

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

Measurement	Liquid	Frequency	Test Date
System Check	Head	750	2020-03-24
System Check	Body	750	2020-03-24
System Check	Head	835	2020-03-25
System Check	Body	835	2020-03-25
System Check	Head	1800	2020-03-26
System Check	Body	1800	2020-03-26
System Check	Head	1900	2020-03-27
System Check	Body	1900	2020-03-27
System Check	Head	2450	2020-03-28
System Check	Body	2450	2020-03-28
System Check	Head	2600	2020-03-30
System Check	Body	2600	2020-03-30
System Check	Head	5200	2020-03-31
System Check	Body	5200	2020-03-31
System Check	Head	5800	2020-04-01
System Check	Body	5800	2020-04-01

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: 03/24/2020

Measurement duration: 22 minutes 04 seconds

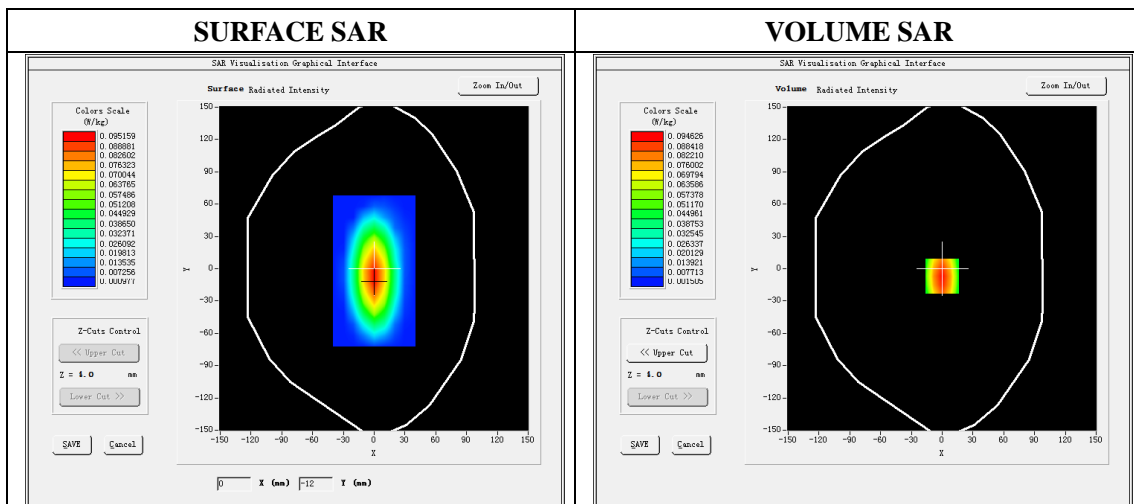
A. Experimental conditions.

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

B. SAR Measurement Results

Band SAR

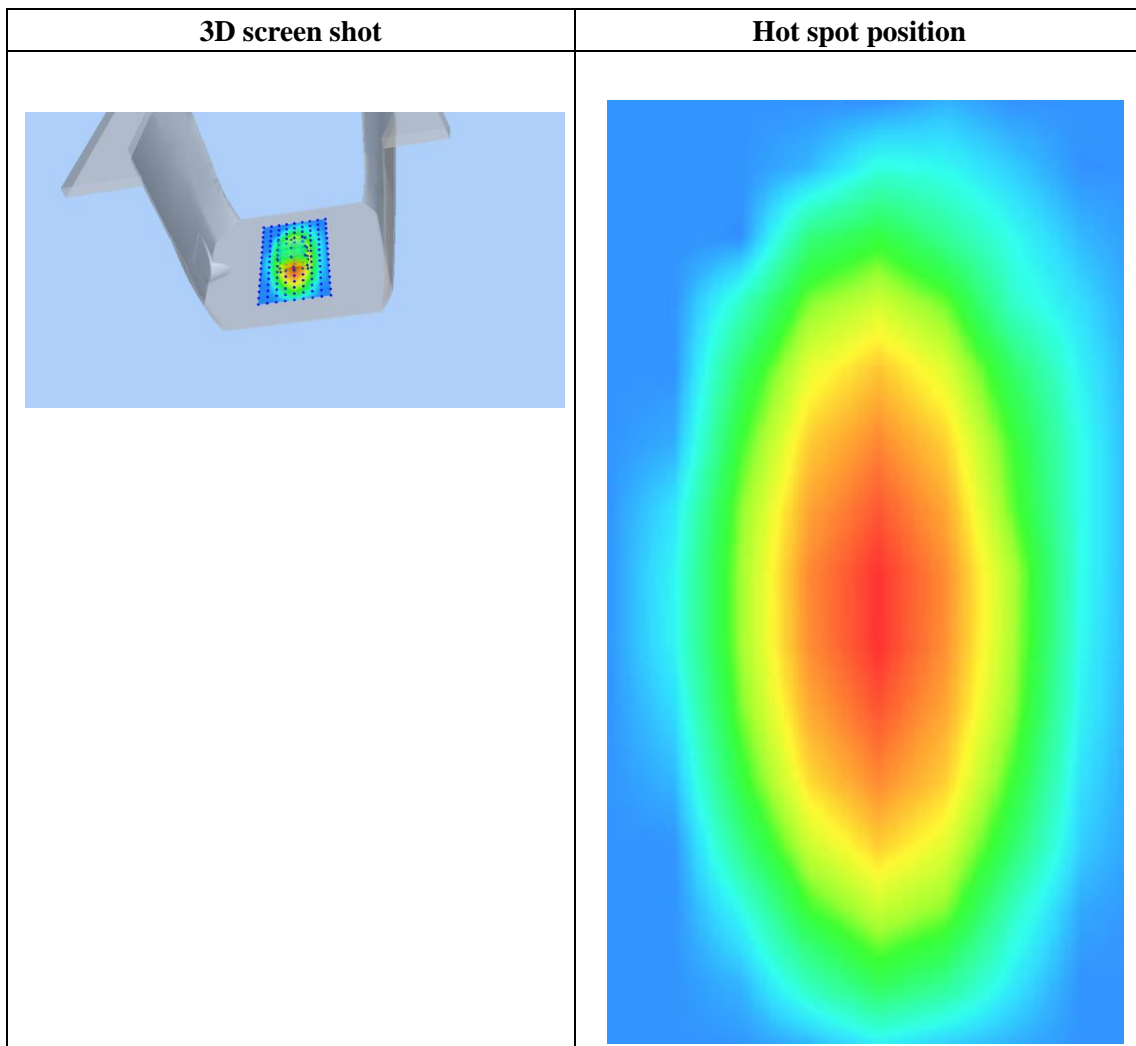
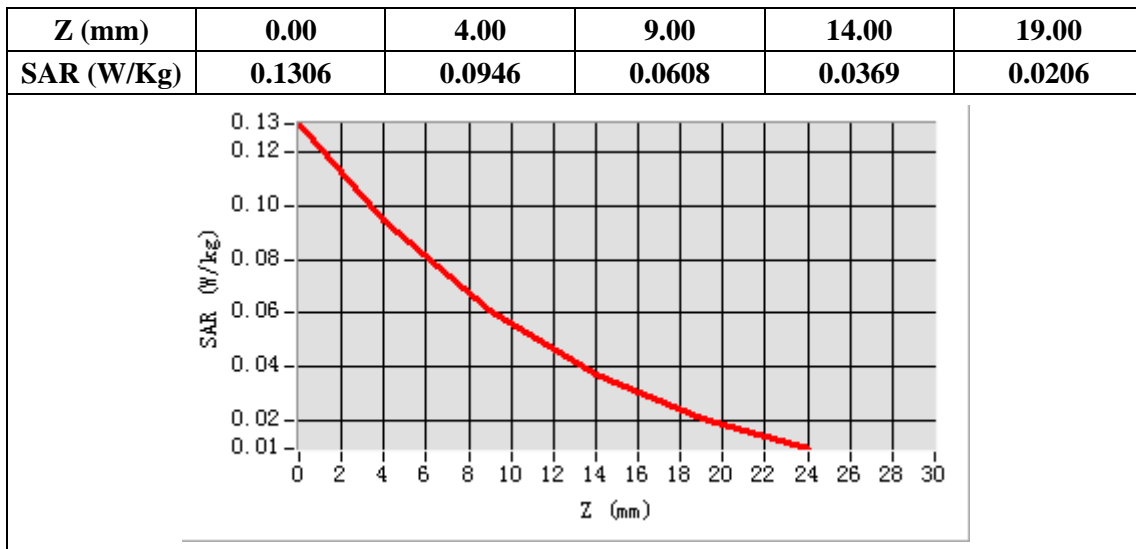
E-Field Probe	SATIMO SN_41/18_EPG0330
Frequency (MHz)	750
Relative permittivity (real part)	41.85
Relative permittivity	21.60
Conductivity (S/m)	0.90
Power drift (%)	0.41
Ambient Temperature:	22.2 °C
Liquid Temperature:	22.6 °C
ConvF:	1.54
Crest factor:	1:1



Maximum location: X=0.00, Y=-7.00

SAR Peak: 0.13 W/kg

SAR 10g (W/Kg)	0.052627
SAR 1g (W/Kg)	0.089371



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: 03/24/2020

Measurement duration: 22 minutes 02 seconds

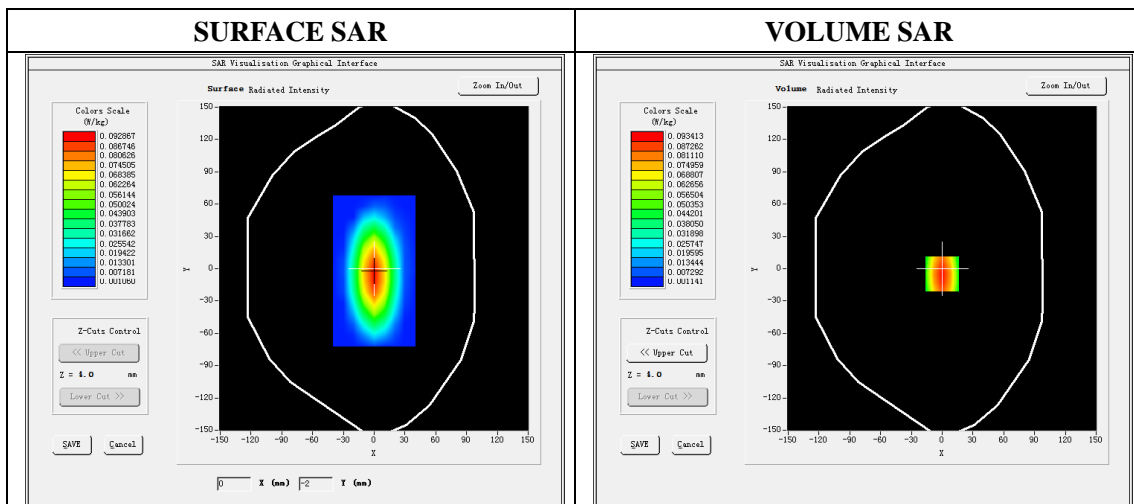
A. Experimental conditions.

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

B. SAR Measurement Results

Band SAR

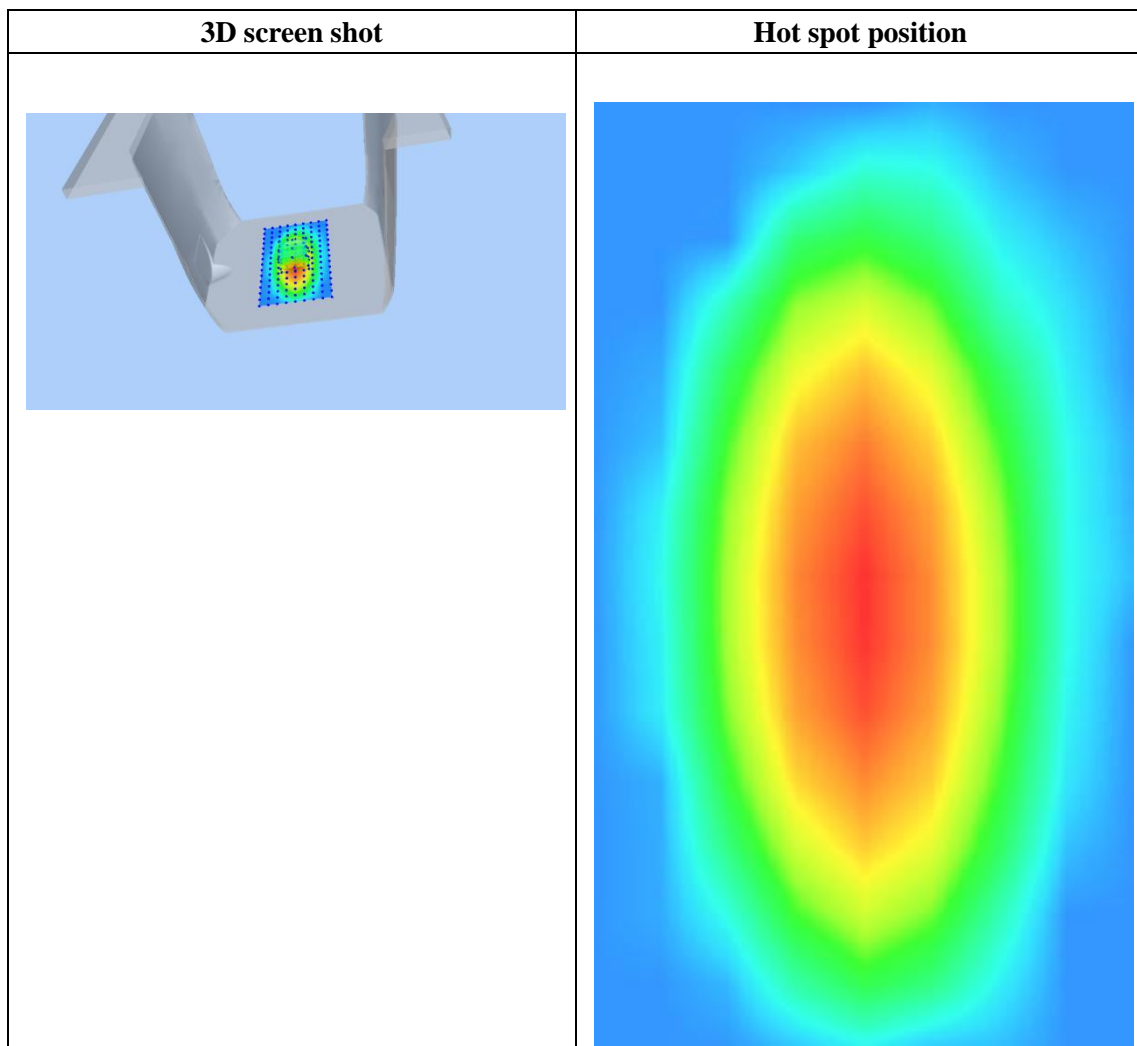
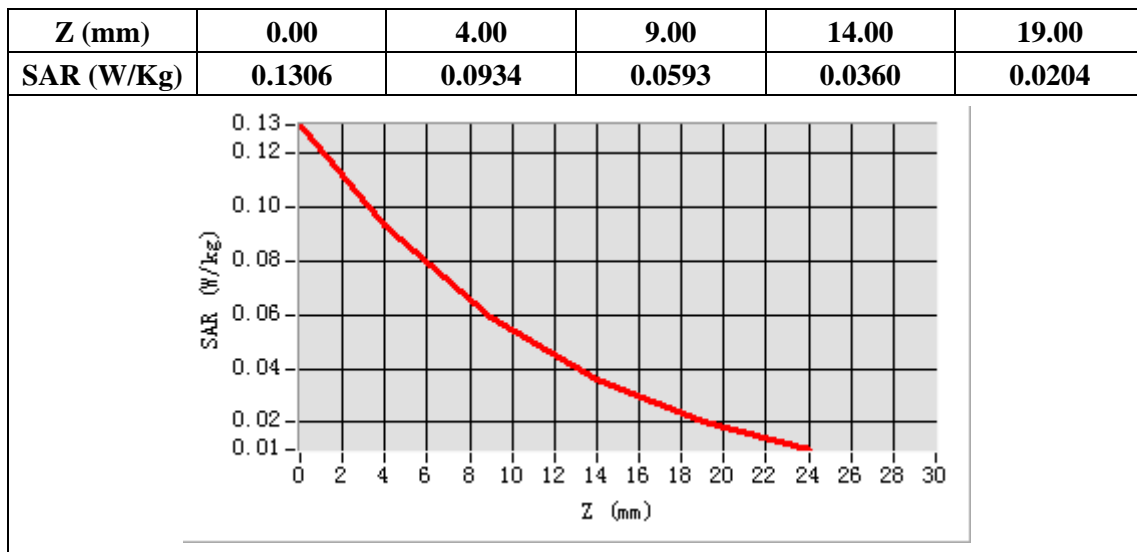
E-Field Probe	SATIMO SN_41/18_EPG0330
Frequency (MHz)	750
Relative permittivity (real part)	55.54
Relative permittivity	23.28
Conductivity (S/m)	0.97
Power drift (%)	0.99
Ambient Temperature:	22.2 °C
Liquid Temperature:	22.6 °C
ConvF:	1.59
Crest factor:	1:1



