

MEASUREMENT 7

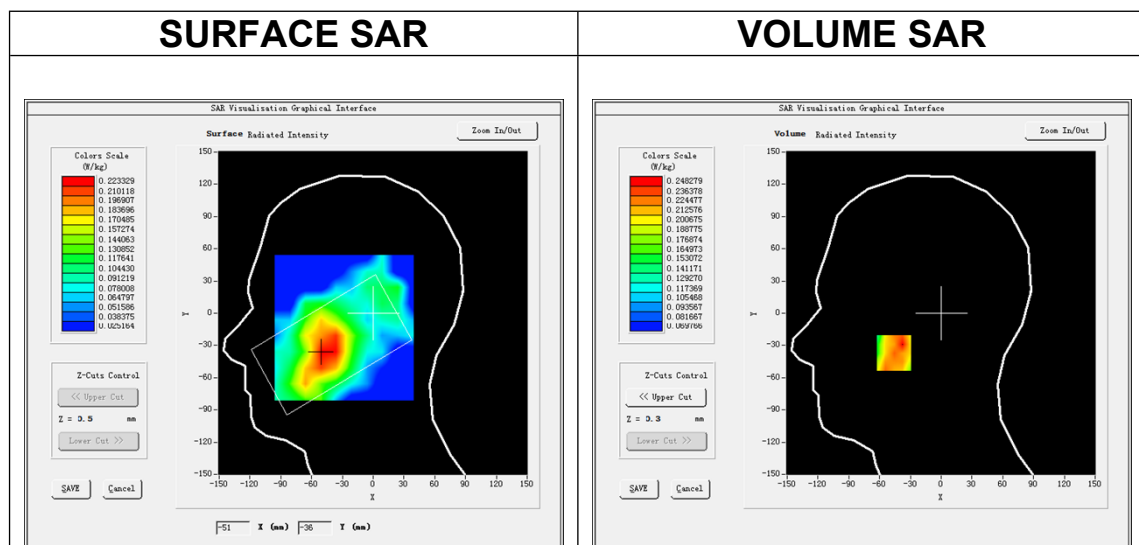
Date of measurement: 25/4/2025

A. Experimental conditions.

Area Scan	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7,dx=8mm dy=8mm dz=5mm</u>
Phantom	<u>Left head</u>
Device Position	<u>Cheek</u>
Band	<u>Band5_WCDMA850</u>
Channels	<u>Middle</u>
Signal	<u>WCDMA (Crest factor: 1.0)</u>
ConvF	<u>1.66</u>

B. SAR Measurement Results

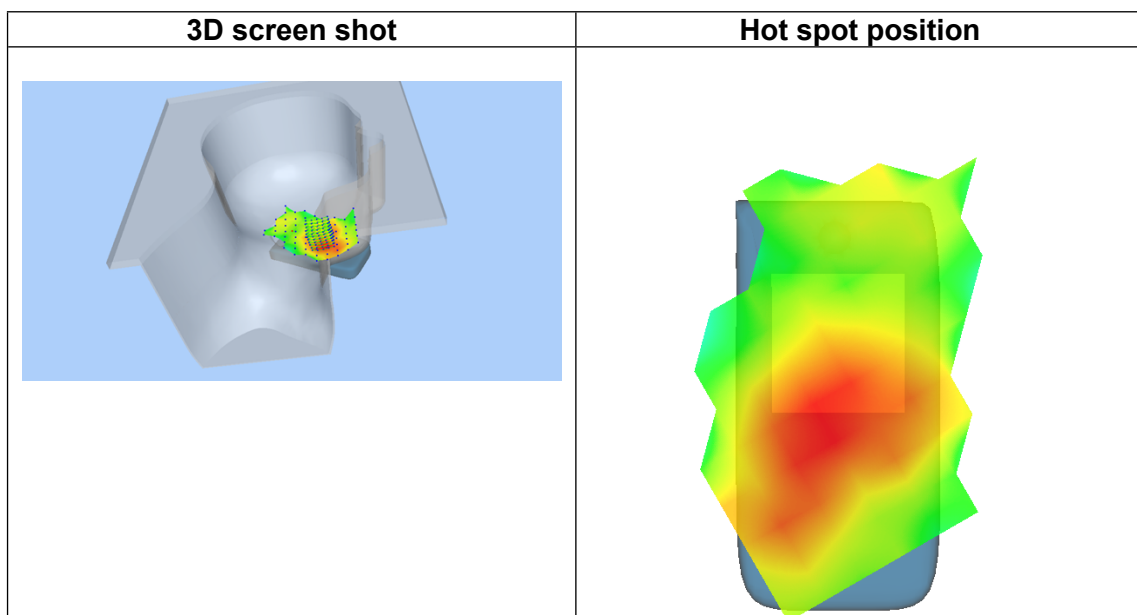
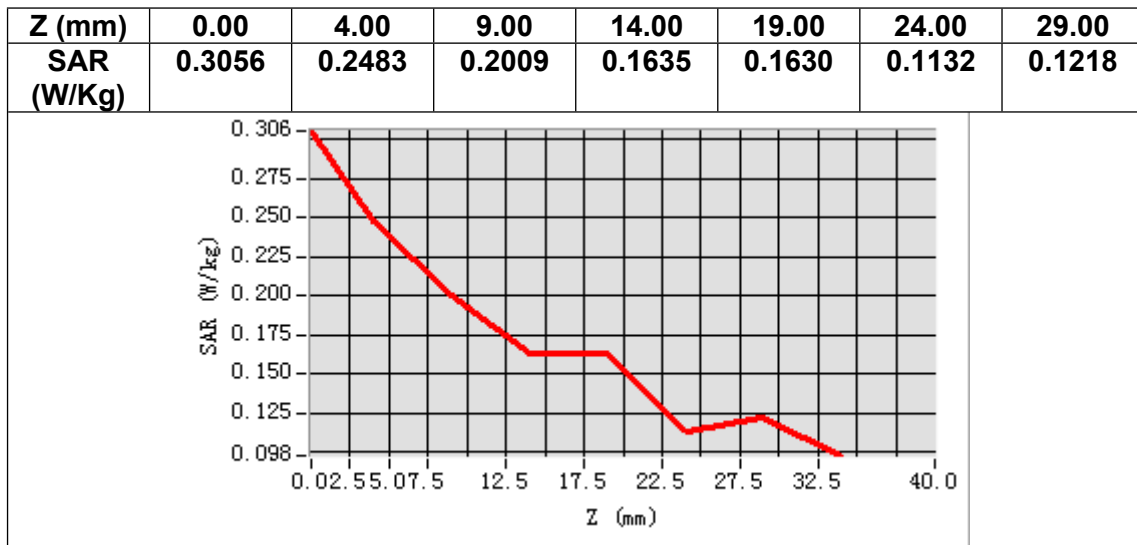
Frequency (MHz)	836.400024
Relative permittivity (real part)	41.500000
Relative permittivity (imaginary part)	19.400000
Conductivity (S/m)	0.901453
Variation (%)	-0.250000



Maximum location: X=-46.00, Y=-37.00

SAR Peak: 0.37 W/kg

SAR 10g (W/Kg)	0.188710
SAR 1g (W/Kg)	0.241004



MEASUREMENT 8

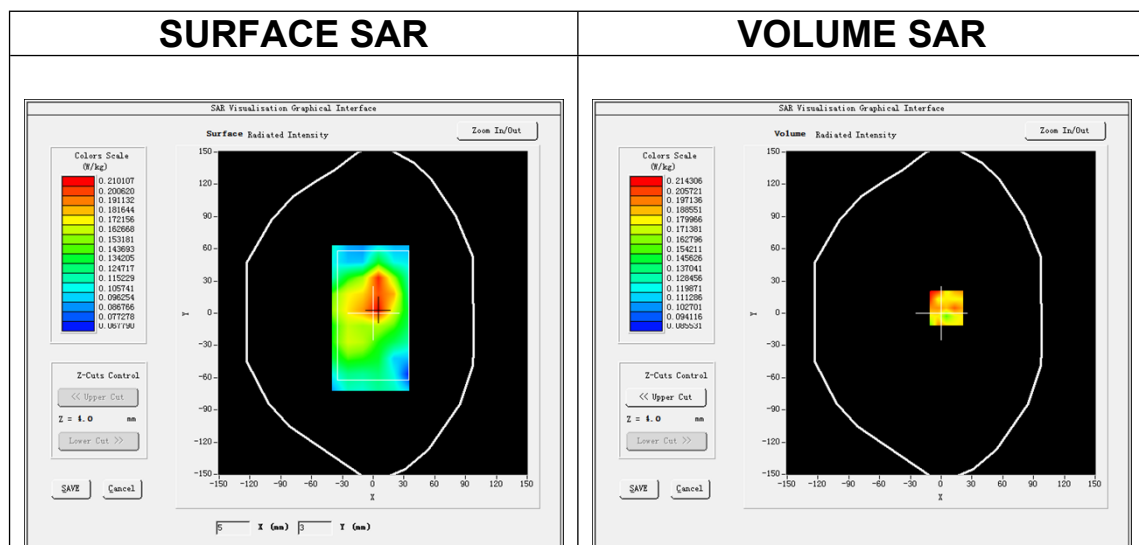
Date of measurement: 25/4/2025

A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7,dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Body</u>
<u>Band</u>	<u>Band5_WCDMA850</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>WCDMA (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>1.66</u>

B. SAR Measurement Results

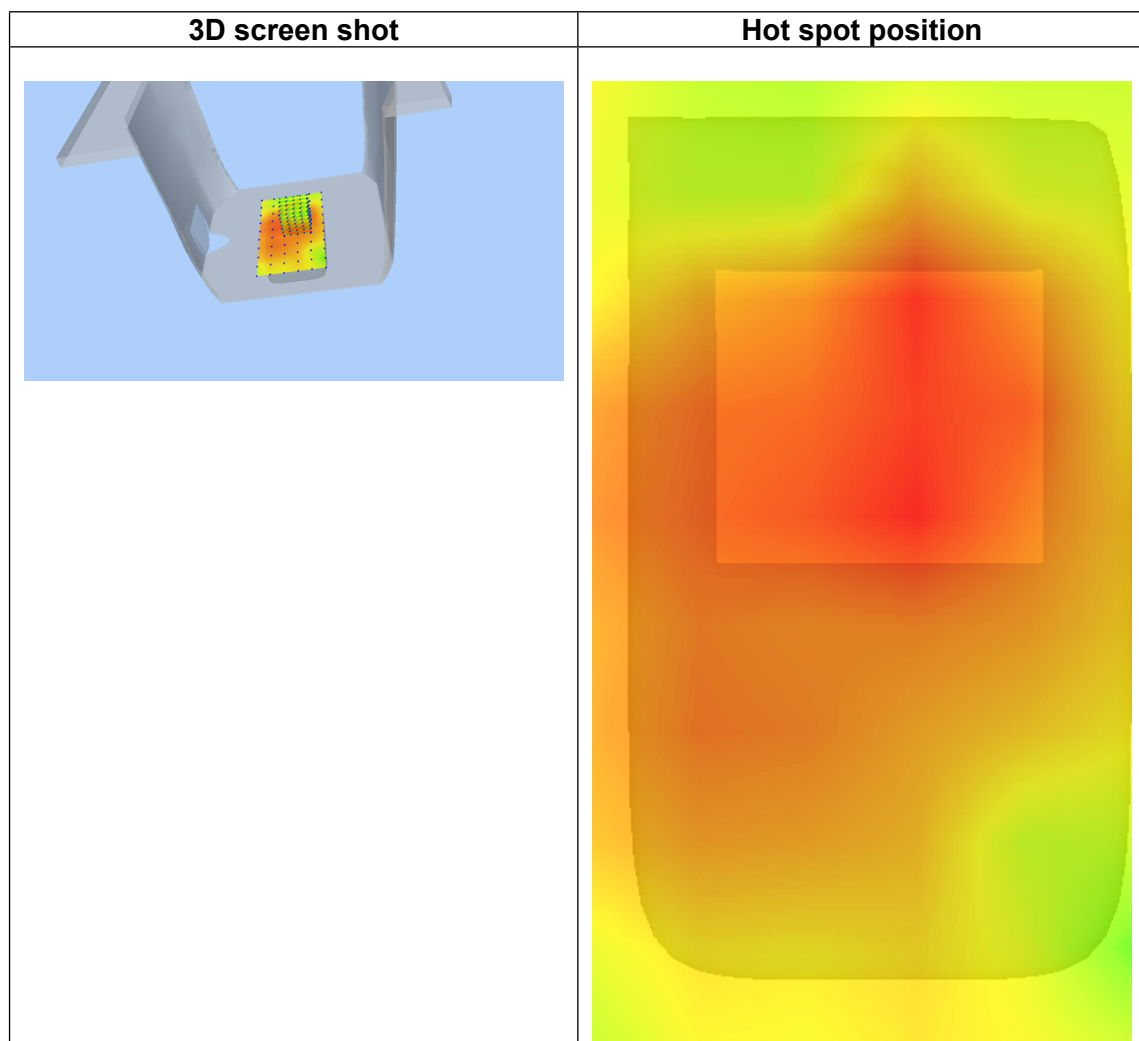
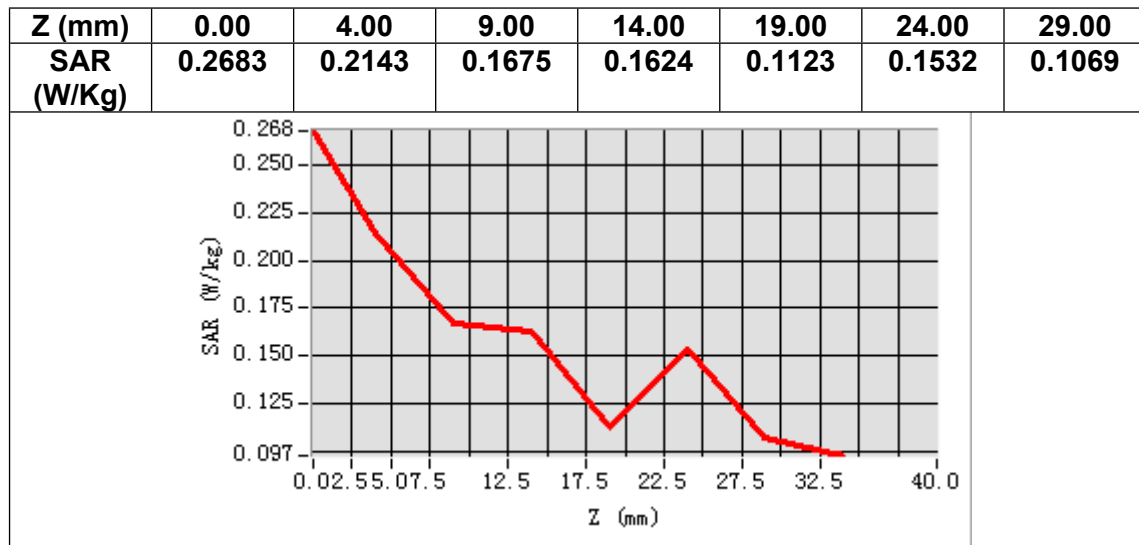
Frequency (MHz)	836.400024
Relative permittivity (real part)	41.500000
Relative permittivity (imaginary part)	19.400000
Conductivity (S/m)	0.901453
Variation (%)	-4.870000



