



## Annex A: System Check

**Project Name : W5**

**Report Number:  
FCC16104036A-6**

### I. RESULTS

| <b><u>TYPE</u></b> | <b><u>BAND</u></b> | <b><u>PARAMETERS</u></b>   |
|--------------------|--------------------|--|
| <b>Validation</b>  | <b>CW835</b>       | <u>Measurement 1</u> : Validation Plane with Dipole device position on Middle Channel in CW mode |
| <b>Validation</b>  | <b>CW835</b>       | <u>Measurement 2</u> : Validation Plane with Dipole device position on Middle Channel in CW mode |
| <b>Validation</b>  | <b>CW1800</b>      | <u>Measurement 3</u> : Validation Plane with Dipole device position on Middle Channel in CW mode |
| <b>Validation</b>  | <b>CW1800</b>      | <u>Measurement 4</u> : Validation Plane with Dipole device position on Middle Channel in CW mode |
| <b>Validation</b>  | <b>CW1900</b>      | <u>Measurement 5</u> : Validation Plane with Dipole device position on Middle Channel in CW mode |
| <b>Validation</b>  | <b>CW1900</b>      | <u>Measurement 6</u> : Validation Plane with Dipole device position on Middle Channel in CW mode |
| <b>Validation</b>  | <b>CW2450</b>      | <u>Measurement 7</u> : Validation Plane with Dipole device position on Middle Channel in CW mode |
| <b>Validation</b>  | <b>CW2450</b>      | <u>Measurement 8</u> : Validation Plane with Dipole device position on Middle Channel in CW mode |

## MEASUREMENT 1

### BODY

Type: Validation measurement (Complete)

Date of measurement: 14/10/2016

Measurement duration: 11 minutes 54 seconds

### **A. Experimental conditions.**

|                               |  |
|-------------------------------|--|
| <b><u>Area Scan</u></b>       | <u>dx=8mm dy=8mm</u>                                   |
| <b><u>ZoomScan</u></b>        | <u>5x5x7, dx=8mm dy=8mm</u><br><u>dz=5mm, Complete</u> |
| <b><u>Phantom</u></b>         | <u>Validation plane</u>                                |
| <b><u>Device Position</u></b> | <u>Dipole</u>  |
| <b><u>Band</u></b>            | <u>CW835</u>   |
| <b><u>Channels</u></b>        | <u>Middle</u>  |
| <b><u>Signal</u></b>          | <u>CW (Duty cycle=1:1)</u>                             |

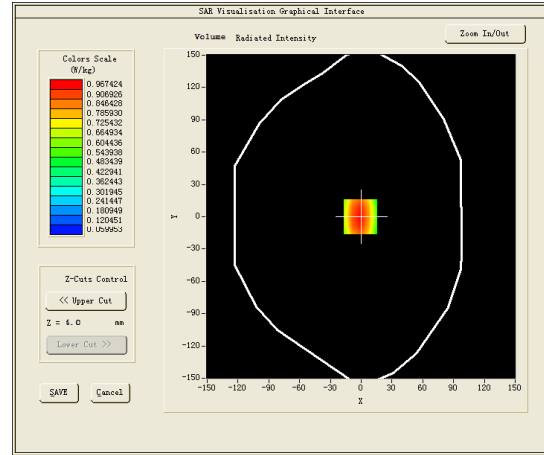
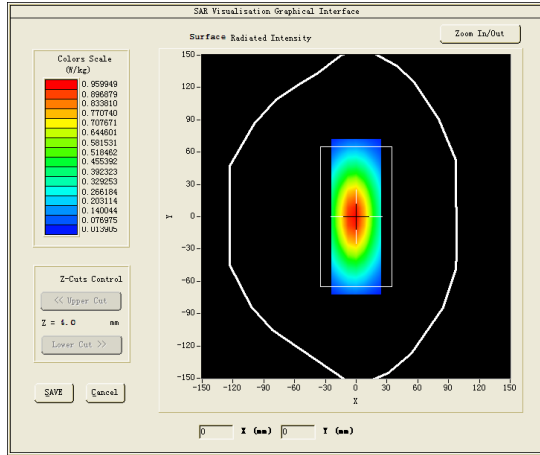
### **C. SAR Measurement Results**

Middle Band SAR (Channel -1):

|   |            |
|---|------------|
| <b>Frequency (MHz)</b>                        | 835.000000 |
| <b>Relative permittivity (real part)</b>      | 53.927799  |
| <b>Relative permittivity (imaginary part)</b> | 21.281300  |
| <b>Conductivity (S/m)</b>                     | 0.987216   |
| <b>Variation (%)</b>                          | 0.120000   |

### SURFACE SAR

### VOLUME SAR

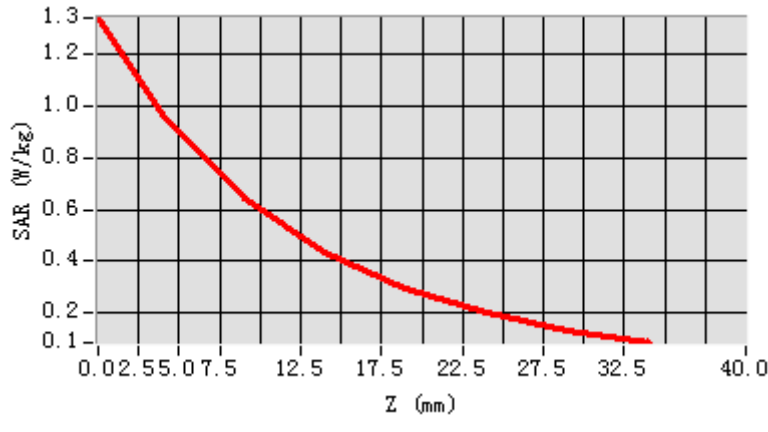


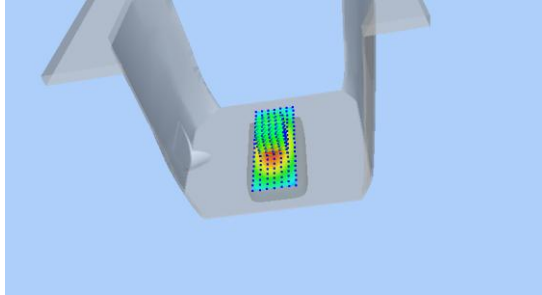
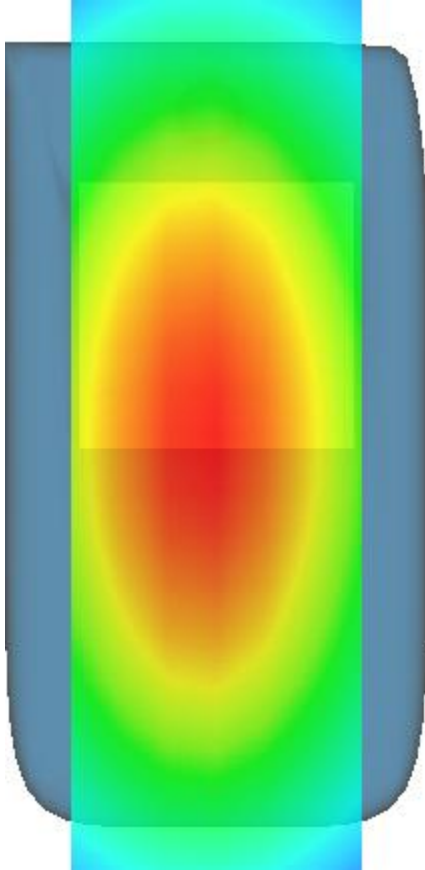
**Maximum location: X=-1.00, Y=0.00**

