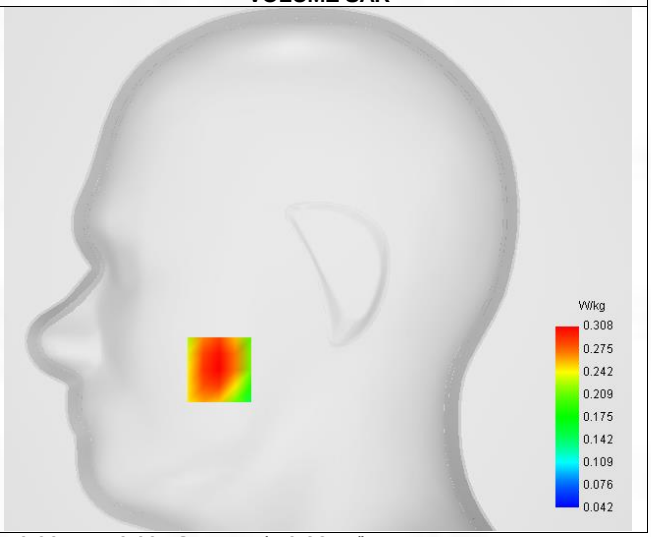
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	1.68
Area Scan	sam_direct_droit2_surf8mm.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Right head
Device Position	Cheek
Band	LTE band 8
Channels	Lower (21500)
Signal	LTE FDD
Cell Bandwidth	10 Mhz
Modulation	SC-OFDM - QPSK
RB offset	0
RB size	1

B. Permitivity

Frequency (MHz)	880.590
Relative permitivity (real part)	41.339
Relative permitivity (imaginary part)	19.561
Conductivity (S/m)	0.894

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=-49.00, Y=-50.00 ; SAR Peak: 0.38 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.223
SAR 1g (W/Kg)	0.299
Variation (%)	-3.010
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

BTF Testing Lab (Shenzhen) Co., Ltd.
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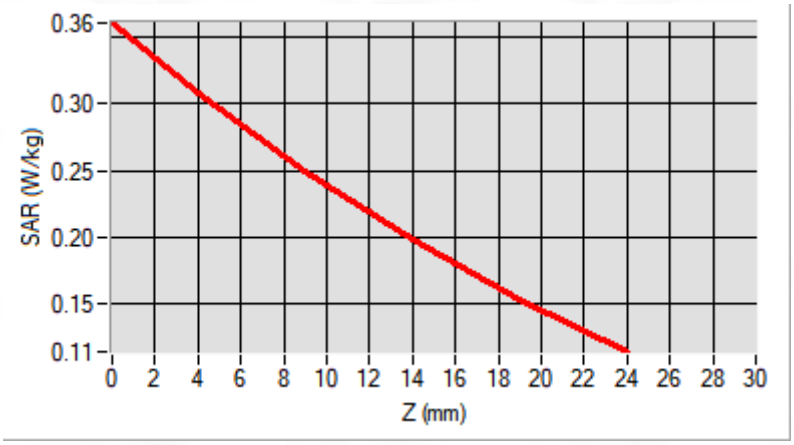
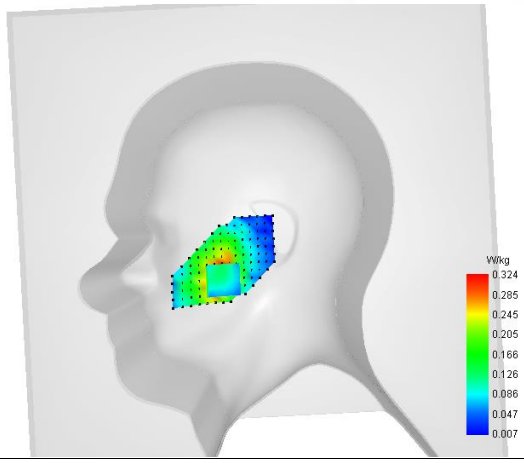
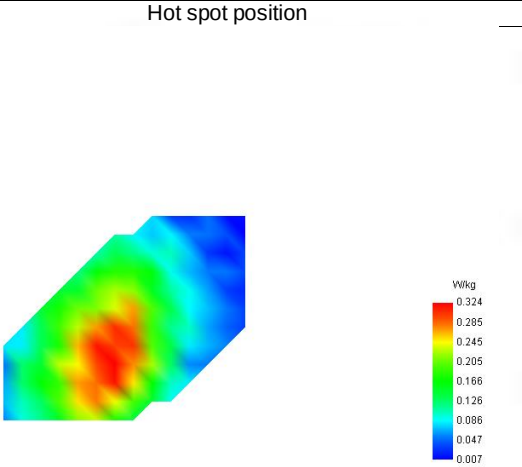
Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.360	0.308	0.250	0.198	0.153



F. 3D Image

3D screen shot	Hot spot position
	

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23-Body with back position in dist. 5mm on Channel 21500 in LTE Band 8

SAR Measurement at LTE band 8 (Body, Validation Plane)

Date of measurement: 14/3/2023

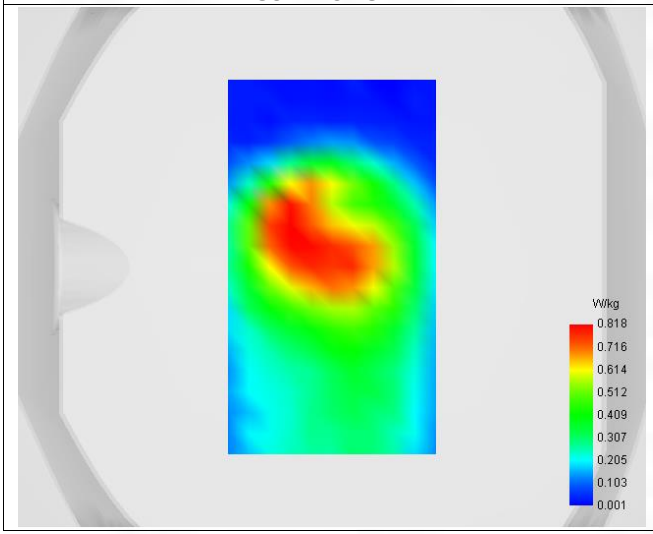
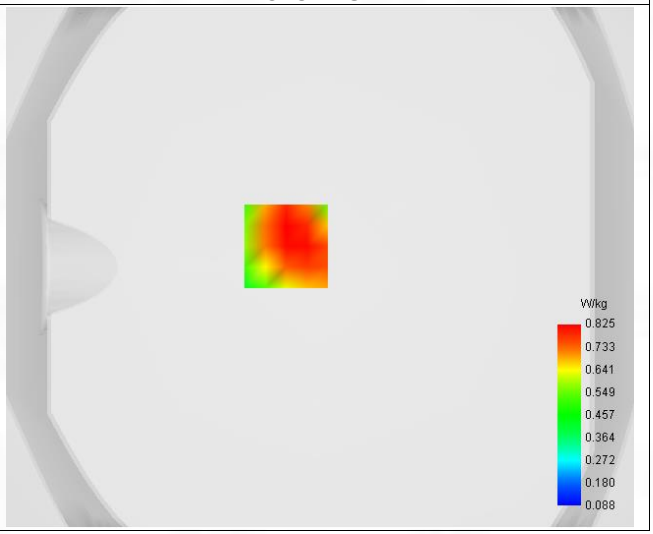
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	1.68
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	LTE band 8
Channels	Lower (21500)
Signal	LTE FDD
Cell Bandwidth	10 Mhz
Modulation	SC-OFDM - QPSK
RB offset	0
RB size	1

B. Permitivity

Frequency (MHz)	880.590
Relative permitivity (real part)	41.339
Relative permitivity (imaginary part)	19.561
Conductivity (S/m)	0.894

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=-13.00, Y=8.00 ; SAR Peak: 1.23 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.513
SAR 1g (W/Kg)	0.801
Variation (%)	0.680
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

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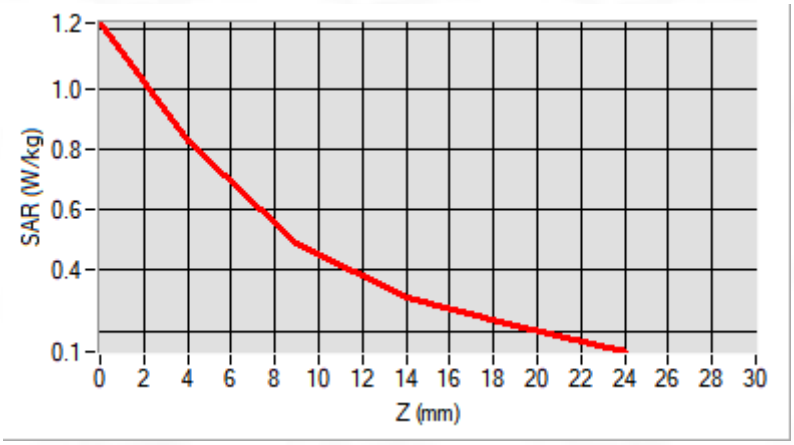
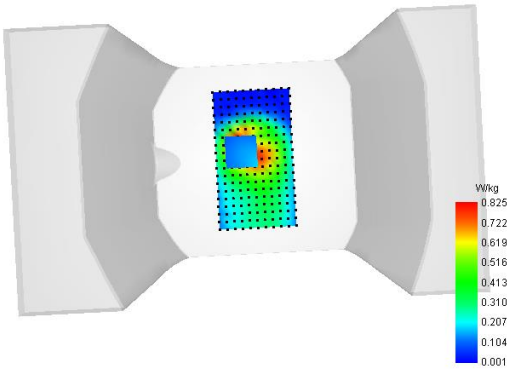
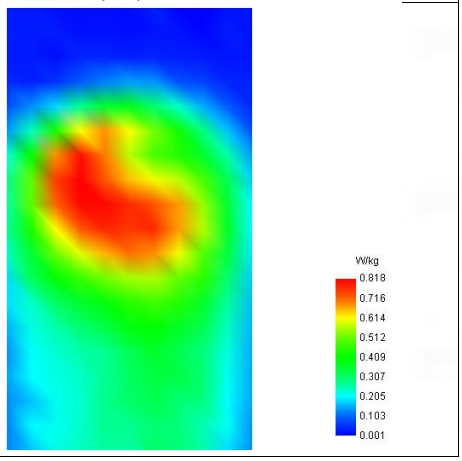
Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.217	0.825	0.490	0.308	0.220



F. 3D Image

3D screen shot	Hot spot position
	

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24-Limb with Back position in dist. 0mm on Channel 21500 in LTE Band 8

SAR Measurement at LTE band 8 (Body, Validation Plane)

Date of measurement: 14/3/2023

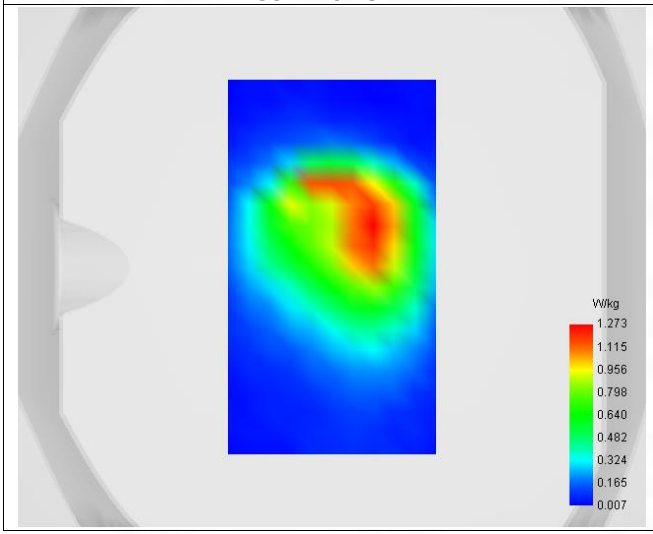
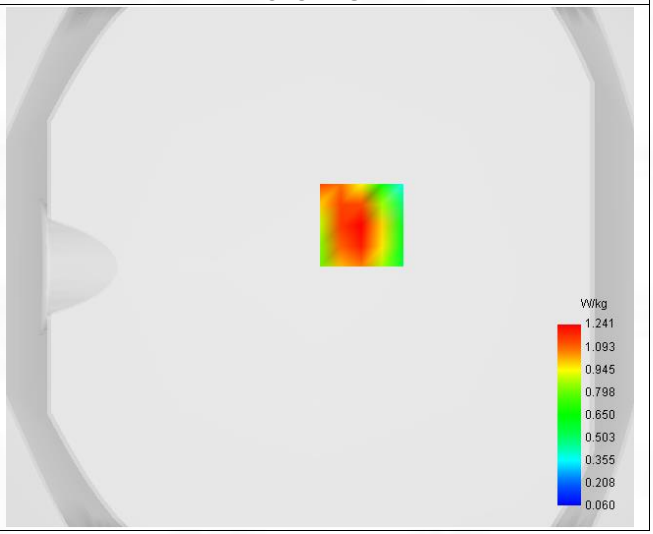
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	1.68
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	LTE band 8
Channels	Lower (21500)
Signal	LTE FDD
Cell Bandwidth	10 Mhz
Modulation	SC-OFDM - QPSK
RB offset	0
RB size	1

B. Permitivity

Frequency (MHz)	880.590
Relative permitivity (real part)	41.339
Relative permitivity (imaginary part)	19.561
Conductivity (S/m)	0.894

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=16.00, Y=16.00 ; SAR Peak: 2.09 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.734
SAR 1g (W/Kg)	1.199
Variation (%)	-1.400
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

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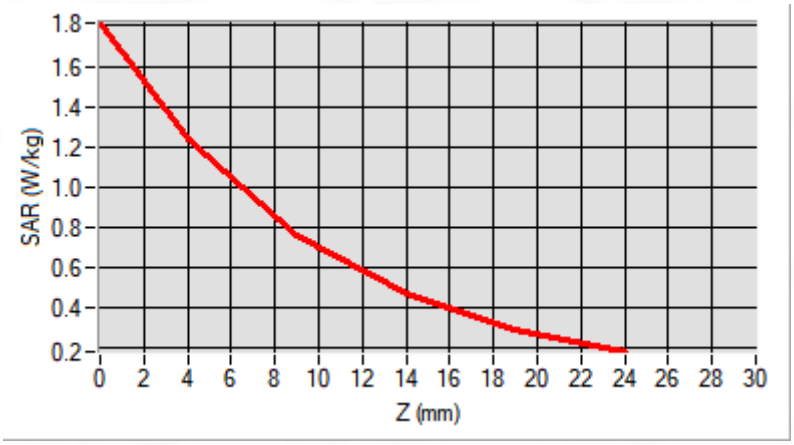
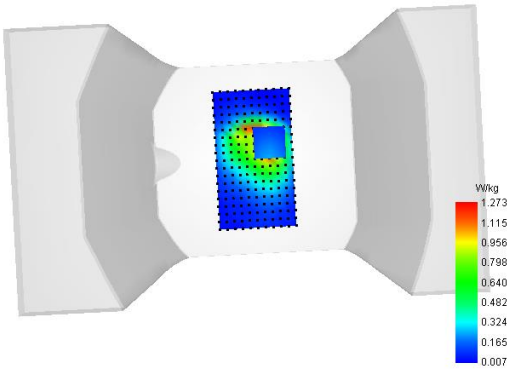
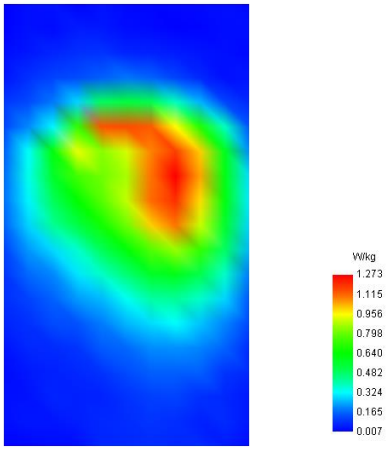
Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.815	1.241	0.760	0.469	0.297



F. 3D Image

3D screen shot	Hot spot position
	

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25-Head with front position in dist. 0mm on Channel 24250 in LTE Band 20

SAR Measurement at LTE band 20 (Cheek, Right)

Date of measurement: 14/3/2023

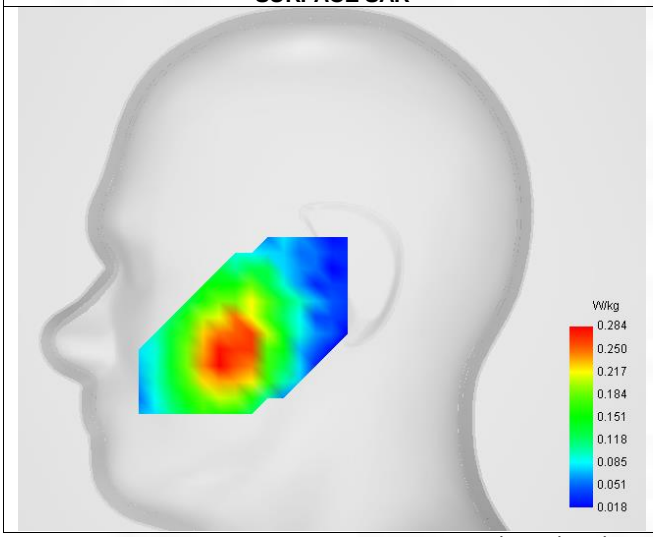
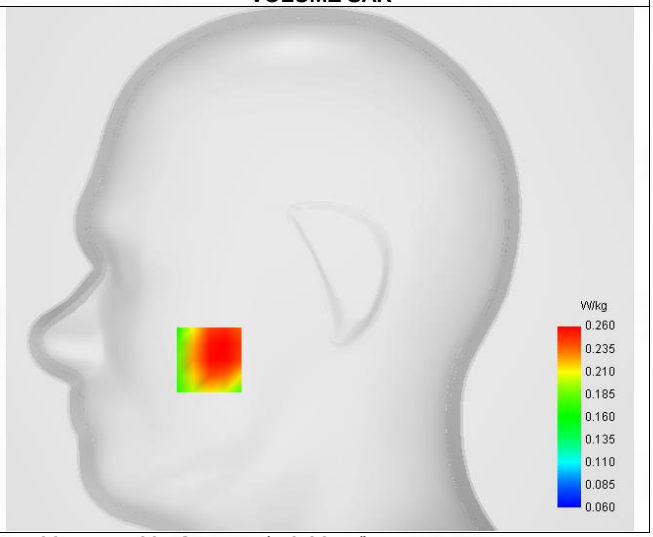
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	1.68
Area Scan	sam_direct_droit2_surf8mm.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Right head
Device Position	Cheek
Band	LTE band 20
Channels	Lower (24250)
Signal	LTE FDD
Cell Bandwidth	20 Mhz
Modulation	SC-OFDM - QPSK
RB offset	0
RB size	1

