

## Appendix B: SAR Measurement results Plots

<b>Plot</b>	<b>Frequency/Mode</b>	<b>Testing Position and Channel</b>	<b>Test Date</b>
1	WCDMA1900	Edge A, Low ,10mm	2019/12/18
2	WCDMA1700	Edge A, High ,10mm	2019/12/17
3	WCDMA850	Edge A, Low ,10mm	2019/12/16
4	LTE Band2	Edge A, Middle ,10mm	2019/12/18
5	LTE Band4	Edge A, High ,10mm	2019/12/17
6	LTE Band5	Edge A, Middle ,10mm	2019/12/16
7	LTE Band7	Edge A, Middle ,10mm	2019/12/20
8	LTE Band12	Edge A, High ,10mm	2019/12/15
9	LTE Band13	Edge A, Middle ,10mm	2019/12/15
10	LTE Band17	Edge A, Middle ,10mm	2019/12/15
11	WIFI 2.4G 802.11b	Edge D, Middle ,10mm	2019/12/19
12	WIFI 5G 802.11a	Body Back, Middle ,10mm	2019/12/21
13	RFID	Body Back, Low ,10mm	2019/12/16

**Plot 1: WCDMA1900, Edge A, Low,10mm**

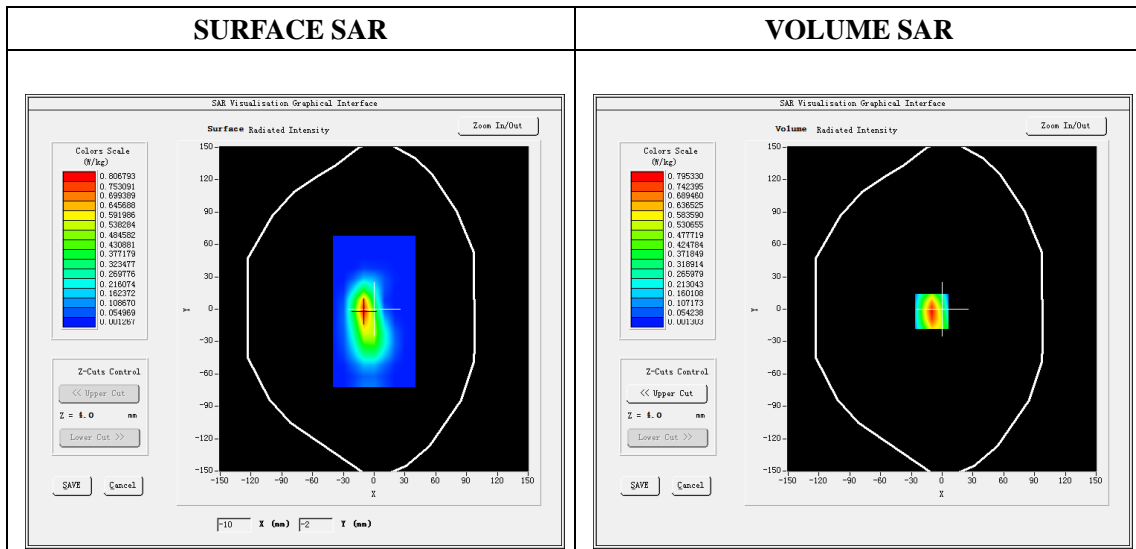
Type: Phone measurement  
 Date of measurement: 12/18/2019  
 Measurement duration: 22 minutes 05 seconds  
 Mobile Phone IMEI number: --

**A. Experimental conditions.**

<b>Area Scan</b>	dx=8mm dy=8mm
<b>ZoomScan</b>	5x5x7,dx=8mm dy=8mm dz=5mm
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Edge A
<b>Band</b>	Band2_WCDMA1900
<b>Channels</b>	9262
<b>Signal</b>	WCDMA (Duty cycle: 1:1)

**B. SAR Measurement Results**

<b>E-Field Probe</b>	SATIMO SN_27/15_EPG0261
<b>Frequency (MHz)</b>	1852.4
<b>Relative permittivity (real part)</b>	53.32
<b>Relative permittivity (imaginary)</b>	14.49
<b>Conductivity (S/m)</b>	1.53
<b>Variation (%)</b>	0.05
<b>ConvF:</b>	2.39

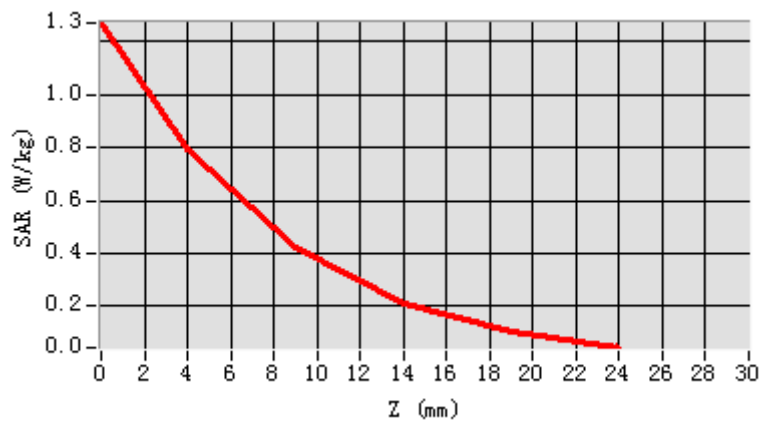


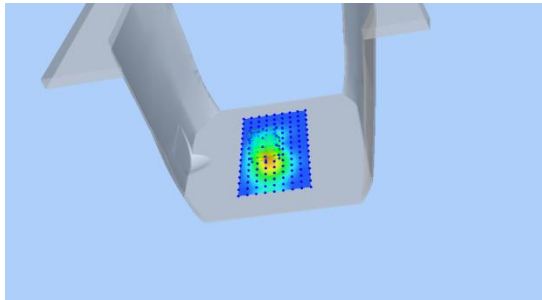
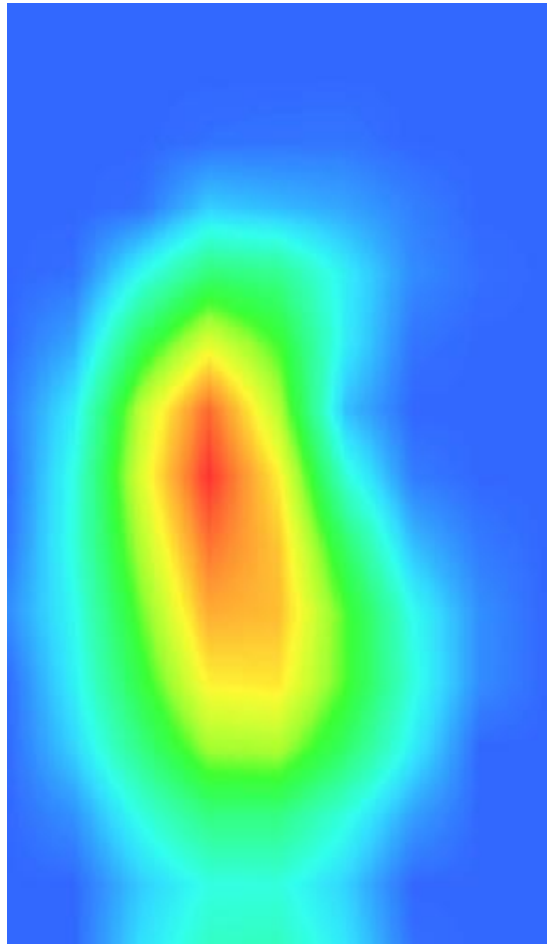
**Maximum location: X=-10.00, Y=-2.00**

**SAR Peak: 1.27W/kg**

<b>SAR 10g (W/Kg)</b>	0.356568
<b>SAR 1g (W/Kg)</b>	0.727218

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.2718	0.7953	0.4207	0.2127	0.1035



3D screen shot	Hot spot position
	

**Plot 2: WCDMA1700, Edge A, High,10mm**

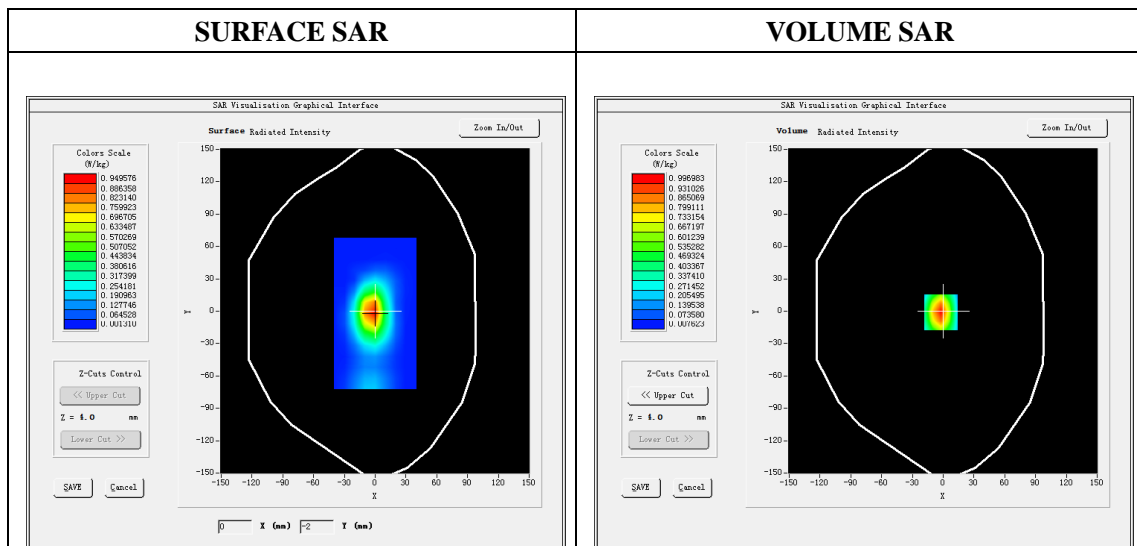
Type: Phone measurement  
 Date of measurement: 12/17/2019  
 Measurement duration: 22 minutes 08 seconds  
 Mobile Phone IMEI number: --

**A. Experimental conditions.**

<b>Area Scan</b>	dx=8mm dy=8mm
<b>ZoomScan</b>	5x5x7,dx=8mm dy=8mm dz=5mm
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Edge A
<b>Band</b>	Band2_WCDMA1700
<b>Channels</b>	1513
<b>Signal</b>	WCDMA (Duty cycle: 1:1)

**B. SAR Measurement Results**

<b>E-Field Probe</b>	SATIMO SN_27/15_EPG0261
<b>Frequency (MHz)</b>	1752.6
<b>Relative permittivity (real part)</b>	53.40
<b>Relative permittivity (imaginary)</b>	15.10
<b>Conductivity (S/m)</b>	1.51
<b>Variation (%)</b>	-4.09
<b>ConvF:</b>	2.22

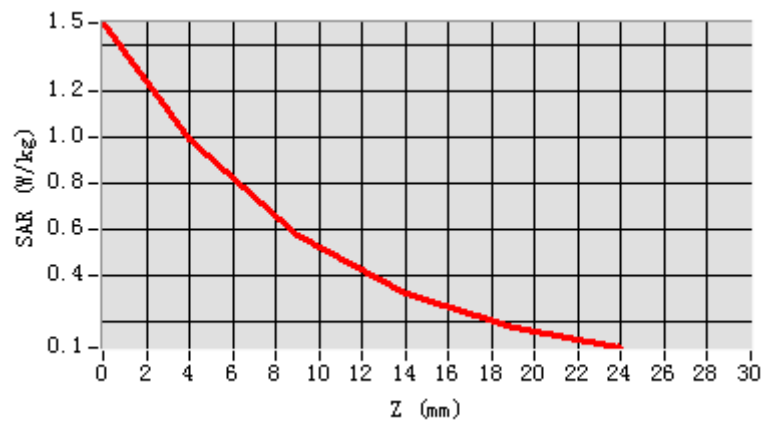


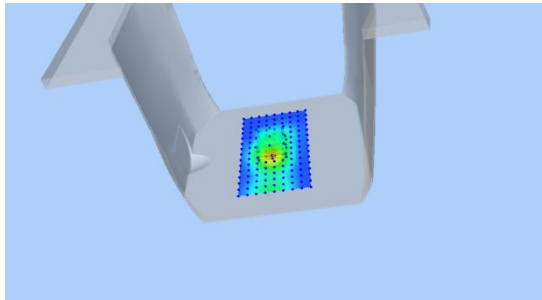
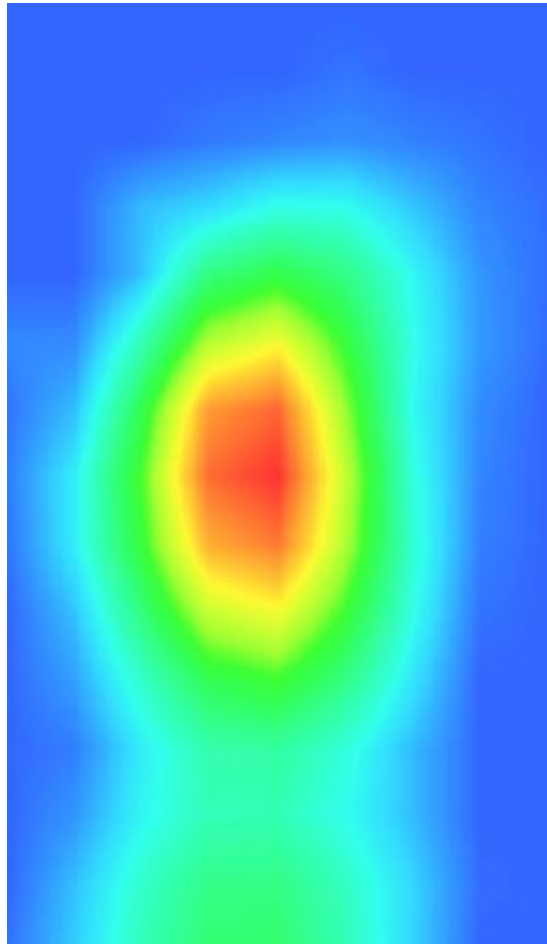
**Maximum location: X=-2.00, Y=-1.00**