Maximum location: X=5.00, Y=5.00

SAR Peak: 0.29 W/kg

SAR 10g (W/Kg)	0.165605
SAR 1g (W/Kg)	0.191964



MEASUREMENT 9

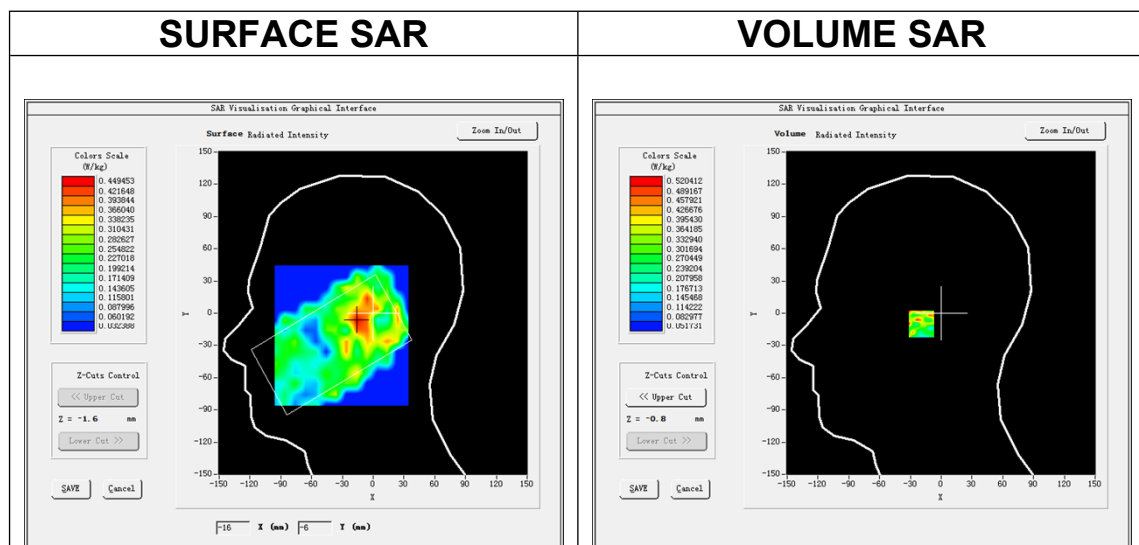
Date of measurement: 2/5/2025

A. Experimental conditions.

<u>Area Scan</u>	<u>dx=10mm dy=10mm, h= 2.00 mm</u>
<u>ZoomScan</u>	<u>7x7x12,dx=4mm dy=4mm dz=2mm</u>
<u>Phantom</u>	<u>Left head</u>
<u>Device Position</u>	<u>Cheek</u>
<u>Band</u>	<u>IEEE 802.11a U-NII</u>
<u>Channels</u>	<u>Low</u>
<u>Signal</u>	<u>IEEE802.a (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.30</u>

B. SAR Measurement Results

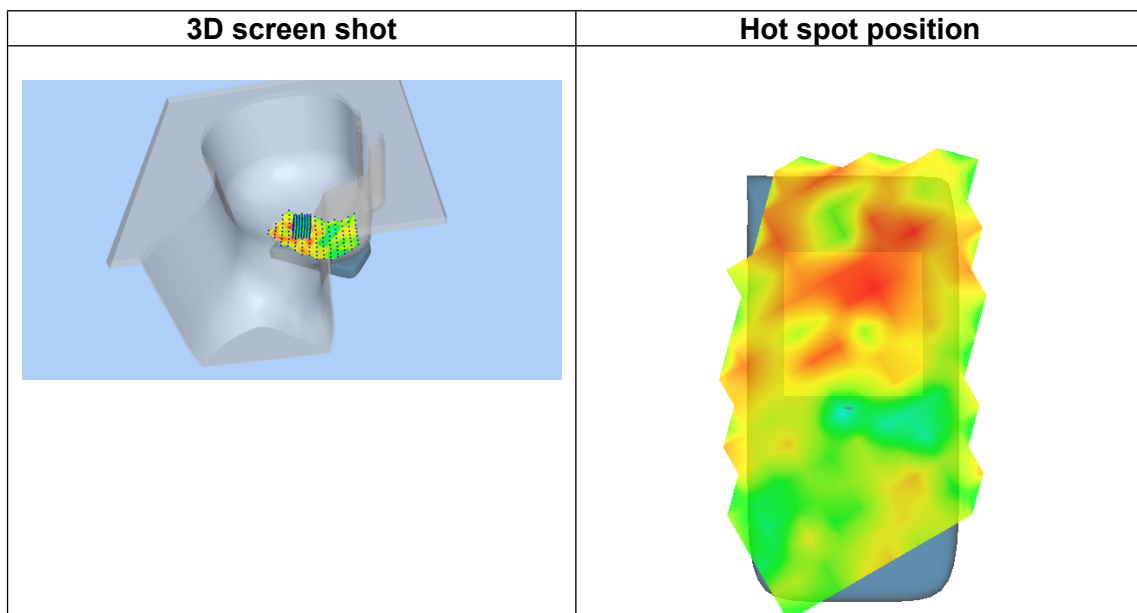
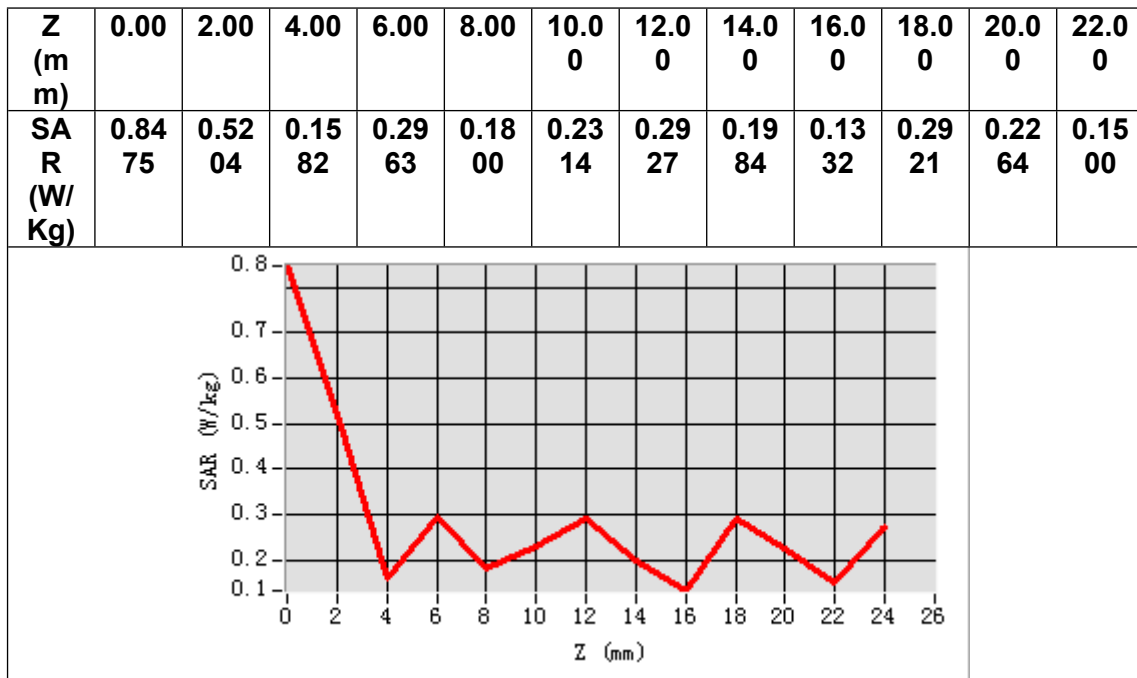
Frequency (MHz)	5180.000000
Relative permittivity (real part)	36.000000
Relative permittivity (imaginary part)	16.128888
Conductivity (S/m)	4.641536
Variation (%)	-0.560000



Maximum location: X=-14.00, Y=-10.00

SAR Peak: 1.61 W/kg

SAR 10g (W/Kg)	0.263717
SAR 1g (W/Kg)	0.353650



MEASUREMENT 10

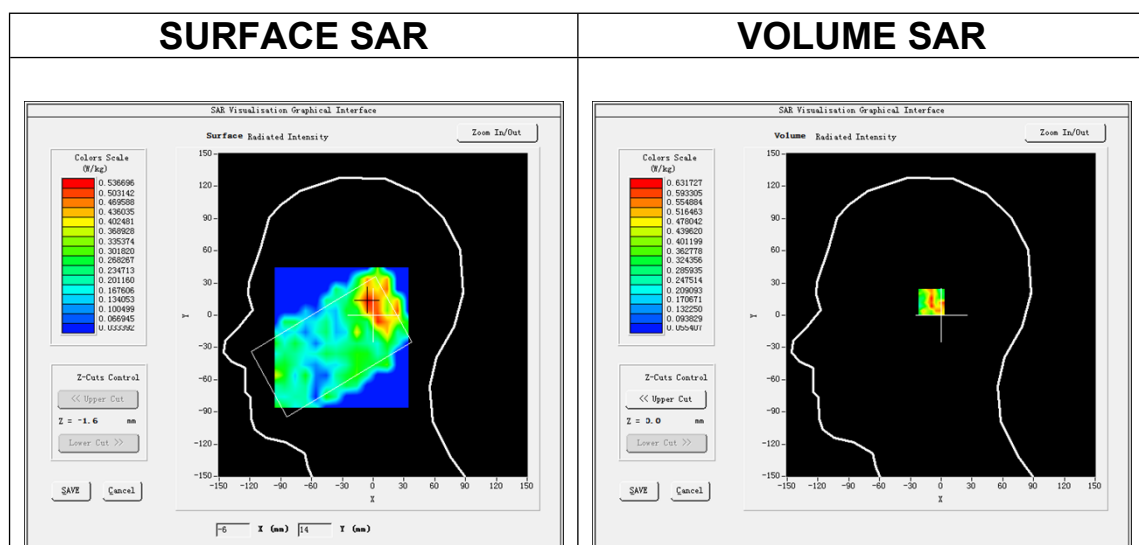
Date of measurement: 5/5/2025

A. Experimental conditions.

<u>Area Scan</u>	<u>dx=10mm dy=10mm, h= 2.00 mm</u>
<u>ZoomScan</u>	<u>7x7x12,dx=4mm dy=4mm dz=2mm</u>
<u>Phantom</u>	<u>Left head</u>
<u>Device Position</u>	<u>Cheek</u>
<u>Band</u>	<u>IEEE 802.11ac U-NII</u>
<u>Channels</u>	<u>High</u>
<u>Signal</u>	<u>IEEE802.ac (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.27</u>

B. SAR Measurement Results

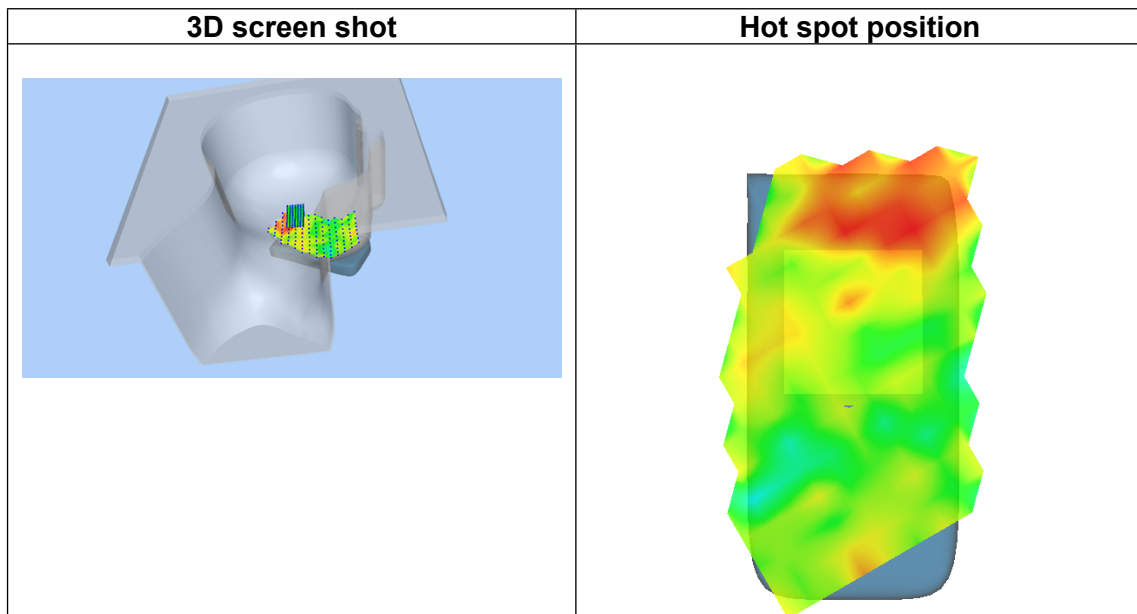
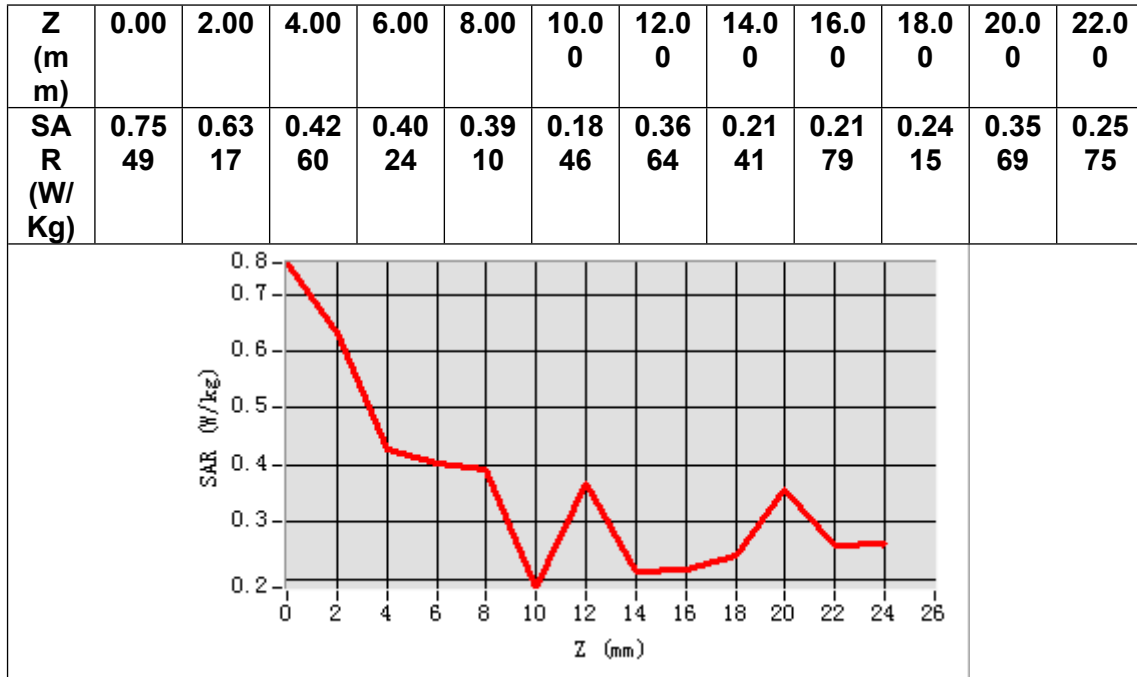
Frequency (MHz)	5795.000000
Relative permittivity (real part)	35.315888
Relative permittivity (imaginary part)	16.356399
Conductivity (S/m)	5.265852
Variation (%)	-3.500000



Maximum location: X=-5.00, Y=12.00

SAR Peak: 1.52 W/kg

SAR 10g (W/Kg)	0.360238
SAR 1g (W/Kg)	0.509823



MEASUREMENT 11

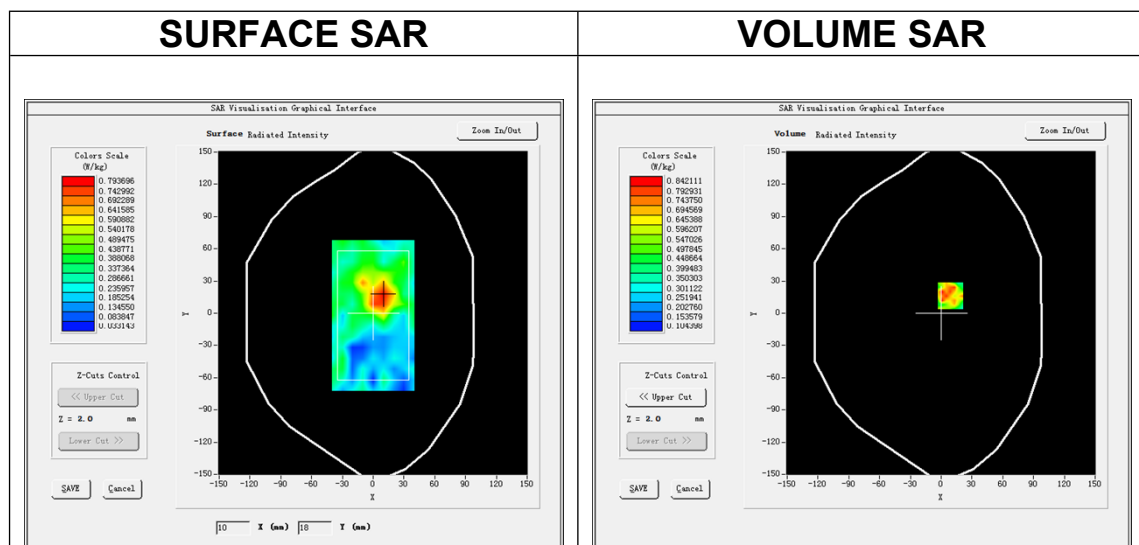
Date of measurement: 2/5/2025

A. Experimental conditions.

<u>Area Scan</u>	<u>dx=10mm dy=10mm, h= 2.00 mm</u>
<u>ZoomScan</u>	<u>7x7x12,dx=4mm dy=4mm dz=2mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Body</u>
<u>Band</u>	<u>IEEE 802.11a U-NII</u>
<u>Channels</u>	<u>Low</u>
<u>Signal</u>	<u>IEEE802.a (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.30</u>

