

MEASUREMENT 21

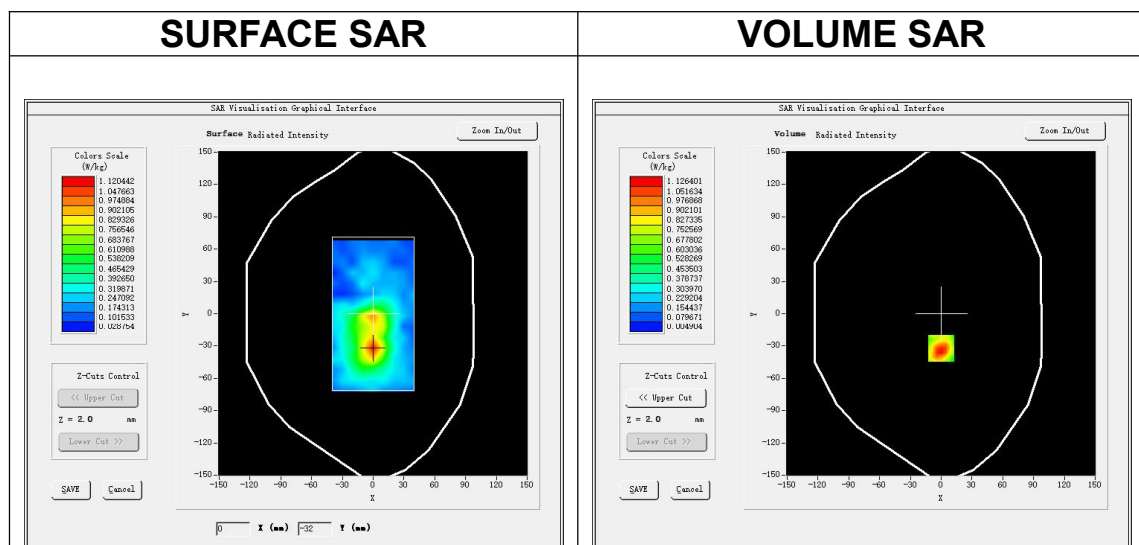
Date of measurement: 17/12/2024

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 802.11n U-NII</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>IEEE802.11n (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>1.90</u>

B. SAR Measurement Results

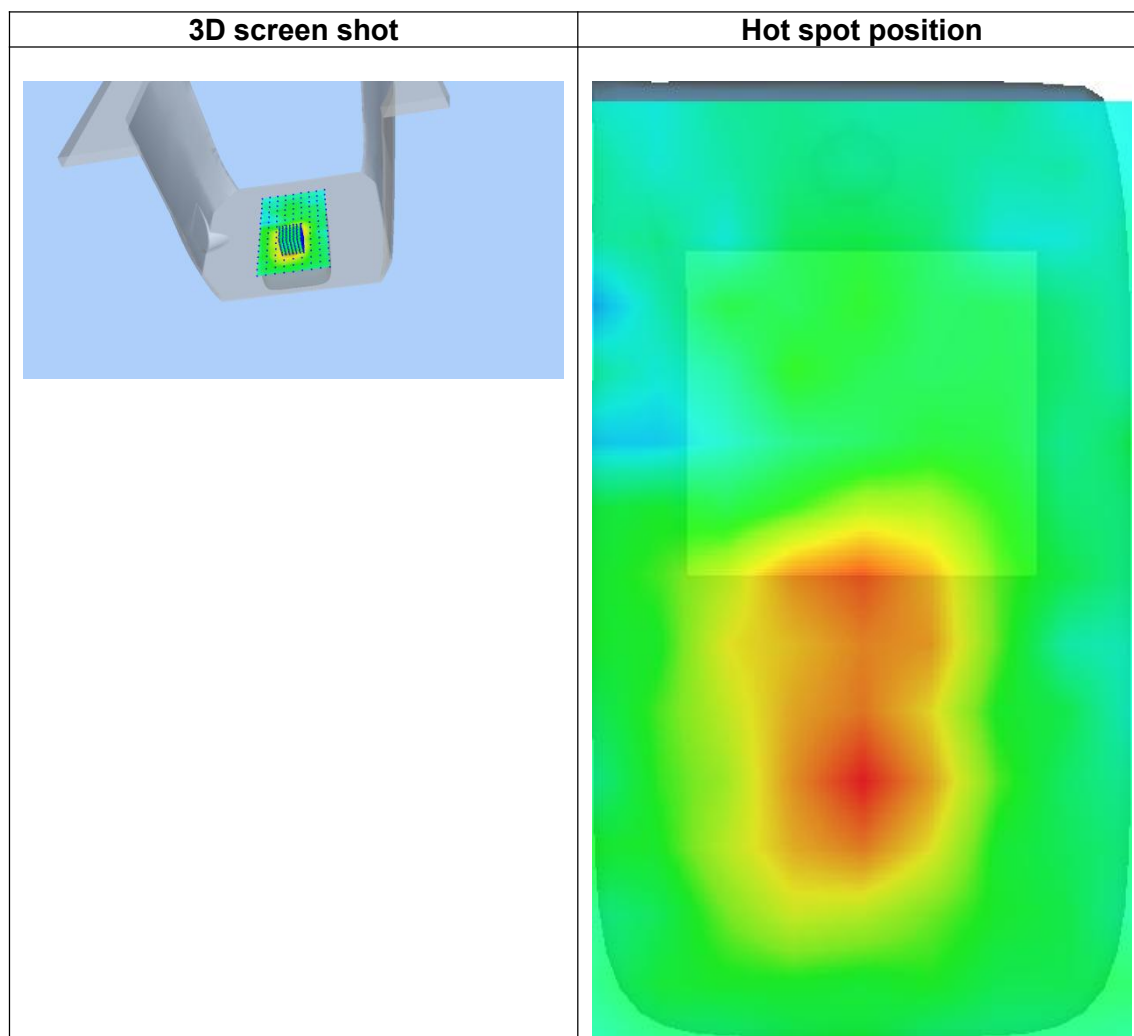
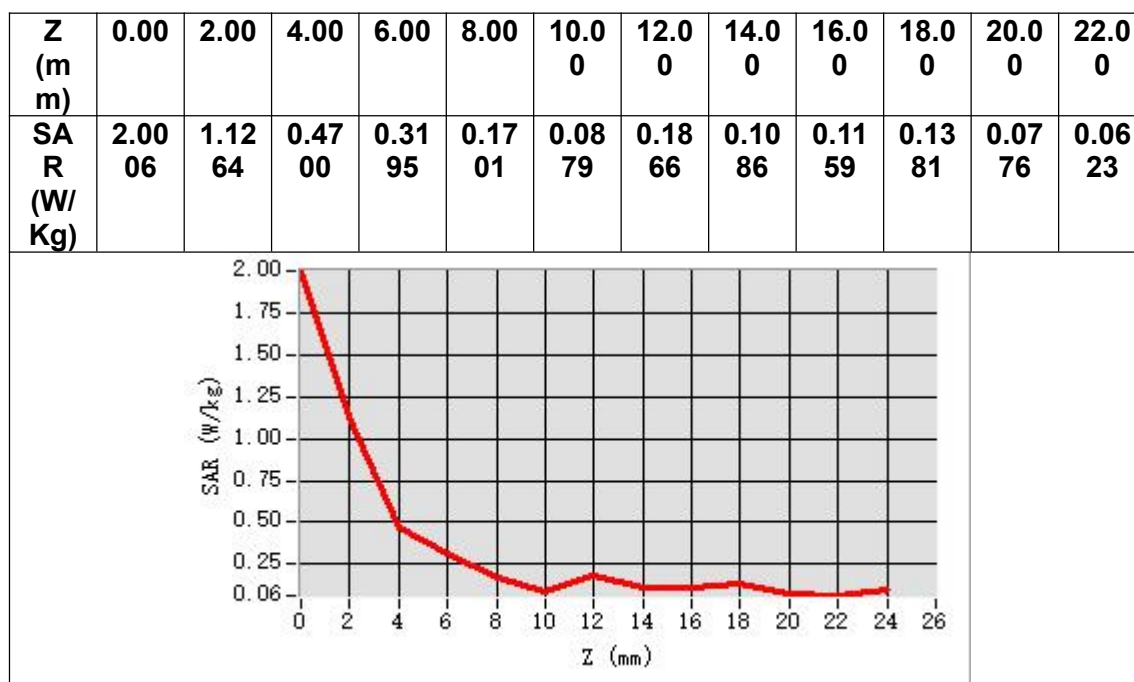
Frequency (MHz)	5795.000000
Relative permittivity (real part)	33.979572
Relative permittivity (imaginary part)	15.795672
Conductivity (S/m)	5.076553
Variation (%)	2.040000



Maximum location: X=0.00, Y=-32.00

SAR Peak: 2.07 W/kg

SAR 10g (W/Kg)	0.319391
SAR 1g (W/Kg)	0.677602



MEASUREMENT 22

Date of measurement: 27/12/2024

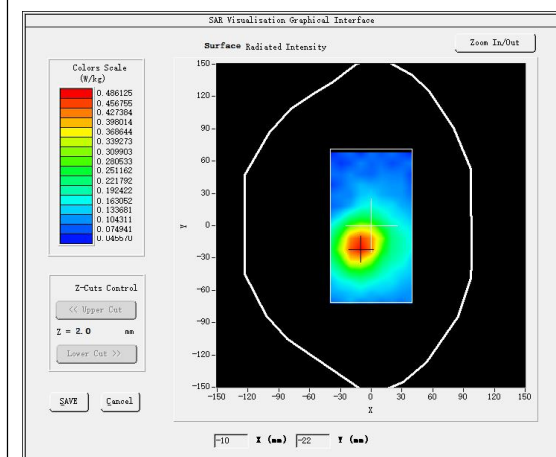
A. Experimental conditions.

<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 802.11n U-NII</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>IEEE802.11n (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>1.89</u>

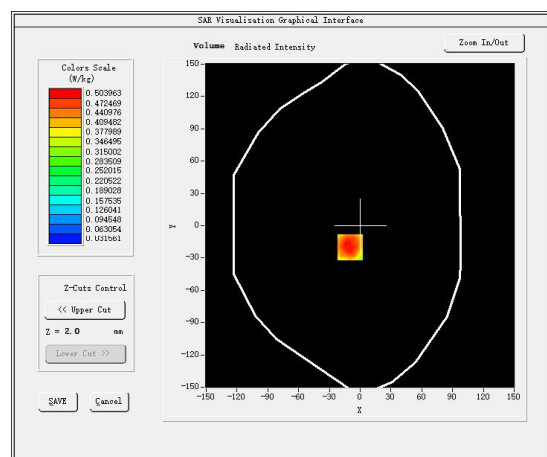
B. SAR Measurement Results

Frequency (MHz)	5200.000000
Relative permittivity (real part)	34.652485
Relative permittivity (imaginary part)	15.561054
Conductivity (S/m)	4.495416
Variation (%)	-2.020000

SURFACE SAR



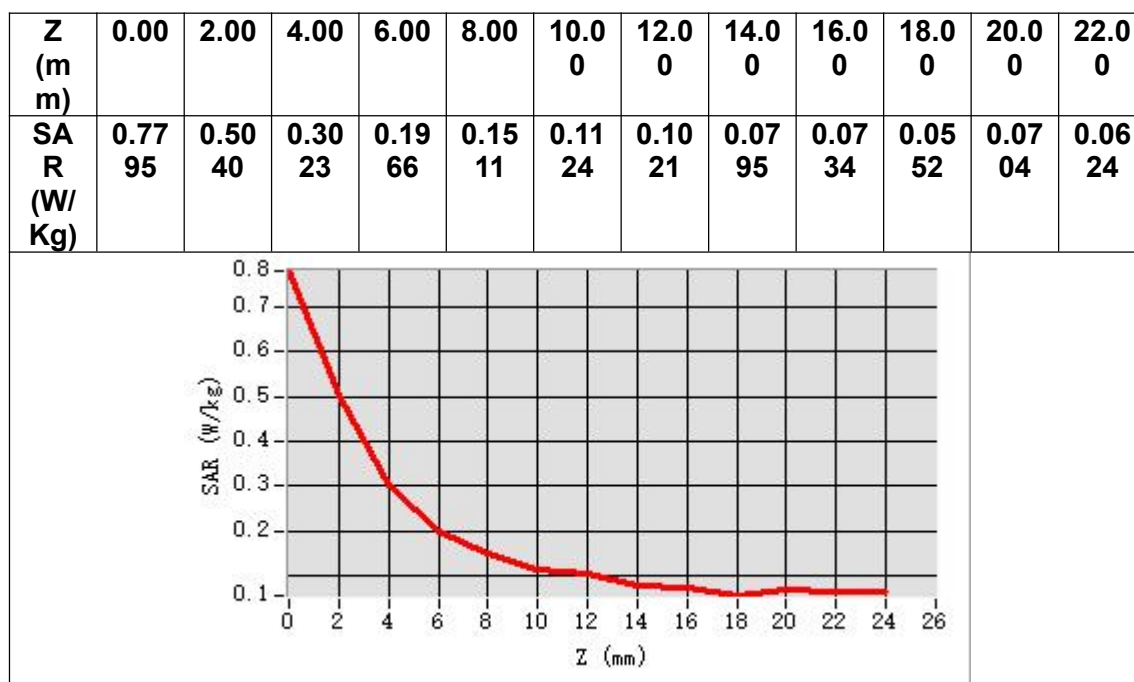
VOLUME SAR



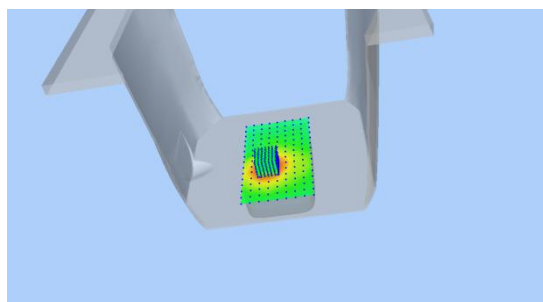
Maximum location: X=-10.00, Y=-20.00

SAR Peak: 0.83 W/kg

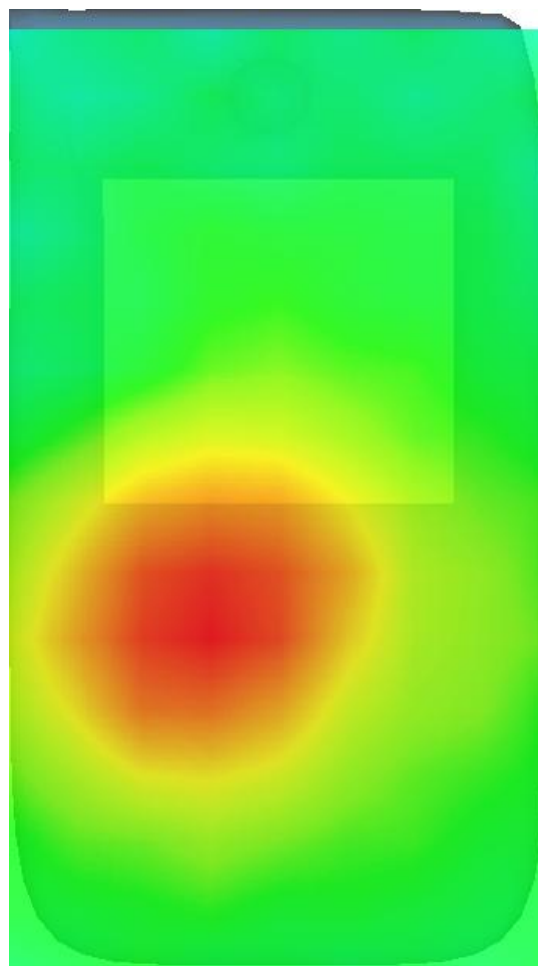
SAR 10g (W/Kg)	0.186524
SAR 1g (W/Kg)	0.333527



3D screen shot



Hot spot position



MEASUREMENT 23

Date of measurement: 17/12/2024

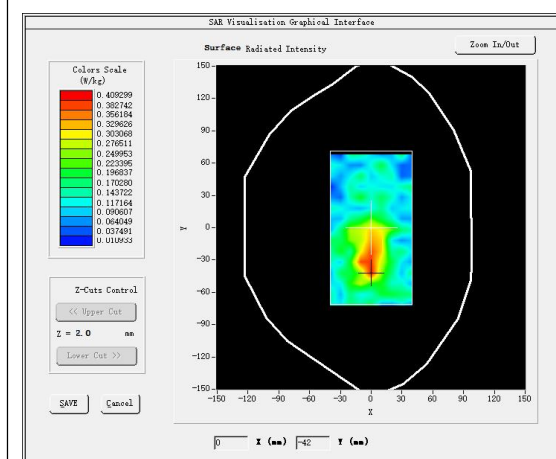
A. Experimental conditions.

<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 802.11n U-NII</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>IEEE802.n (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>1.90</u>

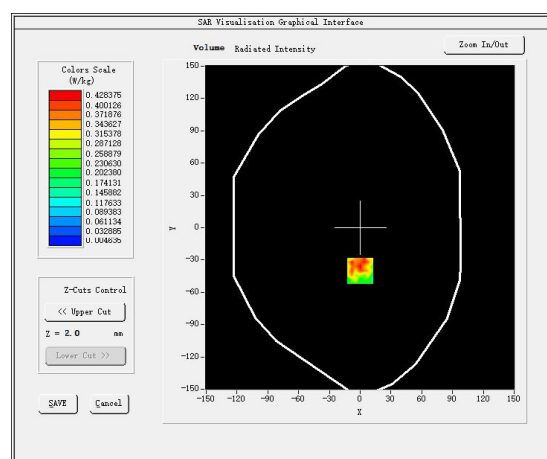
B. SAR Measurement Results

Frequency (MHz)	5825.000000
Relative permittivity (real part)	33.979572
Relative permittivity (imaginary part)	15.795672
Conductivity (S/m)	5.076553
Variation (%)	-3.530000

SURFACE SAR



VOLUME SAR



Maximum location: X=0.00, Y=-40.00

SAR Peak: 0.83 W/kg

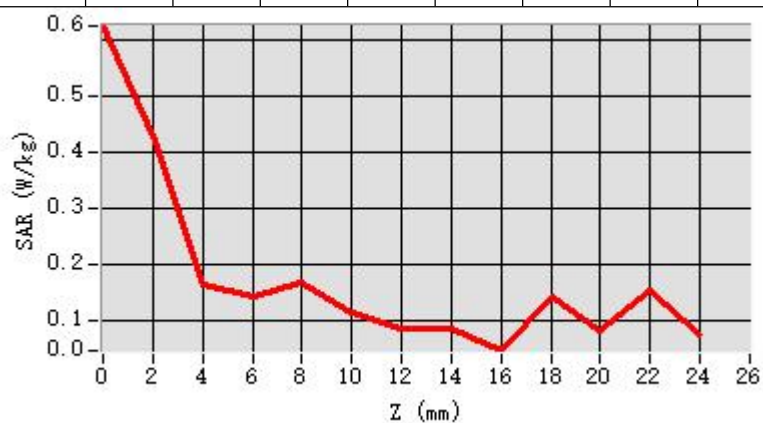
SAR 10g (W/Kg)

0.157637

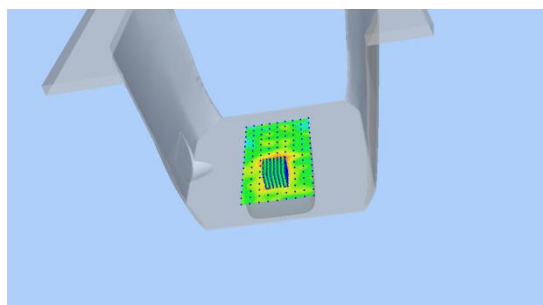
SAR 1g (W/Kg)

0.276249

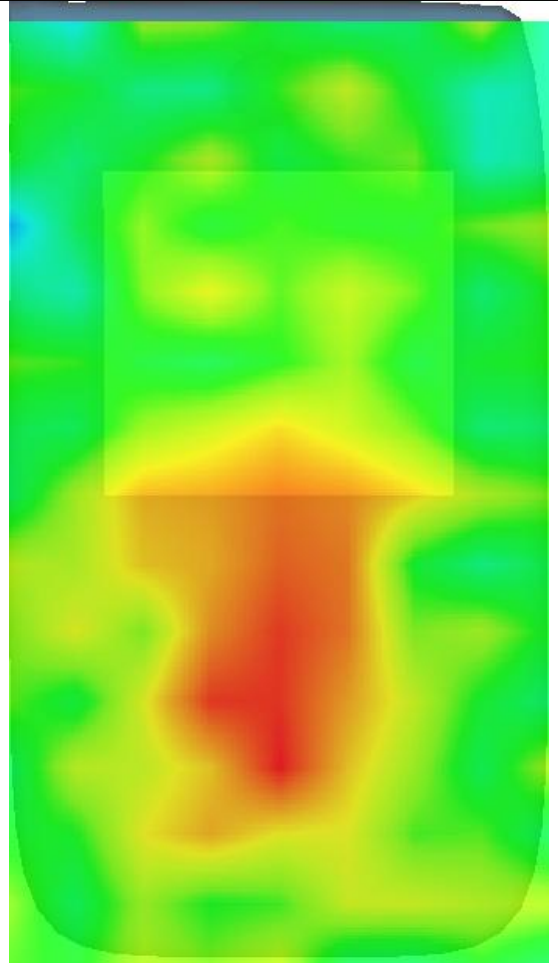
Z (m m)	0.00	2.00	4.00	6.00	8.00	10.0	12.0	14.0	16.0	18.0	20.0	22.0
SAR (W/ Kg)	0.62 36	0.42 84	0.16 23	0.14 36	0.16 68	0.11 52	0.08 65	0.08 48	0.04 63	0.14 32	0.08 03	0.15 36



3D screen shot



Hot spot position



MEASUREMENT 24

Date of measurement: 27/12/2024

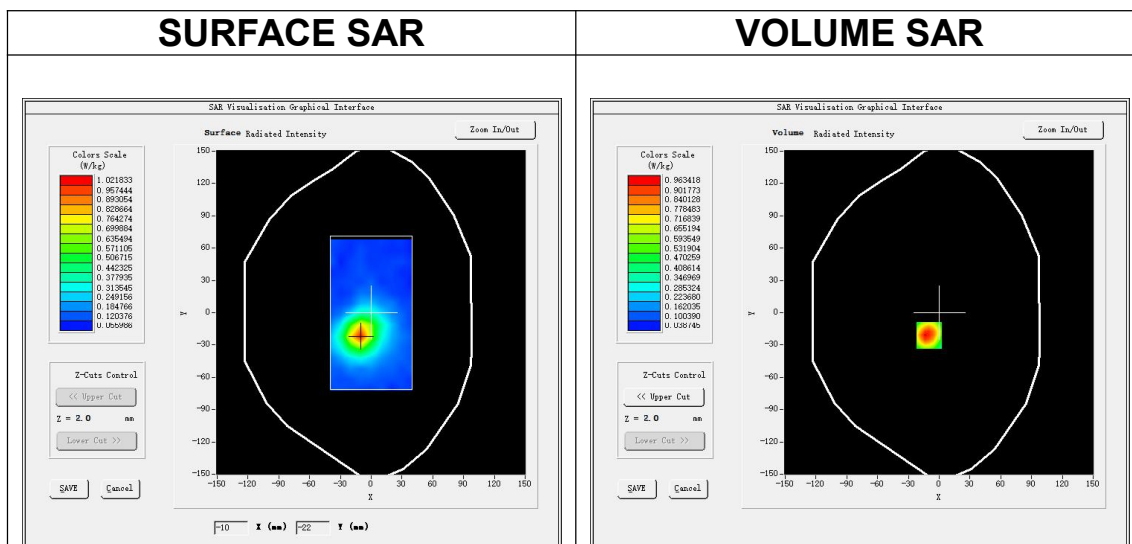
A. Experimental conditions.

