

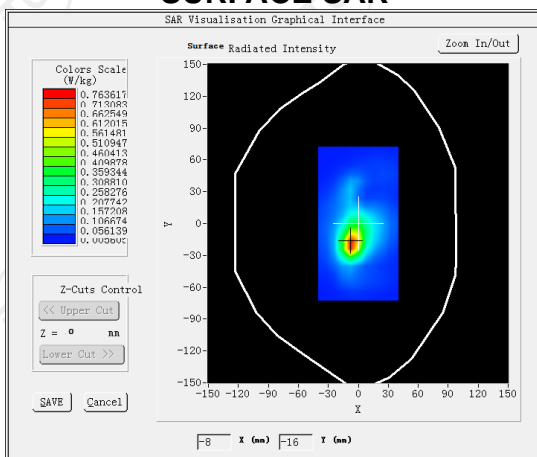
WCDMA Band II  
**MEASUREMENT 1**

Middle Band SAR (Channel 9400):

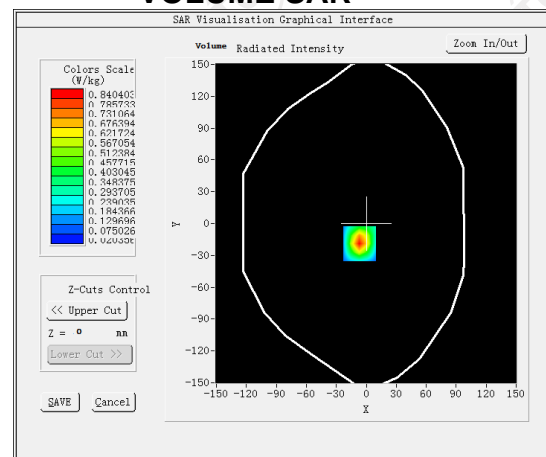
Date: 10/27/2022

<b>Frequency (MHz)</b>	1880.000000
<b>Relative permittivity (real part)</b>	40.000000
<b>Relative permittivity (imaginary part)</b>	13.408000
<b>Conductivity (S/m)</b>	1.400391
<b>Variation (%)</b>	0.080000
<b>Crest Factor</b>	1.0
<b>Probe Conversion factor</b>	2.23
<b>E-Field Probe:</b>	SSE2 (SN 36/20 EPGO346)
<b>Area Scan</b>	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
<b>ZoomScan</b>	<u>5x5x7,dx=8mm dy=8mm</u> <u>dz=5mm,Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
<b>Phantom</b>	<u>Validation plane</u>
<b>Device Position</b>	<u>Body back(0mm)</u>
<b>Band</b>	<u>BAND2 WCDMA1900</u>

**SURFACE SAR**



**VOLUME SAR**



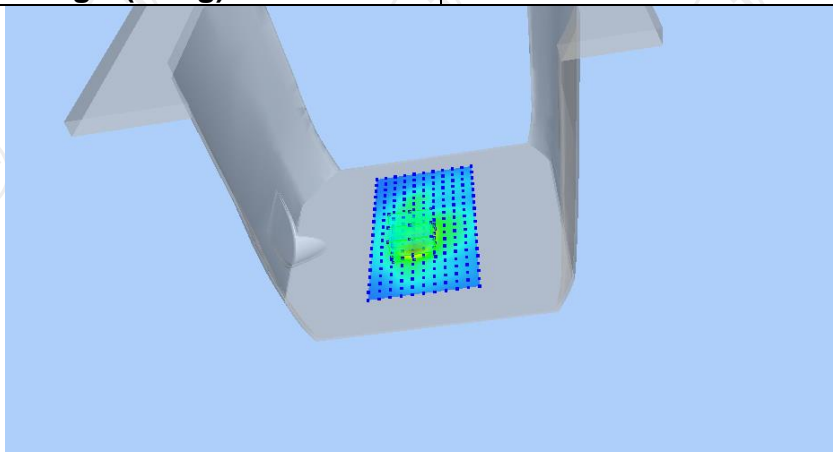
**Maximum location: X=-7.00, Y=-19.00 SAR Peak: 1.53 W/kg**

**SAR 10g (W/Kg)**

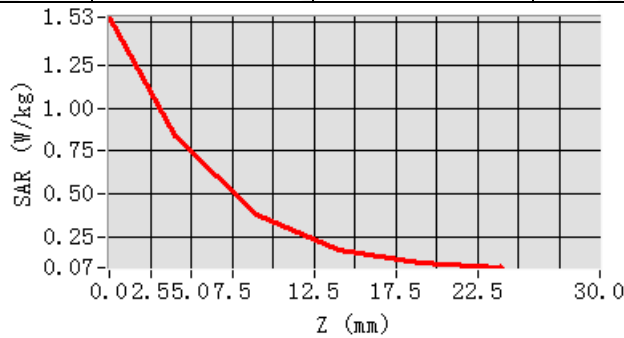
0.354008

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

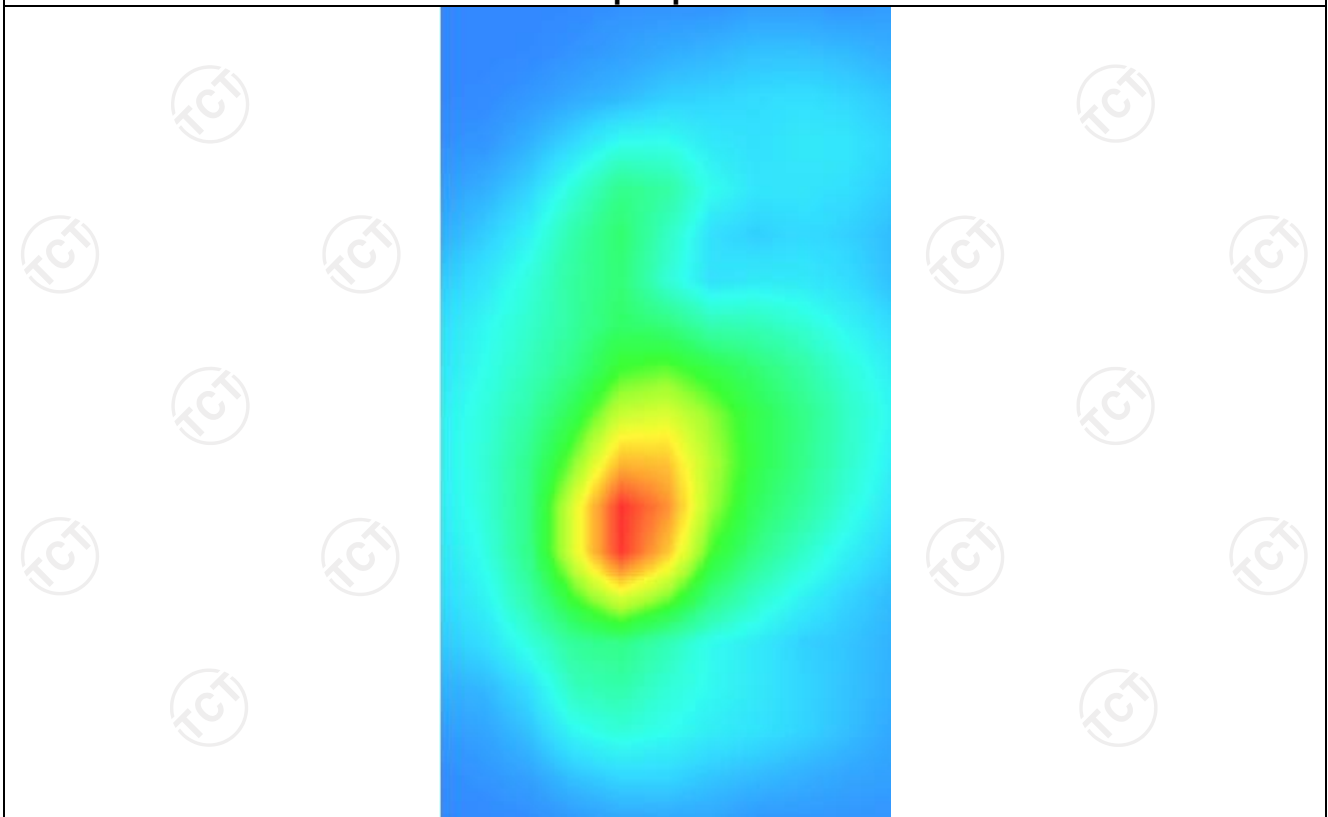
0.770253



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.5266	0.8404	0.3774	0.1776	0.1039



**Hot spot position**



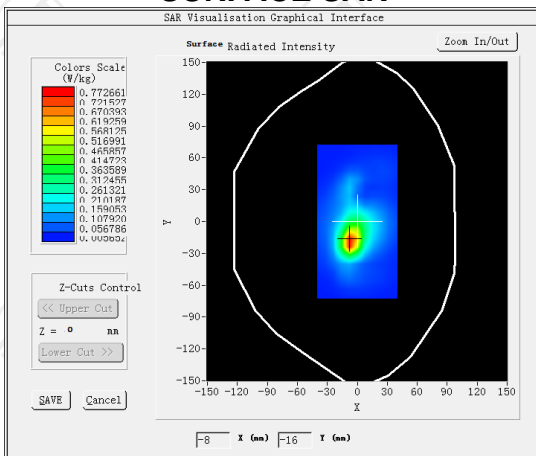
**MEASUREMENT 2**

Middle Band SAR (Channel 9400):

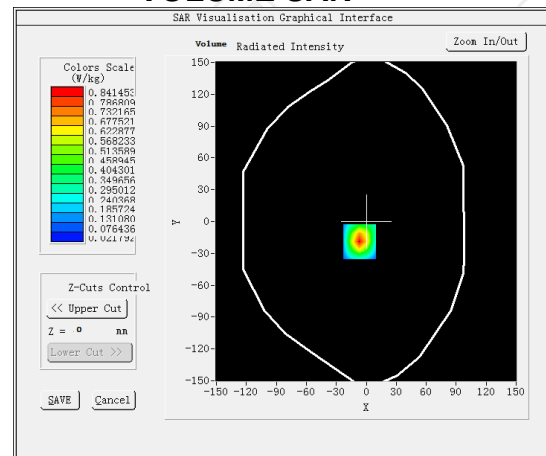
Date: 10/27/2022

<b>Frequency (MHz)</b>	1880.000000
<b>Relative permittivity (real part)</b>	40.000000
<b>Relative permittivity (imaginary part)</b>	13.408000
<b>Conductivity (S/m)</b>	1.400391
<b>Variation (%)</b>	-0.910000
<b>Crest Factor</b>	1.0
<b>Probe Conversion factor</b>	2.23
<b>E-Field Probe:</b>	SSE2 (SN 36/20 EPGO346)
<b>Area Scan</b>	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
<b>ZoomScan</b>	<u>5x5x7, dx=8mm dy=8mm</u> <u>dz=5mm, Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
<b>Phantom</b>	<u>Validation plane</u>
<b>Device Position</b>	<u>Body back(0mm)</u>
<b>Band</b>	<u>BAND2 WCDMA1900(hotspot)</u>

**SURFACE SAR**



**VOLUME SAR**



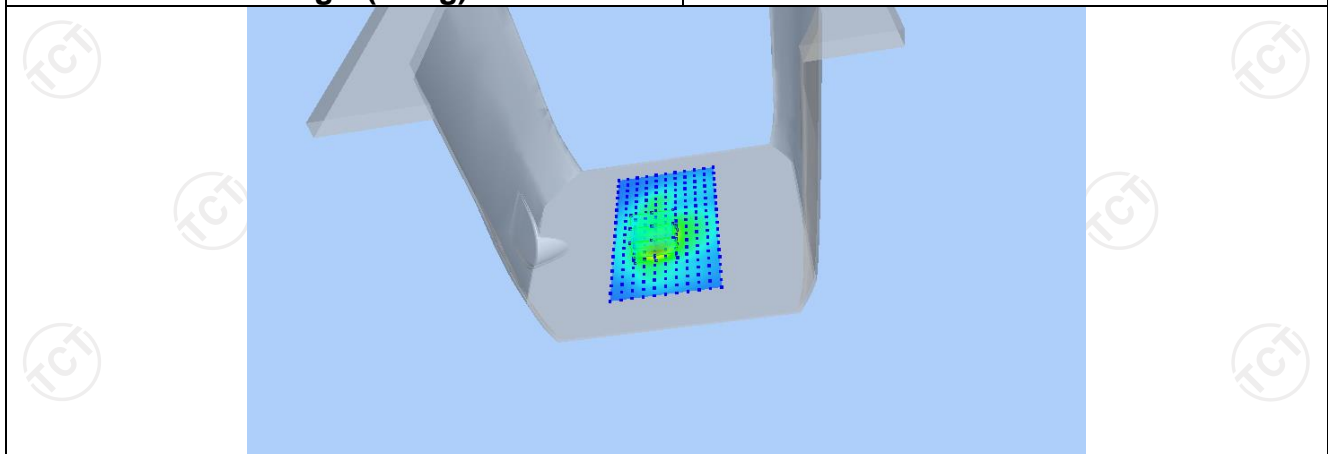
**Maximum location: X=-7.00, Y=-19.00 SAR Peak: 1.53 W/kg**

**SAR 10g (W/Kg)**

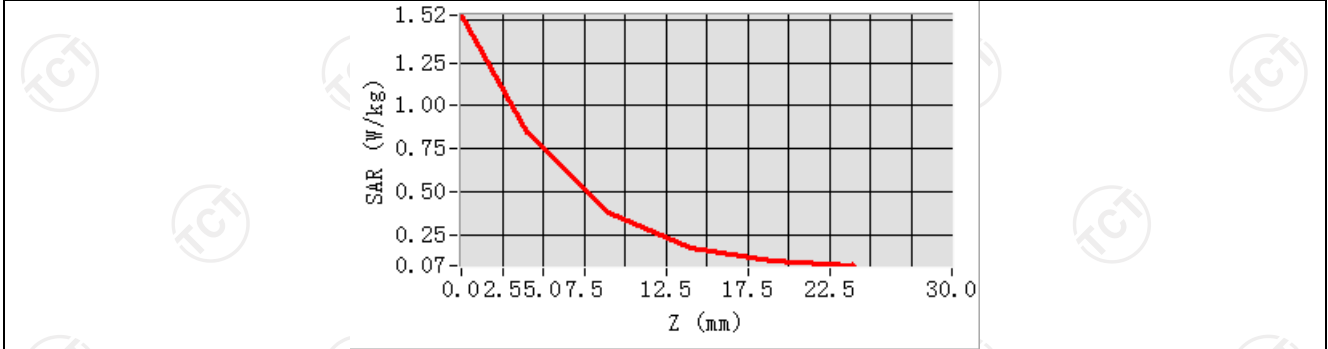
0.355557

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

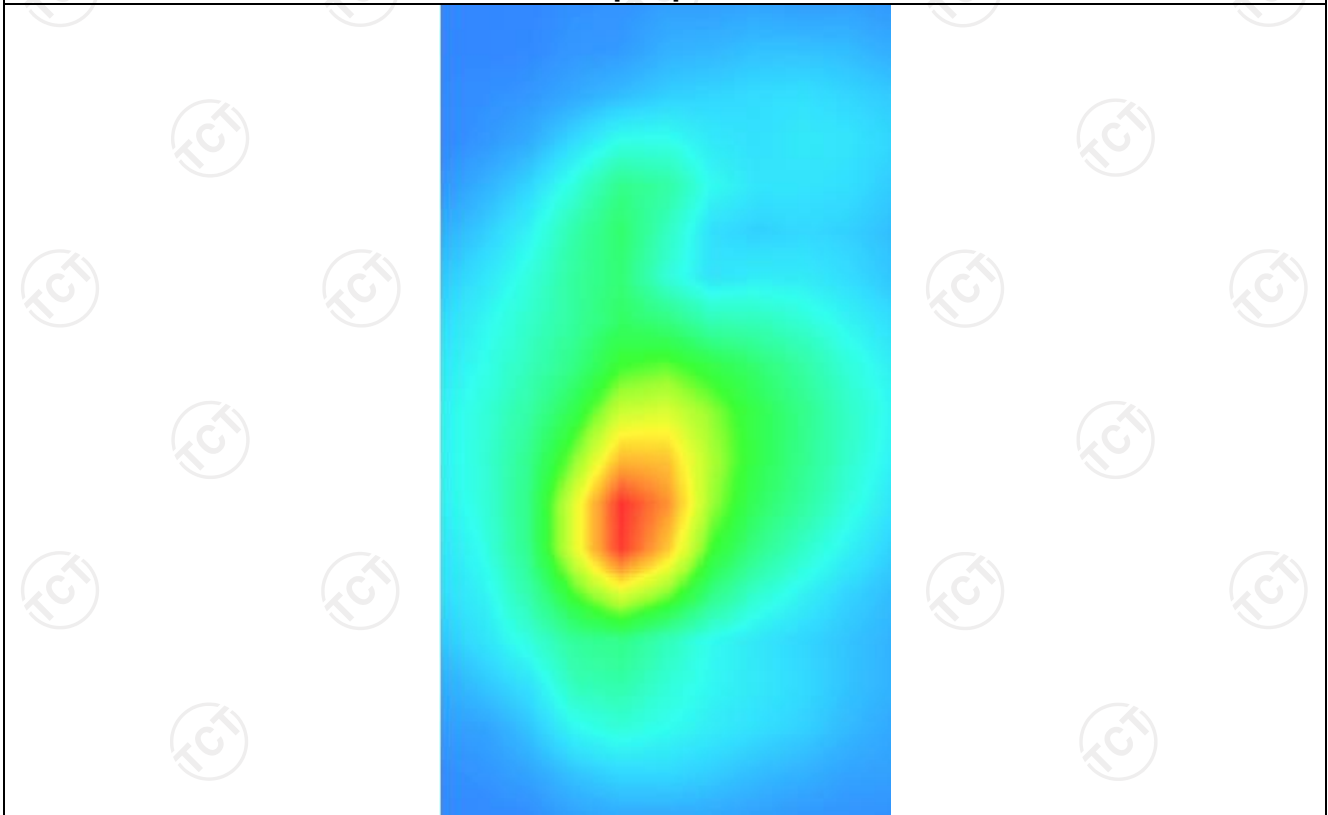
0.771222



<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>SAR (W/Kg)</b>	<b>1.5248</b>	<b>0.8415</b>	<b>0.3794</b>	<b>0.1792</b>	<b>0.1050</b>



**Hot spot position**



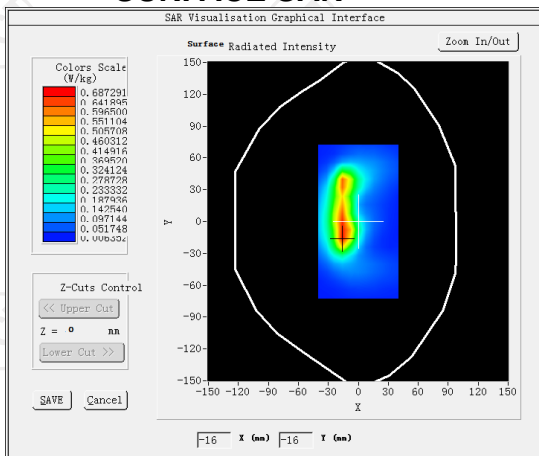
WCDMA Band IV  
**MEASUREMENT 1**

Middle Band SAR (Channel 1413):

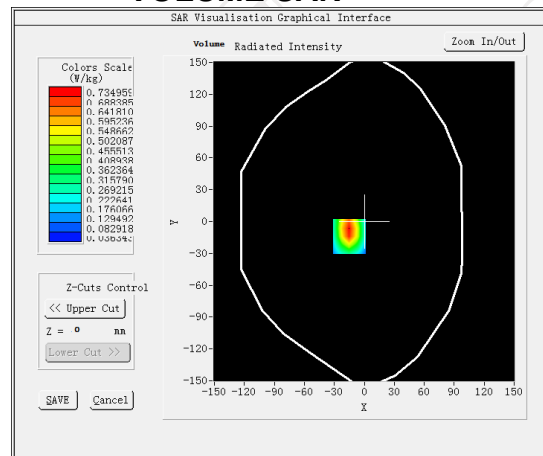
Date: 10/19/2022

<b>Frequency (MHz)</b>	1732.600000
<b>Relative permittivity (real part)</b>	40.116364
<b>Relative permittivity (imaginary part)</b>	14.137455
<b>Conductivity (S/m)</b>	1.360337
<b>Variation (%)</b>	0.830000
<b>Crest Factor</b>	1.0
<b>Probe Conversion factor</b>	2.08
<b>E-Field Probe:</b>	SSE2 (SN 36/20 EPG0346)
<b>Area Scan</b>	dx=8mm dy=8mm, h= 5.00 mm
<b>ZoomScan</b>	5x5x7,dx=8mm dy=8mm dz=5mm,Complete/ndx=8mm dy=8mm, h= 5.00 mm
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body back(0mm)
<b>Band</b>	BAND4 WCDMA1700

**SURFACE SAR**

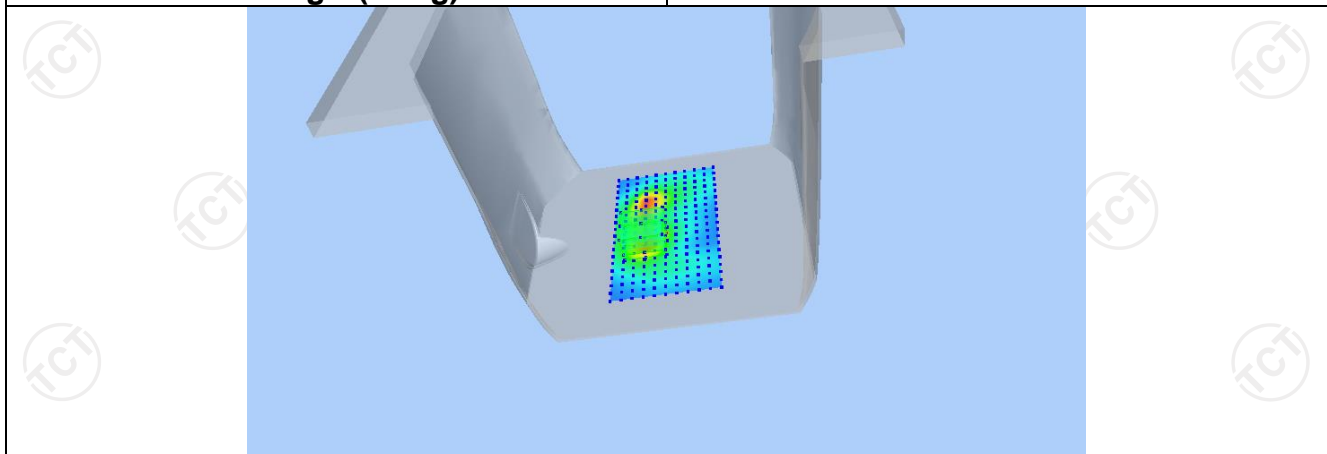


**VOLUME SAR**

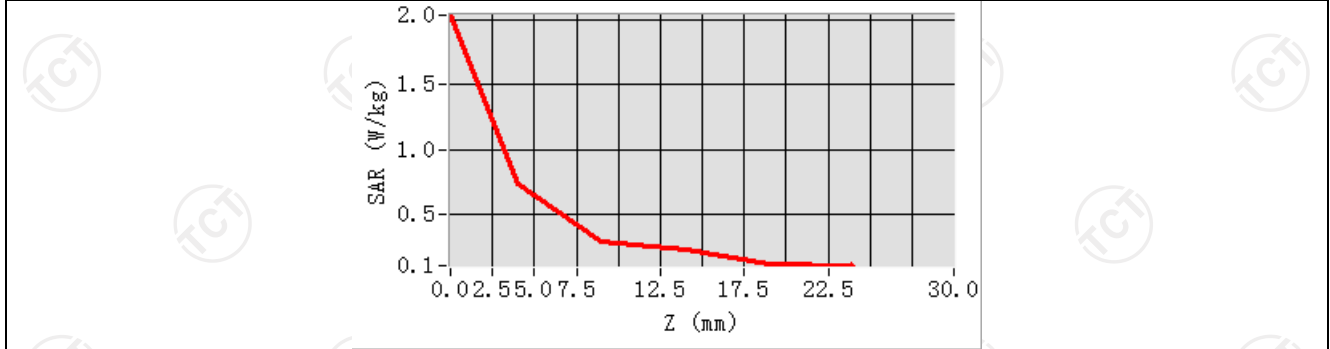


**Maximum location: X=-15.00, Y=-14.00 SAR Peak:1.21 W/kg**

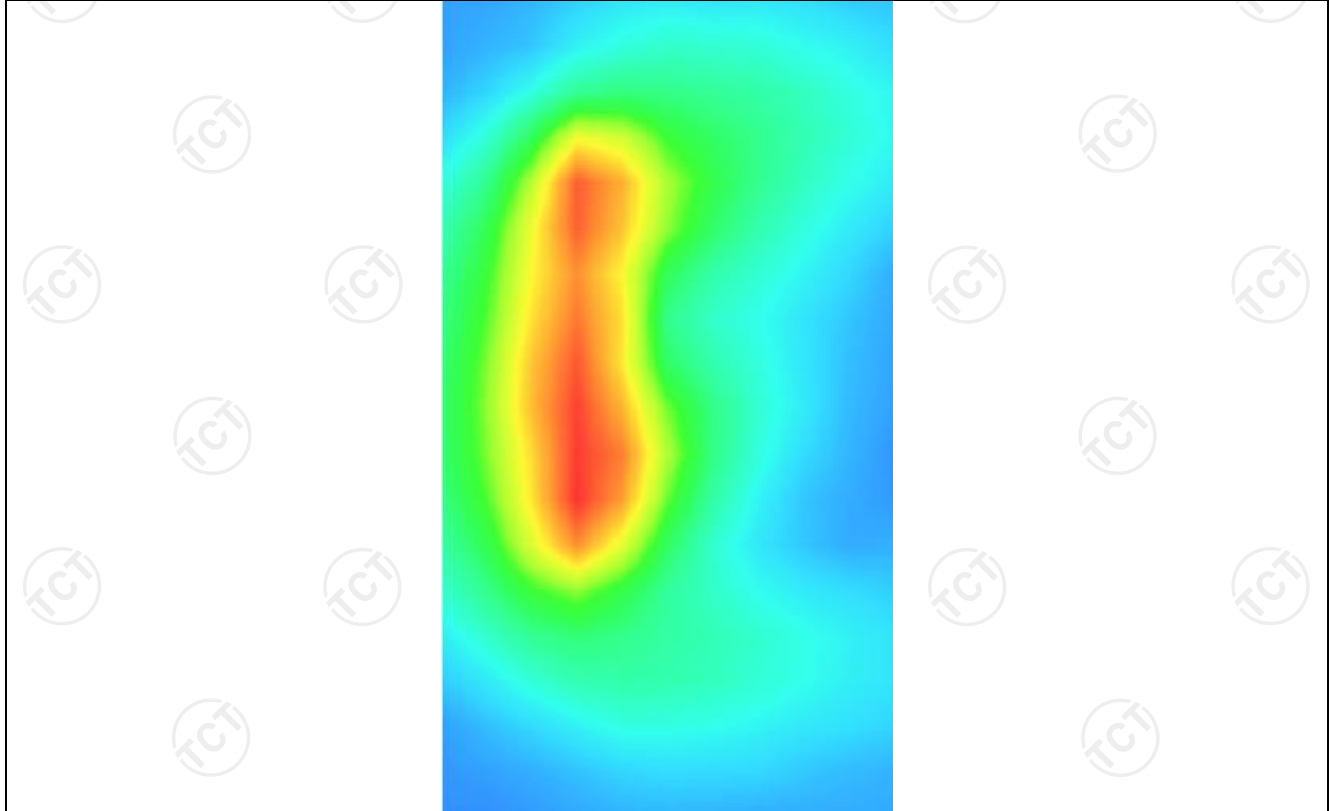
<b>SAR 10g (W/Kg)</b>	1.183260
<b>SAR 1g (W/Kg)</b>	0.667300



