

**Appendix A: SAR System performance Check Plots**

<b>Measurement</b>	<b>Liquid</b>	<b>Frequency</b>	<b>Test Date</b>
System Check	Head	835	2020-06-16
System Check	Body	835	2020-06-16
System Check	Head	1800	2020-06-18
System Check	Body	1800	2020-06-18
System Check	Head	1900	2020-06-19
System Check	Body	1900	2020-06-19
System Check	Head	2450	2020-06-20
System Check	Body	2450	2020-06-20
System Check	Head	2600	2020-06-21
System Check	Body	2600	2020-06-21
System Check	Head	5200	2020-07-20
System Check	Body	5200	2020-07-20
System Check	Head	5800	2020-07-21
System Check	Body	5800	2020-07-21

## System Performance Check (Head, 835MHz)

Type: Phone measurement

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 06/16/2020

Measurement duration: 22 minutes 05 seconds

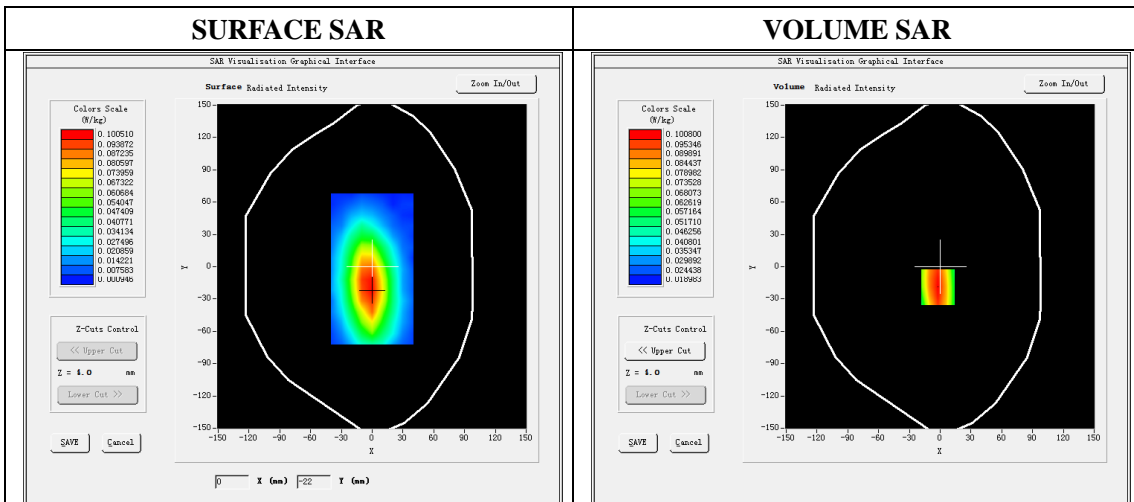
### A. Experimental conditions.

<b>Phantom File</b>	dx=8mm dy=8mm
<b>Phantom</b>	5x5x7,dx=8mm dy=8mm dz=5mm
<b>Device Position</b>	Dipole
<b>Band</b>	835MHz
<b>Channels</b>	
<b>Signal</b>	CW

### B. SAR Measurement Results

#### Band SAR

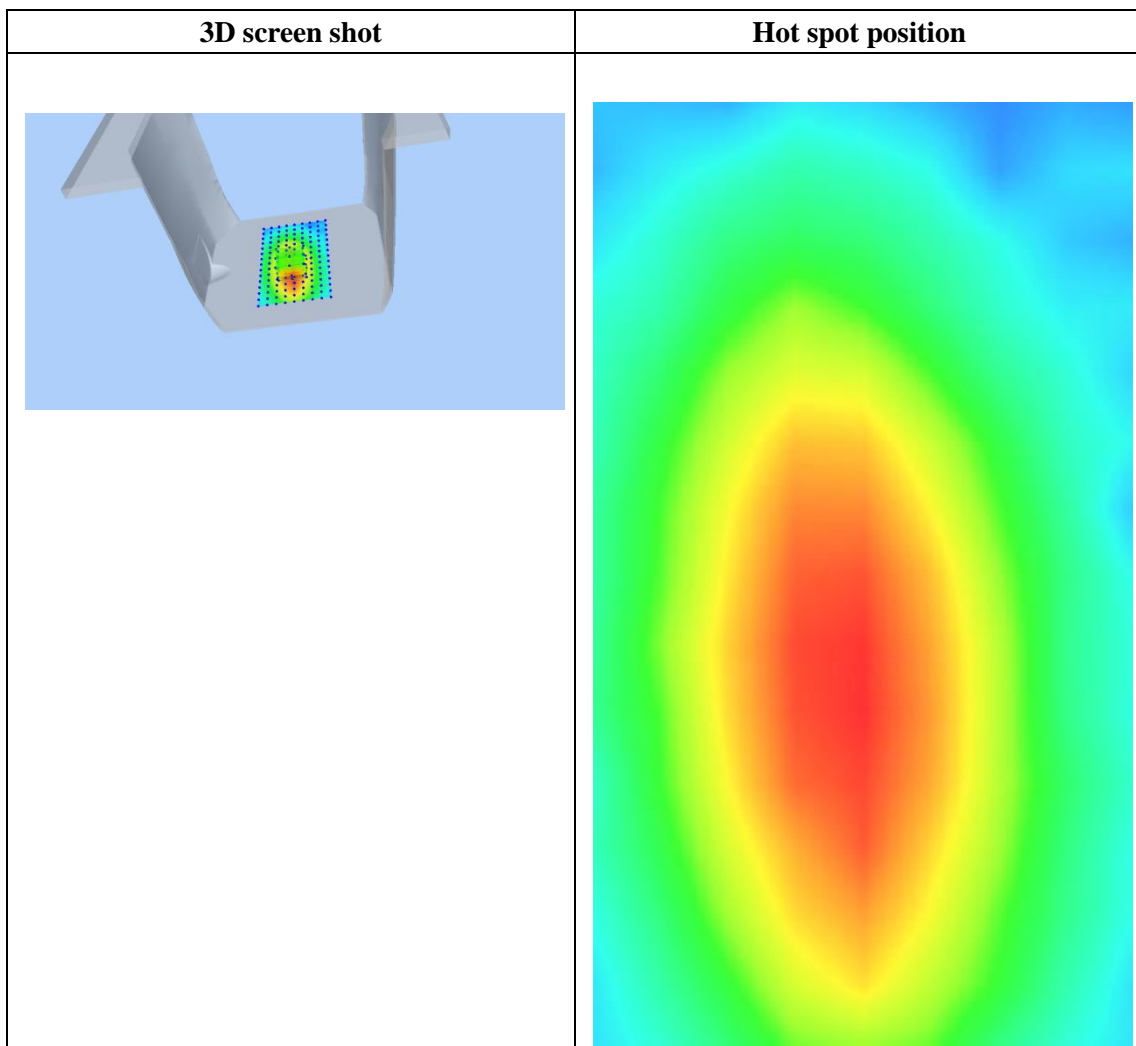
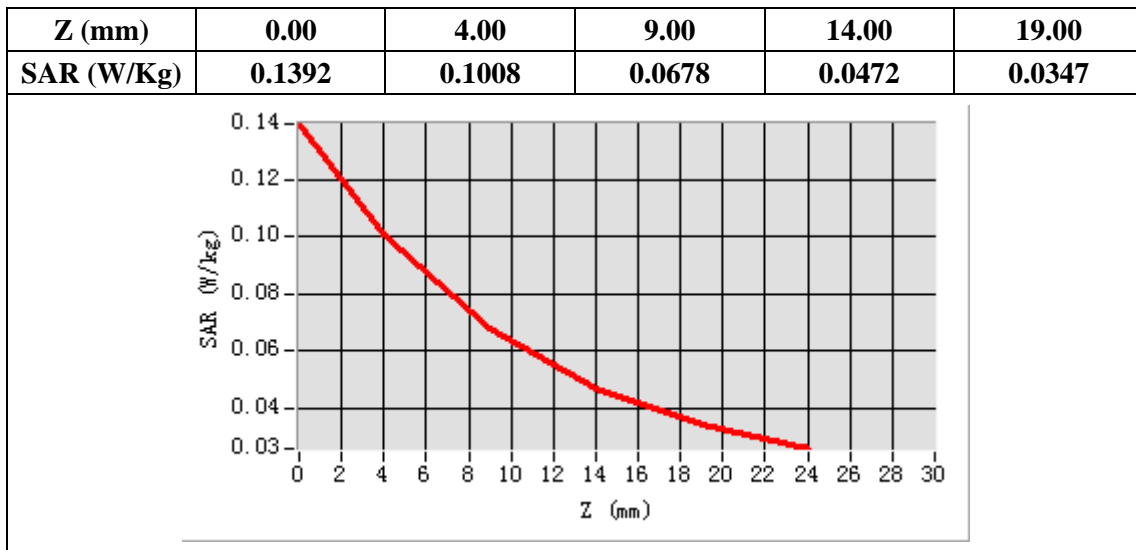
<b>E-Field Probe</b>	SATIMO SN_41/18_EPG0334
<b>Frequency (MHz)</b>	835
<b>Relative permittivity (real part)</b>	41.55
<b>Relative permittivity</b>	20.48
<b>Conductivity (S/m)</b>	0.95
<b>Power drift (%)</b>	-3.85
<b>Ambient Temperature:</b>	22.2 °C
<b>Liquid Temperature:</b>	22.6 °C
<b>ConvF:</b>	1.60
<b>Crest factor:</b>	1:1



**Maximum location: X=-2.00, Y=-19.00**

**SAR Peak: 0.14 W/kg**

<b>SAR 10g (W/Kg)</b>	0.063465
<b>SAR 1g (W/Kg)</b>	0.096357



## System Performance Check (Body, 835MHz)

Type: Phone measurement

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 06/16/2020

Measurement duration: 22 minutes 02 seconds

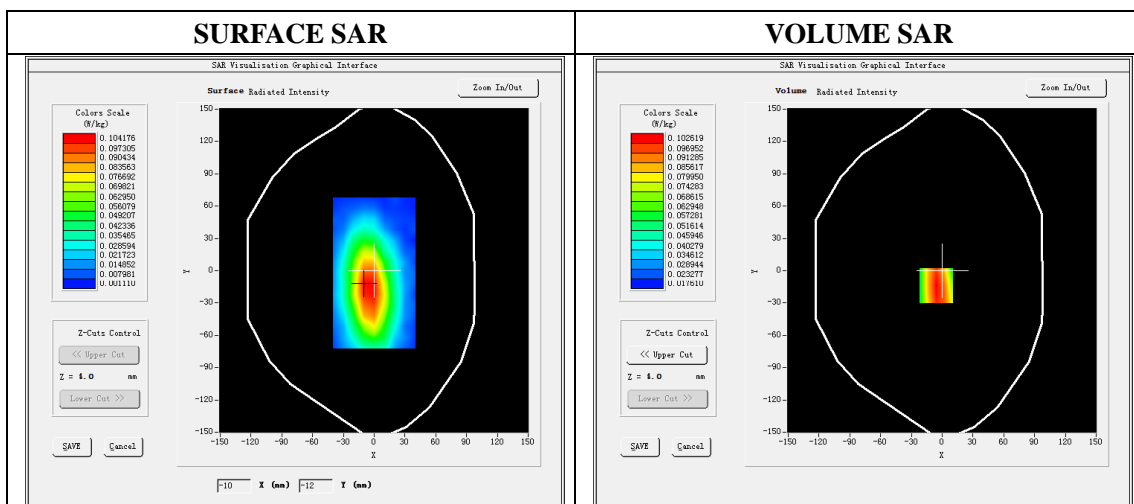
### A. Experimental conditions.

<b>Phantom File</b>	dx=8mm dy=8mm
<b>Phantom</b>	5x5x7,dx=8mm dy=8mm dz=5mm
<b>Device Position</b>	Dipole
<b>Band</b>	835MHz
<b>Channels</b>	
<b>Signal</b>	CW