<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 802.11n U-NII</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>IEEE802.11n (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>1.89</u>

B. SAR Measurement Results

Frequency (MHz)	5200.000000
Relative permittivity (real part)	34.652485

Relative permittivity (imaginary part)	15.561054
Conductivity (S/m)	4.495416
Variation (%)	-4.830000

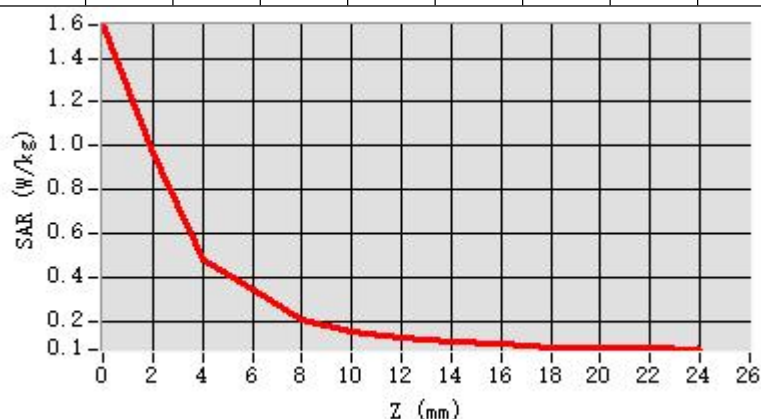


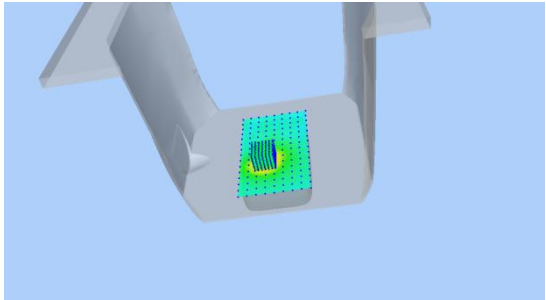
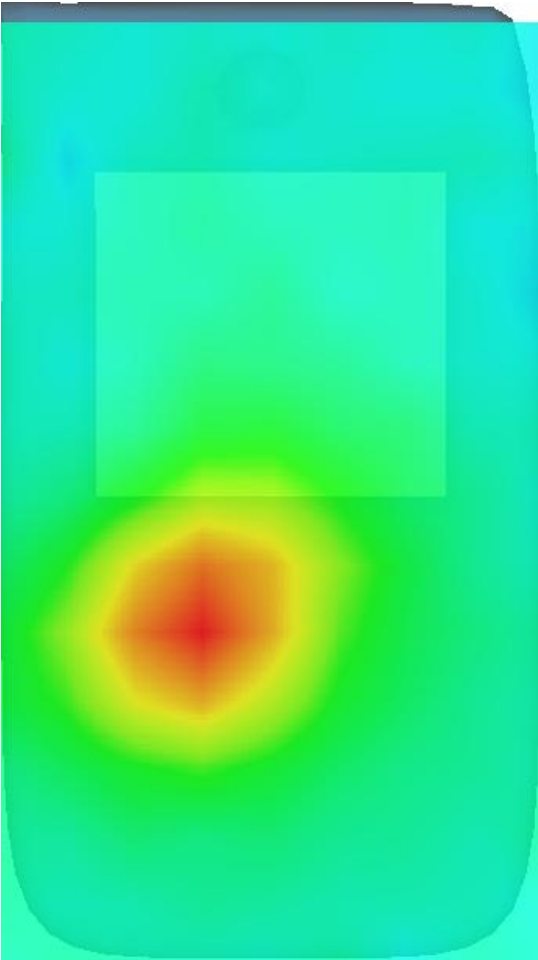
Maximum location: X=-10.00, Y=-21.00

SAR Peak: 1.58 W/kg

SAR 10g (W/Kg)	0.284860
SAR 1g (W/Kg)	0.605030

Z (m)	0.00	2.00	4.00	6.00	8.00	10.0	12.0	14.0	16.0	18.0	20.0	22.0
SAR (W/Kg)	1.5514	0.9634	0.4825	0.3446	0.2049	0.1507	0.1213	0.1017	0.0961	0.0788	0.0799	0.0764



3D screen shot	Hot spot position
	

MEASUREMENT 25

Date of measurement: 12/12/2024

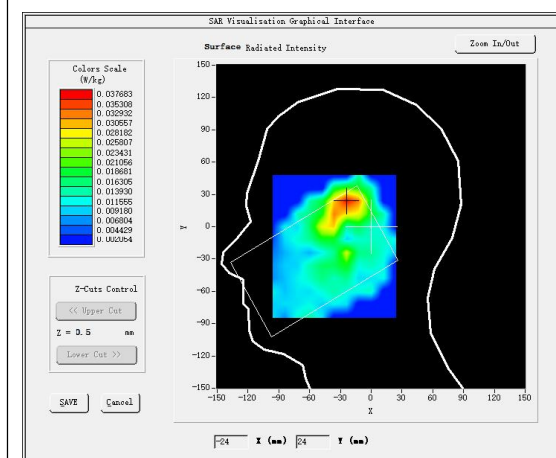
A. Experimental conditions.

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>Middle</u>
Signal	<u>IEEE802.11b (Crest factor: 1.0)</u>
ConvF	<u>1.98</u>

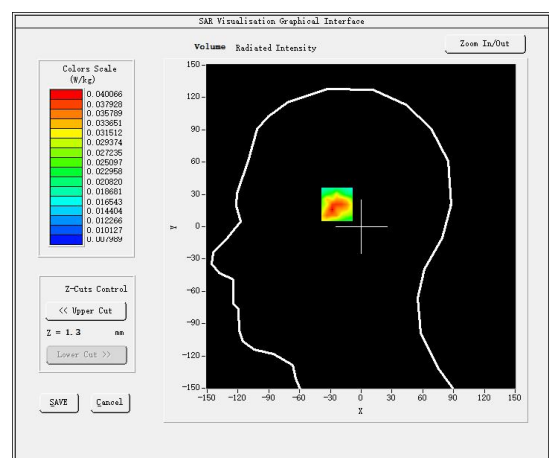
B. SAR Measurement Results

Frequency (MHz)	2437.000000
Relative permittivity (real part)	37.866589
Relative permittivity (imaginary part)	13.006529
Conductivity (S/m)	1.760940
Variation (%)	3.970000

SURFACE SAR



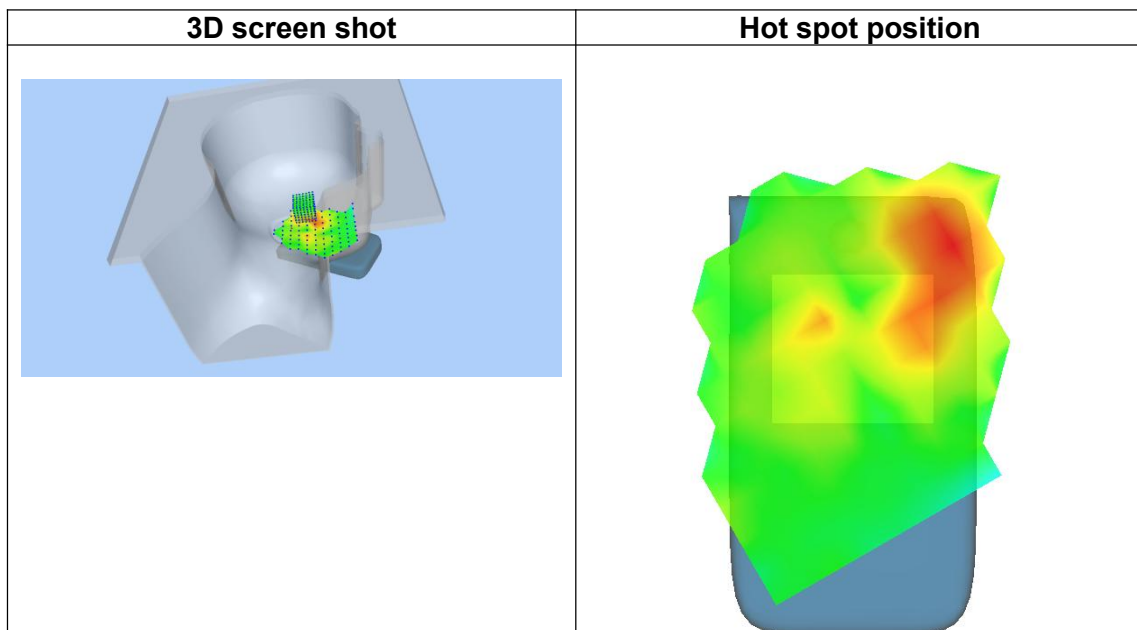
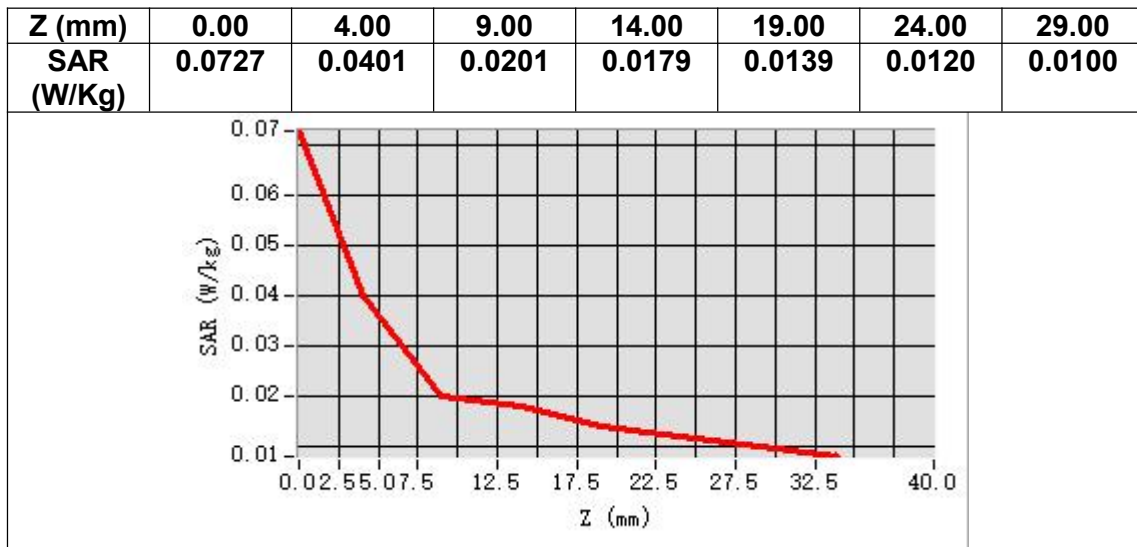
VOLUME SAR



Maximum location: X=-23.00, Y=23.00

SAR Peak: 0.06 W/kg

SAR 10g (W/Kg)	0.023444
SAR 1g (W/Kg)	0.036731



MEASUREMENT 26

Date of measurement: 12/12/2024

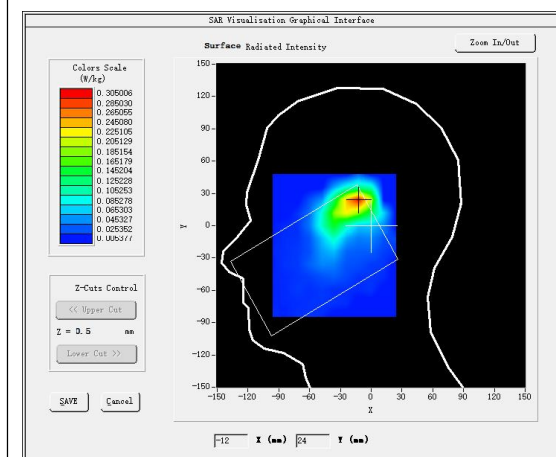
A. Experimental conditions.

<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>Left head</u>
<u>Device Position</u>	<u>Cheek</u>
<u>Band</u>	<u>IEEE 802.11n ISM</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>IEEE802.11n (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>1.98</u>

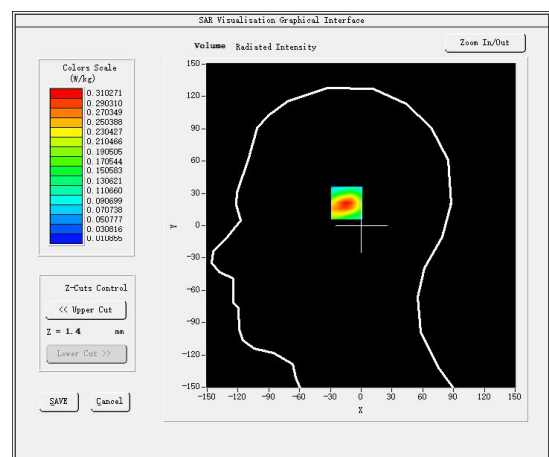
B. SAR Measurement Results

Frequency (MHz)	2437.000000
Relative permittivity (real part)	37.866589
Relative permittivity (imaginary part)	13.006529
Conductivity (S/m)	1.760940
Variation (%)	4.770000

SURFACE SAR



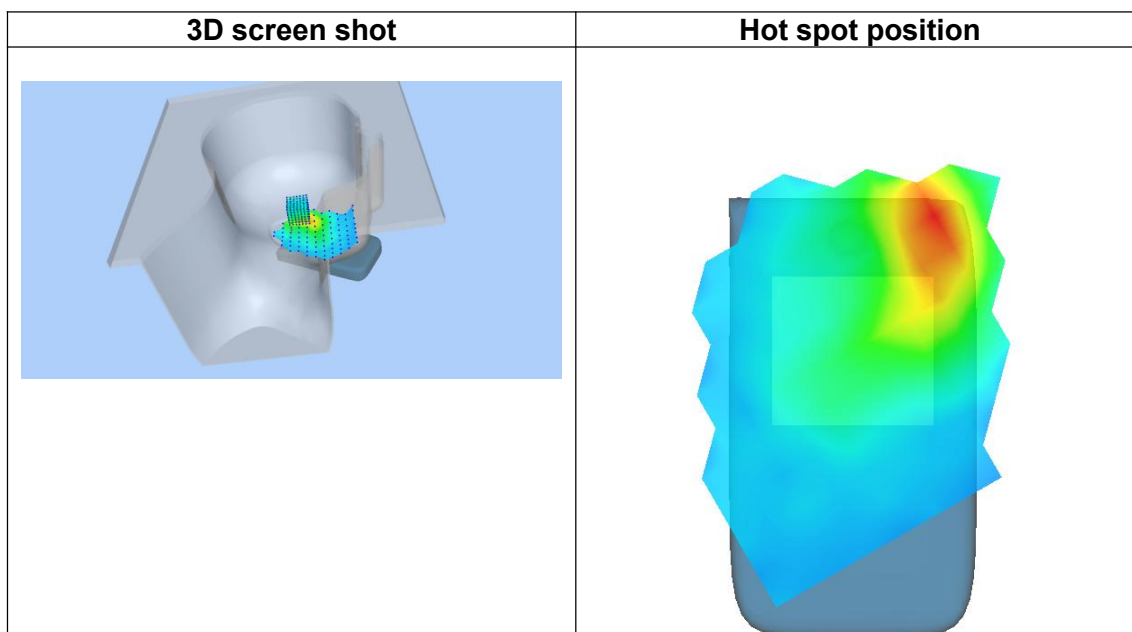
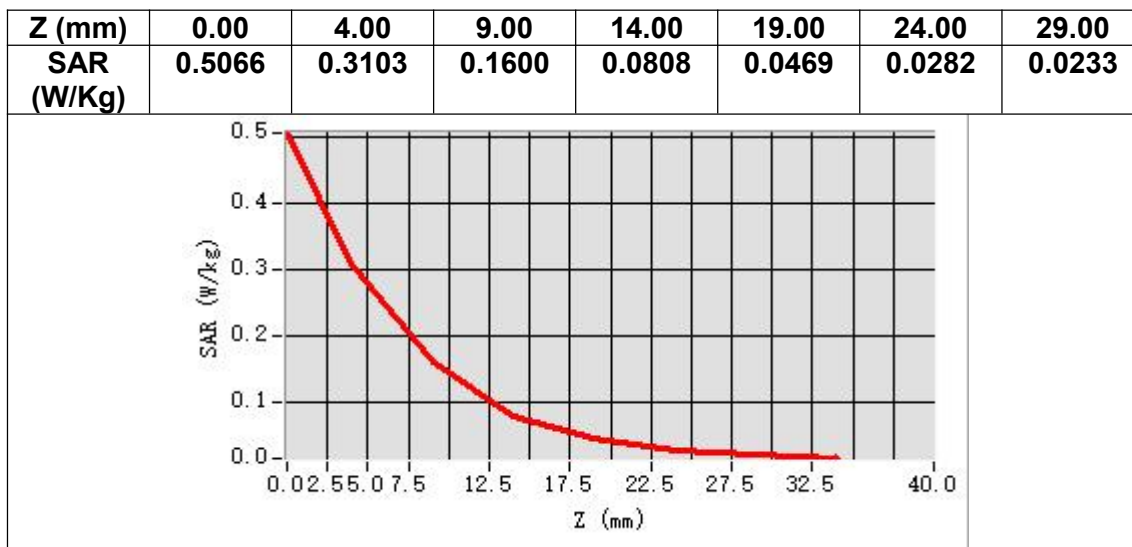
VOLUME SAR



Maximum location: X=-13.00, Y=23.00

SAR Peak: 0.51 W/kg

SAR 10g (W/Kg)	0.143059
SAR 1g (W/Kg)	0.283871



MEASUREMENT 27

Date of measurement: 12/12/2024

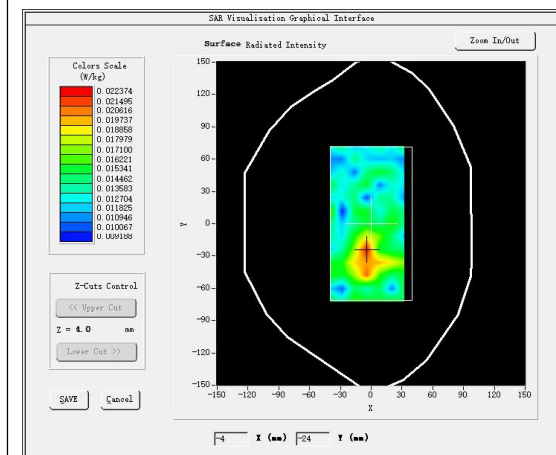
A. Experimental conditions.

<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>IEEE 802.11b ISM</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>IEEE802.11b (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>1.98</u>

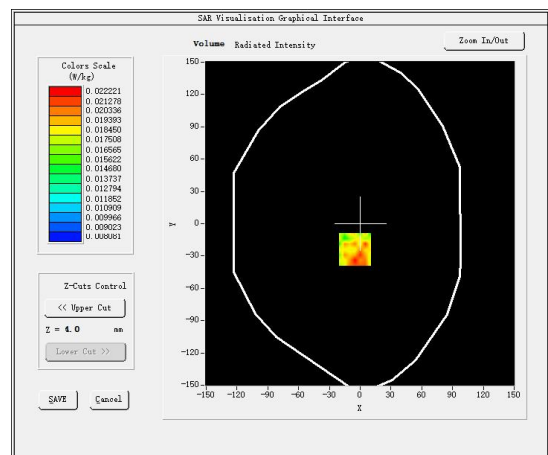
B. SAR Measurement Results

Frequency (MHz)	2437.000000
Relative permittivity (real part)	37.866589
Relative permittivity (imaginary part)	13.006529
Conductivity (S/m)	1.760940
Variation (%)	-2.900000

SURFACE SAR



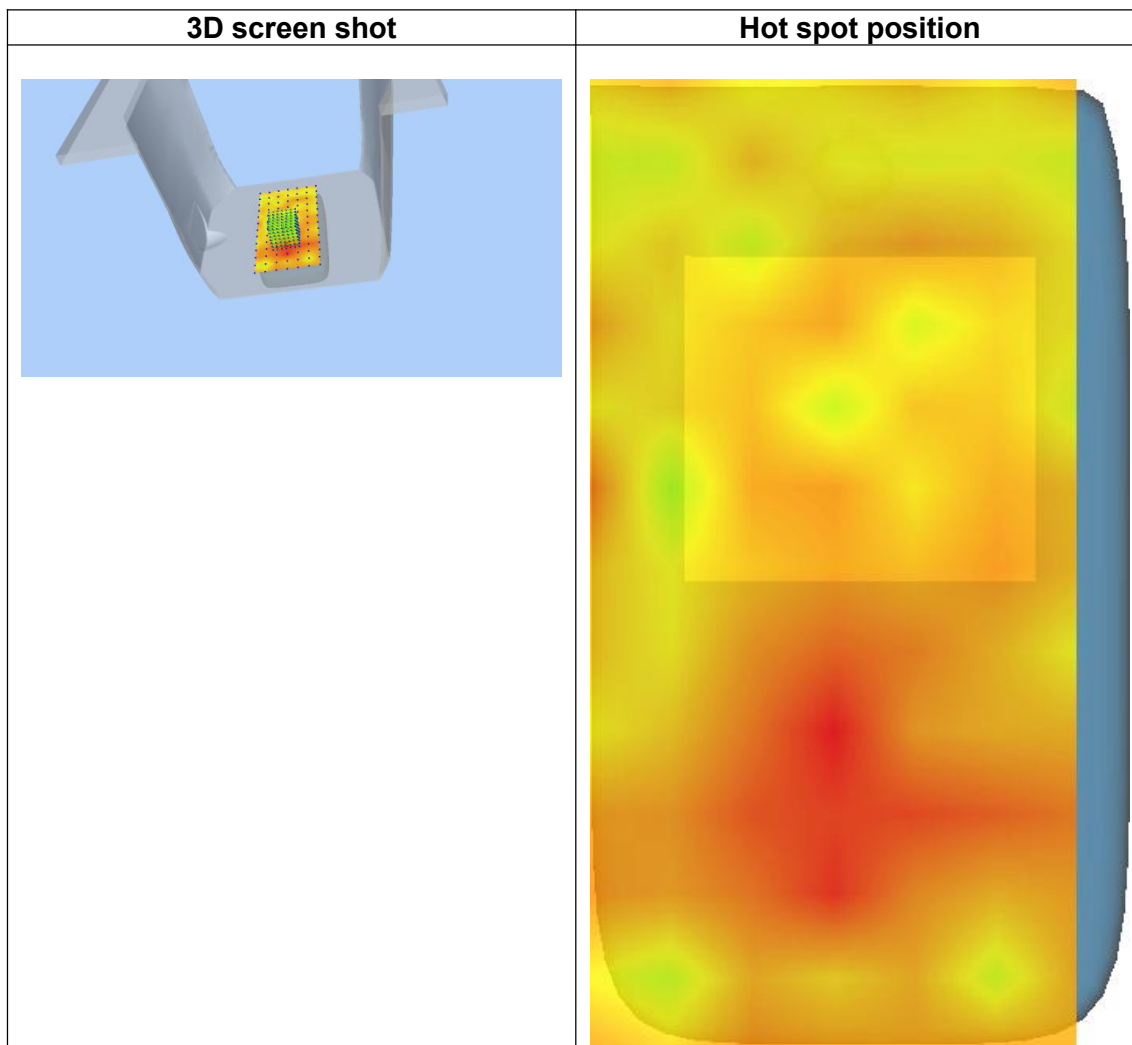
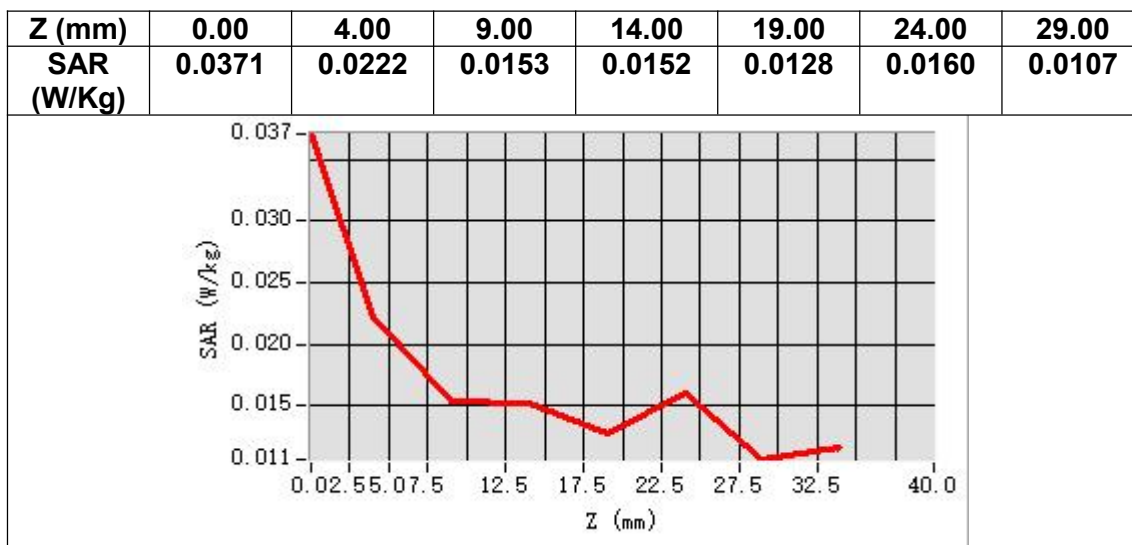
VOLUME SAR



