

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

Measurement	Liquid	Frequency	Test Date
System Check	Head	750	2020-05-13
System Check	Body	750	2020-05-13
System Check	Head	835	2020-05-14
System Check	Body	835	2020-05-14
System Check	Head	1900	2020-05-17
System Check	Body	1900	2020-05-17
System Check	Head	2450	2020-05-18
System Check	Body	2450	2020-05-18
System Check	Head	5200	2020-05-19
System Check	Body	5200	2020-05-19
System Check	Head	5400	2020-05-19
System Check	Body	5400	2020-05-19
System Check	Head	5600	2020-05-19
System Check	Body	5600	2020-05-19
System Check	Head	5800	2020-05-19
System Check	Body	5800	2020-05-19

System Performance Check (Head, 750MHz)

Type: Phone measurement

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

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

Date of measurement: 05/13/2020

Measurement duration: 22 minutes 09 seconds

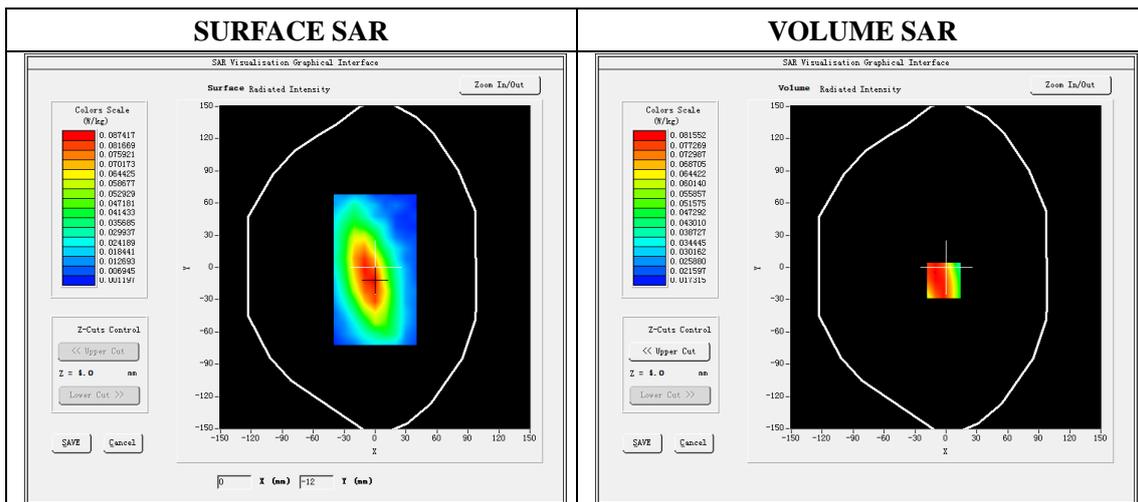
A. Experimental conditions.

Phantom File	dx=8mm dy=8mm
Phantom	5x5x7,dx=8mm dy=8mm dz=5mm
Device Position	Dipole
Band	750MHz
Channels	
Signal	CW

B. SAR Measurement Results

Band SAR

E-Field Probe	SATIMO SN_41/18_EPG0330
Frequency (MHz)	750
Relative permittivity (real part)	41.87
Relative permittivity	21.60
Conductivity (S/m)	0.90
Power drift (%)	-1.33
Ambient Temperature:	22.2 °C
Liquid Temperature:	22.6 °C
ConvF:	1.54
Crest factor:	1:1

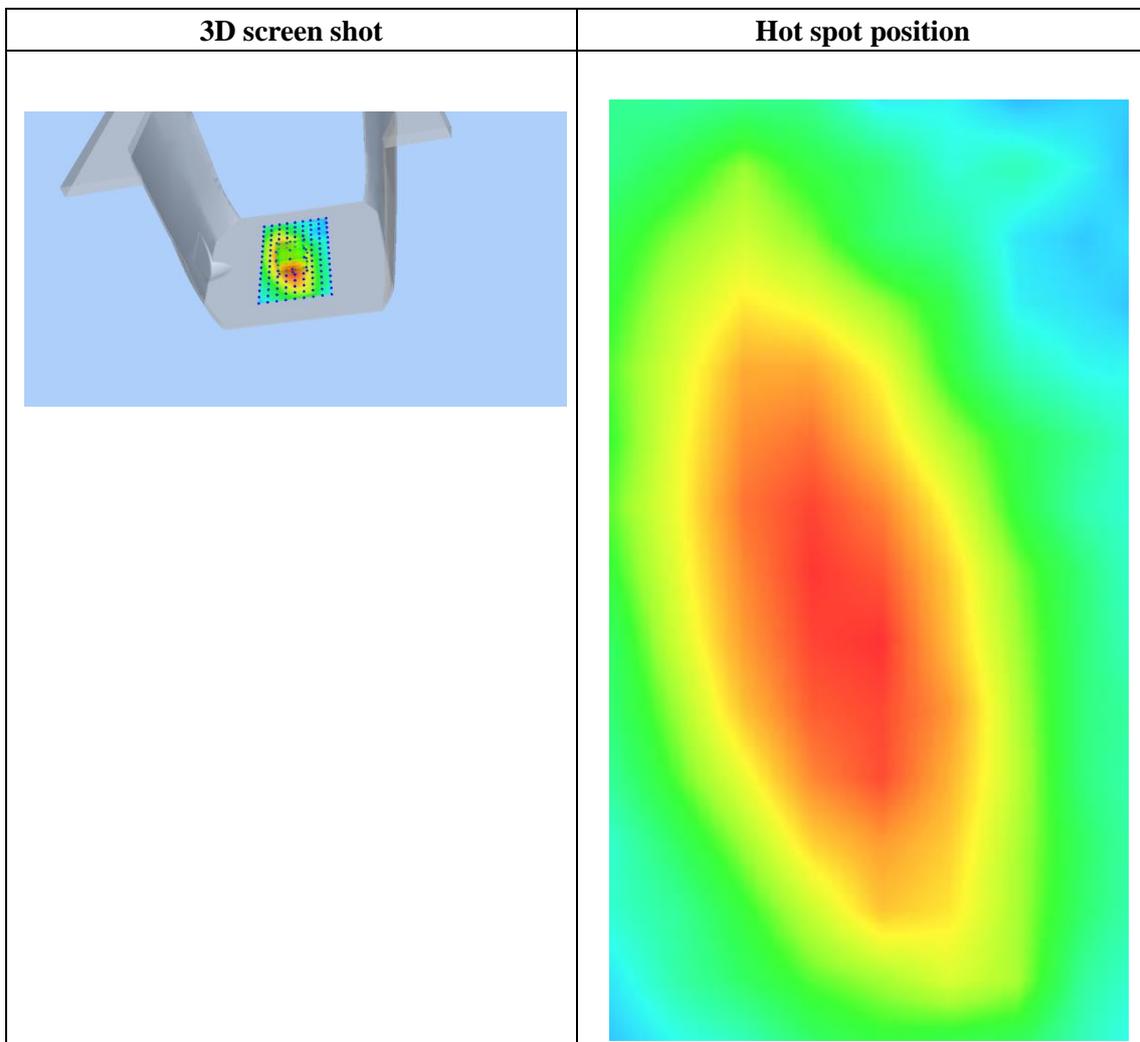
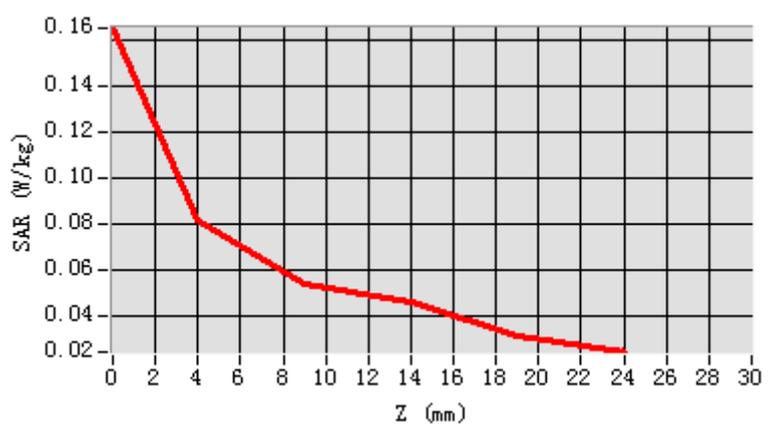


Maximum location: X=-2.00, Y=-12.00

SAR Peak: 0.11 W/kg

SAR 10g (W/Kg)	0.057736
SAR 1g (W/Kg)	0.080363

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.1648	0.0816	0.0538	0.0461	0.0309



System Performance Check (Body, 750MHz)

Type: Phone measurement

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

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

Date of measurement: 05/13/2020

Measurement duration: 22 minutes 03 seconds

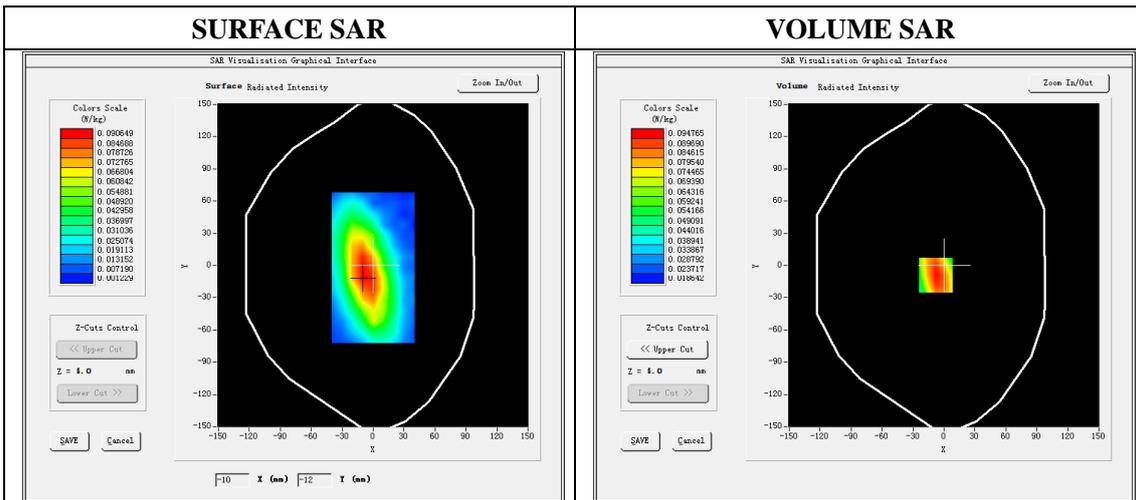
A. Experimental conditions.

Phantom File	dx=8mm dy=8mm
Phantom	5x5x7,dx=8mm dy=8mm dz=5mm
Device Position	Dipole
Band	750MHz
Channels	
Signal	CW

B. SAR Measurement Results

Band SAR

E-Field Probe	SATIMO SN_41/18_EPG0330
Frequency (MHz)	750
Relative permittivity (real part)	55.49
Relative permittivity	22.80
Conductivity (S/m)	0.95
Power drift (%)	-1.50
Ambient Temperature:	22.2 °C
Liquid Temperature:	22.6 °C
ConvF:	1.59
Crest factor:	1:1

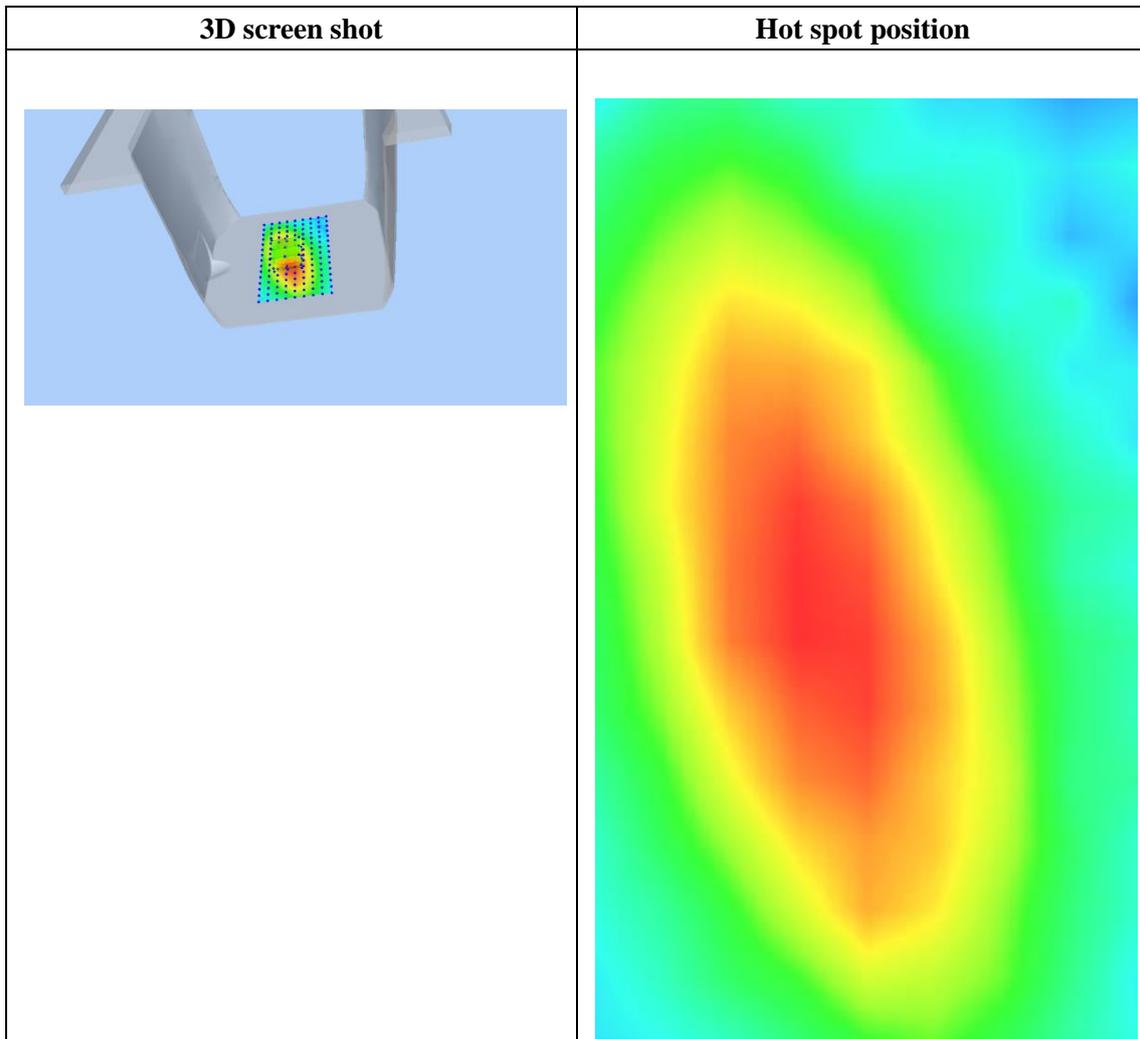
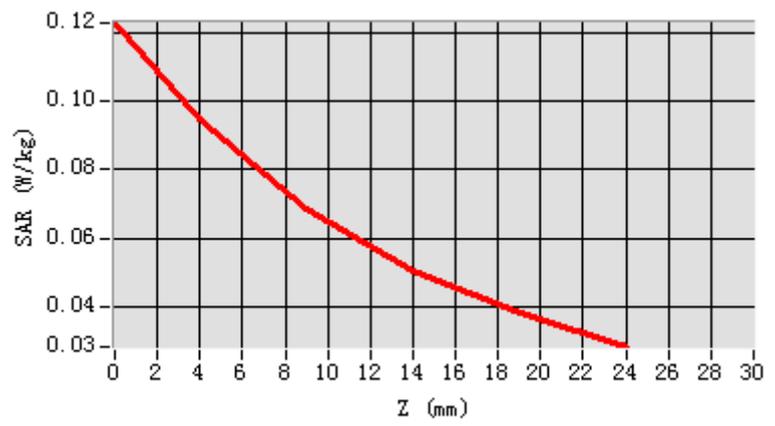


