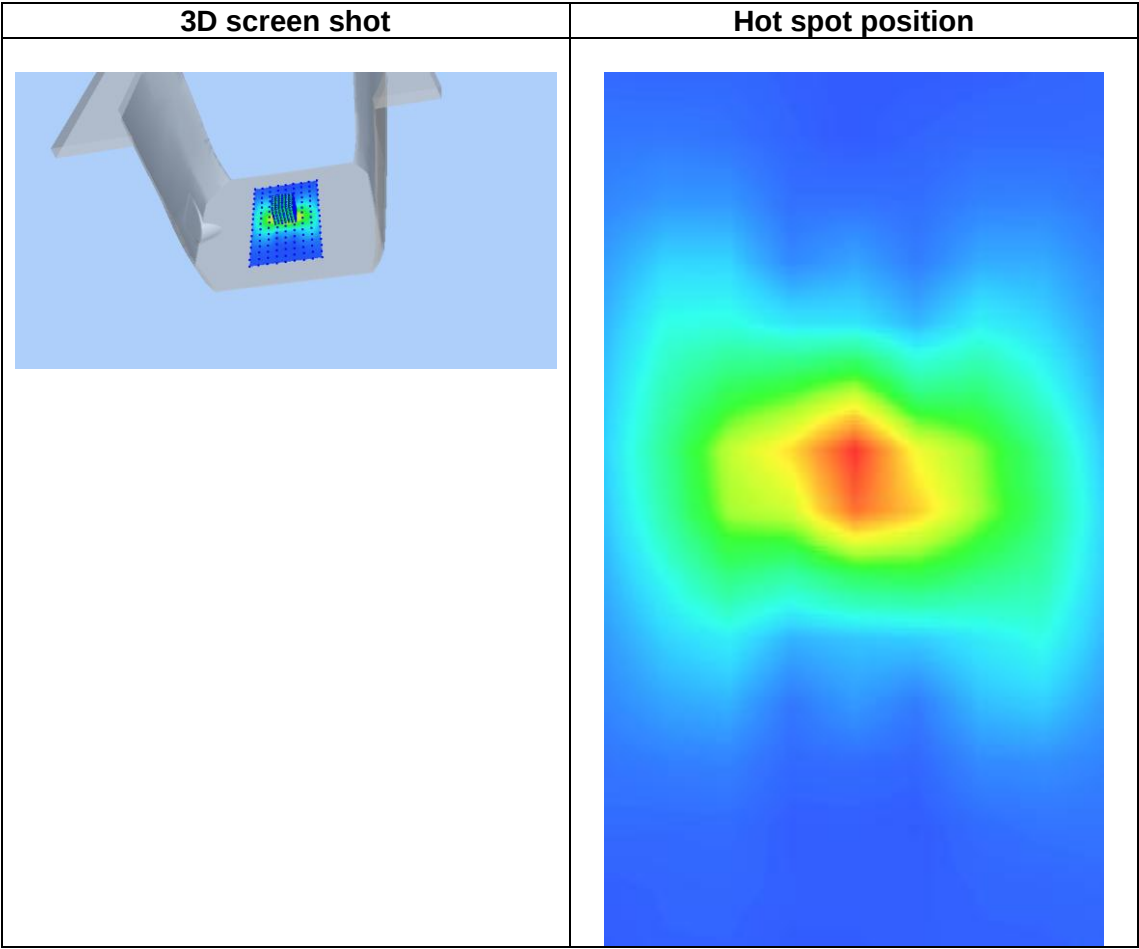
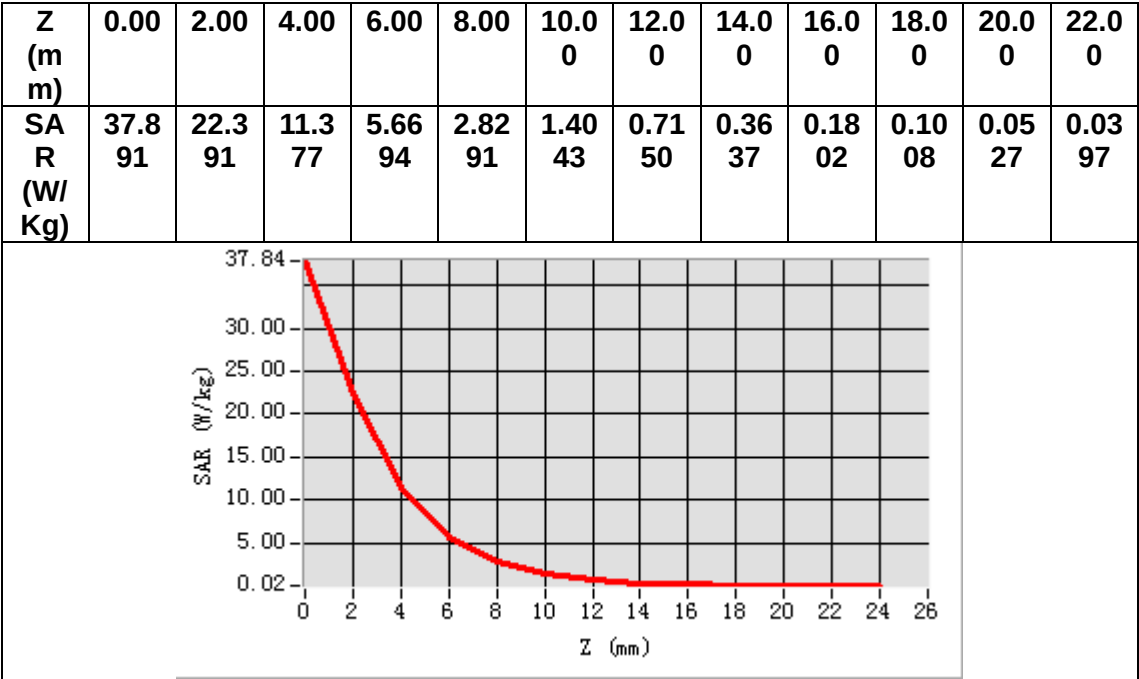




MEASUREMENT 8

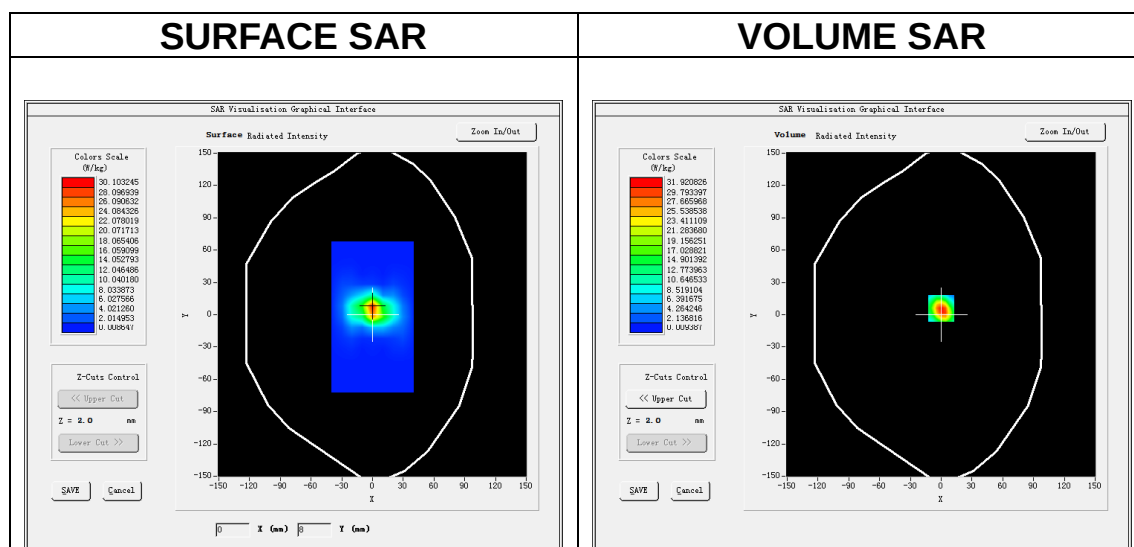
Date of measurement: 22/2/2024

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>Dipole</u>
<u>Band</u>	<u>CW5800</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>CW (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.04</u>

B. SAR Measurement Results

Frequency (MHz)	5800.000000
Relative permittivity (real part)	34.352098
Relative permittivity (imaginary part)	16.122741
Conductivity (S/m)	5.195105
Variation (%)	-0.500000

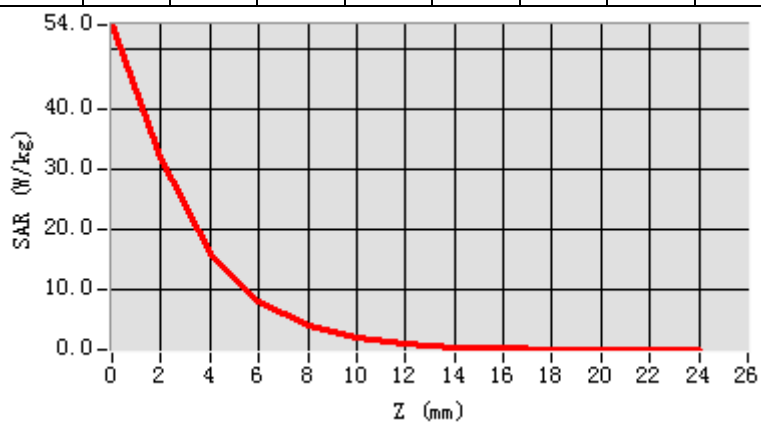


Maximum location: X=0.00, Y=6.00

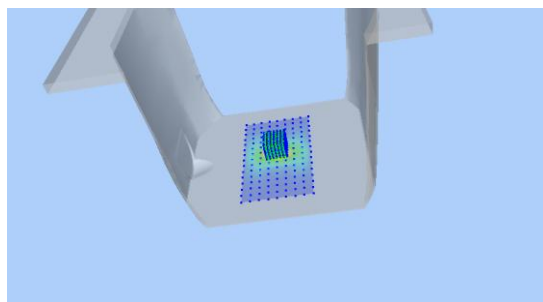
SAR Peak: 57.37 W/kg

SAR 10g (W/Kg)	6.260228
SAR 1g (W/Kg)	17.548190

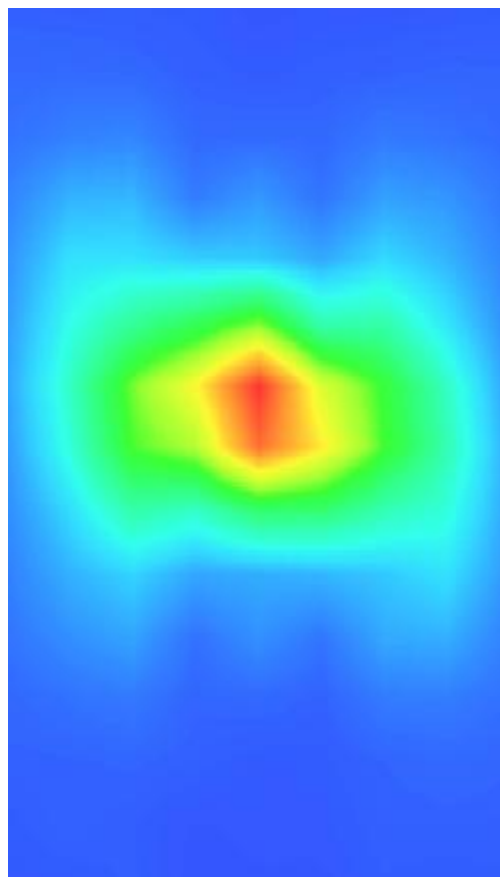
Z (m m)	0.00	2.00	4.00	6.00	8.00	10.0 0	12.0 0	14.0 0	16.0 0	18.0 0	20.0 0	22.0 0
SAR (W/ Kg)	54.0 36	31.9 48	16.1 44	8.17 66	4.08 90	2.05 50	1.03 61	0.51 44	0.27 95	0.15 72	0.07 88	0.04 38



3D screen shot



Hot spot position



1. Appendix C. Plots of High SAR Measurement

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MEASUREMENT 36 LTE Band 26B Body

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MEASUREMENT 38 LTE Band 66 Body

MEASUREMENT 1

Date of measurement: 1/3/2024

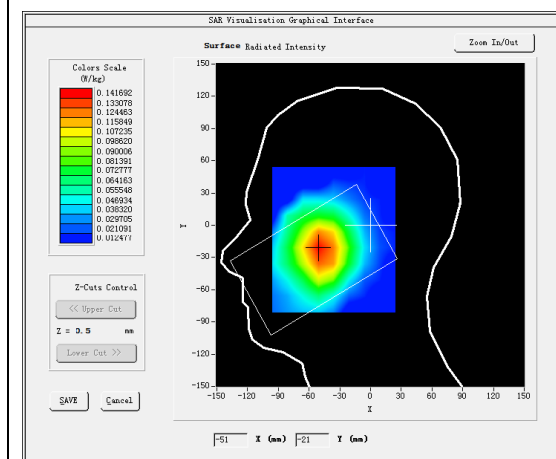
A. Experimental conditions.

<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>GSM850</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>TDMA (Crest factor: 2.0)</u>
<u>ConvF</u>	<u>2.32</u>

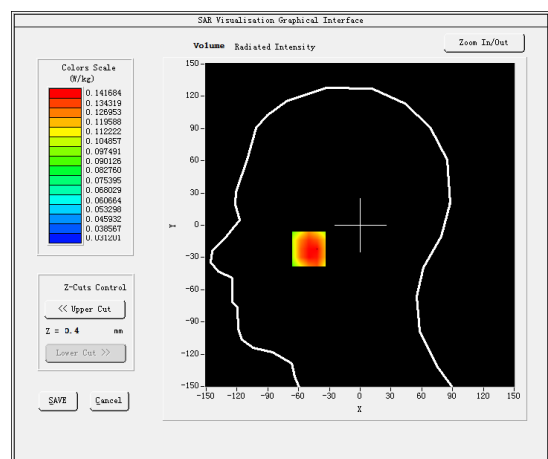
B. SAR Measurement Results

Frequency (MHz)	836.400000
Relative permittivity (real part)	41.301842
Relative permittivity (imaginary part)	19.317196
Conductivity (S/m)	0.897606
Variation (%)	-1.240000

SURFACE SAR



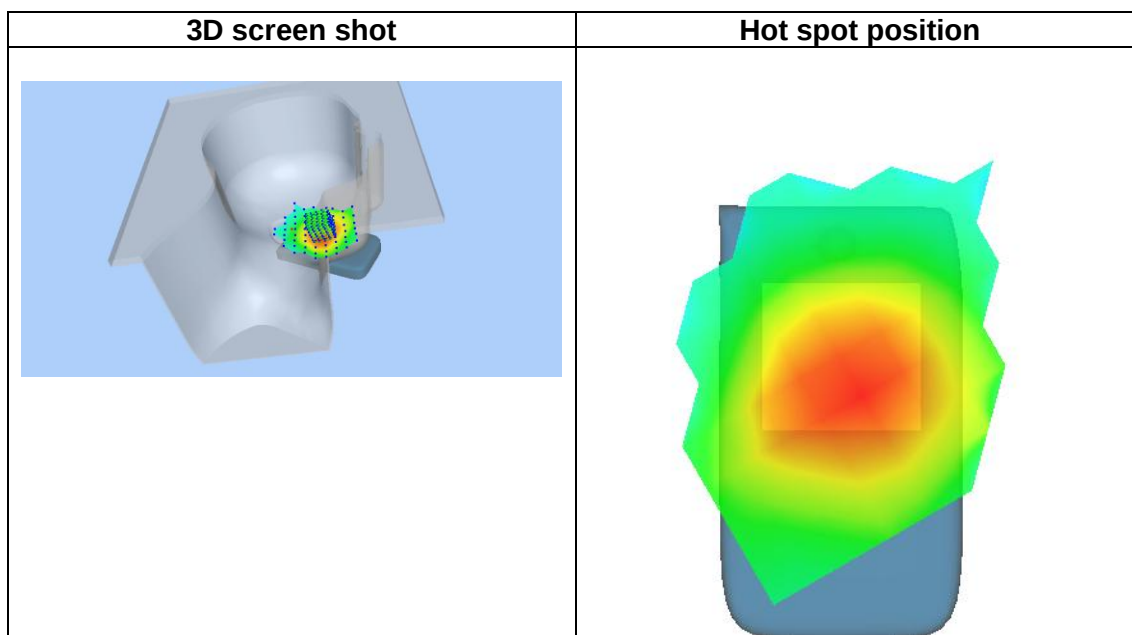
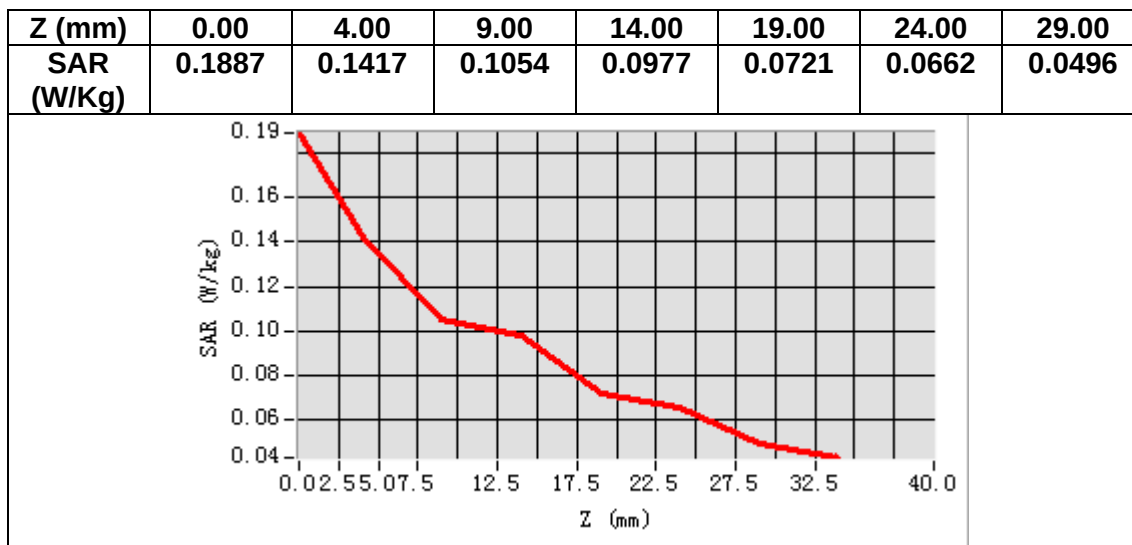
VOLUME SAR



Maximum location: X=-50.00, Y=-22.00

SAR Peak: 0.18 W/kg

SAR 10g (W/Kg)	0.107511
SAR 1g (W/Kg)	0.139583



MEASUREMENT 2

Date of measurement: 1/3/2024

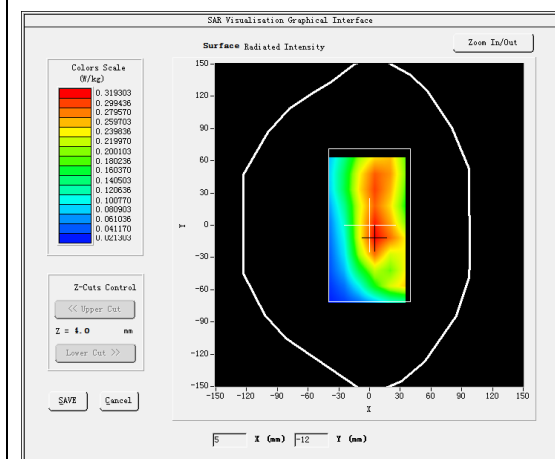
A. Experimental conditions.

<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>GSM850</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>TDMA (Crest factor: 2.0)</u>
<u>ConvF</u>	<u>2.32</u>

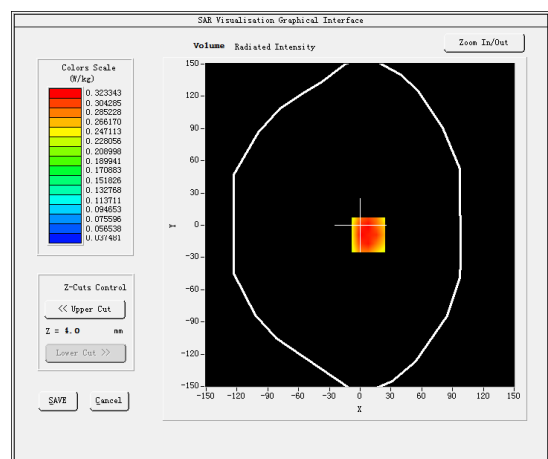
B. SAR Measurement Results

Frequency (MHz)	836.400000
Relative permittivity (real part)	41.301842
Relative permittivity (imaginary part)	19.317196
Conductivity (S/m)	0.897606
Variation (%)	-3.380000

SURFACE SAR



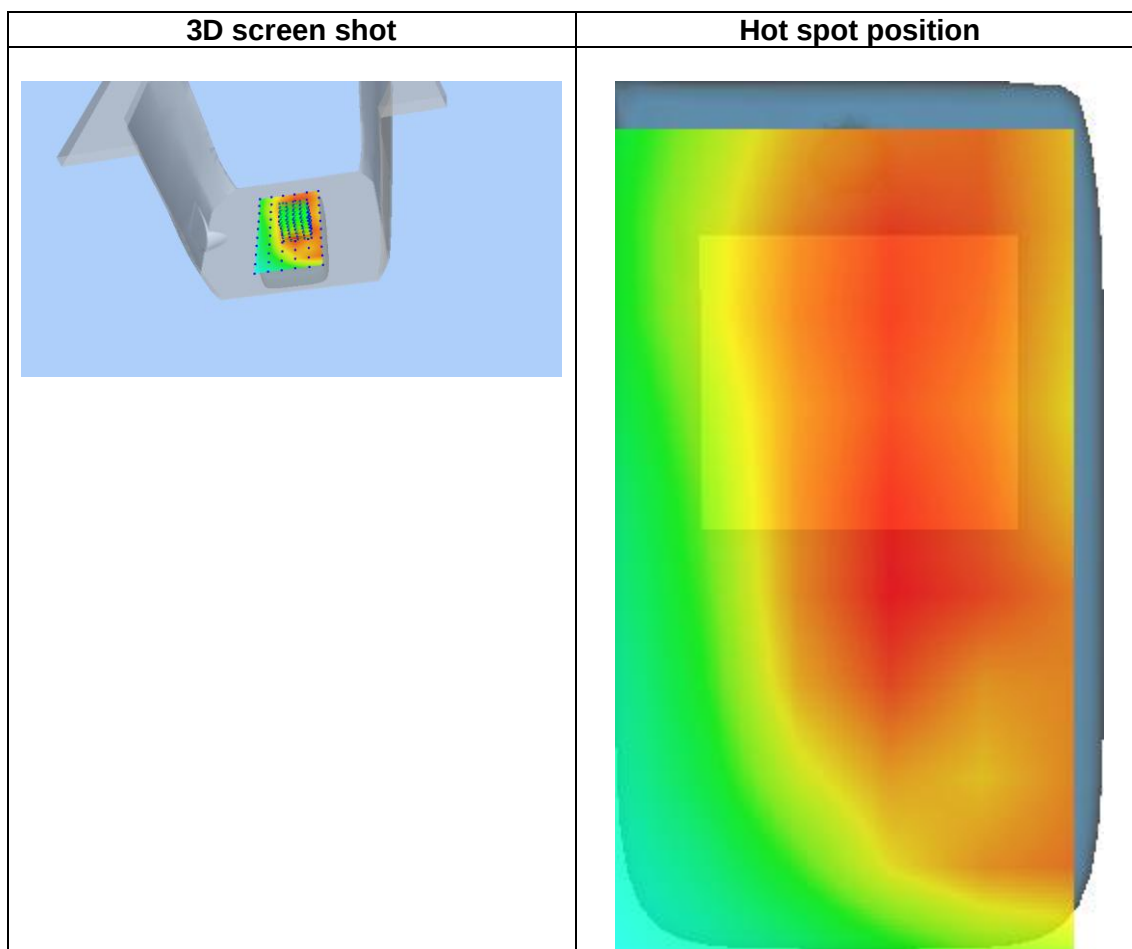
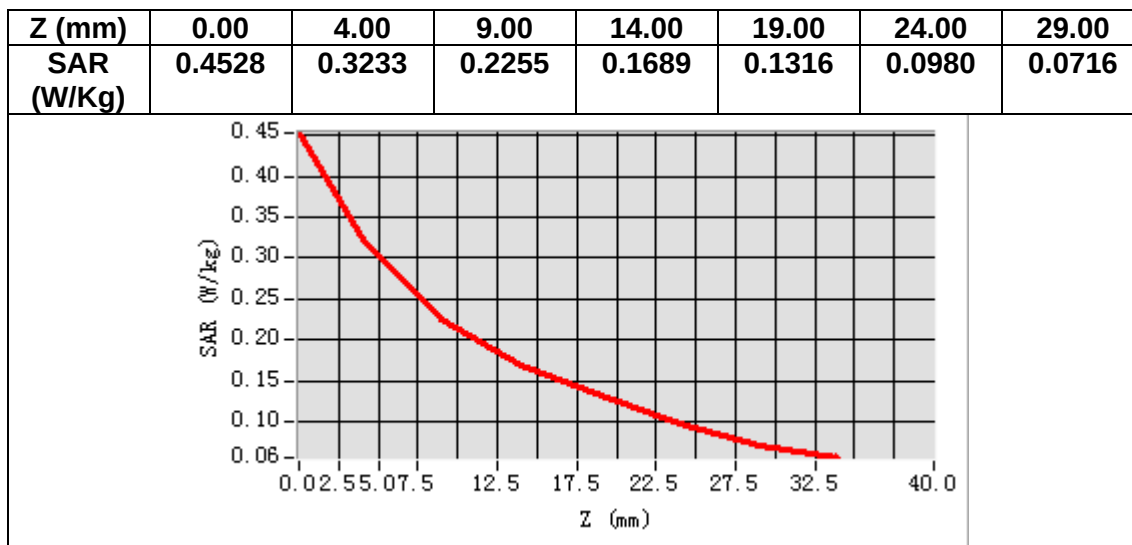
VOLUME SAR



Maximum location: X=8.00, Y=-9.00

SAR Peak: 0.44 W/kg

SAR 10g (W/Kg)	0.222427
SAR 1g (W/Kg)	0.317029



MEASUREMENT 3

Date of measurement: 2/3/2024

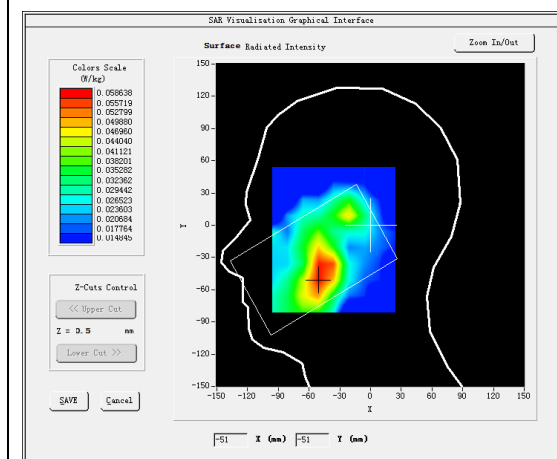
A. Experimental conditions.

<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>GSM1900</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>TDMA (Crest factor: 4.0)</u>
<u>ConvF</u>	<u>2.63</u>

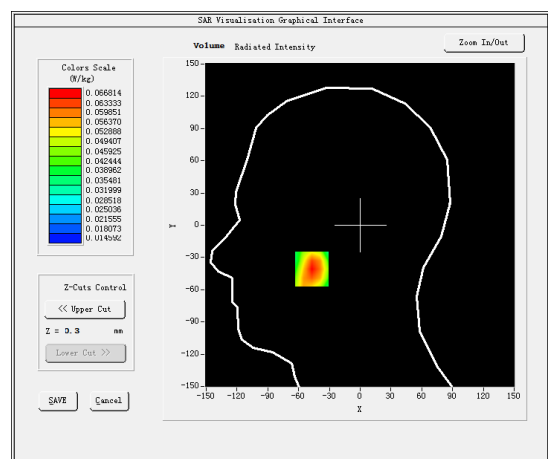
B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative permittivity (real part)	38.975822
Relative permittivity (imaginary part)	13.747208
Conductivity (S/m)	1.435820
Variation (%)	-3.790000

SURFACE SAR



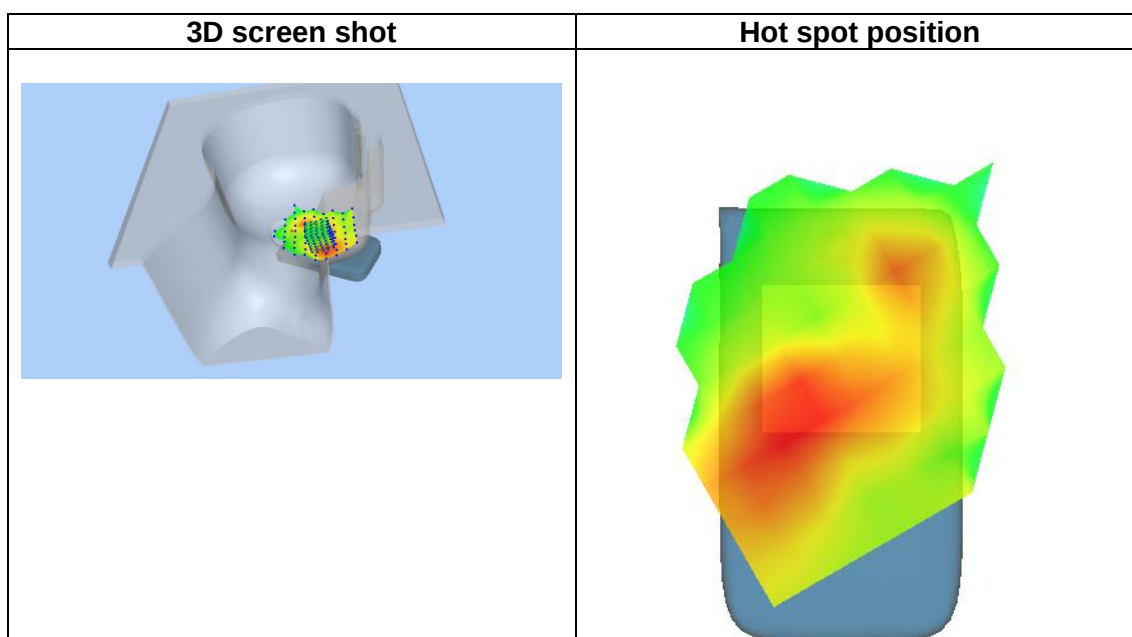
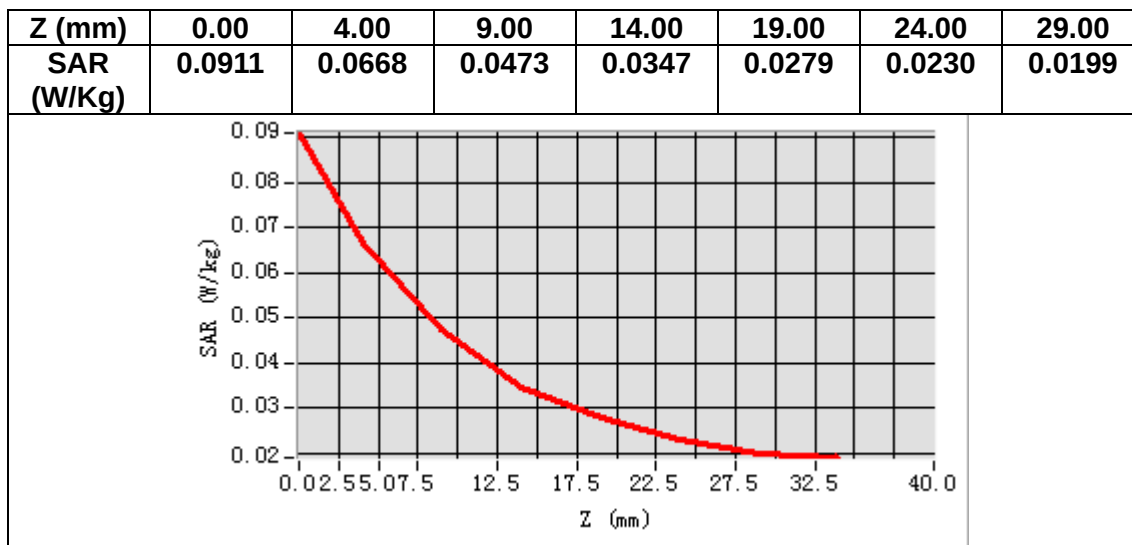
VOLUME SAR



Maximum location: X=-47.00, Y=-41.00

SAR Peak: 0.09 W/kg

SAR 10g (W/Kg)	0.043799
SAR 1g (W/Kg)	0.065449



MEASUREMENT 4

Date of measurement: 2/3/2024

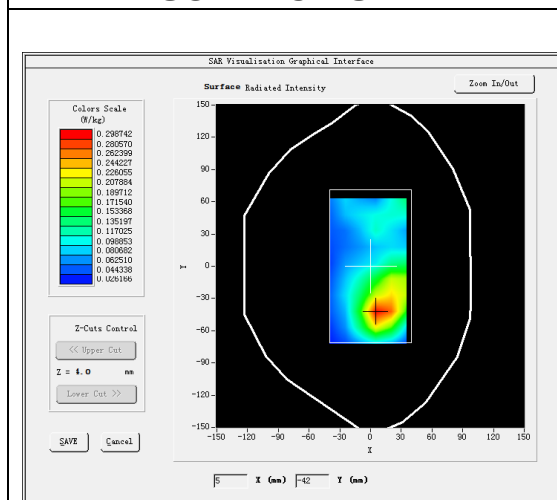
A. Experimental conditions.