Maximum location: X=-5.00, Y=-24.00

SAR Peak: 0.04 W/kg

SAR 10g (W/Kg)	0.016159
SAR 1g (W/Kg)	0.019713



MEASUREMENT 28

Date of measurement: 12/12/2024

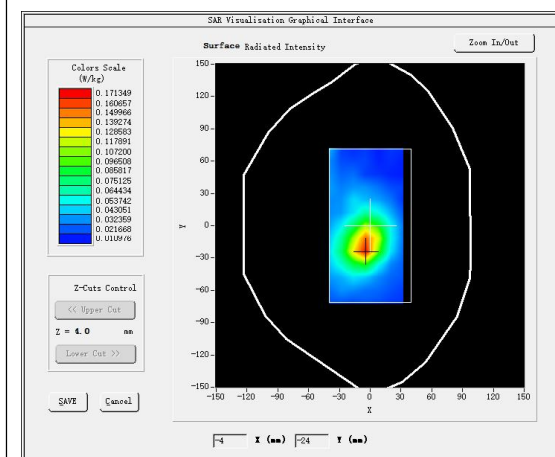
A. Experimental conditions.

<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>IEEE 802.11n ISM</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>IEEE802.11n (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>1.98</u>

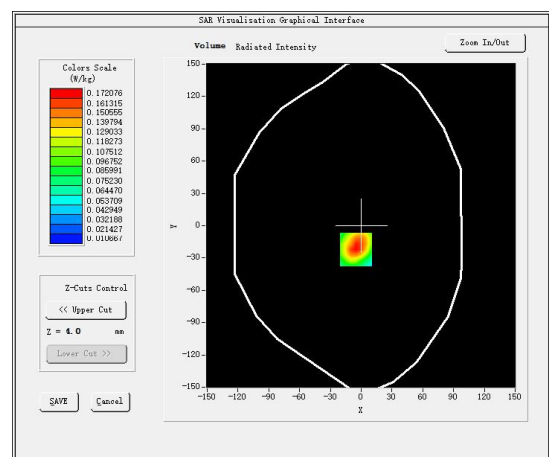
B. SAR Measurement Results

Frequency (MHz)	2437.000000
Relative permittivity (real part)	37.866589
Relative permittivity (imaginary part)	13.006529
Conductivity (S/m)	1.760940
Variation (%)	-2.060000

SURFACE SAR



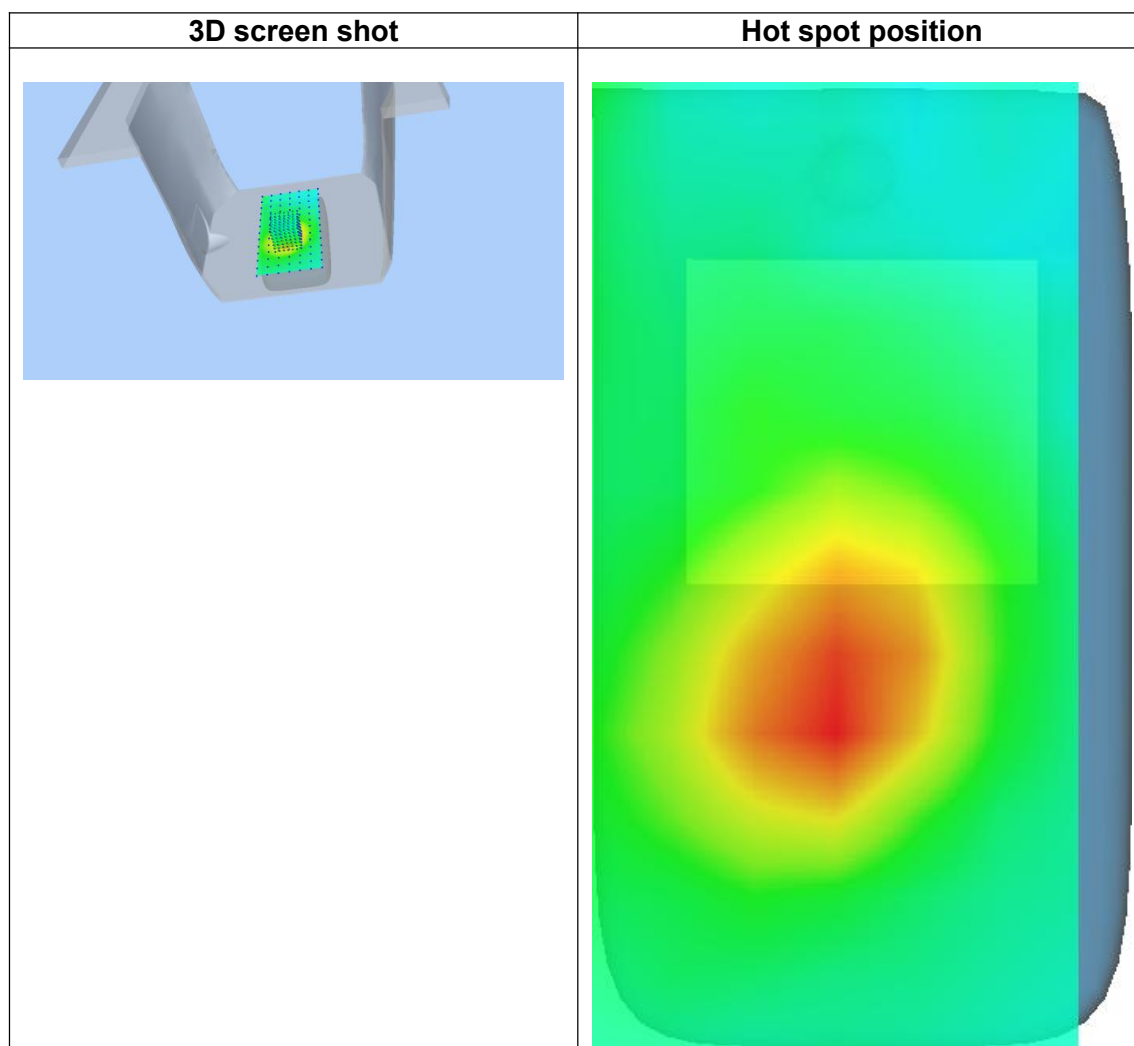
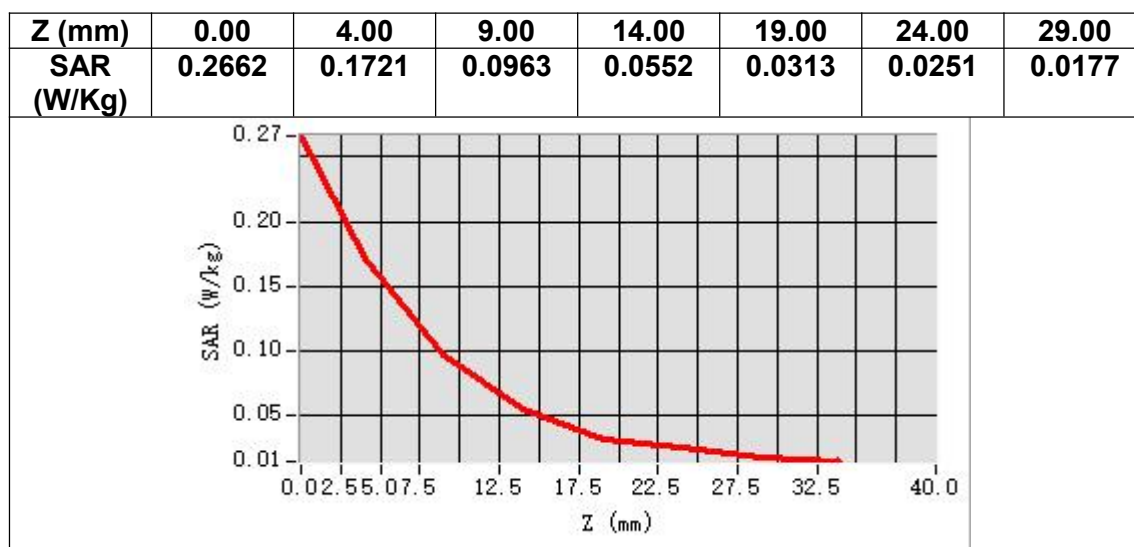
VOLUME SAR



Maximum location: X=-5.00, Y=-22.00

SAR Peak: 0.27 W/kg

SAR 10g (W/Kg)	0.088988
SAR 1g (W/Kg)	0.161721



MEASUREMENT 29

Date of measurement: 9/12/2024

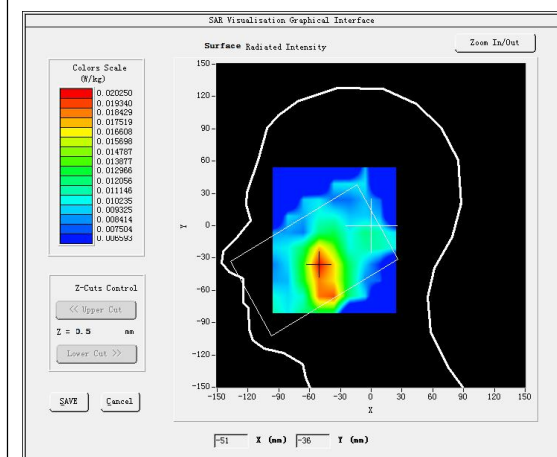
A. Experimental conditions.

<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 2</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.57</u>

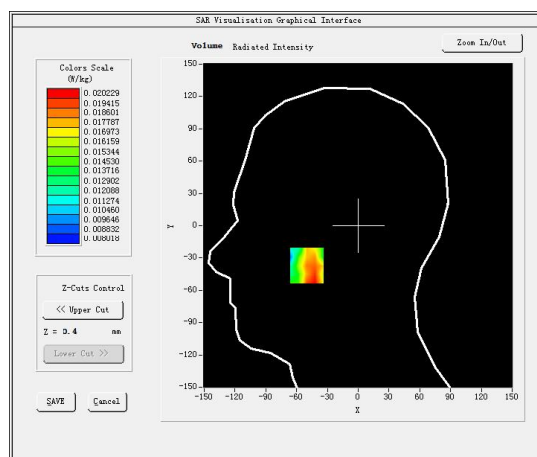
B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative permittivity (real part)	38.543578
Relative permittivity (imaginary part)	13.809931
Conductivity (S/m)	1.442371
Variation (%)	-1.130000

SURFACE SAR



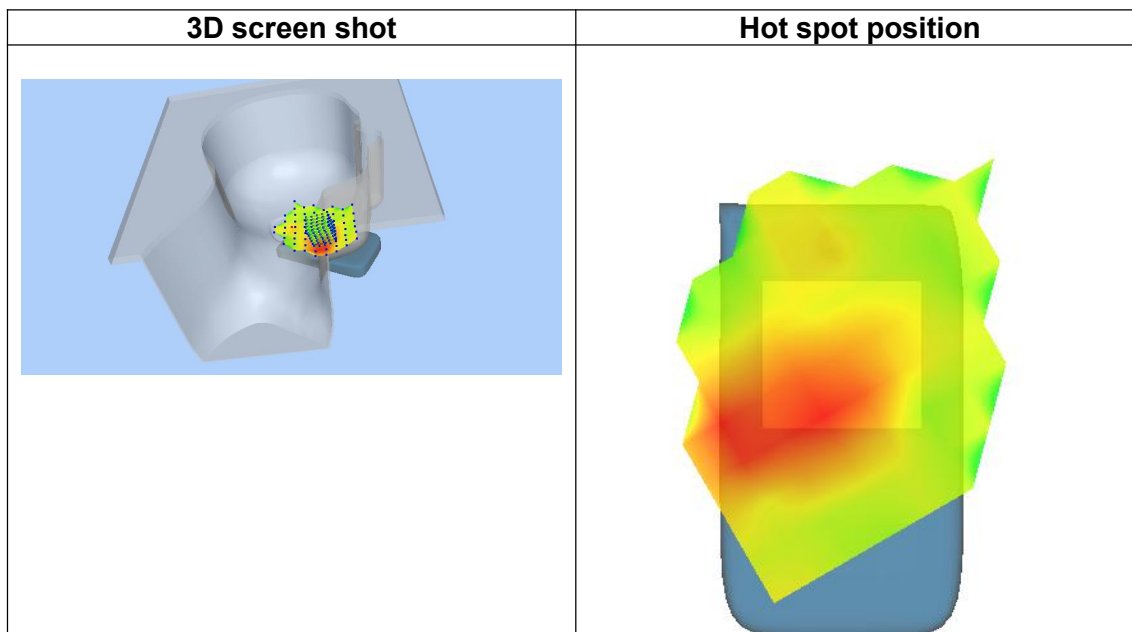
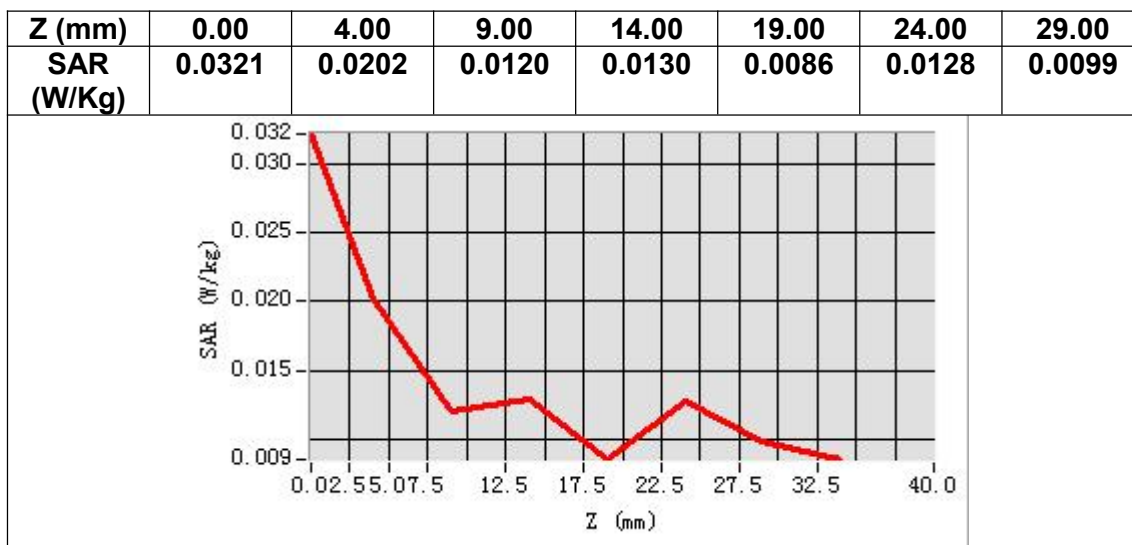
VOLUME SAR



Maximum location: X=-50.00, Y=-37.00

SAR Peak: 0.03 W/kg

SAR 10g (W/Kg)	0.015361
SAR 1g (W/Kg)	0.020890



MEASUREMENT 30

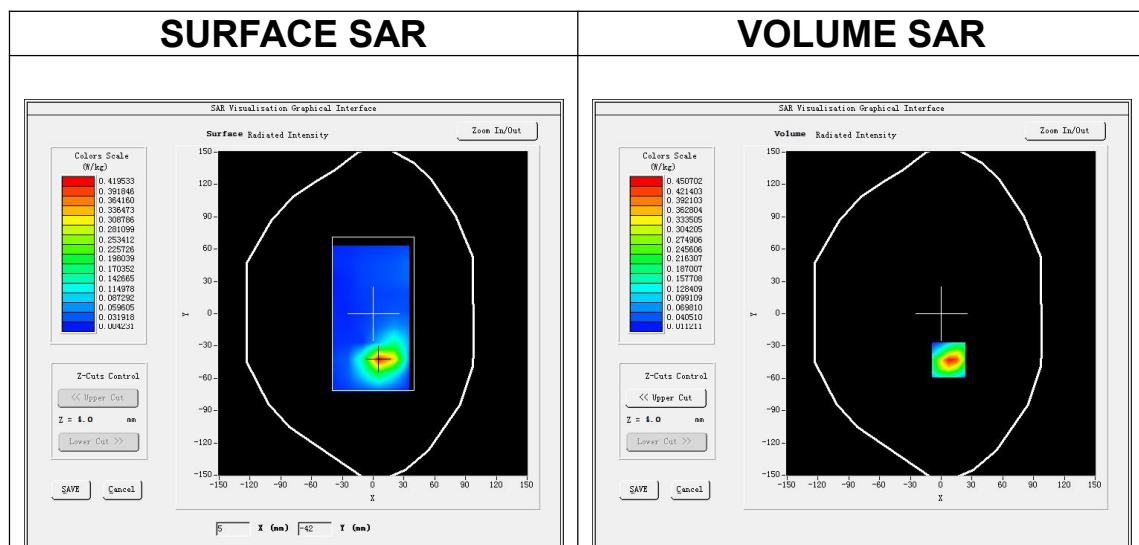
Date of measurement: 9/12/2024

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>2.57</u>

B. SAR Measurement Results

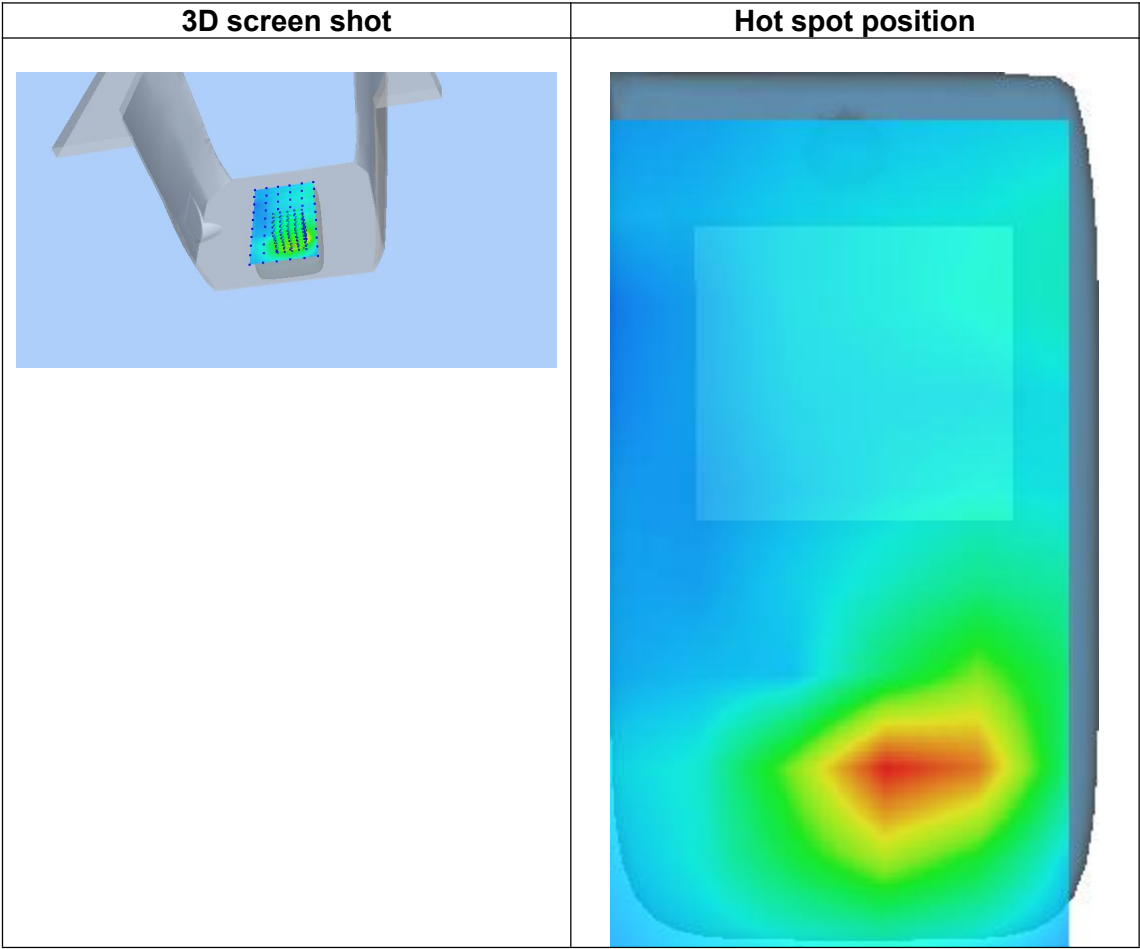
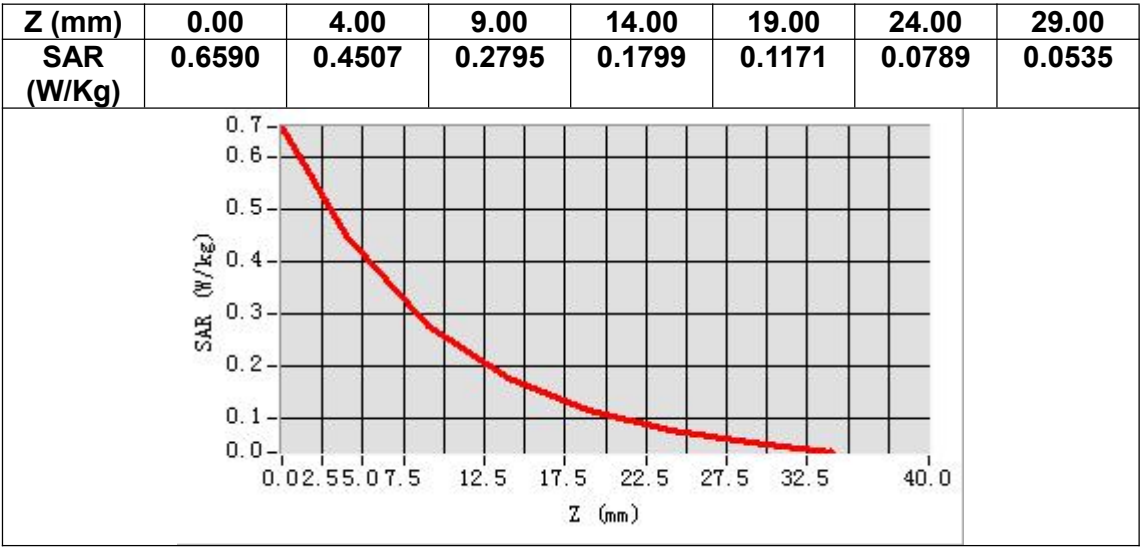
Frequency (MHz)	1880.000000
Relative permittivity (real part)	38.543578
Relative permittivity (imaginary part)	13.809931
Conductivity (S/m)	1.442371
Variation (%)	0.920000



Maximum location: X=7.00, Y=-43.00

SAR Peak: 0.67 W/kg

SAR 10g (W/Kg)	0.225465
SAR 1g (W/Kg)	0.430390



MEASUREMENT 31

Date of measurement: 6/12/2024

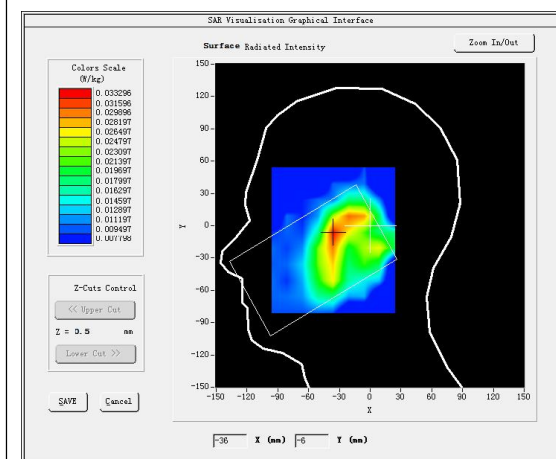
A. Experimental conditions.

