

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

<b>Measurement</b>	<b>Liquid</b>	<b>Frequency</b>	<b>Test Date</b>
System Check	Head	835	2019-12-16
System Check	Body	835	2019-12-16
System Check	Head	1800	2019-12-17
System Check	Body	1800	2019-12-17
System Check	Head	1900	2019-12-18
System Check	Body	1900	2019-12-18
System Check	Head	2450	2019-12-19
System Check	Body	2450	2019-12-19
System Check	Head	2600	2019-12-20
System Check	Body	2600	2019-12-20
System Check	Head	5200	2019-12-21
System Check	Body	5200	2019-12-21
System Check	Head	5800	2019-12-24
System Check	Body	5800	2019-12-24

## 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: 12/16/2019

Measurement duration: 22 minutes 04 seconds

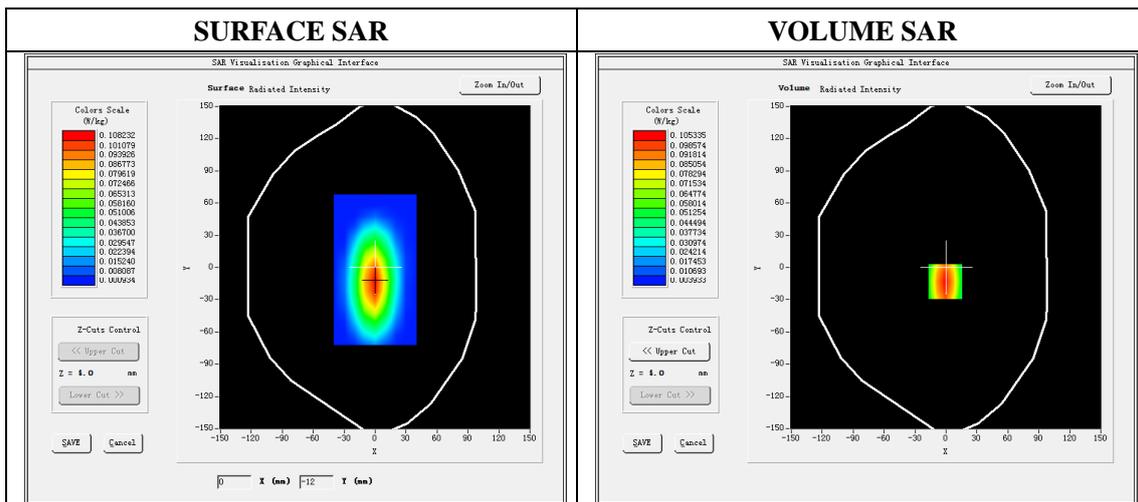
### A. Experimental conditions.

<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>	835MHz
<b>Channels</b>	
<b>Signal</b>	CW

### B. SAR Measurement Results

#### Band SAR

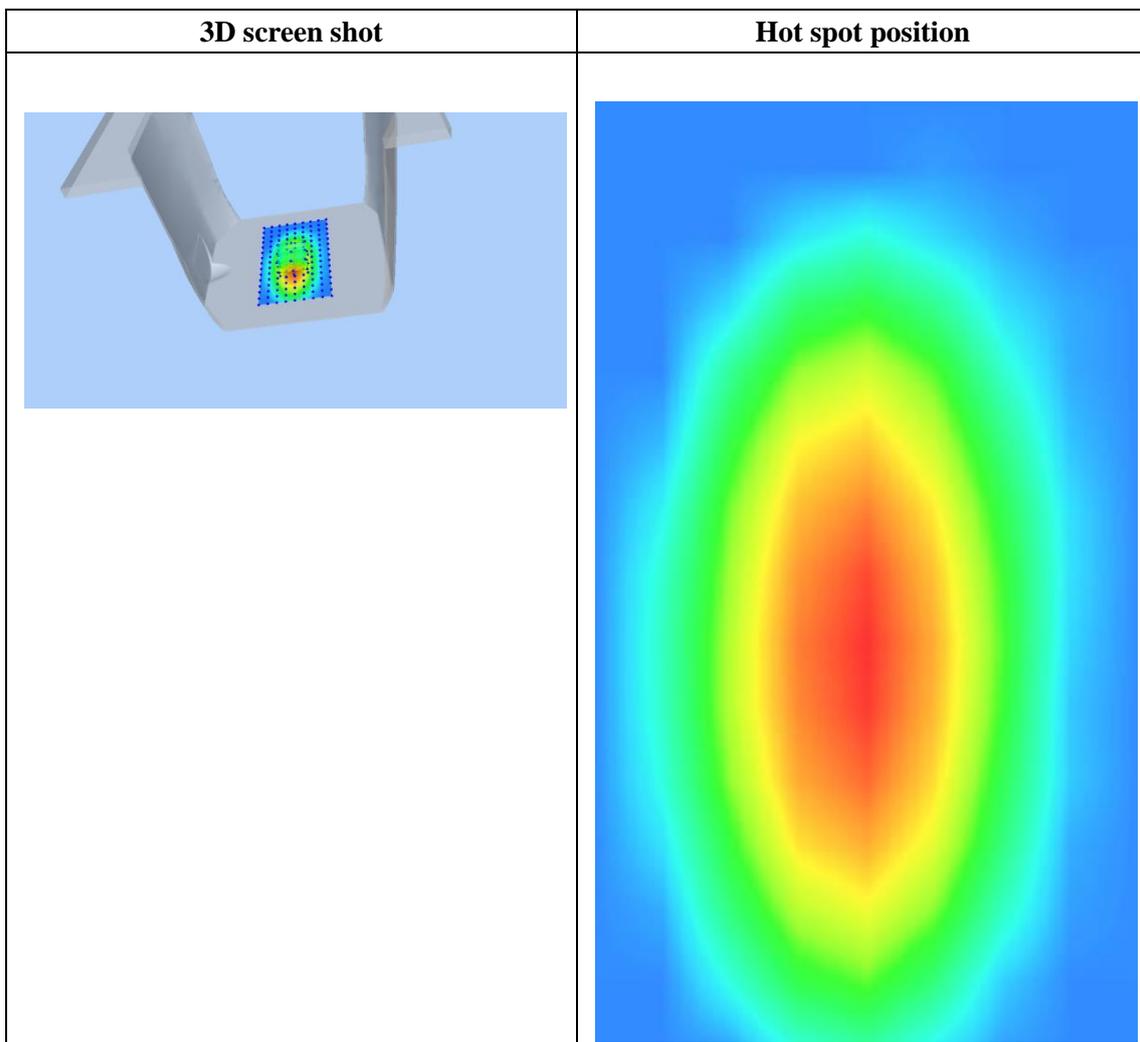
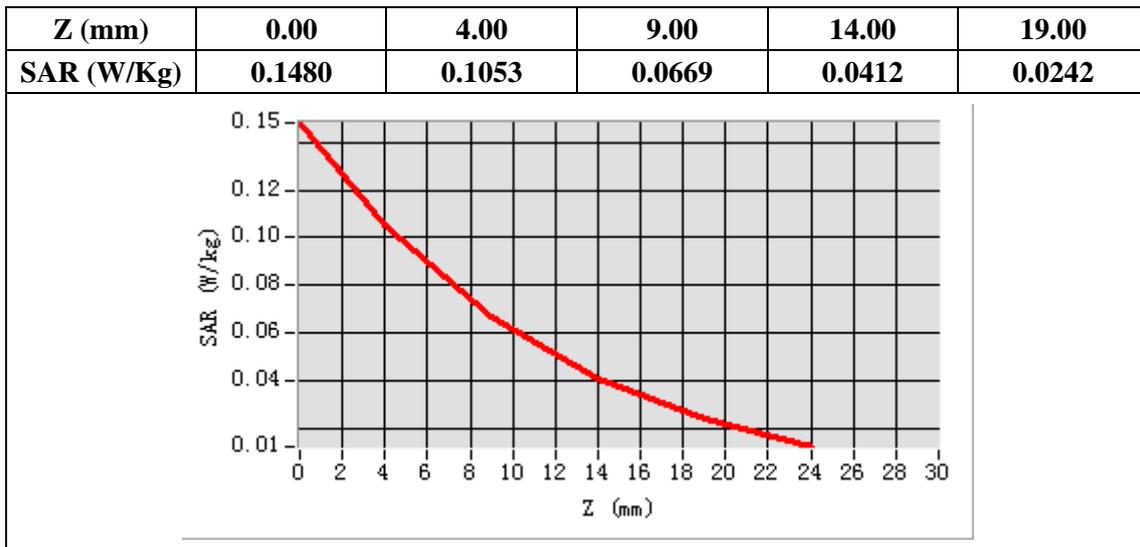
<b>E-Field Probe</b>	SATIMO SN_27/15_EPG0261
<b>Frequency (MHz)</b>	835
<b>Relative permittivity (real part)</b>	41.58
<b>Relative permittivity</b>	20.05
<b>Conductivity (S/m)</b>	0.93
<b>Power drift (%)</b>	-2.33
<b>Ambient Temperature:</b>	22.2°C
<b>Liquid Temperature:</b>	22.6°C
<b>ConvF:</b>	1.92
<b>Crest factor:</b>	1:1



**Maximum location: X=-1.00, Y=-13.00**

**SAR Peak: 0.15 W/kg**

<b>SAR 10g (W/Kg)</b>	0.058461
<b>SAR 1g (W/Kg)</b>	0.098813



## 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: 12/16/2019

Measurement duration: 22 minutes 03 seconds

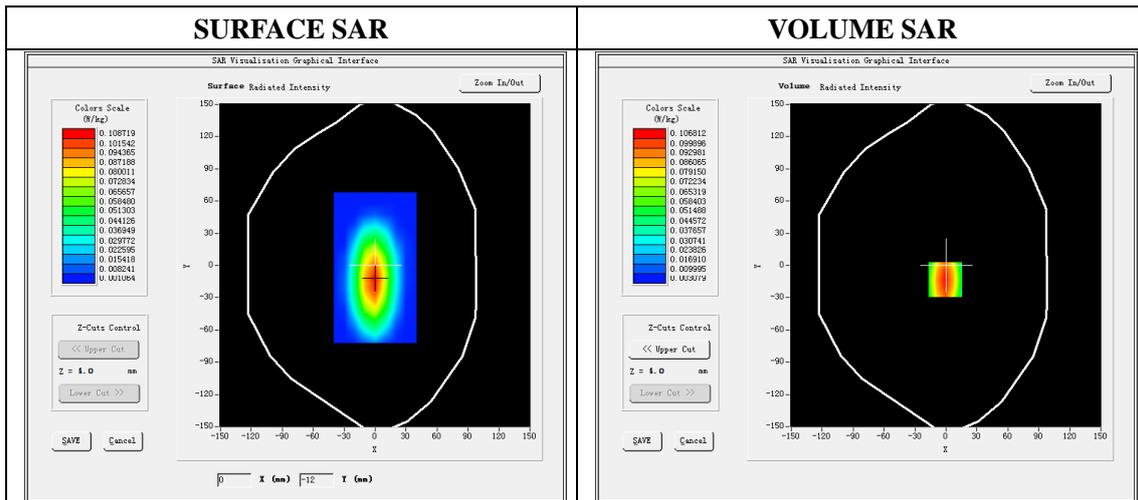
### A. Experimental conditions.