B. SAR Measurement Results

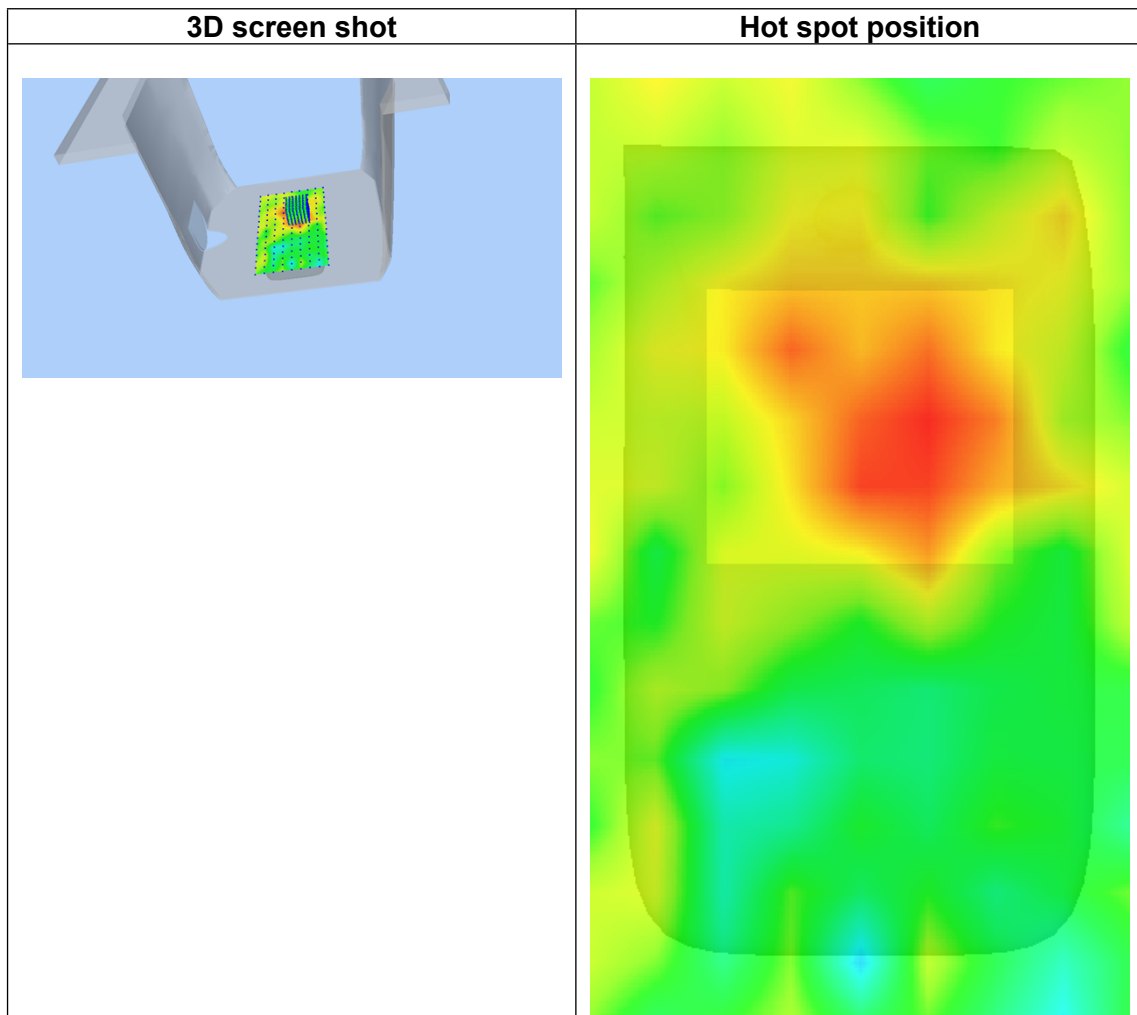
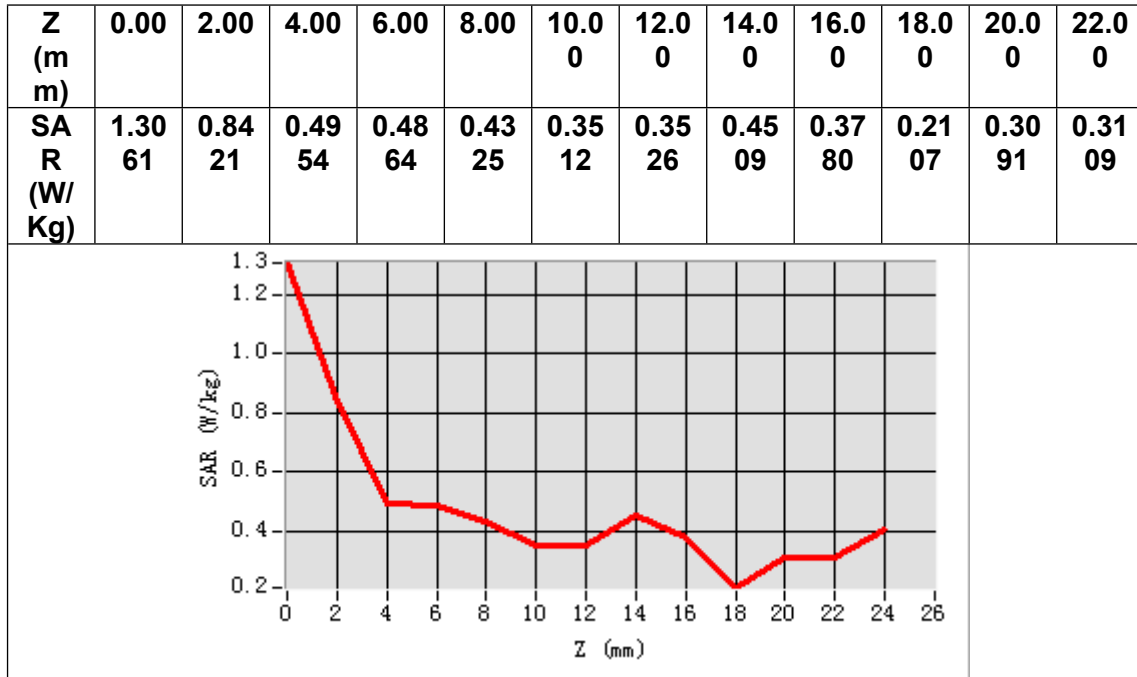
Frequency (MHz)	5180.000000
Relative permittivity (real part)	36.000000
Relative permittivity (imaginary part)	16.128888
Conductivity (S/m)	4.641536
Variation (%)	0.880000



Maximum location: X=9.00, Y=16.00

SAR Peak: 1.41 W/kg

SAR 10g (W/Kg)	0.429908
SAR 1g (W/Kg)	0.577218



MEASUREMENT 12

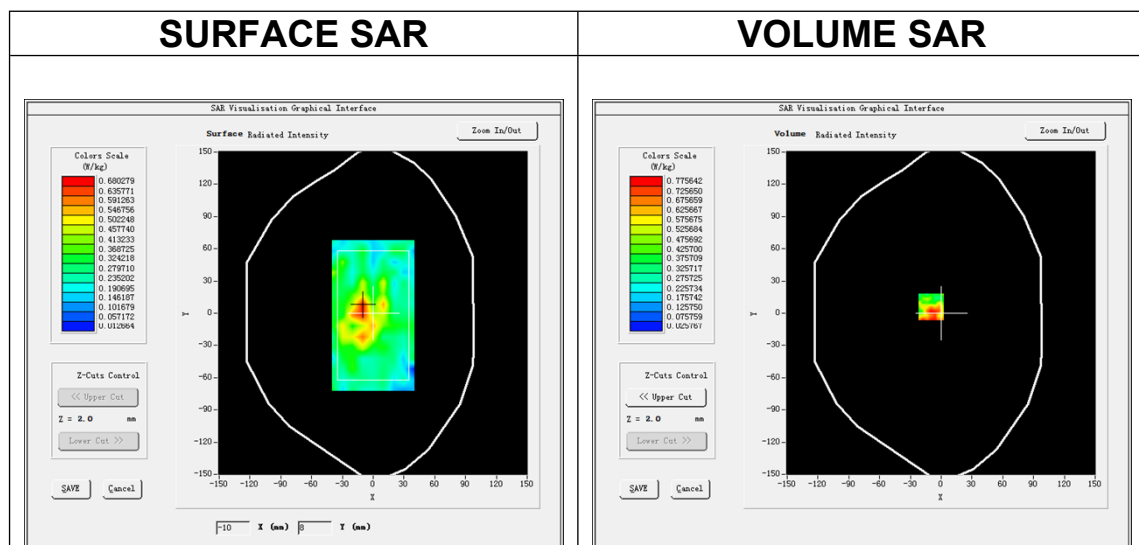
Date of measurement: 5/5/2025

A. Experimental conditions.

<u>Area Scan</u>	<u>dx=10mm dy=10mm, h= 2.00 mm</u>
<u>ZoomScan</u>	<u>7x7x12,dx=4mm dy=4mm dz=2mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Body</u>
<u>Band</u>	<u>IEEE 802.11ac U-NII</u>
<u>Channels</u>	<u>High</u>
<u>Signal</u>	<u>IEEE802.ac (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.27</u>

B. SAR Measurement Results

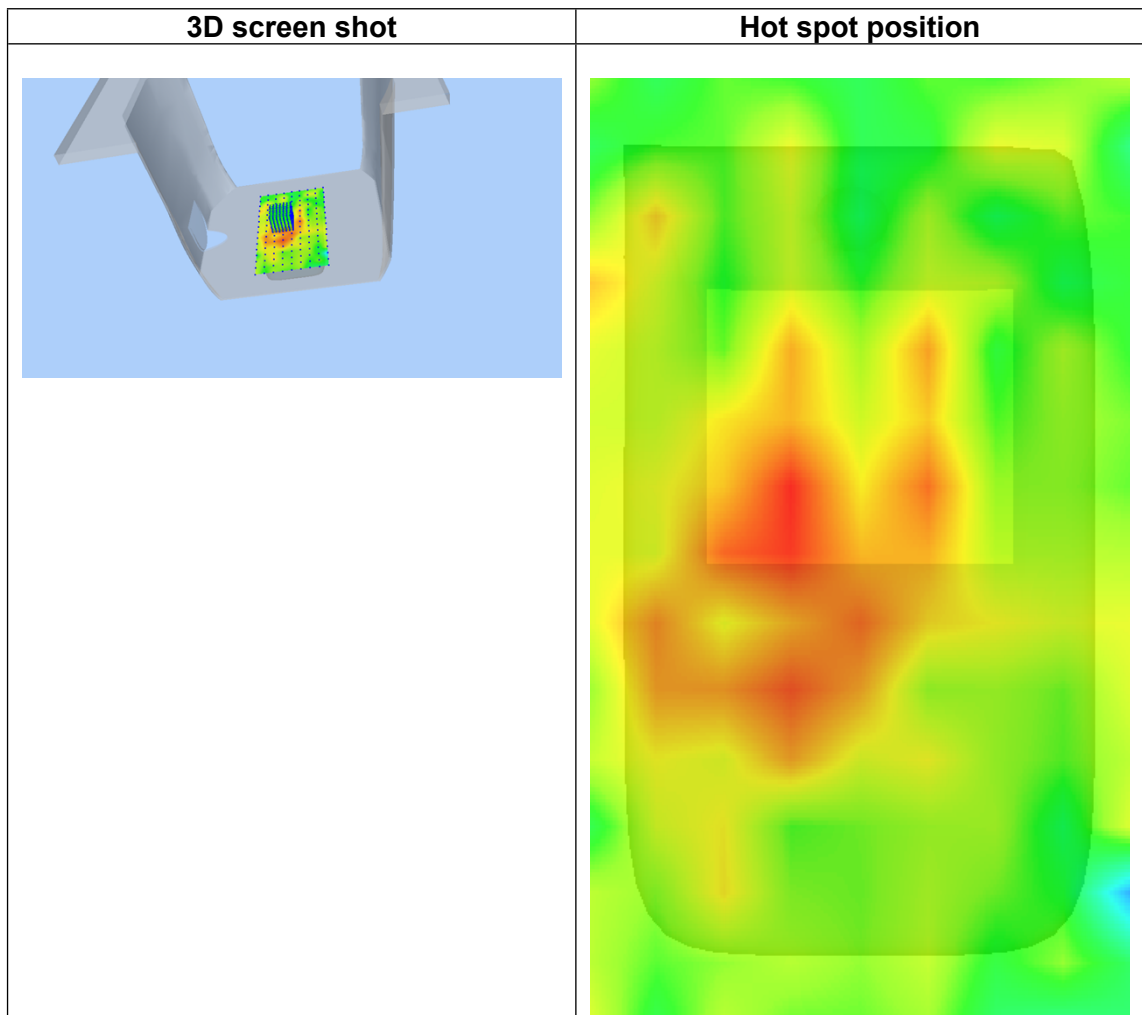
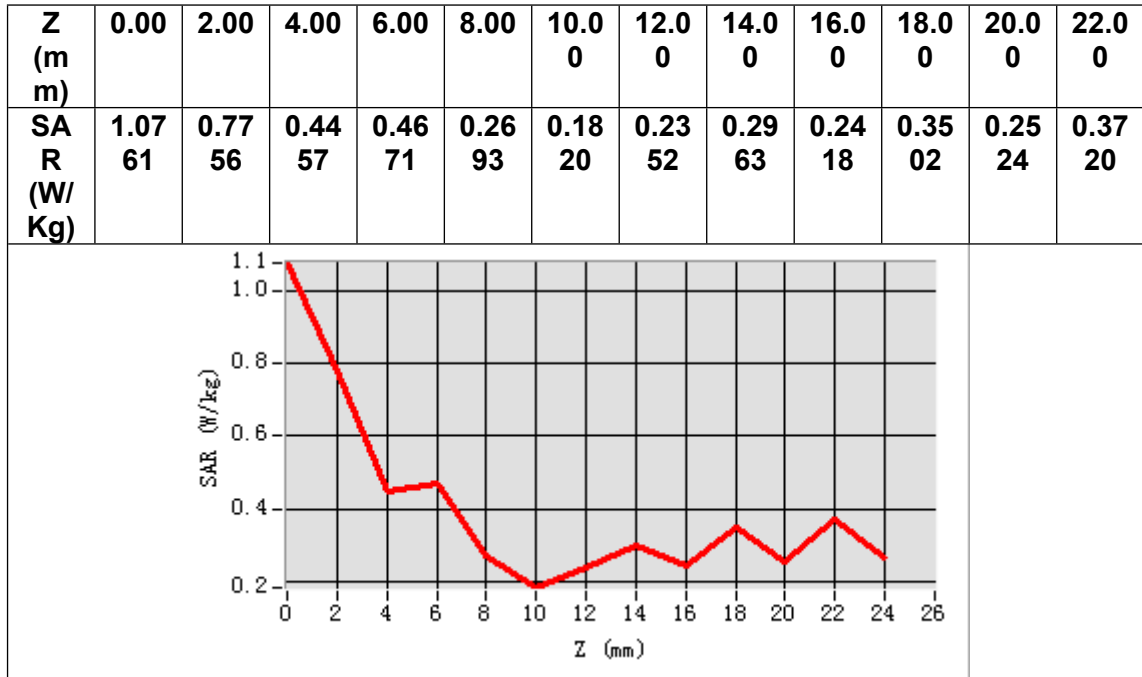
Frequency (MHz)	5795.000000
Relative permittivity (real part)	35.315888
Relative permittivity (imaginary part)	16.356399
Conductivity (S/m)	5.265852
Variation (%)	3.200000



