SAR Measurement at LTE band 26 (Cheek, Left)

Date of measurement: 09/01/2023

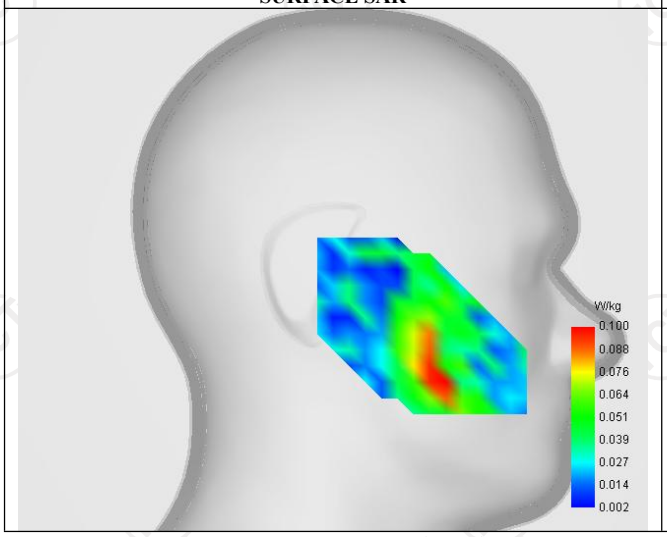
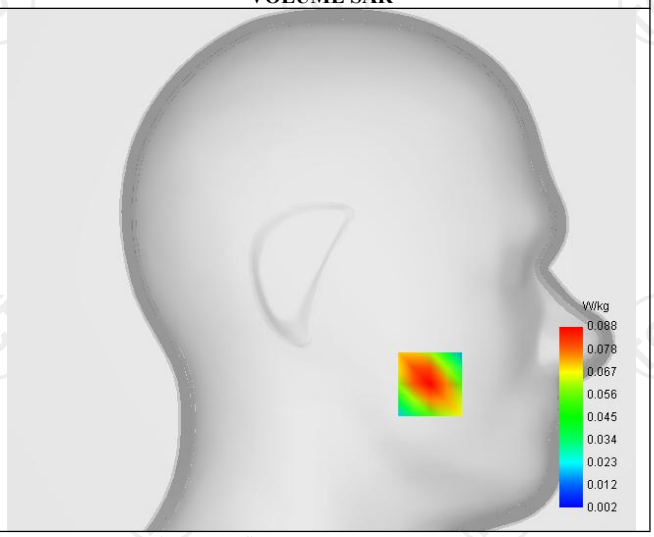
A. Experimental conditions.

Probe	SSE2 (SN 36/20 EPGO346)
ConvF	1.86
Area Scan	sam_direct_droit2_surf8mm.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Left head
Device Position	Cheek
Band	LTE band 26
Channels	Lower (26765)
Signal	LTE FDD
Cell Bandwidth	15 Mhz
Modulation	SC-OFDM - QPSK
RB offset	74
RB size	1

B. Permitivity

Frequency (MHz)	821.500
Relative permitivity (real part)	55.262
Relative permitivity (imaginary part)	21.378
Conductivity (S/m)	0.934

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

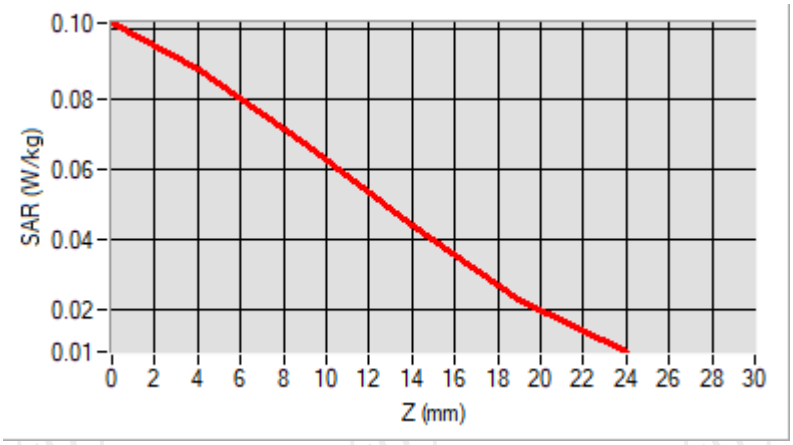
Maximum location: X=-54.00, Y=-57.00 ; SAR Peak: 0.12 W/kg

D. SAR 1g & 10g

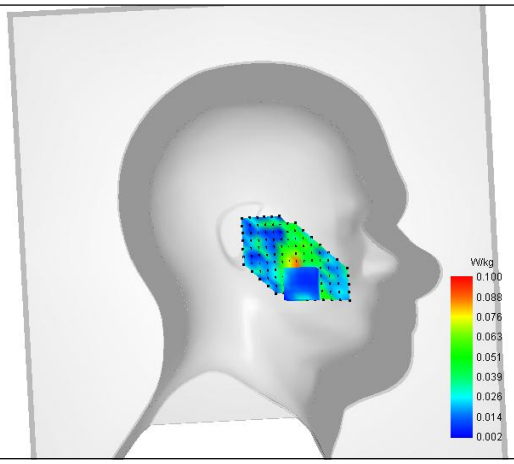
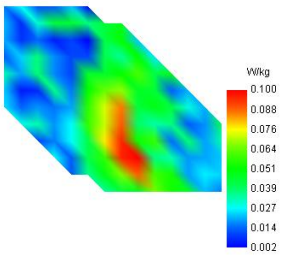
SAR 10g (W/Kg)	0.074
SAR 1g (W/Kg)	0.100
Variation (%)	1.580
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.102	0.088	0.067	0.044	0.023



F. 3D Image

3D screen shot	Hot spot position
	

SAR Measurement at LTE band 26 (Body, Validation Plane)

Date of measurement: 09/01/2023

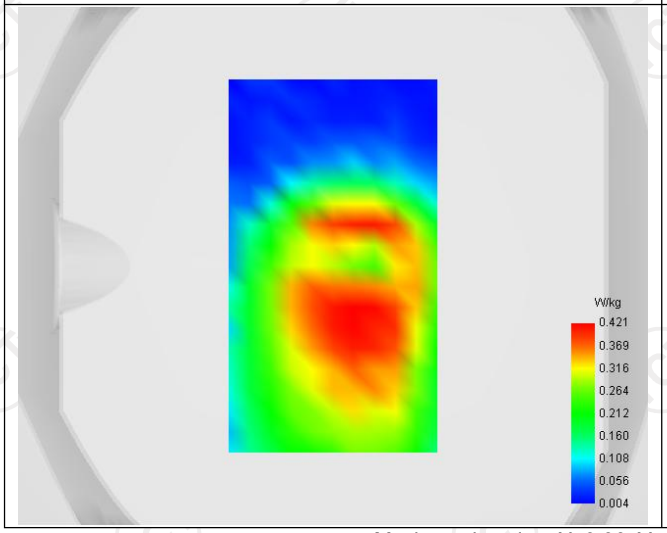
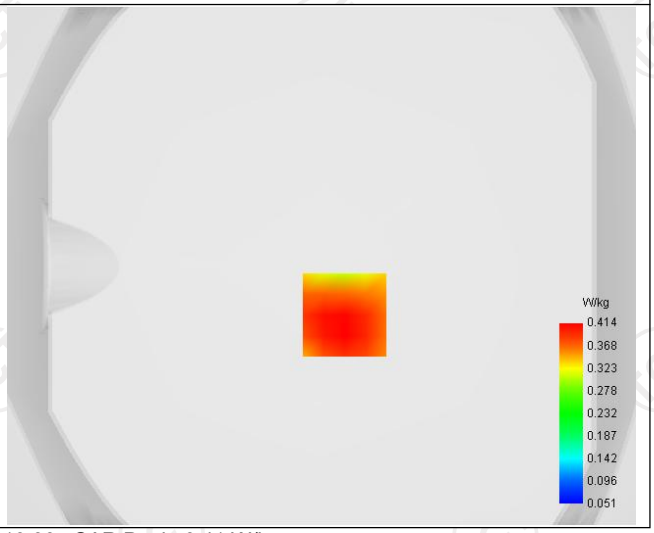
A. Experimental conditions.

