

## MEASUREMENT 21

Date of measurement: 17/12/2024

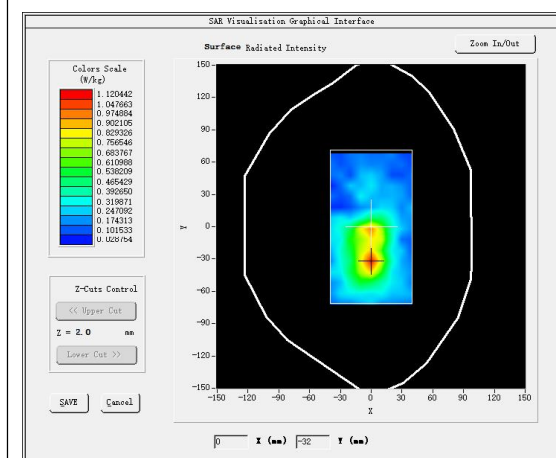
### A. Experimental conditions.

|                        |                                        |
|------------------------|----------------------------------------|
| <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>                            |

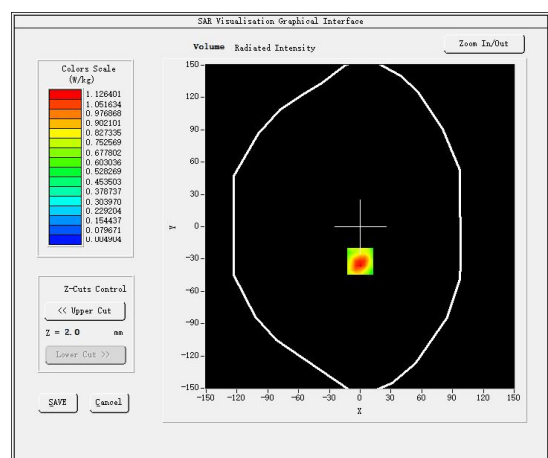
### B. SAR Measurement Results

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

#### SURFACE SAR



#### VOLUME SAR

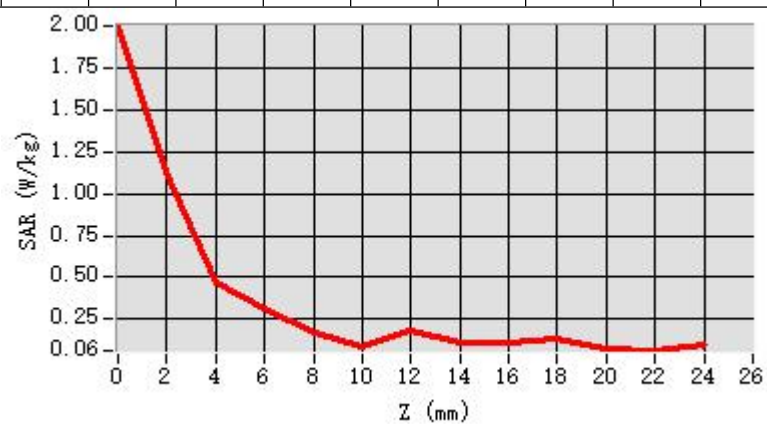


Maximum location: X=0.00, Y=-32.00

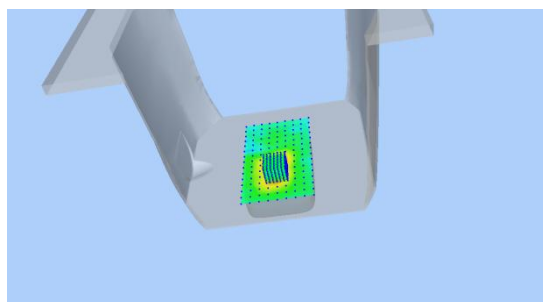
SAR Peak: 2.07 W/kg

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.319391 |
| <b>SAR 1g (W/Kg)</b>  | 0.677602 |

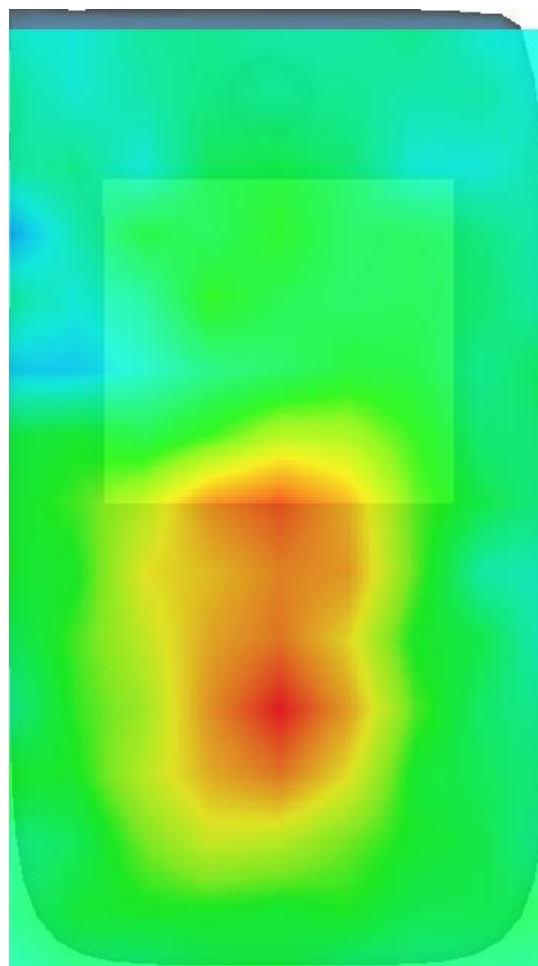
| Z<br>(m<br>m)     | 0.00       | 2.00       | 4.00       | 6.00       | 8.00       | 10.0<br>0  | 12.0<br>0  | 14.0<br>0  | 16.0<br>0  | 18.0<br>0  | 20.0<br>0  | 22.0<br>0  |
|-------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| SAR<br>(W/<br>Kg) | 2.00<br>06 | 1.12<br>64 | 0.47<br>00 | 0.31<br>95 | 0.17<br>01 | 0.08<br>79 | 0.18<br>66 | 0.10<br>86 | 0.11<br>59 | 0.13<br>81 | 0.07<br>76 | 0.06<br>23 |



**3D screen shot**



**Hot spot position**



## MEASUREMENT 22

Date of measurement: 27/12/2024

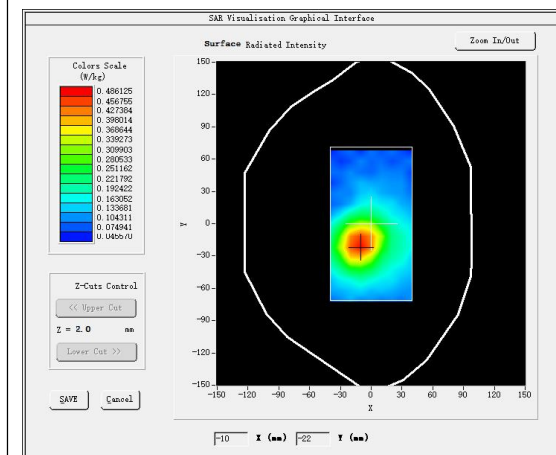
### A. Experimental conditions.

|                        |                                        |
|------------------------|----------------------------------------|
| <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>                            |

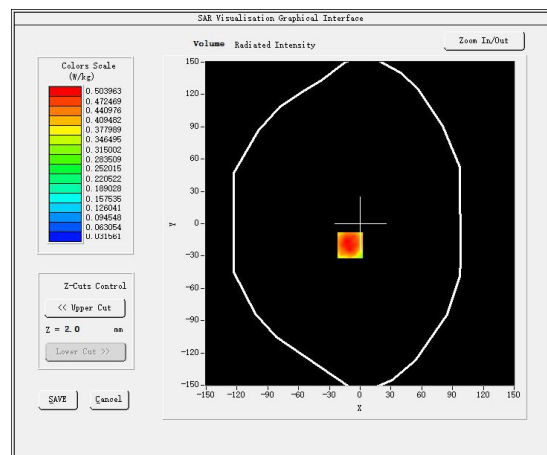
### B. SAR Measurement Results

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

#### SURFACE SAR



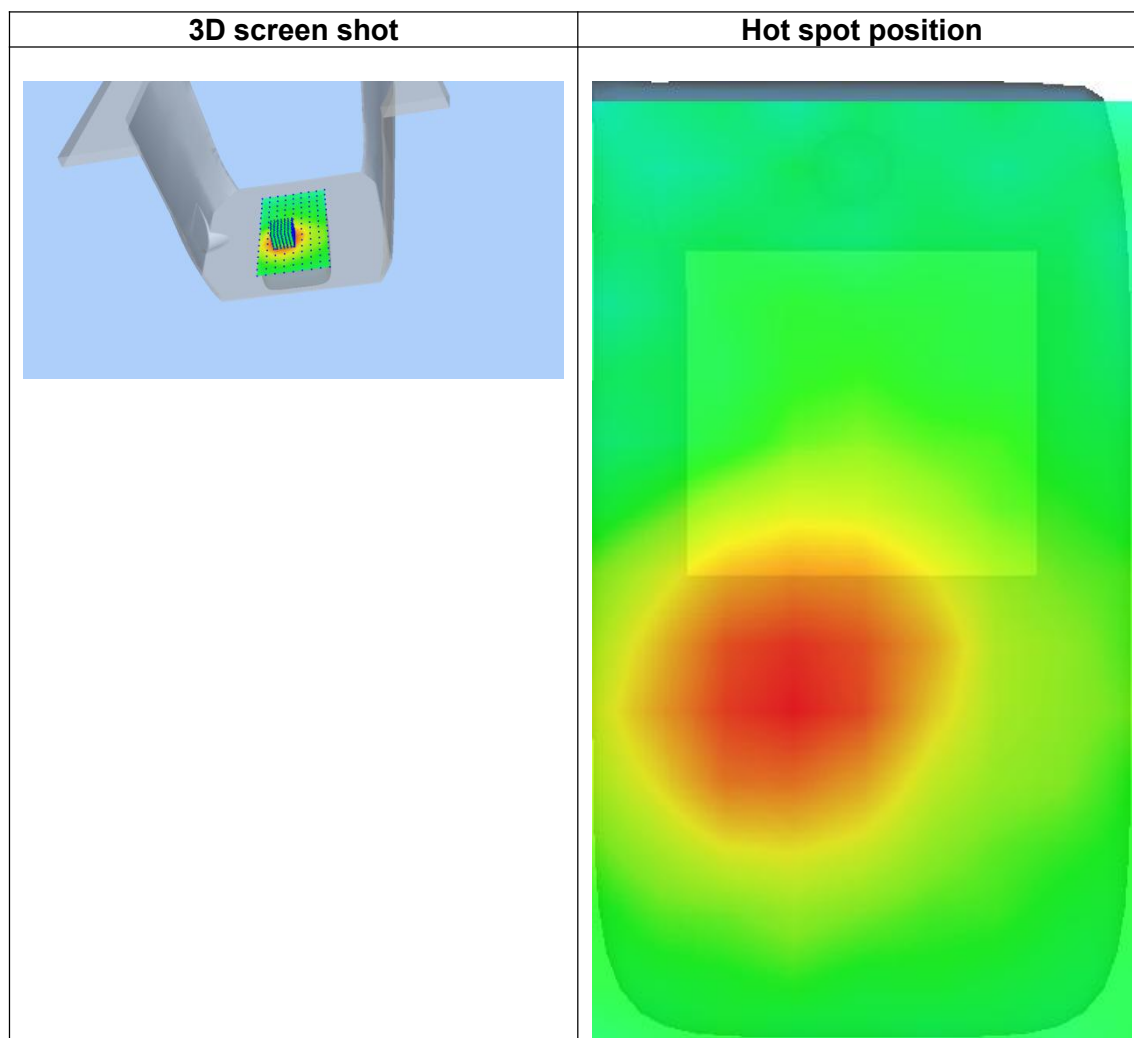
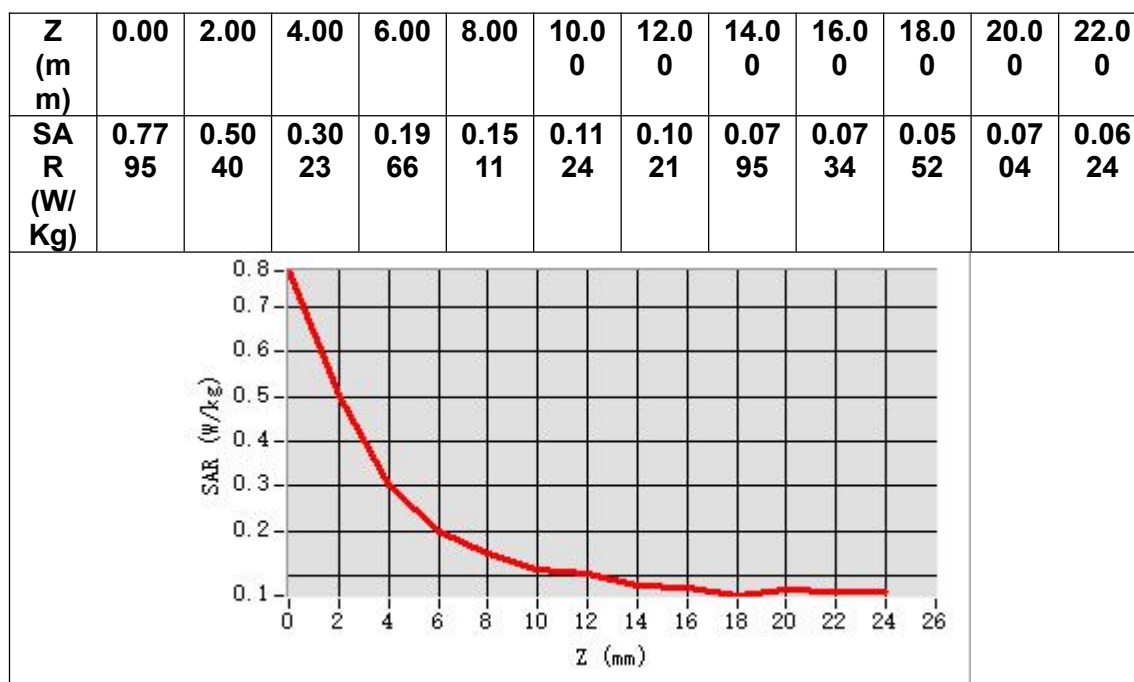
#### VOLUME SAR



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

SAR Peak: 0.83 W/kg

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.186524 |
| <b>SAR 1g (W/Kg)</b>  | 0.333527 |



## MEASUREMENT 23

Date of measurement: 17/12/2024

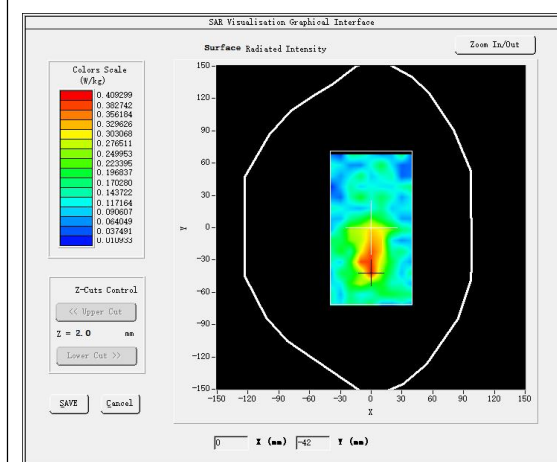
### A. Experimental conditions.

|                        |                                      |
|------------------------|--------------------------------------|
| <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>                          |

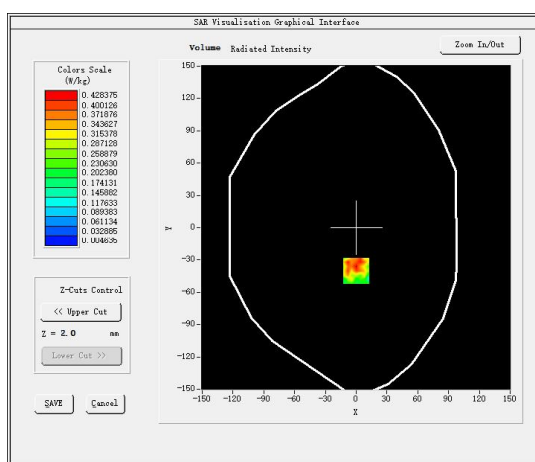
### B. SAR Measurement Results

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

#### SURFACE SAR



#### VOLUME SAR



Maximum location: X=0.00, Y=-40.00

SAR Peak: 0.83 W/kg

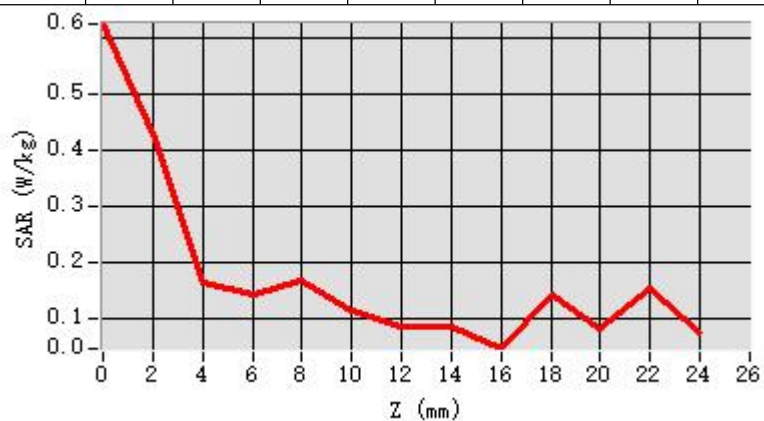
SAR 10g (W/Kg)

0.157637

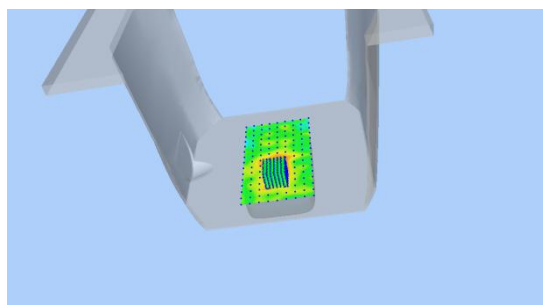
**SAR 1g (W/Kg)**

**0.276249**

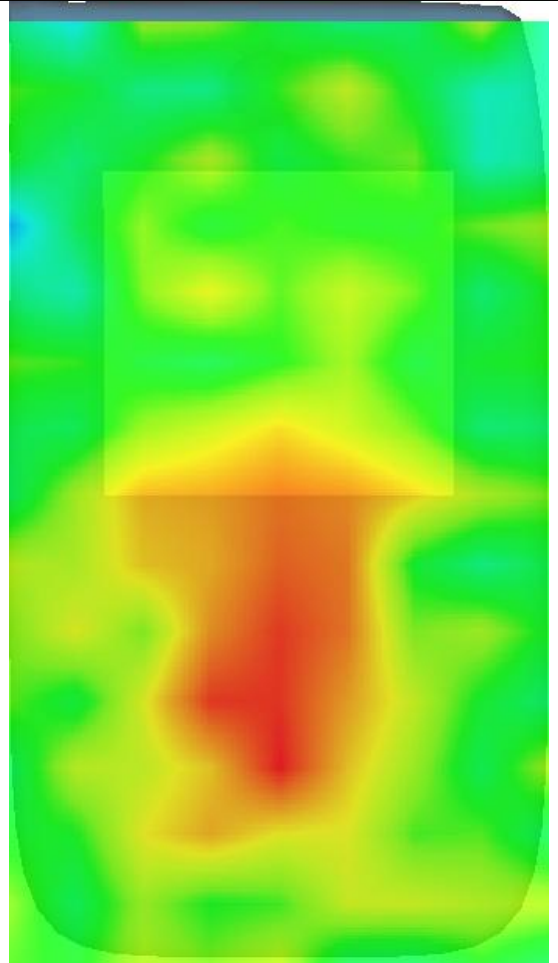
| Z<br>(m<br>m)         | 0.00       | 2.00       | 4.00       | 6.00       | 8.00       | 10.0       | 12.0       | 14.0       | 16.0       | 18.0       | 20.0       | 22.0       |
|-----------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|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



**3D screen shot**



**Hot spot position**



## MEASUREMENT 24

Date of measurement: 27/12/2024

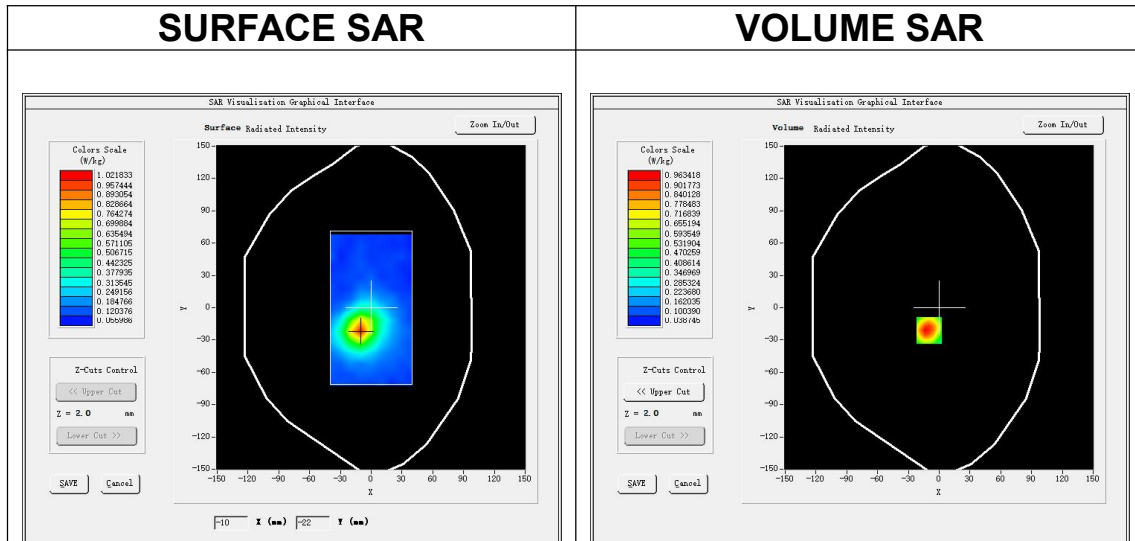
### A. Experimental conditions.