Maximum location: X=0.00, Y=-5.00

SAR Peak: 0.13 W/kg

SAR 10g (W/Kg)	0.051792
SAR 1g (W/Kg)	0.088025



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: 03/25/2020

Measurement duration: 22 minutes 03 seconds

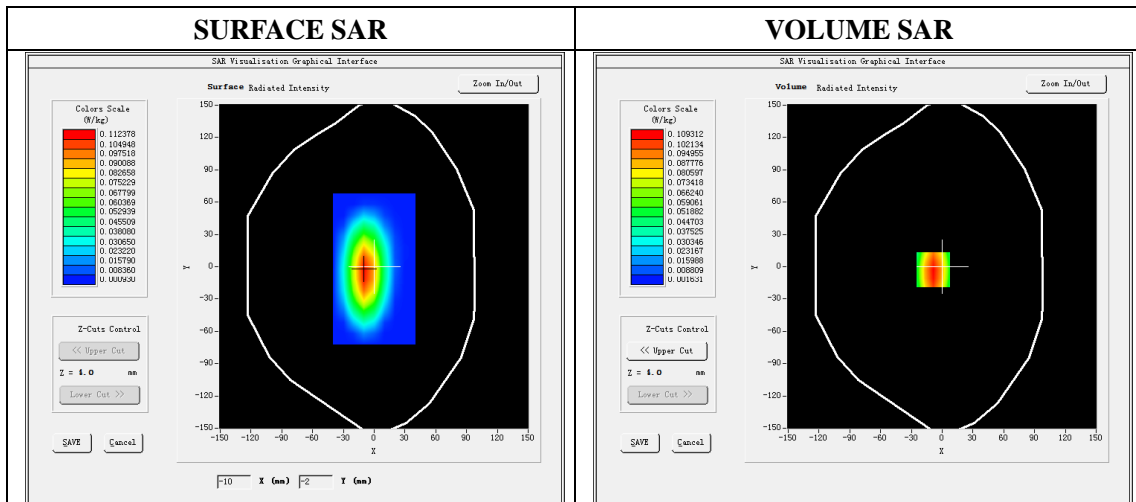
A. Experimental conditions.

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

B. SAR Measurement Results

Band SAR

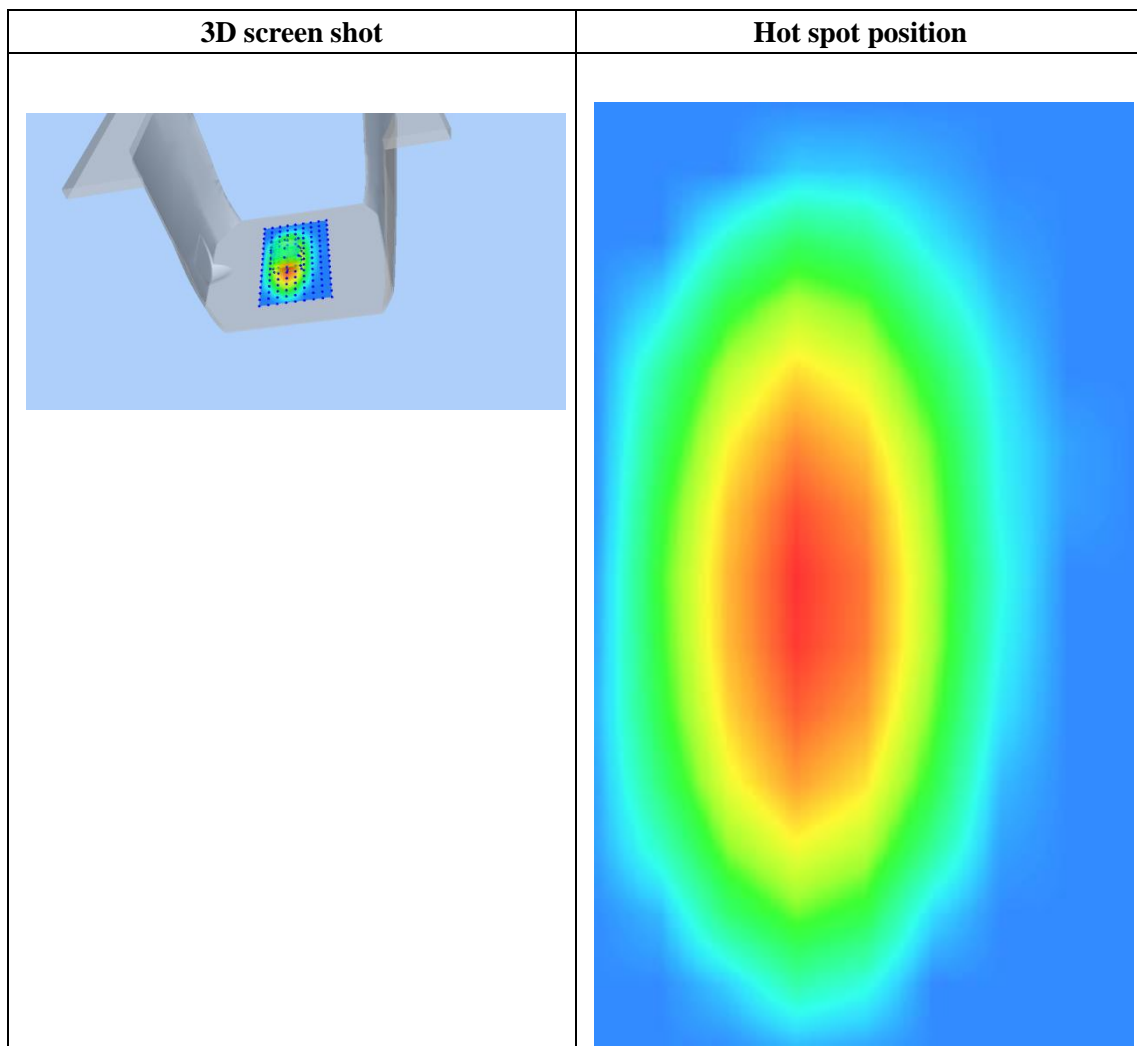
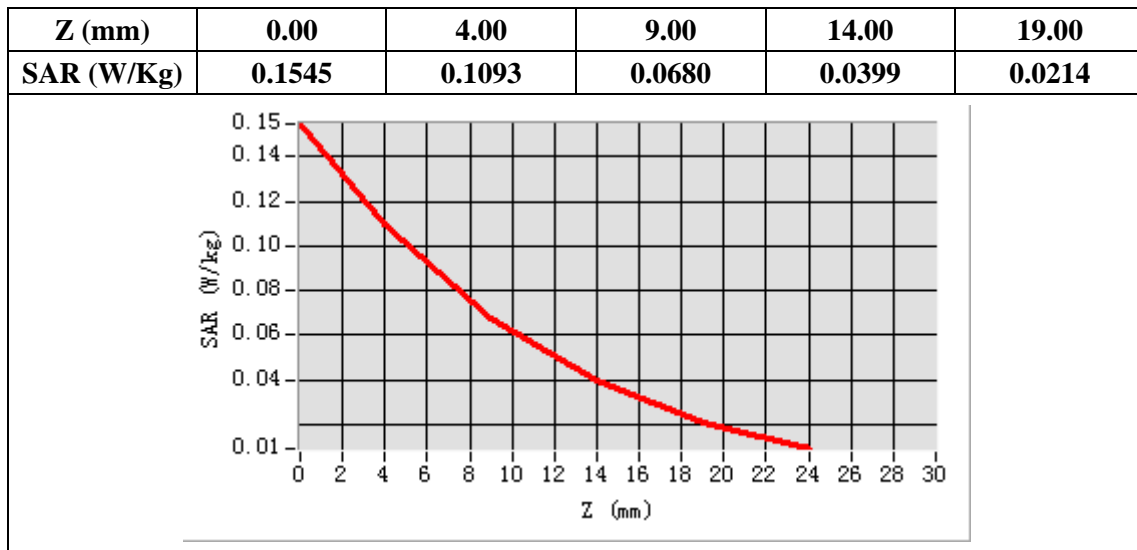
E-Field Probe	SATIMO SN_41/18_EPG0330
Frequency (MHz)	835
Relative permittivity (real part)	41.59
Relative permittivity	18.85
Conductivity (S/m)	0.89
Power drift (%)	-1.35
Ambient Temperature:	22.2 °C
Liquid Temperature:	22.6 °C
ConvF:	1.60
Crest factor:	1:1



Maximum location: X=-9.00, Y=-3.00

SAR Peak: 0.16 W/kg

SAR 10g (W/Kg)	0.058896
SAR 1g (W/Kg)	0.102621



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: 03/25/2020

Measurement duration: 22 minutes 01 seconds

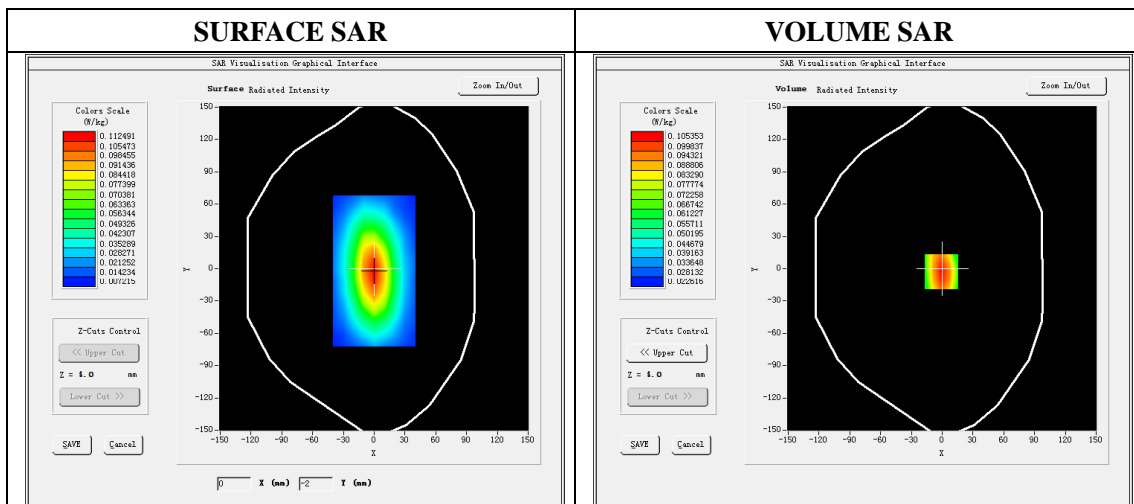
A. Experimental conditions.

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)	55.19
Relative permittivity	21.34
Conductivity (S/m)	0.99
Power drift (%)	-4.59
Ambient Temperature:	22.2 °C
Liquid Temperature:	22.6 °C
ConvF:	1.64
Crest factor:	1:1