Probe	SSE2 (SN 36/20 EPGO346)
ConvF	1.86
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 26
Channels	Lower (26765)
Signal	LTE FDD
Cell Bandwidth	15 Mhz
Modulation	SC-OFDM - QPSK
RB offset	74
RB size	1

B. Permitivity

Frequency (MHz)	821.500
Relative permitivity (real part)	55.262
Relative permitivity (imaginary part)	21.378
Conductivity (S/m)	0.934

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=9.00, Y=-19.00 ; SAR Peak: 0.41 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.160
SAR 1g (W/Kg)	0.288
Variation (%)	-2.450
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)	1.013	0.414	0.268	0.247	0.141

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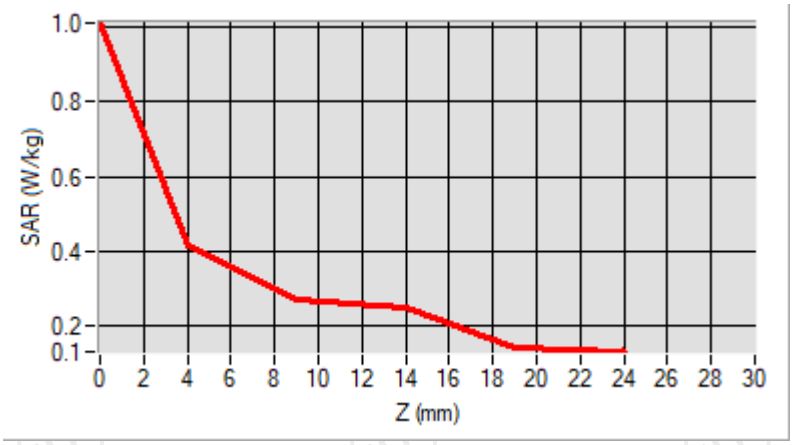
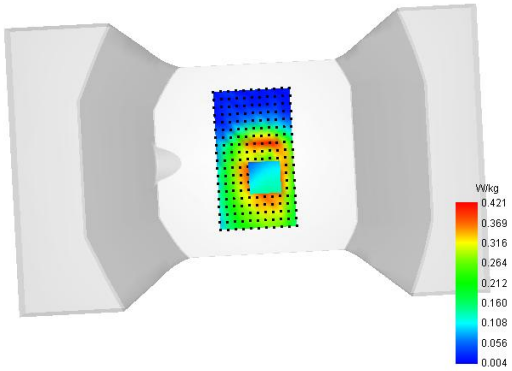
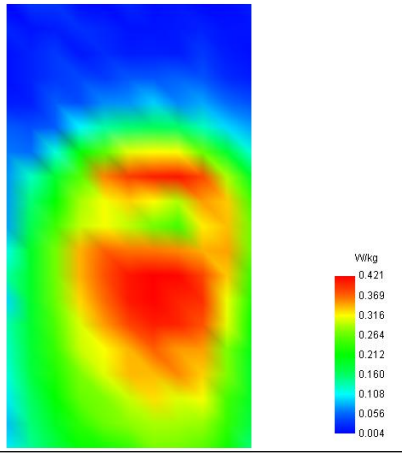


F. 3D Image

3D screen shot	Hot spot position
	

SAR Measurement at LTE band 38 (Cheek, Left)

Date of measurement: 11/01/2023

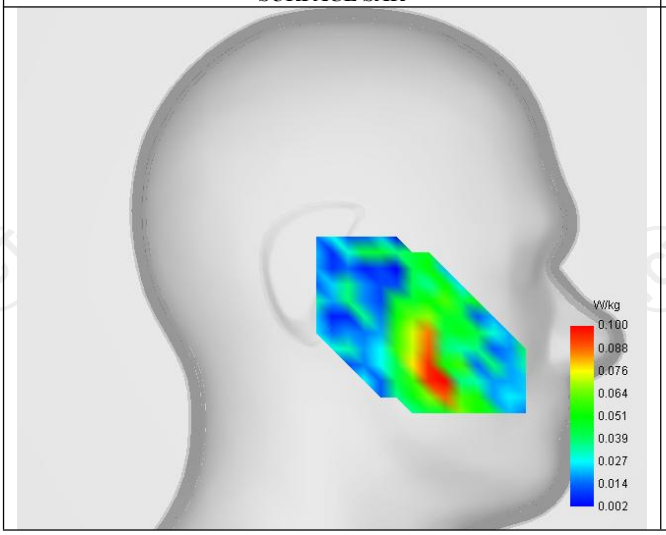
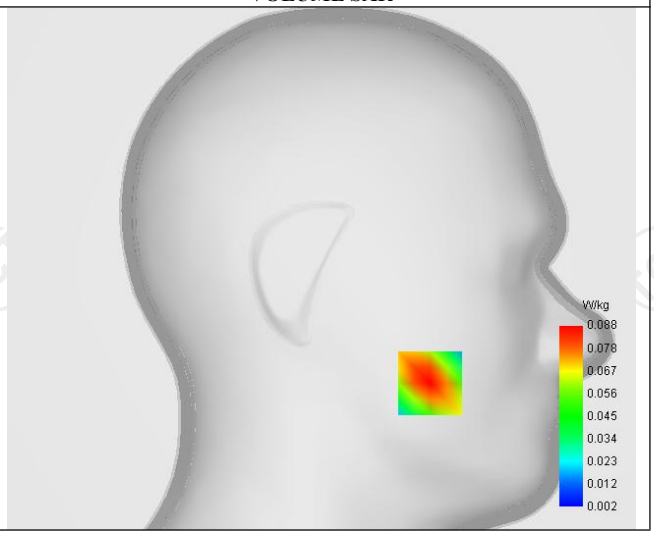
A. Experimental conditions.

Probe	SSE2 (SN 36/20 EPGO346)
ConvF	2.23
Area Scan	sam_direct_droit2_surf8mm.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Left head
Device Position	Cheek
Band	LTE band 38
Channels	Higher (38150)
Signal	LTE TDD
Cell Bandwidth	20 Mhz
Modulation	SC-OFDM - QPSK
RB offset	50
RB size	1
Subframe configuration	0
Special subframe configuration	0
Cyclic prefix	Normal
Duty Cycle (%)	0.61

B. Permitivity

Frequency (MHz)	2586.090
Relative permitivity (real part)	51.841
Relative permitivity (imaginary part)	14.935
Conductivity (S/m)	2.123