|                        |                                        |
|------------------------|----------------------------------------|
| <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<br>(imaginary part) | 15.561054 |
| Conductivity (S/m)                        | 4.495416  |
| Variation (%)                             | -4.830000 |

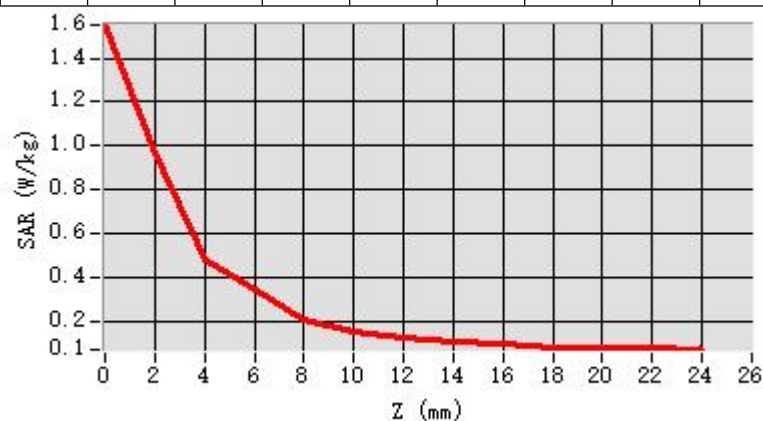


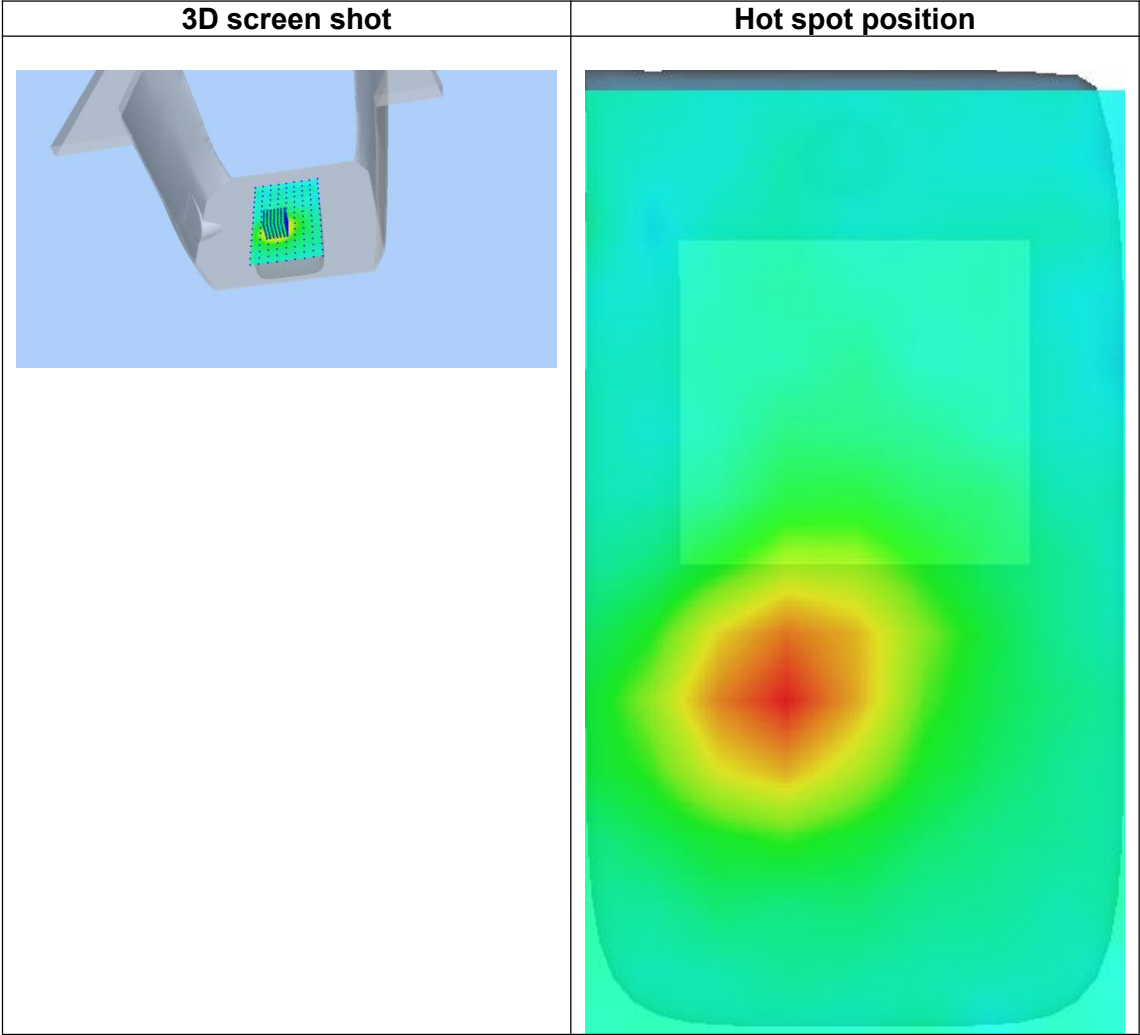
Maximum location: X=-10.00, Y=-21.00

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 |





## MEASUREMENT 25

Date of measurement: 12/12/2024

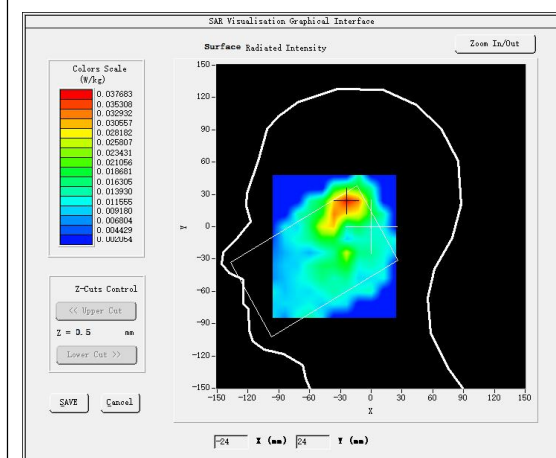
### A. Experimental conditions.

|                        |                                        |
|------------------------|----------------------------------------|
| <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 802.11b 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>                            |

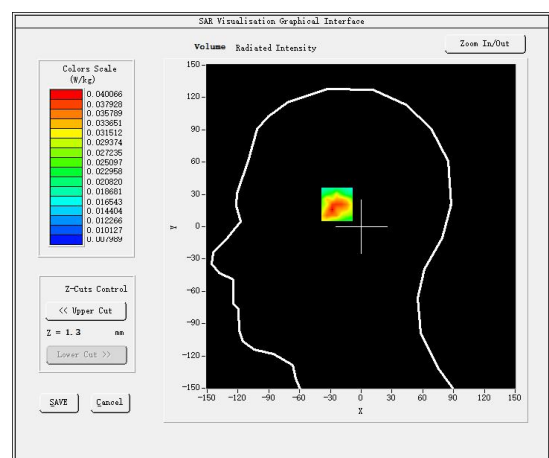
### B. SAR Measurement Results

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

#### SURFACE SAR



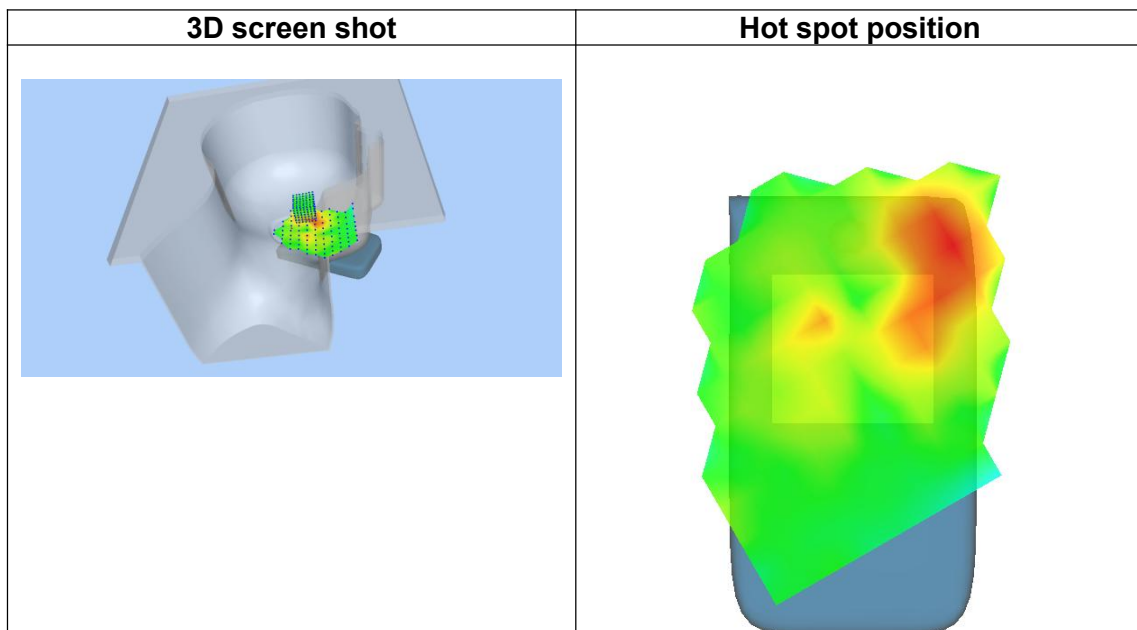
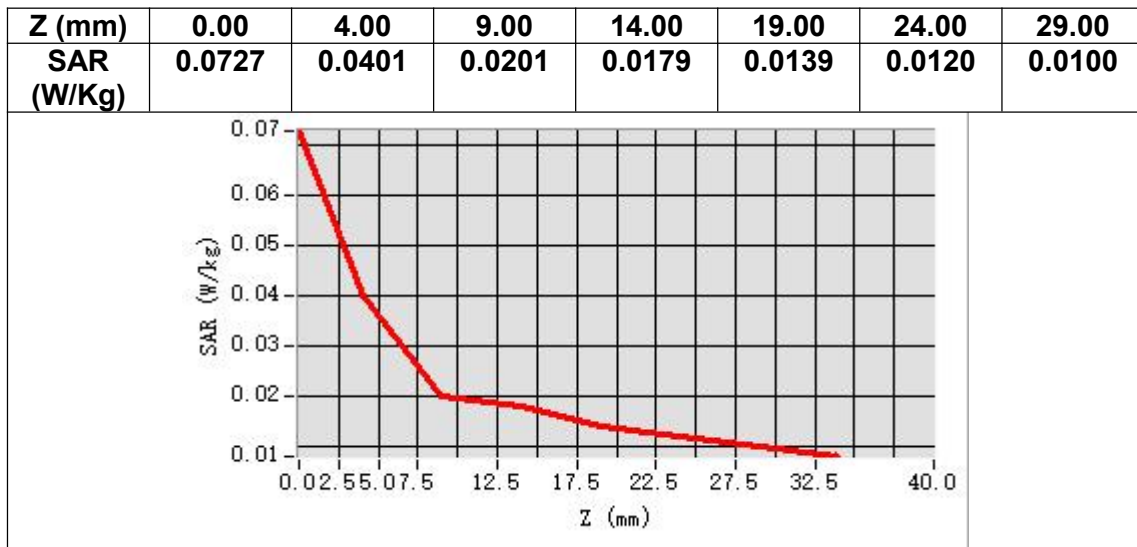
#### VOLUME SAR



Maximum location: X=-23.00, Y=23.00

SAR Peak: 0.06 W/kg

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.023444 |
| <b>SAR 1g (W/Kg)</b>  | 0.036731 |



## MEASUREMENT 26

Date of measurement: 12/12/2024

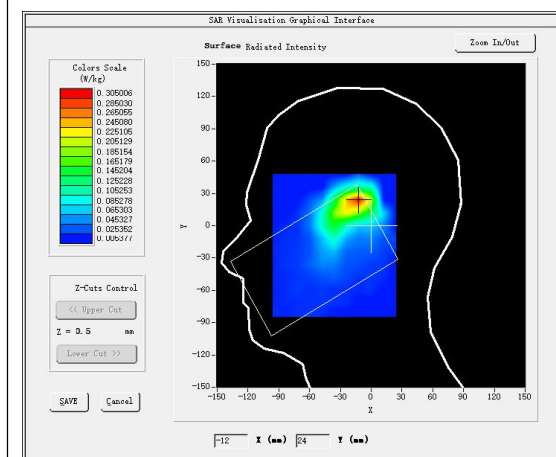
### A. Experimental conditions.

|                        |                                        |
|------------------------|----------------------------------------|
| <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>                            |

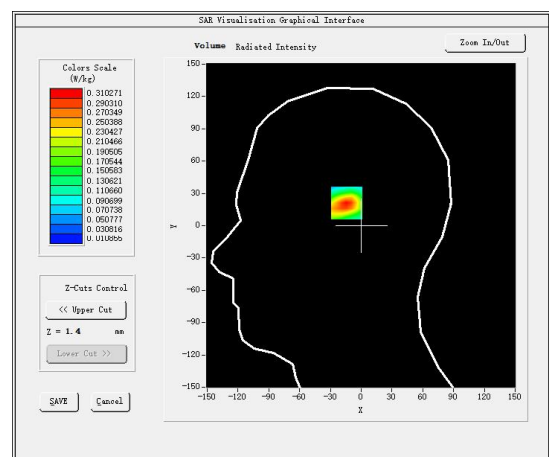
### B. SAR Measurement Results

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

#### SURFACE SAR



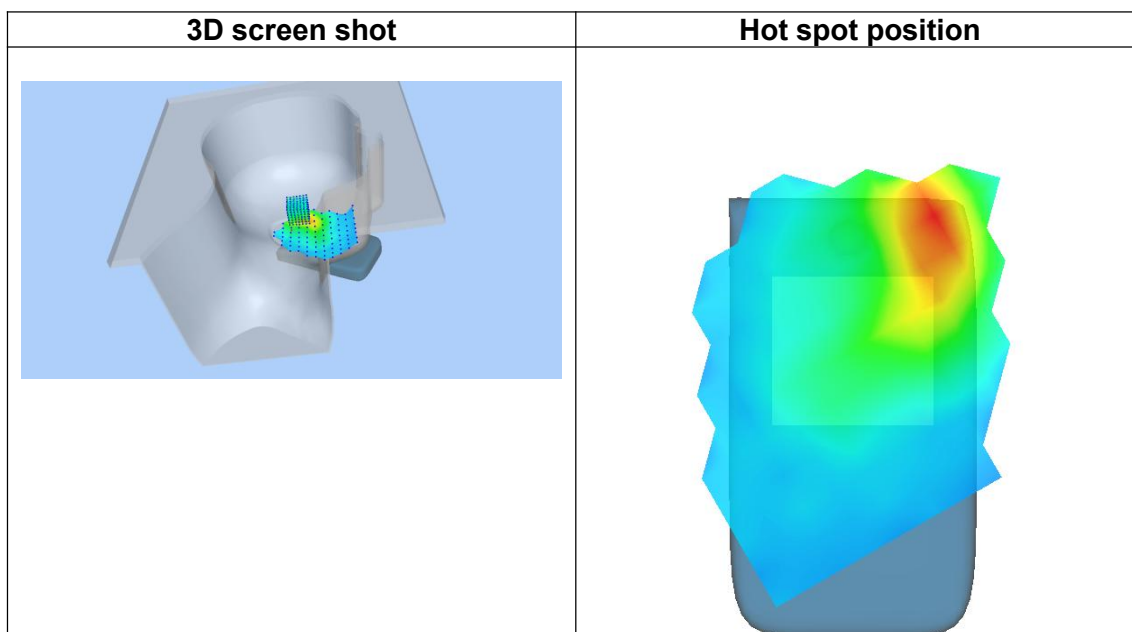
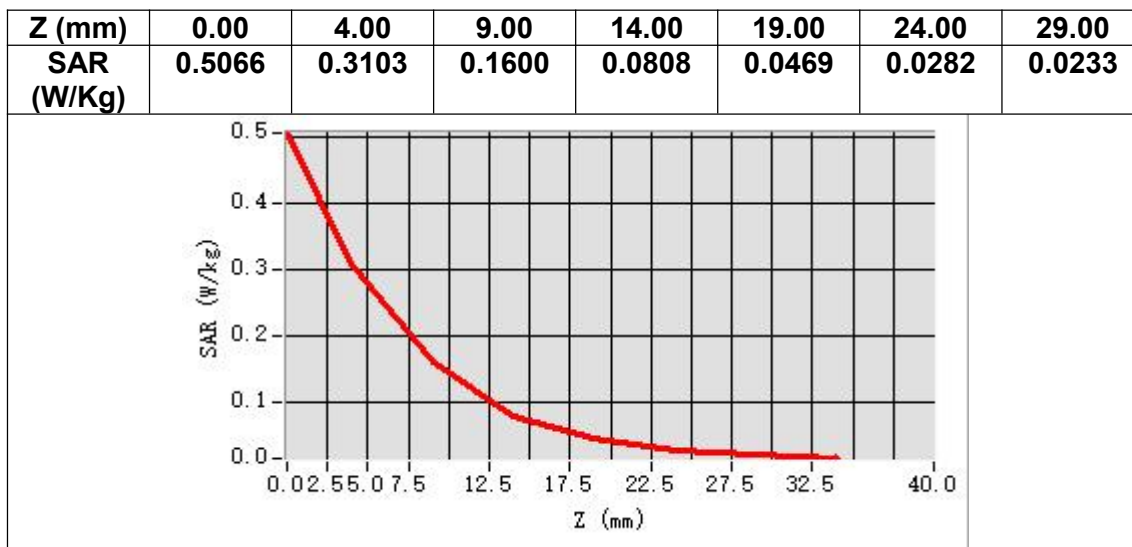
#### VOLUME SAR



Maximum location: X=-13.00, Y=23.00

SAR Peak: 0.51 W/kg

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.143059 |
| <b>SAR 1g (W/Kg)</b>  | 0.283871 |



## MEASUREMENT 27

Date of measurement: 12/12/2024

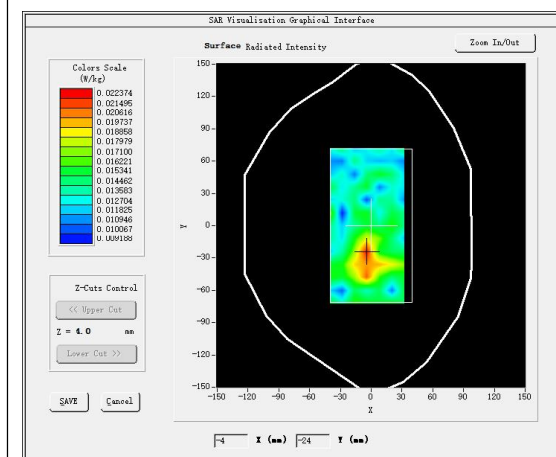
### A. Experimental conditions.

|                        |                                        |
|------------------------|----------------------------------------|
| <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>                            |