<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>2.51</u>

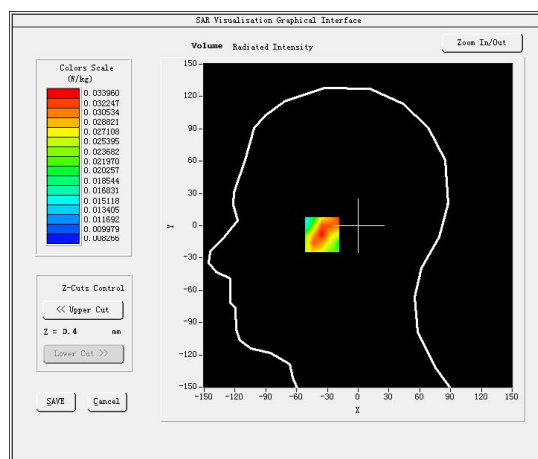
B. SAR Measurement Results

Frequency (MHz)	1732.500000
Relative permittivity (real part)	39.545303
Relative permittivity (imaginary part)	13.802155
Conductivity (S/m)	1.328457
Variation (%)	-0.430000

SURFACE SAR



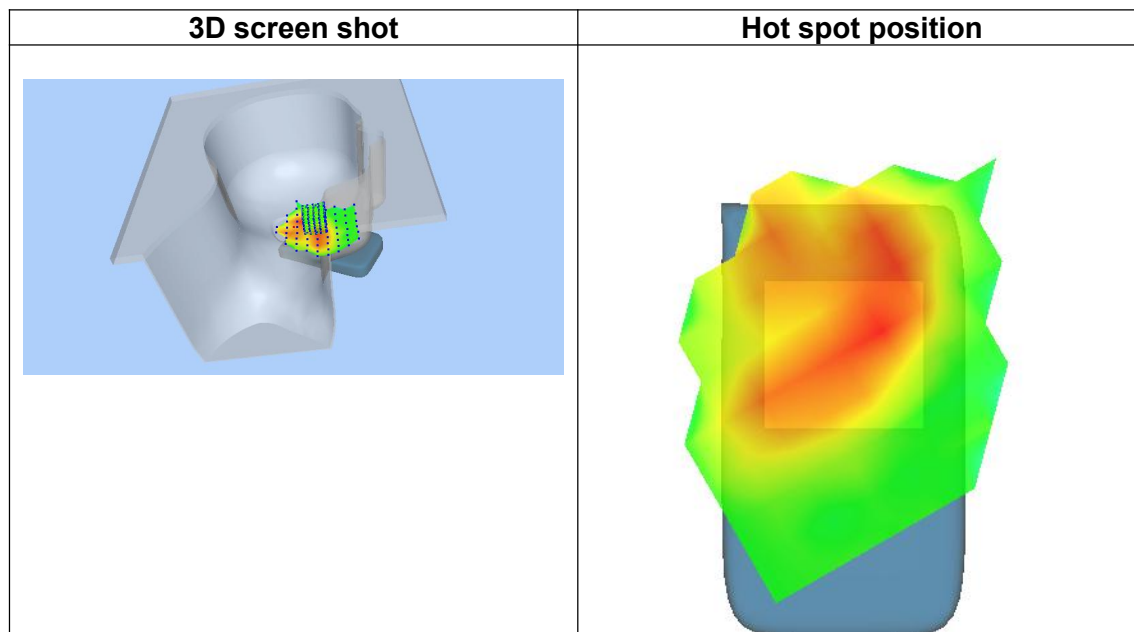
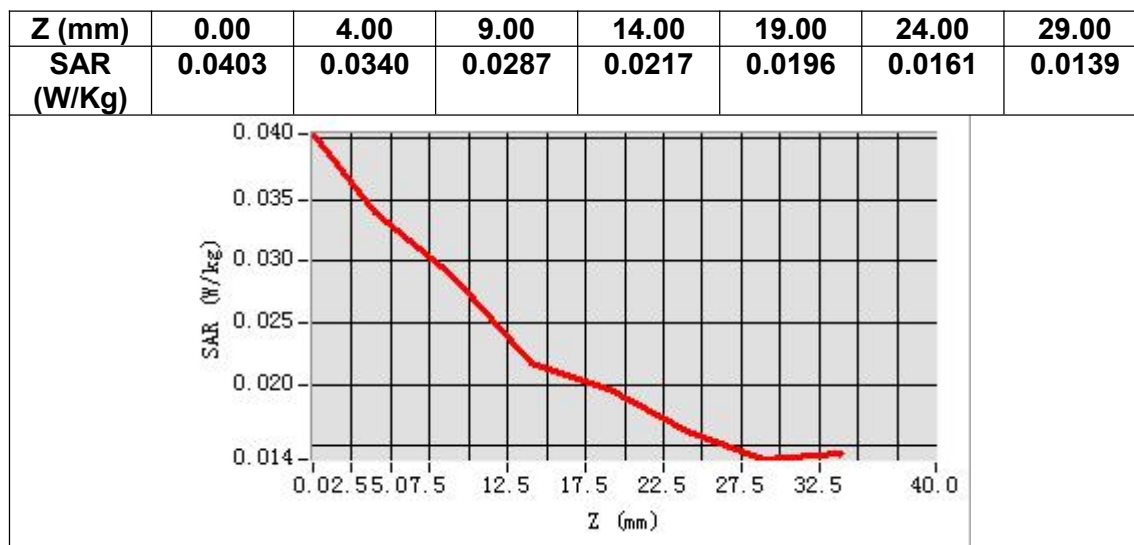
VOLUME SAR



Maximum location: X=-34.00, Y=-7.00

SAR Peak: 0.04 W/kg

SAR 10g (W/Kg)	0.024040
SAR 1g (W/Kg)	0.032626



MEASUREMENT 32

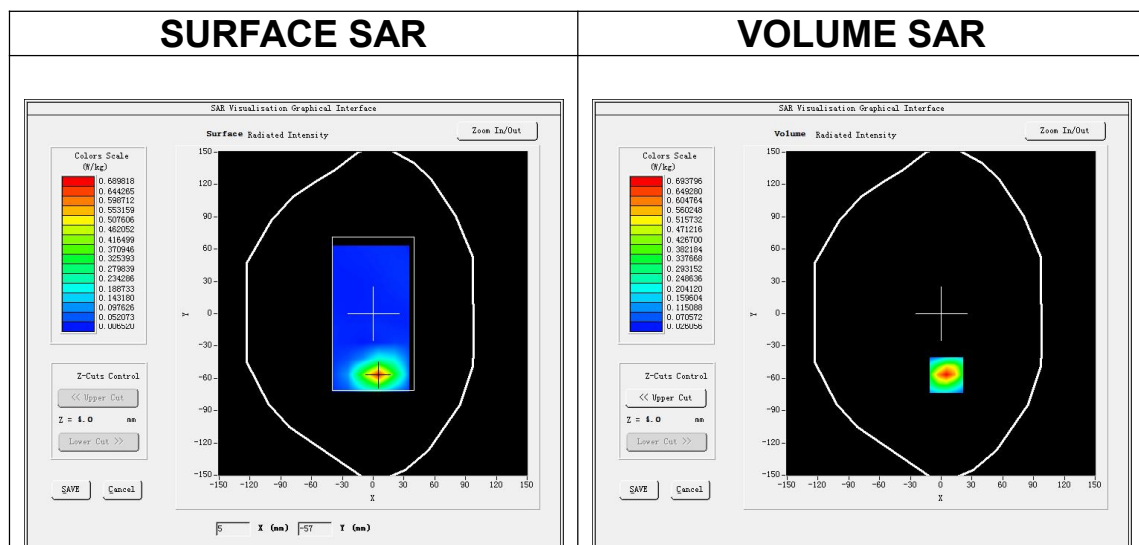
Date of measurement: 6/12/2024

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 4</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.51</u>

B. SAR Measurement Results

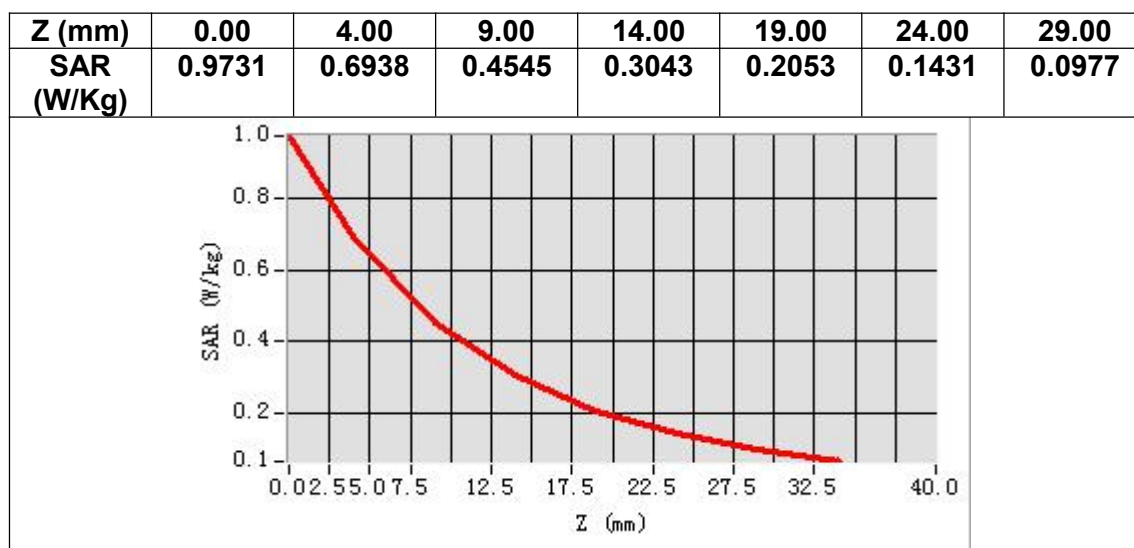
Frequency (MHz)	1732.500000
Relative permittivity (real part)	39.437782
Relative permittivity (imaginary part)	13.684697
Conductivity (S/m)	1.317152
Variation (%)	4.180000



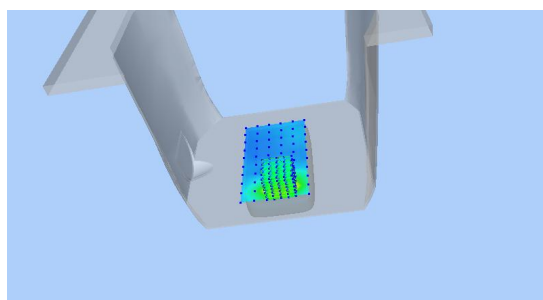
Maximum location: X=5.00, Y=-57.00

SAR Peak: 0.99 W/kg

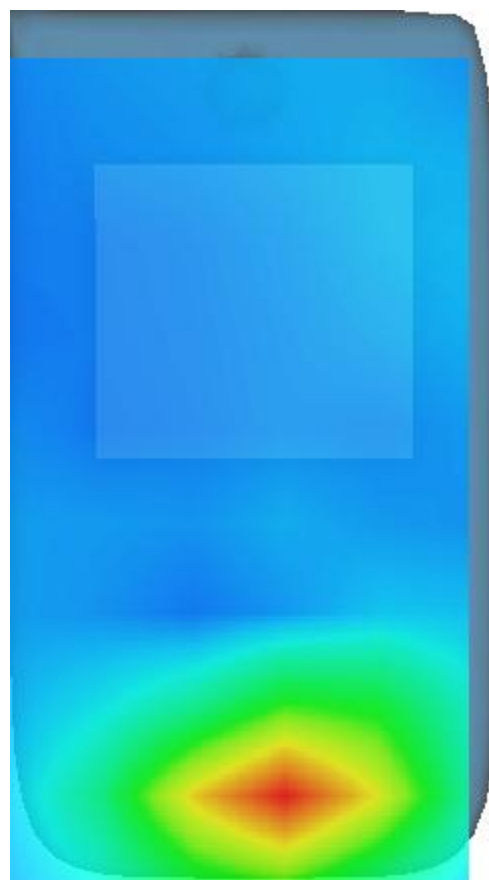
SAR 10g (W/Kg)	0.350187
SAR 1g (W/Kg)	0.638458



3D screen shot



Hot spot position



MEASUREMENT 33

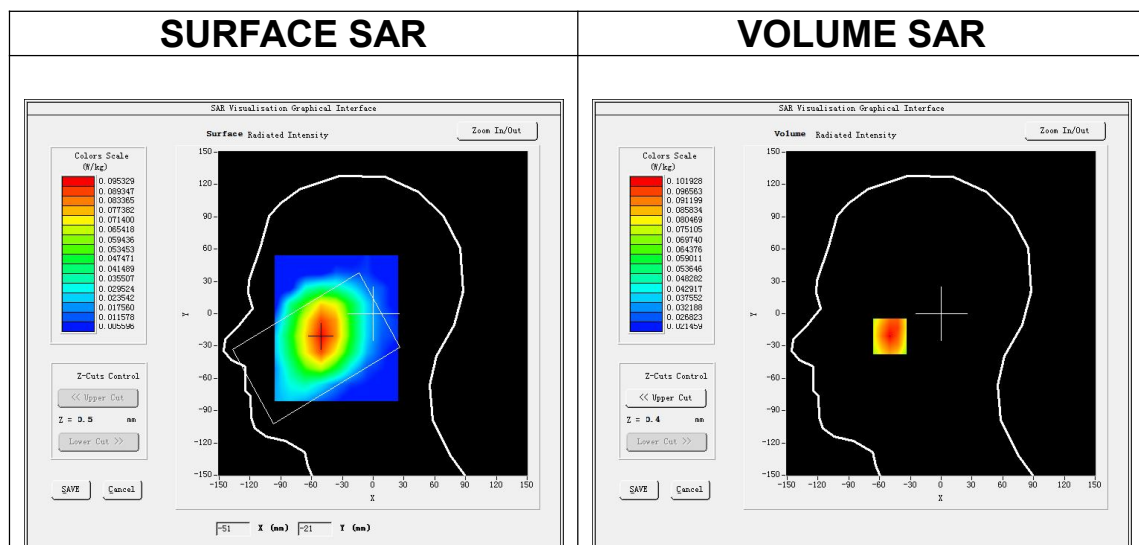
Date of measurement: 11/12/2025

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 5</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.34</u>

B. SAR Measurement Results

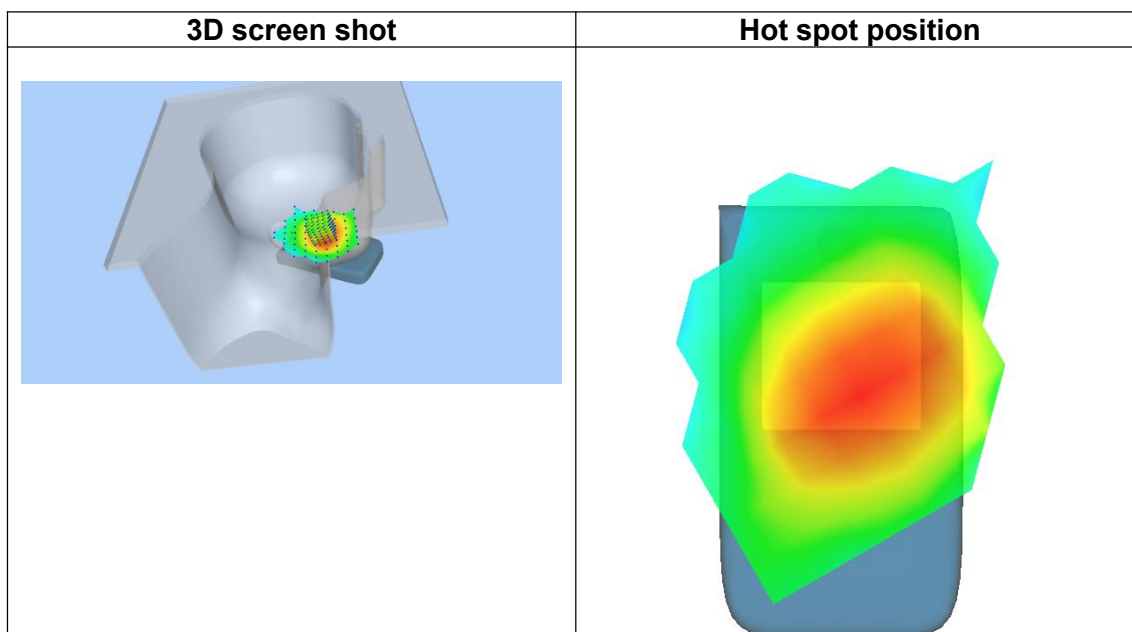
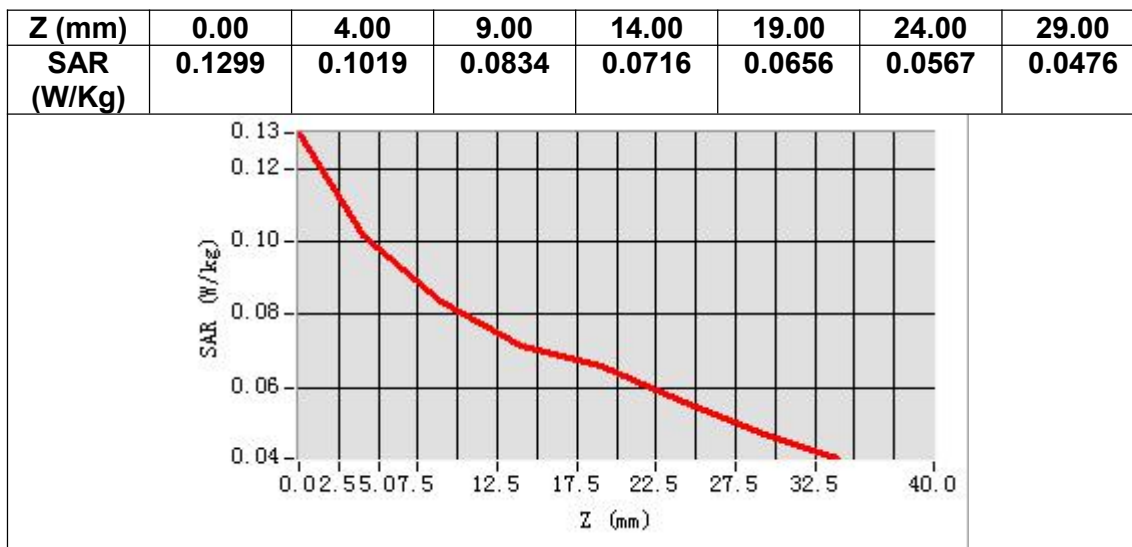
Frequency (MHz)	836.500000
Relative permittivity (real part)	41.745296
Relative permittivity (imaginary part)	19.617273
Conductivity (S/m)	0.911658
Variation (%)	0.150000



Maximum location: X=-50.00, Y=-21.00

SAR Peak: 0.13 W/kg

SAR 10g (W/Kg)	0.078854
SAR 1g (W/Kg)	0.100729



MEASUREMENT 34

Date of measurement: 11/12/2025

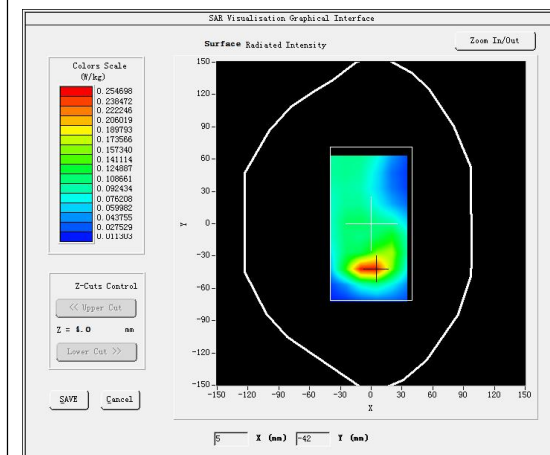
A. Experimental conditions.