**SAR Peak: 1.50W/kg**

<b>SAR 10g (W/Kg)</b>	0.472695
<b>SAR 1g (W/Kg)</b>	0.915222

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.5003	0.9970	0.5781	0.3256	0.1785



3D screen shot	Hot spot position
	

### Plot 3: WCDMA850, Edge A, Low,10mm

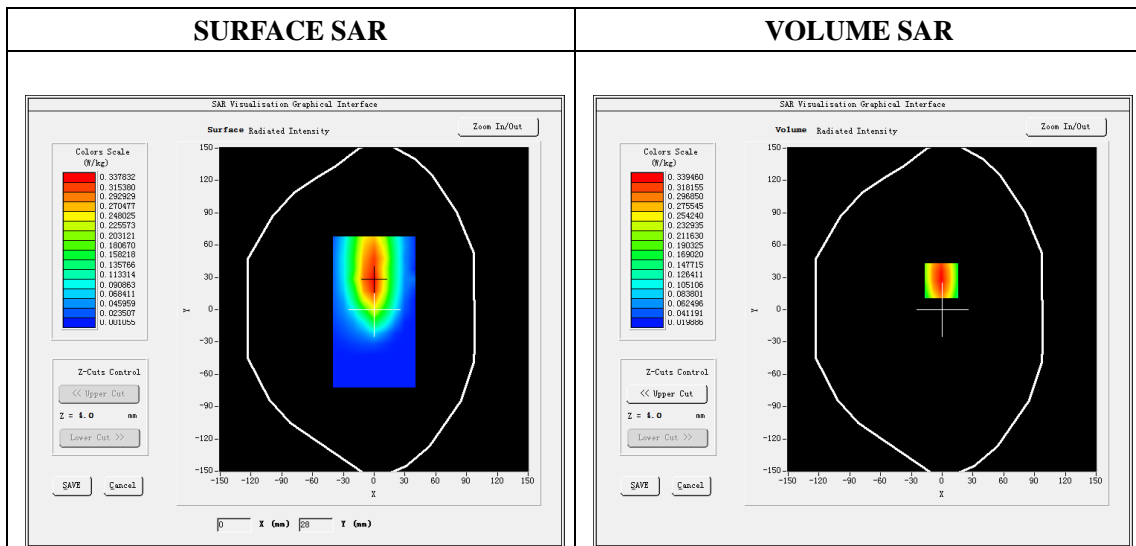
Type: Phone measurement  
 Date of measurement: 12/16/2019  
 Measurement duration: 22 minutes 09 seconds  
 Mobile Phone IMEI number: --

**A. Experimental conditions.**

<b>Area Scan</b>	dx=8mm dy=8mm
<b>ZoomScan</b>	5x5x7,dx=8mm dy=8mm dz=5mm
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Edge A
<b>Band</b>	Band5_WCDMA850
<b>Channels</b>	4132
<b>Signal</b>	WCDMA (Duty cycle: 1:1)

**B. SAR Measurement Results**

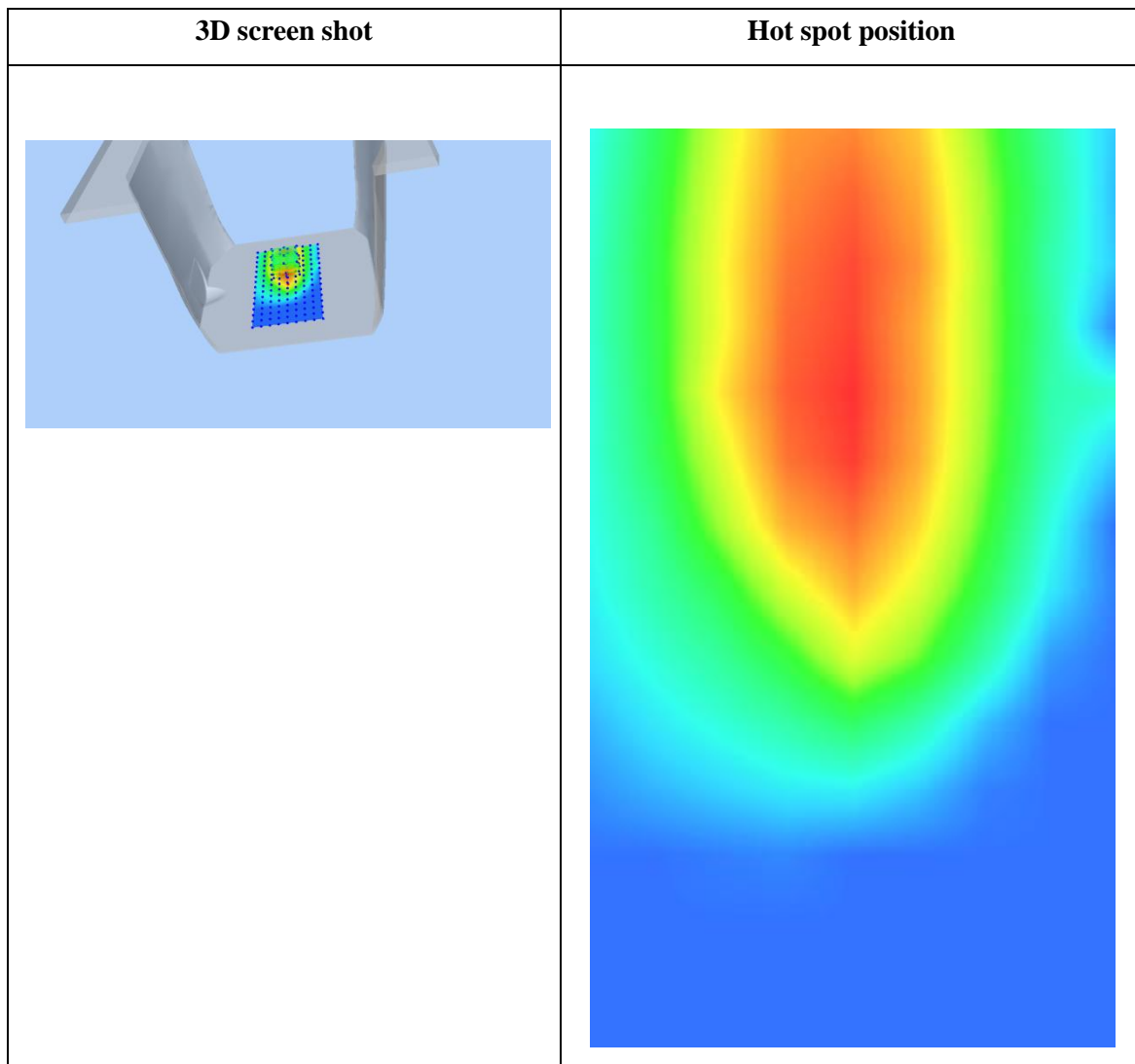
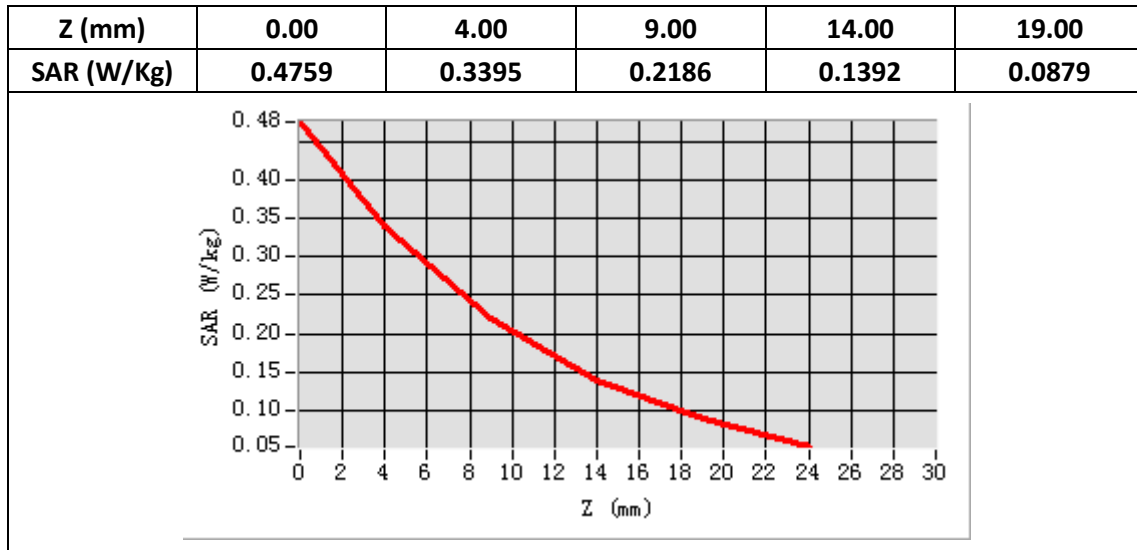
<b>E-Field Probe</b>	SATIMO SN_27/15_EPG0261
<b>Frequency (MHz)</b>	826.4
<b>Relative permittivity (real part)</b>	55.28
<b>Relative permittivity (imaginary)</b>	21.13
<b>Conductivity (S/m)</b>	0.98
<b>Variation (%)</b>	-2.27
<b>ConvF:</b>	1.99



**Maximum location: X=-1.00, Y=27.00**

**SAR Peak: 0.48W/kg**

<b>SAR 10g (W/Kg)</b>	0.201412
<b>SAR 1g (W/Kg)</b>	0.327371



**Plot 4: LTE Band2, 20MHz, Edge A, Middle,10mm**

Type: Phone measurement

Date of measurement: 12/18/2019

Measurement duration: 22 minutes 06 seconds

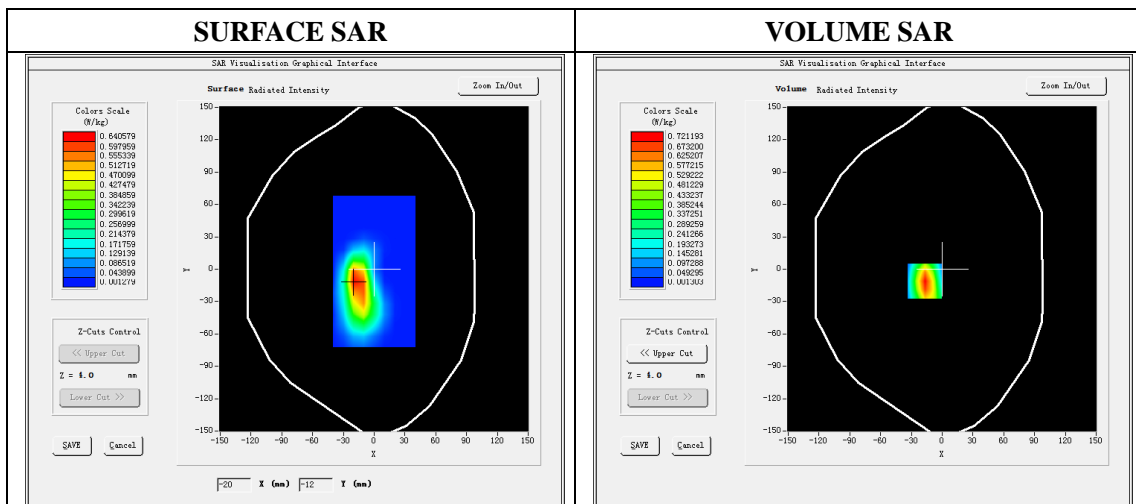
Mobile Phone IMEI number: --

**A. Experimental conditions.**

<b>Area Scan</b>	dx=8mm dy=8mm
<b>ZoomScan</b>	5x5x7,dx=8mm dy=8mm dz=5mm
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Edge A
<b>Band</b>	LTE Band 2
<b>Channels</b>	18900
<b>Signal</b>	LTE (Duty cycle: 1:1)