<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>SAR (W/Kg)</b>	<b>2.0352</b>	<b>0.7350</b>	<b>0.2897</b>	<b>0.2270</b>	<b>0.1134</b>



**Hot spot position**



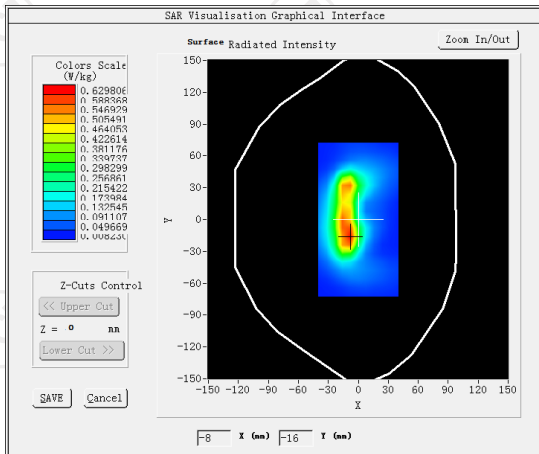
**MEASUREMENT 2**

Middle Band SAR (Channel 1413):

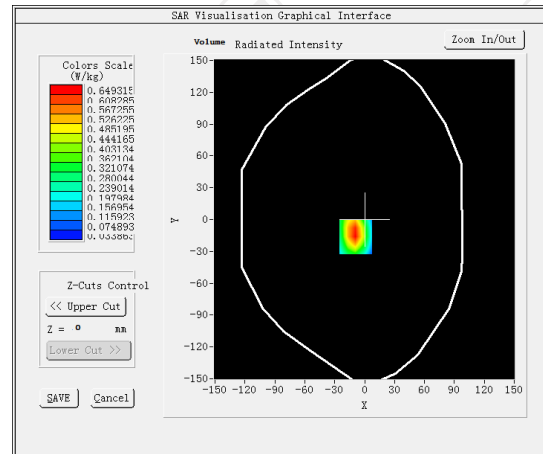
Date: 10/19/2022

Frequency (MHz)	1732.600000
Relative permittivity (real part)	40.116364
Relative permittivity (imaginary part)	14.137455
Conductivity (S/m)	1.360337
Variation (%)	-0.290000
Crest Factor	1.0
Probe Conversion factor	2.08
E-Field Probe:	SSE2 (SN 36/20 EPGO346)
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Body back(hotspot 0mm)
Band	BAND4 WCDMA1700

**SURFACE SAR**



**VOLUME SAR**



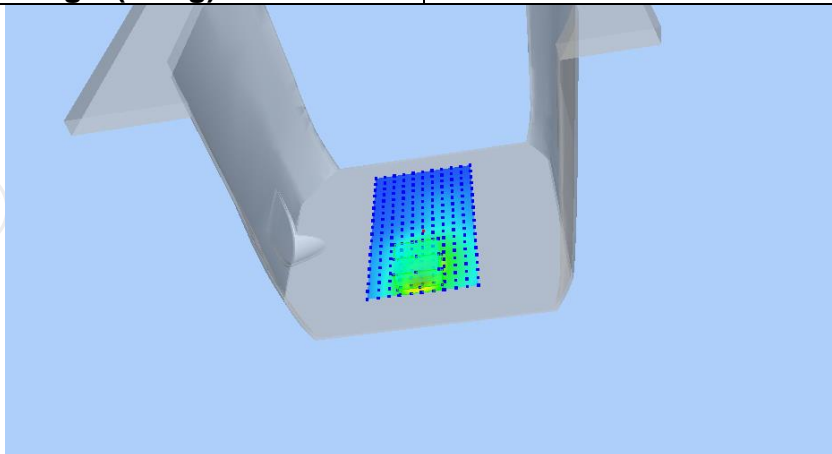
Maximum location: X=-9.00, Y=-16.00 SAR Peak: 1.06 W/kg

SAR 10g (W/Kg)

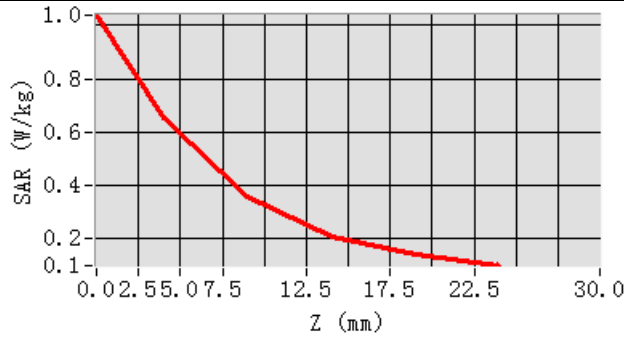
0.328101

SAR 1g (W/Kg)

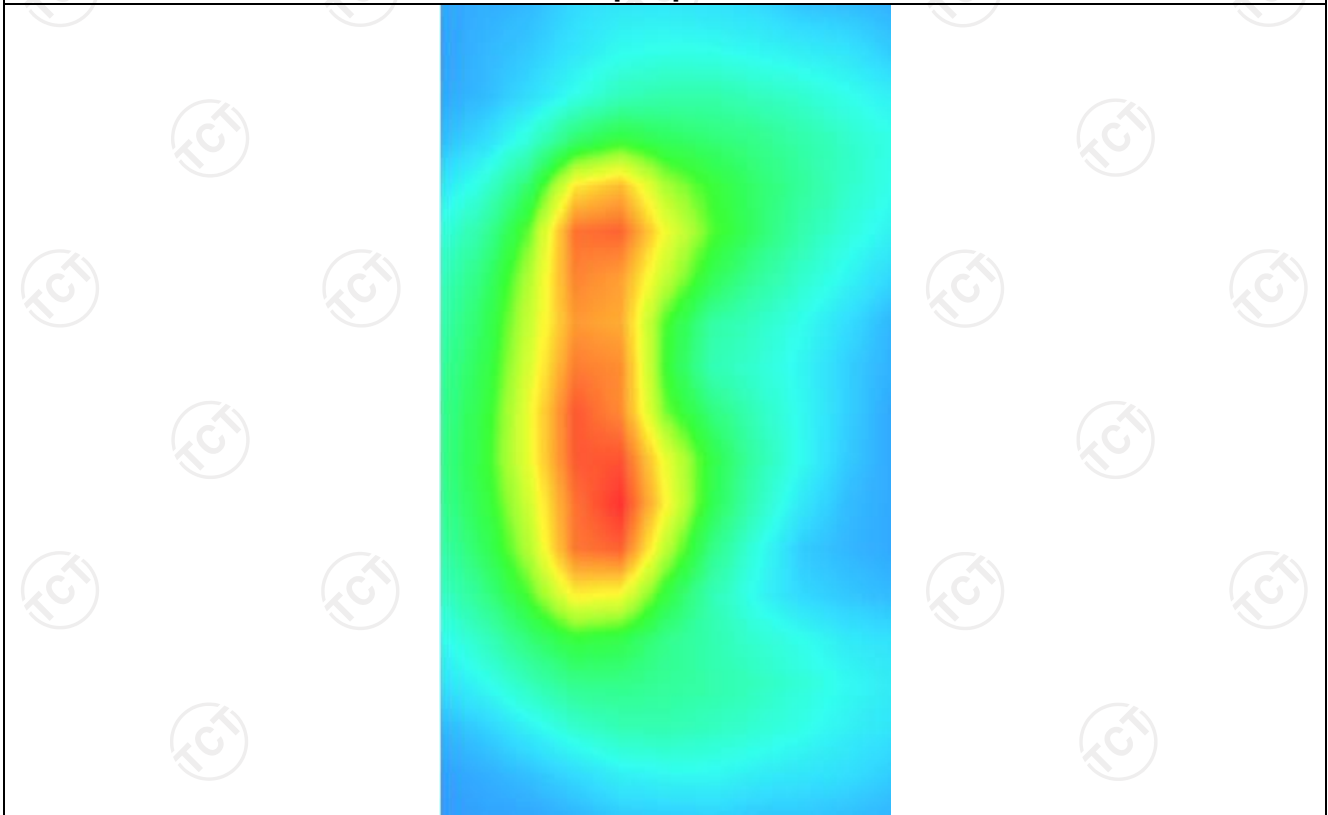
0.610943



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.0392	0.6493	0.3564	0.2060	0.1349



**Hot spot position**





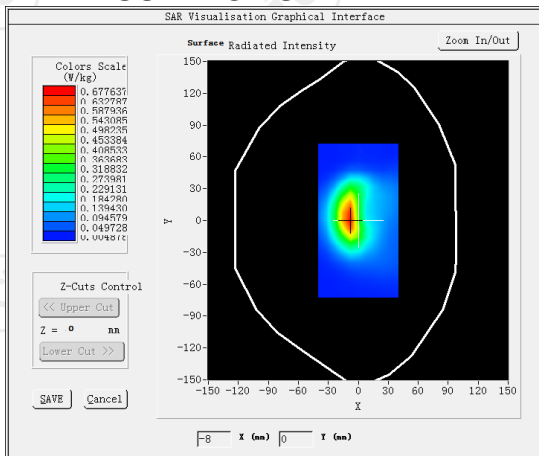
WCDMA Band V  
**MEASUREMENT 1**

Middle Band SAR (Channel 4182):

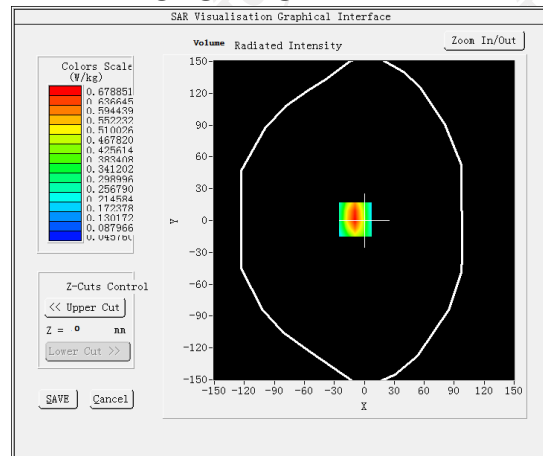
Date: 10/14/2022

<b>Frequency (MHz)</b>	836.400000
<b>Relative permittivity (real part)</b>	41.500000
<b>Relative permittivity (imaginary part)</b>	19.400000
<b>Conductivity (S/m)</b>	0.901453
<b>Variation (%)</b>	-0.030000
<b>Crest Factor:</b>	1.0
<b>Probe Conversion factor</b>	1.80
<b>E-Field Probe:</b>	SSE2 (SN 36/20 EPGO346)
<b>Area Scan</b>	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
<b>ZoomScan</b>	<u>5x5x7, dx=8mm dy=8mm</u> <u>dz=5mm, Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
<b>Phantom</b>	<u>Validation plane</u>
<b>Device Position</b>	<u>Body back(0mm)</u>
<b>Band</b>	<u>BAND5 WCDMA850</u>

**SURFACE SAR**



**VOLUME SAR**



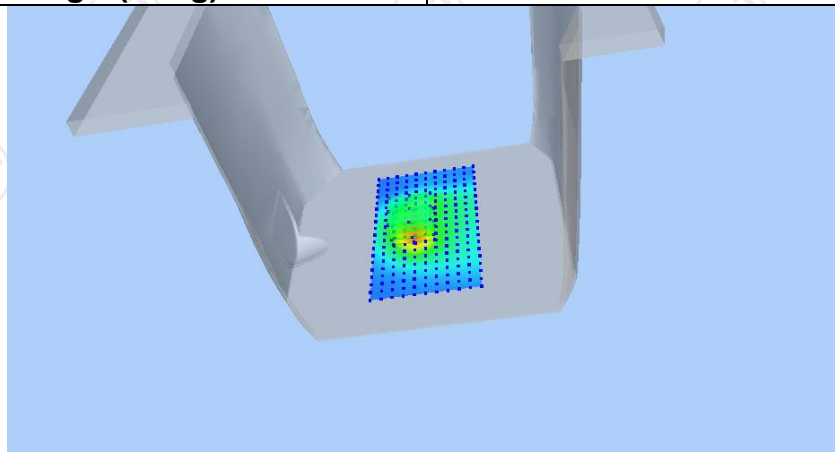
Maximum location: X=-9.00, Y=1.00 SAR Peak: 1.10 W/kg

**SAR 10g (W/Kg)**

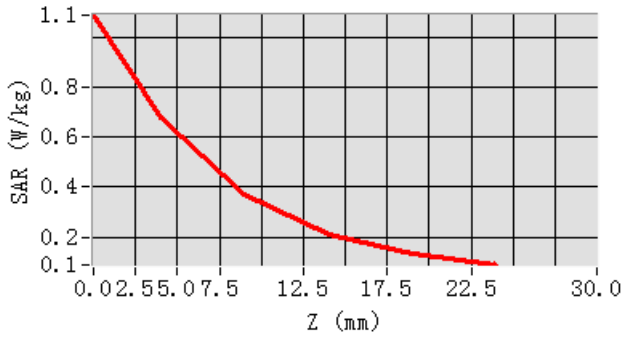
0.342691

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

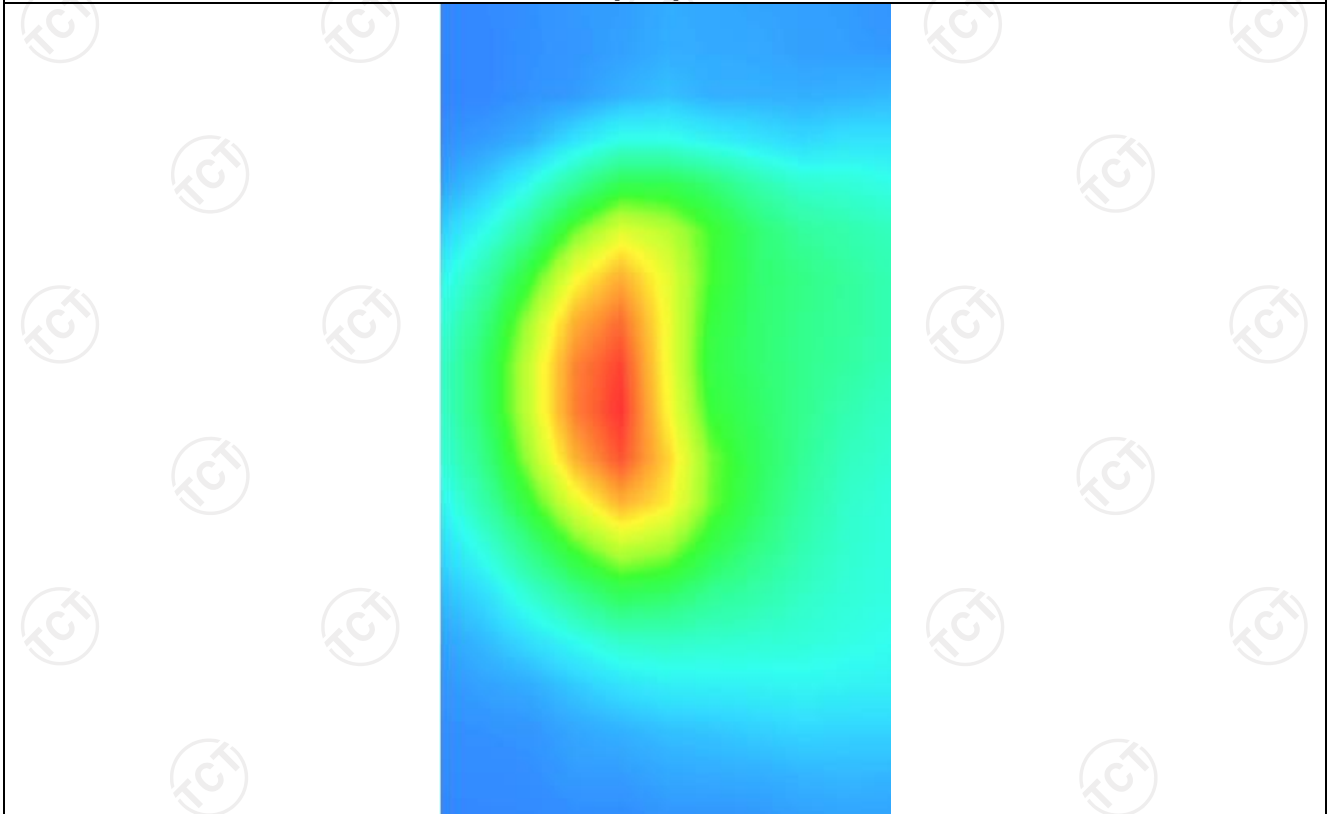
0.635203



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.0881	0.6789	0.3698	0.2094	0.1319



**Hot spot position**



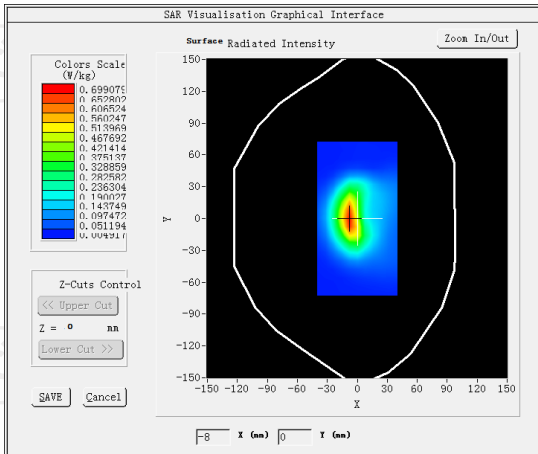
**MEASUREMENT 2**

Middle Band SAR (Channel 4182):

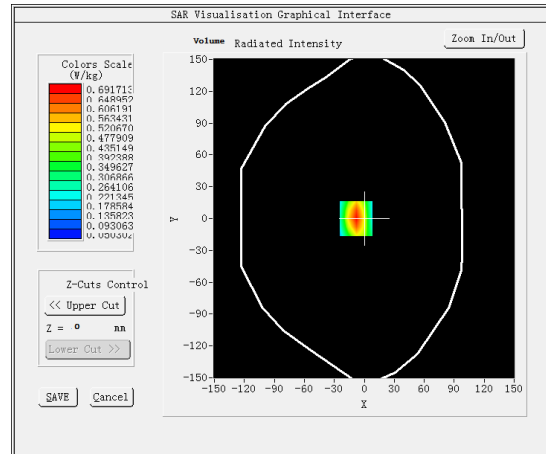
Date: 10/14/2022

Frequency (MHz)	836.400000
Relative permittivity (real part)	41.500000
Relative permittivity (imaginary part)	19.400000
Conductivity (S/m)	0.901453
Variation (%)	-0.780000
Crest Factor:	1.0
Probe Conversion factor	1.80
E-Field Probe:	SSE2 (SN 36/20 EPGO346)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7,dx=8mm dy=8mm dz=5mm,Complete/ndx=8mm dy=8mm, h= 5.00 mm</u>
Phantom	<u>Validation plane</u>
Device Position	<u>Body back(0mm)</u>
Band	<u>BAND5_WCDMA850(hotspot)</u>

**SURFACE SAR**



**VOLUME SAR**



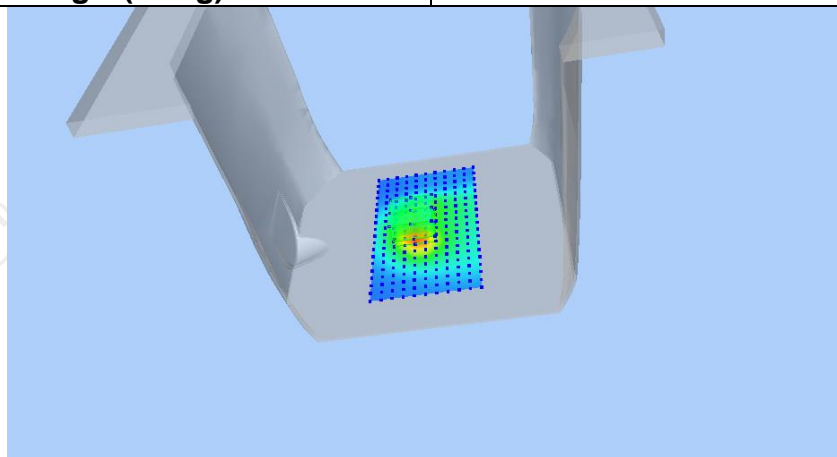
**Maximum location: X=-8.00, Y=0.00 SAR Peak:1.10 W/kg**

**SAR 10g (W/Kg)**

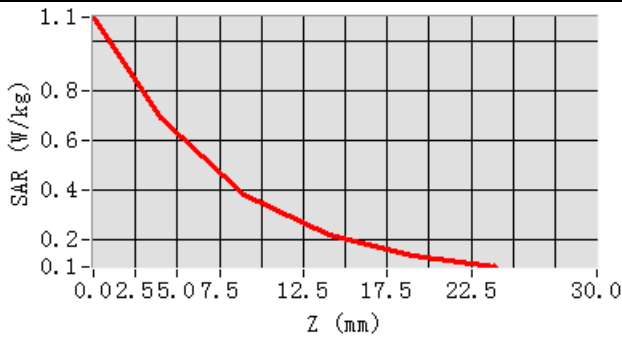
0.347275

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

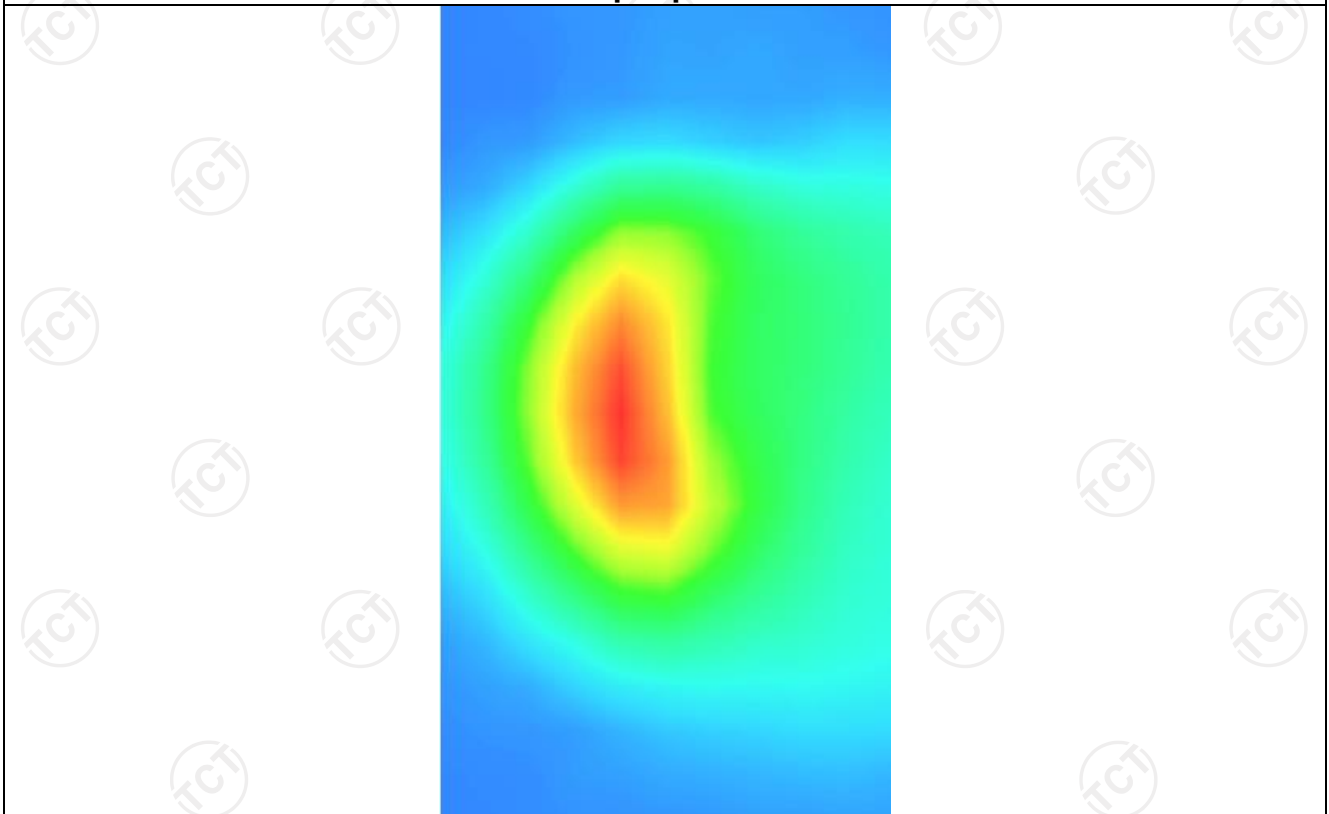
0.641492



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.4021	0.3326	0.2598	0.2008	0.1530



**Hot spot position**



LTE Band 2

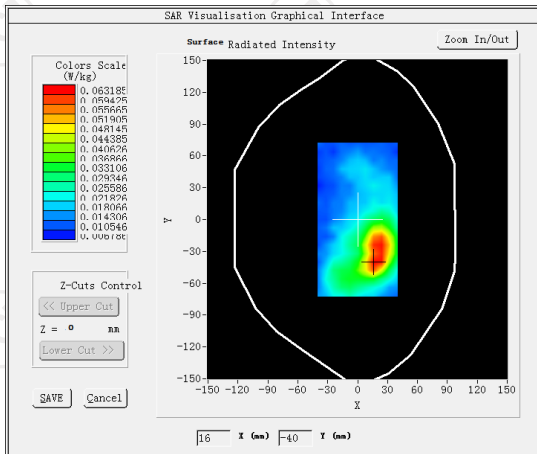
**MEASUREMENT 1**

Lower Band SAR (Channel 18700):

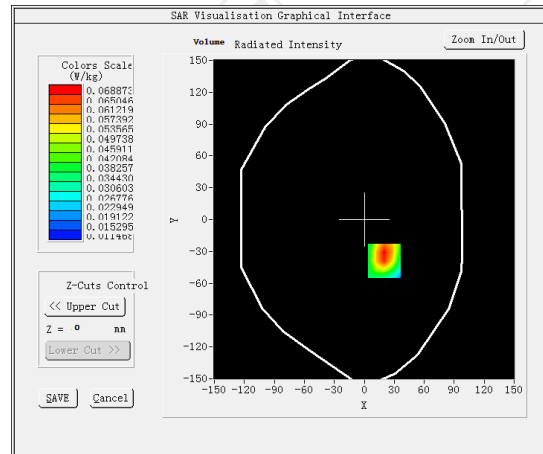
Date: 10/27/2022

<b>Frequency (MHz)</b>	1860.000000
<b>Relative permittivity (real part)</b>	40.000000
<b>Relative permittivity (imaginary part)</b>	13.411700
<b>Conductivity (S/m)</b>	1.400405
<b>Variation (%)</b>	-1.050000
<b>Crest Factor</b>	1.0
<b>Probe Conversion factor</b>	2.23
<b>E-Field Probe:</b>	SSE2 (SN 36/20 EPG0346)
<b>Area Scan</b>	dx=8mm dy=8mm, h= 5.00 mm
<b>ZoomScan</b>	5x5x7,dx=8mm dy=8mm dz=5mm,Complete/ndx=8mm dy=8mm, h= 5.00 mm
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body back(0mm)
<b>Band</b>	LTE band 2 (1 RB#0)