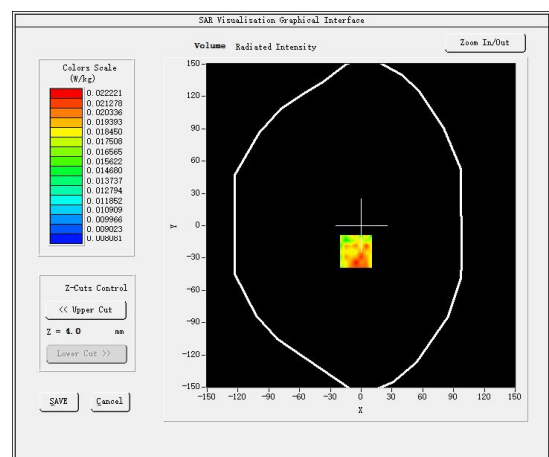
### B. SAR Measurement Results

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

#### SURFACE SAR



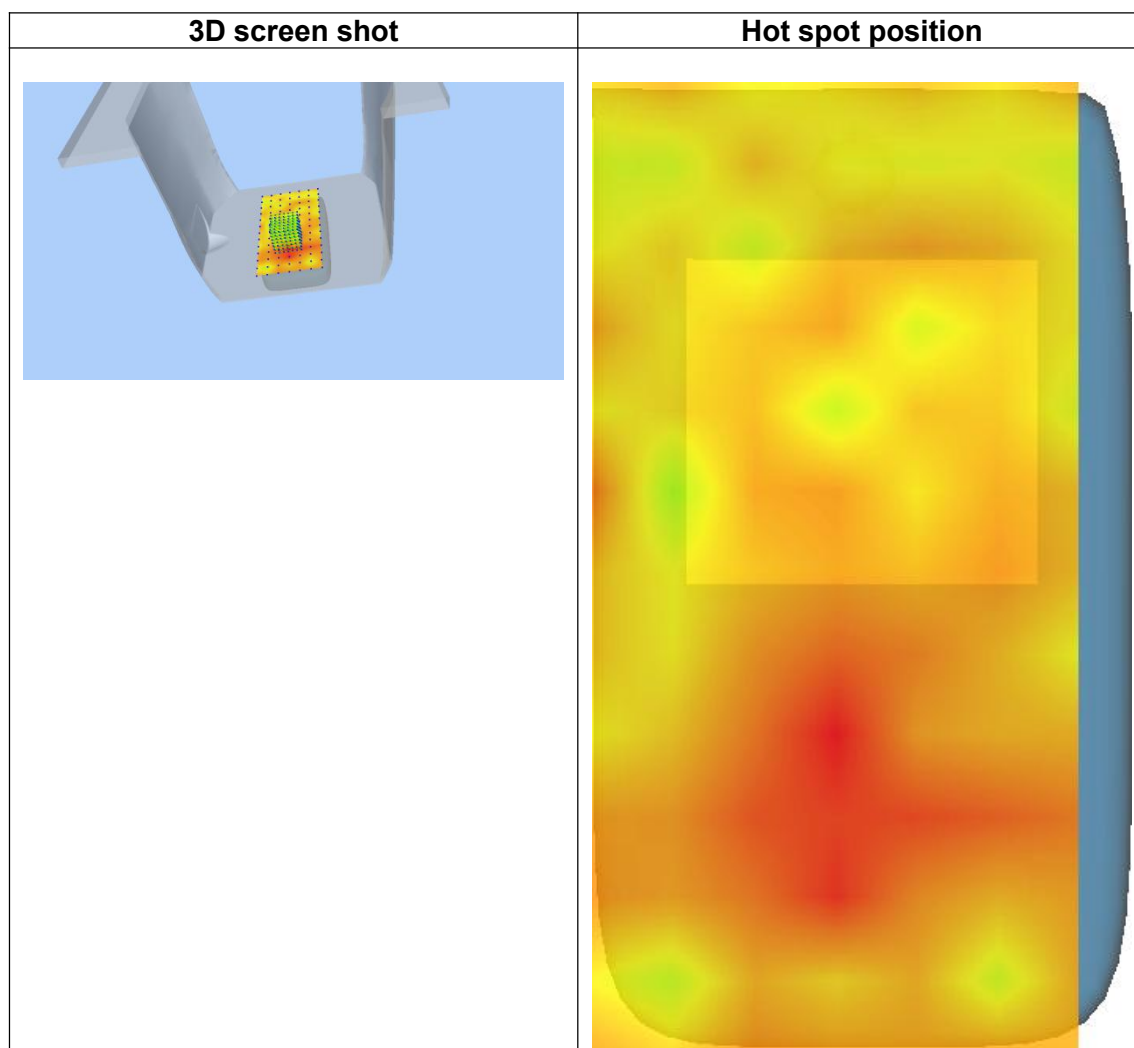
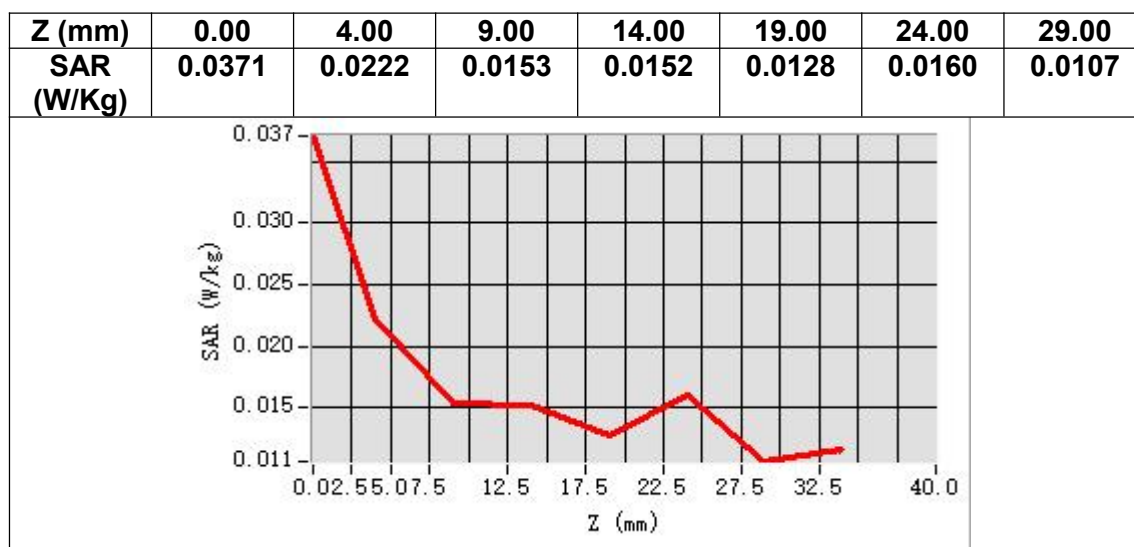
#### VOLUME SAR



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

SAR Peak: 0.04 W/kg

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.016159 |
| <b>SAR 1g (W/Kg)</b>  | 0.019713 |



## MEASUREMENT 28

Date of measurement: 12/12/2024

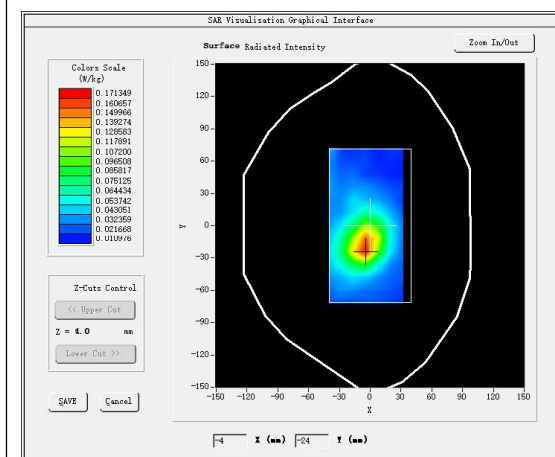
### A. Experimental conditions.

|                        |                                        |
|------------------------|----------------------------------------|
| <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>                            |

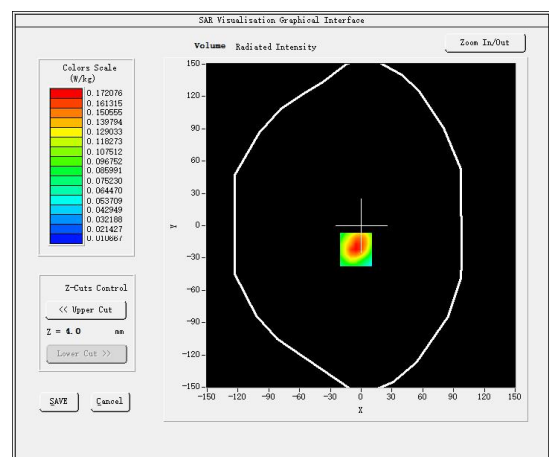
### B. SAR Measurement Results

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

#### SURFACE SAR



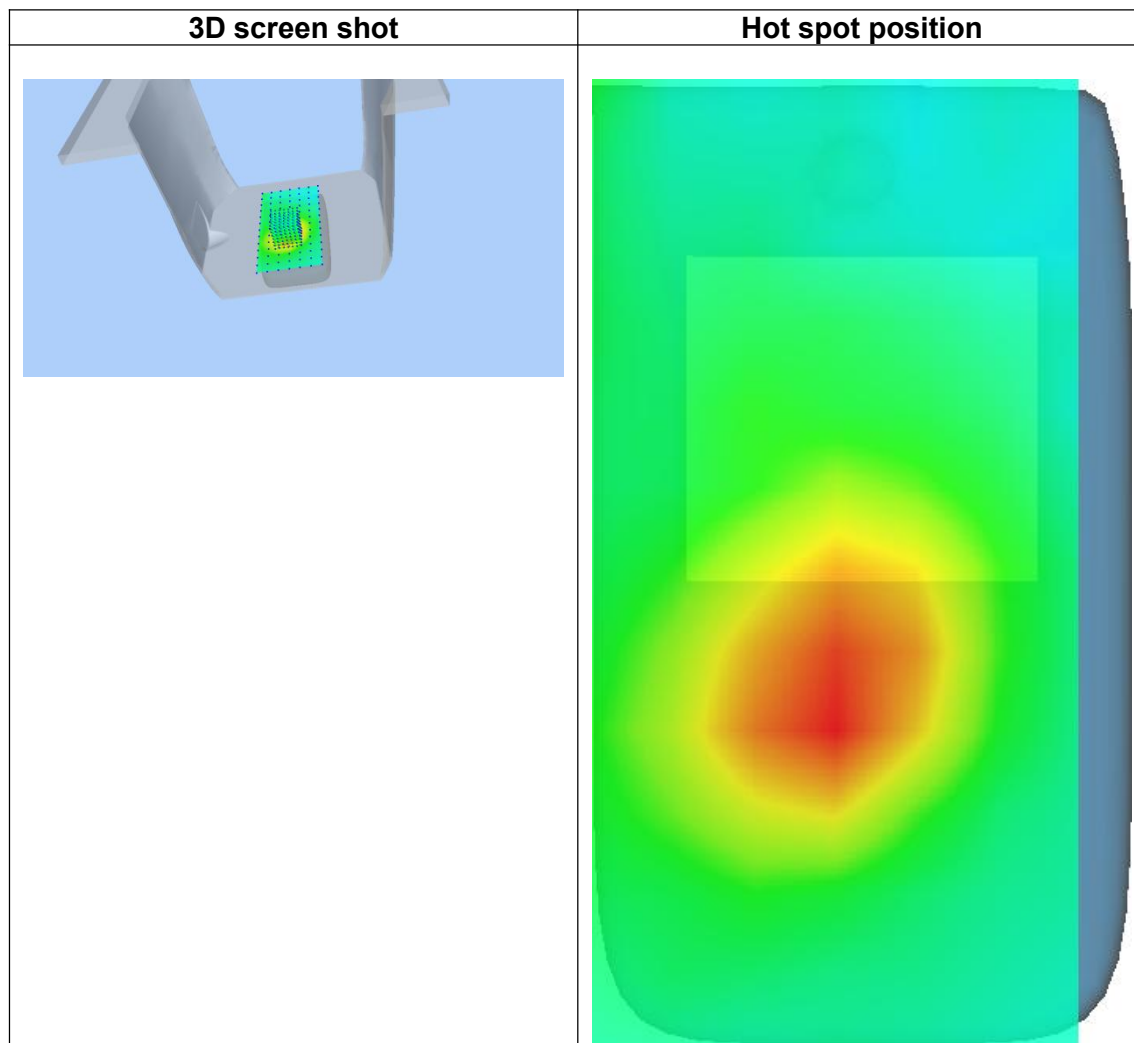
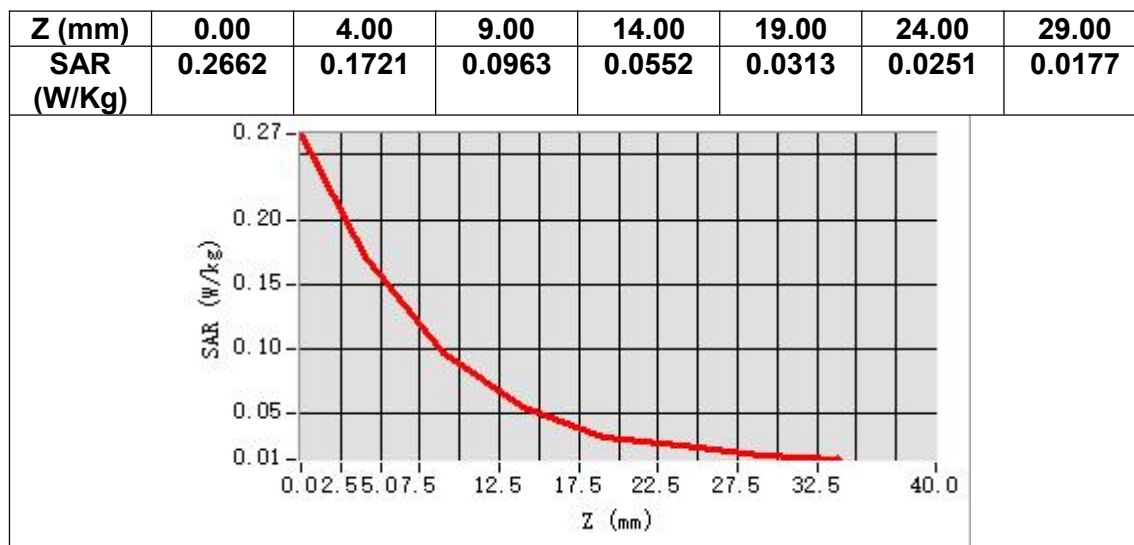
#### VOLUME SAR



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

SAR Peak: 0.27 W/kg

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.088988 |
| <b>SAR 1g (W/Kg)</b>  | 0.161721 |



## MEASUREMENT 29

Date of measurement: 9/12/2024

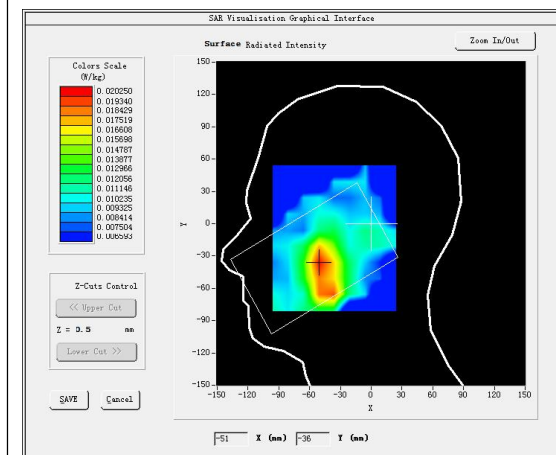
### A. Experimental conditions.

|                        |                                    |
|------------------------|------------------------------------|
| <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>                        |

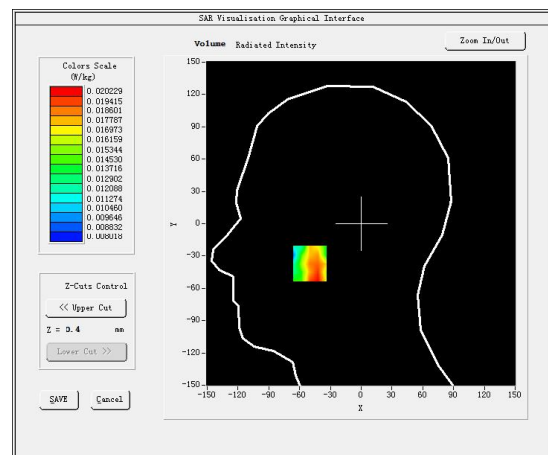
### B. SAR Measurement Results

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

#### SURFACE SAR



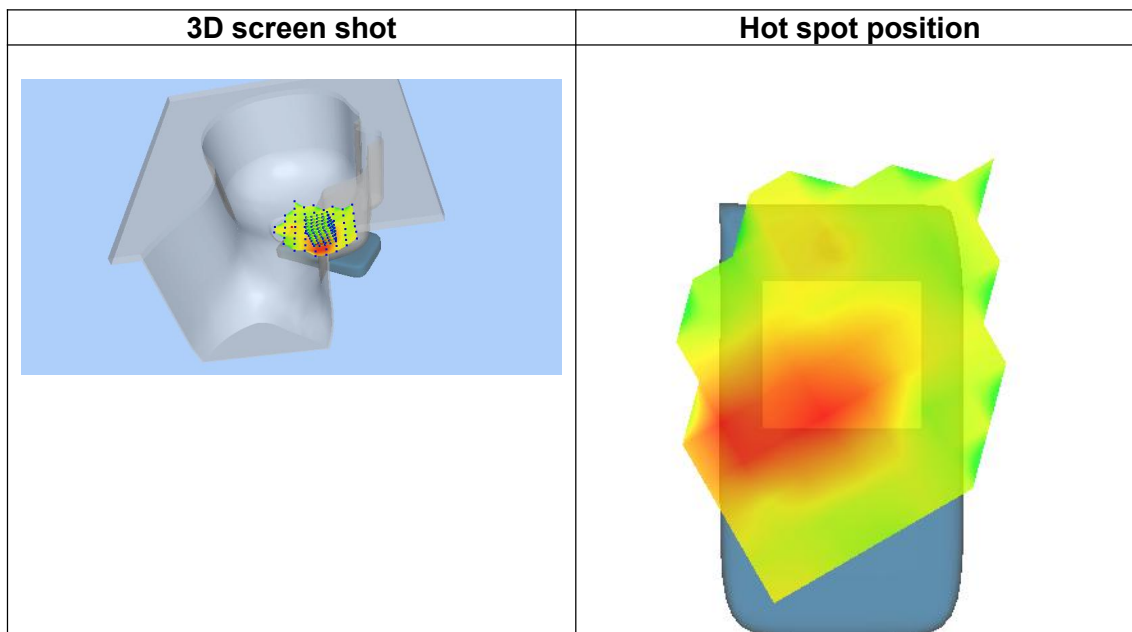
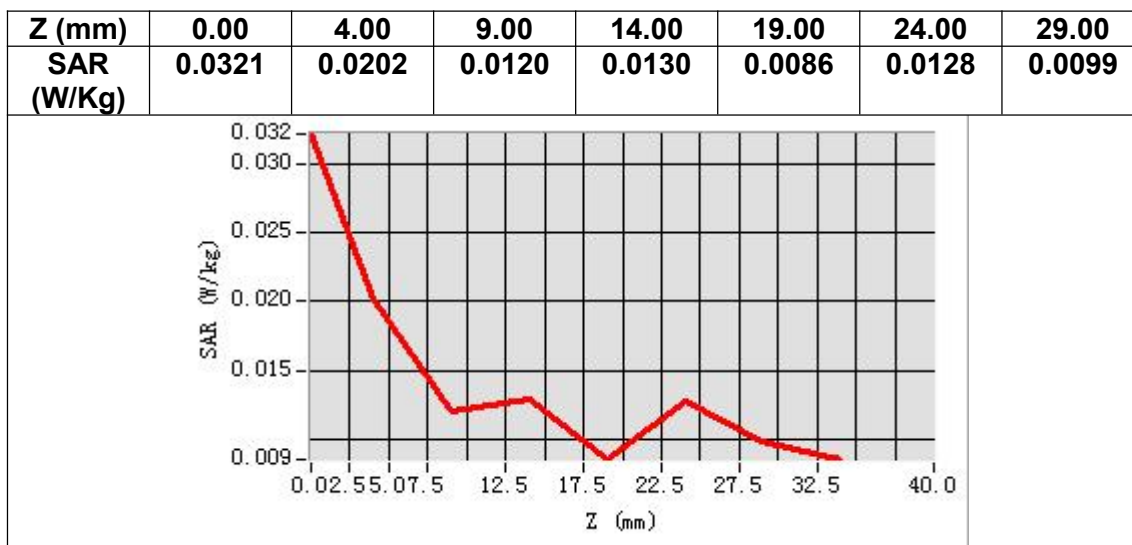
#### VOLUME SAR



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

SAR Peak: 0.03 W/kg

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.015361 |
| <b>SAR 1g (W/Kg)</b>  | 0.020890 |



## MEASUREMENT 30

Date of measurement: 9/12/2024

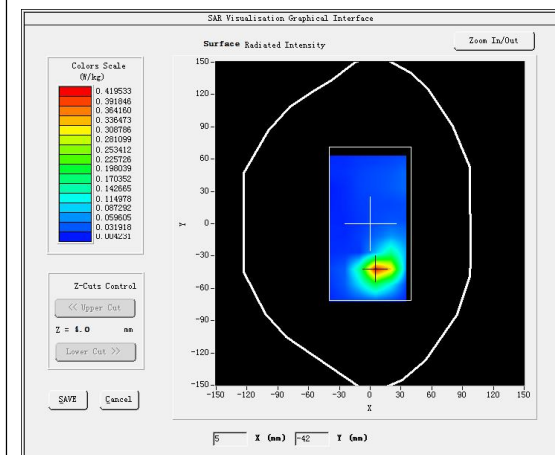
### A. Experimental conditions.

|                        |                                    |
|------------------------|------------------------------------|
| <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>                        |