**B. SAR Measurement Results**

<b>E-Field Probe</b>	SATIMO SN_27/15_EPG0261
<b>Frequency (MHz)</b>	1880
<b>Relative permittivity (real part)</b>	53.32
<b>Relative permittivity (imaginary)</b>	14.49
<b>Conductivity (S/m)</b>	1.53
<b>Variation (%)</b>	-2.07
<b>ConvF:</b>	2.39

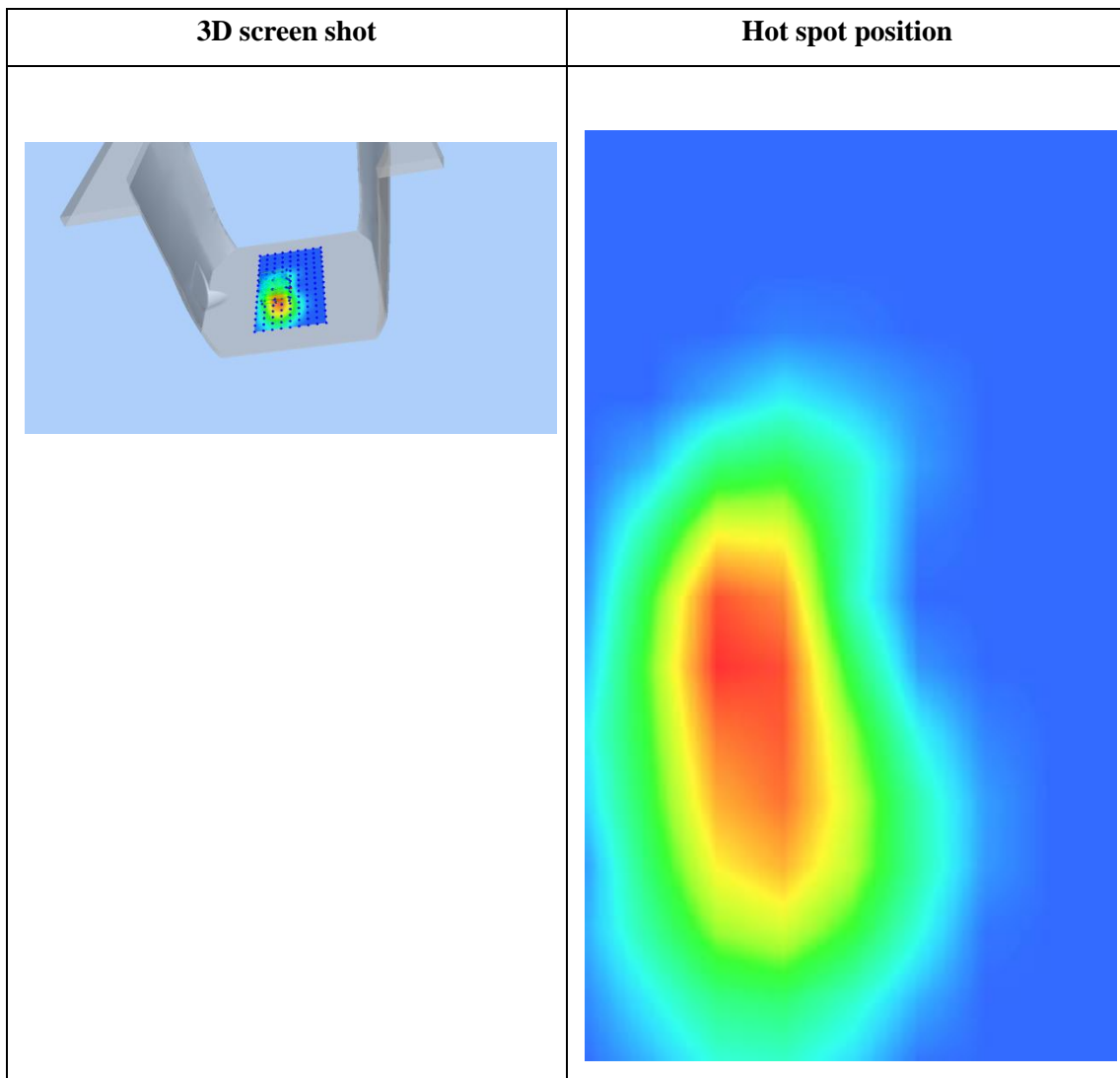
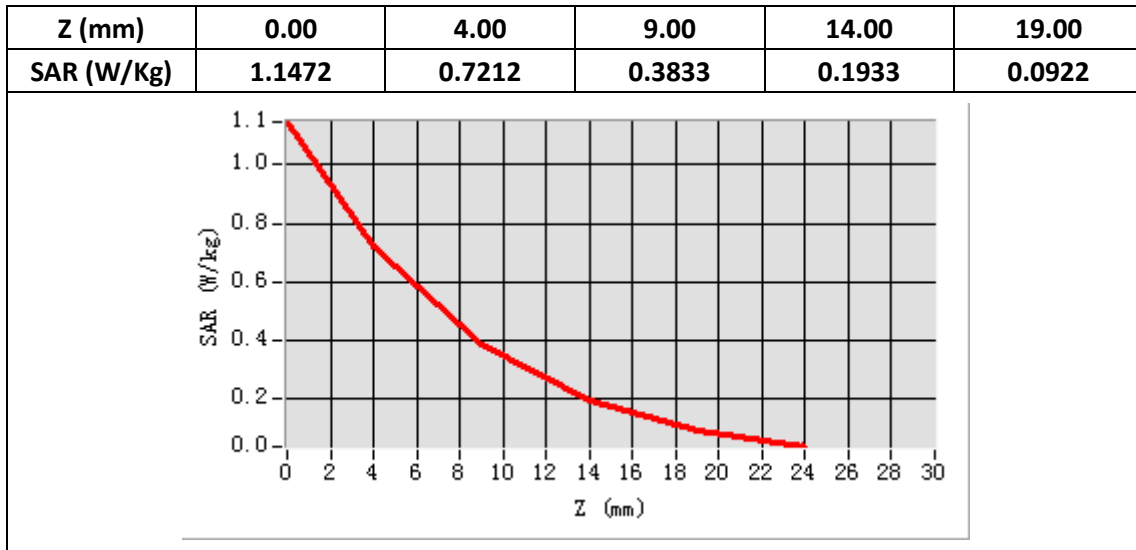


**Maximum location: X=-17.00, Y=-11.00**

**SAR Peak: 1.15W/kg**

<b>SAR 10g (W/Kg)</b>	0.323158
<b>SAR 1g (W/Kg)</b>	0.659134





**Plot 5: LTE Band4, 20MHz, Edge A, High,10mm**

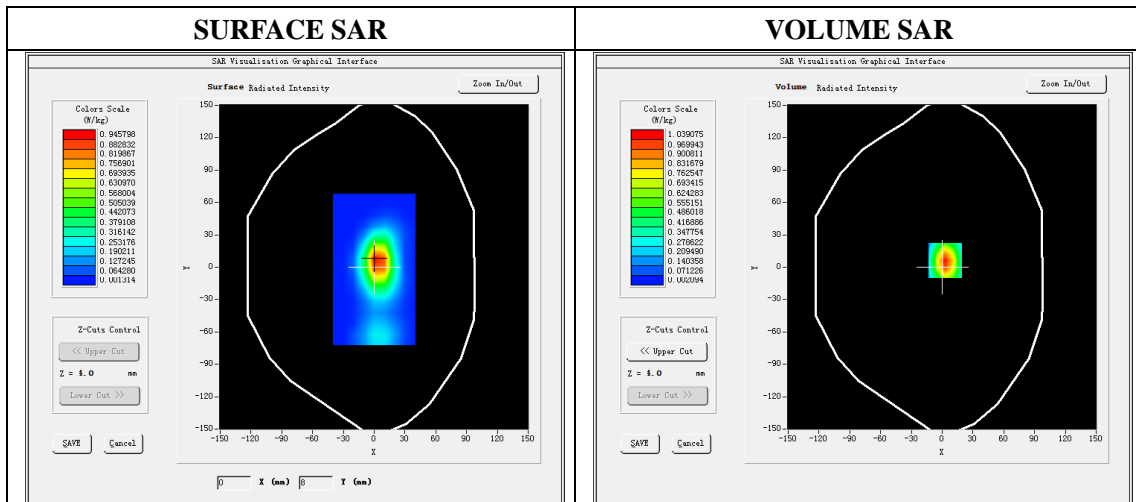
Type: Phone measurement  
 Date of measurement: 12/17/2019  
 Measurement duration: 22 minutes 04 seconds  
 Mobile Phone IMEI number: --

**A. Experimental conditions.**

<b>Area Scan</b>	dx=8mm dy=8mm
<b>ZoomScan</b>	5x5x7,dx=8mm dy=8mm dz=5mm
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Edge A
<b>Band</b>	LTE Band 4
<b>Channels</b>	20300
<b>Signal</b>	LTE (Duty cycle: 1:1)

**B. SAR Measurement Results**

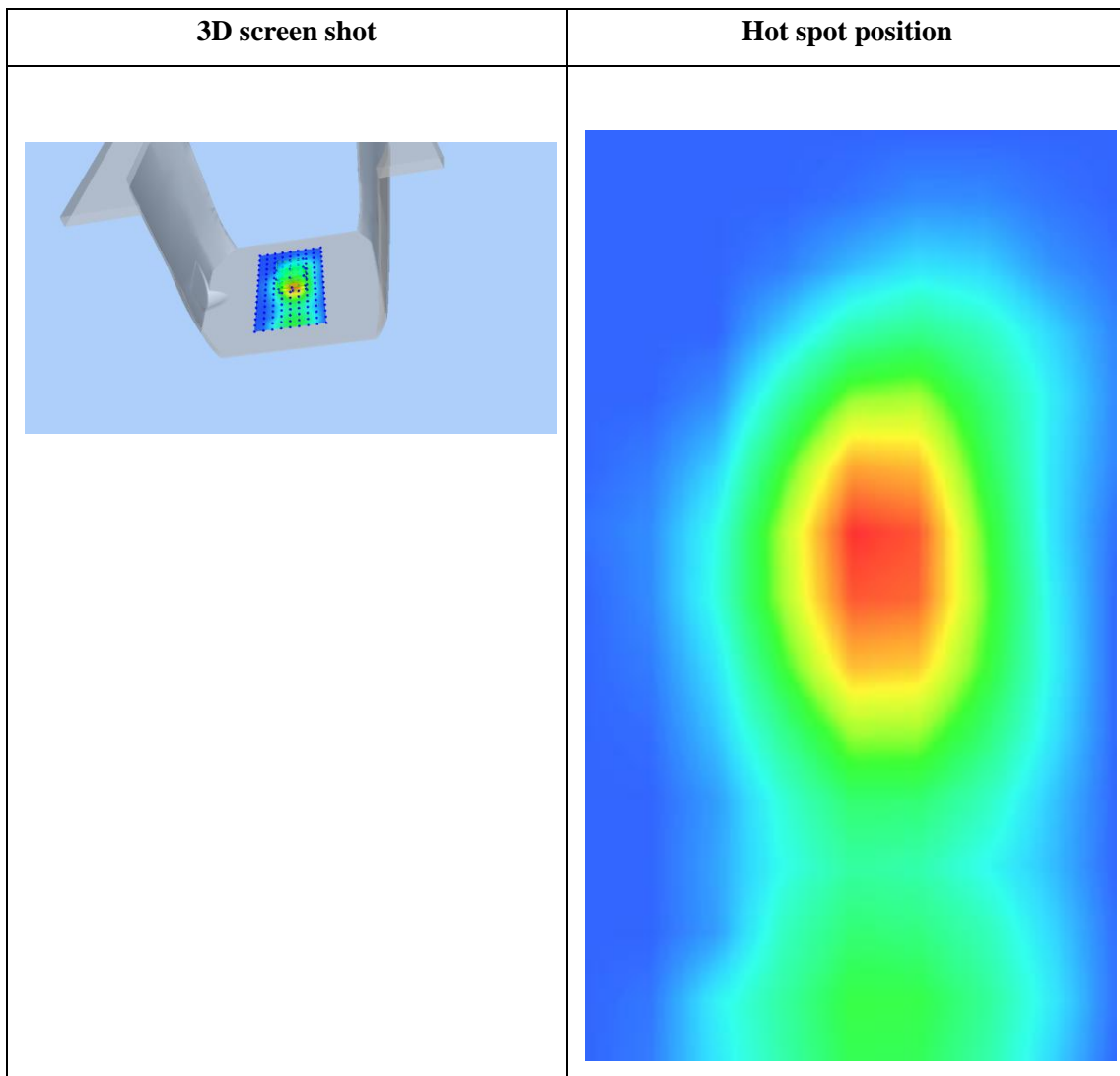
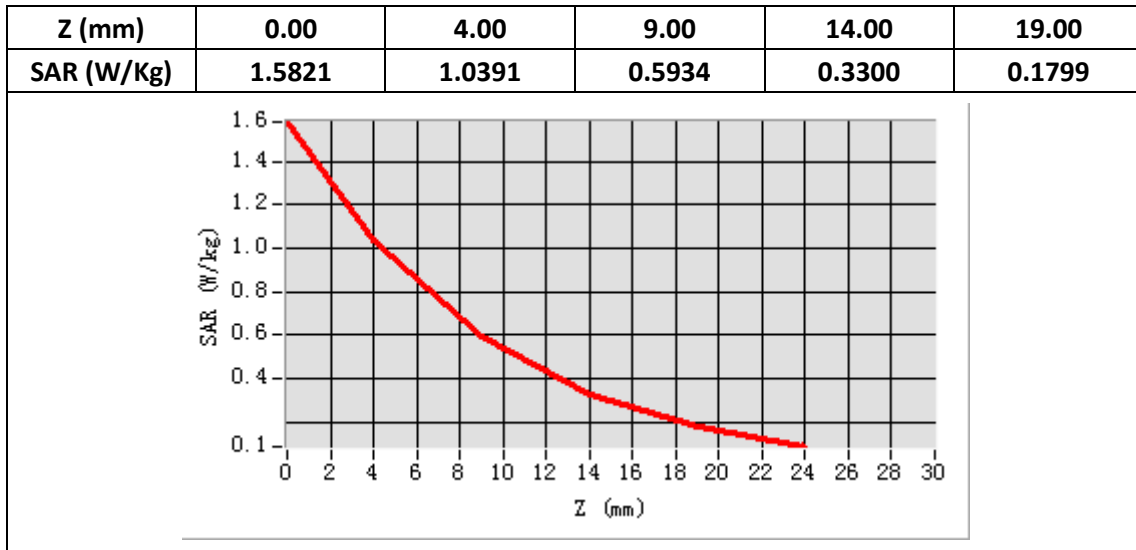
<b>E-Field Probe</b>	SATIMO SN_27/15_EPG0261
<b>Frequency (MHz)</b>	1745
<b>Relative permittivity (real part)</b>	53.40
<b>Relative permittivity (imaginary)</b>	15.10
<b>Conductivity (S/m)</b>	1.51
<b>Variation (%)</b>	-0.65
<b>ConvF:</b>	2.22