B. Permitivity

Frequency (MHz)	833.090
Relative permitivity (real part)	41.413
Relative permitivity (imaginary part)	19.487
Conductivity (S/m)	0.869

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=-55.00, Y=-45.00 ; SAR Peak: 0.32 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.194
SAR 1g (W/Kg)	0.255
Variation (%)	-1.910
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

BTF Testing Lab (Shenzhen) Co., Ltd.
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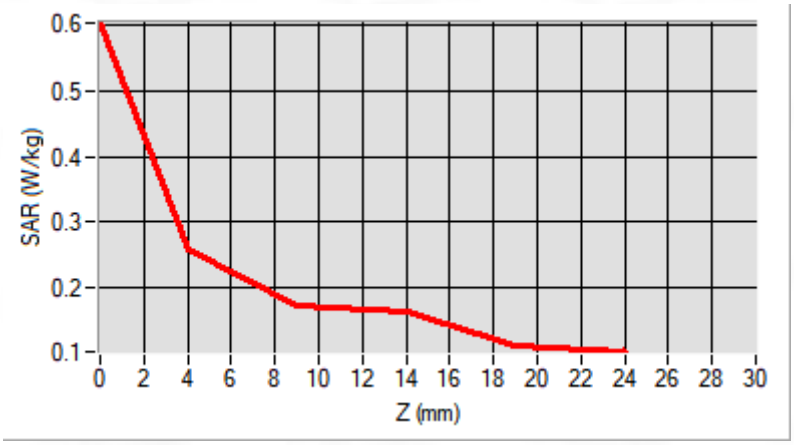
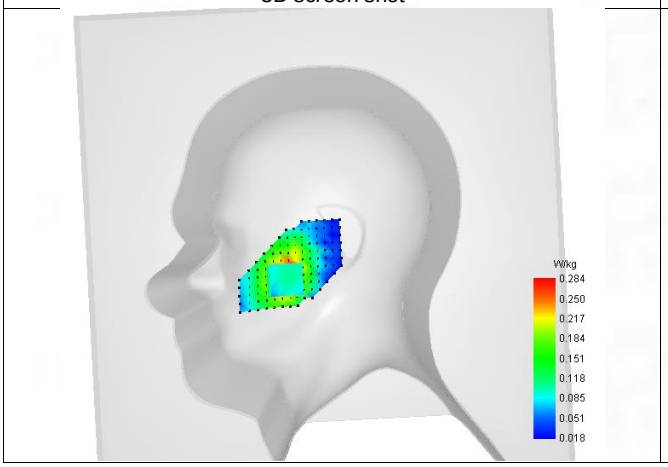
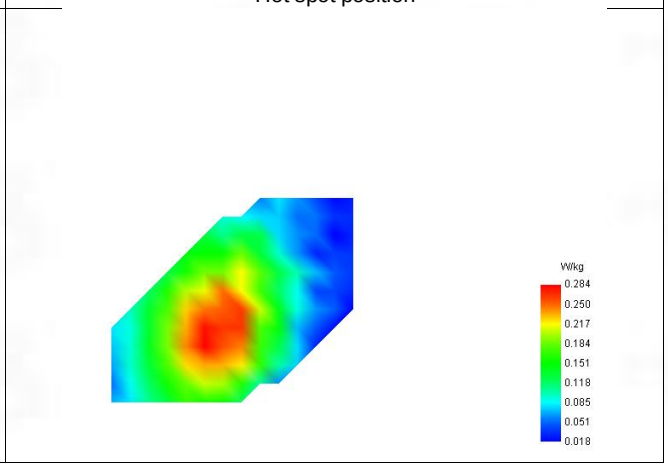
Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.603	0.260	0.173	0.165	0.113



F. 3D Image

3D screen shot	Hot spot position
	

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26-Body with back position in dist. 5mm on Channel 24250 in LTE Band 20

SAR Measurement at LTE band 20 (Body, Validation Plane)

Date of measurement: 14/3/2023

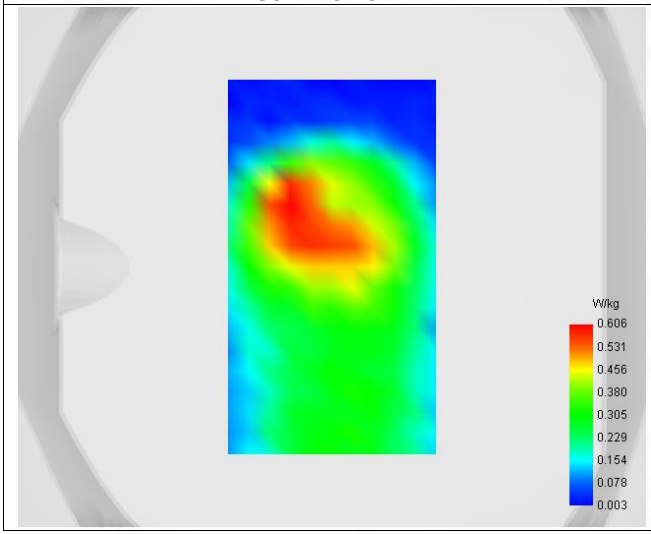
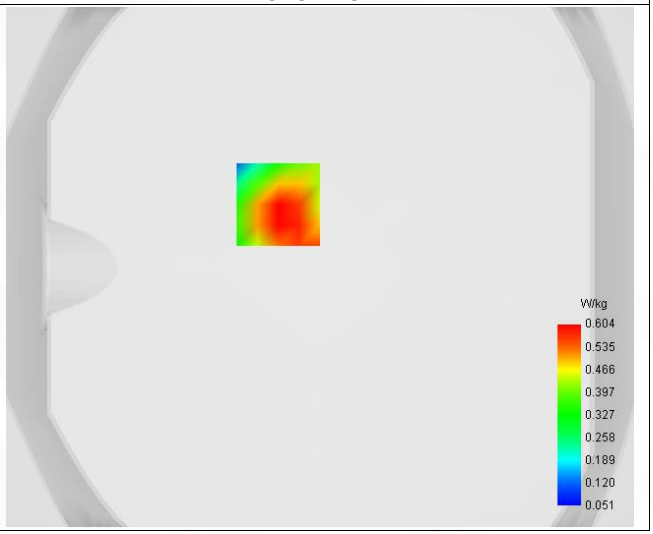
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	1.68
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	LTE band 20
Channels	Lower (24250)
Signal	LTE FDD
Cell Bandwidth	20 Mhz
Modulation	SC-OFDM - QPSK
RB offset	0
RB size	1

B. Permitivity

Frequency (MHz)	833.090
Relative permitivity (real part)	41.413
Relative permitivity (imaginary part)	19.487
Conductivity (S/m)	0.869

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=-16.00, Y=24.00 ; SAR Peak: 0.93 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.360
SAR 1g (W/Kg)	0.586
Variation (%)	3.130
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

BTF Testing Lab (Shenzhen) Co., Ltd.
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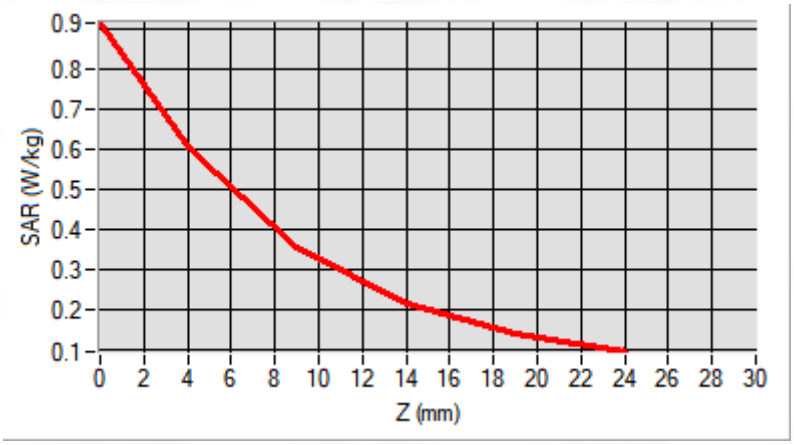
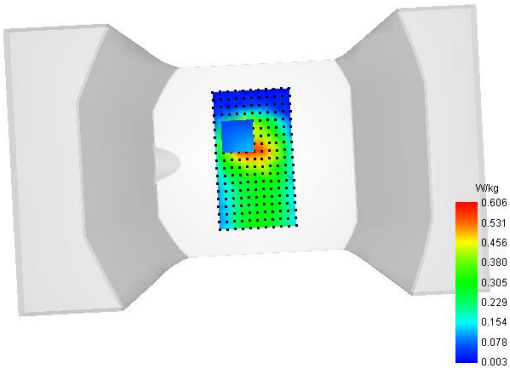
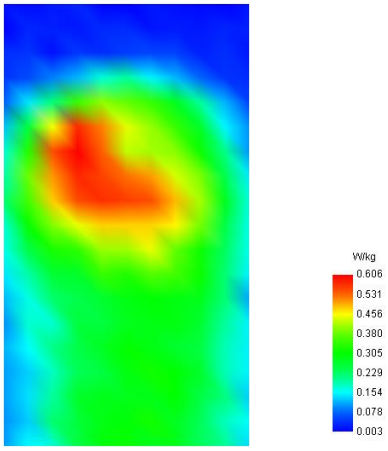
Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.917	0.604	0.355	0.215	0.140



F. 3D Image

3D screen shot	Hot spot position
	

27-Limb with Back position in dist. 0mm on Channel 24250 in LTE Band 20

SAR Measurement at LTE band 20 (Body, Validation Plane)

Date of measurement: 14/3/2023

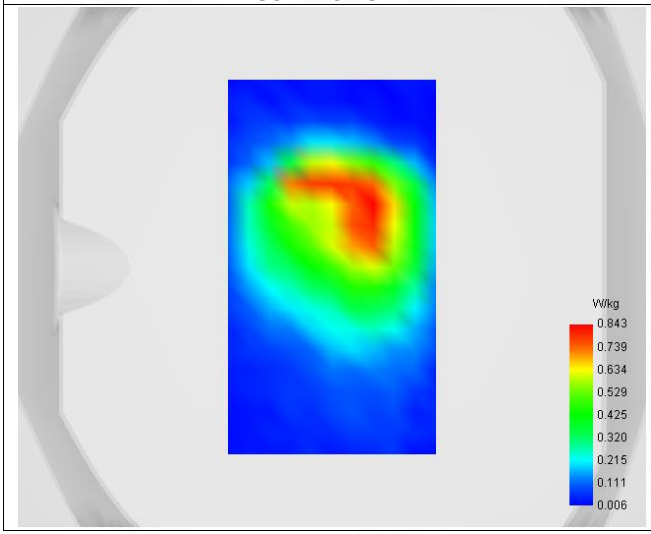
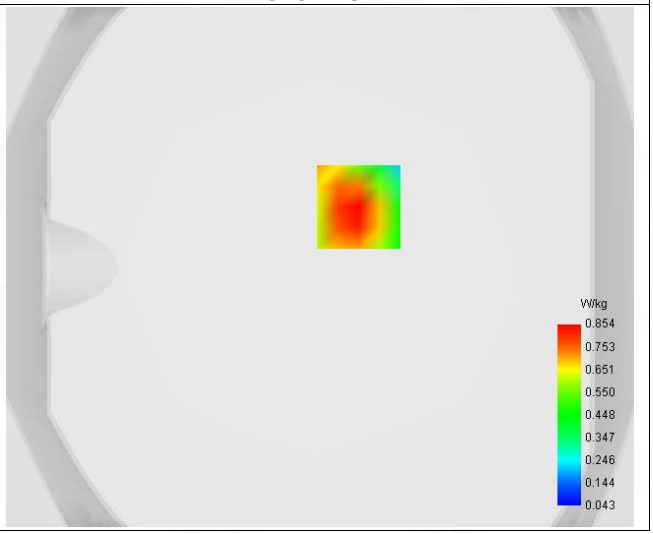
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	1.68
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	LTE band 20
Channels	Lower (24250)
Signal	LTE FDD
Cell Bandwidth	20 Mhz
Modulation	SC-OFDM - QPSK
RB offset	0
RB size	1

B. Permitivity

Frequency (MHz)	833.090
Relative permitivity (real part)	41.413
Relative permitivity (imaginary part)	19.487
Conductivity (S/m)	0.869

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=15.00, Y=23.00 ; SAR Peak: 1.40 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.488
SAR 1g (W/Kg)	0.832
Variation (%)	-4.700
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

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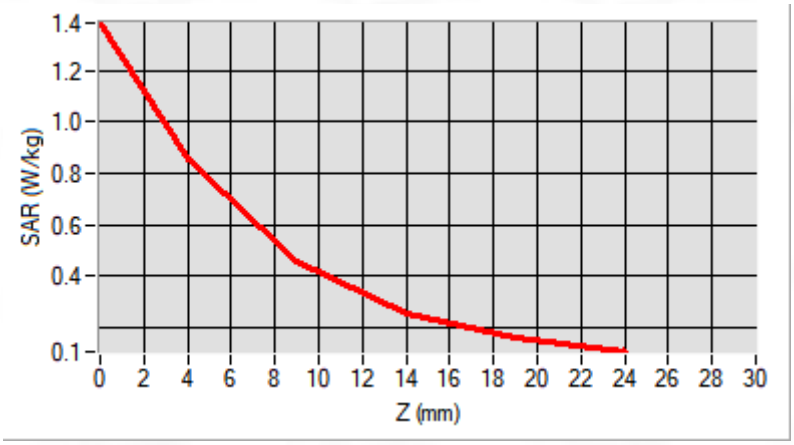
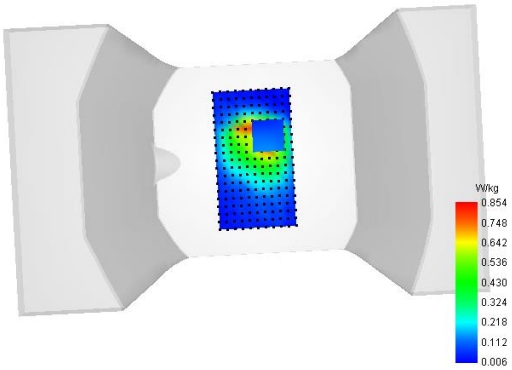
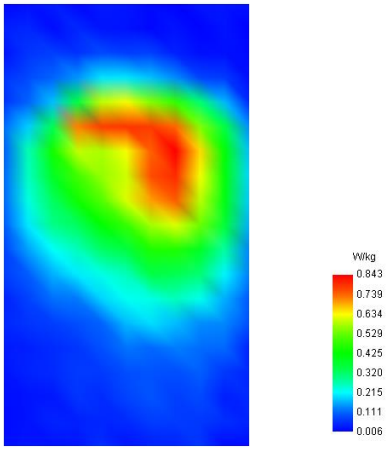
Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.383	0.854	0.459	0.257	0.161



F. 3D Image

3D screen shot	Hot spot position
	

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28-Head with front position in dist. 0mm on Channel 27560 in LTE Band 28

SAR Measurement at LTE band 28 (Cheek, Right)

Date of measurement: 14/3/2023

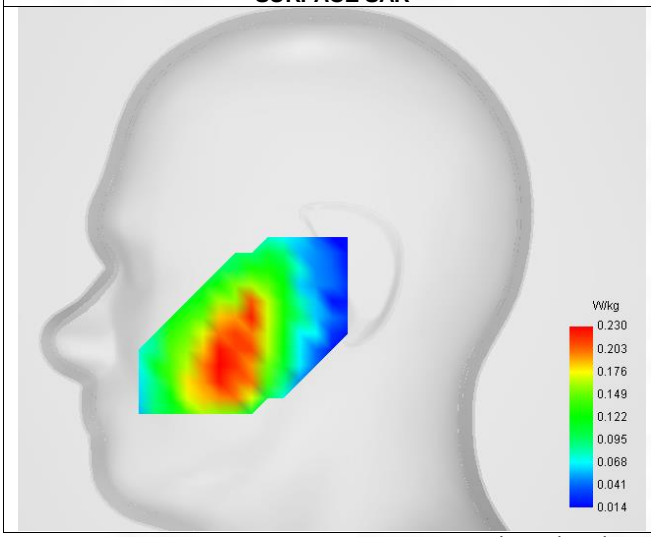
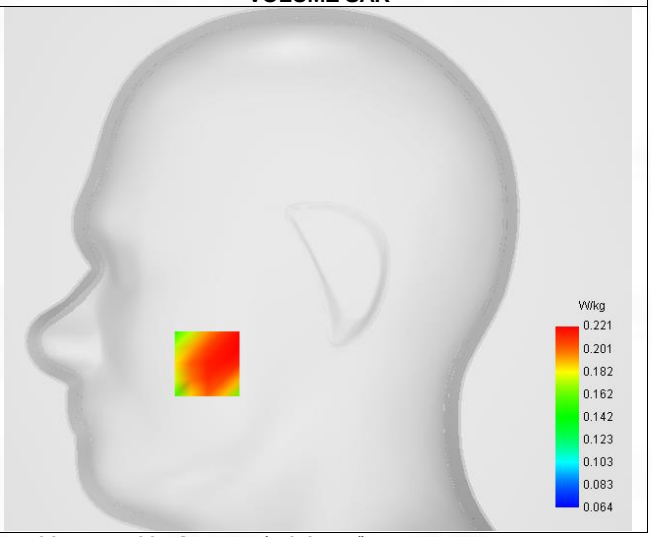
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	1.65
Area Scan	sam_direct_droit2_surf8mm.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Right head
Device Position	Cheek
Band	LTE band 28
Channels	Higher (27560)
Signal	LTE FDD
Cell Bandwidth	20 Mhz
Modulation	SC-OFDM - QPSK
RB offset	0
RB size	1