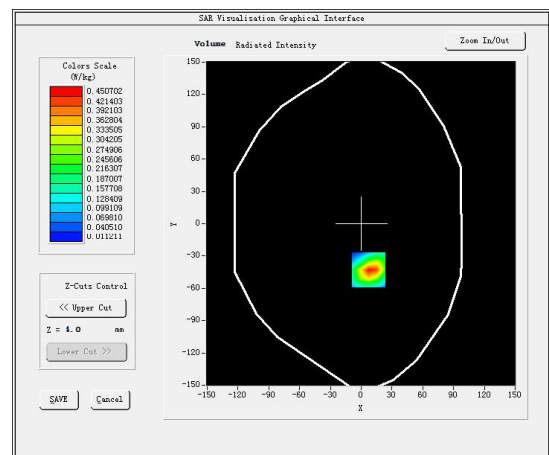
### B. SAR Measurement Results

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

#### SURFACE SAR



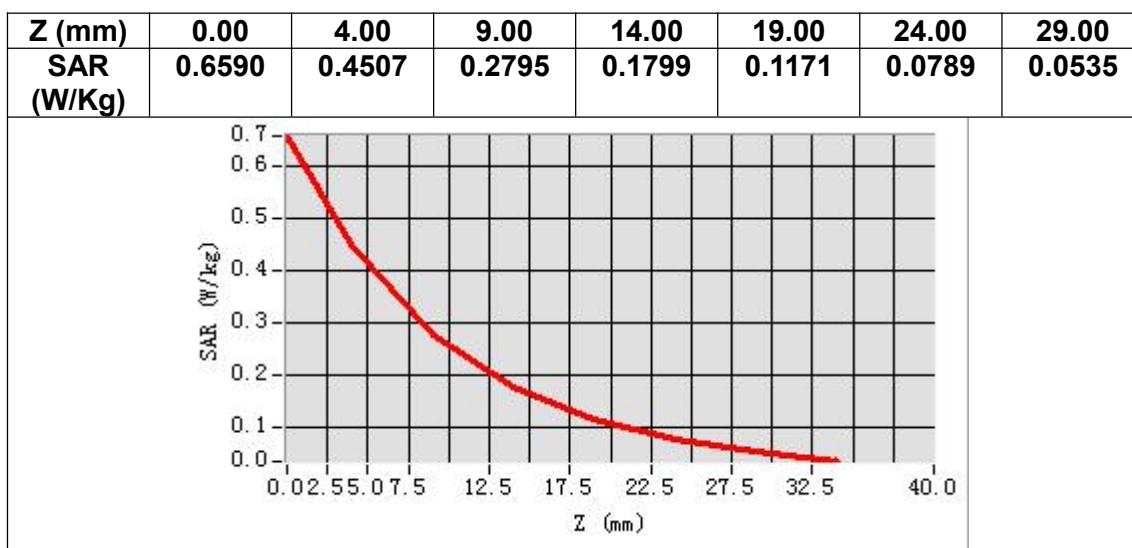
#### VOLUME SAR



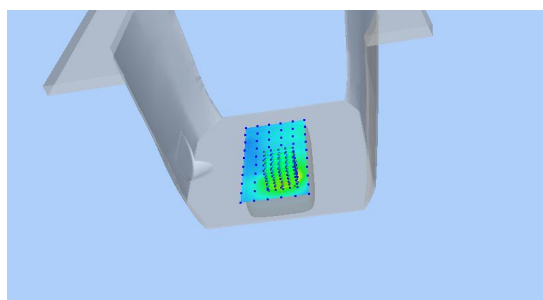
Maximum location: X=7.00, Y=-43.00

SAR Peak: 0.67 W/kg

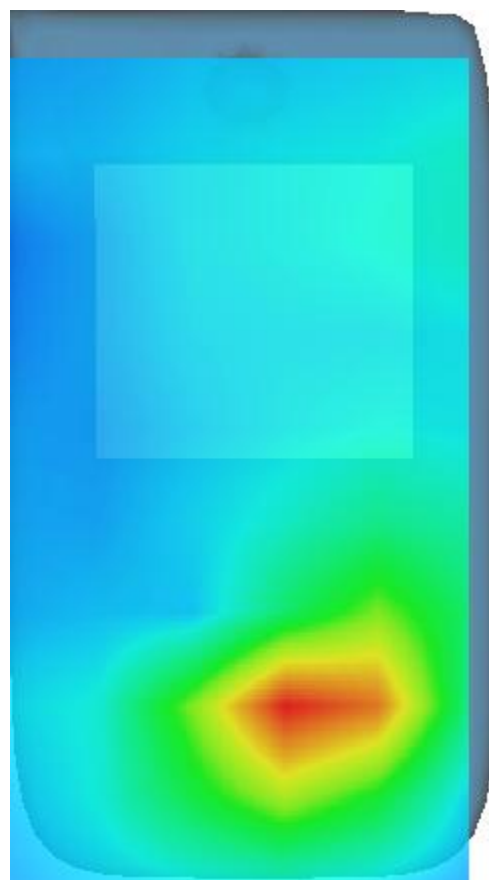
|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.225465 |
| <b>SAR 1g (W/Kg)</b>  | 0.430390 |



3D screen shot



Hot spot position



## MEASUREMENT 31

Date of measurement: 6/12/2024

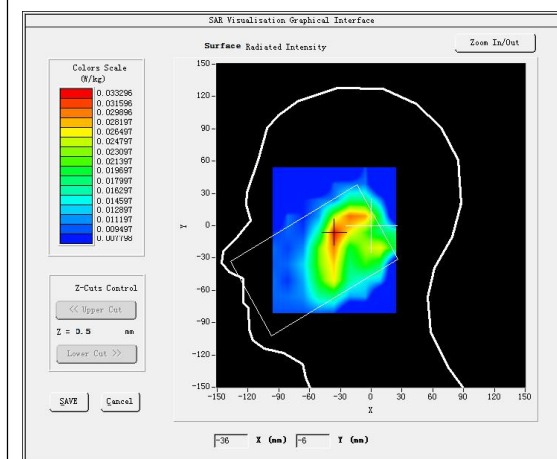
### A. Experimental conditions.

|                        |                                    |
|------------------------|------------------------------------|
| <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>                        |

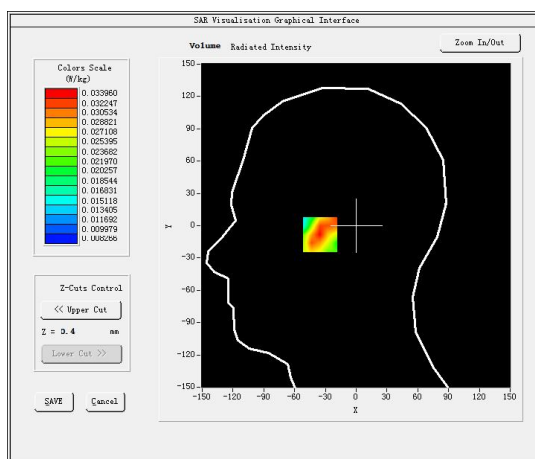
### B. SAR Measurement Results

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

#### SURFACE SAR



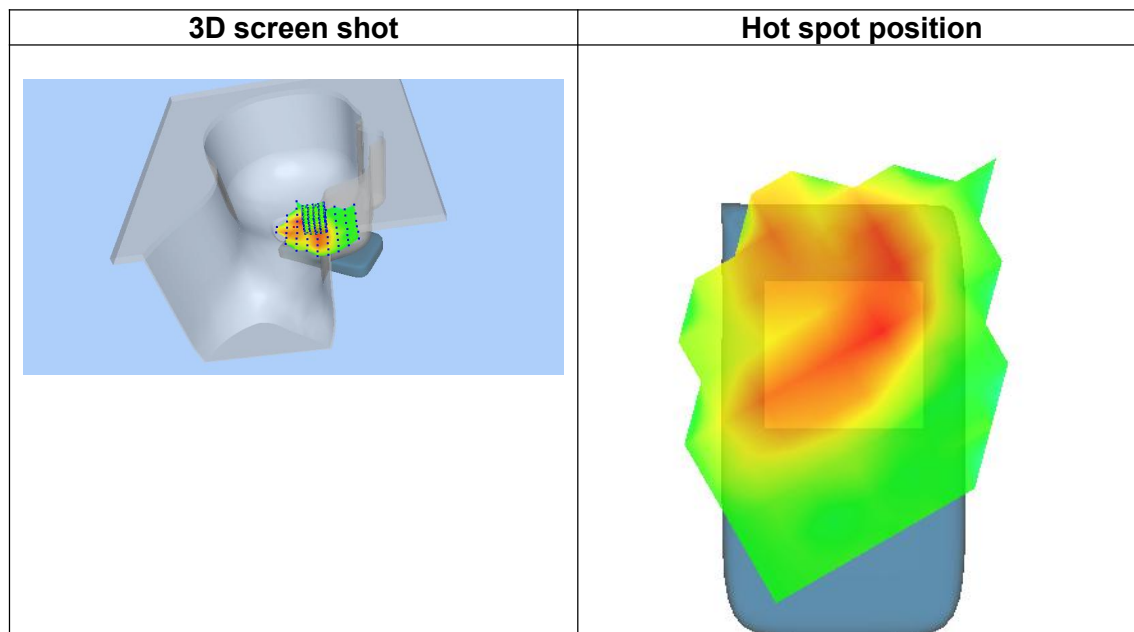
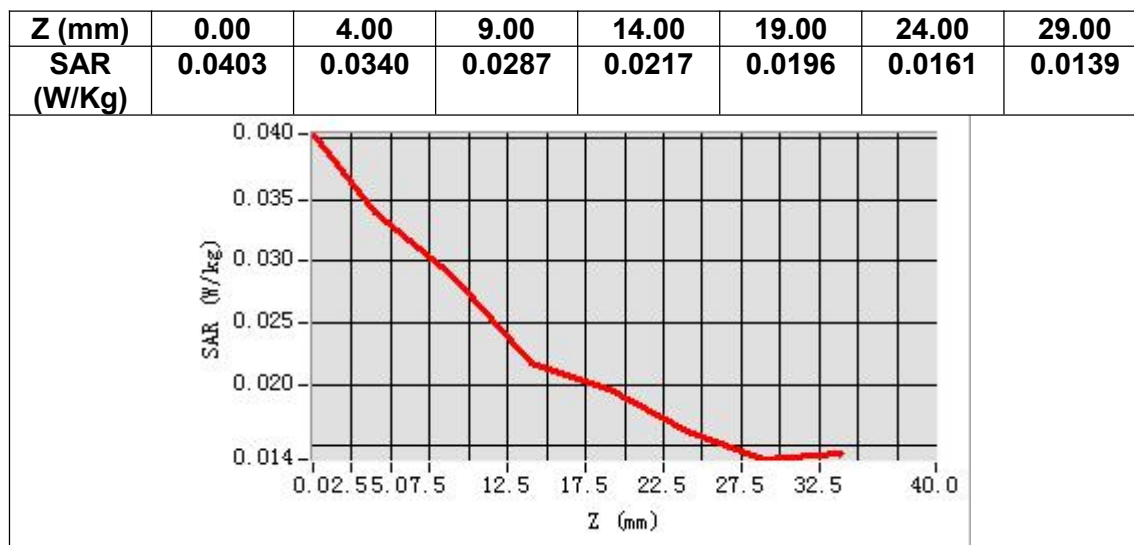
#### VOLUME SAR



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

SAR Peak: 0.04 W/kg

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.024040 |
| <b>SAR 1g (W/Kg)</b>  | 0.032626 |



## MEASUREMENT 32

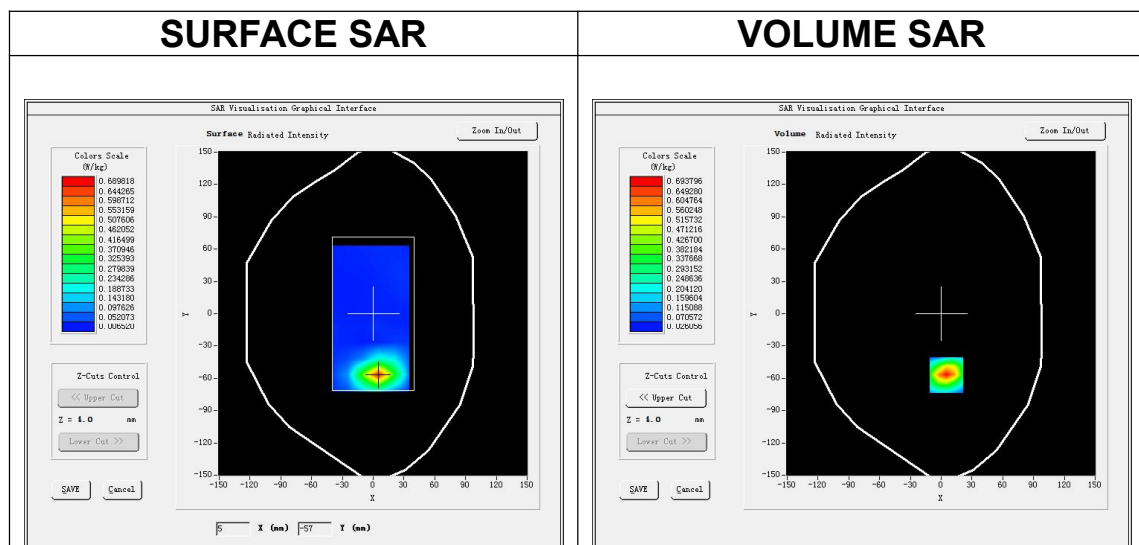
Date of measurement: 6/12/2024

### 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

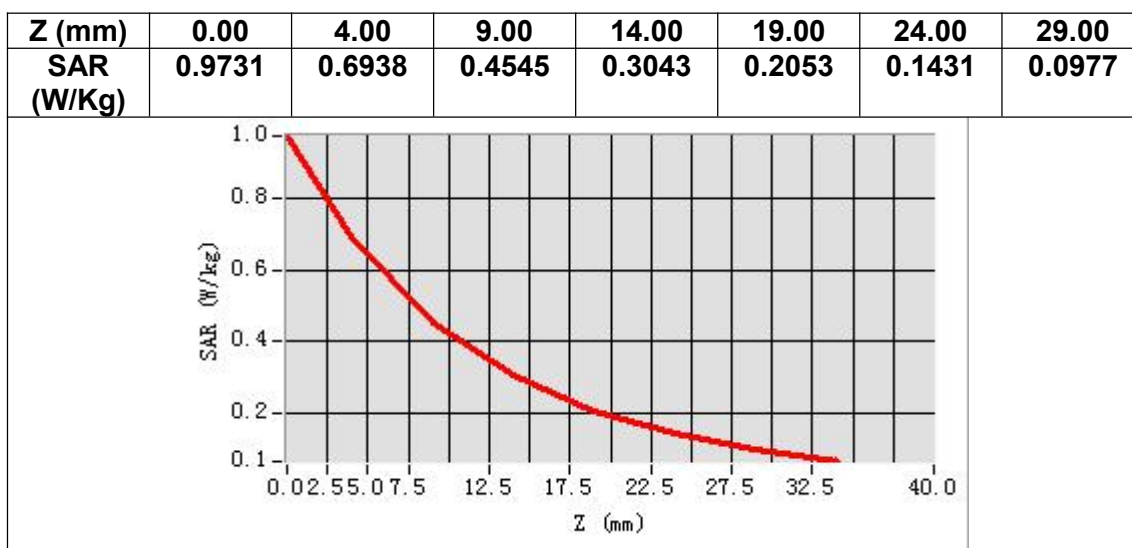
|                                               |             |
|-----------------------------------------------|-------------|
| <b>Frequency (MHz)</b>                        | 1732.500000 |
| <b>Relative permittivity (real part)</b>      | 39.437782   |
| <b>Relative permittivity (imaginary part)</b>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



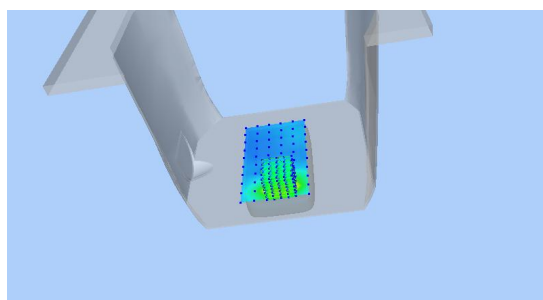
Maximum location: X=5.00, Y=-57.00

SAR Peak: 0.99 W/kg

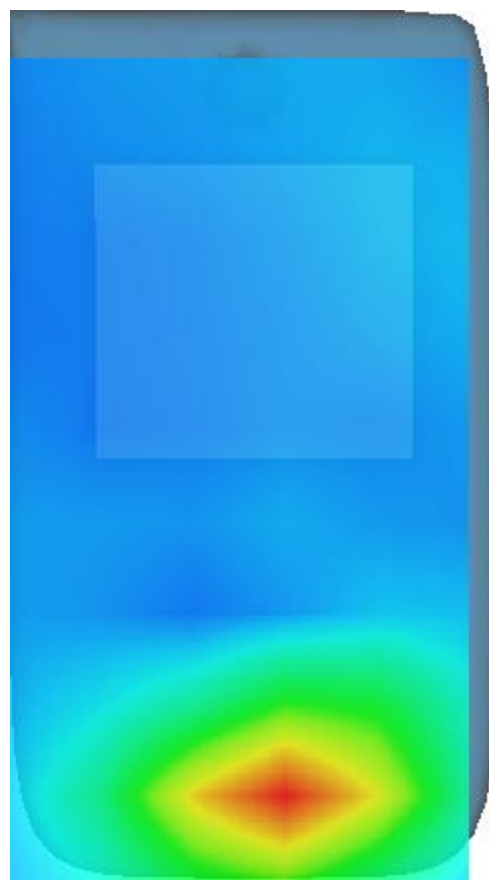
|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.350187 |
| <b>SAR 1g (W/Kg)</b>  | 0.638458 |



3D screen shot



Hot spot position



## MEASUREMENT 33

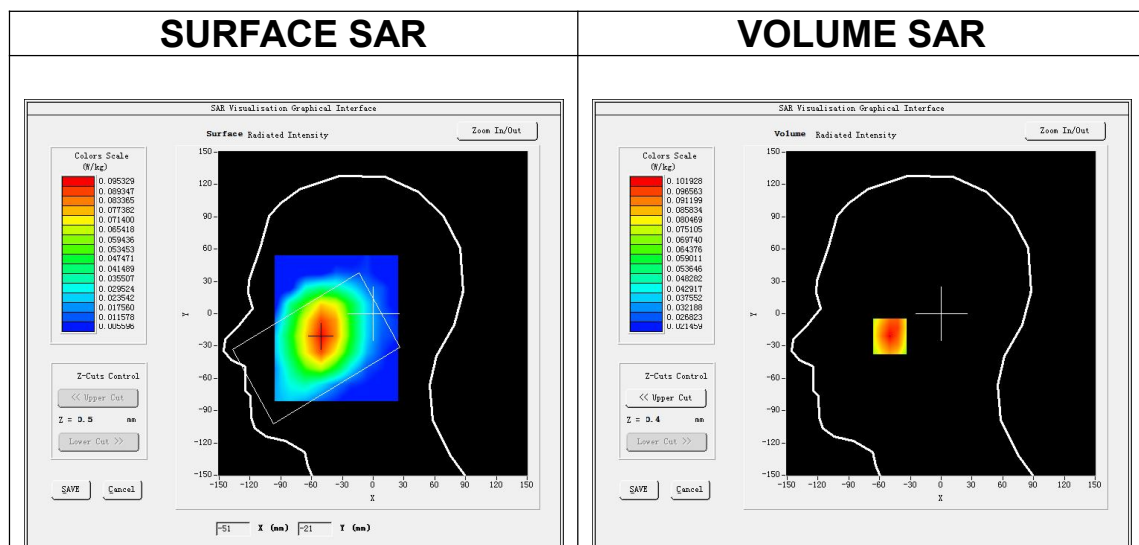
Date of measurement: 11/12/2025

### 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

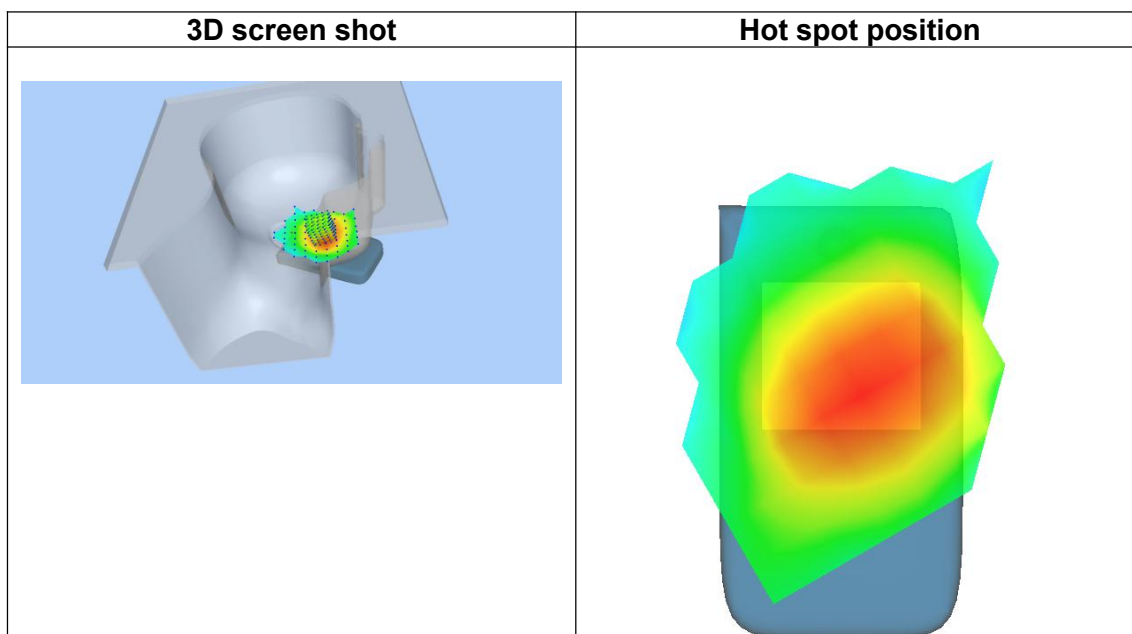
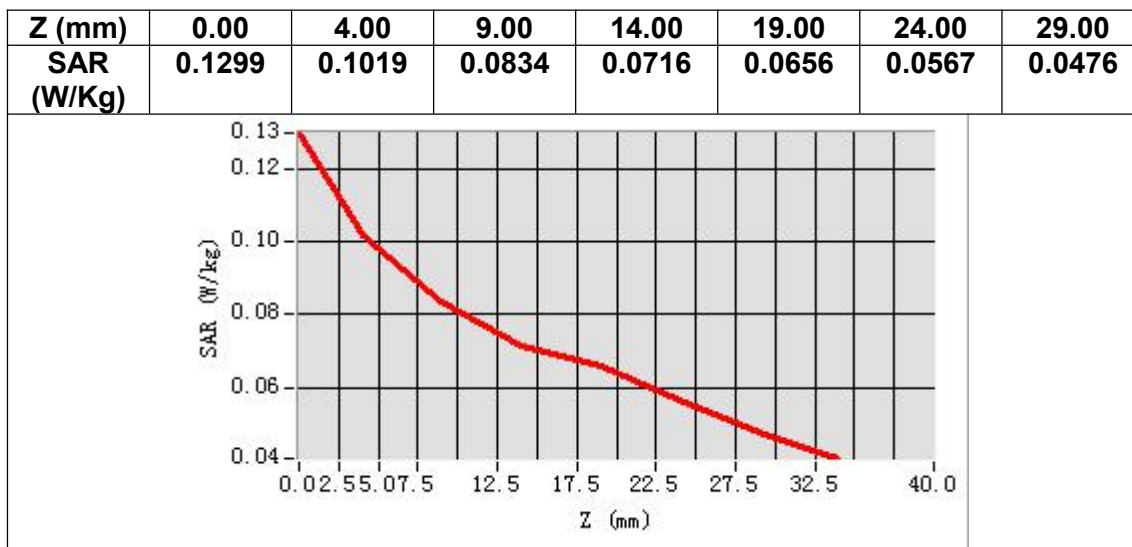
|                                               |            |
|-----------------------------------------------|------------|
| <b>Frequency (MHz)</b>                        | 836.500000 |
| <b>Relative permittivity (real part)</b>      | 41.745296  |
| <b>Relative permittivity (imaginary part)</b> |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