**Maximum location: X=3.00, Y=6.00**

**SAR Peak: 1.59W/kg**

<b>SAR 10g (W/Kg)</b>	0.487999
<b>SAR 1g (W/Kg)</b>	0.950421



**Plot 6: LTE Band5, 10MHz, Edge A, Middle,10mm**

Type: Phone measurement

Date of measurement: 12/16/2019

Measurement duration: 22 minutes 07 seconds

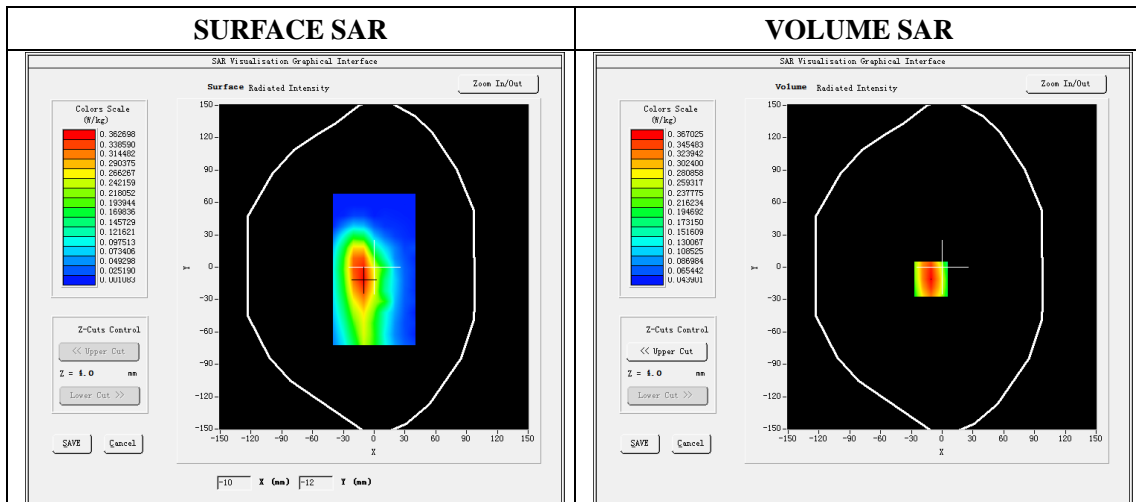
Mobile Phone IMEI number: --

**A. Experimental conditions.**

<b>Area Scan</b>	dx=8mm dy=8mm
<b>ZoomScan</b>	5x5x7,dx=8mm dy=8mm dz=5mm
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Edge A
<b>Band</b>	LTE Band 5
<b>Channels</b>	20525
<b>Signal</b>	LTE (Duty cycle: 1:1)

**B. SAR Measurement Results**

<b>E-Field Probe</b>	SATIMO SN_27/15_EPG0261
<b>Frequency (MHz)</b>	836.5
<b>Relative permittivity (real part)</b>	55.28
<b>Relative permittivity (imaginary)</b>	21.13
<b>Conductivity (S/m)</b>	0.98
<b>Variation (%)</b>	-0.50
<b>ConvF:</b>	1.99

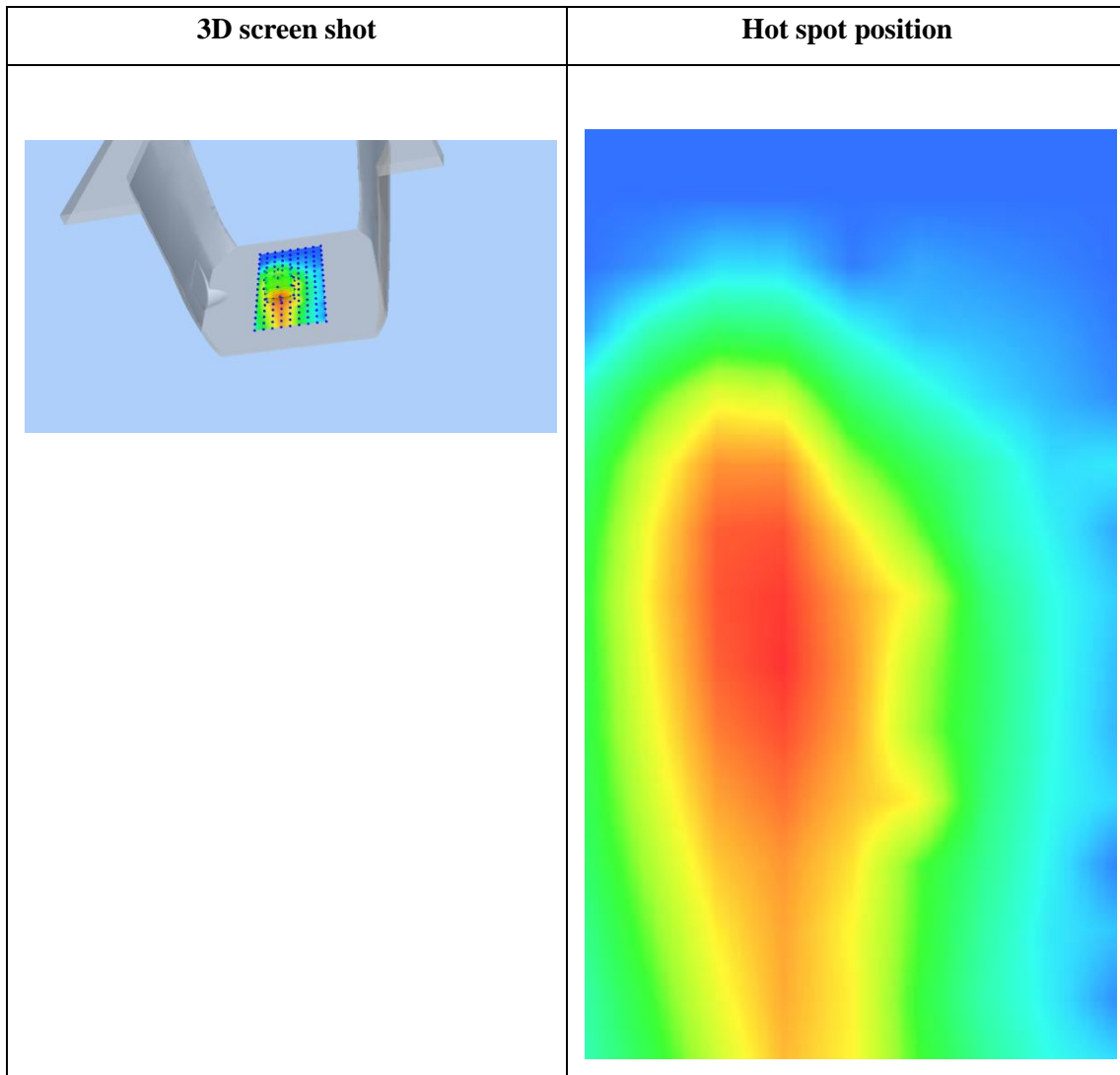
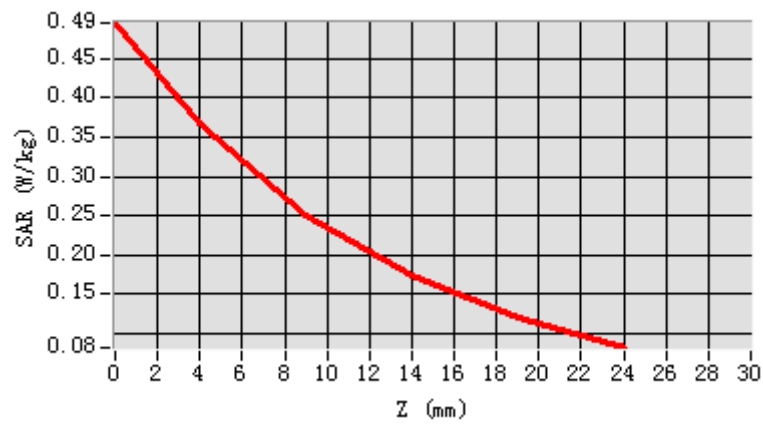


**Maximum location: X=-11.00, Y=-11.00**

**SAR Peak: 0.51W/kg**

<b>SAR 10g (W/Kg)</b>	0.231541
<b>SAR 1g (W/Kg)</b>	0.356397

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.4950	0.3670	0.2511	0.1730	0.1206



**Plot 7: LTE Band7, 20MHz, Edge A, Middle,10mm**

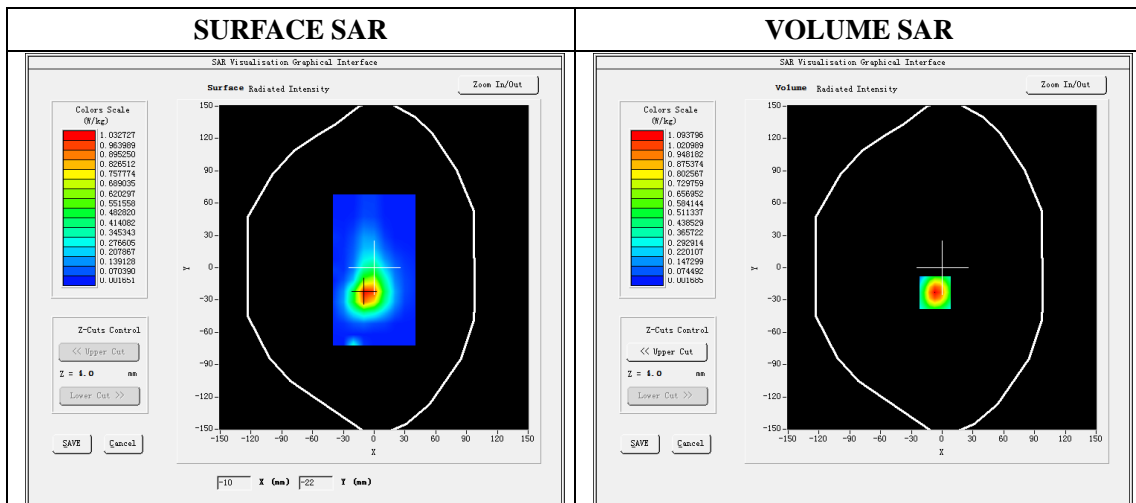
Type: Phone measurement  
 Date of measurement: 12/20/2019  
 Measurement duration: 22 minutes 13 seconds  
 Mobile Phone IMEI number: --