<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

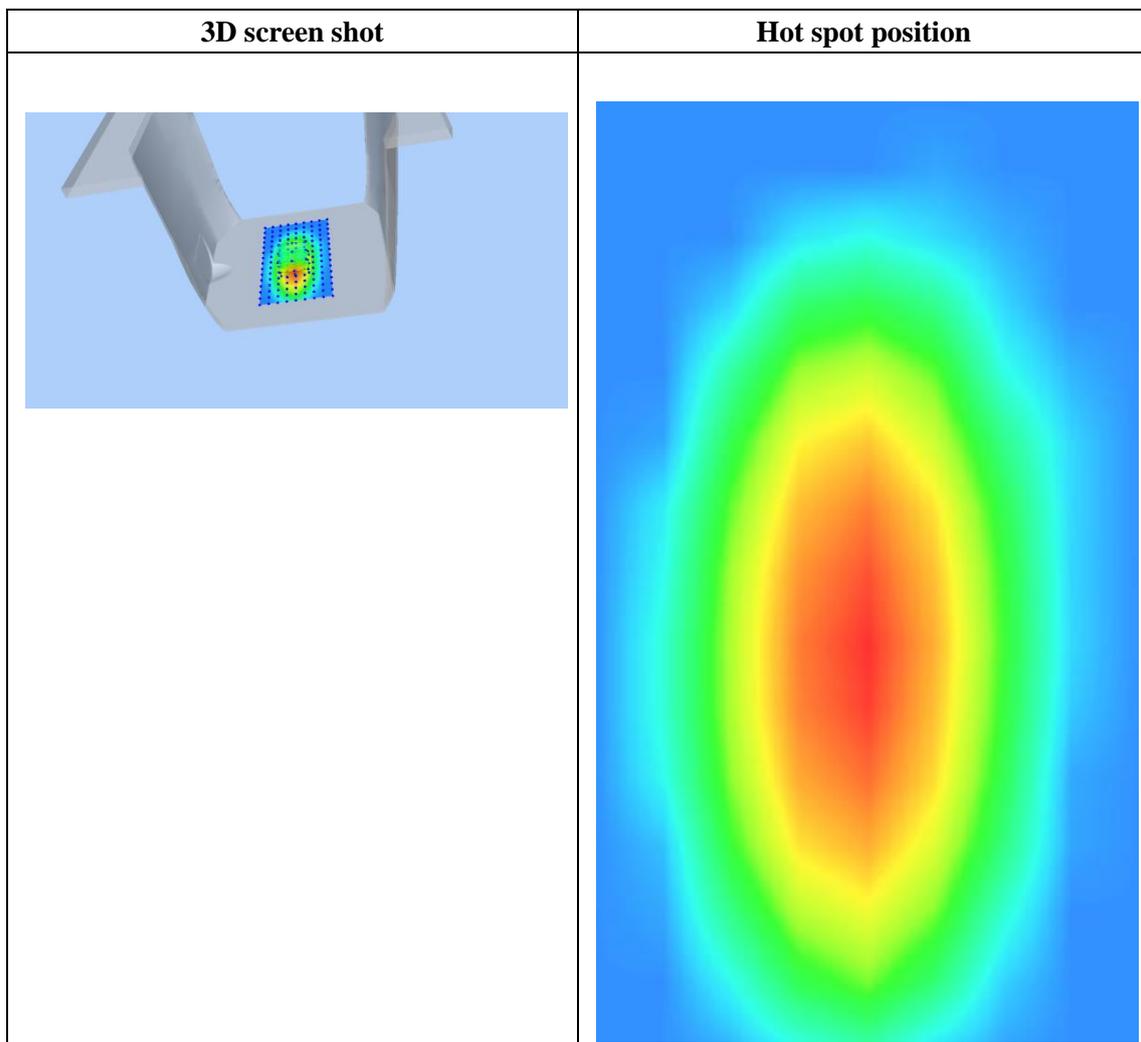
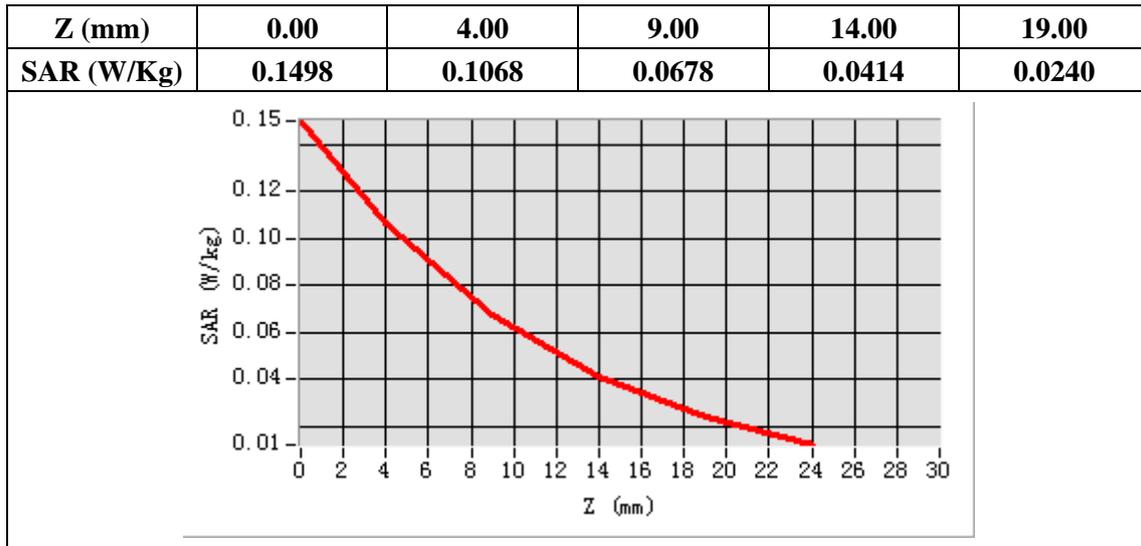
<b>E-Field Probe</b>	SATIMO SN_27/15_EPG0261
<b>Frequency (MHz)</b>	835
<b>Relative permittivity (real part)</b>	55.28
<b>Relative permittivity</b>	21.34
<b>Conductivity (S/m)</b>	0.99
<b>Power drift (%)</b>	-2.16
<b>Ambient Temperature:</b>	22.2°C
<b>Liquid Temperature:</b>	22.6°C
<b>ConvF:</b>	1.99
<b>Crest factor:</b>	1:1



**Maximum location: X=-1.00, Y=-13.00**

**SAR Peak: 0.15 W/kg**

<b>SAR 10g (W/Kg)</b>	0.059511
<b>SAR 1g (W/Kg)</b>	0.101892



## 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: 12/17/2019

Measurement duration: 22 minutes 08 seconds

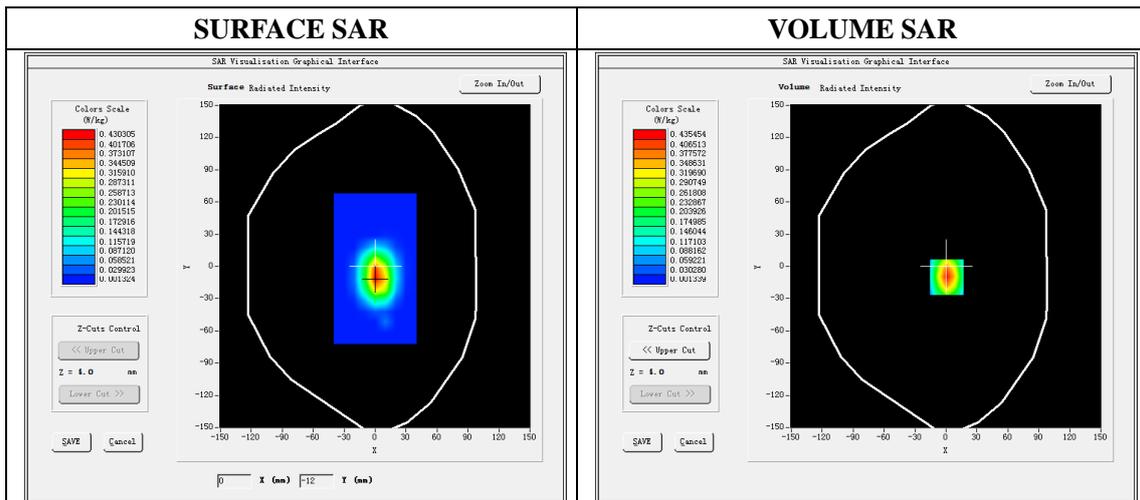
### A. Experimental conditions.

<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_27/15_EPG0261
<b>Frequency (MHz)</b>	1800
<b>Relative permittivity (real part)</b>	40.46
<b>Relative permittivity</b>	14.20
<b>Conductivity (S/m)</b>	1.42
<b>Power Drift (%)</b>	-2.50
<b>Ambient Temperature:</b>	22.1 °C
<b>Liquid Temperature:</b>	22.6 °C
<b>ConvF:</b>	2.14
<b>Duty factor:</b>	1:1

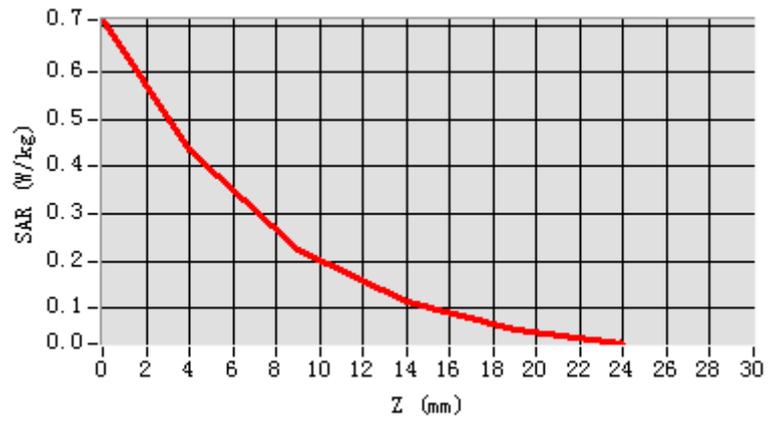


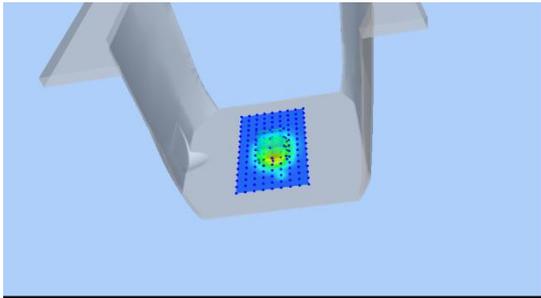
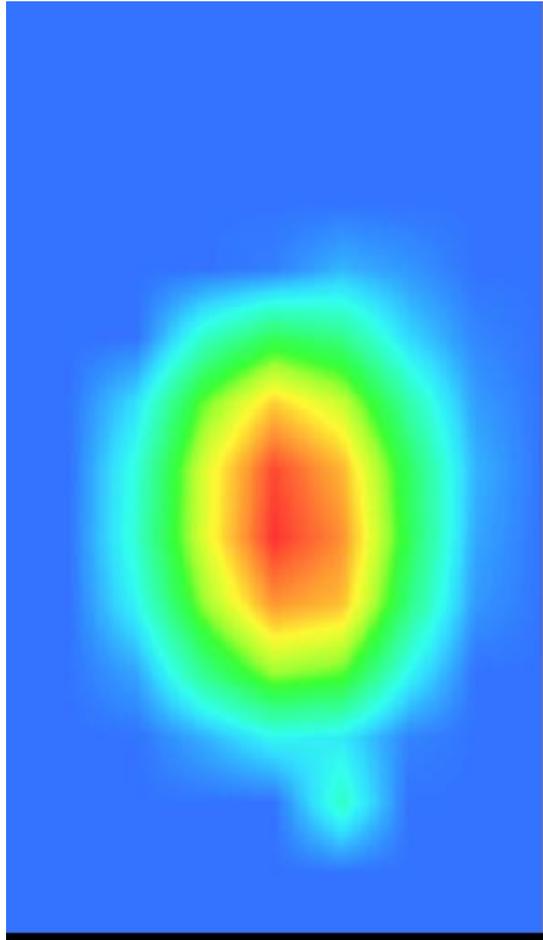
**Maximum location: X=1.00, Y=-10.00**

**SAR Peak: 0.71 W/kg**

<b>SAR 10g (W/Kg)</b>	0.196797
<b>SAR 1g (W/Kg)</b>	0.405952

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.7106	0.4355	0.2250	0.1129	0.0567



3D screen shot	Hot spot position
	

## 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: 12/17/2019

Measurement duration: 22 minutes 06 seconds

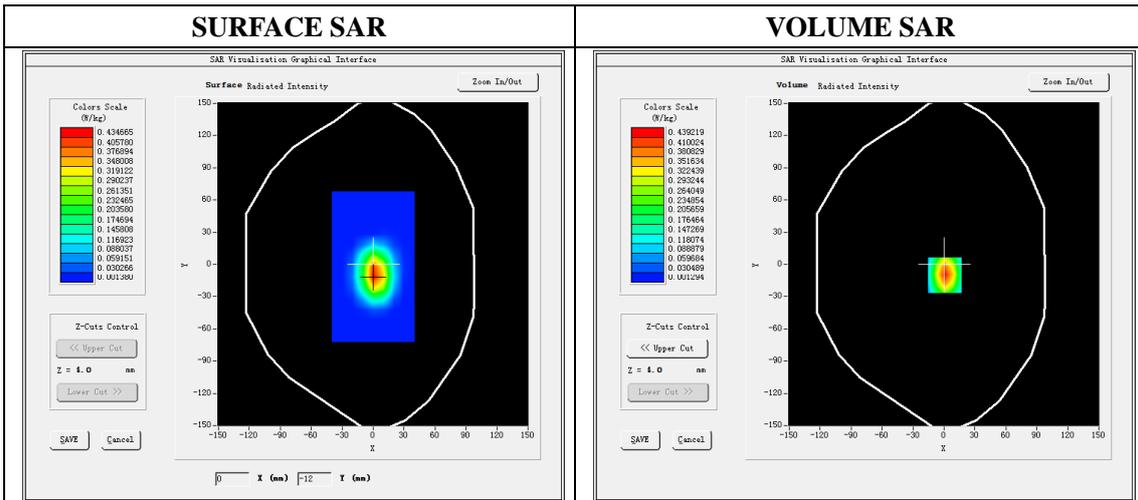
### A. Experimental conditions.