**SURFACE SAR**



**VOLUME SAR**



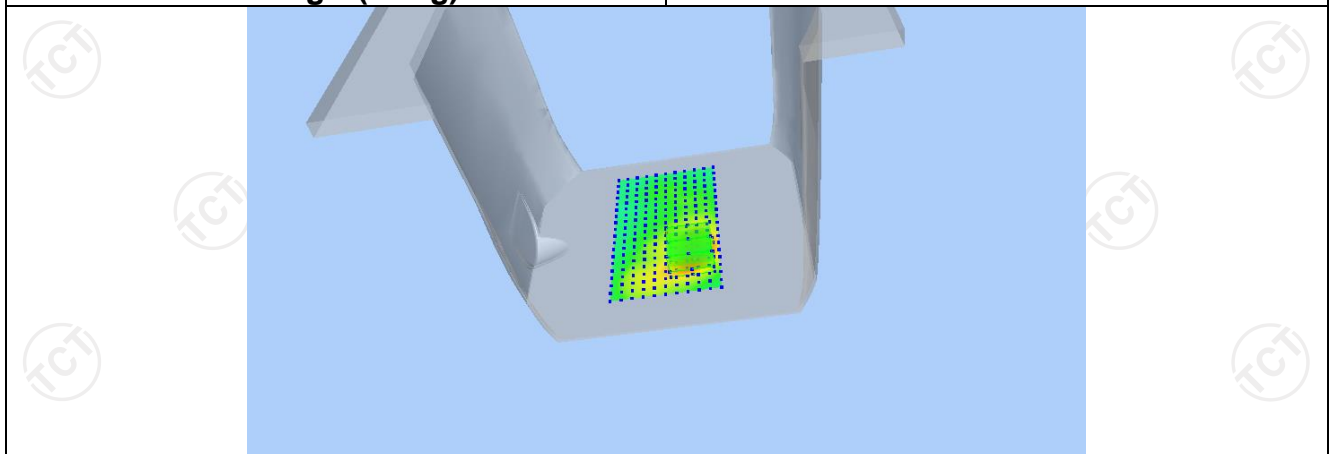
**Maximum location: X=-6.00, Y=-21.00 SAR Peak: 1.20 W/kg**

**SAR 10g (W/Kg)**

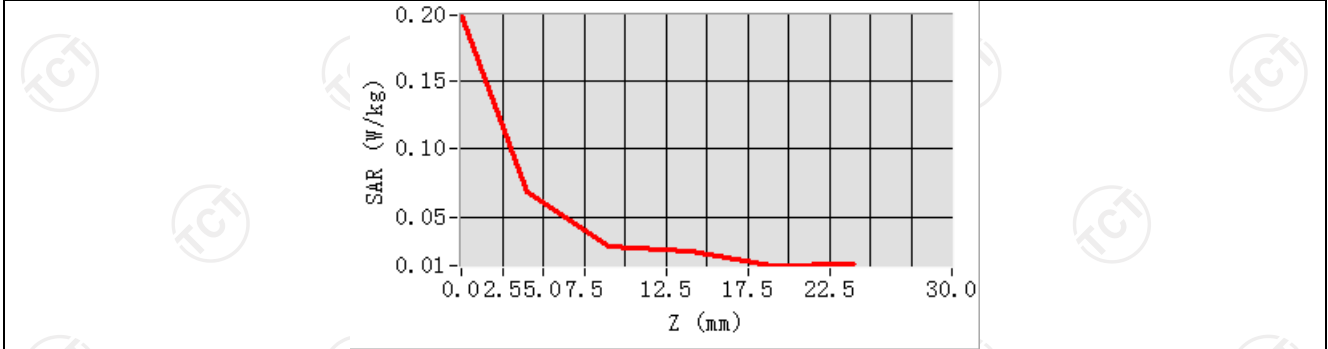
0.258237

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

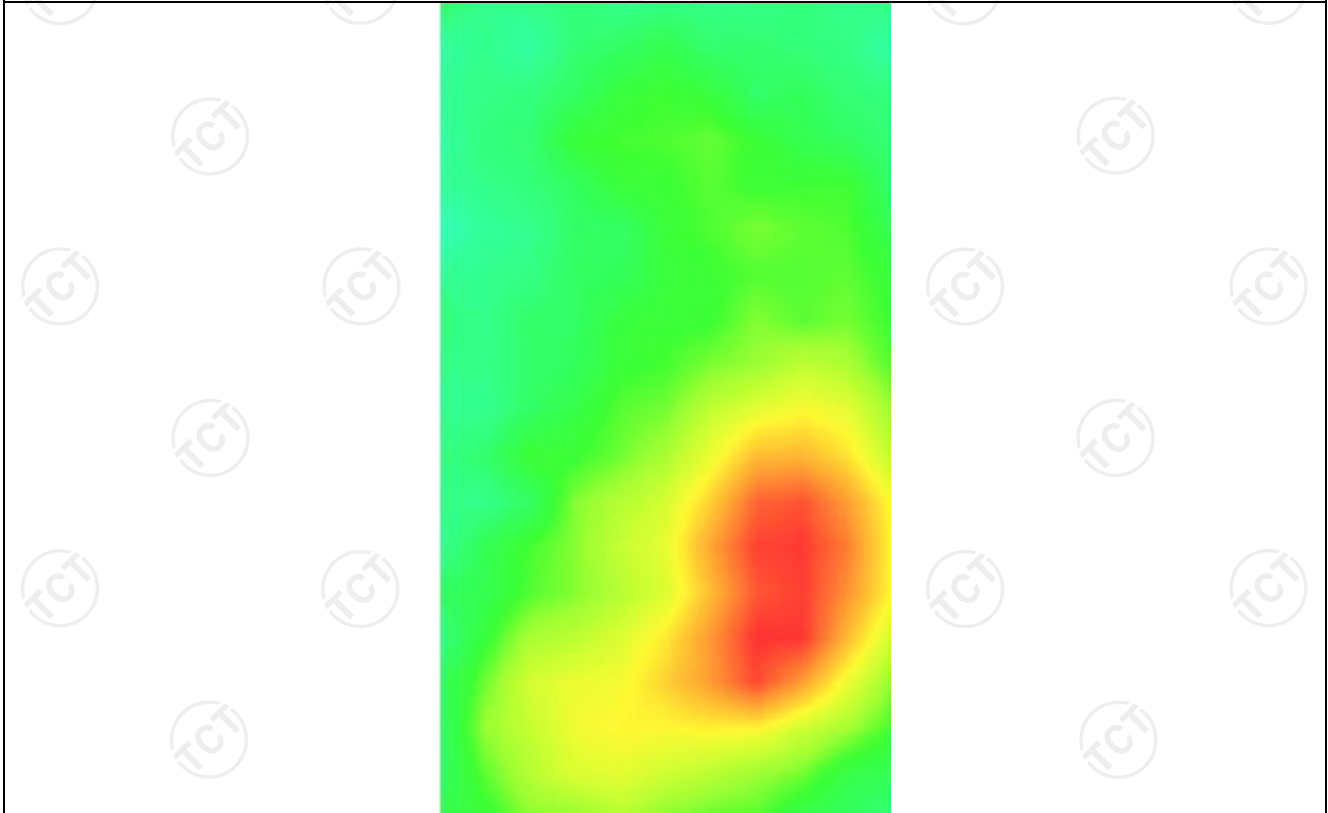
0.582663



<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>SAR (W/Kg)</b>	<b>1.1895</b>	<b>0.6338</b>	<b>0.2684</b>	<b>0.1175</b>	<b>0.0652</b>



**Hot spot position**



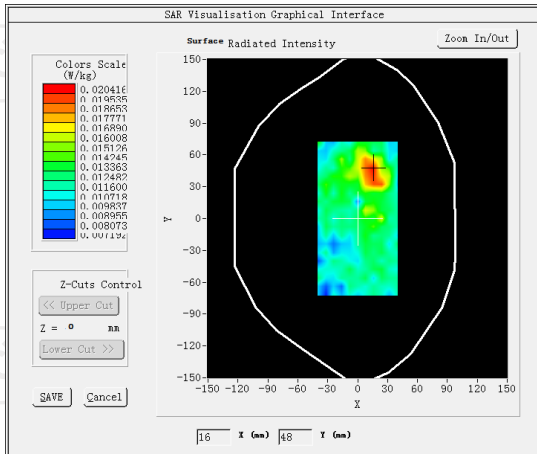
**MEASUREMENT 2**

Lower Band SAR (Channel 18700):

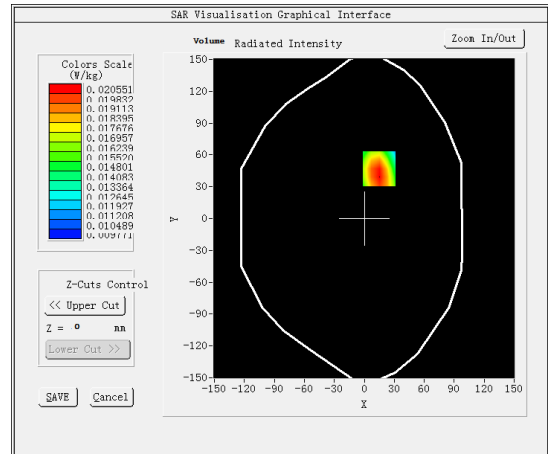
Date: 10/27/2022

<b>Frequency (MHz)</b>	1860.000000
<b>Relative permittivity (real part)</b>	40.000000
<b>Relative permittivity (imaginary part)</b>	13.411700
<b>Conductivity (S/m)</b>	1.400405
<b>Variation (%)</b>	-0.960000
<b>Crest Factor</b>	1.0
<b>Probe Conversion factor</b>	2.23
<b>E-Field Probe:</b>	SSE2 (SN 36/20 EPGO346)
<b>Area Scan</b>	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
<b>ZoomScan</b>	<u>5x5x7, dx=8mm dy=8mm</u> <u>dz=5mm, Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
<b>Phantom</b>	<u>Validation plane</u>
<b>Device Position</b>	<u>Body back(hotspot 0mm)</u>
<b>Band</b>	<u>LTE band 2 (1 RB#0)</u>

**SURFACE SAR**



**VOLUME SAR**



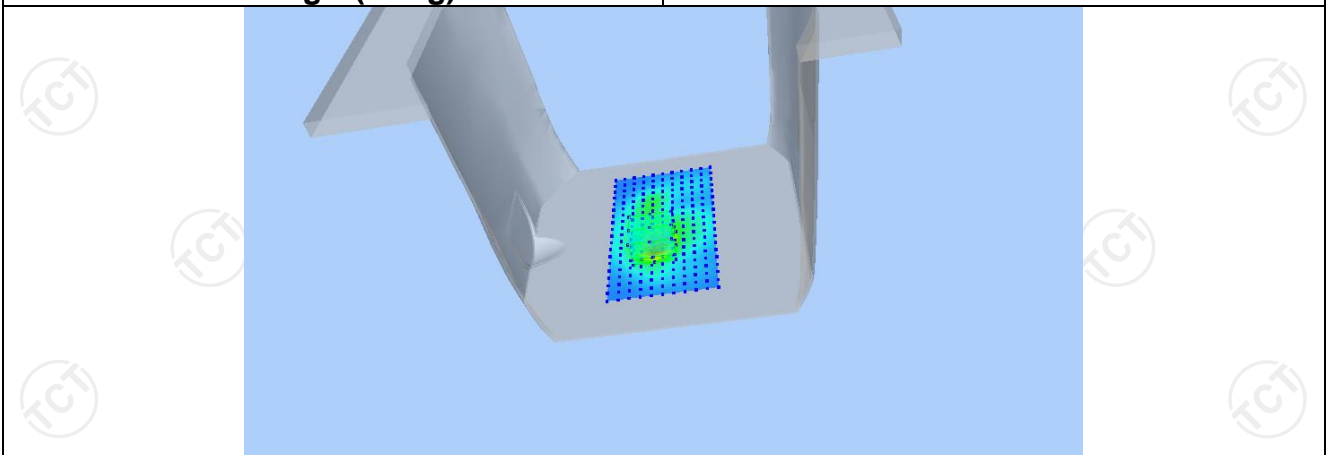
**Maximum location: X=-6.00, Y=-21.00 SAR Peak: 1.20 W/kg**

**SAR 10g (W/Kg)**

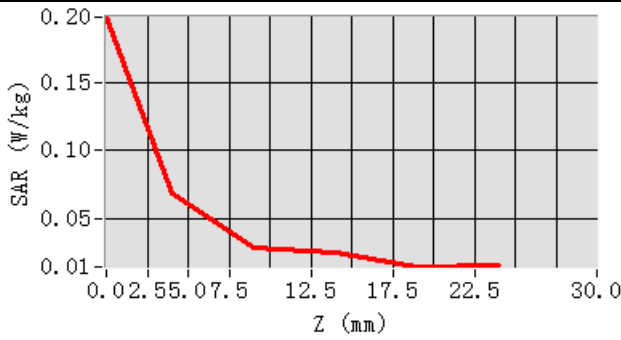
0.257646

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

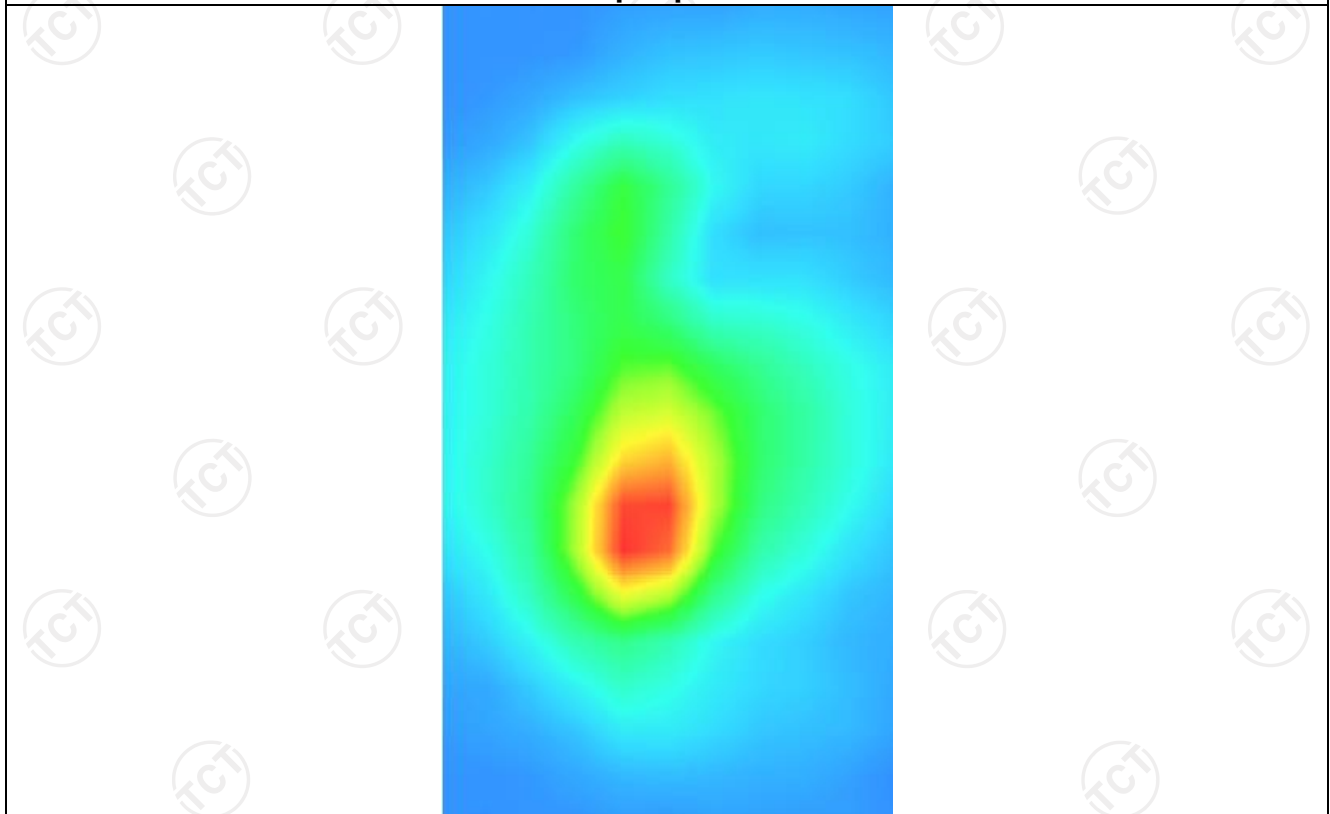
0.582843



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.1917	0.6343	0.2680	0.1166	0.0641



**Hot spot position**





LTE Band 4

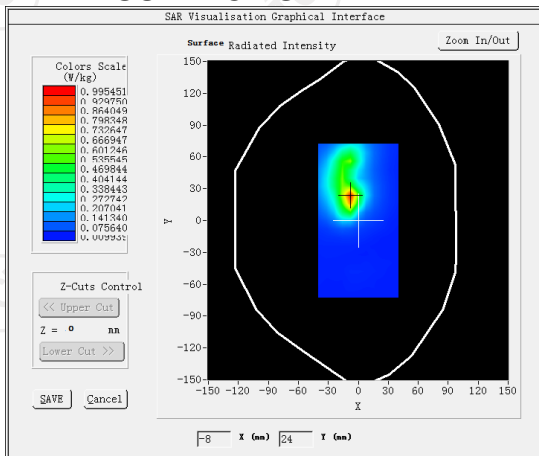
**MEASUREMENT 1**

Middle Band SAR (Channel 20175):

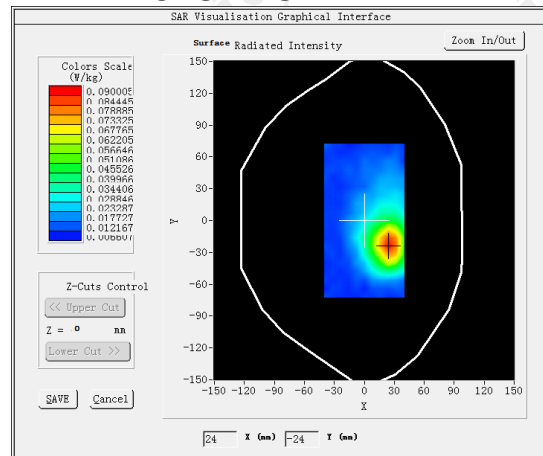
Date: 10/19/2022

Frequency (MHz)	1732.500000
Relative permittivity (real part)	40.115910
Relative permittivity (imaginary part)	14.136136
Conductivity (S/m)	1.360603
Variation (%)	-0.110000
Crest Factor	1.0
Probe Conversion factor	2.08
E-Field Probe:	SSE2 (SN 36/20 EPGO346)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7, dx=8mm dy=8mm</u> <u>dz=5mm, Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	<u>Validation plane</u>
Device Position	<u>Body back(0mm)</u>
Band	<u>LTE band 4(1 RB#49)</u>

**SURFACE SAR**



**VOLUME SAR**



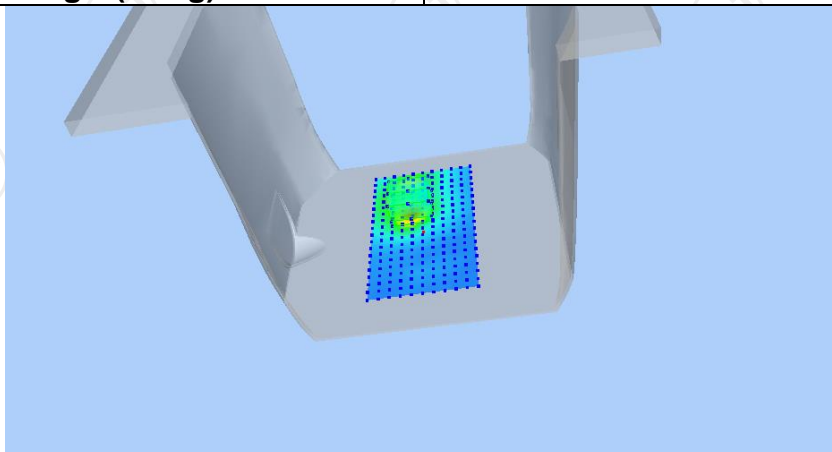
Maximum location: X=-18.00, Y=-21.00 SAR Peak: 1.42 W/kg

SAR 10g (W/Kg)

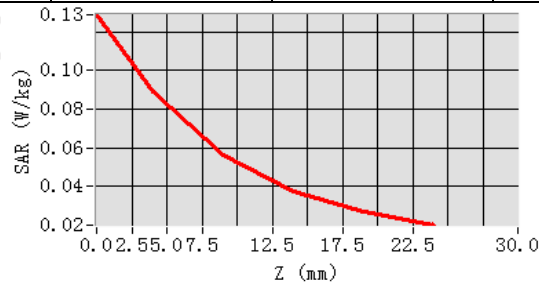
0.445388

SAR 1g (W/Kg)

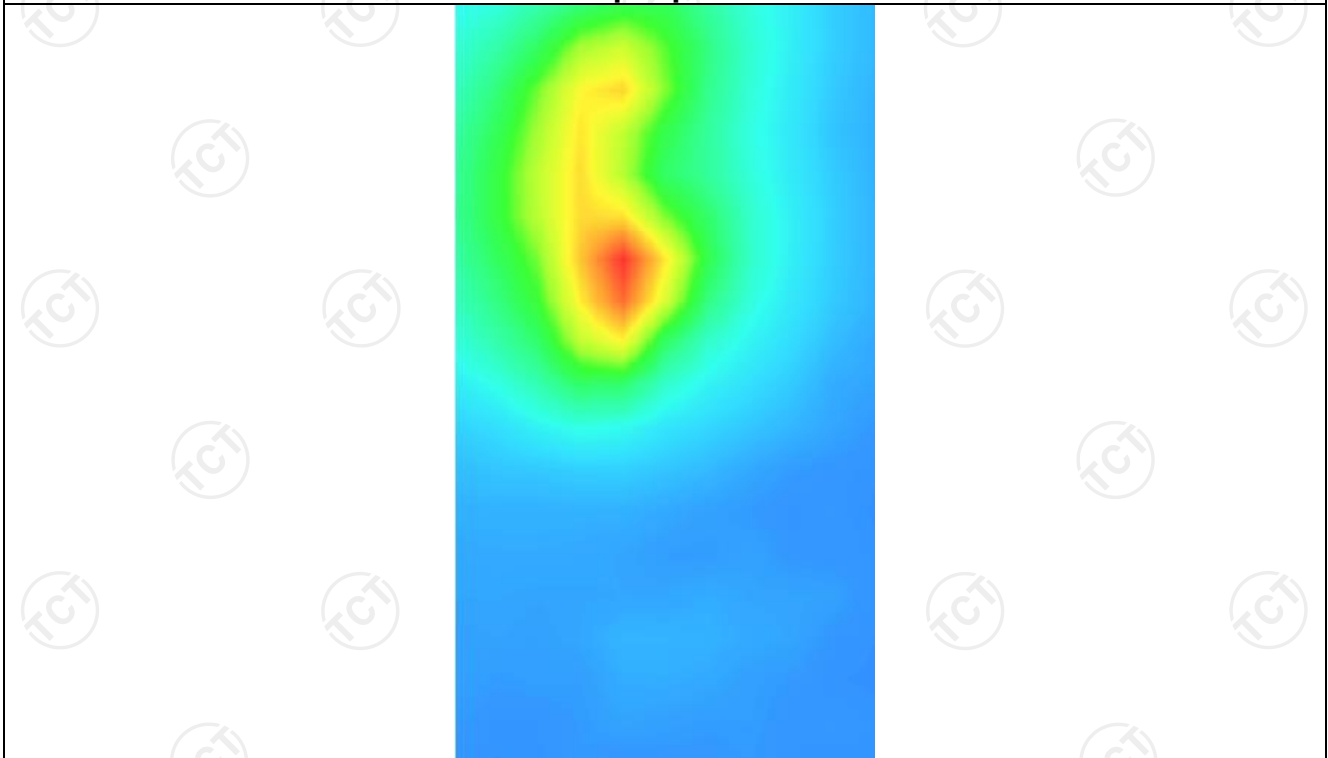
0.723479



<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>SAR (W/Kg)</b>	<b>1.3762</b>	<b>0.8667</b>	<b>0.4814</b>	<b>0.2818</b>	<b>0.1861</b>



**Hot spot position**



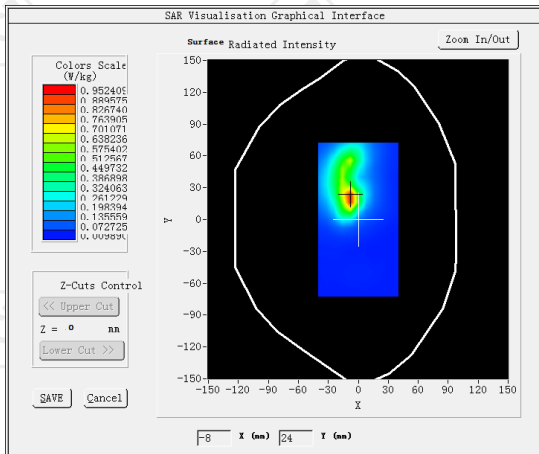
**MEASUREMENT 2**

Middle Band SAR (Channel 20175):

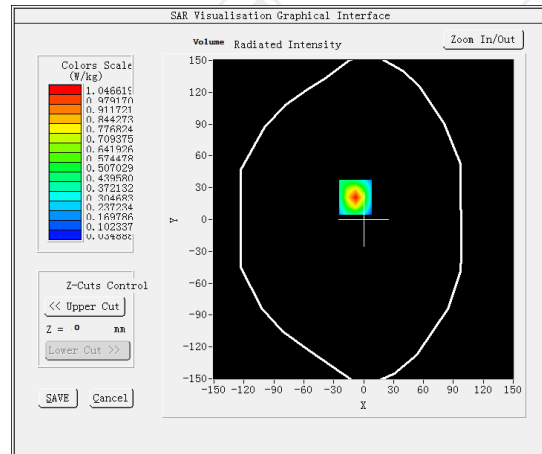
Date: 10/19/2022

Frequency (MHz)	1732.500000
Relative permittivity (real part)	40.115910
Relative permittivity (imaginary part)	14.136136
Conductivity (S/m)	1.360603
Variation (%)	0.330000
Crest Factor	1.0
Probe Conversion factor	2.08
E-Field Probe:	SSE2 (SN 36/20 EPG0346)
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7, dx=8mm dy=8mm dz=5mm, Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Body back(hotspot 0mm)
Band	LTE band 4(1 RB#49)

