Appendix A: SAR System performance Check Plots

Measurement	Liquid	Frequency	Test Date
System Check	Body	750	2020-09-22
System Check	Body	835	2020-09-22
System Check	Body	1800	2020-09-23
System Check	Body	1900	2020-09-23
System Check	Body	2450	2020-09-24
System Check	Body	2600	2020-09-24
System Check	Body	5200	2020-09-25
System Check	Body	5800	2020-09-25

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: 09/22/2020

Measurement duration: 22 minutes 06 seconds

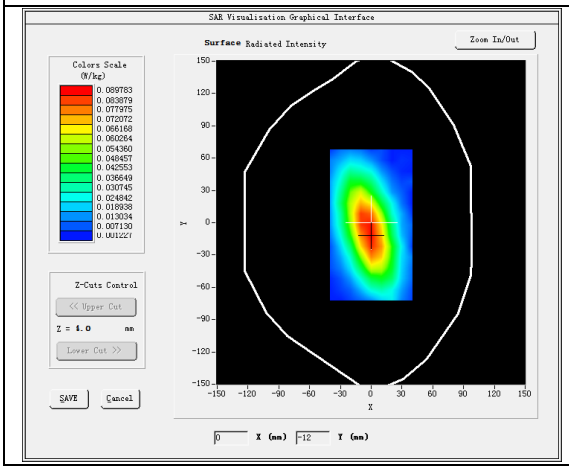
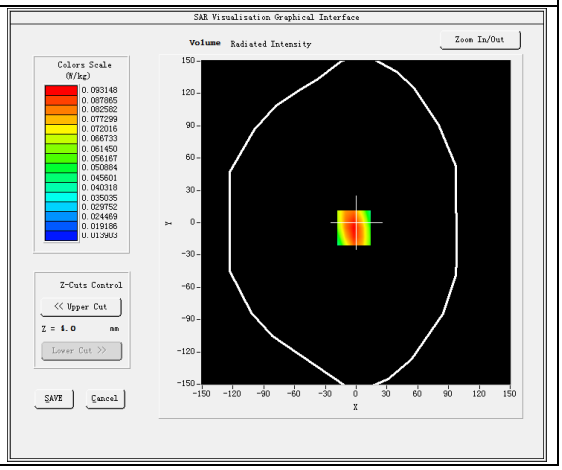
A. Experimental conditions.

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

B. SAR Measurement Results

Band SAR

E-Field Probe	SATIMO SN_27/15_EPG0261
Frequency (MHz)	750
Relative permittivity (real part)	55.51
Relative permittivity	23.04
Conductivity (S/m)	0.96
Power drift (%)	-1.37
Ambient Temperature:	22.2℃
Liquid Temperature:	22.6℃
ConvF:	1.88
Crest factor:	1:1

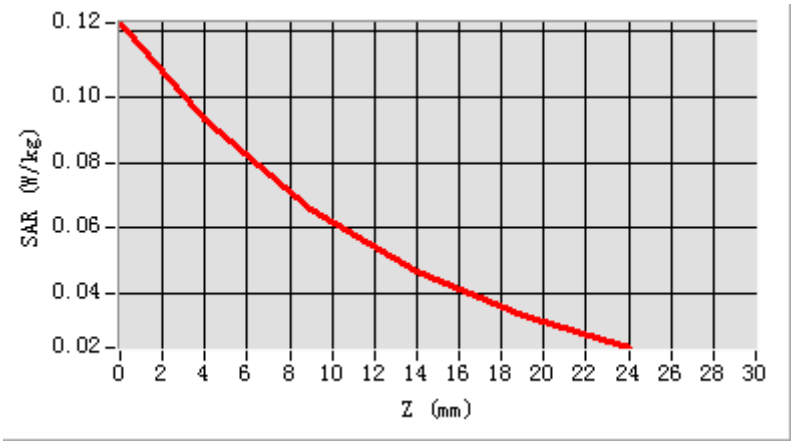
SURFACE SAR	**VOLUME SAR**
	

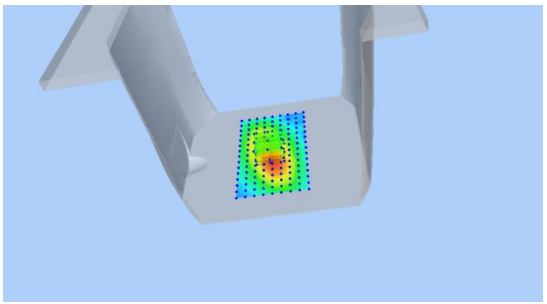
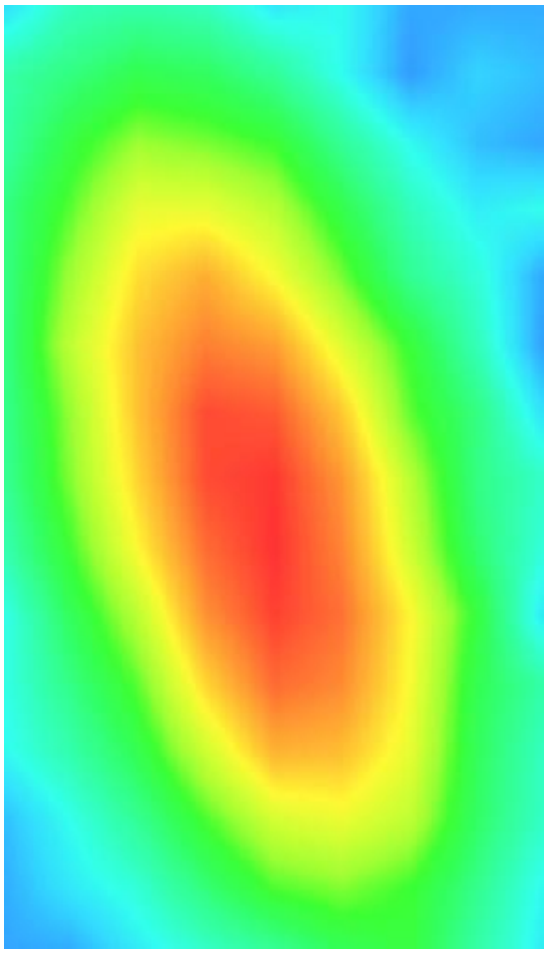
Maximum location: X=-2.00, Y=-5.00