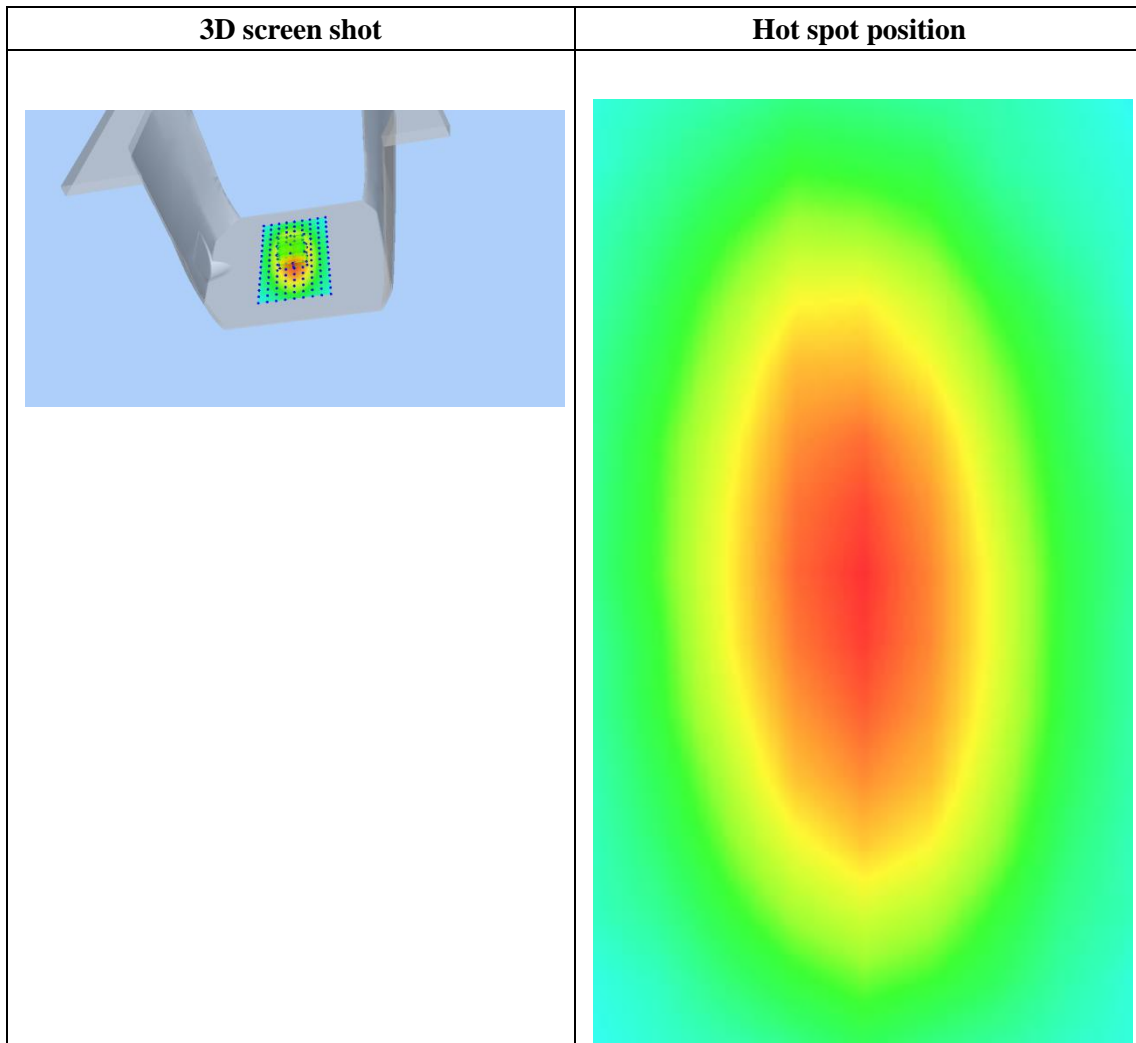
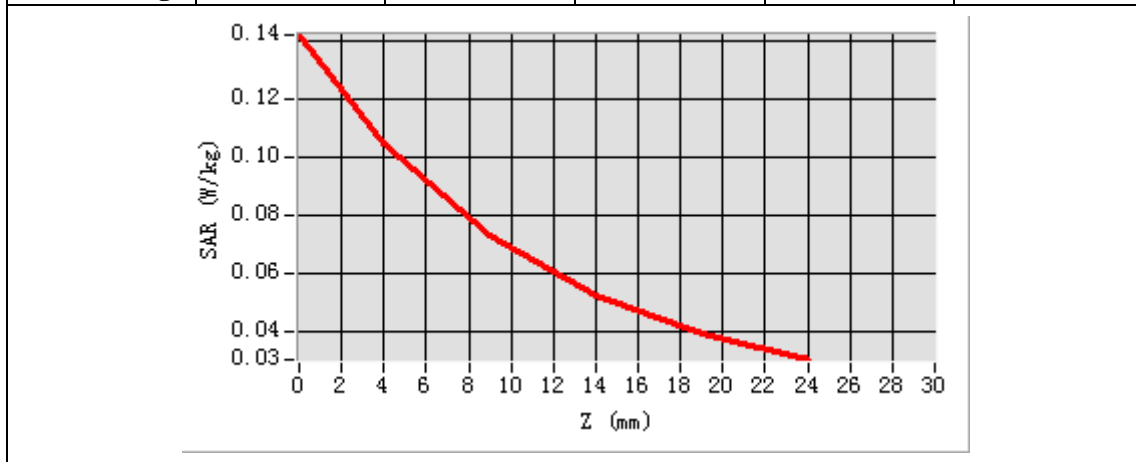


Maximum location: X=-1.00, Y=-3.00

SAR Peak: 0.14 W/kg

SAR 10g (W/Kg)	0.068825
SAR 1g (W/Kg)	0.102302

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.1423	0.1054	0.0731	0.0525	0.0396



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: 03/26/2020

Measurement duration: 22 minutes 09 seconds

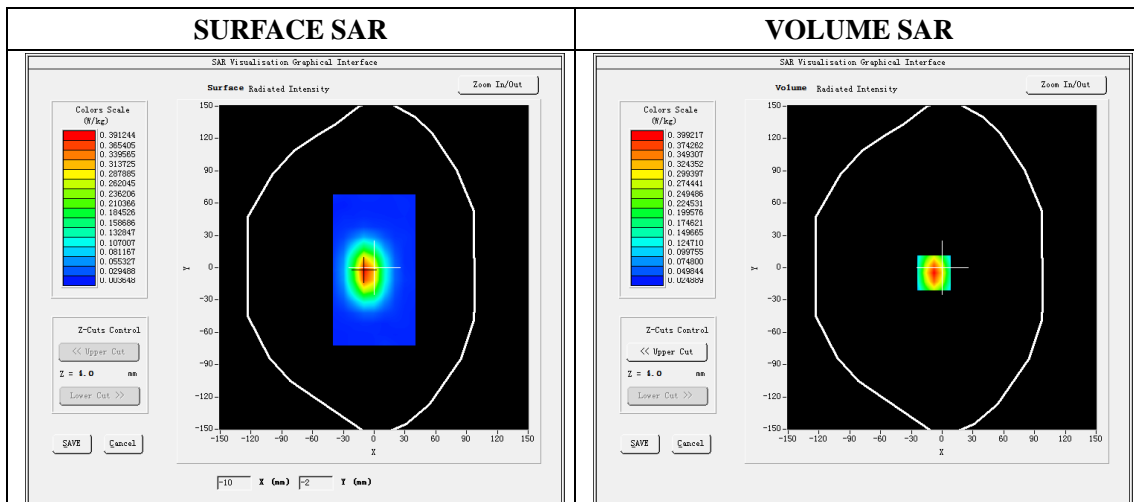
A. Experimental conditions.

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

B. SAR Measurement Results

Band SAR

E-Field Probe	SATIMO SN_41/18_EPG0330
Frequency (MHz)	1800
Relative permittivity (real part)	40.62
Relative permittivity	13.90
Conductivity (S/m)	1.39
Power Drift (%)	-1.82
Ambient Temperature:	22.1 °C
Liquid Temperature:	22.6 °C
ConvF:	1.74
Duty factor:	1:1

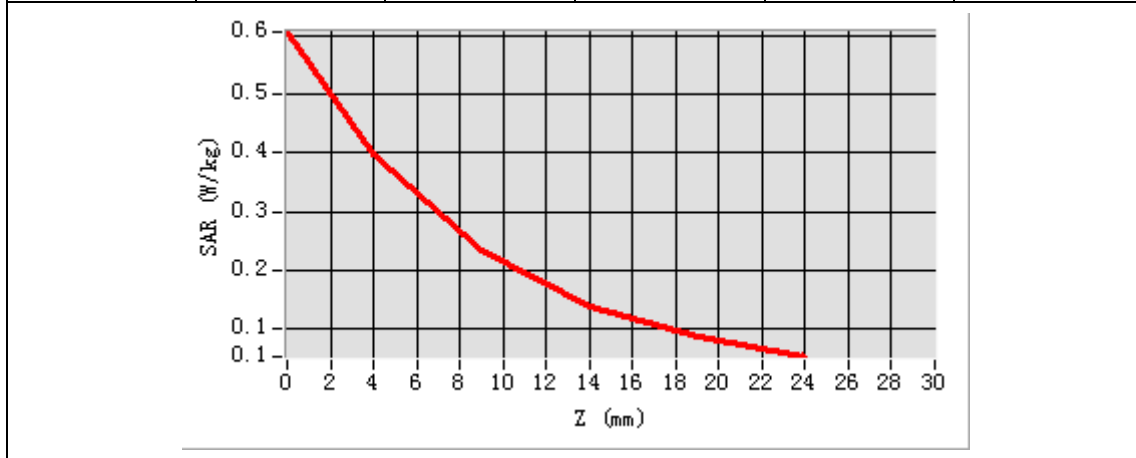


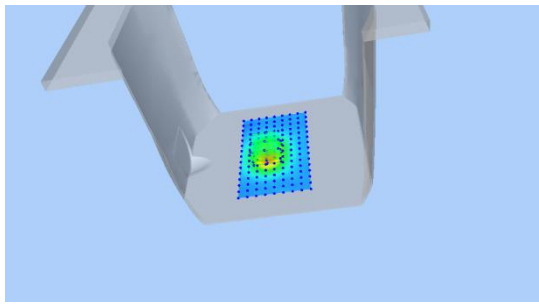
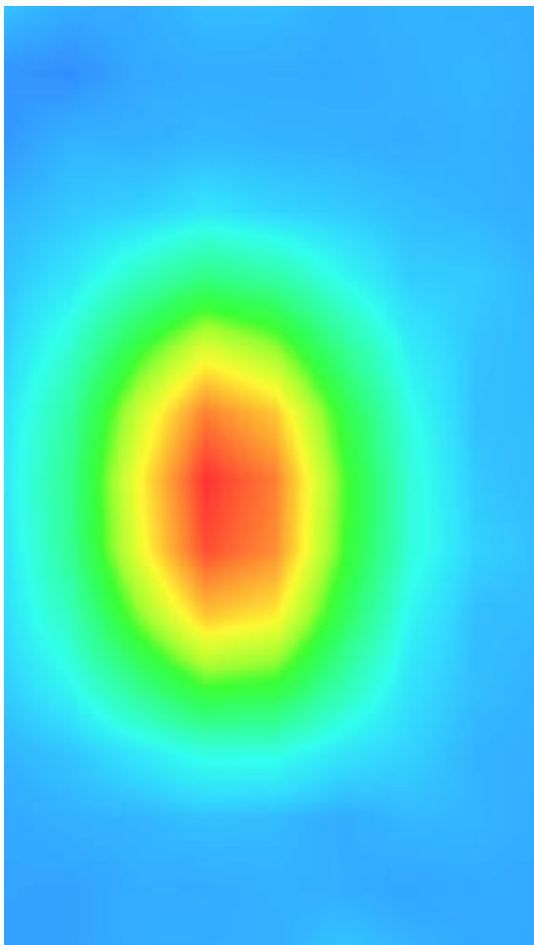
Maximum location: X=-8.00, Y=-5.00

SAR Peak: 0.61 W/kg

SAR 10g (W/Kg)	0.201941
SAR 1g (W/Kg)	0.374304

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.6066	0.3992	0.2326	0.1375	0.0852



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: 03/26/2020

Measurement duration: 22 minutes 05 seconds

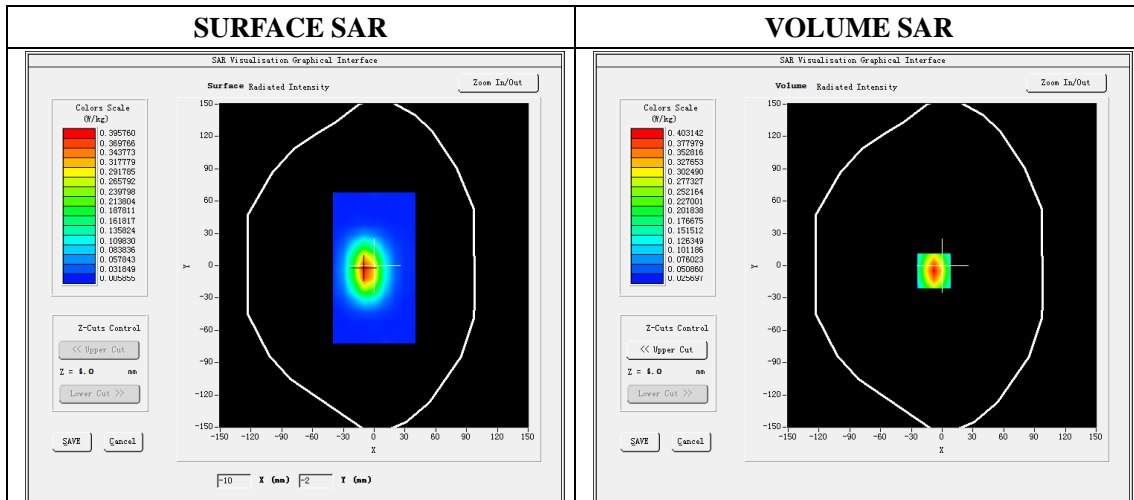
A. Experimental conditions.