Maximum location: X=0.00, Y=0.00

SAR Peak: 1.22 W/kg

SAR 10g (W/Kg)	0.362690
SAR 1g (W/Kg)	0.534952



MEASUREMENT 13

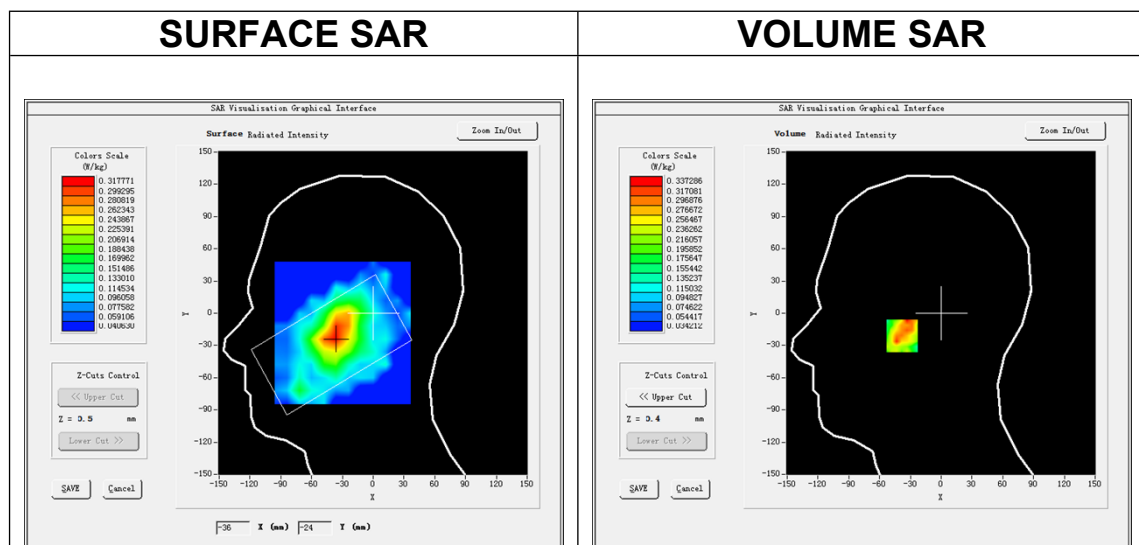
Date of measurement: 30/4/2025

A. Experimental conditions.

Area Scan	<u>dx=12mm dy=12mm, h= 5.00 mm</u>
ZoomScan	<u>7x7x7,dx=5mm dy=5mm dz=5mm</u>
Phantom	<u>Left head</u>
Device Position	<u>Cheek</u>
Band	<u>IEEE 802.11b ISM</u>
Channels	<u>Low</u>
Signal	<u>IEEE802.b (Crest factor: 1.0)</u>
ConvF	<u>2.38</u>

B. SAR Measurement Results

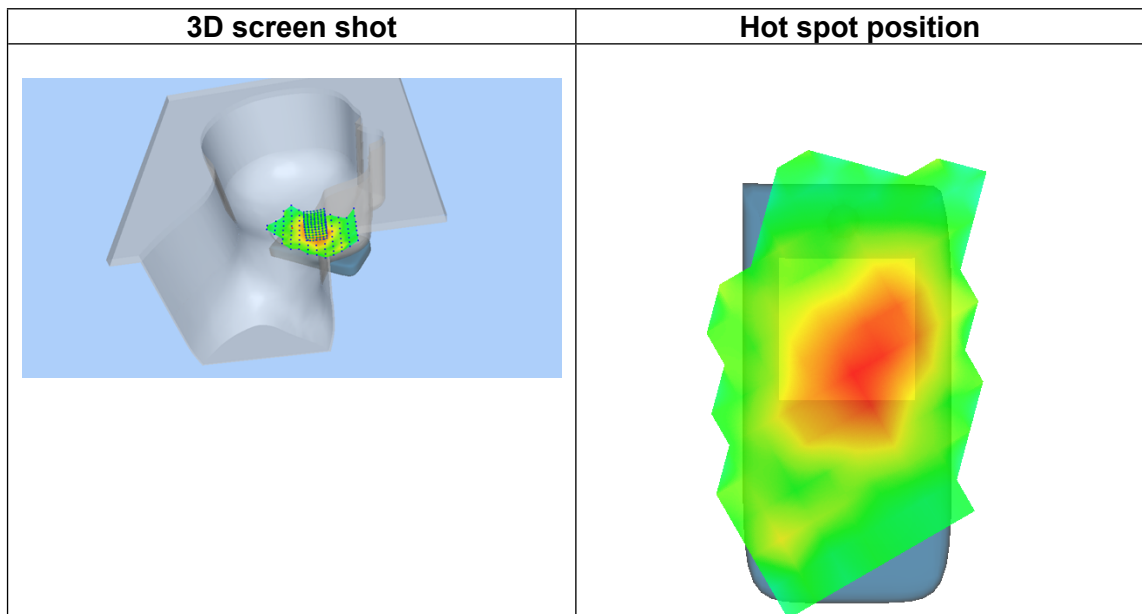
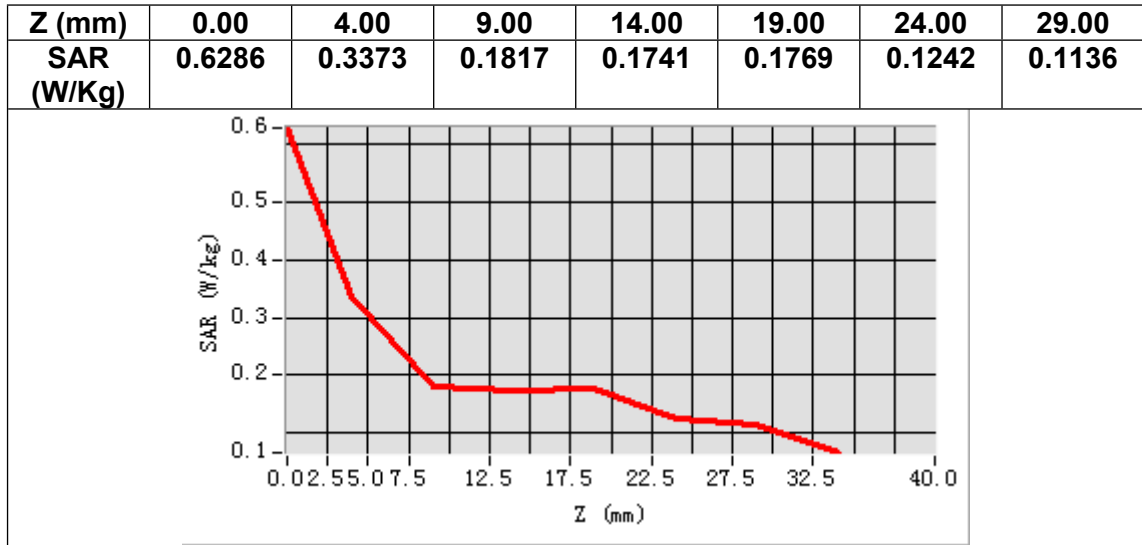
Frequency (MHz)	2412.000000
Relative permittivity (real part)	39.224000
Relative permittivity (imaginary part)	13.205000
Conductivity (S/m)	1.769470
Variation (%)	-3.590000



Maximum location: X=-37.00, Y=-21.00

SAR Peak: 0.50 W/kg

SAR 10g (W/Kg)	0.215891
SAR 1g (W/Kg)	0.304843



MEASUREMENT 14

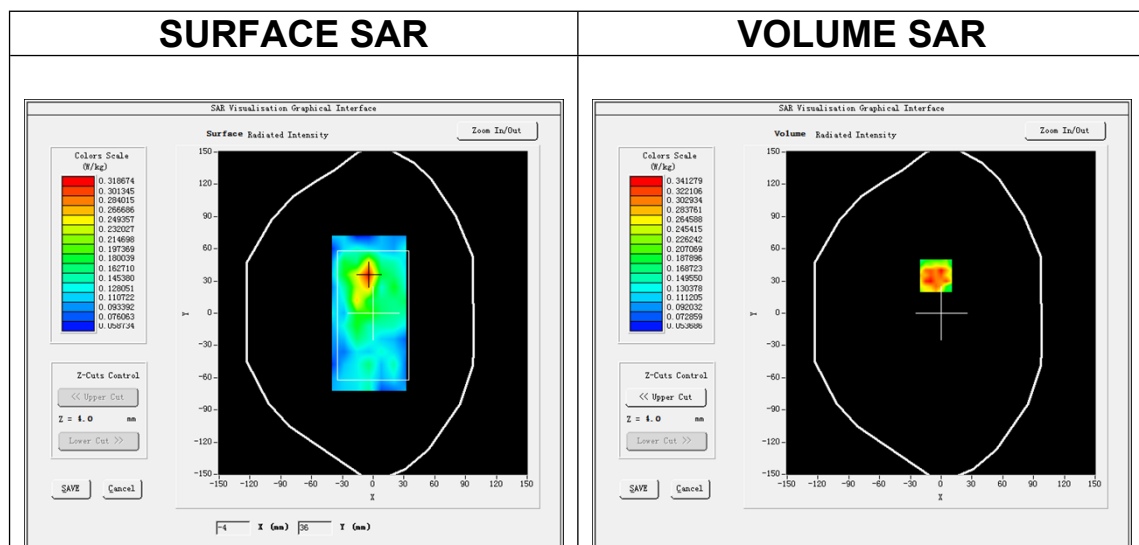
Date of measurement: 30/4/2025

A. Experimental conditions.

Area Scan	<u>dx=12mm dy=12mm, h= 5.00 mm</u>
ZoomScan	<u>7x7x7,dx=5mm dy=5mm dz=5mm</u>
Phantom	<u>Validation plane</u>
Device Position	<u>Body</u>
Band	<u>IEEE 802.11b ISM</u>
Channels	<u>Low</u>
Signal	<u>IEEE802.b (Crest factor: 1.0)</u>
ConvF	<u>2.38</u>

B. SAR Measurement Results

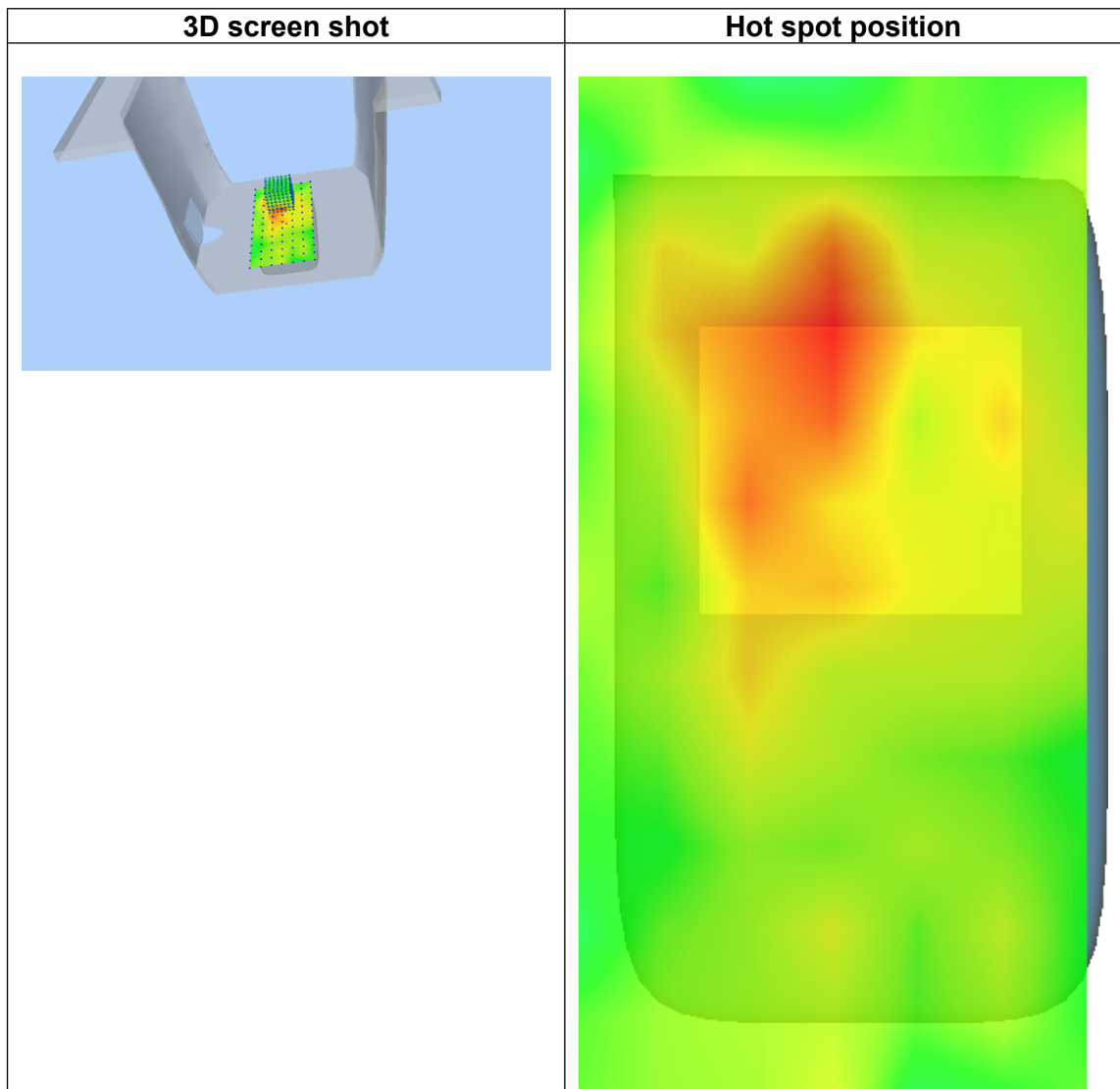
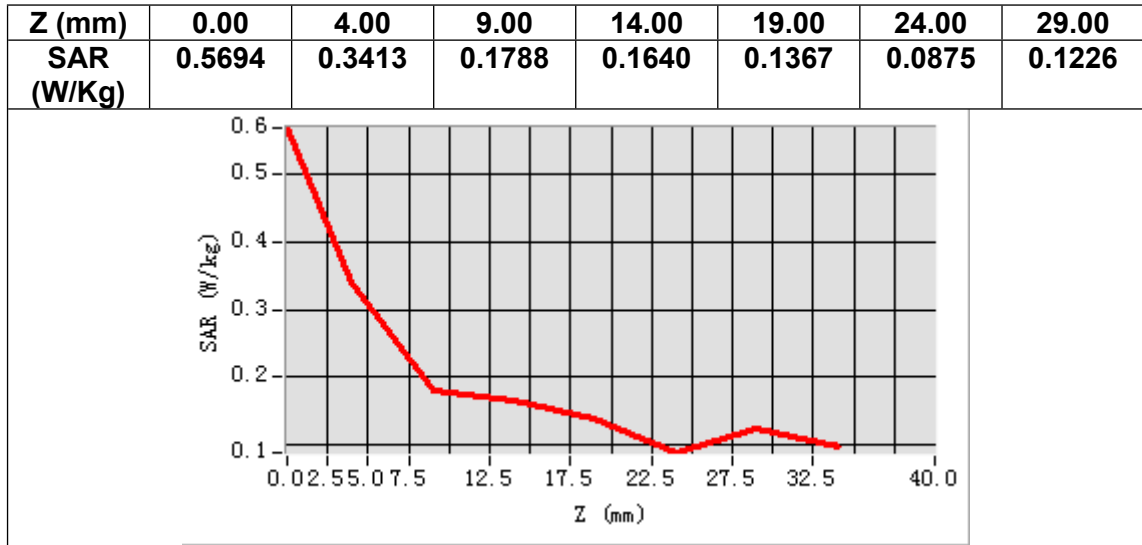
Frequency (MHz)	2412.000000
Relative permittivity (real part)	39.224000
Relative permittivity (imaginary part)	13.205000
Conductivity (S/m)	1.769470
Variation (%)	-1.970000



