

12. SAR Test Data

GSM850

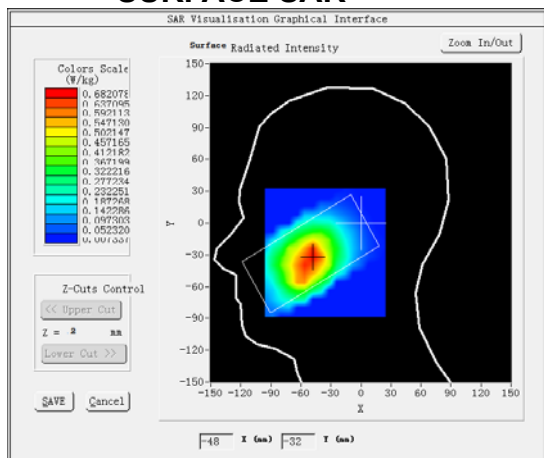
MEASUREMENT 1

Middle Band SAR (Channel 190):

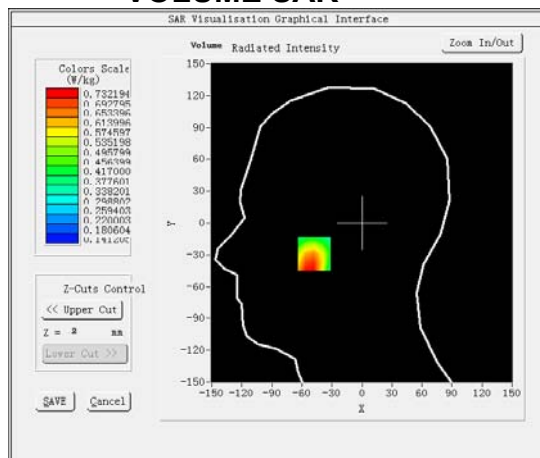
Date: 07/08/2017

Frequency (MHz)	836.600000
Relative permittivity (real part)	41.417760
Relative permittivity (imaginary part)	18.129852
Conductivity (S/m)	0.874923
Variation (%)	-0.250000
Crest Factor:	8.3
Probe Conversion factor	5.50
E-Field Probe:	SSE5 (SN 07/15 EP248)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7, dx=8mm dy=8mm</u> <u>dz=5mm, Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	<u>Left head</u>
Device Position	<u>Cheek</u>
Band	<u>GSM850(voice)</u>

SURFACE SAR



VOLUME SAR



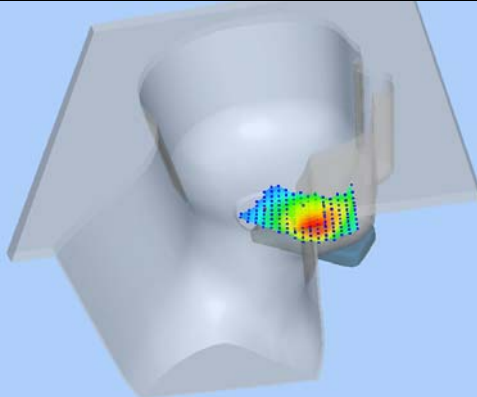
Maximum location: X=-48.00, Y=-29.00 SAR Peak: 0.89 W/kg

SAR 10g (W/Kg)

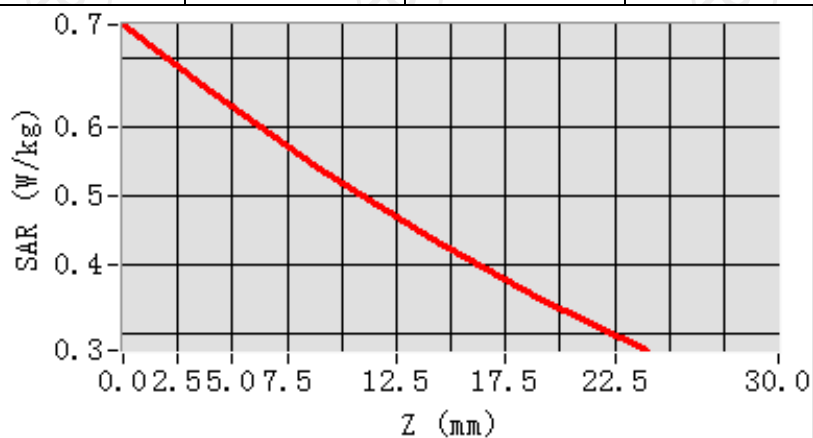
0.523943

SAR 1g (W/Kg)