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

SAR Peak: 0.13 W/kg

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.078854 |
| <b>SAR 1g (W/Kg)</b>  | 0.100729 |



## MEASUREMENT 34

Date of measurement: 11/12/2025

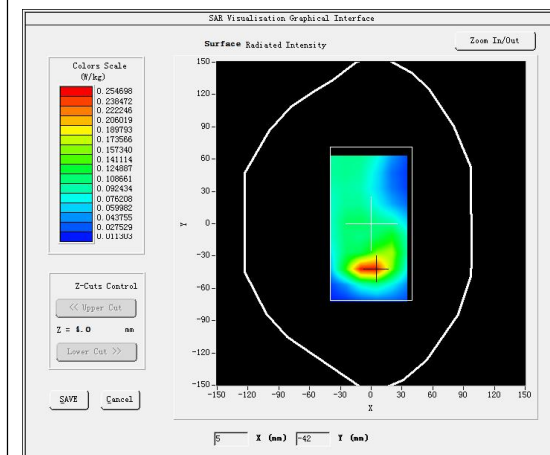
### A. Experimental conditions.

|                        |                                    |
|------------------------|------------------------------------|
| <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>                        |

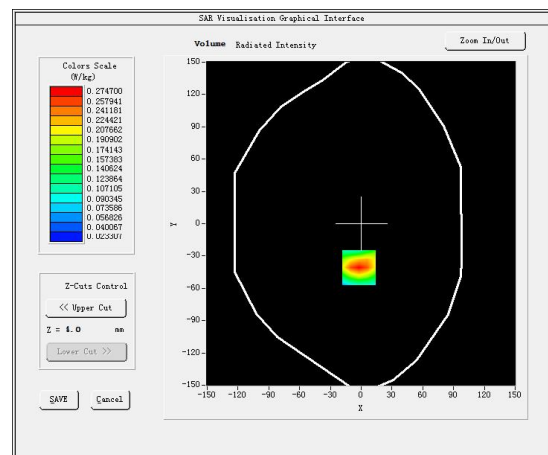
### B. SAR Measurement Results

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

#### SURFACE SAR



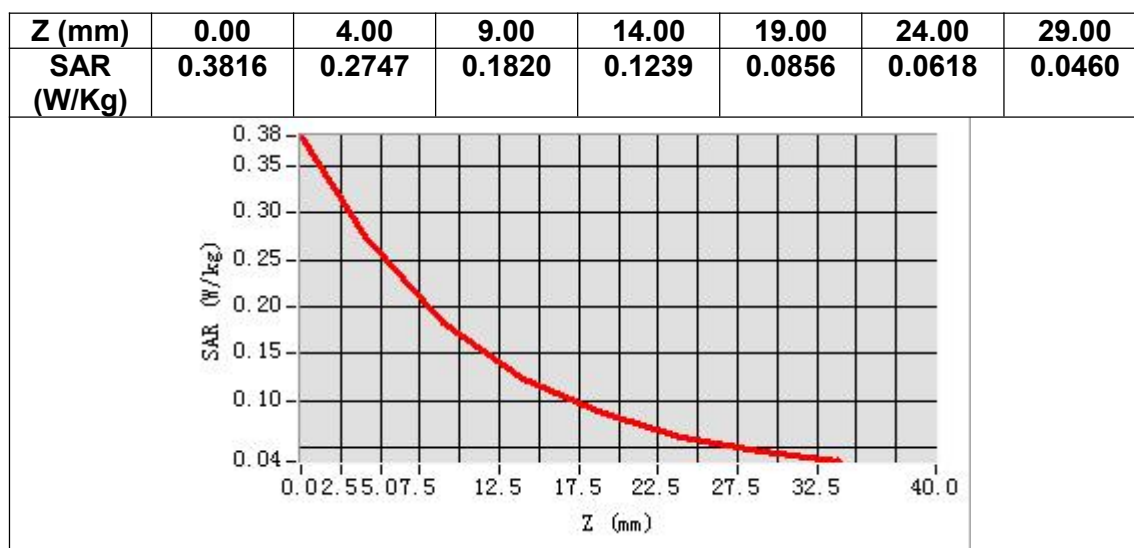
#### VOLUME SAR



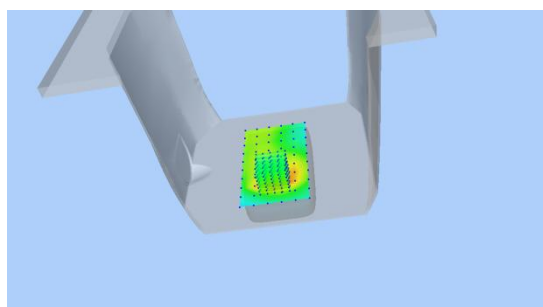
Maximum location: X=-2.00, Y=-41.00

SAR Peak: 0.39 W/kg

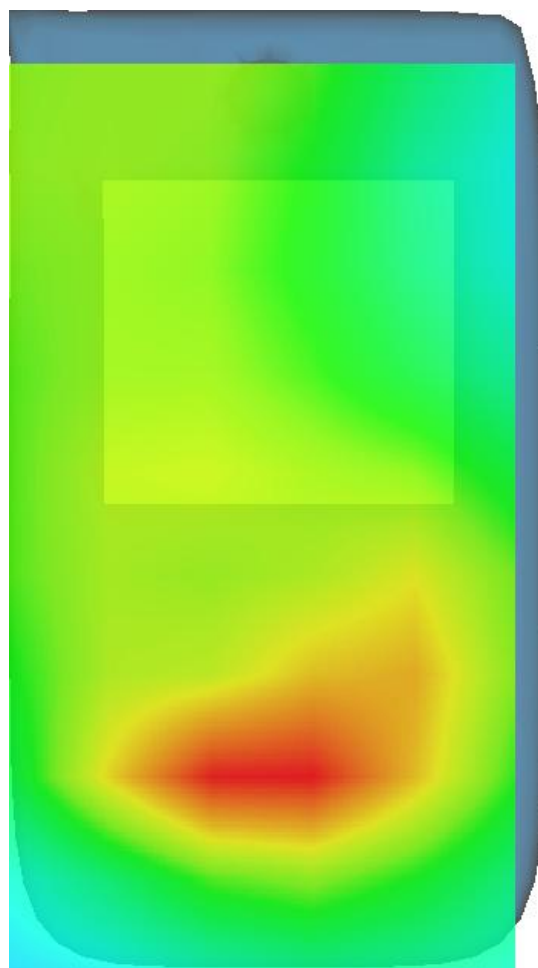
|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.156248 |
| <b>SAR 1g (W/Kg)</b>  | 0.260008 |



3D screen shot



Hot spot position



## MEASUREMENT 35

Date of measurement: 13/12/2025

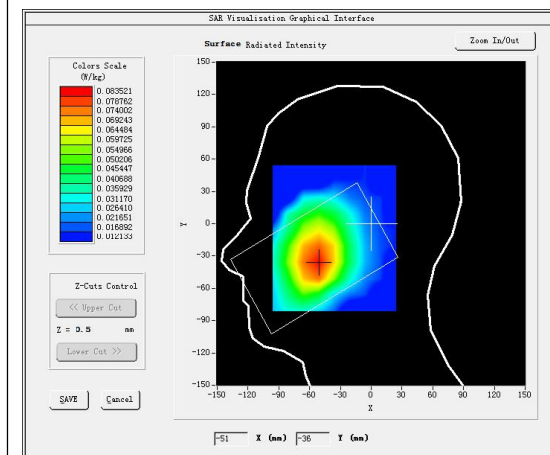
### A. Experimental conditions.

|                        |                                    |
|------------------------|------------------------------------|
| <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>                        |

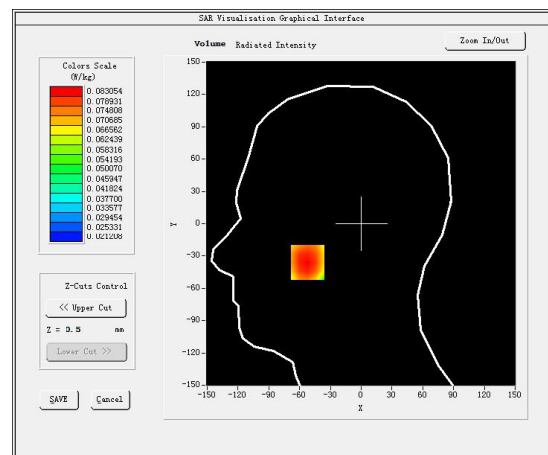
### B. SAR Measurement Results

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

#### SURFACE SAR



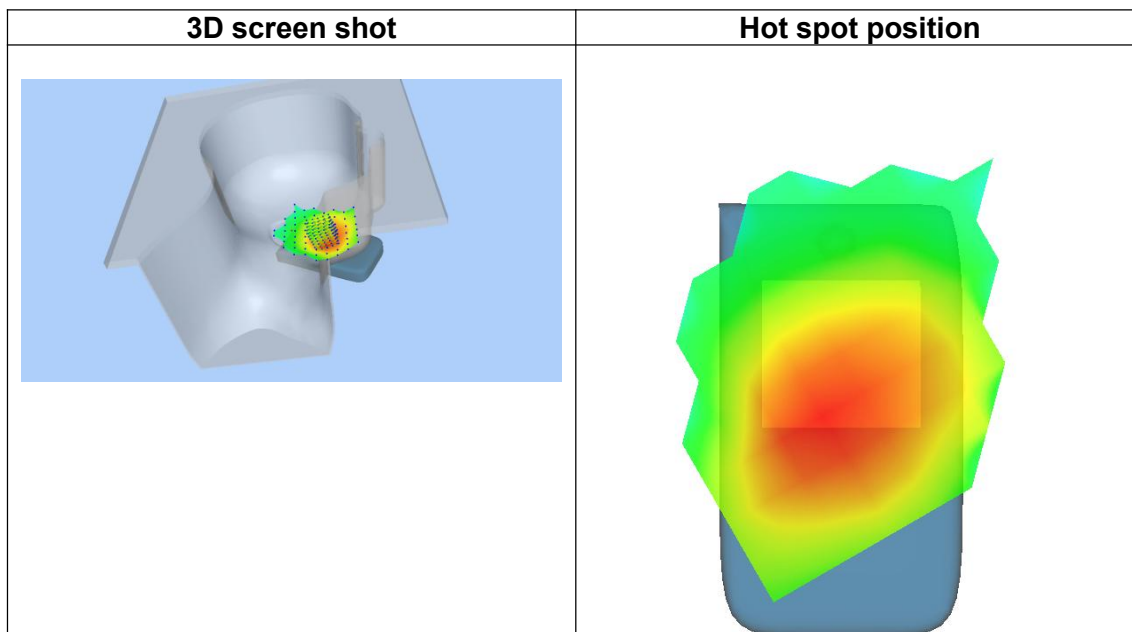
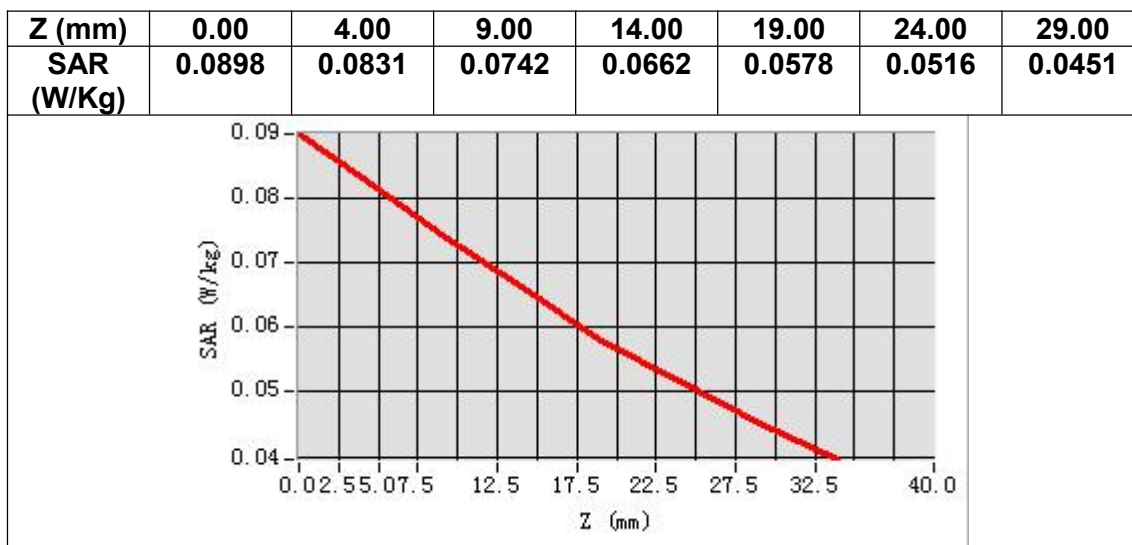
#### VOLUME SAR



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

SAR Peak: 0.09 W/kg

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.070364 |
| <b>SAR 1g (W/Kg)</b>  | 0.081550 |



## MEASUREMENT 36

Date of measurement: 13/12/2025

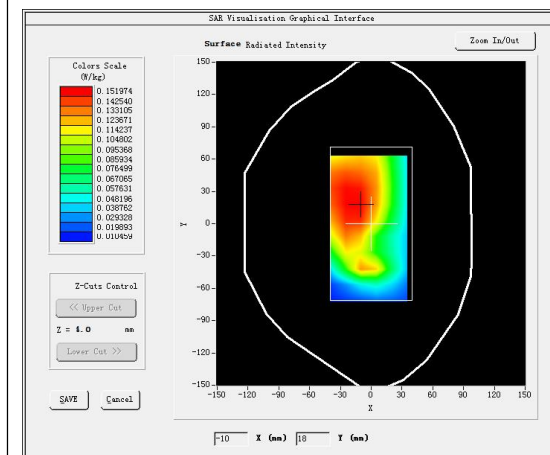
### A. Experimental conditions.

|                        |                                    |
|------------------------|------------------------------------|
| <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>                        |

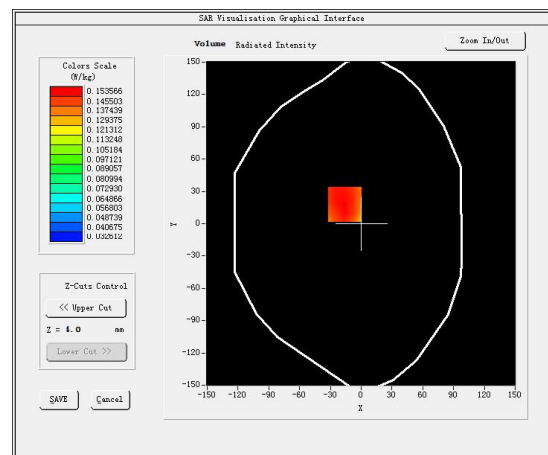
### B. SAR Measurement Results

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

#### SURFACE SAR



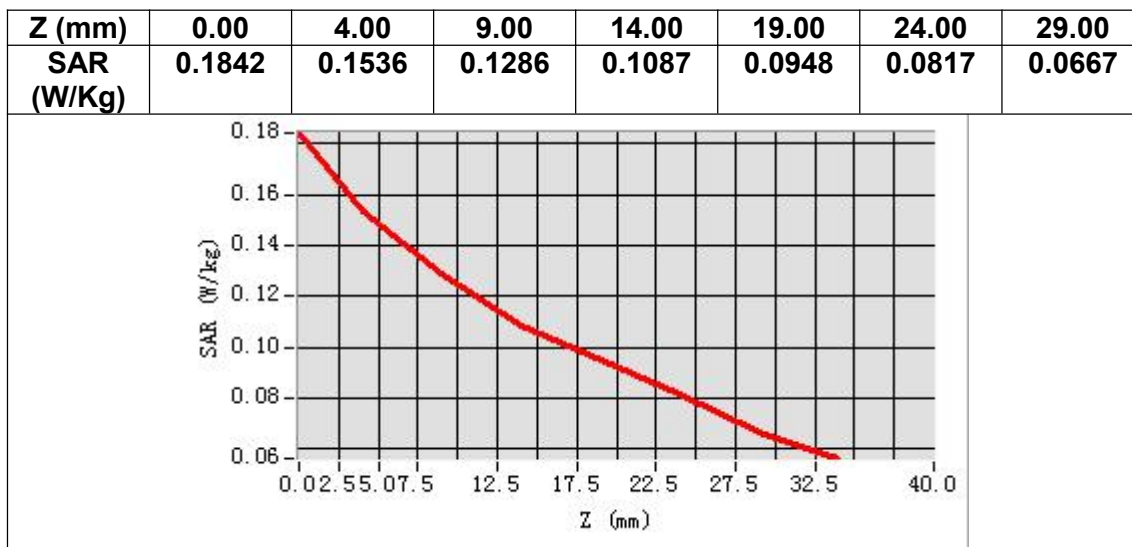
#### VOLUME SAR



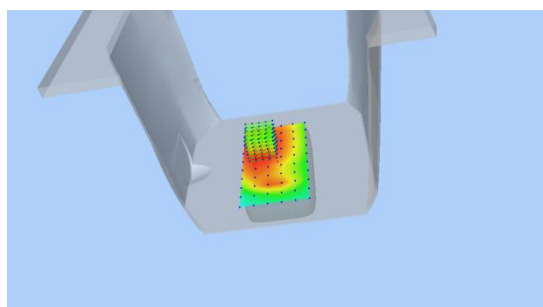
Maximum location: X=-16.00, Y=18.00

SAR Peak: 0.18 W/kg

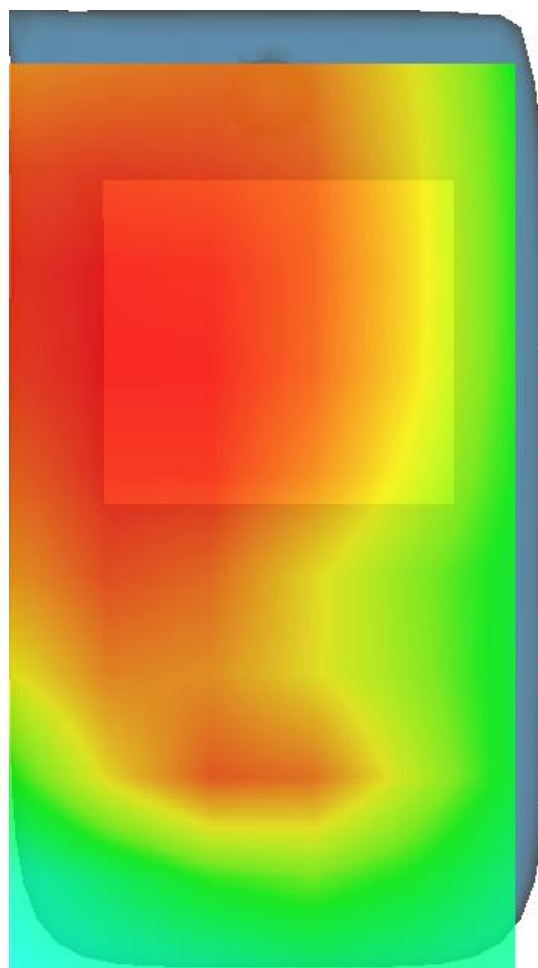
|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.124532 |
| <b>SAR 1g (W/Kg)</b>  | 0.151656 |



3D screen shot



Hot spot position



## MEASUREMENT 37

Date of measurement: 13/12/2025

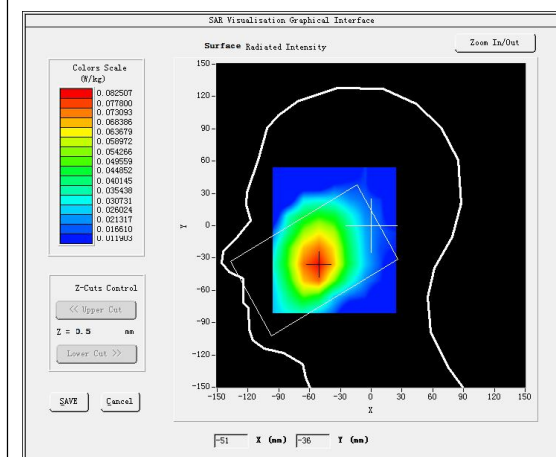
### A. Experimental conditions.

|                        |                                    |
|------------------------|------------------------------------|
| <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>                        |