**SURFACE SAR**



**VOLUME SAR**



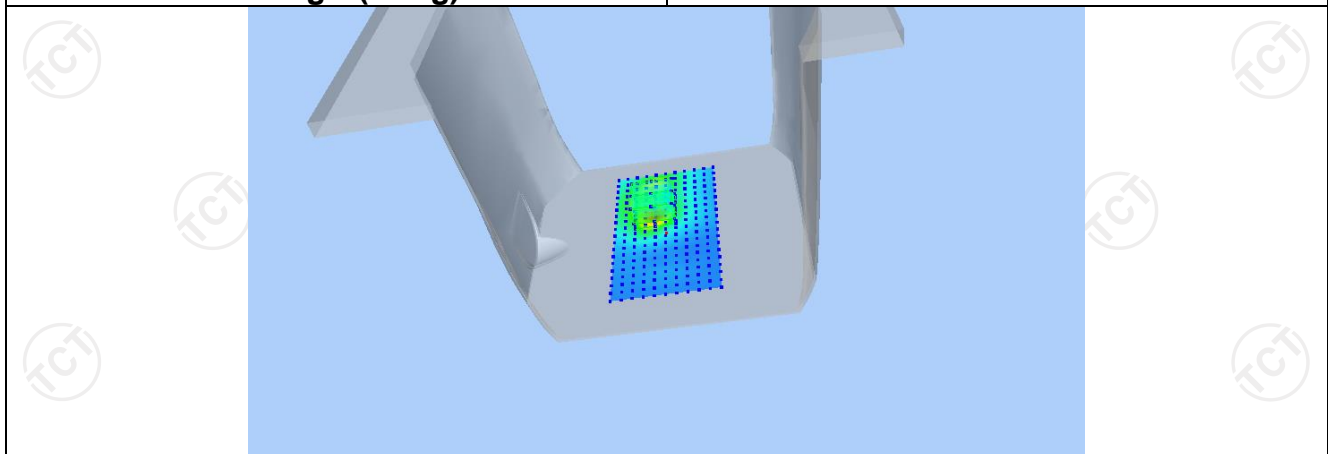
**Maximum location: X=-8.00, Y=21.00 SAR Peak: 1.94 W/kg**

**SAR 10g (W/Kg)**

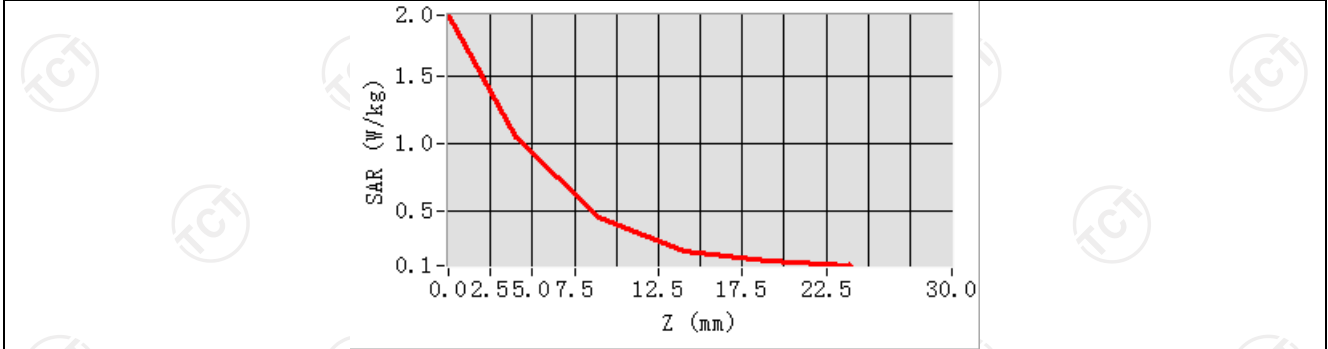
0.443812

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

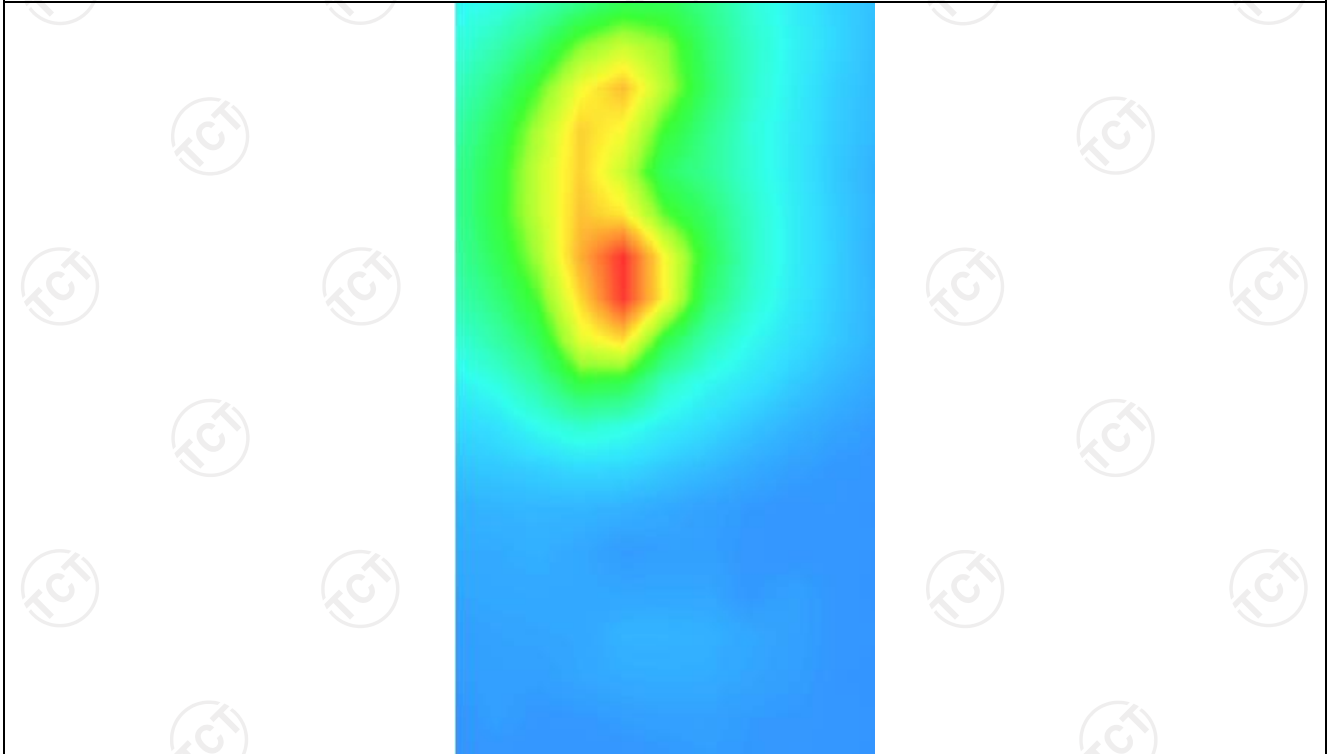
0.619885



<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>SAR (W/Kg)</b>	<b>1.9510</b>	<b>1.0466</b>	<b>0.4519</b>	<b>0.2071</b>	<b>0.1242</b>



**Hot spot position**



LTE Band 5

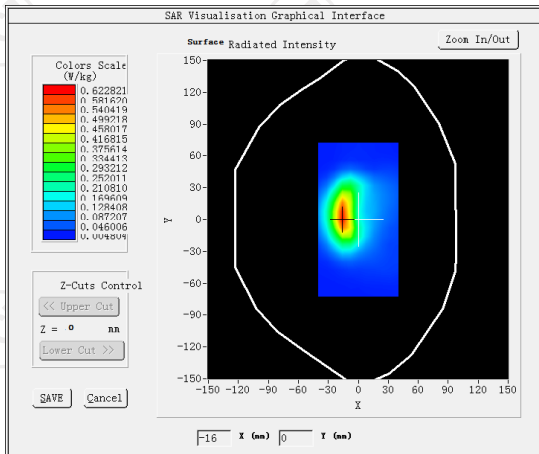
**MEASUREMENT 1**

Lower Band SAR (Channel 20450):

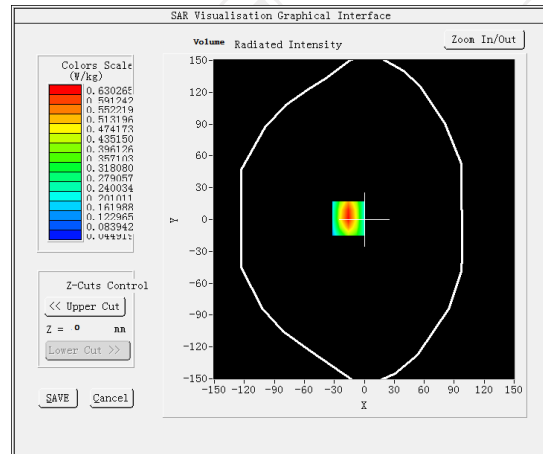
Date: 10/14/2022

<b>Frequency (MHz)</b>	829.000000
<b>Relative permittivity (real part)</b>	41.500000
<b>Relative permittivity (imaginary part)</b>	19.400000
<b>Conductivity (S/m)</b>	0.901561
<b>Variation (%)</b>	-0.620000
<b>Crest Factor</b>	1.0
<b>Probe Conversion factor</b>	1.80
<b>E-Field Probe:</b>	SSE2 (SN 36/20 EPG0346)
<b>Area Scan</b>	dx=8mm dy=8mm, h= 5.00 mm
<b>ZoomScan</b>	5x5x7, dx=8mm dy=8mm dz=5mm, Complete/ndx=8mm dy=8mm, h= 5.00 mm
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body back(0mm)
<b>Band</b>	LTE band 7(1 RB#24)

**SURFACE SAR**



**VOLUME SAR**



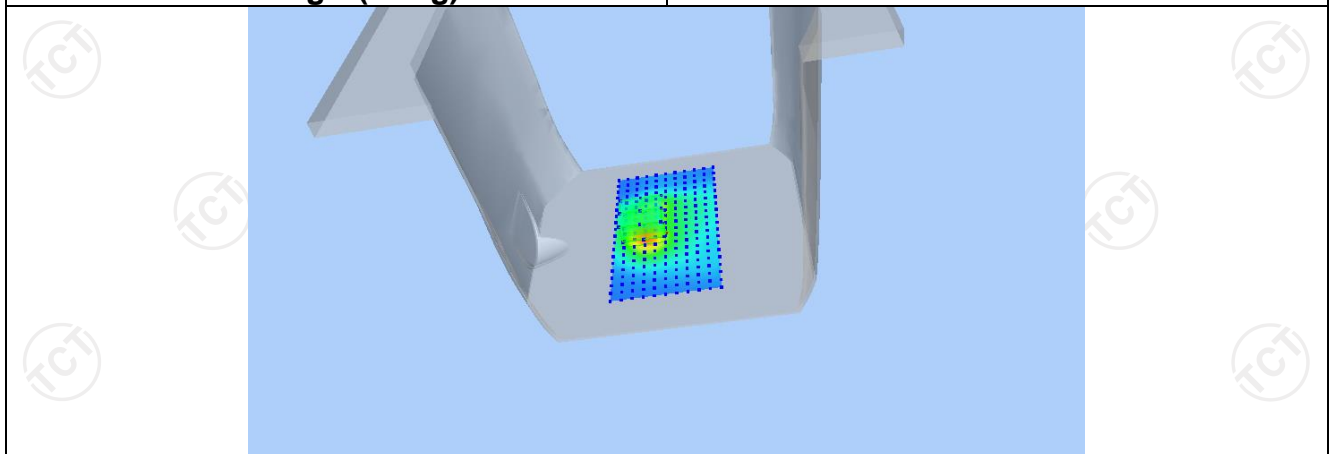
**Maximum location: X=-16.00, Y=1.00 SAR Peak: 1.03 W/kg**

**SAR 10g (W/Kg)**

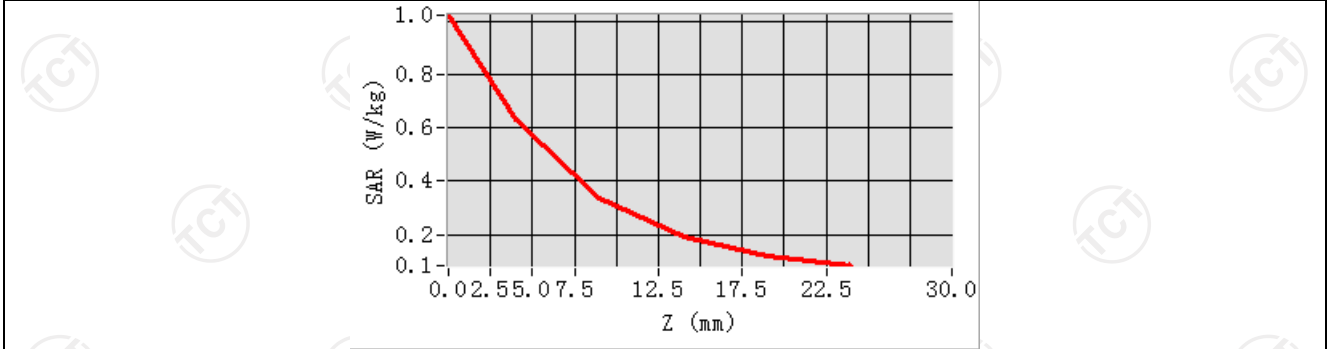
0.312768

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

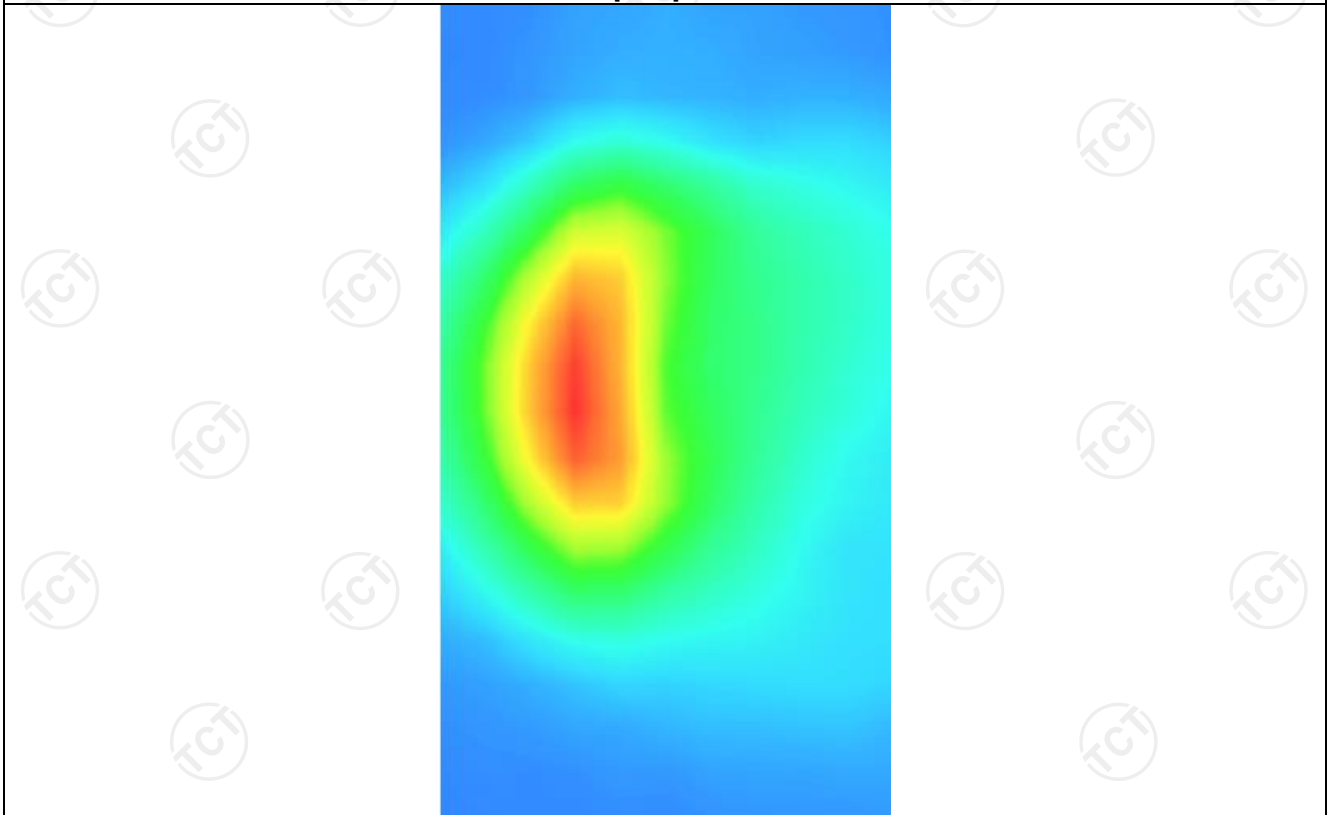
0.587298



<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>SAR (W/Kg)</b>	<b>1.0245</b>	<b>0.6303</b>	<b>0.3372</b>	<b>0.1891</b>	<b>0.1202</b>



**Hot spot position**



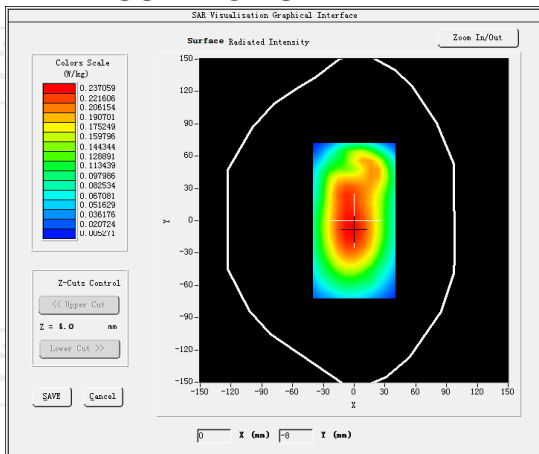
**MEASUREMENT 2**

Lower Band SAR (Channel 20450):

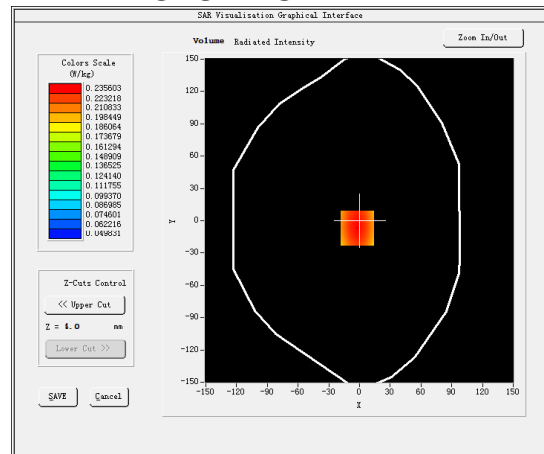
Date: 08/26/2022

Frequency (MHz)	829.000000
Relative permittivity (real part)	41.500000
Relative permittivity (imaginary part)	19.400000
Conductivity (S/m)	0.901561
Variation (%)	-1.190000
Crest Factor	1.0
Probe Conversion factor	1.80
E-Field Probe:	SSE2 (SN 36/20 EPGO346)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7,dx=8mm dy=8mm</u> <u>dz=5mm,Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	<u>Validation plane</u>
Device Position	<u>Body back(hotspot 0mm)</u>
Band	<u>LTE band 7(1 RB#24)</u>

**SURFACE SAR**



**VOLUME SAR**



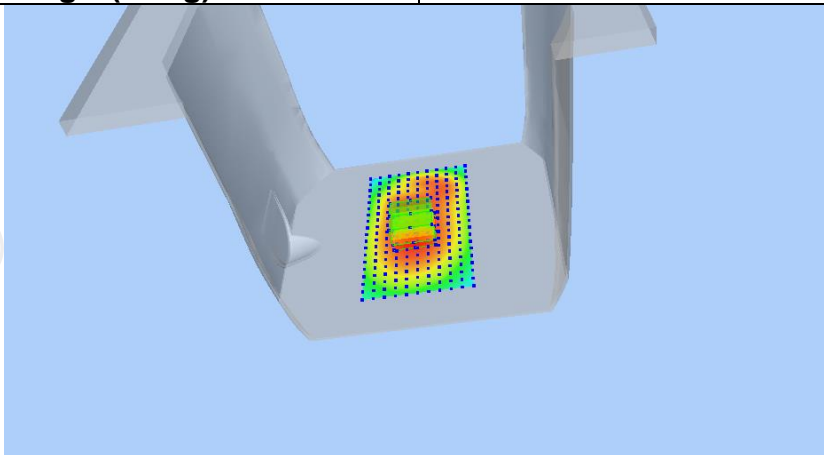
Maximum location: X=-2.00, Y=-7.00 SAR Peak: 0.29 W/kg

SAR 10g (W/Kg)

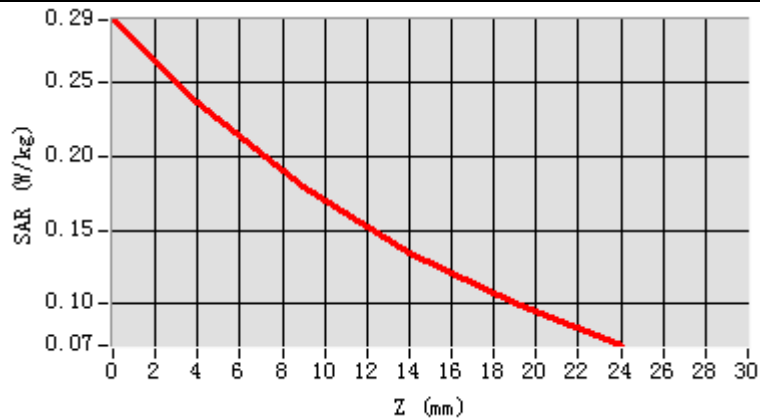
0.165419

SAR 1g (W/Kg)

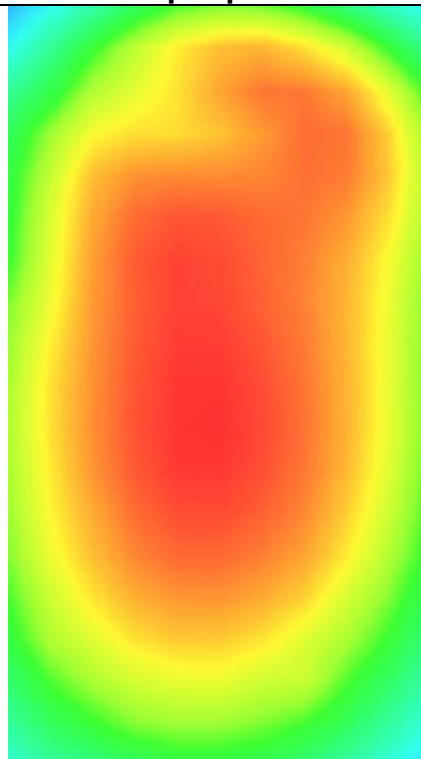
0.227376



<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>SAR (W/Kg)</b>	<b>0.2917</b>	<b>0.2356</b>	<b>0.1788</b>	<b>0.1345</b>	<b>0.1000</b>



**Hot spot position**





LTE Band 12

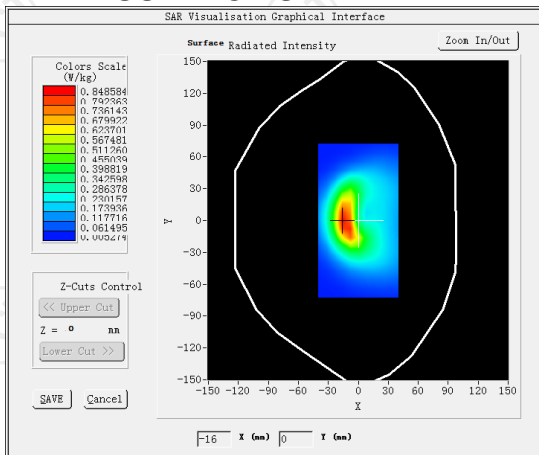
**MEASUREMENT 1**

High Band SAR (Channel 23130):

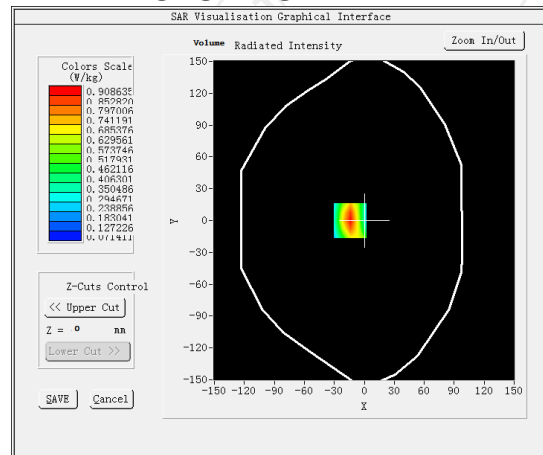
Date: 10/11/2022

Frequency (MHz)	711.000000
Relative permittivity (real part)	42.126667
Relative permittivity (imaginary part)	23.264000
Conductivity (S/m)	0.914404
Variation (%)	0.110000
Crest Factor	1.0
Probe Conversion factor	1.71
E-Field Probe:	SSE2 (SN 36/20 EPGO346)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7, dx=8mm dy=8mm</u> <u>dz=5mm, Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	<u>Validation plane</u>
Device Position	<u>Body back(0mm)</u>
Band	<u>LTE band 12(1 RB#0)</u>

**SURFACE SAR**



**VOLUME SAR**



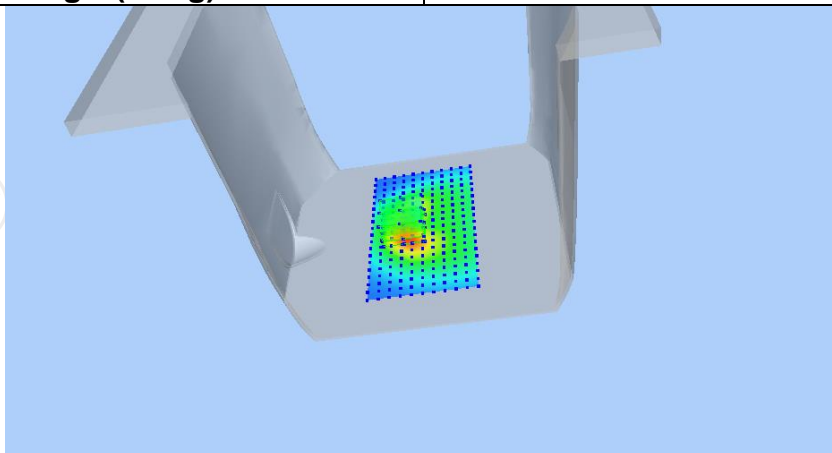
**Maximum location: X=-14.00, Y=0.00 SAR Peak:1.42 W/kg**