**SAR Peak: 1.44 W/kg**

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 6.44746  |
| <b>SAR 1g (W/Kg)</b>  | 10.14583 |

| Z (mm)     | 0.00   | 4.00   | 9.00   | 14.00  | 19.00  | 24.00  | 29.00  |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 1.3418 | 0.9674 | 0.6426 | 0.4358 | 0.2947 | 0.1989 | 0.1326 |



| 3D screen shot  | Hot spot position  |
|---|--|
|  |  |

## MEASUREMENT 2

### HEAD

Type: Validation measurement (Complete)

Date of measurement: 14/10/2016

Measurement duration: 11 minutes 54 seconds

### A. Experimental conditions.

|                               |  |
|-------------------------------|--|
| <b><u>Area Scan</u></b>       | <u>dx=8mm dy=8mm</u>                             |
| <b><u>ZoomScan</u></b>        | <u>5x5x7, dx=8mm dy=8mm<br/>dz=5mm, Complete</u> |
| <b><u>Phantom</u></b>         | <u>Validation plane</u>                          |
| <b><u>Device Position</u></b> | <u>Dipole</u>                                    |
| <b><u>Band</u></b>            | <u>CW835</u>                                     |
| <b><u>Channels</u></b>        | <u>Middle</u>                                    |
| <b><u>Signal</u></b>          | <u>CW (Duty cycle=1:1)</u>                       |

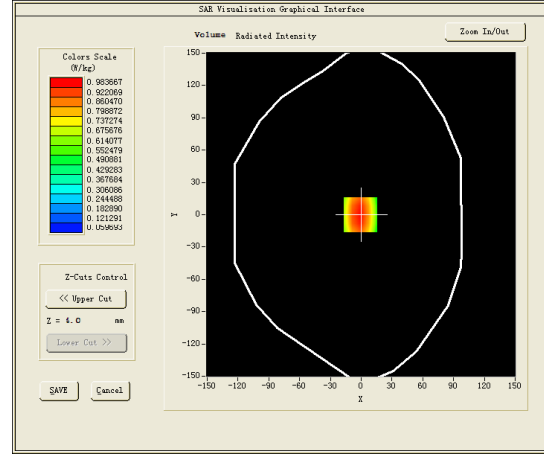
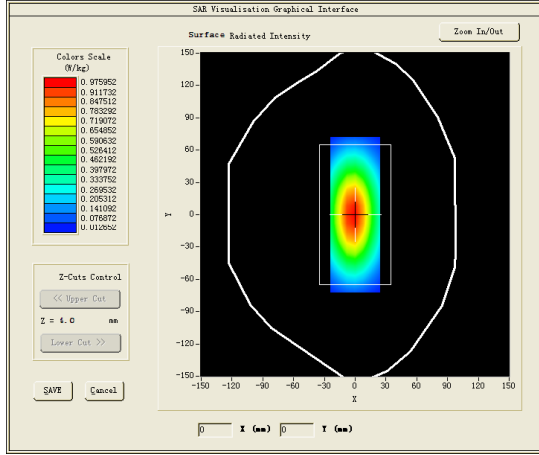
### C. SAR Measurement Results

Middle Band SAR (Channel -1):

|   |            |
|---|------------|
| <b>Frequency (MHz)</b>                        | 835.000000 |
| <b>Relative permittivity (real part)</b>      | 40.328999  |
| <b>Relative permittivity (imaginary part)</b> | 19.880501  |
| <b>Conductivity (S/m)</b>                     | 0.922234   |
| <b>Variation (%)</b>                          | -0.070000  |

### SURFACE SAR

### VOLUME SAR

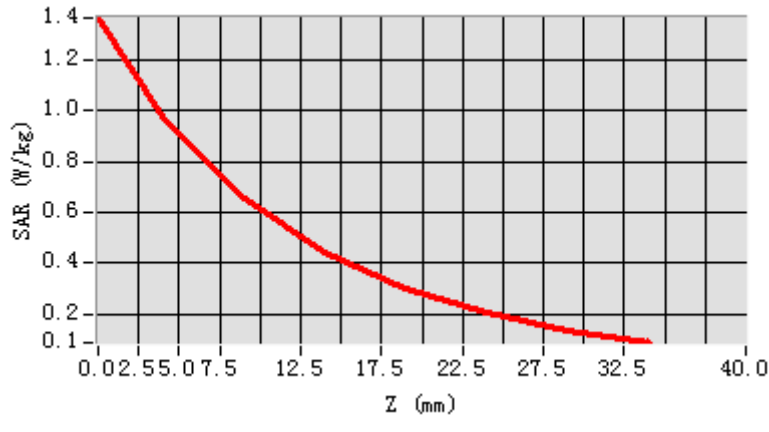


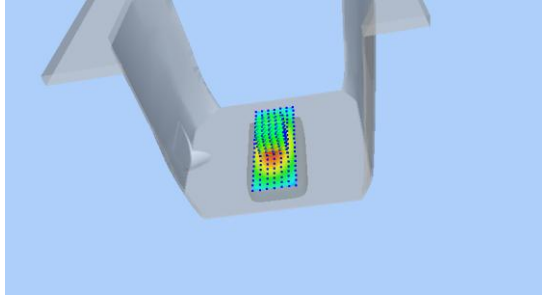
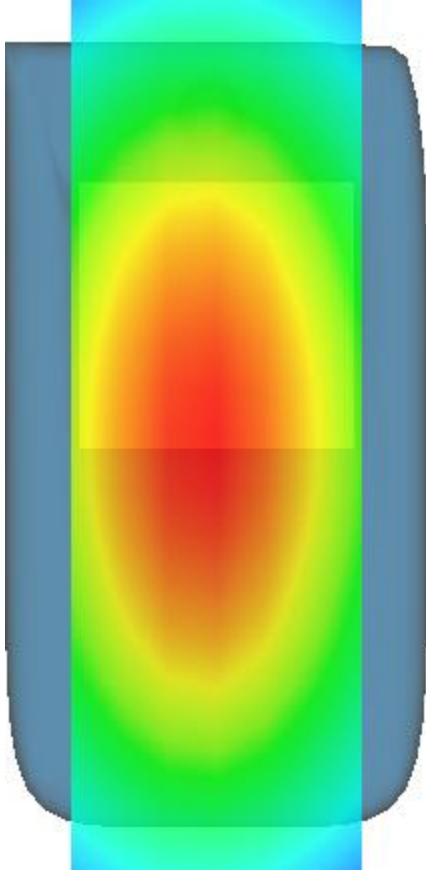
**Maximum location: X=-1.00, Y=0.00**