<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

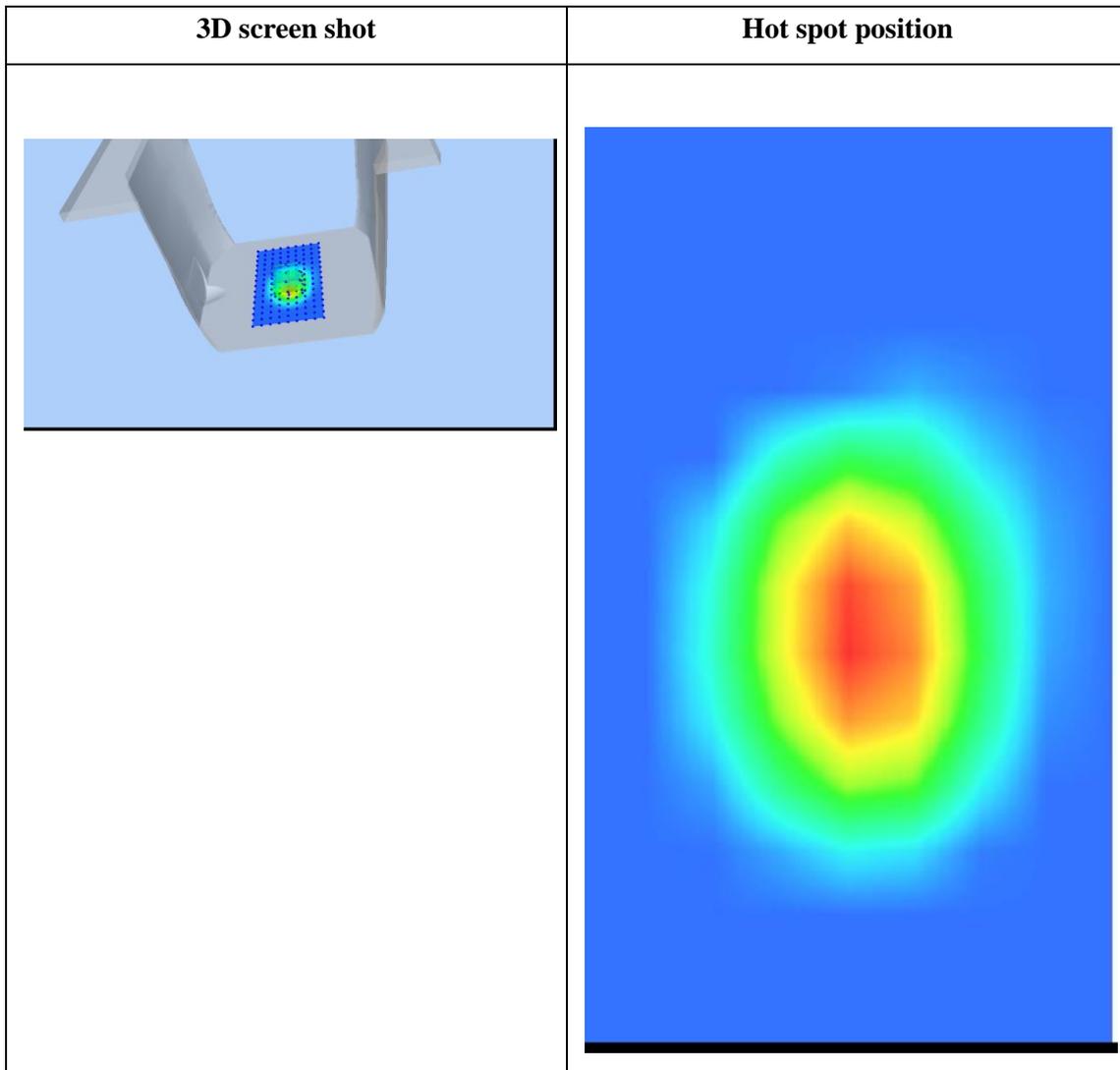
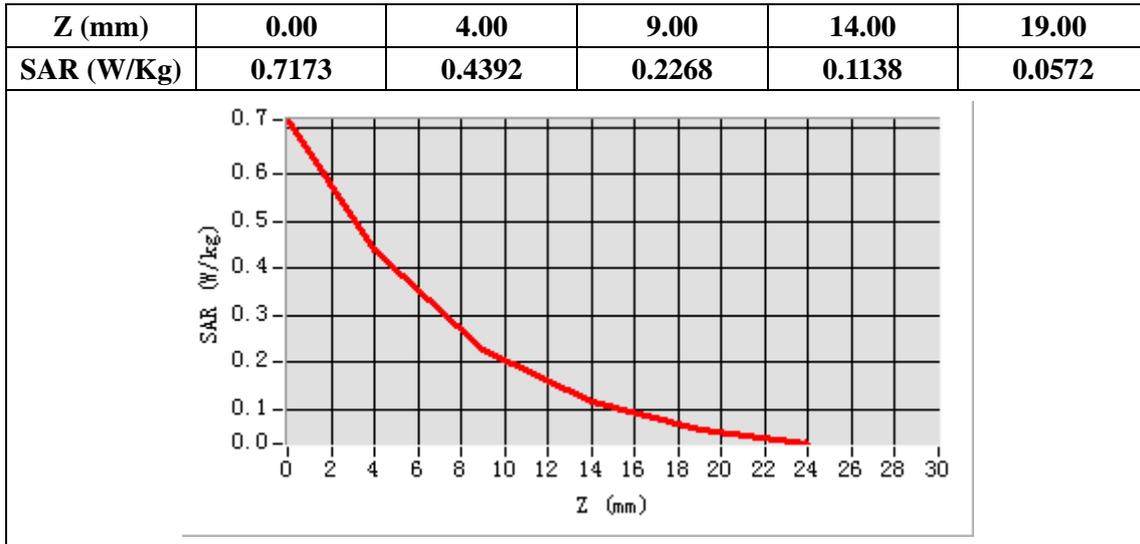
<b>E-Field Probe</b>	SATIMO SN_27/15_EPG0261
<b>Frequency (MHz)</b>	1800
<b>Relative permittivity (real part)</b>	53.47
<b>Relative permittivity</b>	15.30
<b>Conductivity (S/m)</b>	1.53
<b>Power Drift (%)</b>	-2.95
<b>Ambient Temperature:</b>	22.1 °C
<b>Liquid Temperature:</b>	22.6 °C
<b>ConvF:</b>	2.22
<b>Duty factor:</b>	1:1



**Maximum location: X=1.00, Y=-10.00**

**SAR Peak: 0.72 W/kg**

<b>SAR 10g (W/Kg)</b>	0.195907
<b>SAR 1g (W/Kg)</b>	0.403010



## 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: 12/18/2019

Measurement duration: 22 minutes 02 seconds

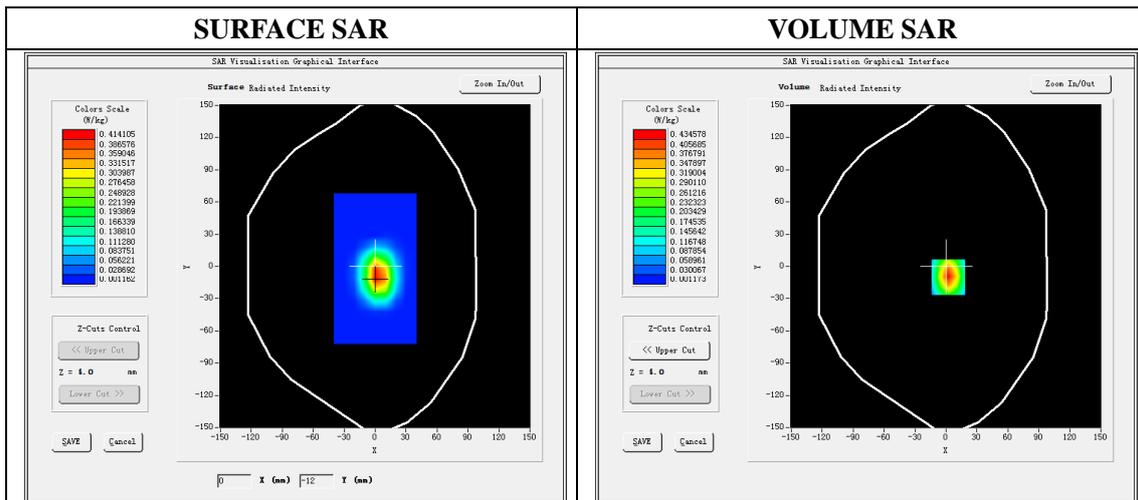
### A. Experimental conditions.

<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>	1900MHz
<b>Channels</b>	
<b>Signal</b>	CW

### B. SAR Measurement Results

#### Band SAR

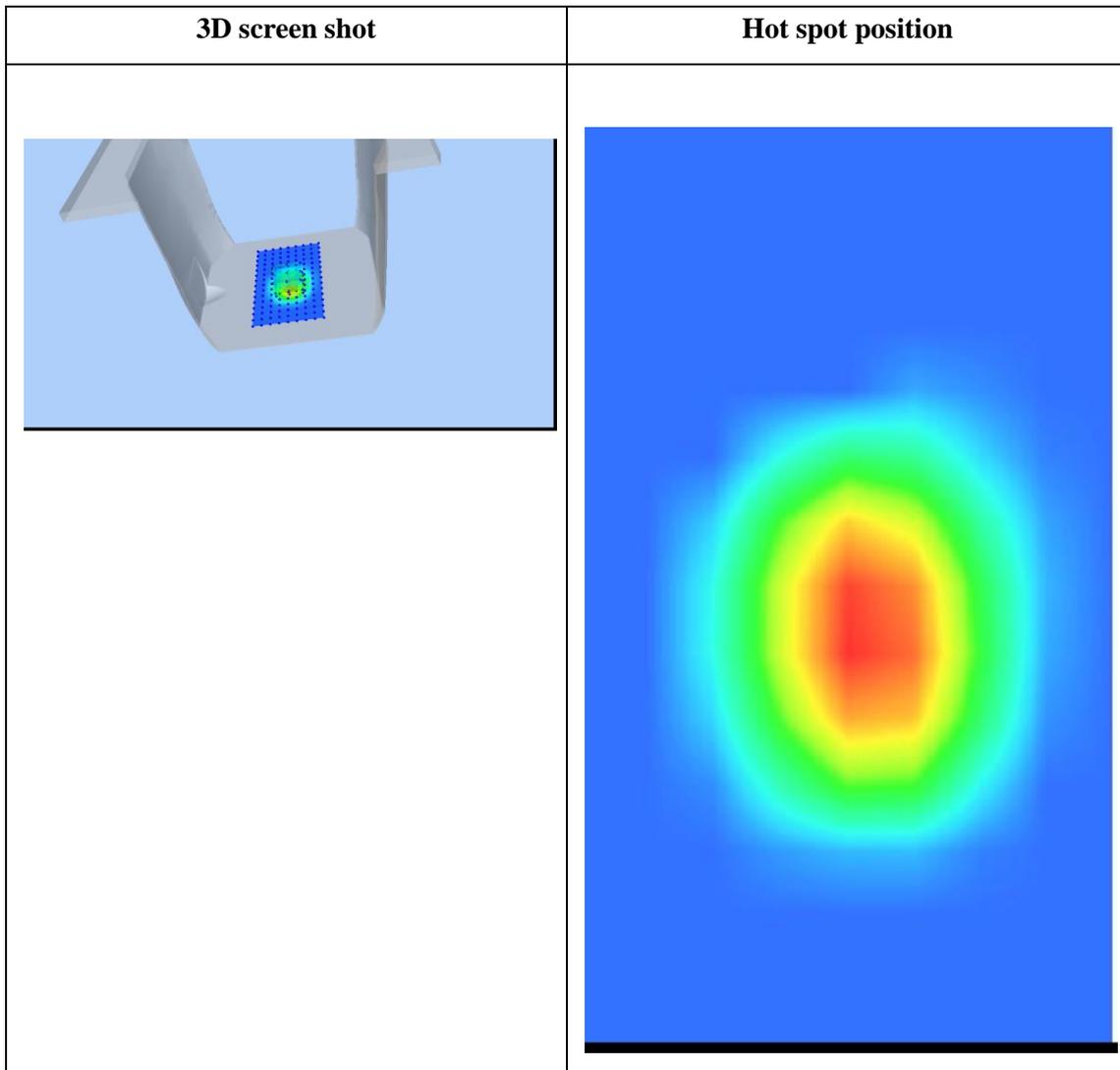
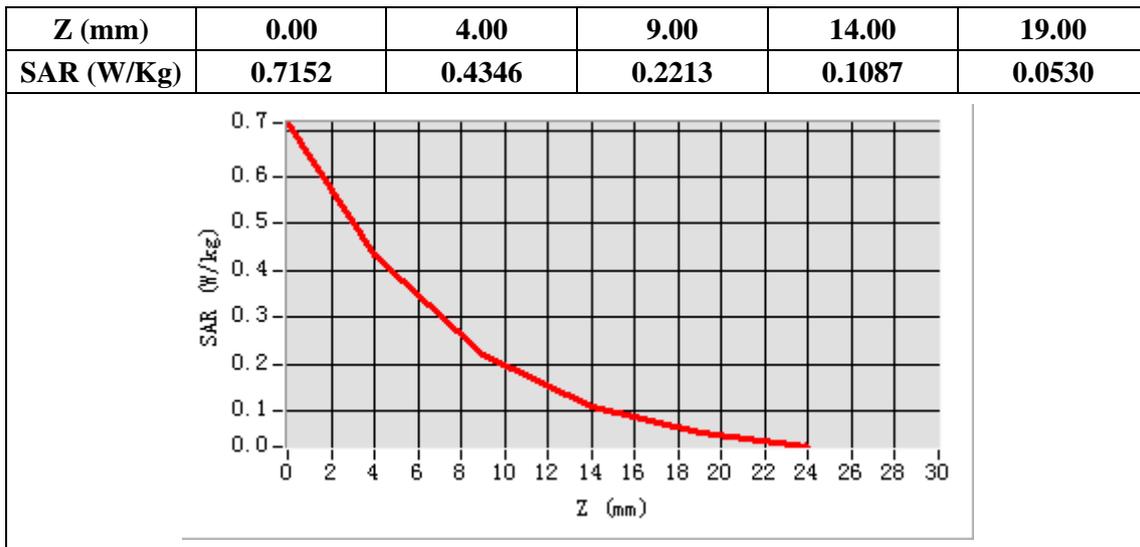
<b>E-Field Probe</b>	SATIMO SN_27/15_EPG0261
<b>Frequency (MHz)</b>	1900
<b>Relative permittivity (real part)</b>	40.39
<b>Relative permittivity</b>	13.36
<b>Conductivity (S/m)</b>	1.41
<b>Power Drift (%)</b>	-2.67
<b>Ambient Temperature:</b>	22.1 °C
<b>Liquid Temperature:</b>	22.6 °C
<b>ConvF:</b>	2.34
<b>Duty factor:</b>	1:1