**SAR 10g (W/Kg)**

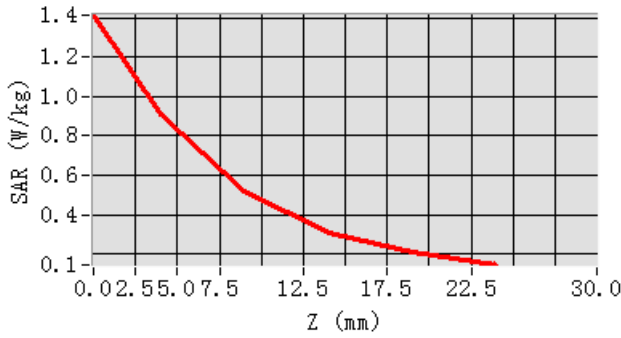
0.477668

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

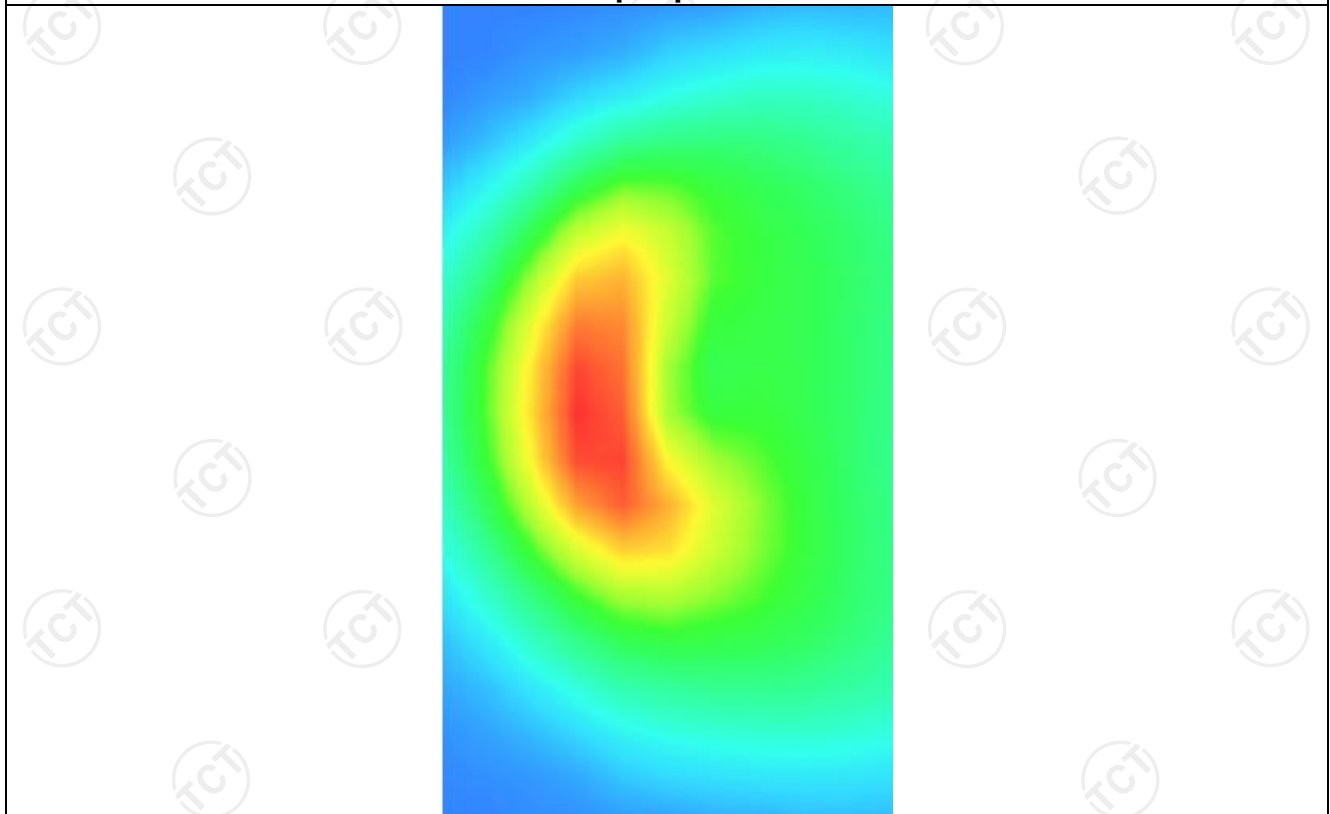
0.660501



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.4143	0.9086	0.5186	0.3101	0.2057



**Hot spot position**



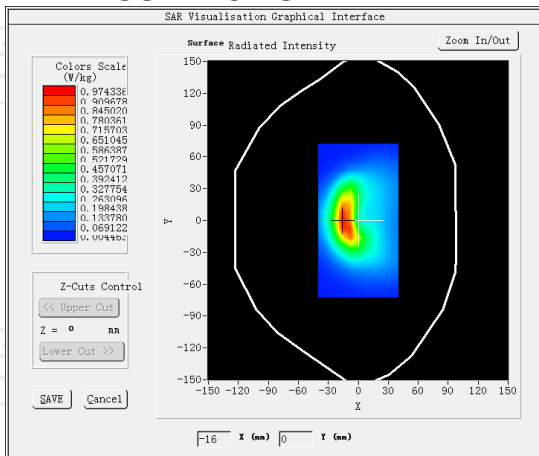
**MEASUREMENT 2**

High Band SAR (Channel 23130):

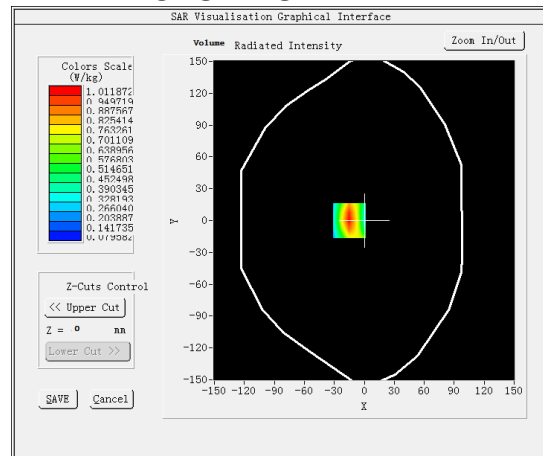
Date: 10/11/2022

Frequency (MHz)	711.000000
Relative permittivity (real part)	42.126667
Relative permittivity (imaginary part)	23.264000
Conductivity (S/m)	0.914404
Variation (%)	0.060000
Crest Factor	1.0
Probe Conversion factor	1.71
E-Field Probe:	SSE2 (SN 36/20 EPGO346)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7, dx=8mm dy=8mm</u> <u>dz=5mm, Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	<u>Validation plane</u>
Device Position	<u>Body back(hotspot 0mm)</u>
Band	<u>LTE band 12(1 RB#0)</u>

**SURFACE SAR**



**VOLUME SAR**



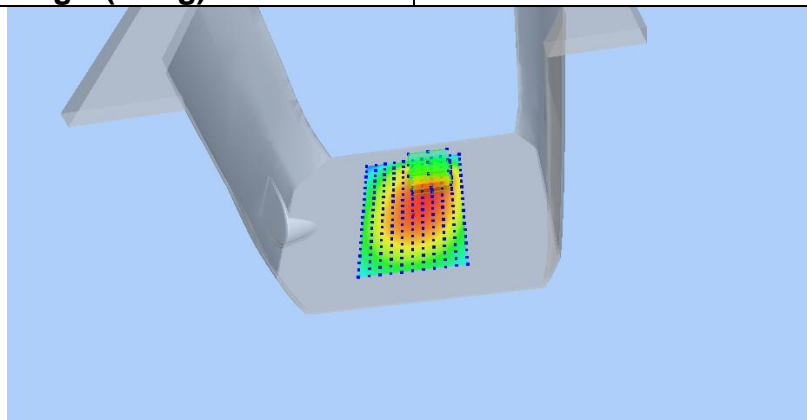
Maximum location: X=-15.00, Y=0.00 SAR Peak: 1.60W/kg

SAR 10g (W/Kg)

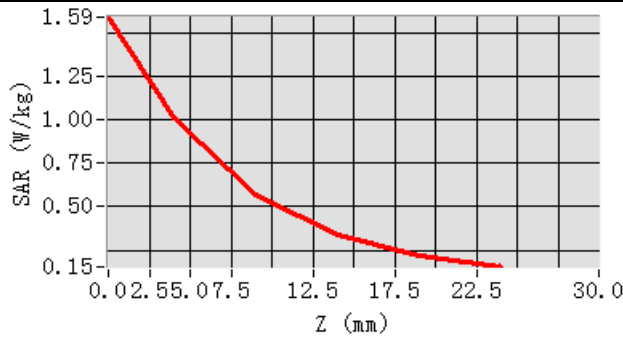
0.525998

SAR 1g (W/Kg)

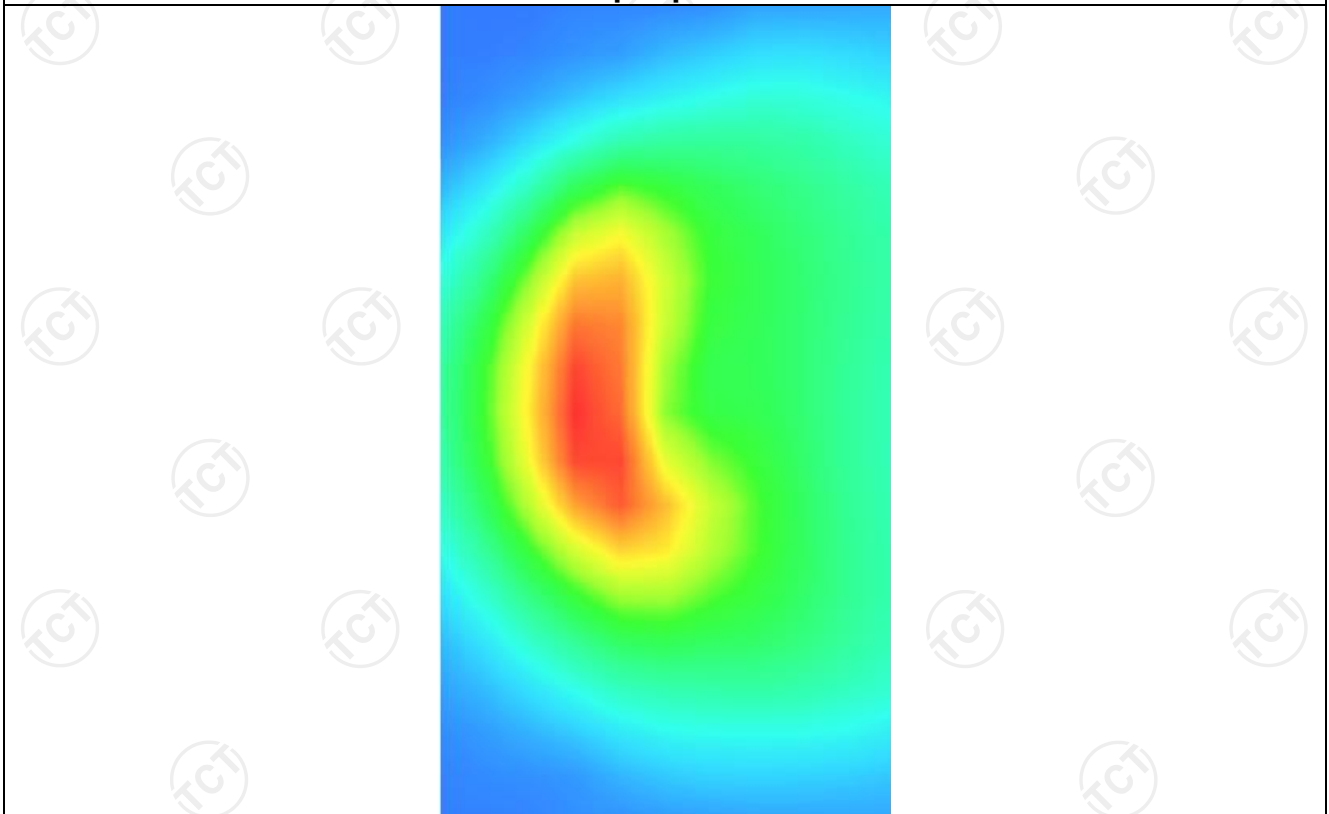
0.559447



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.5912	1.0119	0.5689	0.3354	0.2204



**Hot spot position**



LTE Band 66

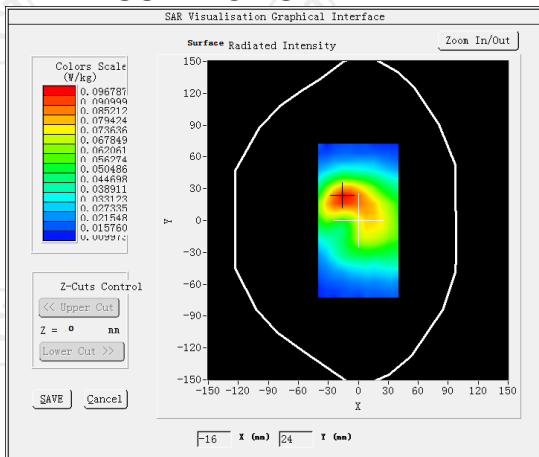
**MEASUREMENT 1**

Middle Band SAR (Channel132322):

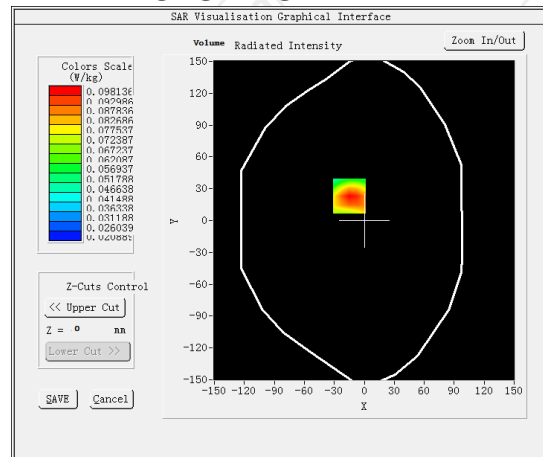
Date: 10/19/2022

<b>Frequency (MHz)</b>	1745.000000
<b>Relative permittivity (real part)</b>	40.115910
<b>Relative permittivity (imaginary part)</b>	14.136136
<b>Conductivity (S/m)</b>	1.360603
<b>Variation (%)</b>	-0.200000
<b>Crest Factor</b>	1.0
<b>Probe Conversion factor</b>	1.71
<b>E-Field Probe:</b>	SSE2 (SN 36/20 EPGO346)
<b>Area Scan</b>	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
<b>ZoomScan</b>	<u>5x5x7, dx=8mm dy=8mm</u> <u>dz=5mm, Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
<b>Phantom</b>	<u>Validation plane</u>
<b>Device Position</b>	<u>Body black(0mm)</u>
<b>Band</b>	<u>LTE band 66(1 RB#49)</u>

**SURFACE SAR**



**VOLUME SAR**



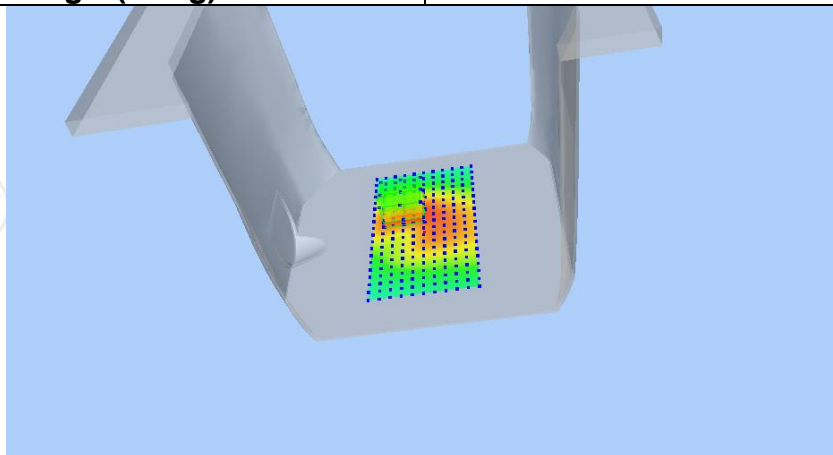
Maximum location: X=-15.00, Y=23.00 SAR Peak: 0.14 W/kg

**SAR 10g (W/Kg)**

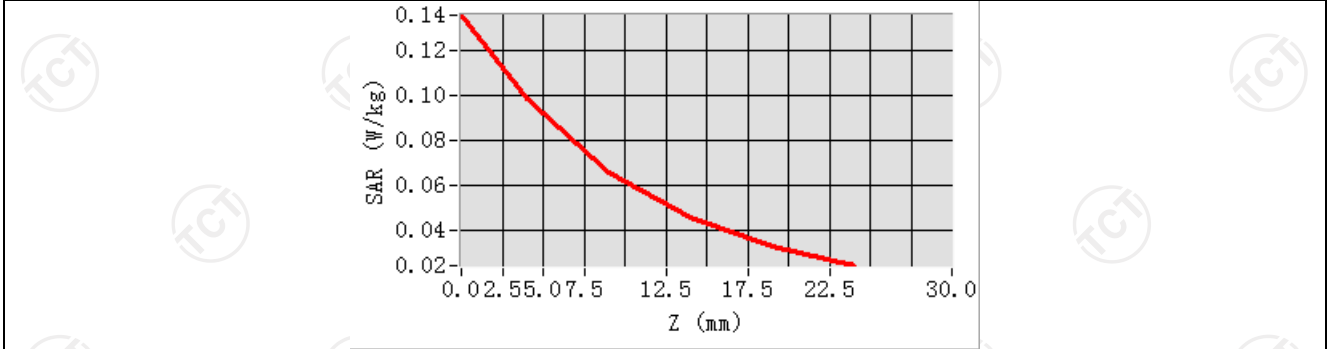
0.062830

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

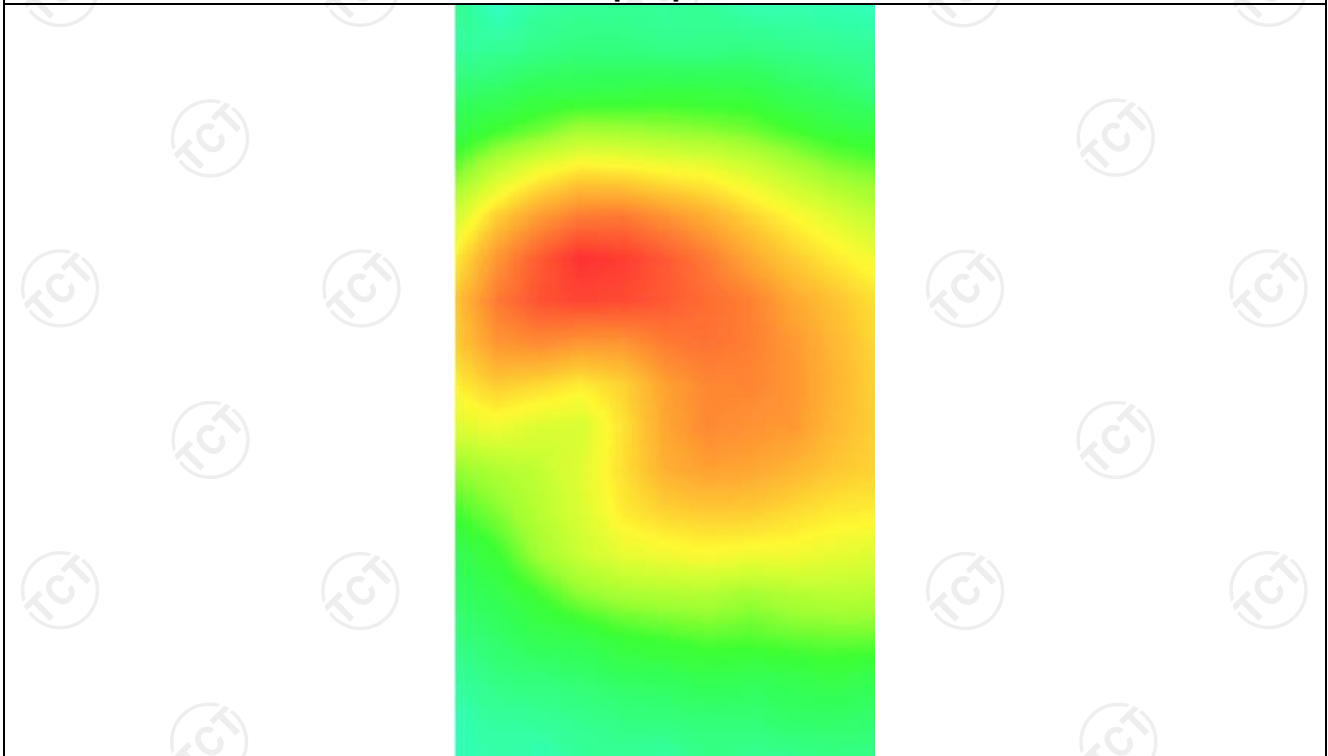
0.115407



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.1355	0.0981	0.0658	0.0455	0.0330



**Hot spot position**



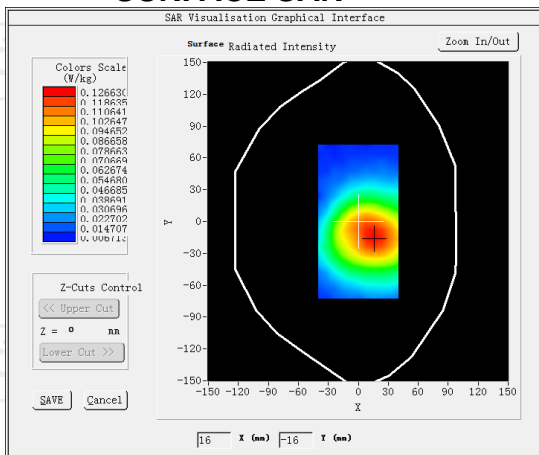
**MEASUREMENT 2**

Middle Band SAR (Channel132322):

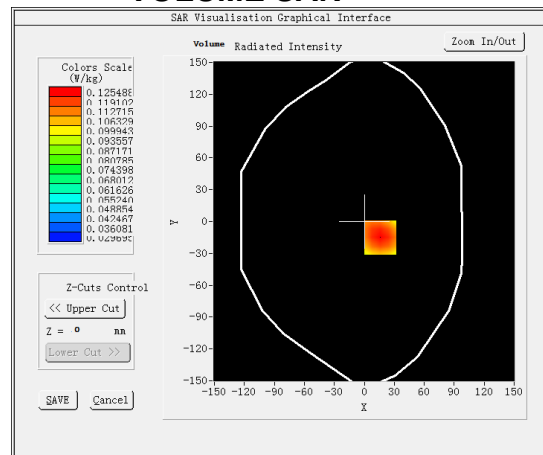
Date: 10/19/2022

<b>Frequency (MHz)</b>	1745.000000
<b>Relative permittivity (real part)</b>	40.115910
<b>Relative permittivity (imaginary part)</b>	14.136136
<b>Conductivity (S/m)</b>	1.360603
<b>Variation (%)</b>	0.1500000
<b>Crest Factor</b>	1.0
<b>Probe Conversion factor</b>	1.71
<b>E-Field Probe:</b>	SSE2 (SN 36/20 EPGO346)
<b>Area Scan</b>	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
<b>ZoomScan</b>	<u>5x5x7,dx=8mm dy=8mm</u> <u>dz=5mm,Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
<b>Phantom</b>	<u>Validation plane</u>
<b>Device Position</b>	<u>Body back(hotspot 0mm)</u>
<b>Band</b>	<u>LTE band 66(1 RB#49)</u>

**SURFACE SAR**



**VOLUME SAR**



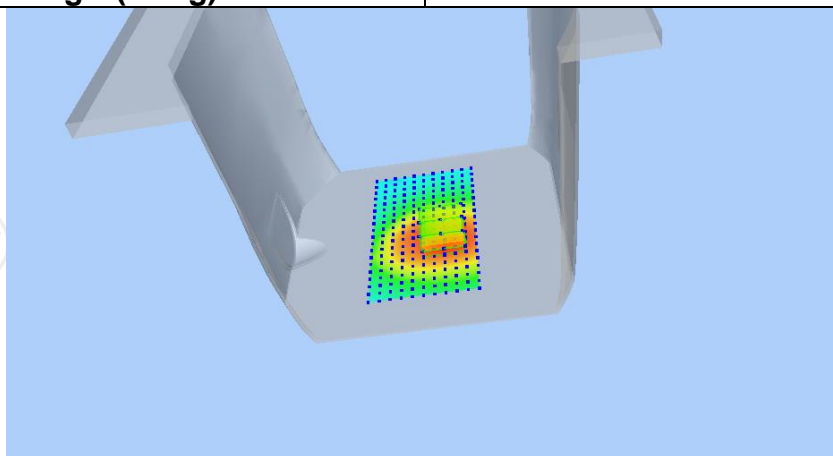
**Maximum location: X=16.00, Y=-15.00 SAR Peak: 0.26 W/kg**

**SAR 10g (W/Kg)**

0.092926

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

0.163802



LTE Band 71

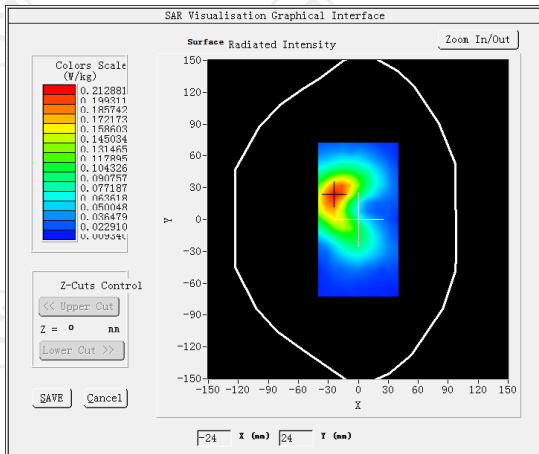
**MEASUREMENT 1**

Lower Band SAR (Channel 133222):

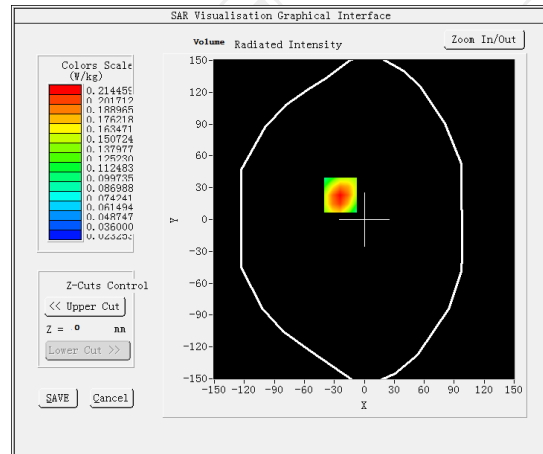
Date: 10/11/2022

<b>Frequency (MHz)</b>	683.000000
<b>Relative permittivity (real part)</b>	42.126667
<b>Relative permittivity (imaginary part)</b>	23.264000
<b>Conductivity (S/m)</b>	0.914404
<b>Variation (%)</b>	0.490000
<b>Crest Factor</b>	1.0
<b>Probe Conversion factor</b>	4.36
<b>E-Field Probe:</b>	SSE2 (SN 36/20 EPG0346)
<b>Area Scan</b>	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
<b>ZoomScan</b>	<u>5x5x7, dx=8mm dy=8mm</u> <u>dz=5mm, Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body back(0mm)
<b>Band</b>	<u>LTE band 71(1 RB#0)</u>

**SURFACE SAR**

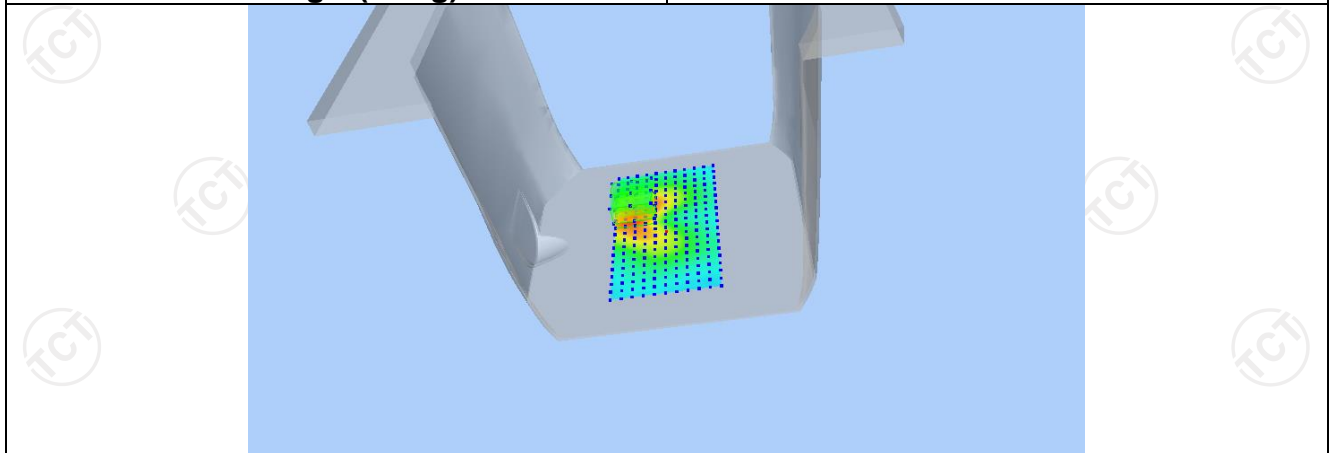


**VOLUME SAR**



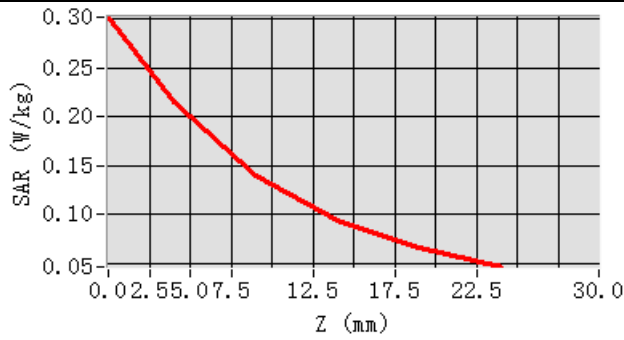
**Maximum location: X=-24.00, Y=23.00 SAR Peak: 0.30 W/kg**