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

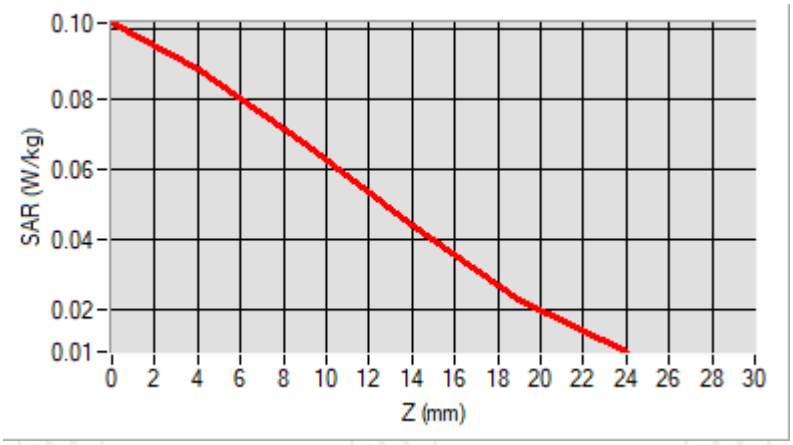
Maximum location: X=-54.00, Y=-57.00 ; SAR Peak: 0.12 W/kg

D. SAR 1g & 10g

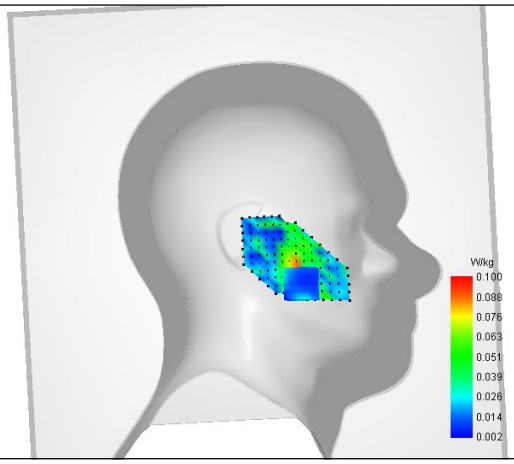
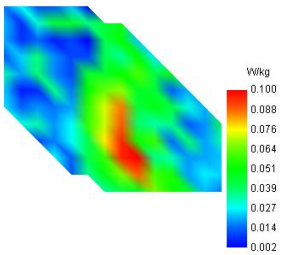
SAR 10g (W/Kg)	0.054
SAR 1g (W/Kg)	0.085
Variation (%)	1.580
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.102	0.088	0.067	0.044	0.023



F. 3D Image

3D screen shot	Hot spot position
	

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

Date of measurement: 11/01/2023

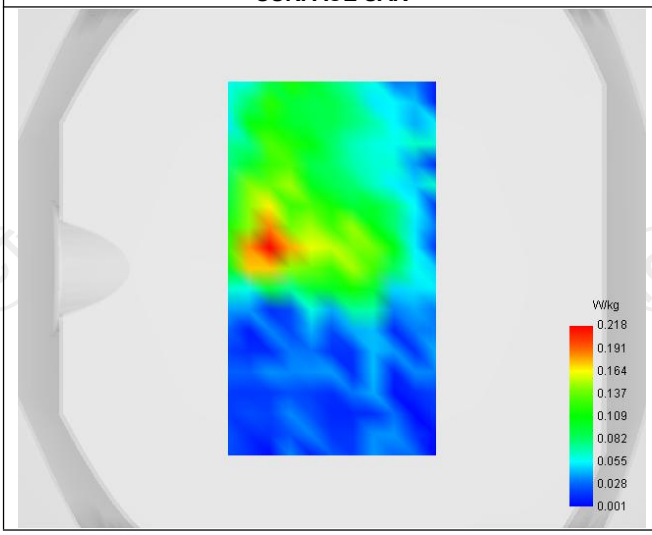
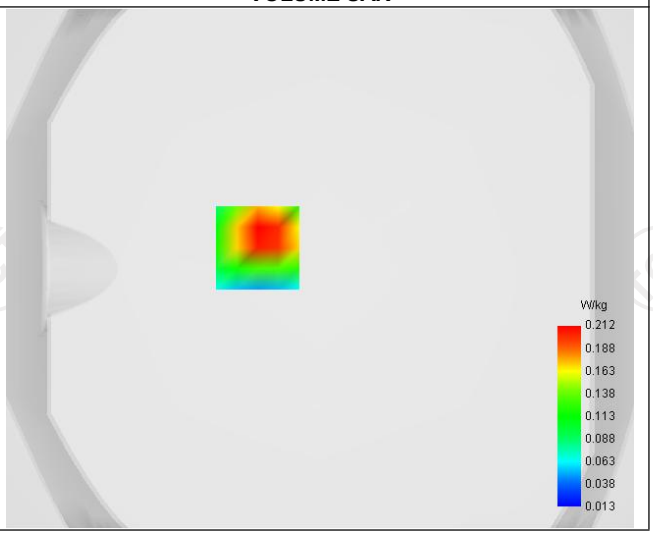
A. Experimental conditions.

Probe	SSE2 (SN 36/20 EPGO346)
ConvF	2.23
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	50
RB size	1
Subframe configuration	0
Special subframe configuration	0
Cyclic prefix	Normal
Duty Cycle (%)	0.61

B. Permitivity

Frequency (MHz)	2586.090
Relative permitivity (real part)	51.841
Relative permitivity (imaginary part)	14.935
Conductivity (S/m)	2.123

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

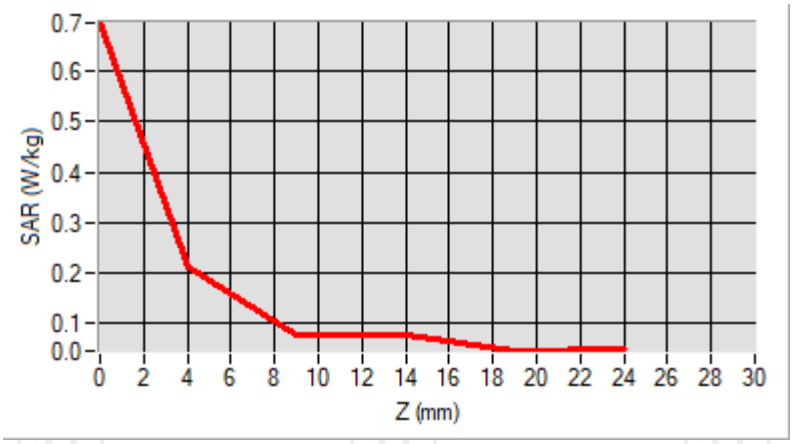
Maximum location: X=-24.00, Y=8.00 ; SAR Peak: 0.36 W/kg

D. SAR 1g & 10g

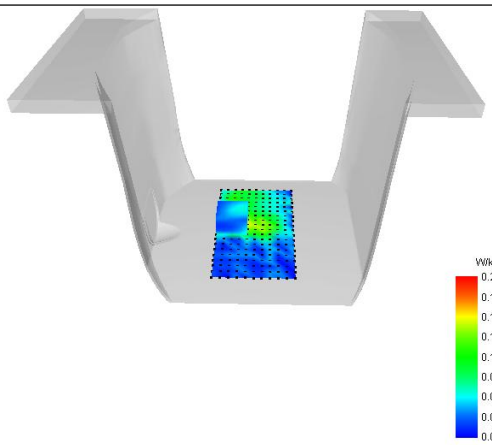
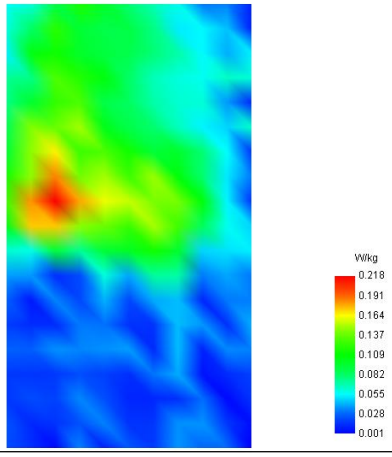
SAR 10g (W/Kg)	0.119
SAR 1g (W/Kg)	0.208
Variation (%)	0.980
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.696	0.212	0.074	0.076	0.044