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

**SAR Peak: 0.72 W/kg**

<b>SAR 10g (W/Kg)</b>	0.190294
<b>SAR 1g (W/Kg)</b>	0.398384



## 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: 12/18/2019

Measurement duration: 22 minutes 09 seconds

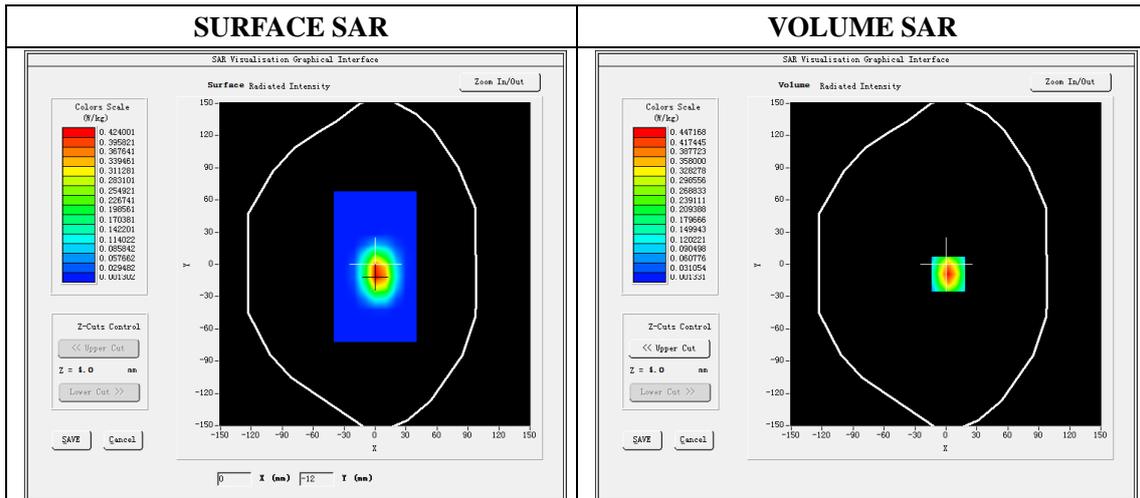
### A. Experimental conditions.

<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

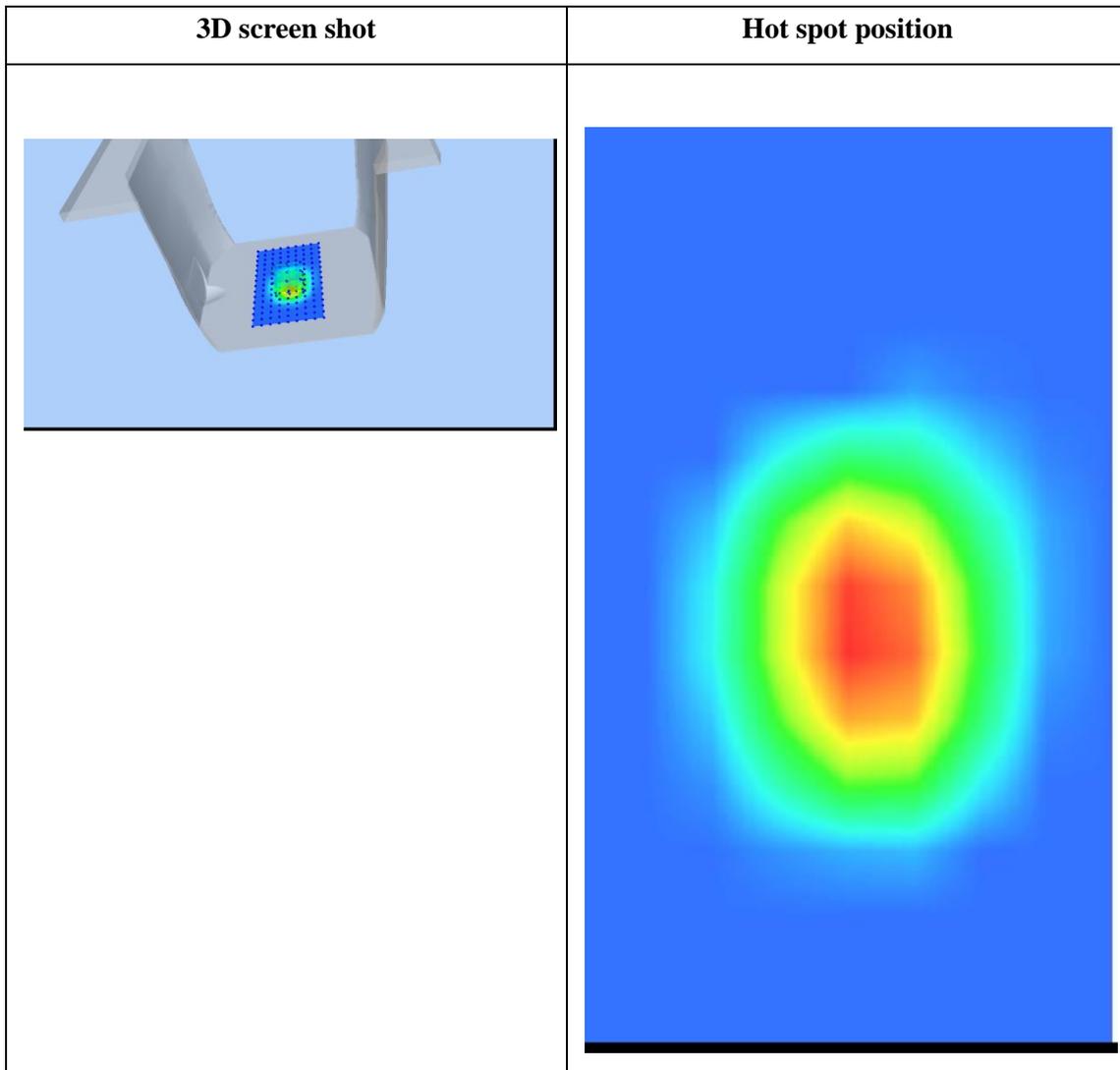
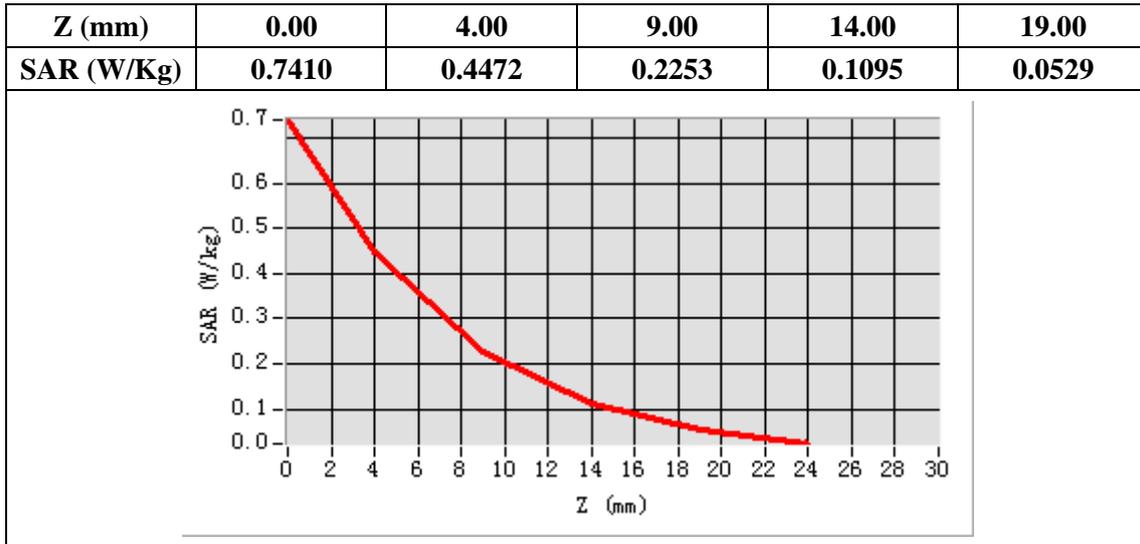
<b>E-Field Probe</b>	SATIMO SN_27/15_EPG0261
<b>Frequency (MHz)</b>	1900
<b>Relative permittivity (real part)</b>	53.40
<b>Relative permittivity</b>	14.40
<b>Conductivity (S/m)</b>	1.52
<b>Power Drift (%)</b>	-1.89
<b>Ambient Temperature:</b>	22.1 °C
<b>Liquid Temperature:</b>	22.6 °C
<b>ConvF:</b>	2.39
<b>Duty factor:</b>	1:1



**Maximum location: X=2.00, Y=-9.00**

**SAR Peak: 0.74 W/kg**

<b>SAR 10g (W/Kg)</b>	0.194266
<b>SAR 1g (W/Kg)</b>	0.408734



## 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: 12/19/2019

Measurement duration: 22 minutes 11 seconds

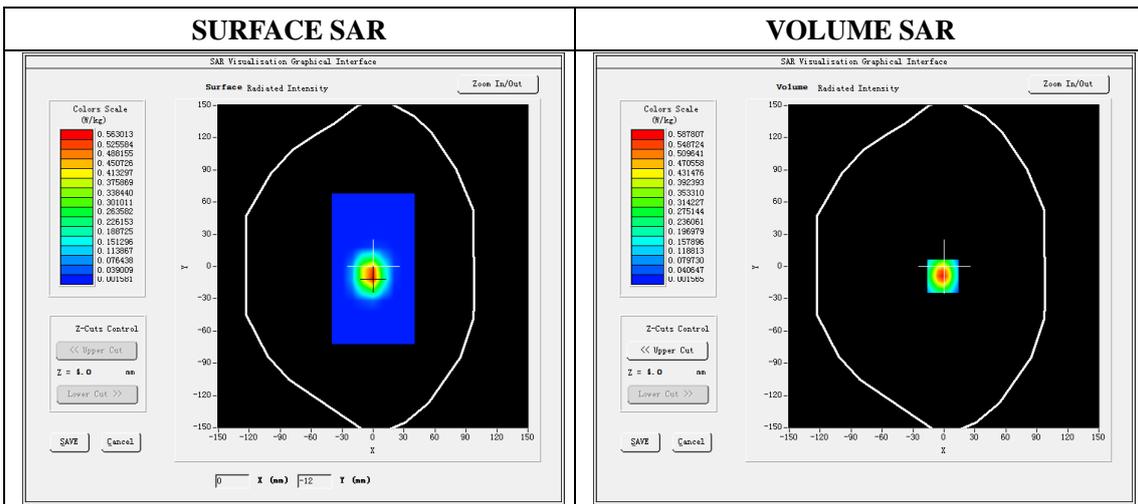
### A. Experimental conditions.