Maximum location: X=-8.00, Y=-9.00

SAR Peak: 0.12 W/kg

SAR 10g (W/Kg)	0.062943
SAR 1g (W/Kg)	0.091060

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.1227	0.0948	0.0688	0.0506	0.0380



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: 05/14/2020

Measurement duration: 22 minutes 06 seconds

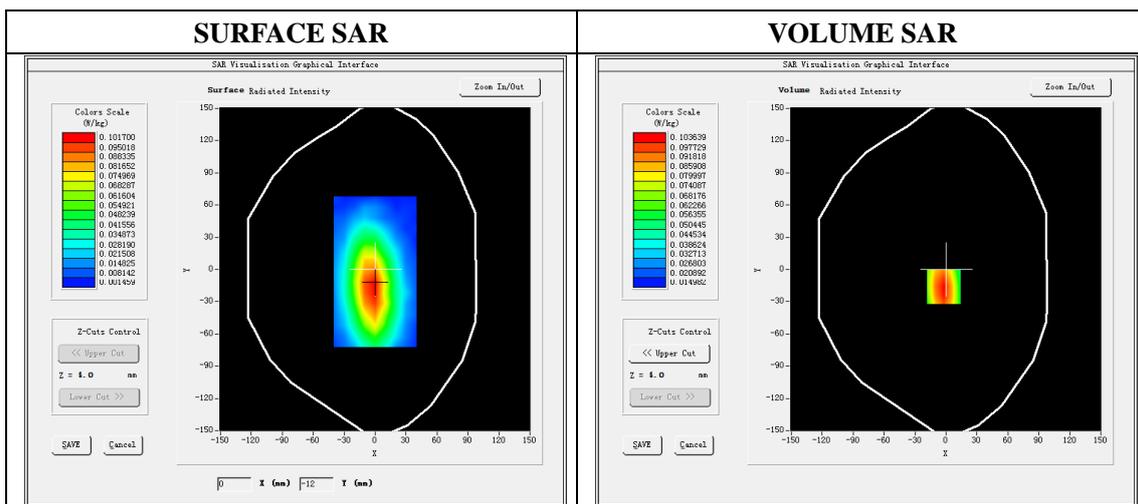
A. Experimental conditions.

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

B. SAR Measurement Results

Band SAR

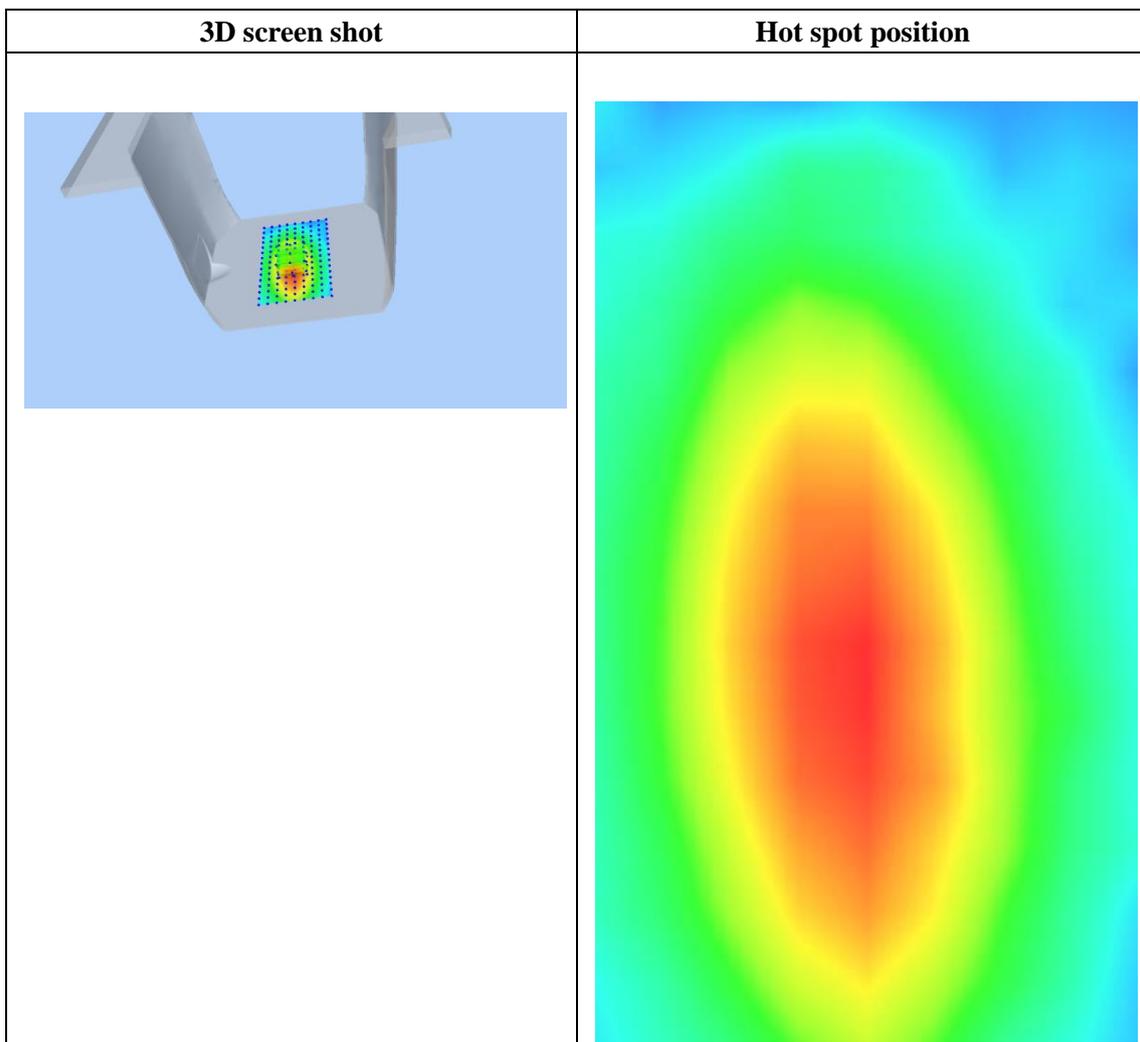
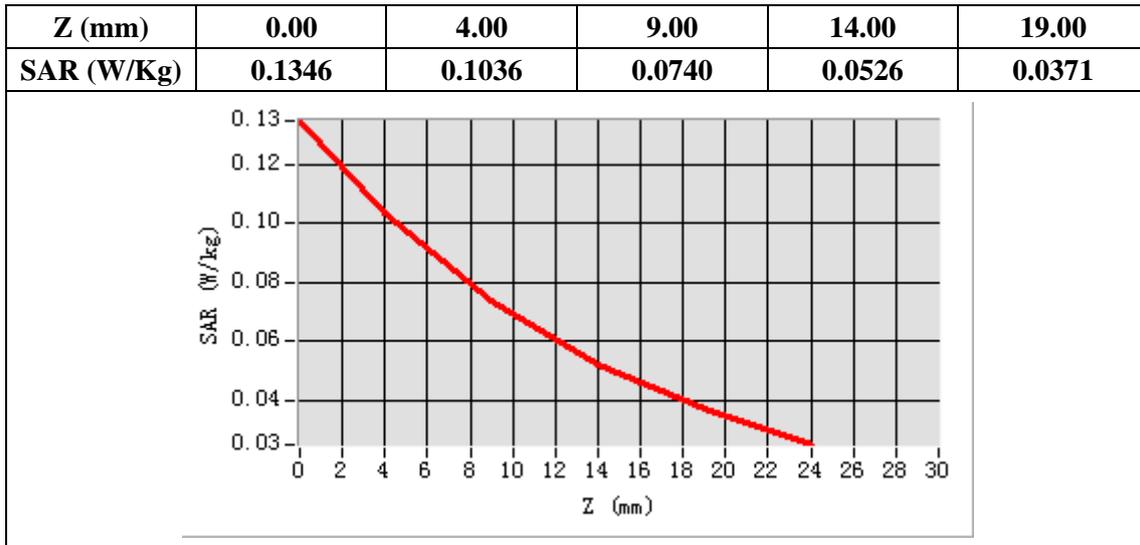
E-Field Probe	SATIMO SN_41/18_EPG0330
Frequency (MHz)	835
Relative permittivity (real part)	41.53
Relative permittivity	19.48
Conductivity (S/m)	0.92
Power drift (%)	-2.66
Ambient Temperature:	22.2 °C
Liquid Temperature:	22.6 °C
ConvF:	1.92
Crest factor:	1:1



Maximum location: X=-2.00, Y=-16.00

SAR Peak: 0.14 W/kg

SAR 10g (W/Kg)	0.065465
SAR 1g (W/Kg)	0.098655



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: 05/14/2020

Measurement duration: 22 minutes 04 seconds

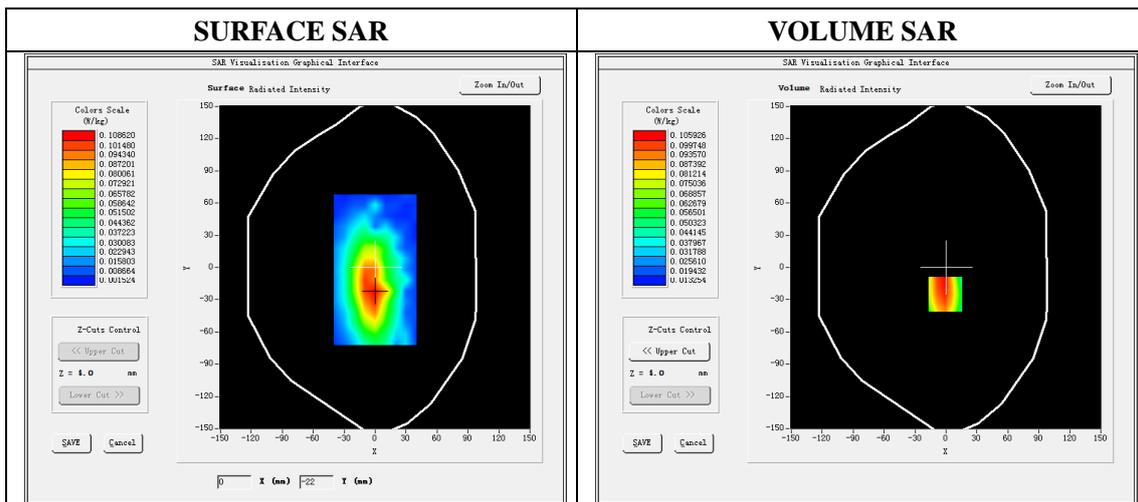
A. Experimental conditions.

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

B. SAR Measurement Results

Band SAR

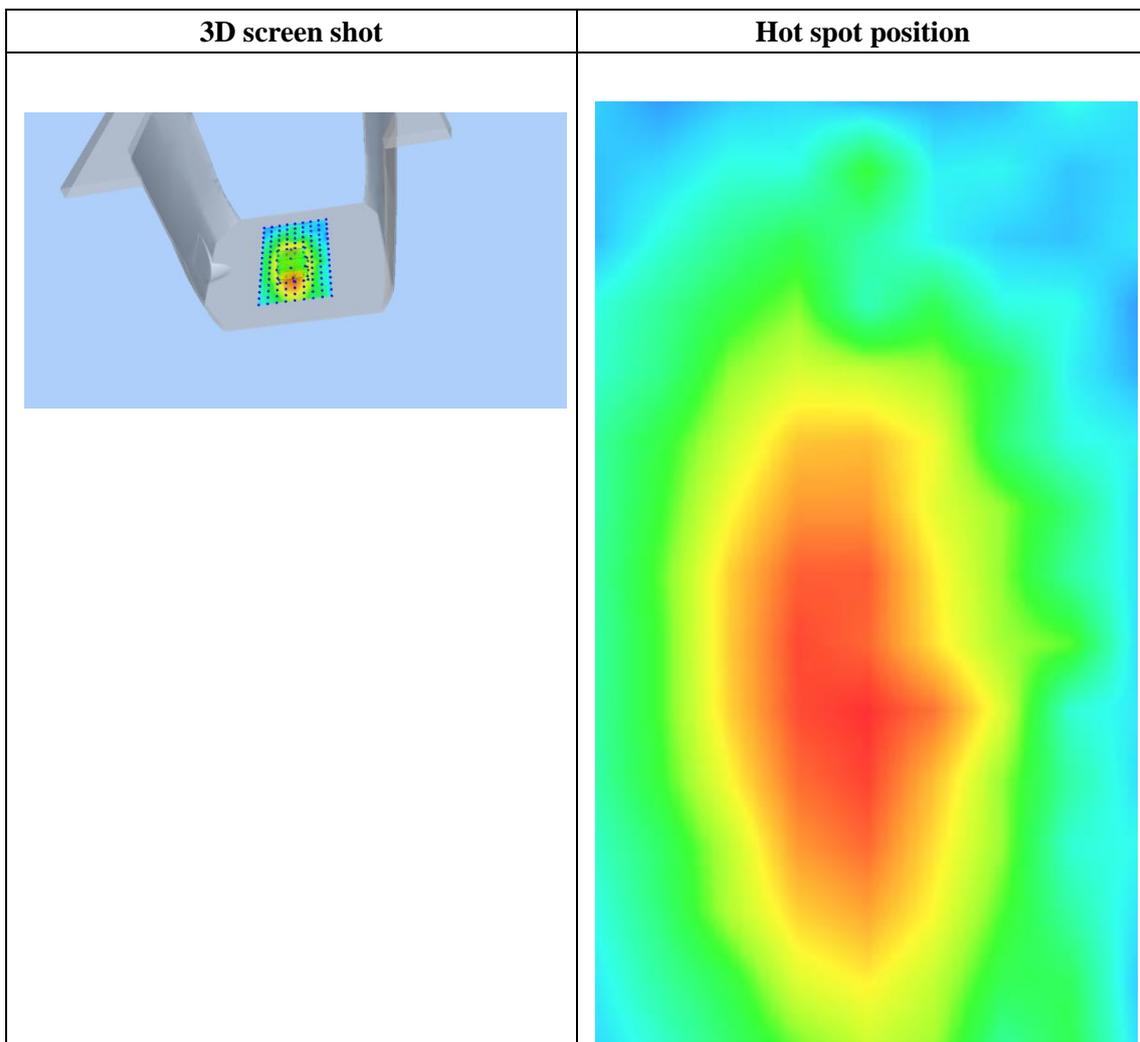
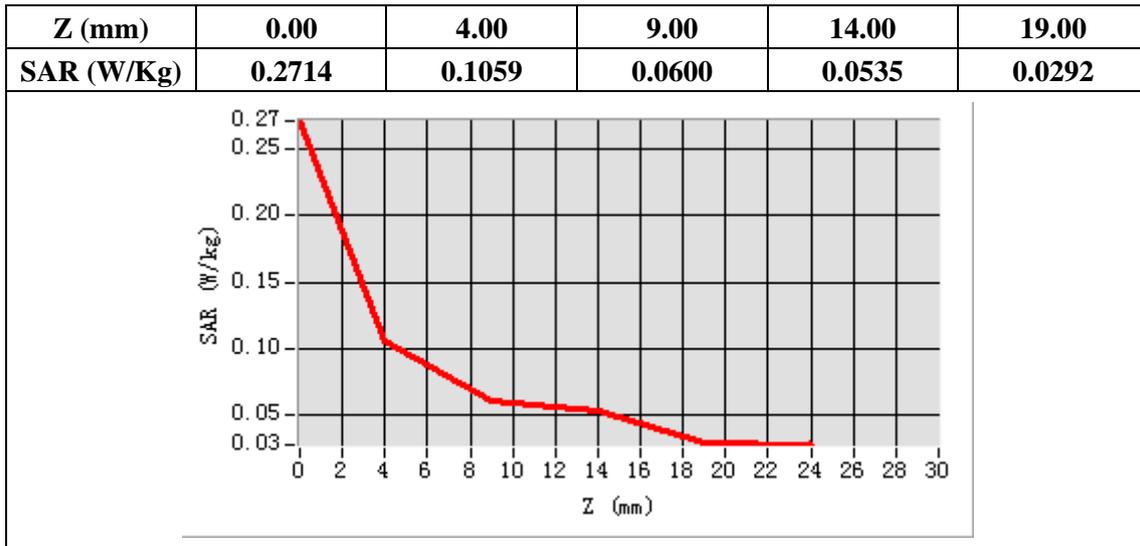
E-Field Probe	SATIMO SN_41/18_EPG0330
Frequency (MHz)	835
Relative permittivity (real part)	55.20
Relative permittivity	20.91
Conductivity (S/m)	0.97
Power drift (%)	-2.52
Ambient Temperature:	22.2 °C
Liquid Temperature:	22.6 °C
ConvF:	1.99
Crest factor:	1:1