### B. SAR Measurement Results

#### Band SAR

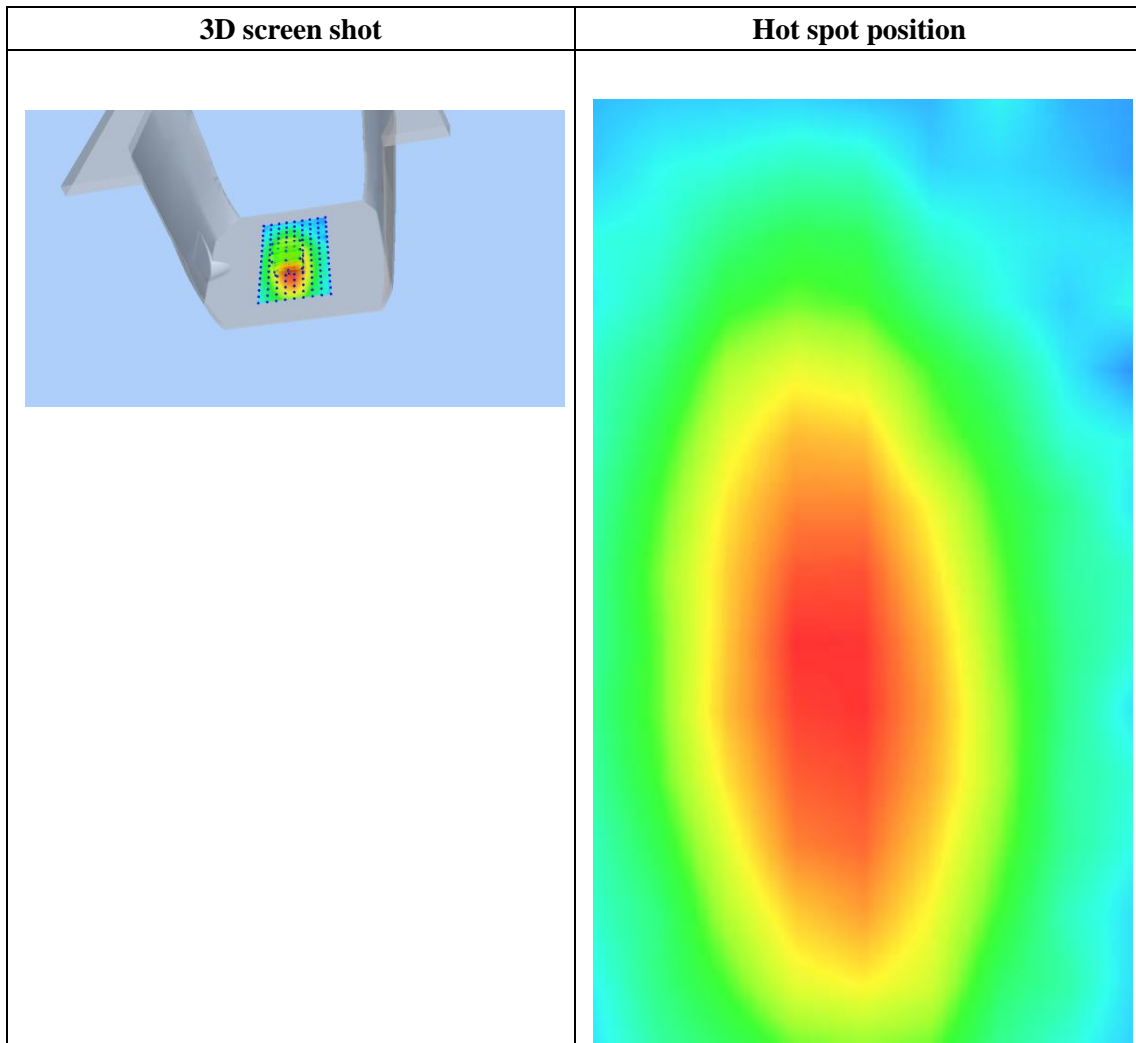
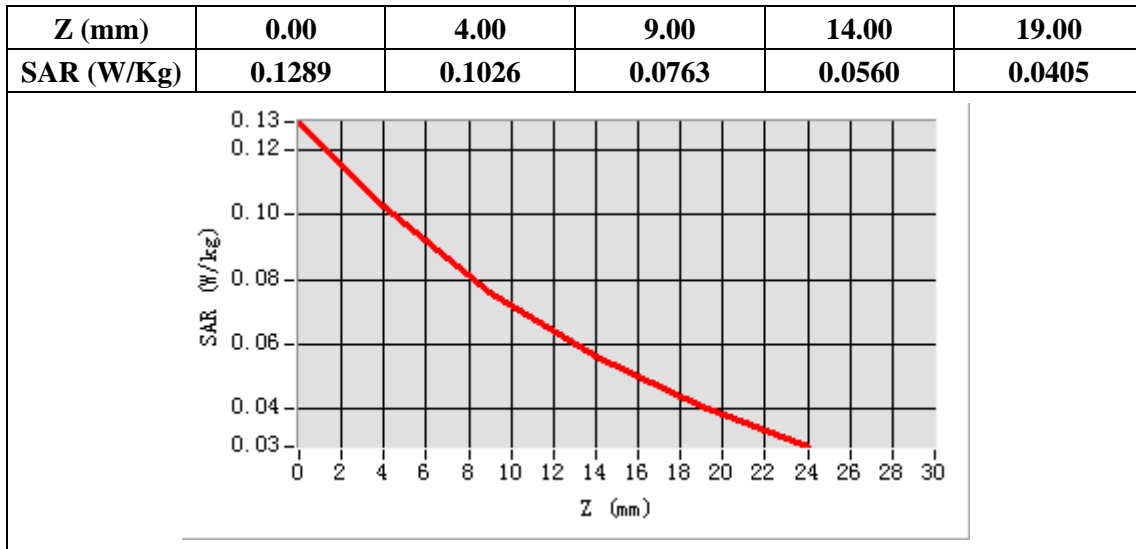
<b>E-Field Probe</b>	SATIMO SN_41/18_EPG0334
<b>Frequency (MHz)</b>	835
<b>Relative permittivity (real part)</b>	55.21
<b>Relative permittivity</b>	21.13
<b>Conductivity (S/m)</b>	0.98
<b>Power drift (%)</b>	-1.15
<b>Ambient Temperature:</b>	22.2 °C
<b>Liquid Temperature:</b>	22.6 °C
<b>ConvF:</b>	1.64
<b>Crest factor:</b>	1:1



**Maximum location: X=-6.00, Y=-14.00**

**SAR Peak: 0.14 W/kg**

<b>SAR 10g (W/Kg)</b>	0.068654
<b>SAR 1g (W/Kg)</b>	0.100384



## System Performance Check (Head, 1800MHz)

Type: Validation measurement

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 06/18/2020

Measurement duration: 22 minutes 08 seconds

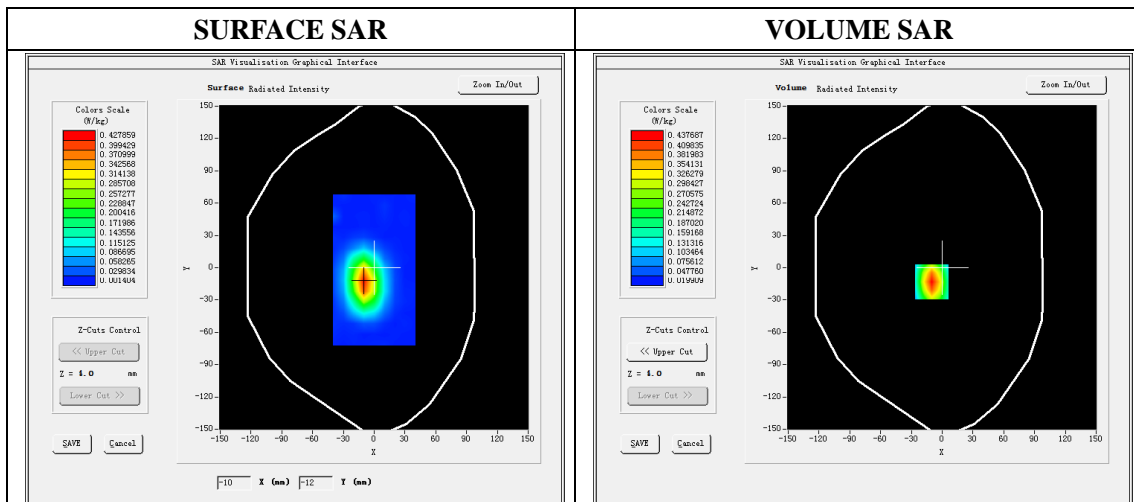
### A. Experimental conditions.

<b>Phantom File</b>	dx=8mm dy=8mm
<b>Phantom</b>	5x5x7,dx=8mm dy=8mm dz=5mm
<b>Device Position</b>	Dipole
<b>Band</b>	1800MHz
<b>Channels</b>	
<b>Signal</b>	CW

### B. SAR Measurement Results

#### Band SAR

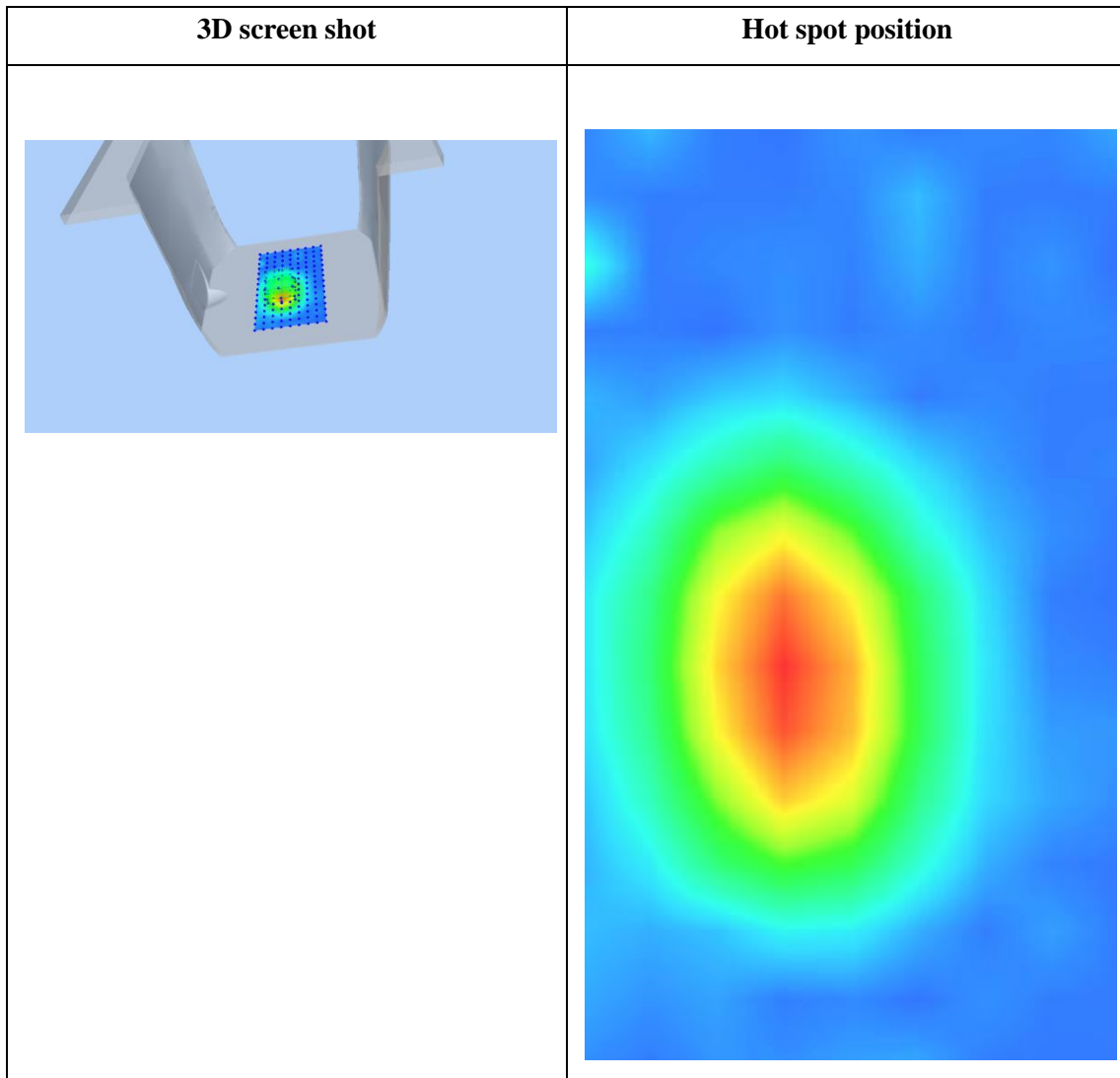
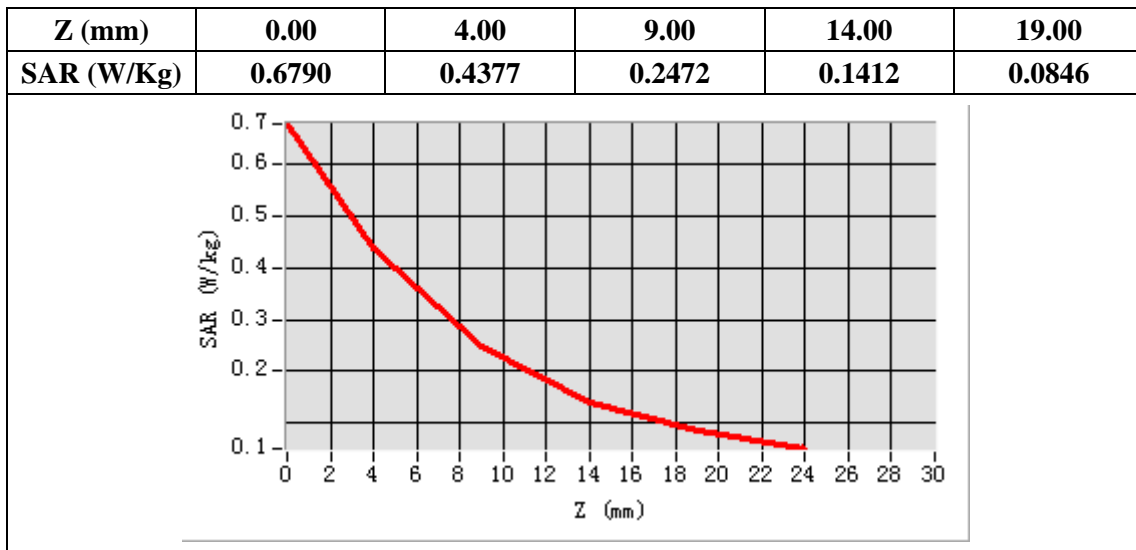
<b>E-Field Probe</b>	SATIMO SN_41/18_EPG0334
<b>Frequency (MHz)</b>	1800
<b>Relative permittivity (real part)</b>	40.54
<b>Relative permittivity</b>	14.40
<b>Conductivity (S/m)</b>	1.44
<b>Power Drift (%)</b>	-1.37
<b>Ambient Temperature:</b>	22.1 °C
<b>Liquid Temperature:</b>	22.6 °C
<b>ConvF:</b>	1.60
<b>Duty factor:</b>	1:1



**Maximum location: X=-10.00, Y=-13.00**

**SAR Peak: 0.68 W/kg**

<b>SAR 10g (W/Kg)</b>	0.216934
<b>SAR 1g (W/Kg)</b>	0.409632



## System Performance Check (Body, 1800MHz)

Type: Validation measurement

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 06/18/2020

Measurement duration: 22 minutes 04 seconds

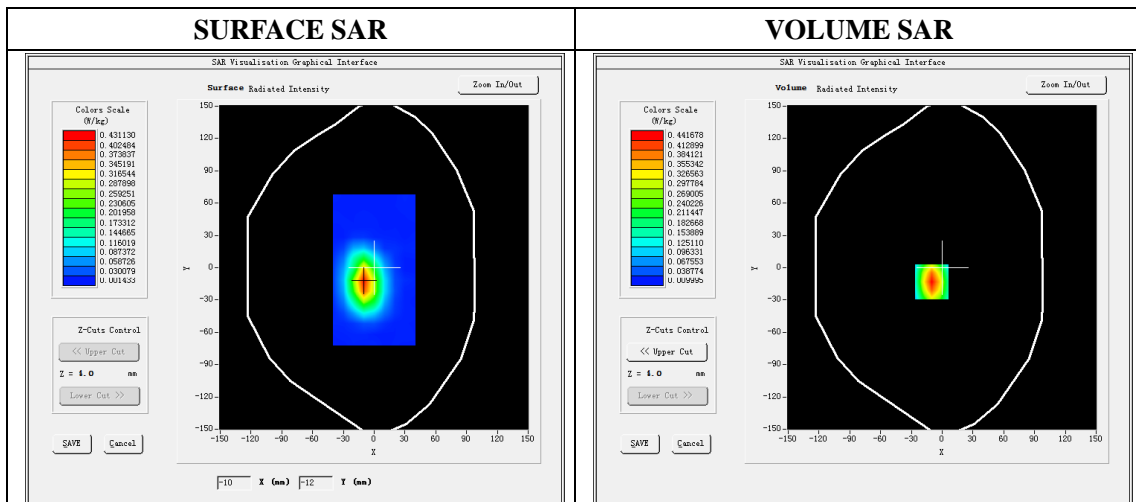
### A. Experimental conditions.