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

B. SAR Measurement Results

Band SAR

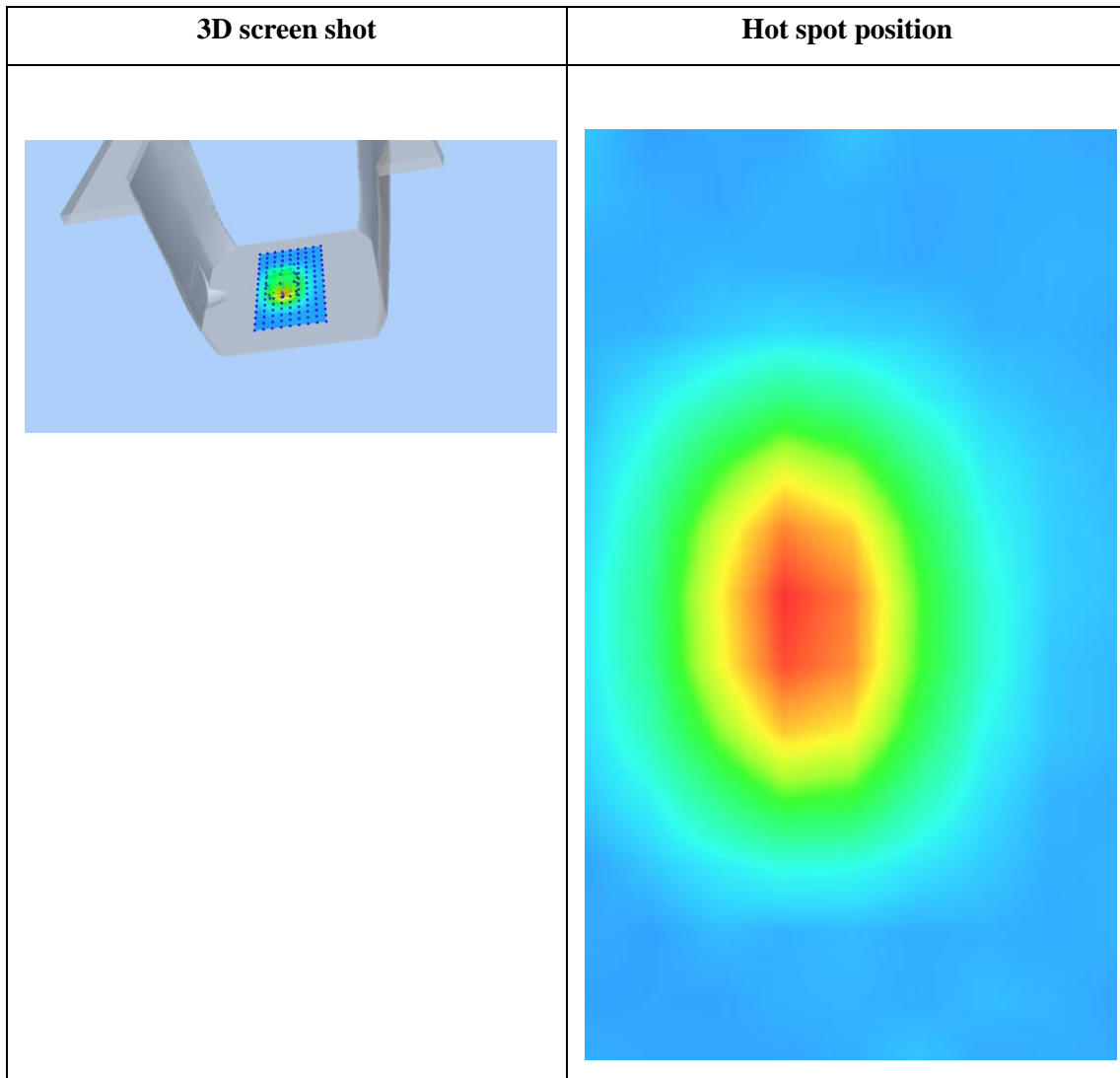
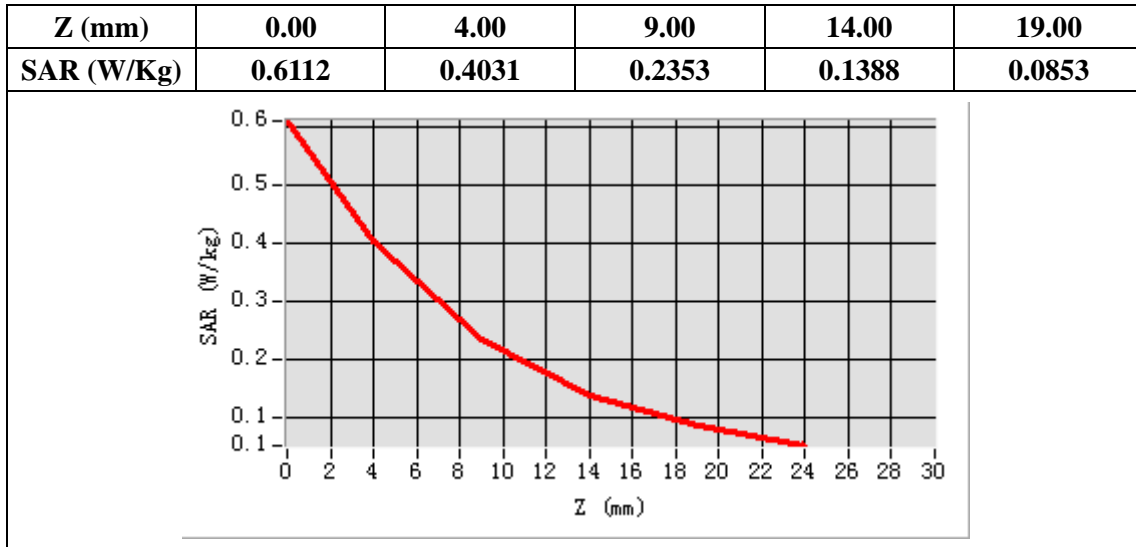
E-Field Probe	SATIMO SN_41/18_EPG0330
Frequency (MHz)	1800
Relative permittivity (real part)	53.27
Relative permittivity	15.10
Conductivity (S/m)	1.51
Power Drift (%)	-1.63
Ambient Temperature:	22.1 °C
Liquid Temperature:	22.6 °C
ConvF:	1.81
Duty factor:	1:1



Maximum location: X=-8.00, Y=-5.00

SAR Peak: 0.61 W/kg

SAR 10g (W/Kg)	0.202238
SAR 1g (W/Kg)	0.373121



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: 03/27/2020

Measurement duration: 22 minutes 07 seconds

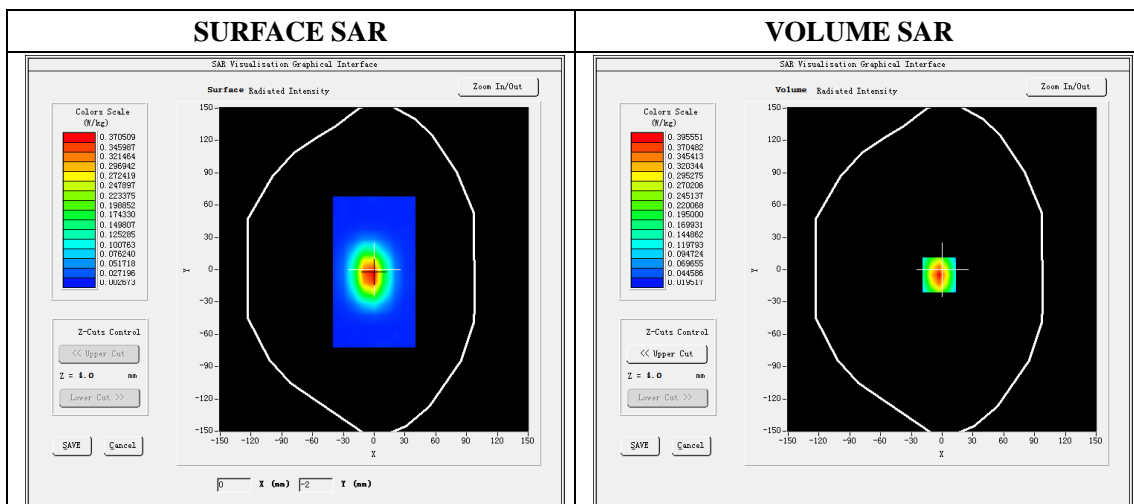
A. Experimental conditions.

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)	40.53
Relative permittivity	13.36
Conductivity (S/m)	1.41
Power Drift (%)	-1.44
Ambient Temperature:	22.1 °C
Liquid Temperature:	22.6 °C
ConvF:	2.03
Duty factor:	1:1

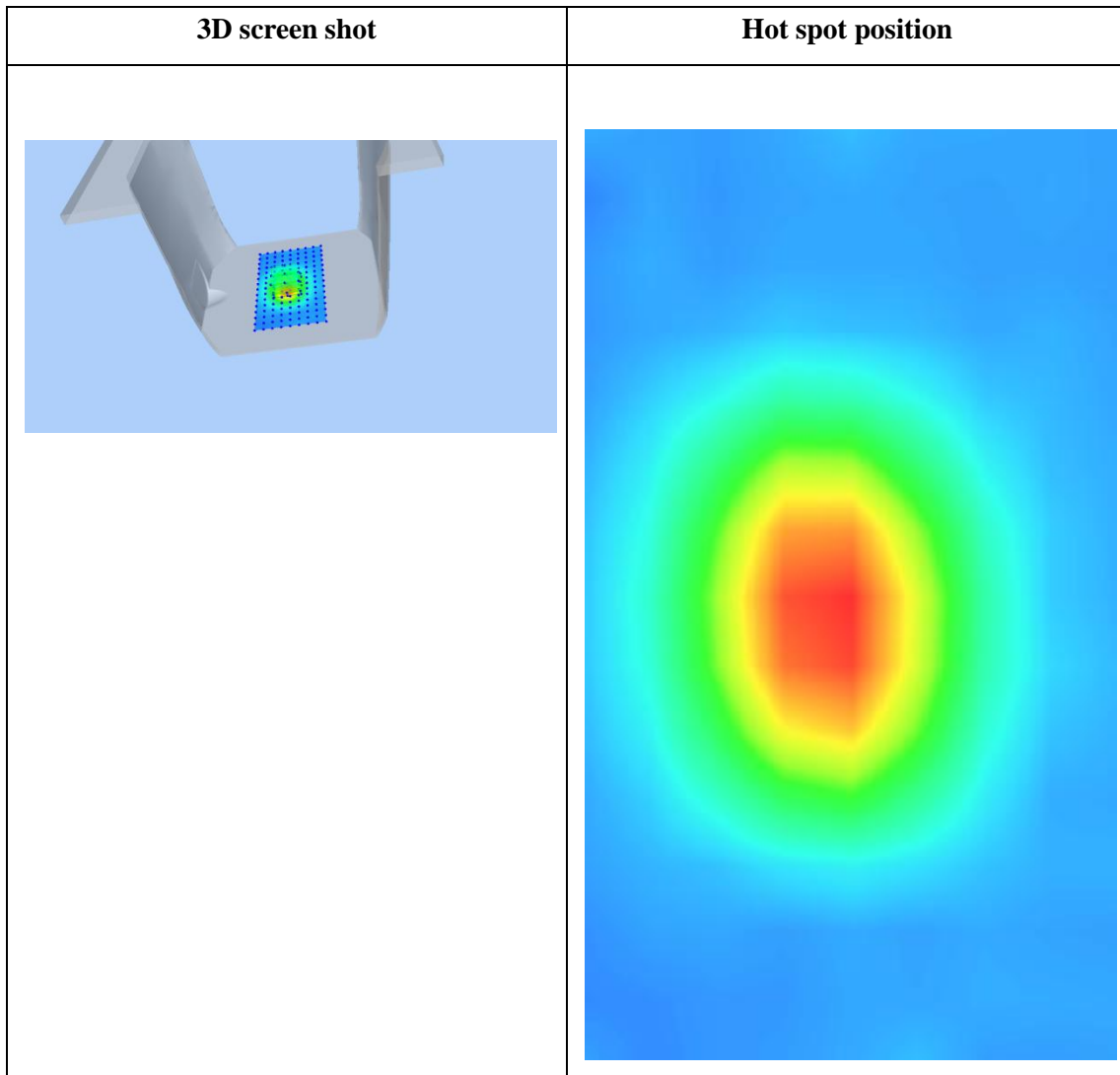
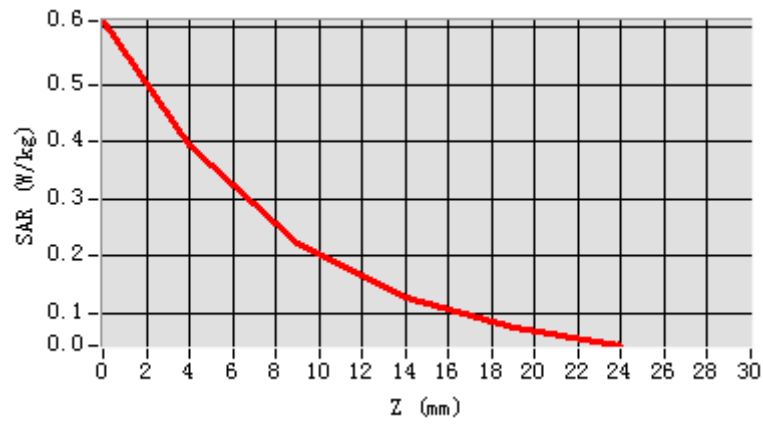


Maximum location: X=-3.00, Y=-5.00

SAR Peak: 0.61 W/kg

SAR 10g (W/Kg)	0.191788
SAR 1g (W/Kg)	0.364282

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.6122	0.3956	0.2238	0.1273	0.0754



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: 03/27/2020

Measurement duration: 22 minutes 08 seconds

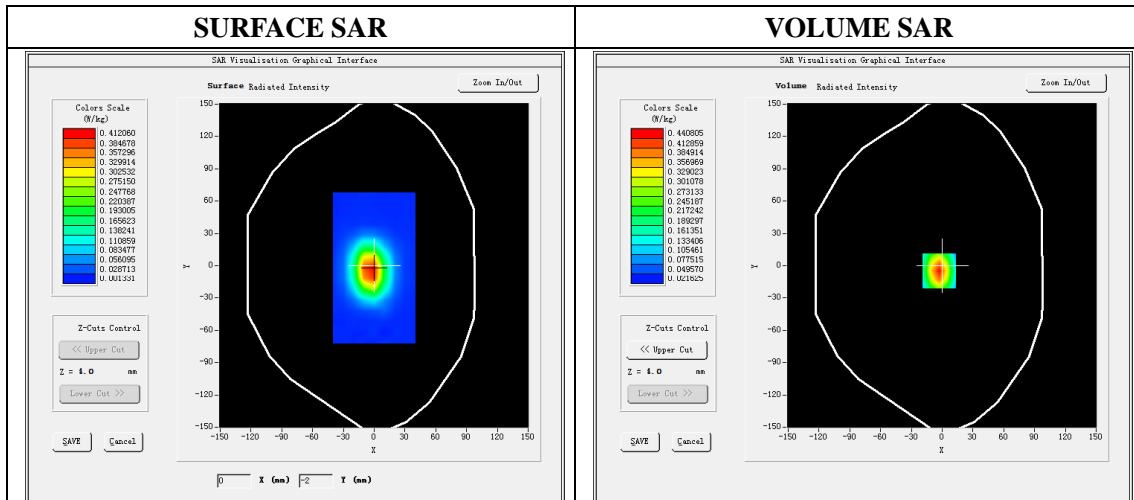
A. Experimental conditions.