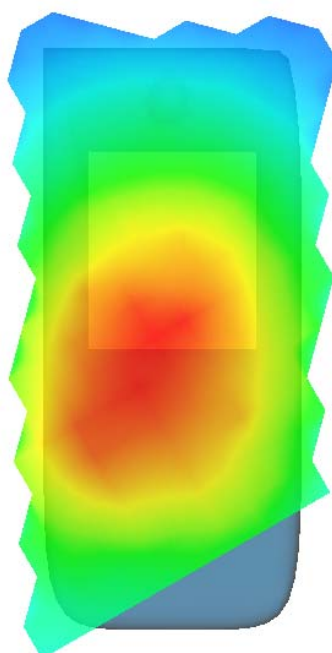
0.715164



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.7469	0.6486	0.5374	0.4387	0.3516



Hot spot position



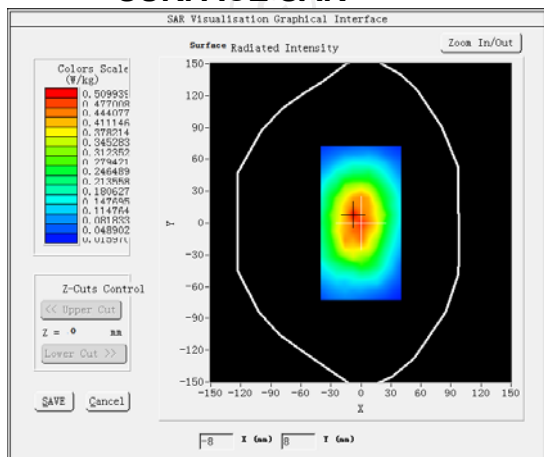
MEASUREMENT 2

Middle Band SAR (Channel 190):

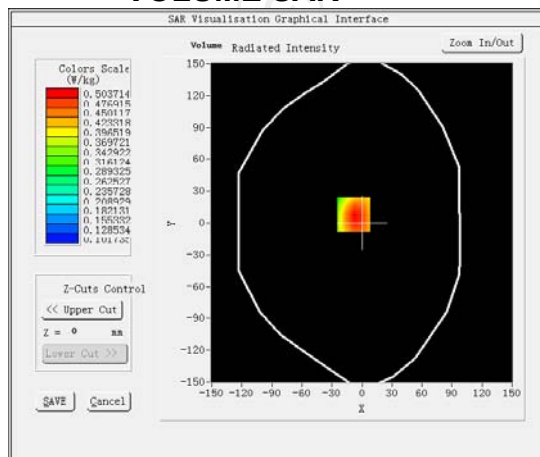
Date: 07/08/2017

Frequency (MHz)	836.600000
Relative permittivity (real part)	55.242077
Relative permittivity (imaginary part)	21.378187
Conductivity (S/m)	0.940253
Variation (%)	2.480000
Crest Factor:	8.3
Probe Conversion factor	5.65
E-Field Probe:	SSE5 (SN 07/15 EP248)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7, dx=8mm dy=8mm</u> <u>dz=5mm, Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	<u>Validation plane</u>
Device Position	<u>Body back(15mm)</u>
Band	<u>GSM850(Voice)</u>