<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

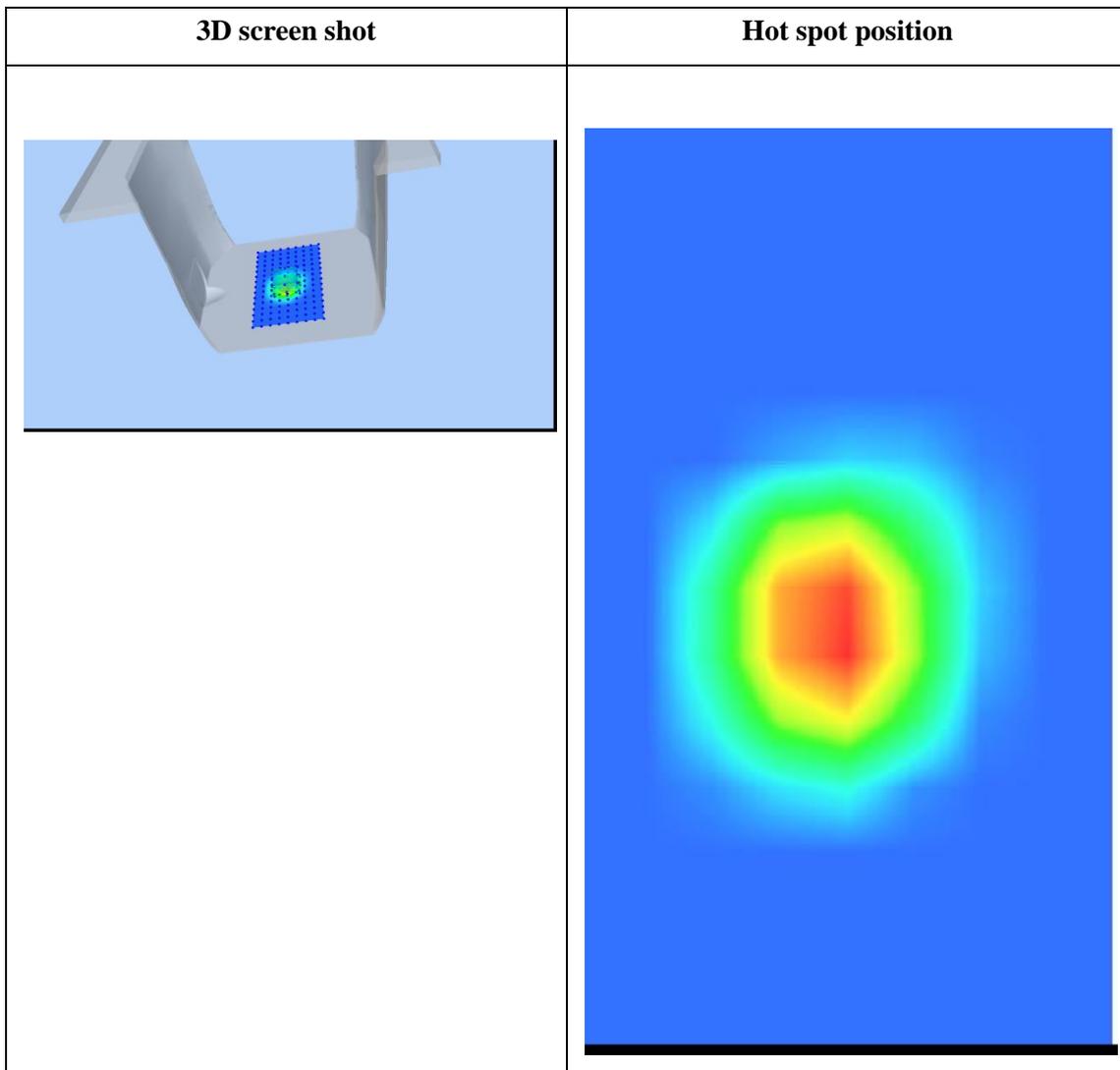
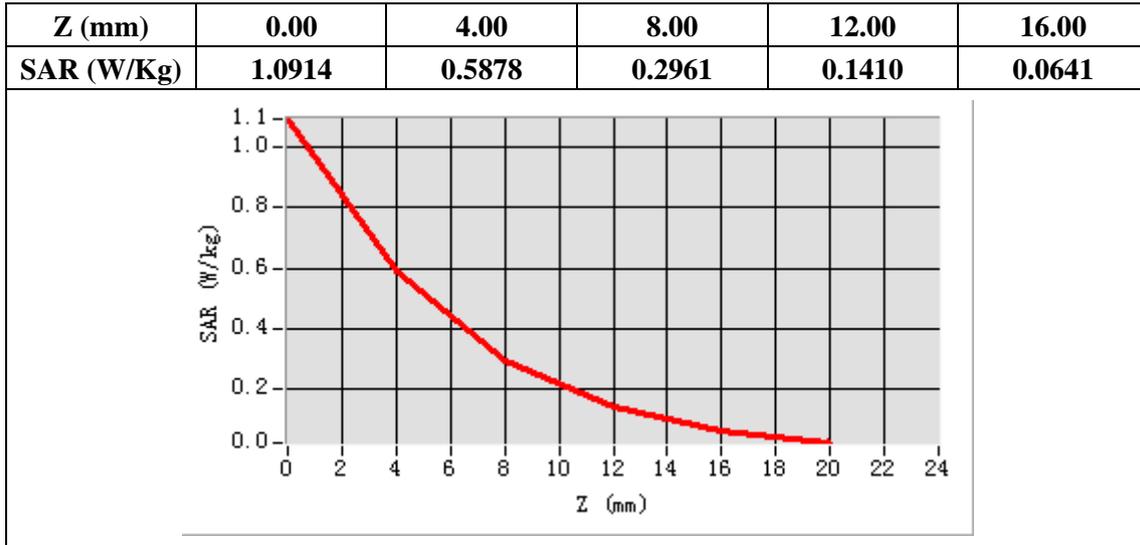
<b>E-Field Probe</b>	SATIMO SN_27/15_EPG0261
<b>Frequency (MHz)</b>	2450
<b>Relative permittivity (real part)</b>	39.31
<b>Relative permittivity</b>	13.37
<b>Conductivity (S/m)</b>	1.82
<b>Power Drift (%)</b>	-2.87
<b>Ambient Temperature:</b>	22.1°C
<b>Liquid Temperature:</b>	22.6°C
<b>ConvF:</b>	2.37
<b>Duty factor:</b>	1:1



Maximum location: X=-1.00, Y=-9.00

SAR Peak: 1.09 W/kg

<b>SAR 10g (W/Kg)</b>	0.219097
<b>SAR 1g (W/Kg)</b>	0.528326



## 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: 12/19/2019

Measurement duration: 22 minutes 13 seconds

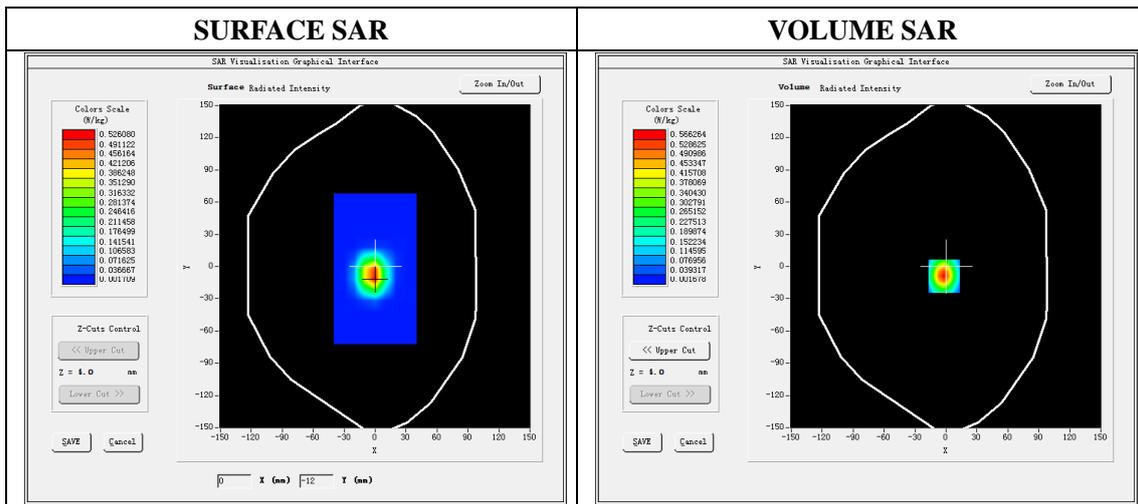
### A. Experimental conditions.

<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_27/15_EPG0261
<b>Frequency (MHz)</b>	2450
<b>Relative permittivity (real part)</b>	52.82
<b>Relative permittivity</b>	14.55
<b>Conductivity (S/m)</b>	1.98
<b>Power Drift (%)</b>	-2.97
<b>Ambient Temperature:</b>	22.1°C
<b>Liquid Temperature:</b>	22.6°C
<b>ConvF:</b>	2.46
<b>Duty factor:</b>	1:1

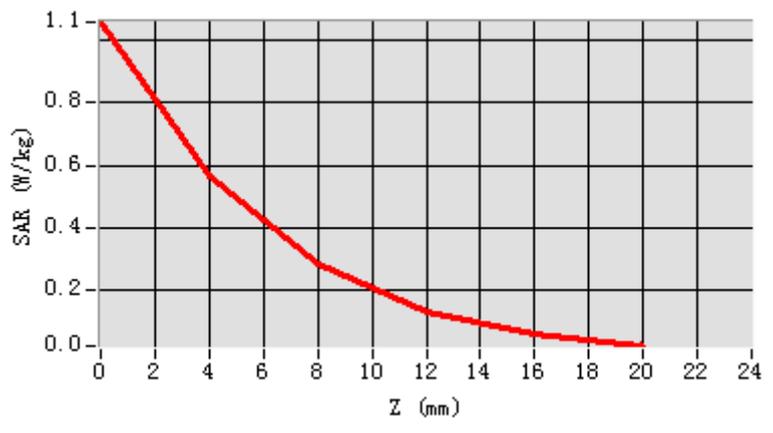


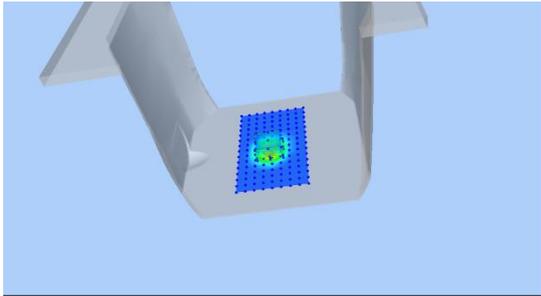
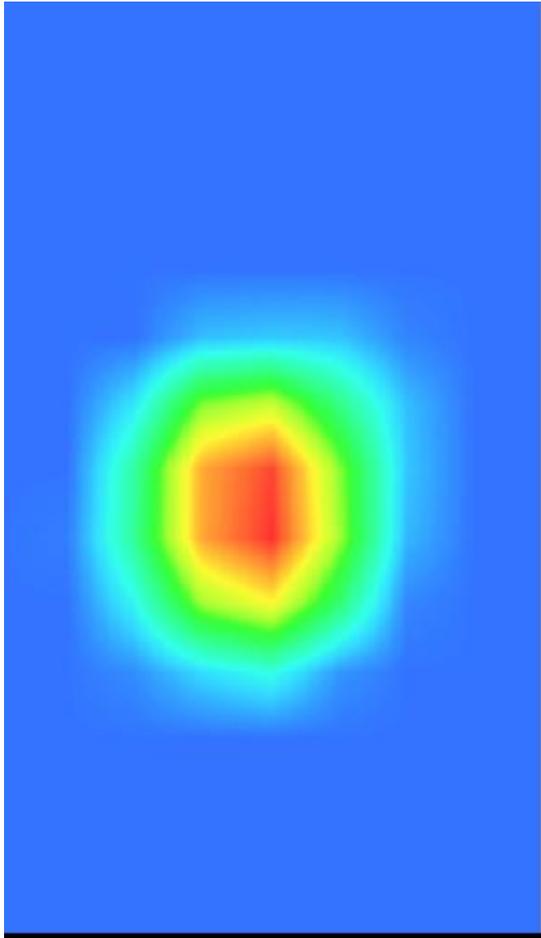
**Maximum location: X=-2.00, Y=-9.00**

**SAR Peak: 1.06 W/kg**

<b>SAR 10g (W/Kg)</b>	0.208463
<b>SAR 1g (W/Kg)</b>	0.508058

Z (mm)	0.00	4.00	8.00	12.00	16.00
SAR (W/Kg)	1.0596	0.5663	0.2820	0.1320	0.0584



3D screen shot	Hot spot position
	

## 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: 12/20/2019

Measurement duration: 22 minutes15 seconds

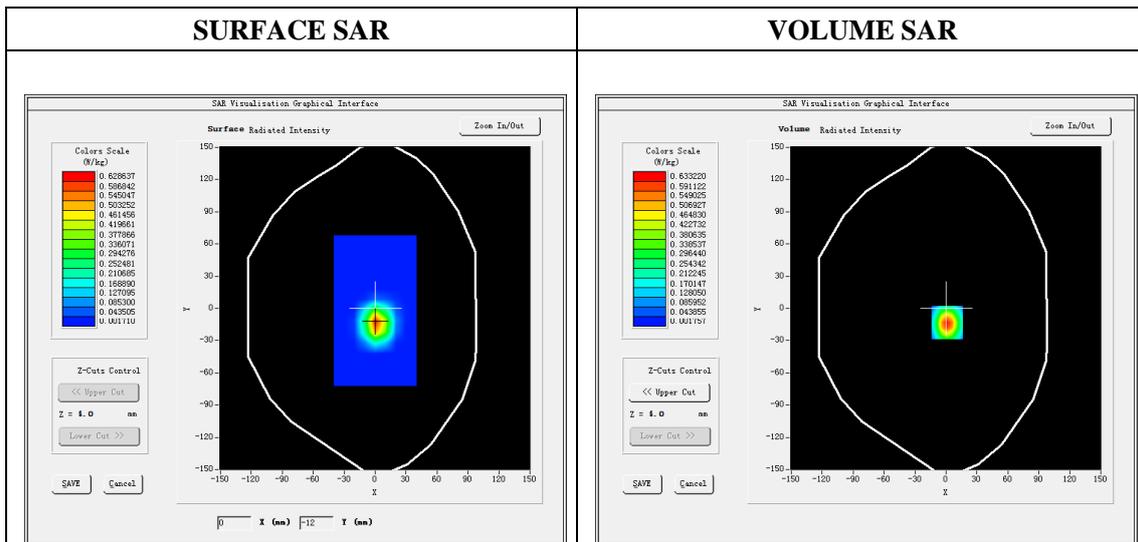
### A. Experimental conditions.