<b>SAR 10g (W/Kg)</b>	0.128515
<b>SAR 1g (W/Kg)</b>	0.203815

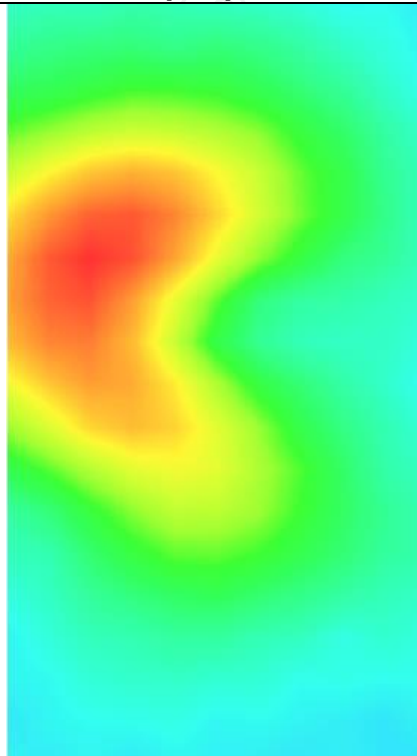




<b>Z (mm)</b>	<b>0.00</b>	<b>4.00</b>	<b>9.00</b>	<b>14.00</b>	<b>19.00</b>
<b>SAR (W/Kg)</b>	<b>0.3017</b>	<b>0.2145</b>	<b>0.1399</b>	<b>0.0936</b>	<b>0.0655</b>



**Hot spot position**



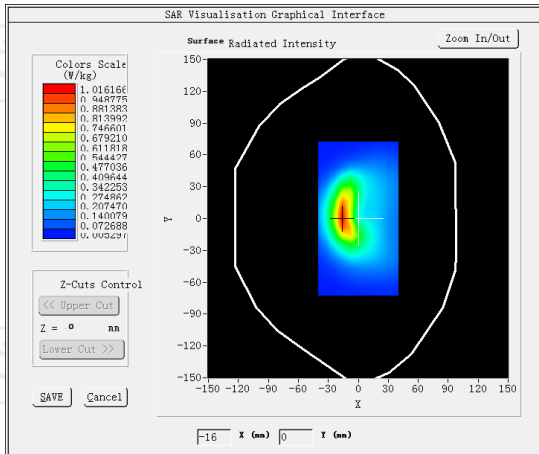
**MEASUREMENT 2**

Lower Band SAR (Channel 133222):

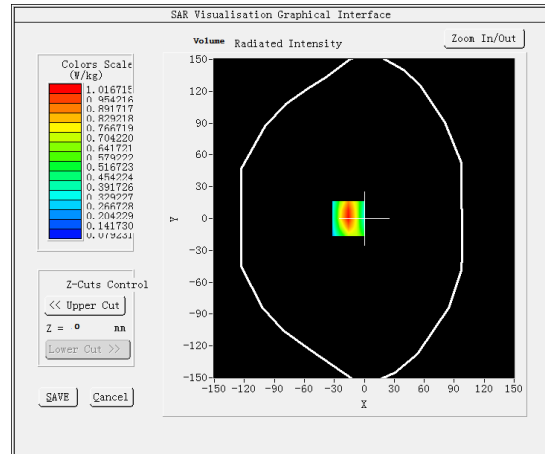
Date: 10/11/2022

Frequency (MHz)	683.000000
Relative permittivity (real part)	42.126667
Relative permittivity (imaginary part)	23.264000
Conductivity (S/m)	0.914404
Variation (%)	-0.710000
Crest Factor	1.0
Probe Conversion factor	4.36
E-Field Probe:	SSE2 (SN 36/20 EPGO346)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7, dx=8mm dy=8mm</u> <u>dz=5mm, Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	Validation plane
Device Position	Body back(hotspot_0mm)
Band	<u>LTE band 71(1 RB#0)</u>

**SURFACE SAR**



**VOLUME SAR**



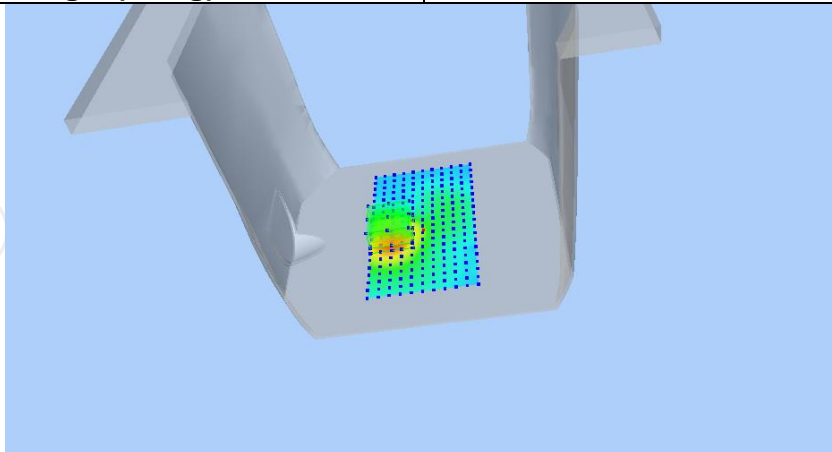
Maximum location: X=-16.00, Y=0.00 SAR Peak: 1.63 W/kg

SAR 10g (W/Kg)

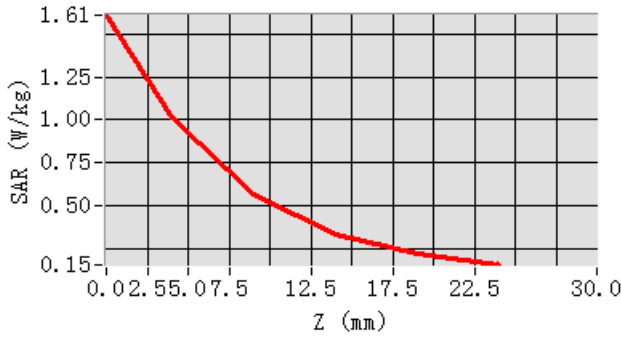
0.528009

SAR 1g (W/Kg)

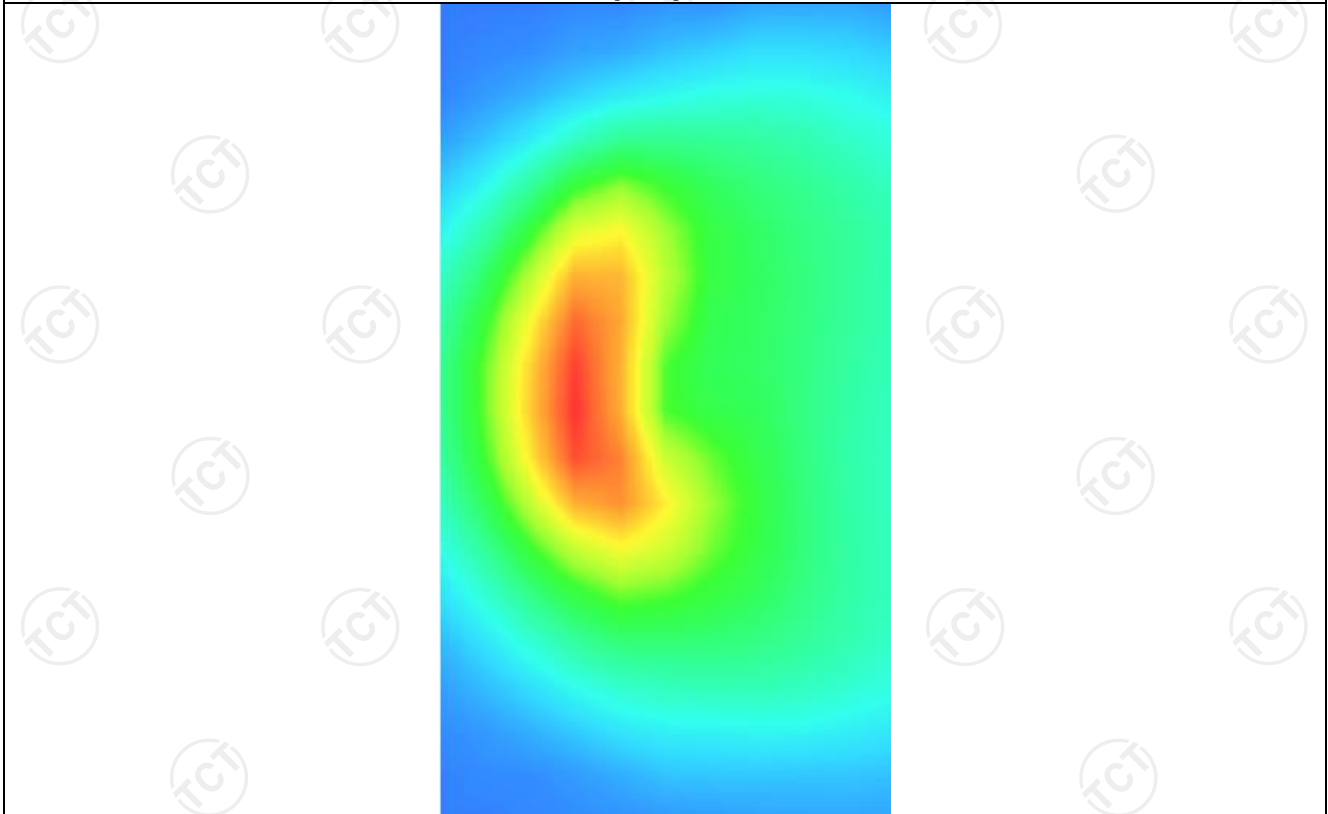
0.567987



<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>SAR (W/Kg)</b>	<b>1.6115</b>	<b>1.0167</b>	<b>0.5657</b>	<b>0.3309</b>	<b>0.2175</b>



**Hot spot position**



WLAN 2.4G

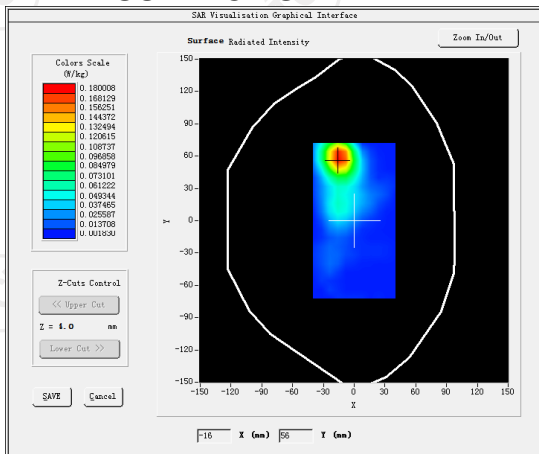
**MEASUREMENT 1**

Middle Band SAR (Channel 06):

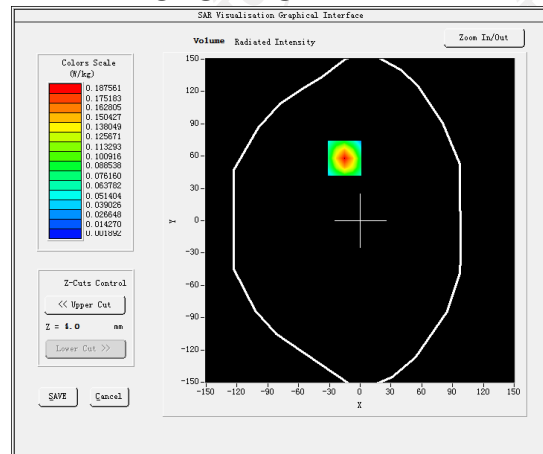
Date: 11/07/2022

Frequency (MHz)	2437.000000
Relative permittivity (real part)	37.821613
Relative permittivity (imaginary part)	13.546980
Conductivity (S/m)	1.834111
Variation (%)	2.120000
Crest Factor	1.0
Probe Conversion factor	2.31
E-Field Probe:	SSE2 (SN 36/20 EPGO346)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7, dx=8mm dy=8mm</u> <u>dz=5mm, Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	Validation plane
Device Position	Body back(0mm)
Band	<u>IEEE 802.11b ISM</u>

**SURFACE SAR**



**VOLUME SAR**



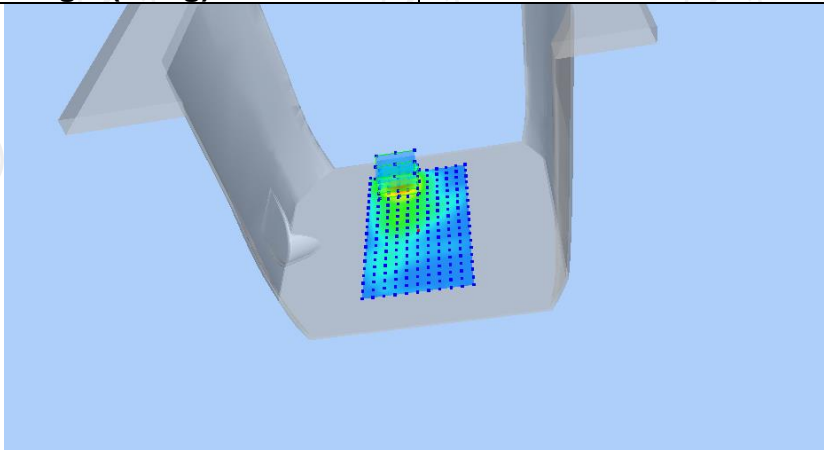
Maximum location: X=-15.00, Y=58.00 SAR Peak: 0.34 W/kg

**SAR 10g (W/Kg)**

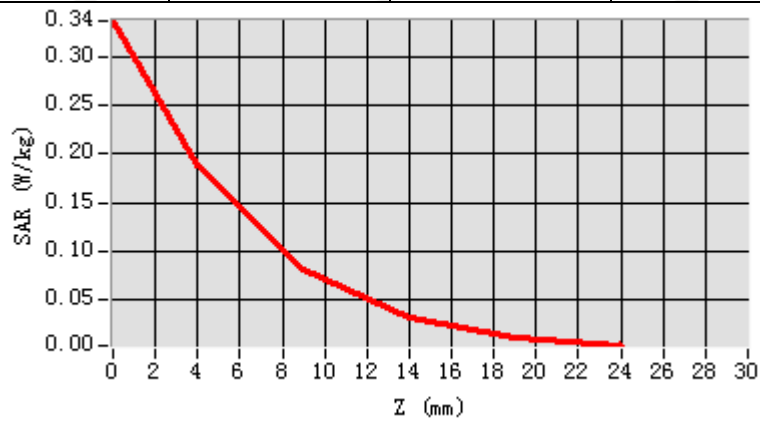
0.077530

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

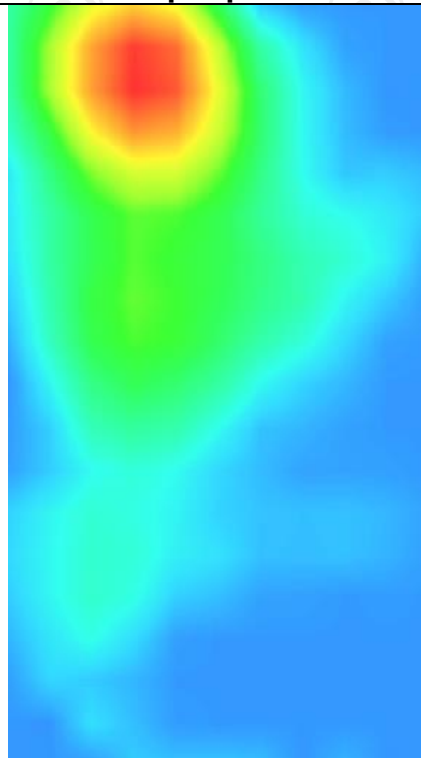
0.293292



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.3372	0.1876	0.0816	0.0317	0.0109



Hot spot position



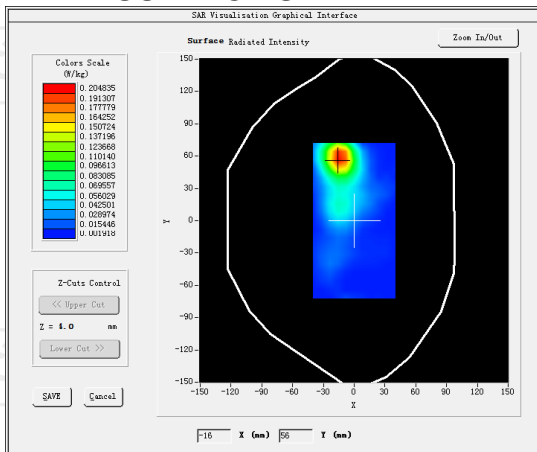
**MEASUREMENT 2**

Middle Band SAR (Channel 06):

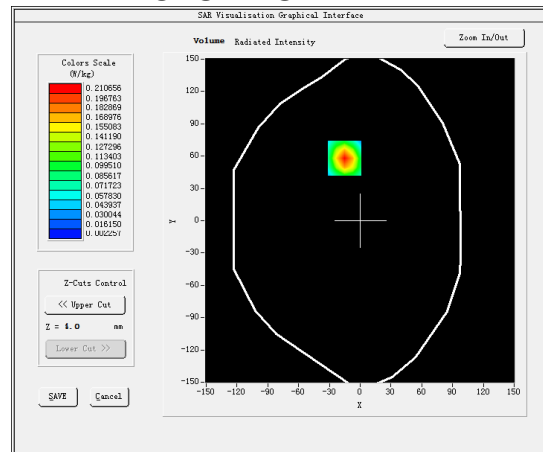
Date: 11/07/2022

Frequency (MHz)	2437.000000
Relative permittivity (real part)	37.821613
Relative permittivity (imaginary part)	13.546980
Conductivity (S/m)	1.834111
Variation (%)	-2.110000
Crest Factor	1.0
Probe Conversion factor	2.31
E-Field Probe:	SSE2 (SN 36/20 EPGO346)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7,dx=8mm dy=8mm</u> <u>dz=5mm,Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	Validation plane
Device Position	Body back(0mm)
Band	<u>IEEE 802.11b ISM(hotspot)</u>

**SURFACE SAR**



**VOLUME SAR**



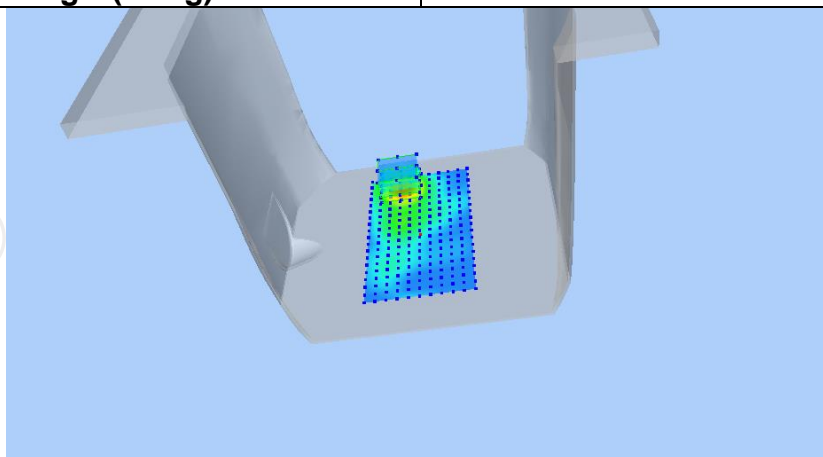
**Maximum location: X=-15.00, Y=58.00 SAR Peak: 0.37 W/kg**

**SAR 10g (W/Kg)**

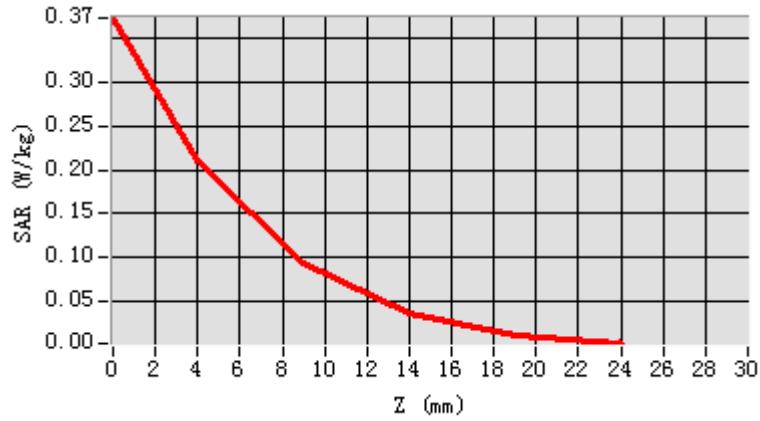
0.087182

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

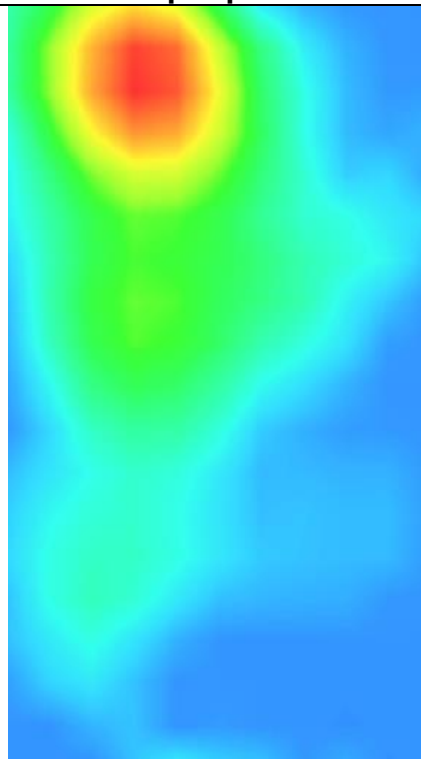
0.323788



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.3732	0.2107	0.0935	0.0368	0.0124



Hot spot position



WLAN 5.2G

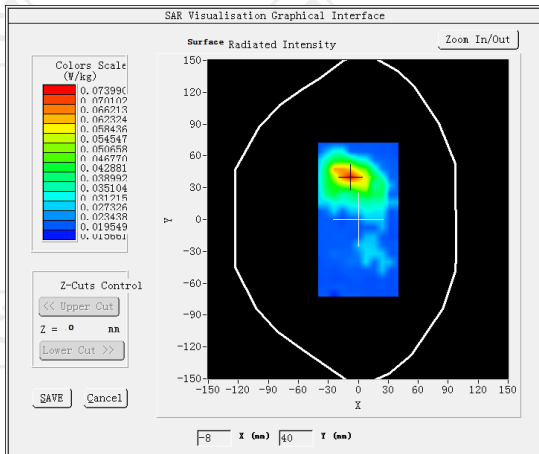
**MEASUREMENT 1**

SAR (Channel 48):

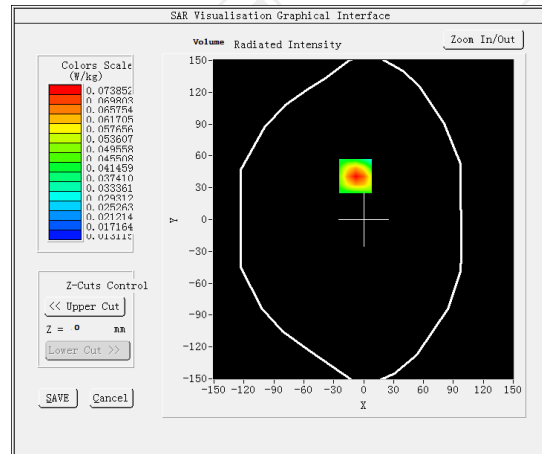
Date: 11/11/2022

Frequency (MHz)	5240.000000
Relative permittivity (real part)	35.068832
Relative permittivity (imaginary part)	13.679428
Conductivity (S/m)	5.220788
Variation (%)	-0.560000
Crest Factor	1.0
Probe Conversion factor	2.01
E-Field Probe:	SSE2 (SN 36/20 EPGO346)
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Body back(0mm)
Band	IEEE 802.11n HT20 ISM

**SURFACE SAR**

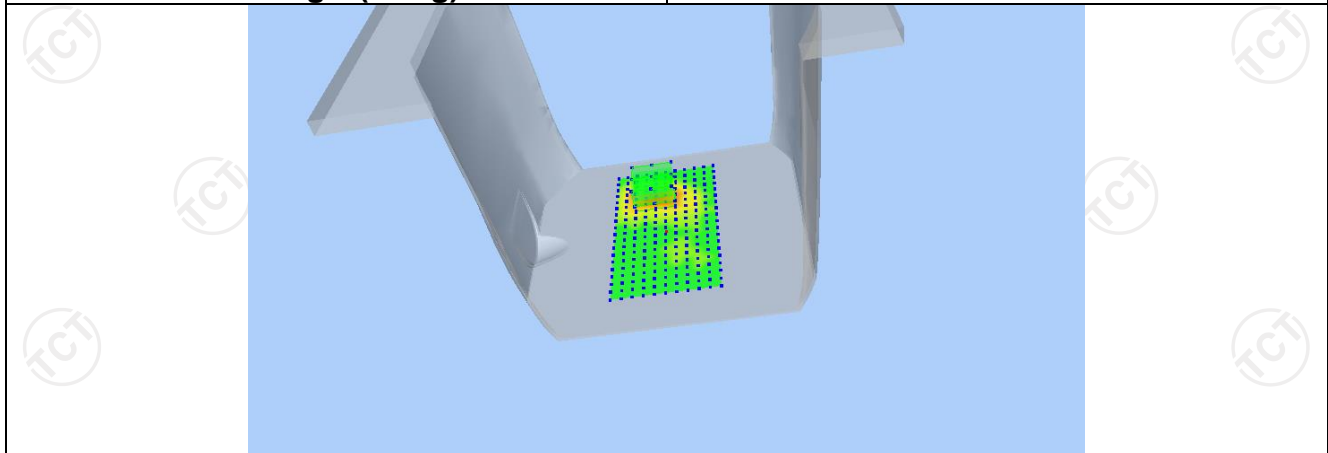


**VOLUME SAR**



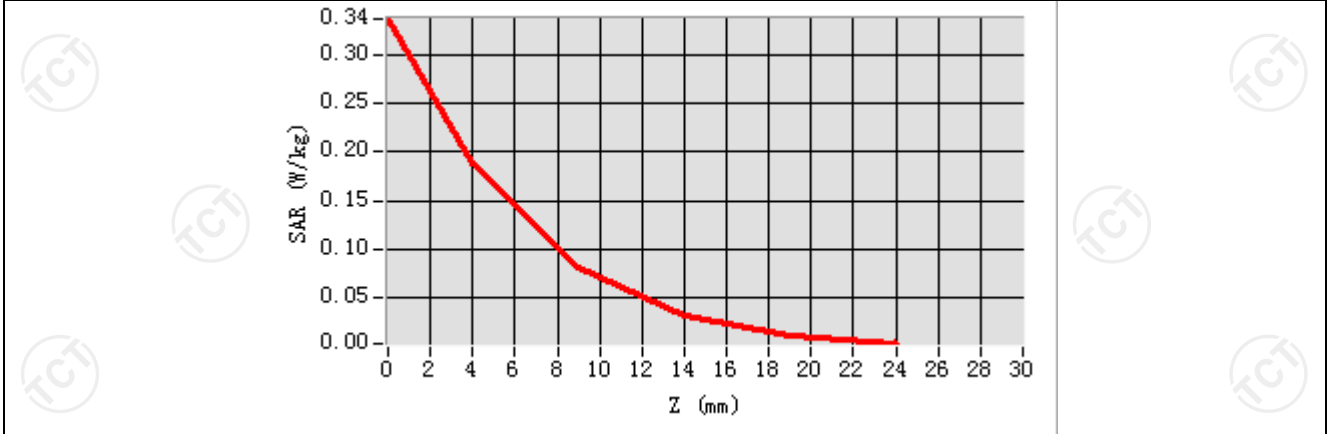
**Maximum location: X=16.00, Y=63.00 SAR Peak: 0.10 W/kg**