<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>GSM1900</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>TDMA (Crest factor: 4.0)</u>
<u>ConvF</u>	<u>2.63</u>

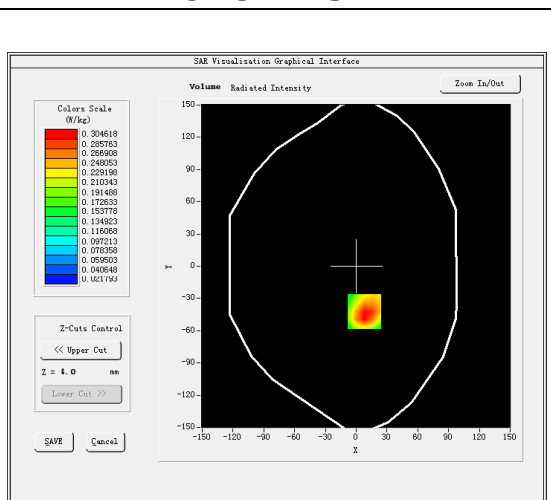
B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative permittivity (real part)	38.975822
Relative permittivity (imaginary part)	13.747208
Conductivity (S/m)	1.435820
Variation (%)	1.000000

SURFACE SAR



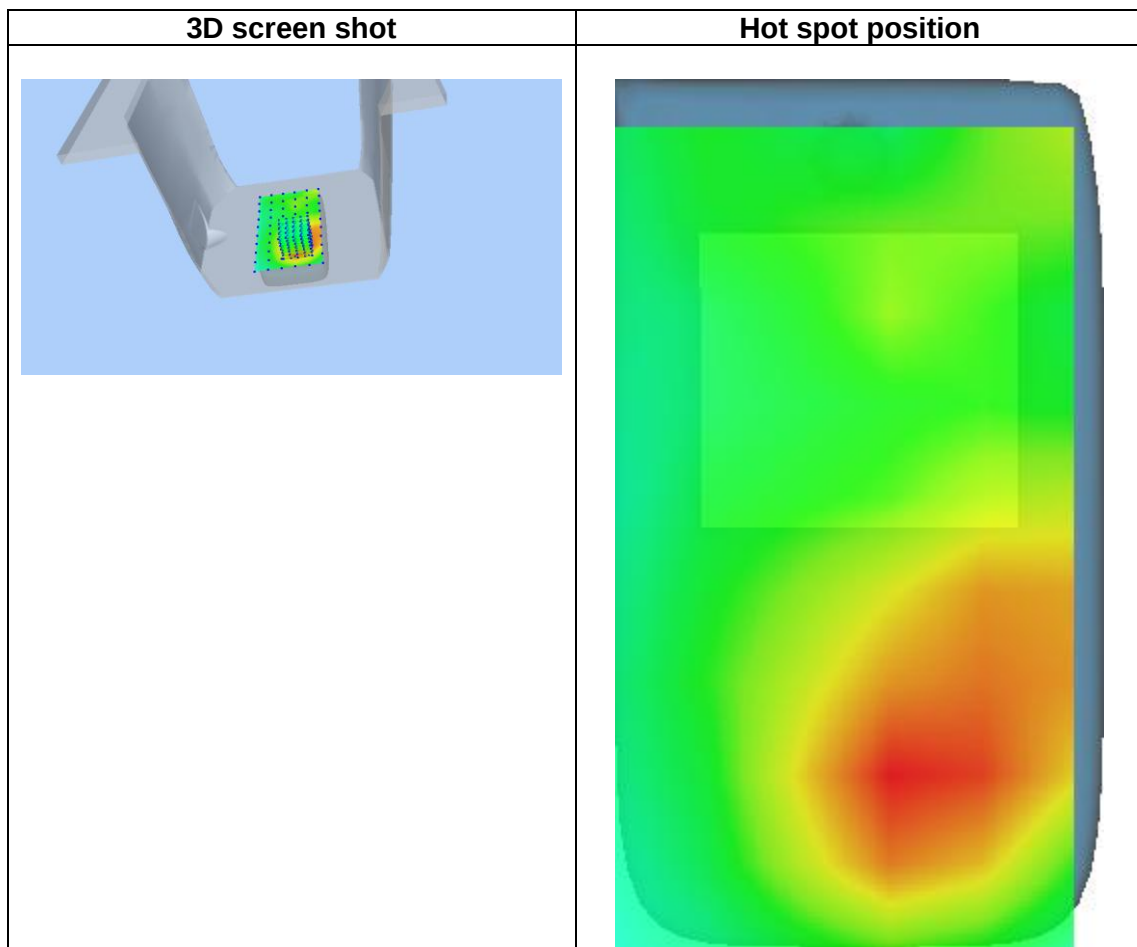
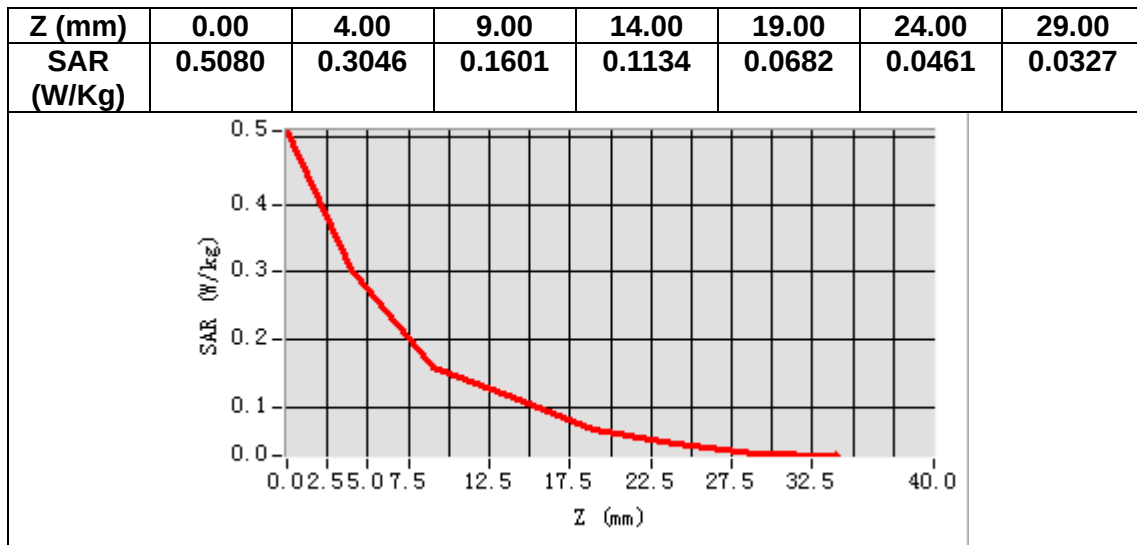
VOLUME SAR



Maximum location: X=8.00, Y=-42.00

SAR Peak: 0.48 W/kg

SAR 10g (W/Kg)	0.171191
SAR 1g (W/Kg)	0.305576



MEASUREMENT 5

Date of measurement: 5/3/2024

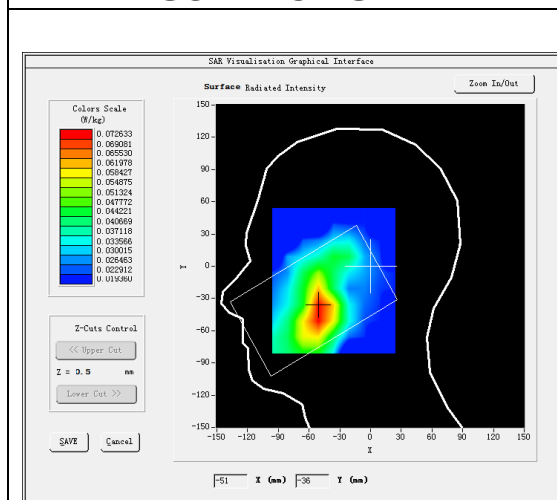
A. Experimental conditions.

<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>Band2 WCDMA1900</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>WCDMA (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.63</u>

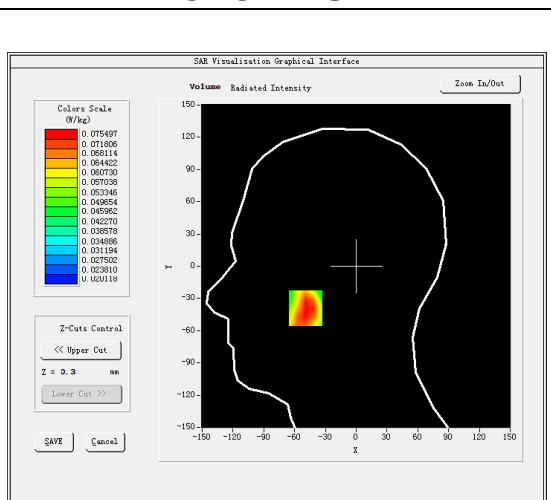
B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative permittivity (real part)	38.975822
Relative permittivity (imaginary part)	13.747208
Conductivity (S/m)	1.435820
Variation (%)	-1.300000

SURFACE SAR



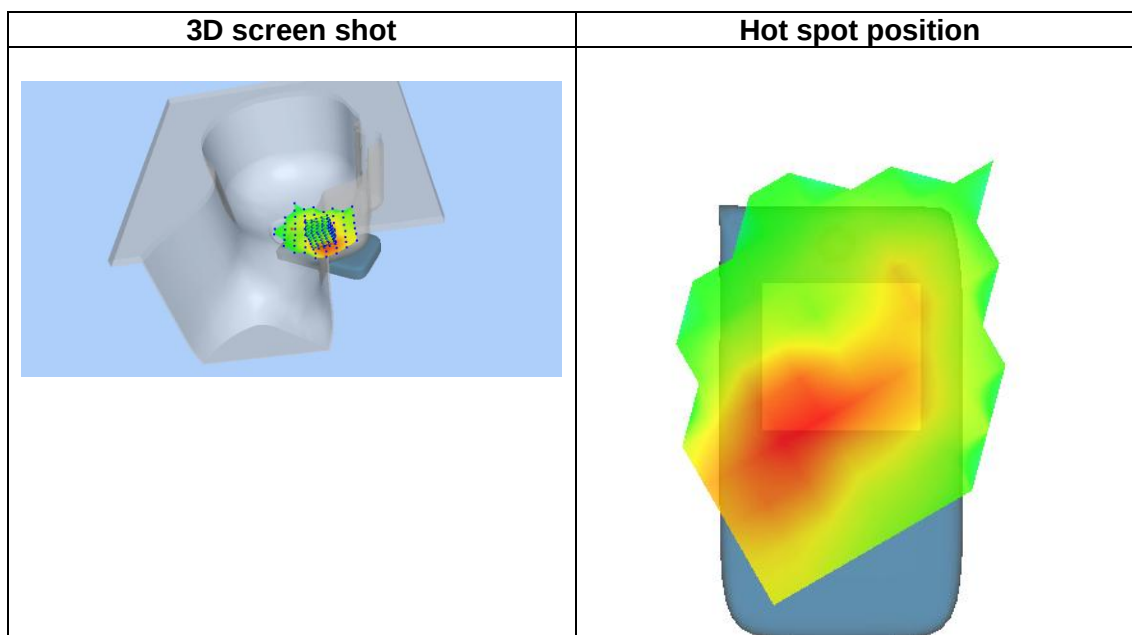
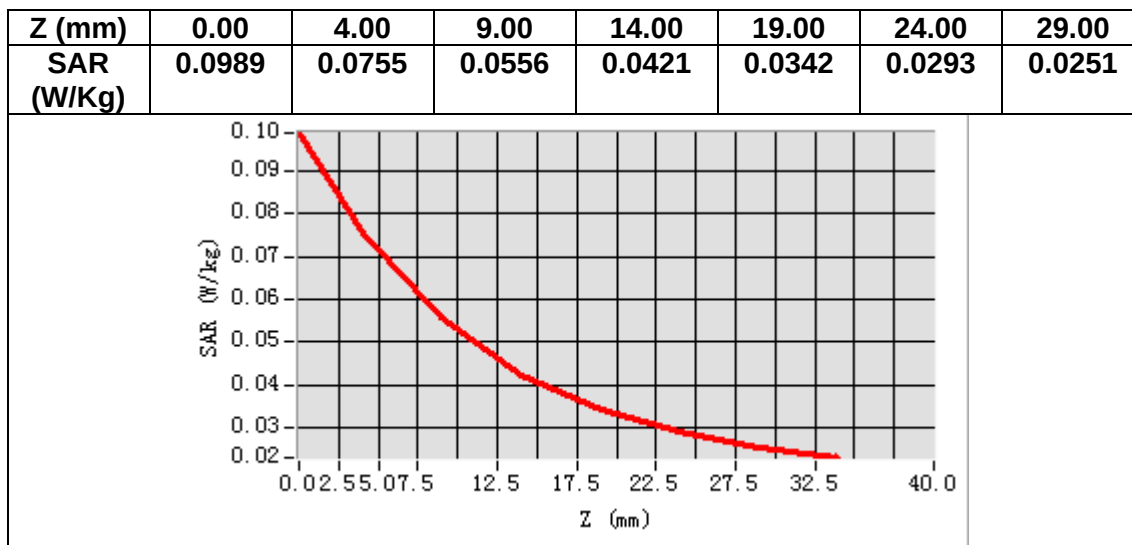
VOLUME SAR



Maximum location: X=-49.00, Y=-39.00

SAR Peak: 0.10 W/kg

SAR 10g (W/Kg)	0.051959
SAR 1g (W/Kg)	0.075287



MEASUREMENT 6

Date of measurement: 2/3/2024

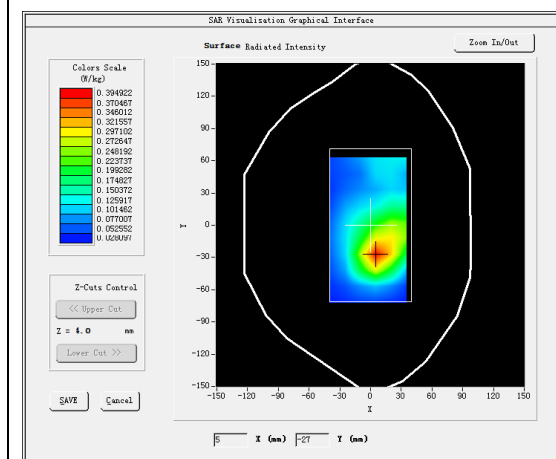
A. Experimental conditions.

<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>Band2 WCDMA1900</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>WCDMA (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.63</u>

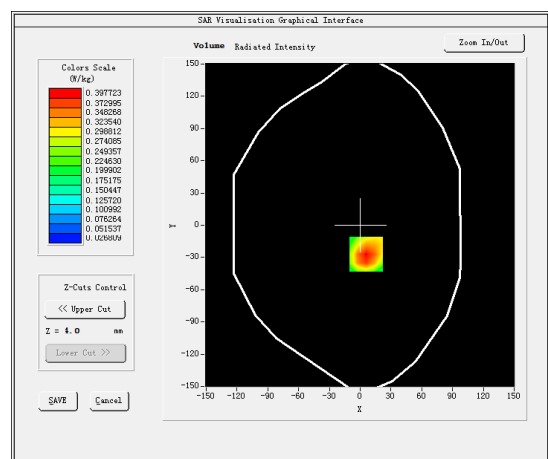
B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative permittivity (real part)	38.975822
Relative permittivity (imaginary part)	13.747208
Conductivity (S/m)	1.435820
Variation (%)	-0.470000

SURFACE SAR



VOLUME SAR

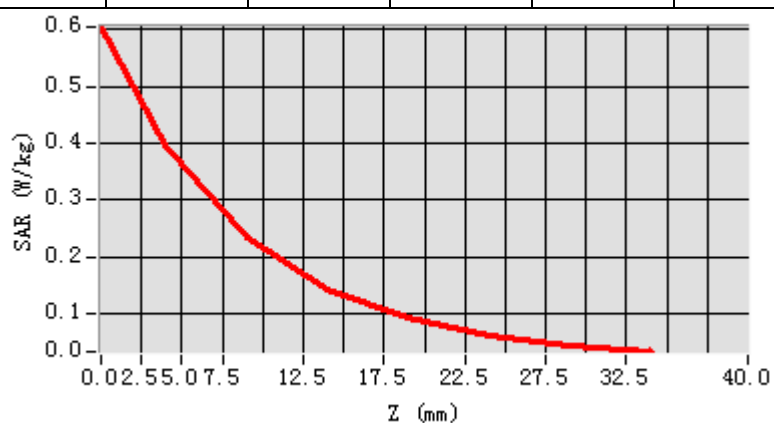


Maximum location: X=6.00, Y=-27.00

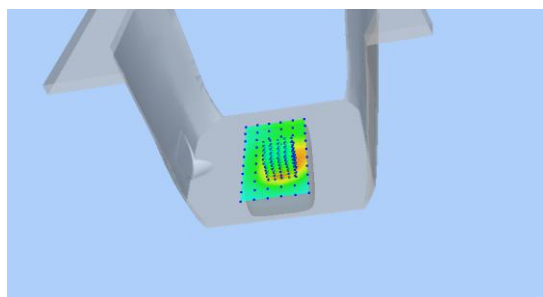
SAR Peak: 0.61 W/kg

SAR 10g (W/Kg)	0.220858
SAR 1g (W/Kg)	0.391661

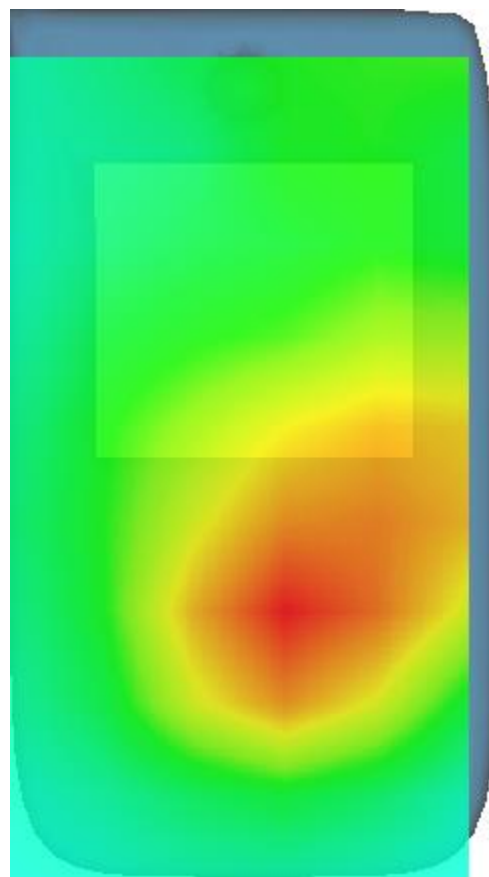
Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.6042	0.3977	0.2338	0.1430	0.0919	0.0605	0.0443



3D screen shot



Hot spot position



MEASUREMENT 7

Date of measurement: 29/2/2024

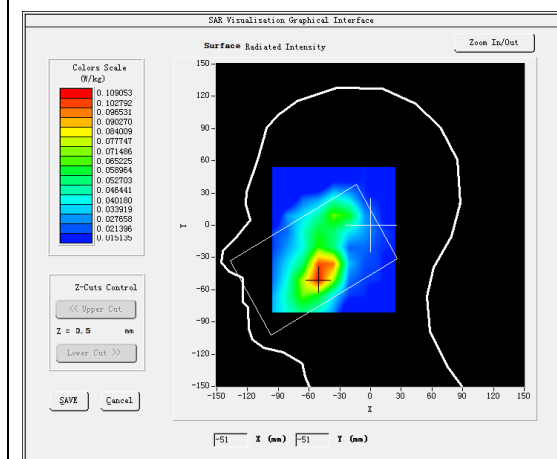
A. Experimental conditions.

<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>Band4 WCDMA1700</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>WCDMA (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.45</u>

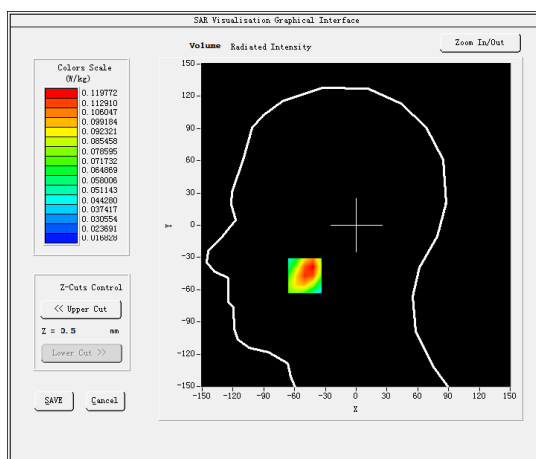
B. SAR Measurement Results

Frequency (MHz)	1732.600000
Relative permittivity (real part)	39.656105
Relative permittivity (imaginary part)	13.871263
Conductivity (S/m)	1.334724
Variation (%)	-0.940000

SURFACE SAR



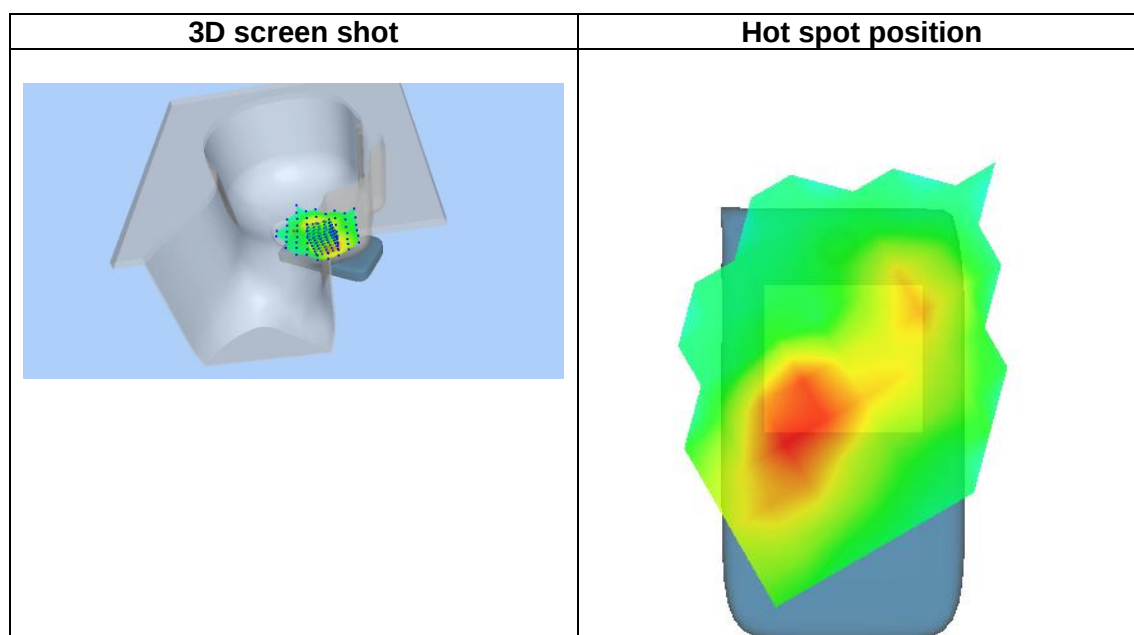
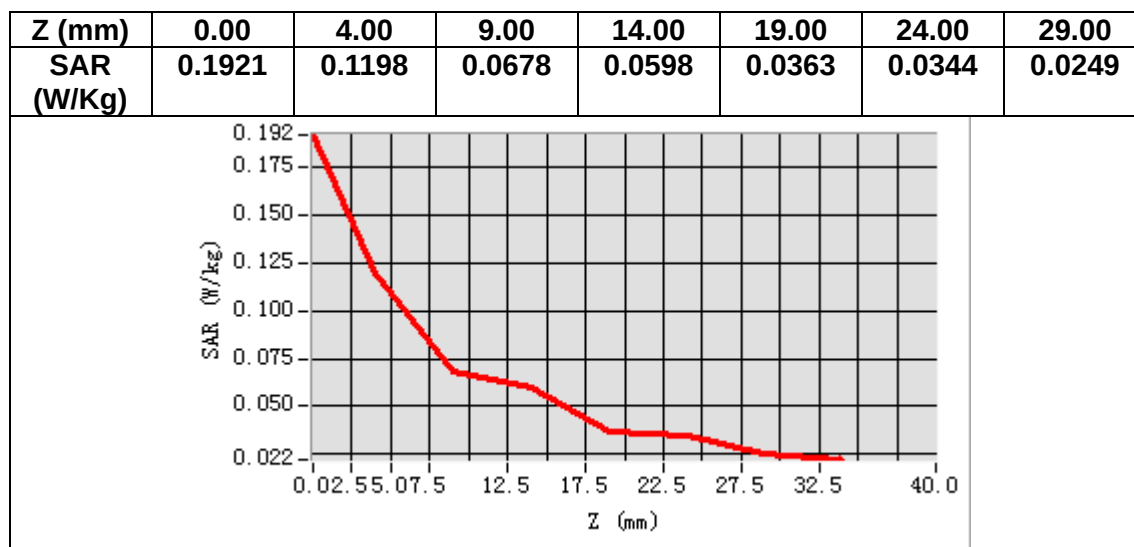
VOLUME SAR



Maximum location: X=-50.00, Y=-47.00

SAR Peak: 0.17 W/kg

SAR 10g (W/Kg)	0.074712
SAR 1g (W/Kg)	0.115388



MEASUREMENT 8

Date of measurement: 29/2/2024

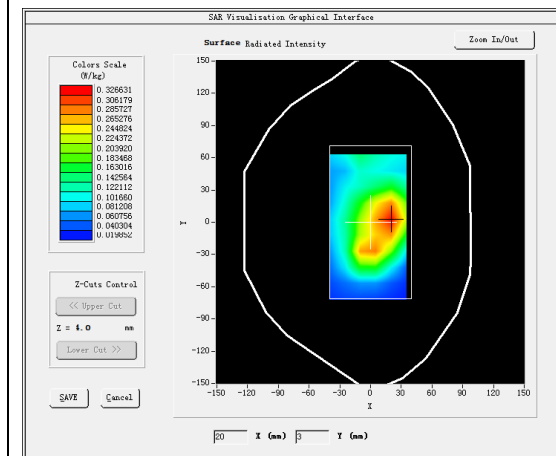
A. Experimental conditions.

<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>Band4 WCDMA1700</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>WCDMA (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.45</u>

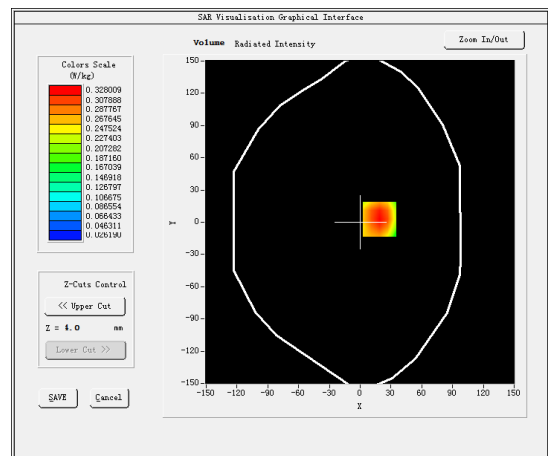
B. SAR Measurement Results

Frequency (MHz)	1732.600000
Relative permittivity (real part)	39.656105
Relative permittivity (imaginary part)	13.871263
Conductivity (S/m)	1.334724
Variation (%)	-2.090000

SURFACE SAR



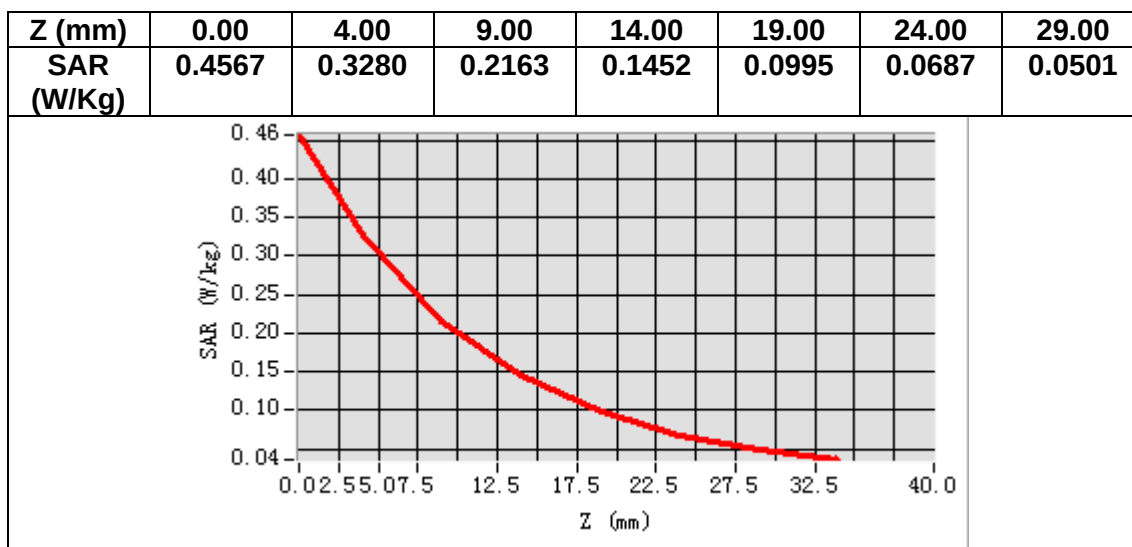
VOLUME SAR



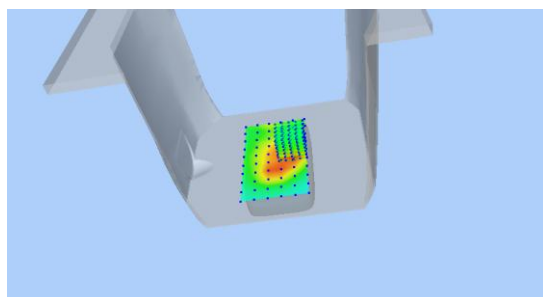
Maximum location: X=19.00, Y=3.00

SAR Peak: 0.46 W/kg

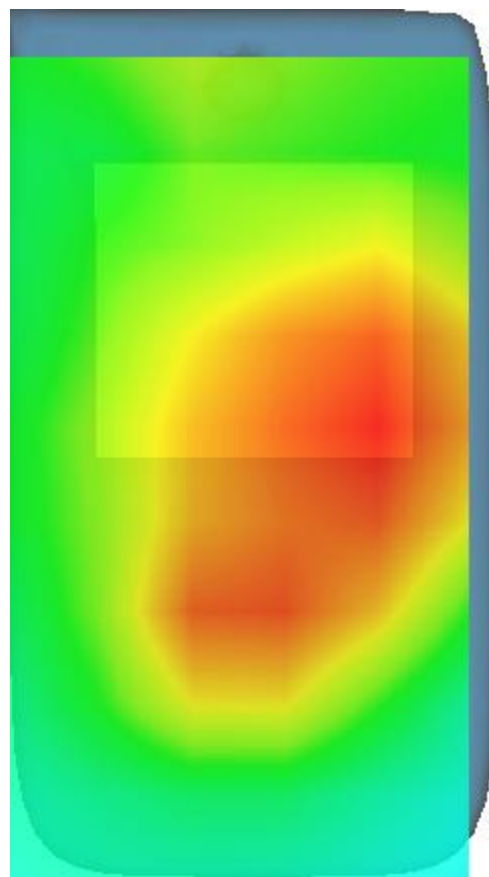
SAR 10g (W/Kg)	0.201738
SAR 1g (W/Kg)	0.315393



3D screen shot



Hot spot position



MEASUREMENT 9

Date of measurement: 1/3/2024

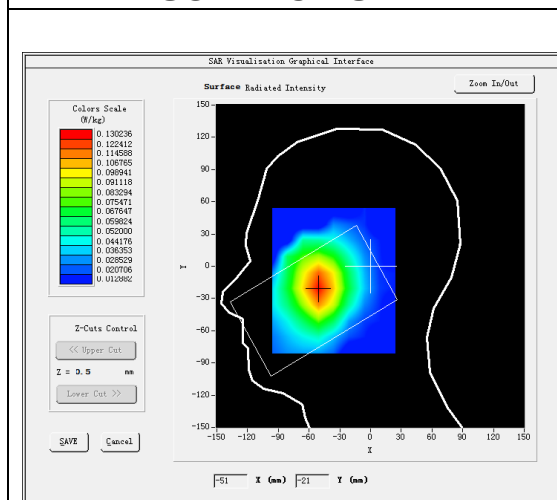
A. Experimental conditions.

<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>Band5 WCDMA850</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>WCDMA (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.32</u>

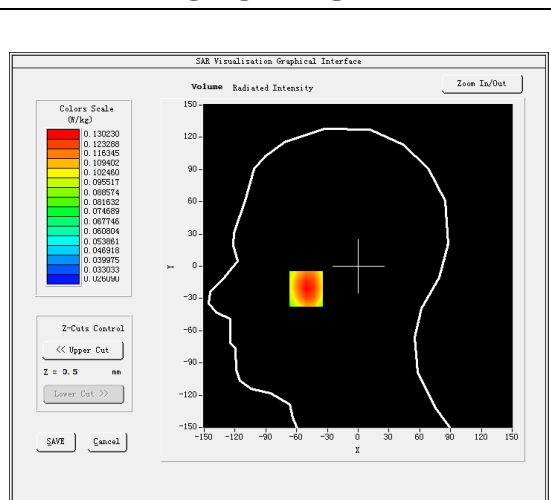
B. SAR Measurement Results

Frequency (MHz)	836.400000
Relative permittivity (real part)	41.301842
Relative permittivity (imaginary part)	19.317196
Conductivity (S/m)	0.897606
Variation (%)	2.790000

SURFACE SAR



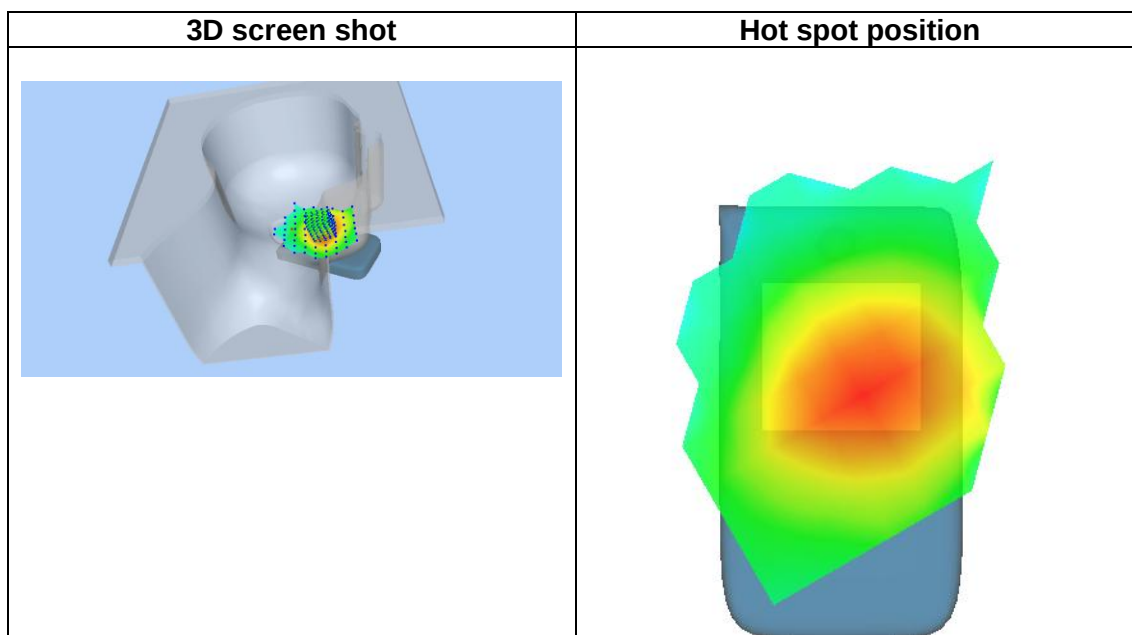
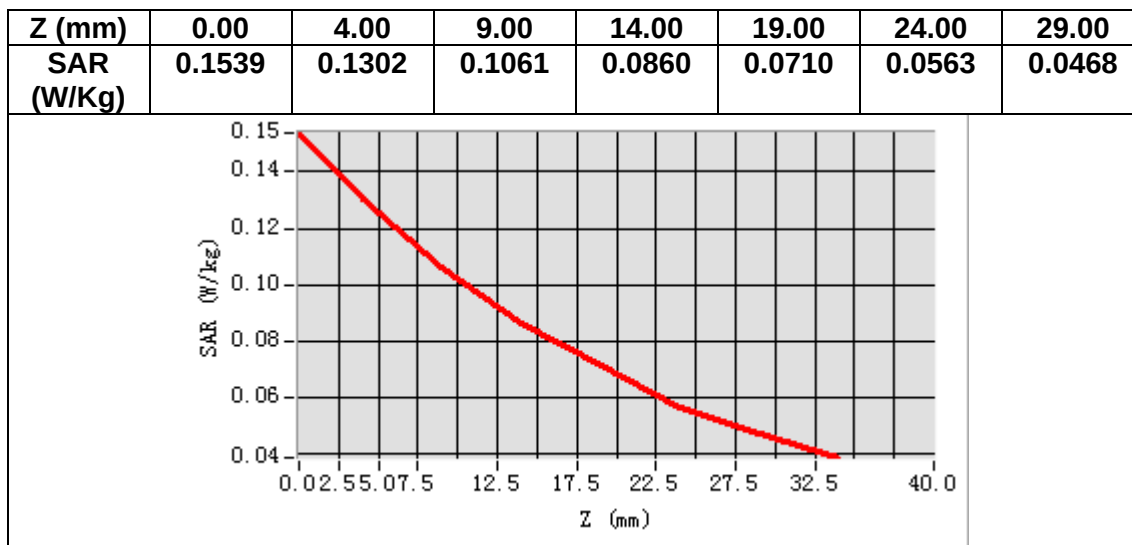
VOLUME SAR



Maximum location: X=-51.00, Y=-21.00

SAR Peak: 0.16 W/kg

SAR 10g (W/Kg)	0.096367
SAR 1g (W/Kg)	0.126388



MEASUREMENT 10

Date of measurement: 1/3/2024

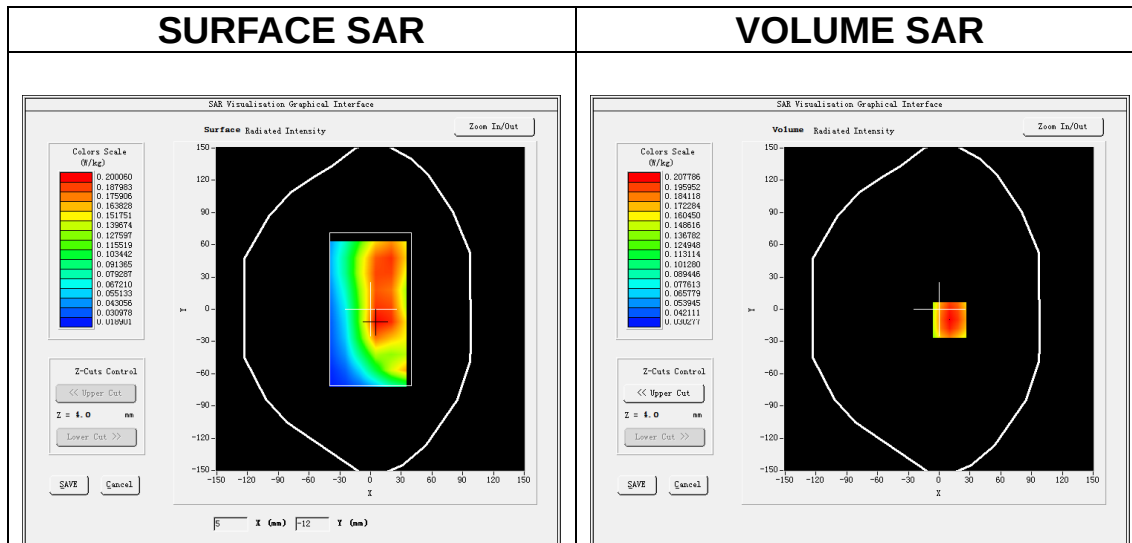
A. Experimental conditions.