SAR Peak: 0.12 W/kg

SAR 10g (W/Kg)	0.059593
SAR 1g (W/Kg)	0.089096

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.1226	0.0931	0.0658	0.0467	0.0334



3D screen shot	Hot spot position
	

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: 09/22/2020

Measurement duration: 22 minutes 03 seconds

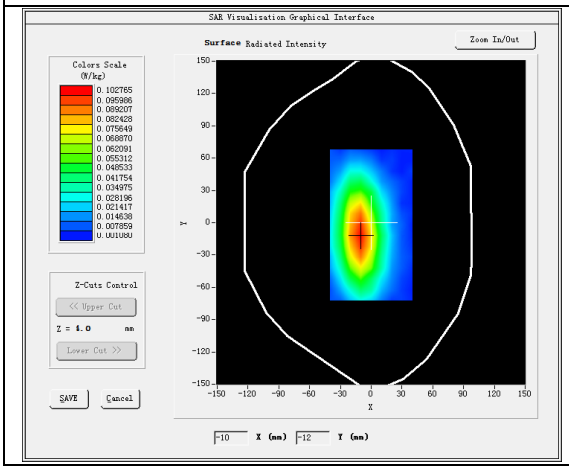
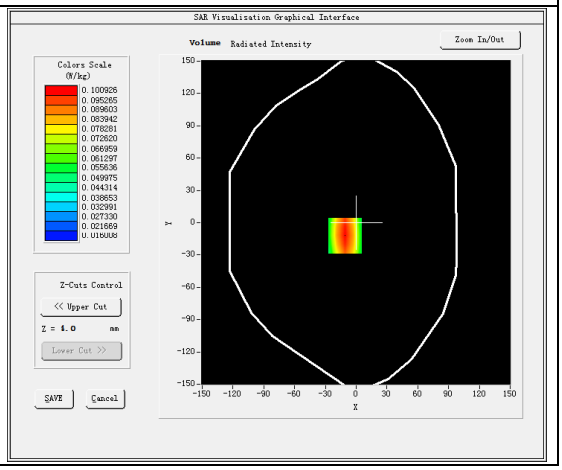
A. Experimental conditions.

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_27/15_EPG0261
Frequency (MHz)	835
Relative permittivity (real part)	55.19
Relative permittivity	20.91
Conductivity (S/m)	0.97
Power drift (%)	-3.47
Ambient Temperature:	22.2℃
Liquid Temperature:	22.6℃
ConvF:	1.90
Crest factor:	1:1

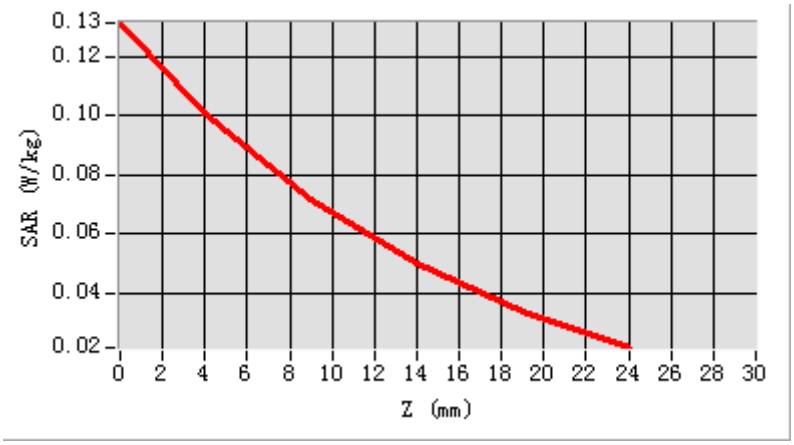
SURFACE SAR	**VOLUME SAR**
	

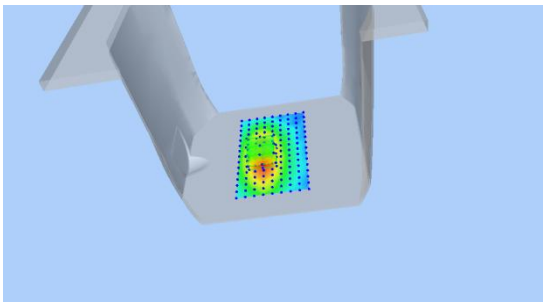
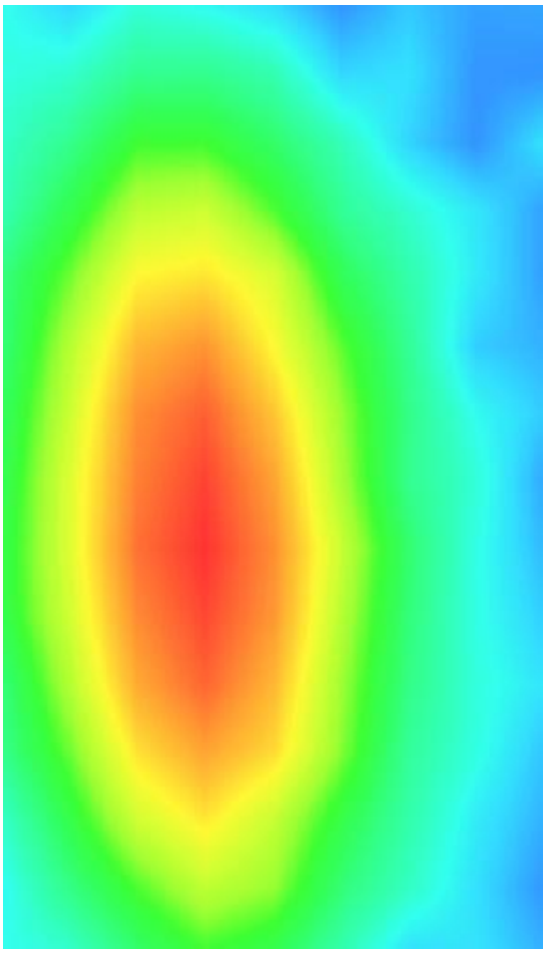
Maximum location: X=-11.00, Y=-12.00