SAR 10g (W/Kg)	0.140642
SAR 1g (W/Kg)	0.268531

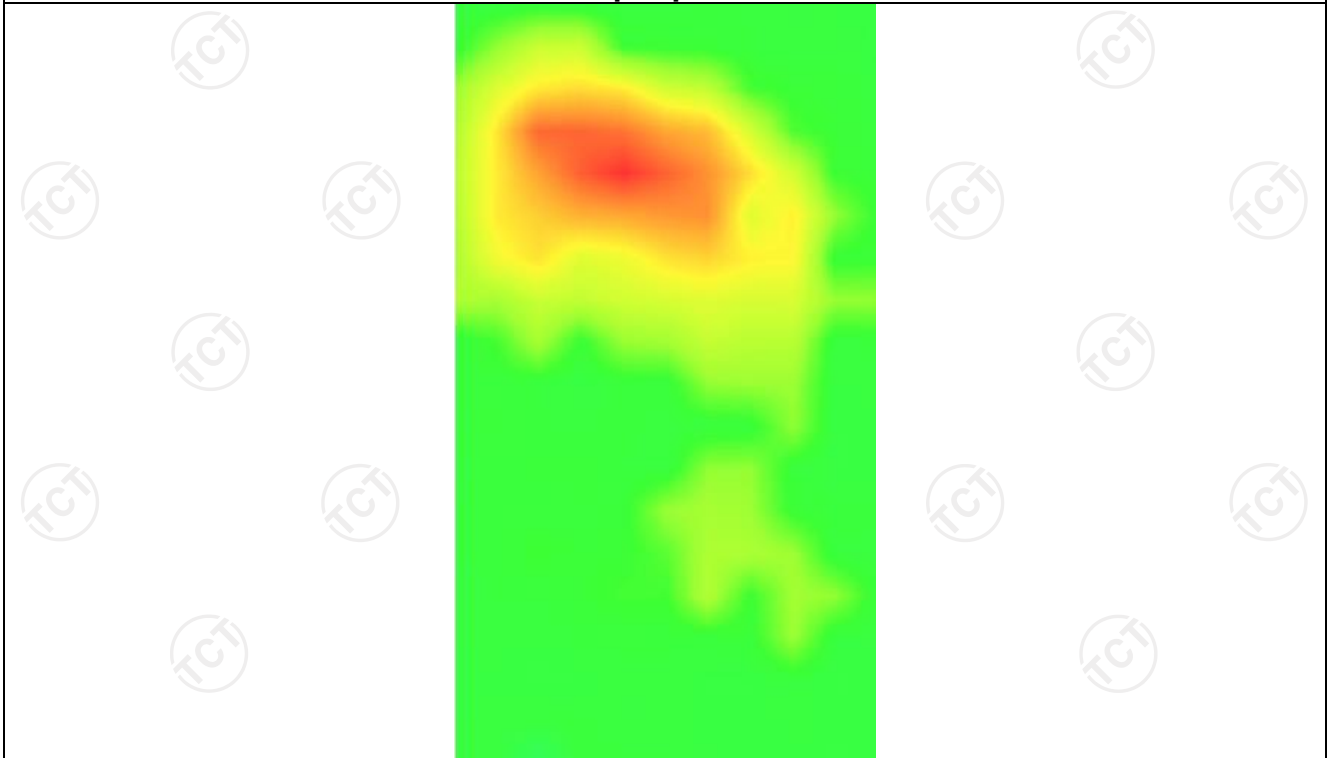




Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.3372	0.1876	0.0816	0.0317	0.0109



**Hot spot position**



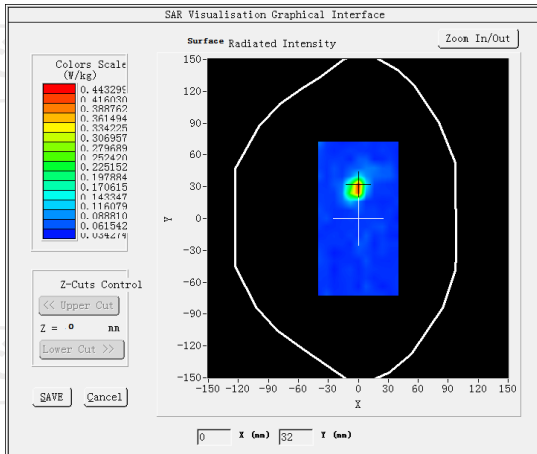
**MEASUREMENT 2**

SAR (Channel 48):

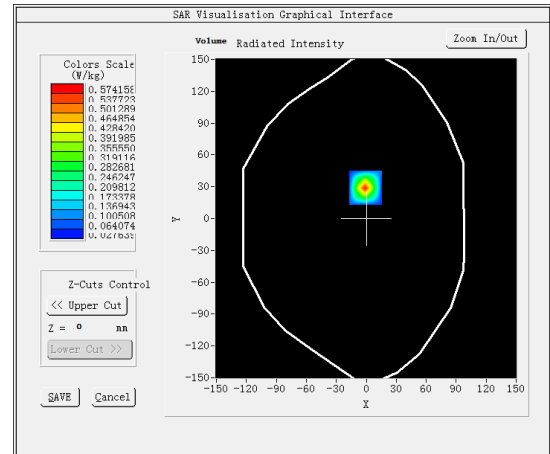
Date: 11/11/2022

Frequency (MHz)	5210.000000
Relative permittivity (real part)	35.068832
Relative permittivity (imaginary part)	13.679428
Conductivity (S/m)	5.220788
Variation (%)	2.280000
Crest Factor	1.0
Probe Conversion factor	2.01
E-Field Probe:	SSE2 (SN 36/20 EPGO346)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7,dx=8mm dy=8mm</u> <u>dz=5mm,Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	Validation plane
Device Position	Body back(0mm)
Band	<u>IEEE 802.11n HT20 ISM (hotspot)</u>

**SURFACE SAR**



**VOLUME SAR**



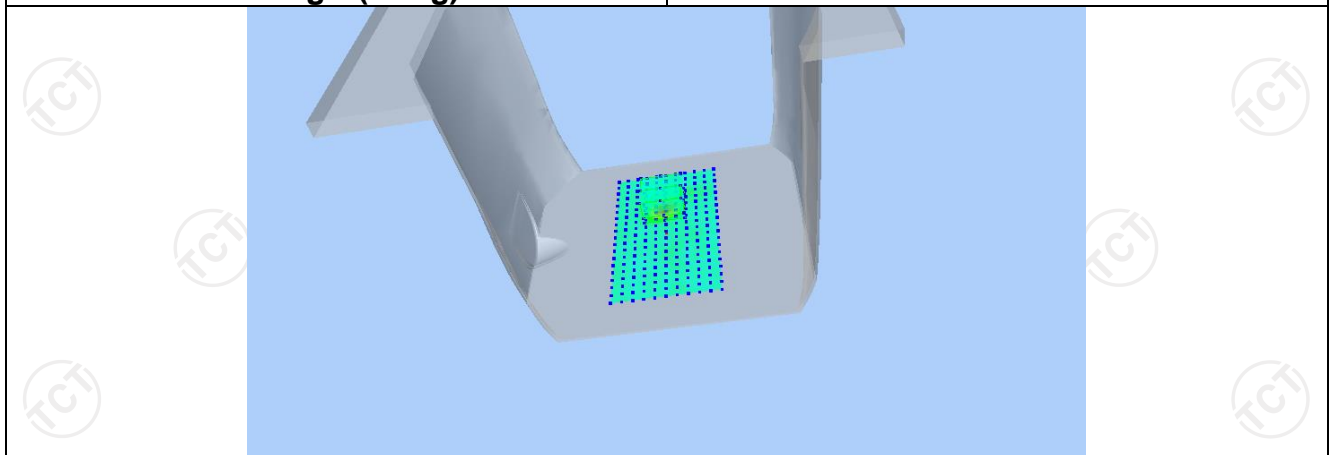
Maximum location: X=-1.00, Y=29.00 SAR Peak: 0.93 W/kg

SAR 10g (W/Kg)

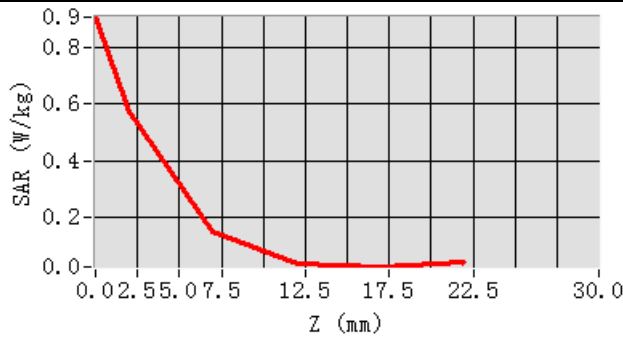
0.179222

SAR 1g (W/Kg)

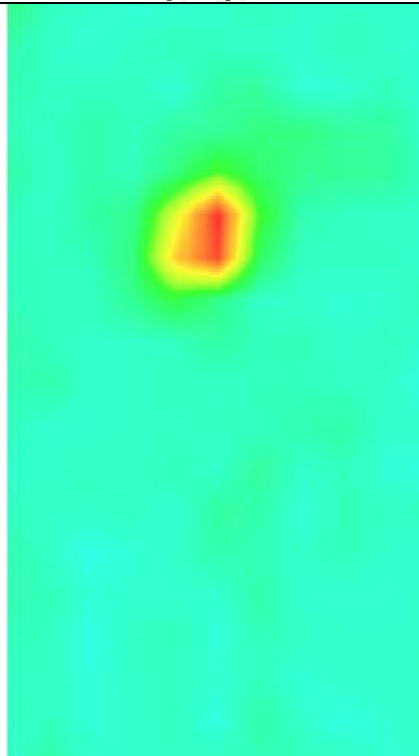
0.277517



<b>Z (mm)</b>	<b>0.00</b>	<b>2.00</b>	<b>7.00</b>	<b>12.00</b>	<b>17.00</b>
<b>SAR (W/Kg)</b>	<b>0.9068</b>	<b>0.5742</b>	<b>0.1505</b>	<b>0.0398</b>	<b>0.0276</b>



**Hot spot position**



WLAN 5.8G

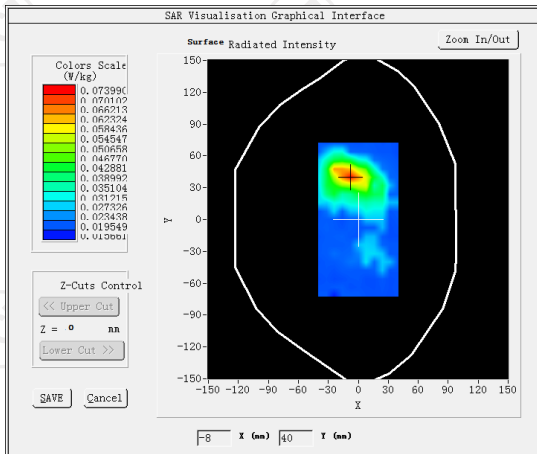
**MEASUREMENT 1**

SAR (Channel 149):

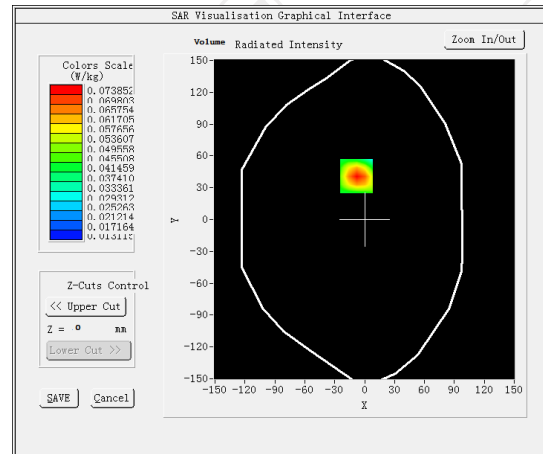
Date: 11/16/2022

<b>Frequency (MHz)</b>	5745.000000
<b>Relative permittivity (real part)</b>	38.352823
<b>Relative permittivity (imaginary part)</b>	13.671675
<b>Conductivity (S/m)</b>	5.430828
<b>Variation (%)</b>	-1.450000
<b>Crest Factor</b>	1.0
<b>Probe Conversion factor</b>	2.06
<b>E-Field Probe:</b>	SSE2 (SN 36/20 EPG0346)
<b>Area Scan</b>	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
<b>ZoomScan</b>	<u>5x5x7, dx=8mm dy=8mm</u> <u>dz=5mm, Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body back(0mm)
<b>Band</b>	<u>IEEE 802.11a ISM</u>

**SURFACE SAR**



**VOLUME SAR**



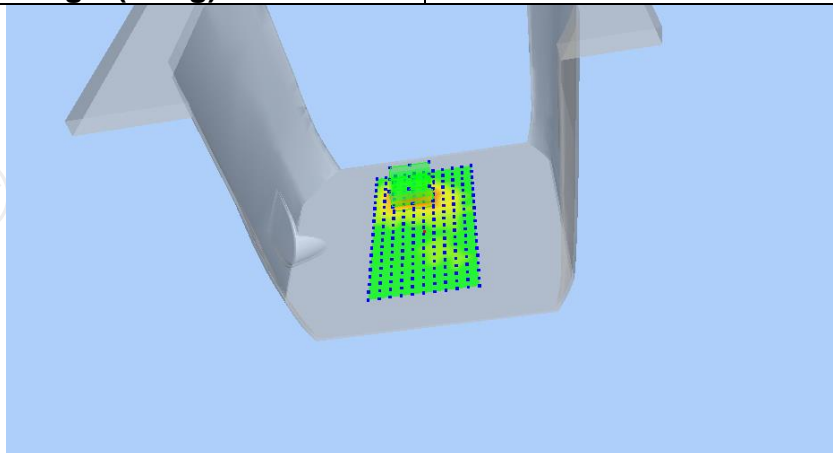
**Maximum location: X=15.00, Y=60.00 SAR Peak: 0.34 W/kg**

**SAR 10g (W/Kg)**

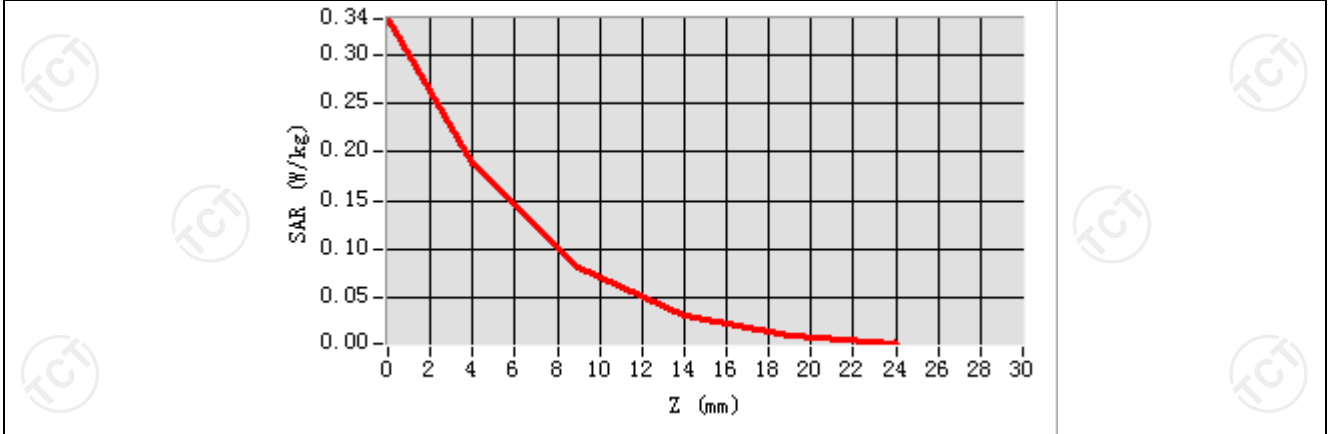
0.151431

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

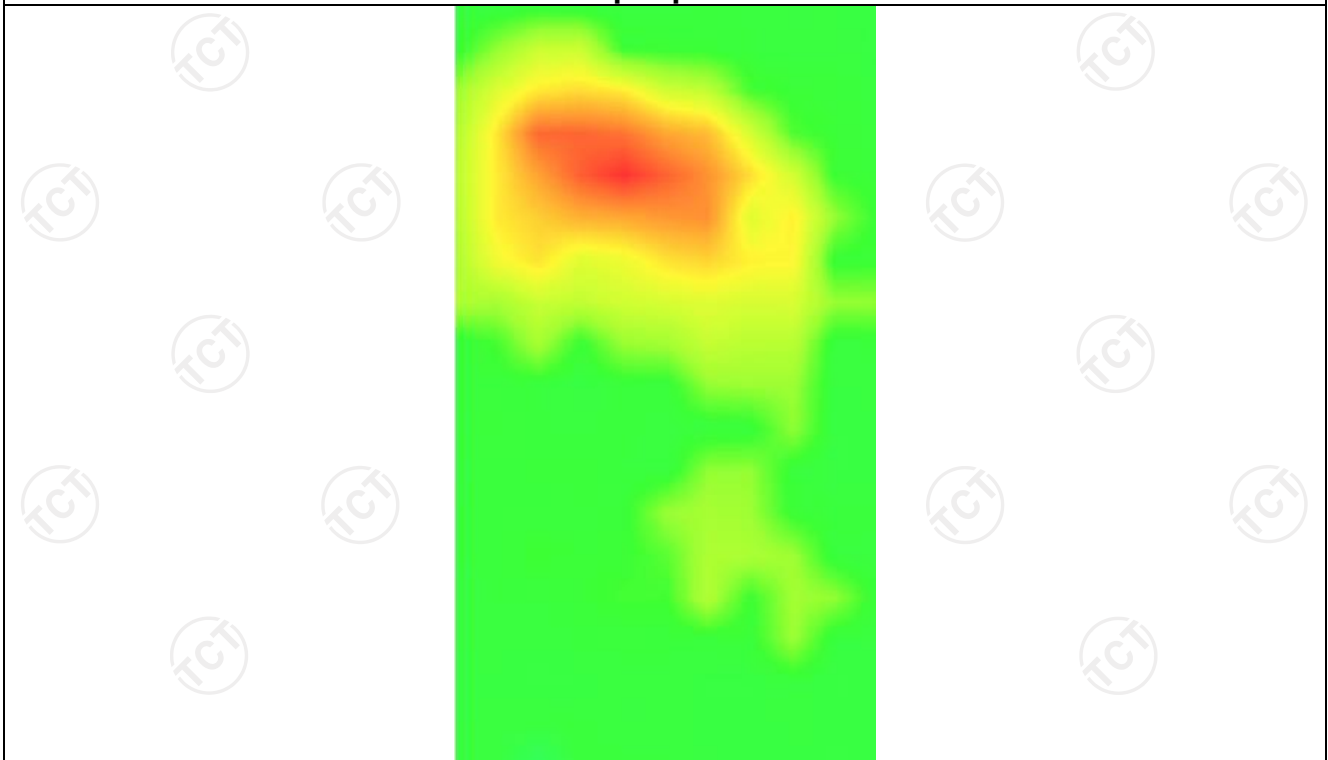
0.205420



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.3397	0.1890	0.0823	0.0317	0.0117



Hot spot position



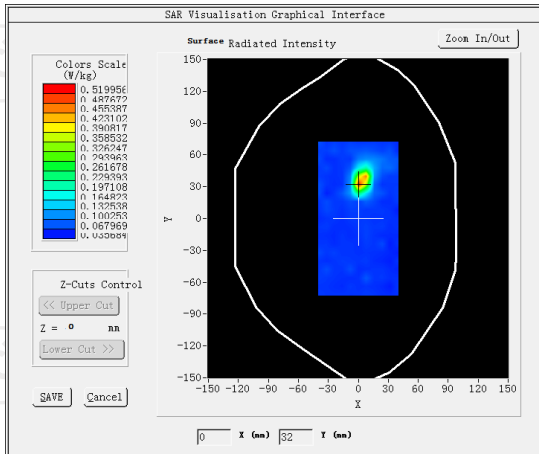
**MEASUREMENT 2**

SAR (Channel 149):

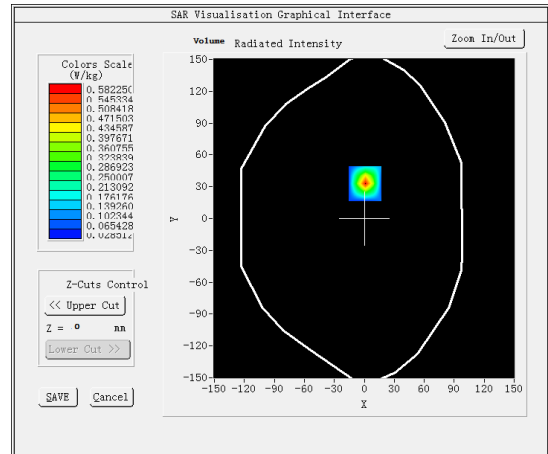
Date: 11/16/2022

Frequency (MHz)	5745.000000
Relative permittivity (real part)	38.352823
Relative permittivity (imaginary part)	13.671675
Conductivity (S/m)	5.430828
Variation (%)	2.540000
Crest Factor	1.0
Probe Conversion factor	2.06
E-Field Probe:	SSE2 (SN 36/20 EPGO346)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7,dx=8mm dy=8mm</u> <u>dz=5mm,Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	Validation plane
Device Position	Body back(10mm)
Band	<u>IEEE 802.11a ISM (hotspot)</u>

**SURFACE SAR**



**VOLUME SAR**



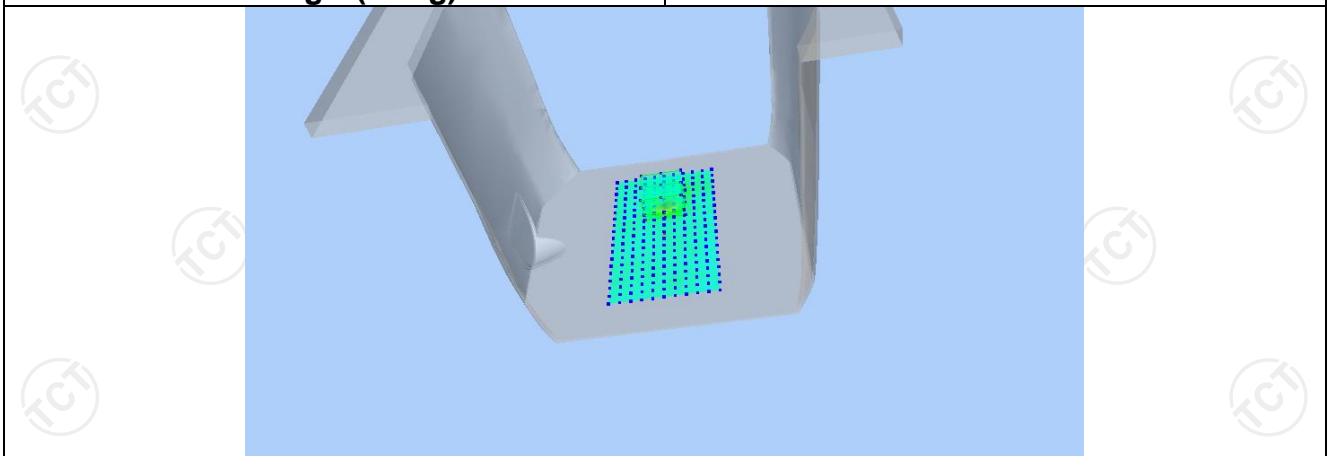
**Maximum location: X=1.00, Y=33.00 SAR Peak: 0.97 W/kg**

**SAR 10g (W/Kg)**

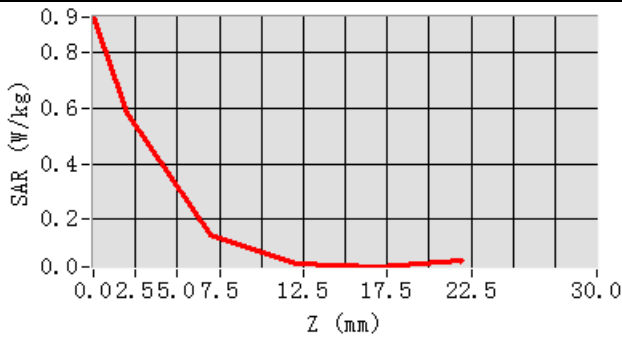
0.116442

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

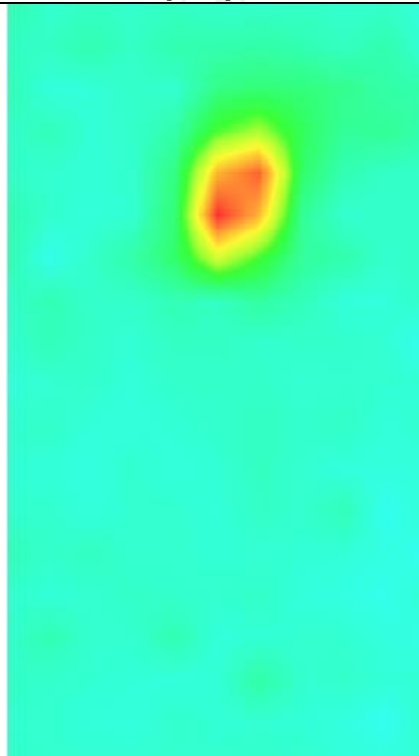
0.226087



Z (mm)	0.00	2.00	7.00	12.00	17.00
SAR (W/Kg)	0.9300	0.5823	0.1459	0.0373	0.0285



**Hot spot position**



BT

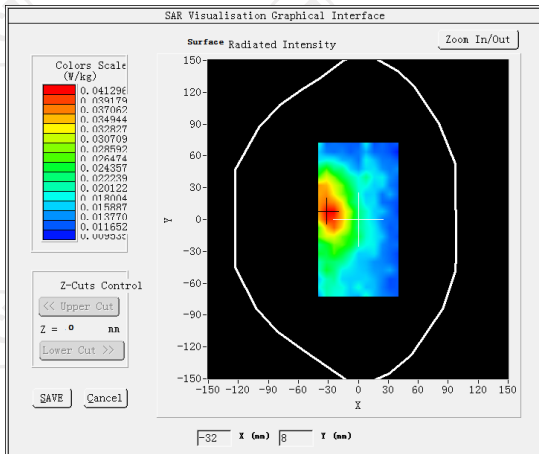
**MEASUREMENT 1**

Middle Band SAR (Channel 39):