<b>Phantom File</b>	dx=8mm dy=8mm
<b>Phantom</b>	5x5x7,dx=8mm dy=8mm dz=5mm
<b>Device Position</b>	Dipole
<b>Band</b>	1800MHz
<b>Channels</b>	
<b>Signal</b>	CW

### B. SAR Measurement Results

#### Band SAR

<b>E-Field Probe</b>	SATIMO SN_41/18_EPG0334
<b>Frequency (MHz)</b>	1800
<b>Relative permittivity (real part)</b>	53.34
<b>Relative permittivity</b>	15.60
<b>Conductivity (S/m)</b>	1.56
<b>Power Drift (%)</b>	0.75
<b>Ambient Temperature:</b>	22.1 °C
<b>Liquid Temperature:</b>	22.6 °C
<b>ConvF:</b>	1.66
<b>Duty factor:</b>	1:1

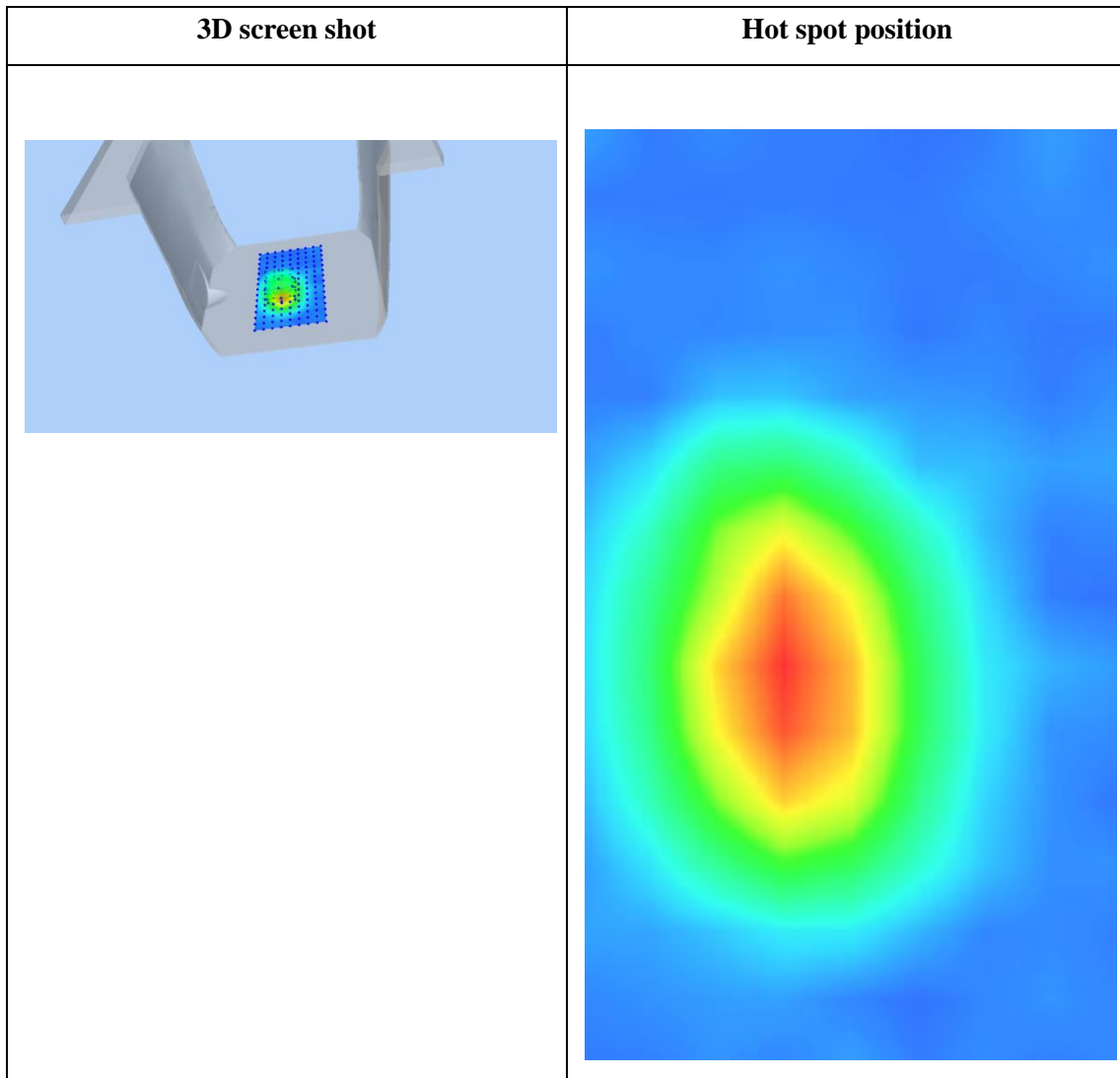
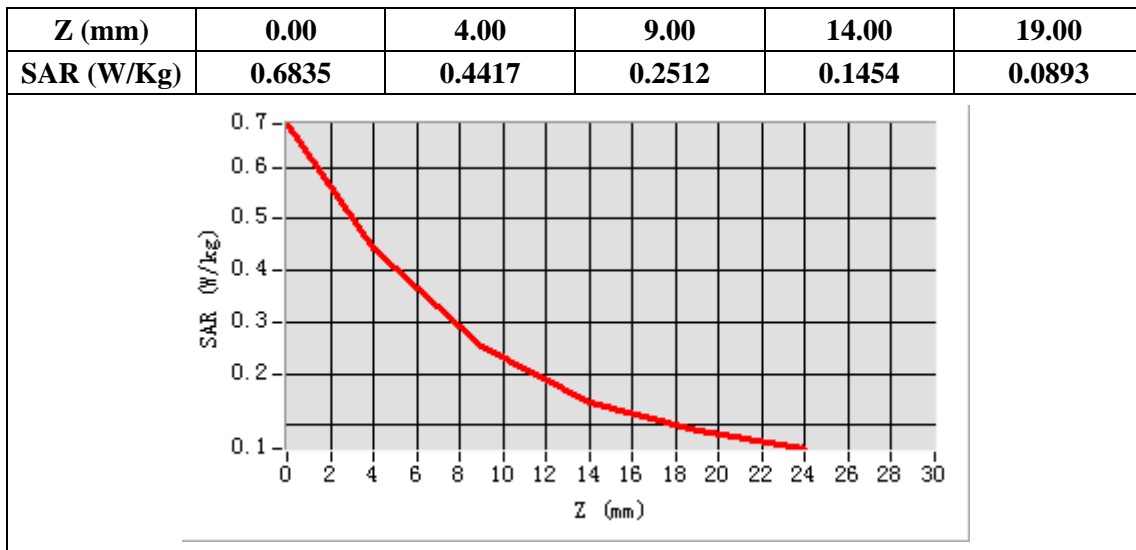


**Maximum location: X=-10.00, Y=-13.00**

**SAR Peak: 0.68 W/kg**

<b>SAR 10g (W/Kg)</b>	0.218311
<b>SAR 1g (W/Kg)</b>	0.408135





## System Performance Check (Head, 1900MHz)

Type: Validation measurement

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 06/19/2020

Measurement duration: 22 minutes 01 seconds

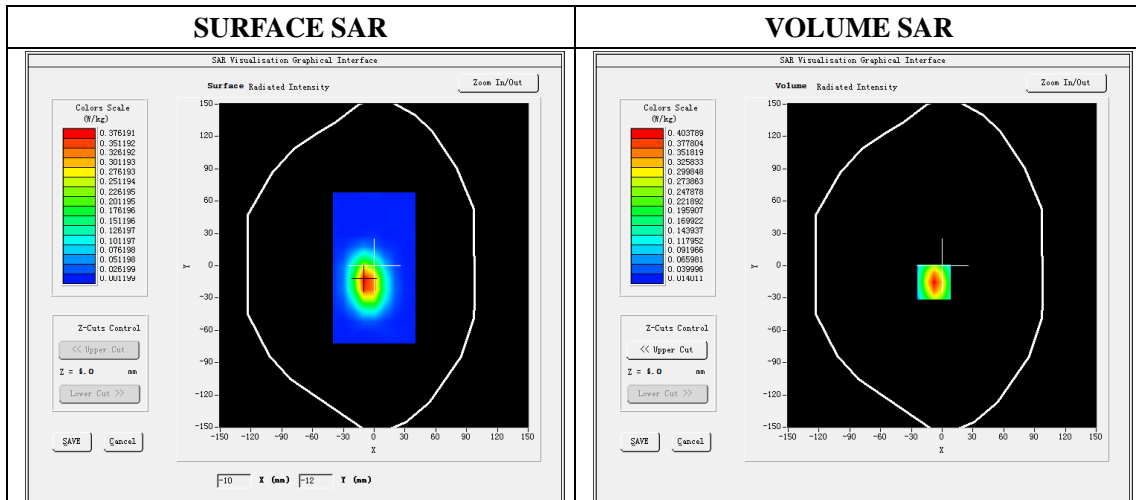
### A. Experimental conditions.

<b>Phantom File</b>	dx=8mm dy=8mm
<b>Phantom</b>	5x5x7,dx=8mm dy=8mm dz=5mm
<b>Device Position</b>	Dipole
<b>Band</b>	1900MHz
<b>Channels</b>	
<b>Signal</b>	CW

### B. SAR Measurement Results

#### Band SAR

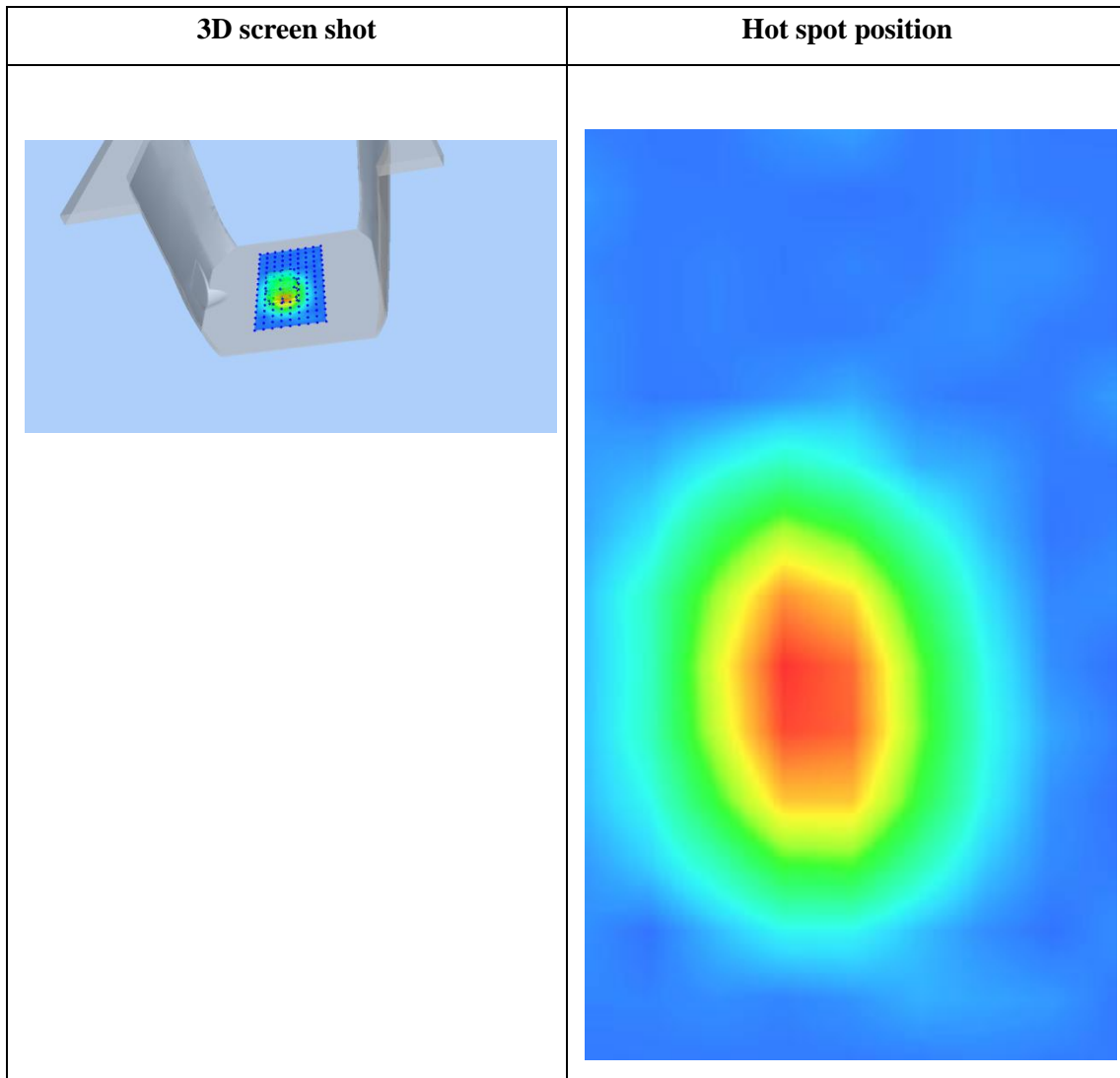
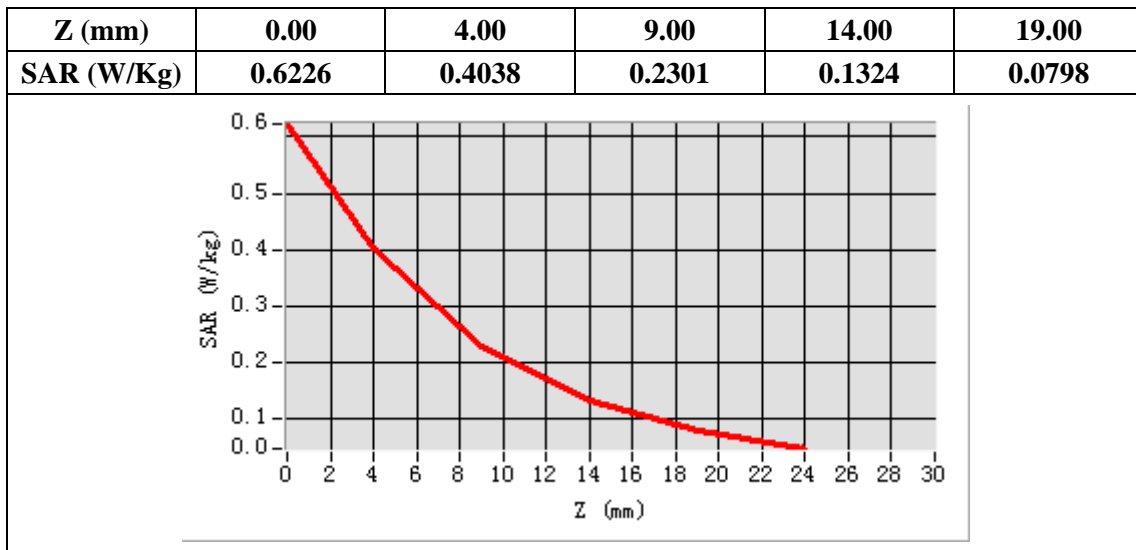
<b>E-Field Probe</b>	SATIMO SN_41/18_EPG0334
<b>Frequency (MHz)</b>	1900
<b>Relative permittivity (real part)</b>	40.48
<b>Relative permittivity</b>	13.07
<b>Conductivity (S/m)</b>	1.38
<b>Power Drift (%)</b>	-1.88
<b>Ambient Temperature:</b>	22.1 °C
<b>Liquid Temperature:</b>	22.6 °C
<b>ConvF:</b>	1.84
<b>Duty factor:</b>	1:1