<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

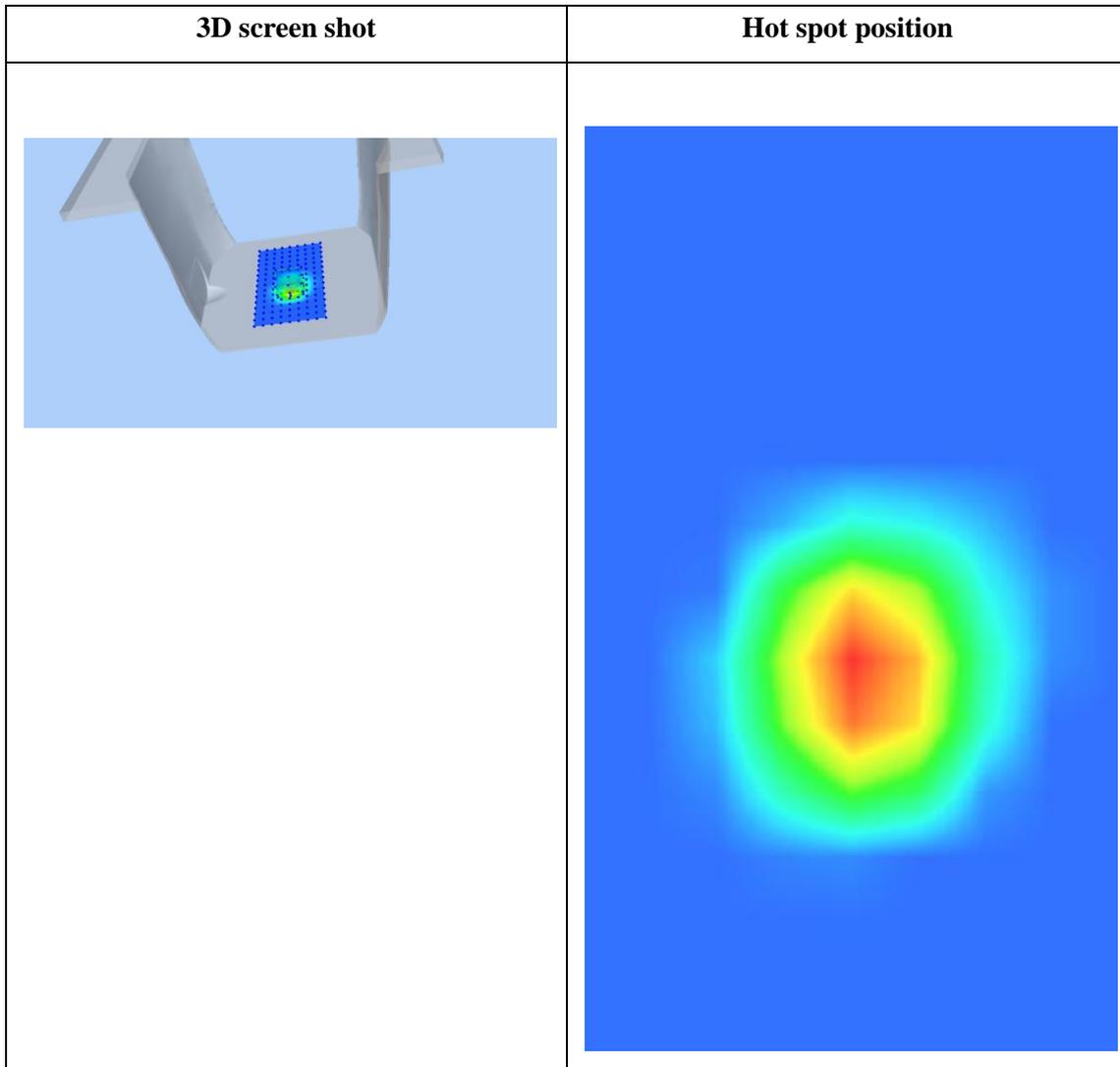
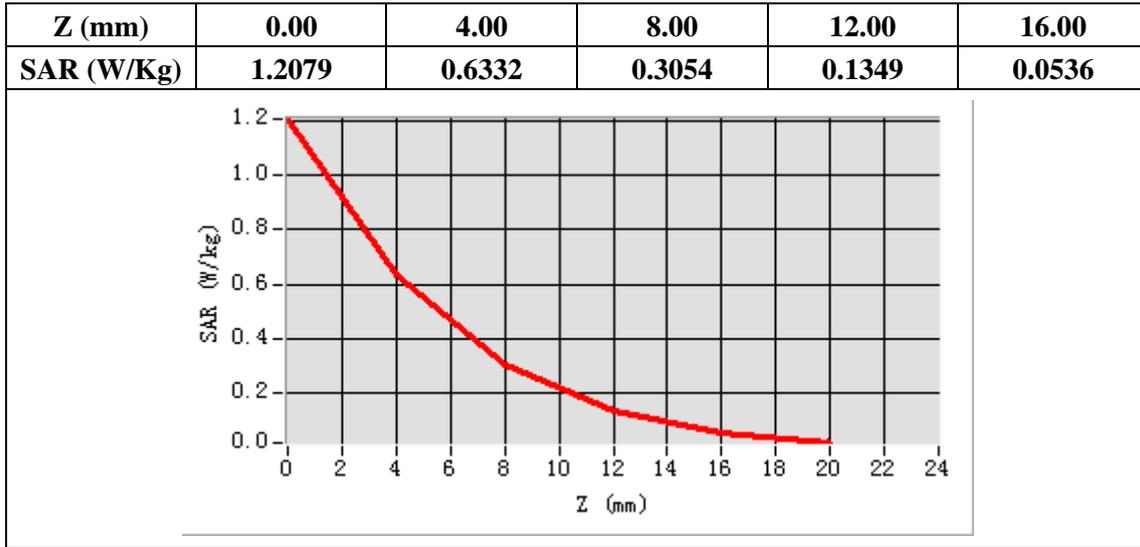
<b>E-Field Probe</b>	SATIMO SN_27/15_EPG0261
<b>Frequency (MHz)</b>	2600
<b>Relative permittivity (real part)</b>	39.14
<b>Relative permittivity</b>	13.71
<b>Conductivity (S/m)</b>	1.98
<b>Power drift (%)</b>	-2.45
<b>Ambient Temperature:</b>	22.2°C
<b>Liquid Temperature:</b>	22.5°C
<b>Crest factor:</b>	1:1
<b>ConvF:</b>	2.35



**Maximum location: X=1.00, Y=-13.00**

**SAR Peak: 1.21 W/kg**

<b>SAR 10g (W/Kg)</b>	0.229208
<b>SAR 1g (W/Kg)</b>	0.573003



## 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: 12/20/2019

Measurement duration: 22 minutes 18 seconds

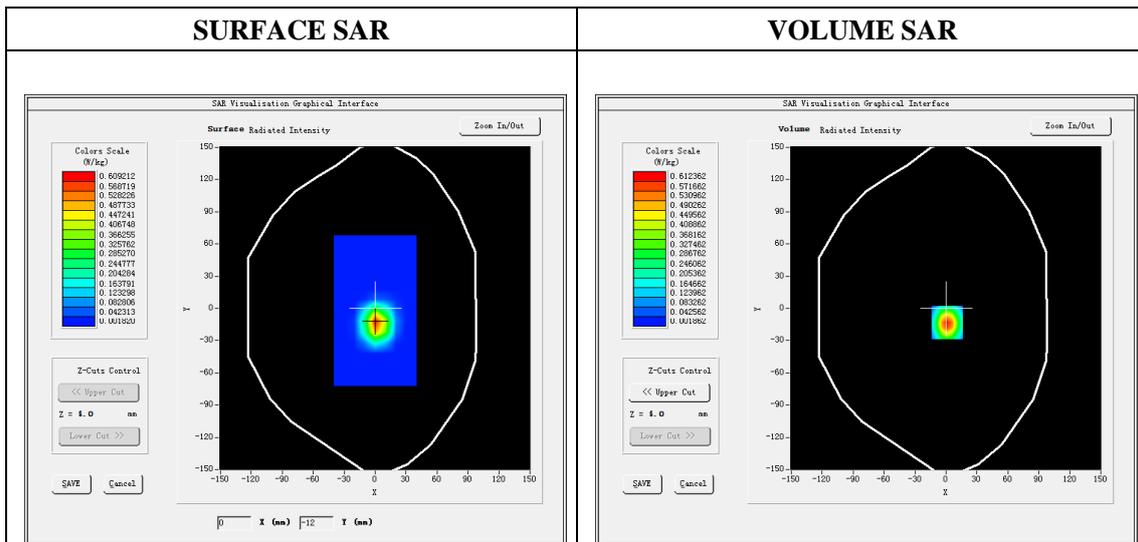
### A. Experimental conditions.

<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

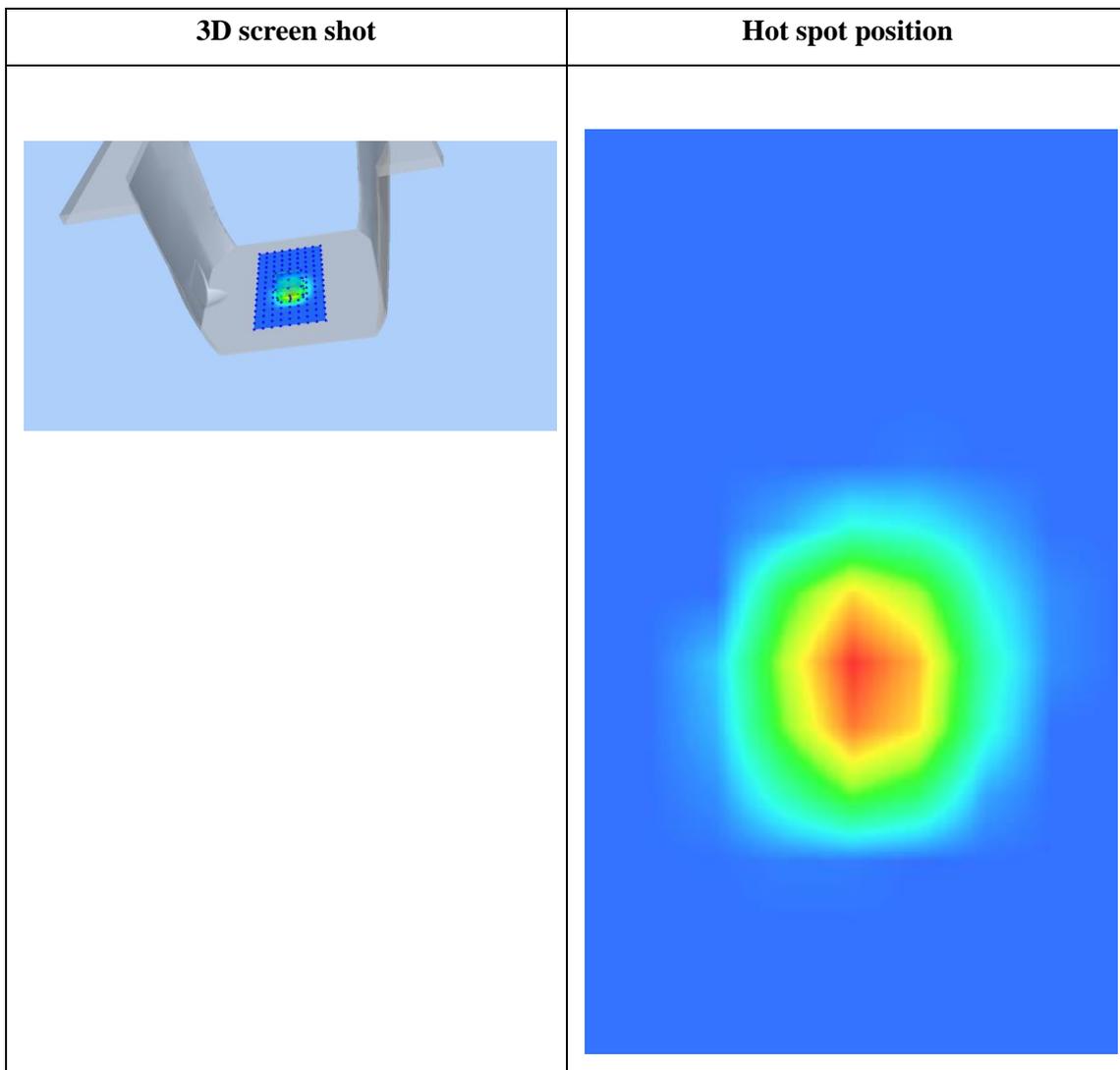
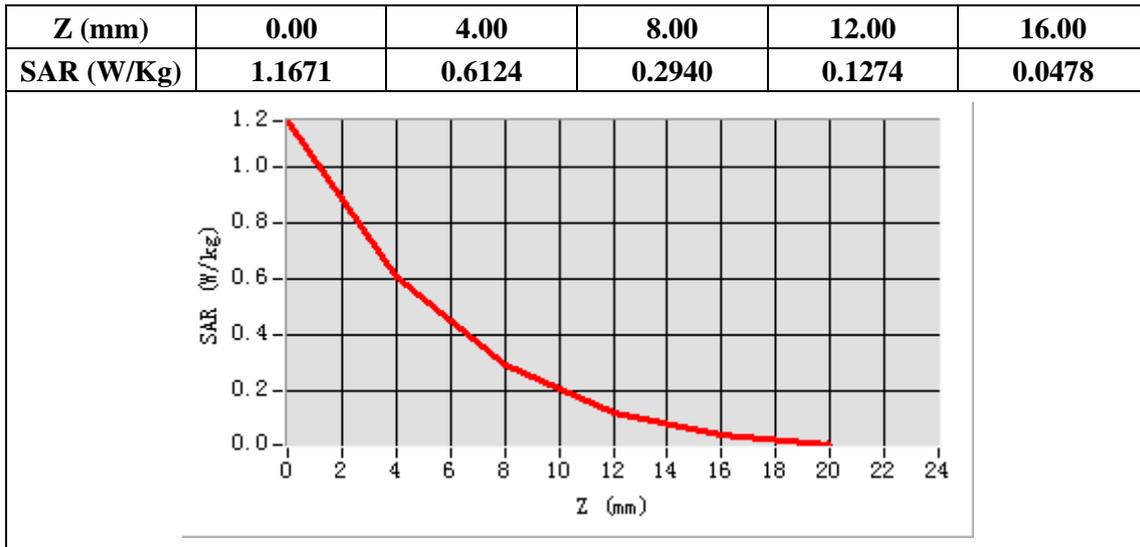
<b>E-Field Probe</b>	SATIMO SN_27/15_EPG0261
<b>Frequency (MHz)</b>	2600
<b>Relative permittivity (real part)</b>	52.60
<b>Relative permittivity</b>	15.16
<b>Conductivity (S/m)</b>	2.19
<b>Power drift (%)</b>	-2.92
<b>Ambient Temperature:</b>	22.2°C
<b>Liquid Temperature:</b>	22.5°C
<b>Crest factor:</b>	1:1
<b>ConvF:</b>	2.43