**A. Experimental conditions.**

<b>Area Scan</b>	dx=5mm,dy=5mm
<b>ZoomScan</b>	7x7x8,dx=5mm dy=5mm dz=4mm
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Edge A
<b>Band</b>	LTE Band 7
<b>Channels</b>	21100
<b>Signal</b>	LTE (Duty cycle: 1:1)

**B. SAR Measurement Results**

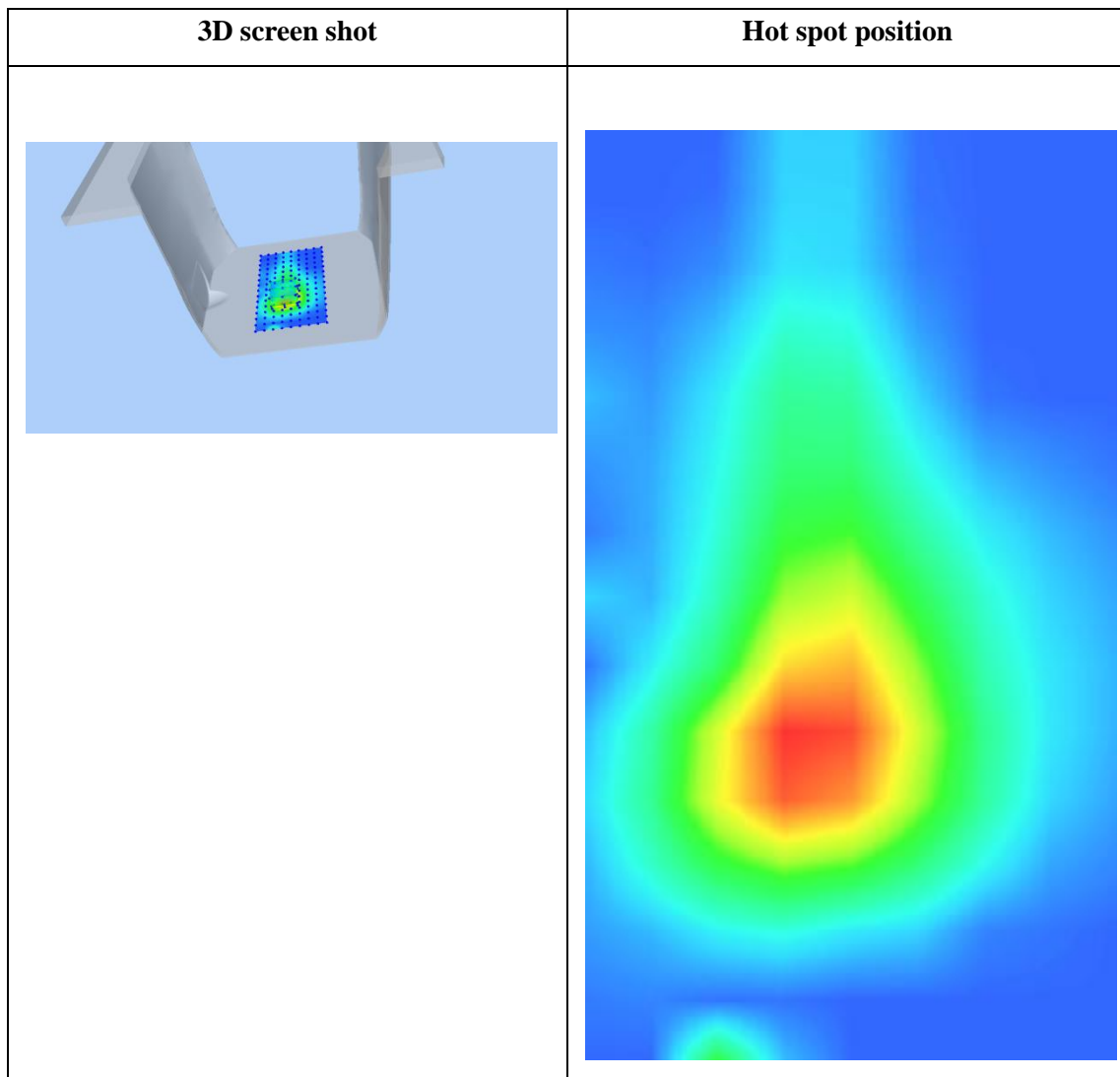
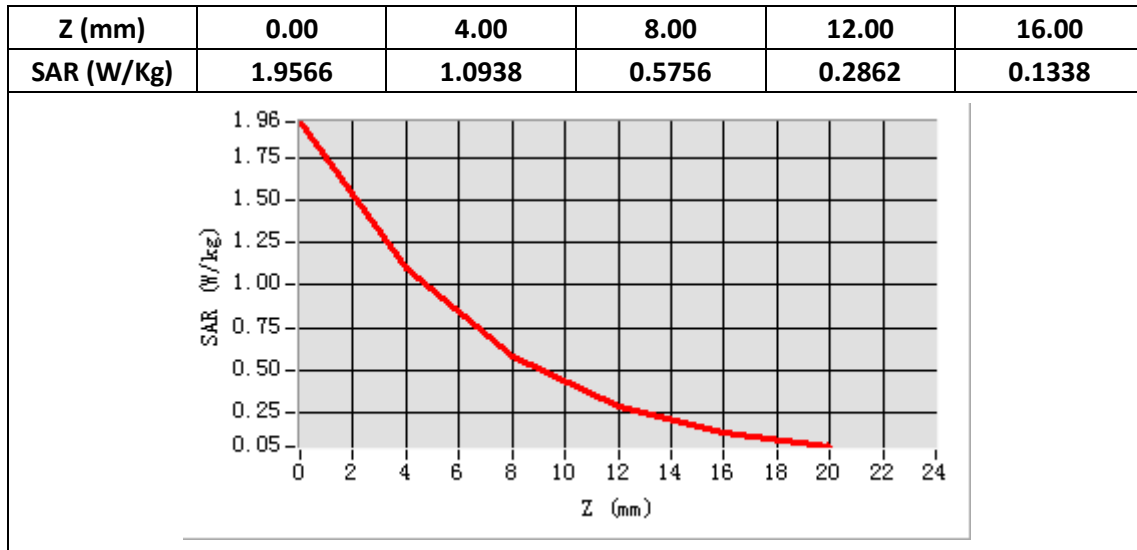
<b>E-Field Probe</b>	SATIMO SN_27/15_EPG0261
<b>Frequency (MHz)</b>	2535
<b>Relative permittivity (real part)</b>	52.54
<b>Relative permittivity (imaginary)</b>	14.88
<b>Conductivity (S/m)</b>	2.15
<b>Variation (%)</b>	-4.71
<b>ConvF:</b>	2.43



**Maximum location: X=-7.00 Y=-23.00**

**SAR Peak: 1.96 W/kg**

<b>SAR 10g (W/Kg)</b>	0.444757
<b>SAR 1g (W/Kg)</b>	0.993783



**Plot 8: LTE Band12, 10MHz, Edge A, High,10mm**

Type: Phone measurement

Date of measurement: 12/15/2019

Measurement duration: 22 minutes 15 seconds

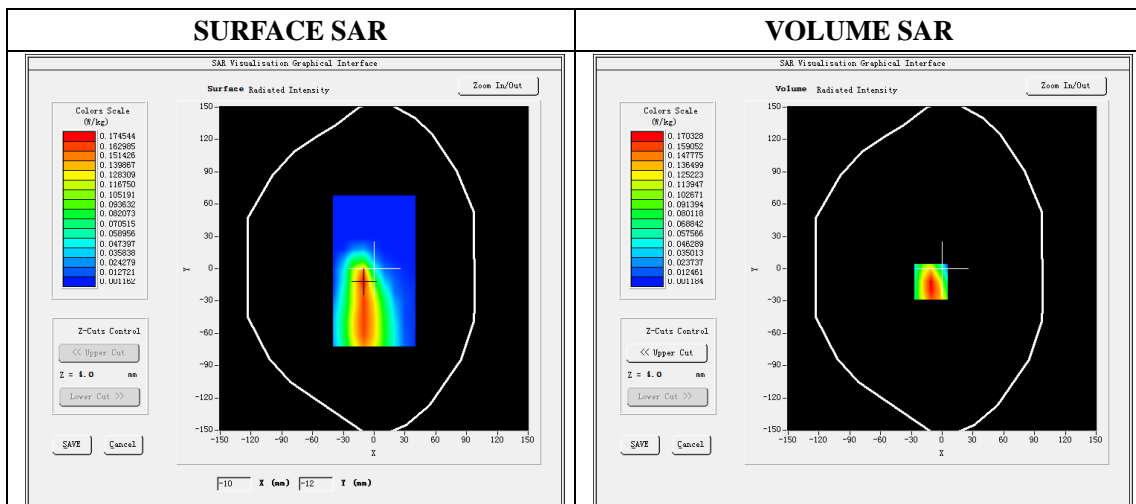
Mobile Phone IMEI number: --

**A. Experimental conditions.**

Area Scan	dx=8mm dy=8mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Edge A
Band	LTE Band 12
Channels	23130
Signal	LTE (Duty cycle: 1:1)

**B. SAR Measurement Results**

E-Field Probe	SATIMO SN_27/15_EPG0261
Frequency (MHz)	711
Relative permittivity (real part)	55.63
Relative permittivity (imaginary)	23.28
Conductivity (S/m)	0.97
Variation (%)	-2.48
ConvF:	1.93



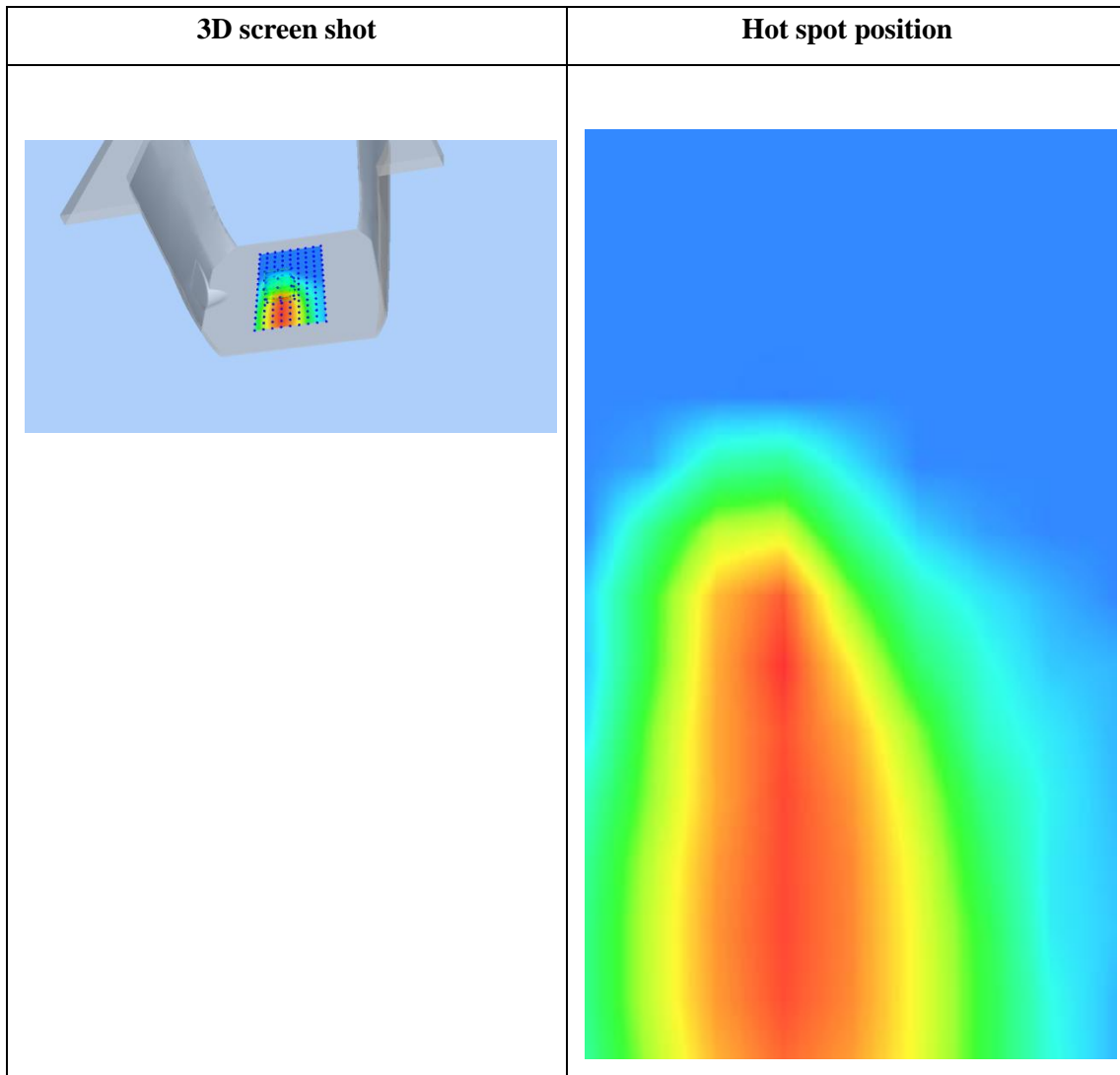
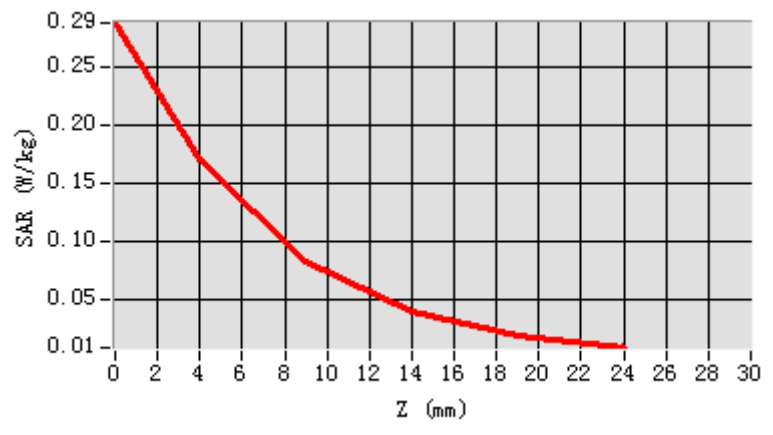
**Maximum location: X=-11.00, Y=-12.00**