SAR Peak: 0.13 W/kg

SAR 10g (W/Kg)	0.063888
SAR 1g (W/Kg)	0.097416

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.1312	0.1009	0.0715	0.0498	0.0338



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: 09/23/2020

Measurement duration: 22 minutes 09 seconds

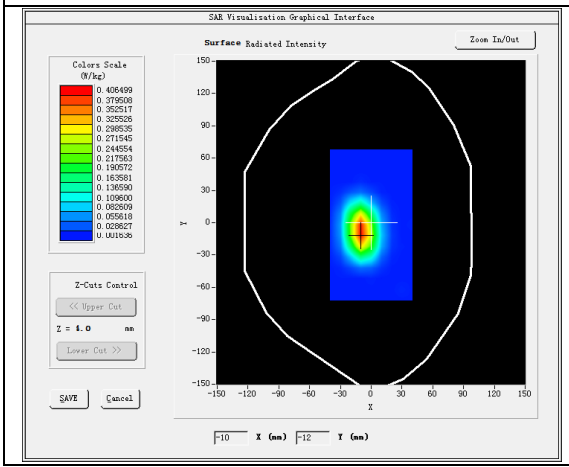
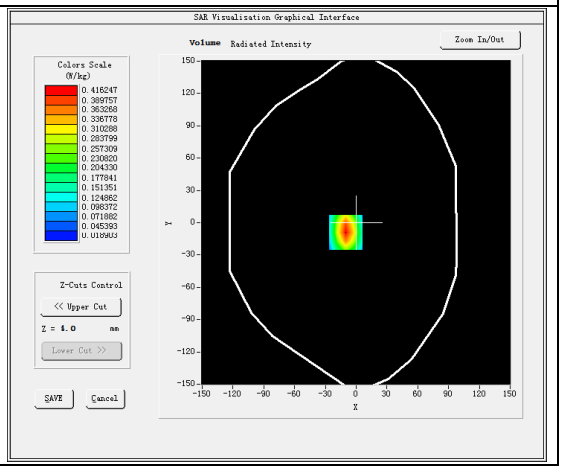
A. Experimental conditions.

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_27/15_EPG0261
Frequency (MHz)	1800
Relative permittivity (real part)	53.34
Relative permittivity	15.60
Conductivity (S/m)	1.56
Power Drift (%)	-1.35
Ambient Temperature:	22.1℃
Liquid Temperature:	22.6℃
ConvF:	2.09
Duty factor:	1:1

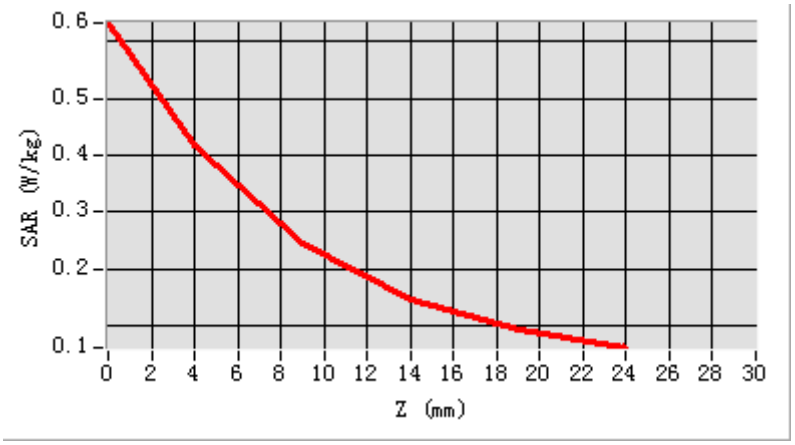
SURFACE SAR	**VOLUME SAR**
	

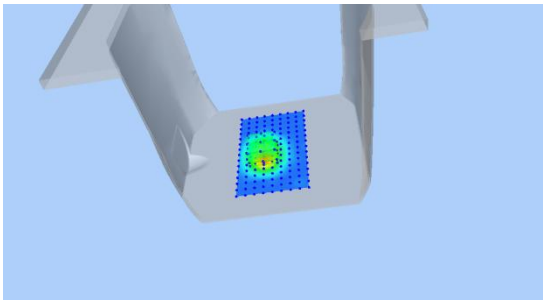
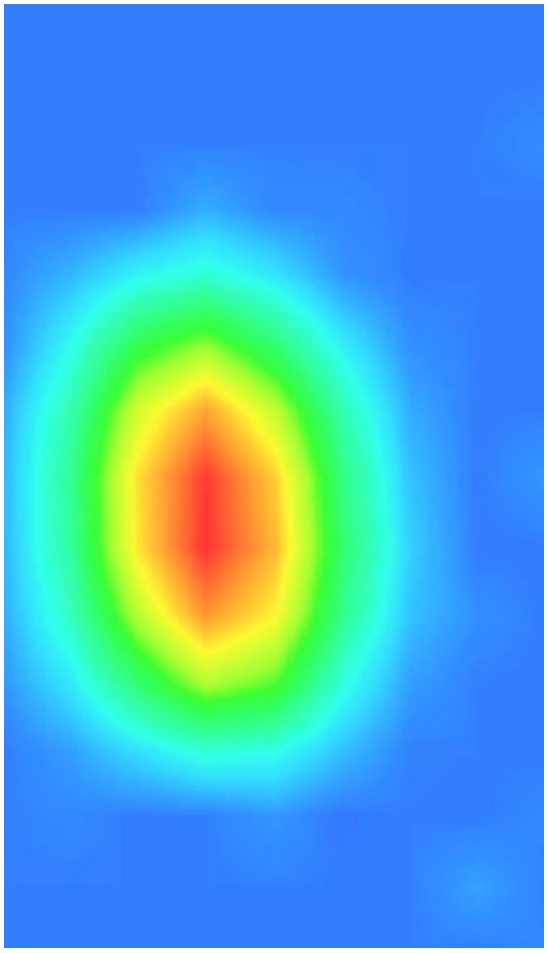
Maximum location: X=-10.00, Y=-9.00