B. Permitivity

Frequency (MHz)	729.090
Relative permitivity (real part)	41.575
Relative permitivity (imaginary part)	19.325
Conductivity (S/m)	0.815

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=-55.00, Y=-47.00 ; SAR Peak: 0.27 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.179
SAR 1g (W/Kg)	0.219
Variation (%)	3.710
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

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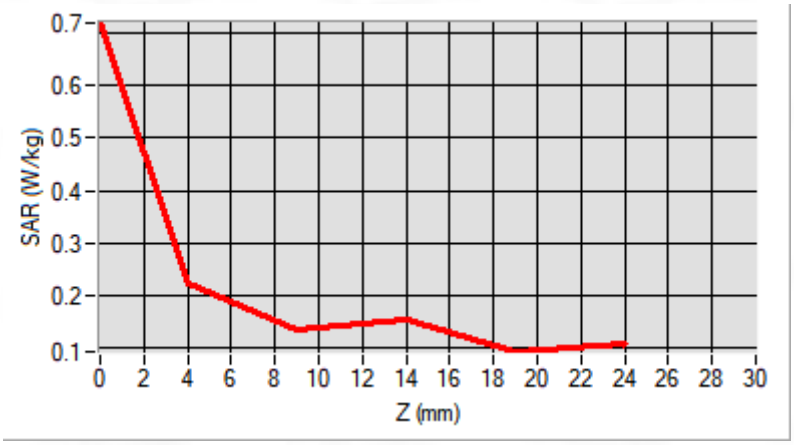
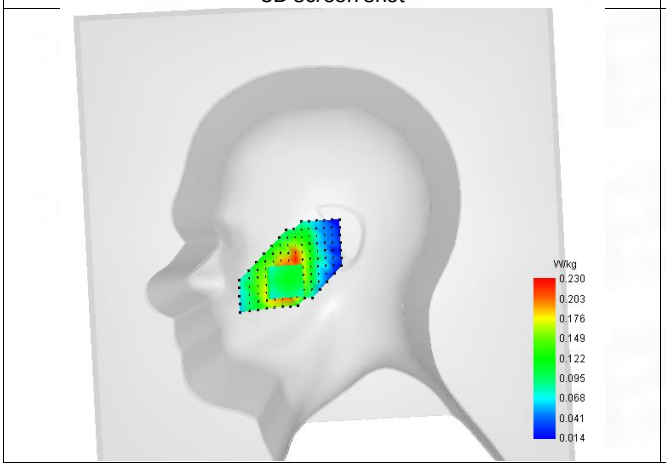
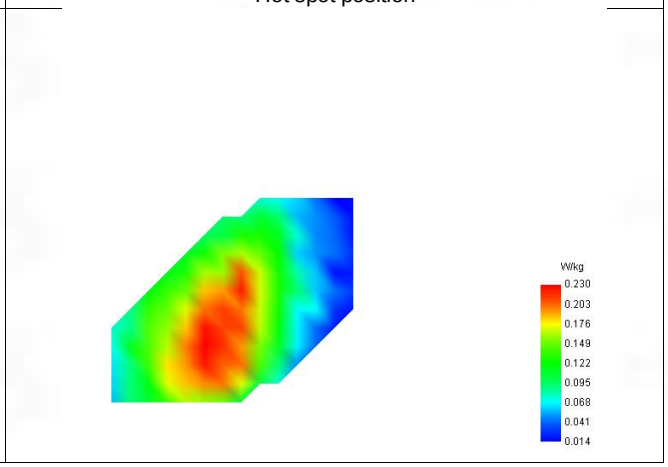
Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.719	0.221	0.134	0.155	0.093



F. 3D Image

3D screen shot	Hot spot position
	

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29-Body with back position in dist. 5mm on Channel 27560 in LTE Band 28

SAR Measurement at LTE band 28 (Body, Validation Plane)

Date of measurement: 14/3/2023

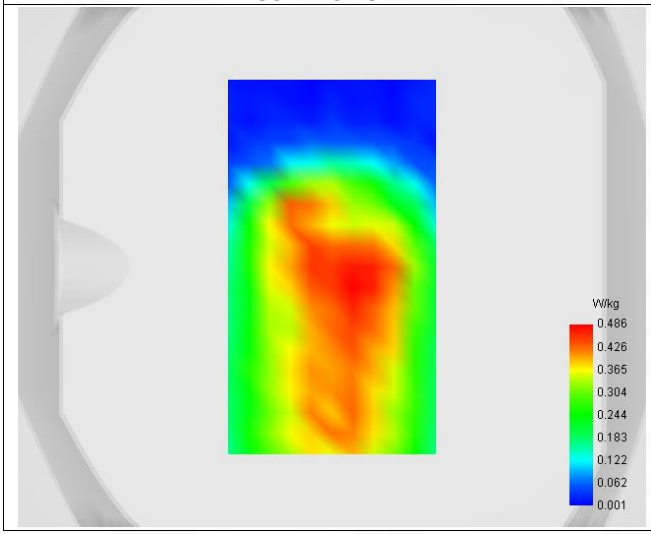
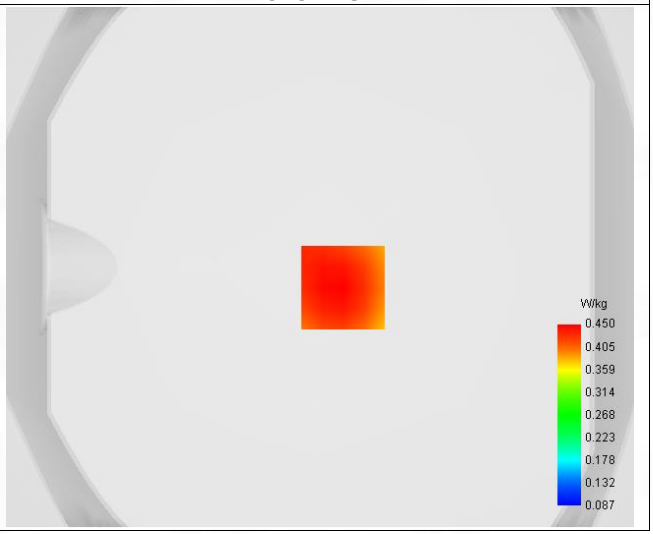
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	1.65
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	LTE band 28
Channels	Higher (27560)
Signal	LTE FDD
Cell Bandwidth	20 Mhz
Modulation	SC-OFDM - QPSK
RB offset	0
RB size	1

B. Permitivity

Frequency (MHz)	729.090
Relative permitivity (real part)	41.575
Relative permitivity (imaginary part)	19.325
Conductivity (S/m)	0.815

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=9.00, Y=-8.00 ; SAR Peak: 0.62 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.333
SAR 1g (W/Kg)	0.447
Variation (%)	-2.970
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

BTF Testing Lab (Shenzhen) Co., Ltd.
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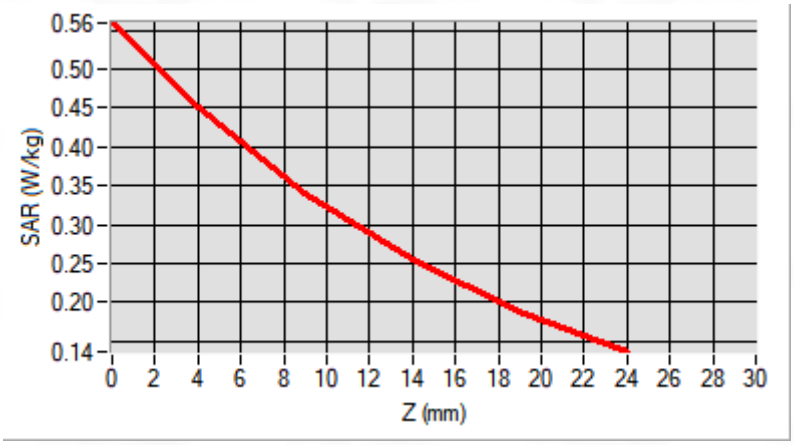
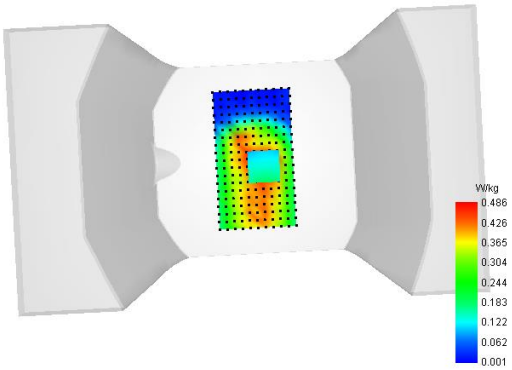
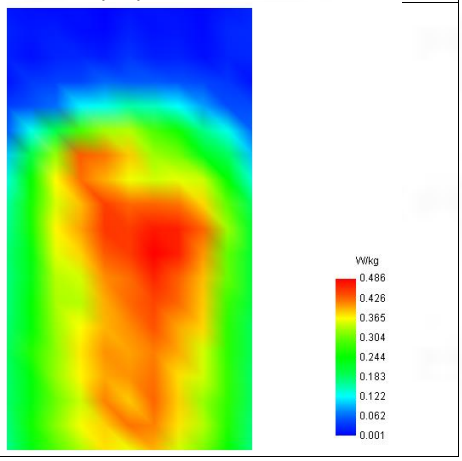
Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.559	0.450	0.340	0.255	0.189



F. 3D Image

3D screen shot	Hot spot position
	

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30-Limb with Back position in dist. 0mm on Channel 27560 in LTE Band 28

SAR Measurement at LTE band 28 (Body, Validation Plane)

Date of measurement: 14/3/2023

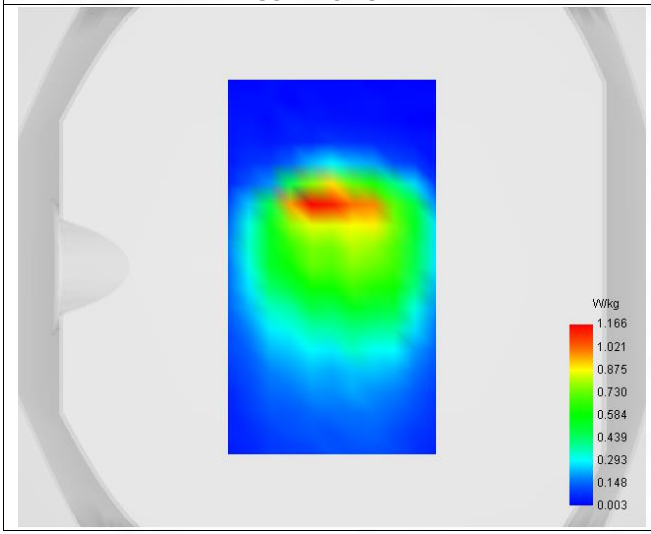
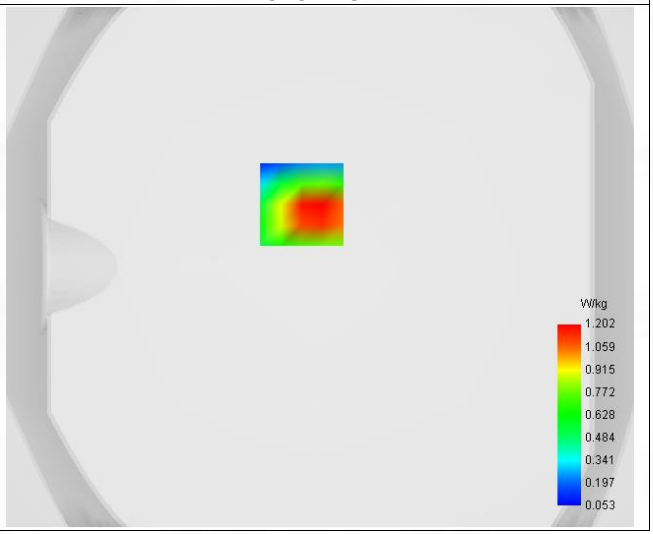
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	1.65
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	LTE band 28
Channels	Higher (27560)
Signal	LTE FDD
Cell Bandwidth	20 Mhz
Modulation	SC-OFDM - QPSK
RB offset	0
RB size	1

B. Permitivity

Frequency (MHz)	729.090
Relative permitivity (real part)	41.575
Relative permitivity (imaginary part)	19.325
Conductivity (S/m)	0.815

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=-7.00, Y=24.00 ; SAR Peak: 2.31 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.615
SAR 1g (W/Kg)	1.200
Variation (%)	-1.100
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

BTF Testing Lab (Shenzhen) Co., Ltd.
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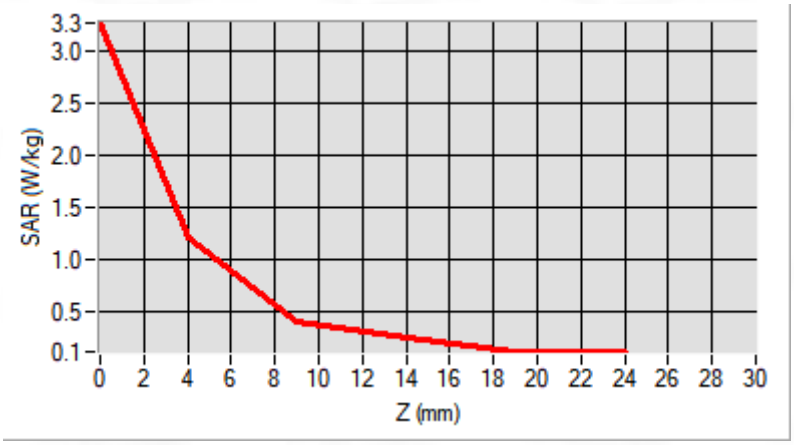
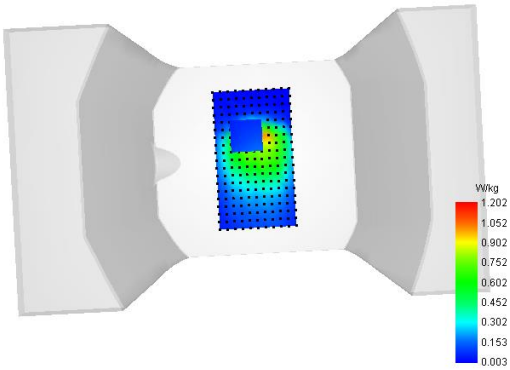
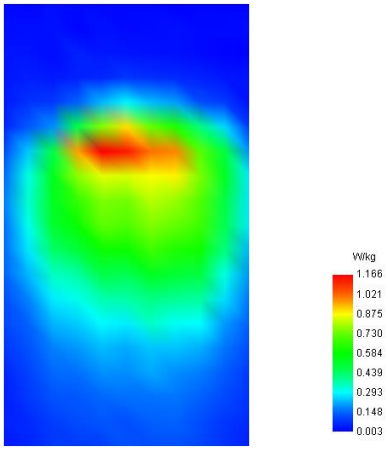
Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	3.263	1.202	0.399	0.254	0.112



F. 3D Image

3D screen shot	Hot spot position
	

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31-Head with front position in dist. 0mm on Channel 38150 in LTE Band 38

SAR Measurement at LTE band 38 (Cheek, Right)

Date of measurement: 16/3/2023

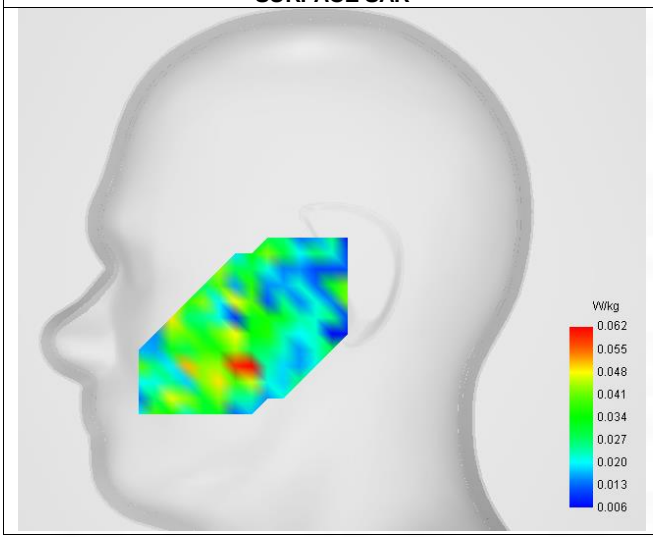
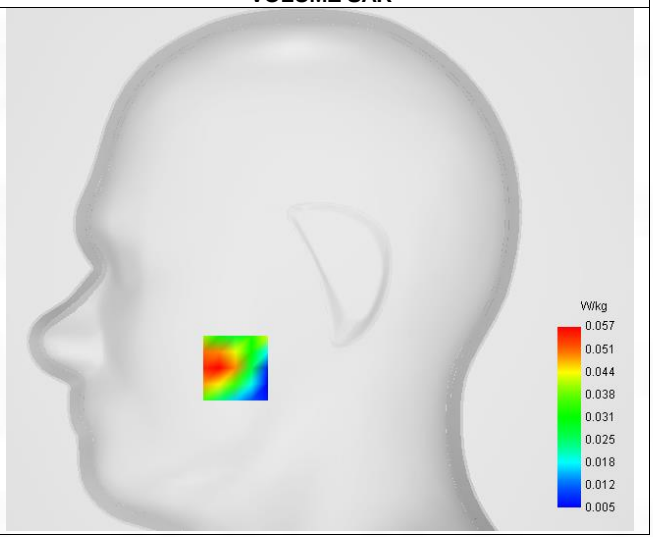
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	2.40
Area Scan	sam_direct_droit2_surf8mm.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Right head
Device Position	Cheek
Band	LTE band 38
Channels	Higher (38150)
Signal	LTE TDD
Cell Bandwidth	20 Mhz
Modulation	SC-OFDM - QPSK
RB offset	99
RB size	1
Subframe configuration	0
Special subframe configuration	0
Cyclic prefix	Normal
Duty Cycle (%)	0.61