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

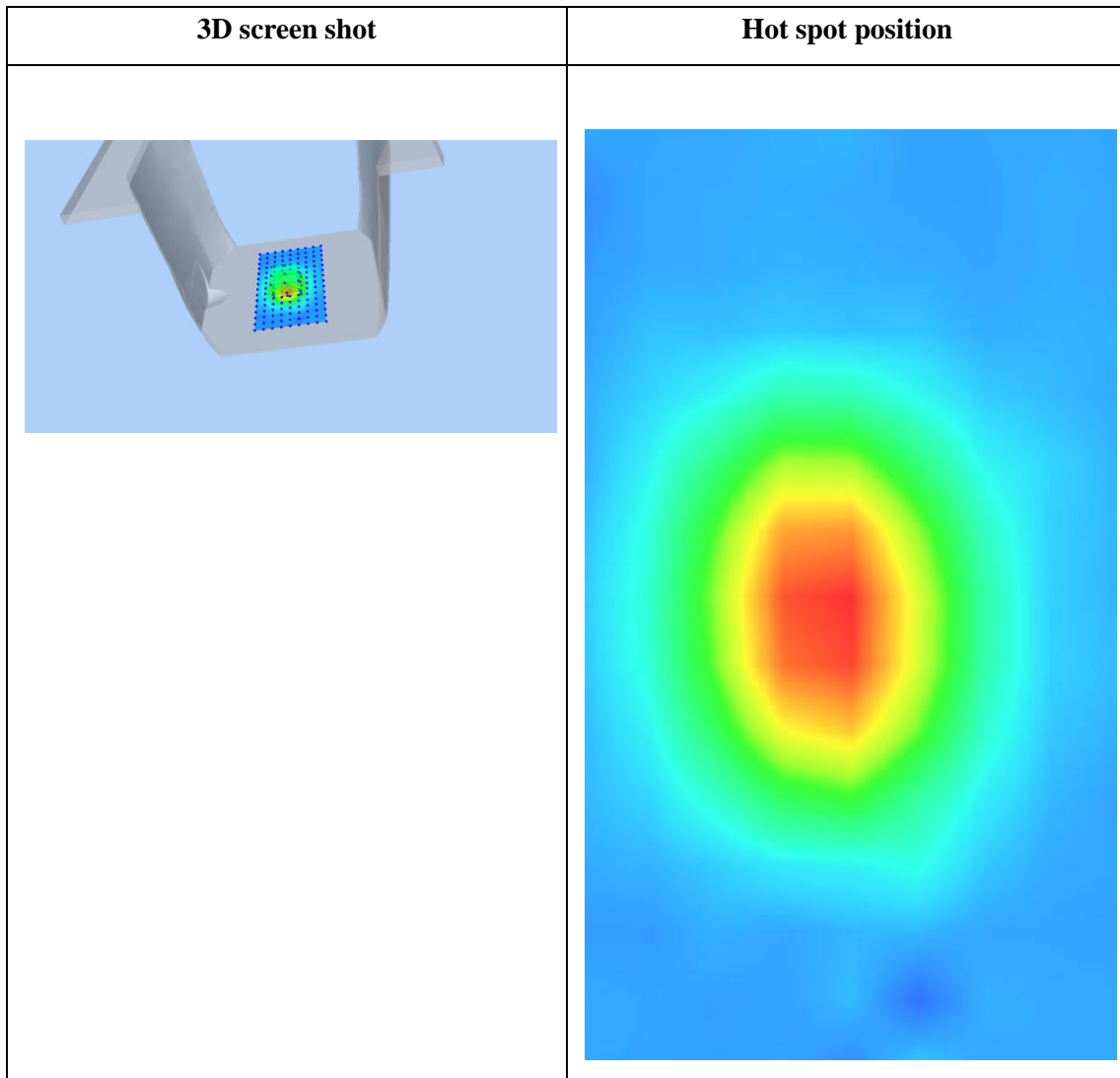
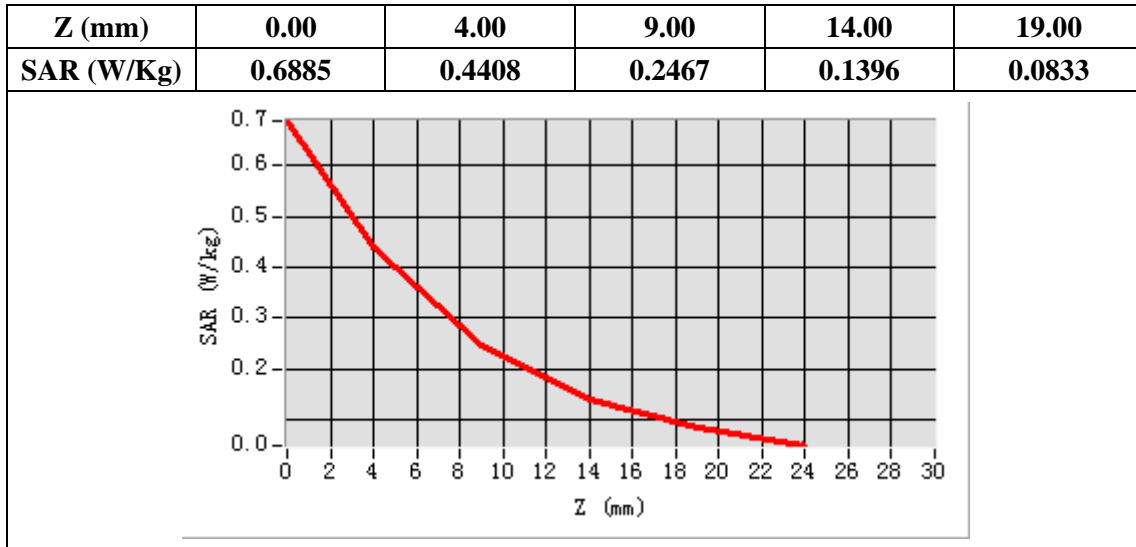
E-Field Probe	SATIMO SN_41/18_EPG0330
Frequency (MHz)	1900
Relative permittivity (real part)	53.18
Relative permittivity	14.21
Conductivity (S/m)	1.50
Power Drift (%)	-1.43
Ambient Temperature:	22.1 °C
Liquid Temperature:	22.6 °C
ConvF:	2.08
Duty factor:	1:1



Maximum location: X=-3.00, Y=-5.00

SAR Peak: 0.69 W/kg

SAR 10g (W/Kg)	0.213355
SAR 1g (W/Kg)	0.406083



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: 03/28/2020

Measurement duration: 22 minutes 06 seconds

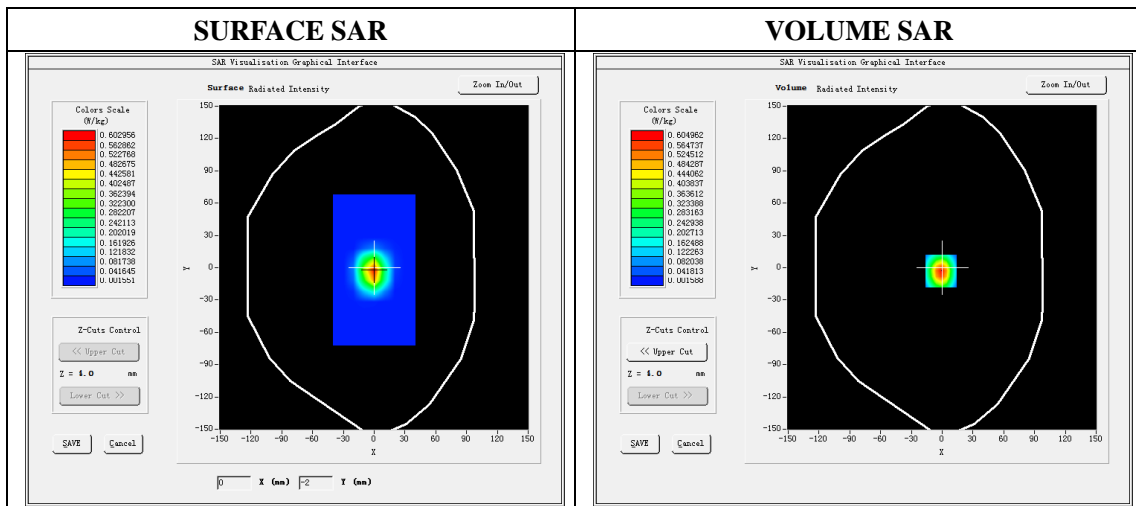
A. Experimental conditions.

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

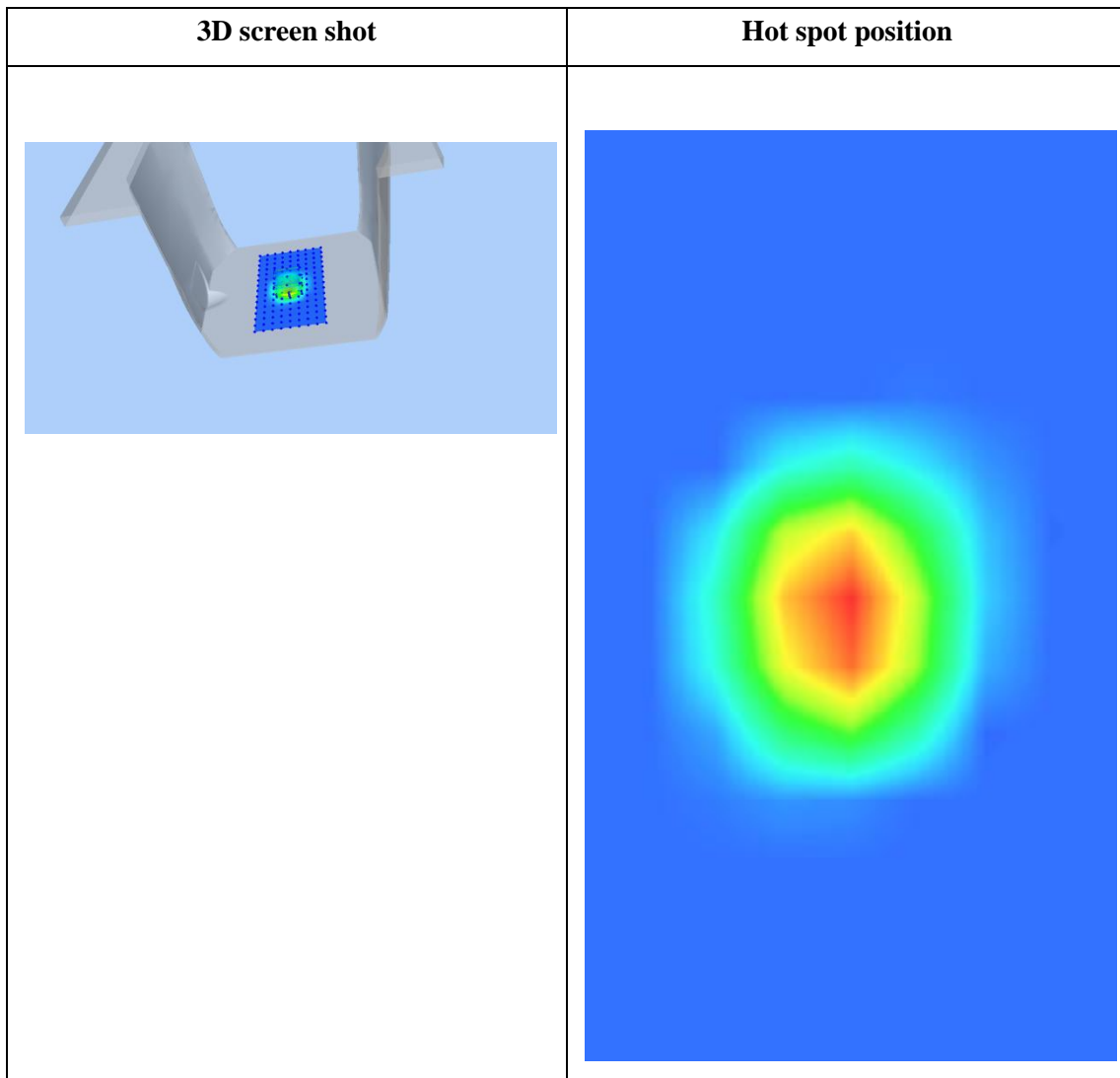
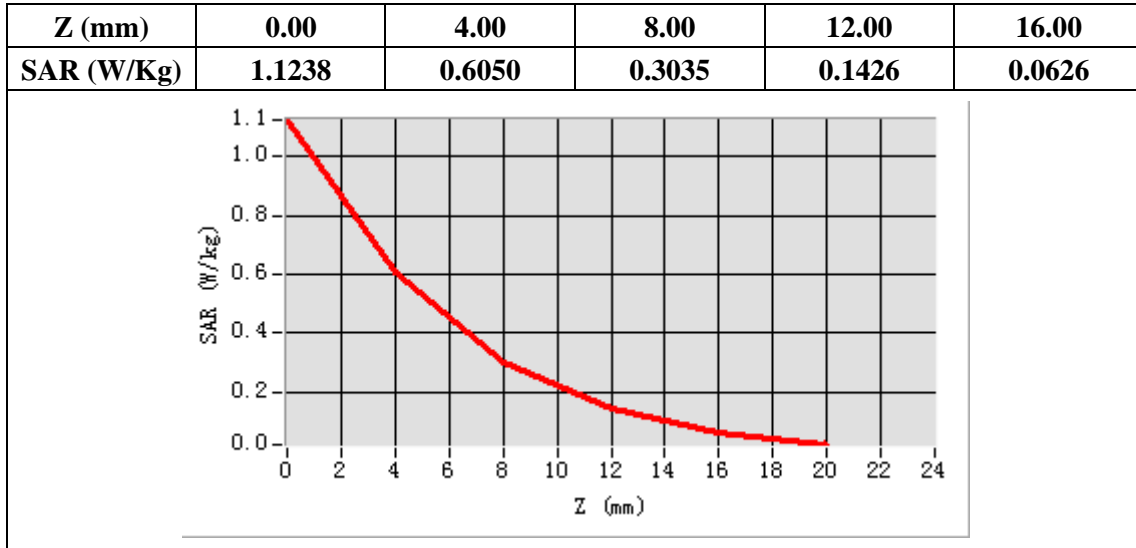
E-Field Probe	SATIMO SN_41/18_EPG0330
Frequency (MHz)	2450
Relative permittivity (real part)	39.31
Relative permittivity	13.37
Conductivity (S/m)	1.82
Power Drift (%)	2.85
Ambient Temperature:	22.1 °C
Liquid Temperature:	22.6 °C
ConvF:	2.05
Duty factor:	1:1



Maximum location: X=-1.00, Y=-3.00

SAR Peak: 1.12 W/kg

SAR 10g (W/Kg)	0.221266
SAR 1g (W/Kg)	0.538747



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: 03/28/2020

Measurement duration: 22 minutes 15 seconds

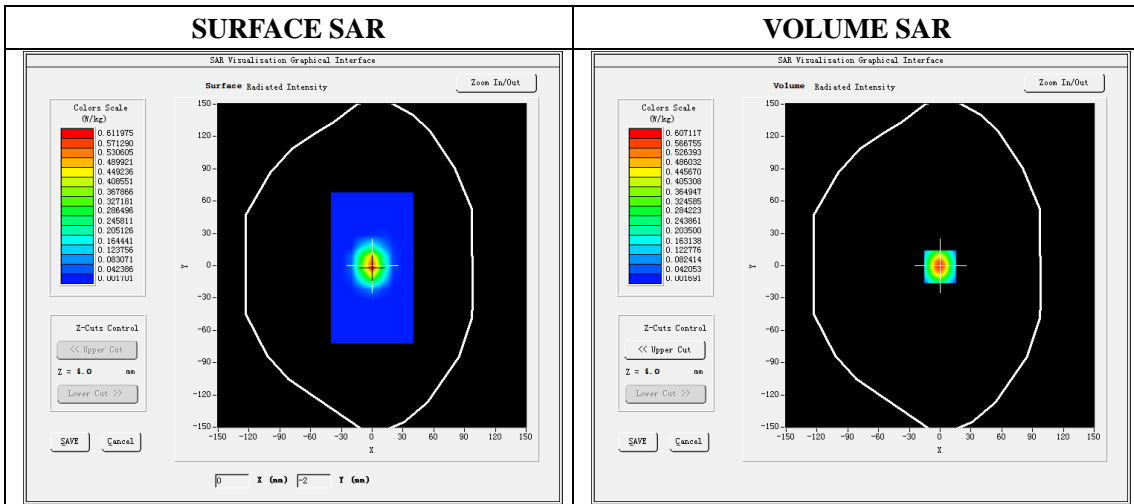
A. Experimental conditions.