SAR Peak: 0.63 W/kg

SAR 10g (W/Kg)	0.208174
SAR 1g (W/Kg)	0.384857

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.6323	0.4162	0.2438	0.1463	0.0935



3D screen shot	Hot spot position
	

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: 09/23/2020

Measurement duration: 22 minutes 01 seconds

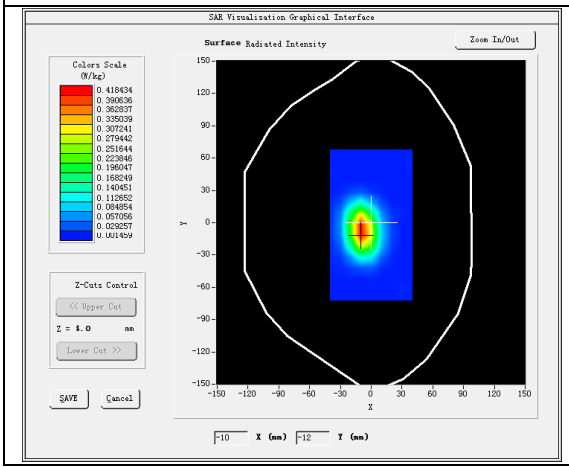
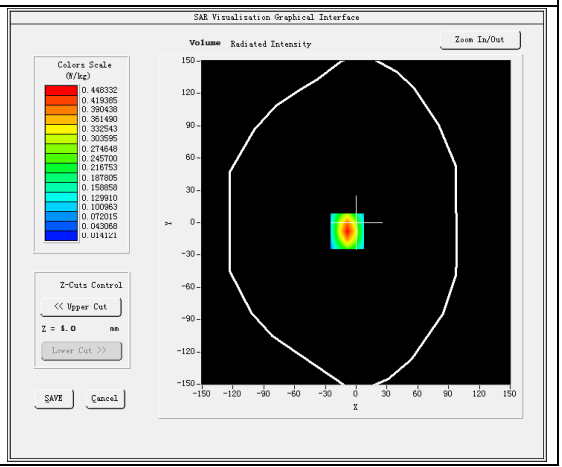
A. Experimental conditions.

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

B. SAR Measurement Results

Band SAR

E-Field Probe	SATIMO SN_27/15_EPG0261
Frequency (MHz)	1900
Relative permittivity (real part)	53.28
Relative permittivity	14.31
Conductivity (S/m)	1.51
Power Drift (%)	-0.87
Ambient Temperature:	22.1℃
Liquid Temperature:	22.6℃
ConvF:	2.26
Duty factor:	1:1