B. Permitivity

Frequency (MHz)	2618.910
Relative permitivity (real part)	38.855
Relative permitivity (imaginary part)	12.715
Conductivity (S/m)	1.990

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=-42.00, Y=-49.00 ; SAR Peak: 0.10 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.040
SAR 1g (W/Kg)	0.056
Variation (%)	-2.250
Horizontal validation criteria: minimum distance (mm)	0.000000

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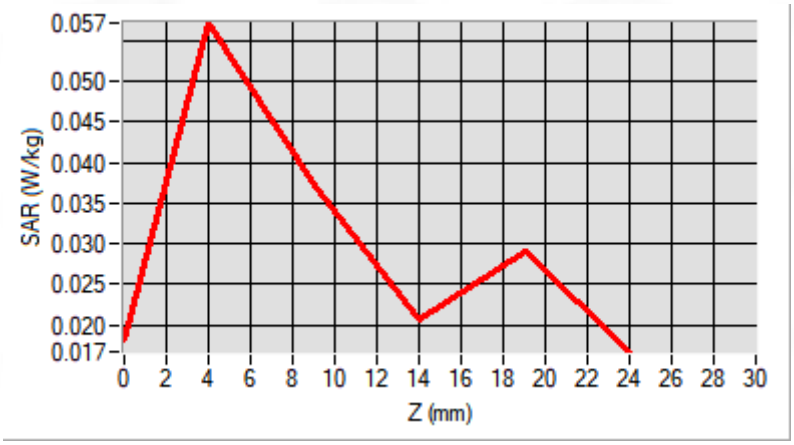
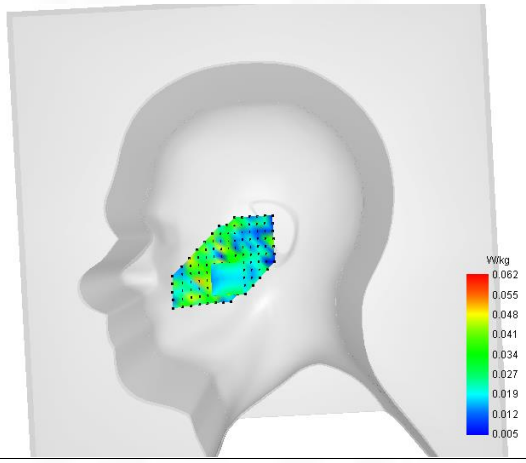
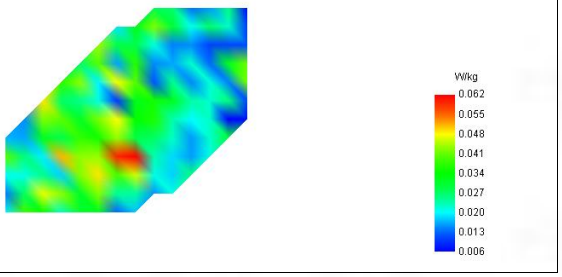
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.018	0.057	0.037	0.021	0.029



F. 3D Image

3D screen shot	Hot spot position
	

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32-Body with back position in dist. 5mm on Channel 38150 in LTE Band 38

SAR Measurement at LTE band 38 (Body, Validation Plane)

Date of measurement: 16/3/2023

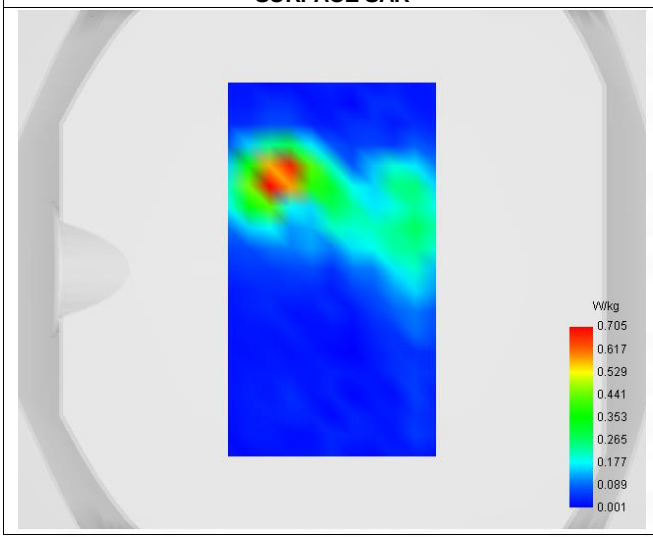
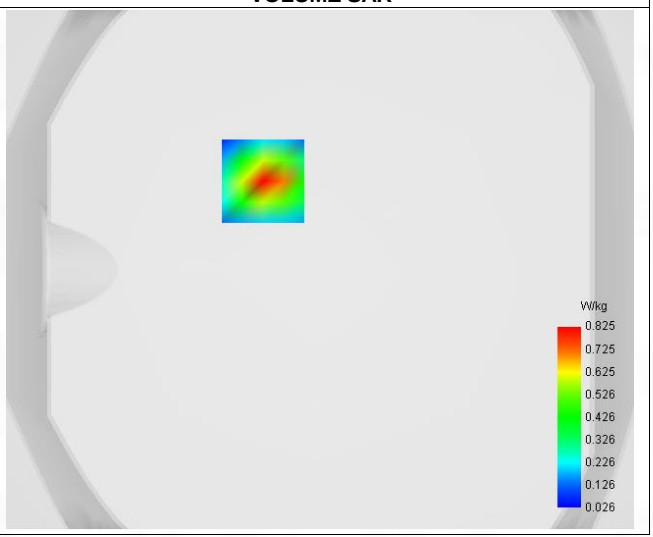
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	2.40
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	LTE band 38
Channels	Higher (38150)
Signal	LTE TDD
Cell Bandwidth	20 Mhz
Modulation	SC-OFDM - QPSK
RB offset	99
RB size	1
Subframe configuration	0
Special subframe configuration	0
Cyclic prefix	Normal
Duty Cycle (%)	0.61

B. Permitivity

Frequency (MHz)	2618.910
Relative permitivity (real part)	38.855
Relative permitivity (imaginary part)	12.715
Conductivity (S/m)	1.990

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=-22.00, Y=34.00 ; SAR Peak: 1.39 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.356
SAR 1g (W/Kg)	0.753
Variation (%)	1.270
Horizontal validation criteria: minimum distance (mm)	0.000000

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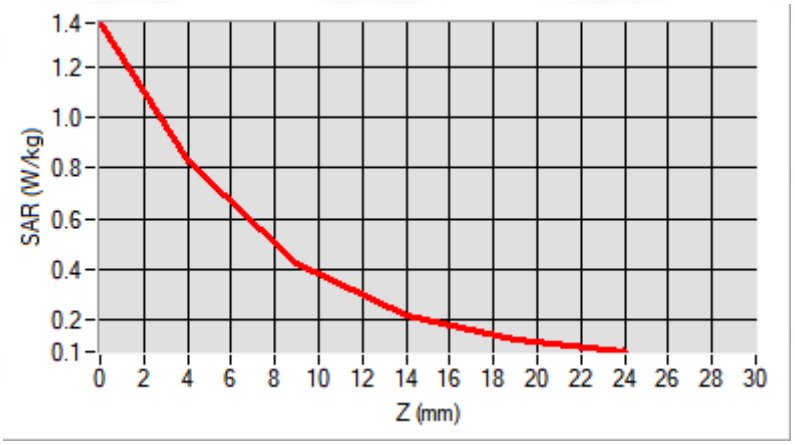
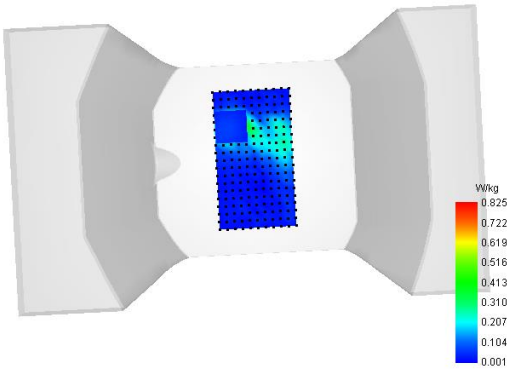
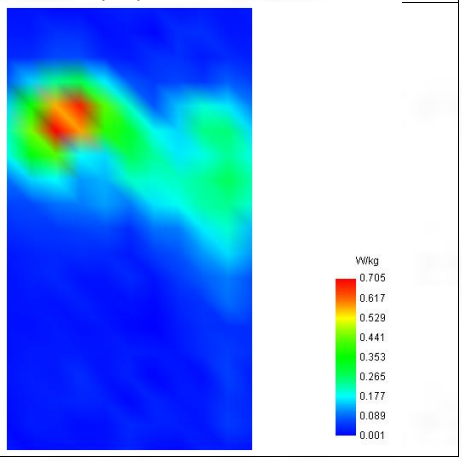
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.378	0.825	0.419	0.215	0.121



F. 3D Image

3D screen shot	Hot spot position
	

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33-Limb with Back position in dist. 0mm on Channel 38150 in LTE Band 38

SAR Measurement at LTE band 38 (Body, Validation Plane)

Date of measurement: 16/3/2023

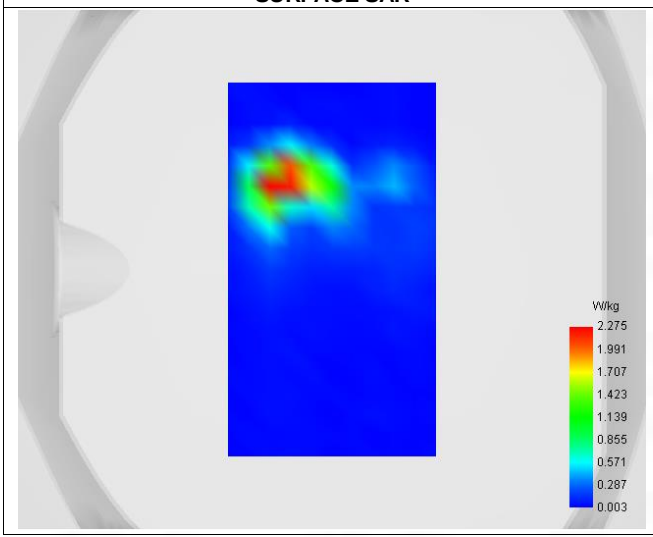
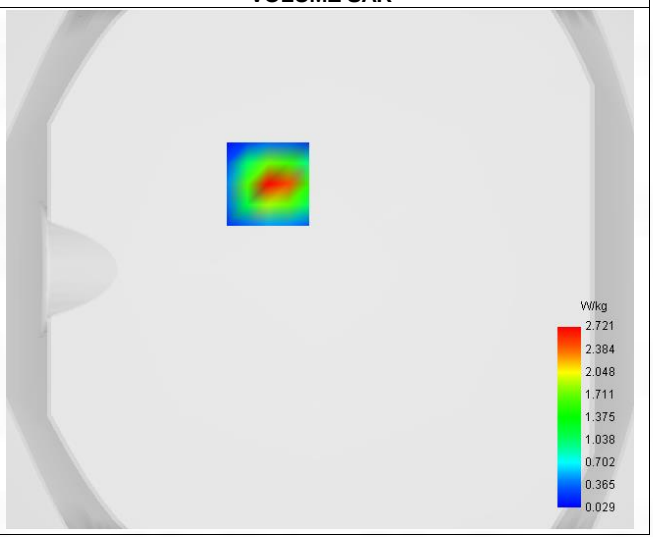
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	2.40
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	LTE band 38
Channels	Higher (38150)
Signal	LTE TDD
Cell Bandwidth	20 Mhz
Modulation	SC-OFDM - QPSK
RB offset	99
RB size	1
Subframe configuration	0
Special subframe configuration	0
Cyclic prefix	Normal
Duty Cycle (%)	0.61

B. Permitivity

Frequency (MHz)	2618.910
Relative permitivity (real part)	38.855
Relative permitivity (imaginary part)	12.715
Conductivity (S/m)	1.990

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=-20.00, Y=33.00 ; SAR Peak: 5.24 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	1.046
SAR 1g (W/Kg)	2.513
Variation (%)	-1.100
Horizontal validation criteria: minimum distance (mm)	0.000000

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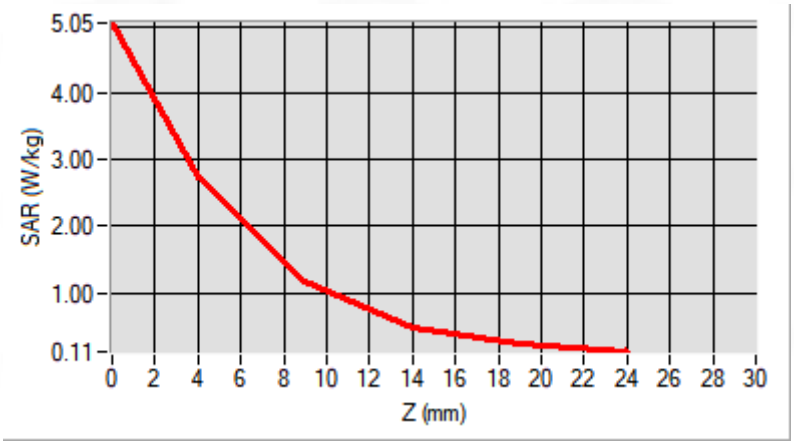
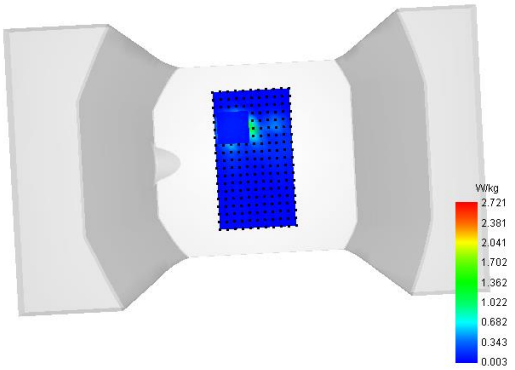
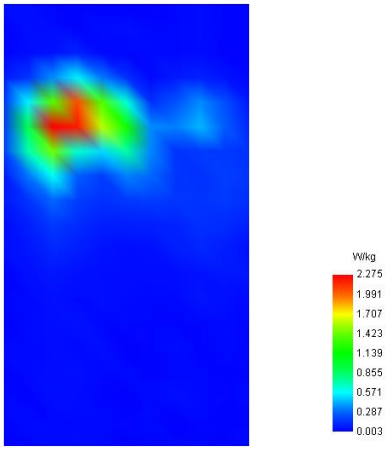
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	5.050	2.721	1.155	0.478	0.224



F. 3D Image

3D screen shot	Hot spot position
	

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34-Head with front position in dist. 0mm on Channel 38750 in LTE Band 40

SAR Measurement at LTE band 40 (Cheek, Right)

Date of measurement: 16/3/2023

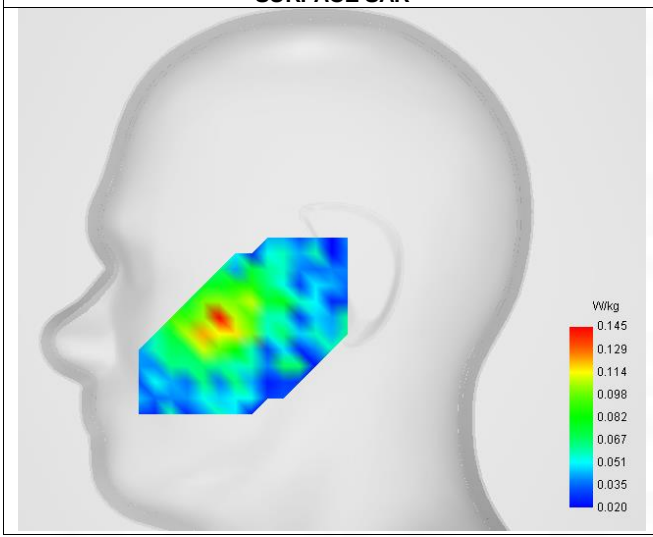
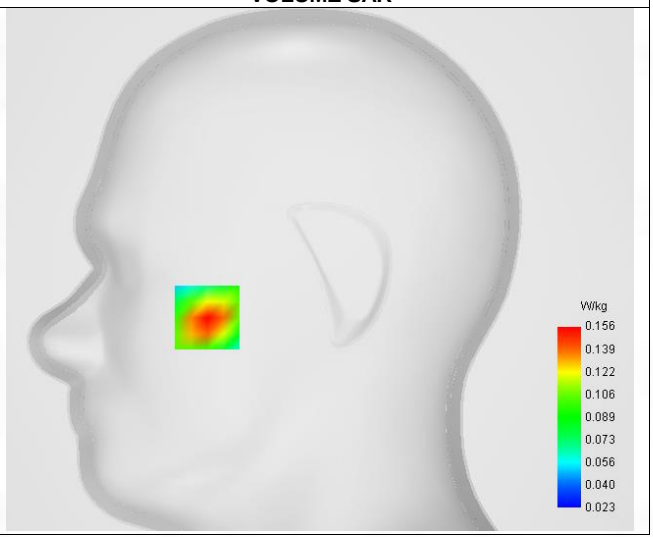
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	2.36
Area Scan	sam_direct_droit2_surf8mm.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Right head
Device Position	Cheek
Band	LTE band 40
Channels	Lower (38750)
Signal	LTE TDD
Cell Bandwidth	20 Mhz
Modulation	SC-OFDM - QPSK
RB offset	99
RB size	1
Subframe configuration	0
Special subframe configuration	0
Cyclic prefix	Normal
Duty Cycle (%)	0.61