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)	52.71
Relative permittivity	14.47
Conductivity (S/m)	1.97
Power Drift (%)	-0.88
Ambient Temperature:	22.1 °C
Liquid Temperature:	22.6 °C
ConvF:	2.12
Duty factor:	1:1

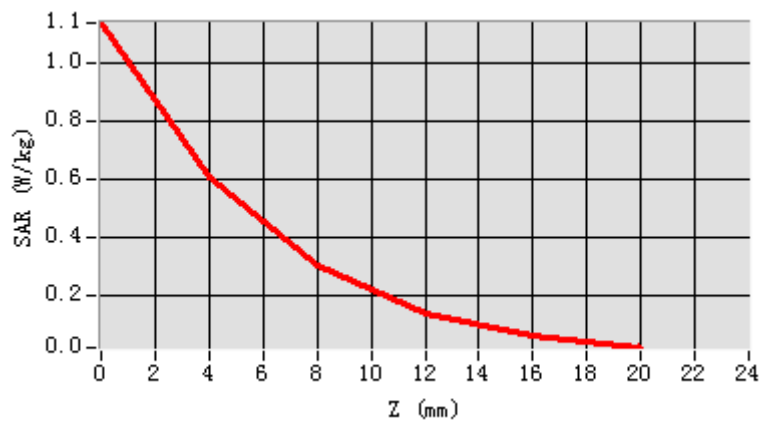


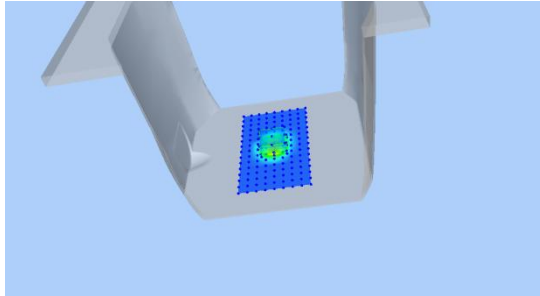
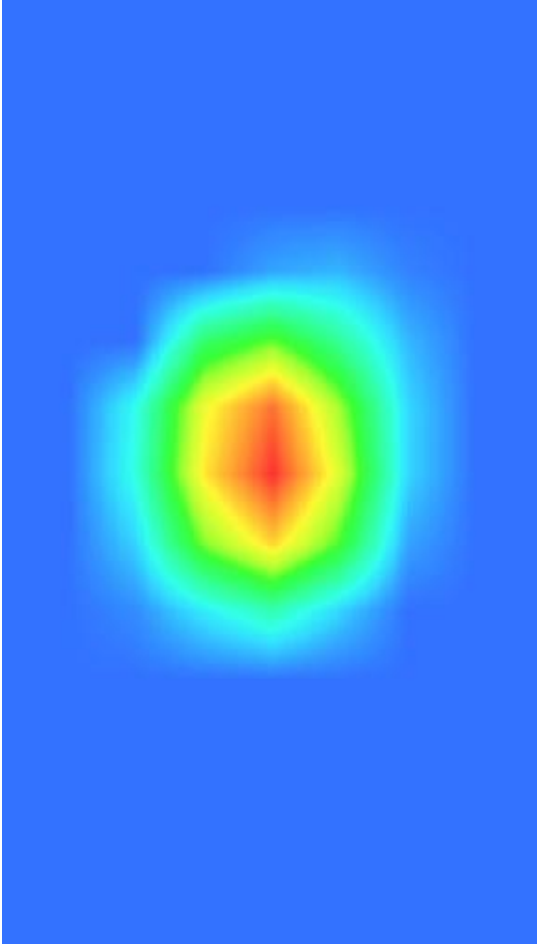
Maximum location: X=0.00, Y=1.00

SAR Peak: 1.14 W/kg

SAR 10g (W/Kg)	0.222851
SAR 1g (W/Kg)	0.544613

Z (mm)	0.00	4.00	8.00	12.00	16.00
SAR (W/Kg)	1.1381	0.6071	0.3020	0.1414	0.0629



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: 03/30/2020

Measurement duration: 22 minutes 11 seconds

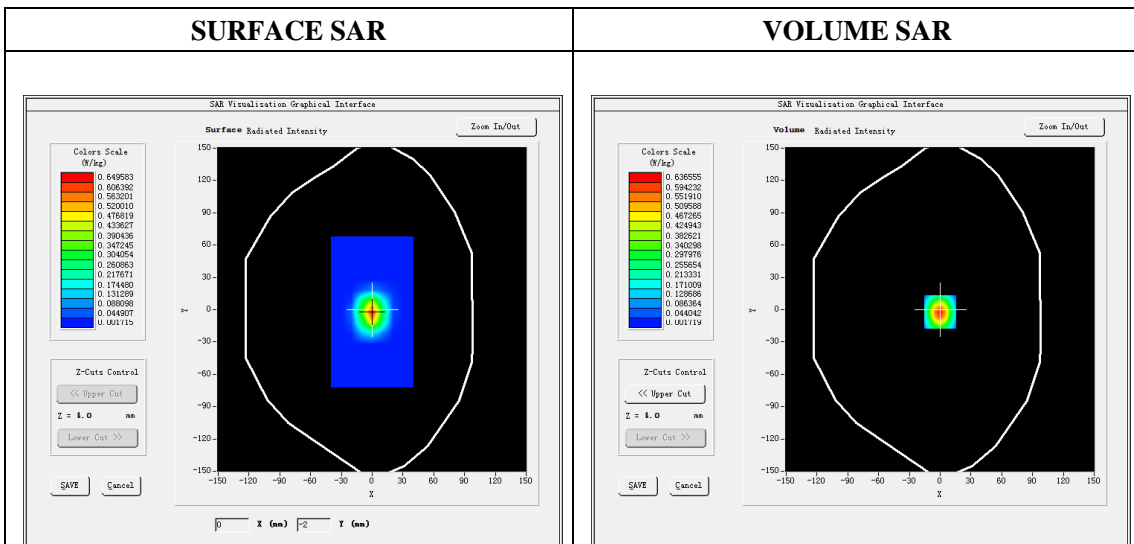
A. Experimental conditions.

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

B. SAR Measurement Results

Band SAR

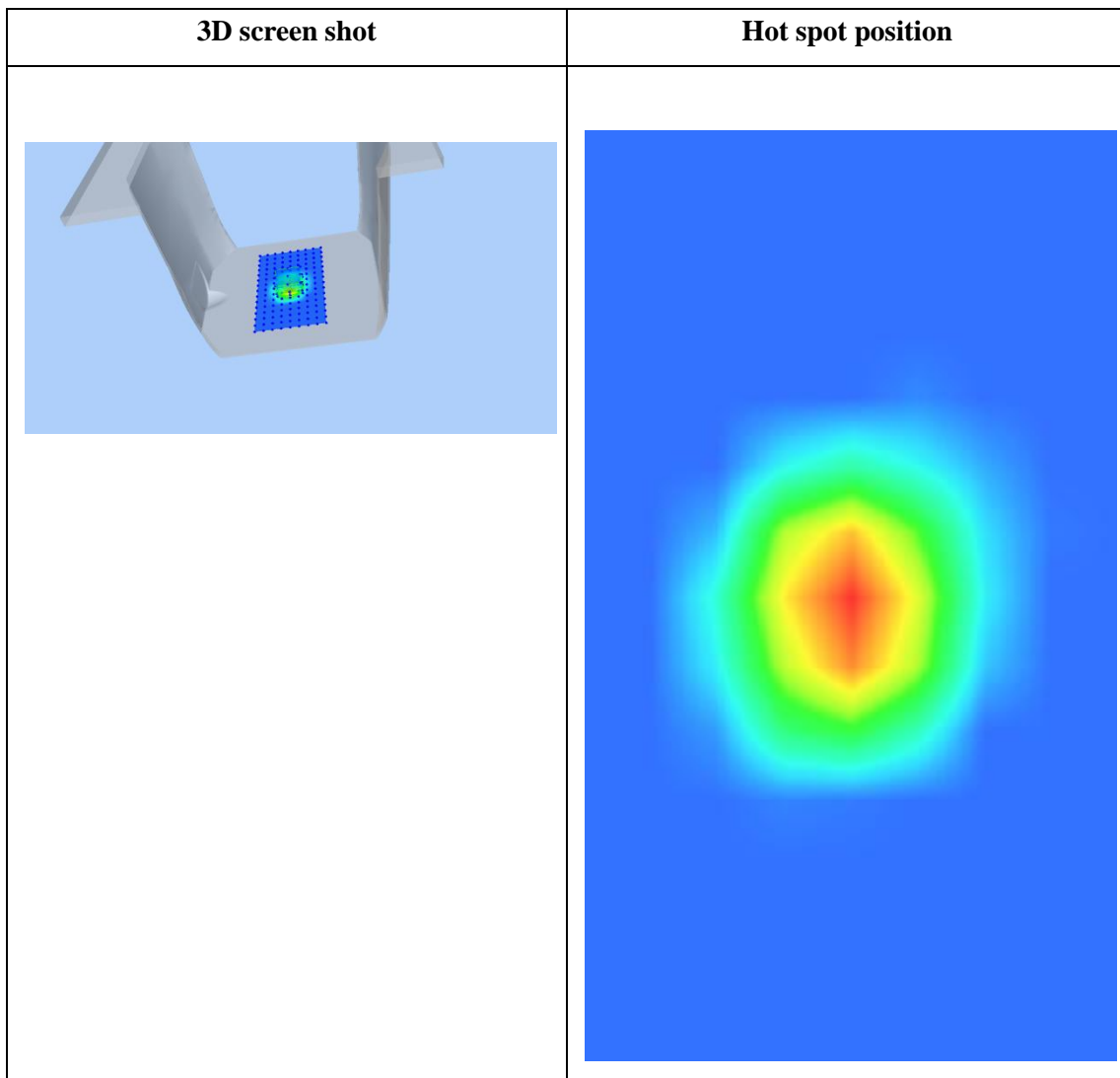
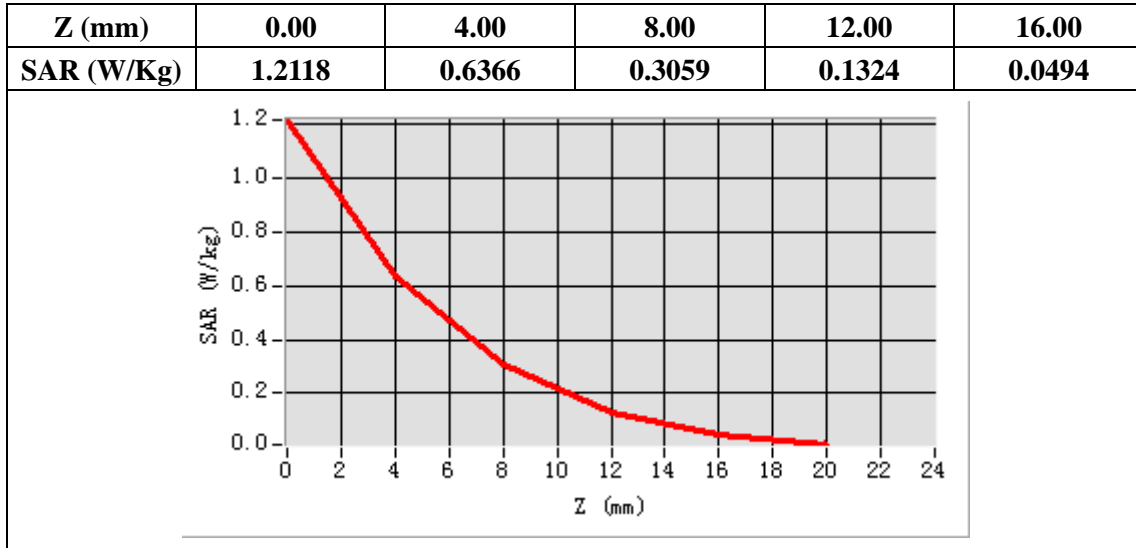
E-Field Probe	SATIMO SN_27/15_EPG0261
Frequency (MHz)	2600
Relative permittivity (real part)	39.10
Relative permittivity	13.43
Conductivity (S/m)	1.94
Power drift (%)	-2.09
Ambient Temperature:	22.2 °C
Liquid Temperature:	22.5 °C
Crest factor:	1:1
ConvF:	2.35



Maximum location: X=0.00, Y=-2.00

SAR Peak: 1.21 W/kg

SAR 10g (W/Kg)	0.228057
SAR 1g (W/Kg)	0.571749



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: 03/30/2020

Measurement duration: 22 minutes 10 seconds

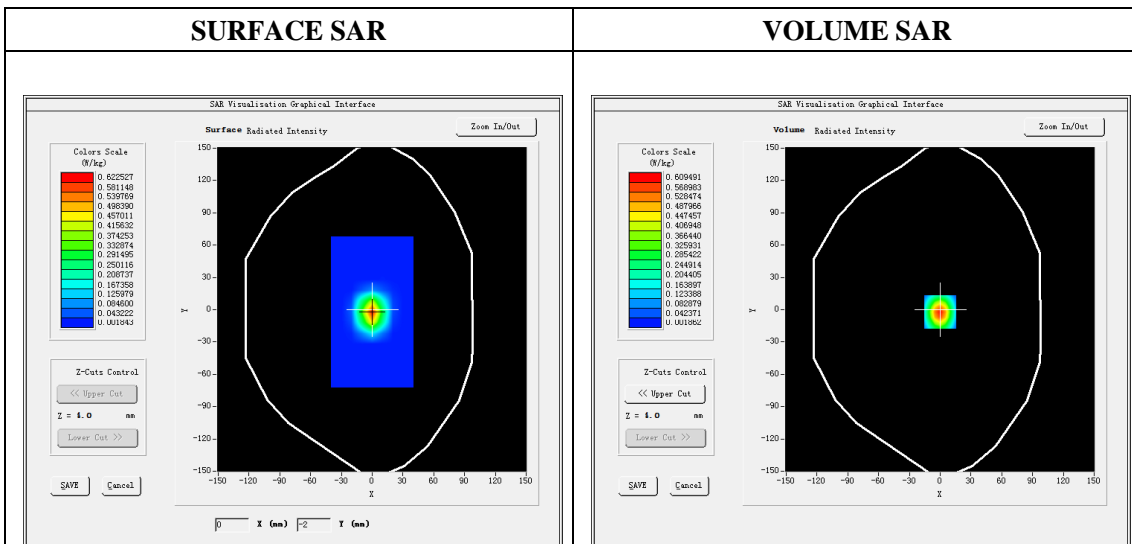
A. Experimental conditions.