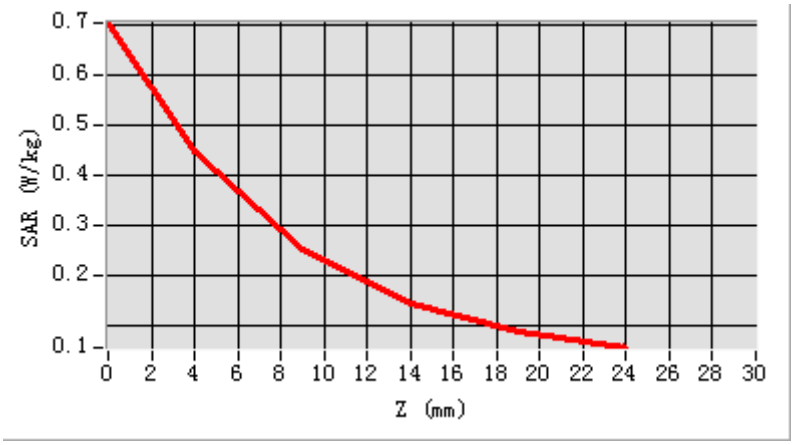
SURFACE SAR	**VOLUME SAR**
	

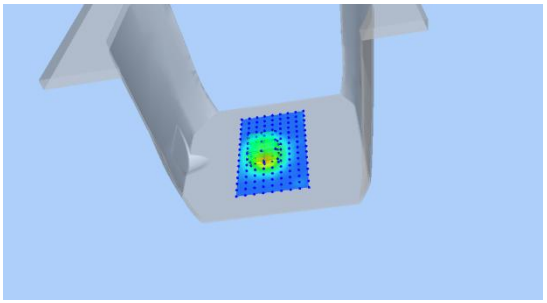
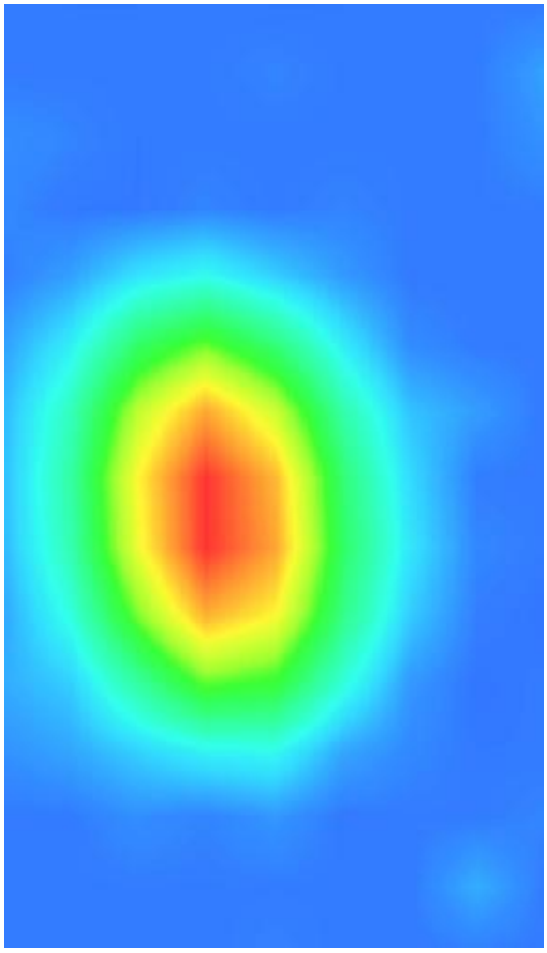
Maximum location: X=-9.00, Y=-8.00

SAR Peak: 0.70 W/kg

SAR 10g (W/Kg)	0.213928
SAR 1g (W/Kg)	0.412054

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.7030	0.4483	0.2504	0.1427	0.0871



3D screen shot	Hot spot position
	

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: 09/24/2020

Measurement duration: 22 minutes 04 seconds

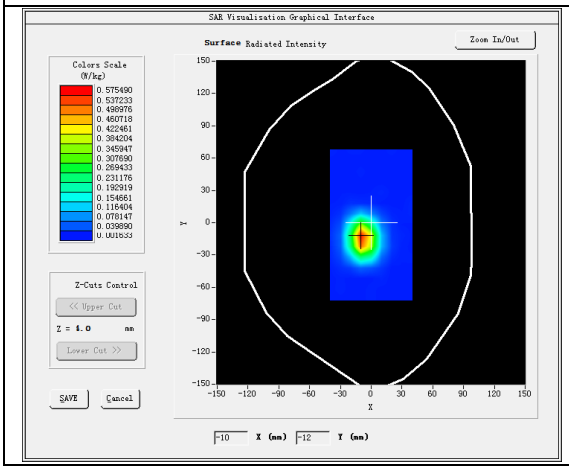
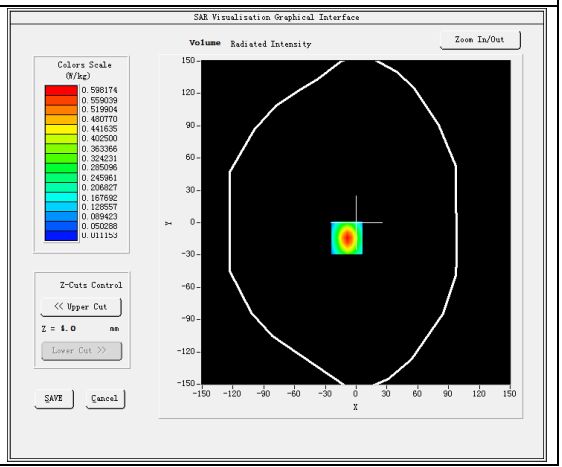
A. Experimental conditions.

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_27/15_EPG0261
Frequency (MHz)	2450
Relative permittivity (real part)	52.72
Relative permittivity	14.40
Conductivity (S/m)	1.96
Power Drift (%)	-0.60
Ambient Temperature:	22.1℃
Liquid Temperature:	22.6℃
ConvF:	2.47
Duty factor:	1:1