<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>2.34</u>

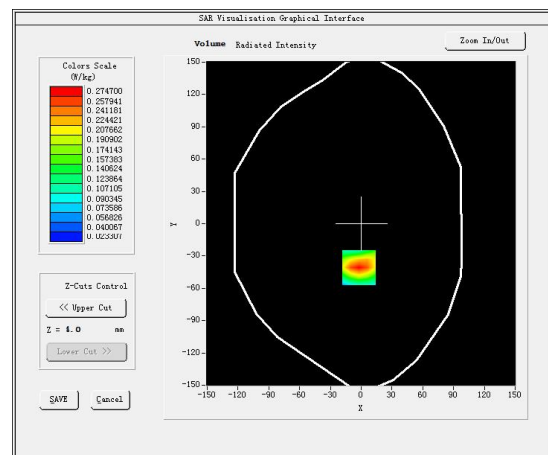
B. SAR Measurement Results

Frequency (MHz)	836.500000
Relative permittivity (real part)	41.745296
Relative permittivity (imaginary part)	19.617273
Conductivity (S/m)	0.911658
Variation (%)	-1.630000

SURFACE SAR



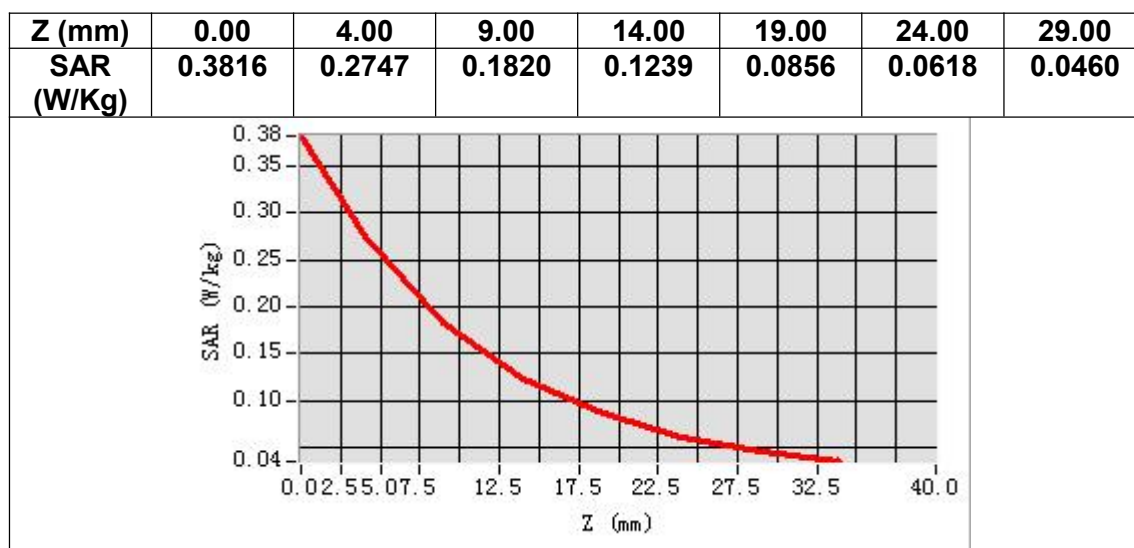
VOLUME SAR



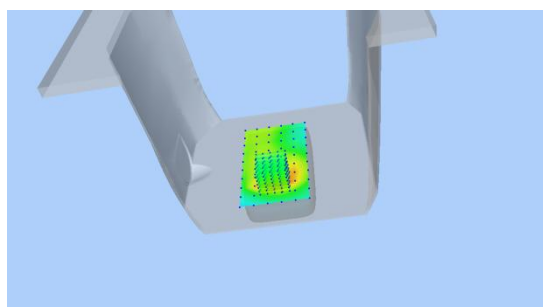
Maximum location: X=-2.00, Y=-41.00

SAR Peak: 0.39 W/kg

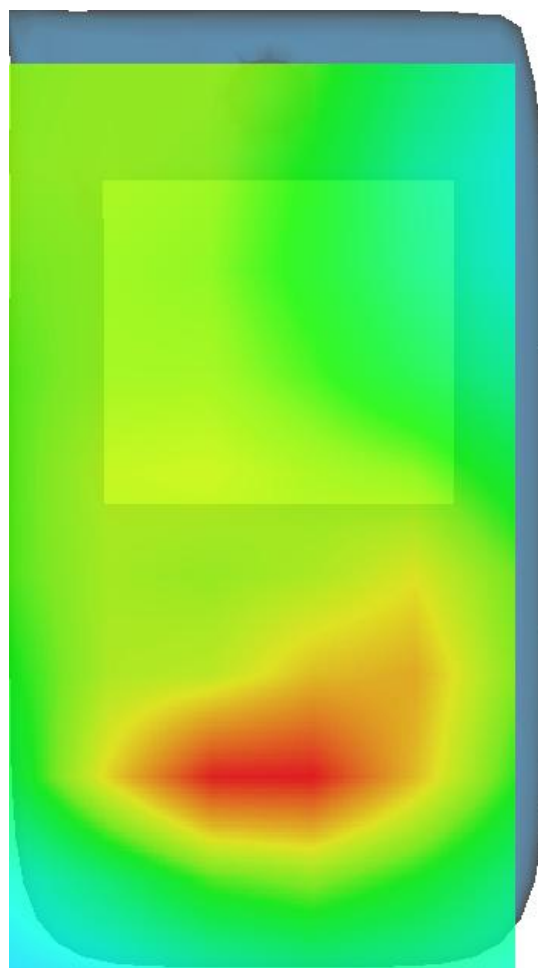
SAR 10g (W/Kg)	0.156248
SAR 1g (W/Kg)	0.260008



3D screen shot



Hot spot position



MEASUREMENT 35

Date of measurement: 13/12/2025

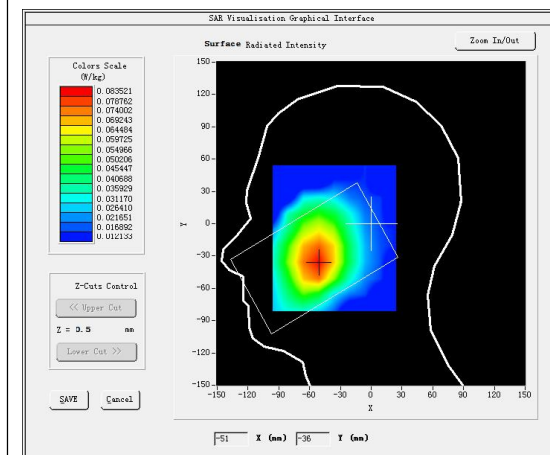
A. Experimental conditions.

<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 12</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.42</u>

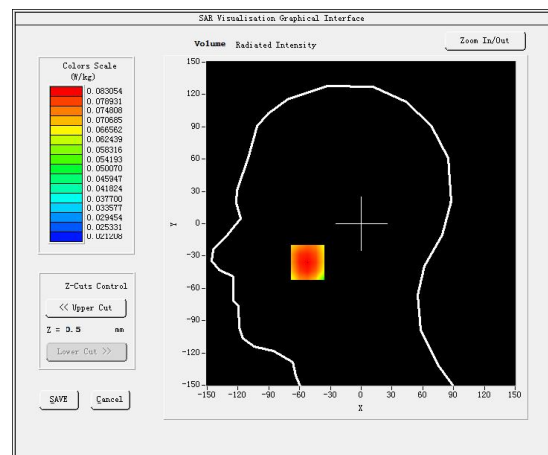
B. SAR Measurement Results

Frequency (MHz)	707.500000
Relative permittivity (real part)	41.314651
Relative permittivity (imaginary part)	21.860296
Conductivity (S/m)	0.859231
Variation (%)	-1.360000

SURFACE SAR



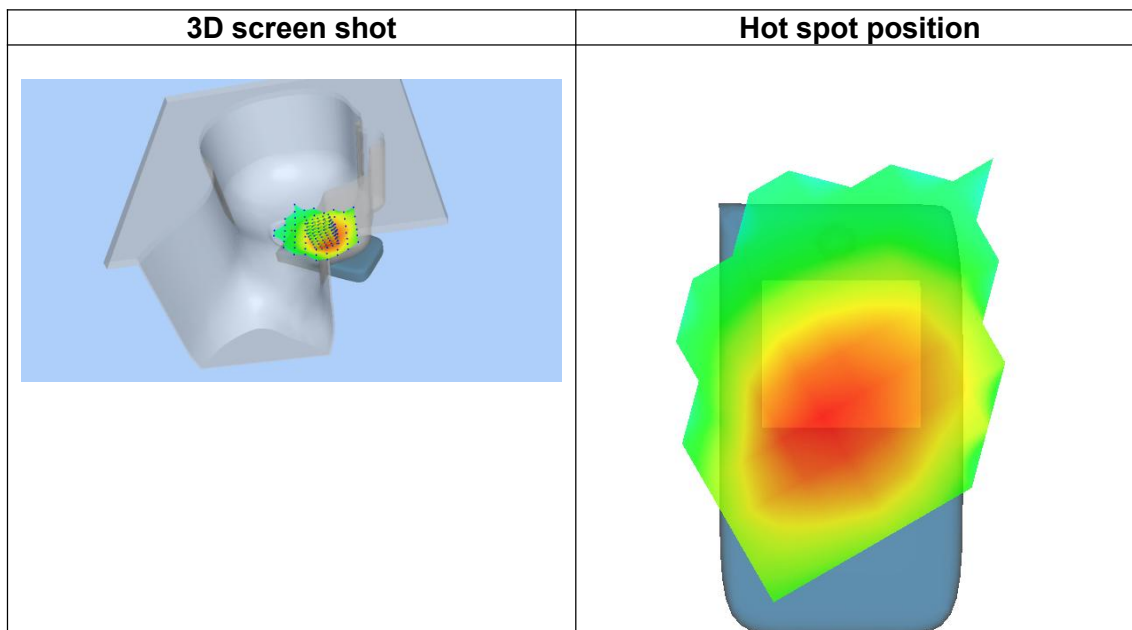
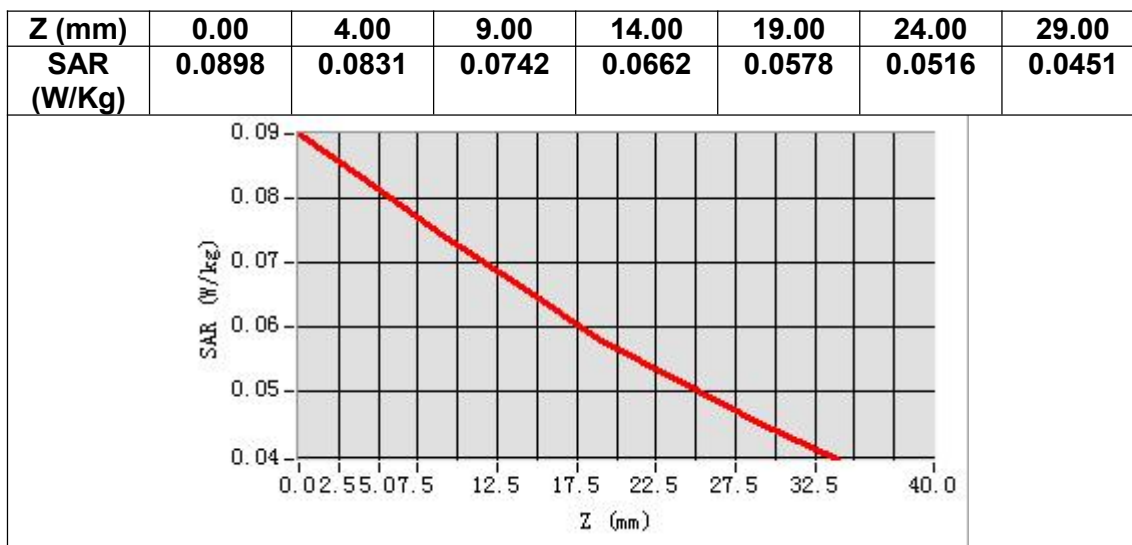
VOLUME SAR



Maximum location: X=-52.00, Y=-36.00

SAR Peak: 0.09 W/kg

SAR 10g (W/Kg)	0.070364
SAR 1g (W/Kg)	0.081550



MEASUREMENT 36

Date of measurement: 13/12/2025

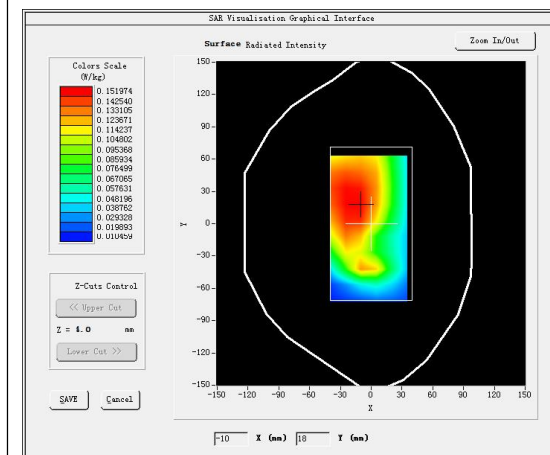
A. Experimental conditions.

<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 12</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.42</u>

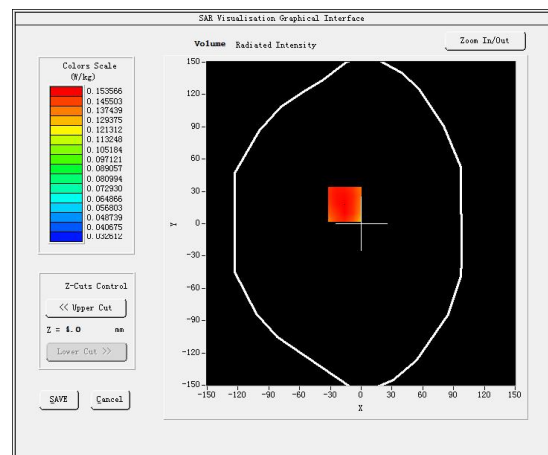
B. SAR Measurement Results

Frequency (MHz)	707.500000
Relative permittivity (real part)	41.314651
Relative permittivity (imaginary part)	21.860296
Conductivity (S/m)	0.859231
Variation (%)	0.110000

SURFACE SAR



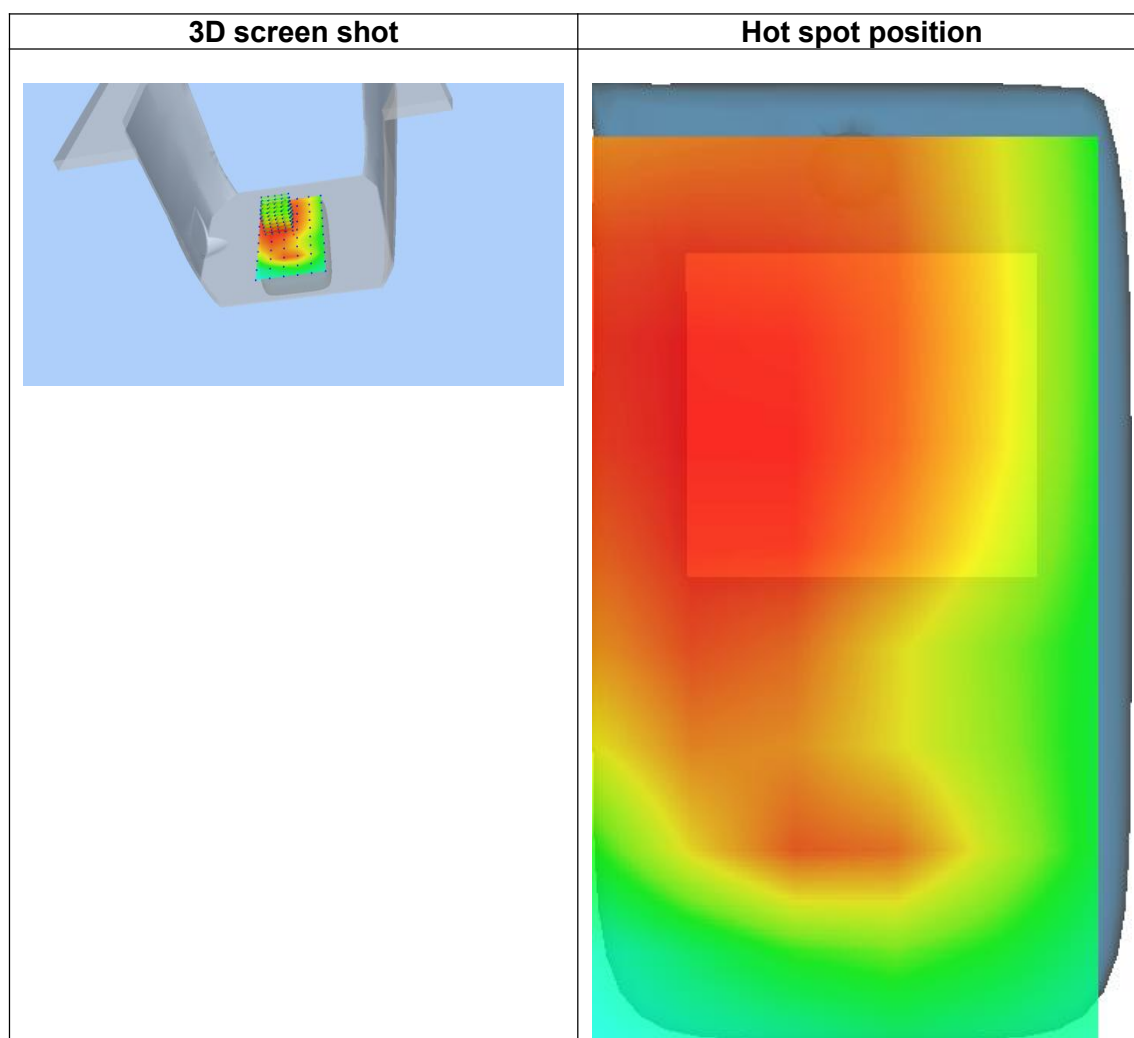
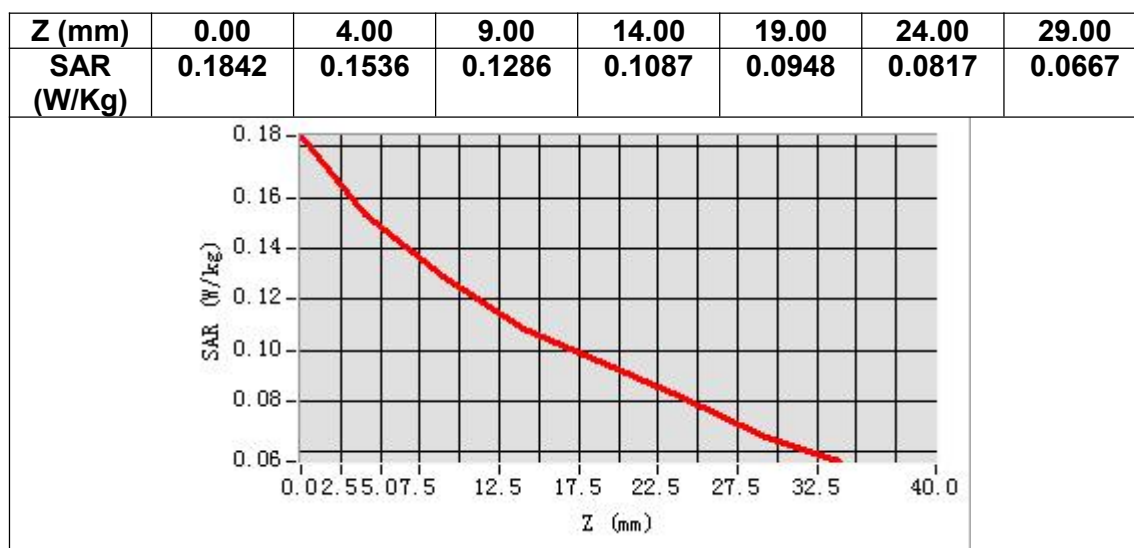
VOLUME SAR



Maximum location: X=-16.00, Y=18.00

SAR Peak: 0.18 W/kg

SAR 10g (W/Kg)	0.124532
SAR 1g (W/Kg)	0.151656



MEASUREMENT 37

Date of measurement: 13/12/2025

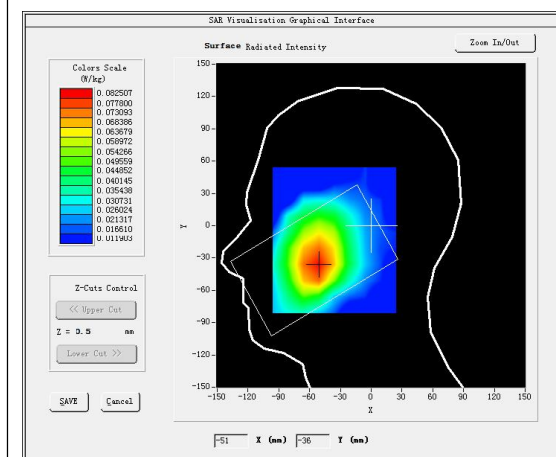
A. Experimental conditions.