Maximum location: X=-1.00, Y=-25.00

SAR Peak: 0.14 W/kg

SAR 10g (W/Kg)	0.070150
SAR 1g (W/Kg)	0.103740



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: 05/17/2020

Measurement duration: 22 minutes 08 seconds

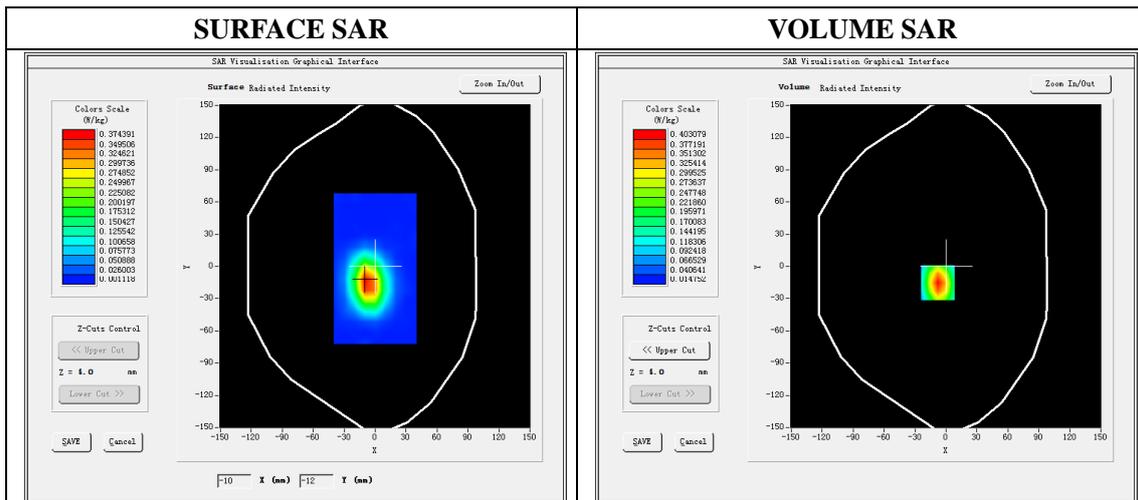
A. Experimental conditions.

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

B. SAR Measurement Results

Band SAR

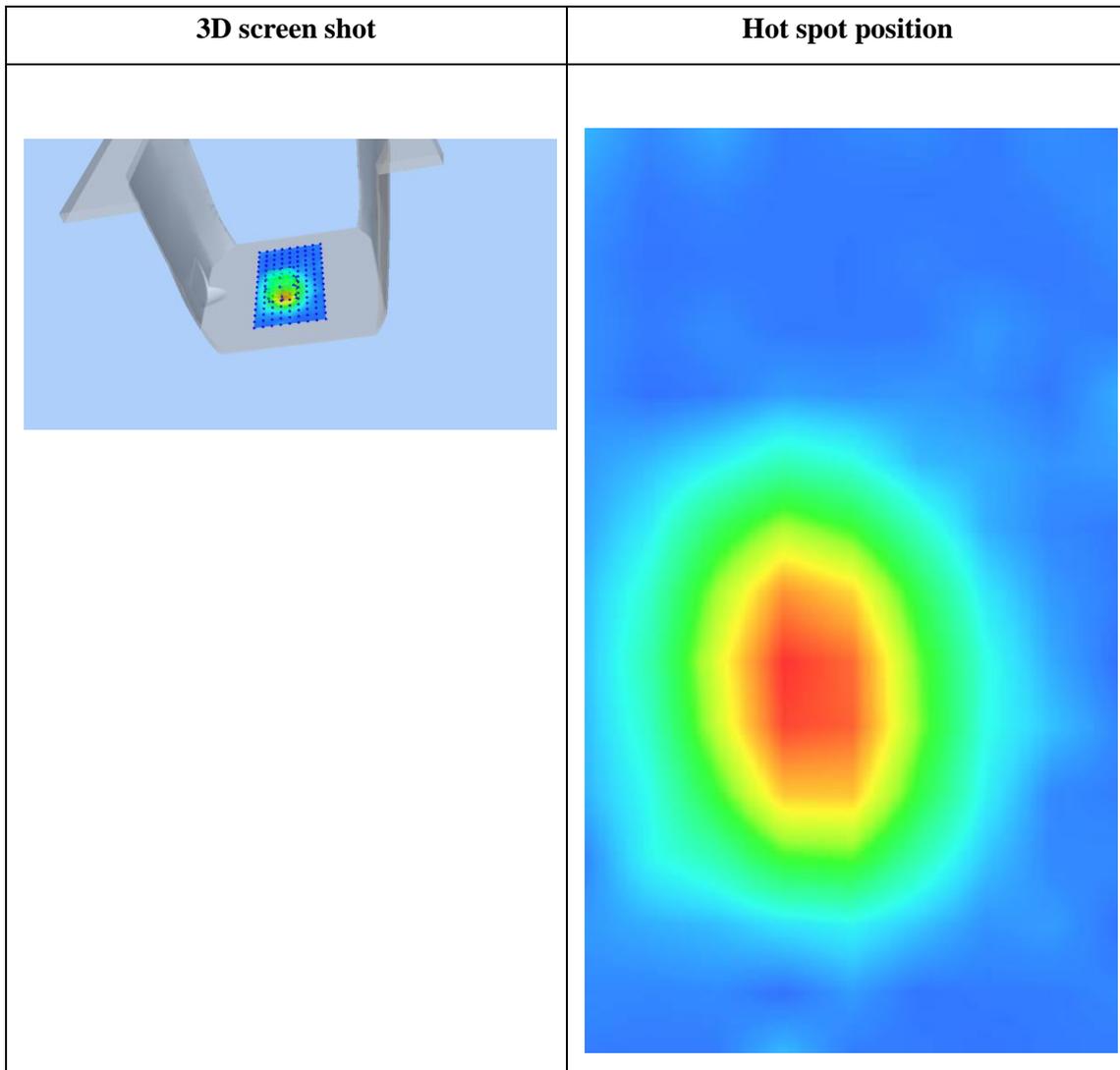
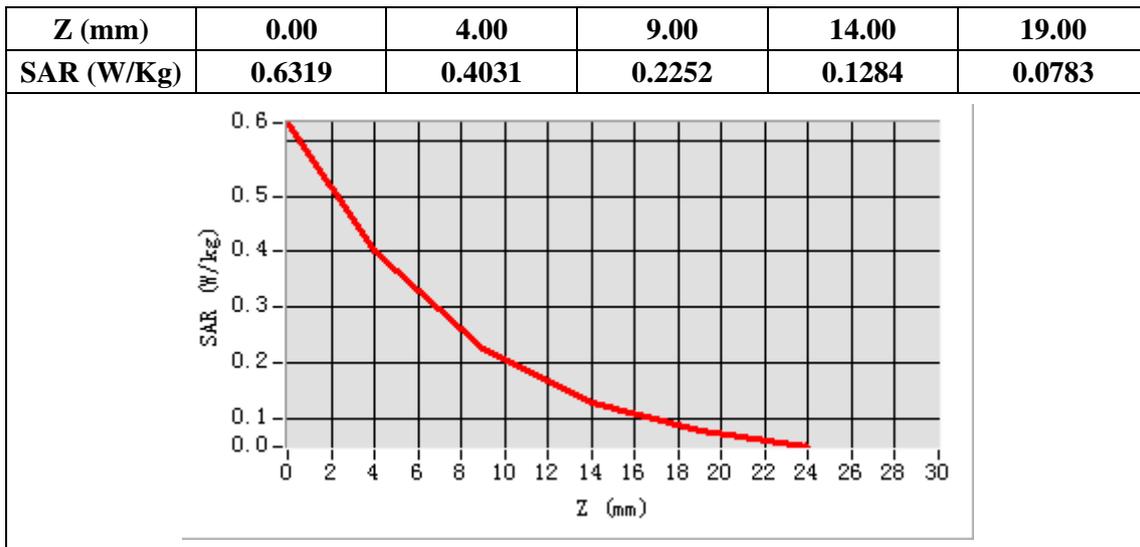
E-Field Probe	SATIMO SN_41/18_EPG0330
Frequency (MHz)	1900
Relative permittivity (real part)	40.46
Relative permittivity	13.26
Conductivity (S/m)	1.40
Power Drift (%)	-1.87
Ambient Temperature:	22.1 °C
Liquid Temperature:	22.6 °C
ConvF:	2.34
Duty factor:	1:1



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

SAR Peak: 0.63 W/kg

SAR 10g (W/Kg)	0.196324
SAR 1g (W/Kg)	0.373255



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: 05/17/2020

Measurement duration: 22 minutes 02 seconds

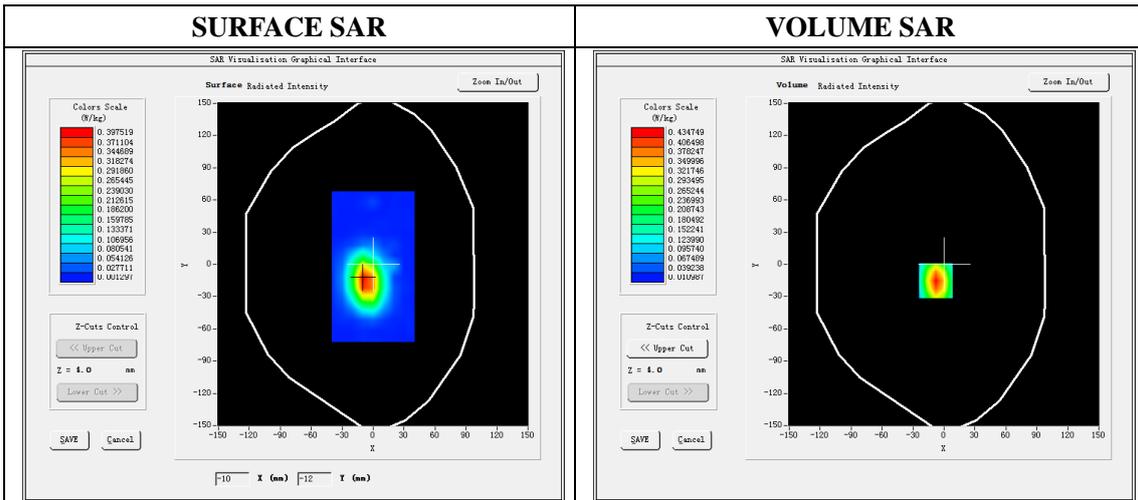
A. Experimental conditions.