F. 3D Image

3D screen shot	Hot spot position
	

SAR Measurement at LTE band 41 (Cheek, Left)

Date of measurement: 11/01/2023

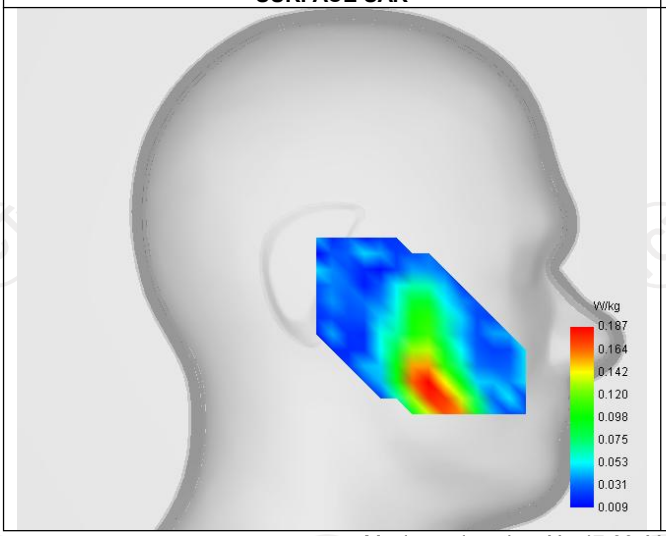
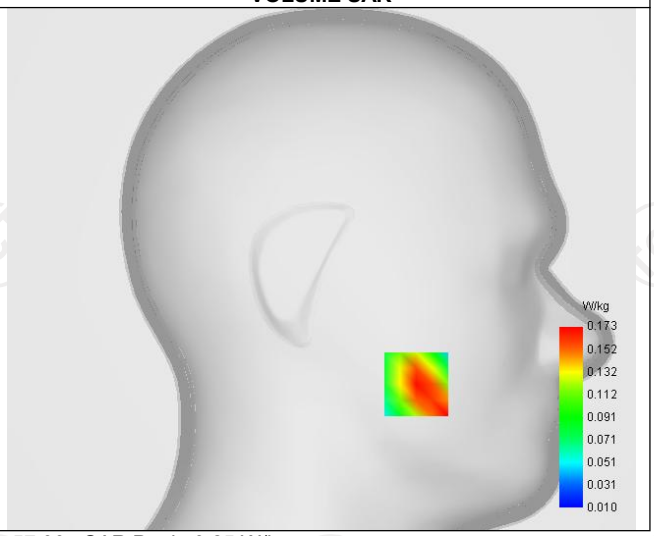
A. Experimental conditions.

Probe	SSE2 (SN 36/20 EPGO346)
ConvF	2.23
Area Scan	sam_direct_droit2_surf8mm.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Left head
Device Position	Cheek
Band	LTE band 41
Channels	Higher (41490)
Signal	LTE TDD
Cell Bandwidth	20 Mhz
Modulation	SC-OFDM - QPSK
RB offset	50
RB size	1
Subframe configuration	0
Special subframe configuration	0
Cyclic prefix	Normal
Duty Cycle (%)	0.61

B. Permitivity

Frequency (MHz)	2680.000
Relative permitivity (real part)	51.812
Relative permitivity (imaginary part)	14.935
Conductivity (S/m)	2.143

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

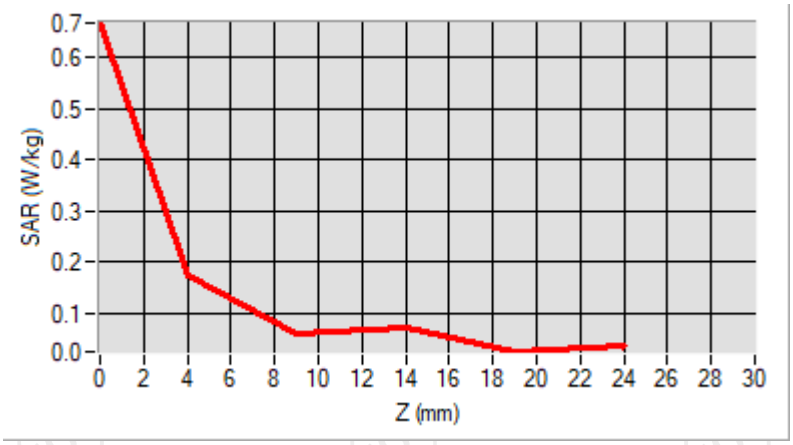
Maximum location: X=-47.00, Y=-57.00 ; SAR Peak: 0.25 W/kg

D. SAR 1g & 10g

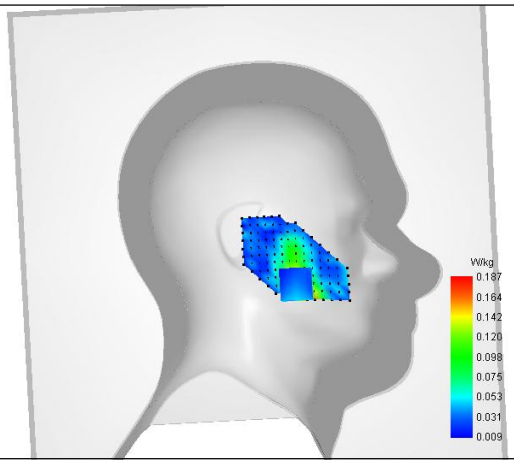
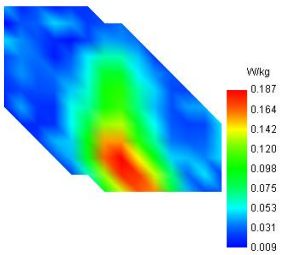
SAR 10g (W/Kg)	0.102
SAR 1g (W/Kg)	0.165
Variation (%)	-2.000
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.668	0.173	0.060	0.071	0.024



F. 3D Image

3D screen shot	Hot spot position
	

SAR Measurement at LTE band 41 (Body, Validation Plane)

Date of measurement: 11/01/2023

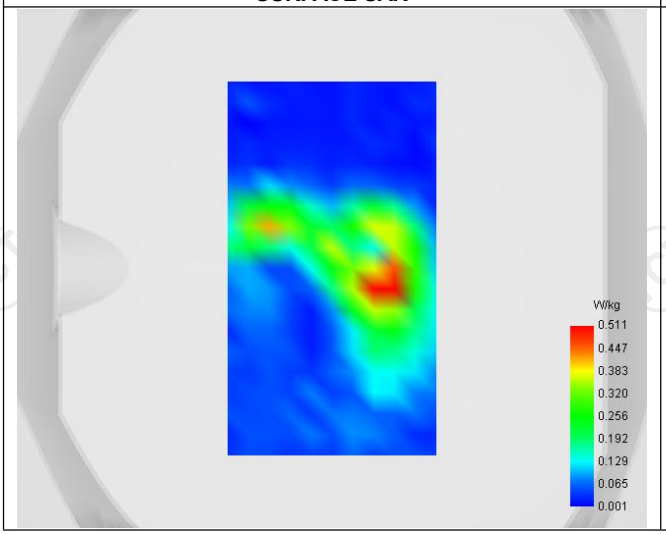
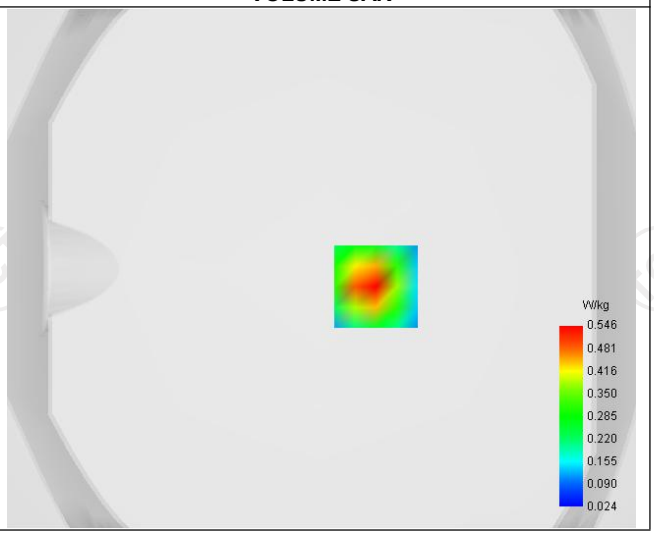
A. Experimental conditions.