B. Permitivity

Frequency (MHz)	2318.910
Relative permitivity (real part)	39.255
Relative permitivity (imaginary part)	13.908
Conductivity (S/m)	1.670

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=-56.00, Y=-24.00 ; SAR Peak: 0.24 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.092
SAR 1g (W/Kg)	0.147
Variation (%)	2.940
Horizontal validation criteria: minimum distance (mm)	0.000000

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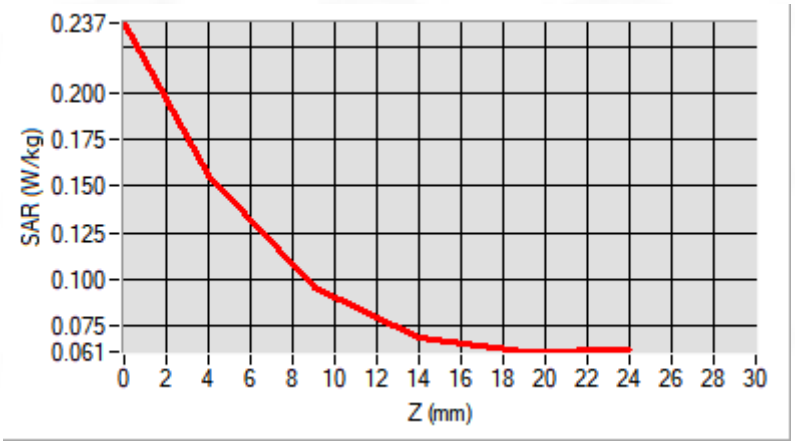
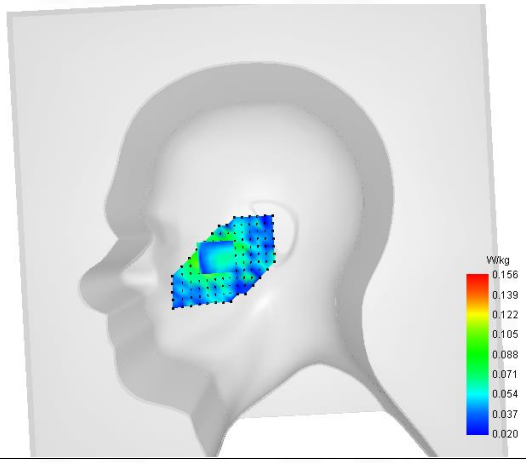
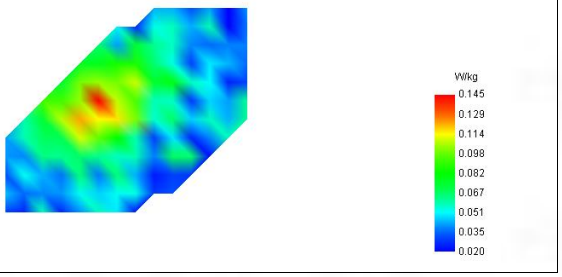
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.237	0.156	0.096	0.069	0.061



F. 3D Image

3D screen shot	Hot spot position
	

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35-Body with back position in dist. 5mm on Channel 38750 in LTE Band 40

SAR Measurement at LTE band 40 (Body, Validation Plane)

Date of measurement: 16/3/2023

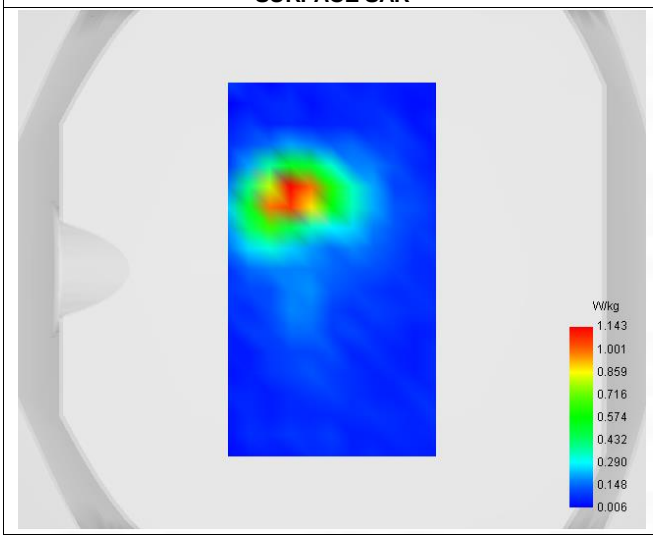
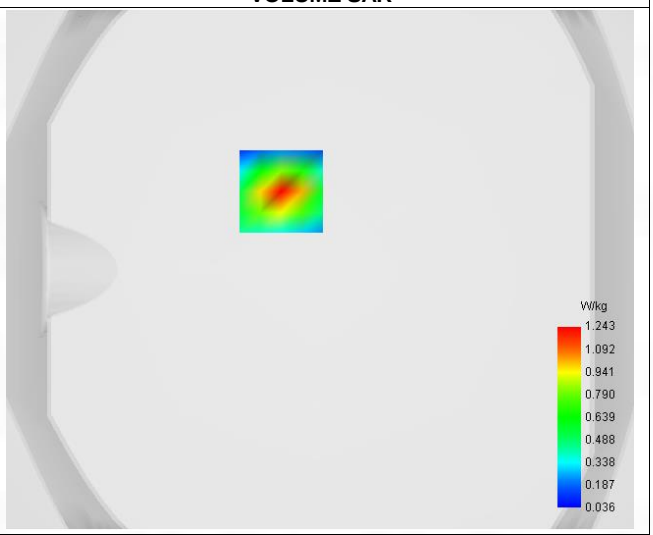
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	2.36
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	LTE band 40
Channels	Lower (38750)
Signal	LTE TDD
Cell Bandwidth	20 Mhz
Modulation	SC-OFDM - QPSK
RB offset	99
RB size	1
Subframe configuration	0
Special subframe configuration	0
Cyclic prefix	Normal
Duty Cycle (%)	0.61

B. Permitivity

Frequency (MHz)	2318.910
Relative permitivity (real part)	39.255
Relative permitivity (imaginary part)	13.908
Conductivity (S/m)	1.670

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=-15.00, Y=30.00 ; SAR Peak: 2.05 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.543
SAR 1g (W/Kg)	1.129
Variation (%)	-2.890
Horizontal validation criteria: minimum distance (mm)	0.000000

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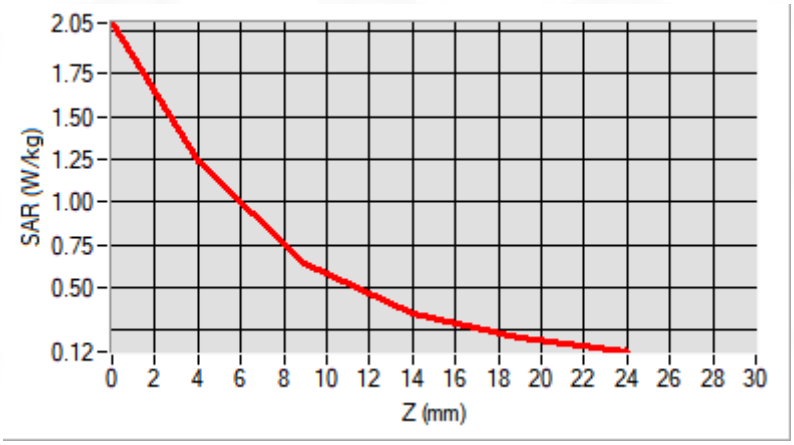
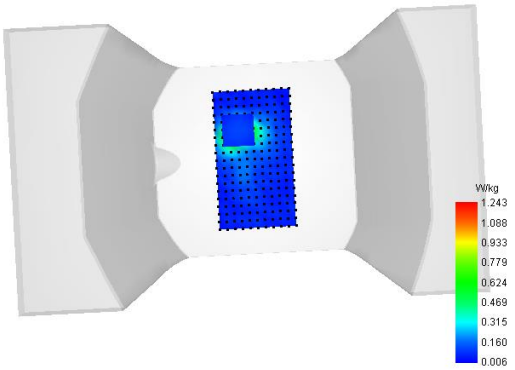
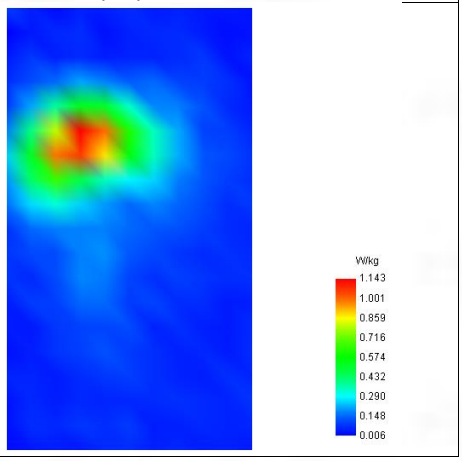
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	2.048	1.243	0.645	0.343	0.201



F. 3D Image

3D screen shot	Hot spot position
	

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36-Limb with Back position in dist. 0mm on Channel 38750 in LTE Band 40

SAR Measurement at LTE band 40 (Body, Validation Plane)

Date of measurement: 16/3/2023

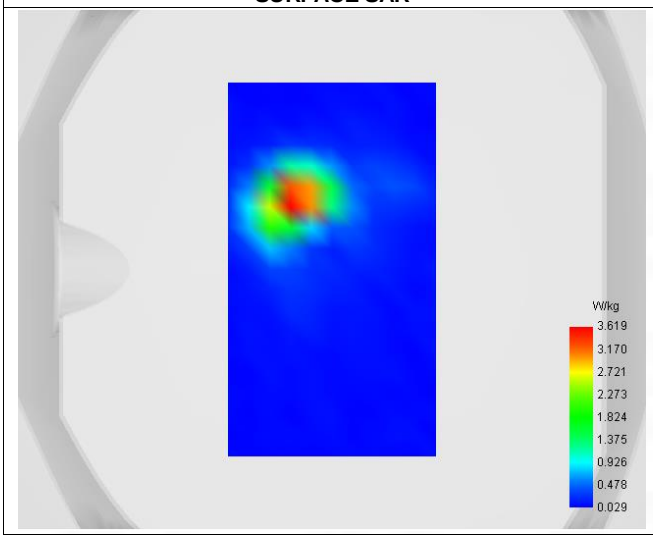
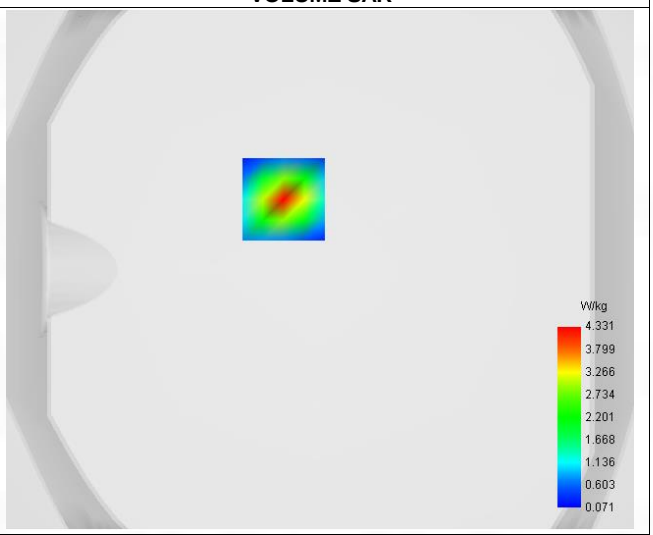
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	2.36
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	LTE band 40
Channels	Lower (38750)
Signal	LTE TDD
Cell Bandwidth	20 Mhz
Modulation	SC-OFDM - QPSK
RB offset	99
RB size	1
Subframe configuration	0
Special subframe configuration	0
Cyclic prefix	Normal
Duty Cycle (%)	0.61

B. Permitivity

Frequency (MHz)	2318.910
Relative permitivity (real part)	39.255
Relative permitivity (imaginary part)	13.908
Conductivity (S/m)	1.670

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=-14.00, Y=27.00 ; SAR Peak: 7.70 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	1.652
SAR 1g (W/Kg)	3.862
Variation (%)	2.700
Horizontal validation criteria: minimum distance (mm)	0.000000

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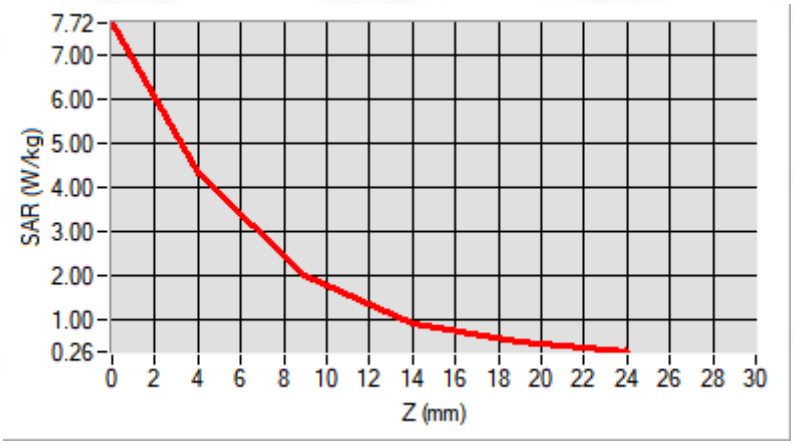
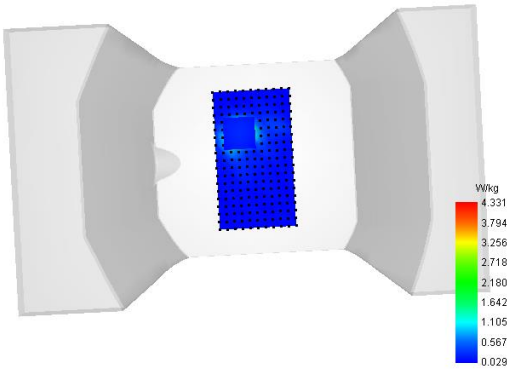
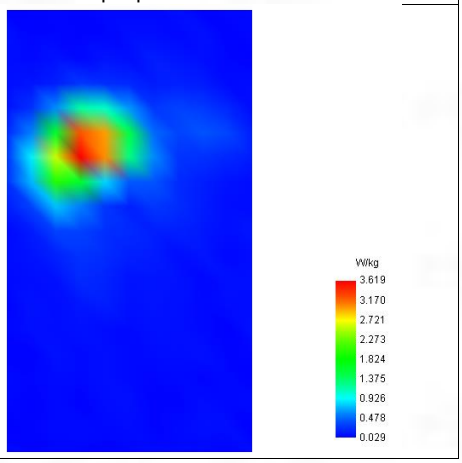
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	7.722	4.331	1.977	0.904	0.468



F. 3D Image

3D screen shot	Hot spot position
	

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37-Head with front position in dist. 0mm on Channel 7 in IEEE 802.11b ISM

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

Date of measurement: 16/3/2023

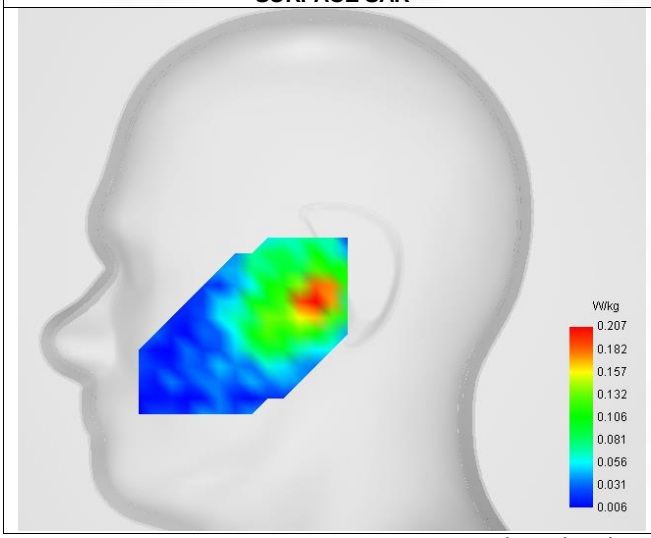
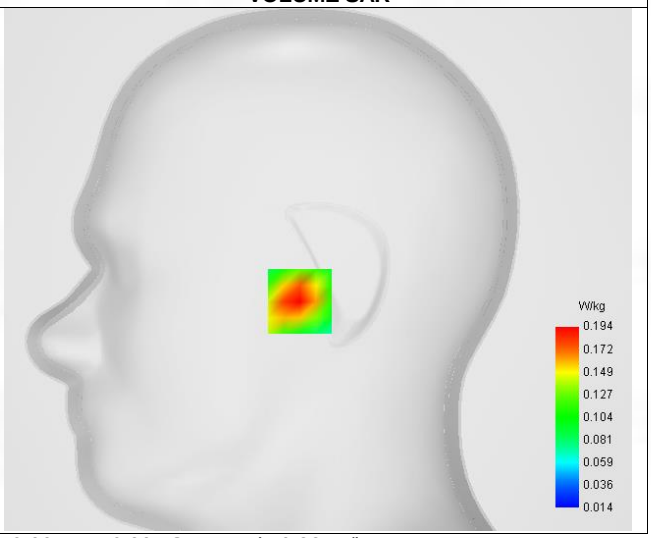
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	2.36
Area Scan	sam_direct_droit2_surf8mm.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Right head
Device Position	Cheek
Band	IEEE 802.11b ISM
Channels	Middle (7)
Signal	IEEE 802.11