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

B. SAR Measurement Results

Band SAR

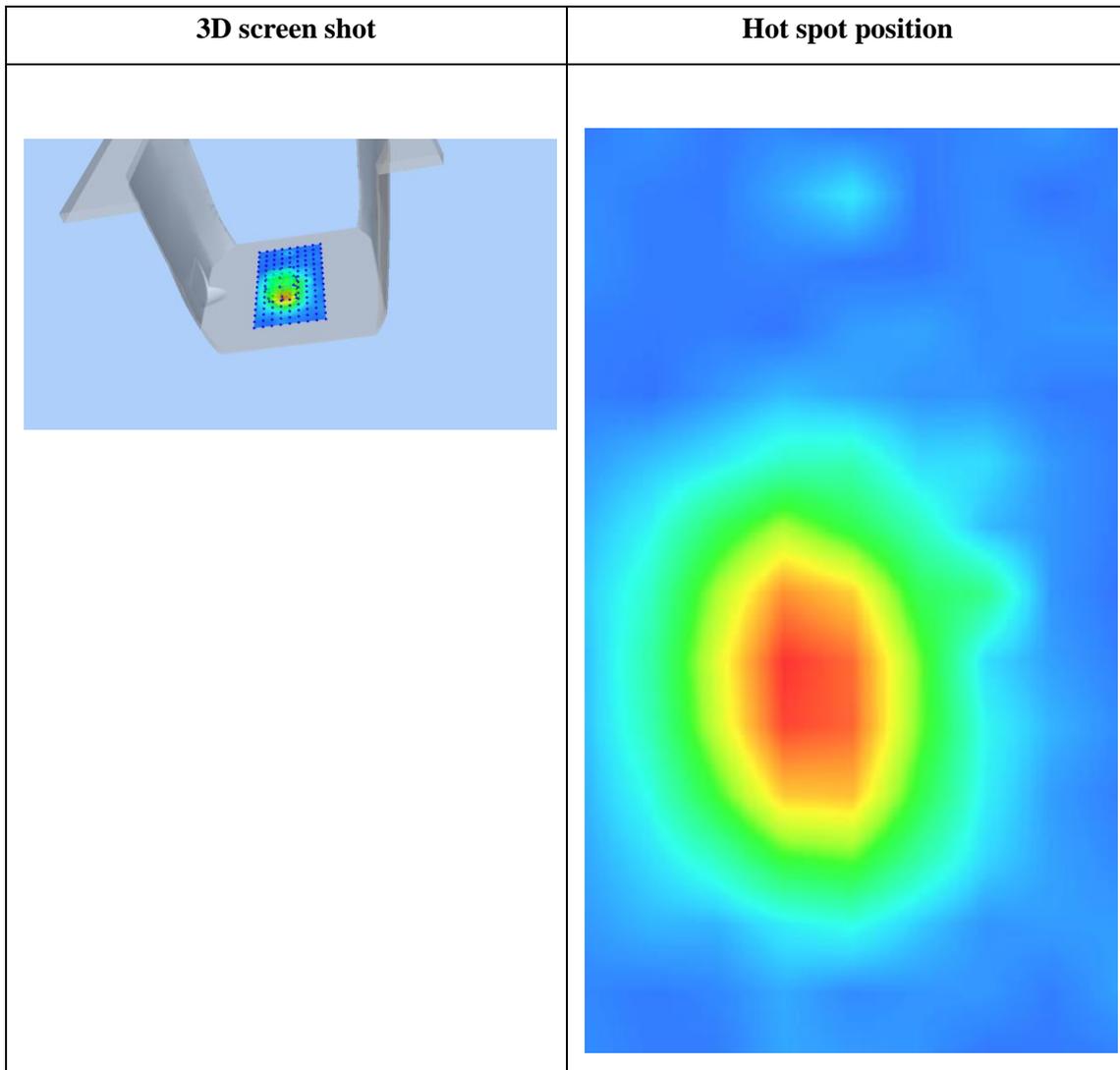
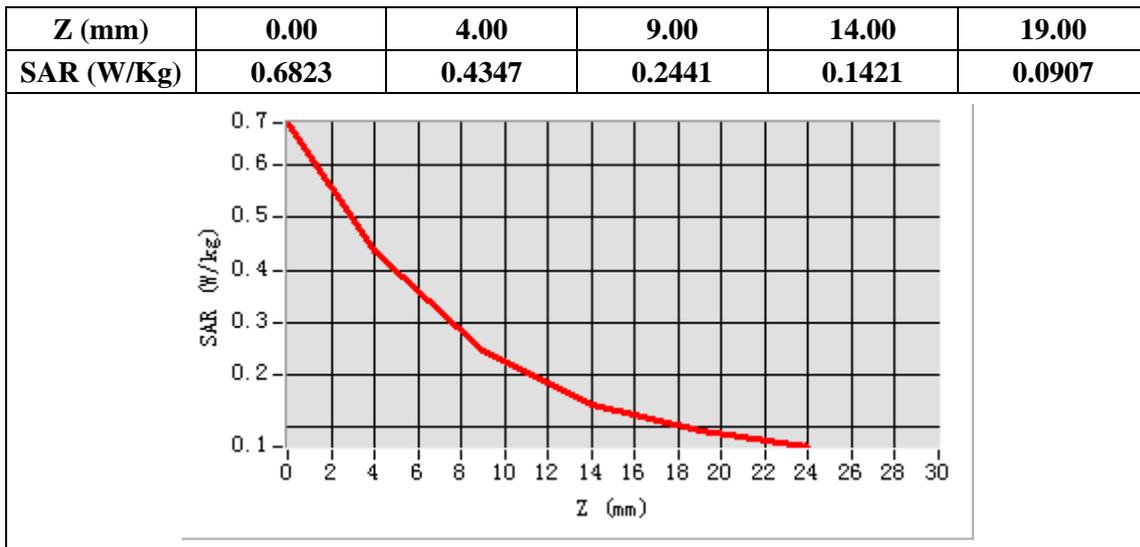
E-Field Probe	SATIMO SN_41/18_EPG0330
Frequency (MHz)	1900
Relative permittivity (real part)	53.27
Relative permittivity	14.21
Conductivity (S/m)	1.50
Power Drift (%)	-1.35
Ambient Temperature:	22.1 °C
Liquid Temperature:	22.6 °C
ConvF:	2.39
Duty factor:	1:1



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

SAR Peak: 0.68 W/kg

SAR 10g (W/Kg)	0.213142
SAR 1g (W/Kg)	0.402610



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: 05/18/2020

Measurement duration: 22 minutes 05 seconds

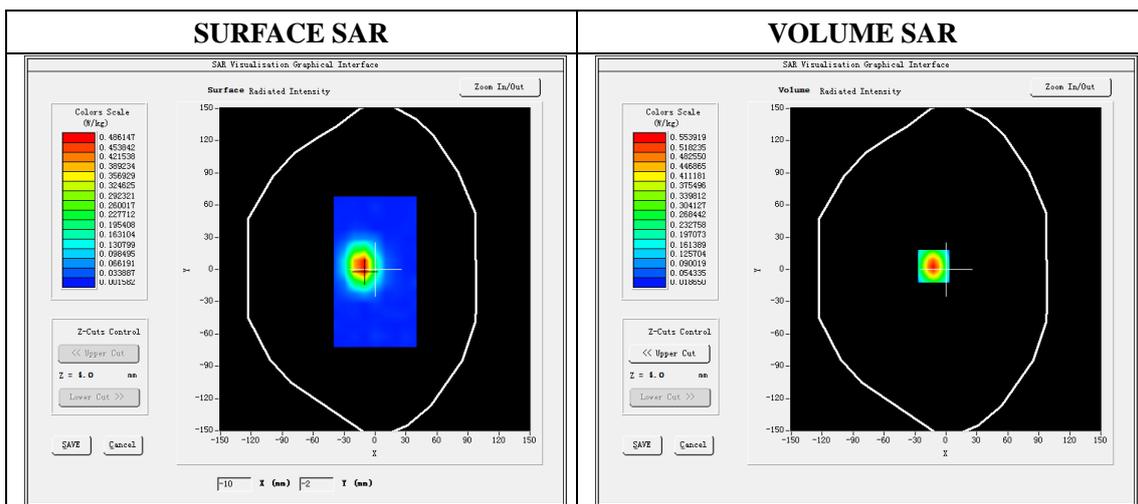
A. Experimental conditions.

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

B. SAR Measurement Results

Band SAR

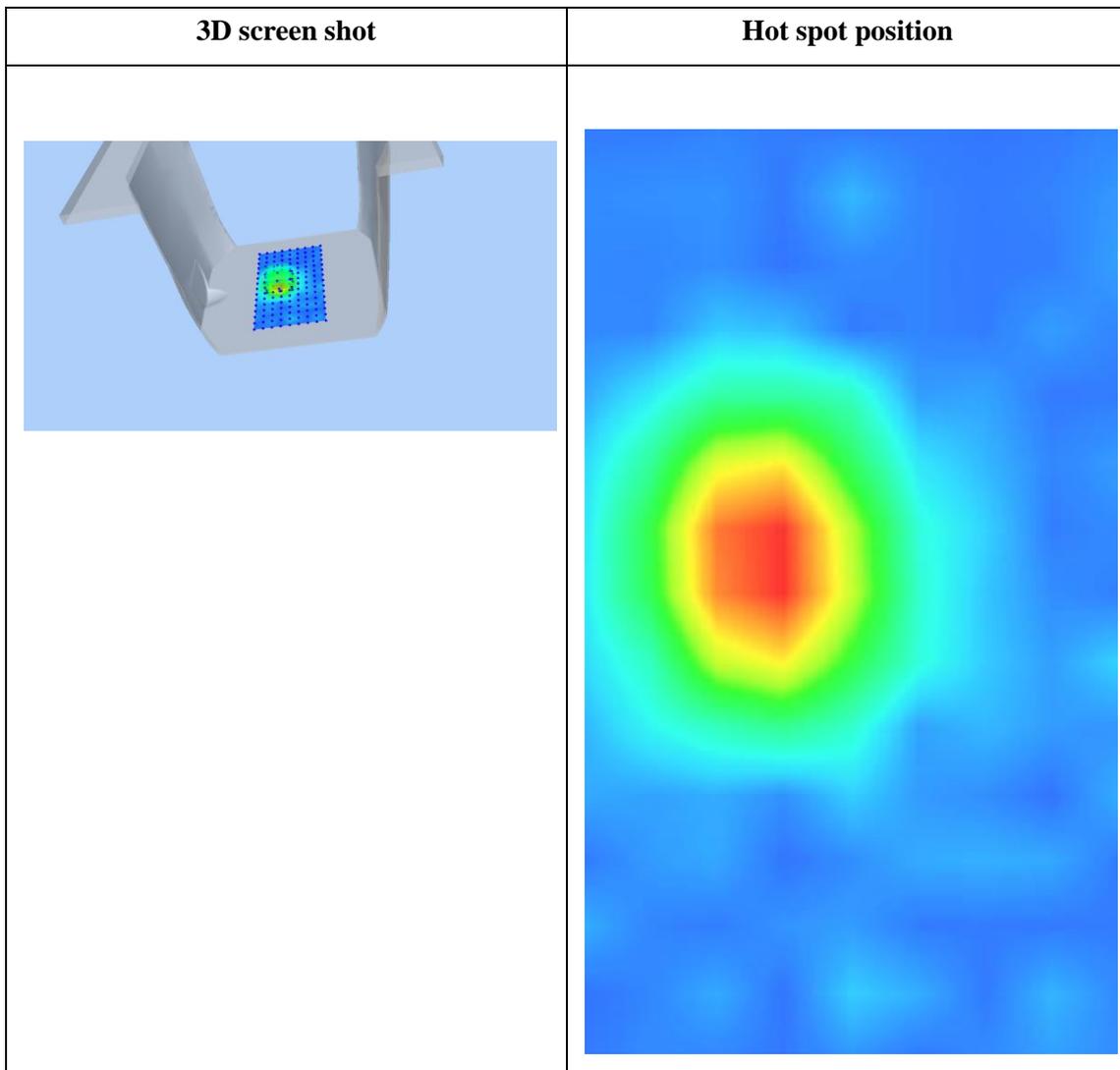
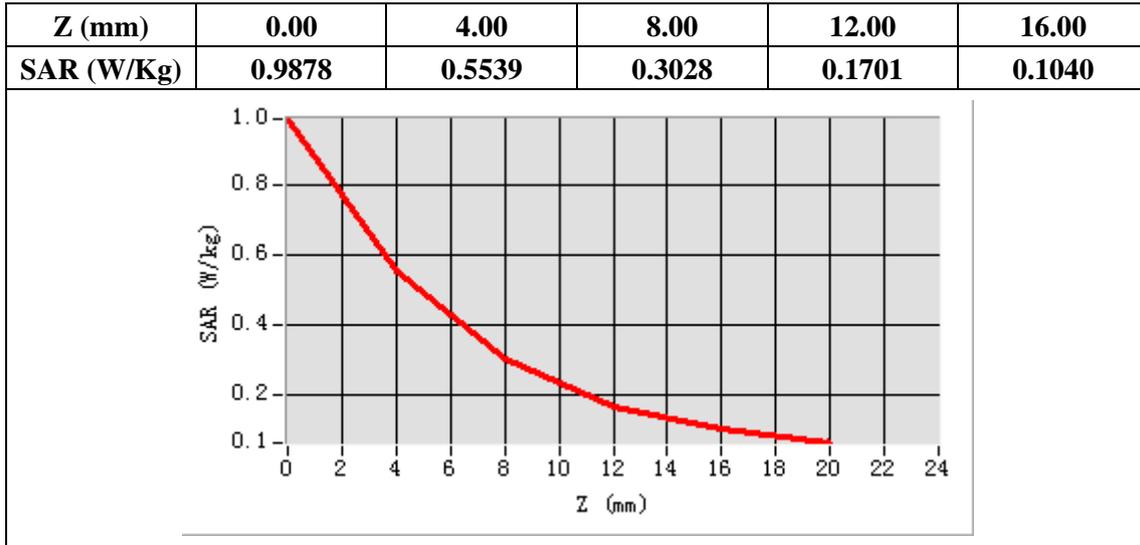
E-Field Probe	SATIMO SN_41/18_EPG0330
Frequency (MHz)	2450
Relative permittivity (real part)	39.24
Relative permittivity	13.44
Conductivity (S/m)	1.83
Power Drift (%)	1.12
Ambient Temperature:	22.1 °C
Liquid Temperature:	22.6 °C
ConvF:	2.37
Duty factor:	1:1



Maximum location: X=-12.00, Y=3.00

SAR Peak: 0.99 W/kg

SAR 10g (W/Kg)	0.236854
SAR 1g (W/Kg)	0.501619



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: 05/18/2020

Measurement duration: 22 minutes 10 seconds

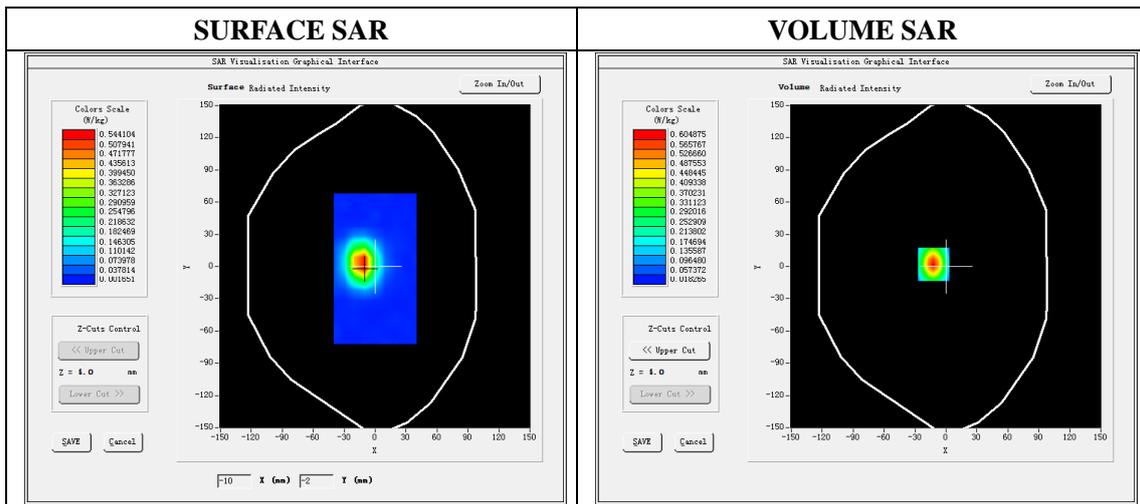
A. Experimental conditions.