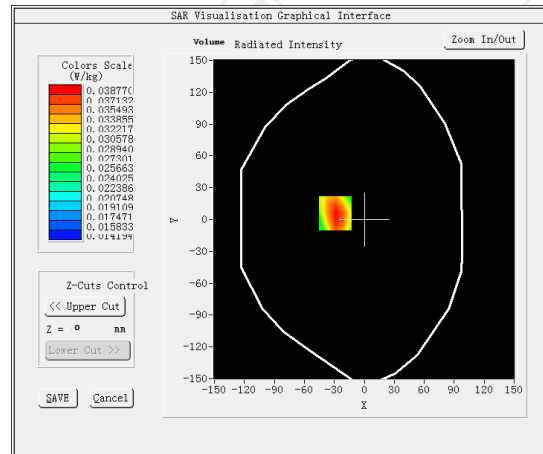
Date: 11/07/2022

<b>Frequency (MHz)</b>	2441.000000
<b>Relative permittivity (real part)</b>	37.821613
<b>Relative permittivity (imaginary part)</b>	13.546980
<b>Conductivity (S/m)</b>	1.834111
<b>Variation (%)</b>	1.910000
<b>Crest Factor</b>	1.0
<b>Probe Conversion factor</b>	2.31
<b>E-Field Probe:</b>	SSE2 (SN 36/20 EPG0346)
<b>Area Scan</b>	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
<b>ZoomScan</b>	<u>5x5x7,dx=8mm dy=8mm</u> <u>dz=5mm,Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body back(0mm)
<b>Band</b>	<u>GFSK</u>

**SURFACE SAR**



**VOLUME SAR**



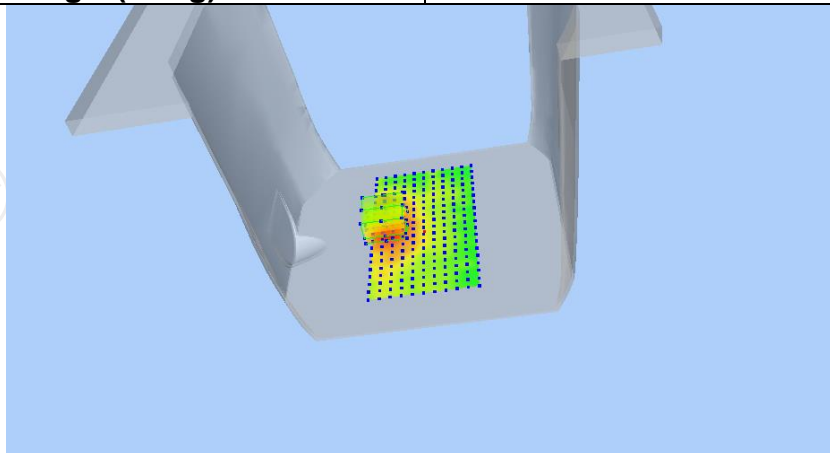
**Maximum location: X=-29.00, Y=6.00 SAR Peak: 0.05 W/kg**

**SAR 10g (W/Kg)**

0.028107

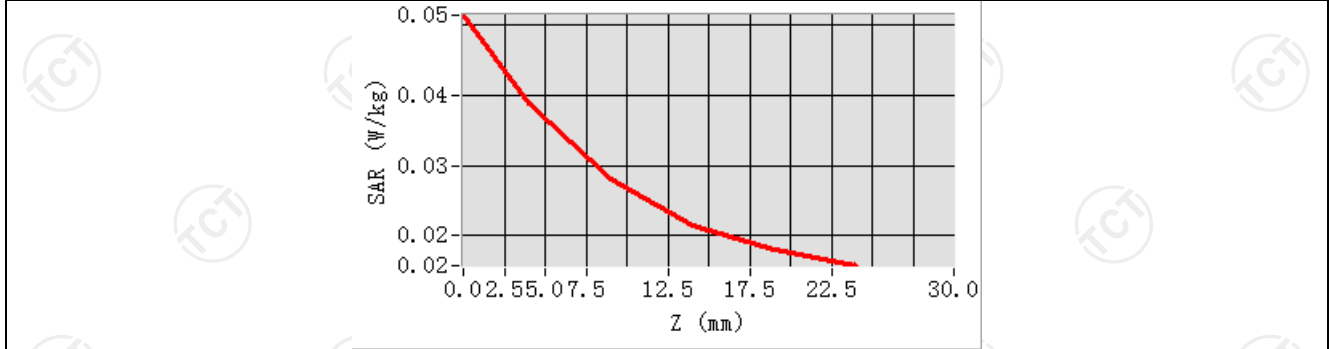
**SAR 1g (W/Kg)**

0.037717

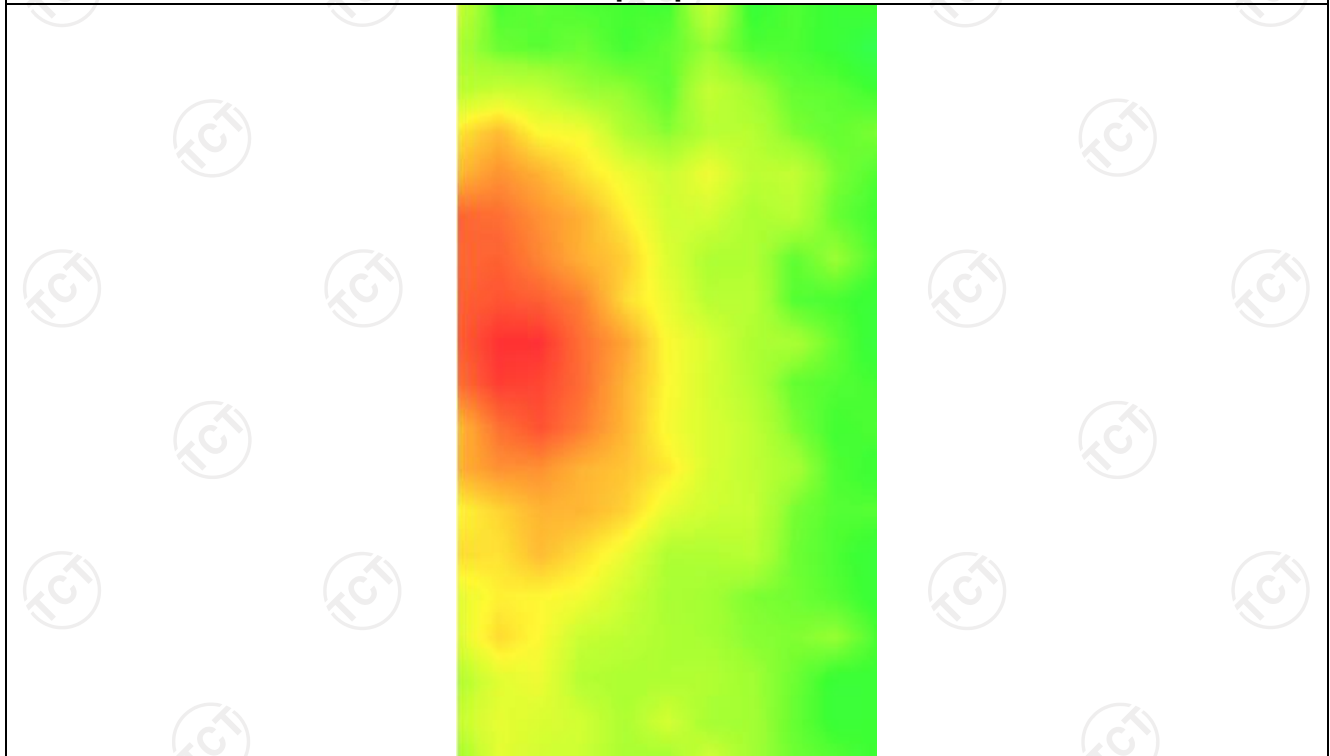




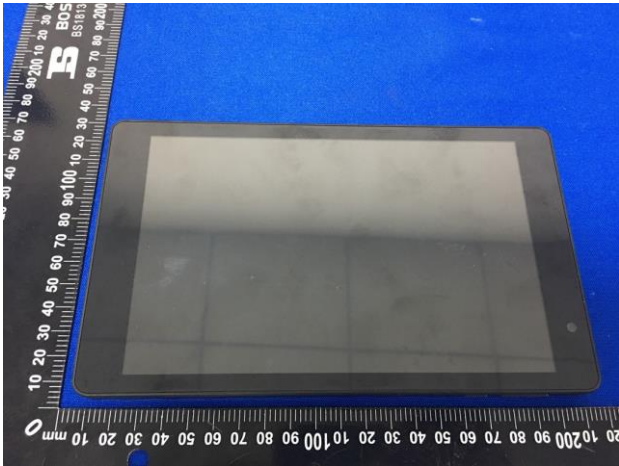
Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0515	0.0388	0.0280	0.0215	0.0180



**Hot spot position**



### Appendix A: EUT Photos



### Liquid depth



The Body Liquid of 835MHz (15.4cm)



The Body Liquid of 1800MHz (15.2 cm)



The Body Liquid of 1900MHz (16.4 cm)



The Body Liquid of 2450MHz (15.3cm)



The Body Liquid of 2600MHz (16.5cm)



The Body Liquid of 5000-6000MHz (16.5cm)



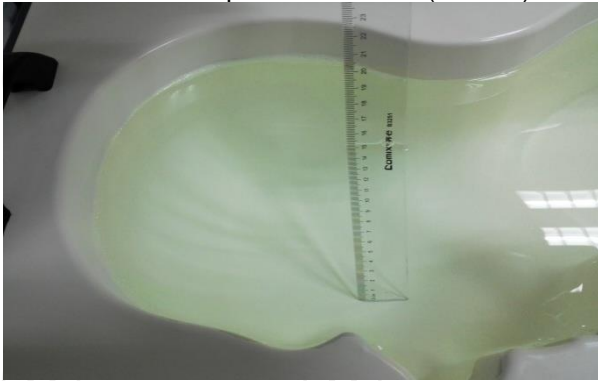
The Body Liquid of 750MHz (15.4cm)



The Head Liquid of 1900MHz (15.5cm)



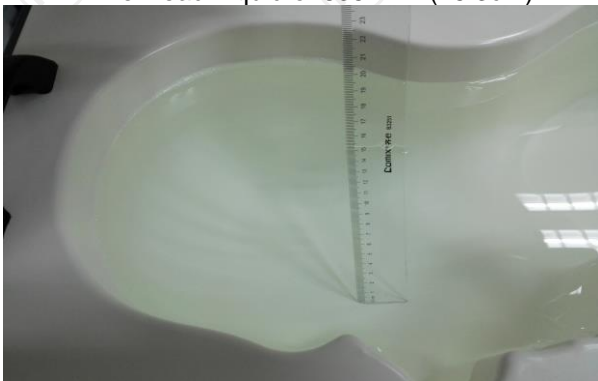
The Head Liquid of 2450MHz (15.6cm)



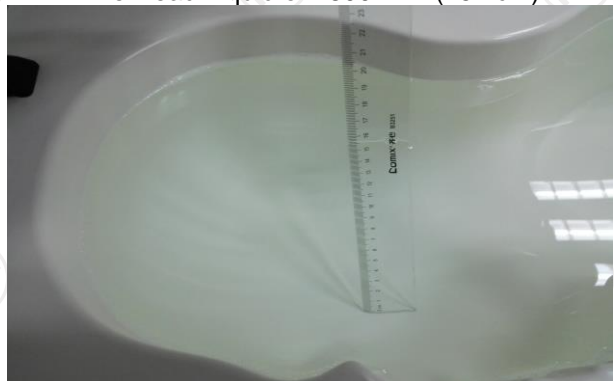
The Head Liquid of 835MHz (15.3cm)



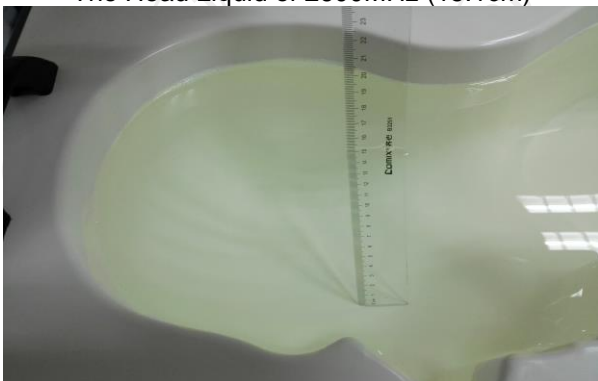
The Head Liquid of 1800MHz (15.2cm)



The Head Liquid of 2600MHz (15.1cm)



The Body Liquid of 5000-6000MHz (15.8cm)



The Head Liquid of 750MHz (15.4cm)

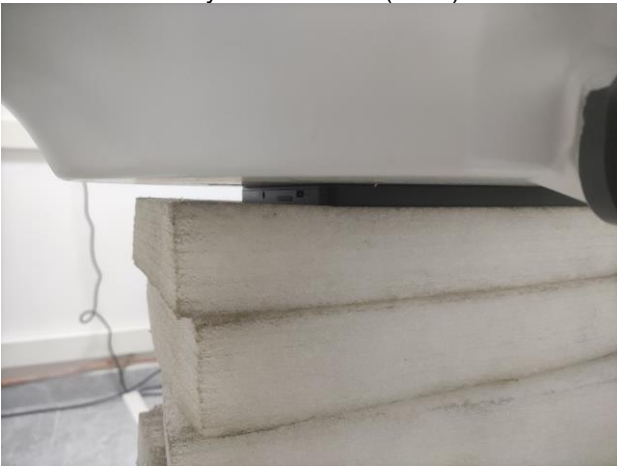
**Appendix B: Test Setup Photos**



Body worn – Front (0mm)



Body worn – Back (0mm)



Hotspot Front (0mm)



Hotspo Back (0mm)



Hotspot Bottom (0mm)

## Appendix C: Probe Calibration Certificate

COMOSAR E-FIELD Probe



### COMOSAR E-Field Probe Calibration Report

Ref : ACR.297.1.20.MVGB.A

#### SHENZHEN TCT TESTING TECHNOLOGY CO., LTD

2101 2201, ZHENCHANG FACTORY, RENSHAN  
INDUSTRIAL ZONE, FUHAI SUBDISTRICT,  
BAOAN DISTRICT, SHENZHEN, GUANGDONG,  
518103. PEOPLES REPUBLIC OF CHINA  
**MVG COMOSAR DOSIMETRIC E-FIELD PROBE**  
SERIAL NO.: SN 36/20 EPGO346

#### Calibrated at MVG

Z.I. de la pointe du diable  
Technopôle Brest Iroise – 295 avenue Alexis de Rochon  
29280 PLOUZANE - FRANCE

Calibration date: 10/08/2022



Accreditations #2-6789 and #2-6814  
Scope available on [www.cofrac.fr](http://www.cofrac.fr)

#### Summary:

This document presents the method and results from an accredited COMOSAR E-Field Probe calibration performed at MVG, using the CALIPROBE test bench, for use with a MVG COMOSAR system only. The test results covered by accreditation are traceable to the International System of Units (SI).



COMOSAR E-FIELD PROBE CALIBRATION REPORT

Ref: ACR.297.1.20.MVGB.A

	<i>Name</i>	<i>Function</i>	<i>Date</i>	<i>Signature</i>
<i>Prepared by :</i>	Jérôme LUC	Technical Manager	10/08/2022	<i>JL</i>
<i>Checked by :</i>	Jérôme LUC	Technical Manager	10/08/2022	<i>JL</i>
<i>Approved by :</i>	Yann Toutain	Laboratory Director	10/11/2022	<i>Yann Toutain</i>

	<i>Customer Name</i>
<i>Distribution :</i>	SHENHEN TCT TESTING TECHNOLOGY CO., LTD

<i>Issue</i>	<i>Name</i>	<i>Date</i>	<i>Modifications</i>
A	Jérôme LUC	10/11/2022	Initial release



**TABLE OF CONTENTS**

1	Device Under Test .....	4
2	Product Description .....	4
2.1	General Information .....	4
3	Measurement Method .....	4
3.1	Linearity .....	4
3.2	Sensitivity .....	5
3.3	Lower Detection Limit .....	5
3.4	Isotropy .....	5
3.1	Boundary Effect .....	5
4	Measurement Uncertainty .....	6
5	Calibration Measurement Results .....	6
5.1	Sensitivity in air .....	6
5.2	Linearity .....	7
5.3	Sensitivity in liquid .....	8
5.4	Isotropy .....	9
6	List of Equipment .....	10





**1 DEVICE UNDER TEST**

Device Under Test	
Device Type	COMOSAR DOSIMETRIC E FIELD PROBE
Manufacturer	MVG
Model	SSE2
Serial Number	SN 36/20 EPGO346
Product Condition (new / used)	New
Frequency Range of Probe	0.15 GHz-6GHz
Resistance of Three Dipoles at Connector	Dipole 1: R1=0.217 MΩ Dipole 2: R2=0.245 MΩ Dipole 3: R3=0.219 MΩ

**2 PRODUCT DESCRIPTION**

**2.1 GENERAL INFORMATION**

MVG's COMOSAR E field Probes are built in accordance to the IEEE 1528, FCC KDB865664 D01, CENELEC EN62209 and CEI/IEC 62209 standards.



**Figure 1 – MVG COMOSAR Dosimetric E field Dipole**

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 IEEE 1528, FCC KDB865664 D01, CENELEC EN62209 and CEI/IEC 62209 standards provide recommended practices for the probe calibrations, including the performance characteristics of interest and methods by which to assess their affect. All calibrations / measurements performed meet the fore mentioned standards.

**3.1 LINEARITY**

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



### 3.2 SENSITIVITY

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

### 3.3 LOWER DETECTION LIMIT

The lower detection limit was assessed using the same measurement set up as used for the linearity measurement. The required lower detection limit is 10 mW/kg.

### 3.4 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°).

### 3.1 BOUNDARY EFFECT

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

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

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

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.,  $\delta \approx 14$  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 SARuncertainty[%] for scanning distances larger than 4mm is 1.0% Limit ,2%).

**4 MEASUREMENT UNCERTAINTY**

The guidelines outlined in the IEEE 1528, OET 65 Bulletin C, CENELEC EN50361 and CEI/IEC 62209 standards were followed to generate the measurement uncertainty associated with an E-field probe calibration using the waveguide technique. All uncertainties listed below represent an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2, traceable to the Internationally Accepted Guides to Measurement Uncertainty.

Uncertainty analysis of the probe calibration in waveguide					
ERROR SOURCES	Uncertainty value (%)	Probability Distribution	Divisor	ci	Standard Uncertainty (%)
Expanded uncertainty 95 % confidence level k = 2					14 %

**5 CALIBRATION MEASUREMENT RESULTS**

Calibration Parameters	
Liquid Temperature	20 +/- 1 °C
Lab Temperature	20 +/- 1 °C
Lab Humidity	30-80 %

**5.1 SENSITIVITY IN AIR**

Normx dipole 1 (µV/(V/m) <sup>2</sup> )	Normy dipole 2 (µV/(V/m) <sup>2</sup> )	Normz dipole 3 (µV/(V/m) <sup>2</sup> )
0.81	0.71	0.80

DCP dipole 1 (mV)	DCP dipole 2 (mV)	DCP dipole 3 (mV)
115	112	112

Calibration curves ei=f(V) (i=1,2,3) allow to obtain E-field value using the formula:

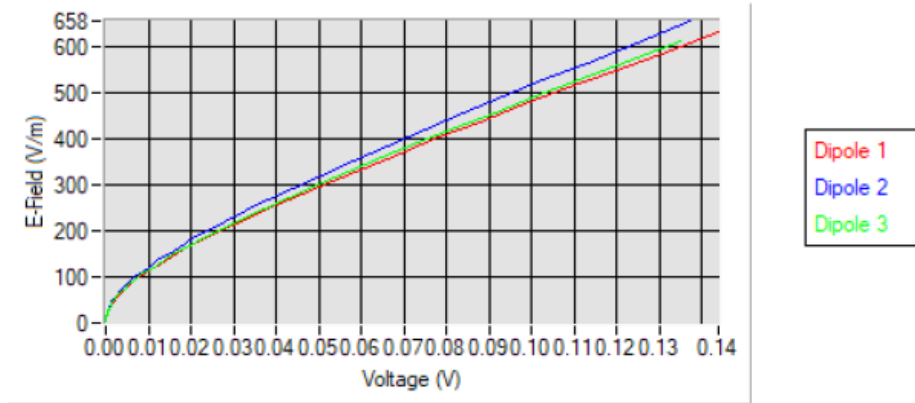
$$E = \sqrt{E_1^2 + E_2^2 + E_3^2}$$



COMOSAR E-FIELD PROBE CALIBRATION REPORT

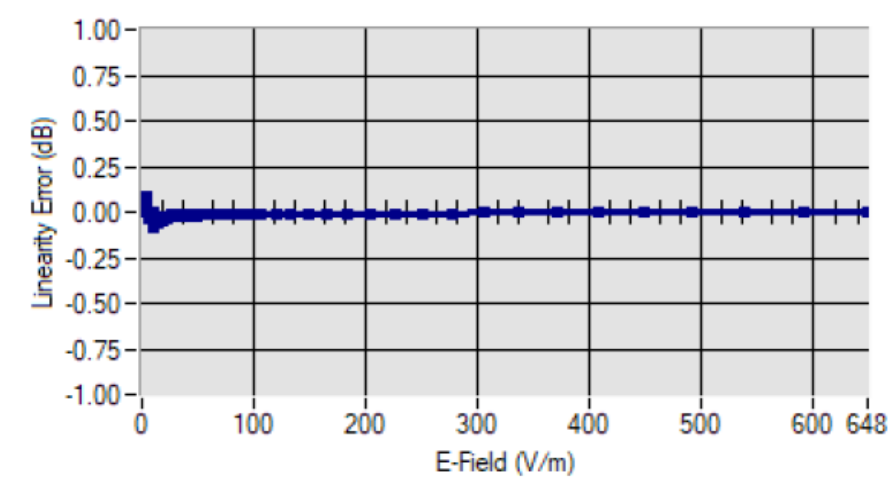
Ref: ACR.297.1.20.MVGB.A

Calibration curves



5.2 LINEARITY

Linearity



Linearity: +/-1.97% (+/-0.09dB)



5.3 SENSITIVITY IN LIQUID

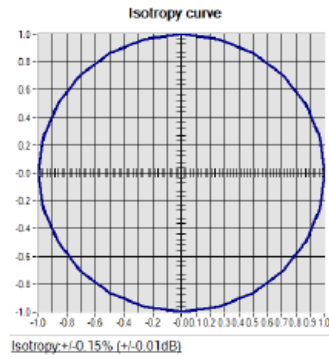
Liquid	Frequency (MHz +/- 100MHz)	ConvF	Epsilon (S/m)	Permittivity
HL750	750	1.71	0.93	40.76
BL750	750	1.78	0.98	56.70
HL900	900	1.91	0.93	41.94
BL900	900	1.96	0.98	54.62
HL1800	1800	2.08	1.29	40.86
BL1800	1800	2.16	1.47	52.27
HL2000	2000	2.03	1.42	38.37
BL2000	2000	2.10	1.52	52.03
HL2450	2450	2.31	1.80	38.72
BL2450	2450	2.37	1.97	54.91
HL2600	2600	2.16	1.89	39.98
BL2600	2600	2.23	2.18	54.42
HL5200	5200	2.01	4.45	36.68
BL5200	5200	2.08	5.46	49.02
HL5800	5800	2.06	5.08	34.81
BL5800	5800	2.13	6.12	47.81

LOWER DETECTION LIMIT: 8mW/kg



5.4 ISOTROPY

HL1800 MHz





**6 LIST OF EQUIPMENT**

Equipment Summary Sheet				
Equipment Description	Manufacturer / Model	Identification No.	Current Calibration Date	Next Calibration Date
Flat Phantom	MVG	SN-20/09-SAM71	Validated. No cal required.	Validated. No cal required.
COMOSAR Test Bench	Version 3	NA	Validated. No cal required.	Validated. No cal required.
Network Analyzer	Rohde & Schwarz ZVM	100203	05/2022	05/2024
Network Analyzer – Calibration kit	Rohde & Schwarz ZV-Z235	101223	05/2022	05/2024
Multimeter	Keithley 2000	1160271	02/2020	02/2023
Signal Generator	Rohde & Schwarz SMB	106589	04/2022	04/2024
Amplifier	Aethercomm	SN 046	Characterized prior to test. No cal required.	Characterized prior to test. No cal required.
Power Meter	NI-USB 5680	170100013	05/2022	05/2024
Directional Coupler	Narda 4216-20	01386	Characterized prior to test. No cal required.	Characterized prior to test. No cal required.
Waveguide	Mega Industries	069Y7-158-13-712	Validated. No cal required.	Validated. No cal required.
Waveguide Transition	Mega Industries	069Y7-158-13-701	Validated. No cal required.	Validated. No cal required.
Waveguide Termination	Mega Industries	069Y7-158-13-701	Validated. No cal required.	Validated. No cal required.
Temperature / Humidity Sensor	Testo 184 H1	44220687	05/2020	05/2023



## Dielectric Probe Calibration Report

Ref : ACR.138.4.33.SATU.A

**SHENZHEN TCT TESTING TECHNOLOGY CO., LTD  
2101&2201, ZHENCHANG FACTORY, RENSHAN  
INDUSTRIAL ZONE, FUHAI SUBDISTRICT, BAOAN  
DISTRICT, SHENZHEN, GUANGDONG, 518103,  
PEOPLES REPUBLIC OF CHINA**

**MVG COMOSAR DOSIMETRIC E-FIELD PROBE**

**FREQUENCY: 0.3-6 GHZ**

**SERIAL NO.: SN 19/15 OCPG 71**

**Calibrated at MVG US  
2105 Barrett Park Dr. - Kennesaw, GA 30144**



**Calibration Date: 06/05/2021**

*Summary:*

This document presents the method and results from an accredited Dielectric Probe calibration performed in MVG USA using the LIMESAR test bench. All calibration results are traceable to national metrology institutions.





SAR DIELECTRIC PROBE CALIBRATION REPORT

Ref. ACR.138.4.33..SATUA

	Name	Function	Date	Signature
Prepared by :	Jérôme LUC	Product Manager	06/05/2021	<i>JS</i>
Checked by :	Jérôme LUC	Product Manager	06/05/2021	<i>JS</i>
Approved by :	Kim RUTKOWSKI	Quality Manager	06/05/2021	<i>Kim Rutkowski</i>

	Customer Name
Distribution :	SHENZHEN TONGCE TESTING LAB

Issue	Date	Modifications
A	06/05/2021	Initial release



**TABLE OF CONTENTS**

1	Introduction.....	4
2	Device Under Test .....	4
3	Product Description .....	4
3.1	General Information .....	4
4	Measurement Method .....	5
4.1	Liquid Permittivity Measurements .....	5
5	Measurement Uncertainty .....	5
5.1	Dielectric Permittivity Measurement .....	5
6	Calibration Measurement Results .....	6
6.1	Liquid Permittivity Measurement .....	6
7	List of Equipment .....	7

Page: 3/7

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