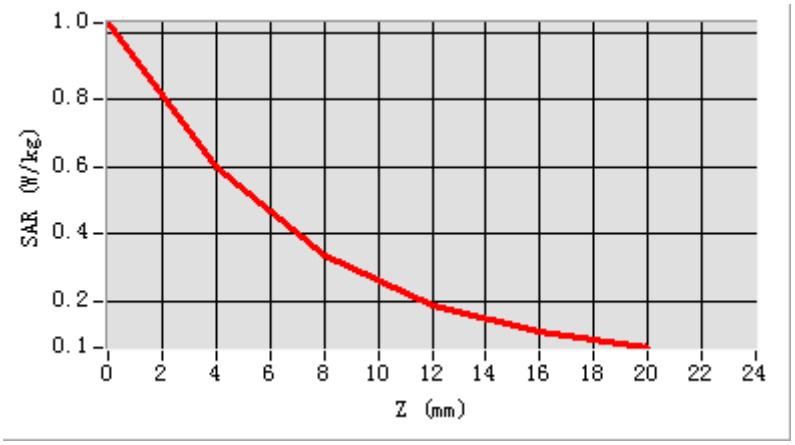
SURFACE SAR	**VOLUME SAR**
	

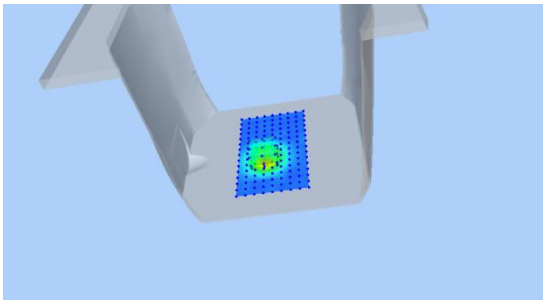
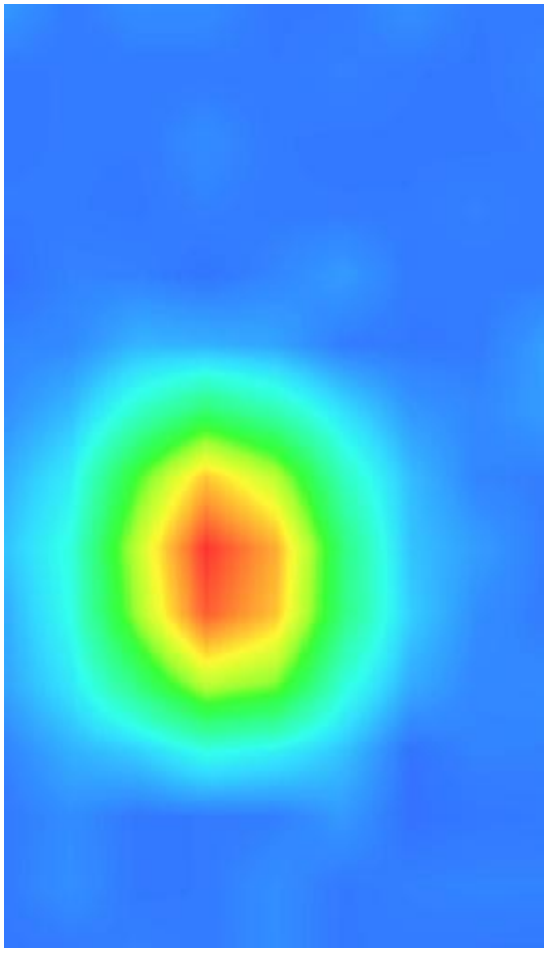
Maximum location: X=-9.00, Y=-14.00

SAR Peak: 1.03 W/kg

SAR 10g (W/Kg)	0.250827
SAR 1g (W/Kg)	0.542302

Z (mm)	0.00	4.00	8.00	12.00	16.00
SAR (W/Kg)	1.0273	0.5982	0.3382	0.1914	0.1119



3D screen shot	Hot spot position
	

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: 09/24/2020

Measurement duration: 22 minutes 07 seconds

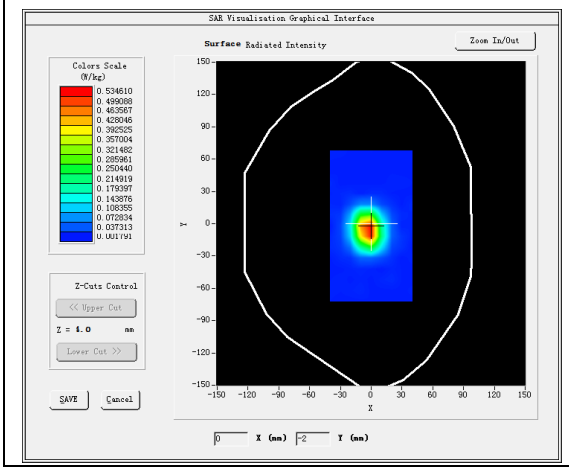
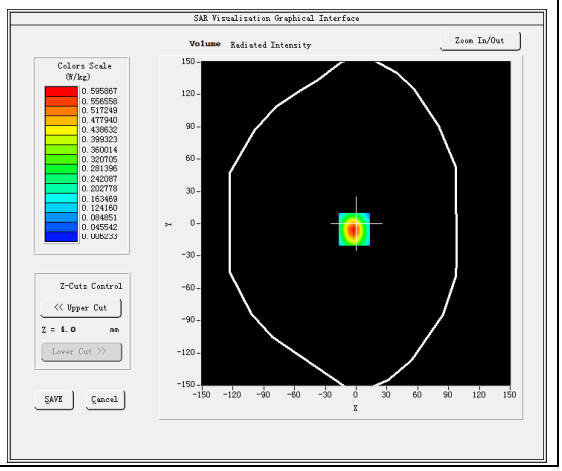
A. Experimental conditions.

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)	52.50
Relative permittivity	14.95
Conductivity (S/m)	2.16
Power drift (%)	-0.52
Ambient Temperature:	22.2℃
Liquid Temperature:	22.5℃
Crest factor:	1:1
ConvF:	2.25