**SAR Peak: 0.29W/kg**

SAR 10g (W/Kg)	0.086569
SAR 1g (W/Kg)	0.166827



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.2880	0.1703	0.0836	0.0400	0.0196



**Plot 9: LTE Band13, 10MHz, Edge A, Middle,10mm**

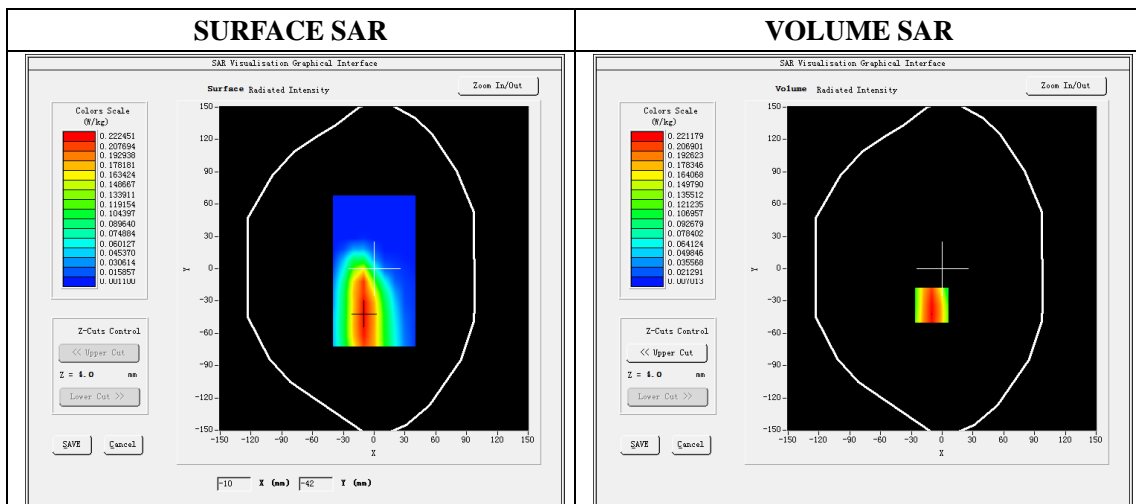
Type: Phone measurement  
 Date of measurement: 12/15/2019  
 Measurement duration: 22 minutes 11 seconds  
 Mobile Phone IMEI number: --

**A. Experimental conditions.**

<b>Area Scan</b>	dx=8mm dy=8mm
<b>ZoomScan</b>	5x5x7,dx=8mm dy=8mm dz=5mm
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Edge A
<b>Band</b>	LTE Band 13
<b>Channels</b>	23230
<b>Signal</b>	LTE (Duty cycle: 1:1)

**B. SAR Measurement Results**

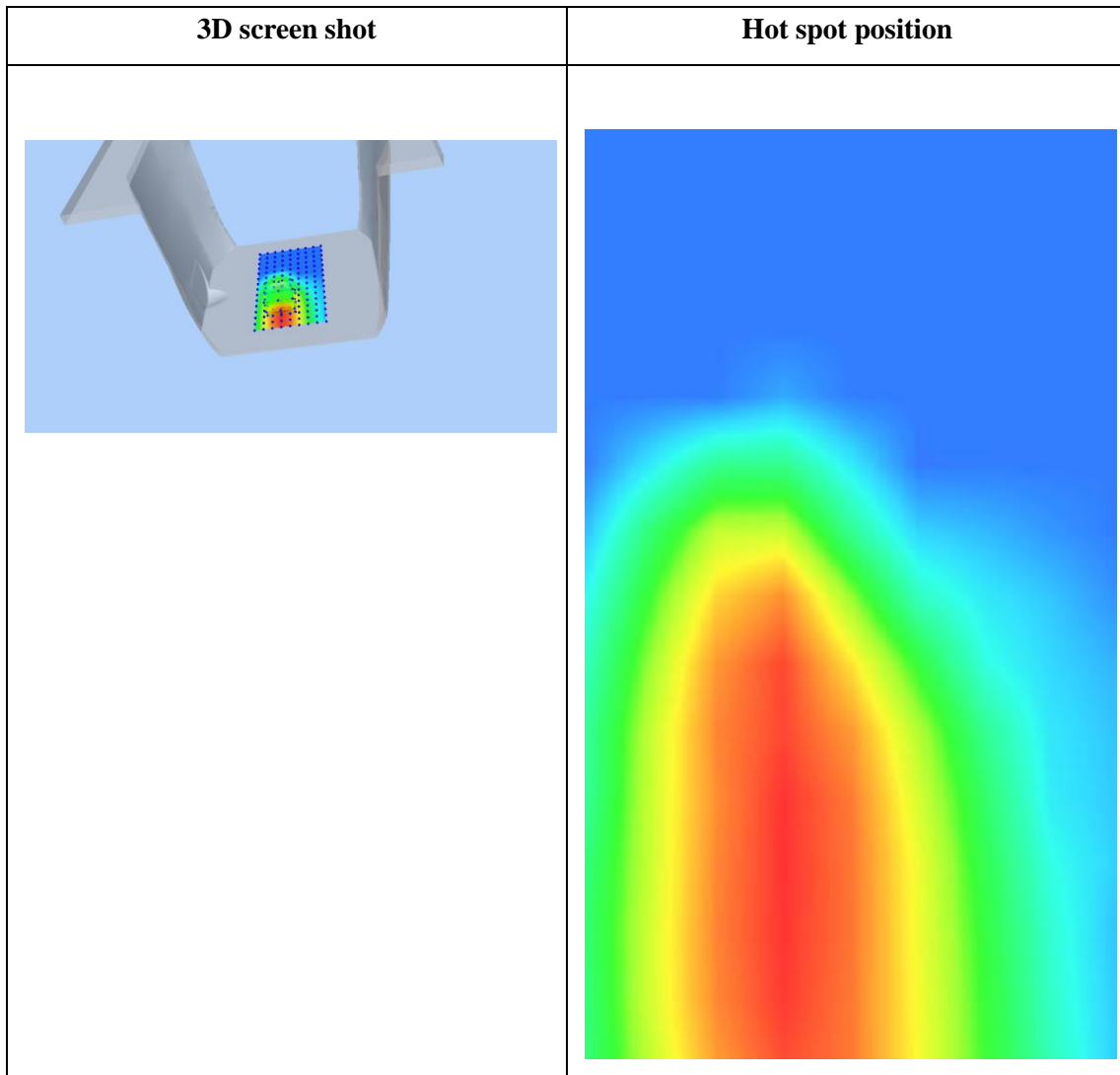
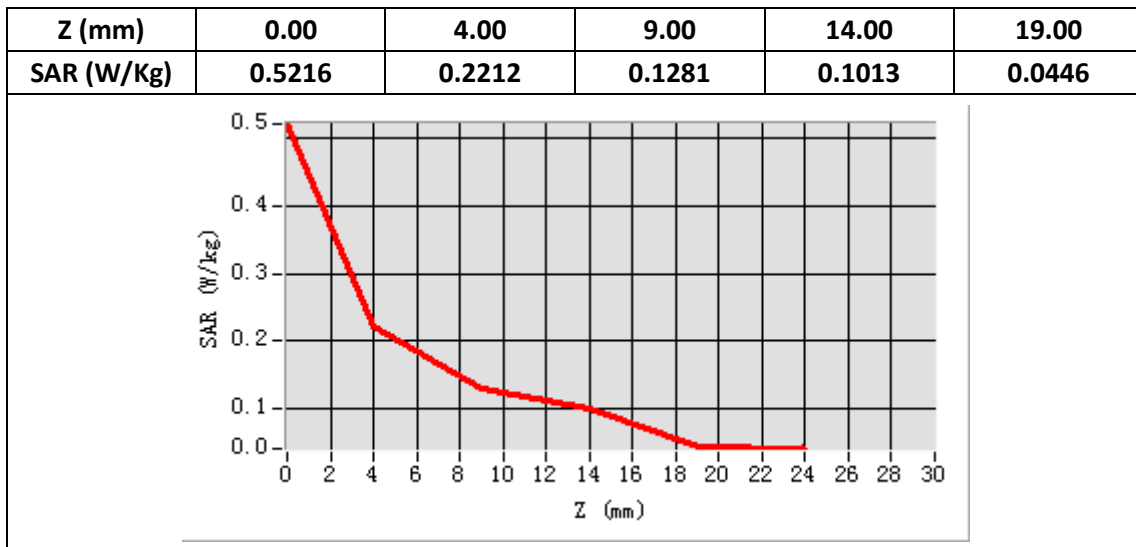
<b>E-Field Probe</b>	SATIMO SN_27/15_EPG0261
<b>Frequency (MHz)</b>	782
<b>Relative permittivity (real part)</b>	55.63
<b>Relative permittivity (imaginary)</b>	23.28
<b>Conductivity (S/m)</b>	0.97
<b>Variation (%)</b>	-2.60
<b>ConvF:</b>	1.93



**Maximum location: X=-10.00, Y=-34.00**

**SAR Peak: 0.35W/kg**

<b>SAR 10g (W/Kg)</b>	0.137274
<b>SAR 1g (W/Kg)</b>	0.221048



**Plot 10: LTE Band17, 10MHz, Edge A, Middle,10mm**

Type: Phone measurement

Date of measurement: 12/15/2019

Measurement duration: 22 minutes 14 seconds

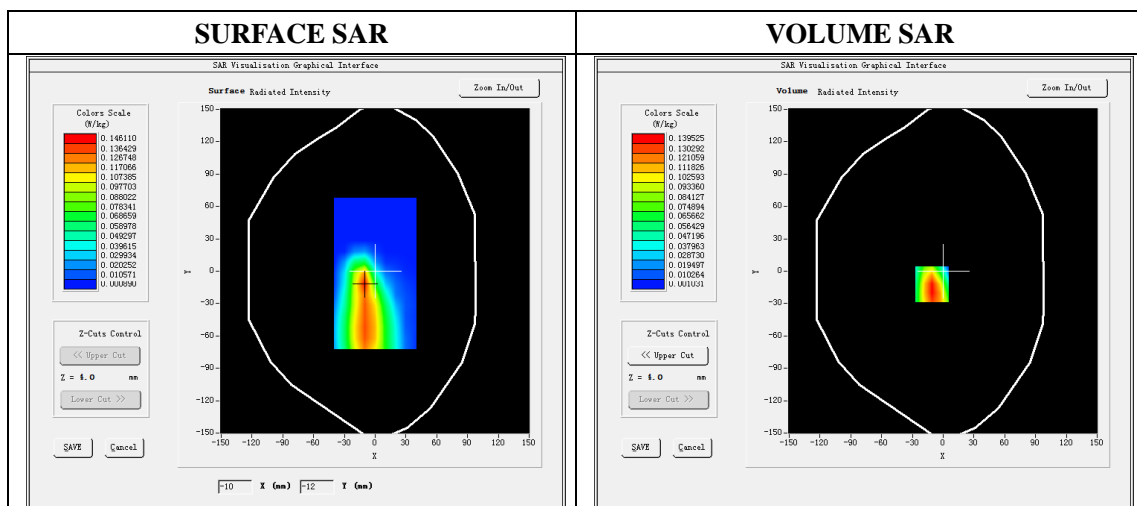
Mobile Phone IMEI number: --

**A. Experimental conditions.**

<b>Area Scan</b>	dx=8mm dy=8mm
<b>ZoomScan</b>	5x5x7,dx=8mm dy=8mm dz=5mm
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Edge A
<b>Band</b>	LTE Band 17
<b>Channels</b>	23790
<b>Signal</b>	LTE (Duty cycle: 1:1)