<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>Band5 WCDMA850</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>WCDMA (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.32</u>

B. SAR Measurement Results

Frequency (MHz)	836.400000
Relative permittivity (real part)	41.301842
Relative permittivity (imaginary part)	19.317196
Conductivity (S/m)	0.897606
Variation (%)	0.250000

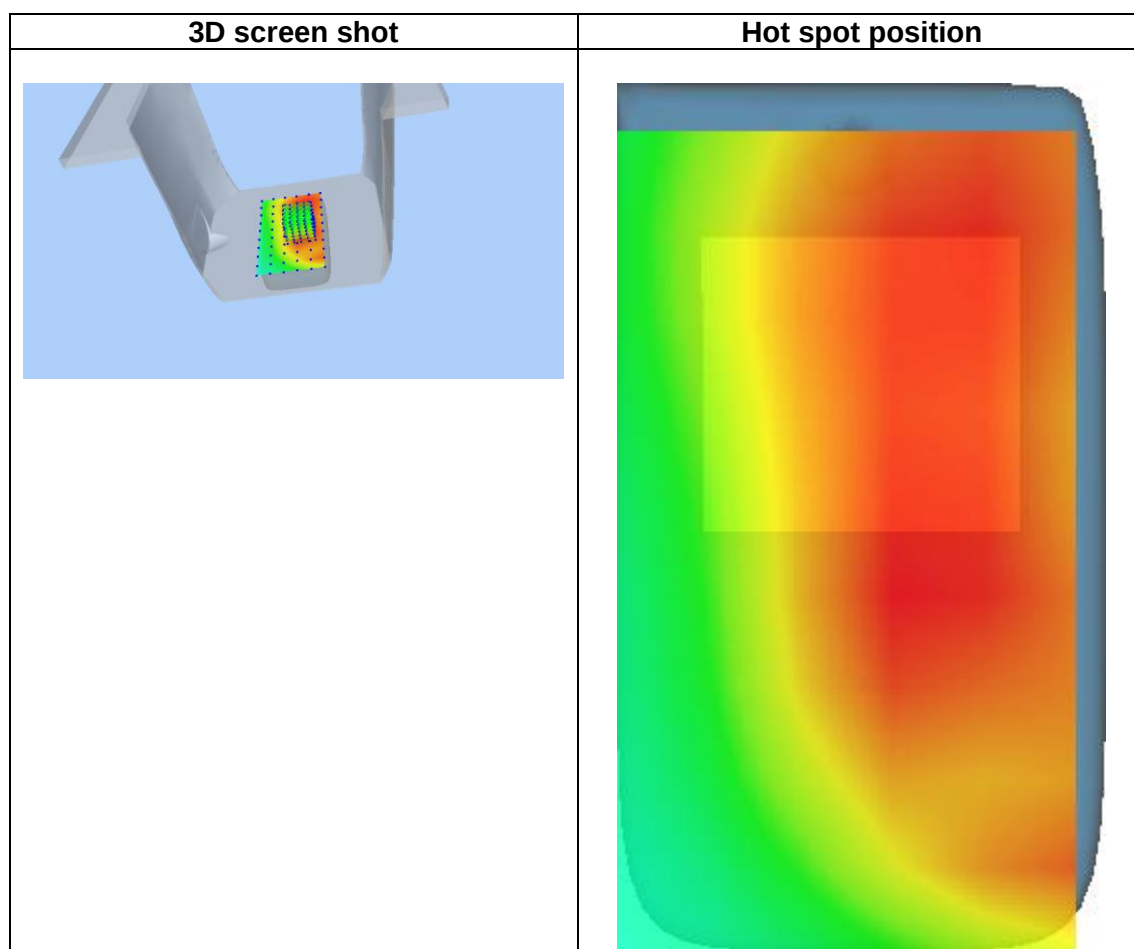
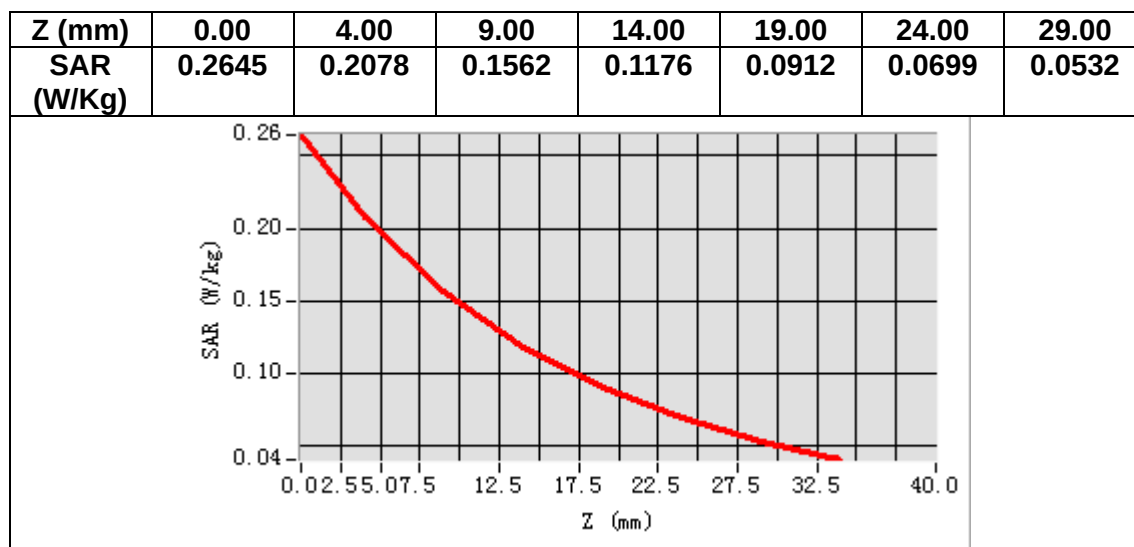
SURFACE SAR



Maximum location: X=10.00, Y=-10.00

SAR Peak: 0.26 W/kg

SAR 10g (W/Kg)	0.145047
SAR 1g (W/Kg)	0.201140



MEASUREMENT 11

Date of measurement: 26/2/2024

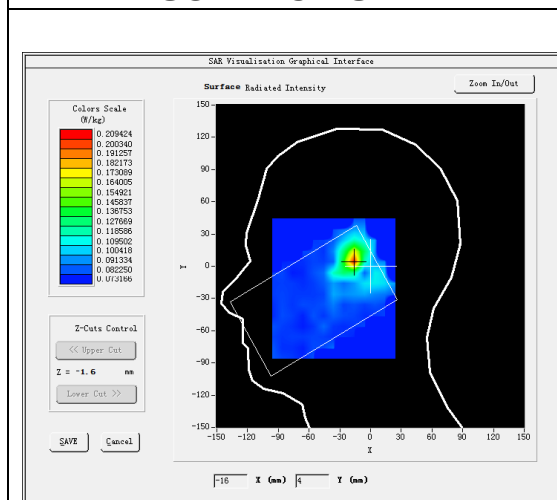
A. Experimental conditions.

<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>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>IEEE802.11ac (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.07</u>

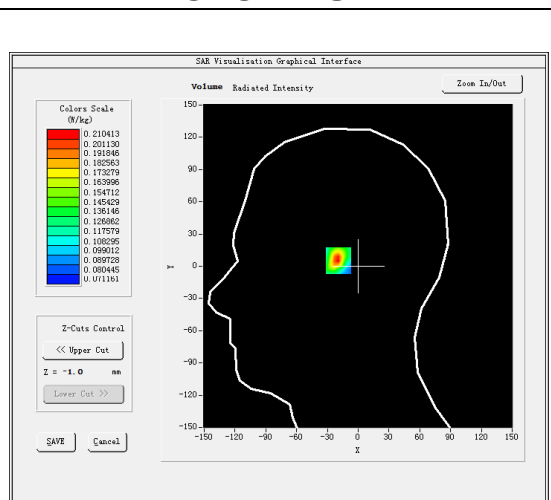
B. SAR Measurement Results

Frequency (MHz)	5240.000000
Relative permittivity (real part)	34.766424
Relative permittivity (imaginary part)	15.609897
Conductivity (S/m)	4.544214
Variation (%)	-1.680000

SURFACE SAR



VOLUME SAR

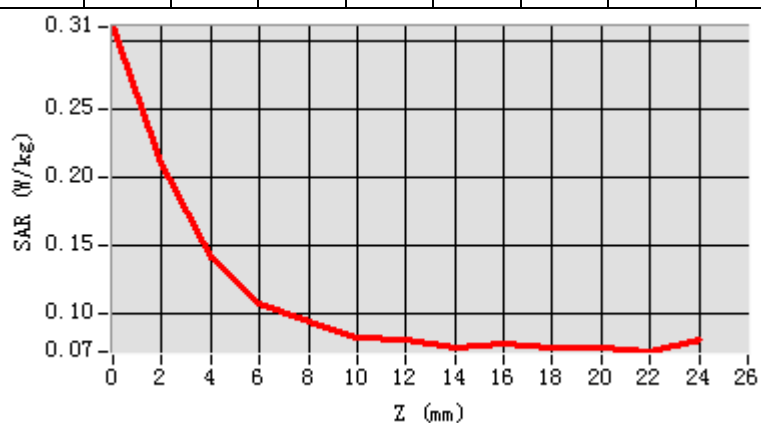


Maximum location: X=-16.00, Y=5.00

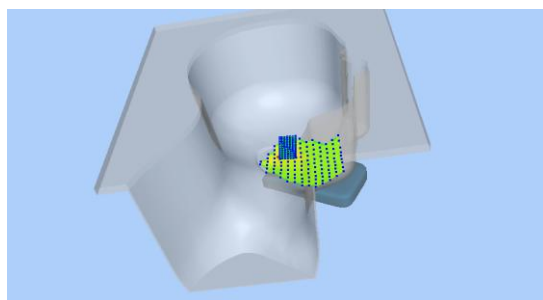
SAR Peak: 0.46 W/kg

SAR 10g (W/Kg)	0.118228
SAR 1g (W/Kg)	0.203007

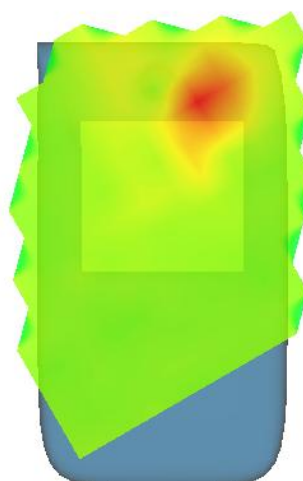
Z (m m)	0.00	2.00	4.00	6.00	8.00	10.0 0	12.0 0	14.0 0	16.0 0	18.0 0	20.0 0	22.0 0
SAR (W/ Kg)	0.31 06	0.21 04	0.14 06	0.10 75	0.09 37	0.08 12	0.08 11	0.07 52	0.07 74	0.07 51	0.07 44	0.07 16



3D screen shot



Hot spot position



MEASUREMENT 12

Date of measurement: 22/2/2024

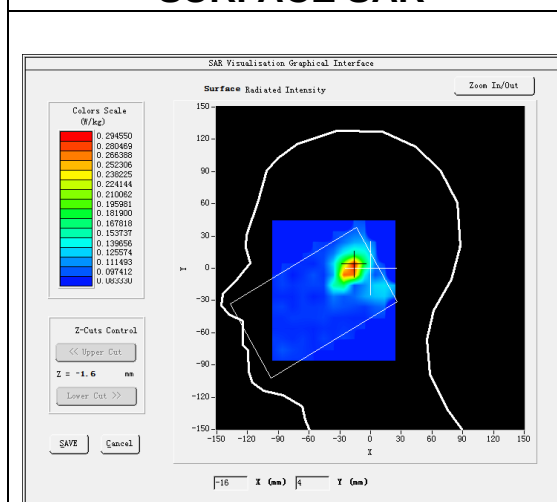
A. Experimental conditions.

<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>Left head</u>
<u>Device Position</u>	<u>Cheek</u>
<u>Band</u>	<u>IEEE 802.11a U-NII</u>
<u>Channels</u>	<u>High</u>
<u>Signal</u>	<u>IEEE802.11a (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.04</u>

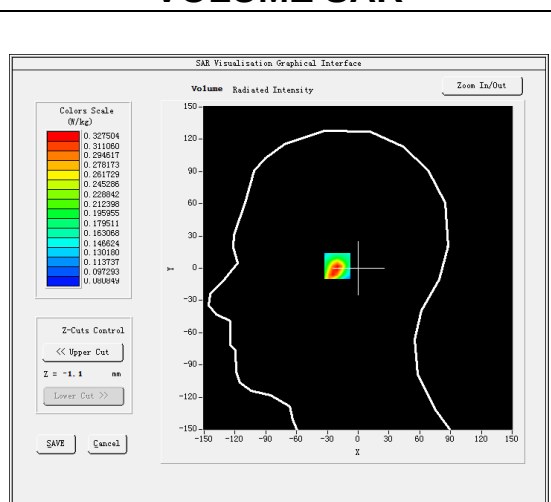
B. SAR Measurement Results

Frequency (MHz)	5825.000000
Relative permittivity (real part)	34.286009
Relative permittivity (imaginary part)	16.103672
Conductivity (S/m)	5.211327
Variation (%)	0.840000

SURFACE SAR



VOLUME SAR

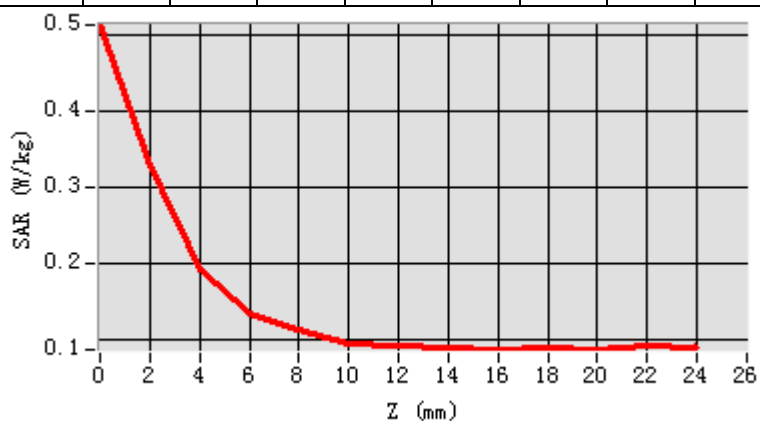


Maximum location: X=-17.00, Y=2.00

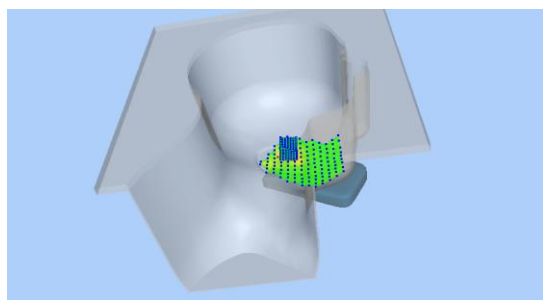
SAR Peak: 0.78 W/kg

SAR 10g (W/Kg)	0.163948
SAR 1g (W/Kg)	0.317692

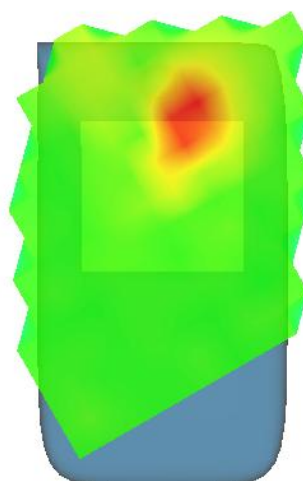
Z (m m)	0.00	2.00	4.00	6.00	8.00	10.0 0	12.0 0	14.0 0	16.0 0	18.0 0	20.0 0	22.0 0
SAR (W/ Kg)	0.51 24	0.32 75	0.19 01	0.13 35	0.11 19	0.09 50	0.09 22	0.08 98	0.08 66	0.08 80	0.08 60	0.09 20



3D screen shot



Hot spot position



MEASUREMENT 13

Date of measurement: 26/2/2024

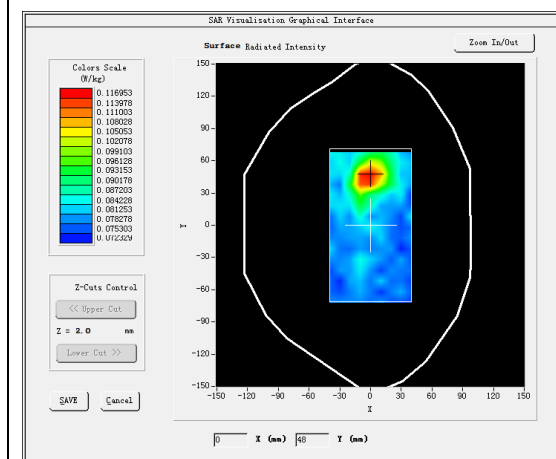
A. Experimental conditions.

<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 802.11ac U-NII</u>
<u>Channels</u>	<u>High</u>
<u>Signal</u>	<u>IEEE802.11ac (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.07</u>

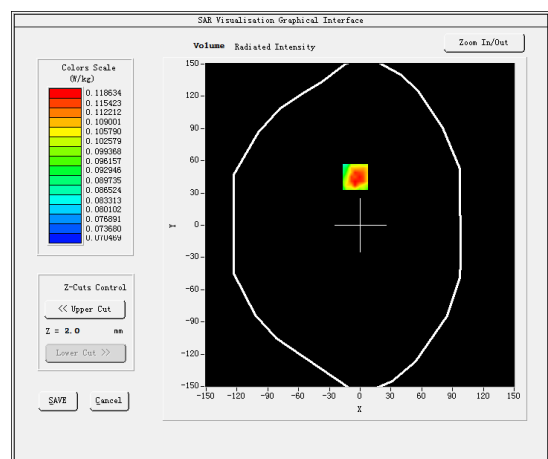
B. SAR Measurement Results

Frequency (MHz)	5240.000000
Relative permittivity (real part)	34.766424
Relative permittivity (imaginary part)	15.609897
Conductivity (S/m)	4.544214
Variation (%)	-0.530000

SURFACE SAR



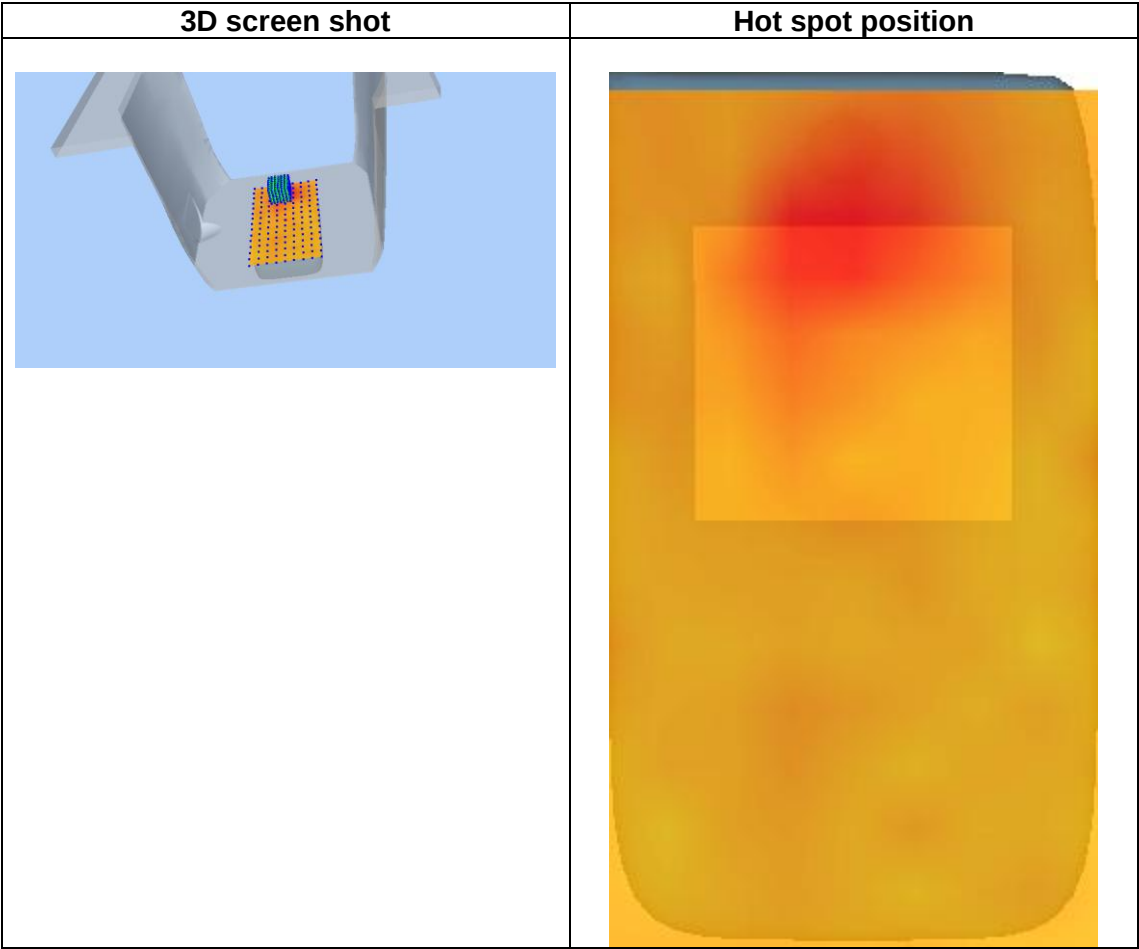
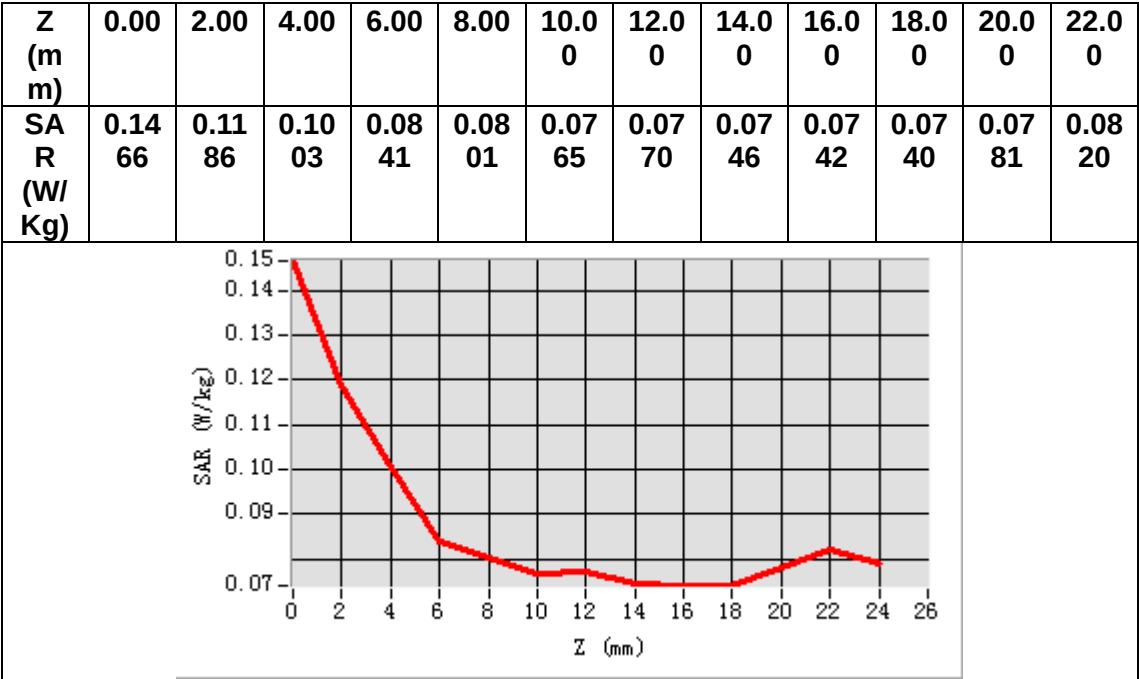
VOLUME SAR



Maximum location: X=-5.00, Y=45.00

SAR Peak: 0.17 W/kg

SAR 10g (W/Kg)	0.086036
SAR 1g (W/Kg)	0.100177



MEASUREMENT 14

Date of measurement: 22/2/2024

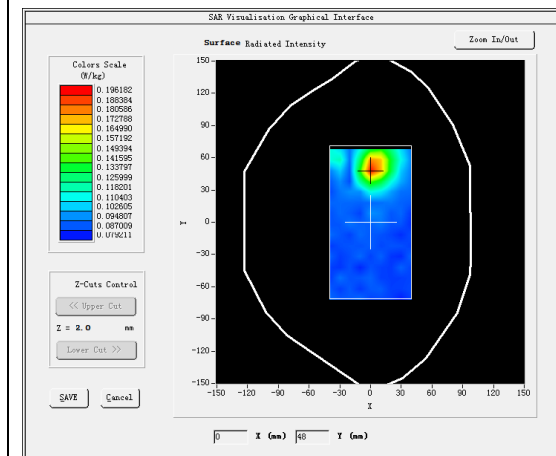
A. Experimental conditions.

<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 802.11a U-NII</u>
<u>Channels</u>	<u>High</u>
<u>Signal</u>	<u>IEEE802.11a (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.04</u>

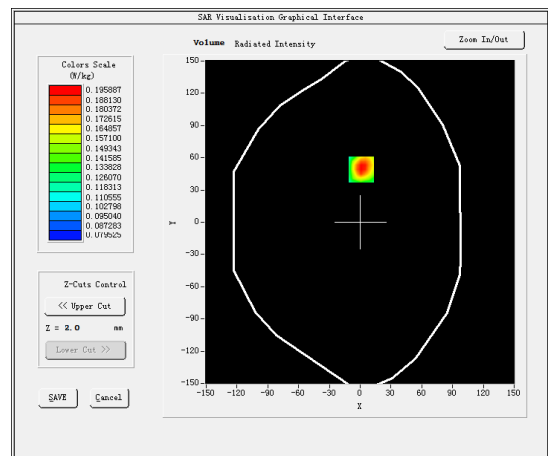
B. SAR Measurement Results

Frequency (MHz)	5825.000000
Relative permittivity (real part)	34.286009
Relative permittivity (imaginary part)	16.103672
Conductivity (S/m)	5.211327
Variation (%)	1.140000

SURFACE SAR



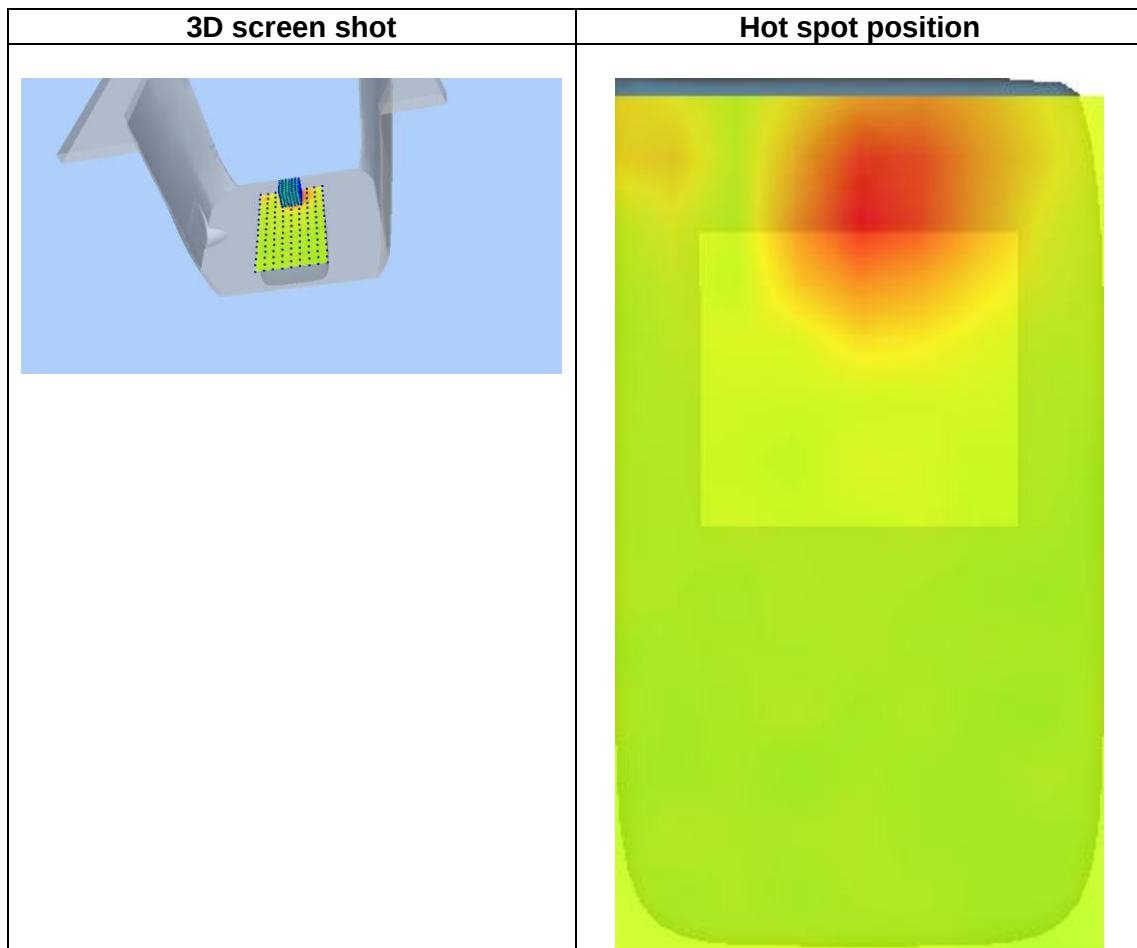
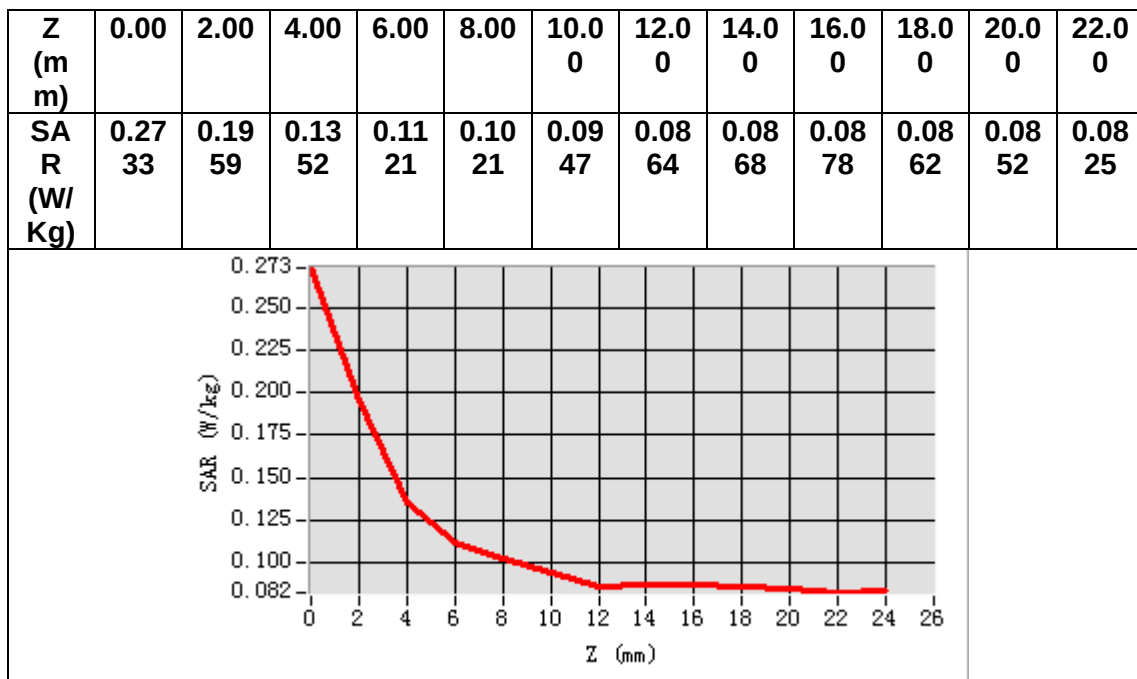
VOLUME SAR



Maximum location: X=1.00, Y=49.00

SAR Peak: 0.29 W/kg

SAR 10g (W/Kg)	0.110628
SAR 1g (W/Kg)	0.150084



MEASUREMENT 15

Date of measurement: 23/2/2024

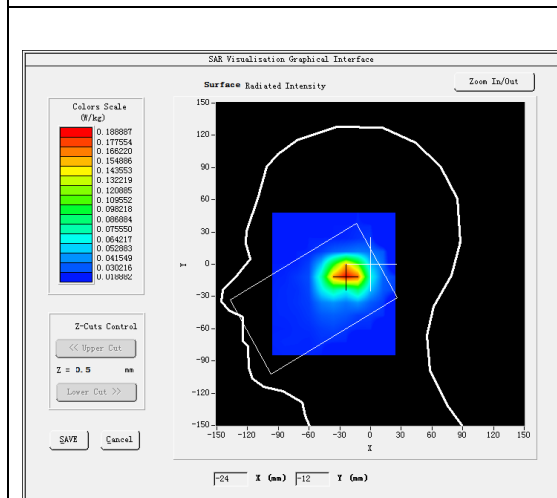
A. Experimental conditions.