Maximum location: X=-5.00, Y=35.00

SAR Peak: 0.63 W/kg

SAR 10g (W/Kg)	0.211329
SAR 1g (W/Kg)	0.324217



MEASUREMENT 15

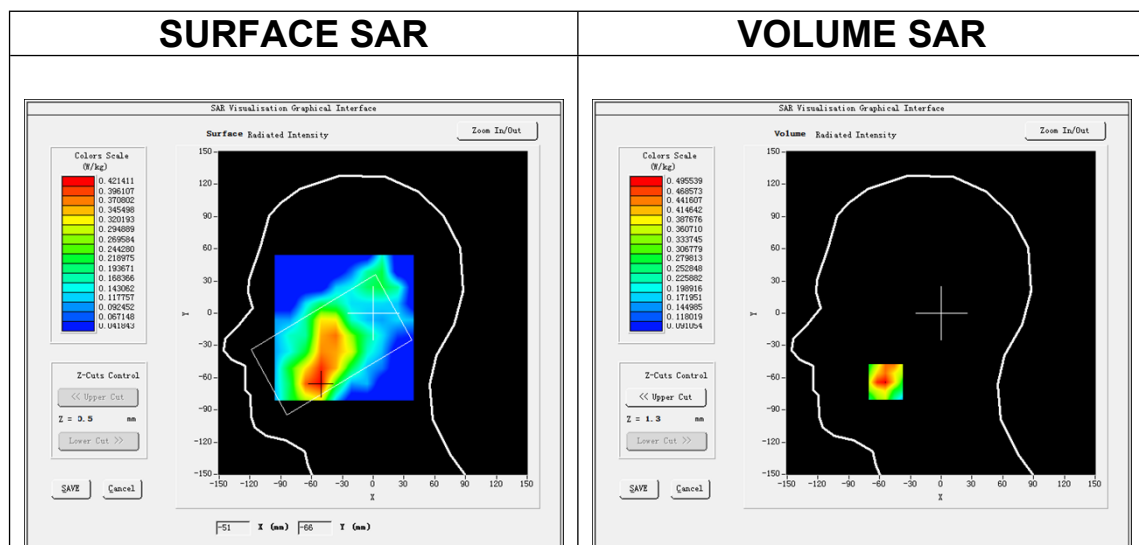
Date of measurement: 29/4/2025

A. Experimental conditions.

Area Scan	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7,dx=8mm dy=8mm dz=5mm</u>
Phantom	<u>Left head</u>
Device Position	<u>Cheek</u>
Band	<u>LTE band 2</u>
Channels	<u>Middle</u>
Signal	<u>LTE (Crest factor: 1.0)</u>
ConvF	<u>2.05</u>

B. SAR Measurement Results

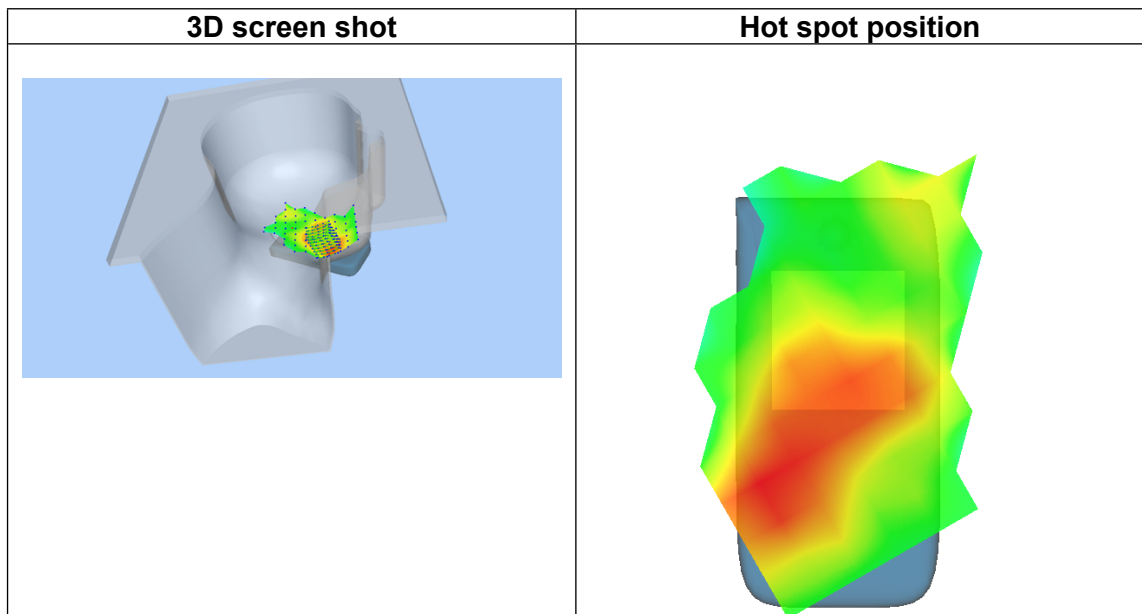
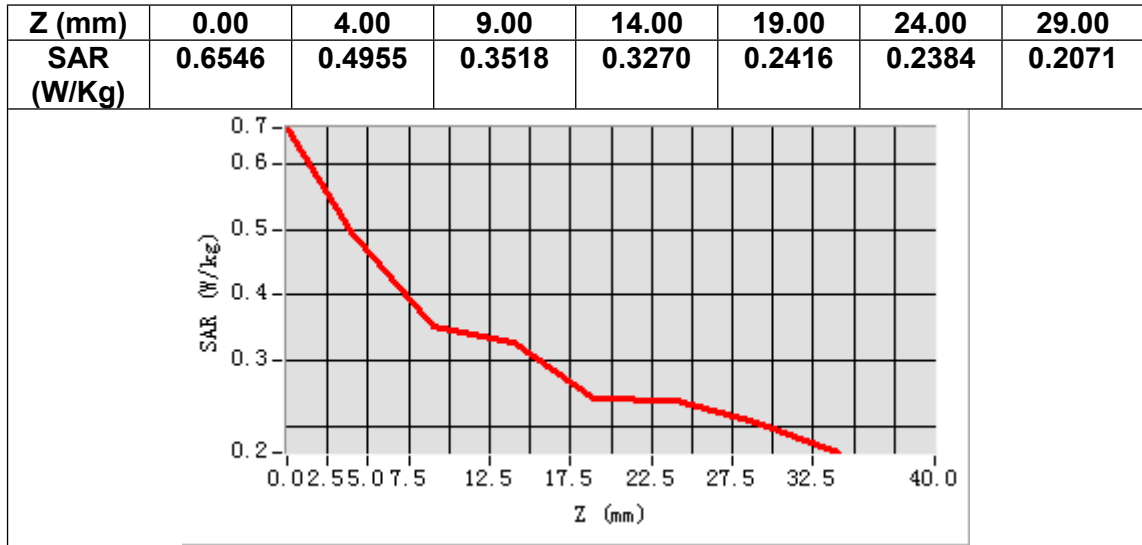
Frequency (MHz)	1879.500000
Relative permittivity (real part)	40.000000
Relative permittivity (imaginary part)	13.411700
Conductivity (S/m)	1.400405
Variation (%)	-0.860000



Maximum location: X=-54.00, Y=-64.00

SAR Peak: 0.68 W/kg

SAR 10g (W/Kg)	0.345530
SAR 1g (W/Kg)	0.471576



MEASUREMENT 16

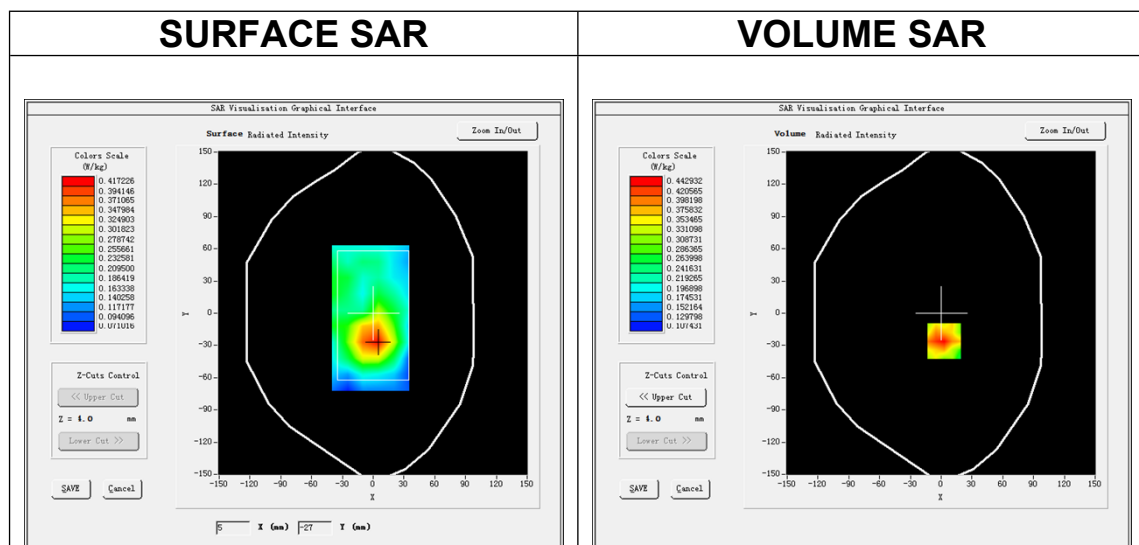
Date of measurement: 29/4/2025

A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7,dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Body</u>
<u>Band</u>	<u>LTE band 2</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.05</u>

B. SAR Measurement Results

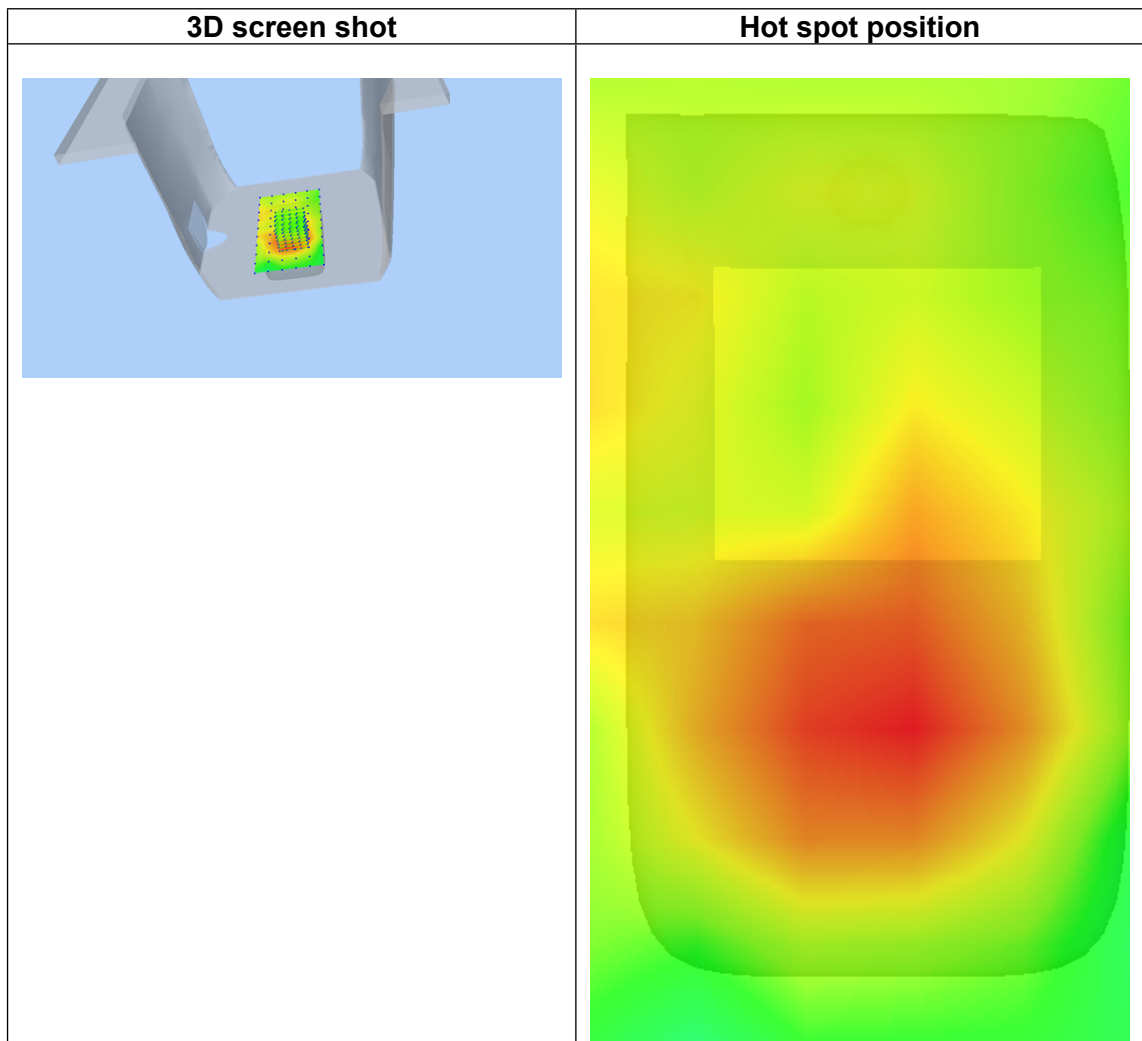
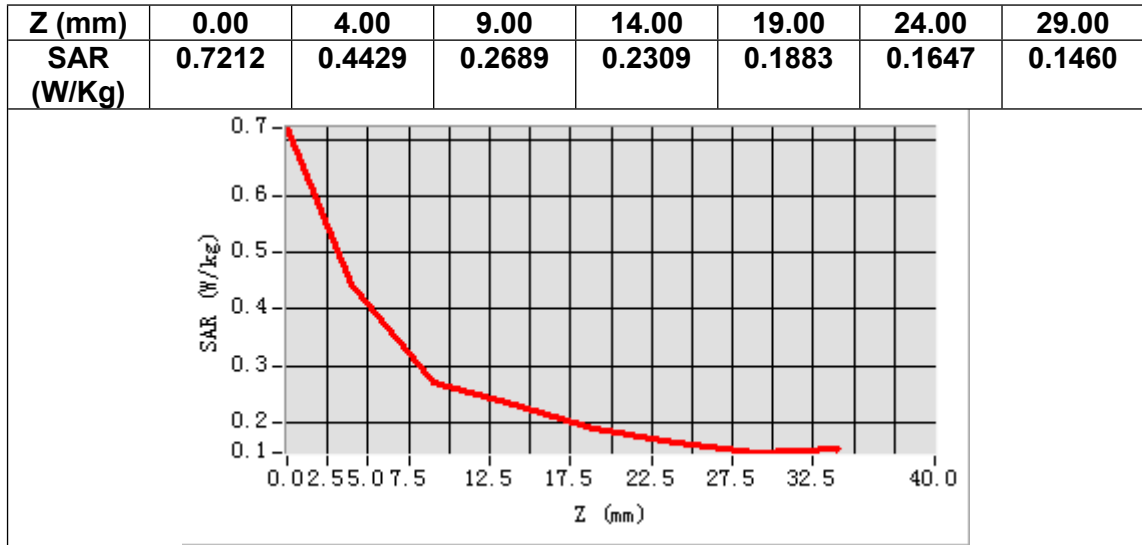
Frequency (MHz)	1879.500000
Relative permittivity (real part)	40.000000
Relative permittivity (imaginary part)	13.411700
Conductivity (S/m)	1.400405
Variation (%)	-2.990000



Maximum location: X=3.00, Y=-26.00

SAR Peak: 0.70 W/kg

SAR 10g (W/Kg)	0.303454
SAR 1g (W/Kg)	0.435518



MEASUREMENT 17

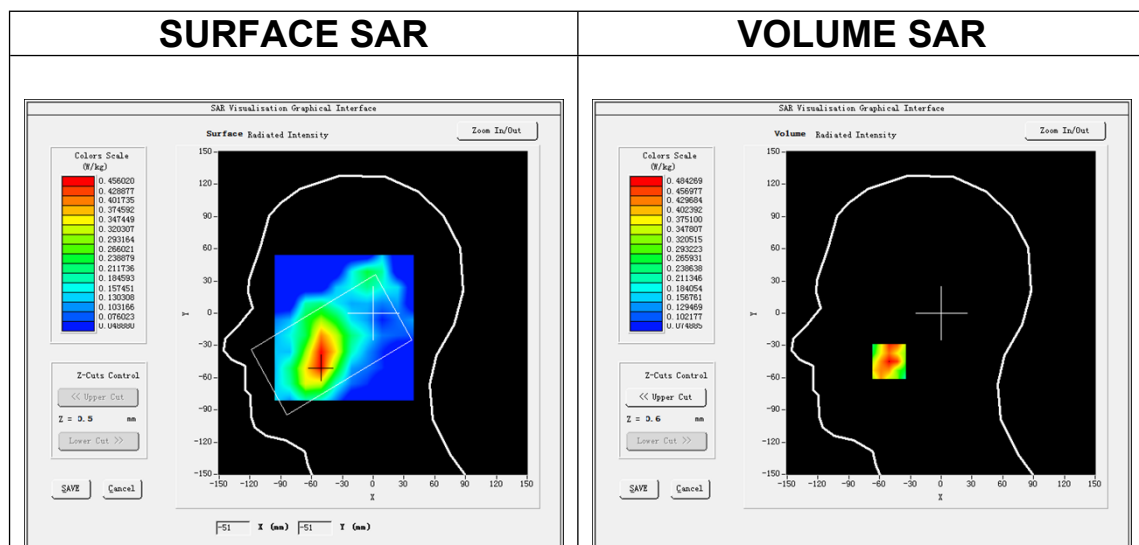
Date of measurement: 28/4/2025

A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7,dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Left head</u>
<u>Device Position</u>	<u>Cheek</u>
<u>Band</u>	<u>LTE band 4</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.05</u>