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

B. SAR Measurement Results

Band SAR

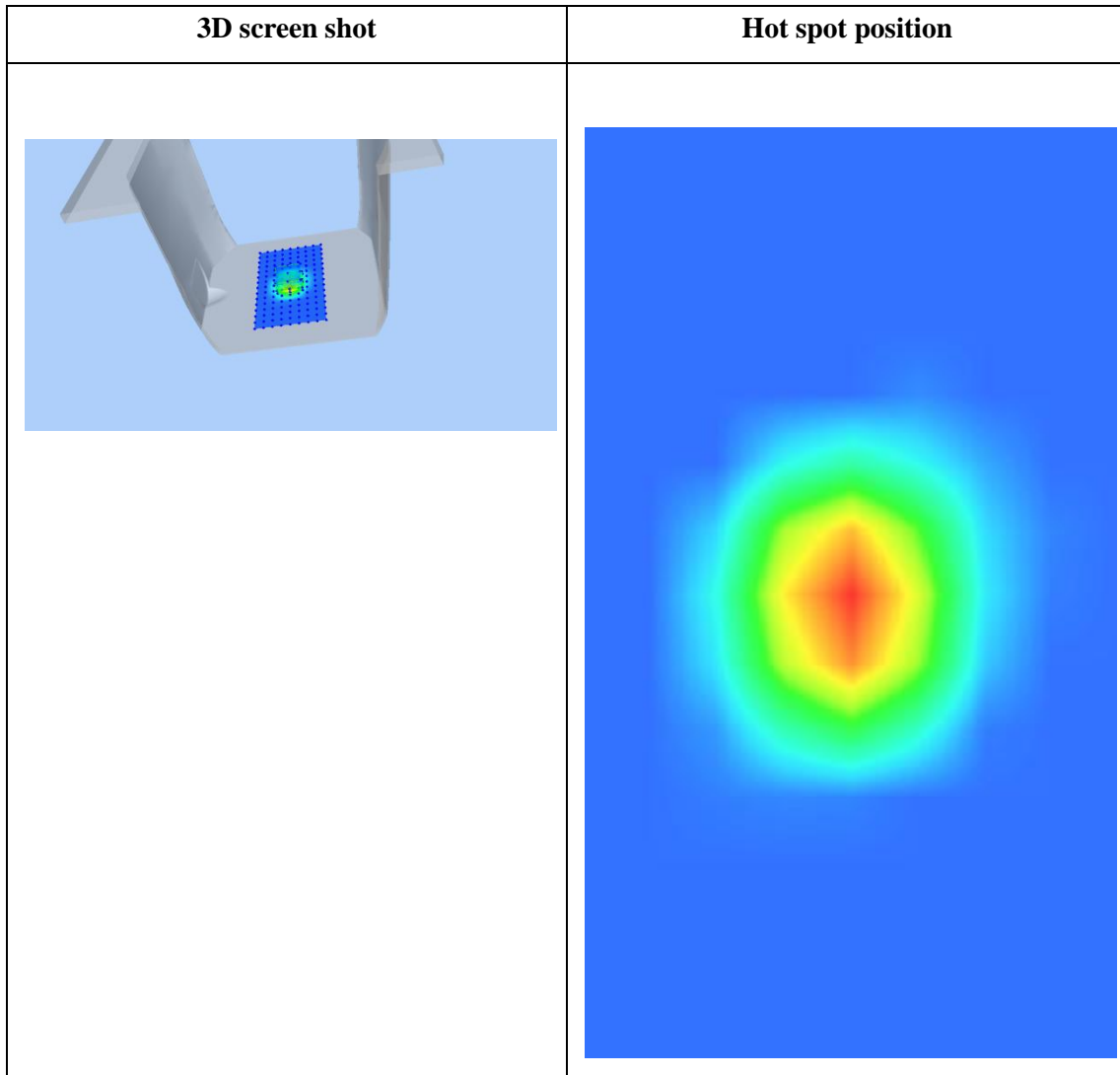
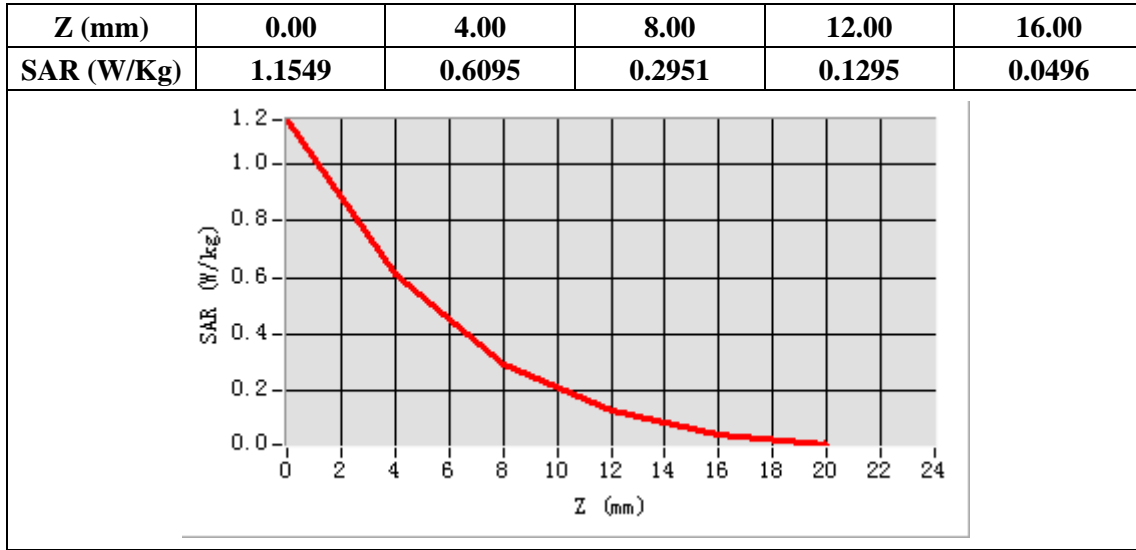
E-Field Probe	SATIMO SN_27/15_EPG0261
Frequency (MHz)	2600
Relative permittivity (real part)	52.52
Relative permittivity	14.88
Conductivity (S/m)	2.15
Power drift (%)	-1.71
Ambient Temperature:	22.2 °C
Liquid Temperature:	22.5 °C
Crest factor:	1:1
ConvF:	2.43



Maximum location: X=0.00, Y=-2.00

SAR Peak: 1.16 W/kg

SAR 10g (W/Kg)	0.217697
SAR 1g (W/Kg)	0.542705



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: 03/31/2020

Measurement duration: 22 minutes 12 seconds

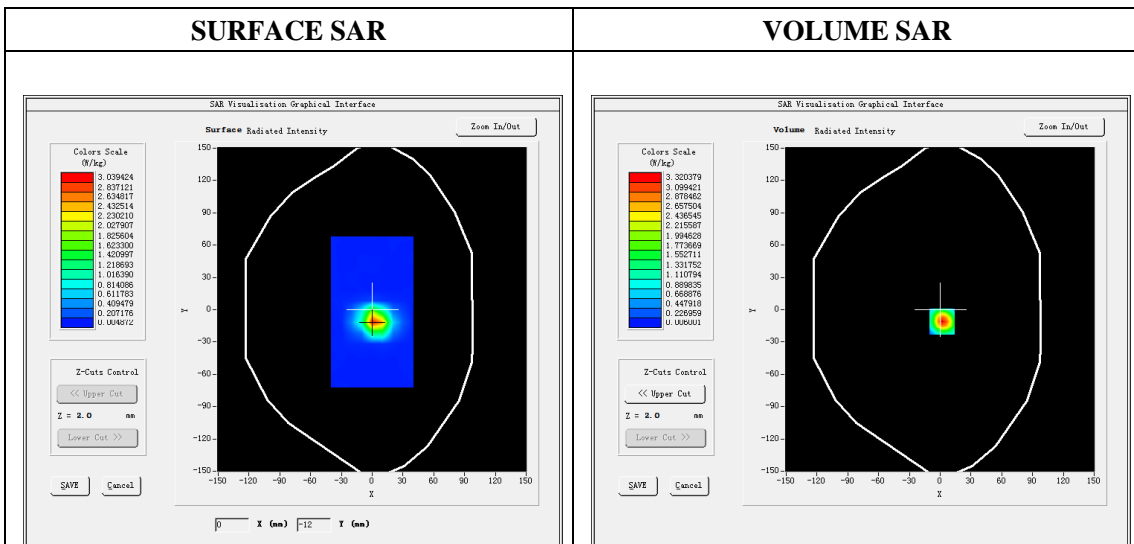
A. Experimental conditions.

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

B. SAR Measurement Results

Band SAR

E-Field Probe	SATIMO SN_27/15_EPG0261
Frequency (MHz)	5200
Relative permittivity (real part)	36.13
Relative permittivity	16.03
Conductivity (S/m)	4.63
Power drift (%)	-1.78
Ambient Temperature:	22.2 °C
Liquid Temperature:	22.5 °C
Crest factor:	1:1
ConvF:	2.15

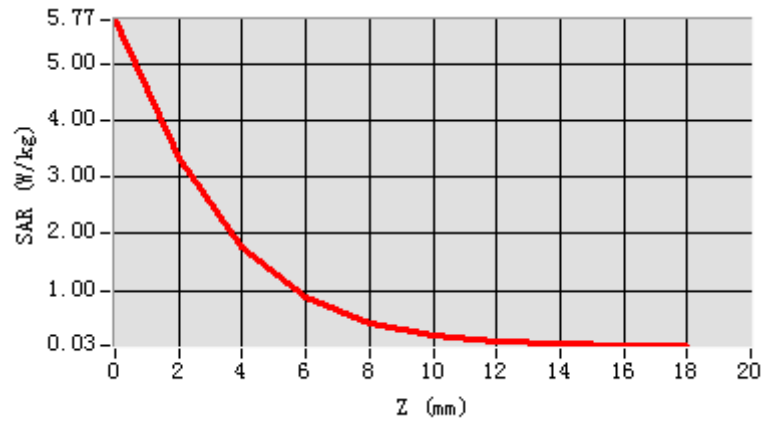


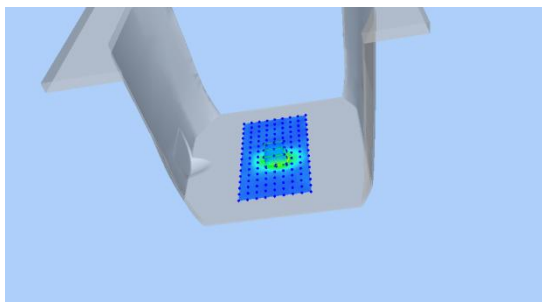
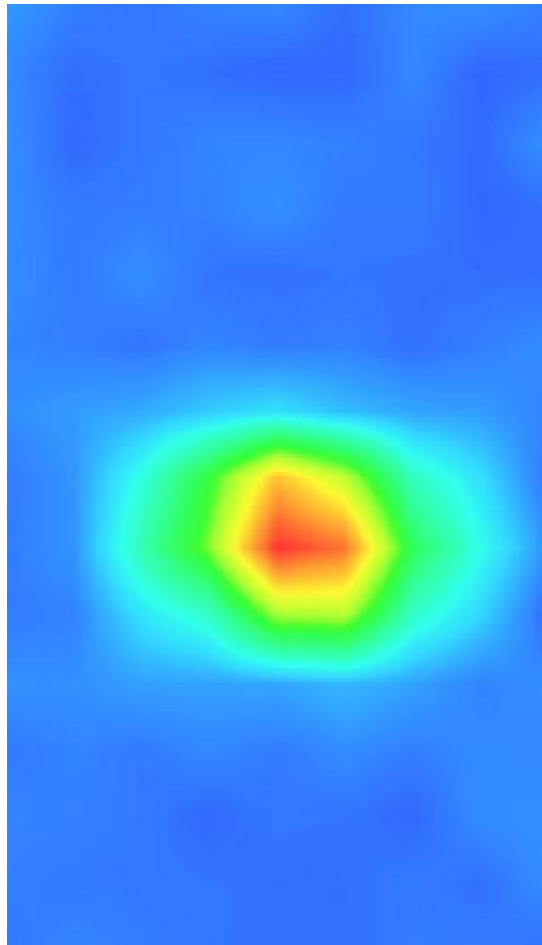
Maximum location: X=2.00, Y=-11.00

SAR Peak: 5.98W/kg

SAR 10g (W/Kg)	0.528941
SAR 1g (W/Kg)	1.800928

Z (mm)	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00
SAR (W/Kg)	5.7655	3.3204	1.7806	0.8926	0.4345	0.2117	0.1092	0.0639	0.0440



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: 03/31/2020

Measurement duration: 22 minutes 13 seconds

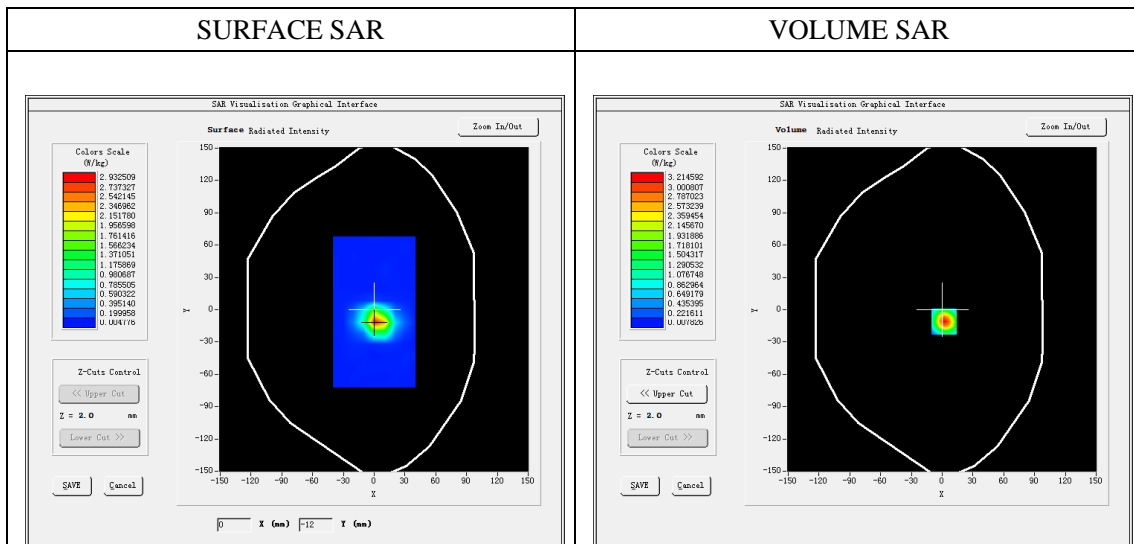
A. Experimental conditions.