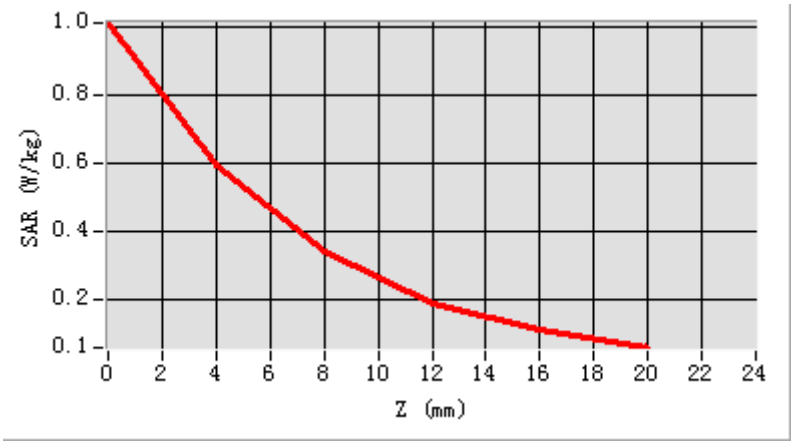
SURFACE SAR	**VOLUME SAR**
	

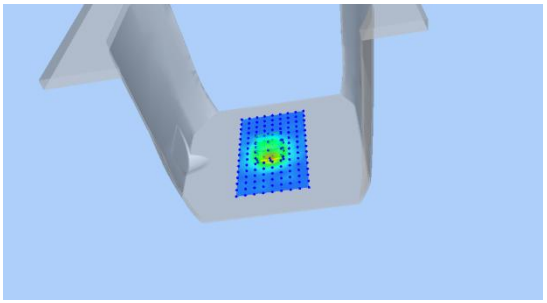
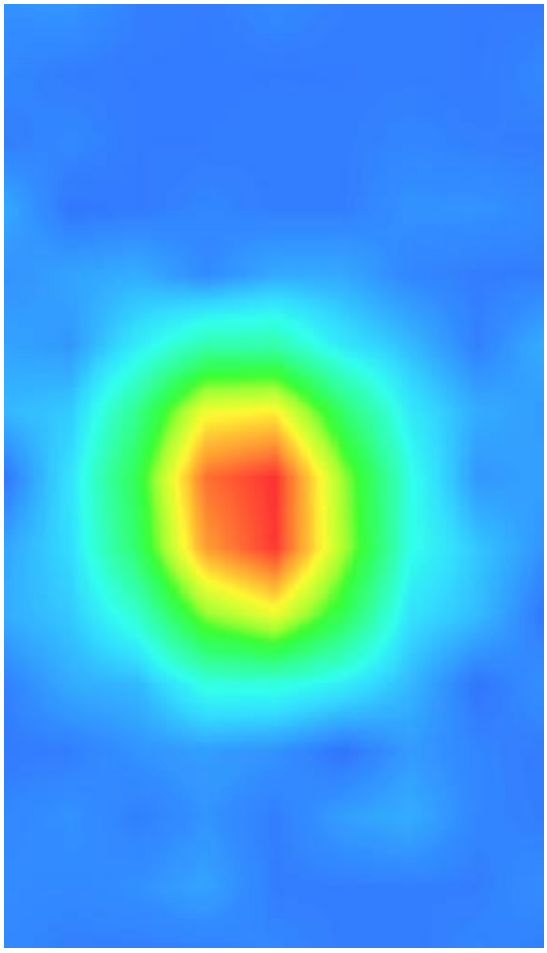
Maximum location: X=-2.00, Y=-5.00

SAR Peak: 1.02 W/kg

SAR 10g (W/Kg)	0.257016
SAR 1g (W/Kg)	0.563453

Z (mm)	0.00	4.00	8.00	12.00	16.00
SAR (W/Kg)	1.0329	0.6159	0.3596	0.2121	0.1303



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: 09/25/2020

Measurement duration: 22 minutes 05 seconds

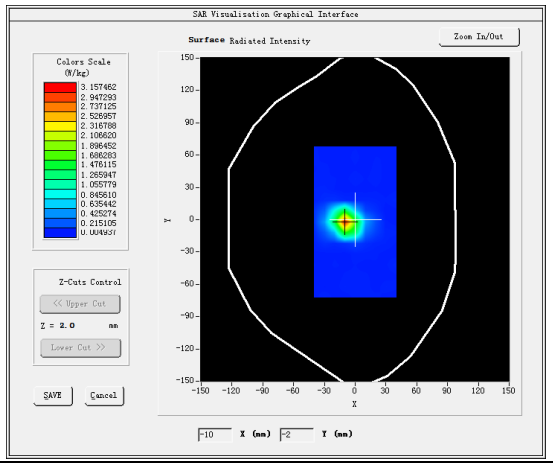
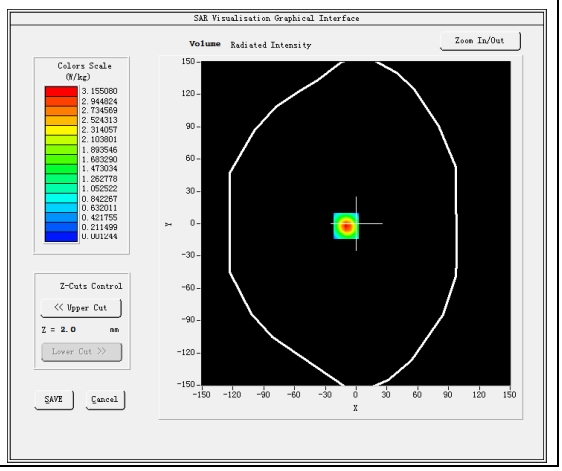
A. Experimental conditions.

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)	49.03
Relative permittivity	18.42
Conductivity (S/m)	5.32
Power drift (%)	-0.21
Ambient Temperature:	22.2℃
Liquid Temperature:	22.5℃
Crest factor:	1:1
ConvF:	2.09