B. Permitivity

Frequency (MHz)	2442.000
Relative permitivity (real part)	39.091
Relative permitivity (imaginary part)	13.375
Conductivity (S/m)	1.801

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=-9.00, Y=-16.00 ; SAR Peak: 0.28 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.108
SAR 1g (W/Kg)	0.183
Variation (%)	-4.170
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.279	0.194	0.122	0.077	0.049

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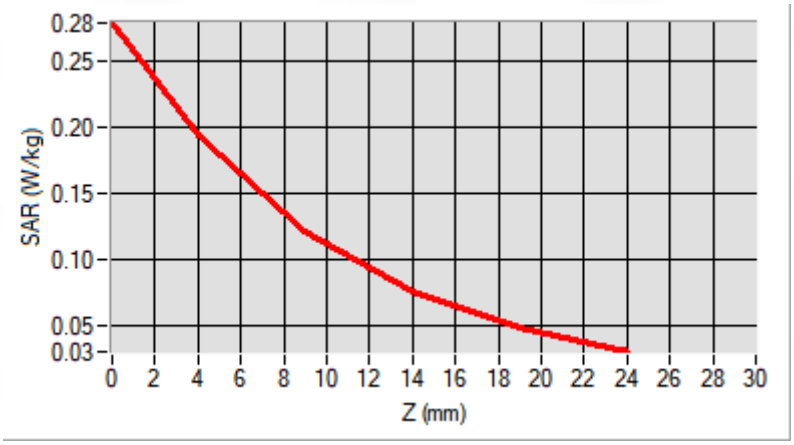
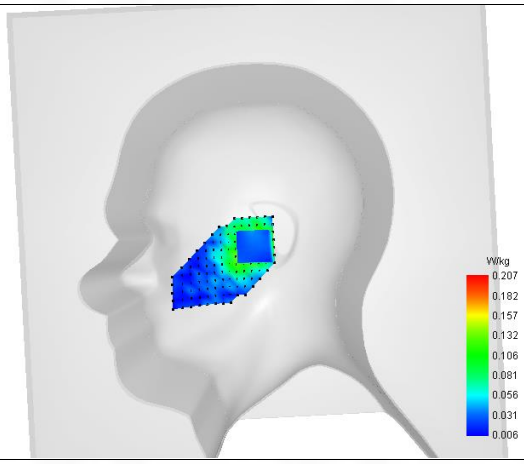
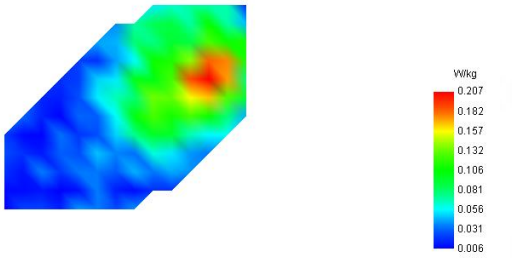


F. 3D Image

3D screen shot	Hot spot position
	

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38-Body with back position in dist. 5mm on Channel 7 in IEEE 802.11b ISM

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

Date of measurement: 16/3/2023

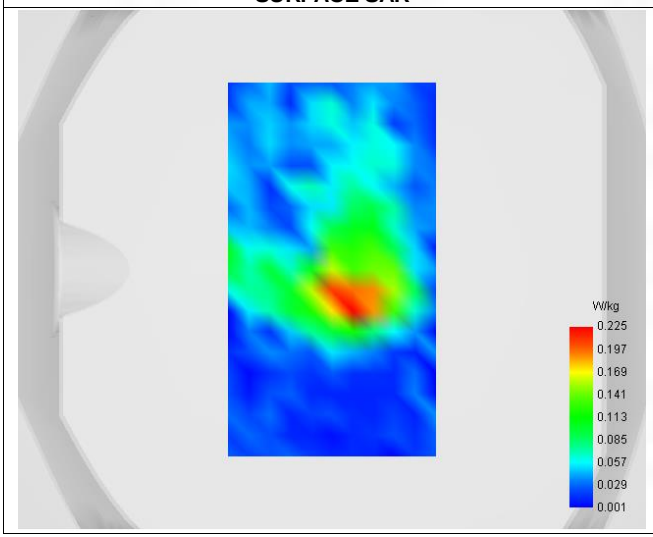
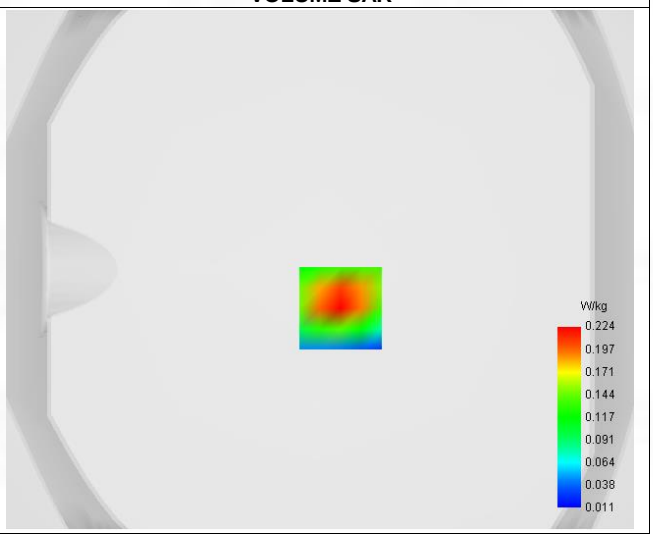
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	2.36
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	IEEE 802.11b ISM
Channels	Middle (7)
Signal	IEEE 802.11

B. Permitivity

Frequency (MHz)	2442.000
Relative permitivity (real part)	39.091
Relative permitivity (imaginary part)	13.375
Conductivity (S/m)	1.801

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=8.00, Y=-15.00 ; SAR Peak: 0.39 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.107
SAR 1g (W/Kg)	0.213
Variation (%)	-1.210
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.377	0.224	0.110	0.053	0.026

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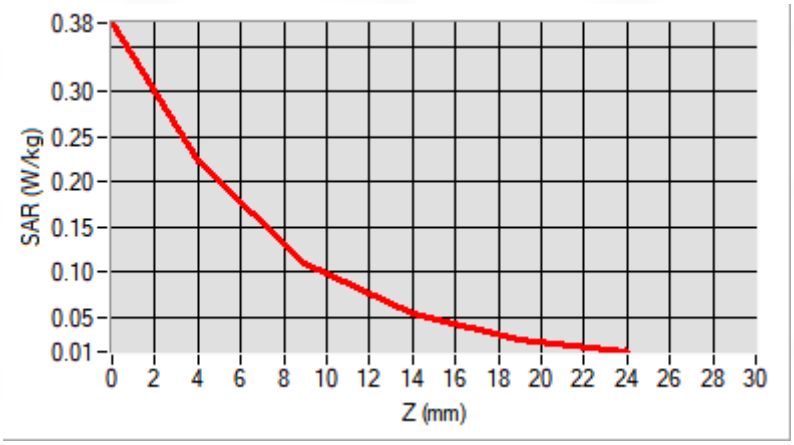
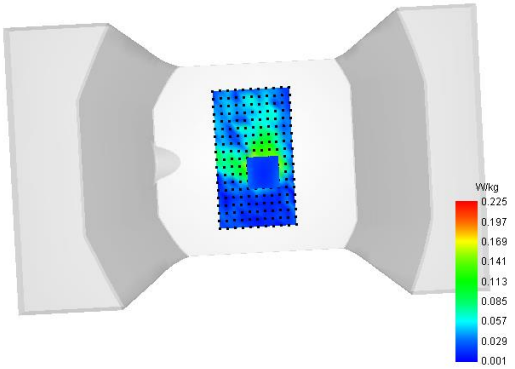
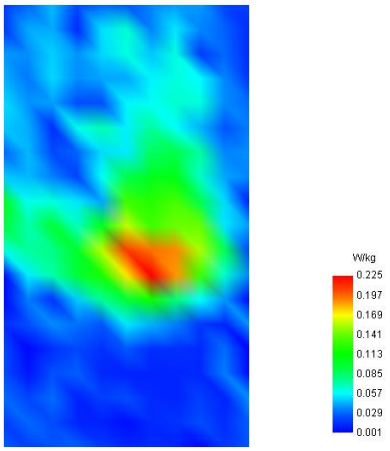


F. 3D Image

3D screen shot	Hot spot position
	

39-Limb with Back position in dist. 0mm on Channel 7 in IEEE 802.11b ISM

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

Date of measurement: 16/3/2023

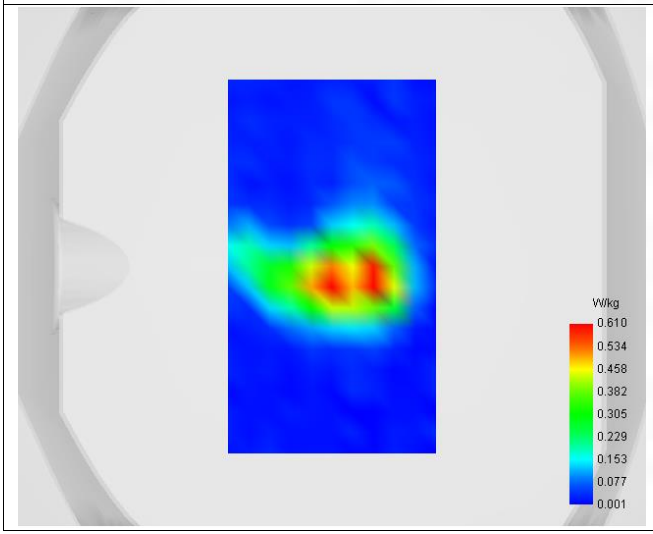
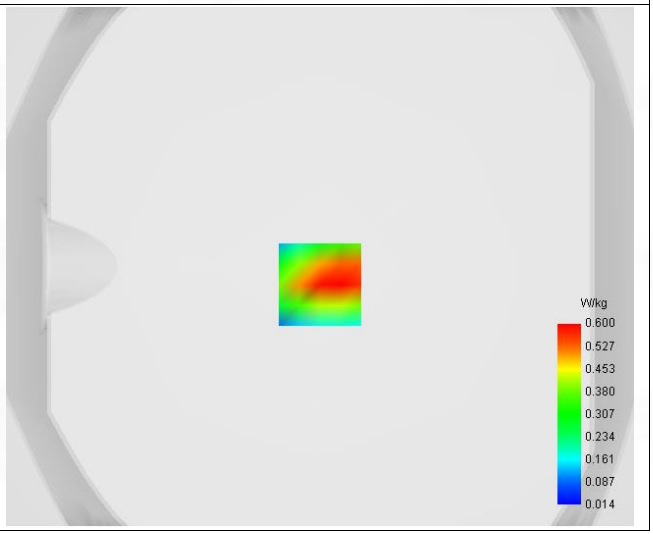
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	2.36
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	IEEE 802.11b ISM
Channels	Middle (7)
Signal	IEEE 802.11

B. Permitivity

Frequency (MHz)	2442.000
Relative permitivity (real part)	39.091
Relative permitivity (imaginary part)	13.375
Conductivity (S/m)	1.801

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=0.00, Y=-7.00 ; SAR Peak: 1.09 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.291
SAR 1g (W/Kg)	0.572
Variation (%)	1.270
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.297	0.600	0.243	0.130	0.072

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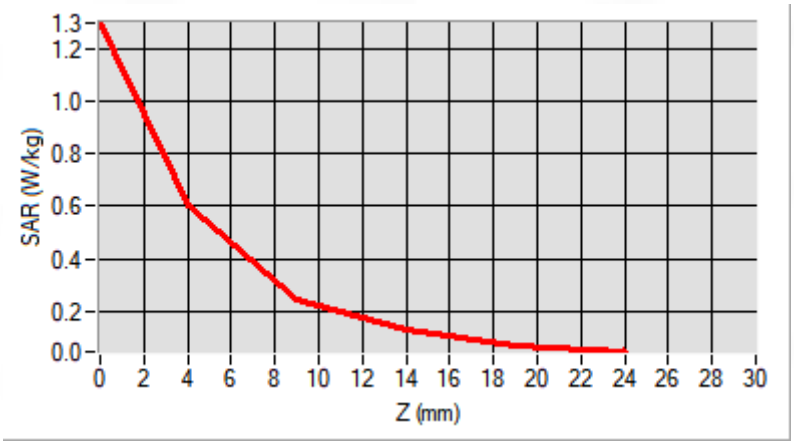
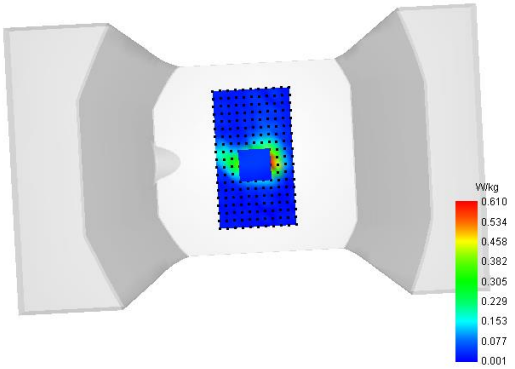
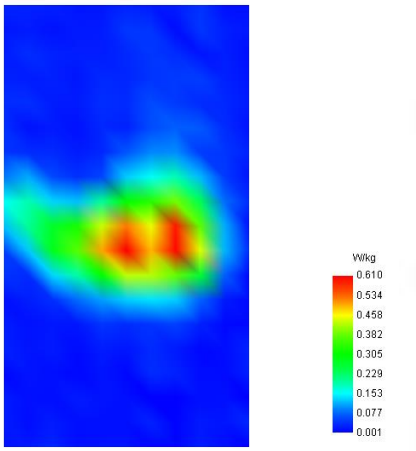


F. 3D Image

3D screen shot	Hot spot position
	

40-Head with front position in dist. 0mm on Channel 42 in IEEE 802.11ac U-NII

SAR Measurement at IEEE 802.11ac U-NII (Cheek, Right)

Date of measurement: 16/3/2023

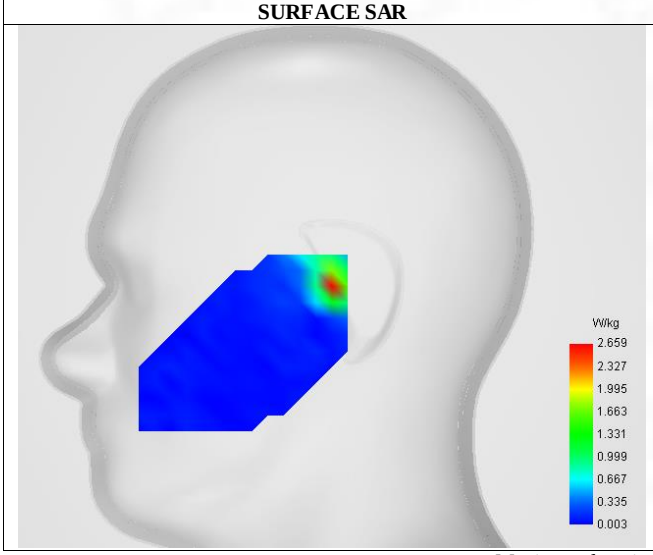
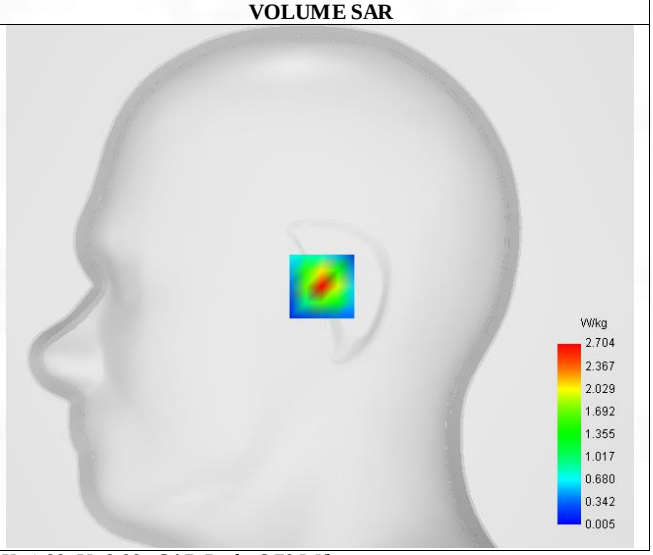
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	2.24
Area Scan	sam_direct_droit2_surf8mm.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Right head
Device Position	Cheek
Band	IEEE 802.11ac U-NII
Channels	Middle (42)
Signal	IEEE 802.11

B. Permitivity

Frequency (MHz)	5210.000
Relative permitivity (real part)	35.870
Relative permitivity (imaginary part)	16.260
Conductivity (S/m)	4.710