<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 17</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.42</u>

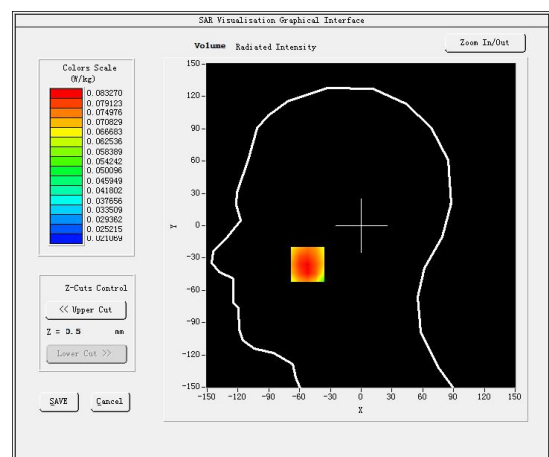
B. SAR Measurement Results

Frequency (MHz)	710.000000
Relative permittivity (real part)	41.299301
Relative permittivity (imaginary part)	21.800747
Conductivity (S/m)	0.859918
Variation (%)	4.620000

SURFACE SAR



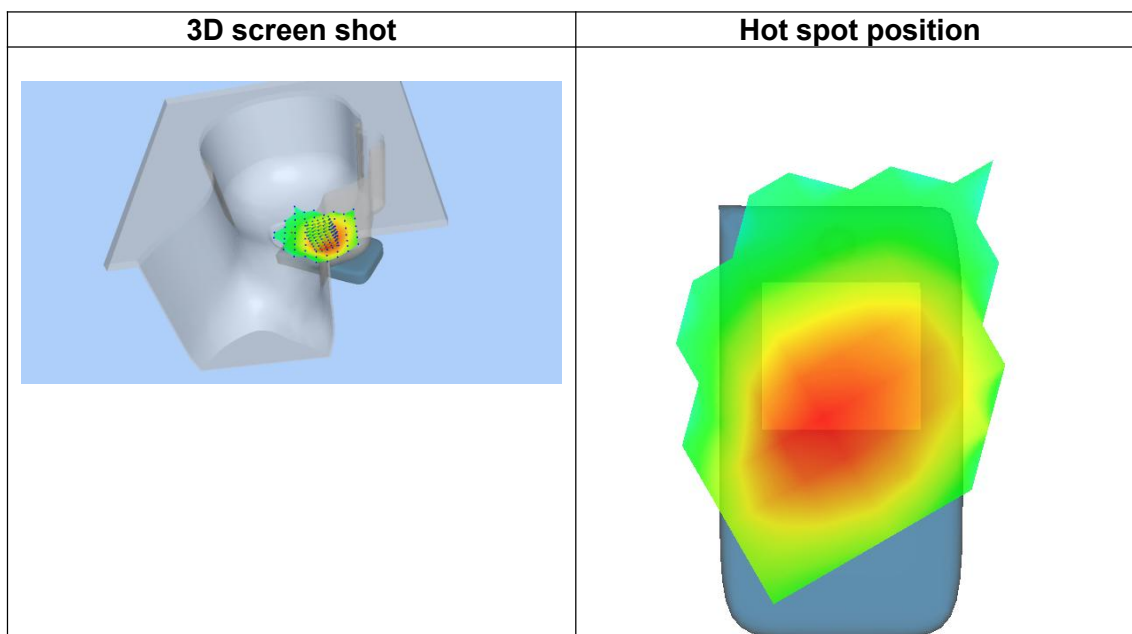
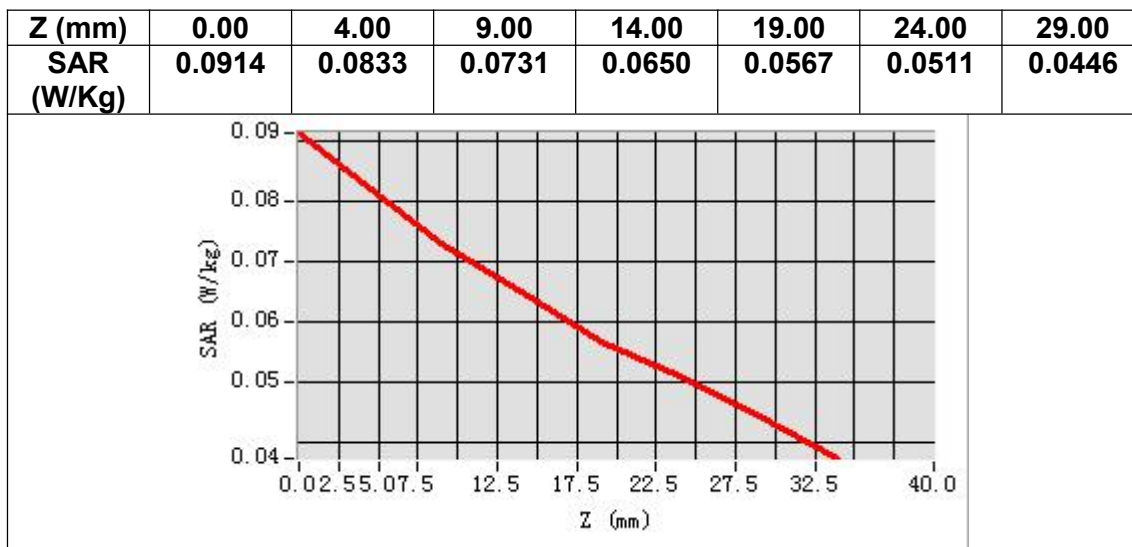
VOLUME SAR



Maximum location: X=-52.00, Y=-36.00

SAR Peak: 0.09 W/kg

SAR 10g (W/Kg)	0.069742
SAR 1g (W/Kg)	0.081563



MEASUREMENT 38

Date of measurement: 13/12/2025

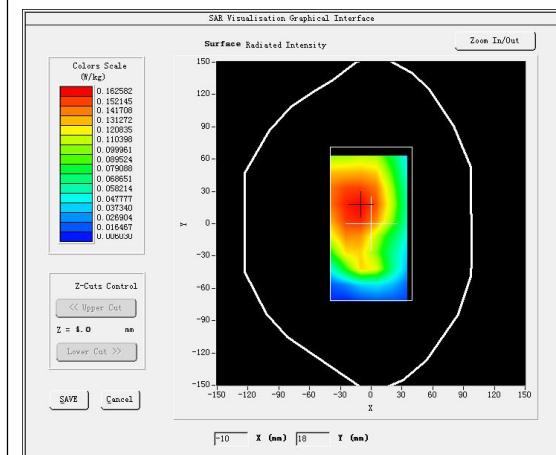
A. Experimental conditions.

<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 17</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.42</u>

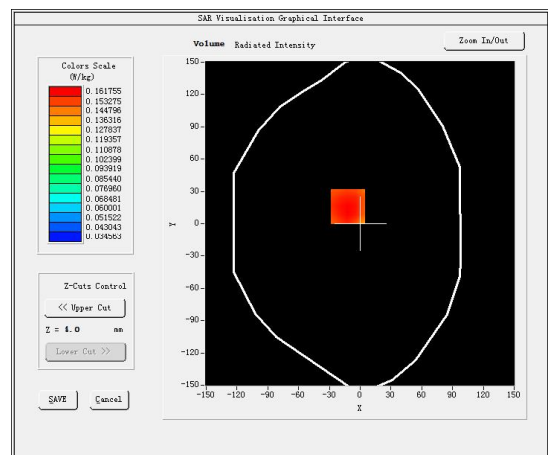
B. SAR Measurement Results

Frequency (MHz)	710.000000
Relative permittivity (real part)	41.299301
Relative permittivity (imaginary part)	21.800747
Conductivity (S/m)	0.859918
Variation (%)	0.800000

SURFACE SAR



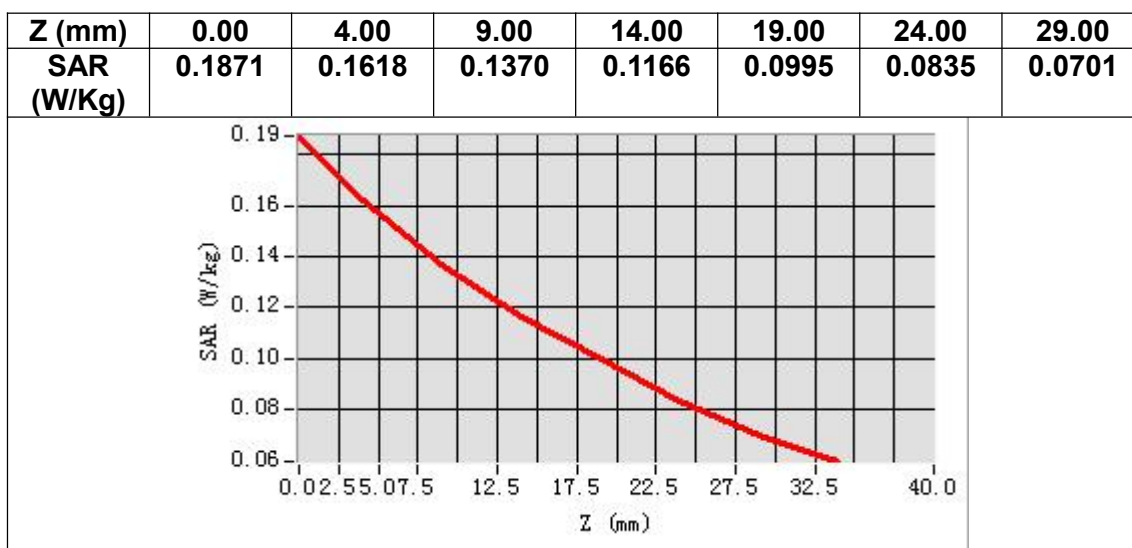
VOLUME SAR



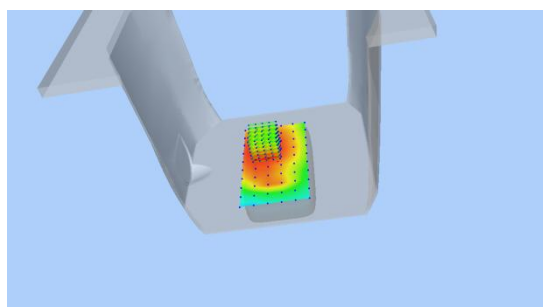
Maximum location: X=-12.00, Y=16.00

SAR Peak: 0.19 W/kg

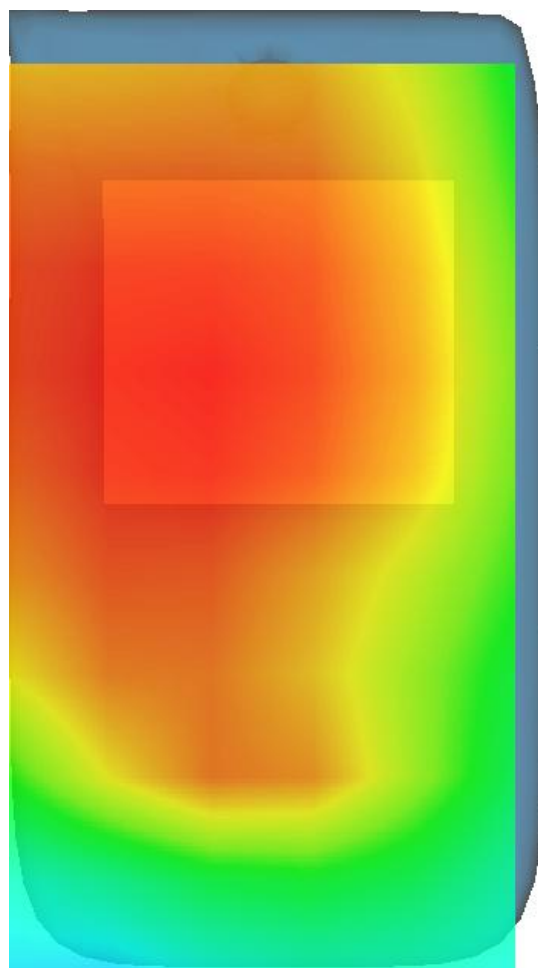
SAR 10g (W/Kg)	0.131386
SAR 1g (W/Kg)	0.159825



3D screen shot



Hot spot position



MEASUREMENT 39

Date of measurement: 16/12/2024

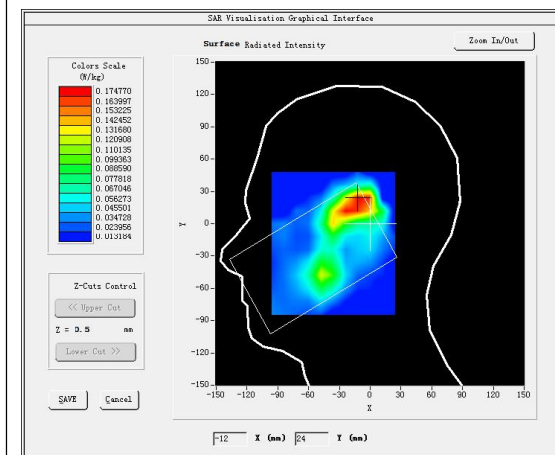
A. Experimental conditions.

<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>Left head</u>
<u>Device Position</u>	<u>Cheek</u>
<u>Band</u>	<u>LTE band 41</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.6)</u>
<u>ConvF</u>	<u>2.51</u>

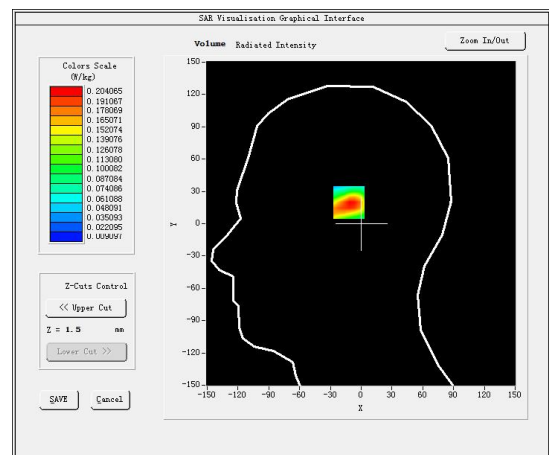
B. SAR Measurement Results

Frequency (MHz)	2593.000000
Relative permittivity (real part)	38.834721
Relative permittivity (imaginary part)	13.665514
Conductivity (S/m)	1.968593
Variation (%)	0.110000

SURFACE SAR



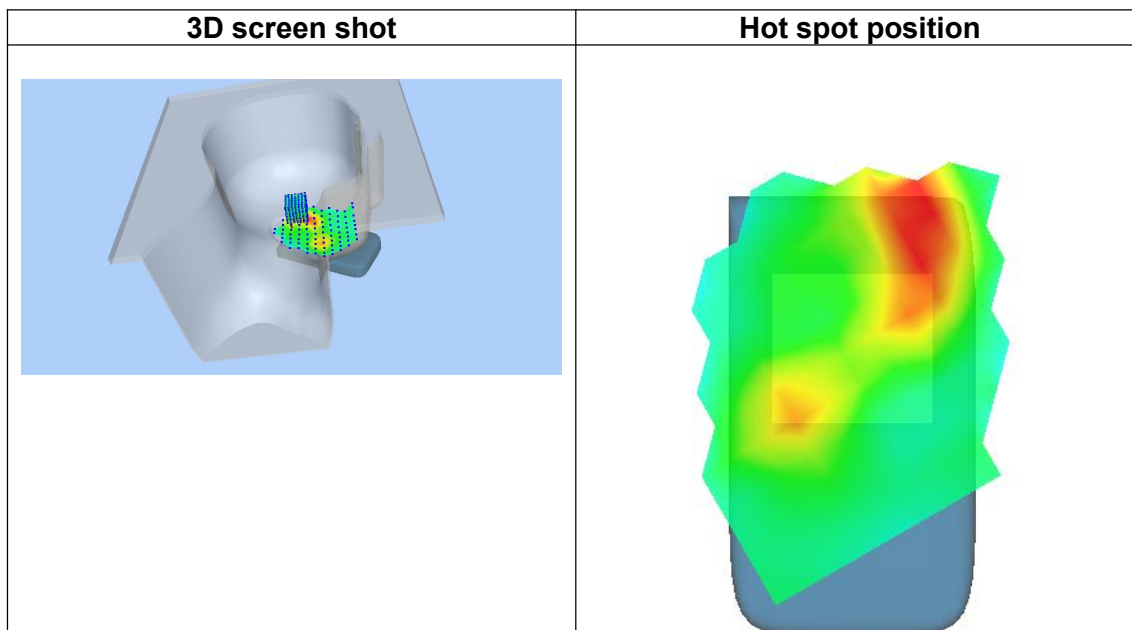
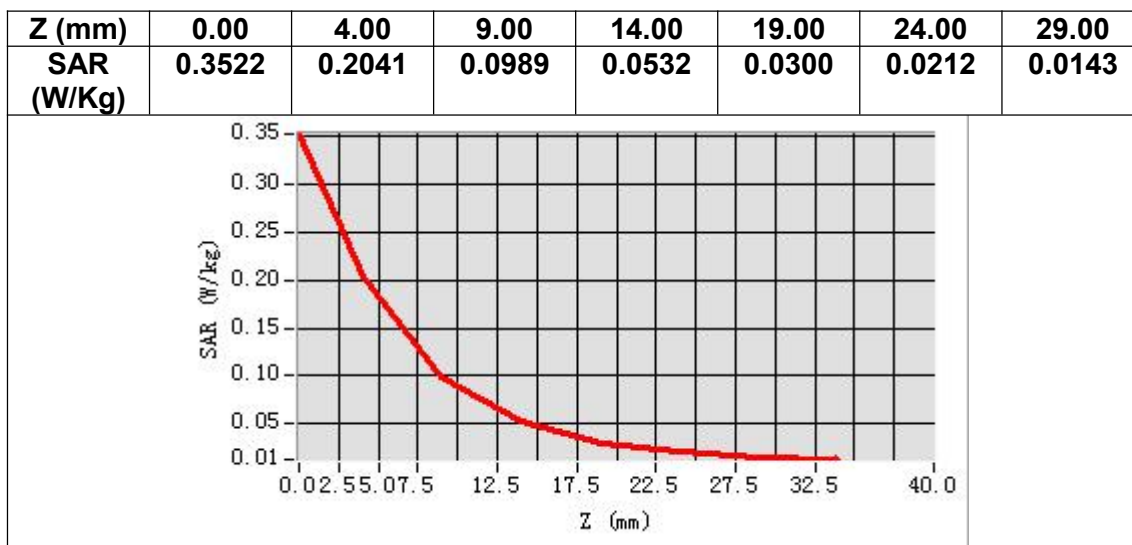
VOLUME SAR



Maximum location: X=-10.00, Y=21.00

SAR Peak: 0.35 W/kg

SAR 10g (W/Kg)	0.097415
SAR 1g (W/Kg)	0.193771



MEASUREMENT 40

Date of measurement: 16/12/2024

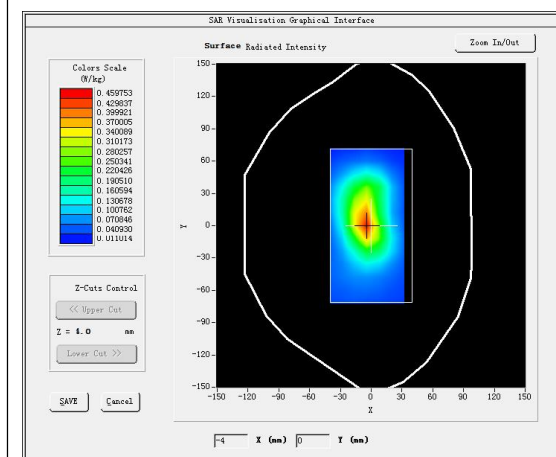
A. Experimental conditions.

<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 41</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.6)</u>
<u>ConvF</u>	<u>2.51</u>

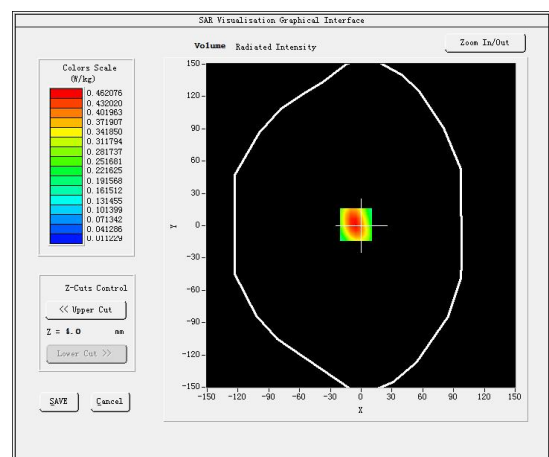
B. SAR Measurement Results

Frequency (MHz)	2593.000000
Relative permittivity (real part)	38.834721
Relative permittivity (imaginary part)	13.665514
Conductivity (S/m)	1.968593
Variation (%)	0.180000

SURFACE SAR



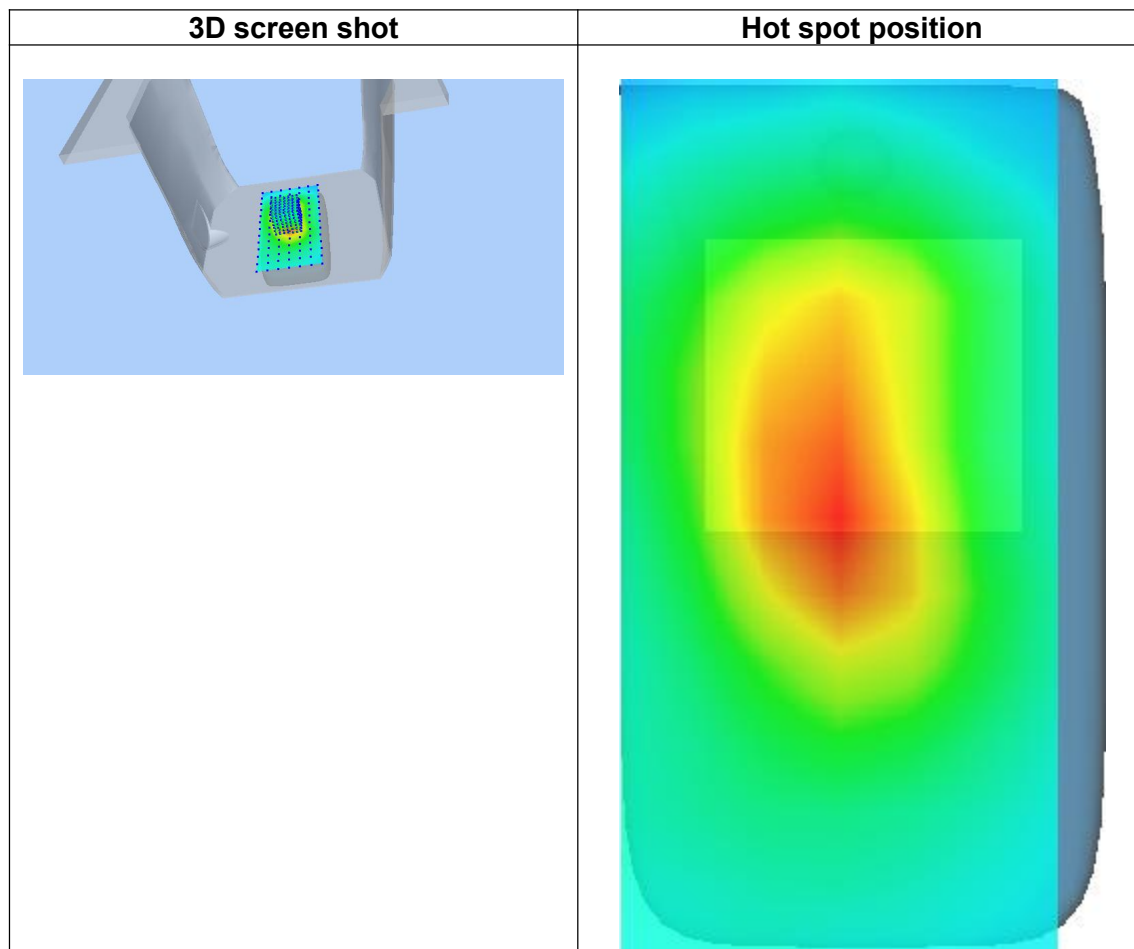
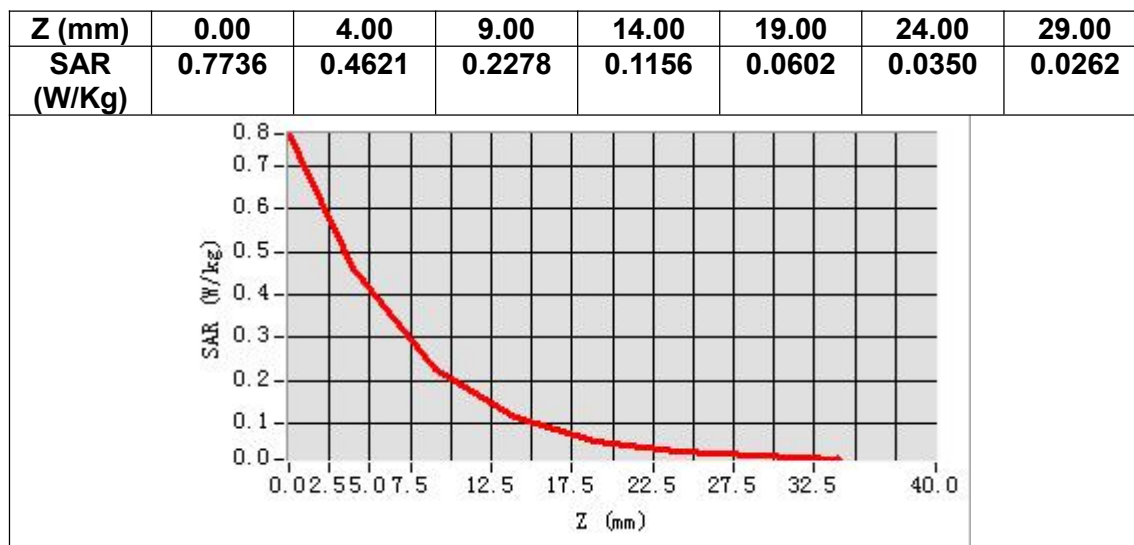
VOLUME SAR



Maximum location: X=-5.00, Y=1.00

SAR Peak: 0.77 W/kg

SAR 10g (W/Kg)	0.225518
SAR 1g (W/Kg)	0.442028



MEASUREMENT 41

Date of measurement: 6/12/2024

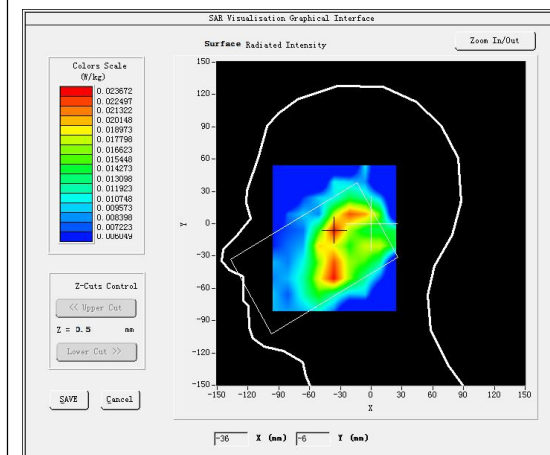
A. Experimental conditions.