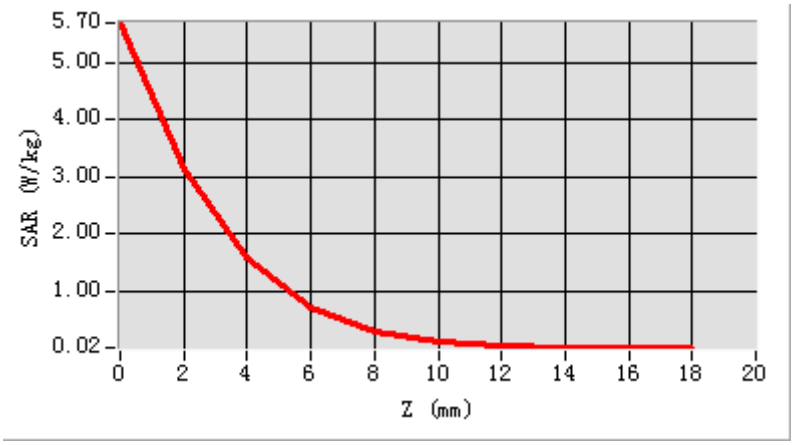
SURFACE SAR	VOLUME SAR
	

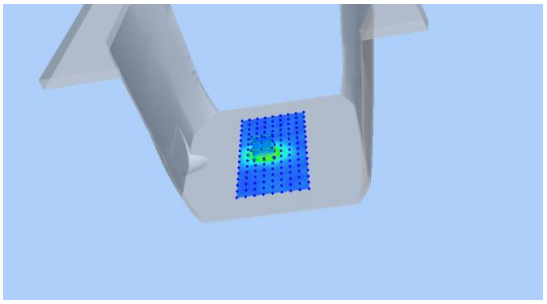
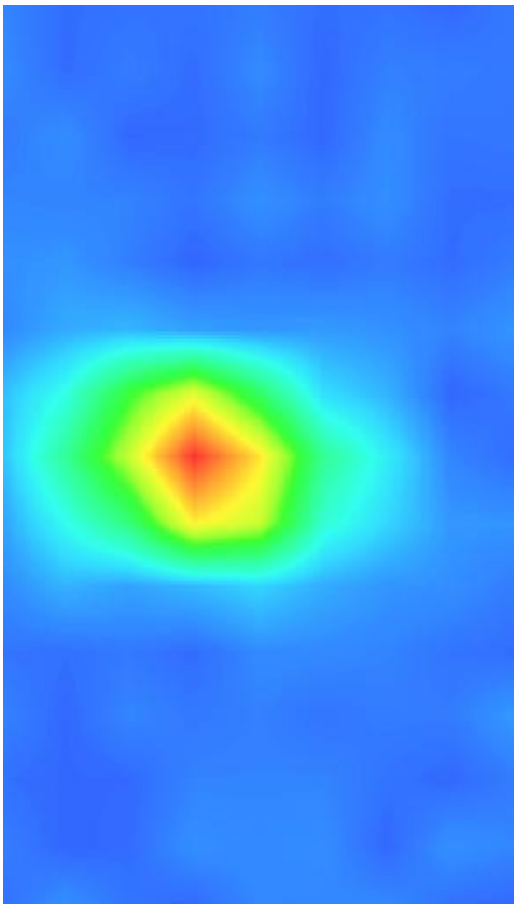
Maximum location: X=-10.00, Y=-2.00

SAR Peak: 5.93 W/kg

SAR 10g (W/Kg)	0.401934
SAR 1g (W/Kg)	1.545166

Z (mm)	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00
SAR (W/Kg)	5.6979	3.0551	1.4910	0.7287	0.3130	0.1295	0.0557	0.0285	0.0194



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: 09/25/2020

Measurement duration: 22 minutes 02 seconds

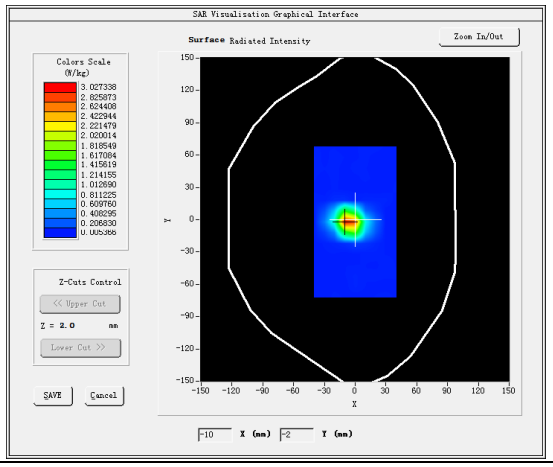
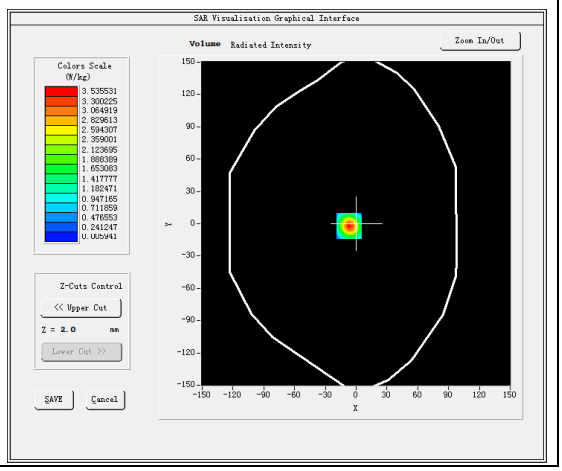
A. Experimental conditions.

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)	48.22
Relative permittivity	18.65
Conductivity (S/m)	6.01
Power drift (%)	-0.22
Ambient Temperature:	22.2℃
Liquid Temperature:	22.5℃
Crest factor:	1:1
ConvF:	2.34

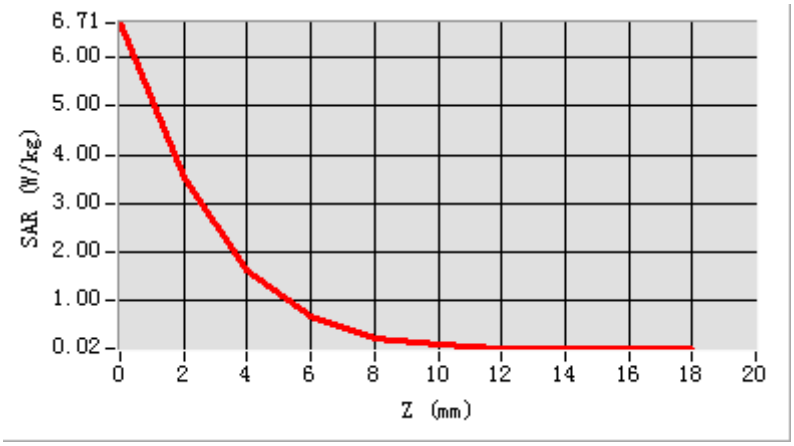
SURFACE SAR	**VOLUME SAR**
	

Maximum location: X=-7.00, Y=-2.00

SAR Peak: 7.05 W/kg

SAR 10g (W/Kg)	0.400437
SAR 1g (W/Kg)	1.653616

Z (mm)	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00
SAR (W/Kg)	6.7112	3.4355	1.5423	0.5662	0.1823	0.0818	0.0303	0.0176	0.0192



3D screen shot	Hot spot position