**Maximum location: X=-8.00, Y=-15.00**

**SAR Peak: 0.62 W/kg**

<b>SAR 10g (W/Kg)</b>	0.196936
<b>SAR 1g (W/Kg)</b>	0.373041



## System Performance Check (Body, 1900MHz)

Type: Validation measurement

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 06/19/2020

Measurement duration: 22 minutes 07 seconds

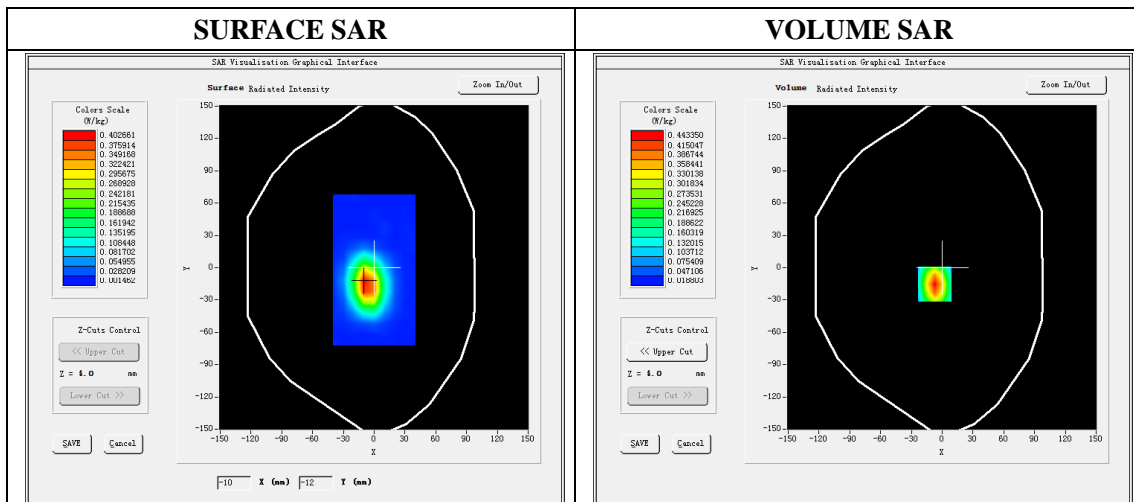
### A. Experimental conditions.

<b>Phantom File</b>	dx=8mm dy=8mm
<b>Phantom</b>	5x5x7,dx=8mm dy=8mm dz=5mm
<b>Device Position</b>	Dipole
<b>Band</b>	1900MHz
<b>Channels</b>	
<b>Signal</b>	CW

### B. SAR Measurement Results

#### Band SAR

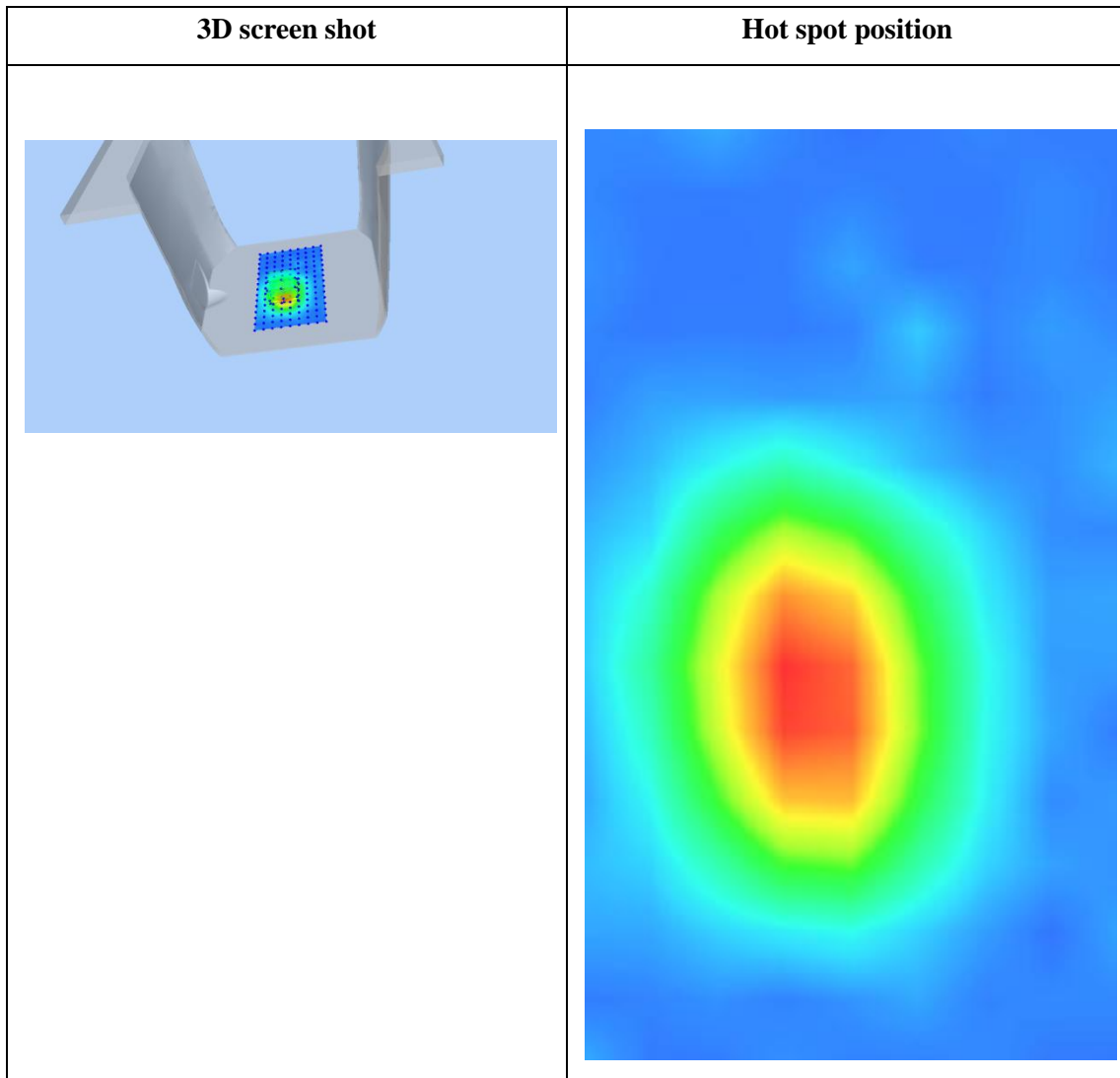
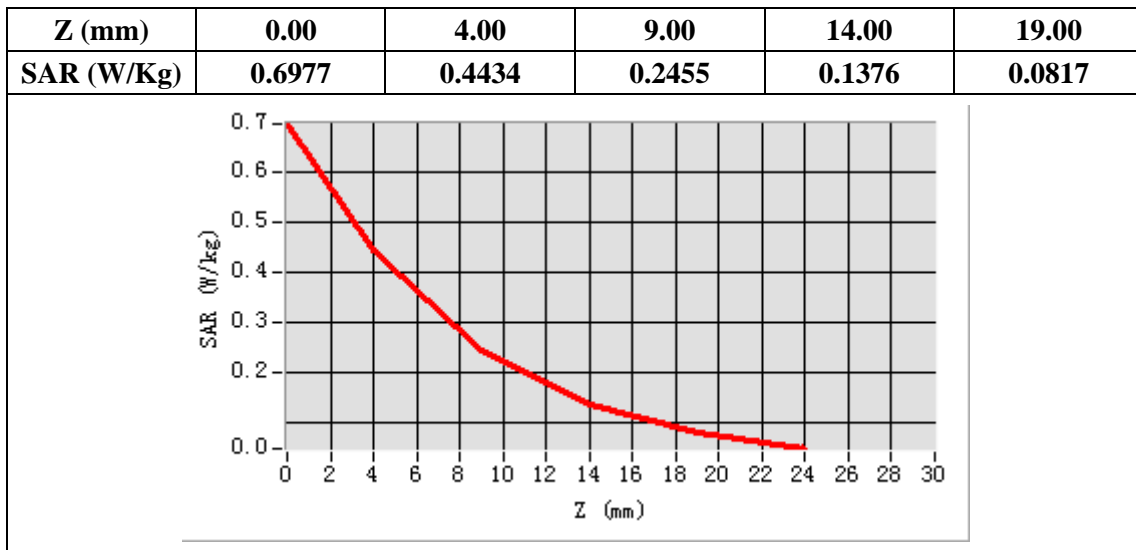
<b>E-Field Probe</b>	SATIMO SN_41/18_EPG0334
<b>Frequency (MHz)</b>	1900
<b>Relative permittivity (real part)</b>	53.29
<b>Relative permittivity</b>	14.31
<b>Conductivity (S/m)</b>	1.51
<b>Power Drift (%)</b>	-0.86
<b>Ambient Temperature:</b>	22.1 °C
<b>Liquid Temperature:</b>	22.6 °C
<b>ConvF:</b>	1.88
<b>Duty factor:</b>	1:1



**Maximum location: X=-7.00, Y=-15.00**

**SAR Peak: 0.70 W/kg**

<b>SAR 10g (W/Kg)</b>	0.213310
<b>SAR 1g (W/Kg)</b>	0.409282



## System Performance Check (Head, 2450MHz)

Type: Phone measurement

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=5mm, dy=5mm, dz=4mm

Date of measurement: 06/20/2020

Measurement duration: 22 minutes 03 seconds

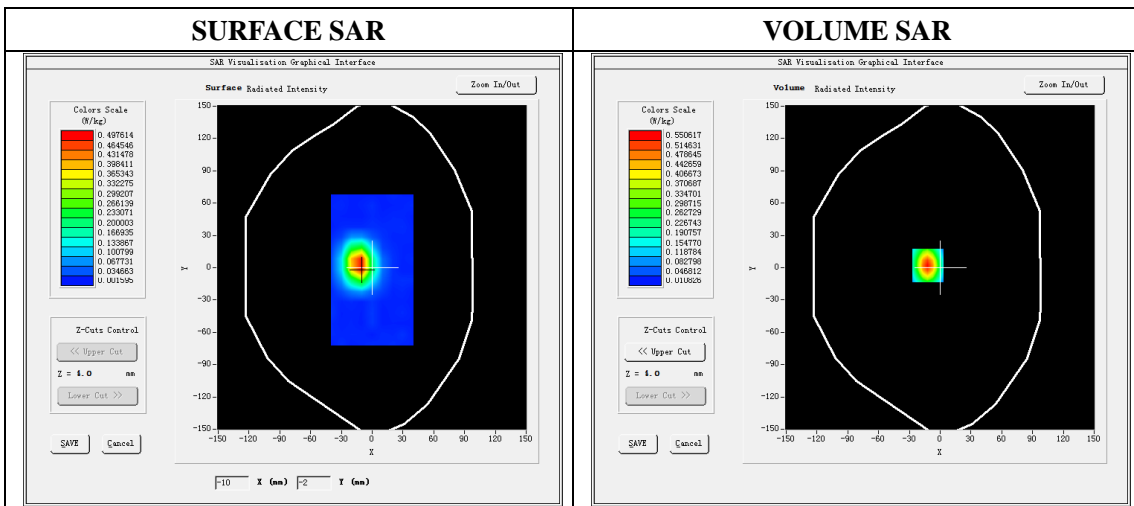
### A. Experimental conditions.

<b>Phantom File</b>	dx=8mm dy=8mm
<b>Phantom</b>	7x7x8,dx=5mm dy=5mm dz=4mm
<b>Device Position</b>	Dipole
<b>Band</b>	2450MHz
<b>Channels</b>	
<b>Signal</b>	CW