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=1.00, Y=0.00 ; SAR Peak: 6.70 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.908
SAR 1g (W/Kg)	2.558
Variation (%)	-2.210
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	2.00	7.00	12.00	17.00
SAR (W/Kg)	4.367	2.704	0.621	0.103	0.034

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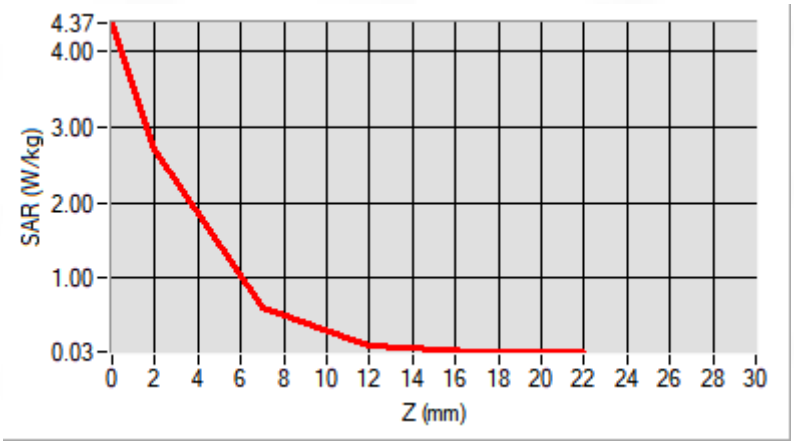
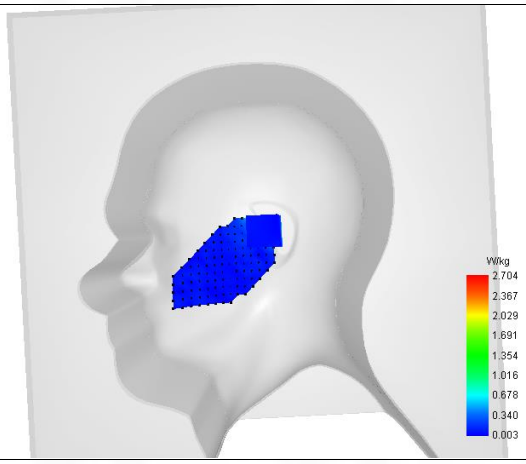
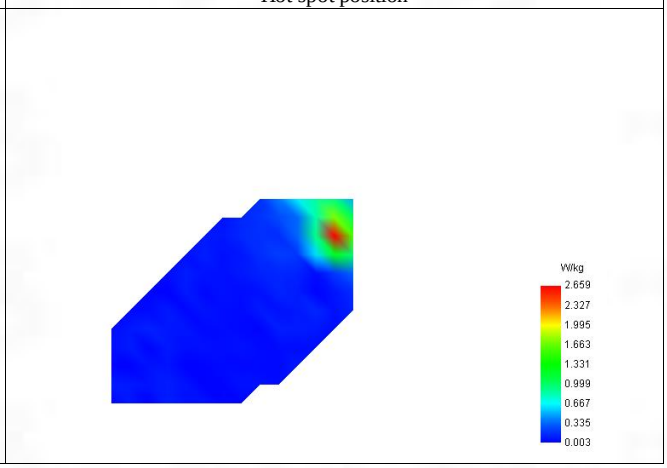


F. 3D Image

3D screen shot	Hot spot position
	

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41-Body with front position in dist. 5mm on Channel 42 in IEEE 802.11ac U-NII

SAR Measurement at IEEE 802.11ac U-NII (Body, Validation Plane)

Date of measurement: 16/3/2023

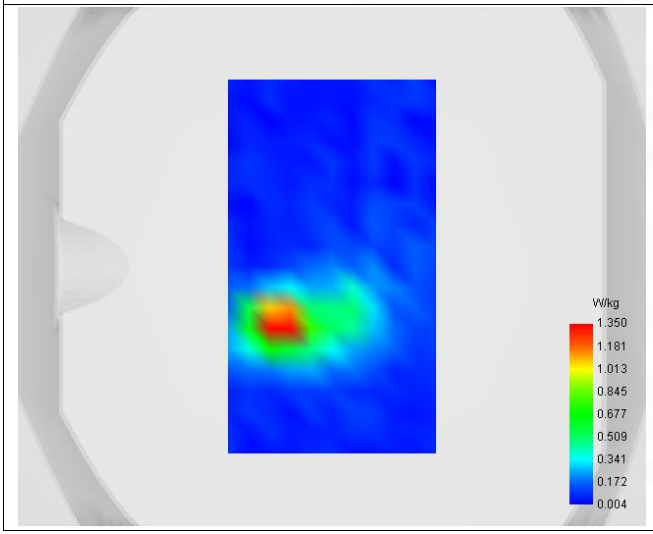
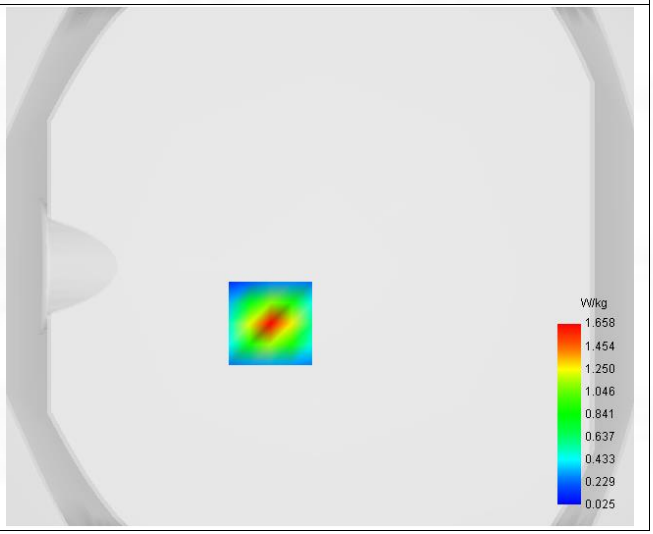
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	2.24
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	IEEE 802.11ac U-NII
Channels	Middle (42)
Signal	IEEE 802.11

B. Permitivity

Frequency (MHz)	5210.000
Relative permitivity (real part)	35.870
Relative permitivity (imaginary part)	16.260
Conductivity (S/m)	4.710

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=-19.00, Y=-22.00 ; SAR Peak: 2.69 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.375
SAR 1g (W/Kg)	0.967
Variation (%)	3.730
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	2.00	7.00	12.00	17.00
SAR (W/Kg)	2.617	1.658	0.424	0.089	0.035

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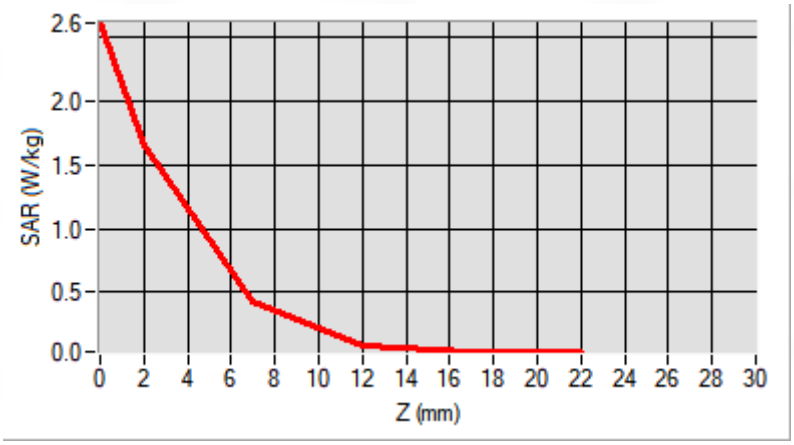
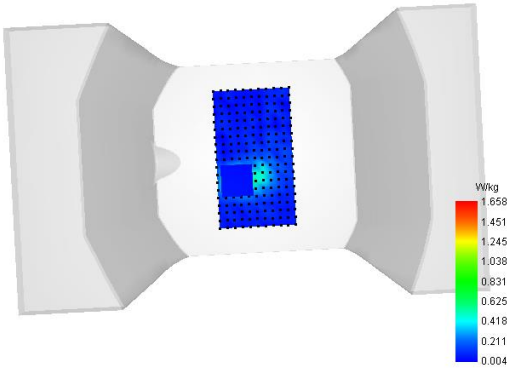
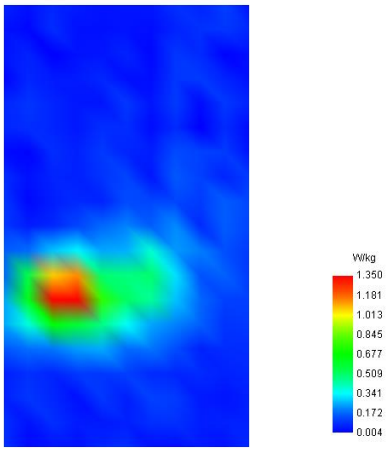


F. 3D Image

3D screen shot	Hot spot position
	

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42-Limb with Back position in dist. 0mm on Channel 42 in IEEE 802.11ac U-NII

SAR Measurement at IEEE 802.11ac U-NII (Body, Validation Plane)

Date of measurement: 16/3/2023

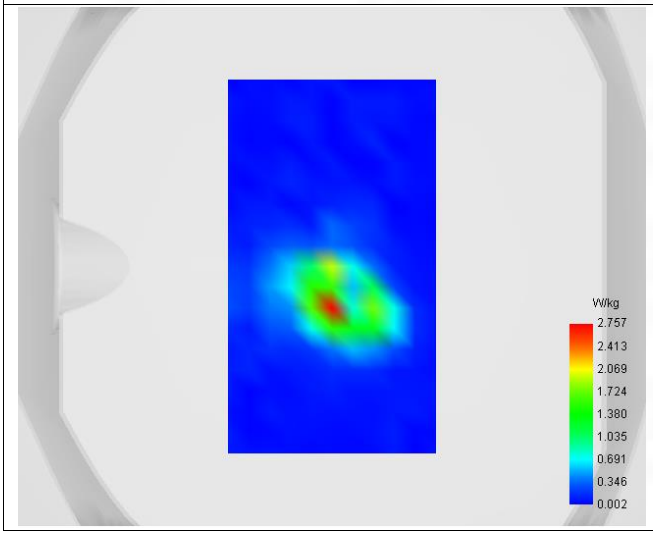
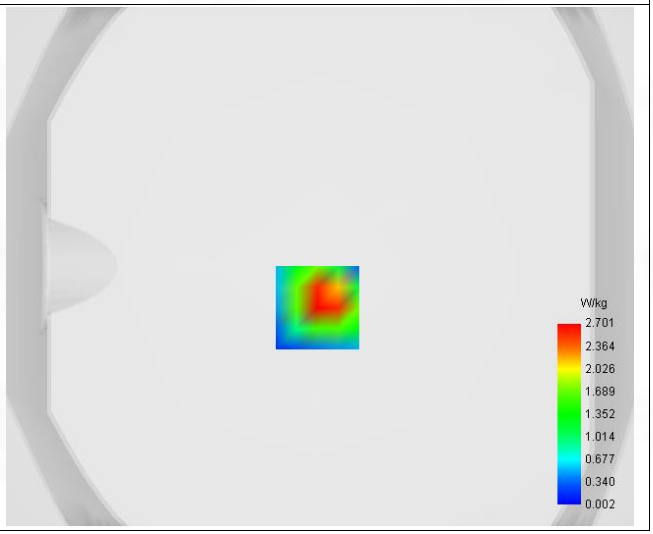
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	2.24
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	IEEE 802.11ac U-NII
Channels	Middle (42)
Signal	IEEE 802.11

B. Permitivity

Frequency (MHz)	5210.000
Relative permitivity (real part)	35.870
Relative permitivity (imaginary part)	16.260
Conductivity (S/m)	4.710

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=-1.00, Y=-16.00 ; SAR Peak: 4.94 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.650
SAR 1g (W/Kg)	1.672
Variation (%)	0.610
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	2.00	7.00	12.00	17.00
SAR (W/Kg)	4.457	2.701	0.552	0.062	0.010

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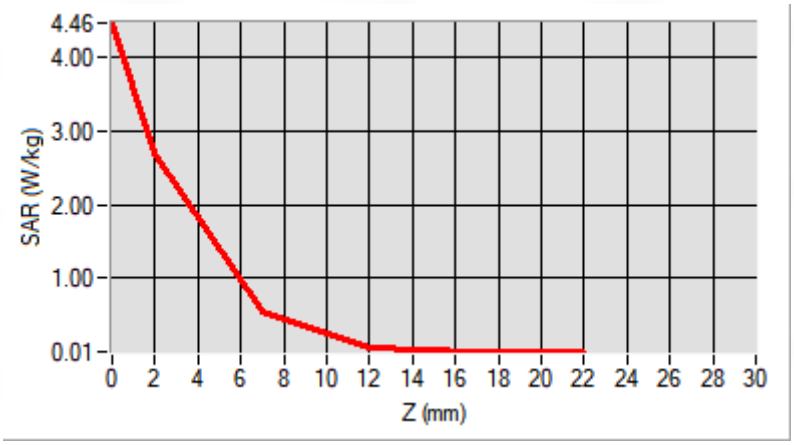
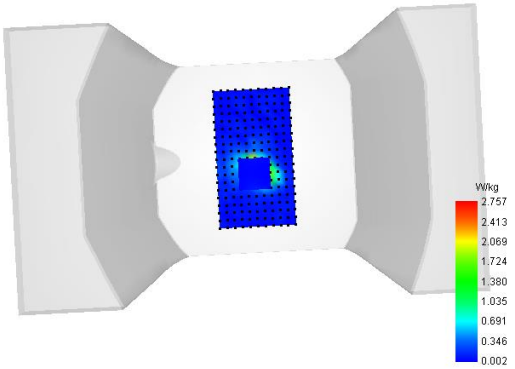
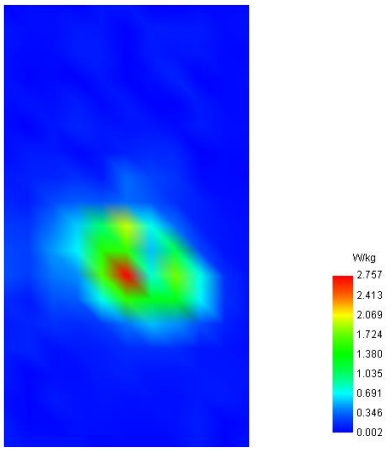


F. 3D Image

3D screen shot	Hot spot position
	

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43-Head with front position in dist. 0mm on Channel 159 in IEEE 802.11n U-NII

SAR Measurement at IEEE 802.11n U-NII (Cheek, Right)

Date of measurement: 16/3/2023

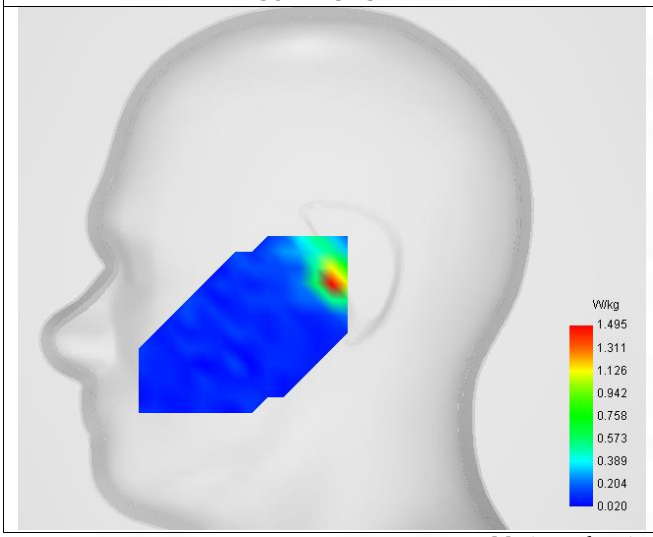
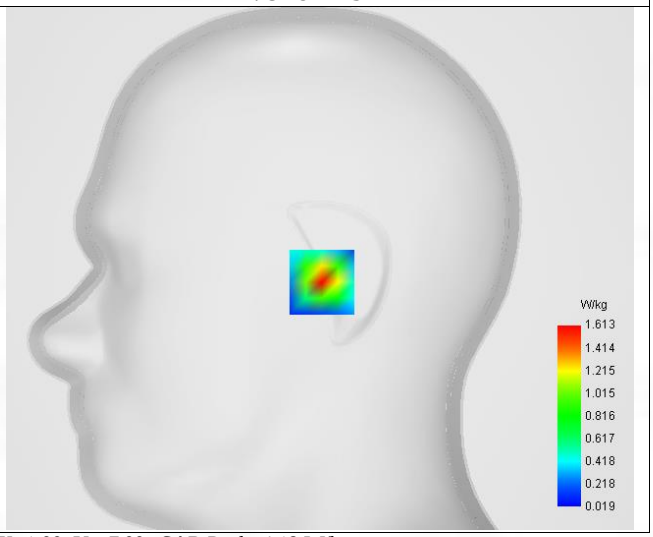
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	2.04
Area Scan	sam_direct_droit2_surf8mm.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Right head
Device Position	Cheek
Band	IEEE 802.11n U-NII
Channels	Higher (159)
Signal	IEEE 802.11

B. Permitivity

Frequency (MHz)	5795.000
Relative permitivity (real part)	35.185
Relative permitivity (imaginary part)	16.615
Conductivity (S/m)	5.305

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=1.00, Y=-7.00 ; SAR Peak: 4.19 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.583
SAR 1g (W/Kg)	1.562
Variation (%)	-5.650
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	2.00	7.00	12.00	17.00
SAR (W/Kg)	2.663	1.613	0.347	0.071	0.062