Probe	SSE2 (SN 36/20 EPGO346)
ConvF	2.23
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 41
Channels	Higher (41490)
Signal	LTE TDD
Cell Bandwidth	20 Mhz
Modulation	SC-OFDM - QPSK
RB offset	50
RB size	1
Subframe configuration	0
Special subframe configuration	0
Cyclic prefix	Normal
Duty Cycle (%)	0.61

B. Permitivity

Frequency (MHz)	2680.000
Relative permitivity (real part)	51.812
Relative permitivity (imaginary part)	14.935
Conductivity (S/m)	2.143

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

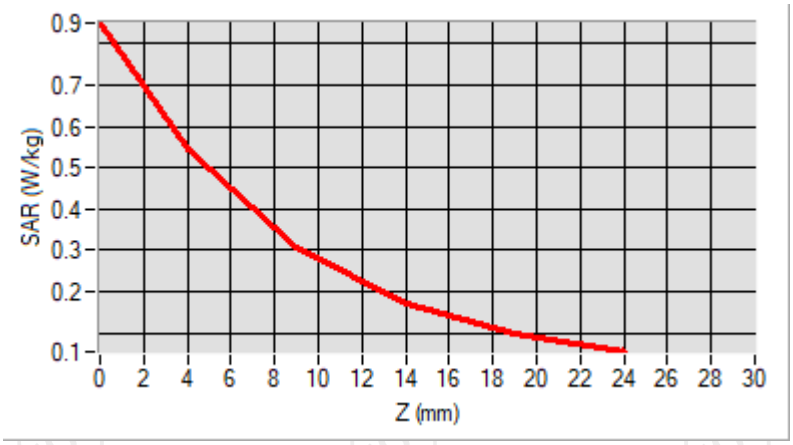
Maximum location: X=21.00, Y=-7.00 ; SAR Peak: 0.86 W/kg

D. SAR 1g & 10g

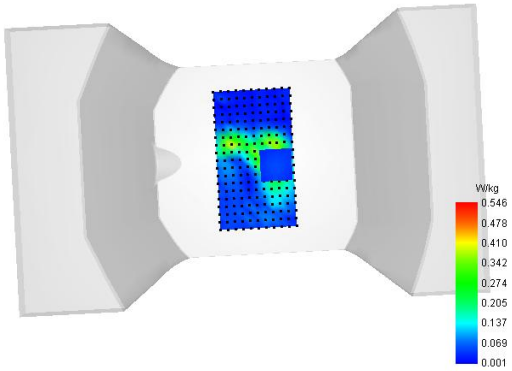
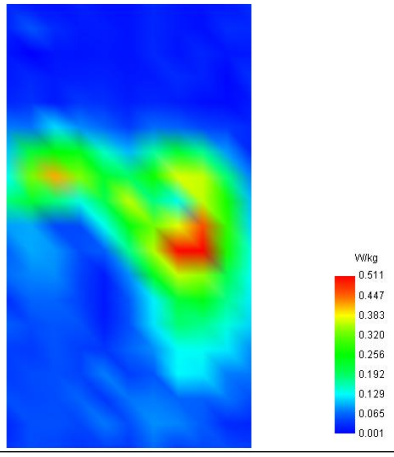
SAR 10g (W/Kg)	0.282
SAR 1g (W/Kg)	0.528
Variation (%)	-1.470
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.850	0.546	0.305	0.170	0.098



F. 3D Image

3D screen shot	Hot spot position
	

SAR Measurement at LTE band 66 (Cheek, Right)

Date of measurement: 10/01/2023

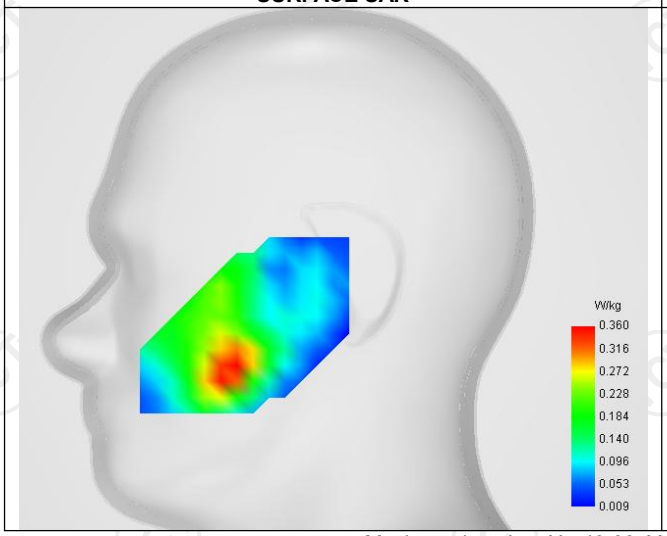
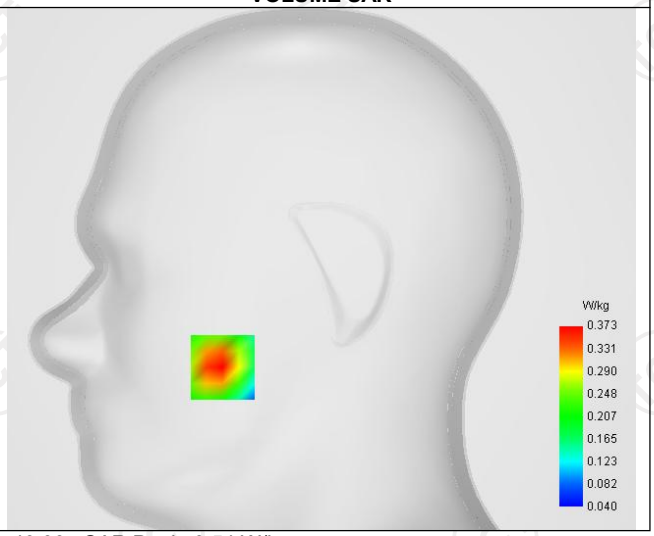
A. Experimental conditions.