### B. SAR Measurement Results

#### Band SAR

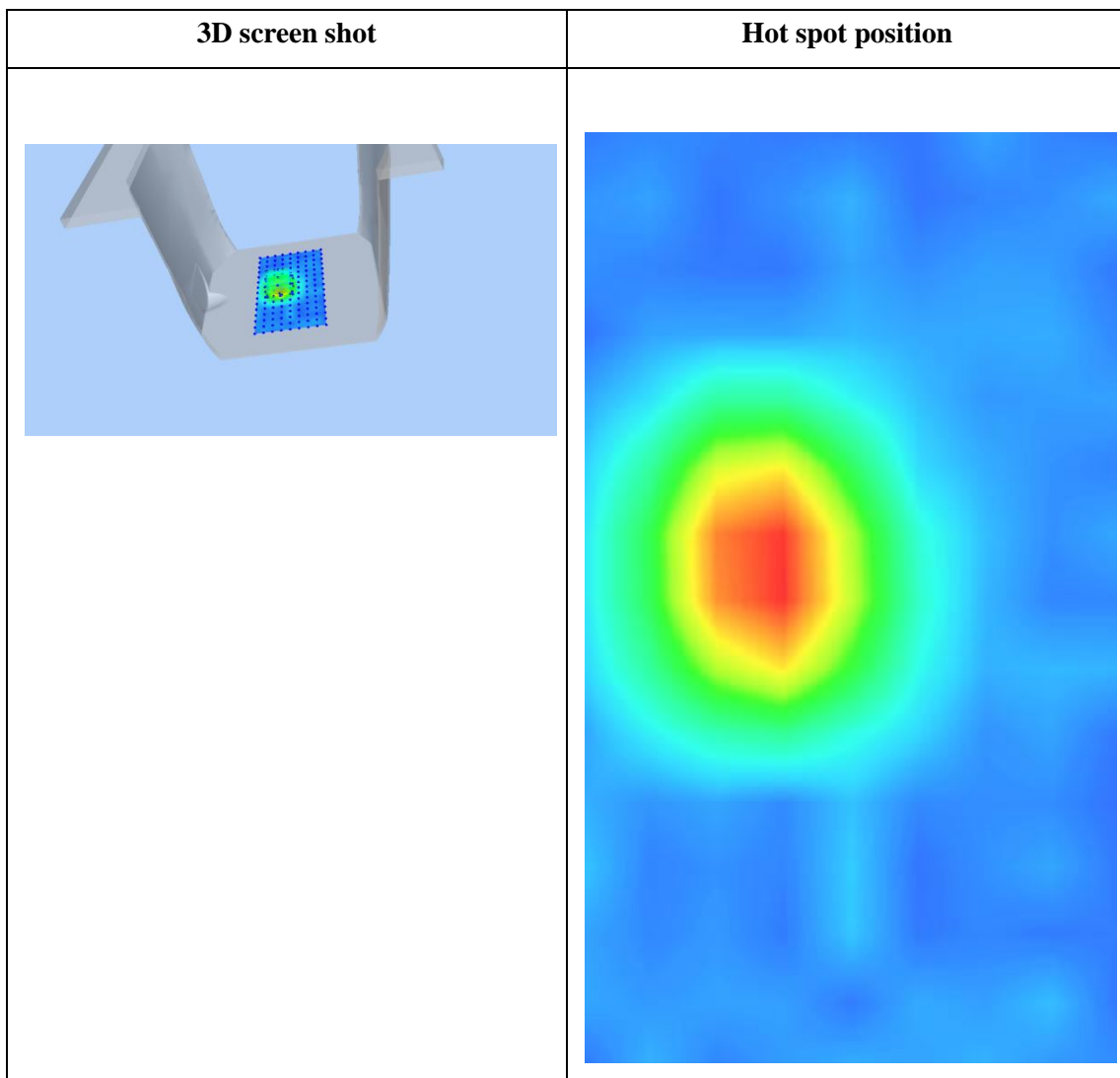
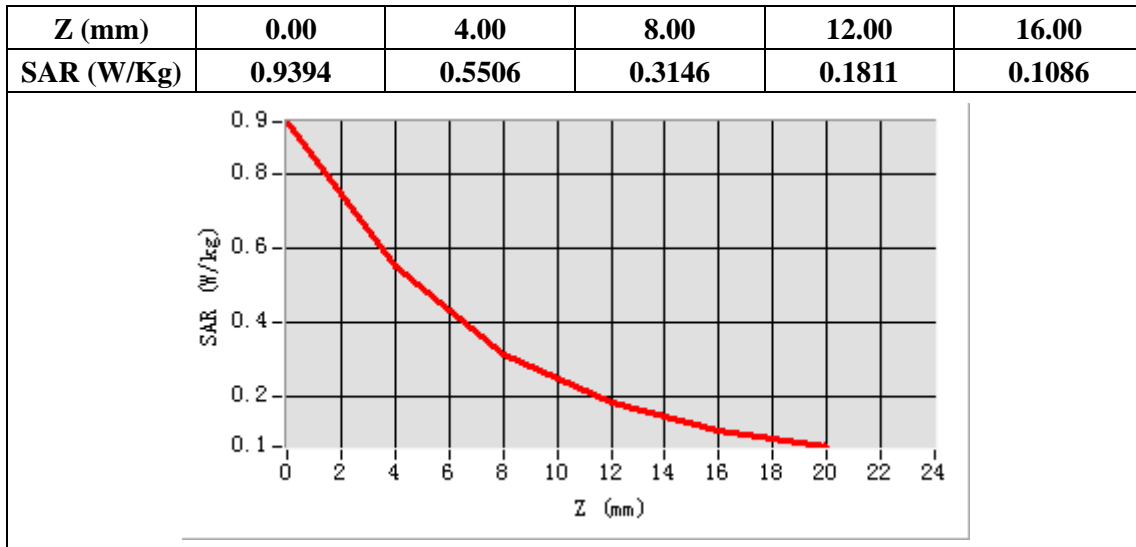
<b>E-Field Probe</b>	SATIMO SN_41/18_EPG0334
<b>Frequency (MHz)</b>	2450
<b>Relative permittivity (real part)</b>	39.23
<b>Relative permittivity</b>	13.44
<b>Conductivity (S/m)</b>	1.83
<b>Power Drift (%)</b>	0.96
<b>Ambient Temperature:</b>	22.1 °C
<b>Liquid Temperature:</b>	22.6 °C
<b>ConvF:</b>	1.97
<b>Duty factor:</b>	1:1



**Maximum location: X=-12.00, Y=2.00**

**SAR Peak: 0.94 W/kg**

<b>SAR 10g (W/Kg)</b>	0.235583
<b>SAR 1g (W/Kg)</b>	0.496115



## System Performance Check (Body, 2450MHz)

Type: Phone measurement

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=5mm, dy=5mm, dz=4mm

Date of measurement: 06/20/2020

Measurement duration: 22 minutes 06 seconds

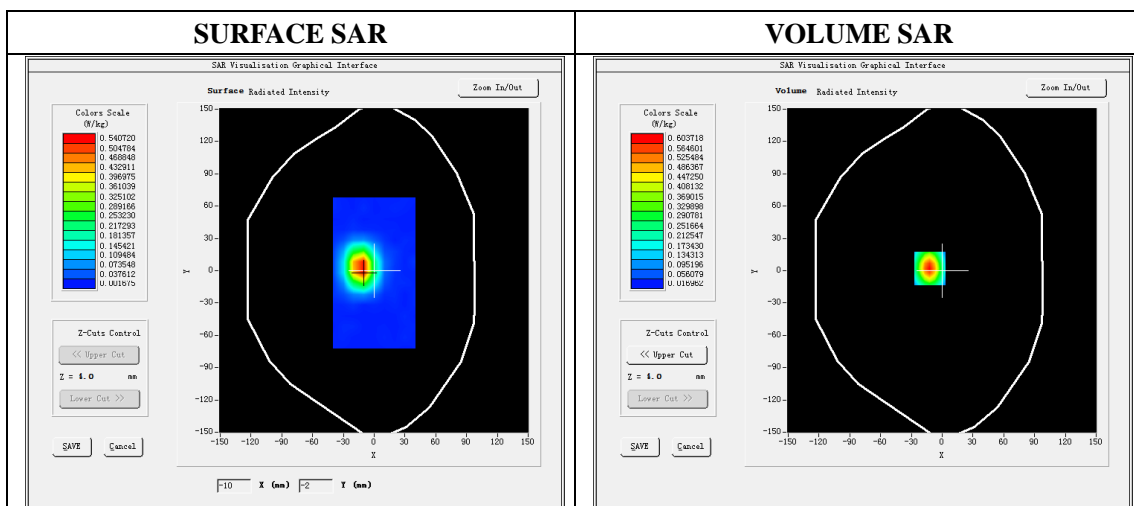
### A. Experimental conditions.

<b>Phantom File</b>	dx=8mm dy=8mm
<b>Phantom</b>	7x7x8,dx=5mm dy=5mm dz=4mm
<b>Device Position</b>	Dipole
<b>Band</b>	2450MHz
<b>Channels</b>	
<b>Signal</b>	CW

### B. SAR Measurement Results

#### Band SAR

<b>E-Field Probe</b>	SATIMO SN_41/18_EPG0334
<b>Frequency (MHz)</b>	2450
<b>Relative permittivity (real part)</b>	52.71
<b>Relative permittivity</b>	14.40
<b>Conductivity (S/m)</b>	1.96
<b>Power Drift (%)</b>	-0.75
<b>Ambient Temperature:</b>	22.1 °C
<b>Liquid Temperature:</b>	22.6 °C
<b>ConvF:</b>	2.02
<b>Duty factor:</b>	1:1



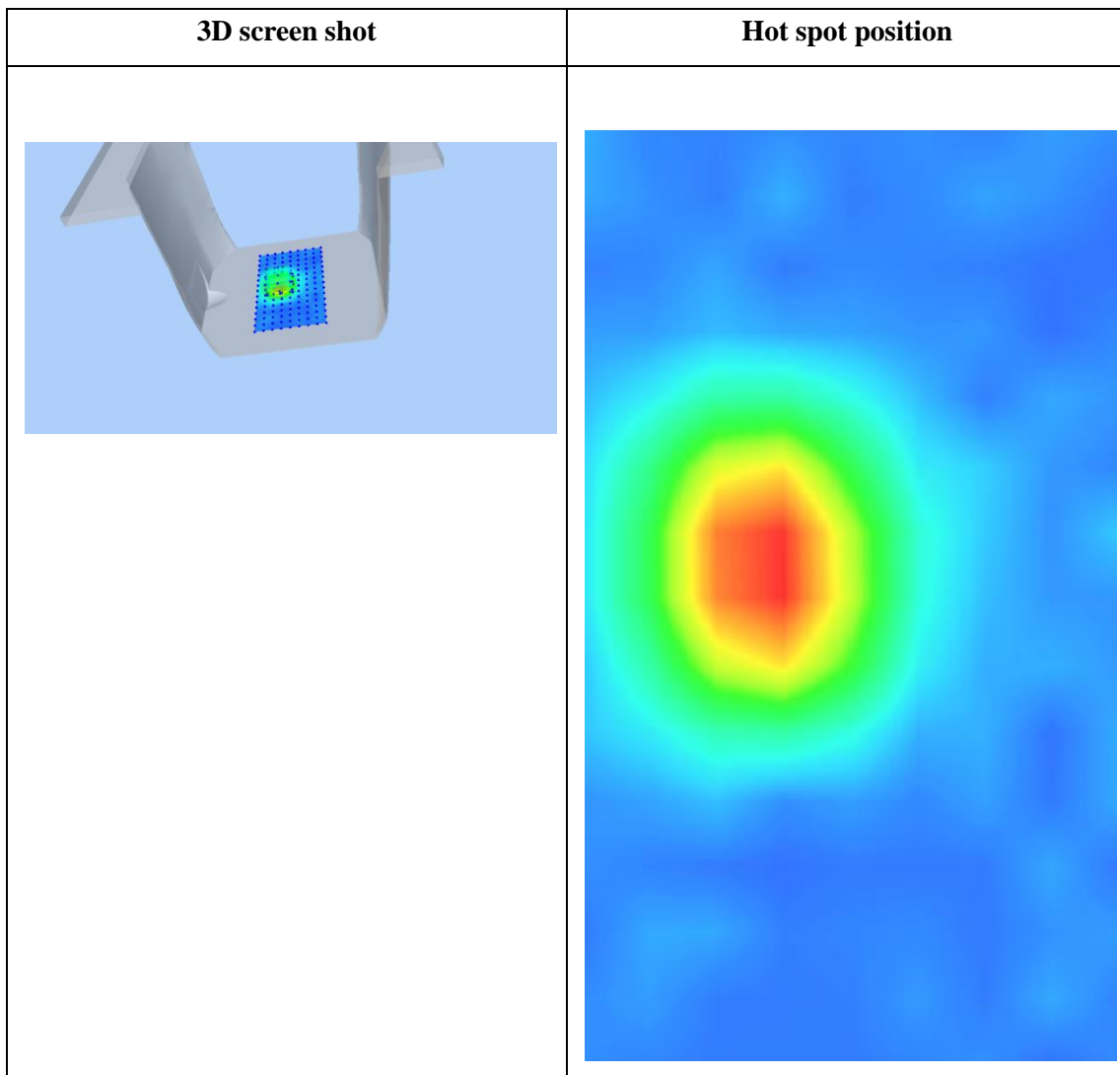
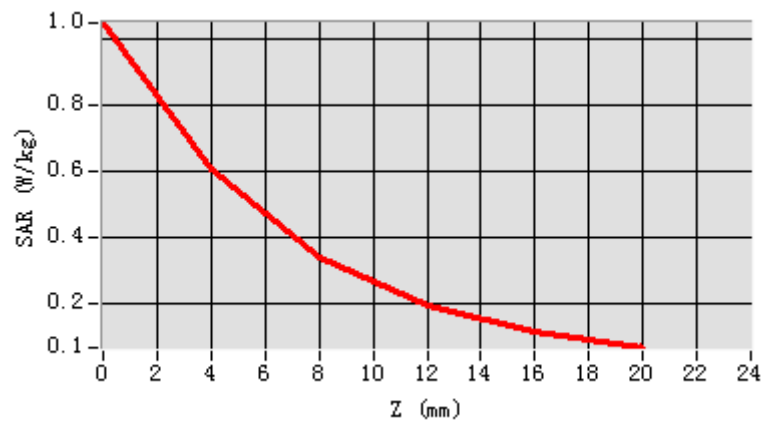
**Maximum location: X=-12.00, Y=2.00**

**SAR Peak: 1.05 W/kg**

<b>SAR 10g (W/Kg)</b>	0.256683
<b>SAR 1g (W/Kg)</b>	0.547958



Z (mm)	0.00	4.00	8.00	12.00	16.00
SAR (W/Kg)	1.0463	0.6037	0.3388	0.1917	0.1137



## System Performance Check (Head, 2600MHz)

Type: Phone measurement

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=5mm, dy=5mm, dz=4mm

Date of measurement: 06/21/2020

Measurement duration: 22 minutes 09 seconds

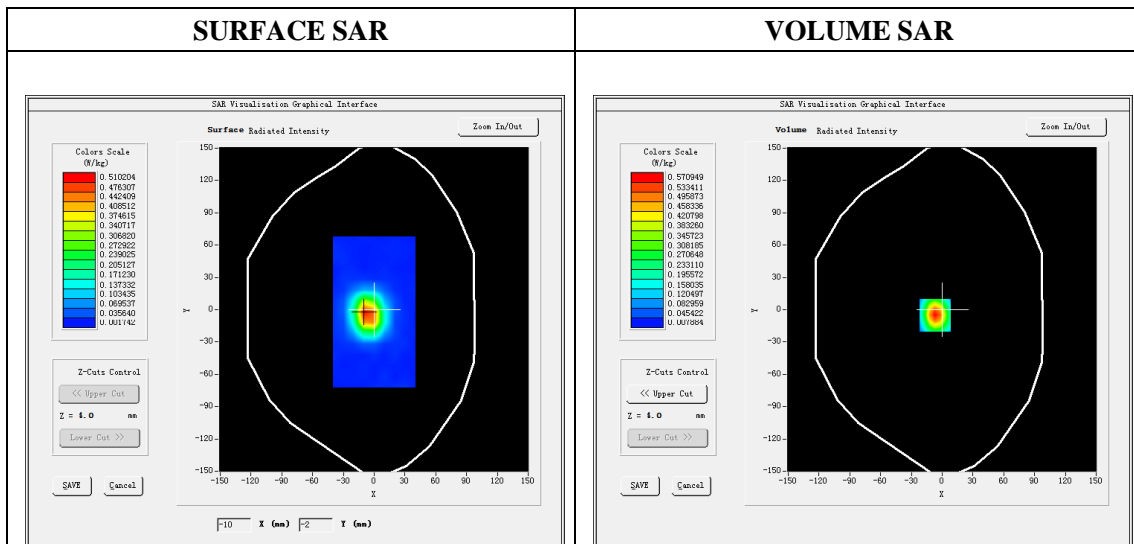
### A. Experimental conditions.