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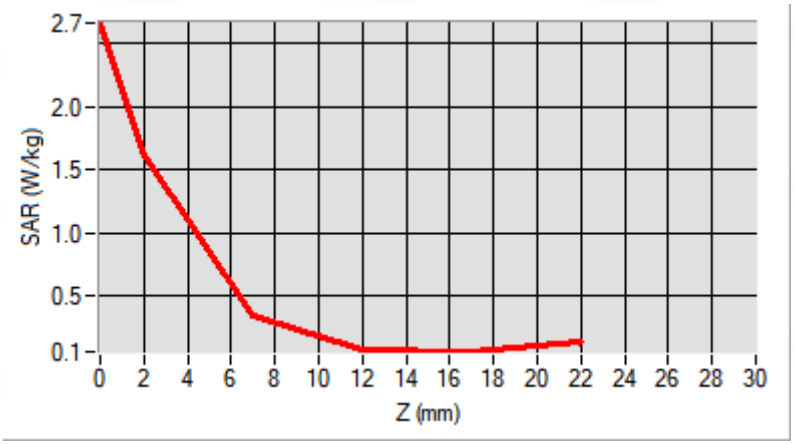
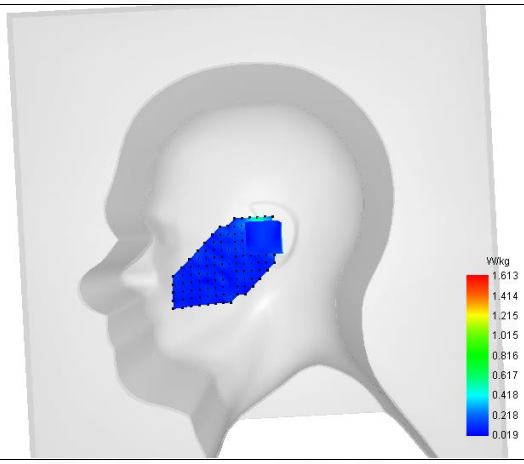
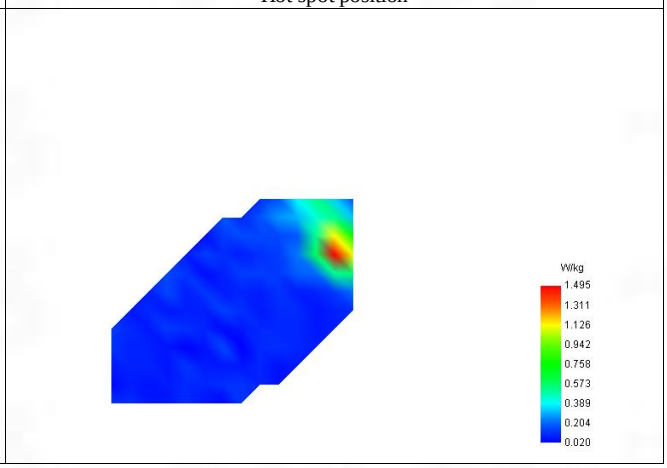


F. 3D Image

3D screen shot	Hot spot position
	

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44-Body with front position in dist. 5mm on Channel 159 in IEEE 802.11n U-NII

SAR Measurement at IEEE 802.11n U-NII (Body, Validation Plane)

Date of measurement: 16/3/2023

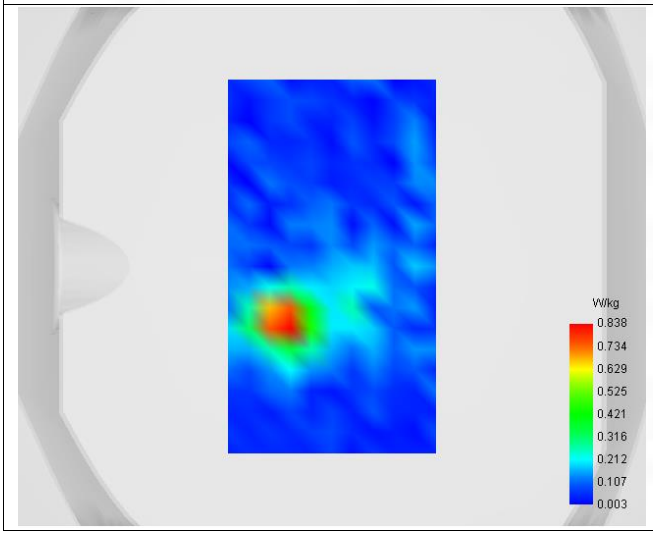
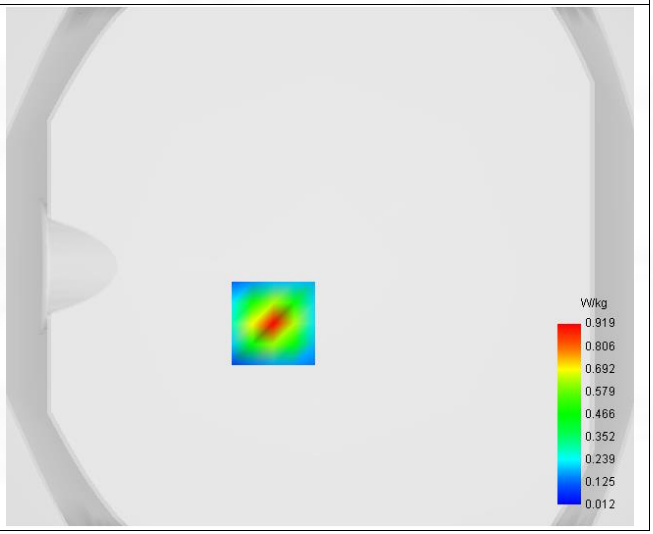
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	2.04
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	IEEE 802.11n U-NII
Channels	Higher (159)
Signal	IEEE 802.11

B. Permitivity

Frequency (MHz)	5795.000
Relative permitivity (real part)	35.185
Relative permitivity (imaginary part)	16.615
Conductivity (S/m)	5.305

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=-18.00, Y=-22.00 ; SAR Peak: 1.49 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.227
SAR 1g (W/Kg)	0.543
Variation (%)	2.690
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	2.00	7.00	12.00	17.00
SAR (W/Kg)	1.447	0.919	0.243	0.061	0.037

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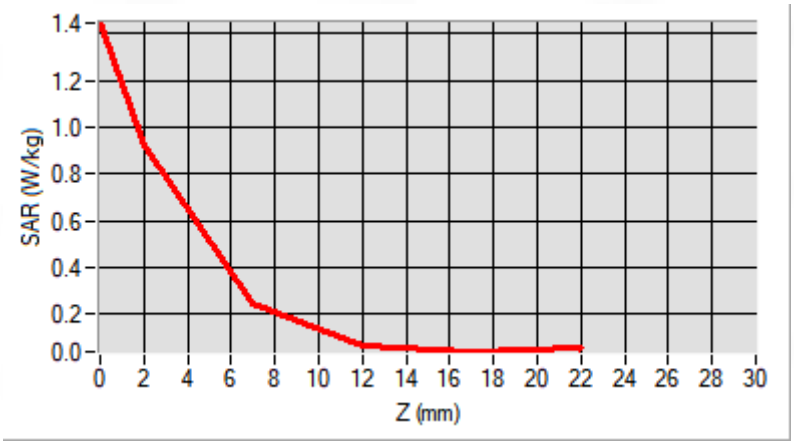
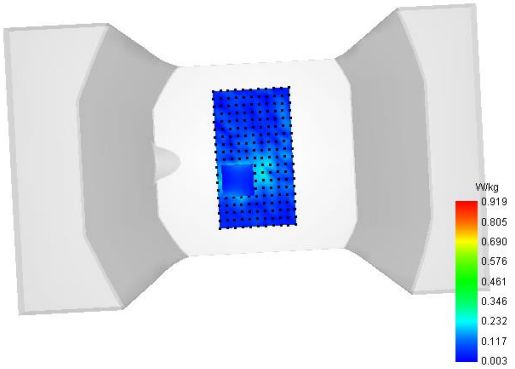
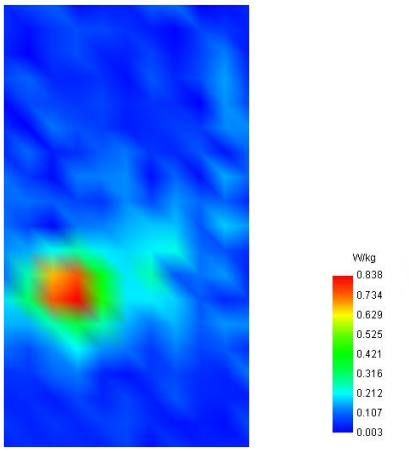


F. 3D Image

3D screen shot	Hot spot position
	

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45-Limb with back position in dist. 0mm on Channel 159 in IEEE 802.11n U-NII

SAR Measurement at IEEE 802.11n U-NII (Body, Validation Plane)

Date of measurement: 16/3/2023

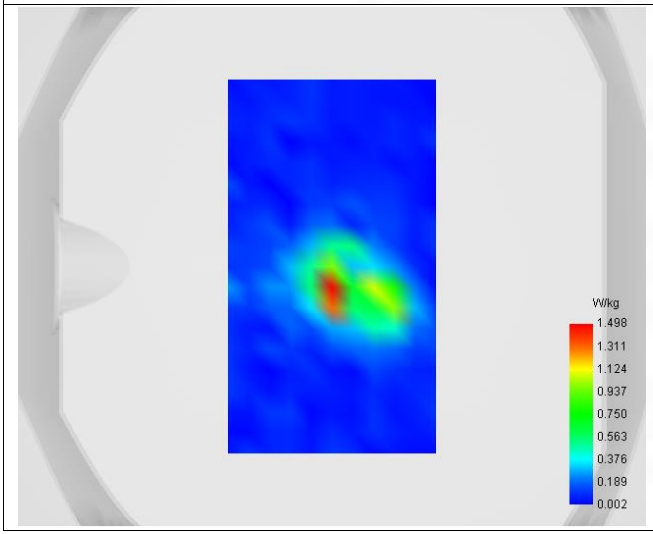
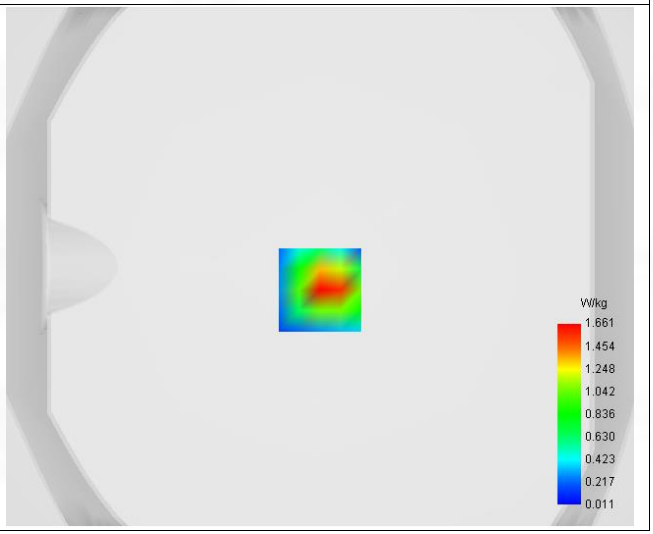
A. Experimental conditions.

Probe	SN 04/22 EPGO365
ConvF	2.04
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body
Band	IEEE 802.11n U-NII
Channels	Higher (159)
Signal	IEEE 802.11

B. Permitivity

Frequency (MHz)	5795.000
Relative permitivity (real part)	35.185
Relative permitivity (imaginary part)	16.615
Conductivity (S/m)	5.305

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=0.00, Y=-9.00 ; SAR Peak: 2.95 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.391
SAR 1g (W/Kg)	0.997
Variation (%)	2.950
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	2.00	7.00	12.00	17.00
SAR (W/Kg)	2.730	1.661	0.356	0.058	0.030

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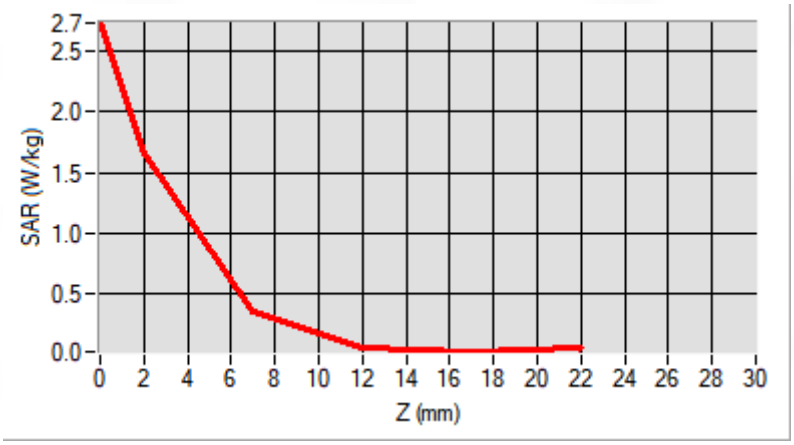
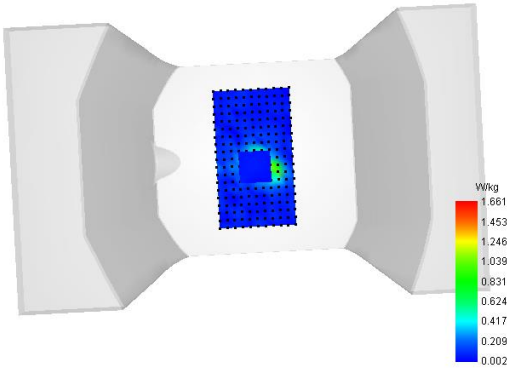
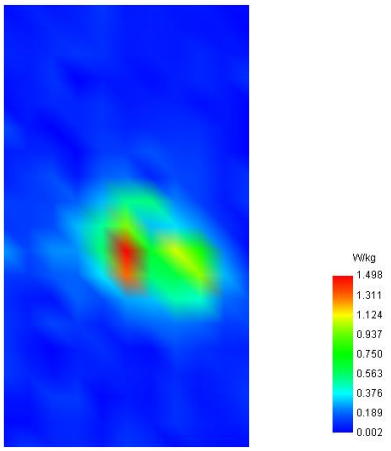


F. 3D Image

3D screen shot	Hot spot position
	

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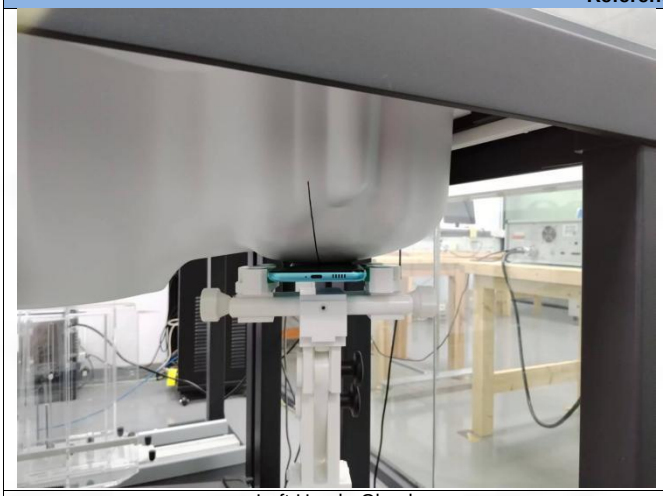
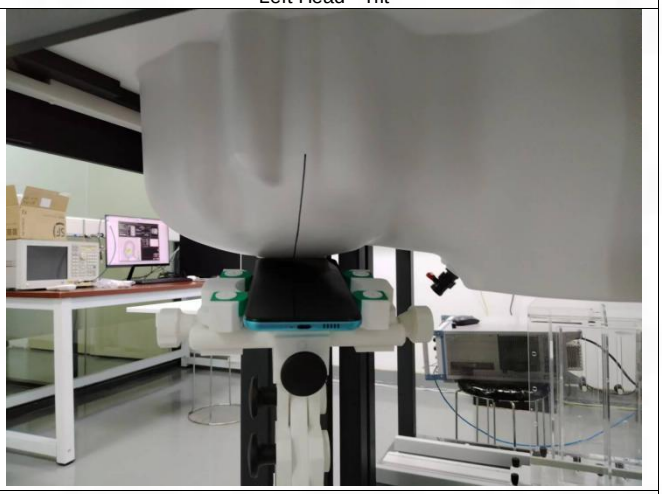
ANNEX D SAR Test Setup Photos

Reference Photo: simulation liquid depth 15cm


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

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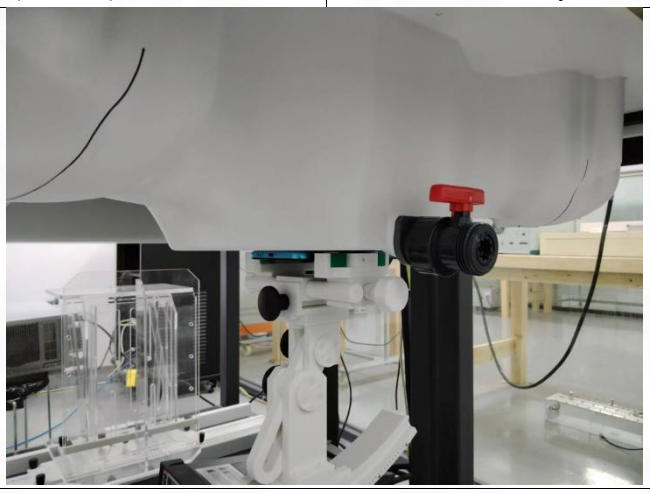
Body-worn Front（dist. 5mm）

Body-worn Back（dist. 5mm）



Limb Back（dist. 0mm）

ANNEX E EUT External and Internal Photos

Please refer to RF Report.

ANNEX F Calibration Report

Please refer the document “Calibration Report.pdf”.

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