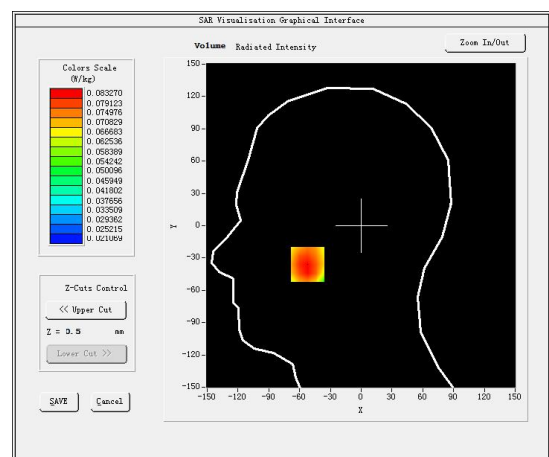
### B. SAR Measurement Results

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

#### SURFACE SAR



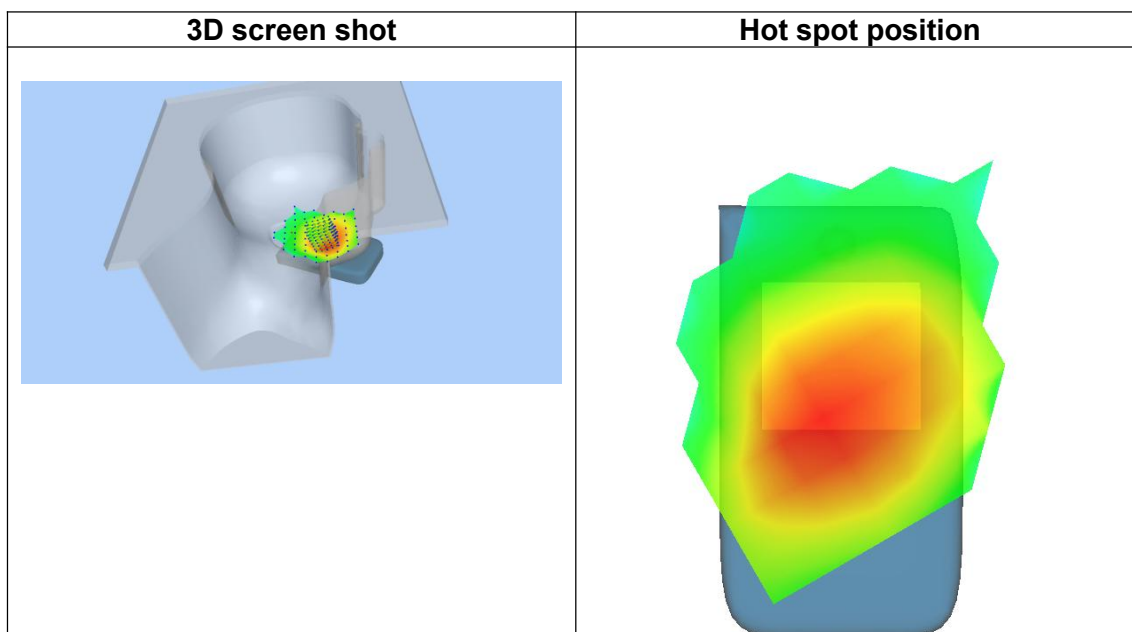
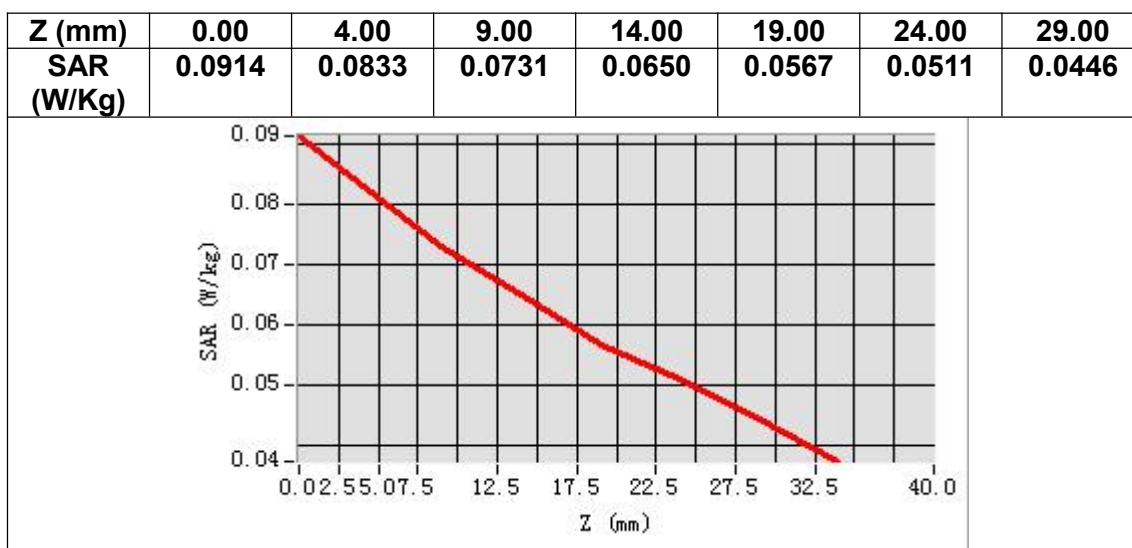
#### VOLUME SAR



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

SAR Peak: 0.09 W/kg

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.069742 |
| <b>SAR 1g (W/Kg)</b>  | 0.081563 |



## MEASUREMENT 38

Date of measurement: 13/12/2025

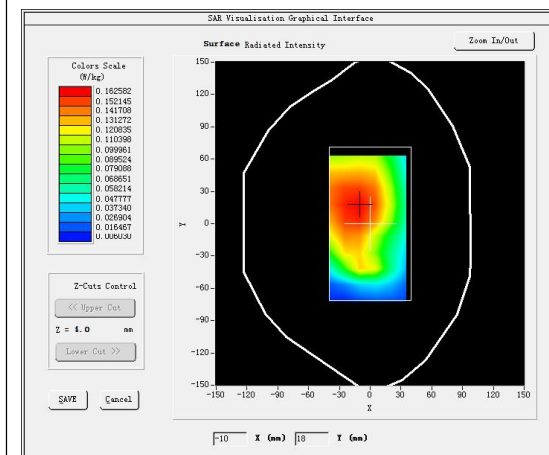
### A. Experimental conditions.

|                        |                                    |
|------------------------|------------------------------------|
| <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>                        |

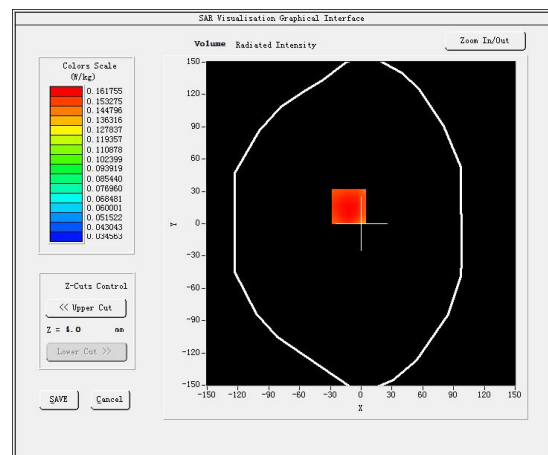
### B. SAR Measurement Results

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

#### SURFACE SAR



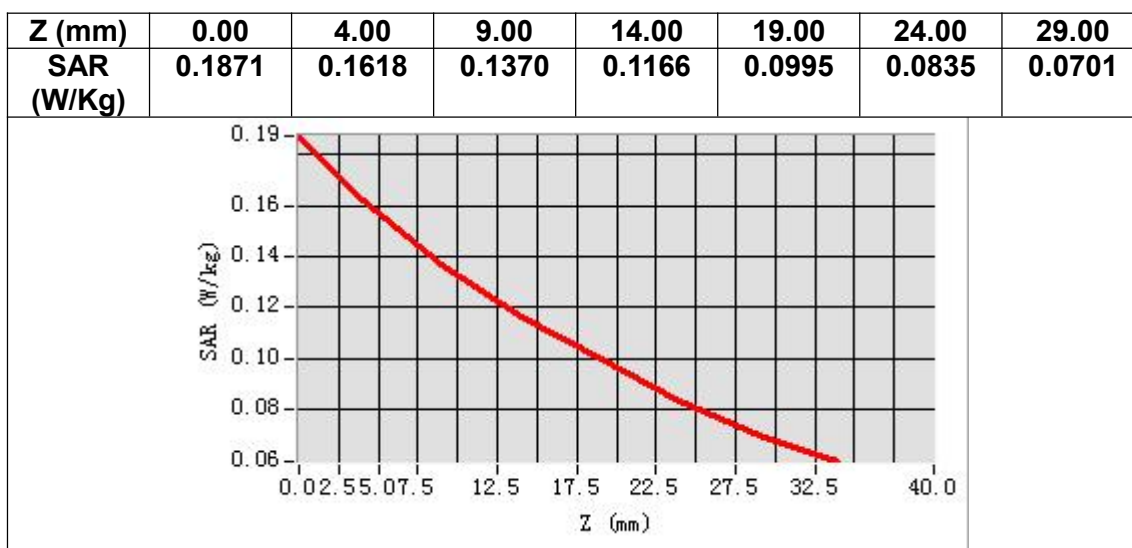
#### VOLUME SAR



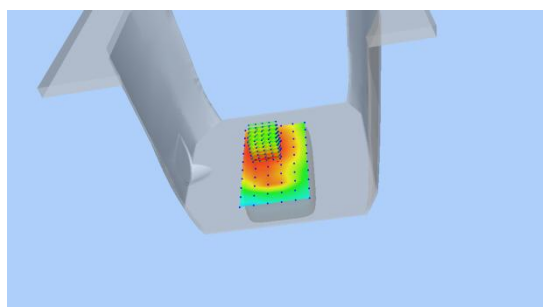
Maximum location: X=-12.00, Y=16.00

SAR Peak: 0.19 W/kg

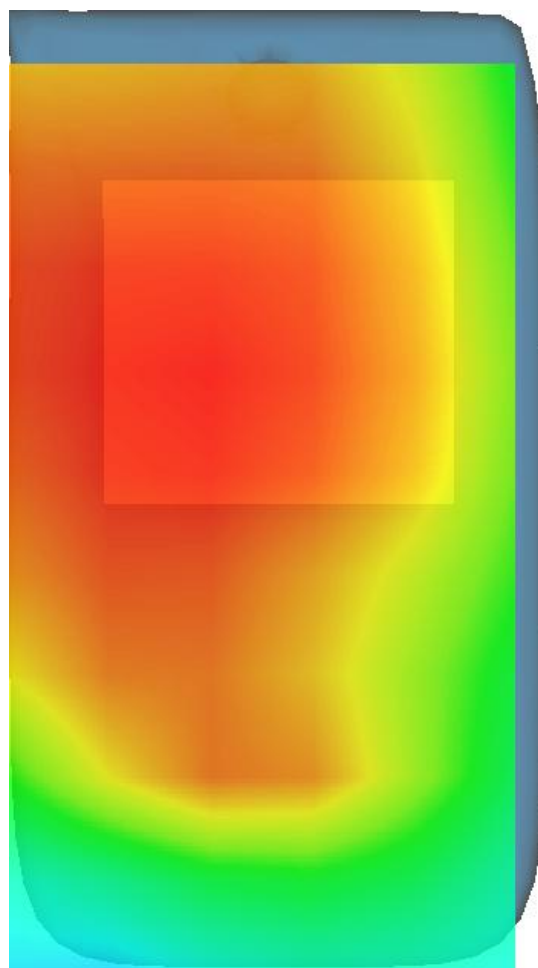
|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.131386 |
| <b>SAR 1g (W/Kg)</b>  | 0.159825 |



3D screen shot



Hot spot position



## MEASUREMENT 39

Date of measurement: 16/12/2024

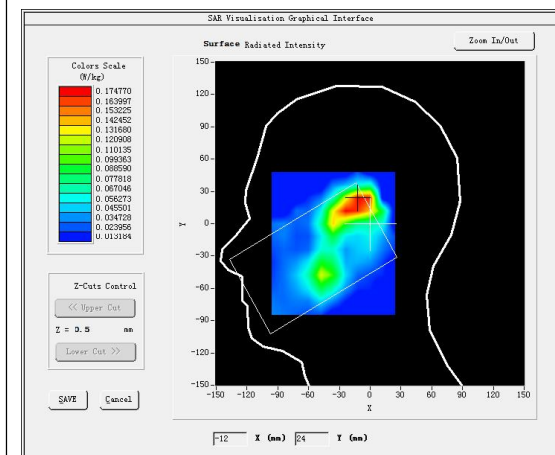
### A. Experimental conditions.

|                        |                                    |
|------------------------|------------------------------------|
| <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>                        |

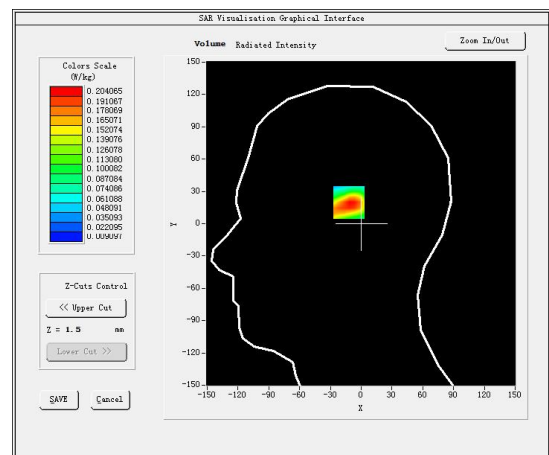
### B. SAR Measurement Results

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

#### SURFACE SAR



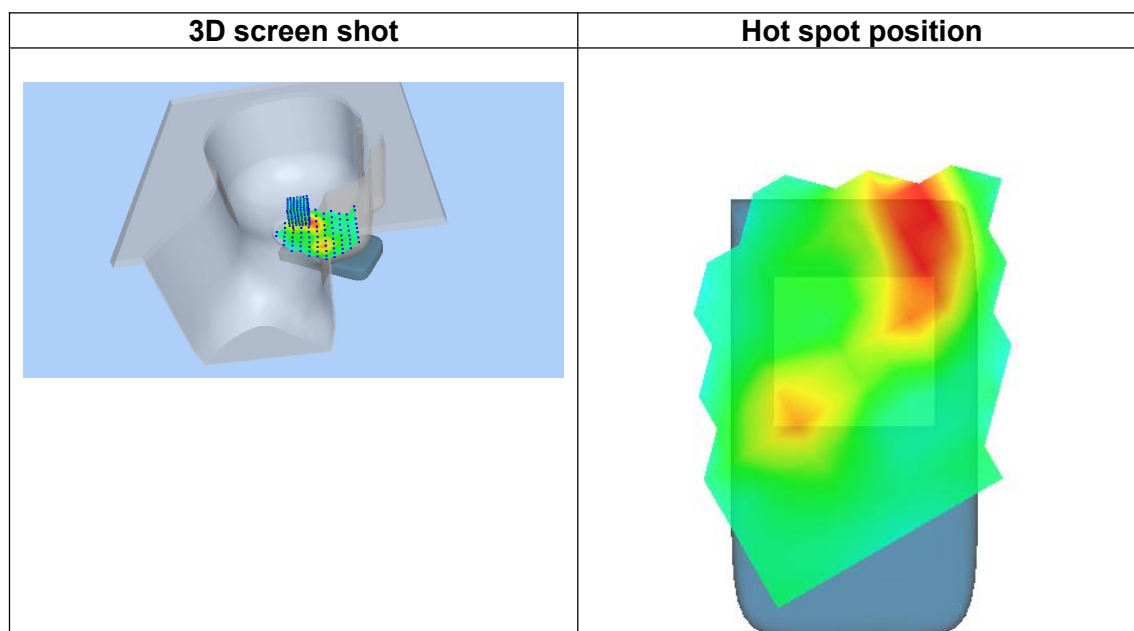
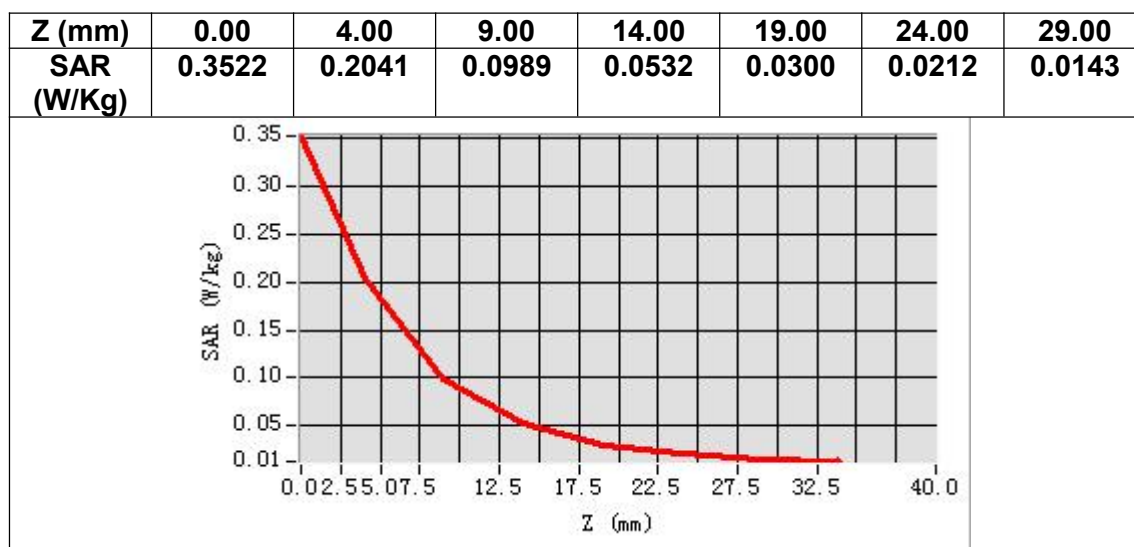
#### VOLUME SAR



Maximum location: X=-10.00, Y=21.00

SAR Peak: 0.35 W/kg

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.097415 |
| <b>SAR 1g (W/Kg)</b>  | 0.193771 |



## MEASUREMENT 40

Date of measurement: 16/12/2024

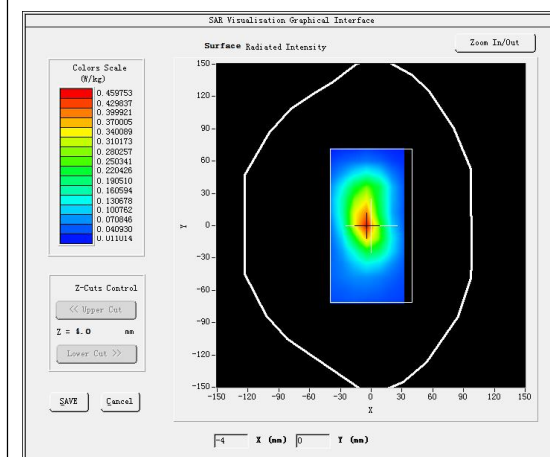
### A. Experimental conditions.

|                        |                                    |
|------------------------|------------------------------------|
| <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>                        |

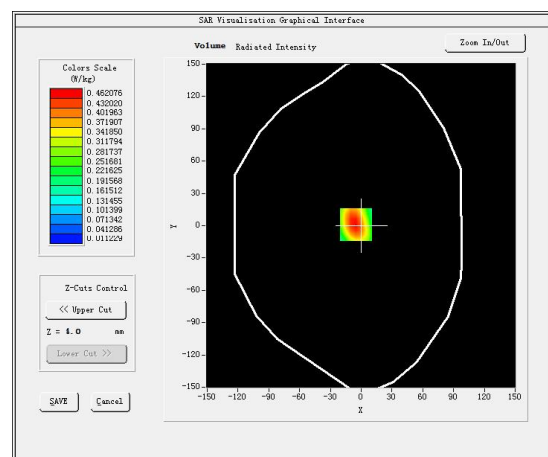
### B. SAR Measurement Results

|                                        |             |
|----------------------------------------|-------------|
| 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



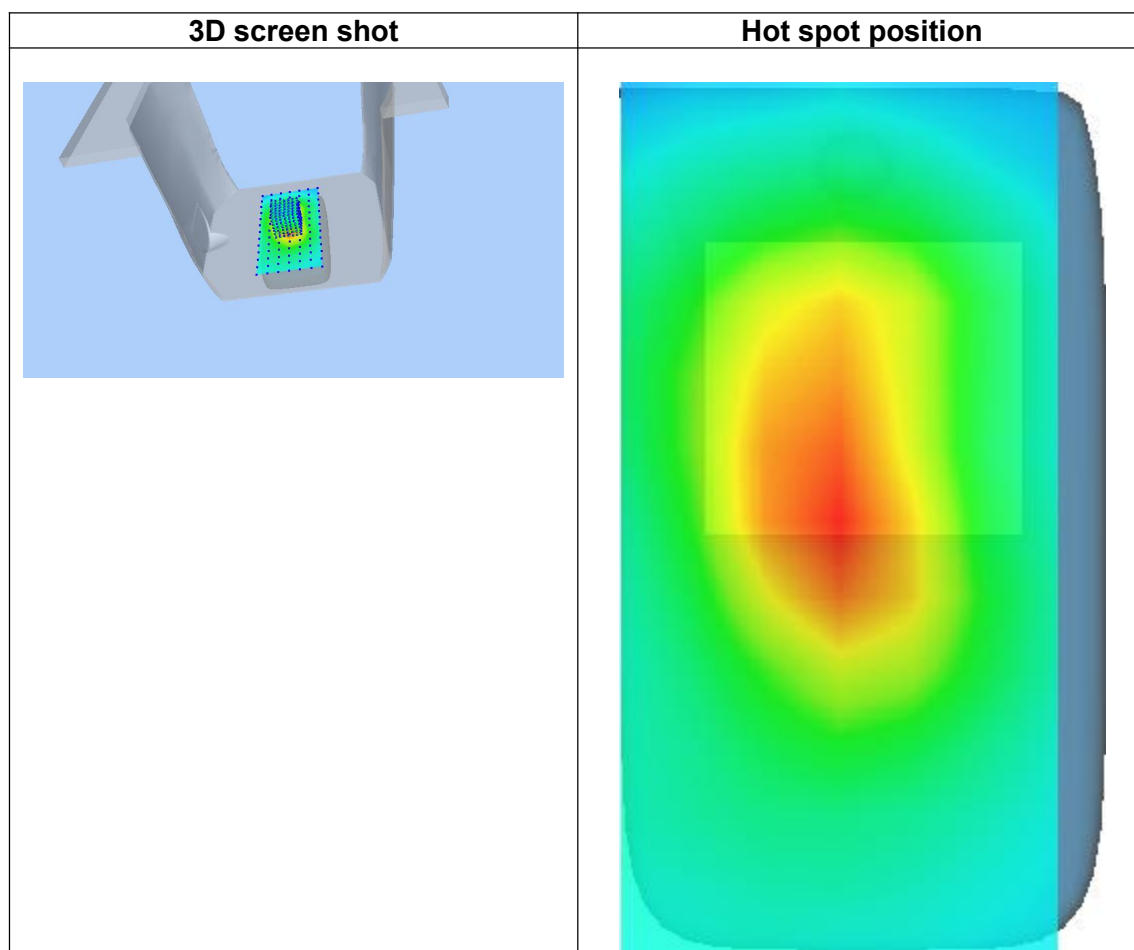
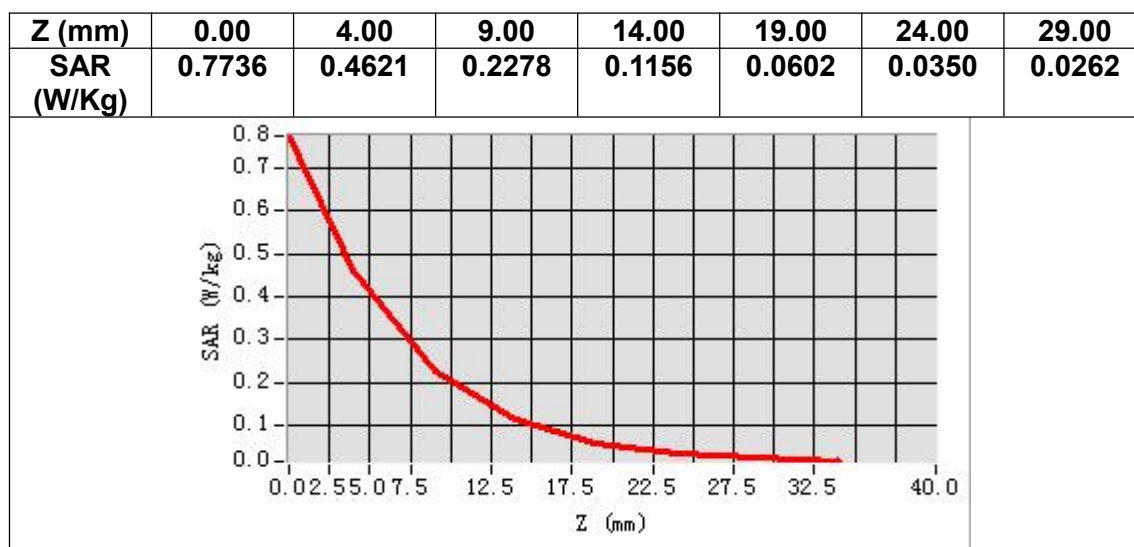
#### VOLUME SAR