Probe	SSE2 (SN 36/20 EPGO346)
ConvF	2.16
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 66
Channels	Middle (132322)
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)	53.343
Relative permitivity (imaginary part)	15.200
Conductivity (S/m)	1.492

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

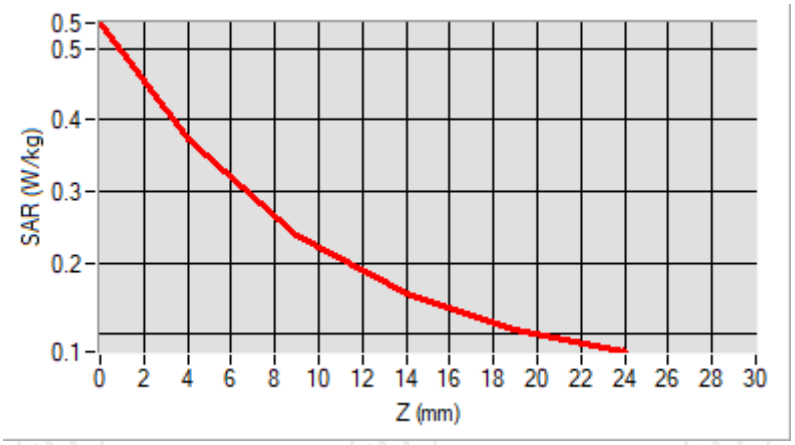
Maximum location: X=-49.00, Y=-49.00 ; SAR Peak: 0.54 W/kg

D. SAR 1g & 10g

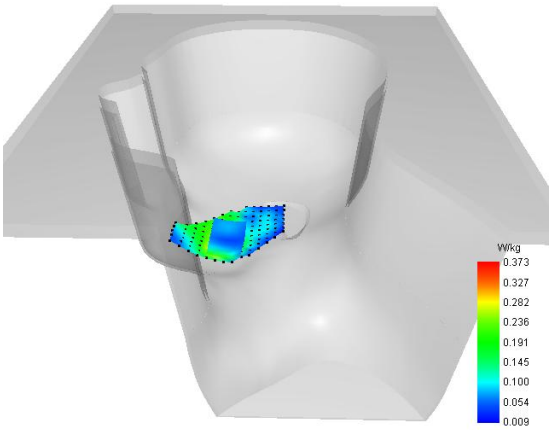
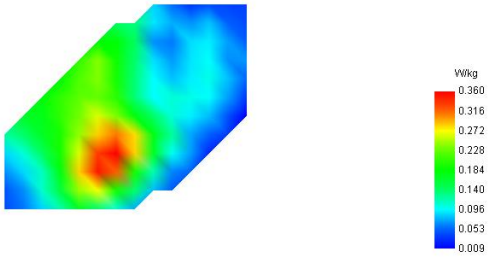
SAR 10g (W/Kg)	0.215
SAR 1g (W/Kg)	0.354
Variation (%)	1.460
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.535	0.373	0.237	0.156	0.108



F. 3D Image

3D screen shot	Hot spot position
	

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

Date of measurement: 10/01/2023

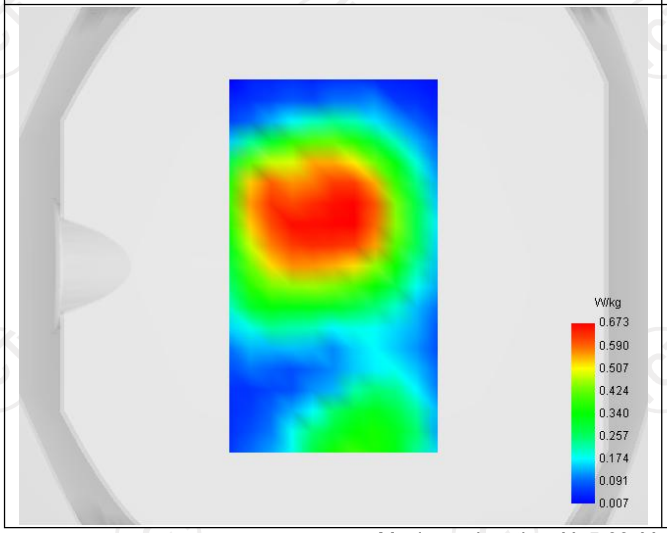
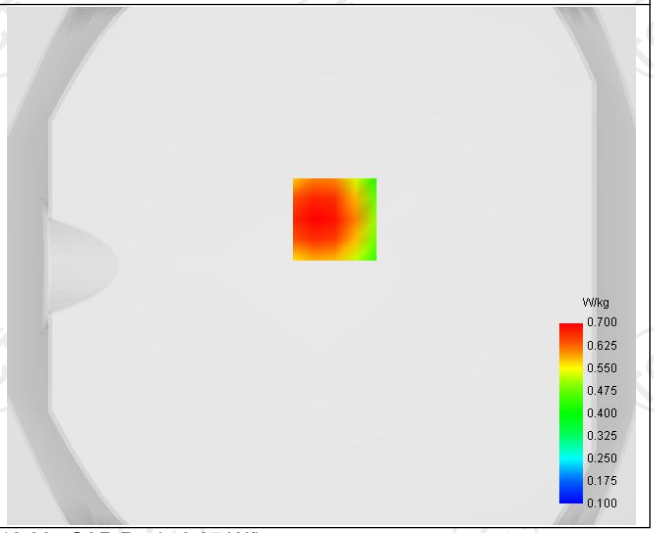
A. Experimental conditions.

Probe	SSE2 (SN 36/20 EPGO346)
ConvF	2.16
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 66
Channels	Middle (132322)
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)	53.343
Relative permitivity (imaginary part)	15.200
Conductivity (S/m)	1.492

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

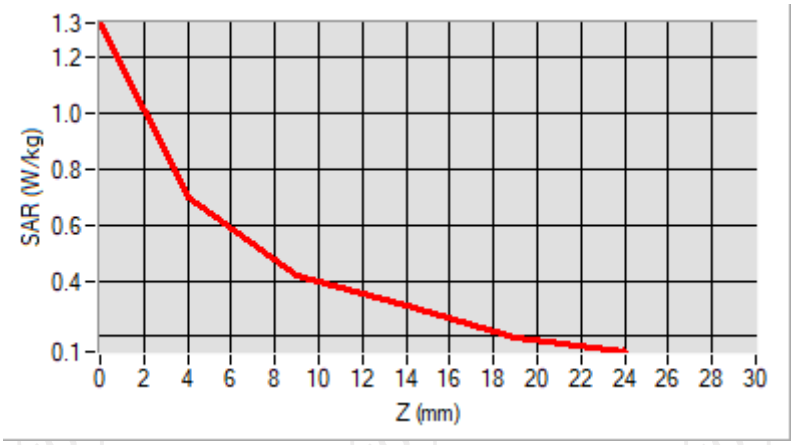
Maximum location: X=5.00, Y=18.00 ; SAR Peak: 0.97 W/kg

D. SAR 1g & 10g

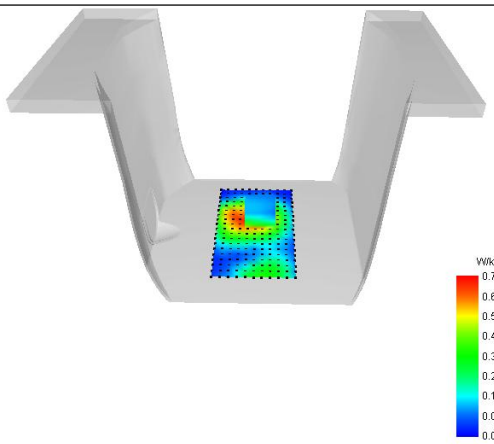
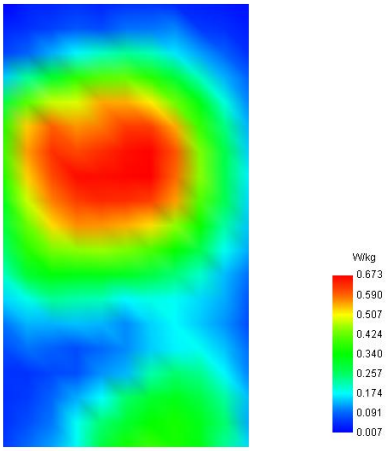
SAR 10g (W/Kg)	0.441
SAR 1g (W/Kg)	0.673
Variation (%)	-1.370
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.323	0.700	0.418	0.309	0.197