**SAR Peak: 1.37 W/kg**

|                       |         |
|-----------------------|---------|
| <b>SAR 10g (W/Kg)</b> | 6.15004 |
| <b>SAR 1g (W/Kg)</b>  | 9.70049 |

| Z (mm)     | 0.00   | 4.00   | 9.00   | 14.00  | 19.00  | 24.00  | 29.00  |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 1.3669 | 0.9837 | 0.6529 | 0.4412 | 0.2993 | 0.2017 | 0.1343 |



| 3D screen shot  | Hot spot position  |
|---|--|
|  |  |

## MEASUREMENT 3

### BODY

Type: Validation measurement (Complete)

Date of measurement: 17/10/2016

Measurement duration: 11 minutes 43 seconds

### A. Experimental conditions.

|                               |  |
|-------------------------------|--|
| <b><u>Area Scan</u></b>       | <u>dx=8mm dy=8mm</u>                                 |
| <b><u>ZoomScan</u></b>        | <u>5x5x7,dx=8mm dy=8mm</u><br><u>dz=5mm,Complete</u> |
| <b><u>Phantom</u></b>         | <u>Validation plane</u>                              |
| <b><u>Device Position</u></b> | <u>Dipole</u>  |
| <b><u>Band</u></b>            | <u>CW1800</u>  |
| <b><u>Channels</u></b>        | <u>Middle</u>  |
| <b><u>Signal</u></b>          | <u>CW (Duty cycle=1:1)</u>                           |

### C. SAR Measurement Results

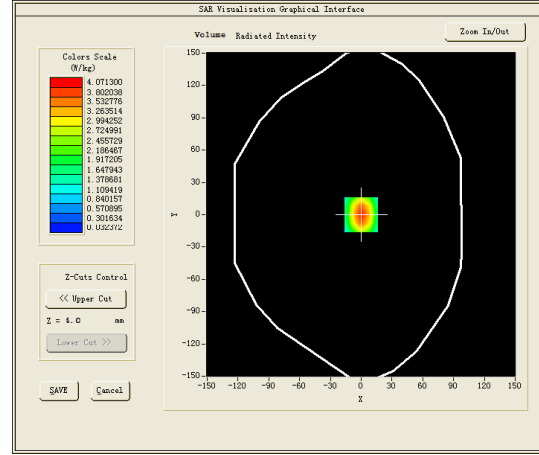
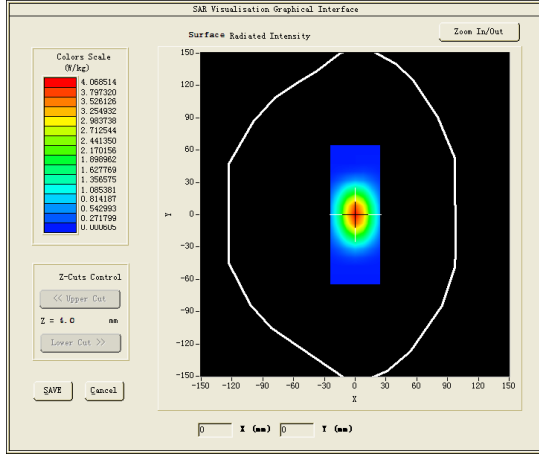
Middle Band SAR (Channel -1):

|   |             |
|---|-------------|
| <b>Frequency (MHz)</b>                        | 1800.000000 |
| <b>Relative permittivity (real part)</b>      | 52.970200   |
| <b>Relative permittivity (imaginary part)</b> | 15.414900   |
| <b>Conductivity (S/m)</b>                     | 1.541490    |
| <b>Variation (%)</b>                          | -0.080000   |



### SURFACE SAR

### VOLUME SAR

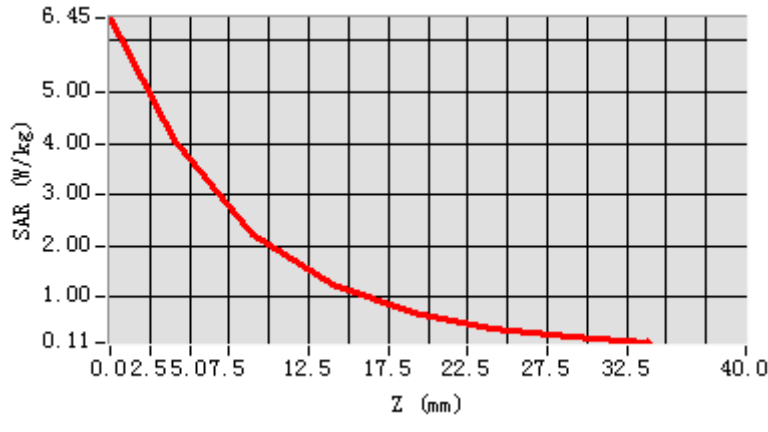


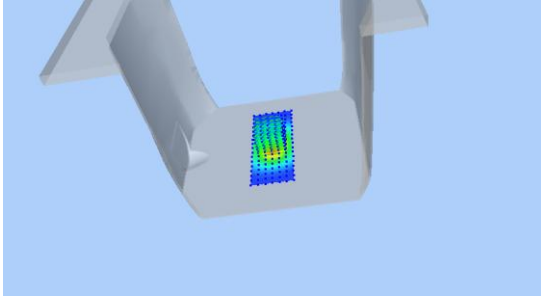
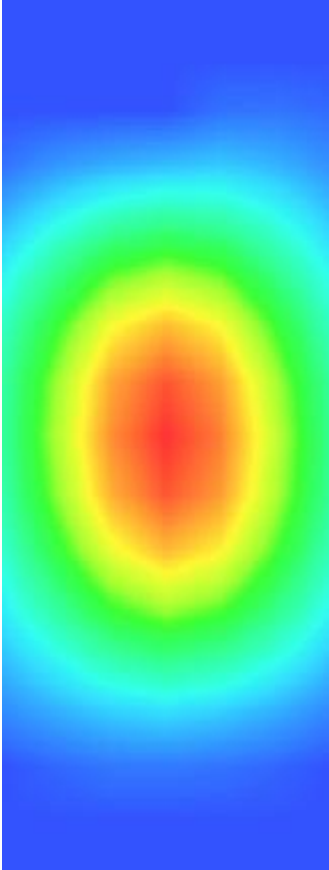
**Maximum location: X=0.00, Y=0.00**