<b>Phantom File</b>	dx=8mm dy=8mm
<b>Phantom</b>	7x7x8,dx=5mm dy=5mm dz=4mm
<b>Device Position</b>	Dipole
<b>Band</b>	2600MHz
<b>Channels</b>	
<b>Signal</b>	CW

### B. SAR Measurement Results

#### Band SAR

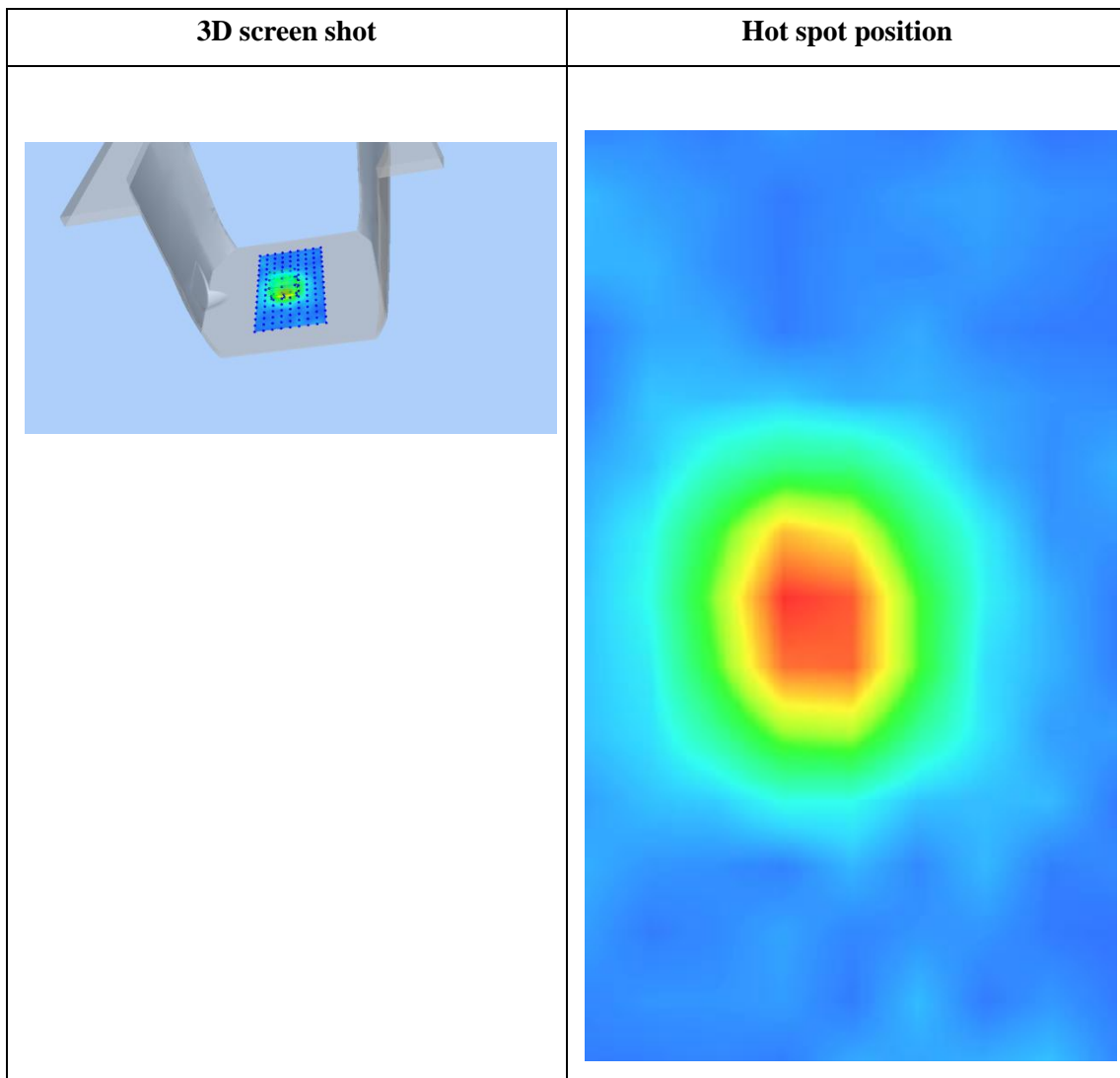
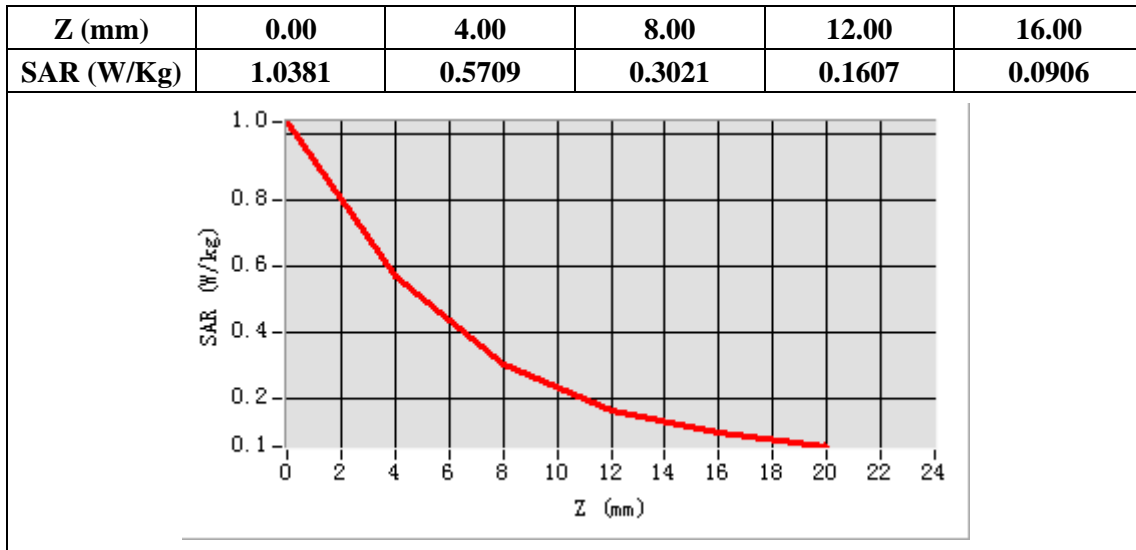
<b>E-Field Probe</b>	SATIMO SN_41/18_EPG0334
<b>Frequency (MHz)</b>	2600
<b>Relative permittivity (real part)</b>	39.04
<b>Relative permittivity</b>	13.85
<b>Conductivity (S/m)</b>	2.00
<b>Power drift (%)</b>	-0.77
<b>Ambient Temperature:</b>	22.2 °C
<b>Liquid Temperature:</b>	22.5 °C
<b>Crest factor:</b>	1:1
<b>ConvF:</b>	1.85



**Maximum location: X=-7.00, Y=-5.00**

**SAR Peak: 1.04 W/kg**

<b>SAR 10g (W/Kg)</b>	0.234575
<b>SAR 1g (W/Kg)</b>	0.521097



## System Performance Check (Body, 2600MHz)

Type: Phone measurement

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=5mm, dy=5mm, dz=4mm

Date of measurement: 06/21/2020

Measurement duration: 22 minutes 12 seconds

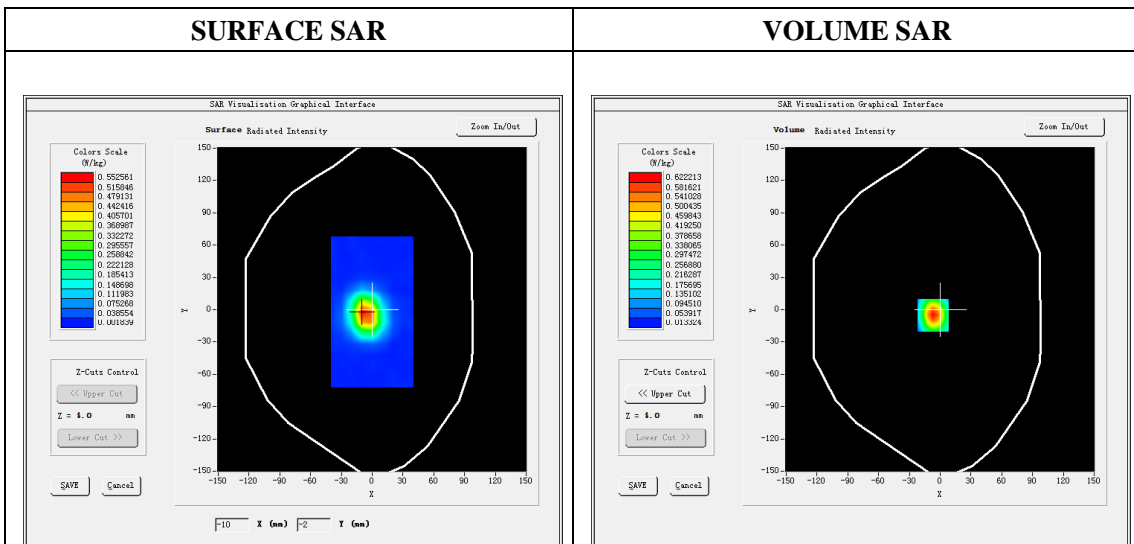
### A. Experimental conditions.

<b>Phantom File</b>	dx=8mm dy=8mm
<b>Phantom</b>	7x7x8,dx=5mm dy=5mm dz=4mm
<b>Device Position</b>	Dipole
<b>Band</b>	2600MHz
<b>Channels</b>	
<b>Signal</b>	CW

### B. SAR Measurement Results

#### Band SAR

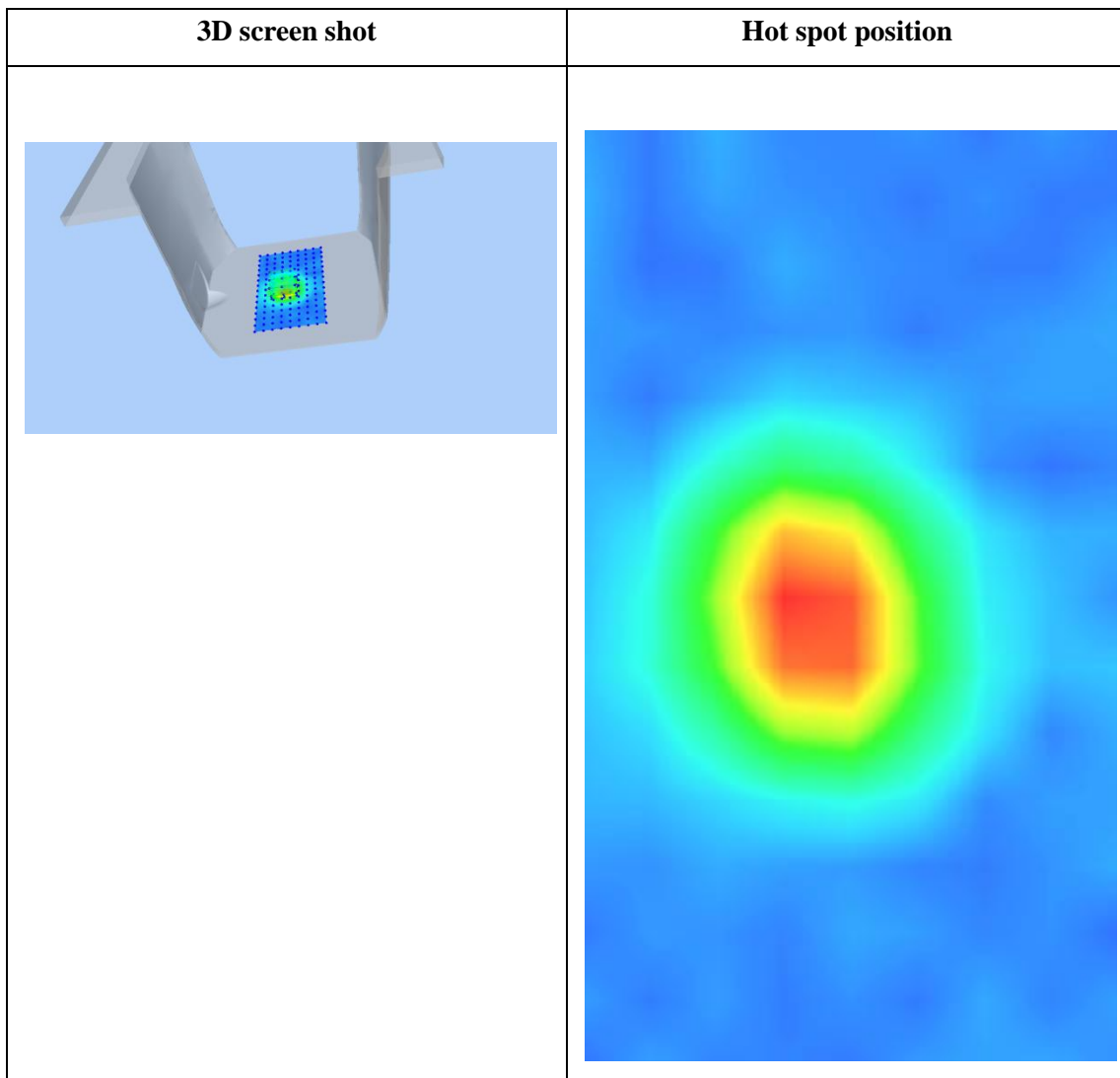
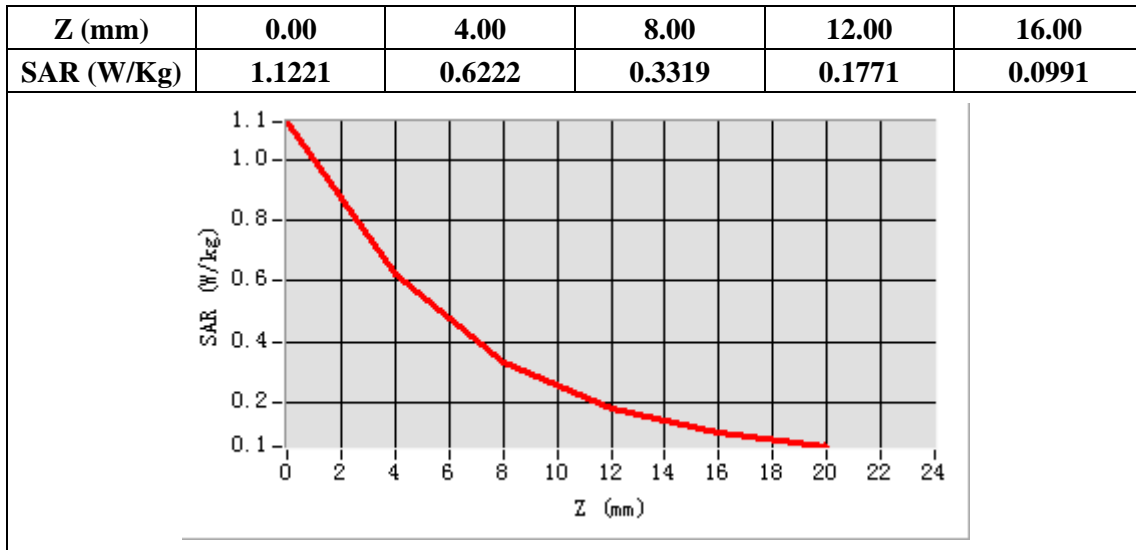
<b>E-Field Probe</b>	SATIMO SN_41/18_EPG0334
<b>Frequency (MHz)</b>	2600
<b>Relative permittivity (real part)</b>	52.47
<b>Relative permittivity</b>	14.75
<b>Conductivity (S/m)</b>	2.13
<b>Power drift (%)</b>	-2.00
<b>Ambient Temperature:</b>	22.2 °C
<b>Liquid Temperature:</b>	22.5 °C
<b>Crest factor:</b>	1:1
<b>ConvF:</b>	1.92