<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 802.11b ISM</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>IEEE802.11b (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.85</u>

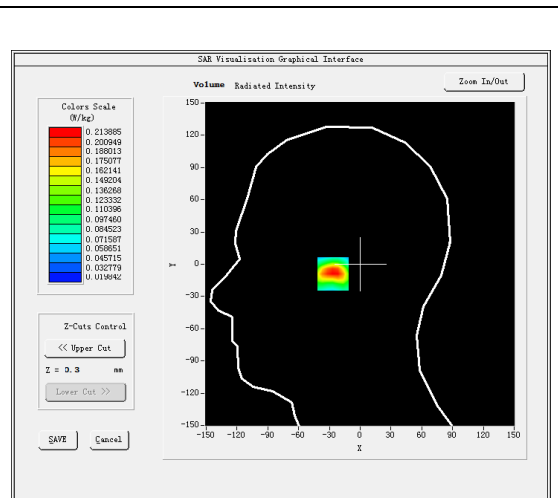
B. SAR Measurement Results

Frequency (MHz)	2437.000000
Relative permittivity (real part)	37.921777
Relative permittivity (imaginary part)	12.684278
Conductivity (S/m)	1.717310
Variation (%)	2.230000

SURFACE SAR



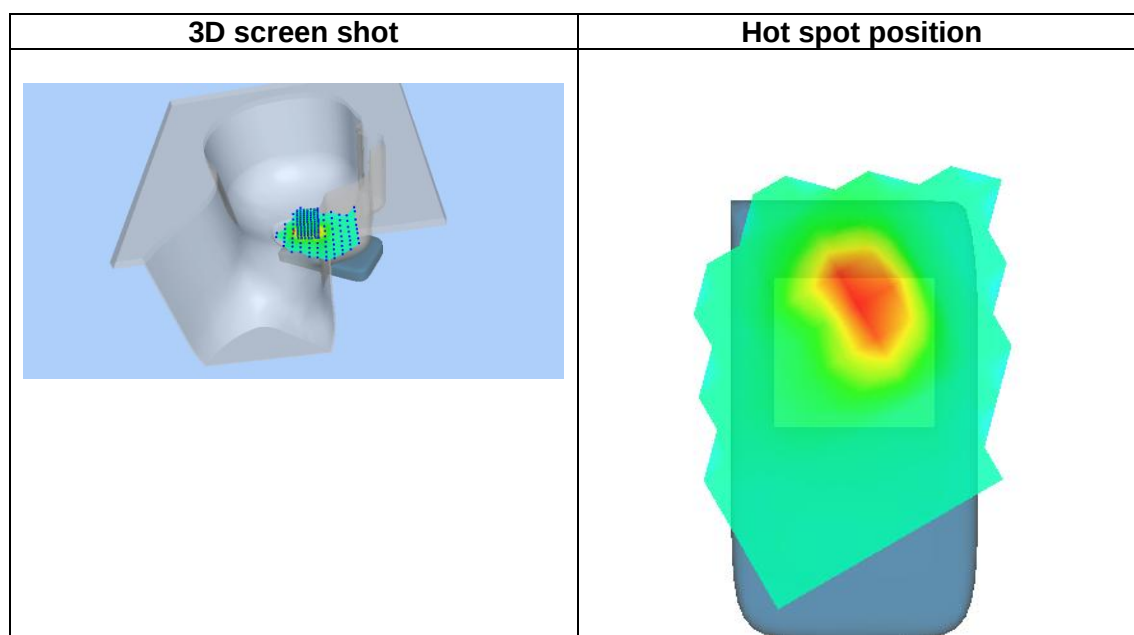
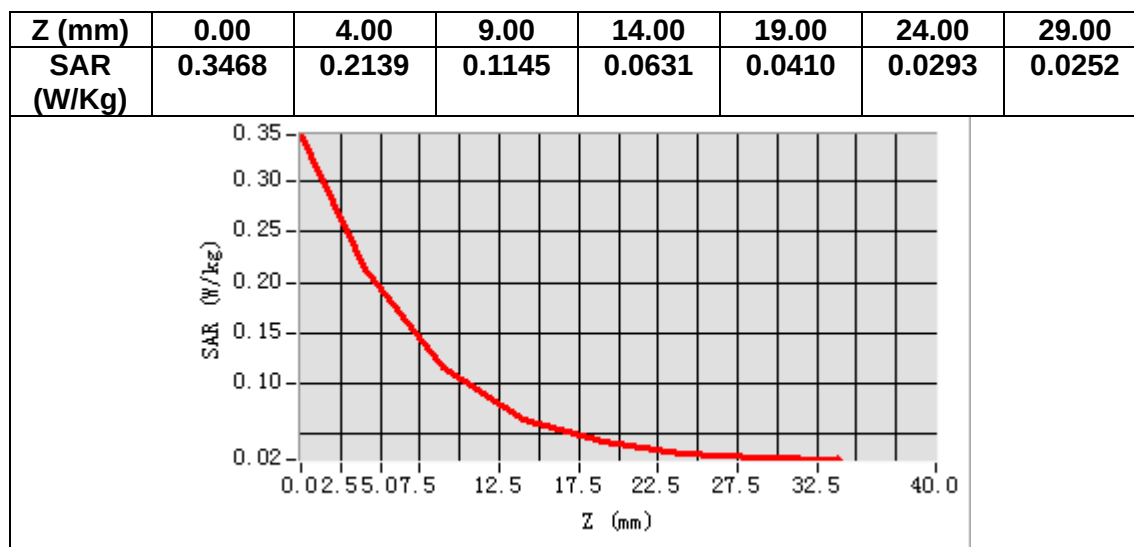
VOLUME SAR



Maximum location: X=-23.00, Y=-9.00

SAR Peak: 0.36 W/kg

SAR 10g (W/Kg)	0.102815
SAR 1g (W/Kg)	0.201631



MEASUREMENT 16

Date of measurement: 23/2/2024

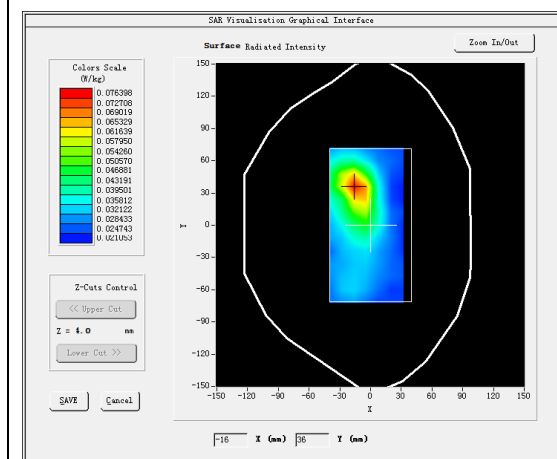
A. Experimental conditions.

<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>2.85</u>

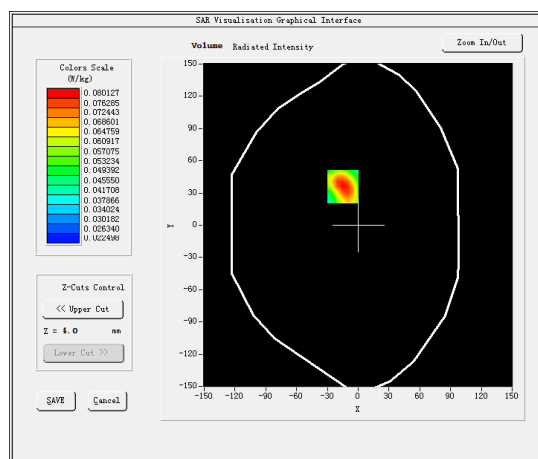
B. SAR Measurement Results

Frequency (MHz)	2437.000000
Relative permittivity (real part)	37.921777
Relative permittivity (imaginary part)	12.684278
Conductivity (S/m)	1.717310
Variation (%)	2.070000

SURFACE SAR



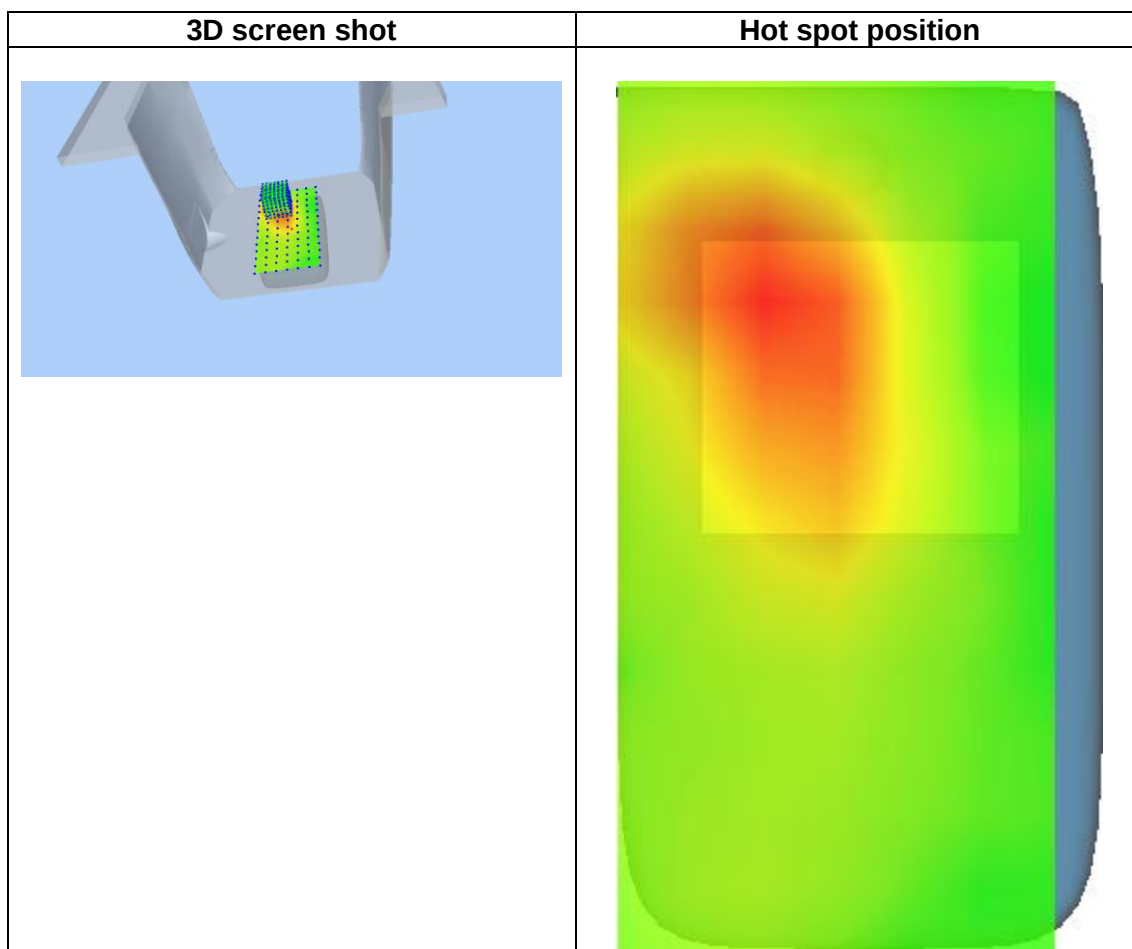
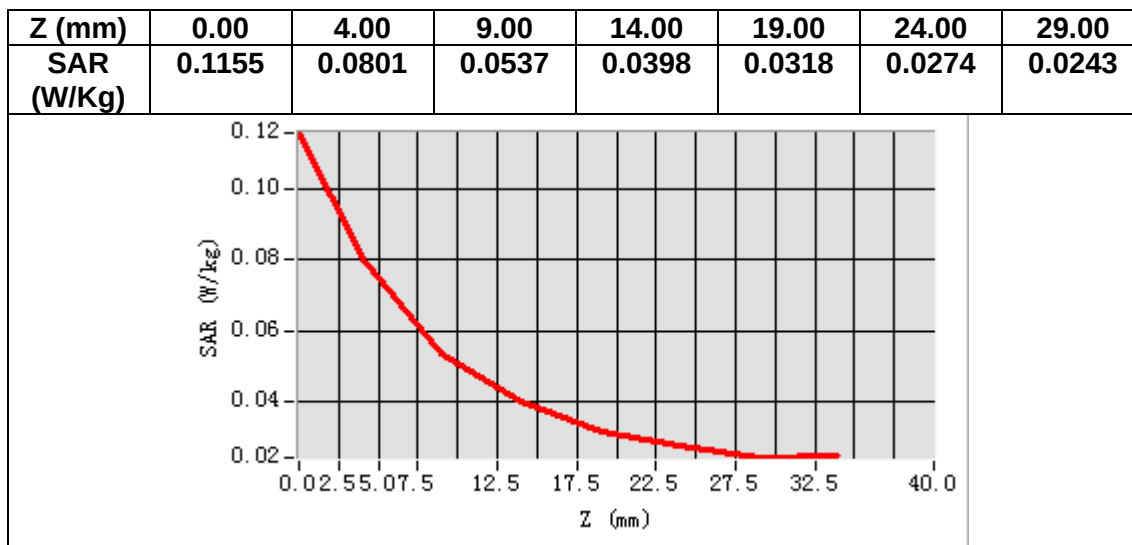
VOLUME SAR



Maximum location: X=-15.00, Y=36.00

SAR Peak: 0.12 W/kg

SAR 10g (W/Kg)	0.051100
SAR 1g (W/Kg)	0.076875



MEASUREMENT 17

Date of measurement: 2/3/2024

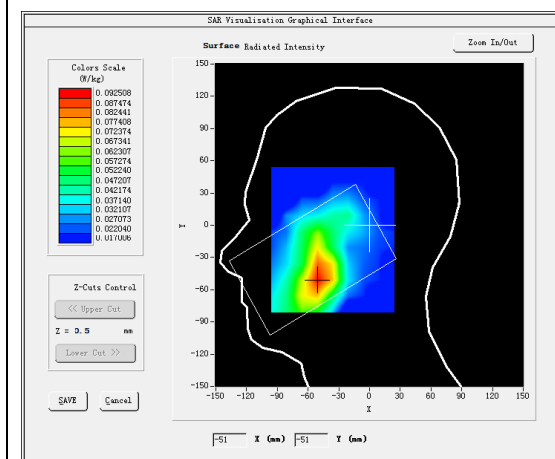
A. Experimental conditions.

<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>2.63</u>

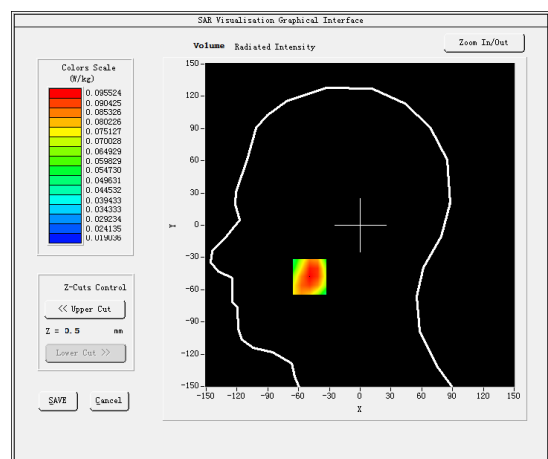
B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative permittivity (real part)	38.975822
Relative permittivity (imaginary part)	13.747208
Conductivity (S/m)	1.435820
Variation (%)	-2.370000

SURFACE SAR



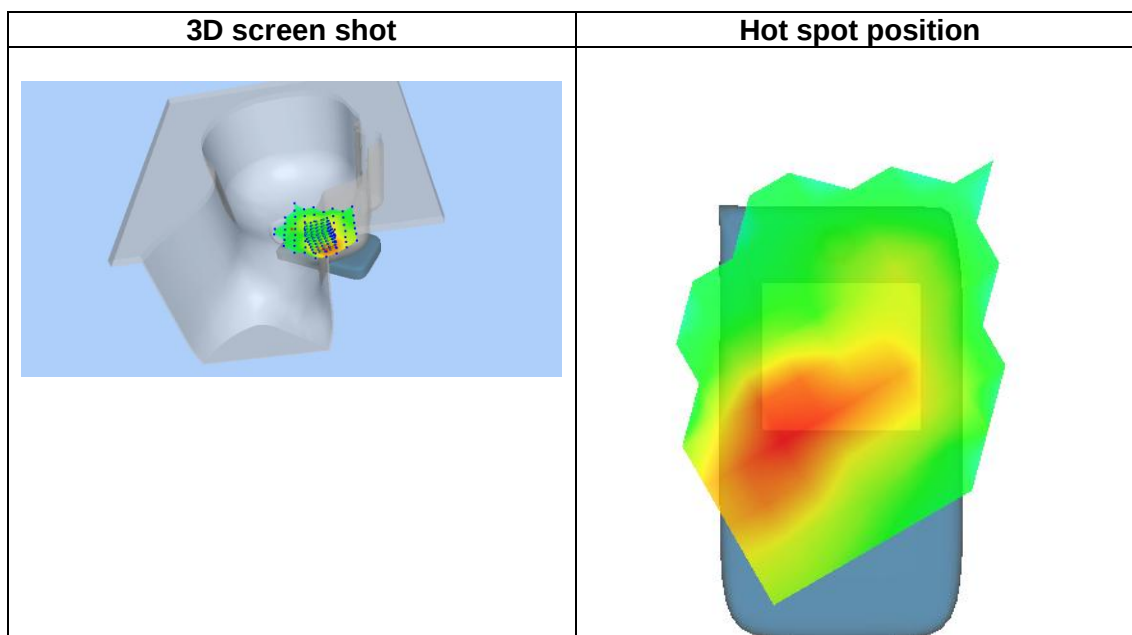
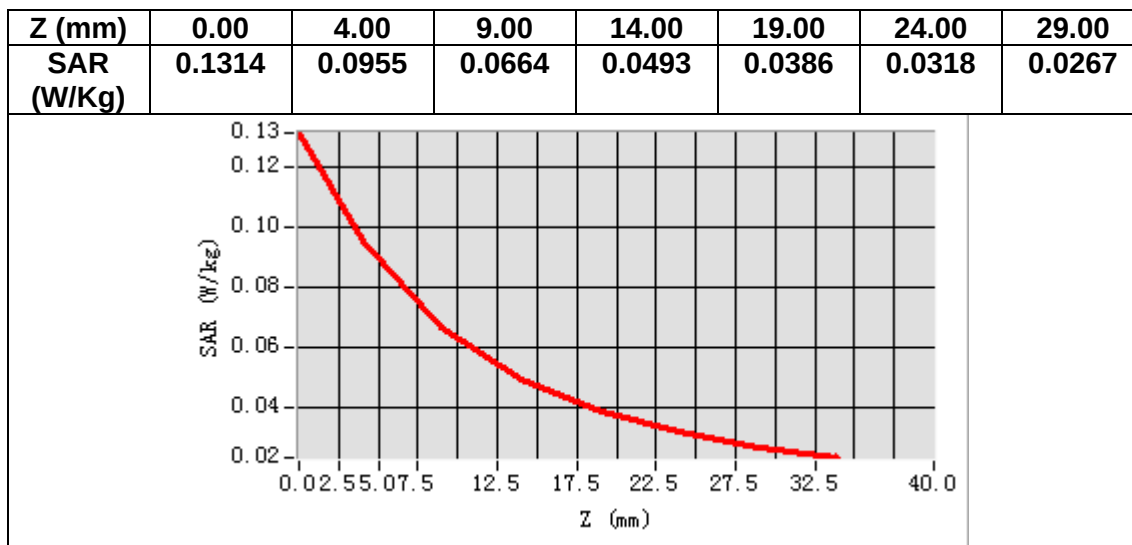
VOLUME SAR



Maximum location: X=-49.00, Y=-48.00

SAR Peak: 0.13 W/kg

SAR 10g (W/Kg)	0.063620
SAR 1g (W/Kg)	0.095202



MEASUREMENT 18

Date of measurement: 2/3/2024

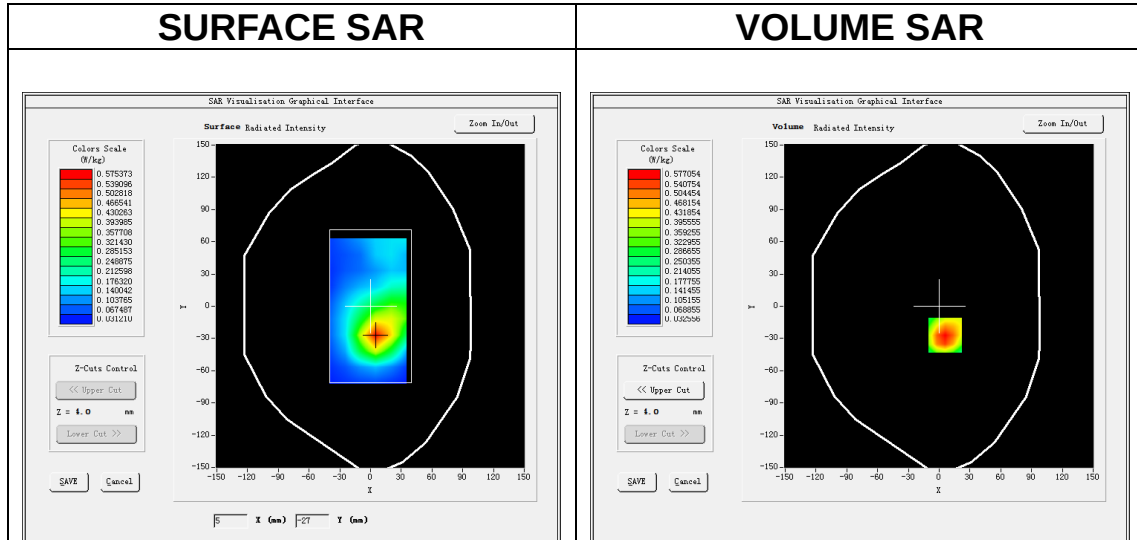
A. Experimental conditions.

<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>2.63</u>

B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative permittivity (real part)	38.975822
Relative permittivity (imaginary part)	13.747208
Conductivity (S/m)	1.435820
Variation (%)	-0.810000

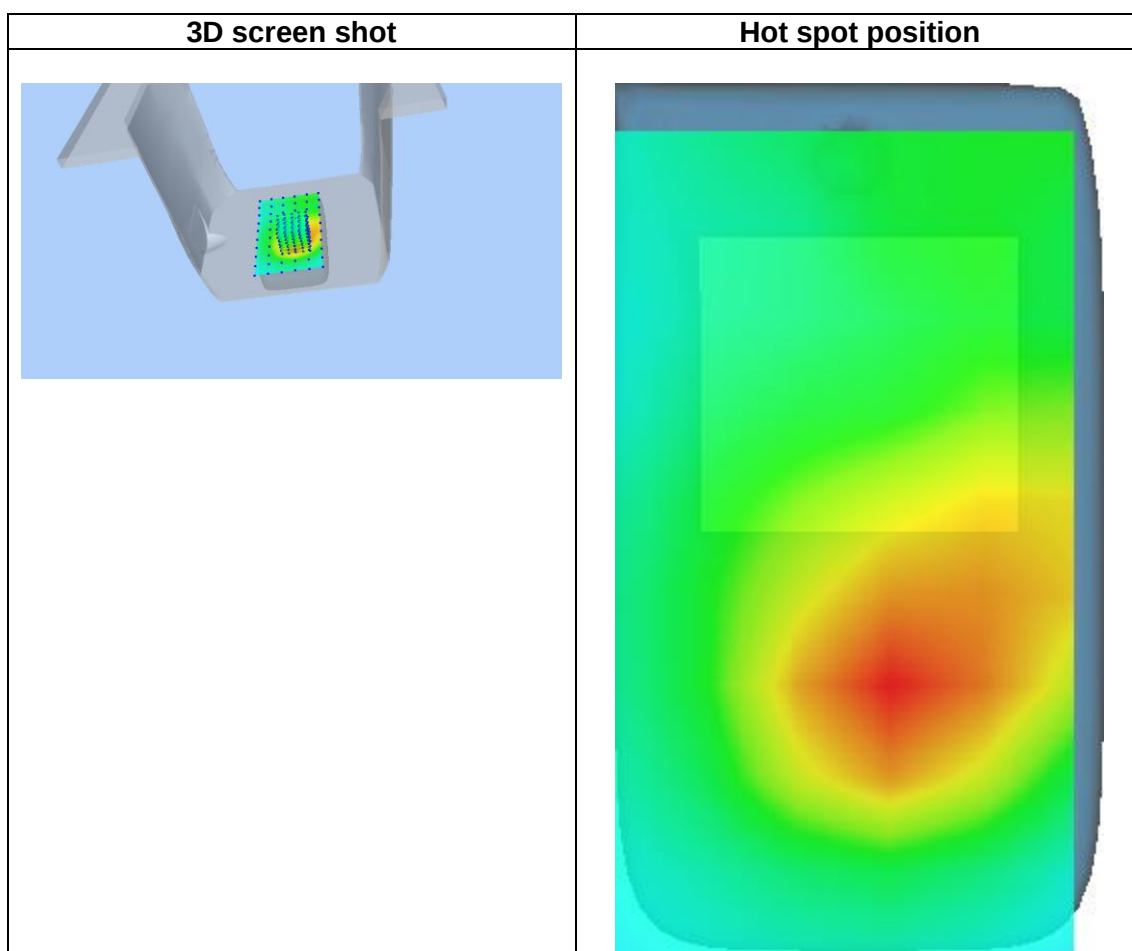
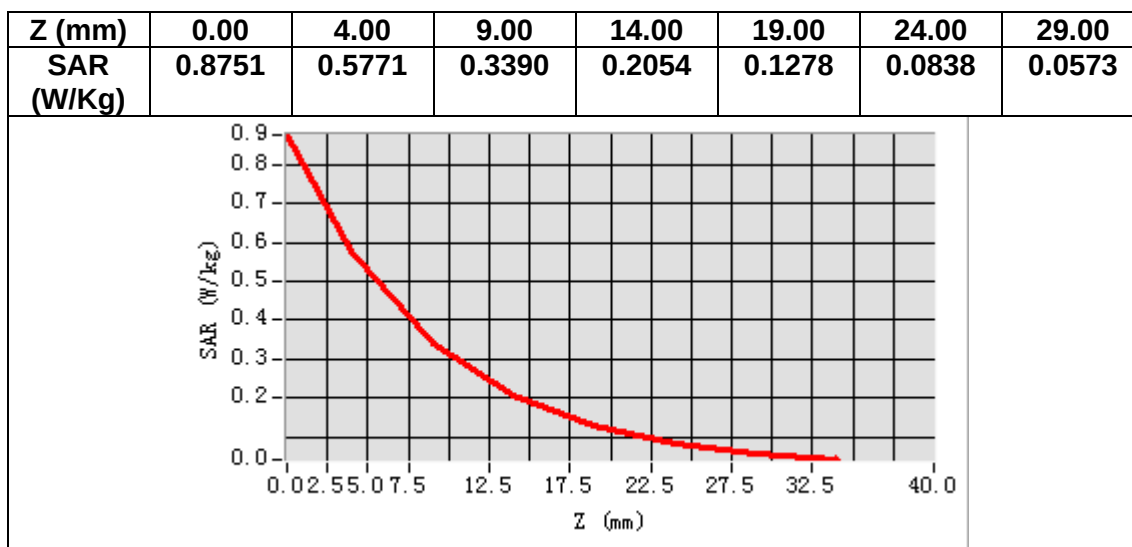
SURFACE SAR



Maximum location: X=6.00, Y=-27.00

SAR Peak: 0.89 W/kg

SAR 10g (W/Kg)	0.316904
SAR 1g (W/Kg)	0.567498



MEASUREMENT 19

Date of measurement: 29/2/2024

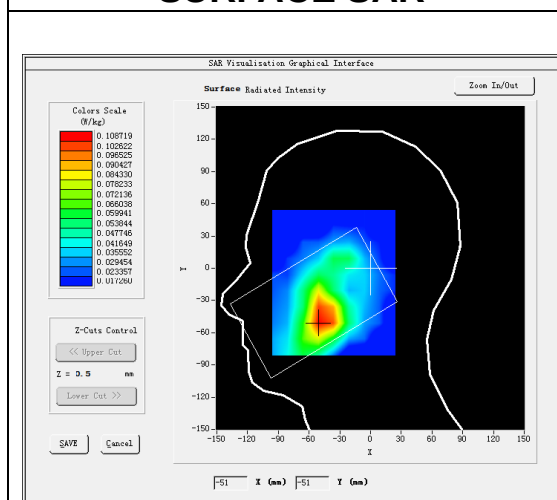
A. Experimental conditions.

<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>2.45</u>

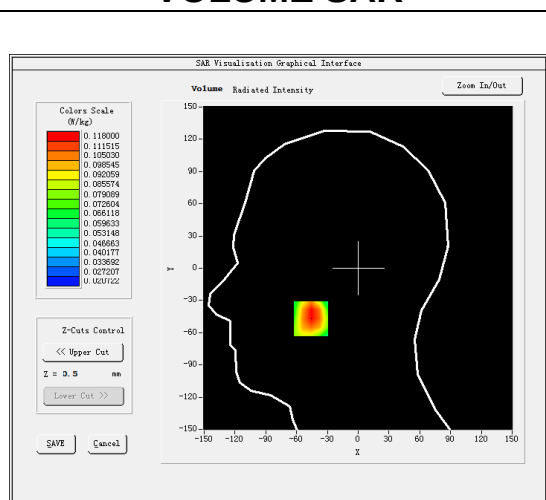
B. SAR Measurement Results

Frequency (MHz)	1732.500000
Relative permittivity (real part)	39.664005
Relative permittivity (imaginary part)	13.856113
Conductivity (S/m)	1.333651
Variation (%)	-0.660000

SURFACE SAR



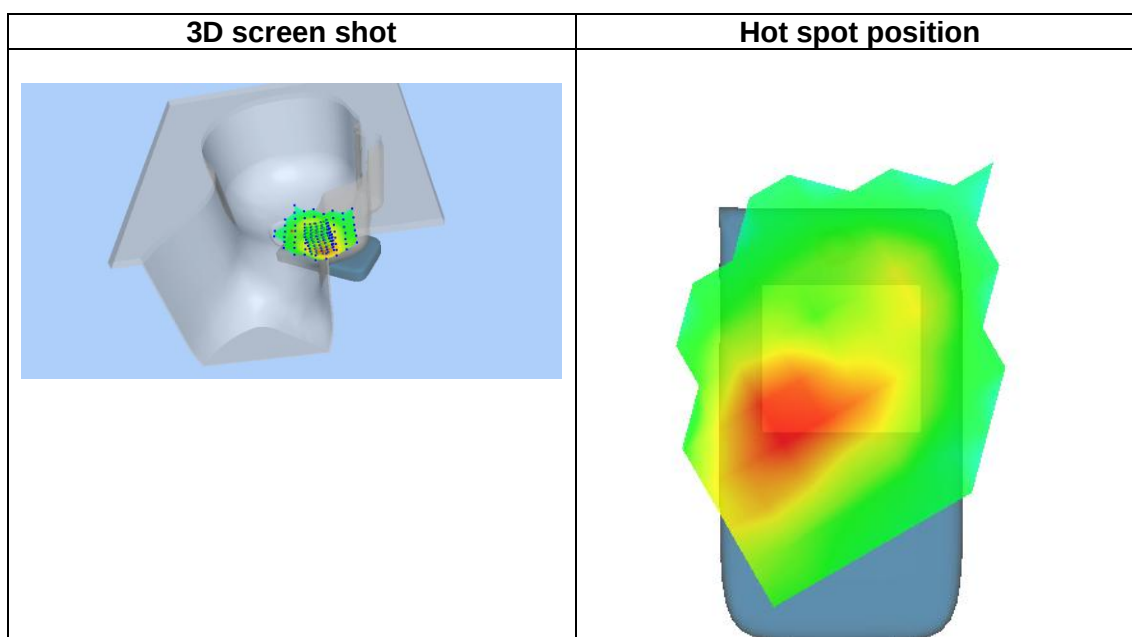
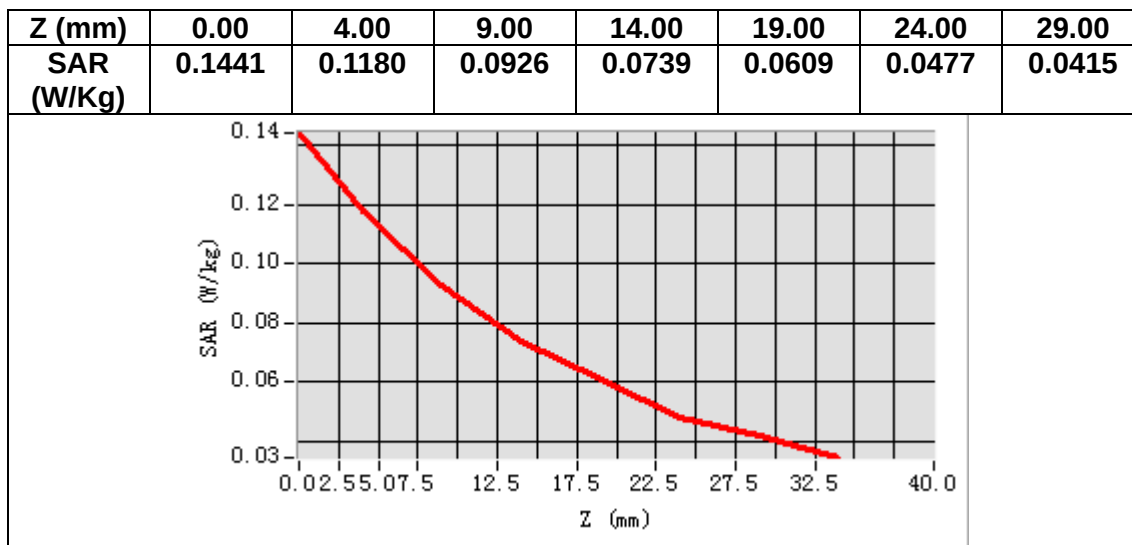
VOLUME SAR



Maximum location: X=-46.00, Y=-47.00

SAR Peak: 0.15 W/kg

SAR 10g (W/Kg)	0.082039
SAR 1g (W/Kg)	0.113855



MEASUREMENT 20

Date of measurement: 29/2/2024

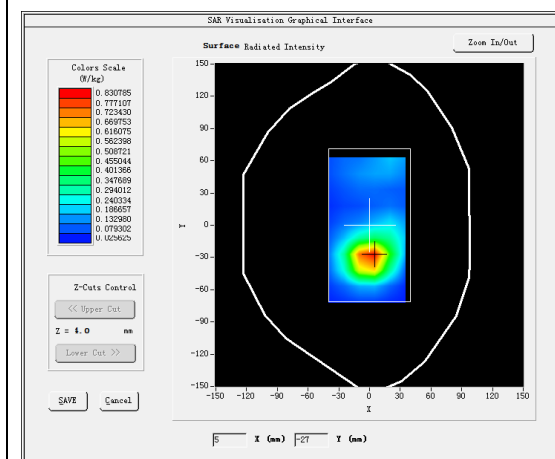
A. Experimental conditions.