**SAR Peak: 6.86 W/kg**

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 20.71523 |
| <b>SAR 1g (W/Kg)</b>  | 39.55761 |

|                   |               |               |               |               |               |               |               |
|-------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| <b>Z (mm)</b>     | <b>0.00</b>   | <b>4.00</b>   | <b>9.00</b>   | <b>14.00</b>  | <b>19.00</b>  | <b>24.00</b>  | <b>29.00</b>  |
| <b>SAR (W/Kg)</b> | <b>6.4478</b> | <b>4.0713</b> | <b>2.2310</b> | <b>1.2495</b> | <b>0.7043</b> | <b>0.3895</b> | <b>0.2089</b> |



| 3D screen shot  | Hot spot position  |
|---|--|
|  |  |

## MEASUREMENT 4

### HEAD

Type: Validation measurement (Complete)

Date of measurement: 17/10/2016

Measurement duration: 11 minutes 41 seconds

### A. Experimental conditions.

|                               |  |
|-------------------------------|--|
| <b><u>Area Scan</u></b>       | <u>dx=8mm dy=8mm</u>                                 |
| <b><u>ZoomScan</u></b>        | <u>5x5x7,dx=8mm dy=8mm</u><br><u>dz=5mm,Complete</u> |
| <b><u>Phantom</u></b>         | <u>Validation plane</u>                              |
| <b><u>Device Position</u></b> | <u>Dipole</u>  |
| <b><u>Band</u></b>            | <u>CW1800</u>  |
| <b><u>Channels</u></b>        | <u>Middle</u>  |
| <b><u>Signal</u></b>          | <u>CW (Duty cycle=1:1)</u>                           |

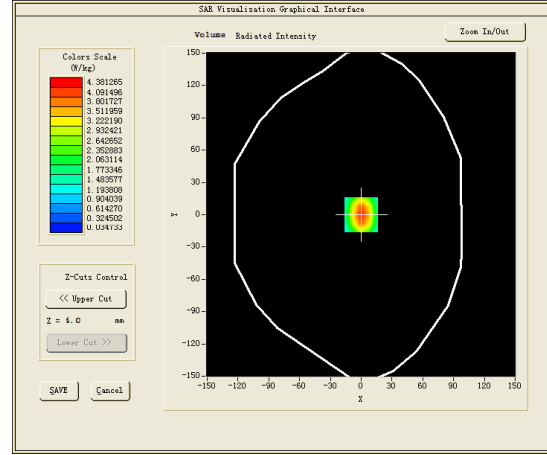
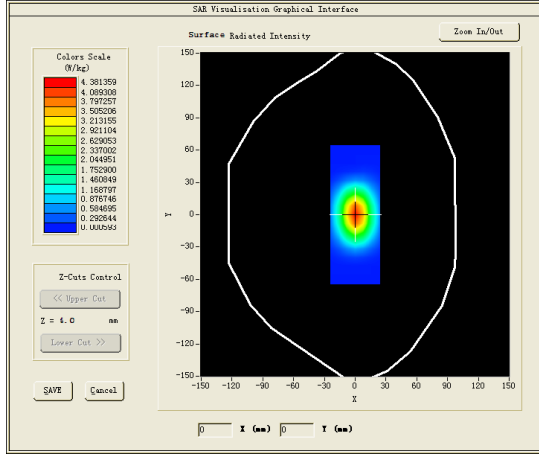
### C. SAR Measurement Results

Middle Band SAR (Channel -1):

|   |             |
|---|-------------|
| <b>Frequency (MHz)</b>                        | 1800.000000 |
| <b>Relative permittivity (real part)</b>      | 39.484501   |
| <b>Relative permittivity (imaginary part)</b> | 14.358300   |
| <b>Conductivity (S/m)</b>                     | 1.435830    |
| <b>Variation (%)</b>                          | 0.610000    |

### SURFACE SAR

### VOLUME SAR

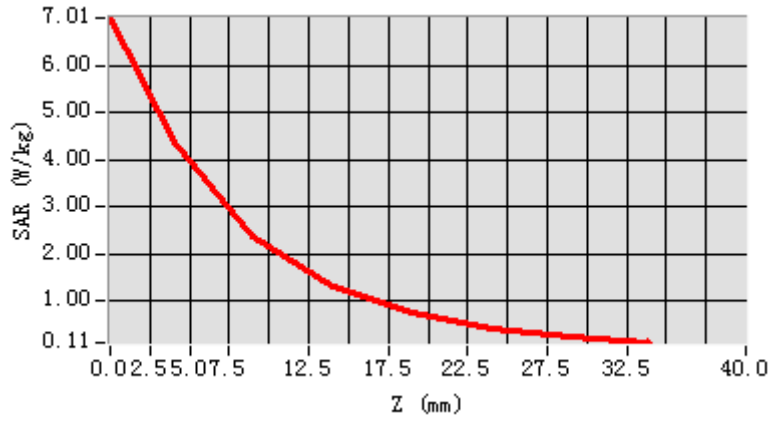


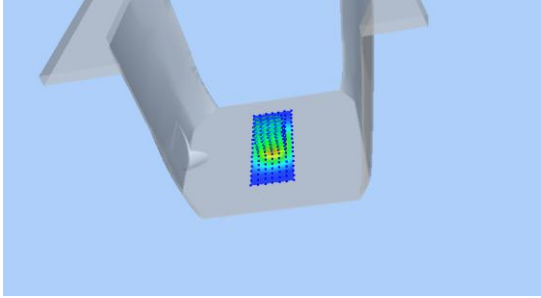
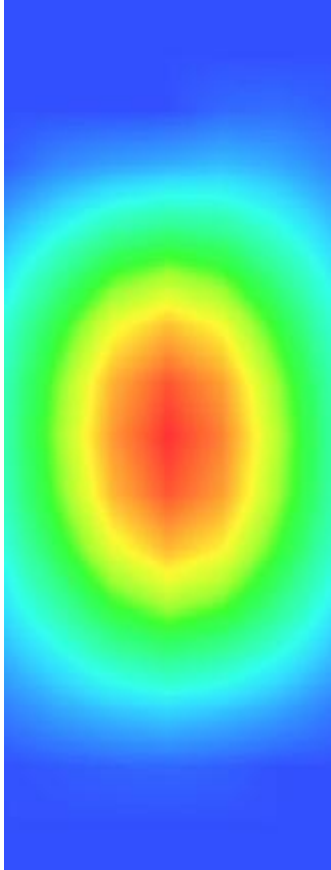
**Maximum location: X=0.00, Y=0.00**