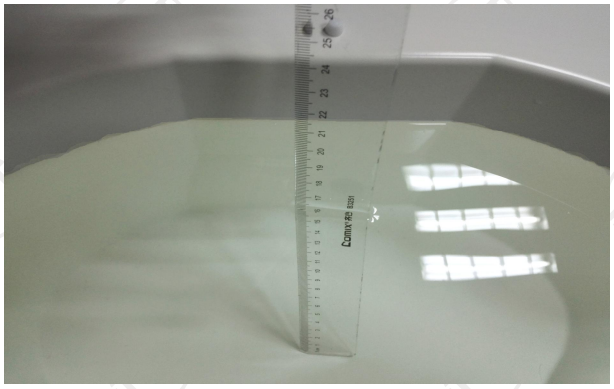
F. 3D Image

3D screen shot	Hot spot position
	

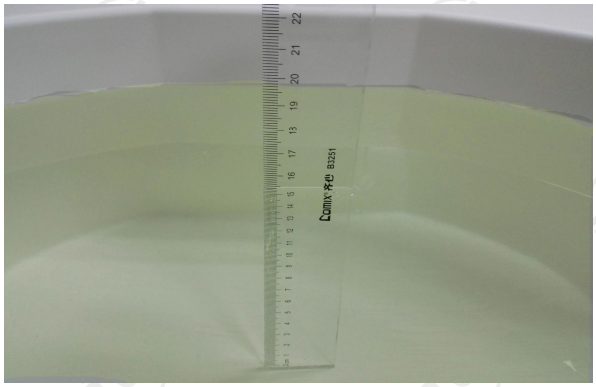
Appendix A: EUT Photos

Please refer to RF report.

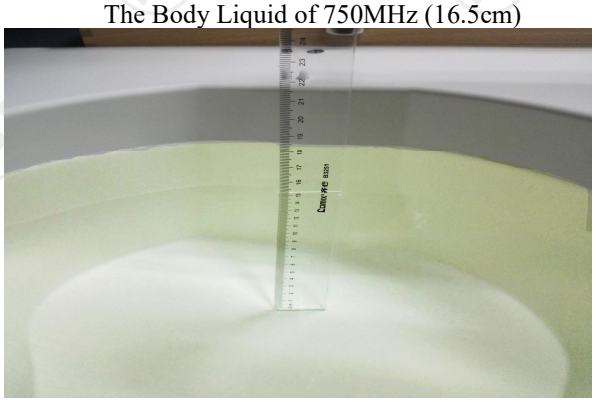
Liquid depth



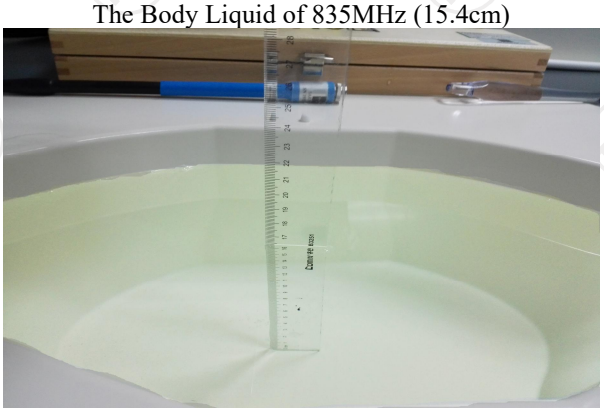
The Body Liquid of 750MHz (16.5cm)



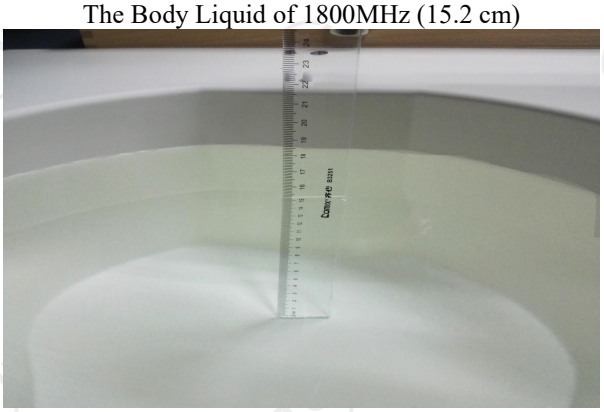
The Body Liquid of 835MHz (15.4cm)



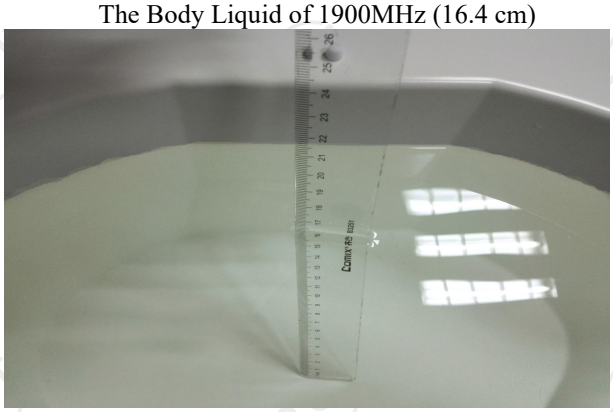
The Body Liquid of 1800MHz (15.2 cm)



The Body Liquid of 1900MHz (16.4 cm)