**B. SAR Measurement Results**

<b>E-Field Probe</b>	SATIMO SN_27/15_EPG0261
<b>Frequency (MHz)</b>	710
<b>Relative permittivity (real part)</b>	55.63
<b>Relative permittivity (imaginary)</b>	23.28
<b>Conductivity (S/m)</b>	0.97
<b>Variation (%)</b>	-1.65
<b>ConvF:</b>	1.93

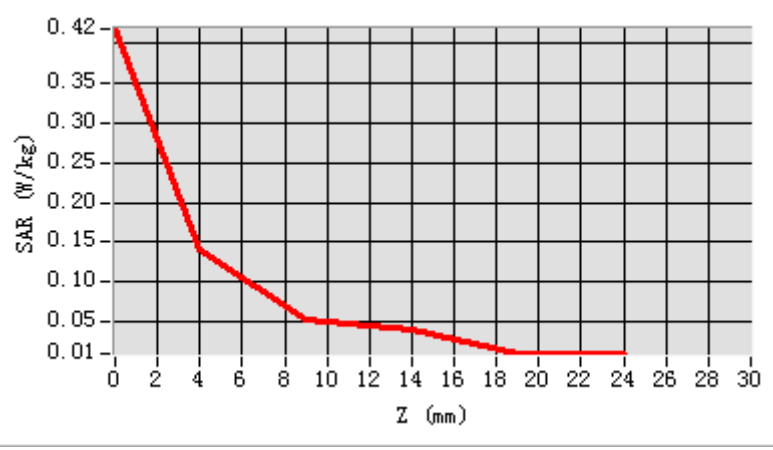


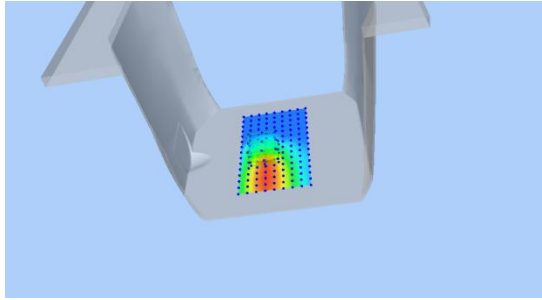
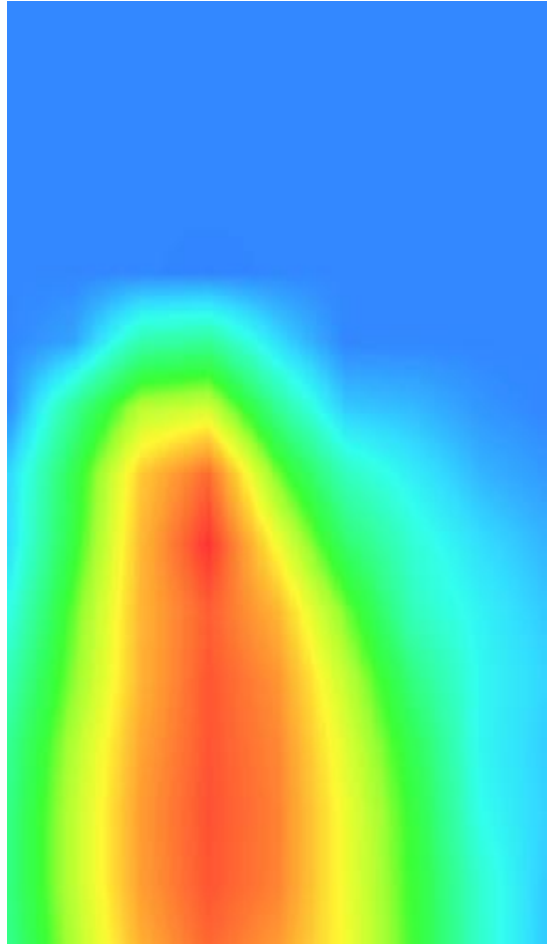
**Maximum location: X=-11.00, Y=-12.00**

**SAR Peak: 0.23W/kg**

<b>SAR 10g (W/Kg)</b>	0.069827
<b>SAR 1g (W/Kg)</b>	0.133277

<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>0.4182</b>	<b>0.1395</b>	<b>0.0528</b>	<b>0.0408</b>	<b>0.0096</b>



3D screen shot	Hot spot position
	

**Plot 11: Wi-Fi 802.11b, Edge D ,Middle, 10mm**

Type: Phone measurement

Date of measurement: 12/19/2019

Measurement duration: 22 minutes 17 seconds

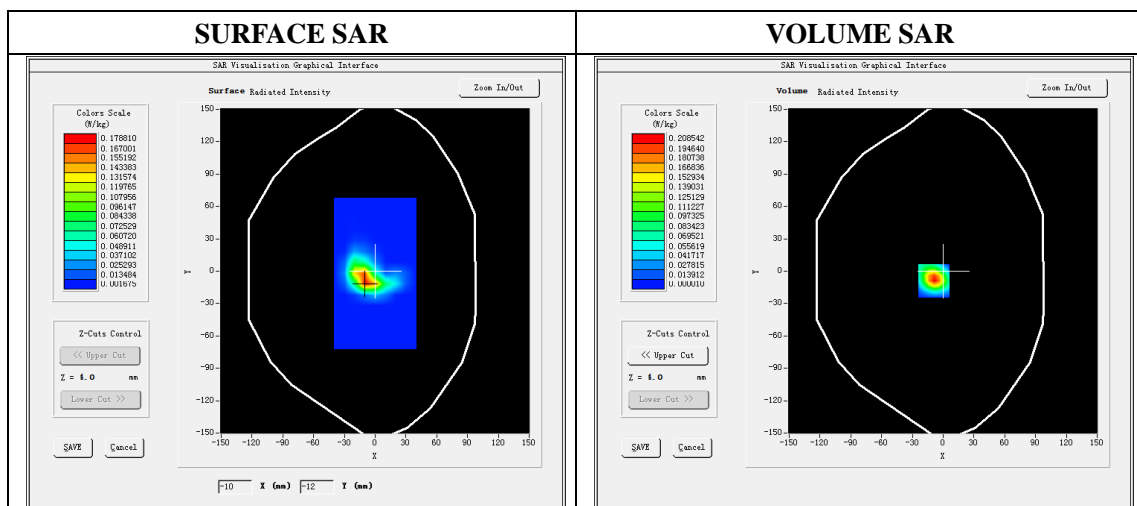
Mobile Phone IMEI number: --

**A. Experimental conditions.**

<b>Area Scan</b>	dx=5mm,dy=5mm
<b>ZoomScan</b>	7x7x8,dx=5mm dy=5mm dz=4mm
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Edge D
<b>Band</b>	WIFI
<b>Channels</b>	6
<b>Signal</b>	DSSS (Duty cycle: 1:1)

**B. SAR Measurement Results**

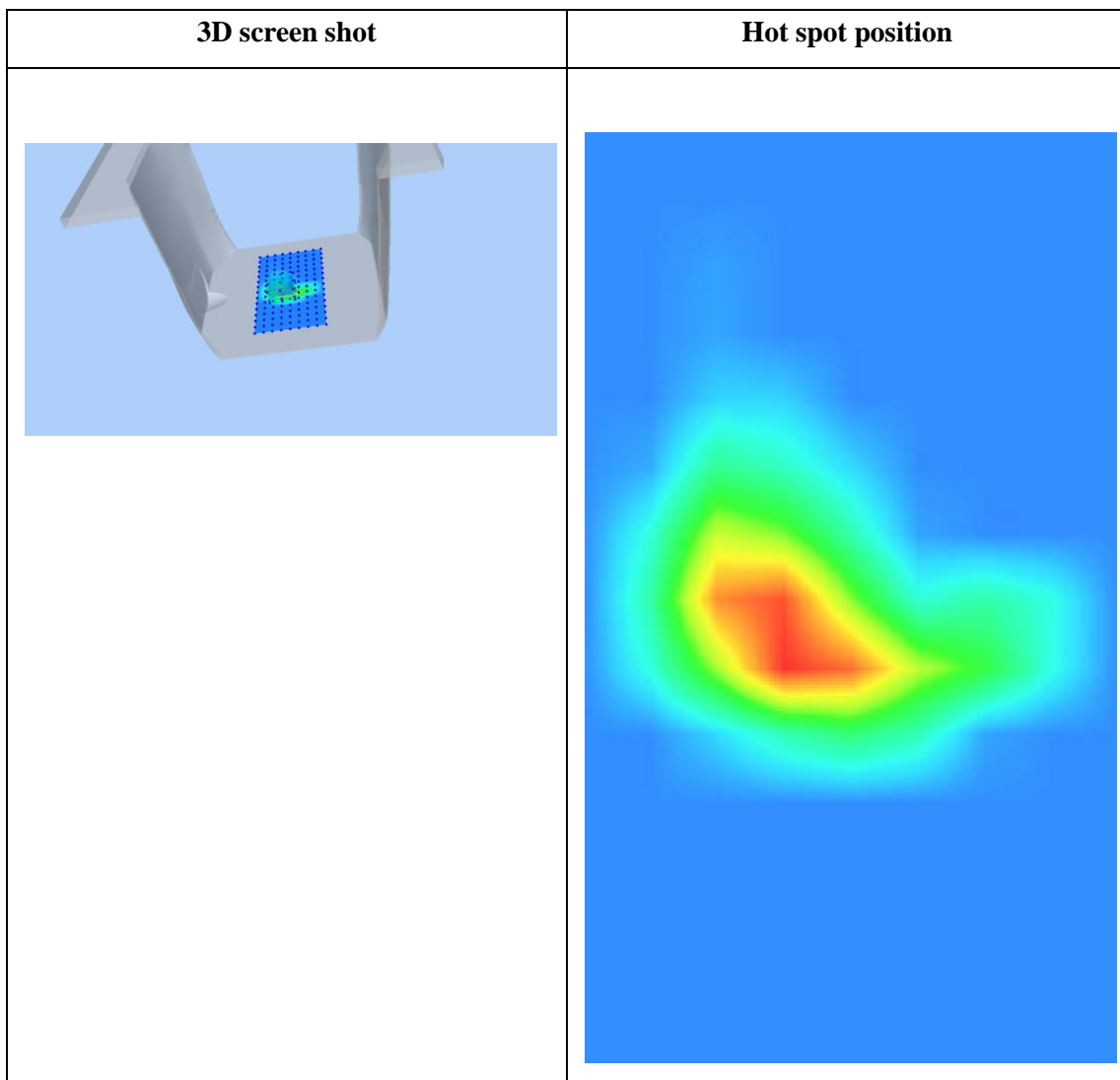
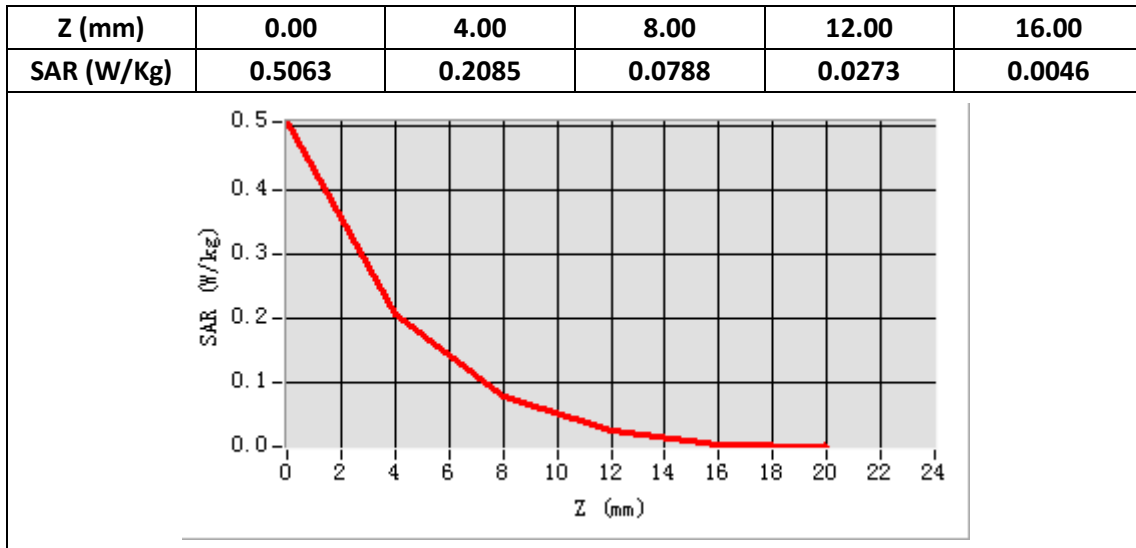
<b>E-Field Probe</b>	SATIMO SN_27/15_EPG0261
<b>Frequency (MHz)</b>	2437
<b>Relative permittivity (real part)</b>	52.76
<b>Relative permittivity (imaginary)</b>	14.40
<b>Conductivity (S/m)</b>	1.96
<b>Variation (%)</b>	-0.81
<b>ConvF:</b>	2.46