<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>FDDBand66</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>(Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.51</u>

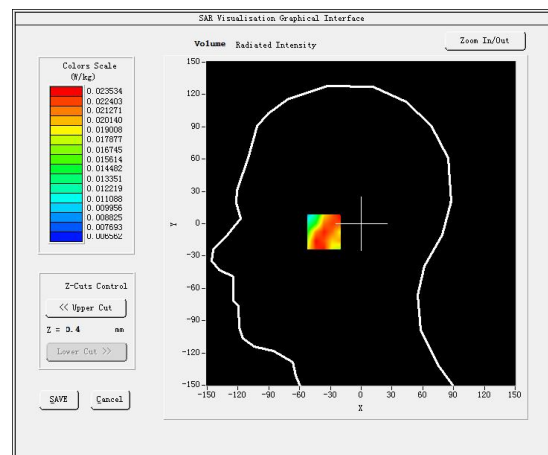
B. SAR Measurement Results

Frequency (MHz)	1745.000000
Relative permittivity (real part)	39.365982
Relative permittivity (imaginary part)	13.682247
Conductivity (S/m)	1.326418
Variation (%)	4.980000

SURFACE SAR



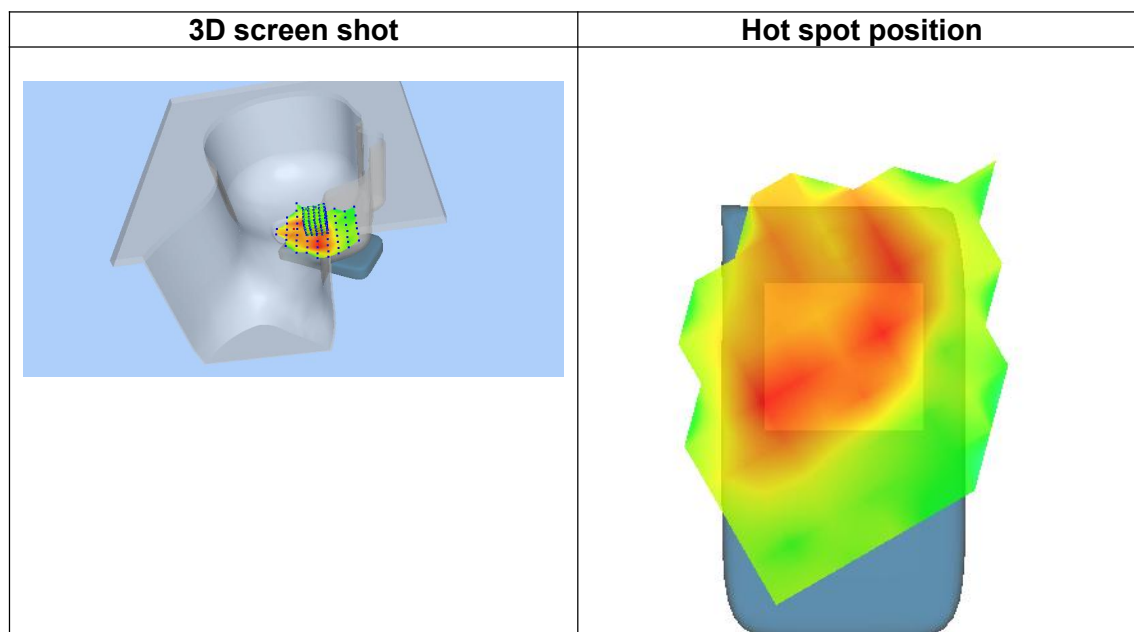
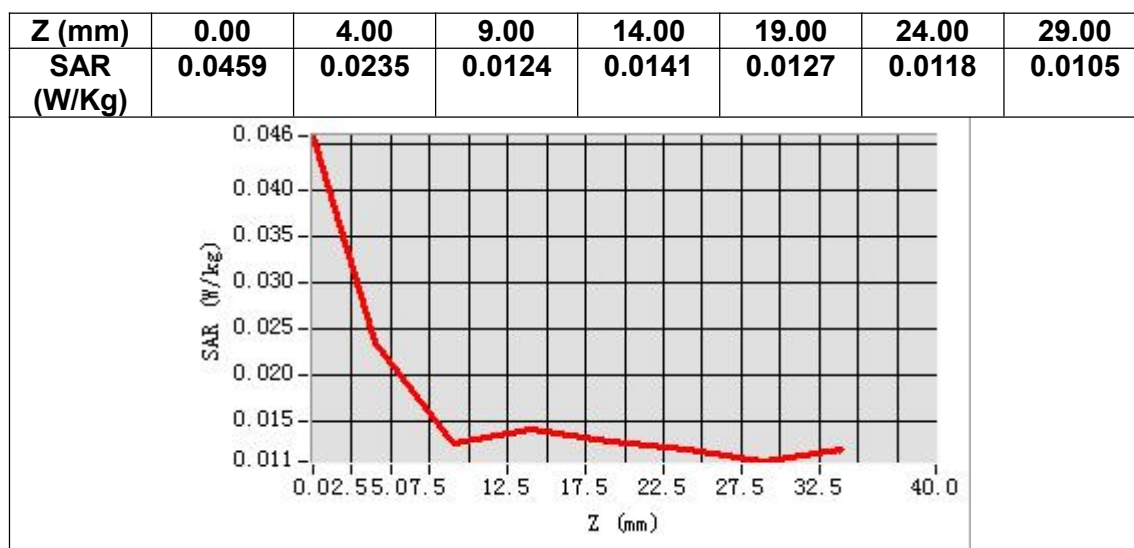
VOLUME SAR



Maximum location: X=-36.00, Y=-6.00

SAR Peak: 0.04 W/kg

SAR 10g (W/Kg)	0.017950
SAR 1g (W/Kg)	0.023699



MEASUREMENT 42

Date of measurement: 6/12/2024

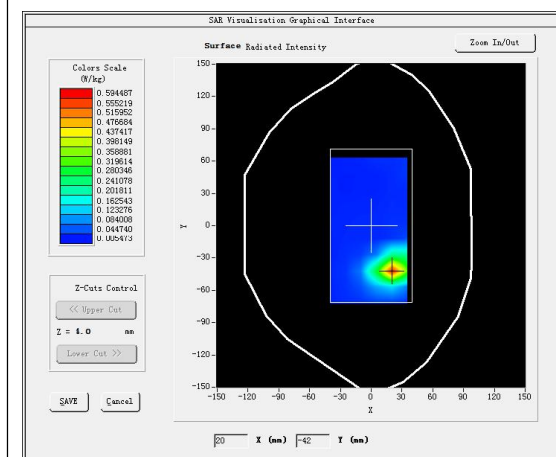
A. Experimental conditions.

<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>FDDBand66</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>(Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.51</u>

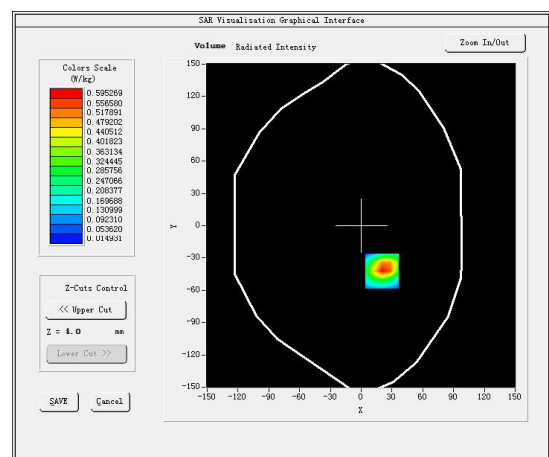
B. SAR Measurement Results

Frequency (MHz)	1745.000000
Relative permittivity (real part)	39.365982
Relative permittivity (imaginary part)	13.682247
Conductivity (S/m)	1.326418
Variation (%)	1.000000

SURFACE SAR



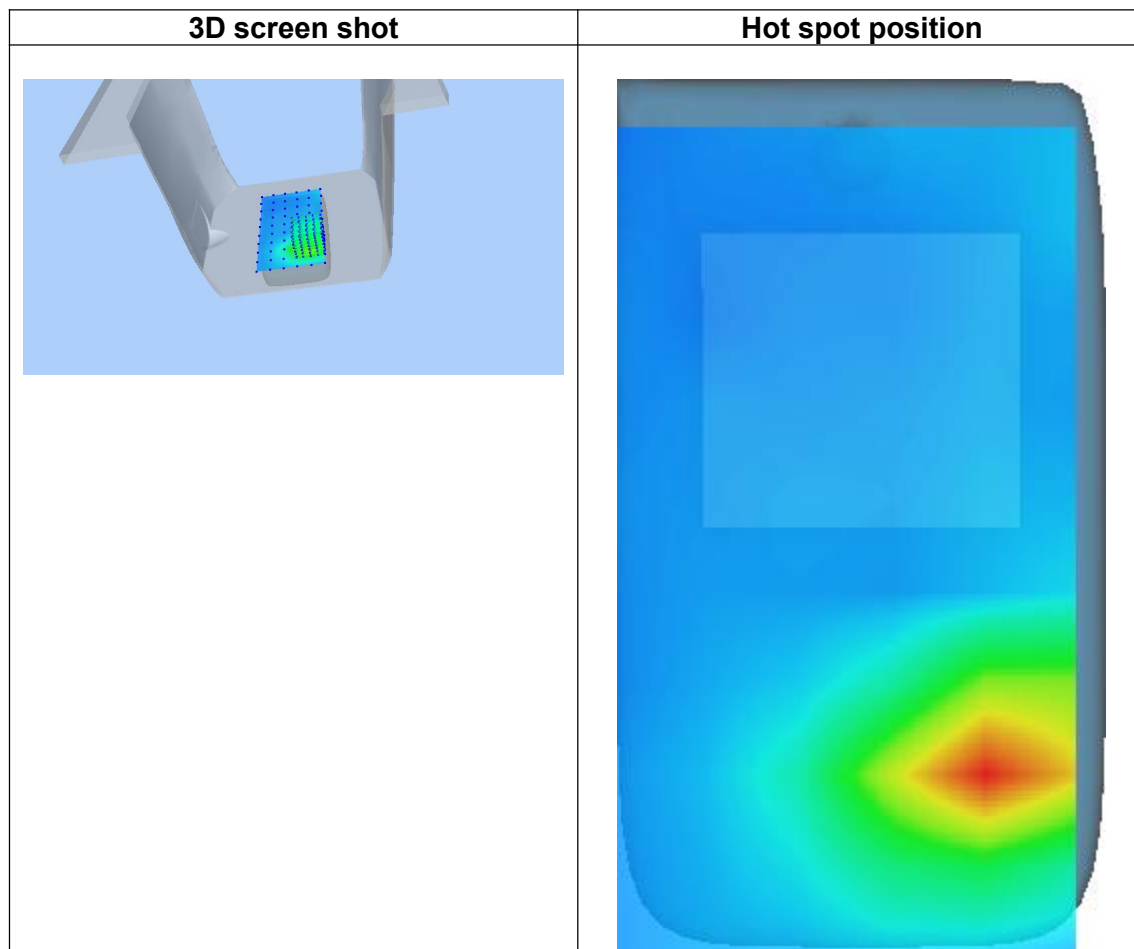
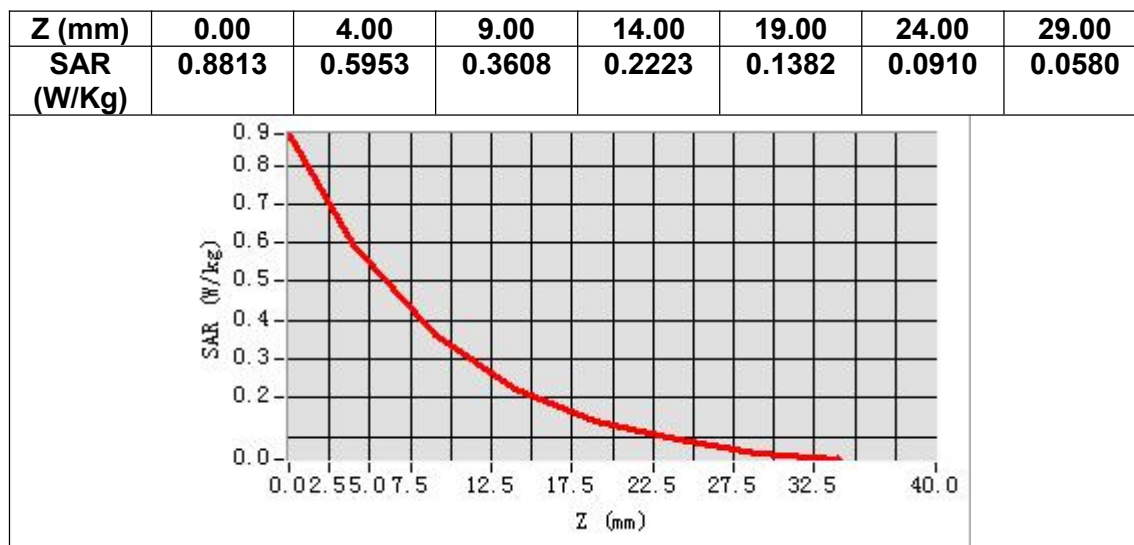
VOLUME SAR



Maximum location: X=20.00, Y=-42.00

SAR Peak: 0.96 W/kg

SAR 10g (W/Kg)	0.288954
SAR 1g (W/Kg)	0.574101



MEASUREMENT 43

Date of measurement: 13/12/2024

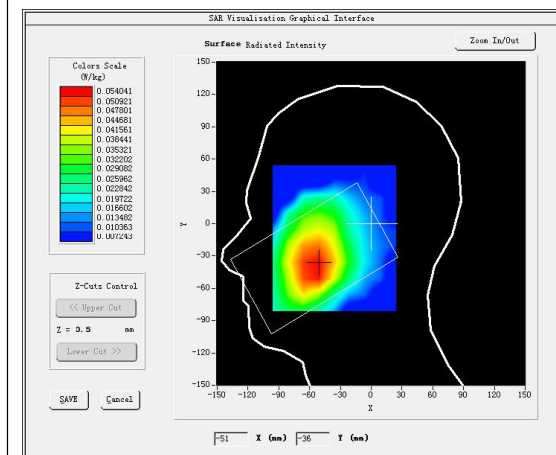
A. Experimental conditions.

<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>FDDBand71</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>(Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.42</u>

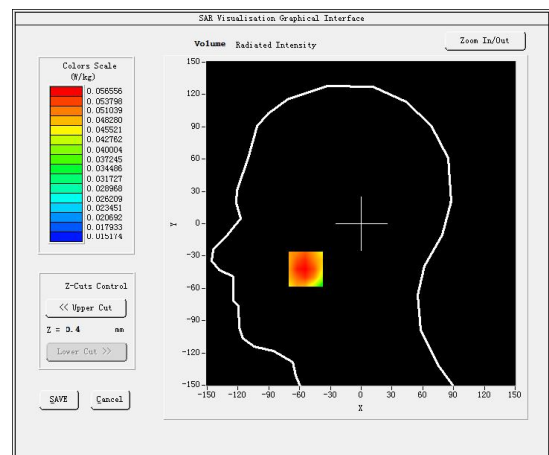
B. SAR Measurement Results

Frequency (MHz)	683.000000
Relative permittivity (real part)	41.612701
Relative permittivity (imaginary part)	22.603046
Conductivity (S/m)	0.857660
Variation (%)	2.410000

SURFACE SAR



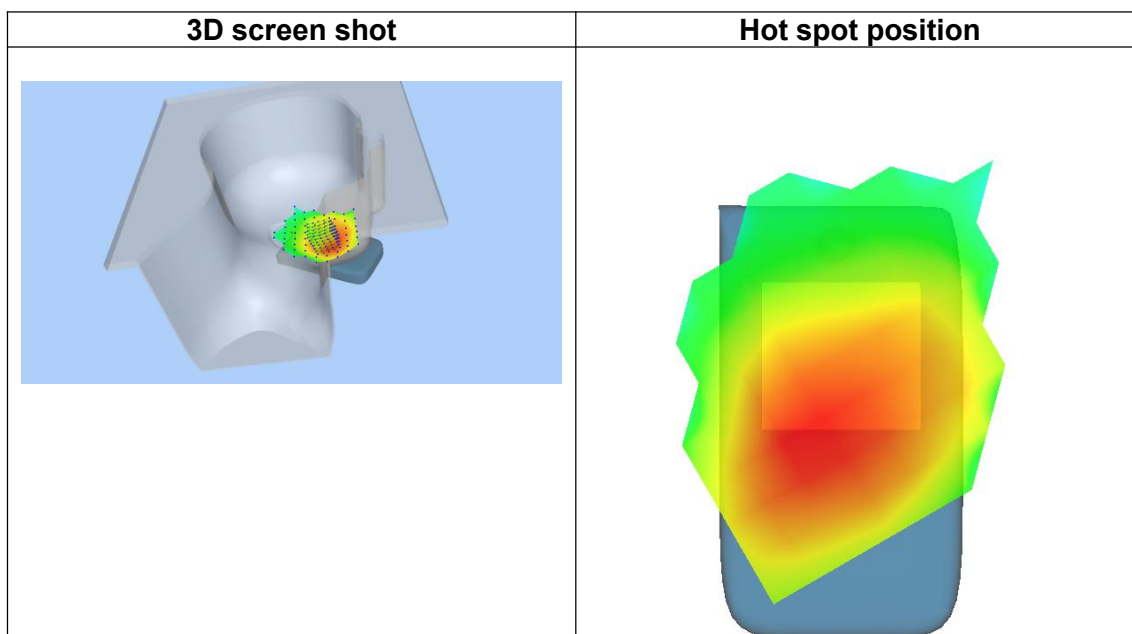
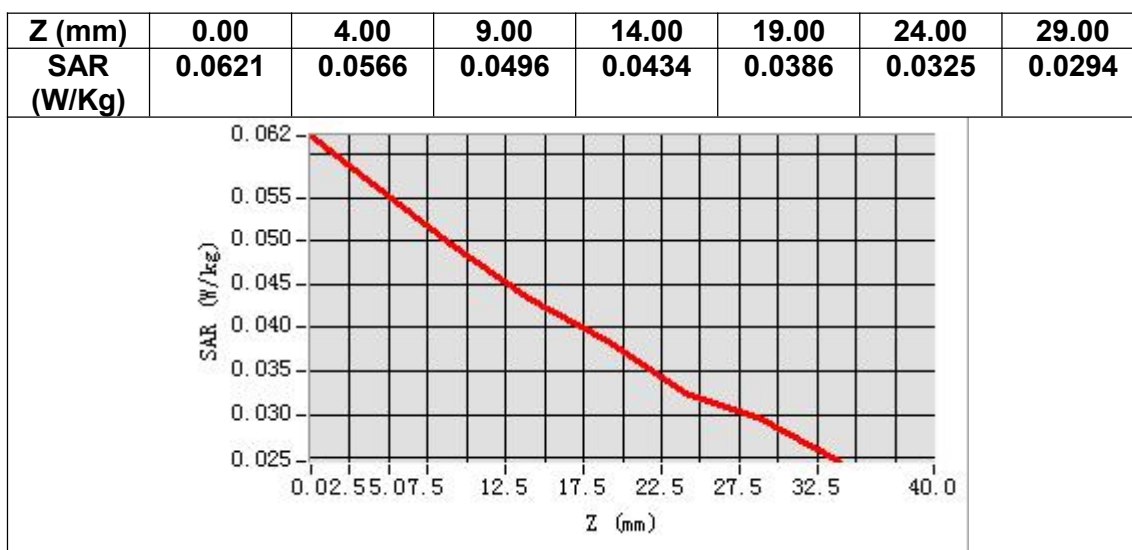
VOLUME SAR



Maximum location: X=-54.00, Y=-42.00

SAR Peak: 0.06 W/kg

SAR 10g (W/Kg)	0.047230
SAR 1g (W/Kg)	0.055450



MEASUREMENT 44

Date of measurement: 13/12/2022

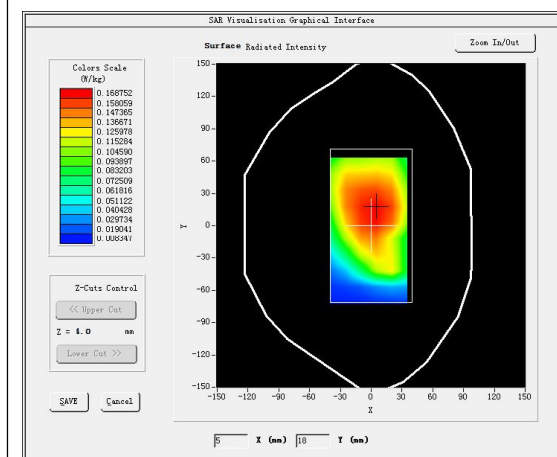
A. Experimental conditions.