<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>Low</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.45</u>

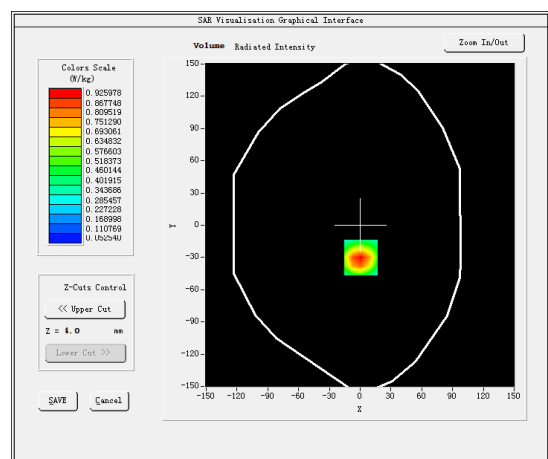
B. SAR Measurement Results

Frequency (MHz)	1720.000000
Relative permittivity (real part)	39.786404
Relative permittivity (imaginary part)	13.846763
Conductivity (S/m)	1.323135
Variation (%)	-0.210000

SURFACE SAR



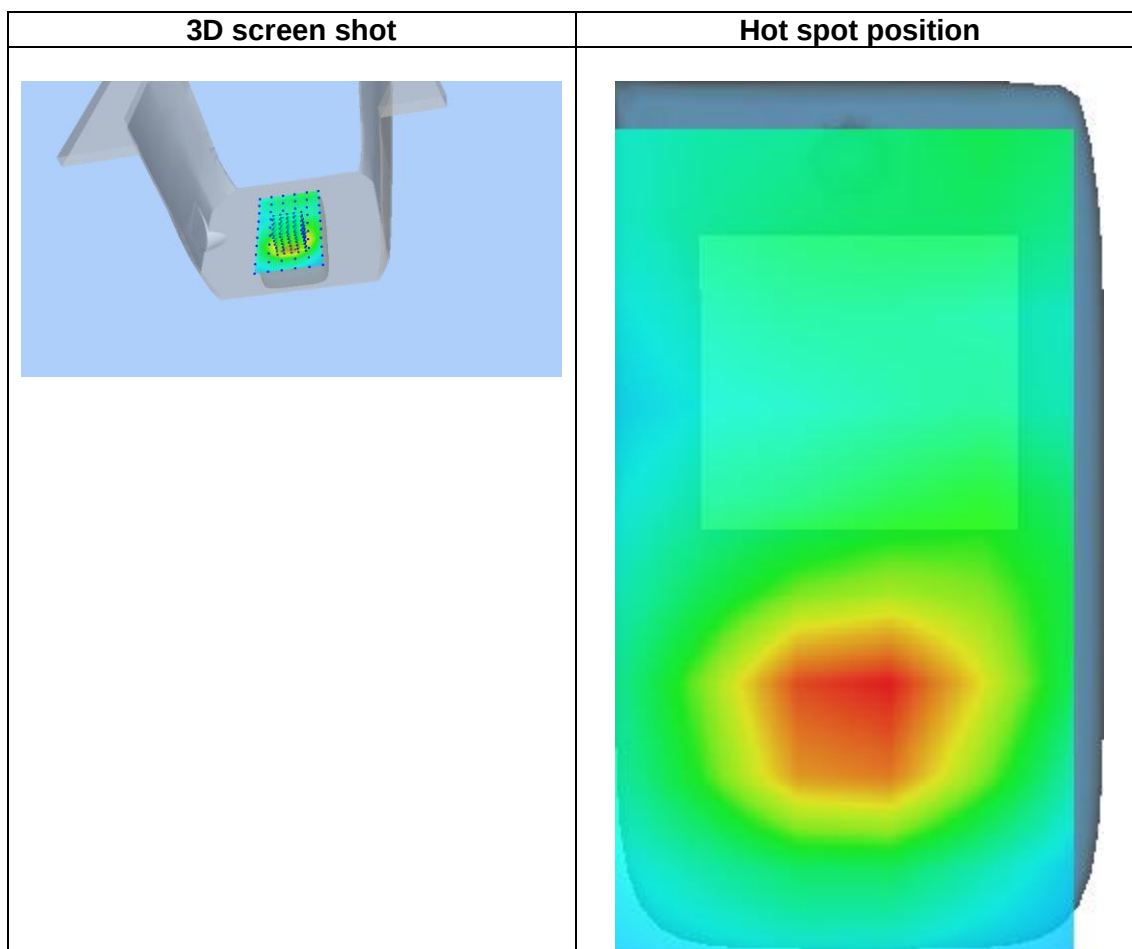
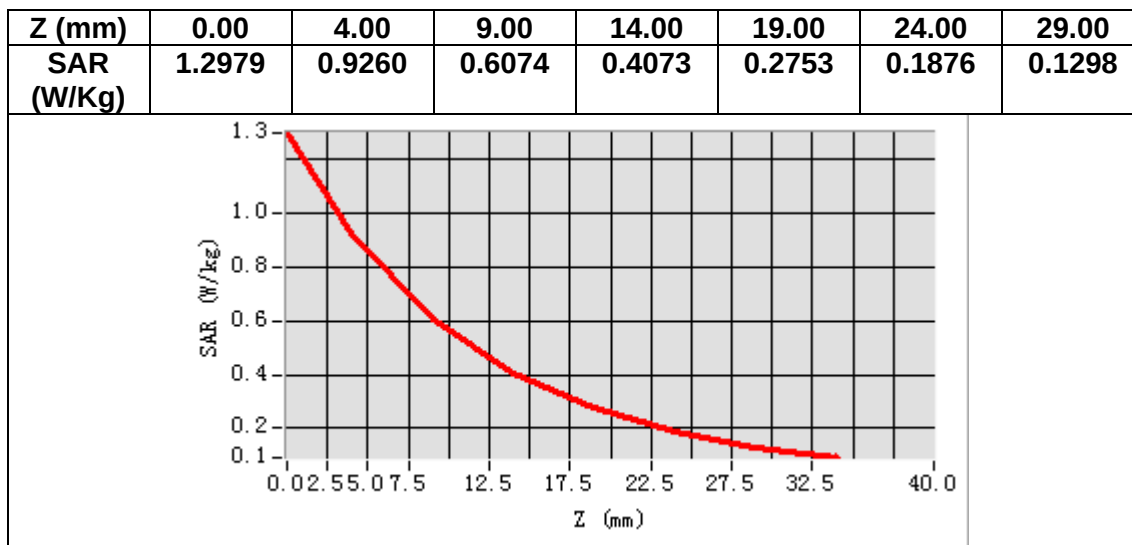
VOLUME SAR



Maximum location: X=1.00, Y=-30.00

SAR Peak: 1.32 W/kg

SAR 10g (W/Kg)	0.521007
SAR 1g (W/Kg)	0.885601



MEASUREMENT 21

Date of measurement: 1/3/2024

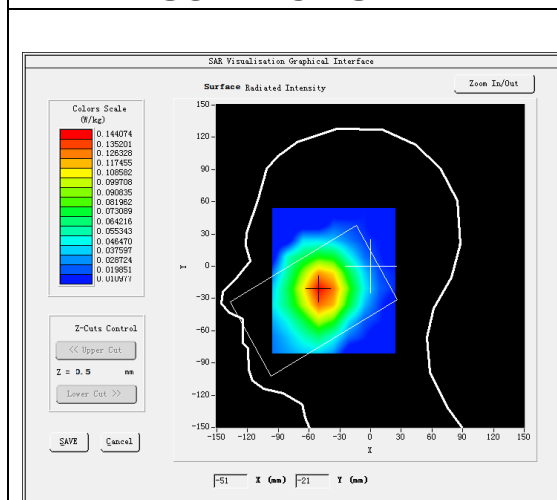
A. Experimental conditions.

<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 5</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.32</u>

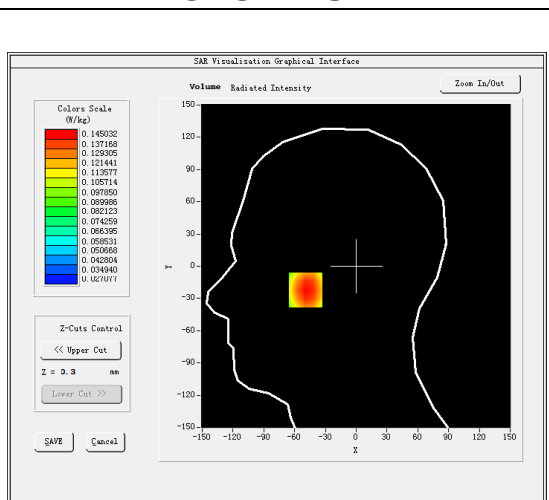
B. SAR Measurement Results

Frequency (MHz)	836.500000
Relative permittivity (real part)	41.304111
Relative permittivity (imaginary part)	19.318996
Conductivity (S/m)	0.897797
Variation (%)	-0.920000

SURFACE SAR



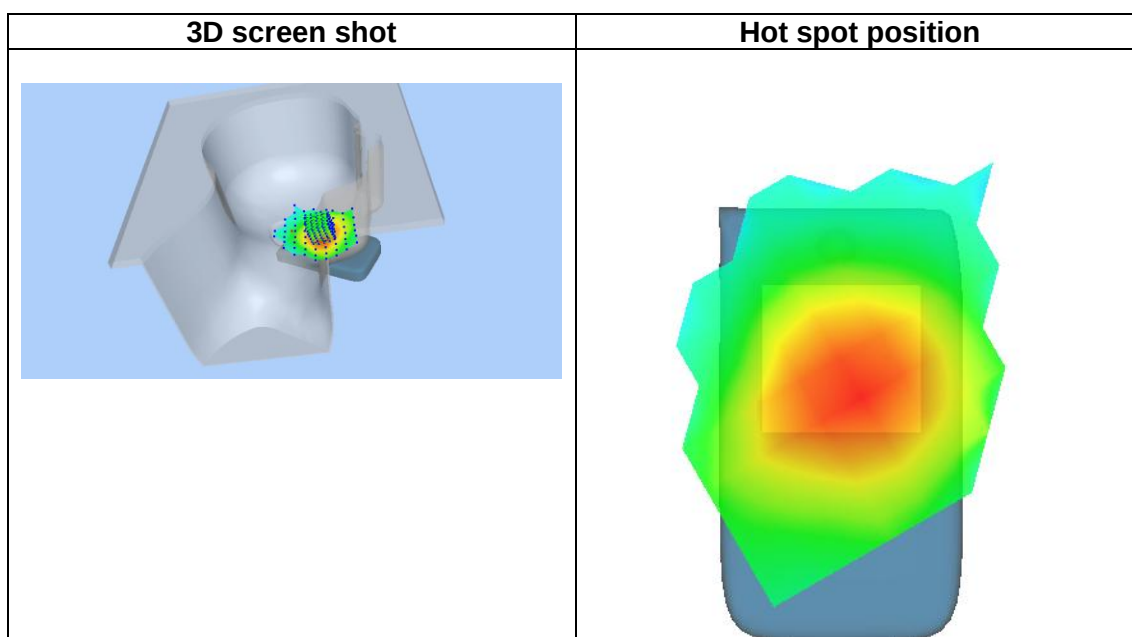
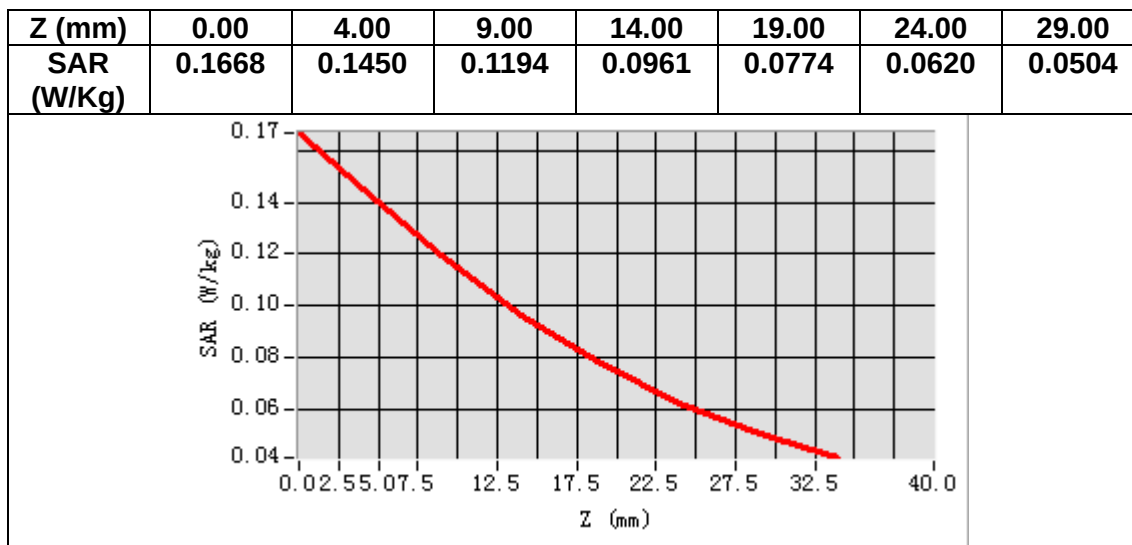
VOLUME SAR



Maximum location: X=-49.00, Y=-22.00

SAR Peak: 0.17 W/kg

SAR 10g (W/Kg)	0.107129
SAR 1g (W/Kg)	0.140147



MEASUREMENT 22

Date of measurement: 1/3/2024

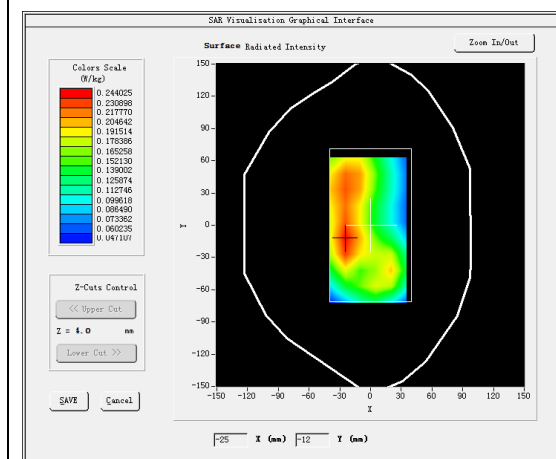
A. Experimental conditions.

<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 5</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.32</u>

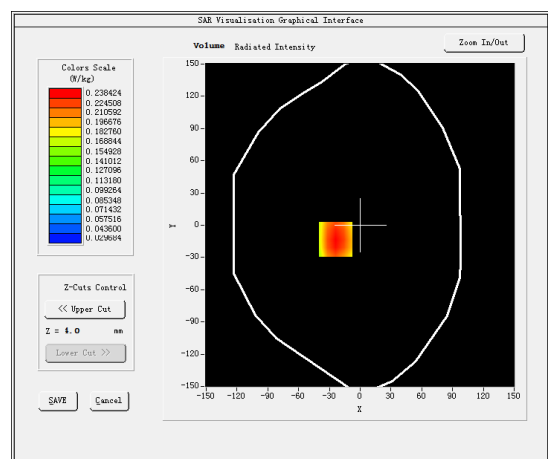
B. SAR Measurement Results

Frequency (MHz)	836.500000
Relative permittivity (real part)	41.304111
Relative permittivity (imaginary part)	19.318996
Conductivity (S/m)	0.897797
Variation (%)	-3.980000

SURFACE SAR



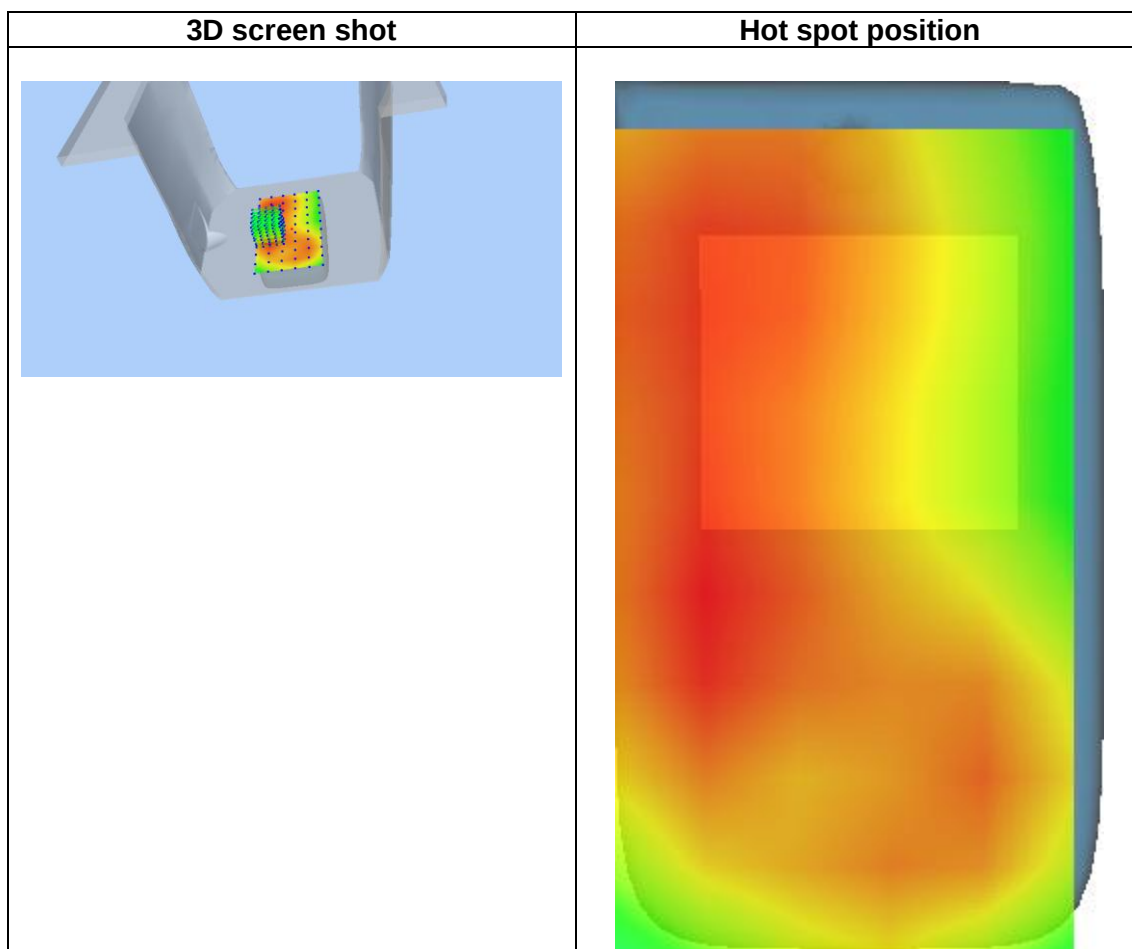
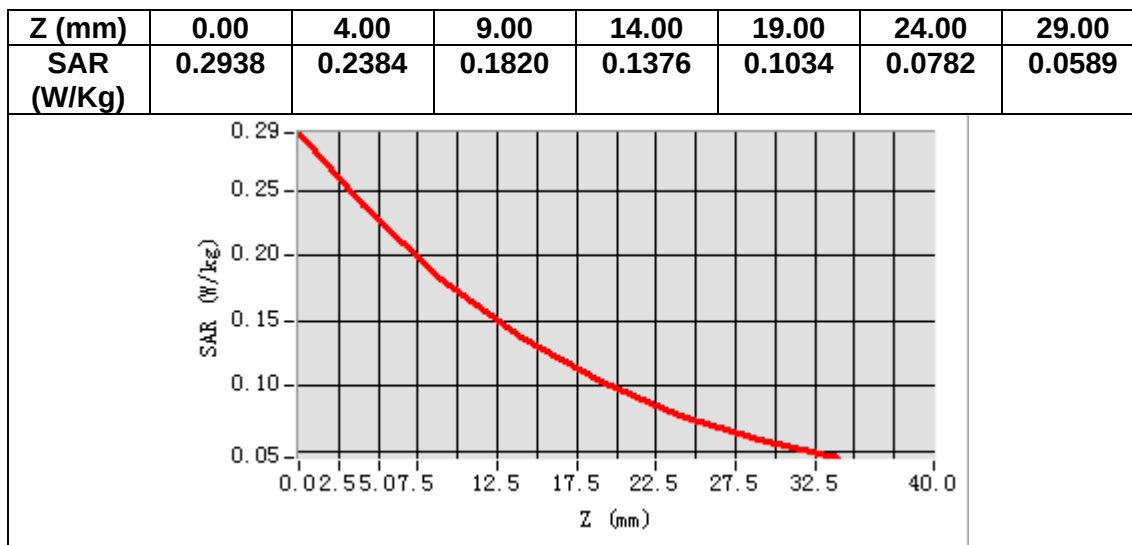
VOLUME SAR



Maximum location: X=-24.00, Y=-13.00

SAR Peak: 0.30 W/kg

SAR 10g (W/Kg)	0.164892
SAR 1g (W/Kg)	0.229947



MEASUREMENT 23

Date of measurement: 24/2/2024

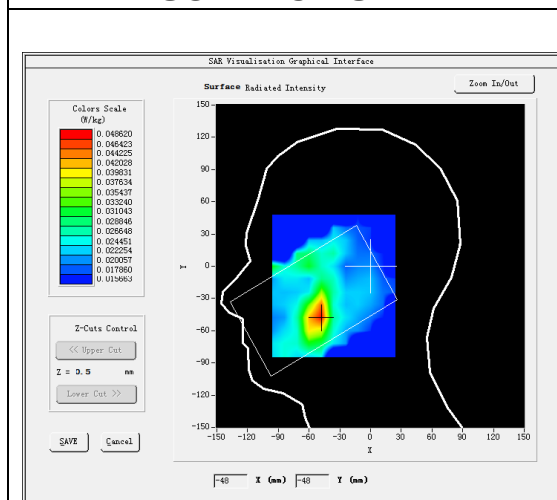
A. Experimental conditions.

<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 7</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.65</u>

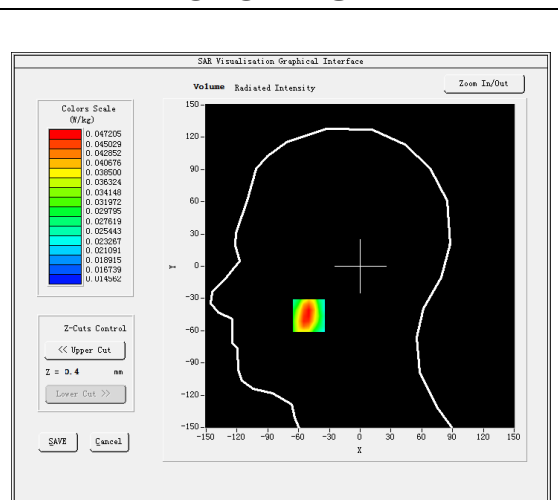
B. SAR Measurement Results

Frequency (MHz)	2535.000000
Relative permittivity (real part)	38.981022
Relative permittivity (imaginary part)	13.304074
Conductivity (S/m)	1.873657
Variation (%)	-2.130000

SURFACE SAR



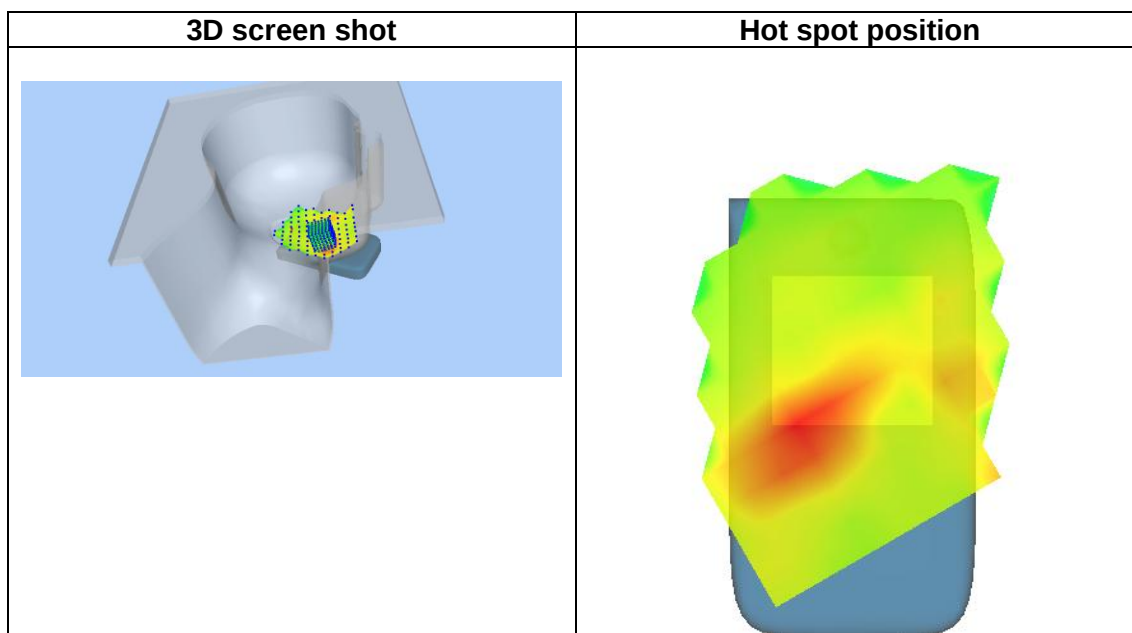
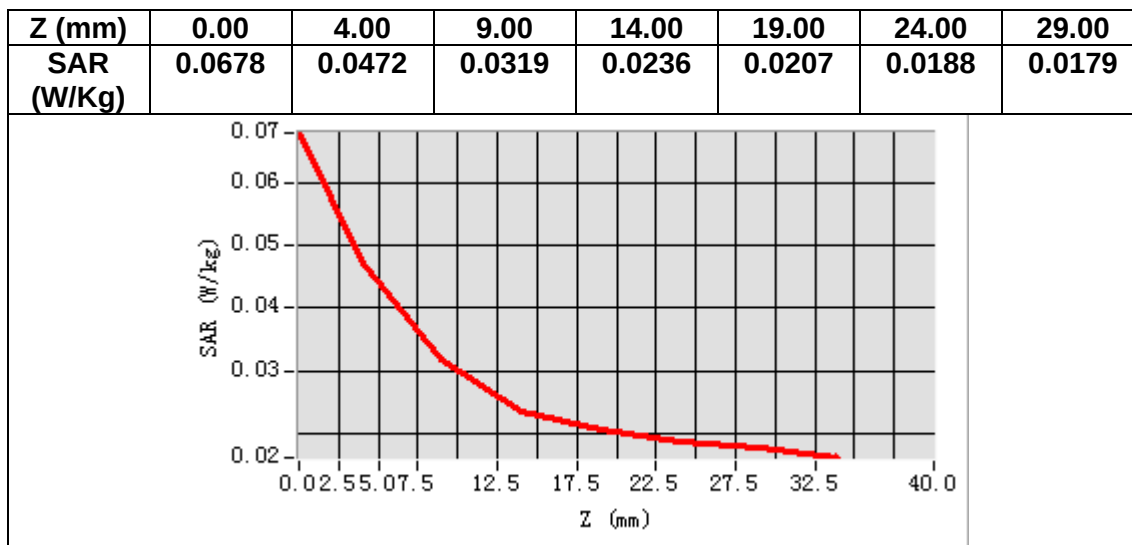
VOLUME SAR



Maximum location: X=-50.00, Y=-46.00

SAR Peak: 0.06 W/kg

SAR 10g (W/Kg)	0.030609
SAR 1g (W/Kg)	0.044896



MEASUREMENT 24

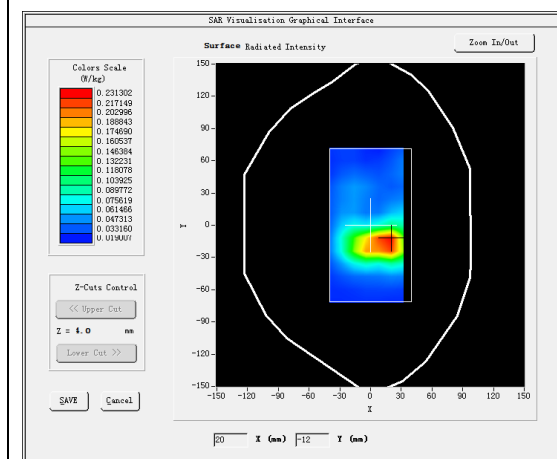
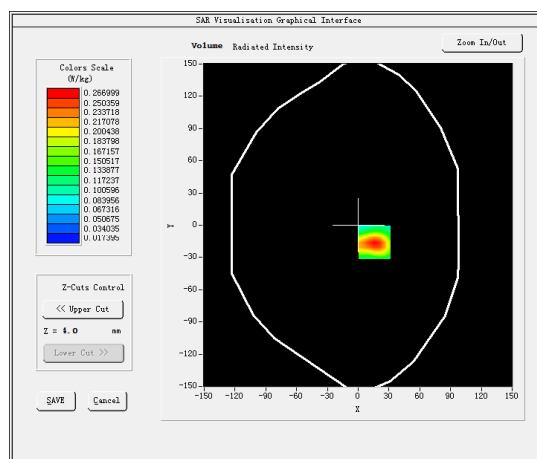
Date of measurement: 24/2/2024

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 7</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.65</u>

B. SAR Measurement Results

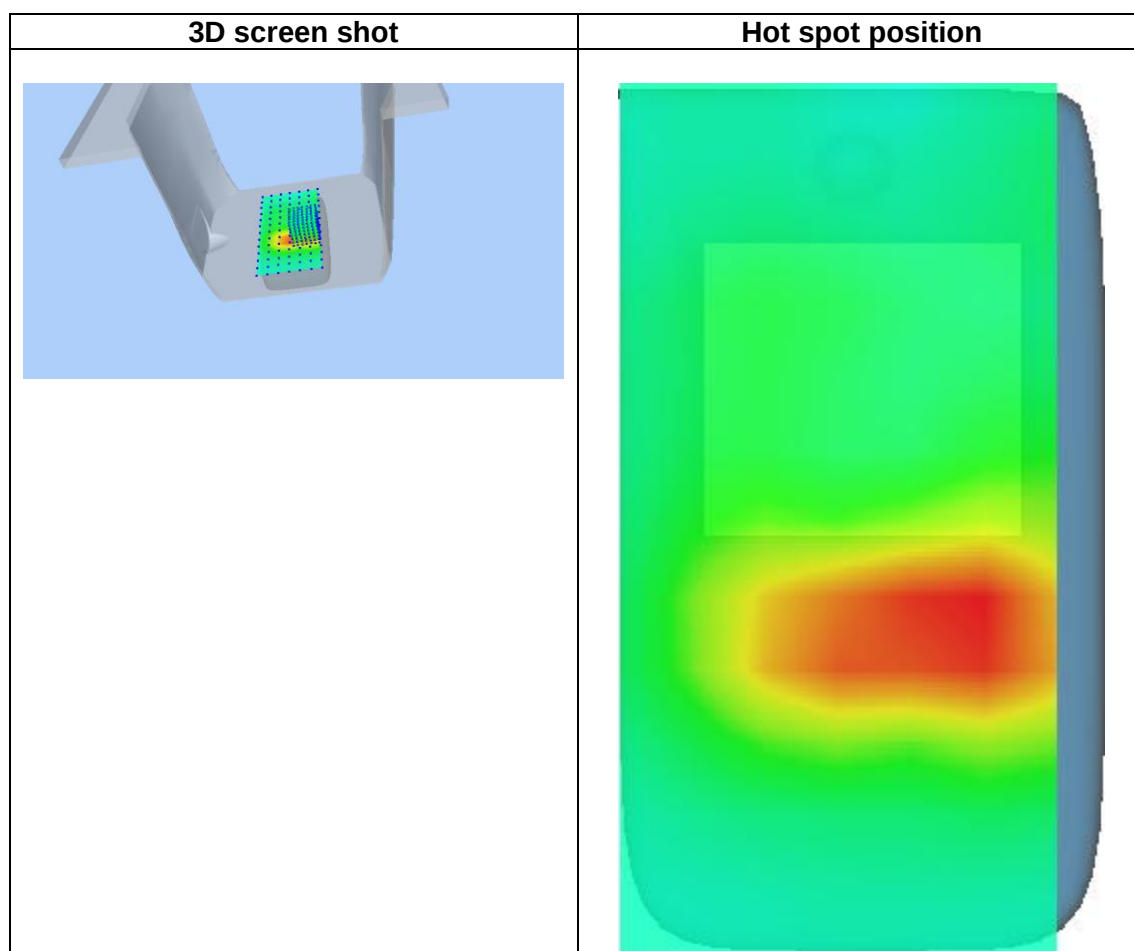
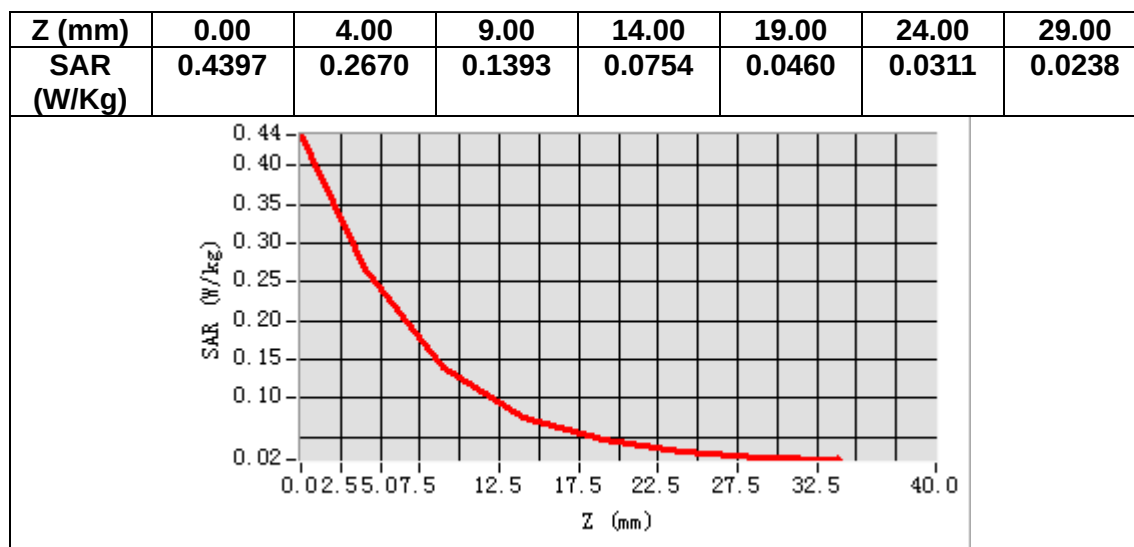
Frequency (MHz)	2535.000000
Relative permittivity (real part)	38.981022
Relative permittivity (imaginary part)	13.304074
Conductivity (S/m)	1.873657
Variation (%)	-1.830000

SURFACE SAR**VOLUME SAR**

Maximum location: X=16.00, Y=-16.00

SAR Peak: 0.44 W/kg

SAR 10g (W/Kg)	0.129246
SAR 1g (W/Kg)	0.249645



MEASUREMENT 25

Date of measurement: 27/2/2024

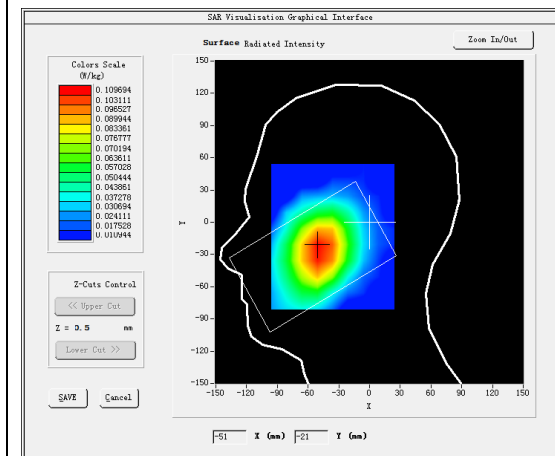
A. Experimental conditions.