**Maximum location: X=1.00, Y=-13.00**

**SAR Peak: 1.17 W/kg**

<b>SAR 10g (W/Kg)</b>	0.218561
<b>SAR 1g (W/Kg)</b>	0.548354



### System Performance Check (Head, 5200MHz)

Type: Phone measurement

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

Zoom scan resolution: dx=4mm, dy=4mm, dz=2mm

Date of measurement: 12/21/2019

Measurement duration: 22 minutes 14 seconds

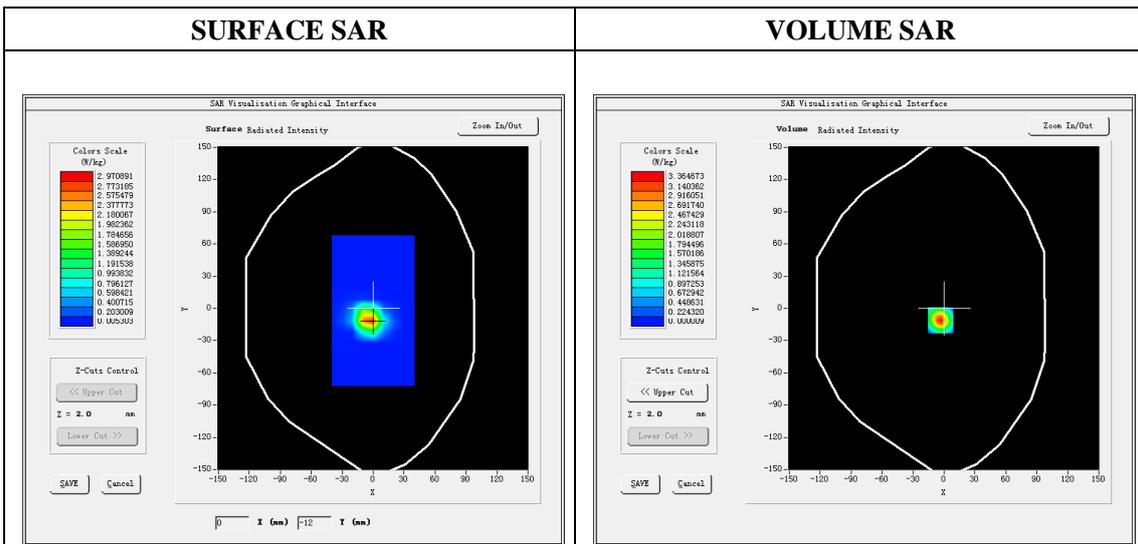
**A. Experimental conditions.**

<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>	5200MHz
<b>Channels</b>	
<b>Signal</b>	CW

**B. SAR Measurement Results**

Band SAR

<b>E-Field Probe</b>	SATIMO SN_27/15_EPG0261
<b>Frequency (MHz)</b>	5200
<b>Relative permittivity (real part)</b>	36.31
<b>Relative permittivity</b>	16.13
<b>Conductivity (S/m)</b>	4.66
<b>Power drift (%)</b>	-2.52
<b>Ambient Temperature:</b>	22.2°C
<b>Liquid Temperature:</b>	22.5°C
<b>Crest factor:</b>	1:1
<b>ConvF:</b>	2.15

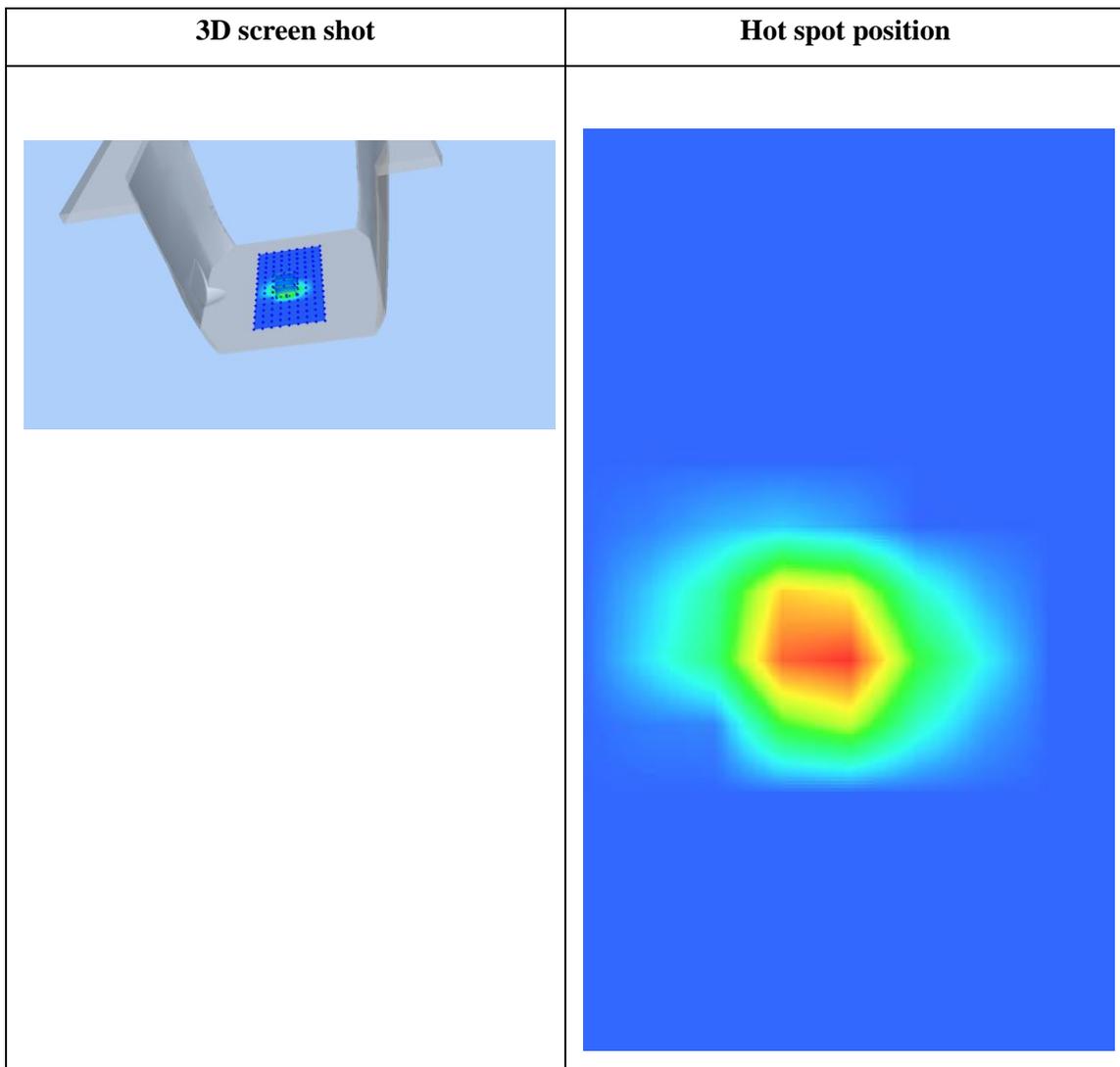
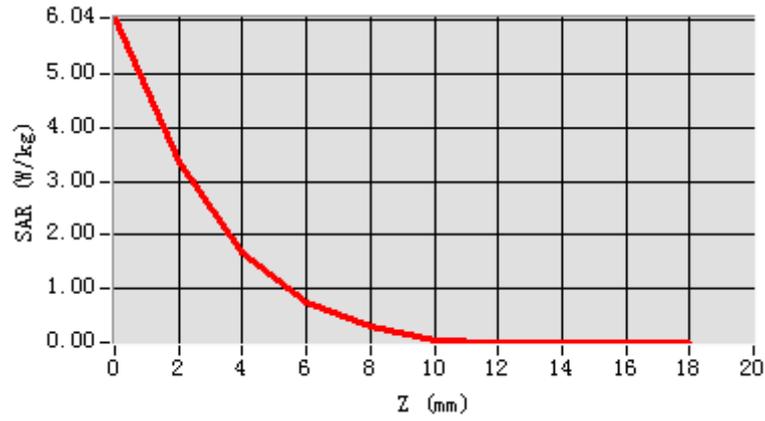


**Maximum location: X=-3.00, Y=-11.00**

**SAR Peak: 6.40W/kg**

<b>SAR 10g (W/Kg)</b>	0.436363
<b>SAR 1g (W/Kg)</b>	1.732535

Z (mm)	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00
SAR (W/Kg)	6.0402	3.3647	1.6651	0.7375	0.2983	0.0324	0.0006	0.0035	0.0036



## System Performance Check (Body, 5200MHz)

Type: Phone measurement

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

Zoom scan resolution: dx=4mm, dy=4mm, dz=2mm

Date of measurement: 12/21/2019

Measurement duration: 22 minutes 10 seconds

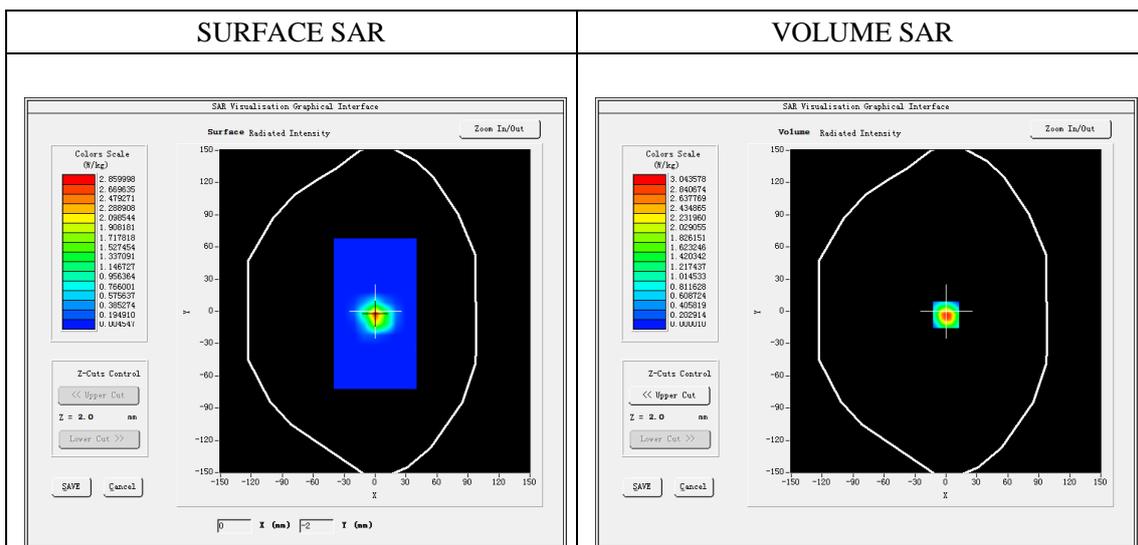
### A. Experimental conditions.

<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_27/15_EPG0261
<b>Frequency (MHz)</b>	5200
<b>Relative permittivity (real part)</b>	49.43
<b>Relative permittivity</b>	18.42
<b>Conductivity (S/m)</b>	5.32
<b>Power drift (%)</b>	-1.85
<b>Ambient Temperature:</b>	22.2°C
<b>Liquid Temperature:</b>	22.5°C
<b>Crest factor:</b>	1:1
<b>ConvF:</b>	2.21

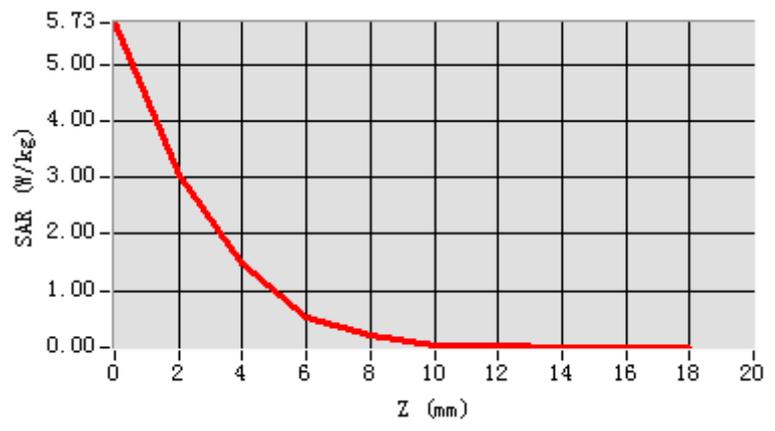


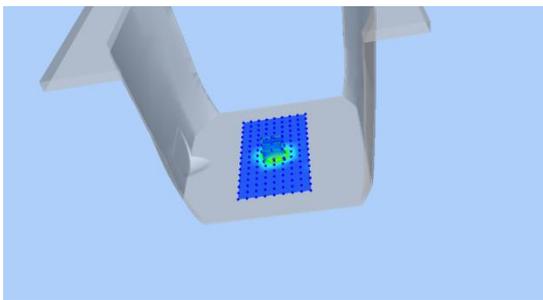
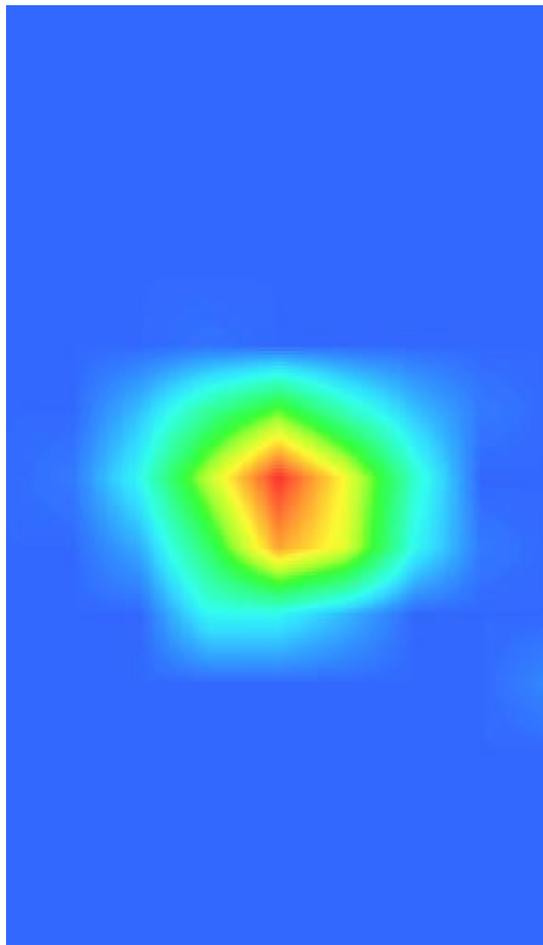
**Maximum location: X=0.00, Y=-3.00**