<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>FDDBand71</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>(Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.42</u>

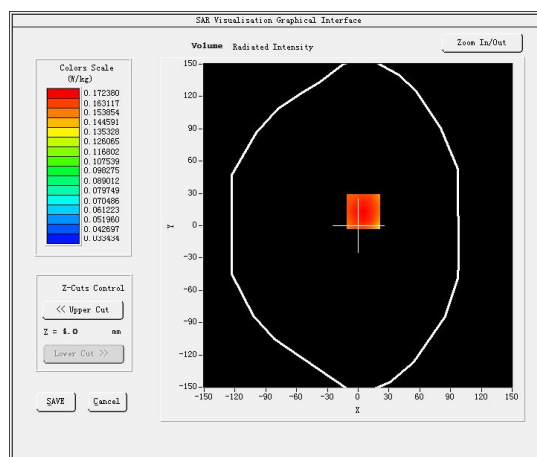
B. SAR Measurement Results

Frequency (MHz)	683.000000
Relative permittivity (real part)	41.612701
Relative permittivity (imaginary part)	22.603046
Conductivity (S/m)	0.857660
Variation (%)	-0.200000

SURFACE SAR



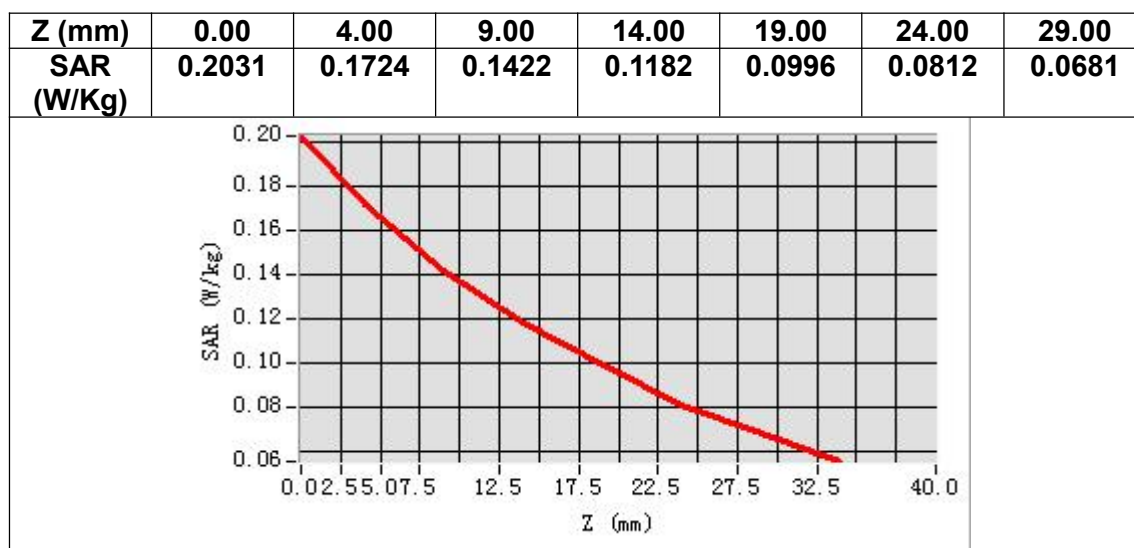
VOLUME SAR



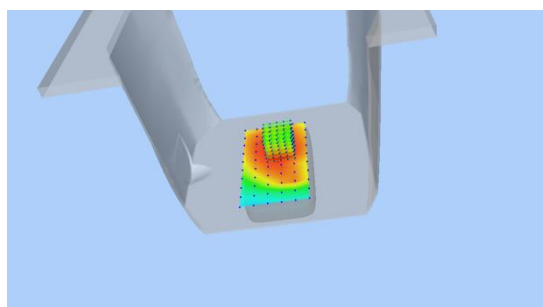
Maximum location: X=5.00, Y=13.00

SAR Peak: 0.20 W/kg

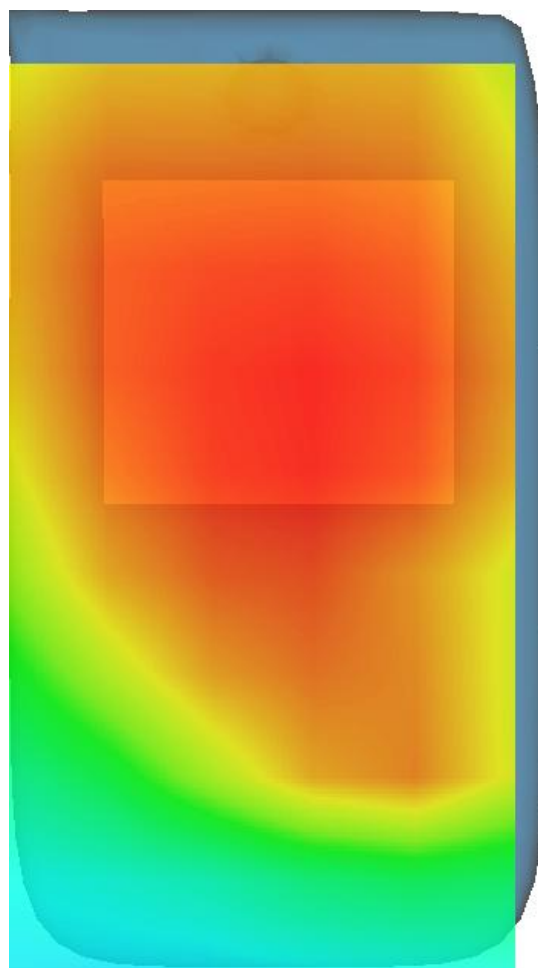
SAR 10g (W/Kg)	0.136023
SAR 1g (W/Kg)	0.168455



3D screen shot



Hot spot position



MEASUREMENT 45

Date of measurement: 13/12/2025

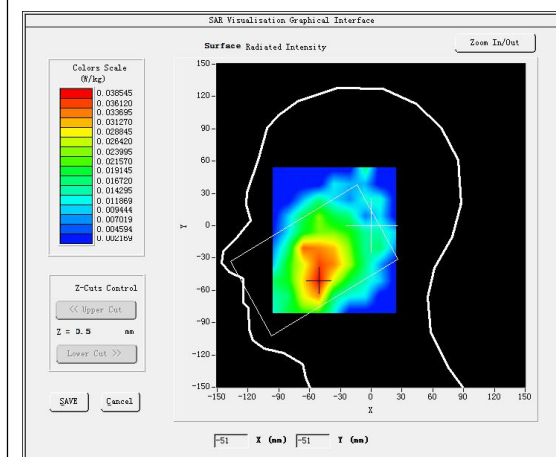
A. Experimental conditions.

<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>SA n71</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>(Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.42</u>

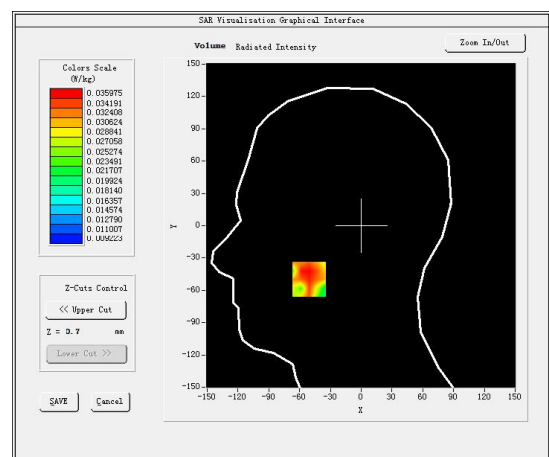
B. SAR Measurement Results

Frequency (MHz)	680.500000
Relative permittivity (real part)	41.656803
Relative permittivity (imaginary part)	22.597197
Conductivity (S/m)	0.854300
Variation (%)	0.360000

SURFACE SAR



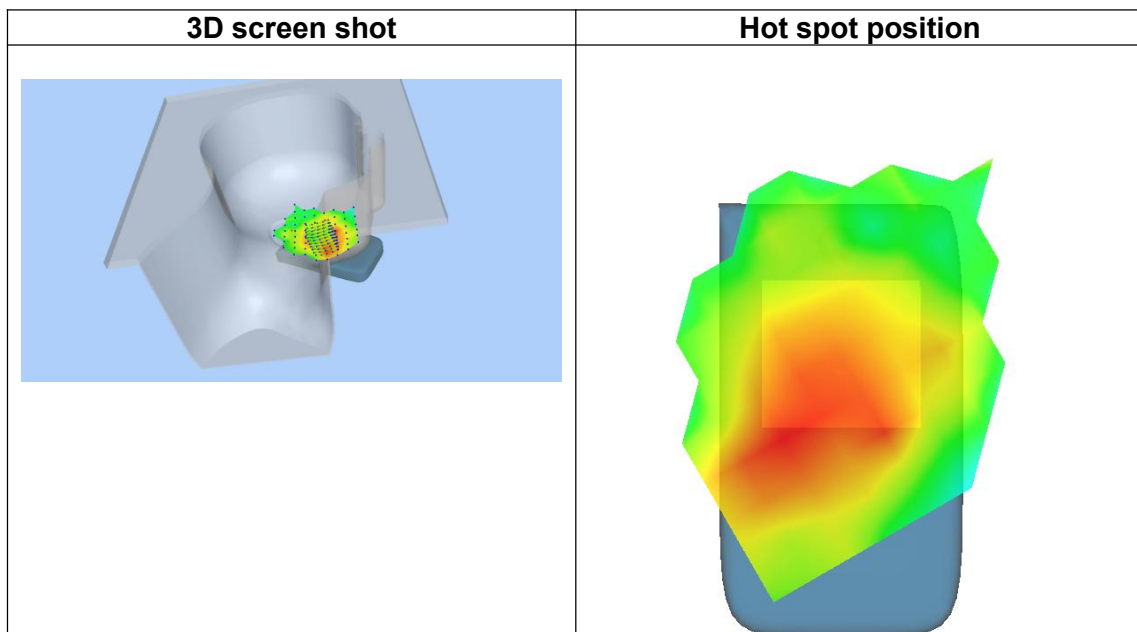
VOLUME SAR



Maximum location: X=-51.00, Y=-50.00

SAR Peak: 0.05 W/kg

SAR 10g (W/Kg)	0.027741
SAR 1g (W/Kg)	0.034816



MEASUREMENT 46

Date of measurement: 13/12/2025

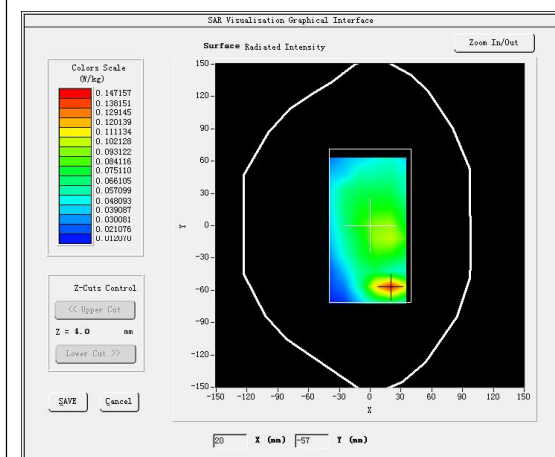
A. Experimental conditions.

<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>SA n71</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>(Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.42</u>

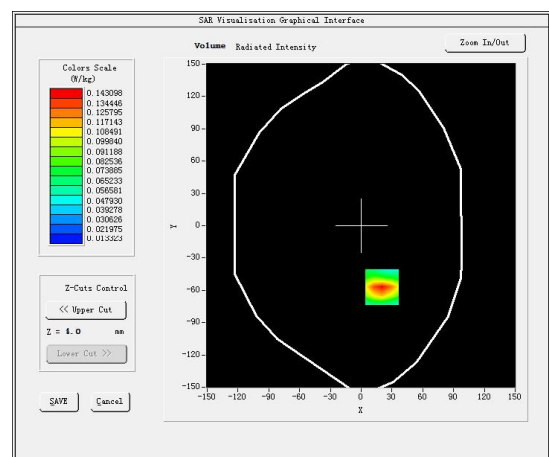
B. SAR Measurement Results

Frequency (MHz)	680.500000
Relative permittivity (real part)	41.656803
Relative permittivity (imaginary part)	22.597197
Conductivity (S/m)	0.854300
Variation (%)	-2.050000

SURFACE SAR



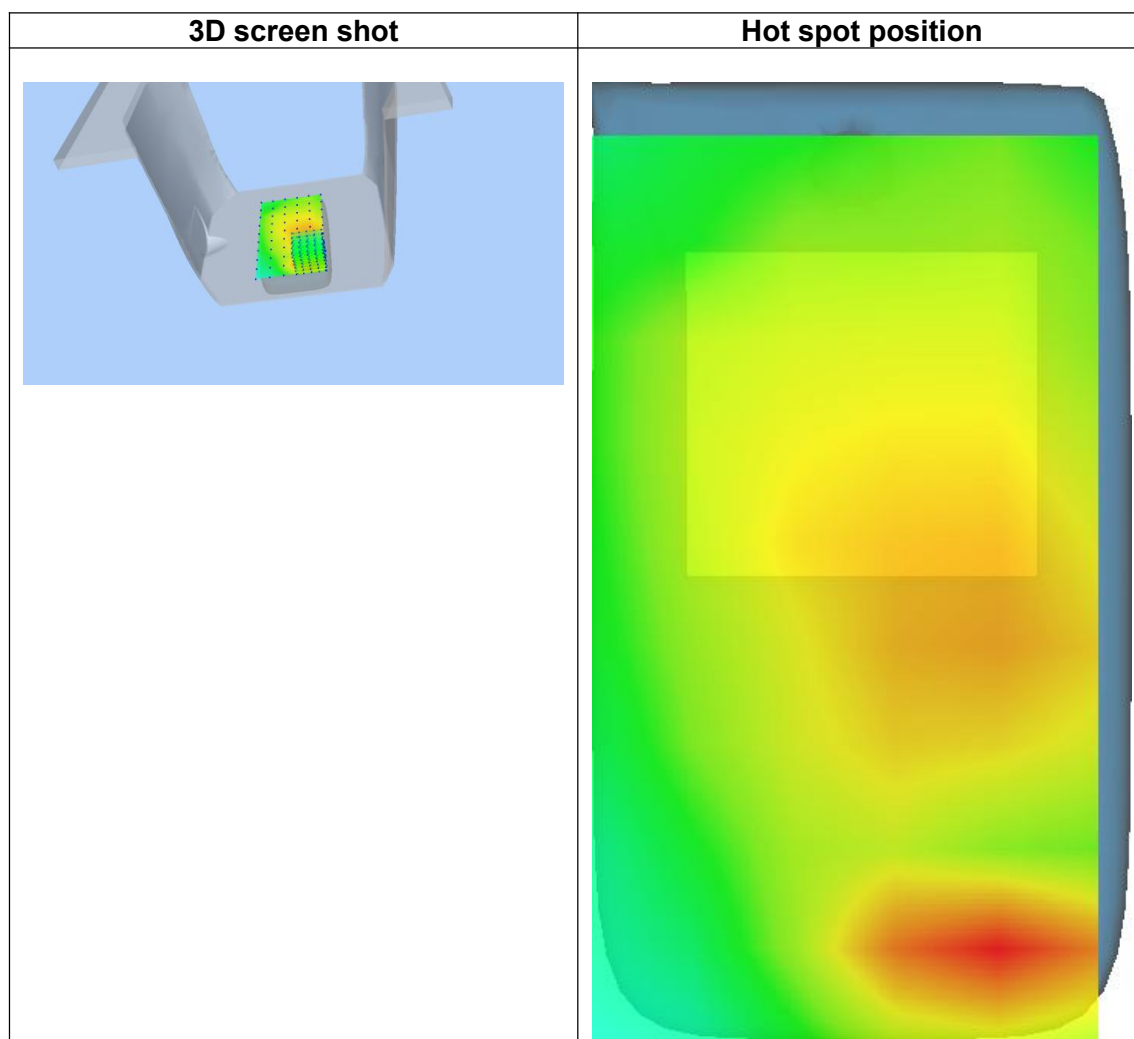
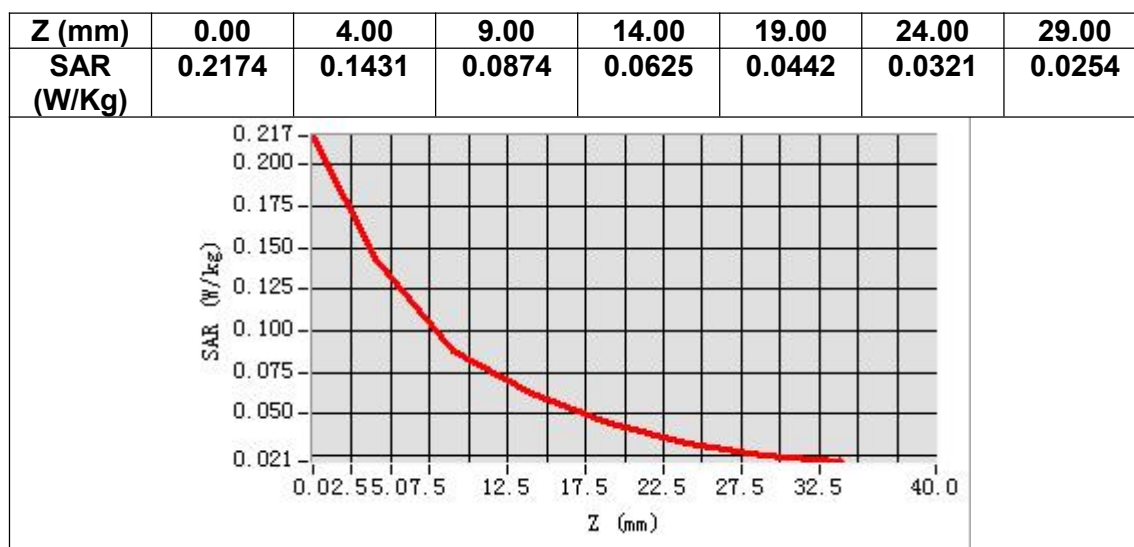
VOLUME SAR



Maximum location: X=20.00, Y=-57.00

SAR Peak: 0.22 W/kg

SAR 10g (W/Kg)	0.078939
SAR 1g (W/Kg)	0.135321



14. Appendix D. Calibration Certificate

Table of contents
E Field Probe - 4024-EPGO-442
750 MHz Dipole - SN 03/15 DIP 0G750-355
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 13/14 WGA 33

DocuSign Envelope ID: 223C1A7C-4751-4B95-8502-1618DC0951E3



COMOSAR E-Field Probe Calibration Report

Ref : ACR.278.12.24.BES.A

SHENZHEN NTEK TESTING TECHNOLOGY CO., LTD.

BUILDING E, FENDA SCIENCE PARK, SANWEI
COMMUNITY, XIXIANG STREET,
BAO'AN DISTRICT, SHENZHEN GUANGDONG, CHINA
MVG COMOSAR DOSIMETRIC E-FIELD PROBE
SERIAL NO.: 4024-EPGO-442

Calibrated at MVG

Z.I. de la pointe du diable

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

Calibration date: 10/04/2024



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 Dosimetric 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).

DocuSign Envelope ID: 223C1A7C-4751-4B95-8502-1618DC0951E3



COMOSAR E-FIELD PROBE CALIBRATION REPORT

Ref: ACR.278.12.24.BES.A

	Name	Function	Date	Signature
Prepared by :	Cyrille ONNEE	Measurement Responsible	10/4/2024	
Checked & approved by:	Pedro Ruiz	Technical Manager	10/4/2024	
Authorized by:	Pedro Ruiz	Laboratory Director	10/4/2024	

Assinado por:

Pedro RUIZ

29093B31C46F42B...

	Customer Name
Distribution :	SHENZHEN NTEK TESTING TECHNOLOGY CO., LTD.

Issue	Name	Date	Modifications
A	Cyrille ONNEE	10/4/2024	Initial release

Docusign Envelope ID: 223C1A7C-4751-4B95-8502-1618DC0951E3



COMOSAR E-FIELD PROBE CALIBRATION REPORT

Ref: ACR.278.12.24.BES.A

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COMOSAR E-FIELD PROBE CALIBRATION REPORT

Ref: ACR.278.12.24.BES.A

1 DEVICE UNDER TEST

Device Under Test	
Device Type	COMOSAR DOSIMETRIC E FIELD PROBE
Manufacturer	MVG
Model	SSE2
Serial Number	4024-EPGO-442
Product Condition (new / used)	New
Frequency Range of Probe	0.15 GHz-7.5GHz
Resistance of Three Dipoles at Connector	Dipole 1: R1=0.206 MΩ Dipole 2: R2=0.223 MΩ Dipole 3: R3=0.235 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 effect. All calibrations / measurements performed meet the fore-mentioned standards.

3.1 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 for frequency range 600-7500MHz and using the calorimeter cell method (transfer method) as outlined in the standards for frequency 150-450 MHz.

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COMOSAR E-FIELD PROBE CALIBRATION REPORT

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3.2 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.

3.3 ISOTROPY

The axial isotropy was evaluated by exposing the probe to a reference wave from a standard dipole with the dipole mounted under the flat phantom in the test configuration suggested for system validations and checks. The probe was rotated along its main axis from 0 to 360 degrees in 15-degree steps. The hemispherical isotropy is determined by inserting the probe in a thin plastic box filled with tissue-equivalent liquid, with the plastic box illuminated with the fields from a half wave dipole. The dipole is rotated about its axis (0°–180°) in 15° increments. At each step the probe is rotated about its axis (0°–360°).

3.4 BOUNDARY EFFECT

The boundary effect is defined as the deviation between the SAR measured data and the expected exponential decay in the liquid when the probe is oriented normal to the interface. To evaluate this effect, the liquid filled flat phantom is exposed to fields from either a reference dipole or waveguide. With the probe normal to the phantom surface, the peak spatial average SAR is measured and compared to the analytical value at the surface.

The boundary effect uncertainty can be estimated according to the following uncertainty approximation formula based on linear and exponential extrapolations between the surface and $d_{be} + d_{step}$ along lines that are approximately normal to the surface:

$$SAR_{uncertainty} [\%] = \Delta SAR_{be} \frac{(d_{be} + d_{step})^2 (e^{-\alpha(d_{be} + d_{step})})}{2d_{step} \delta/2} \quad \text{for } (d_{be} + d_{step}) < 10 \text{ mm}$$

where

$SAR_{uncertainty}$ is the uncertainty in percent of the probe boundary effect

d_{be} is the distance between the surface and the closest *zoom-scan* measurement point, in millimetre

Δ_{step} is the separation distance between the first and second measurement points that are closest to the phantom surface, in millimetre, assuming the boundary effect at the second location is negligible

δ is the minimum penetration depth in millimetres of the head tissue-equivalent liquids defined in this standard, i.e., $\delta \approx 14 \text{ mm}$ at 3 GHz;

ΔSAR_{be} in percent of SAR is the deviation between the measured SAR value, at the distance d_{be} from the boundary, and the analytical SAR value.

The measured worst case boundary effect $SAR_{uncertainty}[\%]$ for scanning distances larger than 4mm is 1.0% Limit, 2%).

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COMOSAR E-FIELD PROBE CALIBRATION REPORT

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3.5 PROBE MODULATION RESPONSE

MVG's probe were evaluated experimentally with various modulated signal and the deviation from CW response were found neglectable in the used power range of the probe. So the correction to taking into account the linearization parameters for different modulation is null, therefore the CW factor given in this report can be used whatever the measured modulation

4 MEASUREMENT UNCERTAINTY

The guidelines outlined in the IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards were followed to generate the measurement uncertainty associated with a SAR probe calibration using the waveguide or calorimetric cell technique depending on the frequency.

The estimated expanded uncertainty (k=2) in calibration for SAR (W/kg) is +/-11% for the frequency range 150-450MHz.

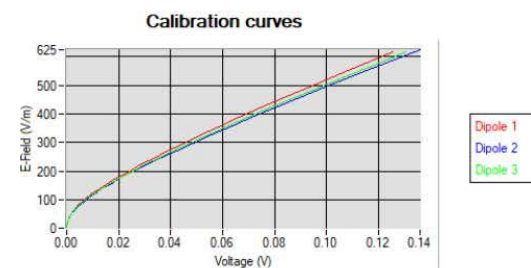
The estimated expanded uncertainty (k=2) in calibration for SAR (W/kg) is +/-14% for the frequency range 600-7500MHz.

5 CALIBRATION RESULTS

Ambient condition	
Liquid Temperature	20 +/- 1 °C
Lab Temperature	20 +/- 1 °C
Lab Humidity	30-70 %

5.1 CALIBRATION IN AIR

The following curve represents the measurement in waveguide of the voltage picked up by the probe toward the E-field generated inside the waveguide.



From this curve, the sensitivity in air is calculated using the below formula.

$$E^2 = \sum_{i=1}^3 \frac{V_i (1 + V_i / DCP_i)}{Norm_i}$$

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