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

B. SAR Measurement Results

Band SAR

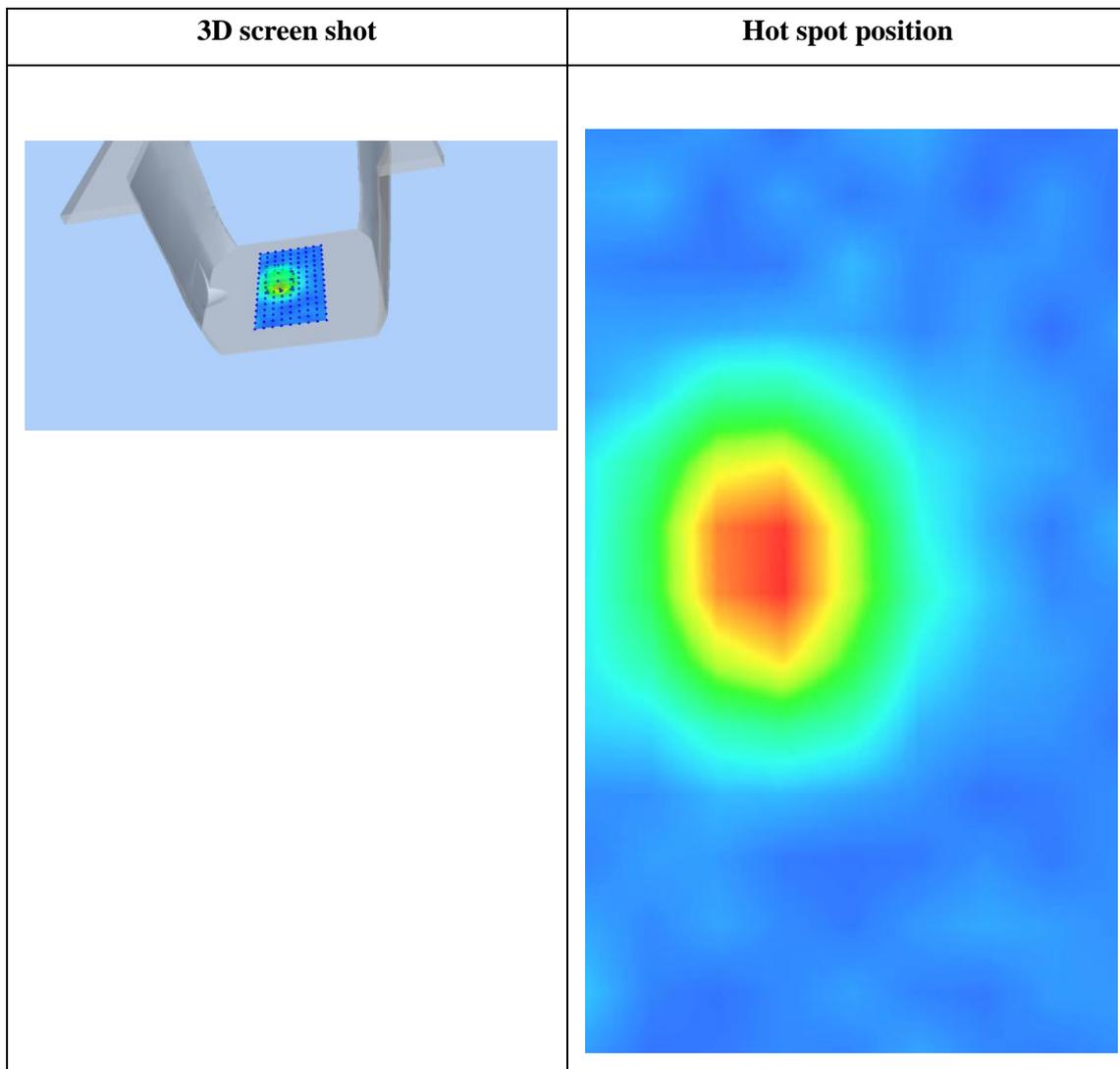
E-Field Probe	SATIMO SN_41/18_EPG0330
Frequency (MHz)	2450
Relative permittivity (real part)	52.72
Relative permittivity	14.21
Conductivity (S/m)	1.50
Power Drift (%)	0.15
Ambient Temperature:	22.1 °C
Liquid Temperature:	22.6 °C
ConvF:	2.46
Duty factor:	1:1



Maximum location: X=-12.00, Y=2.00

SAR Peak: 1.05 W/kg

SAR 10g (W/Kg)	0.254848
SAR 1g (W/Kg)	0.546589



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: 05/19/2020

Measurement duration: 22 minutes 14 seconds

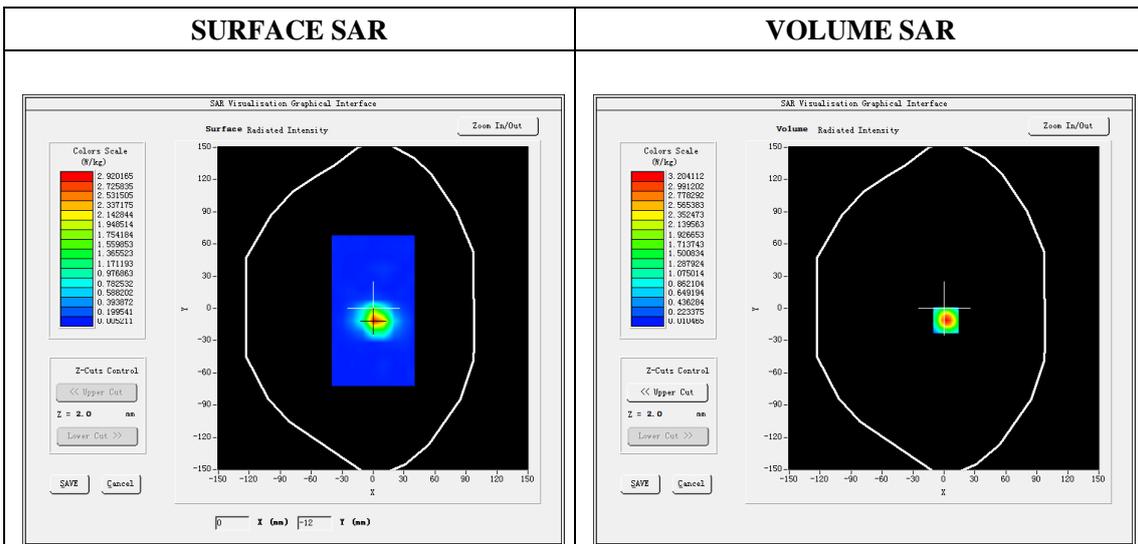
A. Experimental conditions.

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

B. SAR Measurement Results

Band SAR

E-Field Probe	SATIMO SN_41/18_EPG0330
Frequency (MHz)	5200
Relative permittivity (real part)	36.01
Relative permittivity	16.17
Conductivity (S/m)	4.67
Power drift (%)	-2.19
Ambient Temperature:	22.2 °C
Liquid Temperature:	22.5 °C
Crest factor:	1:1
ConvF:	2.15

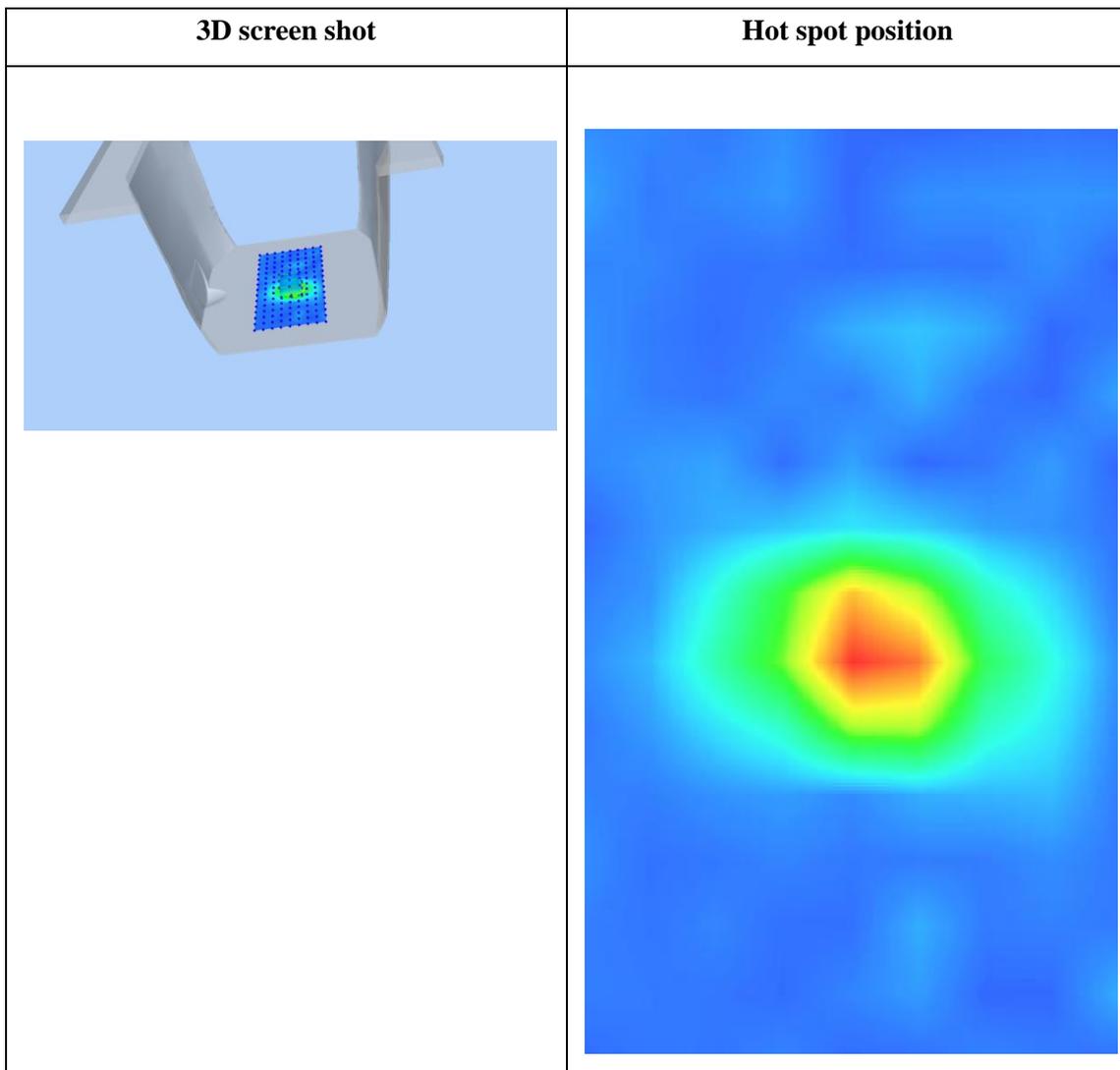
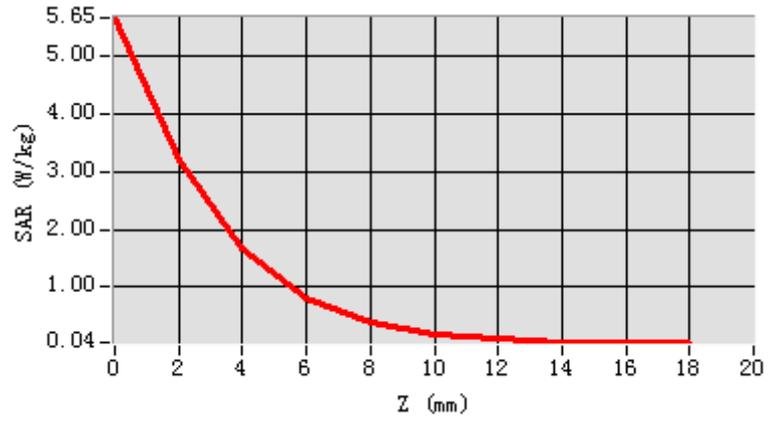


Maximum location: X=2.00, Y=-11.00

SAR Peak: 5.88W/kg

SAR 10g (W/Kg)	0.506021
SAR 1g (W/Kg)	1.726714

Z (mm)	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00
SAR (W/Kg)	5.6548	3.2041	1.6781	0.8172	0.3866	0.1854	0.0975	0.0618	0.0489



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: 05/19/2020

Measurement duration: 22 minutes 17 seconds

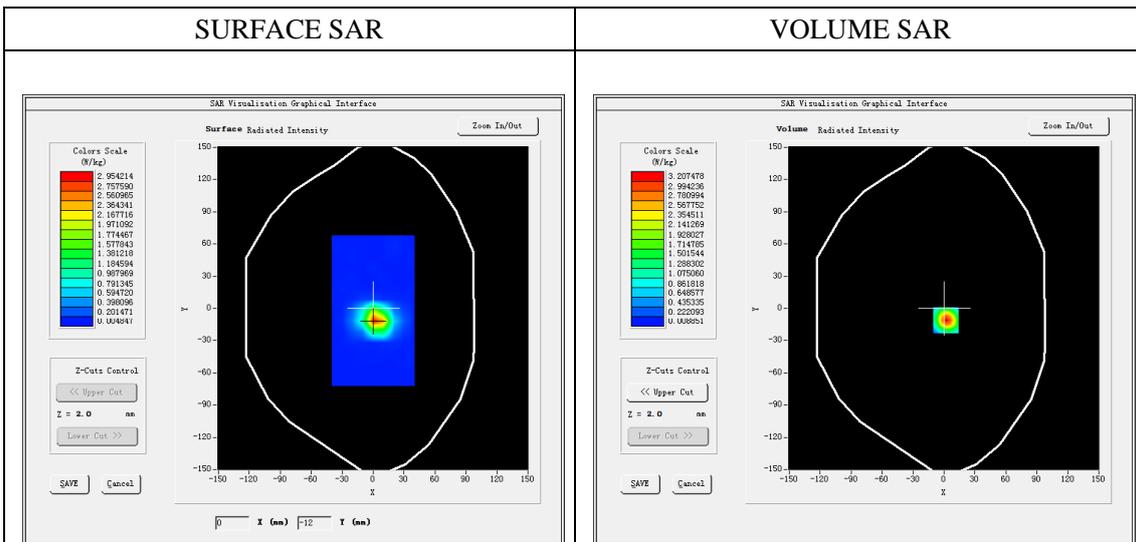
A. Experimental conditions.