SURFACE SAR

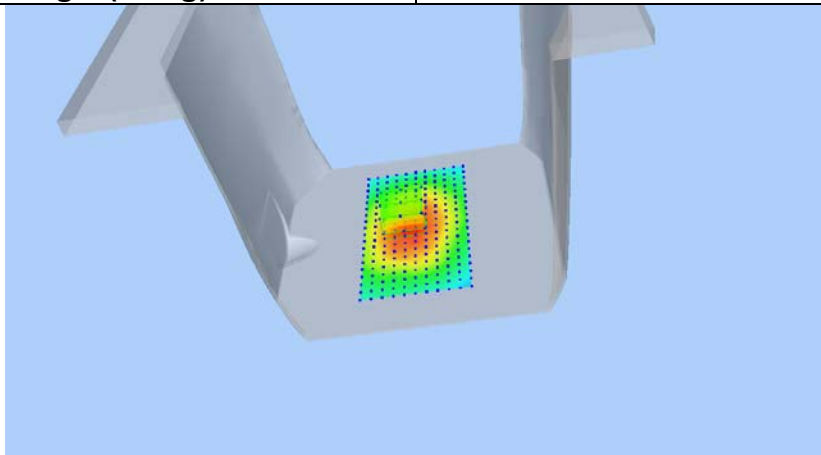


VOLUME SAR

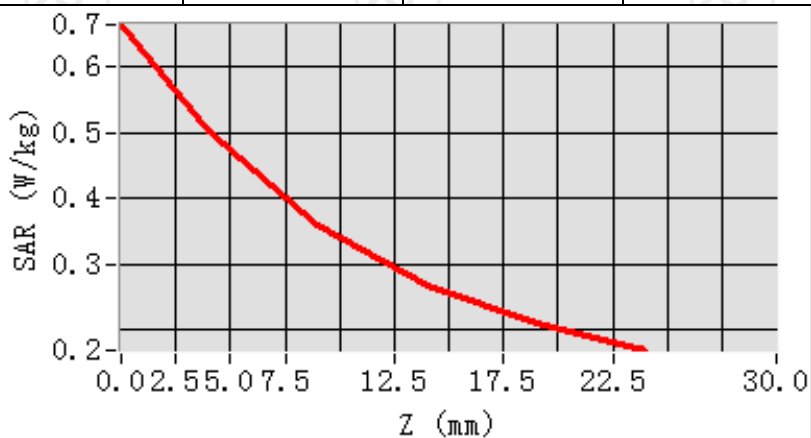


Maximum location: X=-8.00, Y=8.00 SAR Peak: 0.67 W/kg

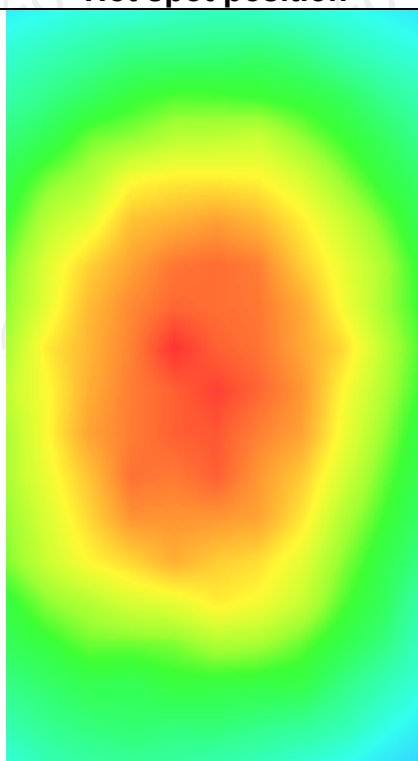
SAR 10g (W/Kg)	0.359978
SAR 1g (W/Kg)	0.499459



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.6649	0.5037	0.3609	0.2687	0.2104



Hot spot position



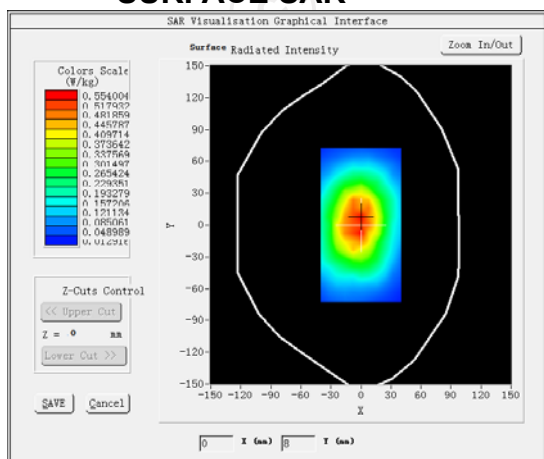
MEASUREMENT 3

Middle Band SAR (Channel 190):

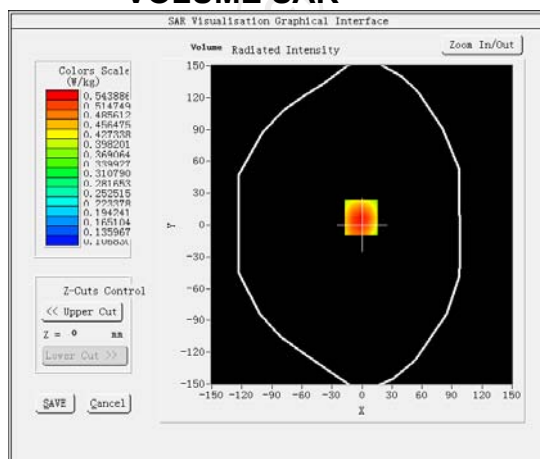
Date: 07/08/2017

Frequency (MHz)	836.600000
Relative permittivity (real part)	55.242077
Relative permittivity (imaginary part)	21.378187
Conductivity (S/m)	0.940253
Variation (%)	-2.120000
Crest Factor:	2.0
Probe Conversion factor	5.65
E-Field Probe:	SSE5 (SN 07/15 EP248)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7, dx=8mm dy=8mm</u> <u>dz=5mm, Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	<u>Validation plane</u>
Device Position	<u>Body back(15mm)</u>
Band	<u>GSM850(GPRS 4slot)</u>