**Maximum location: X=-7.00, Y=-5.00**

**SAR Peak: 1.12 W/kg**

<b>SAR 10g (W/Kg)</b>	0.253957
<b>SAR 1g (W/Kg)</b>	0.562458



## System Performance Check (Head, 5200MHz)

Type: Phone measurement

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=5mm, dy=5mm, dz=4mm

Date of measurement: 07/20/2020

Measurement duration: 22 minutes 10 seconds

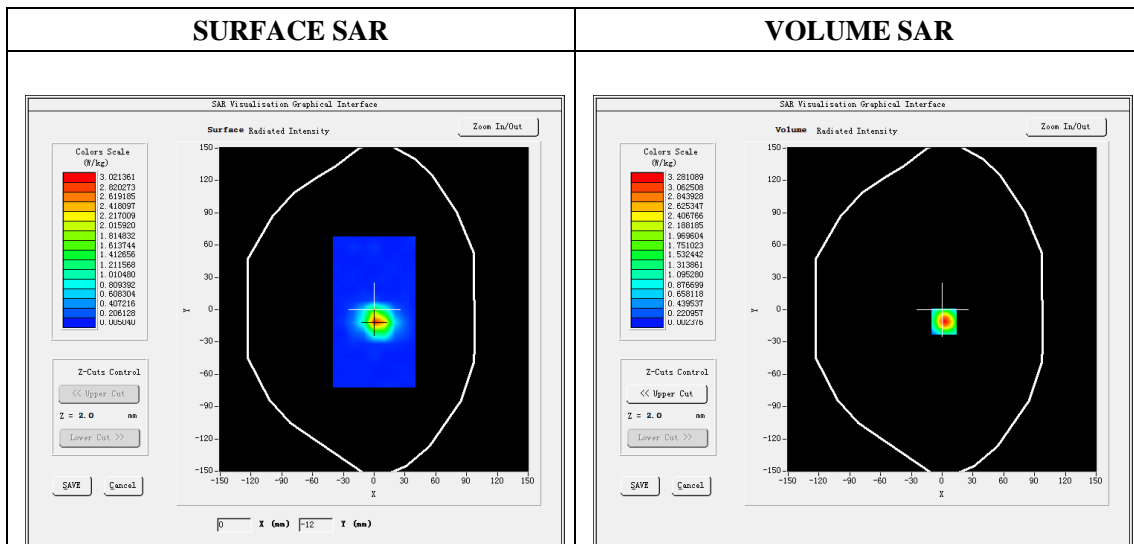
### A. Experimental conditions.

<b>Phantom File</b>	dx=8mm dy=8mm
<b>Phantom</b>	7x7x8,dx=4mm dy=4mm dz=2mm
<b>Device Position</b>	Dipole
<b>Band</b>	5200MHz
<b>Channels</b>	
<b>Signal</b>	CW

### B. SAR Measurement Results

#### Band SAR

<b>E-Field Probe</b>	SATIMO SN_41/18_EPG0334
<b>Frequency (MHz)</b>	5200
<b>Relative permittivity (real part)</b>	36.02
<b>Relative permittivity</b>	16.20
<b>Conductivity (S/m)</b>	4.68
<b>Power drift (%)</b>	-0.26
<b>Ambient Temperature:</b>	22.2 °C
<b>Liquid Temperature:</b>	22.5 °C
<b>Crest factor:</b>	1:1
<b>ConvF:</b>	1.86

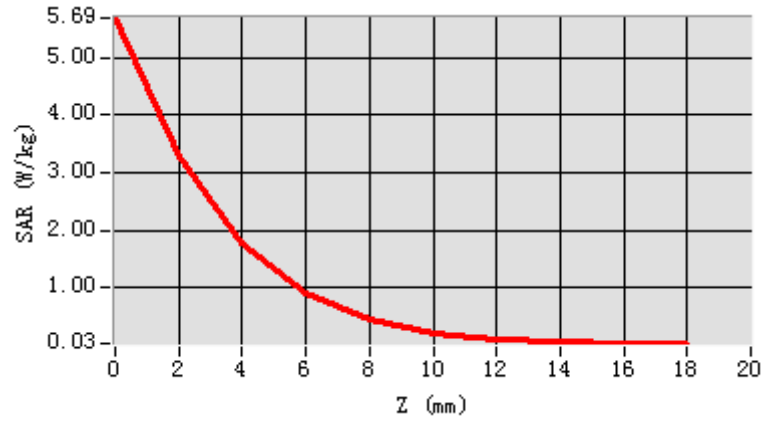


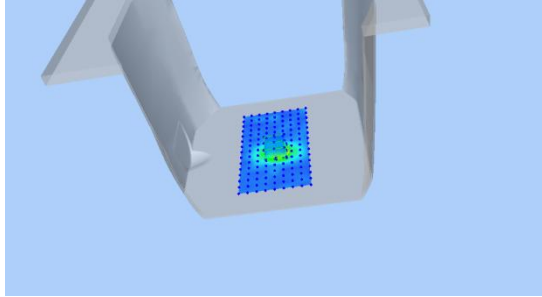
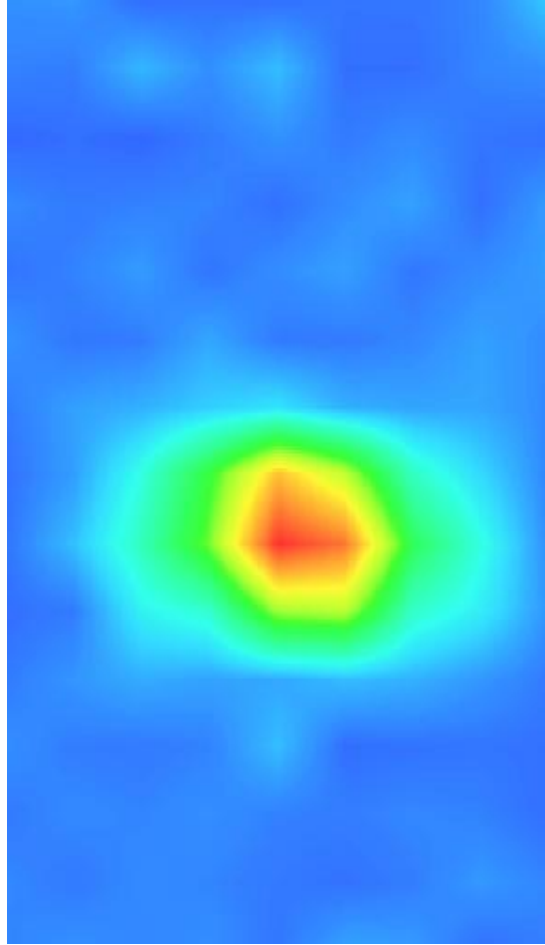
**Maximum location: X=2.00, Y=-11.00**

**SAR Peak: 5.89W/kg**

<b>SAR 10g (W/Kg)</b>	0.526579
<b>SAR 1g (W/Kg)</b>	1.780801

Z (mm)	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00
SAR (W/Kg)	5.6859	3.2811	1.7637	0.8853	0.4299	0.2073	0.1042	0.0582	0.0375



3D screen shot	Hot spot position
	

## System Performance Check (Body, 5200MHz)

Type: Phone measurement

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=5mm, dy=5mm, dz=4mm

Date of measurement: 07/20/2020

Measurement duration: 22 minutes 11 seconds

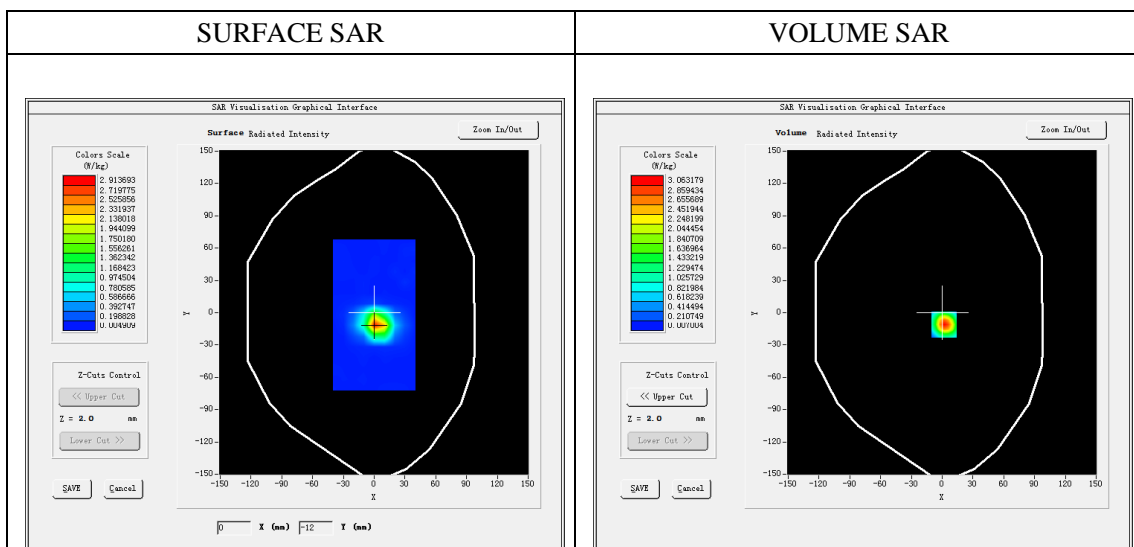
### A. Experimental conditions.

<b>Phantom File</b>	dx=8mm dy=8mm
<b>Phantom</b>	7x7x8,dx=4mm dy=4mm dz=2mm
<b>Device Position</b>	Dipole
<b>Band</b>	5200MHz
<b>Channels</b>	
<b>Signal</b>	CW

### B. SAR Measurement Results

#### Band SAR

<b>E-Field Probe</b>	SATIMO SN_41/18_EPG0334
<b>Frequency (MHz)</b>	5200
<b>Relative permittivity (real part)</b>	49.04
<b>Relative permittivity</b>	18.48
<b>Conductivity (S/m)</b>	5.34
<b>Power drift (%)</b>	-2.67
<b>Ambient Temperature:</b>	22.2 °C
<b>Liquid Temperature:</b>	22.5 °C
<b>Crest factor:</b>	1:1
<b>ConvF:</b>	1.92



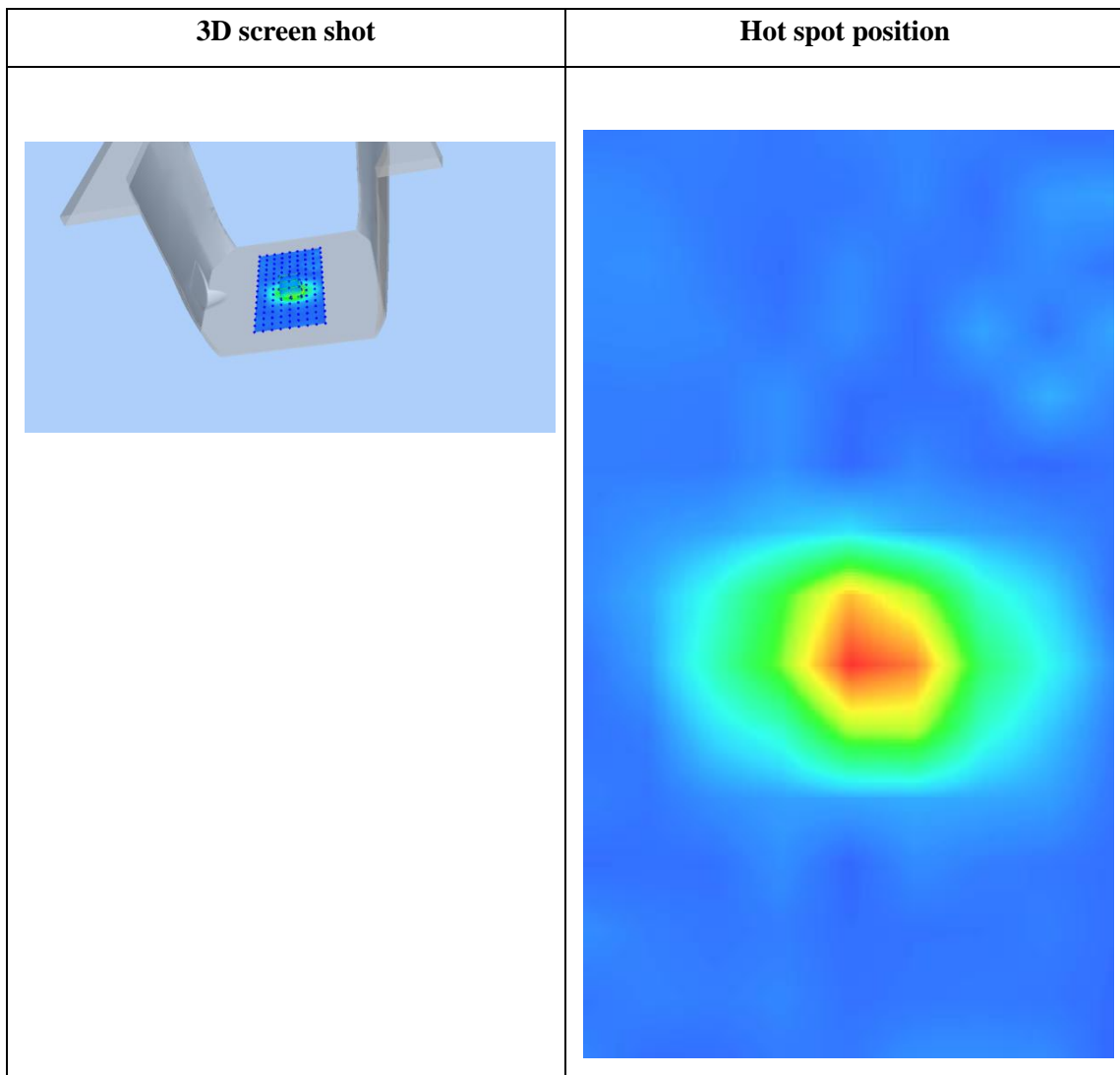
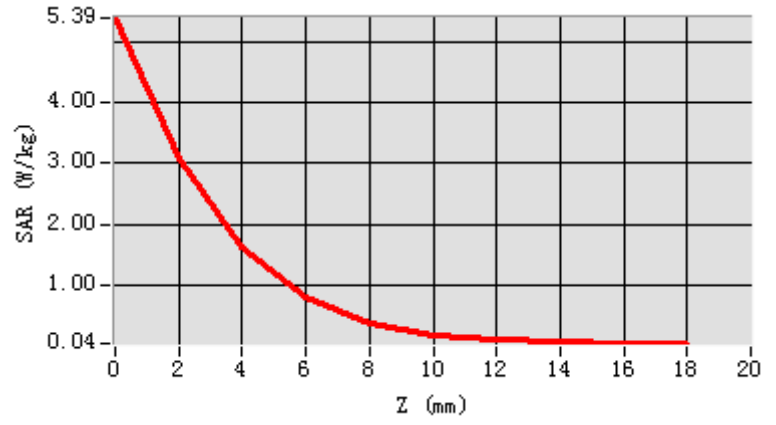
**Maximum location: X=2.00, Y=-11.00**