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

B. SAR Measurement Results

Band SAR

E-Field Probe	SATIMO SN_41/18_EPG0330
Frequency (MHz)	5200
Relative permittivity (real part)	49.03
Relative permittivity	18.38
Conductivity (S/m)	5.31
Power drift (%)	-1.81
Ambient Temperature:	22.2 °C
Liquid Temperature:	22.5 °C
Crest factor:	1:1
ConvF:	2.21

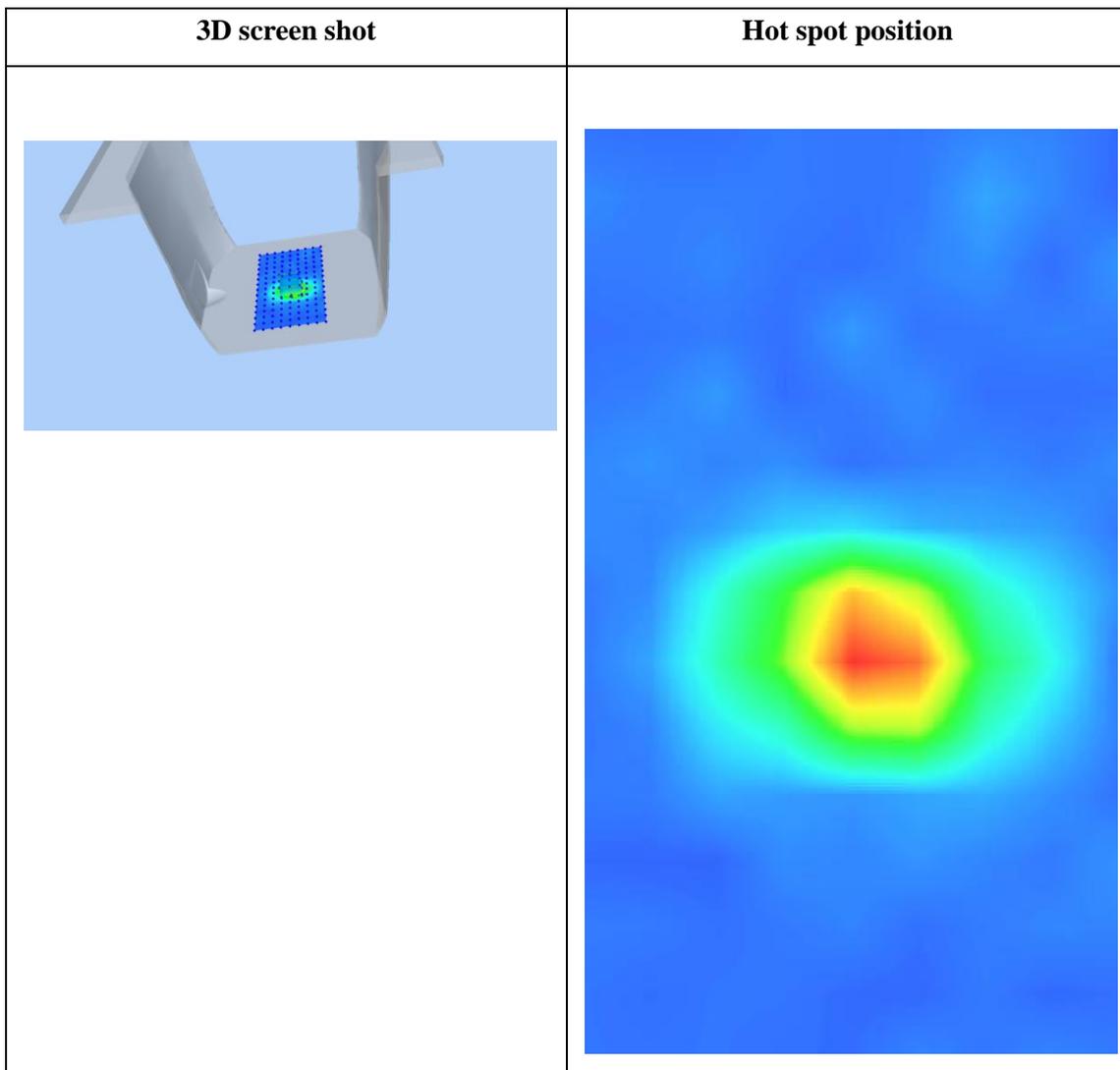
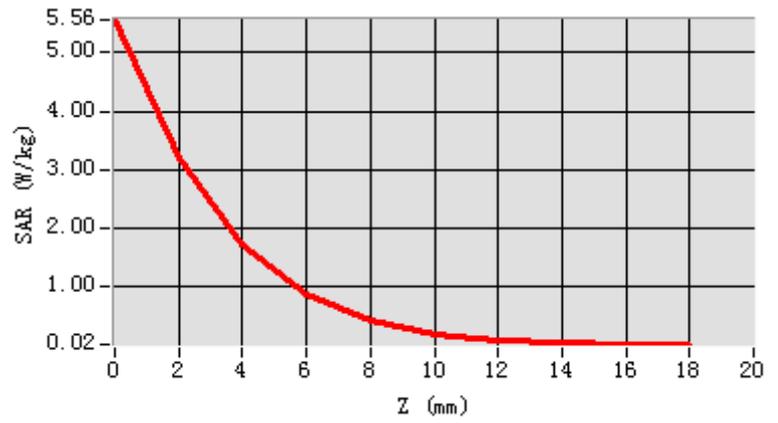


Maximum location: X=2.00, Y=-11.00

SAR Peak: 5.76 W/kg

SAR 10g (W/Kg)	0.502081
SAR 1g (W/Kg)	1.712320

Z (mm)	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00
SAR (W/Kg)	5.5571	3.2075	1.7237	0.8632	0.4162	0.1974	0.0961	0.0509	0.0305



System Performance Check (Head, 5400MHz)

Type: Phone measurement

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

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

Date of measurement: 05/19/2020

Measurement duration: 22 minutes 16 seconds

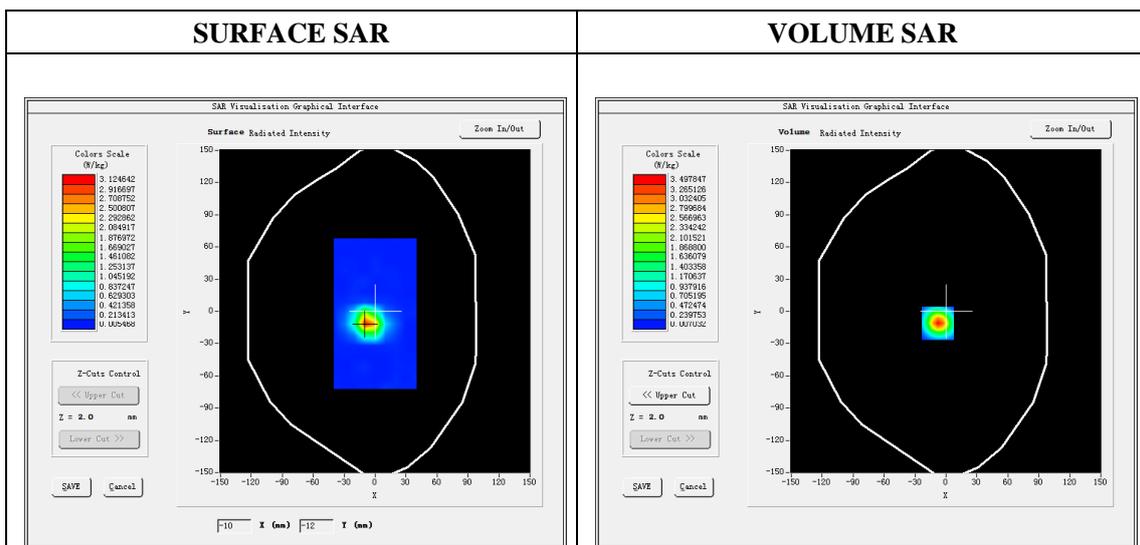
A. Experimental conditions.

Phantom File	dx=8mm dy=8mm
Phantom	7x7x8,dx=4mm dy=4mm dz=2mm
Device Position	Dipole
Band	5400MHz
Channels	
Signal	CW

B. SAR Measurement Results

Band SAR

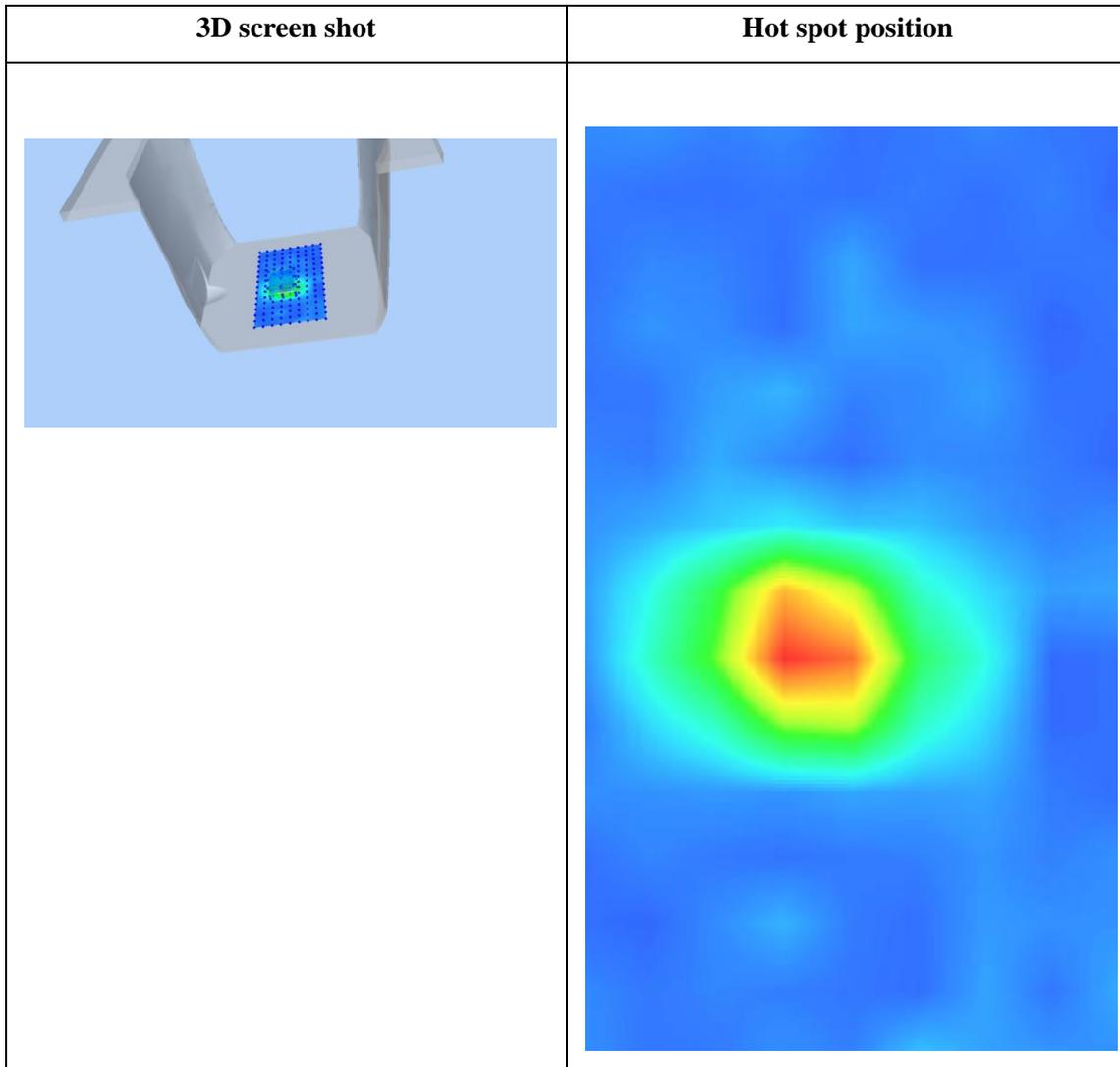
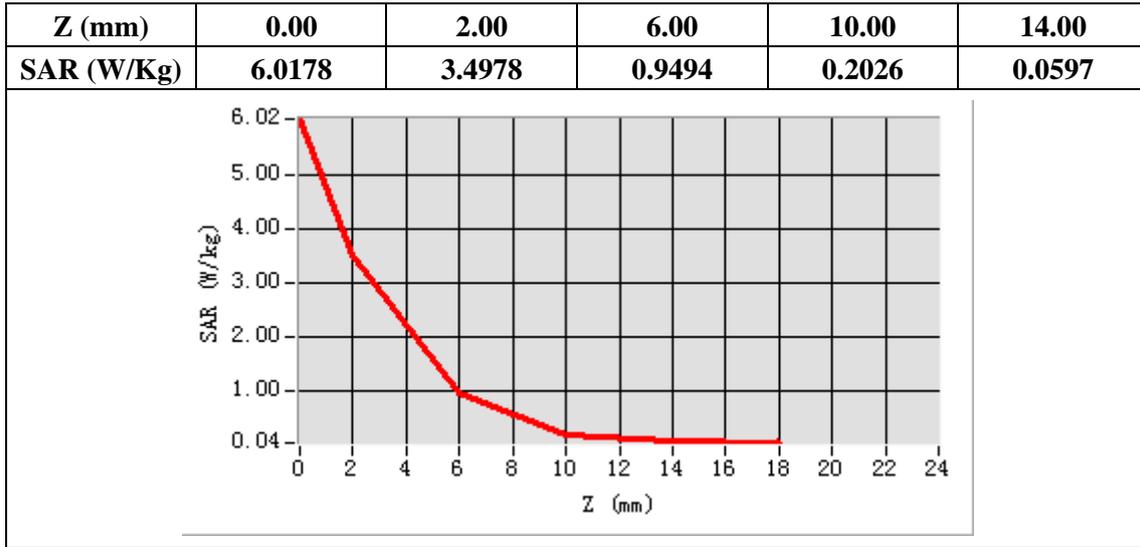
E-Field Probe	SATIMO SN_41/18_EPG0330
Frequency (MHz)	5400
Relative permittivity (real part)	35.78
Relative permittivity	16.17
Conductivity (S/m)	4.85
Power drift (%)	3.24
Ambient Temperature:	22.2 °C
Liquid Temperature:	22.5 °C
Crest factor:	1:1
ConvF:	2.10



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

SAR Peak: 6.22W/kg

SAR 10g (W/Kg)	0.600896
SAR 1g (W/Kg)	1.861065



System Performance Check (Body, 5400MHz)

Type: Phone measurement

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

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

Date of measurement: 05/19/2020

Measurement duration: 22 minutes 19 seconds

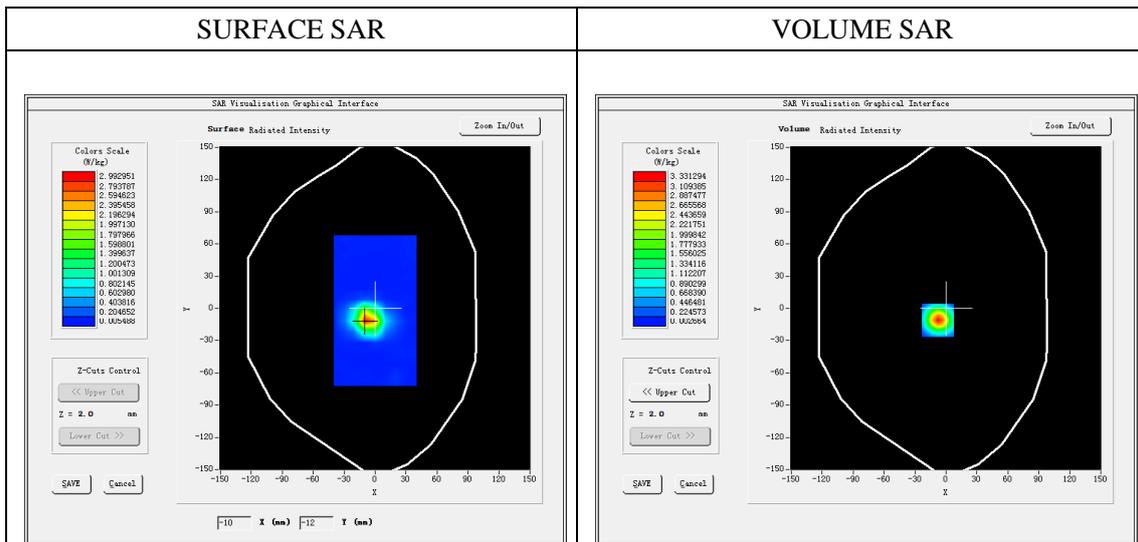
A. Experimental conditions.