**SAR Peak: 6.95 W/kg**

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 20.60484 |
| <b>SAR 1g (W/Kg)</b>  | 38.98096 |

|                   |               |               |               |               |               |               |               |
|-------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| <b>Z (mm)</b>     | <b>0.00</b>   | <b>4.00</b>   | <b>9.00</b>   | <b>14.00</b>  | <b>19.00</b>  | <b>24.00</b>  | <b>29.00</b>  |
| <b>SAR (W/Kg)</b> | <b>7.0118</b> | <b>4.3813</b> | <b>2.3674</b> | <b>1.3177</b> | <b>0.7415</b> | <b>0.4093</b> | <b>0.2206</b> |



| 3D screen shot  | Hot spot position  |
|---|--|
|  |  |

## MEASUREMENT 5

### BODY

Type: Validation measurement (Complete)

Date of measurement: 15/10/2016

Measurement duration: 10 minutes 57 seconds

### A. Experimental conditions.

|                               |  |
|-------------------------------|--|
| <b><u>Area Scan</u></b>       | <u>dx=8mm dy=8mm</u>                           |
| <b><u>ZoomScan</u></b>        | <u>5x5x7,dx=8mm dy=8mm<br/>dz=5mm,Complete</u> |
| <b><u>Phantom</u></b>         | <u>Validation plane</u>                        |
| <b><u>Device Position</u></b> | <u>Dipole</u>                                  |
| <b><u>Band</u></b>            | <u>CW1900</u>                                  |
| <b><u>Channels</u></b>        | <u>Middle</u>                                  |
| <b><u>Signal</u></b>          | <u>CW (Duty cycle=1:1)</u>                     |

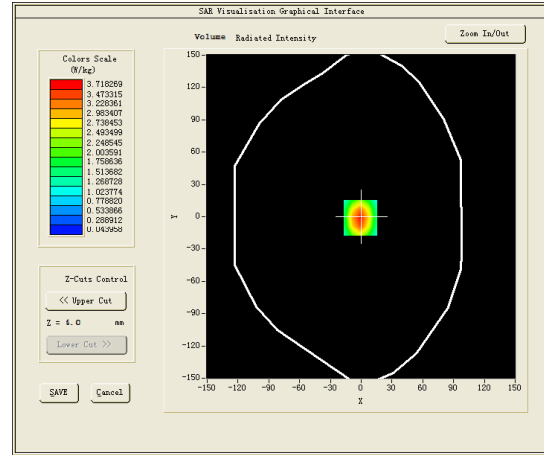
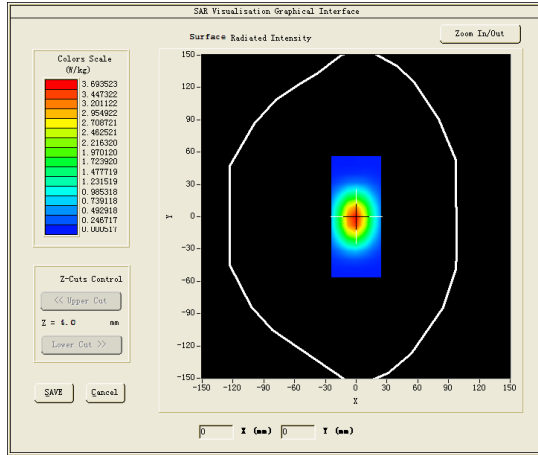
### C. SAR Measurement Results

Middle Band SAR (Channel -1):

|   |             |
|---|-------------|
| <b>Frequency (MHz)</b>                        | 1900.000000 |
| <b>Relative permittivity (real part)</b>      | 53.365299   |
| <b>Relative permittivity (imaginary part)</b> | 14.757600   |
| <b>Conductivity (S/m)</b>                     | 1.557747    |
| <b>Variation (%)</b>                          | -0.450000   |

### SURFACE SAR

### VOLUME SAR

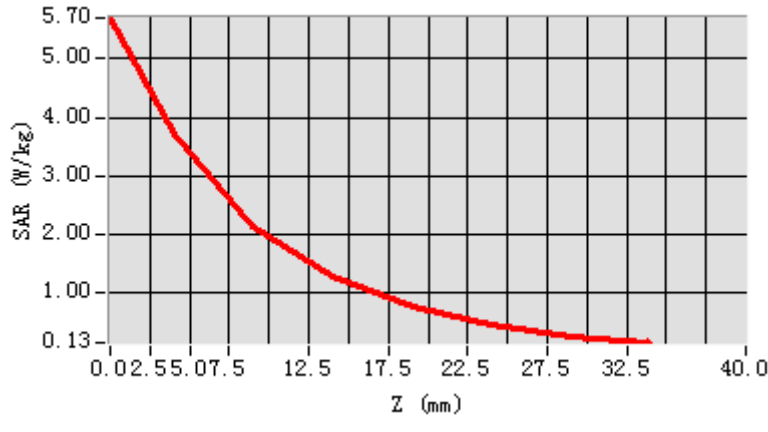


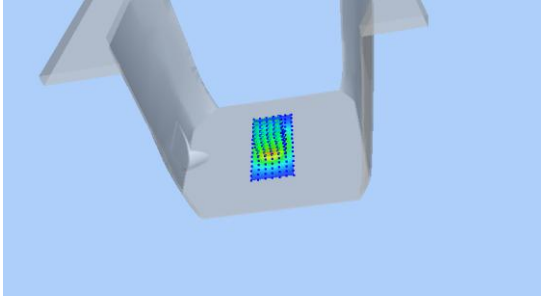
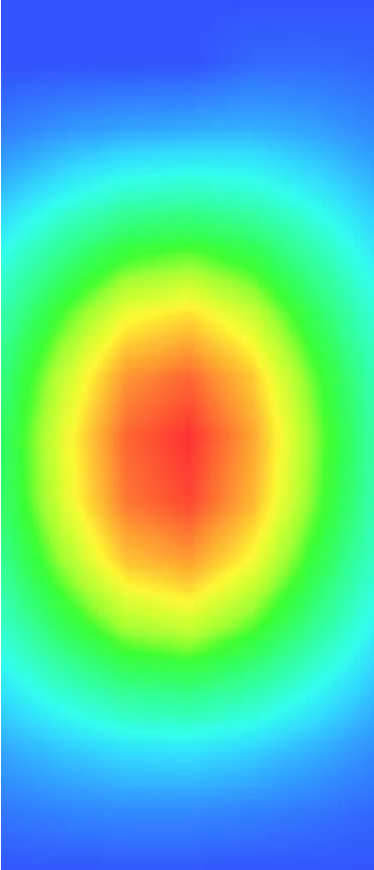
**Maximum location: X=-1.00, Y=-1.00**

**SAR Peak: 6.26 W/kg**

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 20.93533 |
| <b>SAR 1g (W/Kg)</b>  | 39.32904 |

|                   |               |               |               |               |               |               |               |
|-------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| <b>Z (mm)</b>     | <b>0.00</b>   | <b>4.00</b>   | <b>9.00</b>   | <b>14.00</b>  | <b>19.00</b>  | <b>24.00</b>  | <b>29.00</b>  |
| <b>SAR (W/Kg)</b> | <b>5.7034</b> | <b>3.7183</b> | <b>2.1347</b> | <b>1.2560</b> | <b>0.7338</b> | <b>0.4260</b> | <b>0.2429</b> |



| 3D screen shot  | Hot spot position  |
|---|--|
|  |  |



## MEASUREMENT 6

### HEAD

Type: Validation measurement (Complete)