**SAR Peak: 5.95 W/kg**

<b>SAR 10g (W/Kg)</b>	0.391836
<b>SAR 1g (W/Kg)</b>	1.554786

Z (mm)	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00
SAR (W/Kg)	5.7269	3.0436	1.4694	0.5371	0.2066	0.0419	0.0224	0.0018	0.0033



3D screen shot	Hot spot position
	

## System Performance Check (Head, 5800MHz)

Type: Phone measurement

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

Zoom scan resolution: dx=4mm, dy=4mm, dz=2mm

Date of measurement: 12/24/2019

Measurement duration: 22 minutes 05 seconds

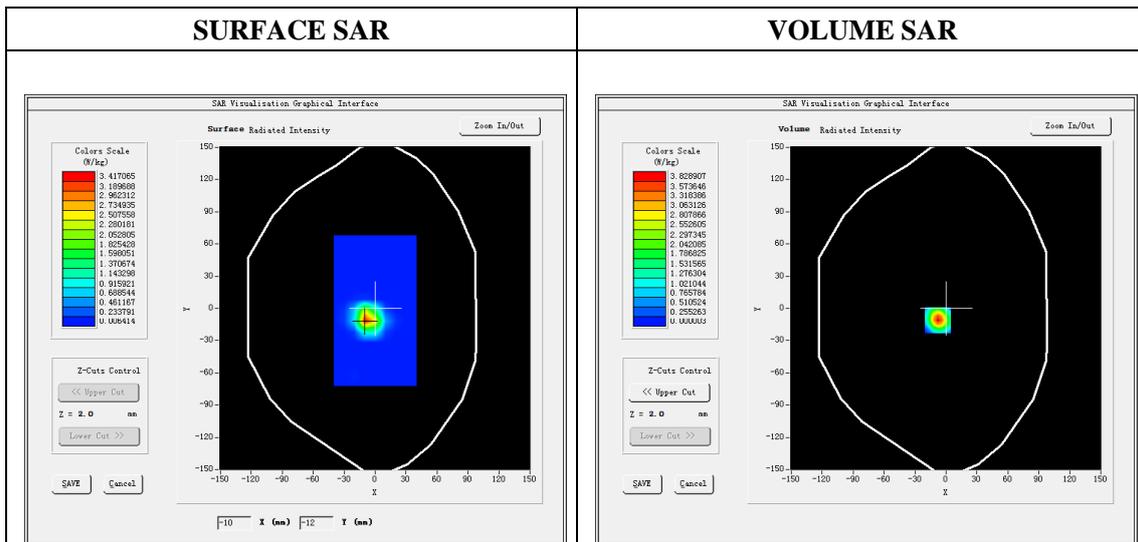
### A. Experimental conditions.

<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_27/15_EPG0261
<b>Frequency (MHz)</b>	5800
<b>Relative permittivity (real part)</b>	35.60
<b>Relative permittivity</b>	16.36
<b>Conductivity (S/m)</b>	5.27
<b>Power drift (%)</b>	-2.87
<b>Ambient Temperature:</b>	22.2°C
<b>Liquid Temperature:</b>	22.5°C
<b>Crest factor:</b>	1:1
<b>ConvF:</b>	2.19

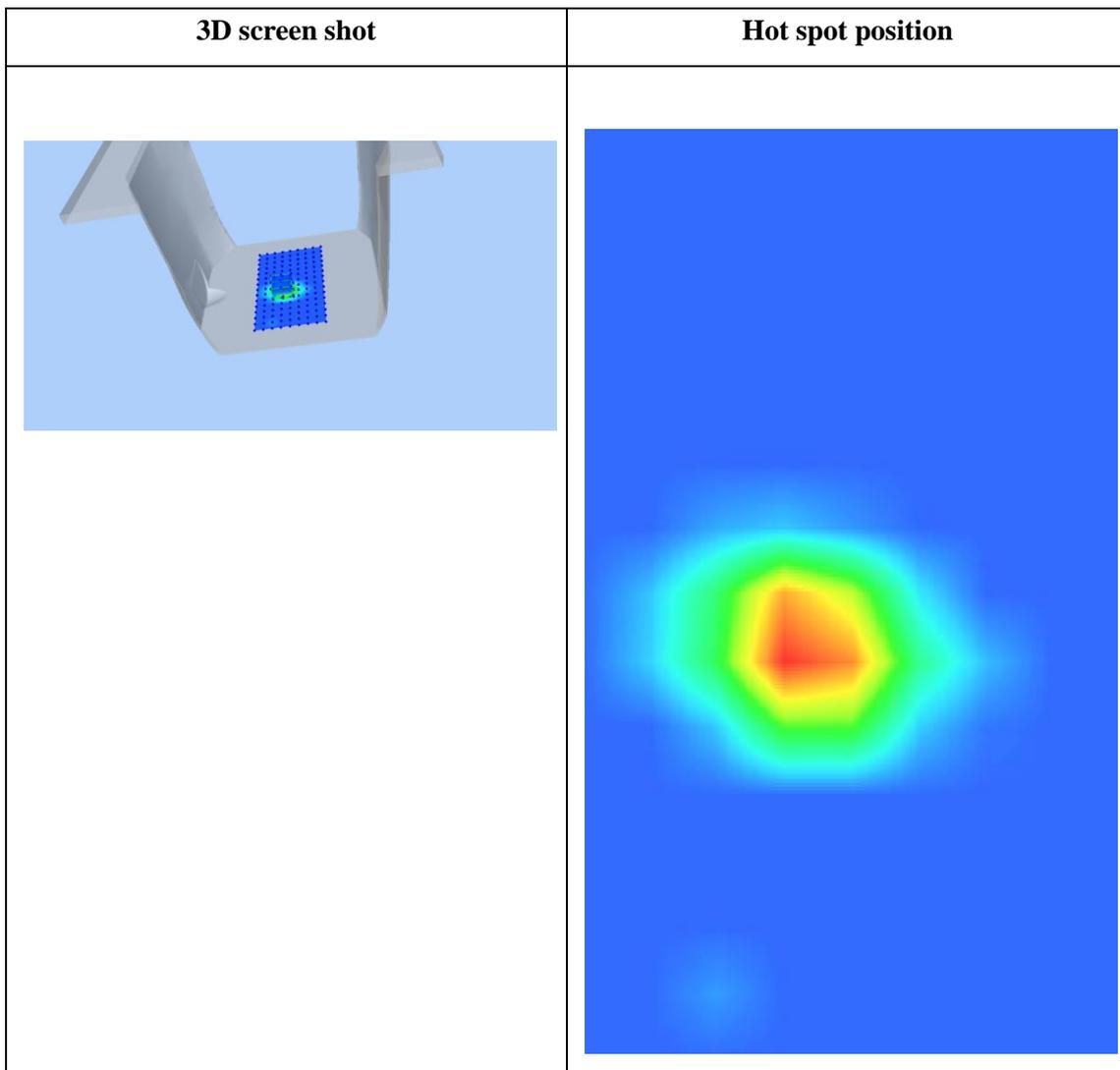
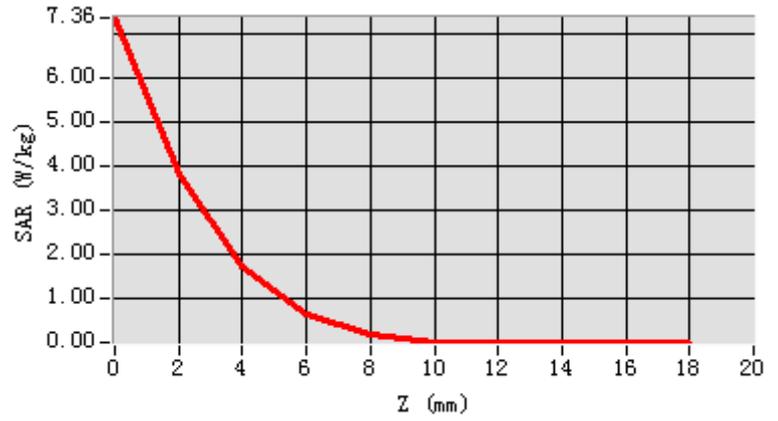


**Maximum location: X=-8.00, Y=-11.00**

**SAR Peak: 7.87 W/kg**

<b>SAR 10g (W/Kg)</b>	0.445950
<b>SAR 1g (W/Kg)</b>	1.919346

Z (mm)	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00
SAR (W/Kg)	7.3624	3.8289	1.7097	0.6436	0.2018	0.0028	0.0006	0.0036	0.0065



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

Type: Phone measurement

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

Zoom scan resolution: dx=4mm, dy=4mm, dz=2mm

Date of measurement: 12/24/2019

Measurement duration: 22 minutes 17 seconds

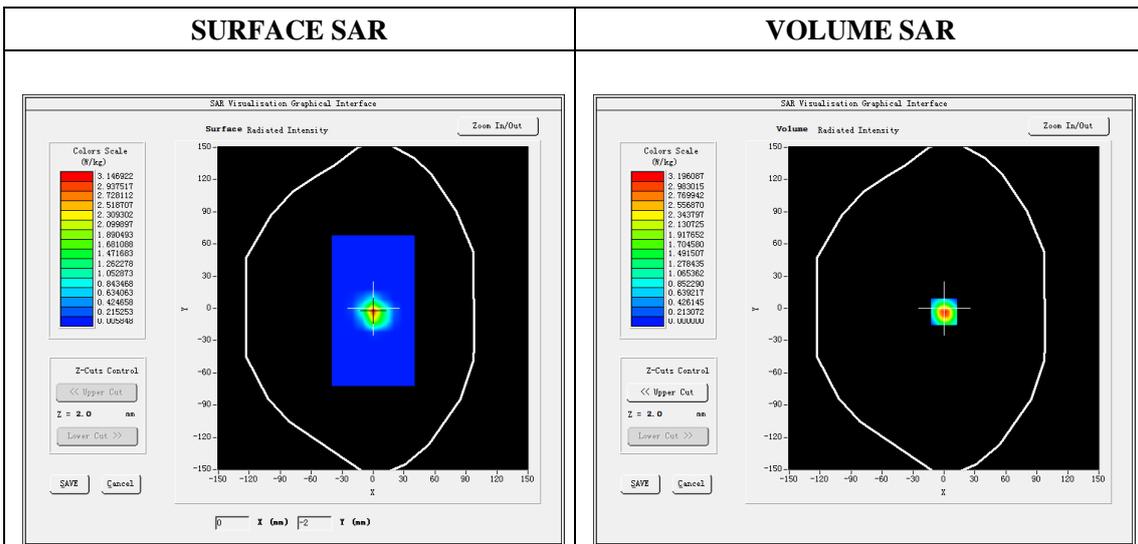
**A. Experimental conditions.**

<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_27/15_EPG0261
<b>Frequency (MHz)</b>	5800
<b>Relative permittivity (real part)</b>	48.58
<b>Relative permittivity</b>	18.65
<b>Conductivity (S/m)</b>	6.01
<b>Power drift (%)</b>	-2.28
<b>Ambient Temperature:</b>	22.2°C
<b>Liquid Temperature:</b>	22.5°C
<b>Crest factor:</b>	1:1
<b>ConvF:</b>	2.26

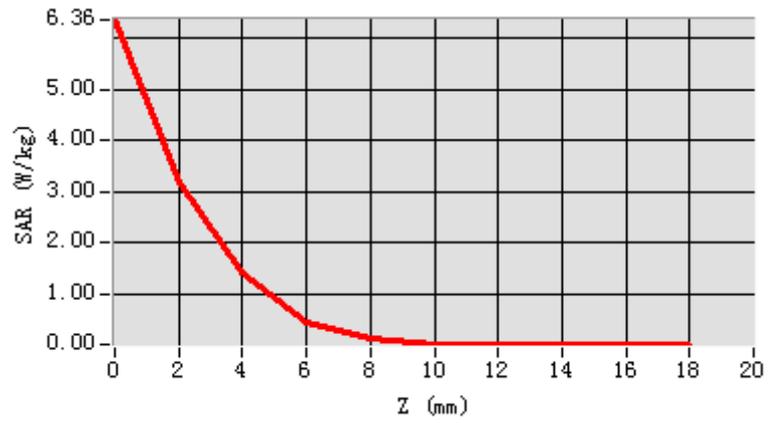


**Maximum location: X=0.00, Y=-3.00**

**SAR Peak: 6.66 W/kg**

<b>SAR 10g (W/Kg)</b>	0.357449
<b>SAR 1g (W/Kg)</b>	1.589486

Z (mm)	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00
SAR (W/Kg)	6.3600	3.1961	1.3971	0.4235	0.1223	0.0172	0.0002	0.0007	0.0059



3D screen shot	Hot spot position