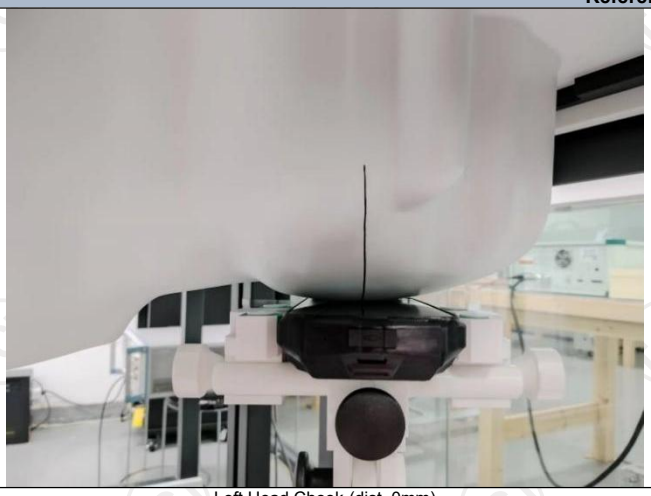
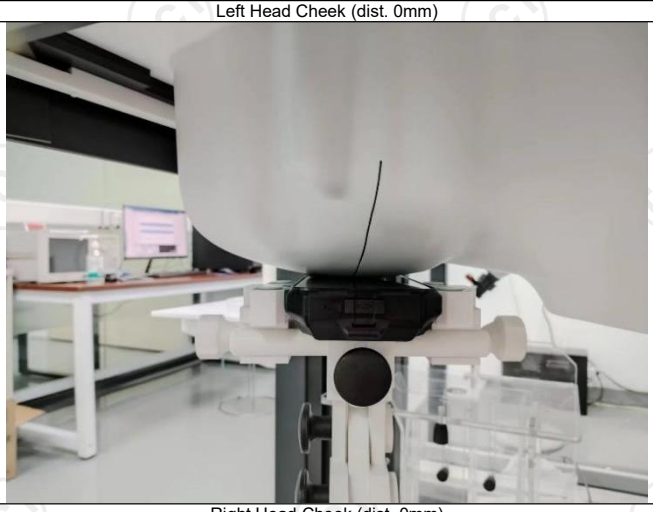
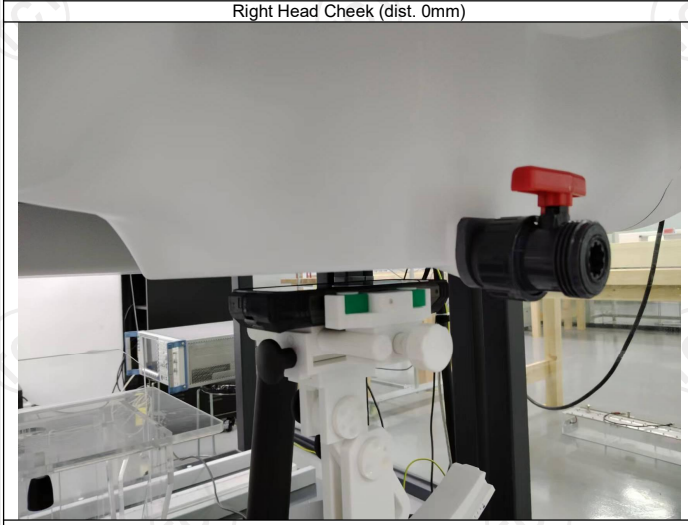
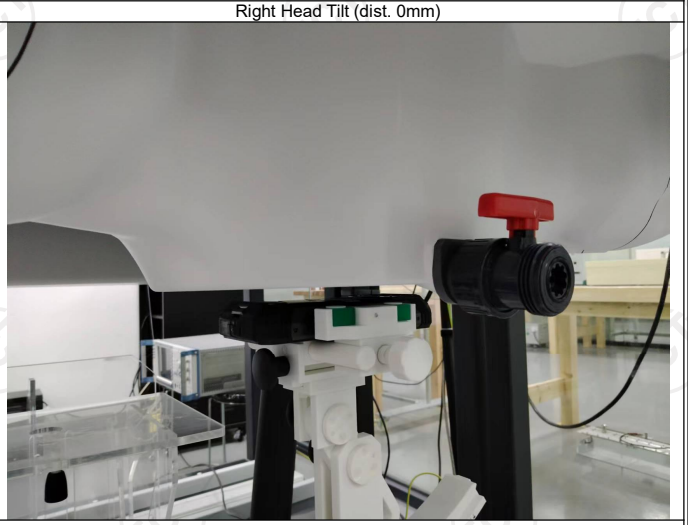


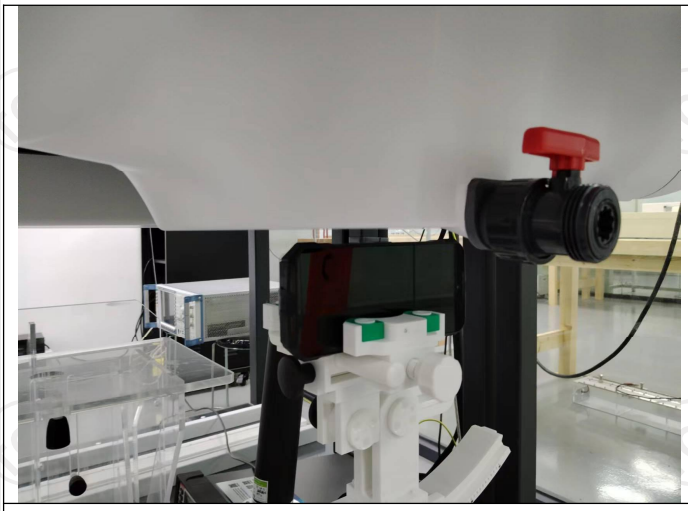
The Body Liquid of 2450MHz (15.3cm)



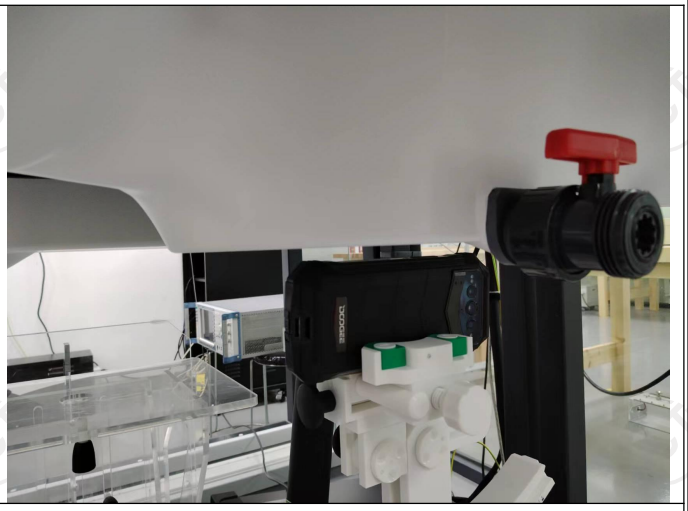
The Body Liquid of 5000-6000MHz (16.5cm)

Appendix B: Test Setup Photos

Reference Photos	
	
Left Head Cheek (dist. 0mm)	Left Head Tilt (dist. 0mm)
	
Right Head Cheek (dist. 0mm)	Right Head Tilt (dist. 0mm)
	
Front (dist. 10mm)	Back (dist. 10mm)

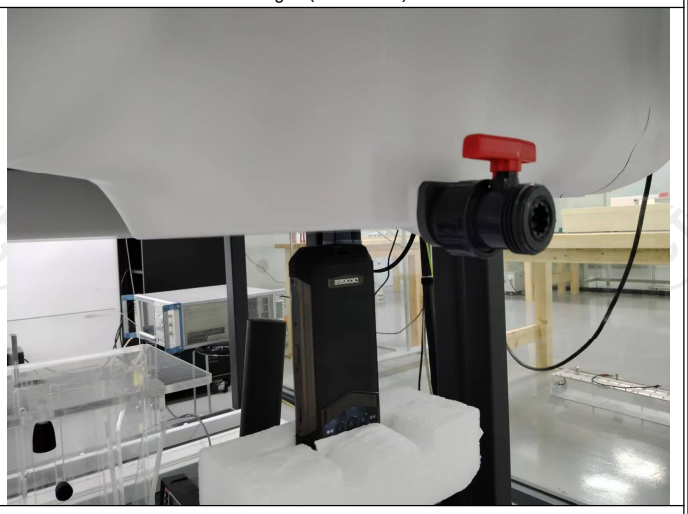


Left（dist. 10mm）



Right（dist. 10mm）

Top（dist. 10mm）



Bottom（dist. 10mm）

Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com

Appendix C: Probe Calibration Certificate

COMOSAR E-FIELD Probe

COMOSAR E-Field Probe Calibration Report

Ref : ACR.297.1.20.MVGB.A

SHENZHEN TONGCE TESTING LAB.

TCT TESTING INDUSTRIAL PARK, FUQIAO 5TH INDUSTRIAL ZONE, FUHAI STREET, BAOAN DISTRICT, SHENZHEN, GUANGDONG , 518103, PEOPLES REPUBLIC OF CHINA

MVG COMOSAR DOSIMETRIC E-FIELD PROBE

SERIAL NO.: SN 36/20 EPGO346

Calibrated at MVG

Z.I. de la pointe du diable

Technopôle Brest Iroise – 295 avenue Alexis de Rochon

29280 PLOUZANE - FRANCE

Calibration date: 10/08/2022

Accreditations #2-6789 and #2-6814
Scope available on www.cofrac.fr

Summary:

This document presents the method and results from an accredited COMOSAR E-Field Probe calibration performed at MVG, using the CALIPROBE test bench, for use with a MVG COMOSAR system only. The test results covered by accreditation are traceable to the International System of Units (SI).

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