Phantom File	dx=8mm dy=8mm
Phantom	7x7x8,dx=4mm dy=4mm dz=2mm
Device Position	Dipole
Band	5400MHz
Channels	
Signal	CW

B. SAR Measurement Results

Band SAR

E-Field Probe	SATIMO SN_41/18_EPG0330
Frequency (MHz)	5400
Relative permittivity (real part)	48.74
Relative permittivity	18.53
Conductivity (S/m)	5.56
Power drift (%)	0.08
Ambient Temperature:	22.2 °C
Liquid Temperature:	22.5 °C
Crest factor:	1:1
ConvF:	2.16

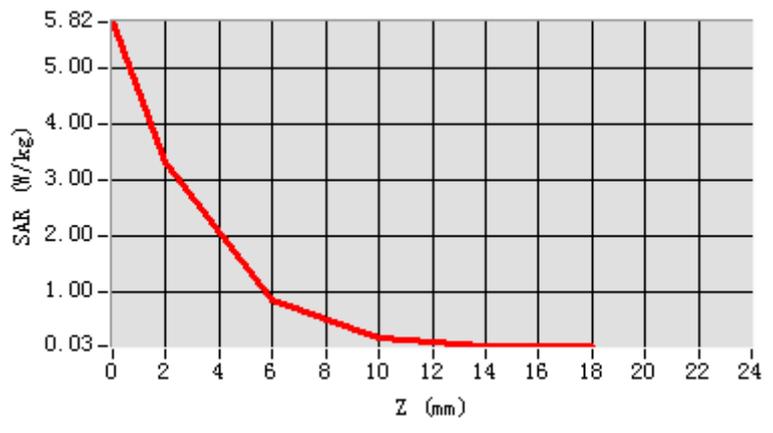


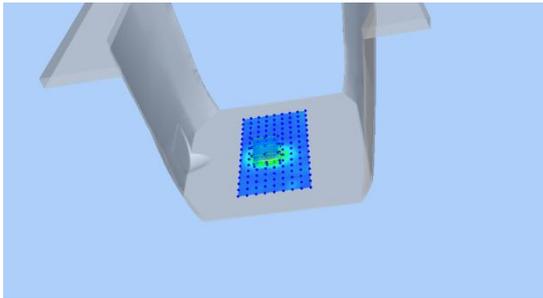
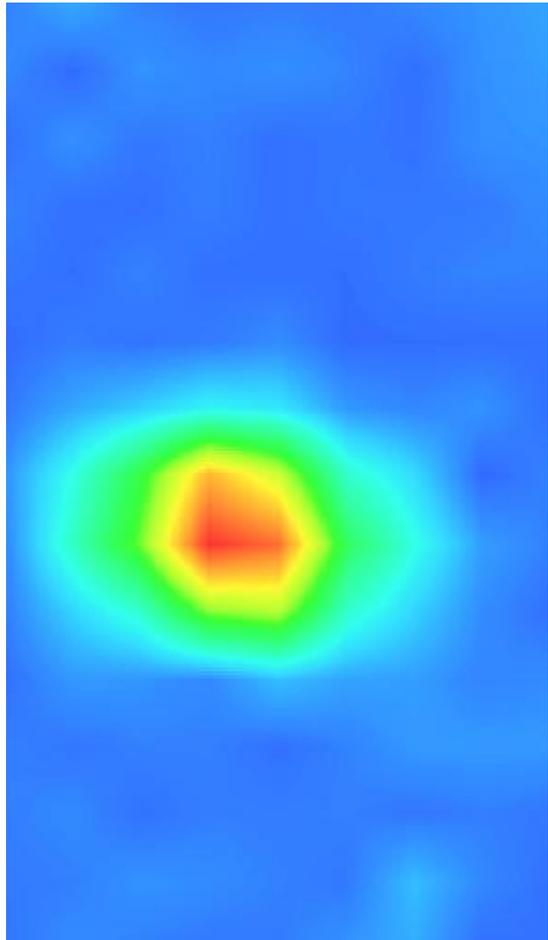
Maximum location: X=-8.00, Y=-11.00

SAR Peak: 6.02 W/kg

SAR 10g (W/Kg)	0.557766
SAR 1g (W/Kg)	1.753640

Z (mm)	0.00	2.00	6.00	10.00	14.00
SAR (W/Kg)	5.8236	3.3313	0.8531	0.1610	0.0416



3D screen shot	Hot spot position
	

System Performance Check (Head, 5600MHz)

Type: Phone measurement

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

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

Date of measurement: 05/19/2020

Measurement duration: 22 minutes 12 seconds

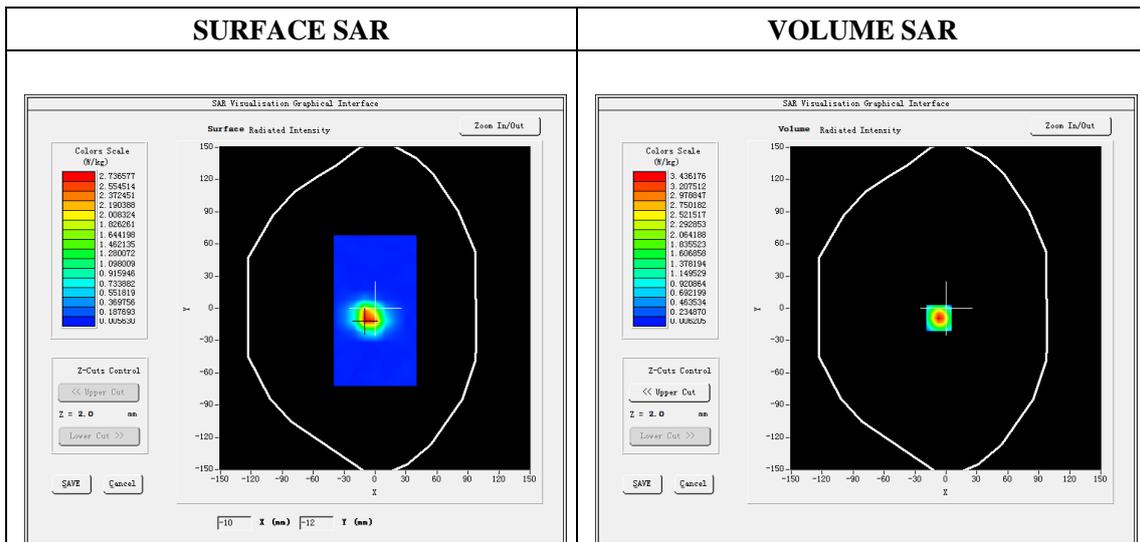
A. Experimental conditions.

Phantom File	dx=8mm dy=8mm
Phantom	7x7x8,dx=4mm dy=4mm dz=2mm
Device Position	Dipole
Band	5600MHz
Channels	
Signal	CW

B. SAR Measurement Results

Band SAR

E-Field Probe	SATIMO SN_41/18_EPG0330
Frequency (MHz)	5600
Relative permittivity (real part)	35.52
Relative permittivity	16.33
Conductivity (S/m)	5.08
Power drift (%)	0.07
Ambient Temperature:	22.2 °C
Liquid Temperature:	22.5 °C
Crest factor:	1:1
ConvF:	2.17

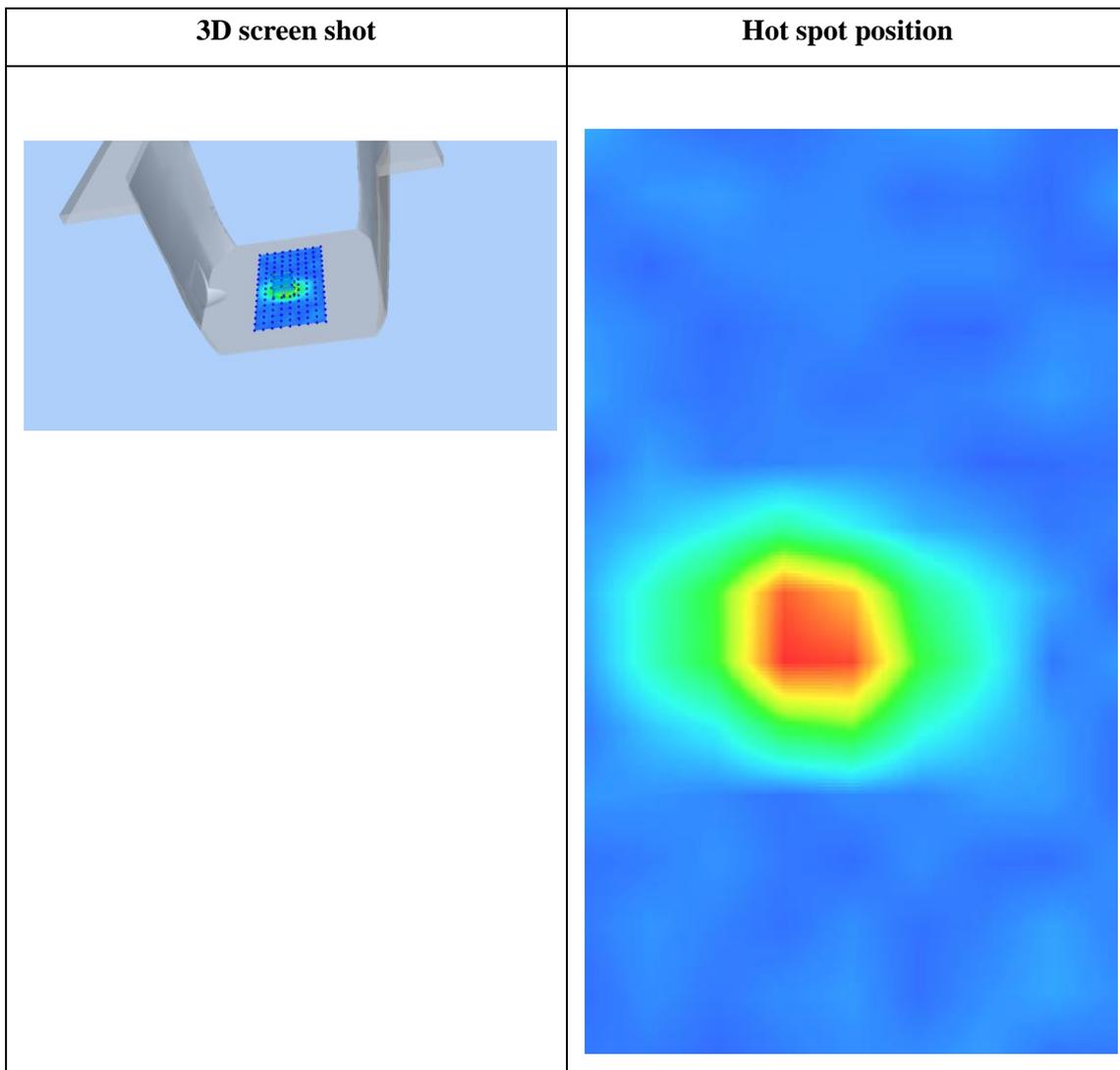
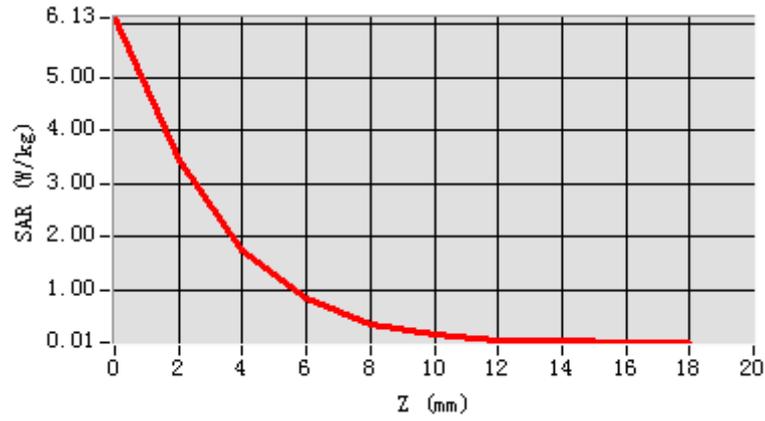


Maximum location: X=-7.00, Y=-9.00

SAR Peak: 6.38W/kg

SAR 10g (W/Kg)	0.498668
SAR 1g (W/Kg)	1.796003

Z (mm)	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00
SAR (W/Kg)	6.1261	3.4362	1.7670	0.8302	0.3668	0.1552	0.0662	0.0313	0.0179



System Performance Check (Body, 5600MHz)

Type: Phone measurement

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

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

Date of measurement: 05/19/2020

Measurement duration: 22 minutes 18 seconds

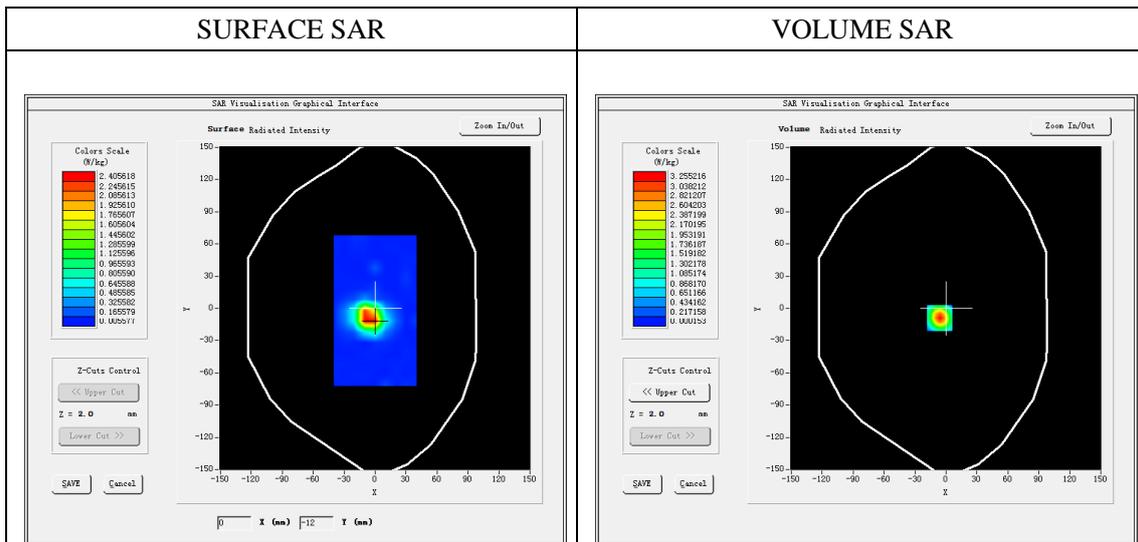
A. Experimental conditions.