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_27/15_EPG0261
Frequency (MHz)	5200
Relative permittivity (real part)	49.08
Relative permittivity	18.24
Conductivity (S/m)	5.27
Power drift (%)	1.49
Ambient Temperature:	22.2 °C
Liquid Temperature:	22.5 °C
Crest factor:	1:1
ConvF:	2.21

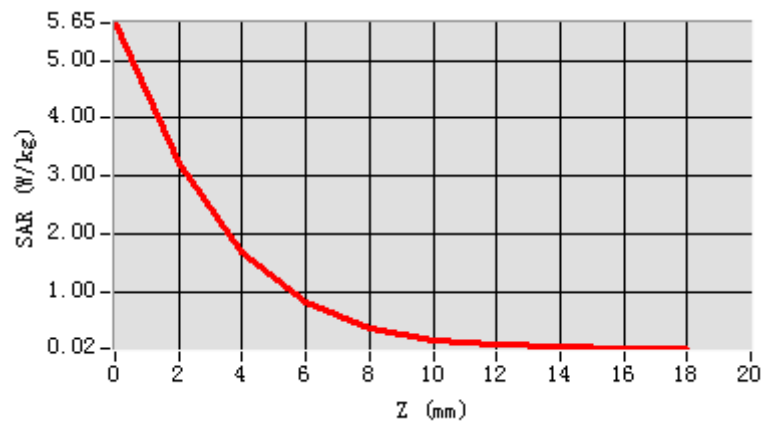


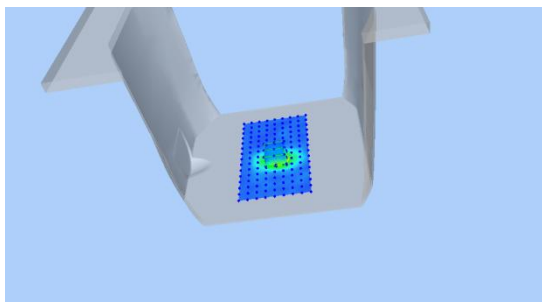
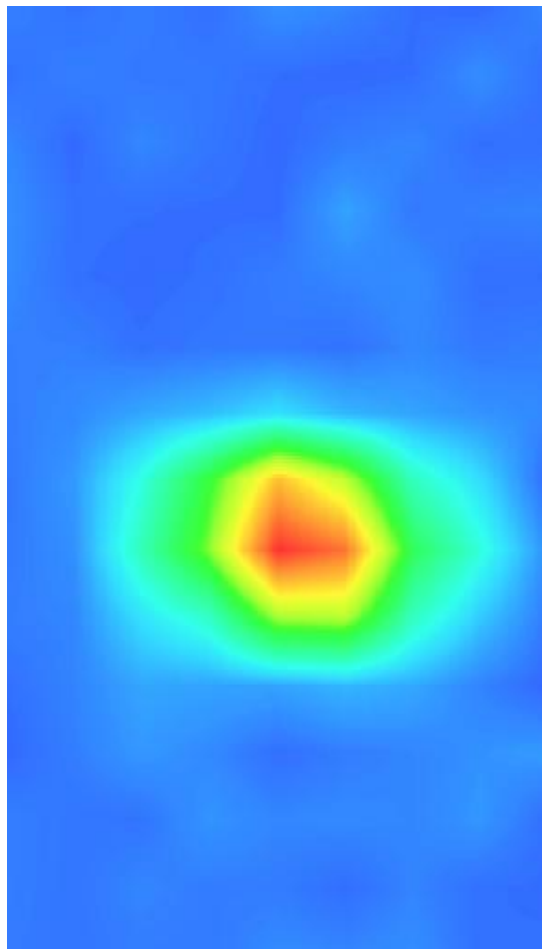
Maximum location: X=2.00, Y=-11.00

SAR Peak: 5.86 W/kg

SAR 10g (W/Kg)	0.495714
SAR 1g (W/Kg)	1.707315

Z (mm)	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00
SAR (W/Kg)	5.6485	3.2146	1.6920	0.8245	0.3850	0.1770	0.0848	0.0459	0.0297



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: 04/01/2020

Measurement duration: 22 minutes 14 seconds

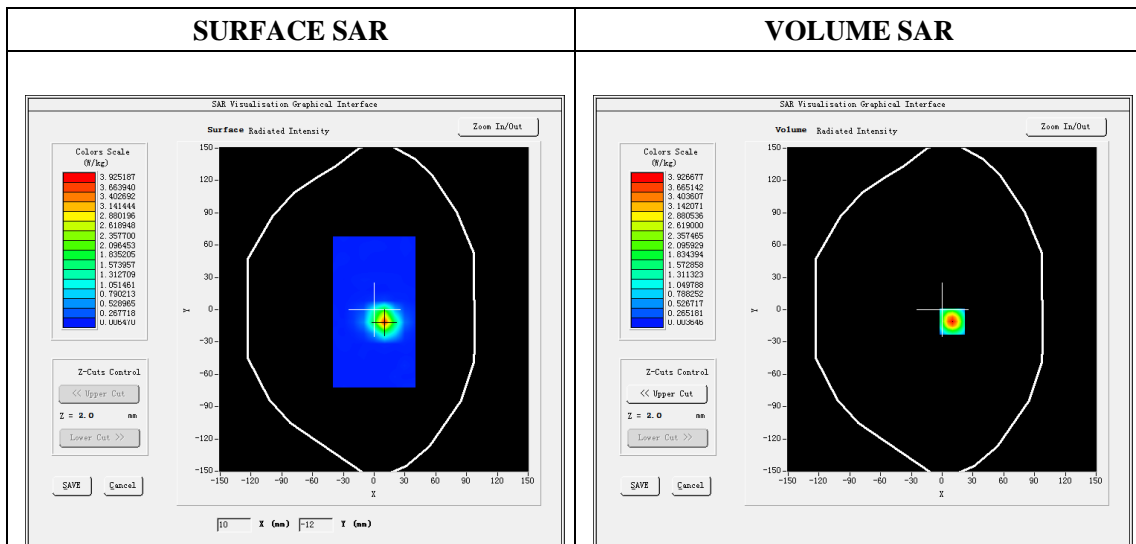
A. Experimental conditions.

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

B. SAR Measurement Results

Band SAR

E-Field Probe	SATIMO SN_27/15_EPG0261
Frequency (MHz)	5800
Relative permittivity (real part)	35.38
Relative permittivity	16.42
Conductivity (S/m)	5.29
Power drift (%)	-3.95
Ambient Temperature:	22.2 °C
Liquid Temperature:	22.5 °C
Crest factor:	1:1
ConvF:	2.19

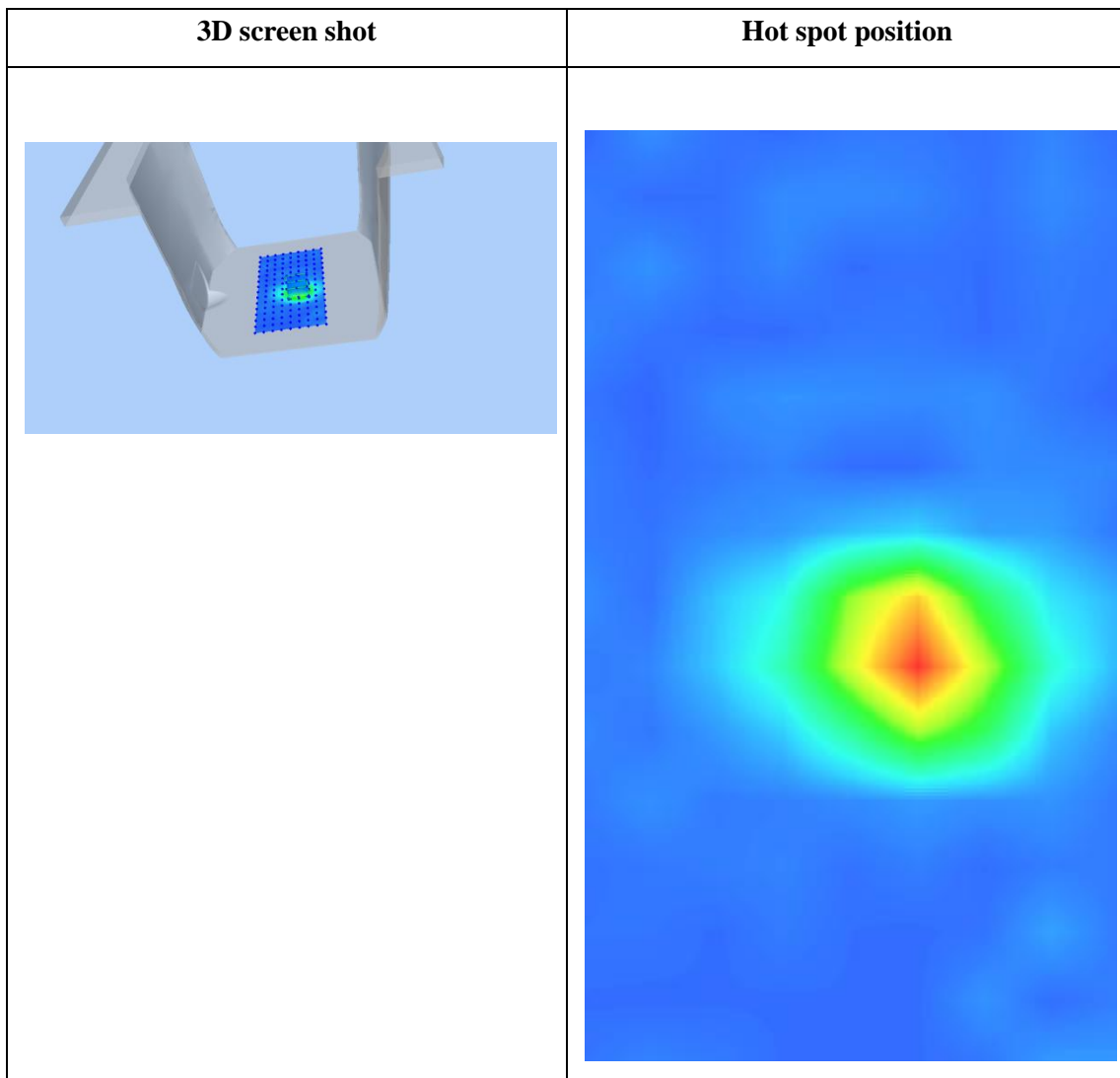
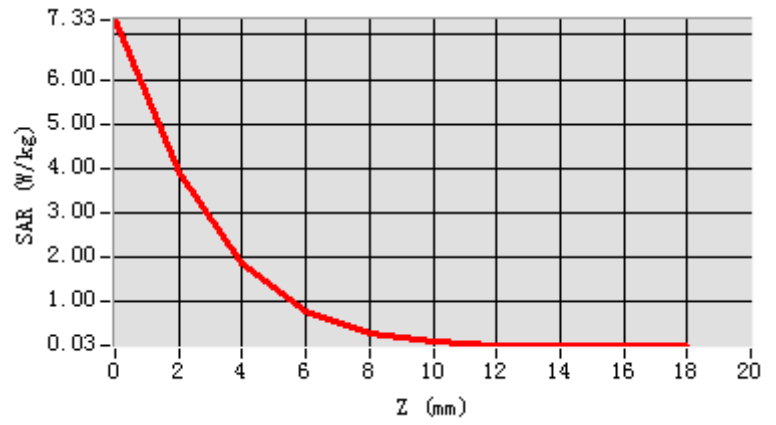


Maximum location: X=10.00, Y=-11.00

SAR Peak: 7.68 W/kg

SAR 10g (W/Kg)	0.533195
SAR 1g (W/Kg)	2.009385

Z (mm)	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00
SAR (W/Kg)	7.3326	3.9267	1.8760	0.7954	0.3092	0.1146	0.0465	0.0269	0.0254



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: 04/01/2020

Measurement duration: 22 minutes 18 seconds

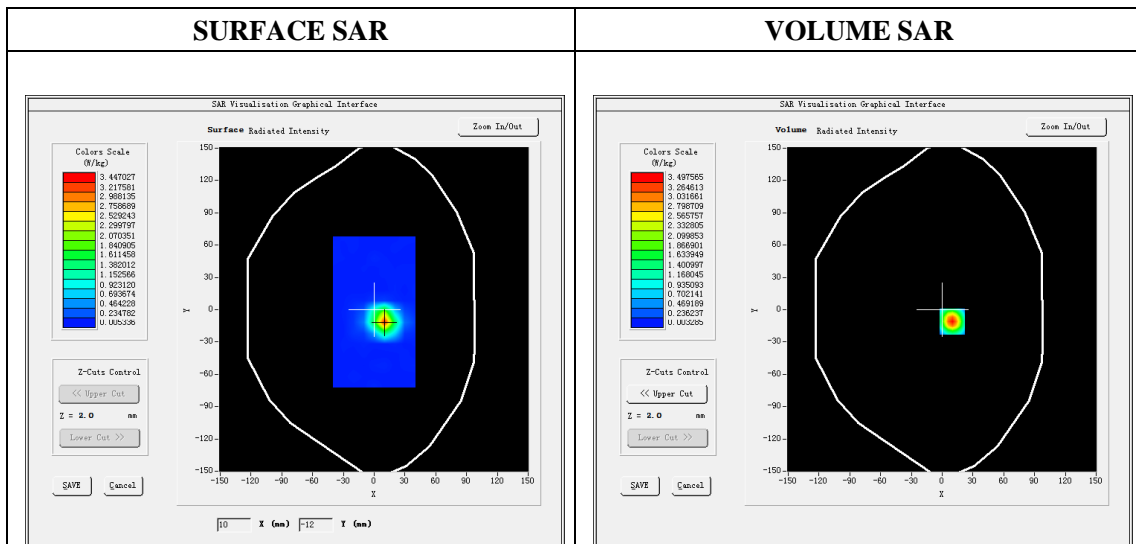
A. Experimental conditions.

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

B. SAR Measurement Results

Band SAR

E-Field Probe	SATIMO SN_27/15_EPG0261
Frequency (MHz)	5800
Relative permittivity (real part)	48.25
Relative permittivity	18.50
Conductivity (S/m)	5.96
Power drift (%)	-4.25
Ambient Temperature:	22.2 °C
Liquid Temperature:	22.5 °C
Crest factor:	1:1
ConvF:	2.26

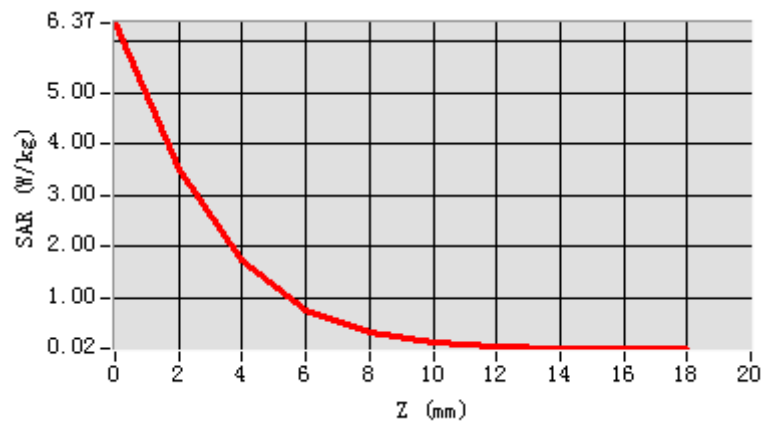


Maximum location: X=10.00, Y=-11.00

SAR Peak: 6.63 W/kg

SAR 10g (W/Kg)	0.501637
SAR 1g (W/Kg)	1.826918

Z (mm)	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00
SAR (W/Kg)	6.3661	3.4976	1.7422	0.7847	0.3304	0.1341	0.0574	0.0305	0.0227



3D screen shot	Hot spot position