Date of measurement: 15/10/2016

Measurement duration: 11 minutes 6 seconds

### A. Experimental conditions.

|                               |  |
|-------------------------------|--|
| <b><u>Area Scan</u></b>       | <u>dx=8mm dy=8mm</u>                             |
| <b><u>ZoomScan</u></b>        | <u>5x5x7, dx=8mm dy=8mm<br/>dz=5mm, Complete</u> |
| <b><u>Phantom</u></b>         | <u>Validation plane</u>                          |
| <b><u>Device Position</u></b> | <u>Dipole</u>                                    |
| <b><u>Band</u></b>            | <u>CW1900</u>                                    |
| <b><u>Channels</u></b>        | <u>Middle</u>                                    |
| <b><u>Signal</u></b>          | <u>CW (Duty cycle=1:1)</u>                       |

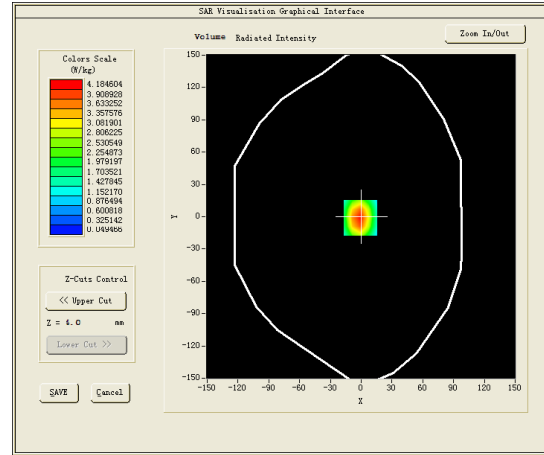
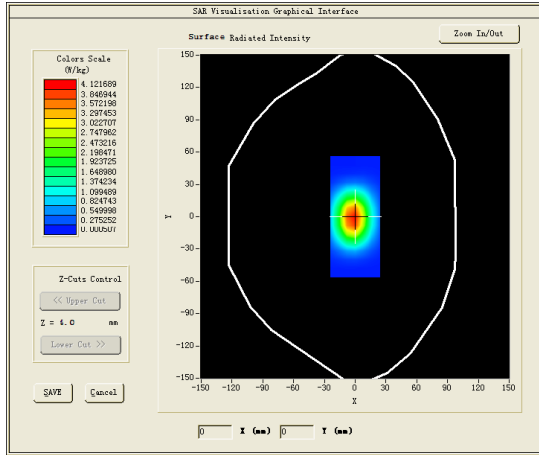
### C. SAR Measurement Results

Middle Band SAR (Channel -1):

|   |             |
|---|-------------|
| <b>Frequency (MHz)</b>                        | 1900.000000 |
| <b>Relative permittivity (real part)</b>      | 39.976398   |
| <b>Relative permittivity (imaginary part)</b> | 13.386300   |
| <b>Conductivity (S/m)</b>                     | 1.412998    |
| <b>Variation (%)</b>                          | -0.040000   |

### SURFACE SAR

### VOLUME SAR

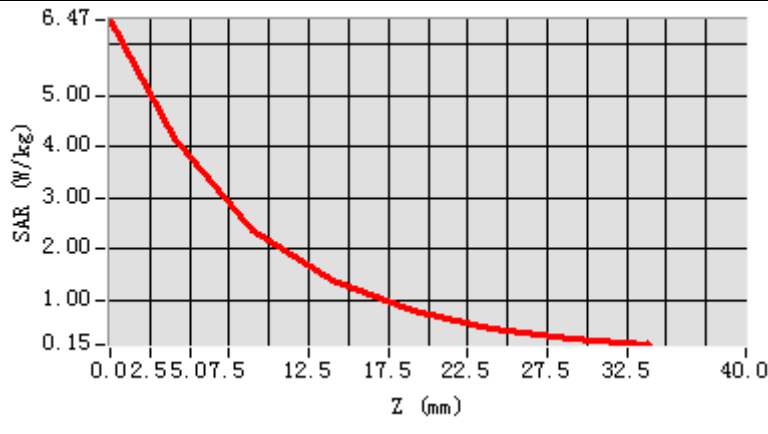


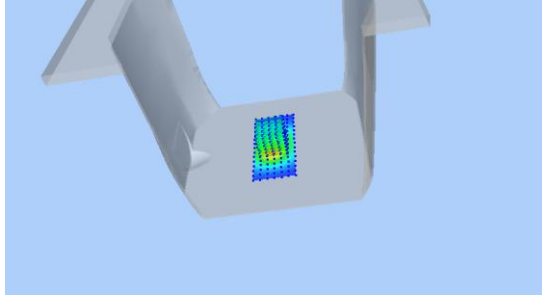
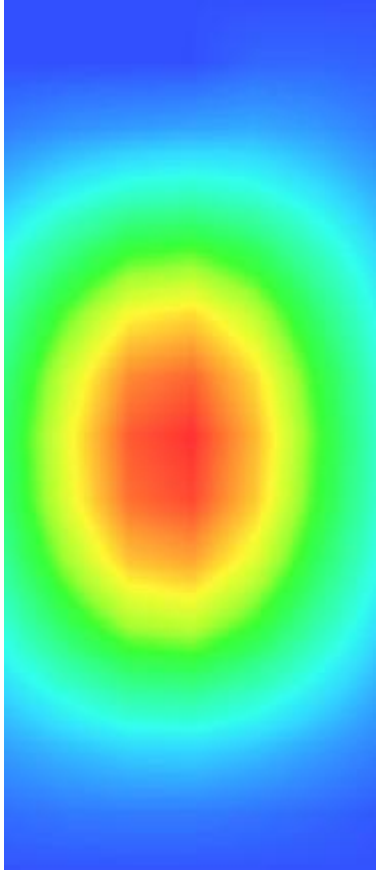
**Maximum location: X=-1.00, Y=-1.00**

**SAR Peak: 6.48 W/kg**

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 21.07104 |
| <b>SAR 1g (W/Kg)</b>  | 39.97625 |

| Z (mm)     | 0.00   | 4.00   | 9.00   | 14.00  | 19.00  | 24.00  | 29.00  |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 6.4693 | 4.1846 | 2.3780 | 1.3892 | 0.8084 | 0.4680 | 0.2662 |



| 3D screen shot  | Hot spot position  |
|---|--|
|  |  |

## MEASUREMENT 7

### BODY

Type: Validation measurement (Complete)