<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 12</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.37</u>

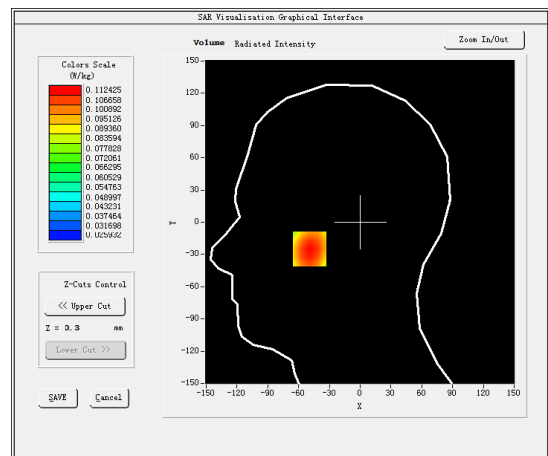
B. SAR Measurement Results

Frequency (MHz)	707.500000
Relative permittivity (real part)	41.722584
Relative permittivity (imaginary part)	22.037128
Conductivity (S/m)	0.866182
Variation (%)	0.180000

SURFACE SAR



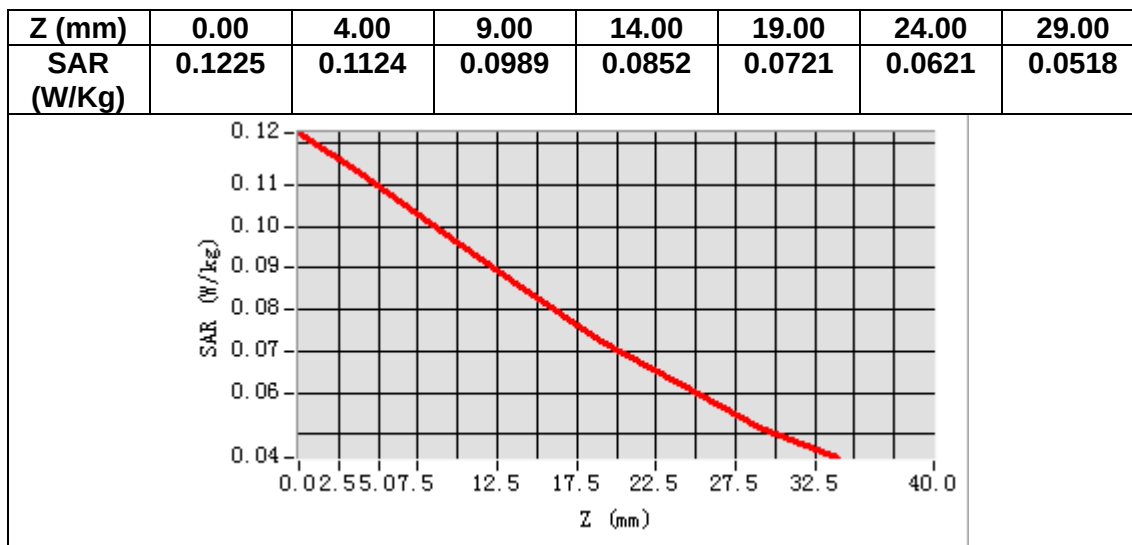
VOLUME SAR



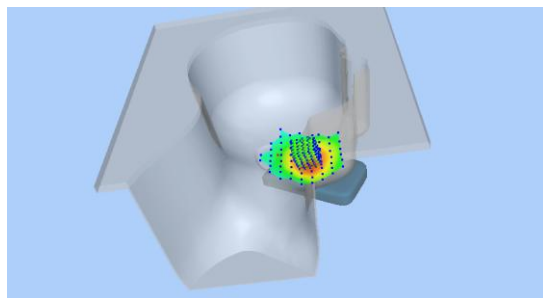
Maximum location: X=-49.00, Y=-25.00

SAR Peak: 0.12 W/kg

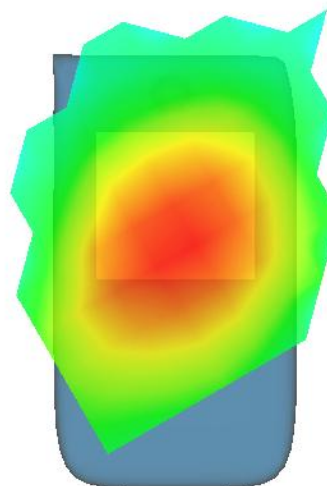
SAR 10g (W/Kg)	0.089732
SAR 1g (W/Kg)	0.109082



3D screen shot



Hot spot position



MEASUREMENT 26

Date of measurement: 27/2/2024

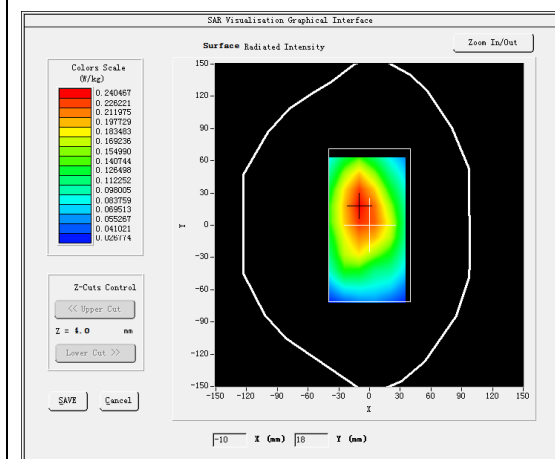
A. Experimental conditions.

<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 12</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.37</u>

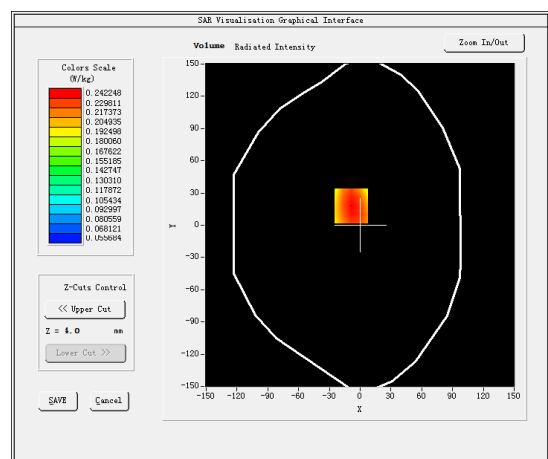
B. SAR Measurement Results

Frequency (MHz)	707.500000
Relative permittivity (real part)	41.722584
Relative permittivity (imaginary part)	22.037128
Conductivity (S/m)	0.866182
Variation (%)	-0.880000

SURFACE SAR



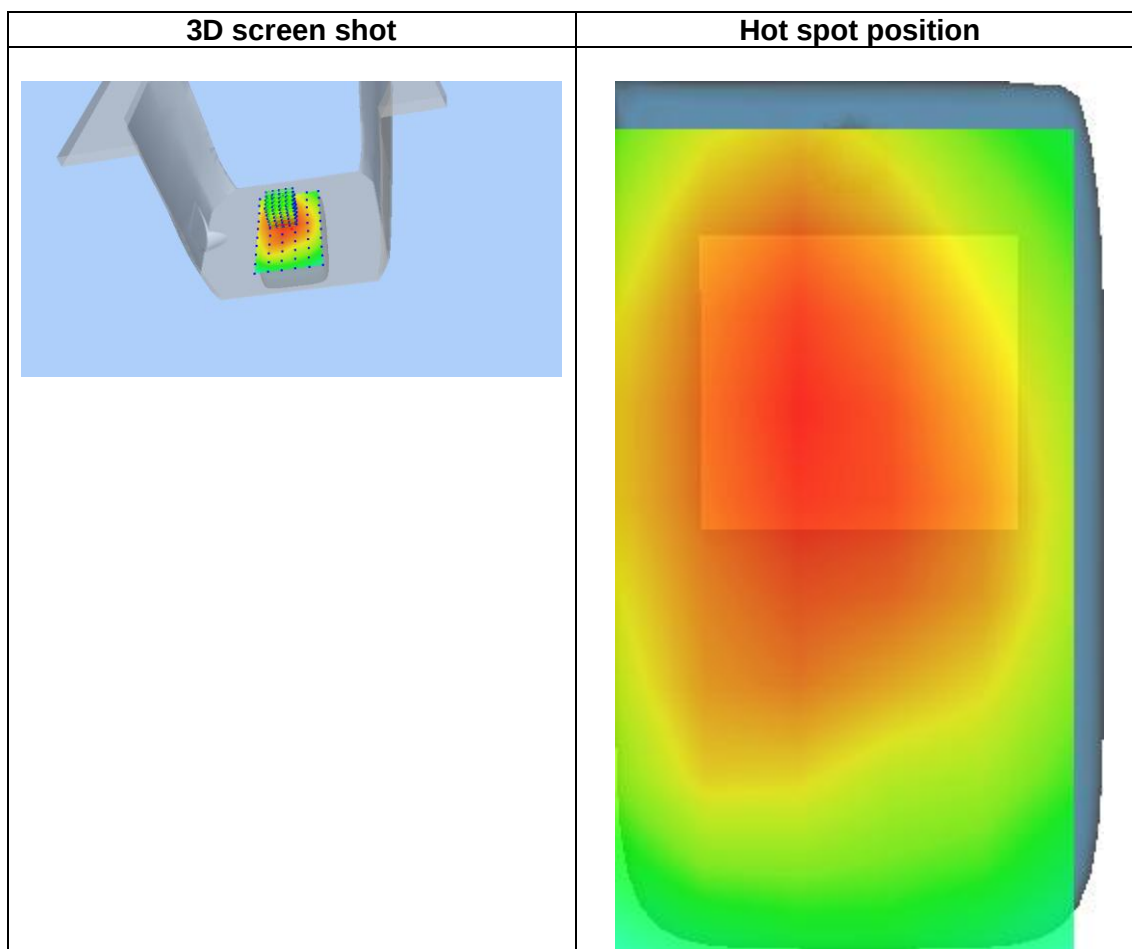
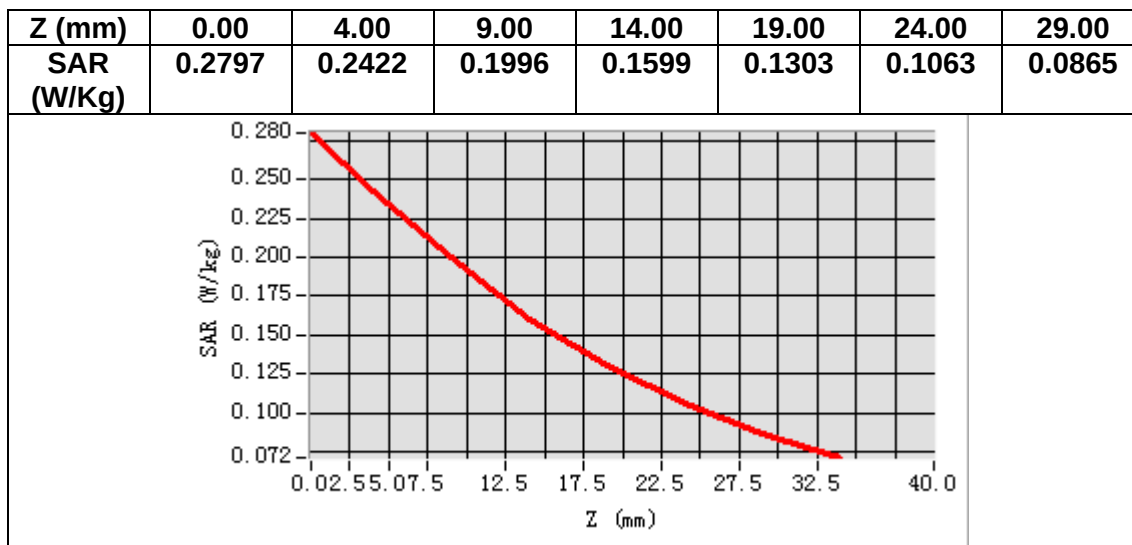
VOLUME SAR



Maximum location: X=-9.00, Y=18.00

SAR Peak: 0.28 W/kg

SAR 10g (W/Kg)	0.183335
SAR 1g (W/Kg)	0.234412



MEASUREMENT 27

Date of measurement: 27/2/2024

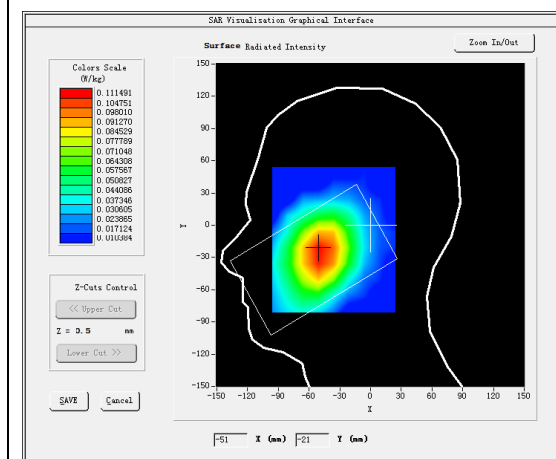
A. Experimental conditions.

<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 17</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.37</u>

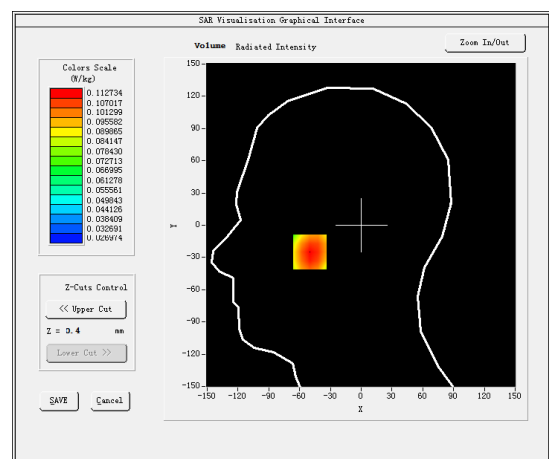
B. SAR Measurement Results

Frequency (MHz)	710.000000
Relative permittivity (real part)	41.707233
Relative permittivity (imaginary part)	21.977579
Conductivity (S/m)	0.866893
Variation (%)	-2.260000

SURFACE SAR



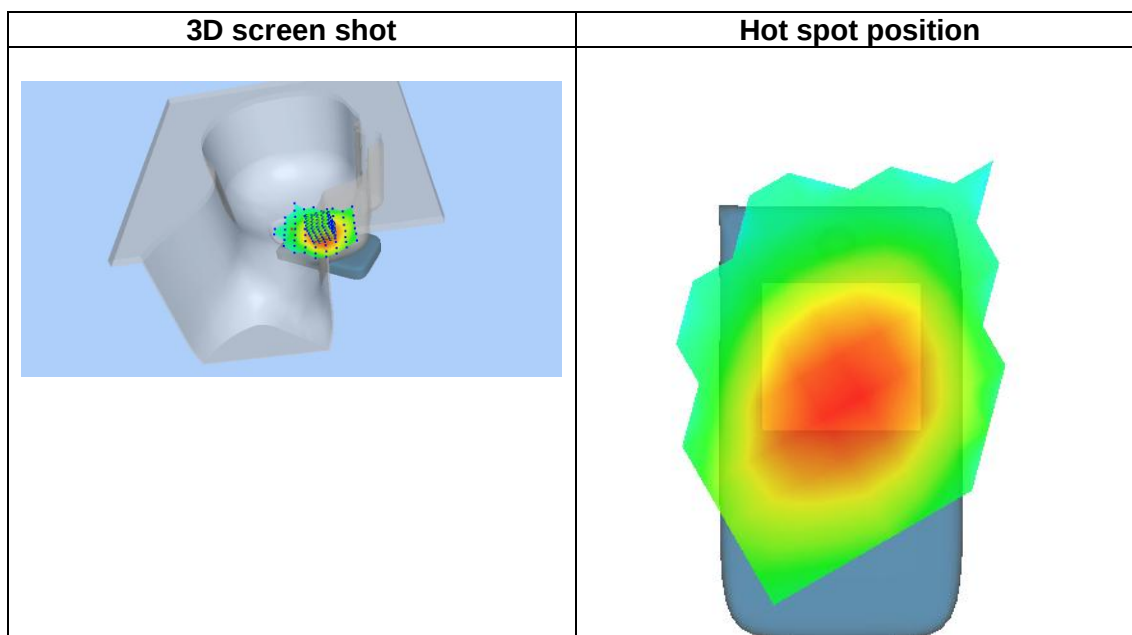
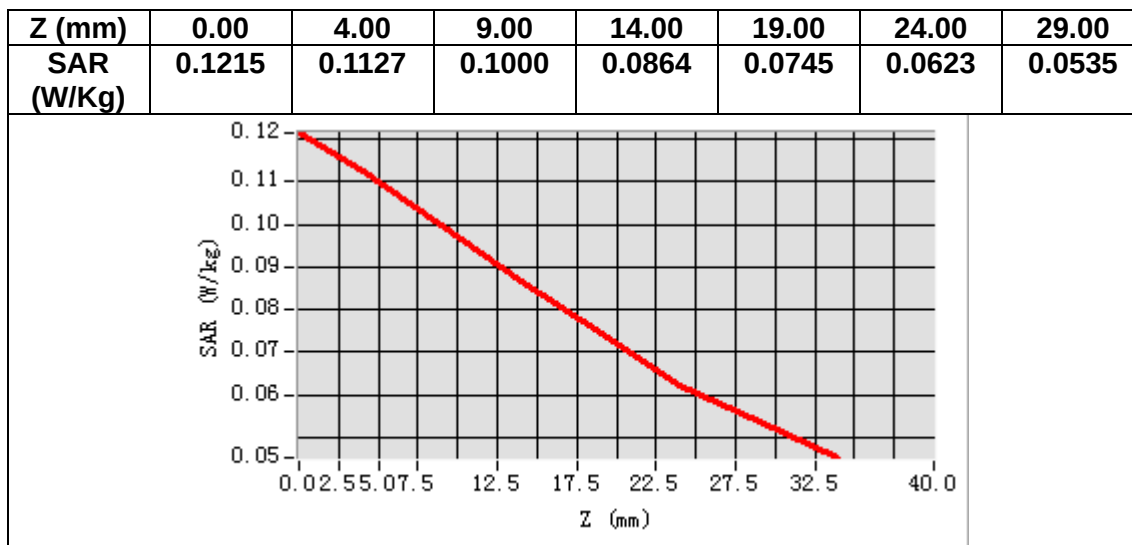
VOLUME SAR



Maximum location: X=-50.00, Y=-25.00

SAR Peak: 0.12 W/kg

SAR 10g (W/Kg)	0.090438
SAR 1g (W/Kg)	0.109633



MEASUREMENT 28

Date of measurement: 27/2/2024

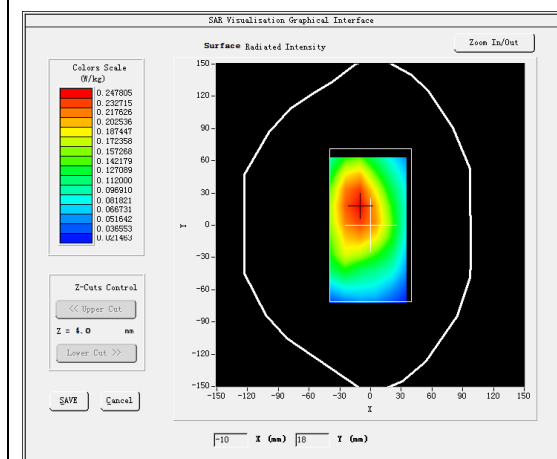
A. Experimental conditions.

<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 17</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.37</u>

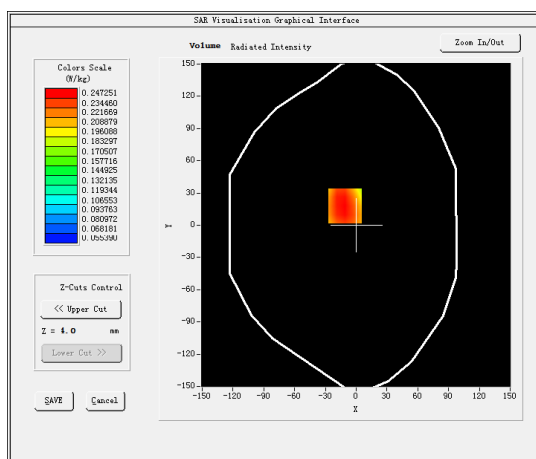
B. SAR Measurement Results

Frequency (MHz)	710.000000
Relative permittivity (real part)	41.707233
Relative permittivity (imaginary part)	21.977579
Conductivity (S/m)	0.866893
Variation (%)	-1.040000

SURFACE SAR



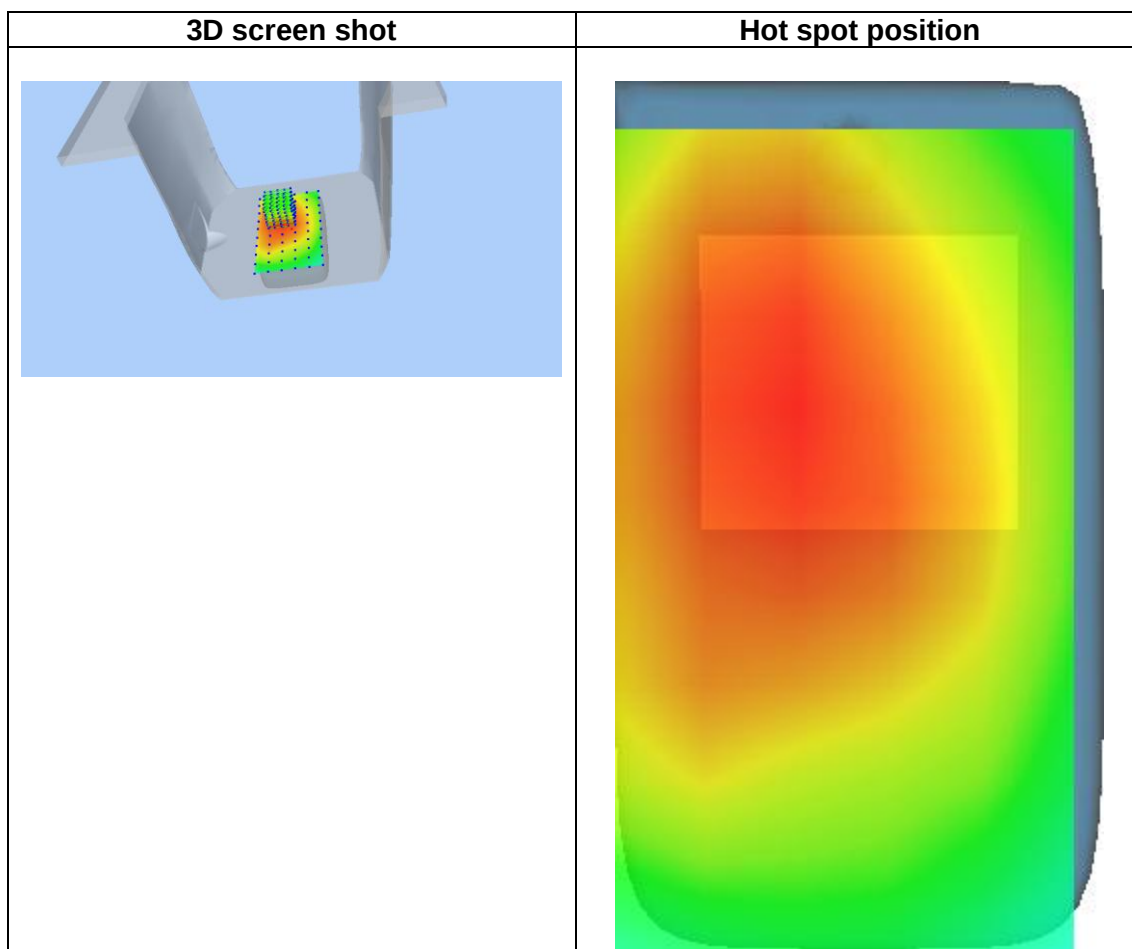
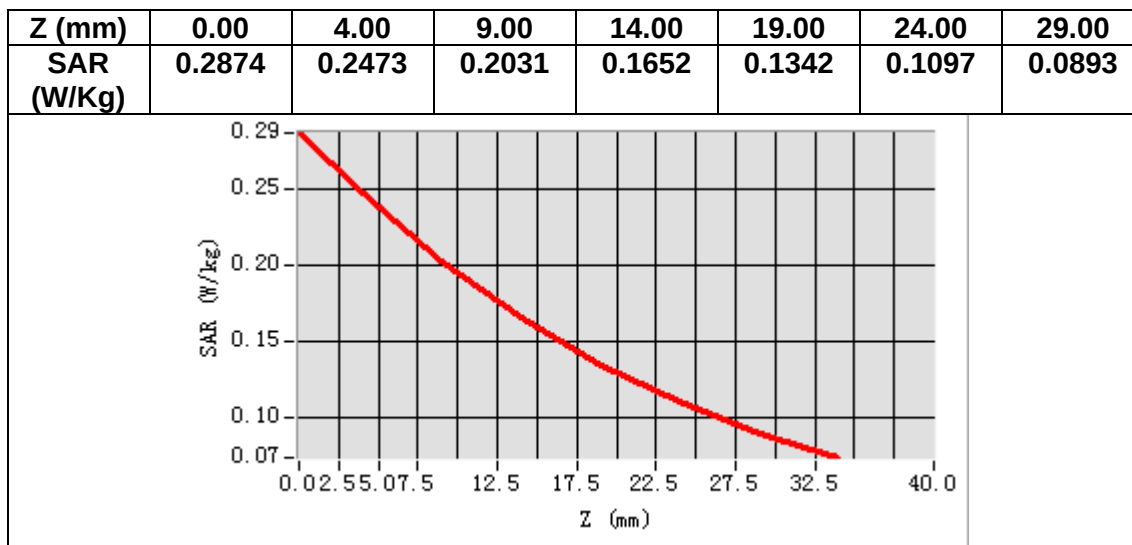
VOLUME SAR



Maximum location: X=-11.00, Y=18.00

SAR Peak: 0.29 W/kg

SAR 10g (W/Kg)	0.187865
SAR 1g (W/Kg)	0.240370



MEASUREMENT 29

Date of measurement: 2/3/2024

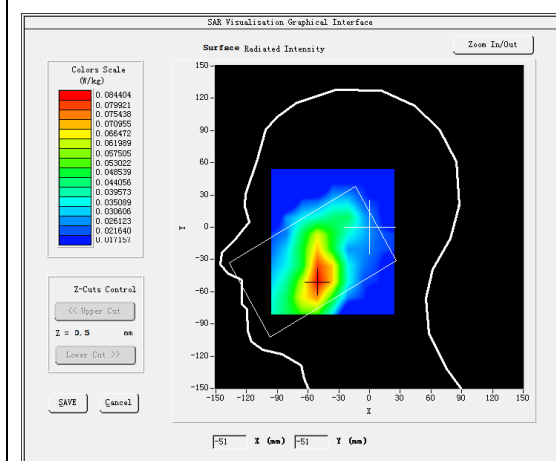
A. Experimental conditions.

<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 25</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.63</u>

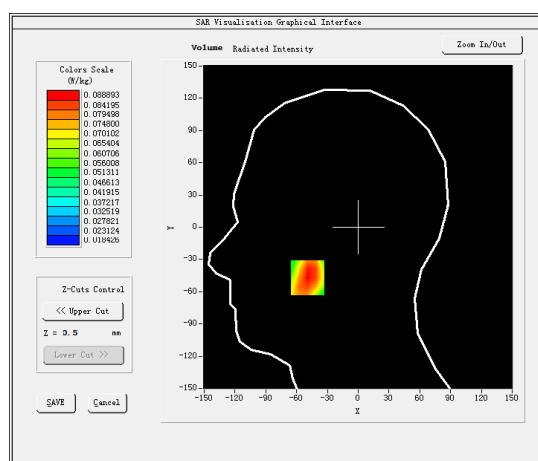
B. SAR Measurement Results

Frequency (MHz)	1882.500000
Relative permittivity (real part)	38.983822
Relative permittivity (imaginary part)	13.738008
Conductivity (S/m)	1.436385
Variation (%)	-3.330000

SURFACE SAR



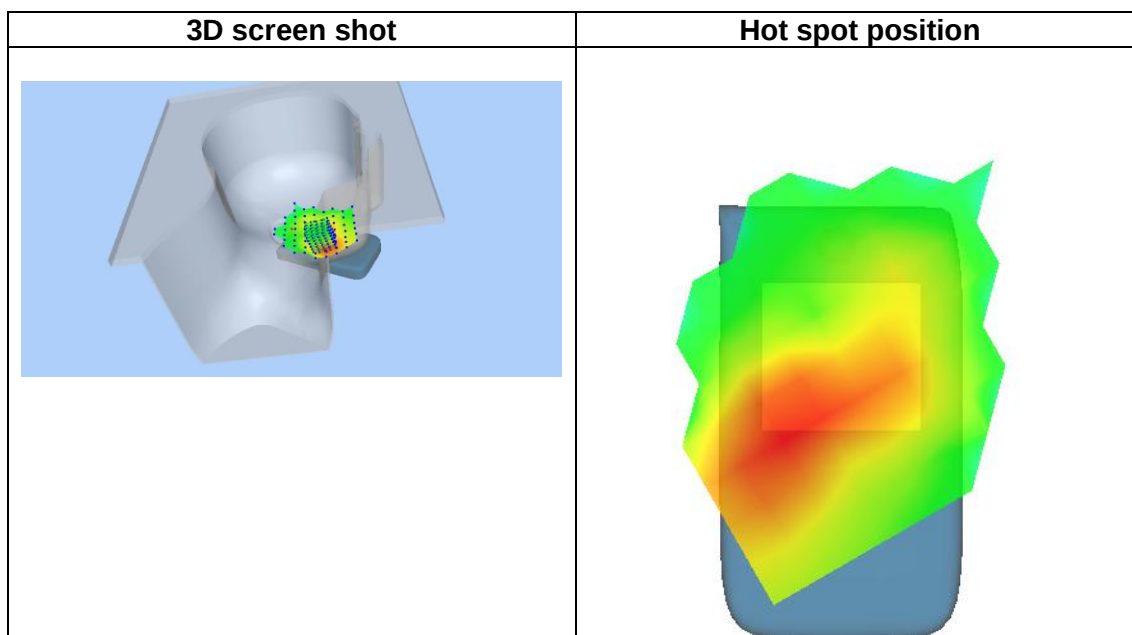
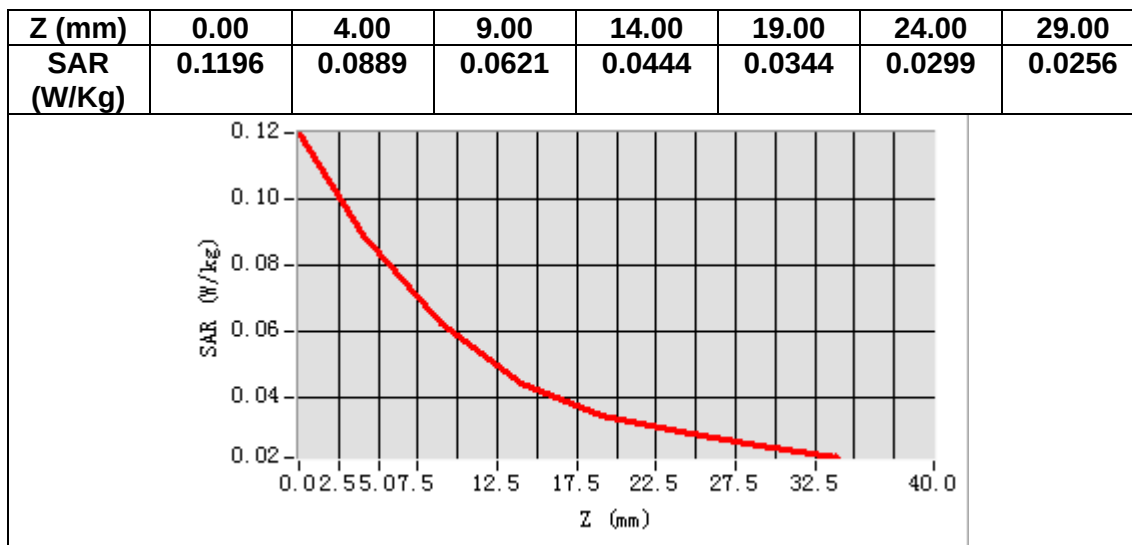
VOLUME SAR



Maximum location: X=-49.00, Y=-47.00

SAR Peak: 0.12 W/kg

SAR 10g (W/Kg)	0.058648
SAR 1g (W/Kg)	0.087580



MEASUREMENT 30

Date of measurement: 2/3/2024

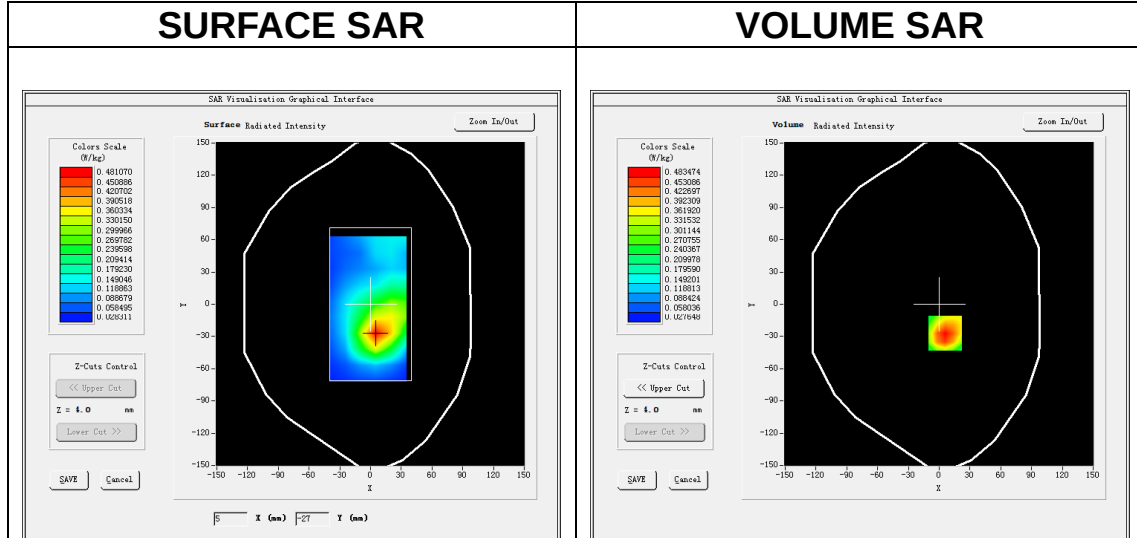
A. Experimental conditions.