B. SAR Measurement Results

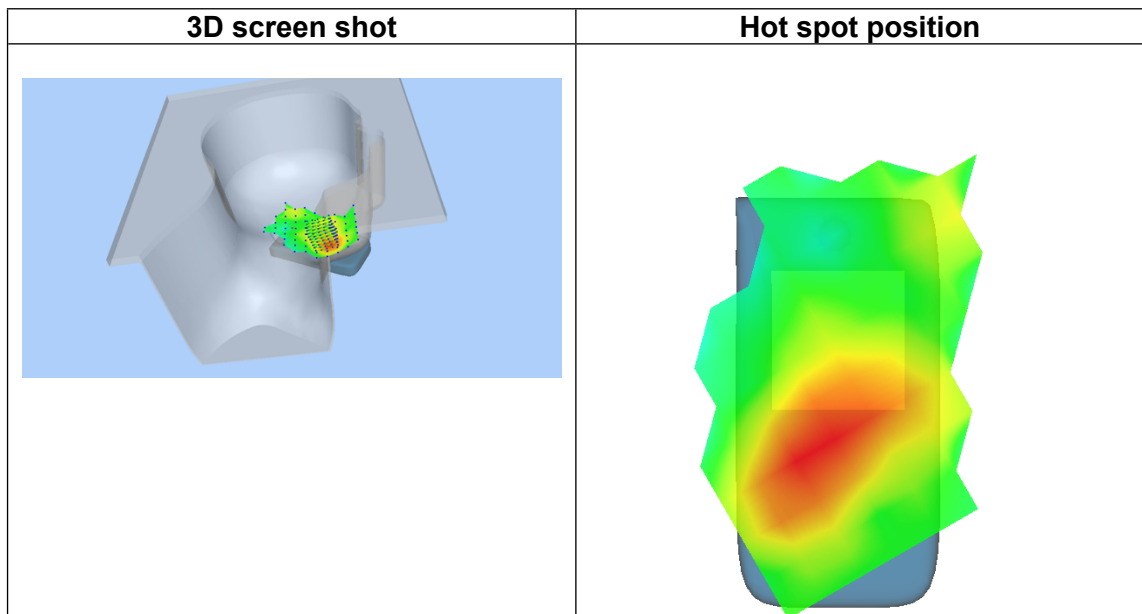
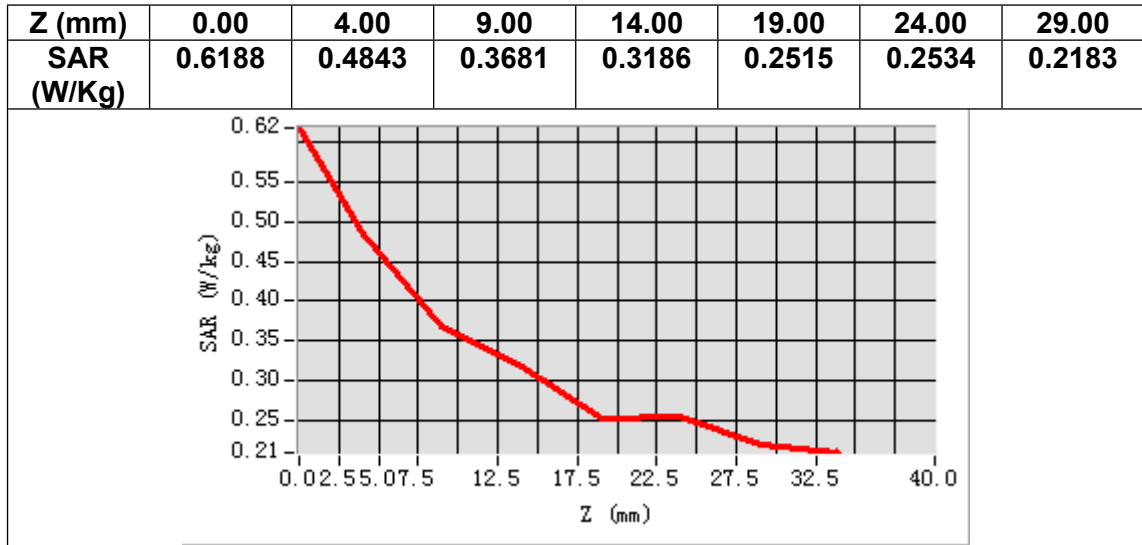
Frequency (MHz)	1732.500000
Relative permittivity (real part)	40.115910
Relative permittivity (imaginary part)	14.136136
Conductivity (S/m)	1.360603
Variation (%)	-4.480000



Maximum location: X=-51.00, Y=-45.00

SAR Peak: 0.66 W/kg

SAR 10g (W/Kg)	0.345165
SAR 1g (W/Kg)	0.454860



MEASUREMENT 18

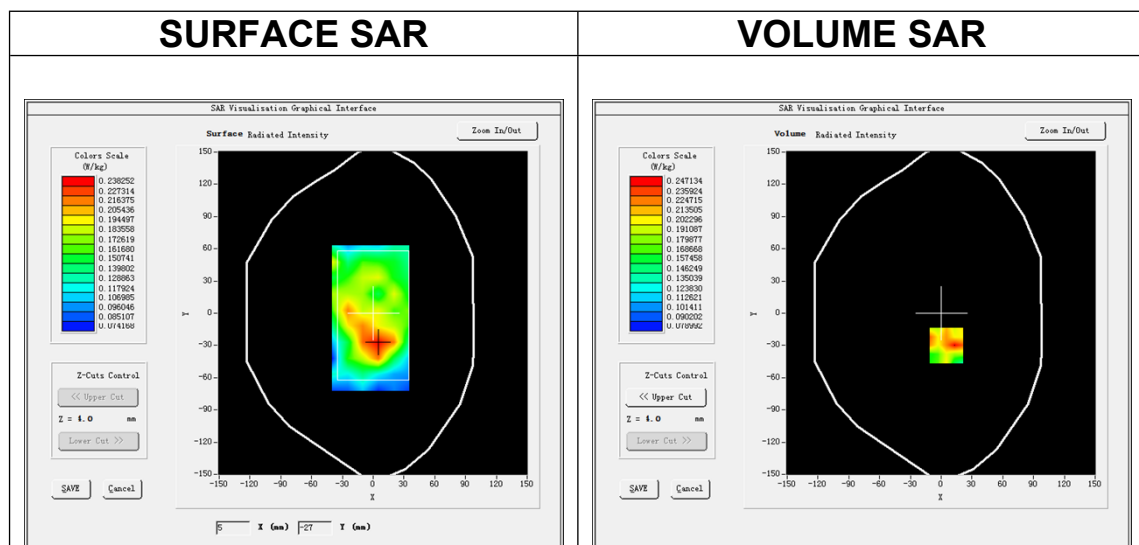
Date of measurement: 28/4/2025

A. Experimental conditions.

Area Scan	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7,dx=8mm dy=8mm dz=5mm</u>
Phantom	<u>Validation plane</u>
Device Position	<u>Body</u>
Band	<u>LTE band 4</u>
Channels	<u>Middle</u>
Signal	<u>LTE (Crest factor: 1.0)</u>
ConvF	<u>2.05</u>

B. SAR Measurement Results

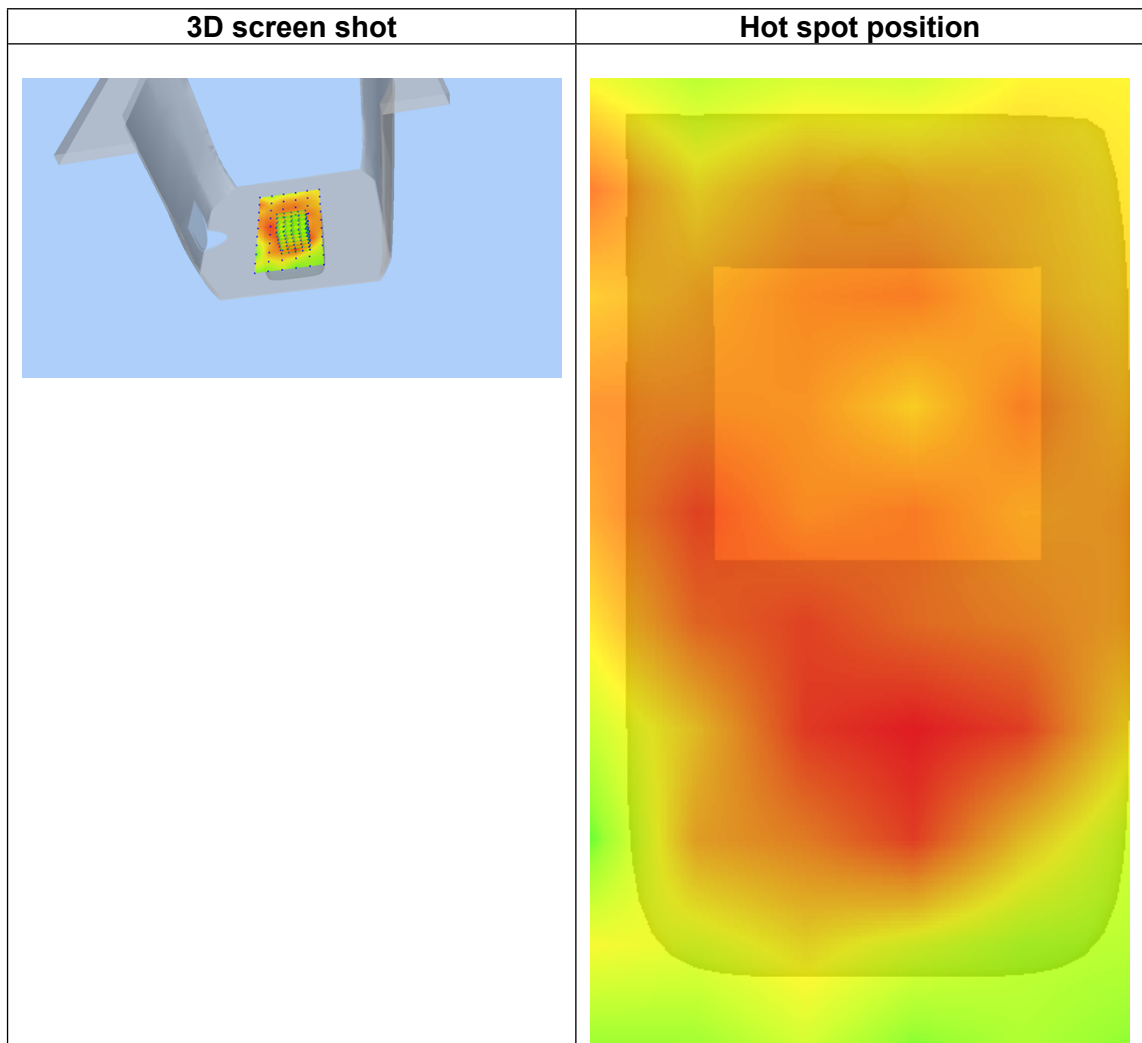
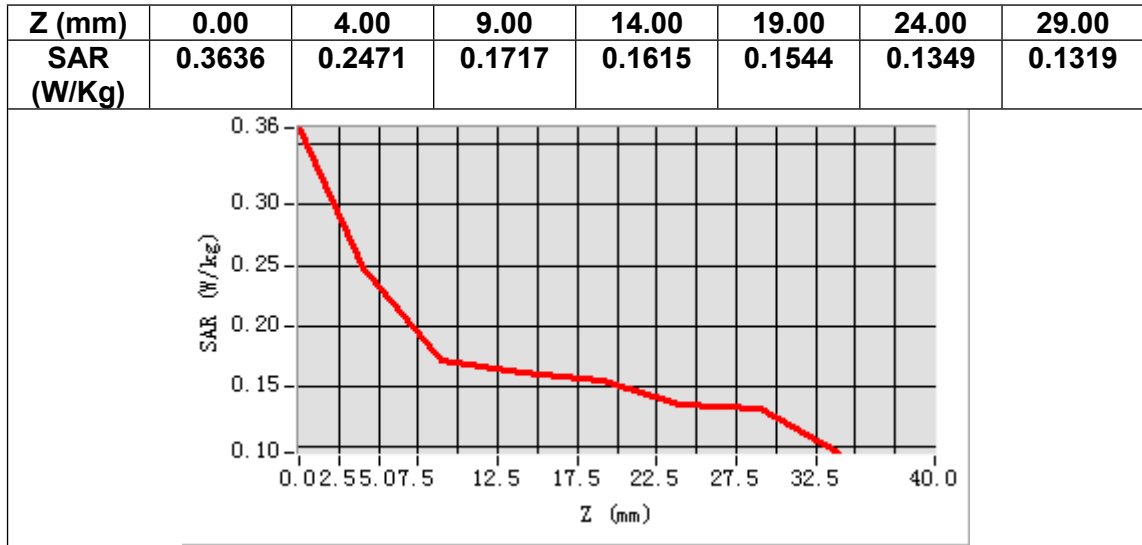
Frequency (MHz)	1732.500000
Relative permittivity (real part)	40.115910
Relative permittivity (imaginary part)	14.136136
Conductivity (S/m)	1.360603
Variation (%)	-0.900000



Maximum location: X=5.00, Y=-30.00

SAR Peak: 0.42 W/kg

SAR 10g (W/Kg)	0.180804
SAR 1g (W/Kg)	0.251018



MEASUREMENT 19

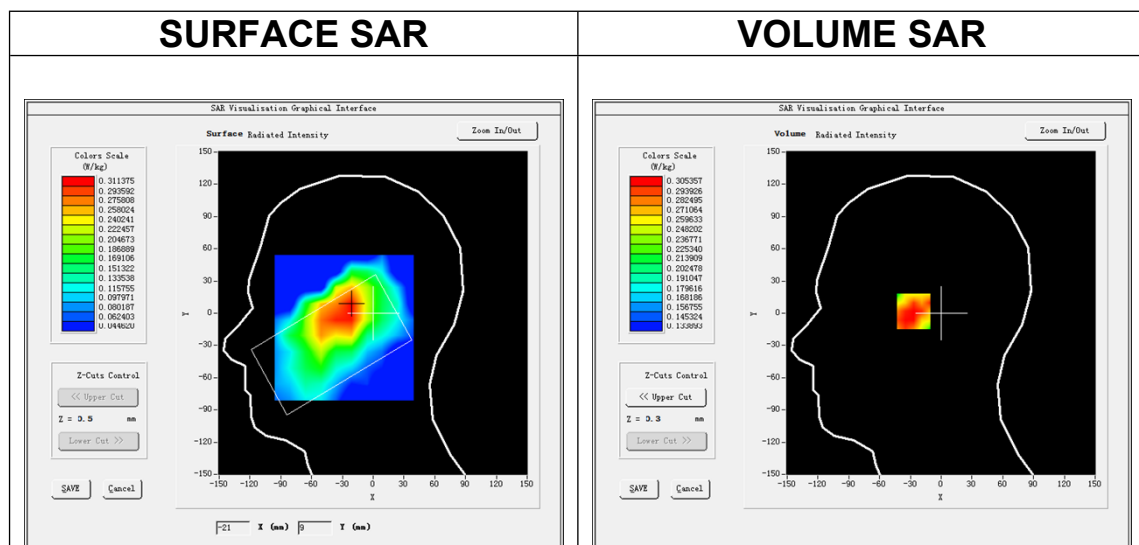
Date of measurement: 25/4/2025

A. Experimental conditions.

Area Scan	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7,dx=8mm dy=8mm dz=5mm</u>
Phantom	<u>Left head</u>
Device Position	<u>Cheek</u>
Band	<u>LTE band 5</u>
Channels	<u>Middle</u>
Signal	<u>LTE (Crest factor: 1.0)</u>
ConvF	<u>1.66</u>