Date of measurement: 13/10/2016

Measurement duration: 9 minutes 46 seconds

### A. Experimental conditions.

|                               |  |
|-------------------------------|--|
| <b><u>Area Scan</u></b>       | <u>dx=8mm dy=8mm</u>                           |
| <b><u>ZoomScan</u></b>        | <u>5x5x7,dx=8mm dy=8mm<br/>dz=5mm,Complete</u> |
| <b><u>Phantom</u></b>         | <u>Validation plane</u>                        |
| <b><u>Device Position</u></b> | <u>Dipole</u>                                  |
| <b><u>Band</u></b>            | <u>CW2450</u>                                  |
| <b><u>Channels</u></b>        | <u>Middle</u>                                  |
| <b><u>Signal</u></b>          | <u>CW (Duty cycle=1:1)</u>                     |

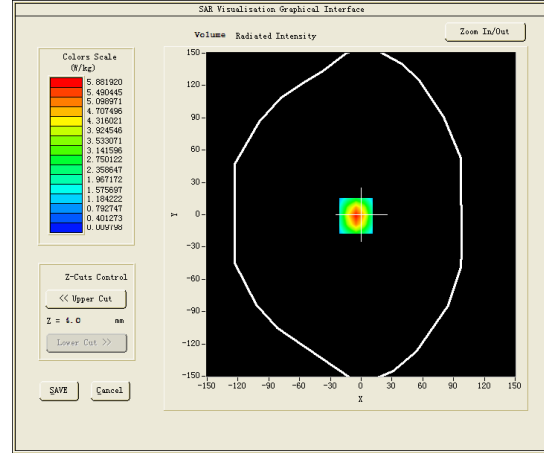
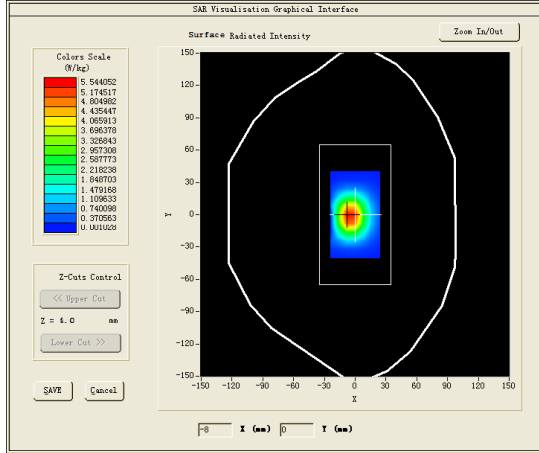
### C. SAR Measurement Results

Middle Band SAR (Channel -1):

|   |             |
|---|-------------|
| <b>Frequency (MHz)</b>                        | 2450.000000 |
| <b>Relative permittivity (real part)</b>      | 52.735699   |
| <b>Relative permittivity (imaginary part)</b> | 14.017300   |
| <b>Conductivity (S/m)</b>                     | 1.907910    |
| <b>Variation (%)</b>                          | 0.390000    |

### SURFACE SAR

### VOLUME SAR

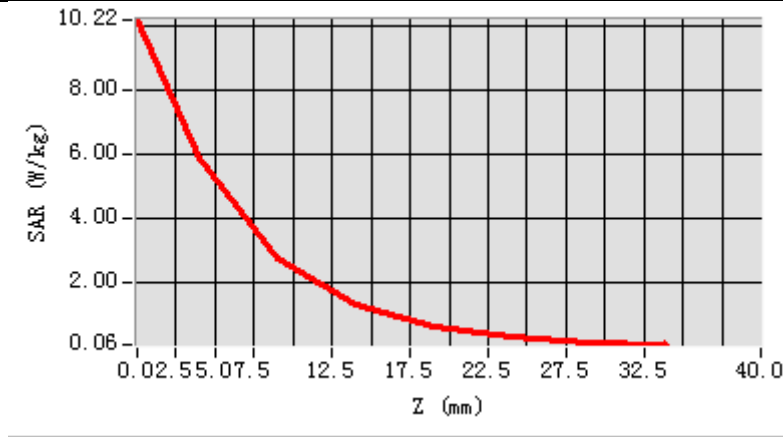


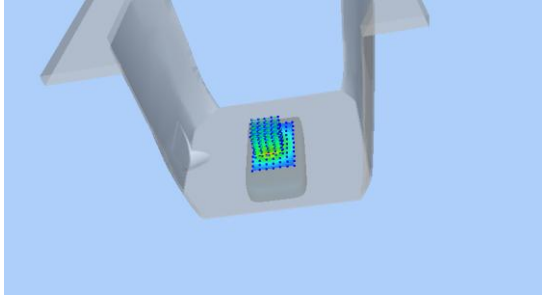
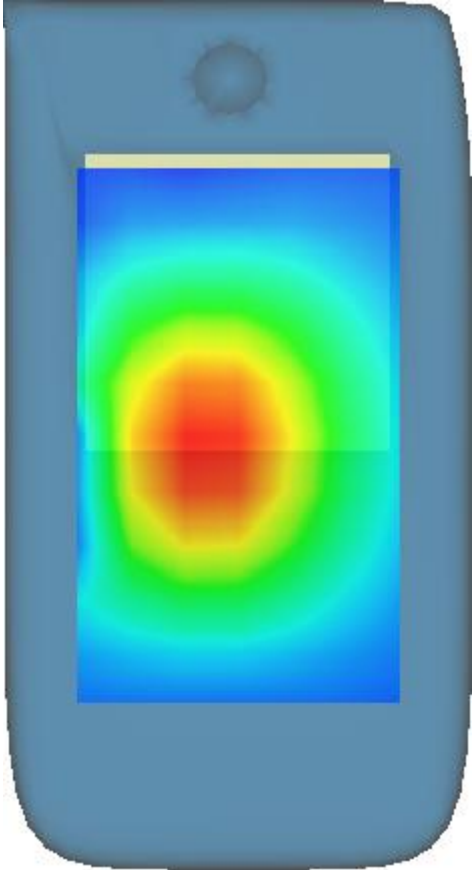
**Maximum location: X=-5.00, Y=-1.00**

**SAR Peak: 10.96 W/kg**

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 24.33453 |
| <b>SAR 1g (W/Kg)</b>  | 52.33343 |

|                   |                |               |               |               |               |               |               |
|-------------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|
| <b>Z (mm)</b>     | <b>0.00</b>    | <b>4.00</b>   | <b>9.00</b>   | <b>14.00</b>  | <b>19.00</b>  | <b>24.00</b>  | <b>29.00</b>  |
| <b>SAR (W/Kg)</b> | <b>10.2188</b> | <b>5.8819</b> | <b>2.7478</b> | <b>1.3151</b> | <b>0.6266</b> | <b>0.2969</b> | <b>0.1341</b> |



| 3D screen shot  | Hot spot position  |
|---|--|
|  |  |

## MEASUREMENT 8

### HEAD

Type: Validation measurement (Complete)