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

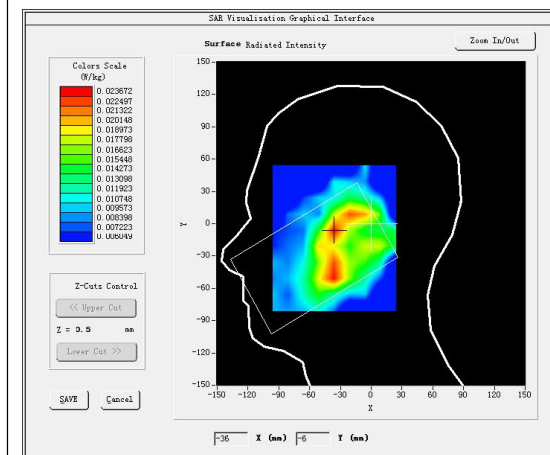
### A. Experimental conditions.

|                        |                                    |
|------------------------|------------------------------------|
| <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>                        |

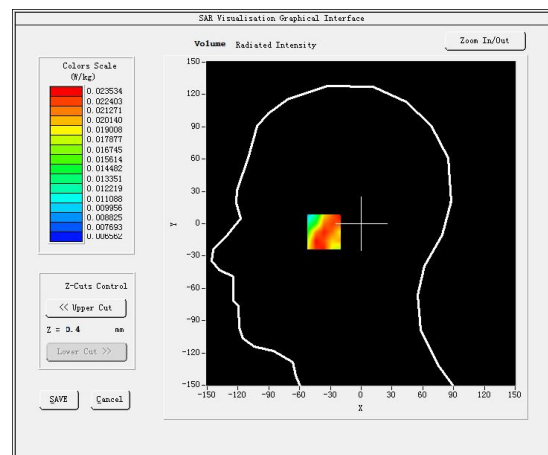
### B. SAR Measurement Results

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

#### SURFACE SAR



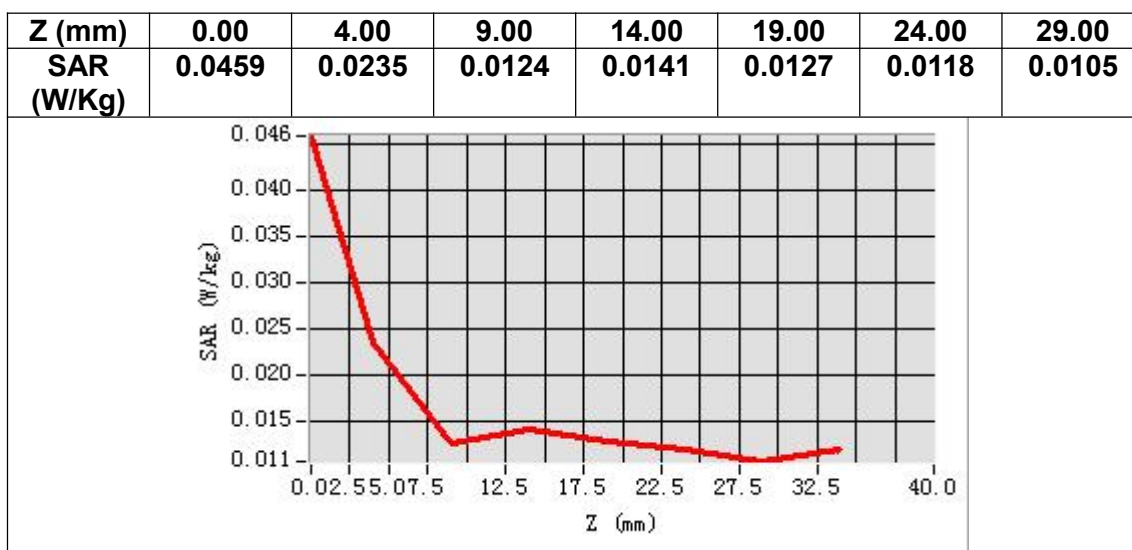
#### VOLUME SAR



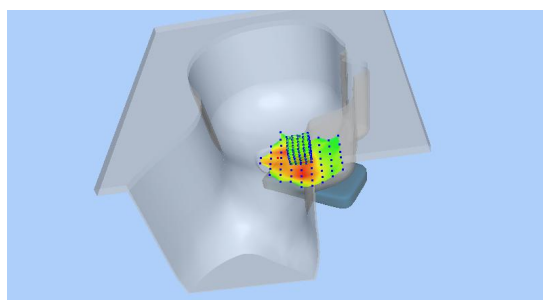
Maximum location: X=-36.00, Y=-6.00

SAR Peak: 0.04 W/kg

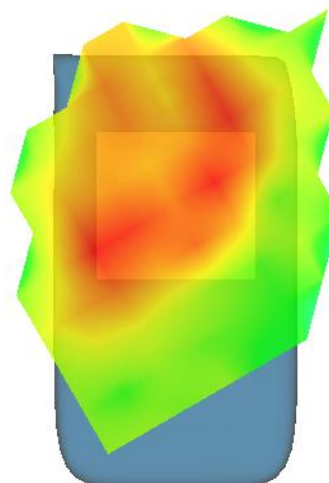
|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.017950 |
| <b>SAR 1g (W/Kg)</b>  | 0.023699 |



3D screen shot



Hot spot position



## MEASUREMENT 42

Date of measurement: 6/12/2024

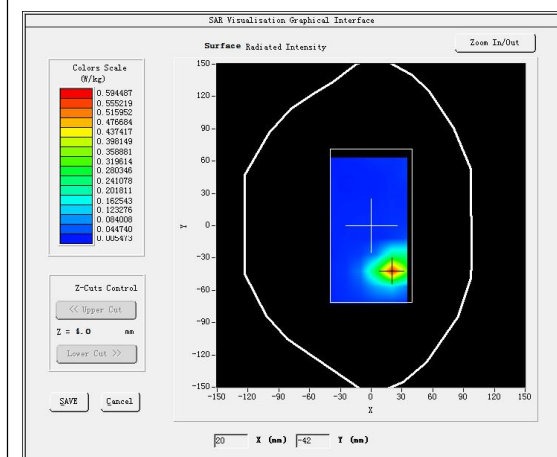
### A. Experimental conditions.

|                        |                                    |
|------------------------|------------------------------------|
| <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>                        |

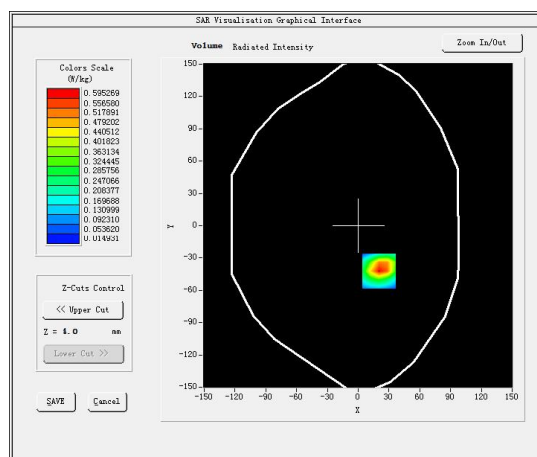
### B. SAR Measurement Results

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

#### SURFACE SAR



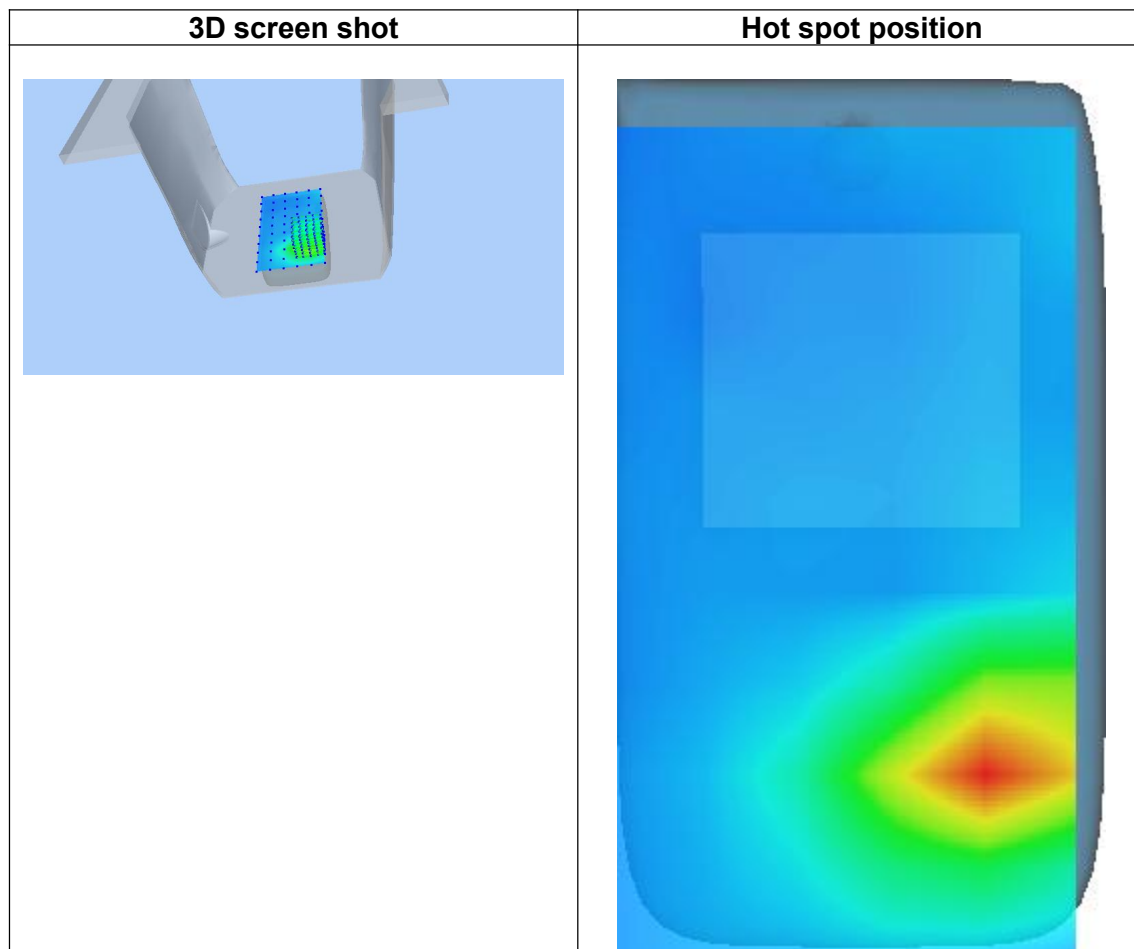
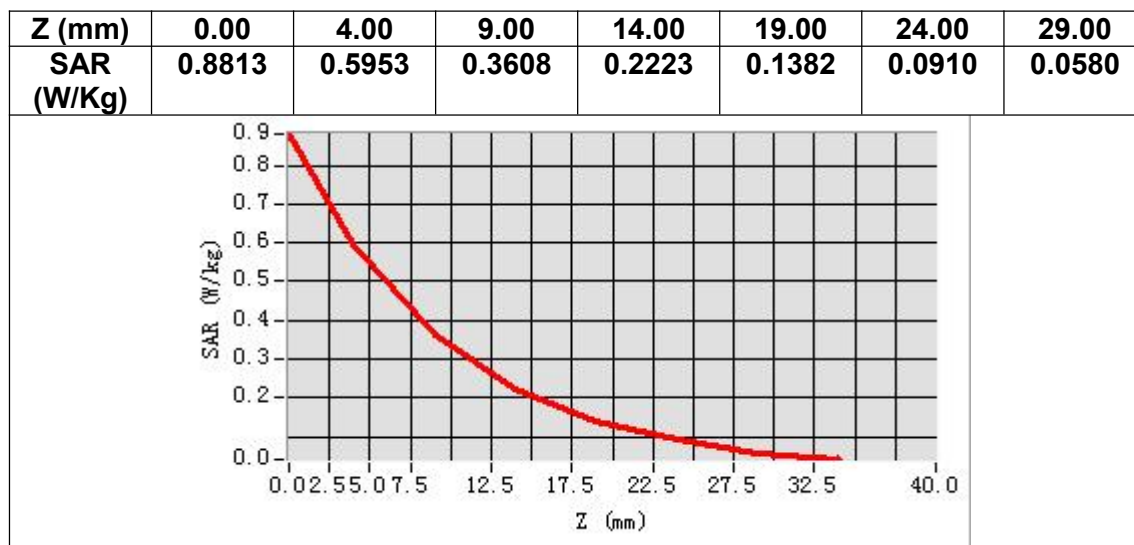
#### VOLUME SAR



Maximum location: X=20.00, Y=-42.00

SAR Peak: 0.96 W/kg

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.288954 |
| <b>SAR 1g (W/Kg)</b>  | 0.574101 |



## MEASUREMENT 43

Date of measurement: 13/12/2024

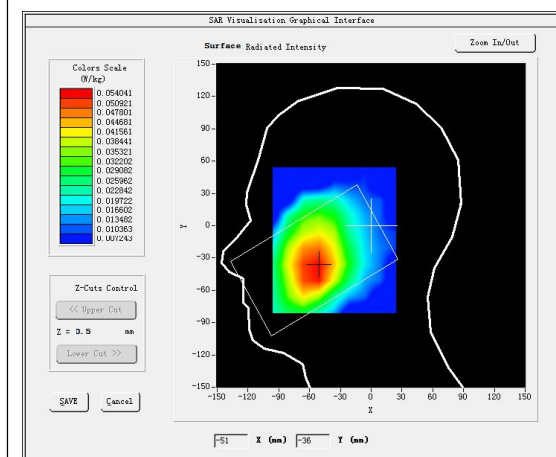
### A. Experimental conditions.

|                        |                                    |
|------------------------|------------------------------------|
| <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>                        |

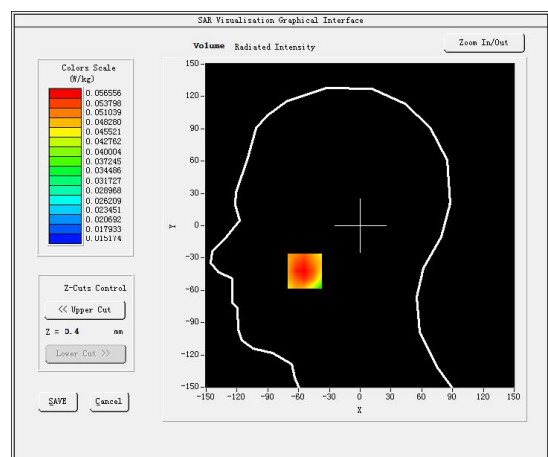
### B. SAR Measurement Results

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

#### SURFACE SAR



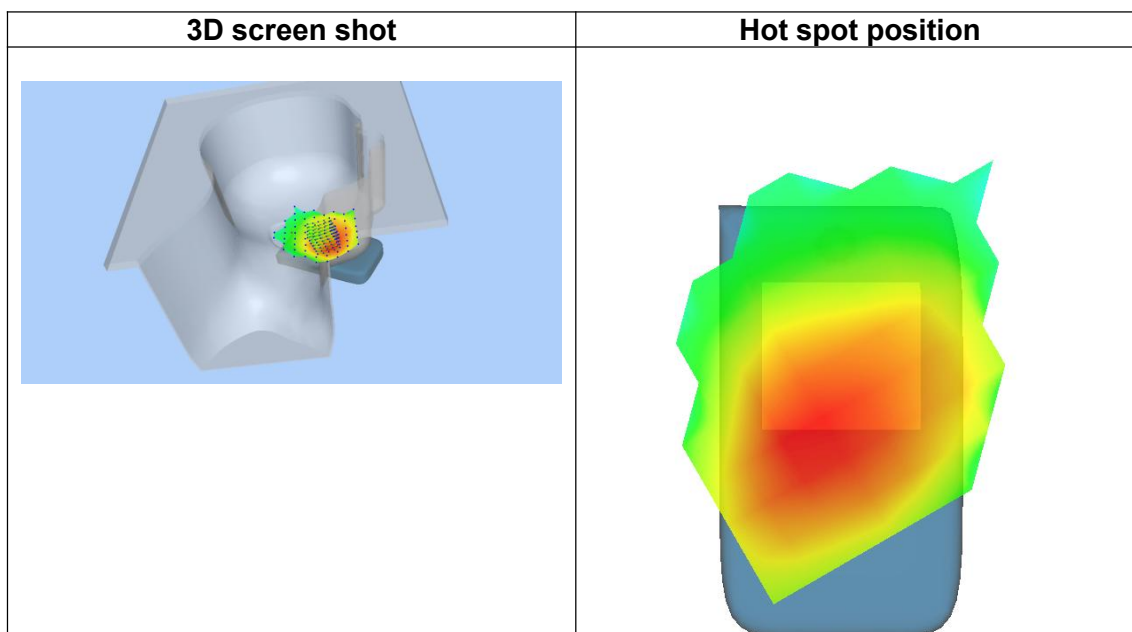
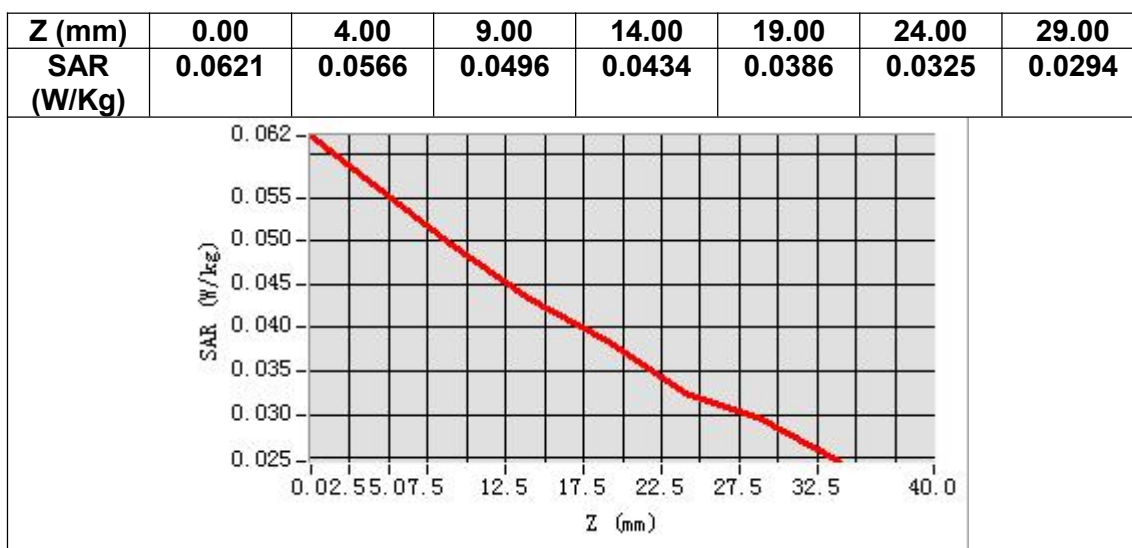
#### VOLUME SAR



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

SAR Peak: 0.06 W/kg

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.047230 |
| <b>SAR 1g (W/Kg)</b>  | 0.055450 |