B. SAR Measurement Results

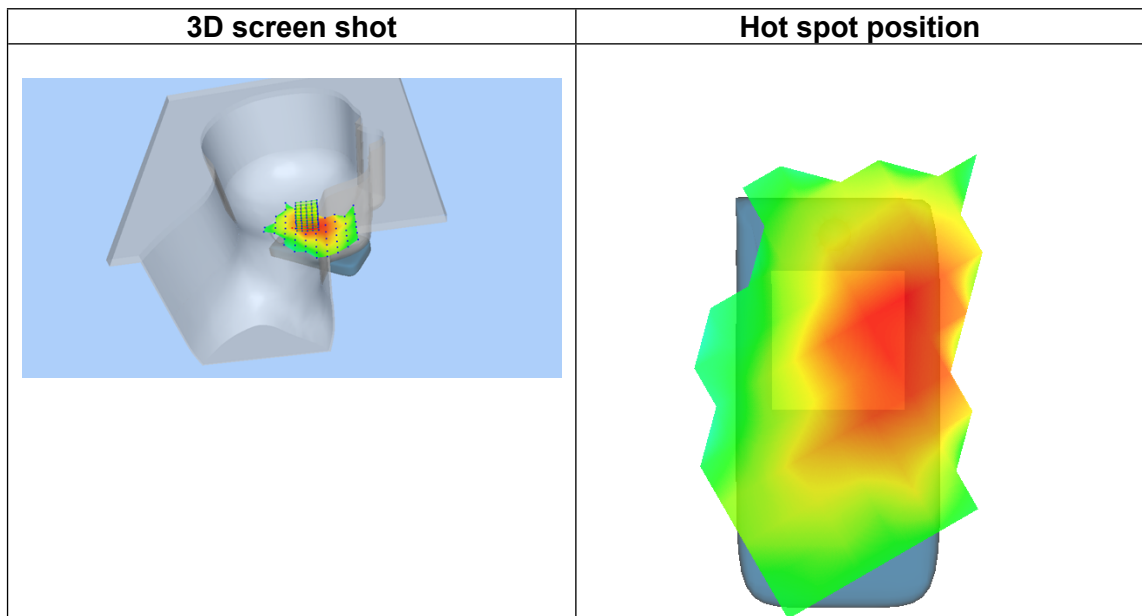
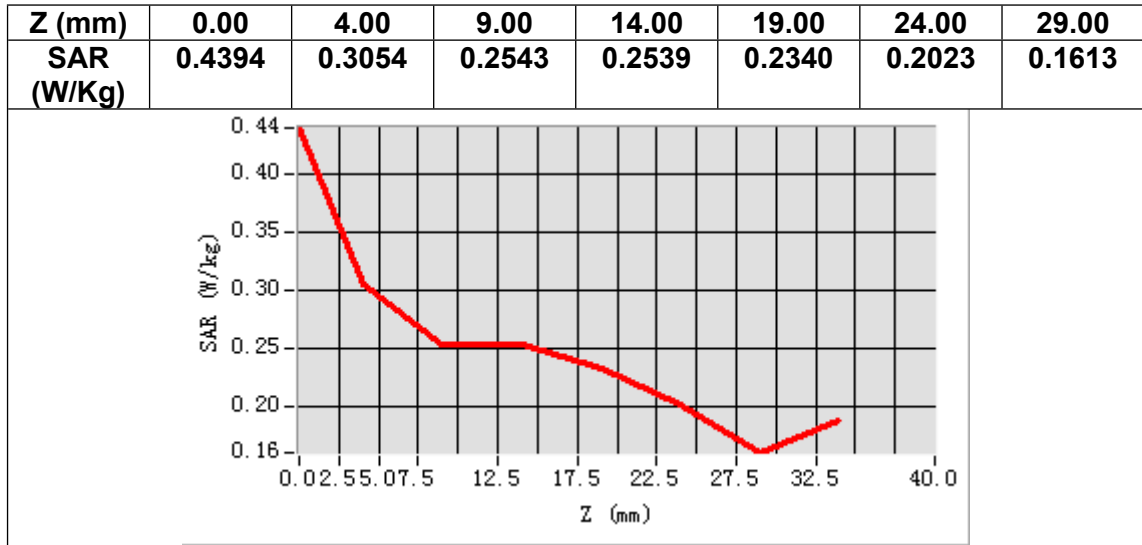
Frequency (MHz)	836.500000
Relative permittivity (real part)	41.500000
Relative permittivity (imaginary part)	19.400000
Conductivity (S/m)	0.901561
Variation (%)	0.070000



Maximum location: X=-24.00, Y=3.00

SAR Peak: 0.42 W/kg

SAR 10g (W/Kg)	0.263623
SAR 1g (W/Kg)	0.322971



MEASUREMENT 20

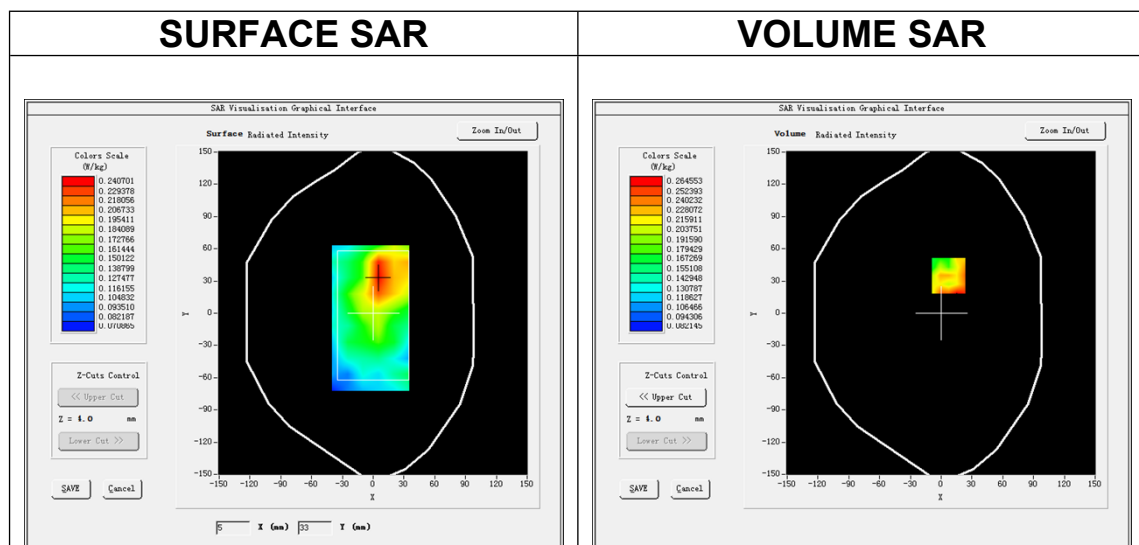
Date of measurement: 25/4/2025

A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7,dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Body</u>
<u>Band</u>	<u>LTE band 5</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>1.66</u>

B. SAR Measurement Results

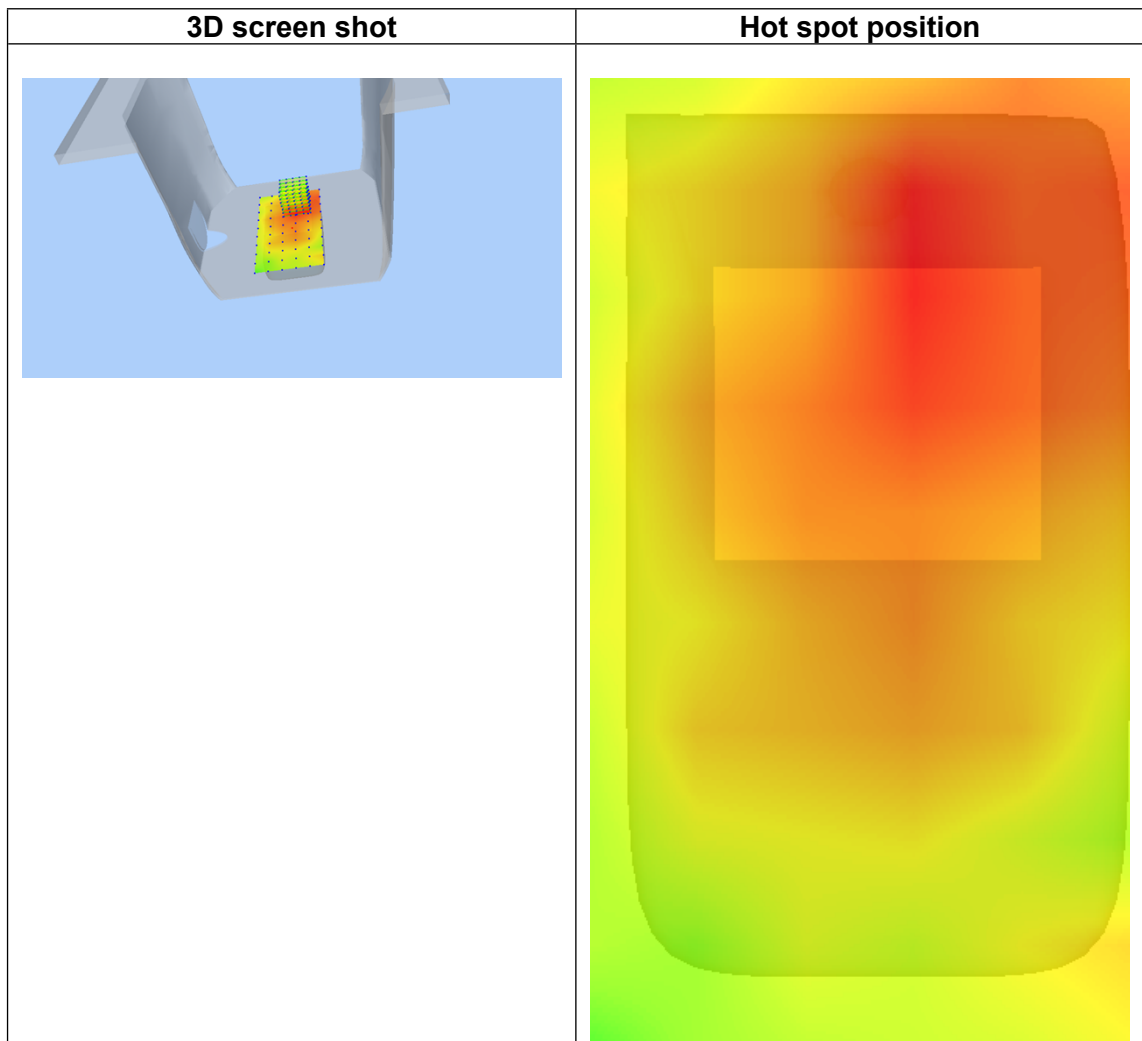
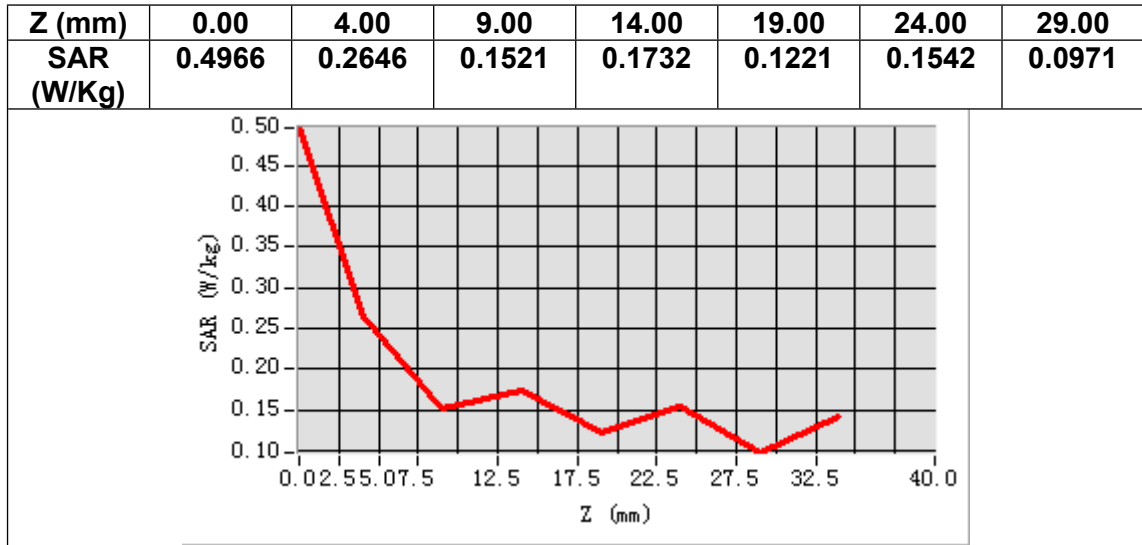
Frequency (MHz)	836.500000
Relative permittivity (real part)	41.500000
Relative permittivity (imaginary part)	19.400000
Conductivity (S/m)	0.901561
Variation (%)	0.610000



Maximum location: X=7.00, Y=35.00

SAR Peak: 0.35 W/kg

SAR 10g (W/Kg)	0.190637
SAR 1g (W/Kg)	0.234243



MEASUREMENT 21

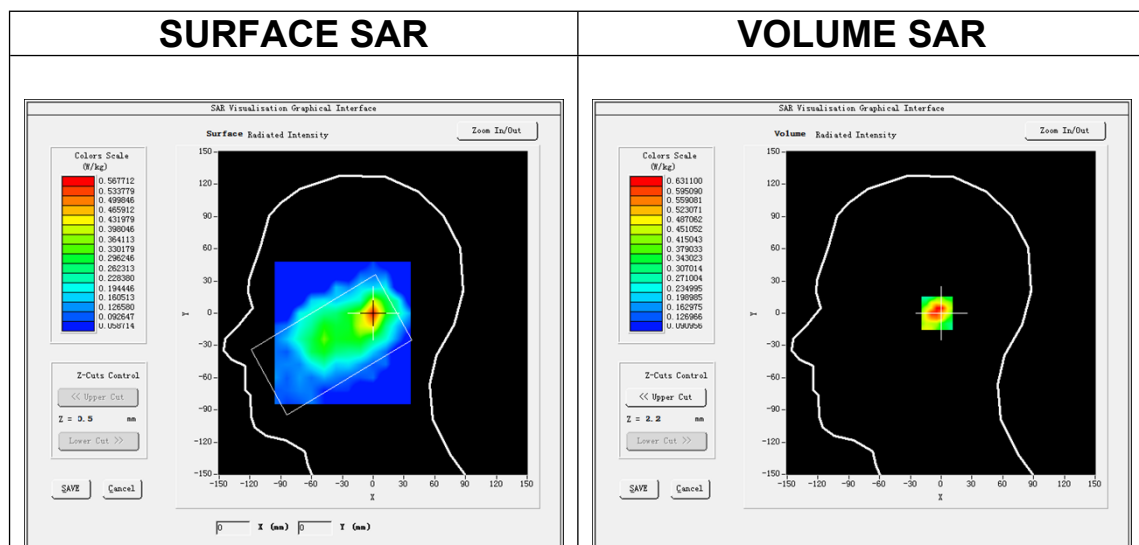
Date of measurement: 1/5/2025

A. Experimental conditions.

Area Scan	<u>dx=12mm dy=12mm, h= 5.00 mm</u>
ZoomScan	<u>7x7x7,dx=5mm dy=5mm dz=5mm</u>
Phantom	<u>Left head</u>
Device Position	<u>Cheek</u>
Band	<u>LTE band 7</u>
Channels	<u>Middle</u>
Signal	<u>LTE (Crest factor: 1.0)</u>
ConvF	<u>2.35</u>