<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 25</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.63</u>

B. SAR Measurement Results

Frequency (MHz)	1882.500000
Relative permittivity (real part)	38.983822
Relative permittivity (imaginary part)	13.738008
Conductivity (S/m)	1.436385
Variation (%)	-4.880000

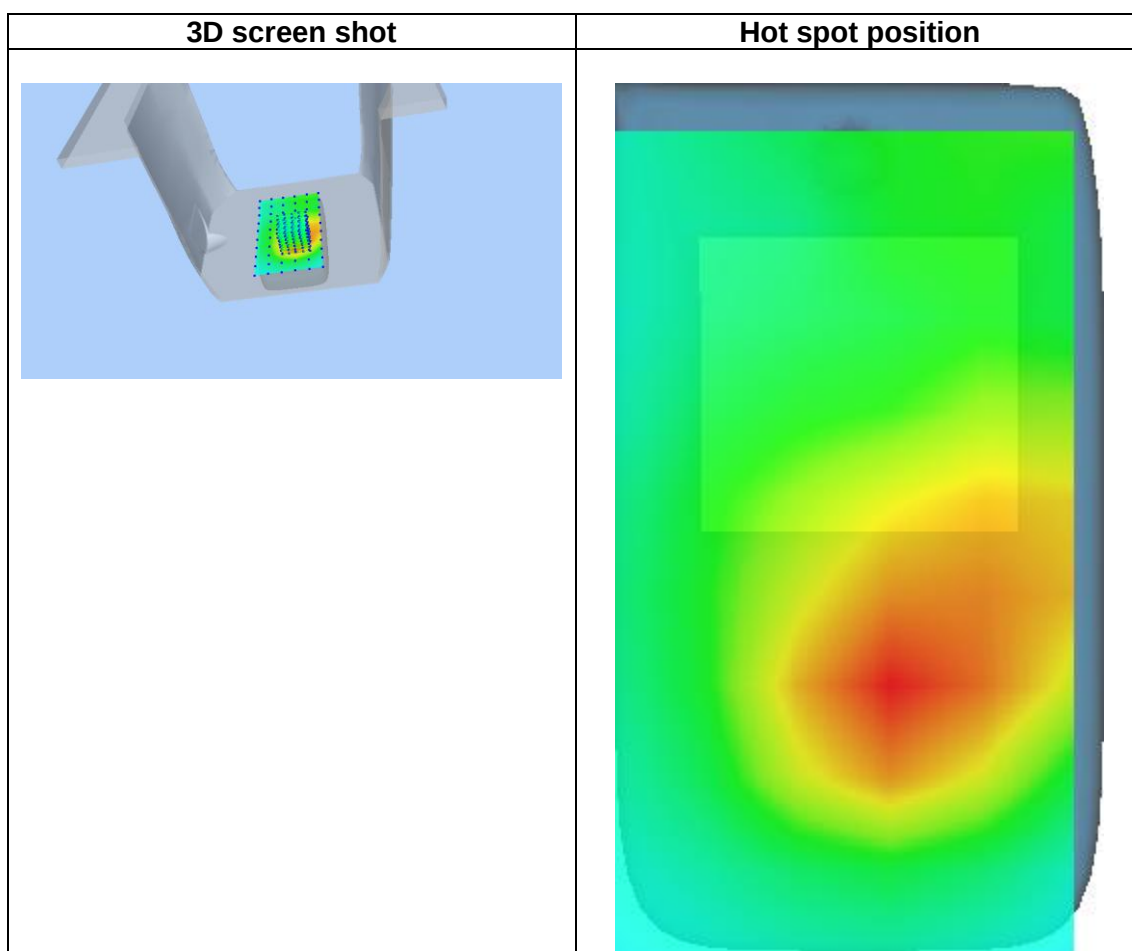
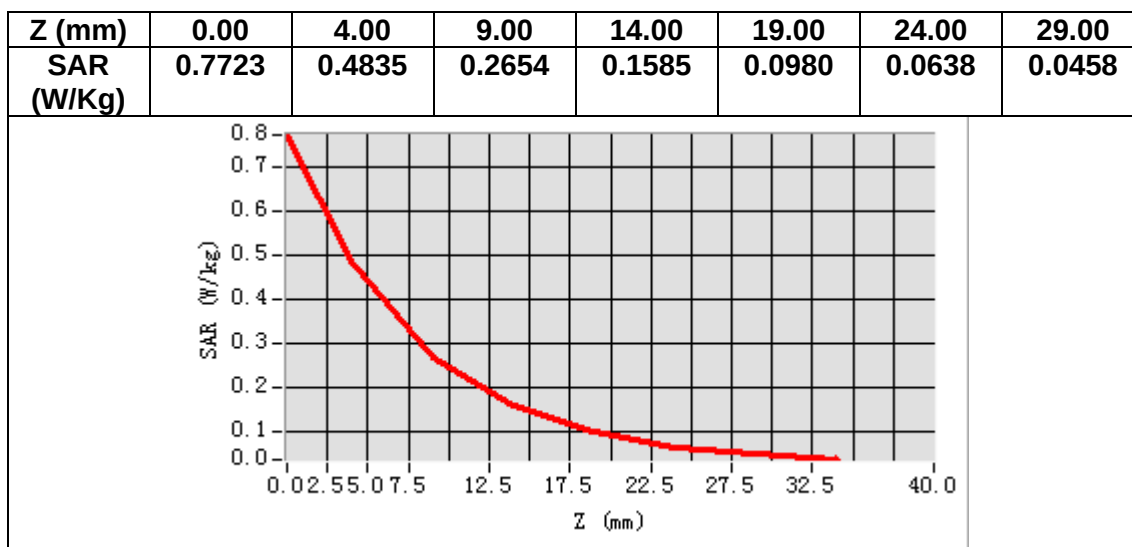
SURFACE SAR



Maximum location: X=6.00, Y=-27.00

SAR Peak: 0.78 W/kg

SAR 10g (W/Kg)	0.259457
SAR 1g (W/Kg)	0.478927



MEASUREMENT 31

Date of measurement: 24/2/2024

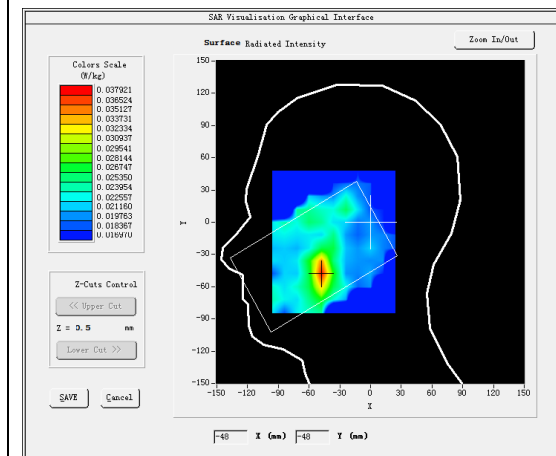
A. Experimental conditions.

<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: 1.0)</u>
<u>ConvF</u>	<u>2.65</u>

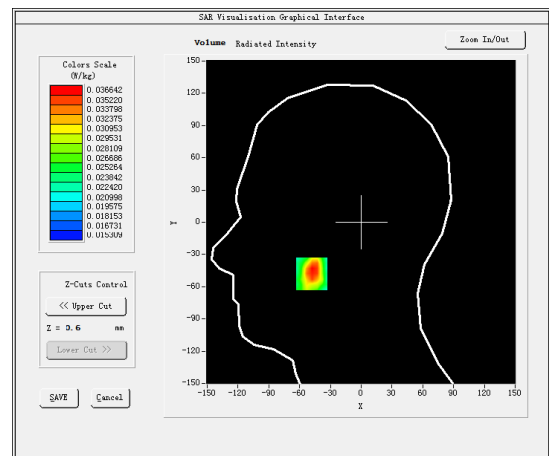
B. SAR Measurement Results

Frequency (MHz)	2593.000000
Relative permittivity (real part)	38.699520
Relative permittivity (imaginary part)	13.467674
Conductivity (S/m)	1.940093
Variation (%)	-0.120000

SURFACE SAR



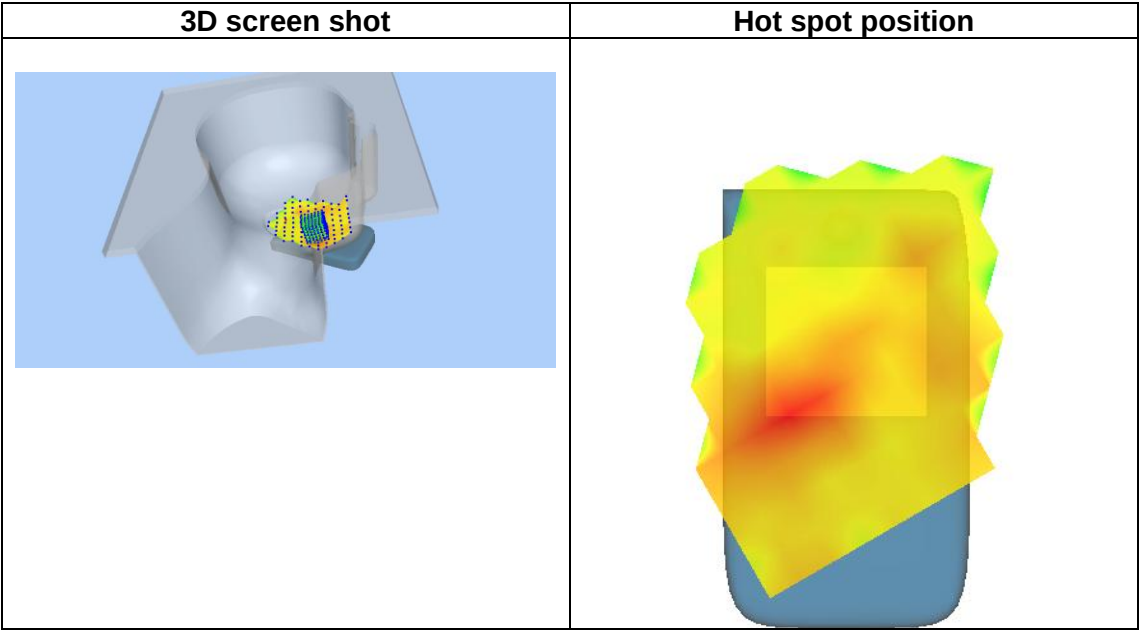
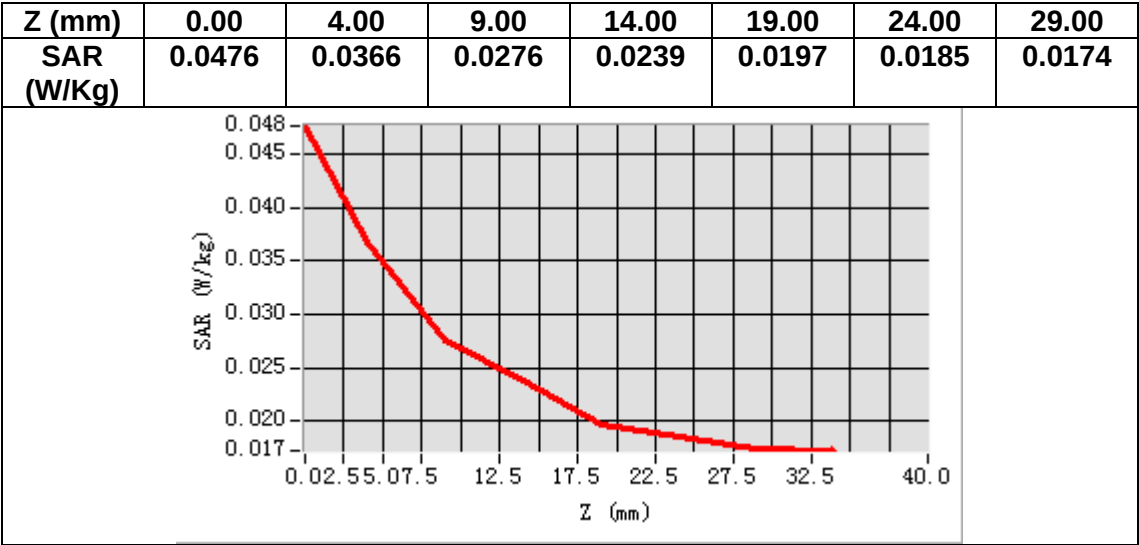
VOLUME SAR



Maximum location: X=-48.00, Y=-48.00

SAR Peak: 0.05 W/kg

SAR 10g (W/Kg)	0.025637
SAR 1g (W/Kg)	0.034585



MEASUREMENT 32

Date of measurement: 24/2/2024

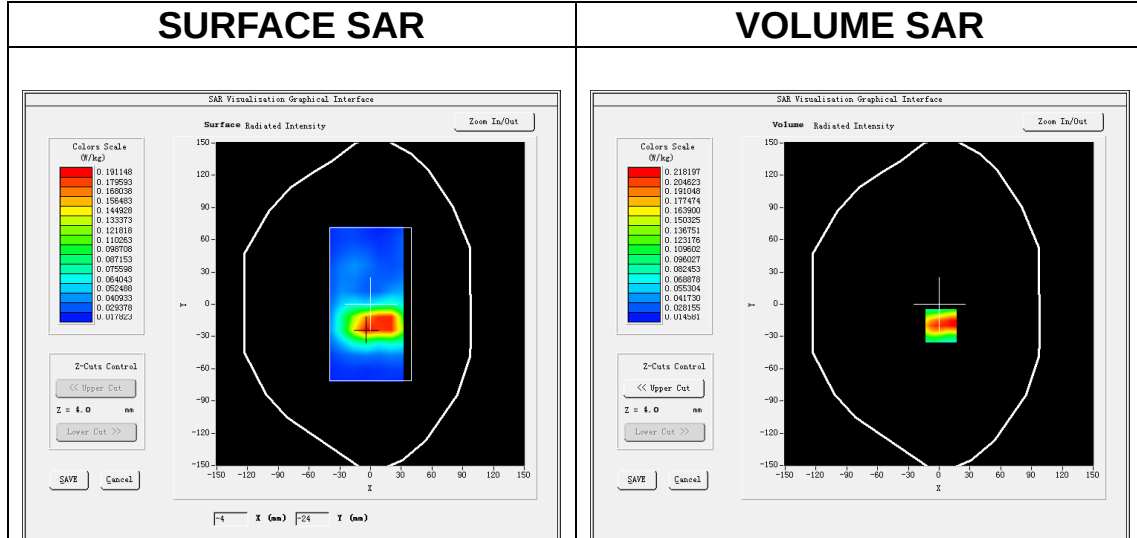
A. Experimental conditions.

<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: 1.0)</u>
<u>ConvF</u>	<u>2.65</u>

B. SAR Measurement Results

Frequency (MHz)	2593.000000
Relative permittivity (real part)	38.699520
Relative permittivity (imaginary part)	13.467674
Conductivity (S/m)	1.940093
Variation (%)	0.340000

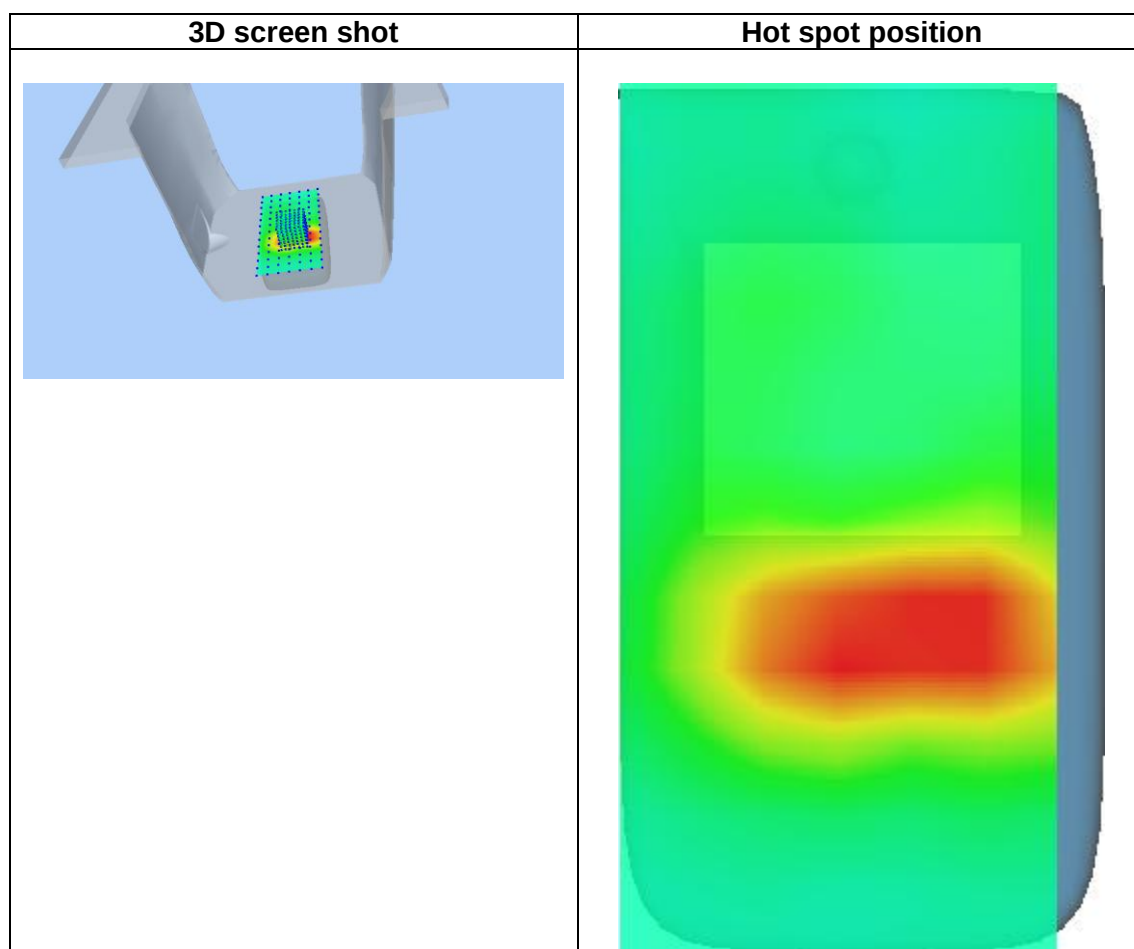
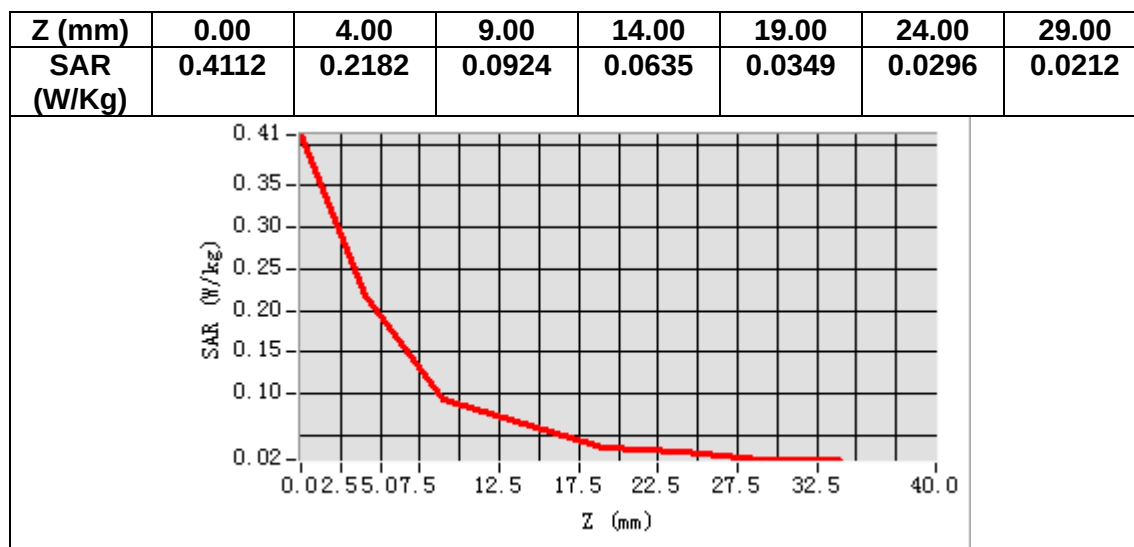
SURFACE SAR



Maximum location: X=2.00, Y=-20.00

SAR Peak: 0.37 W/kg

SAR 10g (W/Kg)	0.110262
SAR 1g (W/Kg)	0.211107



MEASUREMENT 33

Date of measurement: 1/3/2024

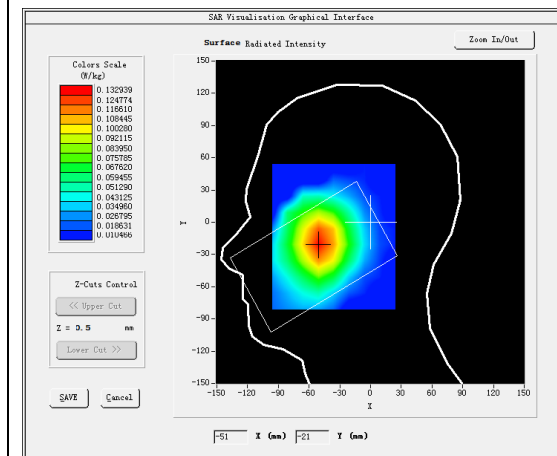
A. Experimental conditions.

<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>FDDBand26A</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>(Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.32</u>

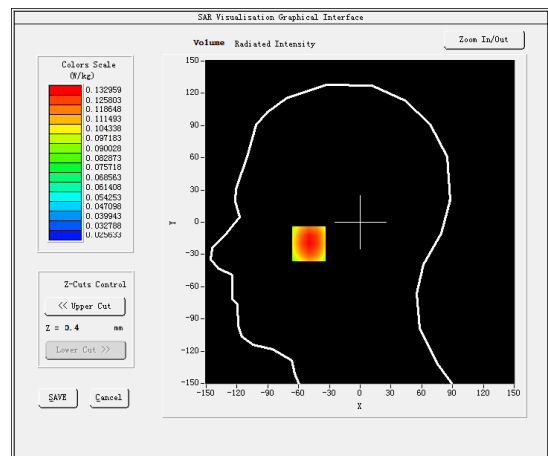
B. SAR Measurement Results

Frequency (MHz)	819.000000
Relative permittivity (real part)	41.559860
Relative permittivity (imaginary part)	19.242996
Conductivity (S/m)	0.875556
Variation (%)	3.210000

SURFACE SAR



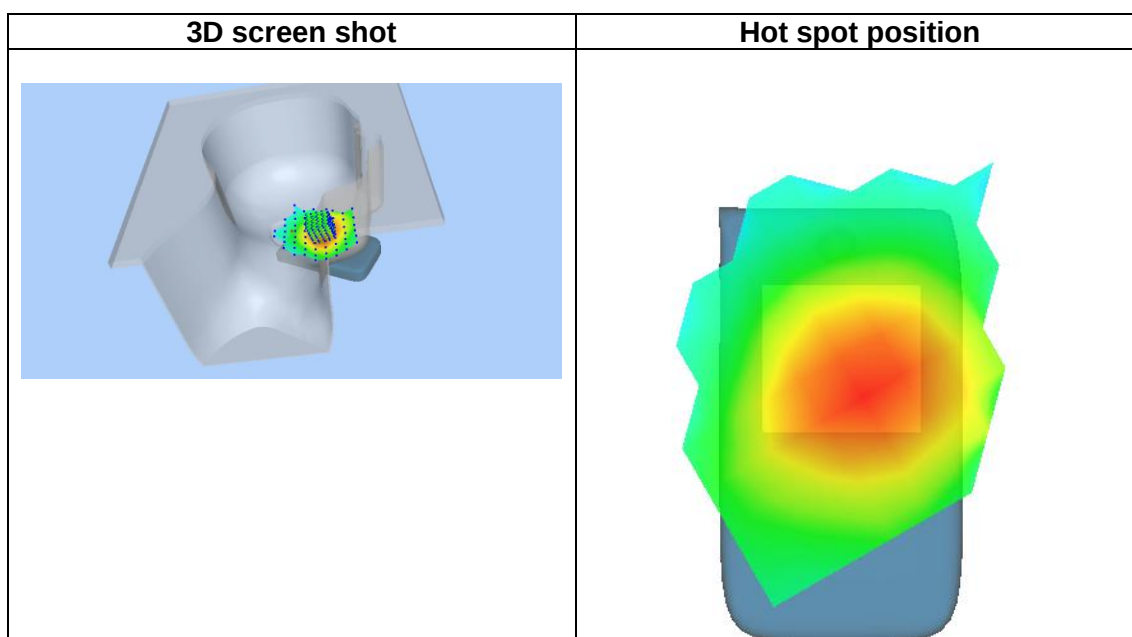
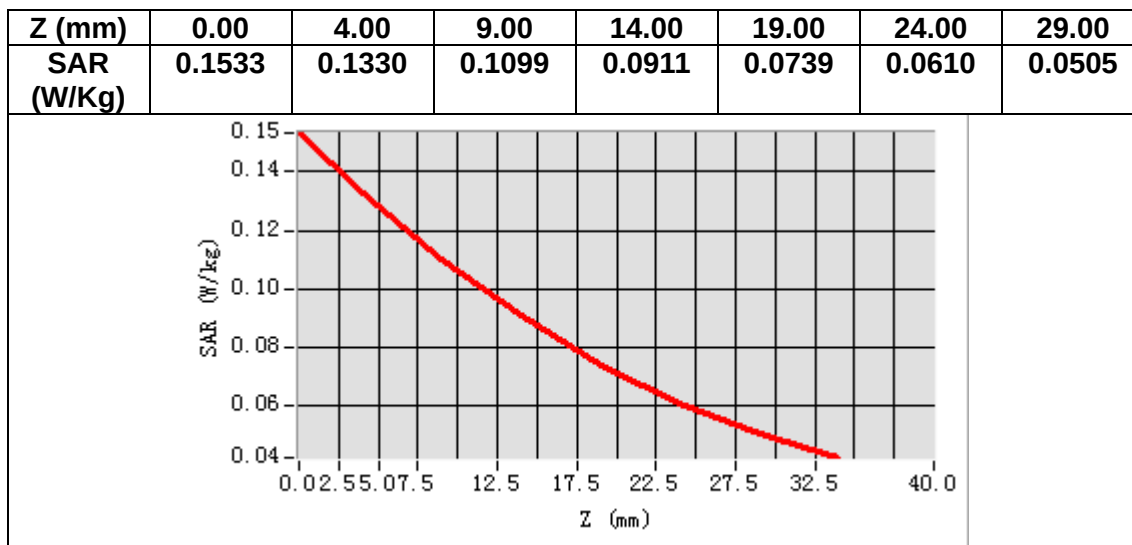
VOLUME SAR



Maximum location: X=-50.00, Y=-20.00

SAR Peak: 0.16 W/kg

SAR 10g (W/Kg)	0.099937
SAR 1g (W/Kg)	0.129041



MEASUREMENT 34

Date of measurement: 1/3/2024

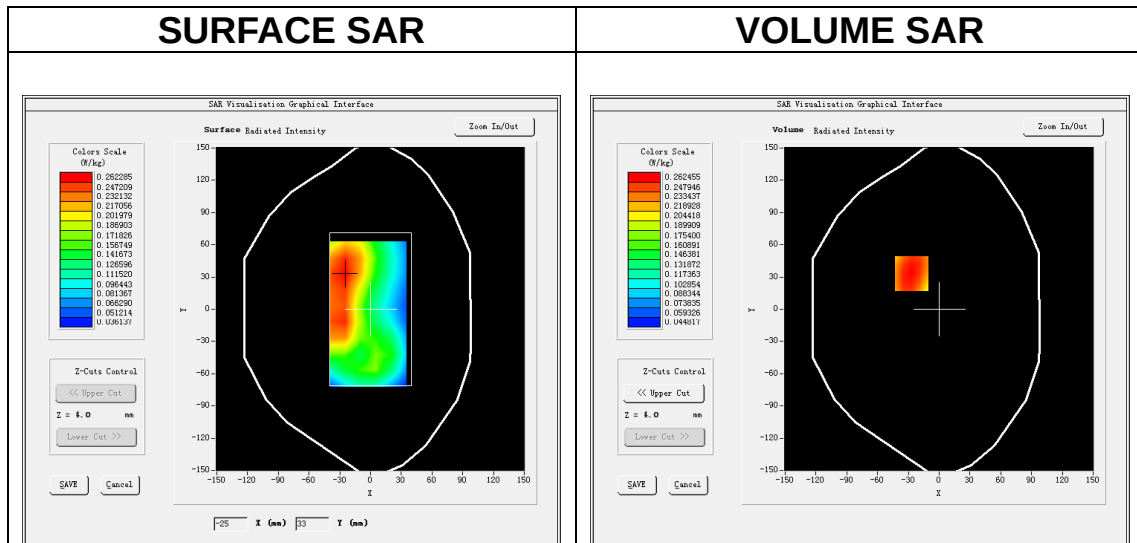
A. Experimental conditions.

<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>FDDBand26A</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>(Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.32</u>

B. SAR Measurement Results

Frequency (MHz)	819.000000
Relative permittivity (real part)	41.559860
Relative permittivity (imaginary part)	19.242996
Conductivity (S/m)	0.875556
Variation (%)	-0.680000

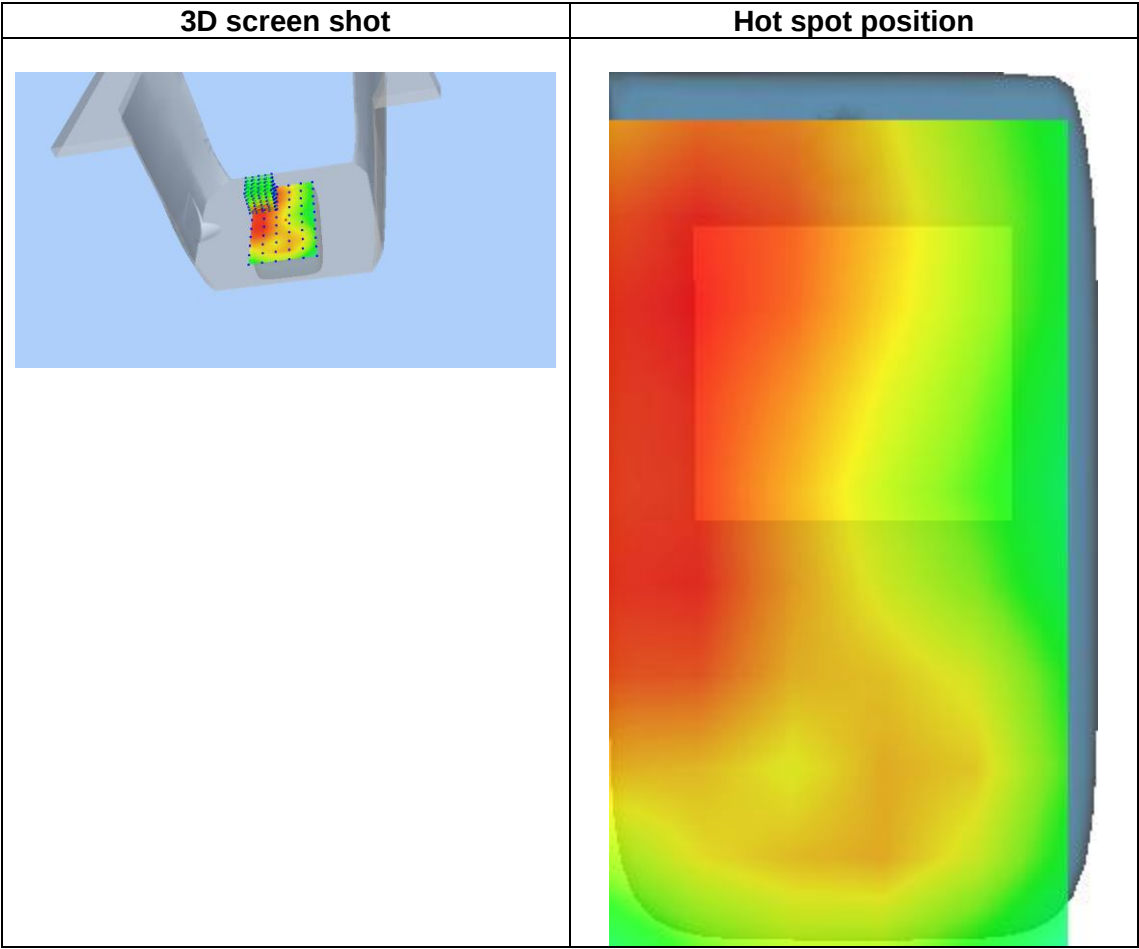
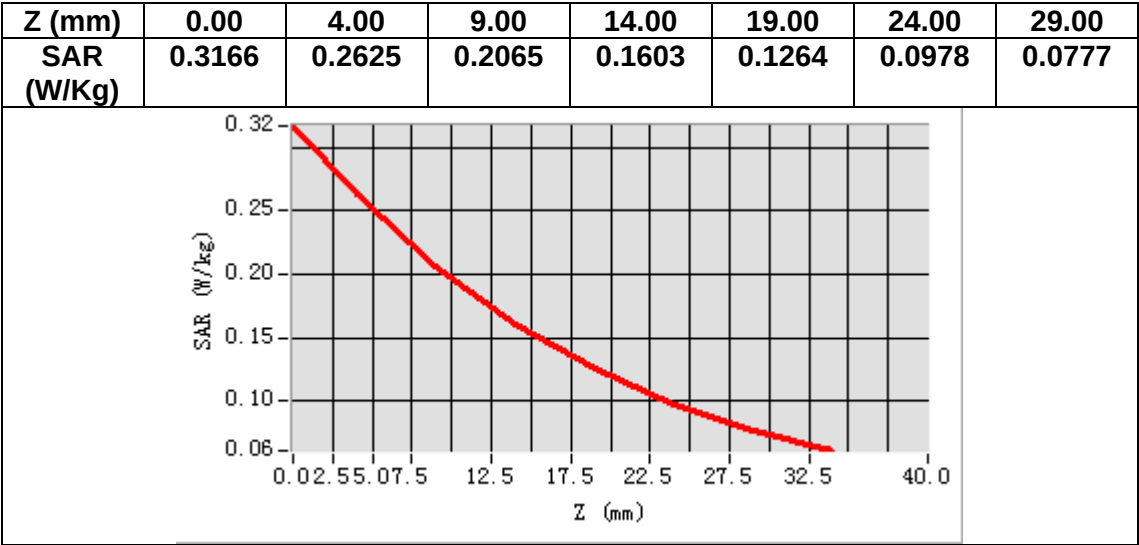
SURFACE SAR



Maximum location: X=-27.00, Y=33.00

SAR Peak: 0.32 W/kg

SAR 10g (W/Kg)	0.192407
SAR 1g (W/Kg)	0.255039



MEASUREMENT 35

Date of measurement: 1/3/2024

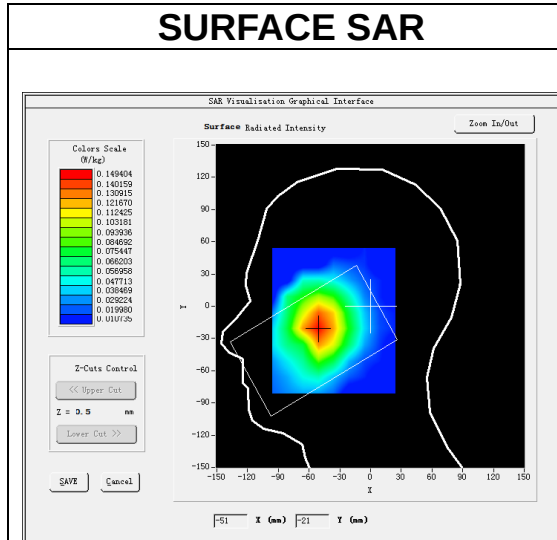
A. Experimental conditions.