**Maximum location: X=-9.00 Y=-9.00**

**SAR Peak: 0.49W/kg**

<b>SAR 10g (W/Kg)</b>	0.070167
<b>SAR 1g (W/Kg)</b>	0.196348



**Plot 12: WIFI 5G 802.11a(20MHz), Back , Middle,10mm**

Type: Phone measurement

Date of measurement: 12/21/2019

Measurement duration: 22 minutes 19 seconds

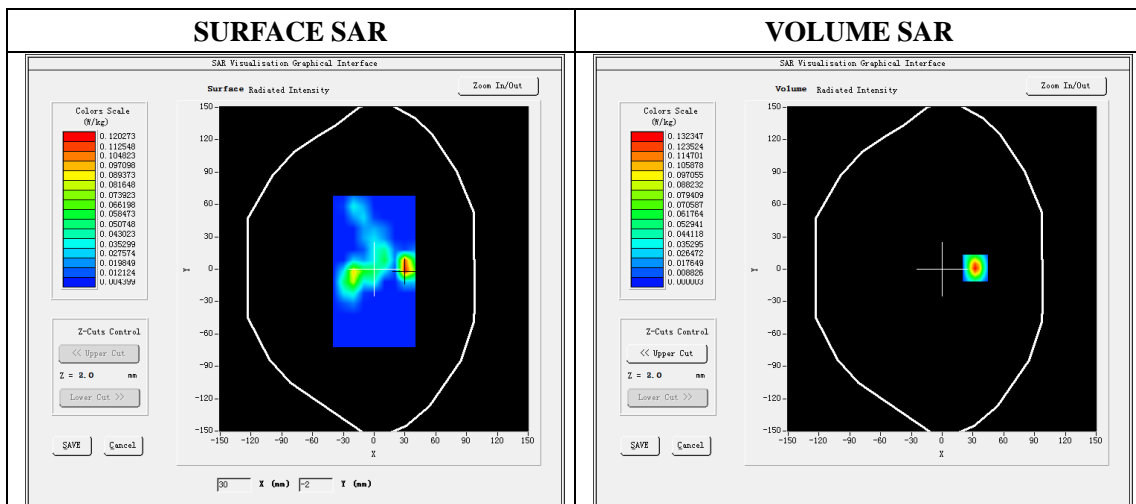
Mobile Phone IMEI number: --

**A. Experimental conditions.**

<b>Area Scan</b>	dx=4mm,dy=4mm
<b>ZoomScan</b>	7x7x12,dx=4m, dy=4mm, dz=2mm
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Back
<b>Band</b>	WIFI 5G
<b>Channels</b>	44
<b>Signal</b>	OFDM (Duty cycle: 1:1)

**B. SAR Measurement Results**

<b>E-Field Probe</b>	SATIMO SN_27/15_EPG0261
<b>Frequency (MHz)</b>	5220
<b>Relative permittivity (real part)</b>	49.12
<b>Relative permittivity (imaginary)</b>	18.35
<b>Conductivity (S/m)</b>	5.30
<b>Variation (%)</b>	-1.10
<b>ConvF:</b>	2.21



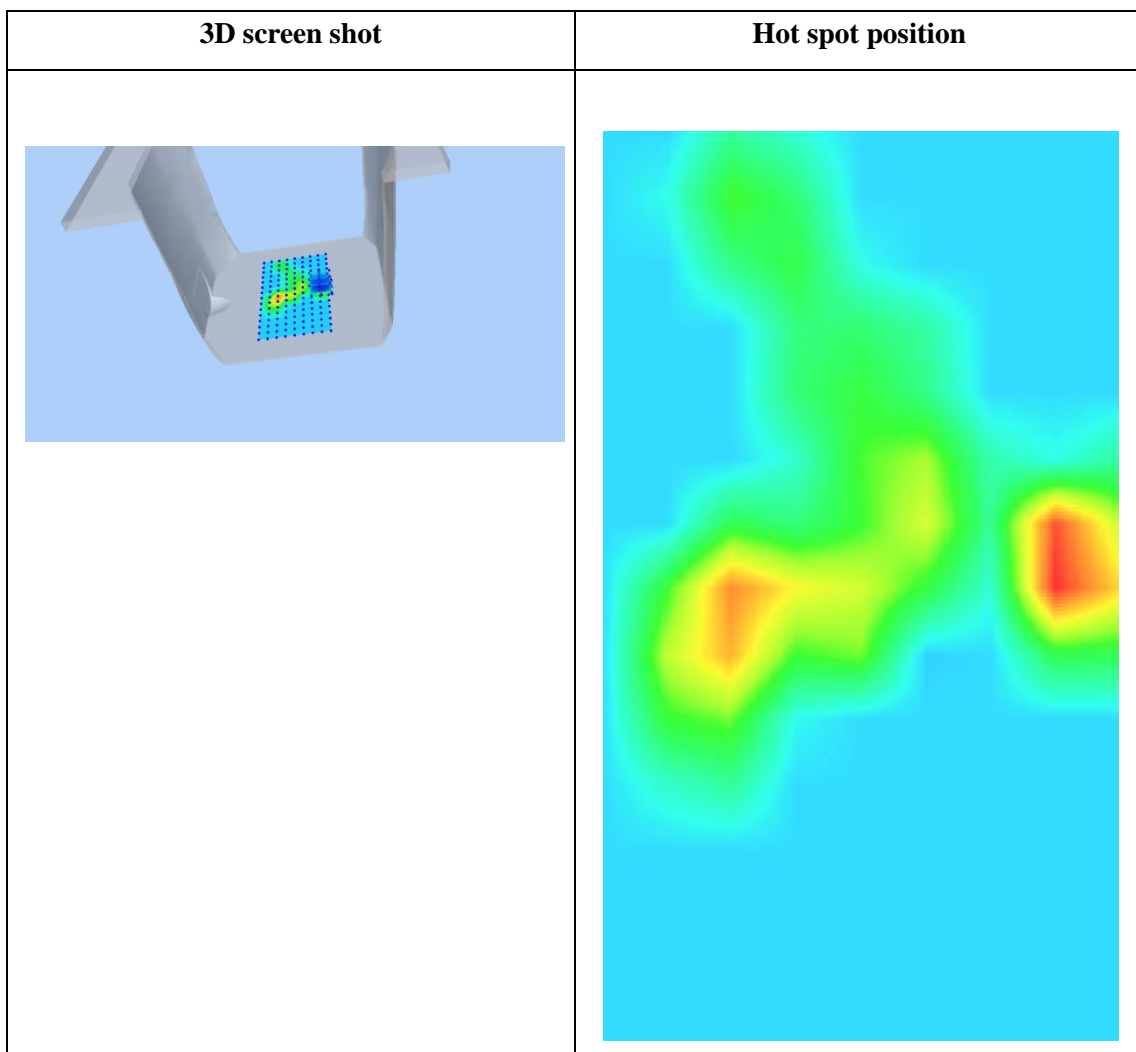
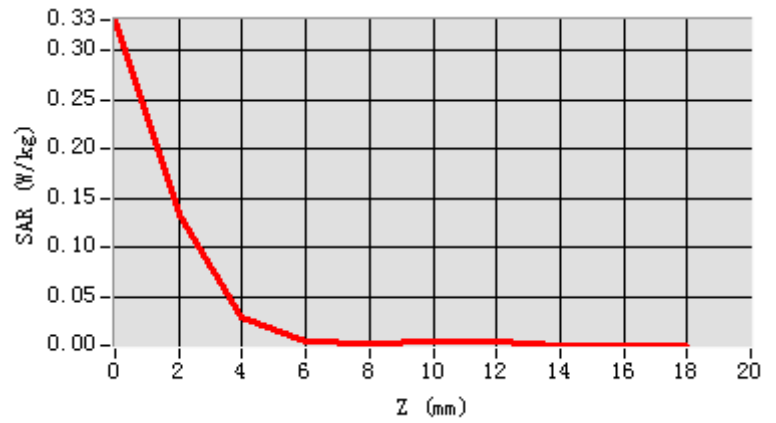
**Maximum location: X=32.00 Y=1.00**

**SAR Peak: 0.39 W/kg**

<b>SAR 10g (W/Kg)</b>	0.010773
<b>SAR 1g (W/Kg)</b>	0.076190



Z (mm)	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00
SAR (W/Kg)	0.3313	0.1323	0.0286	0.0033	0.0025	0.0039	0.0050	0.0000	0.0000



**Plot 13: RFID, Back, Low,10mm**

Type: Phone measurement

Date of measurement: 12/16/2019

Measurement duration: 22 minutes 20 seconds

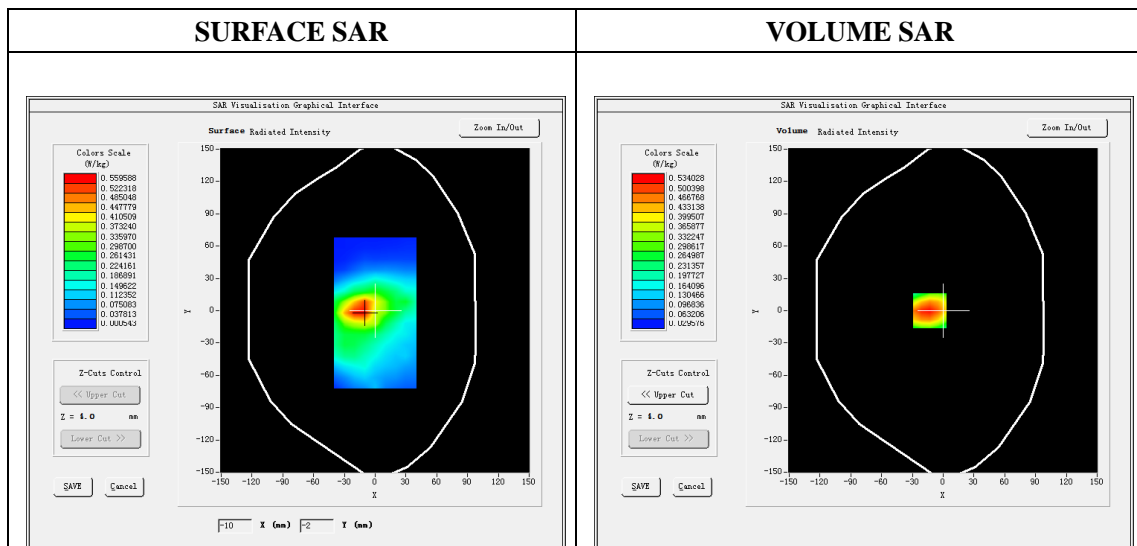
Mobile Phone IMEI number: --

**A. Experimental conditions.**

<b>Area Scan</b>	dx=8mm dy=8mm
<b>ZoomScan</b>	5x5x7,dx=8mm dy=8mm dz=5mm
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body
<b>Band</b>	RFID
<b>Channels</b>	1
<b>Signal</b>	UHF

**B. SAR Measurement Results**

<b>E-Field Probe</b>	SATIMO SN_27/15_EPG0261
<b>Frequency (MHz)</b>	902.75
<b>Relative permittivity (real part)</b>	55.28
<b>Relative permittivity (imaginary part)</b>	21.13
<b>Conductivity (S/m)</b>	0.98
<b>Variation (%)</b>	-1.56
<b>ConvF:</b>	1.99



**Maximum location: X=-13.00, Y=0.00**

**SAR Peak: 0.76 W/kg**

<b>SAR 10g (W/Kg)</b>	0.311202
<b>SAR 1g (W/Kg)</b>	0.514264

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.7515	0.5340	0.3431	0.2195	0.1405