B. SAR Measurement Results

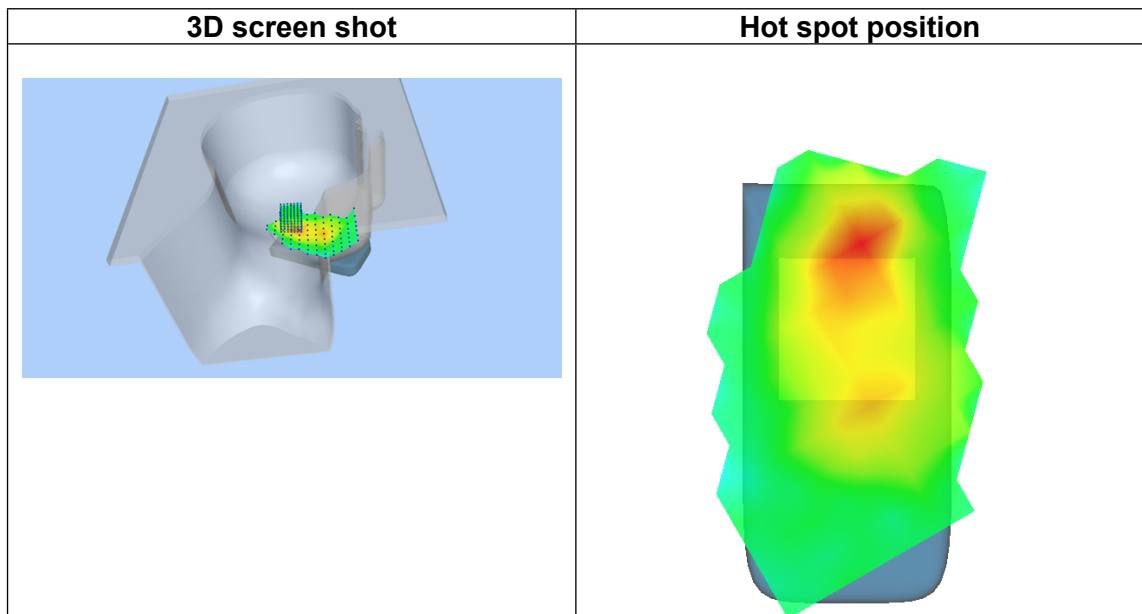
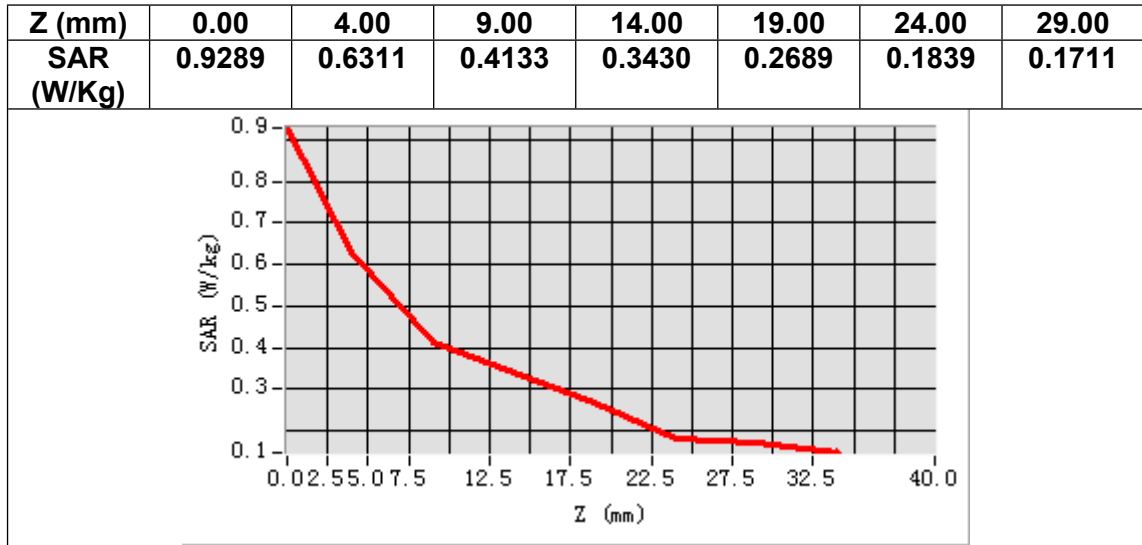
Frequency (MHz)	2535.000000
Relative permittivity (real part)	39.086666
Relative permittivity (imaginary part)	13.418333
Conductivity (S/m)	1.889749
Variation (%)	-1.800000



Maximum location: X=0.00, Y=0.00

SAR Peak: 1.10 W/kg

SAR 10g (W/Kg)	0.382689
SAR 1g (W/Kg)	0.579661



MEASUREMENT 22

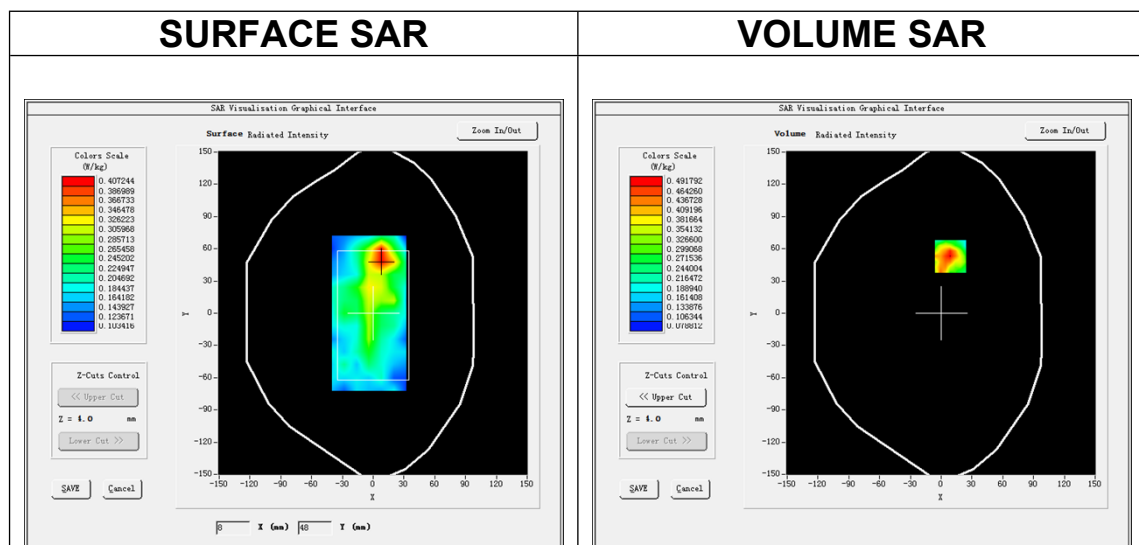
Date of measurement: 1/5/2025

A. Experimental conditions.

<u>Area Scan</u>	<u>dx=12mm dy=12mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>7x7x7,dx=5mm dy=5mm dz=5mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Body</u>
<u>Band</u>	<u>LTE band 7</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.35</u>

B. SAR Measurement Results

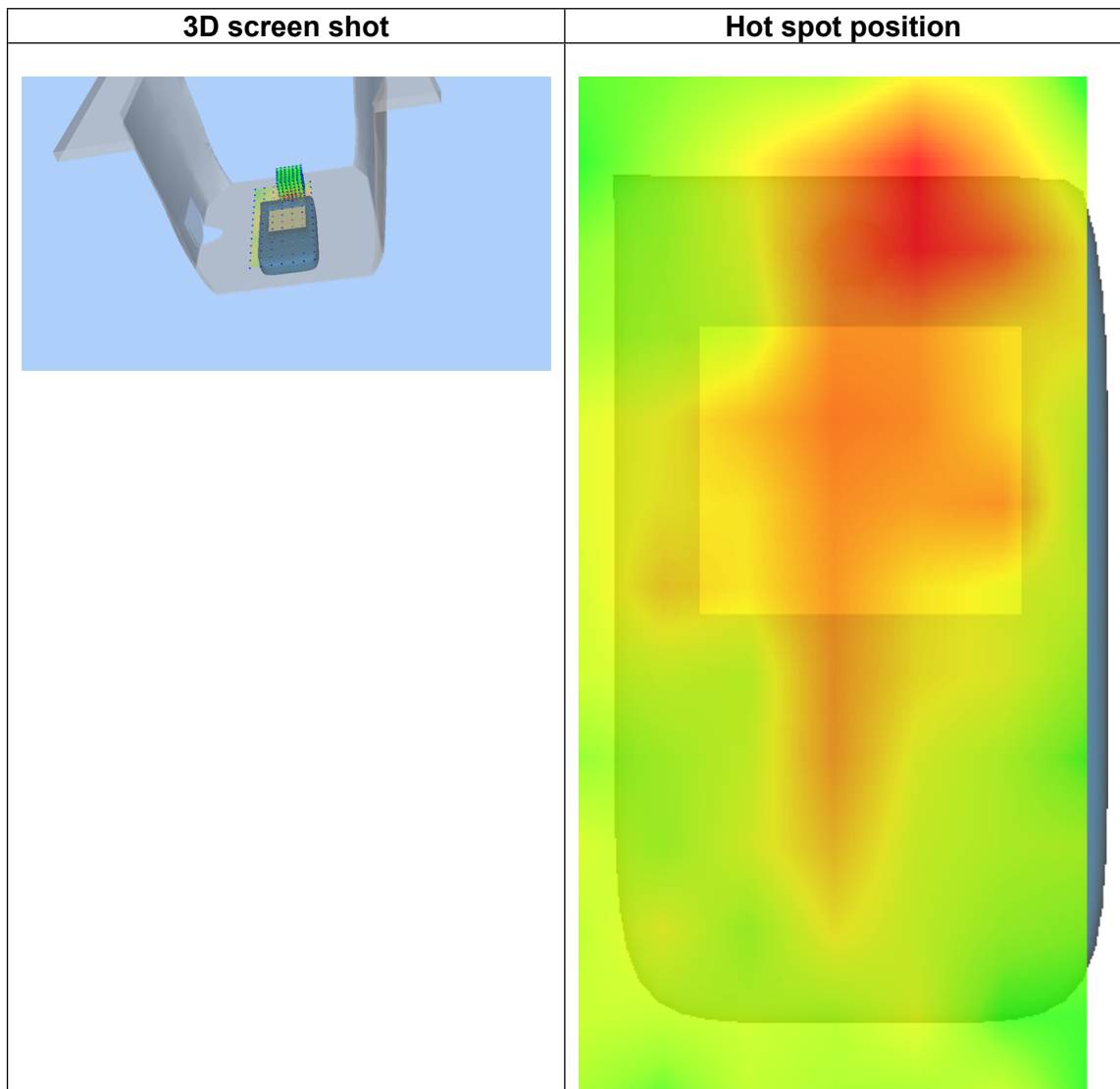
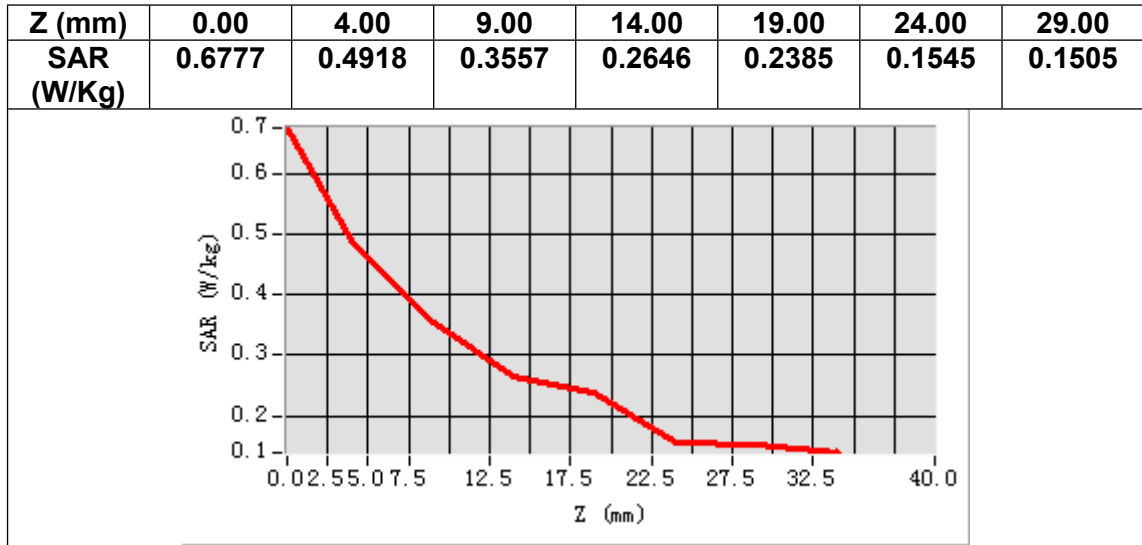
Frequency (MHz)	2535.000000
Relative permittivity (real part)	39.086666
Relative permittivity (imaginary part)	13.418333
Conductivity (S/m)	1.889749
Variation (%)	0.180000



Maximum location: X=9.00, Y=53.00

SAR Peak: 0.69 W/kg

SAR 10g (W/Kg)	0.308470
SAR 1g (W/Kg)	0.455250



Appendix D. Calibration Certificate

Table of contents
E Field Probe - EPGO0523-403
835 MHz Dipole - SN 03/15 DIP 0G835-347
1800 MHz Dipole - SN 03/15 DIP 1G800-349
1900 MHz Dipole - SN 03/15 DIP 1G900-350
2450 MHz Dipole - SN 03/15 DIP 2G450-352
2600 MHz Dipole - SN 03/15 DIP 2G600-356
5000-6000 MHz Dipole - SN 03/14 WGA33



COMOSAR E-Field Probe Calibration Report

Ref : ACR.307.3.24.BES.A

**GUANGDONG ASIA HONGKE TEST
TECHNOLOGY CO., LTD**
NO.1/F,BUILDING B1, JUNFENG INDUSTRIAL PARK,
CHONGQING ROAD, HEPING COMMUNITY,
FUHAIHAI STREET, BAO'AN DISTRICT,SHENZHEN,
GUANGDONG 518055, P.R.CHINA
MVG COMOSAR DOSIMETRIC E-FIELD PROBE
SERIAL NO.: SN 39/21 EPGO0523-403

Calibrated at MVG

Z.I. de la pointe du diable

**Technopôle Brest Iroise – 295 avenue Alexis de Rochon
29280 PLOUZANE - FRANCE**

Calibration date: 09/11/2024



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

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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).



COMOSAR E-FIELD PROBE CALIBRATION REPORT

Ref: ACR.307.3.24.BES.A

	<i>Name</i>	<i>Function</i>	<i>Date</i>	<i>Signature</i>
<i>Prepared by :</i>	Jérôme Le Gall	Measurement Responsible	09/10/2024	
<i>Checked by :</i>	Jérôme Luc	Technical Manager	09/10/2024	
<i>Approved by :</i>	Yann Toutain	Laboratory Director	09/11/2024	

	<i>Customer Name</i>
<i>Distribution :</i>	Shenzhen Asia Hongke

<i>Issue</i>	<i>Name</i>	<i>Date</i>	<i>Modifications</i>
A	Jérôme Luc	9/11/2024	Initial release



COMOSAR E-FIELD PROBE CALIBRATION REPORT

Ref: ACR.307.3.24.BES.A

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COMOSAR E-FIELD PROBE CALIBRATION REPORT

Ref: ACR.307.3.24.BES.A

1 DEVICE UNDER TEST

Device Under Test	
Device Type	COMOSAR DOSIMETRIC E FIELD PROBE
Manufacturer	MVG
Model	SSE2
Serial Number	SN 39/21 EPG00523-403
Product Condition (new / used)	New
Frequency Range of Probe	0.15 GHz-6GHz
Resistance of Three Dipoles at Connector	Dipole 1: R1=0.199 MΩ Dipole 2: R2=0.218 MΩ Dipole 3: R3=0.210 MΩ

2 PRODUCT DESCRIPTION

2.1 GENERAL INFORMATION

MVG's COMOSAR E field Probes are built in accordance to the IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards.



Figure 1 – MVG COMOSAR Dosimetric E field Probe

Probe Length	330 mm
Length of Individual Dipoles	2 mm
Maximum external diameter	8 mm
Probe Tip External Diameter	2.5 mm
Distance between dipoles / probe extremity	1 mm

3 MEASUREMENT METHOD

The IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards provide recommended practices for the probe calibrations, including the performance characteristics of interest and methods by which to assess their affect. All calibrations / measurements performed meet the fore mentioned standards.

3.1 LINEARITY

The evaluation of the linearity was done in free space using the waveguide, performing a power sweep to cover the SAR range 0.01W/kg to 100W/kg.

3.2 SENSITIVITY

The sensitivity factors of the three dipoles were determined using a two step calibration method (air and tissue simulating liquid) using waveguides as outlined in the standards.

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