<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>FDDBand26B</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>(Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.23</u>

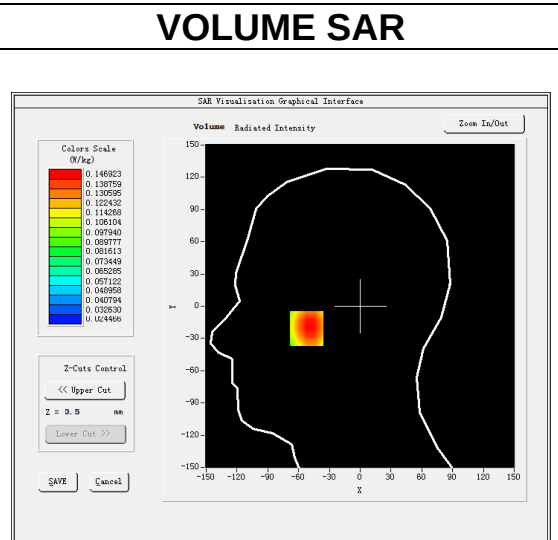
B. SAR Measurement Results

Frequency (MHz)	831.500000
Relative permittivity (real part)	41.352760
Relative permittivity (imaginary part)	19.299545
Conductivity (S/m)	0.891532
Variation (%)	-0.230000

SURFACE SAR



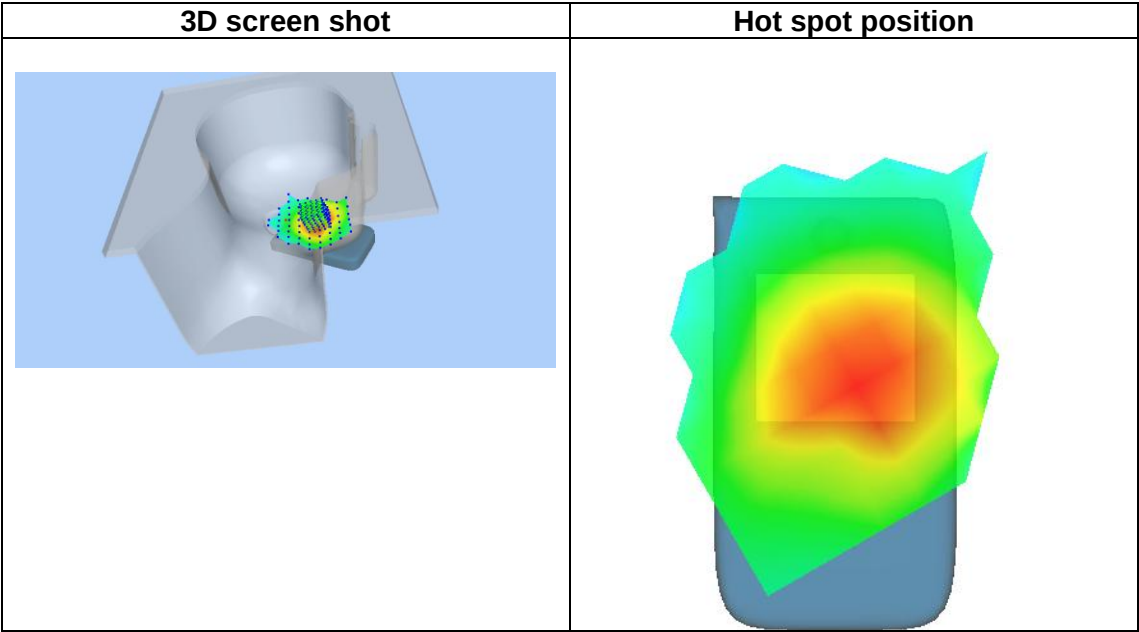
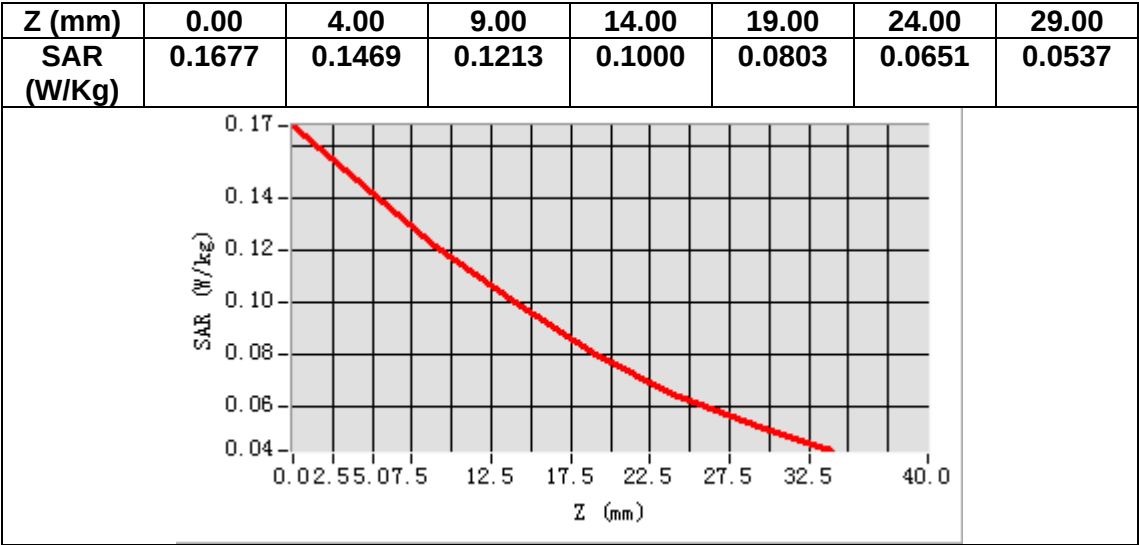
VOLUME SAR



Maximum location: X=-52.00, Y=-20.00

SAR Peak: 0.18 W/kg

SAR 10g (W/Kg)	0.110525
SAR 1g (W/Kg)	0.145540



MEASUREMENT 36

Date of measurement: 1/3/2024

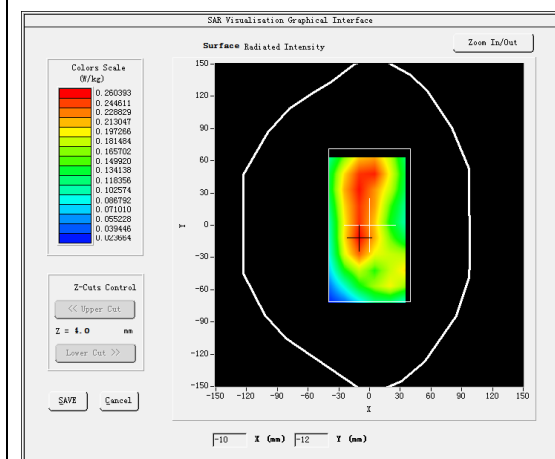
A. Experimental conditions.

<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>FDDBand26B</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>(Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.23</u>

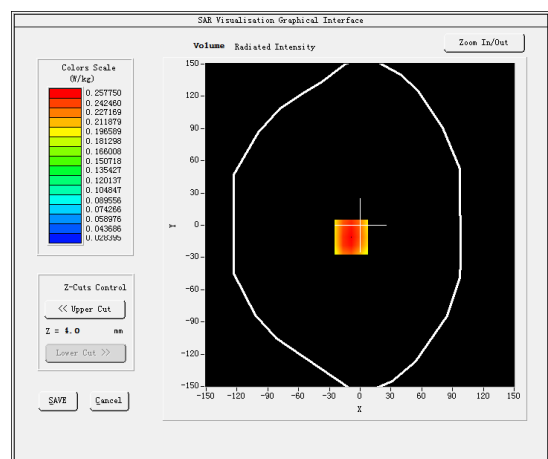
B. SAR Measurement Results

Frequency (MHz)	831.500000
Relative permittivity (real part)	41.352760
Relative permittivity (imaginary part)	19.299545
Conductivity (S/m)	0.891532
Variation (%)	-0.490000

SURFACE SAR



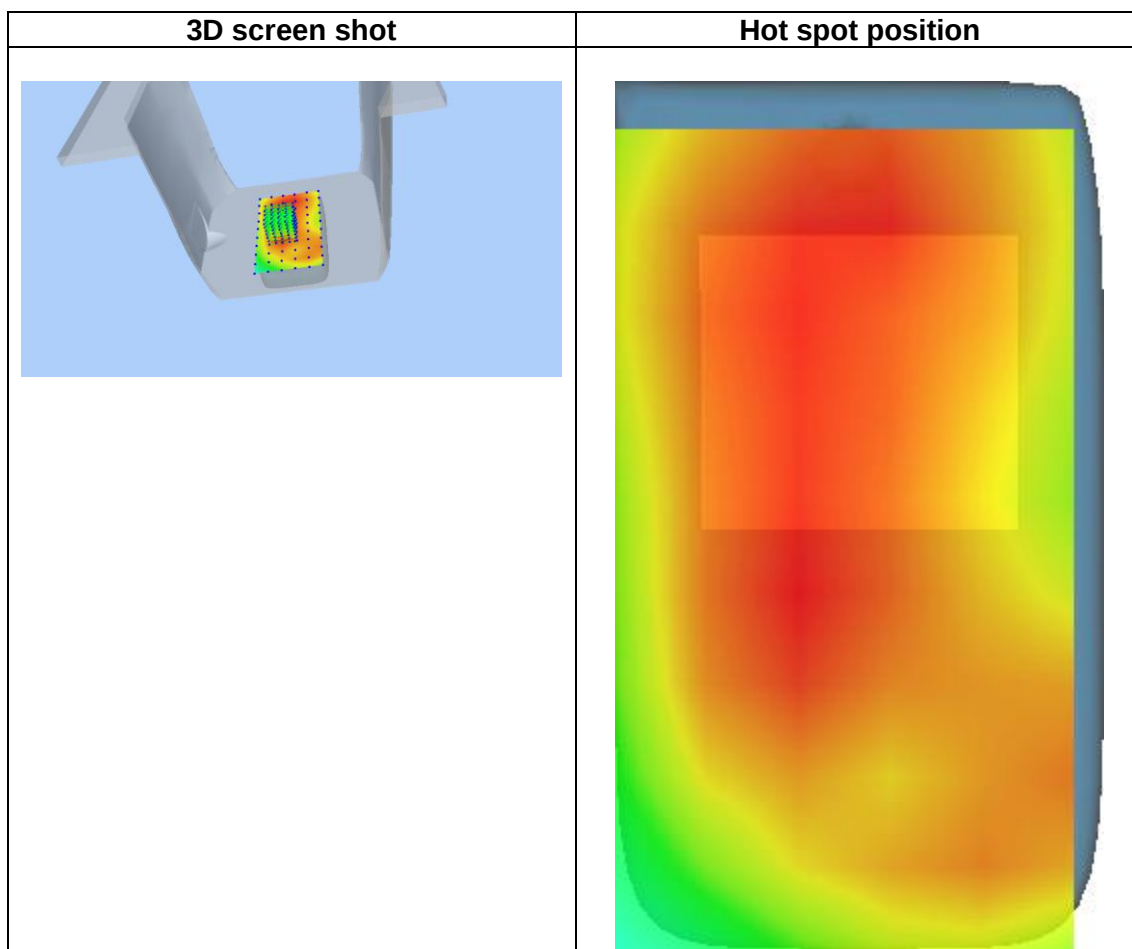
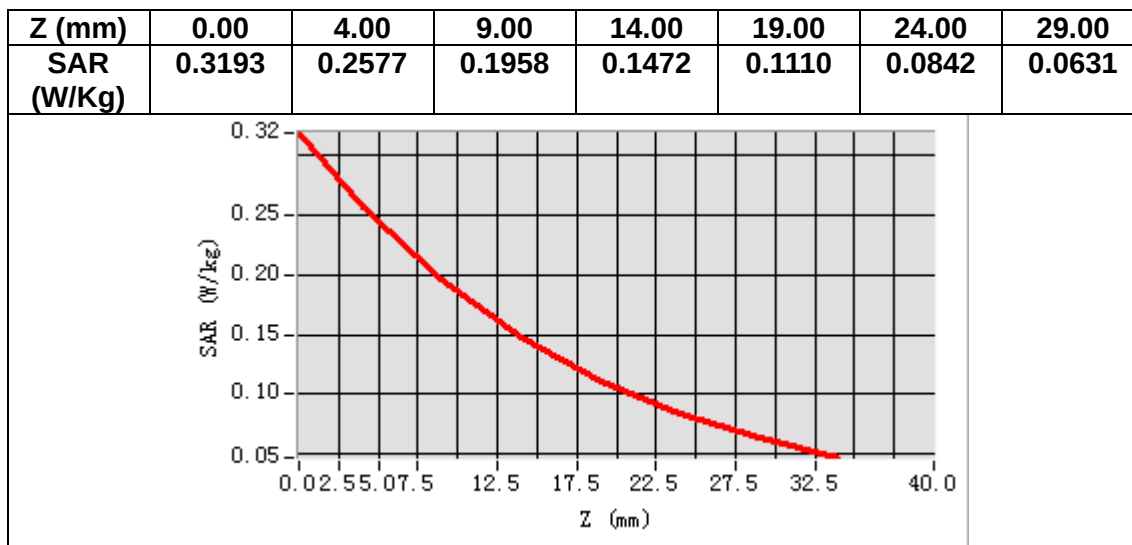
VOLUME SAR



Maximum location: X=-9.00, Y=-11.00

SAR Peak: 0.32 W/kg

SAR 10g (W/Kg)	0.177684
SAR 1g (W/Kg)	0.249014



MEASUREMENT 37

Date of measurement: 29/2/2024

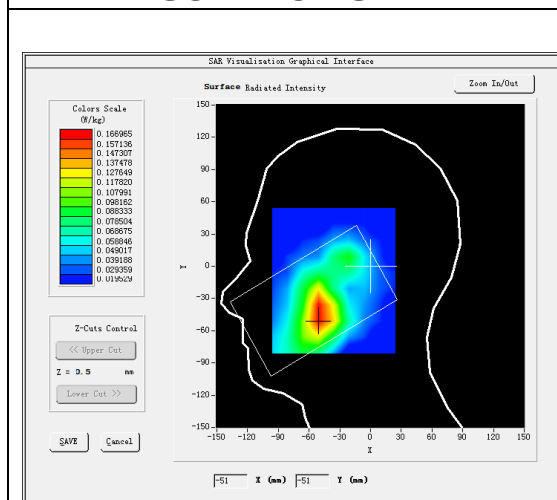
A. Experimental conditions.

<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>2.45</u>

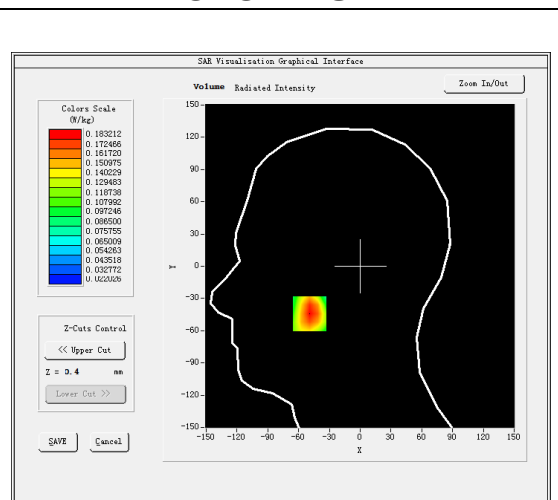
B. SAR Measurement Results

Frequency (MHz)	1745.000000
Relative permittivity (real part)	39.592205
Relative permittivity (imaginary part)	13.853663
Conductivity (S/m)	1.343036
Variation (%)	0.350000

SURFACE SAR



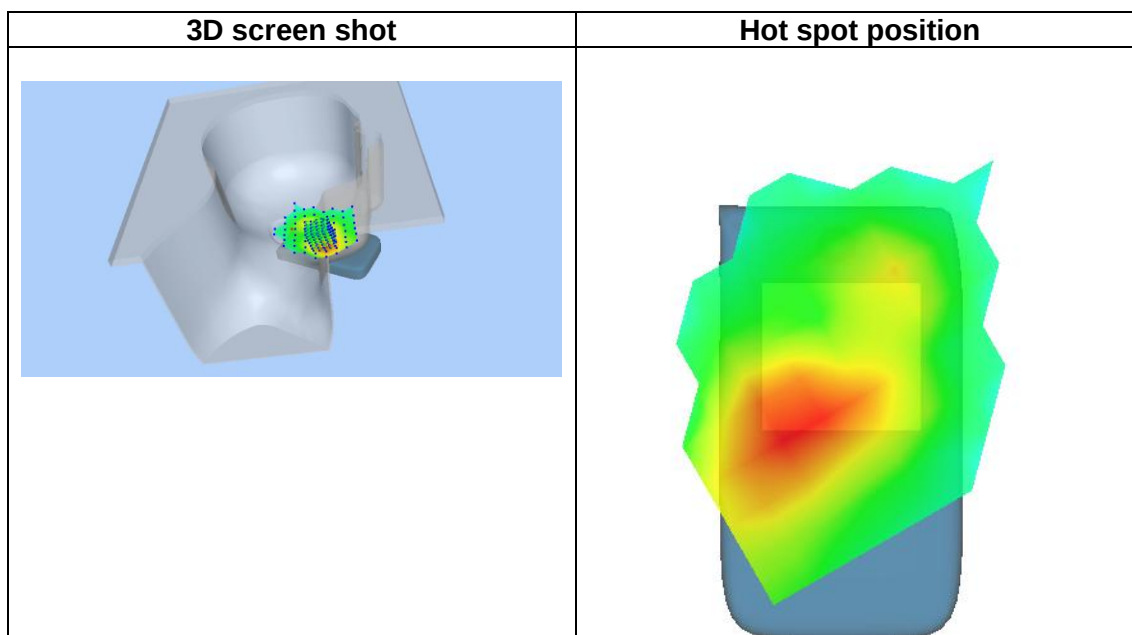
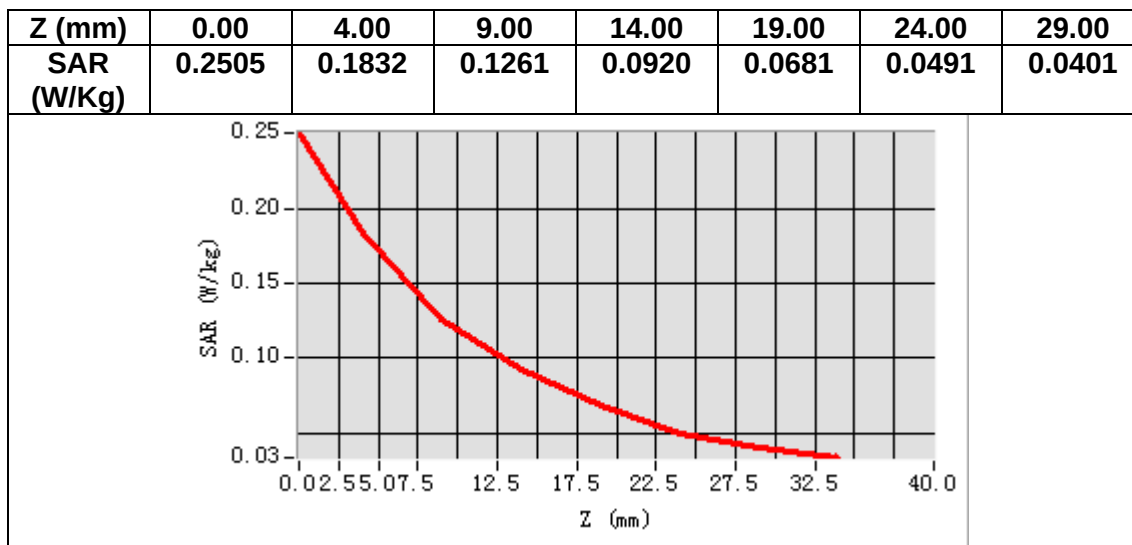
VOLUME SAR



Maximum location: X=-49.00, Y=-44.00

SAR Peak: 0.25 W/kg

SAR 10g (W/Kg)	0.114812
SAR 1g (W/Kg)	0.176395



MEASUREMENT 38

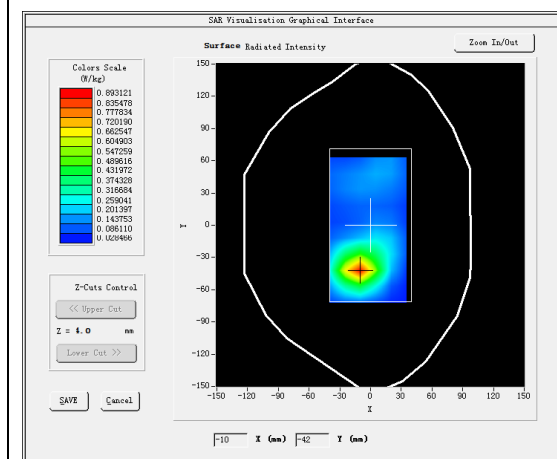
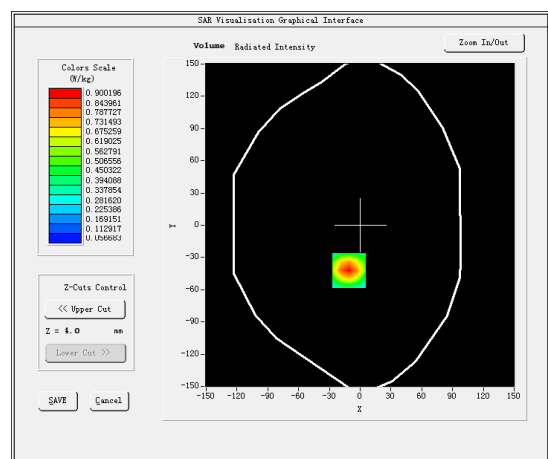
Date of measurement: 29/2/2024

A. Experimental conditions.

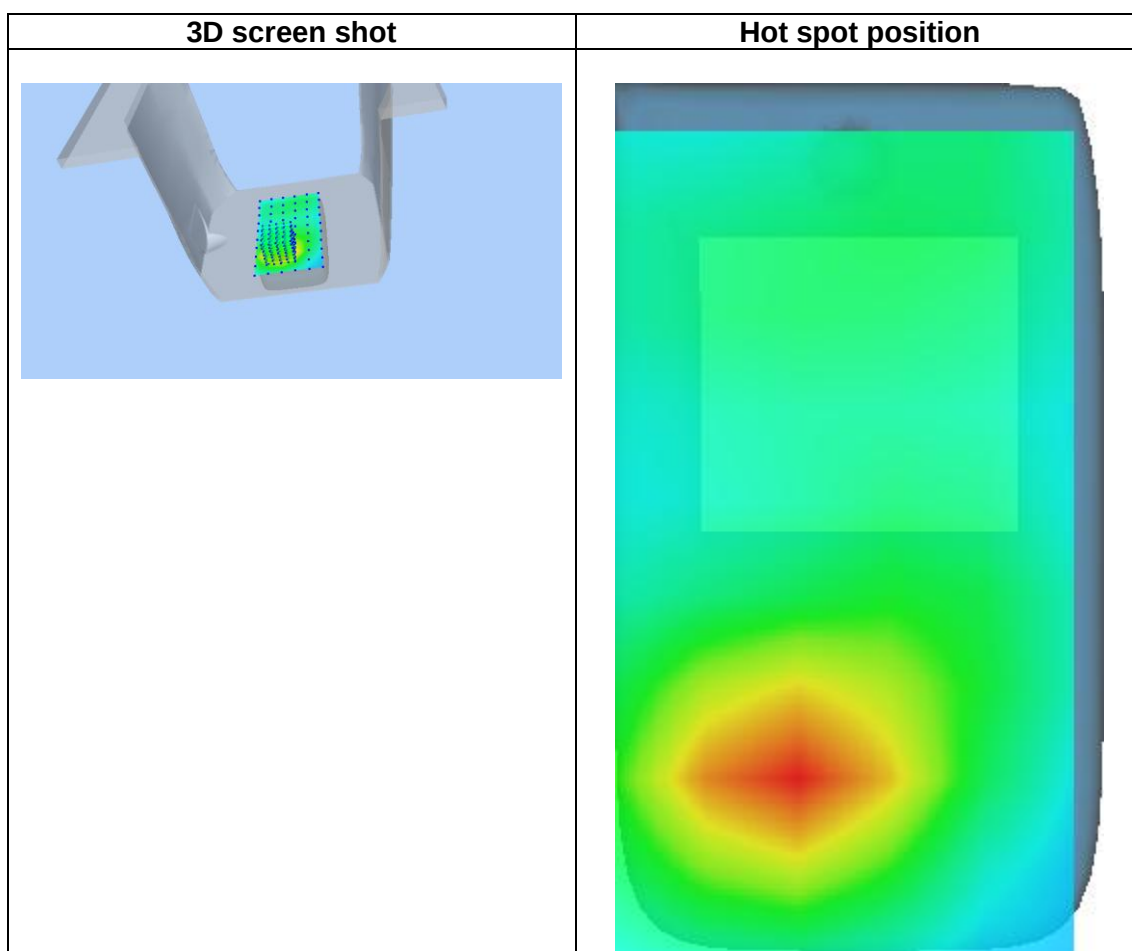
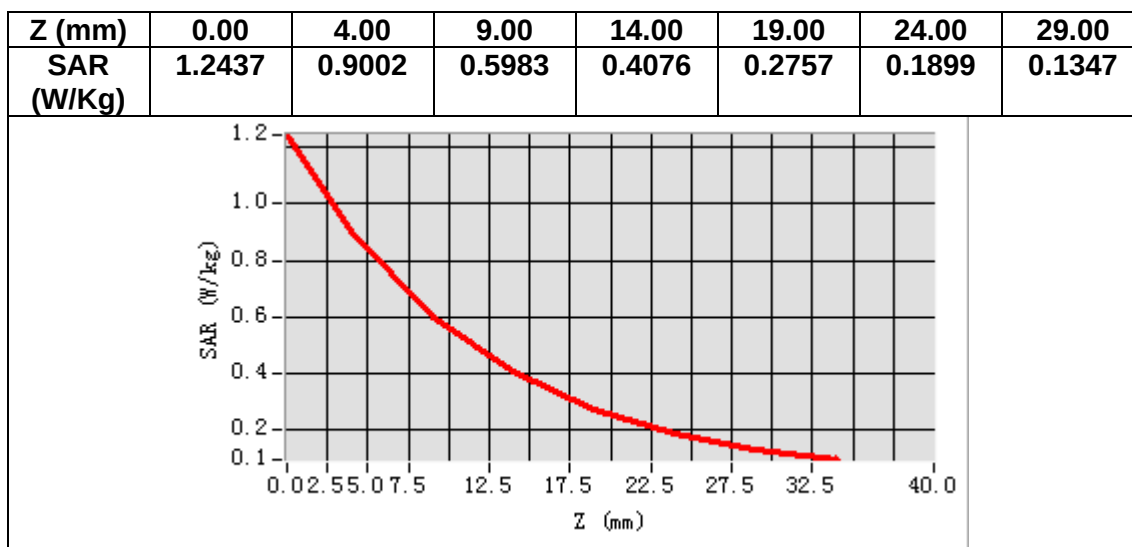
Area Scan	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7, dx=8mm dy=8mm dz=5mm</u>
Phantom	<u>Validation plane</u>
Device Position	<u>Body</u>
Band	<u>FDDBand66</u>
Channels	<u>Low</u>
Signal	<u>(Crest factor: 1.0)</u>
ConvF	<u>2.45</u>

B. SAR Measurement Results

Frequency (MHz)	1720.000000
Relative permittivity (real part)	39.786404
Relative permittivity (imaginary part)	13.846763
Conductivity (S/m)	1.323135
Variation (%)	-0.490000

SURFACE SAR**VOLUME SAR****Maximum location: X=-11.00, Y=-42.00****SAR Peak: 1.25 W/kg**

SAR 10g (W/Kg)	0.507078
SAR 1g (W/Kg)	0.846336



2. Appendix D. Calibration Certificate

Table of contents
E Field Probe - 3423-EPGO-426
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
Extended Calibration Certificate



COMOSAR E-Field Probe Calibration Report

Ref : ACR.261.11.23.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.: 3423-EPGO-426

Calibrated at MVG

Z.I. de la pointe du diable

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

Calibration date: 09/18/2023



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).



COMOSAR E-FIELD PROBE CALIBRATION REPORT

Ref: ACR.261.11.23.BES.A

	<i>Name</i>	<i>Function</i>	<i>Date</i>	<i>Signature</i>
<i>Prepared by :</i>	Cyrille ONNEE	Measurement Responsible	9/18/2023	
<i>Checked & approved by:</i>	Jérôme Luc	Technical Manager	9/18/2023	
<i>Authorized by:</i>	Yann Toutain	Laboratory Director	9/19/2023	

Yann
Toutain IDSignature
numérique de
Yann Toutain ID
Date : 2023.09.19
09:08:14 +02'00'

	<i>Customer Name</i>
<i>Distribution :</i>	SHENZHEN NTEK TESTING TECHNOLOGY CO., LTD.

<i>Issue</i>	<i>Name</i>	<i>Date</i>	<i>Modifications</i>
A	Cyrille ONNEE	9/18/2023	Initial release



COMOSAR E-FIELD PROBE CALIBRATION REPORT

Ref: ACR.261.11.23.BES.A

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COMOSAR E-FIELD PROBE CALIBRATION REPORT

Ref: ACR.261.11.23.BES.A

1 DEVICE UNDER TEST

Device Under Test	
Device Type	COMOSAR DOSIMETRIC E FIELD PROBE
Manufacturer	MVG
Model	SSE2
Serial Number	3423-EPGO-426
Product Condition (new / used)	New
Frequency Range of Probe	0.15 GHz-7.5GHz
Resistance of Three Dipoles at Connector	Dipole 1: R1=0.261 MΩ Dipole 2: R2=0.213 MΩ Dipole 3: R3=0.233 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.



COMOSAR E-FIELD PROBE CALIBRATION REPORT

Ref: ACR.261.11.23.BES.A

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:

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

where

$SAR_{uncertainty}$	is the uncertainty in percent of the probe boundary effect
d_{be}	is the distance between the surface and the closest <i>zoom-scan</i> 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., $\delta \approx 14$ 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 SARuncertainty[%] for scanning distances larger than 4mm is 1.0% Limit ,2%).



COMOSAR E-FIELD PROBE CALIBRATION REPORT

Ref: ACR.261.11.23.BES.A

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.

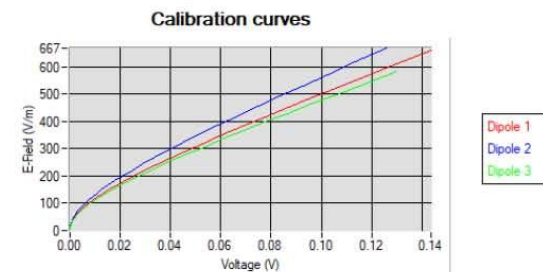
The estimated expanded uncertainty (k=2) in calibration for SAR (W/kg) is +/-14% for the frequency range 600-7500MHz.

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.

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

where

V_i =voltage readings on the 3 channels of the probe

DCP_i =diode compression point given below for the 3 channels of the probe

$Norm_i$ =dipole sensitivity given below for the 3 channels of the probe



COMOSAR E-FIELD PROBE CALIBRATION REPORT

Ref: ACR.261.11.23.BES.A

Normx dipole 1 ($\mu\text{V}/(\text{V}/\text{m})^2$)	Normy dipole 2 ($\mu\text{V}/(\text{V}/\text{m})^2$)	Normz dipole 3 ($\mu\text{V}/(\text{V}/\text{m})^2$)
0.78	0.62	0.85

DCP dipole 1 (mV)	DCP dipole 2 (mV)	DCP dipole 3 (mV)
105	108	107

5.2 CALIBRATION IN LIQUID

The calorimeter cell or the waveguide is used to determine the calibration in liquid using the formula below.

$$\text{ConvF} = \frac{E_{\text{liquid}}^2}{E_{\text{air}}^2}$$

The E-field in the liquid is determined from the SAR measurement according to the below formula.

$$E_{\text{liquid}}^2 = \frac{\rho \text{ SAR}}{\sigma}$$

where

σ =the conductivity of the liquid

ρ =the volumetric density of the liquid

SAR=the SAR measured from the formula that depends on the setup used. The SAR formulas are given below

For the calorimeter cell (150-450 MHz), the formula is:

$$\text{SAR} = c \frac{dT}{dt}$$

where

c =the specific heat for the liquid

dT/dt =the temperature rises over the time

For the waveguide setup (600-75000 MHz), the formula is:

$$\text{SAR} = \frac{4P_W}{ab\delta} e^{-\frac{2z}{\delta}}$$

where

a =the larger cross-sectional of the waveguide

b =the smaller cross-sectional of the waveguide

δ =the skin depth for the liquid in the waveguide

P_W =the power delivered to the liquid