## MEASUREMENT 44

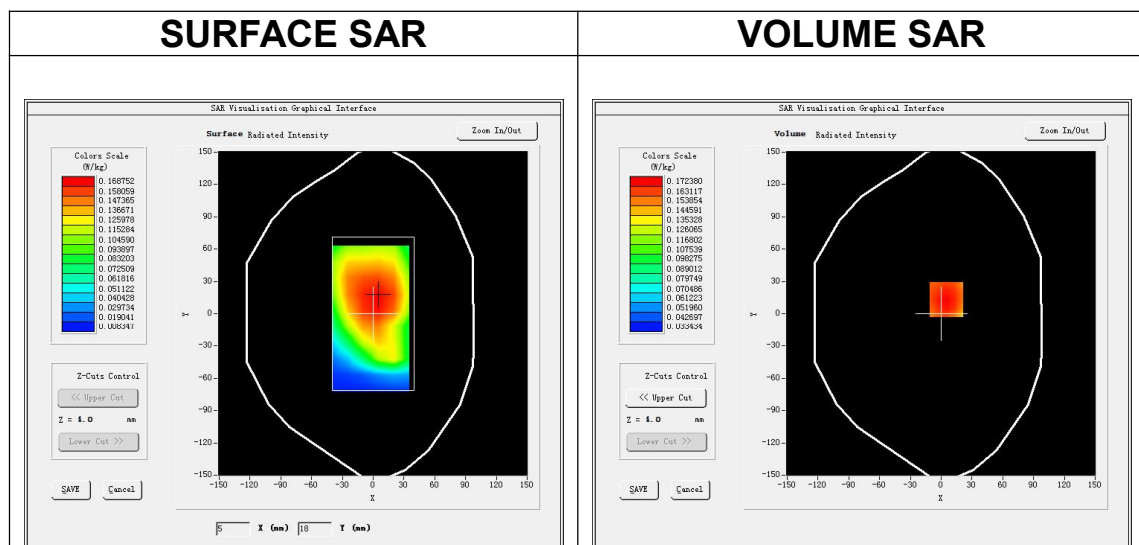
Date of measurement: 13/12/2022

### 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

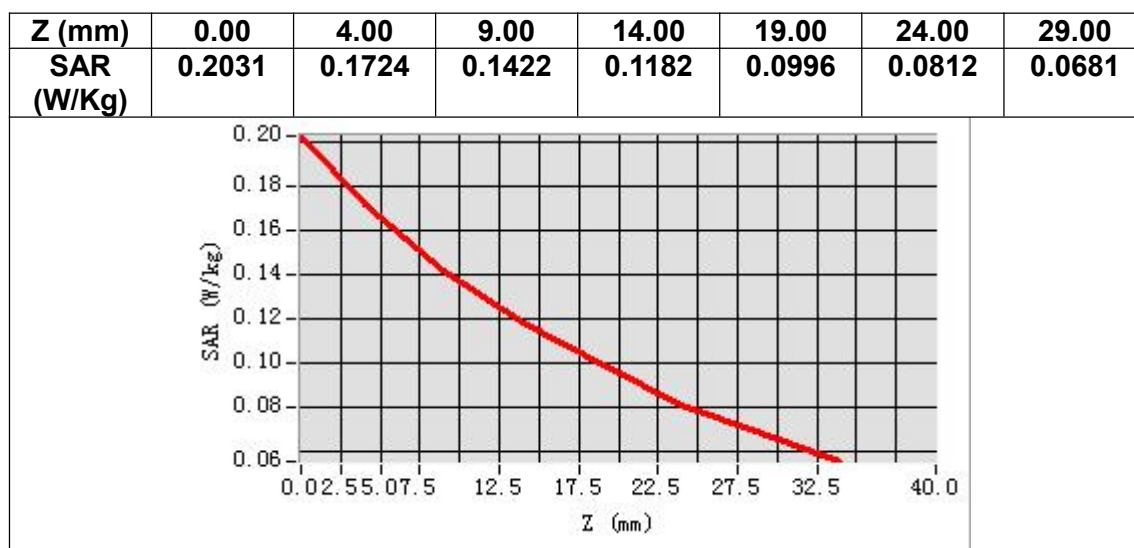
|                                               |            |
|-----------------------------------------------|------------|
| <b>Frequency (MHz)</b>                        | 683.000000 |
| <b>Relative permittivity (real part)</b>      | 41.612701  |
| <b>Relative permittivity (imaginary part)</b> |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



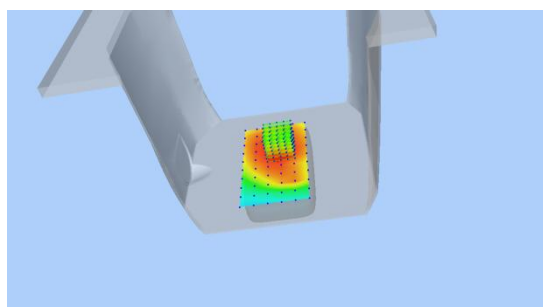
Maximum location: X=5.00, Y=13.00

SAR Peak: 0.20 W/kg

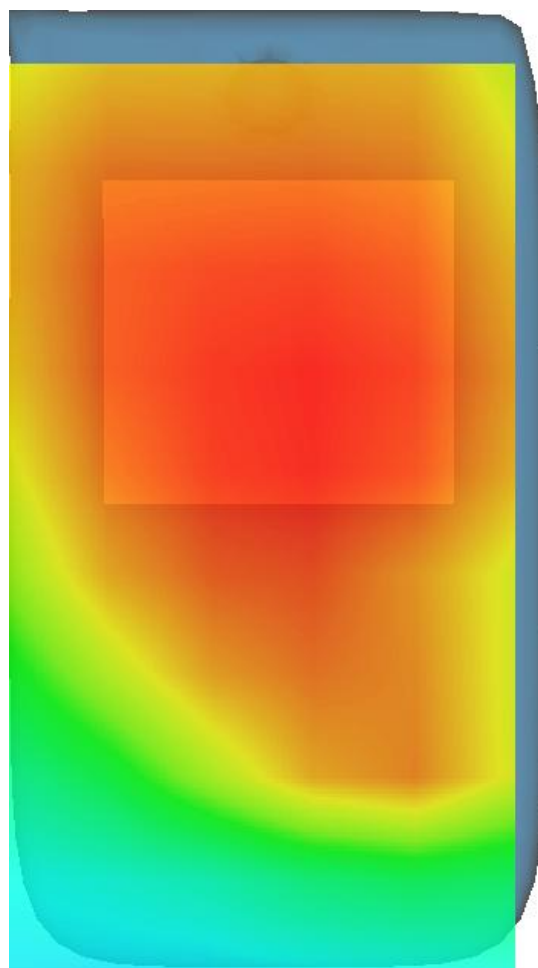
|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.136023 |
| <b>SAR 1g (W/Kg)</b>  | 0.168455 |



3D screen shot



Hot spot position



## MEASUREMENT 45

Date of measurement: 13/12/2025

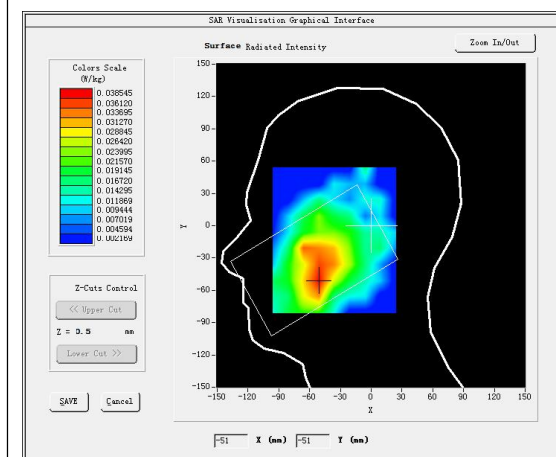
### A. Experimental conditions.

|                        |                                    |
|------------------------|------------------------------------|
| <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>                        |

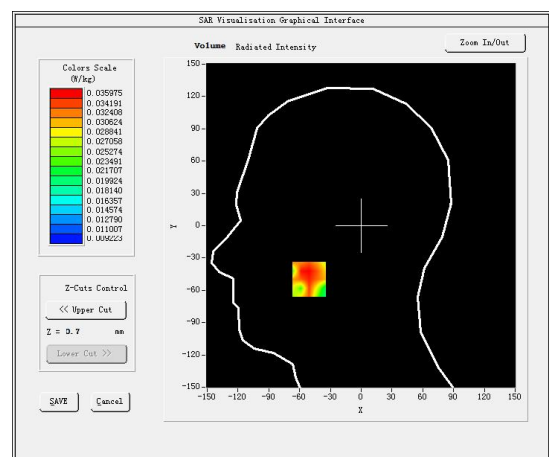
### B. SAR Measurement Results

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

#### SURFACE SAR



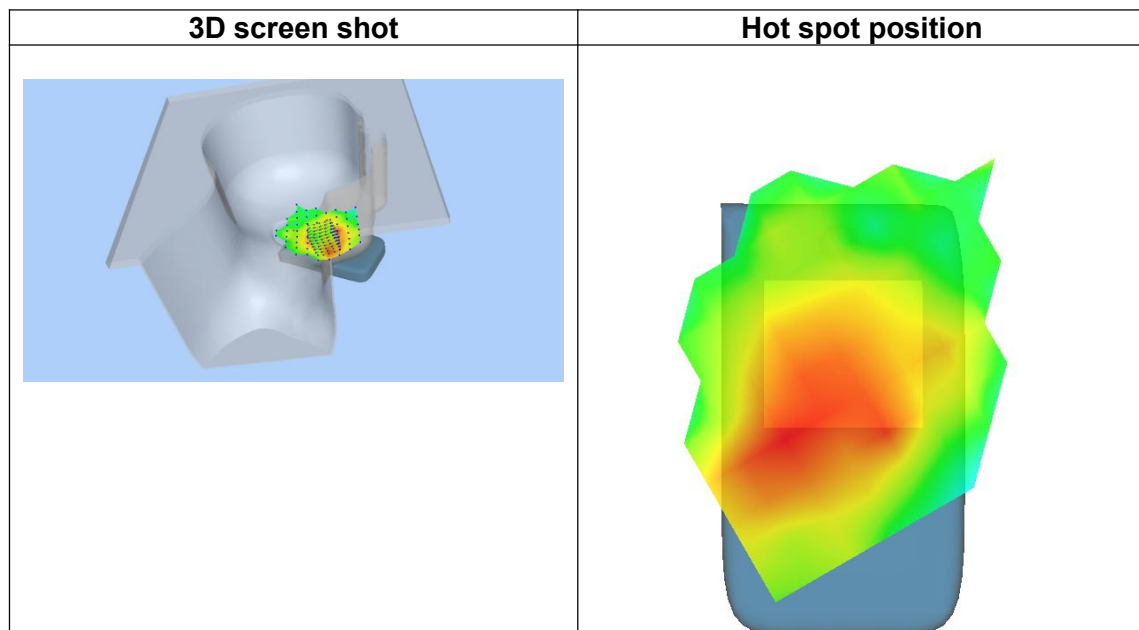
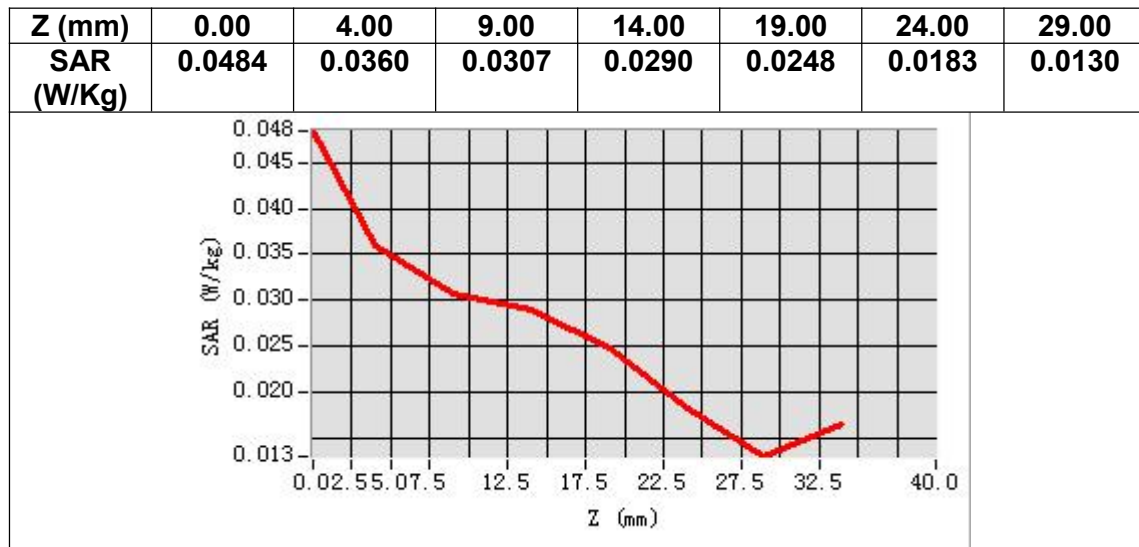
#### VOLUME SAR



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

SAR Peak: 0.05 W/kg

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.027741 |
| <b>SAR 1g (W/Kg)</b>  | 0.034816 |



## MEASUREMENT 46

Date of measurement: 13/12/2025

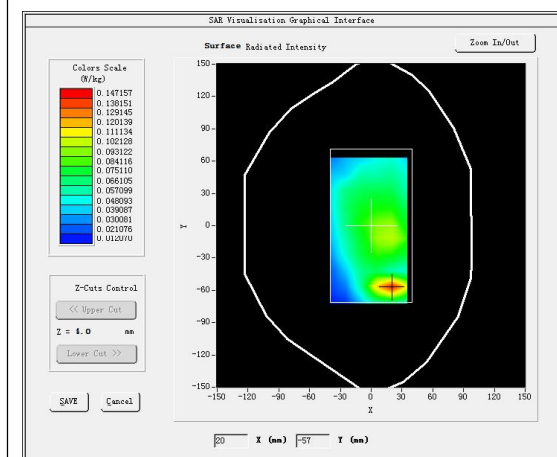
### A. Experimental conditions.

|                        |                                    |
|------------------------|------------------------------------|
| <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>                        |

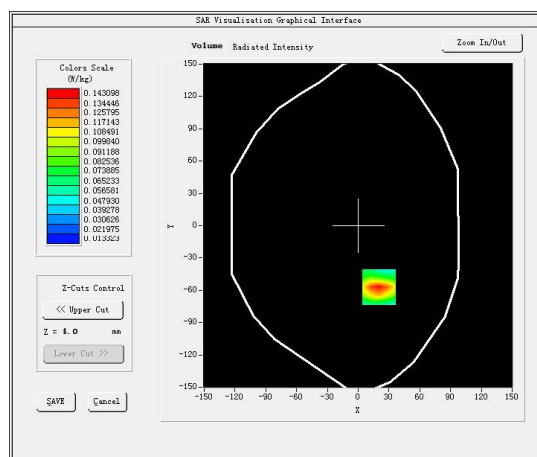
### B. SAR Measurement Results

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

#### SURFACE SAR



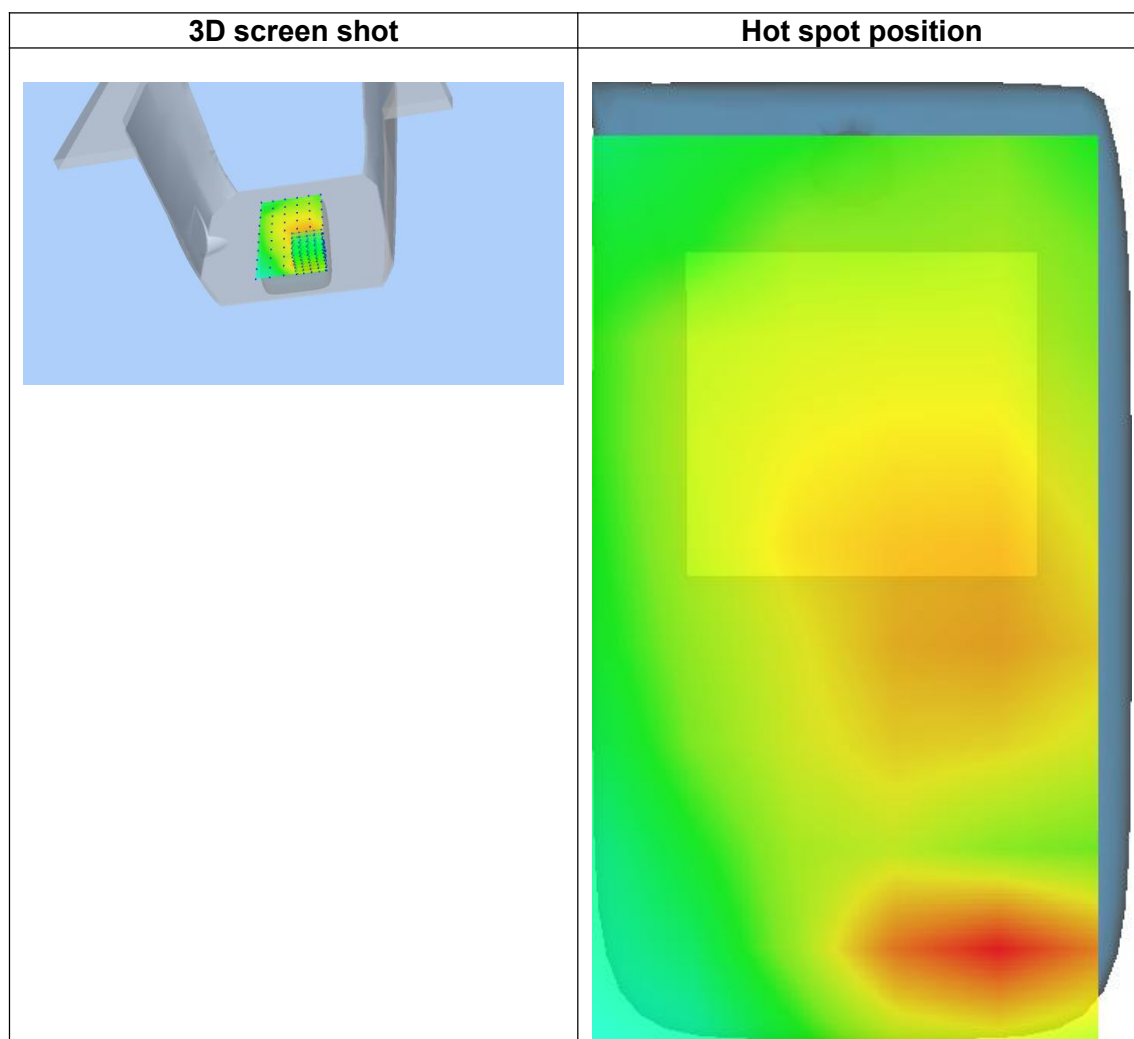
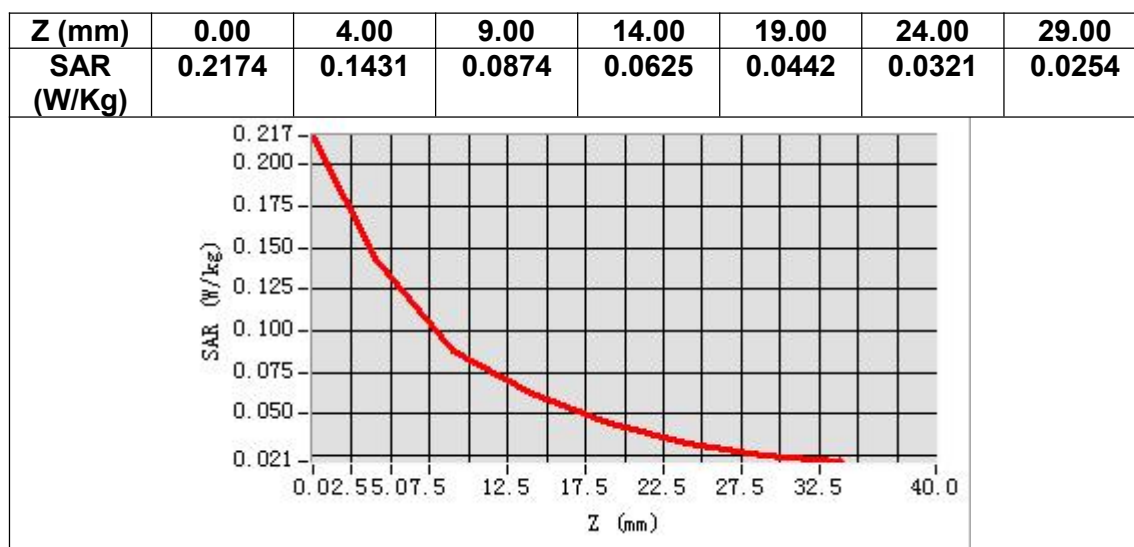
#### VOLUME SAR



Maximum location: X=20.00, Y=-57.00

SAR Peak: 0.22 W/kg

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 0.078939 |
| <b>SAR 1g (W/Kg)</b>  | 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](http://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<br>TESTING<br>TECHNOLOGY<br>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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DocuSign Envelope ID: 223C1A7C-4751-4B95-8502-1618DC0951E3



## 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<br>Dipole 2: R2=0.223 MΩ<br>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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### 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

$\Delta_{step}$  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

$\delta$  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;

$\Delta SAR_{be}$  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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### 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.

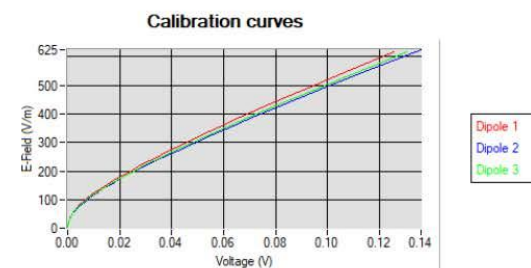
The estimated expanded uncertainty (k=2) in calibration for SAR (W/kg) is +/-14% for the frequency range 600-7500MHz.

### 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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