**SAR Peak: 5.61 W/kg**

<b>SAR 10g (W/Kg)</b>	0.476415
<b>SAR 1g (W/Kg)</b>	1.628713



Z (mm)	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00
SAR (W/Kg)	5.3914	3.0632	1.6103	0.7869	0.3726	0.1776	0.0916	0.0559	0.0421



### System Performance Check (Head, 5800MHz)

Type: Phone measurement

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=5mm, dy=5mm, dz=4mm

Date of measurement: 07/21/2020

Measurement duration: 22 minutes 13 seconds

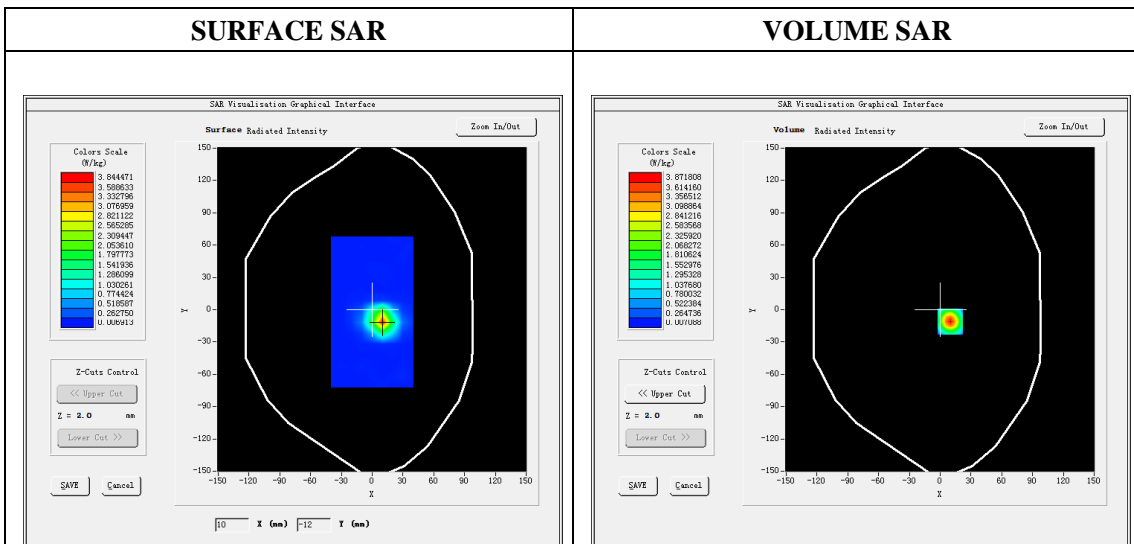
**A. Experimental conditions.**

<b>Phantom File</b>	dx=8mm dy=8mm
<b>Phantom</b>	7x7x8,dx=4mm dy=4mm dz=2mm
<b>Device Position</b>	Dipole
<b>Band</b>	5800MHz
<b>Channels</b>	
<b>Signal</b>	CW

**B. SAR Measurement Results**

Band SAR

<b>E-Field Probe</b>	SATIMO SN_41/18_EPG0334
<b>Frequency (MHz)</b>	5800
<b>Relative permittivity (real part)</b>	35.33
<b>Relative permittivity</b>	16.45
<b>Conductivity (S/m)</b>	5.30
<b>Power drift (%)</b>	2.88
<b>Ambient Temperature:</b>	22.2 °C
<b>Liquid Temperature:</b>	22.5 °C
<b>Crest factor:</b>	1:1
<b>ConvF:</b>	2.09

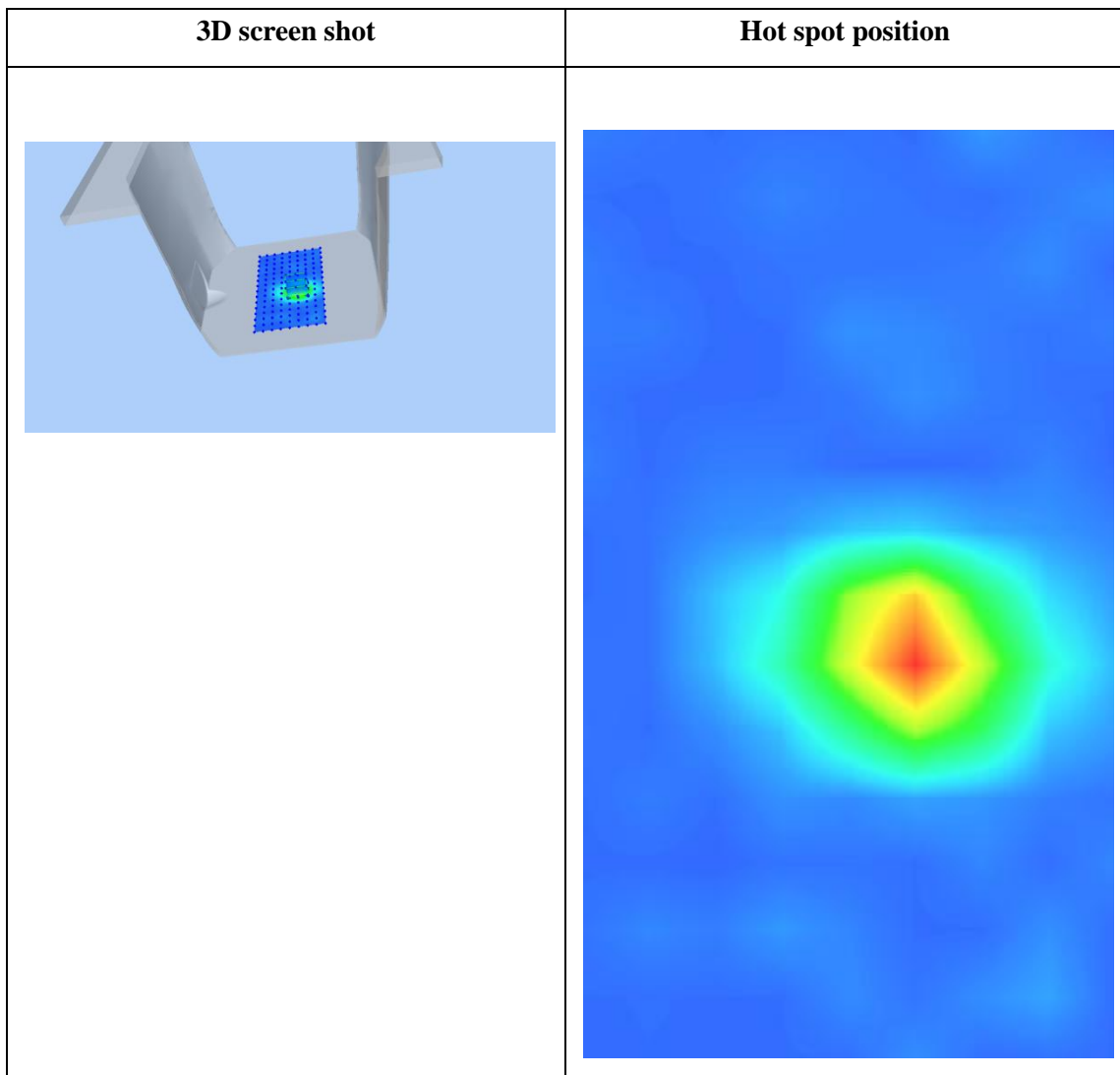
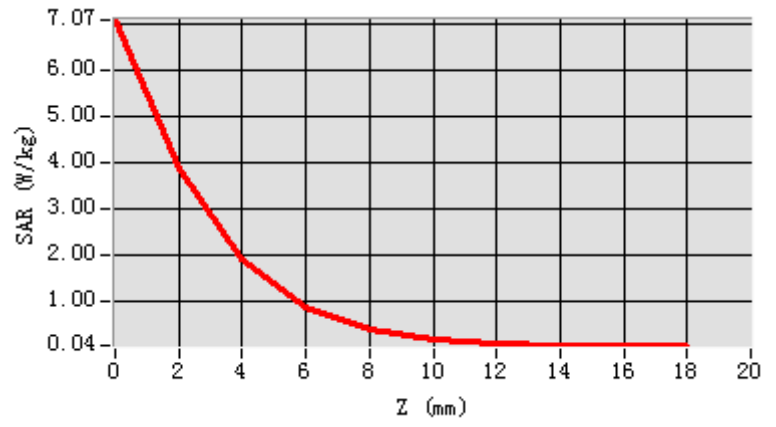


**Maximum location: X=10.00, Y=-11.00**

**SAR Peak: 7.37 W/kg**

<b>SAR 10g (W/Kg)</b>	0.535787
<b>SAR 1g (W/Kg)</b>	1.993054

Z (mm)	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00
SAR (W/Kg)	7.0687	3.8718	1.9209	0.8634	0.3657	0.1526	0.0700	0.0420	0.0358



### System Performance Check (Body, 5800MHz)

Type: Phone measurement

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=5mm, dy=5mm, dz=4mm

Date of measurement: 07/21/2020

Measurement duration: 22 minutes 14 seconds

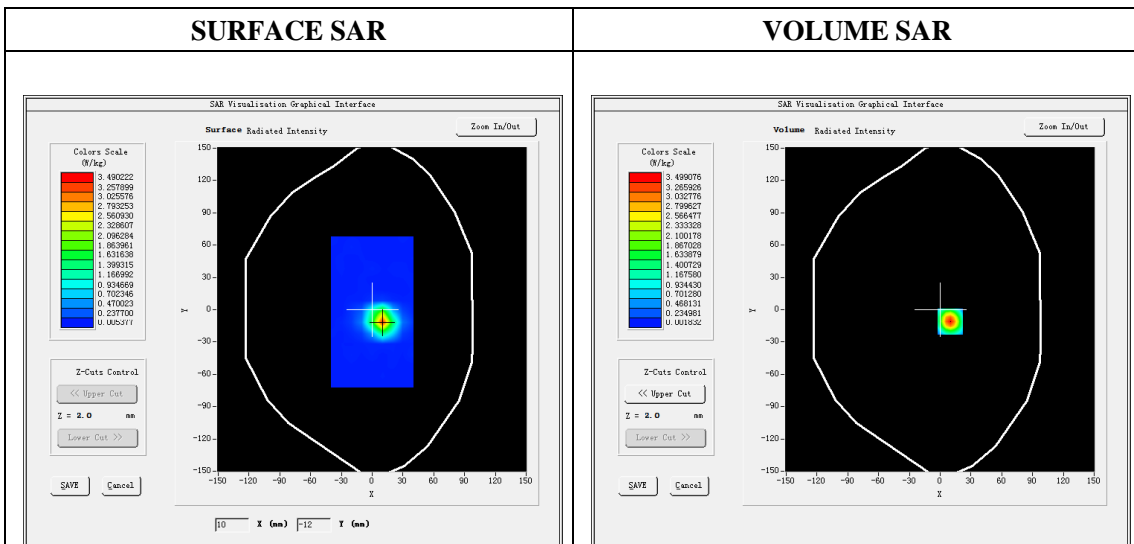
**A. Experimental conditions.**

<b>Phantom File</b>	dx=8mm dy=8mm
<b>Phantom</b>	7x7x8,dx=4mm dy=4mm dz=2mm
<b>Device Position</b>	Dipole
<b>Band</b>	5800MHz
<b>Channels</b>	
<b>Signal</b>	CW

**B. SAR Measurement Results**

Band SAR

<b>E-Field Probe</b>	SATIMO SN_41/18_EPG0334
<b>Frequency (MHz)</b>	5800
<b>Relative permittivity (real part)</b>	48.19
<b>Relative permittivity</b>	18.59
<b>Conductivity (S/m)</b>	5.99
<b>Power drift (%)</b>	-4.01
<b>Ambient Temperature:</b>	22.2 °C
<b>Liquid Temperature:</b>	22.5 °C
<b>Crest factor:</b>	1:1
<b>ConvF:</b>	2.16



**Maximum location: X=10.00, Y=-11.00**

**SAR Peak: 6.75 W/kg**

<b>SAR 10g (W/Kg)</b>	0.477031
<b>SAR 1g (W/Kg)</b>	1.794353

Z (mm)	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00
SAR (W/Kg)	6.4592	3.4991	1.7057	0.7490	0.3092	0.1267	0.0593	0.0386	0.0374