Phantom File	dx=8mm dy=8mm
Phantom	7x7x8,dx=4mm dy=4mm dz=2mm
Device Position	Dipole
Band	5600MHz
Channels	
Signal	CW

B. SAR Measurement Results

Band SAR

E-Field Probe	SATIMO SN_41/18_EPG0330
Frequency (MHz)	5600
Relative permittivity (real part)	48.53
Relative permittivity	18.58
Conductivity (S/m)	5.78
Power drift (%)	-0.80
Ambient Temperature:	22.2 °C
Liquid Temperature:	22.5 °C
Crest factor:	1:1
ConvF:	2.24

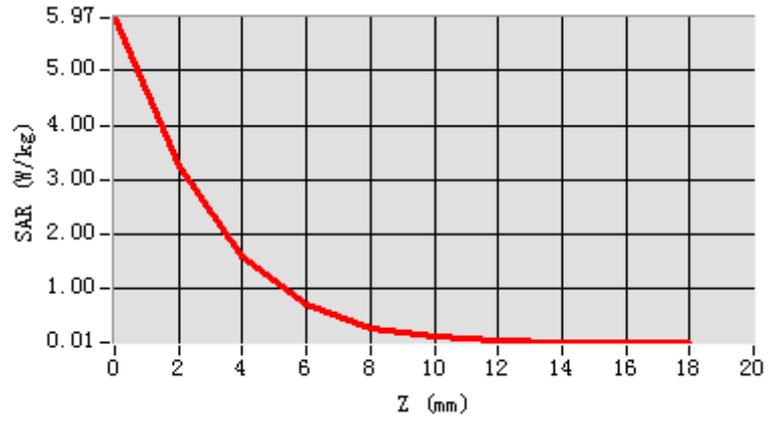


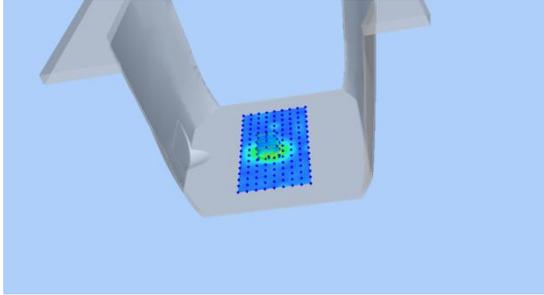
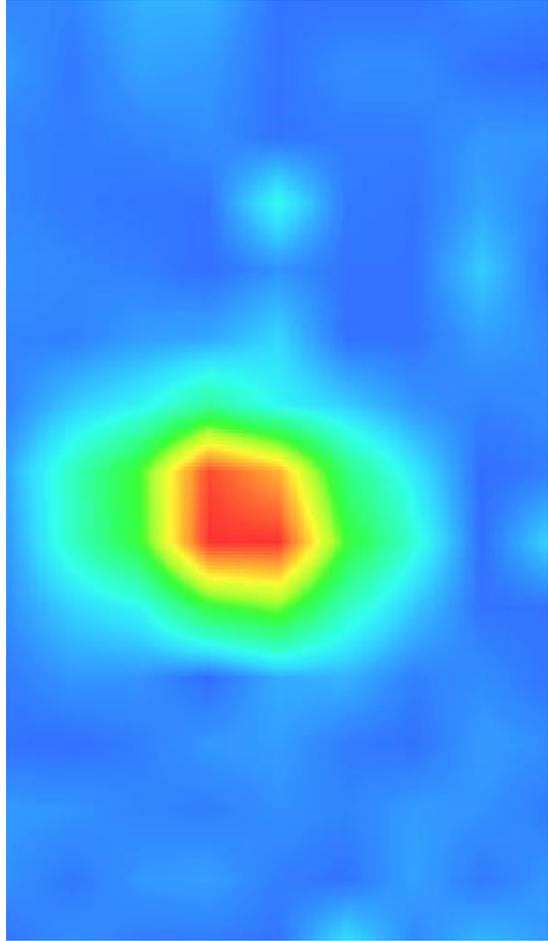
Maximum location: X=-6.00, Y=-9.00

SAR Peak: 6.22 W/kg

SAR 10g (W/Kg)	0.457492
SAR 1g (W/Kg)	1.687072

Z (mm)	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00
SAR (W/Kg)	5.9668	3.2552	1.6023	0.7076	0.2883	0.1109	0.0439	0.0213	0.0151



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=5mm, dy=5mm, dz=4mm

Date of measurement: 05/19/2020

Measurement duration: 22 minutes 15 seconds

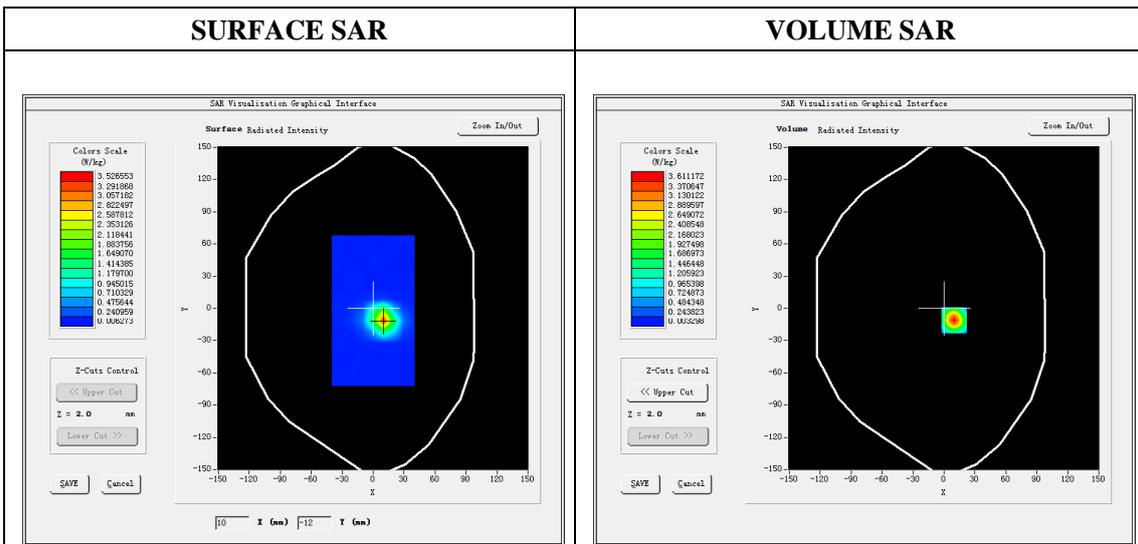
A. Experimental conditions.

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

B. SAR Measurement Results

Band SAR

E-Field Probe	SATIMO SN_41/18_EPG0330
Frequency (MHz)	5800
Relative permittivity (real part)	35.30
Relative permittivity	16.36
Conductivity (S/m)	5.27
Power drift (%)	-2.00
Ambient Temperature:	22.2 °C
Liquid Temperature:	22.5 °C
Crest factor:	1:1
ConvF:	2.19

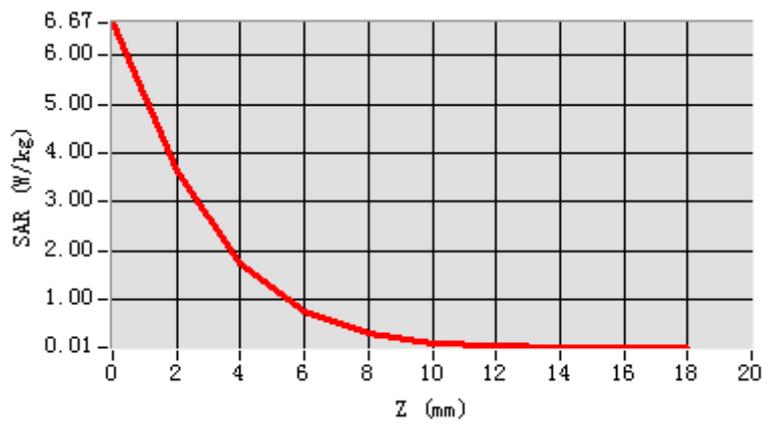


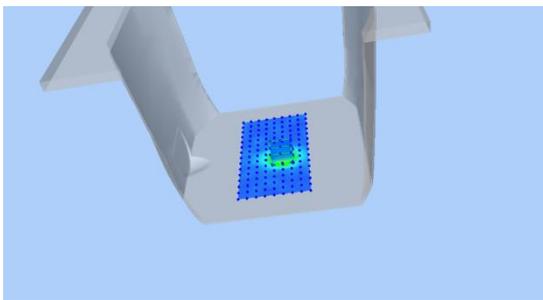
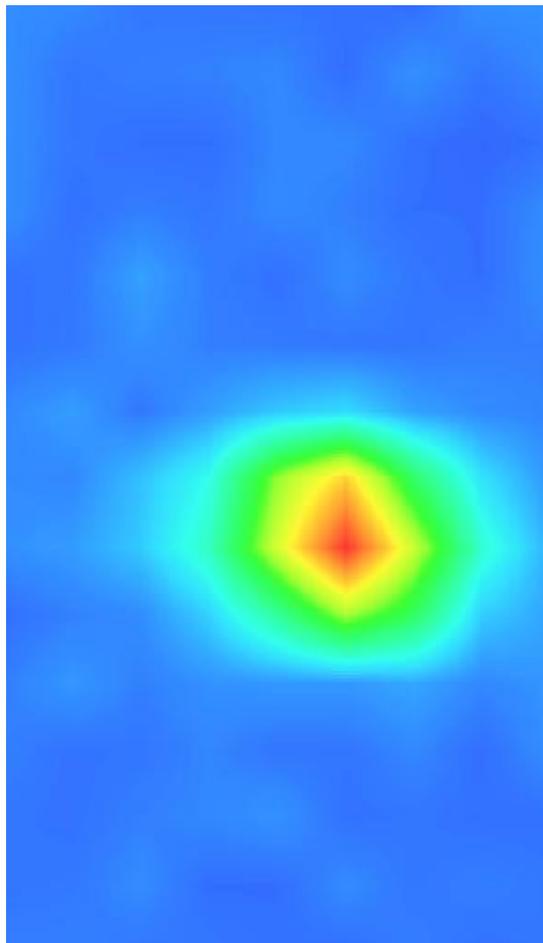
Maximum location: X=10.00, Y=-11.00

SAR Peak: 6.96 W/kg

SAR 10g (W/Kg)	0.484617
SAR 1g (W/Kg)	1.846325

Z (mm)	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00
SAR (W/Kg)	6.6662	3.6112	1.7570	0.7623	0.3027	0.1124	0.0427	0.0204	0.0149



3D screen shot	Hot spot position
	

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: 05/19/2020

Measurement duration: 22 minutes 20 seconds

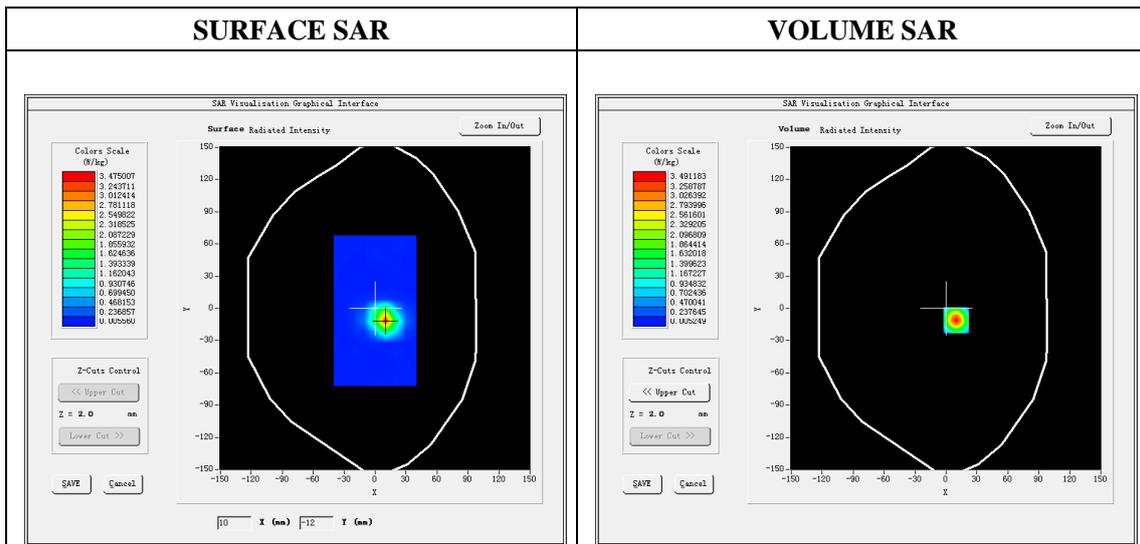
A. Experimental conditions.

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

B. SAR Measurement Results

Band SAR

E-Field Probe	SATIMO SN_41/18_EPG0330
Frequency (MHz)	5800
Relative permittivity (real part)	48.20
Relative permittivity	18.62
Conductivity (S/m)	6.00
Power drift (%)	-3.33
Ambient Temperature:	22.2 °C
Liquid Temperature:	22.5 °C
Crest factor:	1:1
ConvF:	2.26



Maximum location: X=10.00, Y=-11.00

SAR Peak: 6.82 W/kg

SAR 10g (W/Kg)	0.466788
SAR 1g (W/Kg)	1.779539

Z (mm)	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00
SAR (W/Kg)	6.5186	3.4912	1.6666	0.7021	0.2669	0.0931	0.0330	0.0154	0.0121