Date of measurement: 13/10/2016

Measurement duration: 9 minutes 46 seconds

### A. Experimental conditions.

|                               |  |
|-------------------------------|--|
| <b><u>Area Scan</u></b>       | <u>dx=8mm dy=8mm</u>                           |
| <b><u>ZoomScan</u></b>        | <u>5x5x7,dx=8mm dy=8mm<br/>dz=5mm,Complete</u> |
| <b><u>Phantom</u></b>         | <u>Validation plane</u>                        |
| <b><u>Device Position</u></b> | <u>Dipole</u>                                  |
| <b><u>Band</u></b>            | <u>CW2450</u>                                  |
| <b><u>Channels</u></b>        | <u>Middle</u>                                  |
| <b><u>Signal</u></b>          | <u>CW (Duty cycle=1:1)</u>                     |

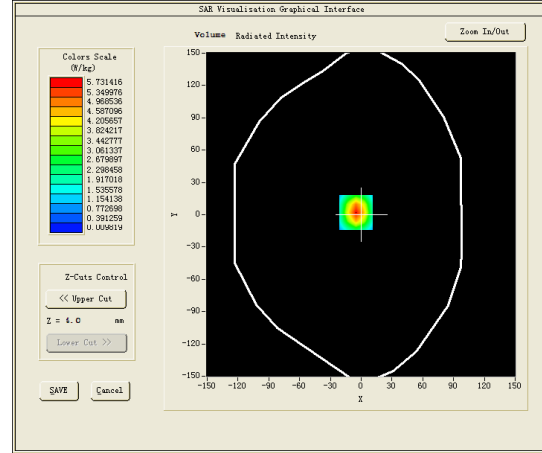
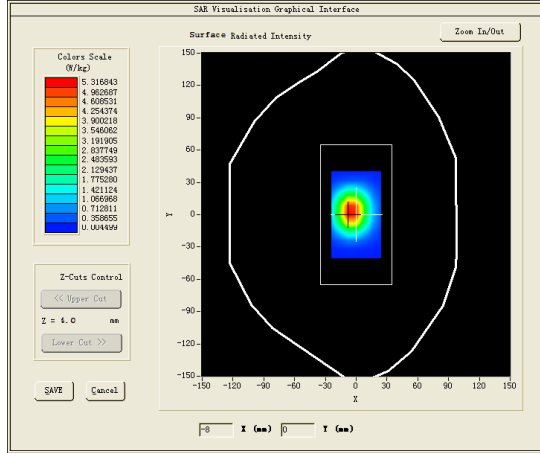
### C. SAR Measurement Results

Middle Band SAR (Channel -1):

|   |             |
|---|-------------|
| <b>Frequency (MHz)</b>                        | 2450.000000 |
| <b>Relative permittivity (real part)</b>      | 39.235699   |
| <b>Relative permittivity (imaginary part)</b> | 12.917300   |
| <b>Conductivity (S/m)</b>                     | 1.758188    |
| <b>Variation (%)</b>                          | 2.820000    |

### SURFACE SAR

### VOLUME SAR



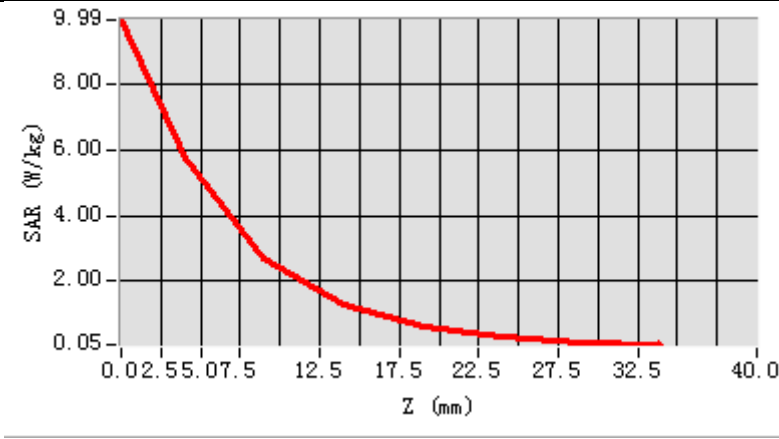
**Maximum location: X=-5.00, Y=2.00**

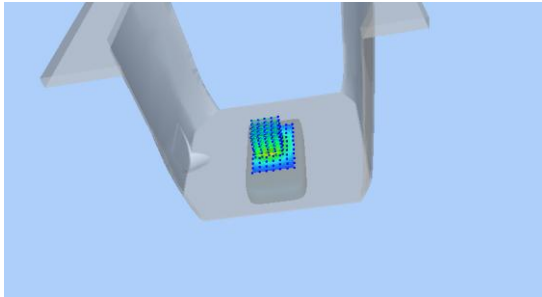
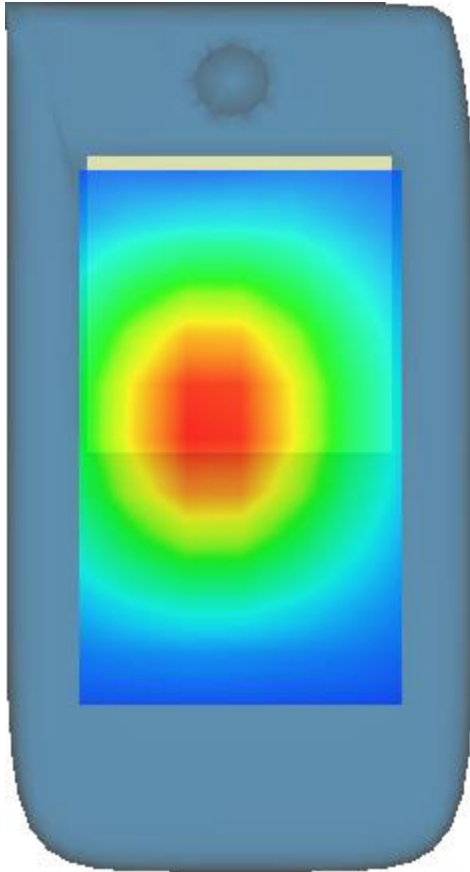
**SAR Peak: 9.92 W/kg**

|                       |          |
|-----------------------|----------|
| <b>SAR 10g (W/Kg)</b> | 24.52895 |
| <b>SAR 1g (W/Kg)</b>  | 53.93069 |



| Z (mm)     | 0.00   | 4.00   | 9.00   | 14.00  | 19.00  | 24.00  | 29.00  |
|------------|--------|--------|--------|--------|--------|--------|--------|
| SAR (W/Kg) | 9.9915 | 5.7314 | 2.6626 | 1.2722 | 0.6047 | 0.2852 | 0.1274 |



| 3D screen shot  | Hot spot position  |
|---|--|
|  |  |