SURFACE SAR

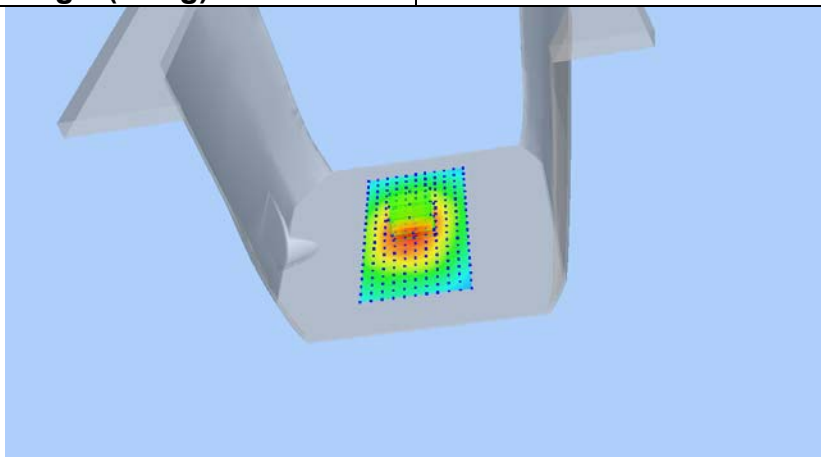


VOLUME SAR

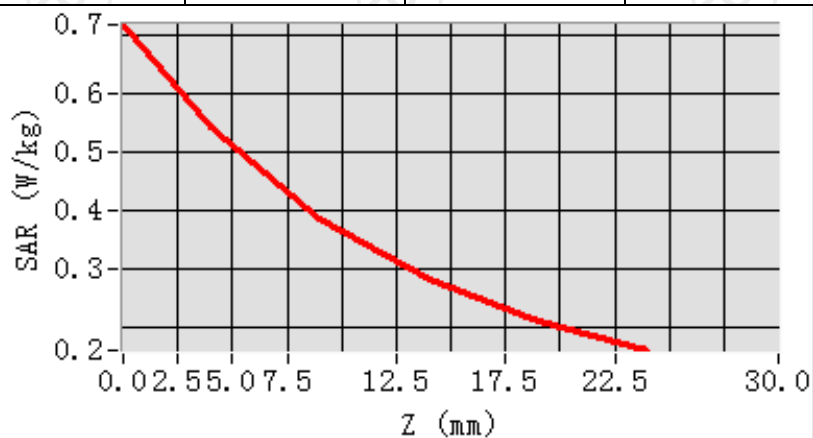


Maximum location: X=-1.00, Y=7.00 SAR Peak: 0.72 W/kg

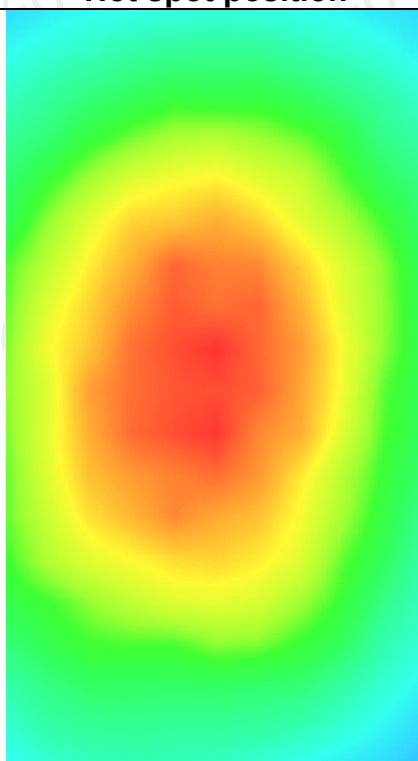
SAR 10g (W/Kg)	0.369773
SAR 1g (W/Kg)	0.534158



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.7184	0.5439	0.3861	0.2806	0.2107



Hot spot position

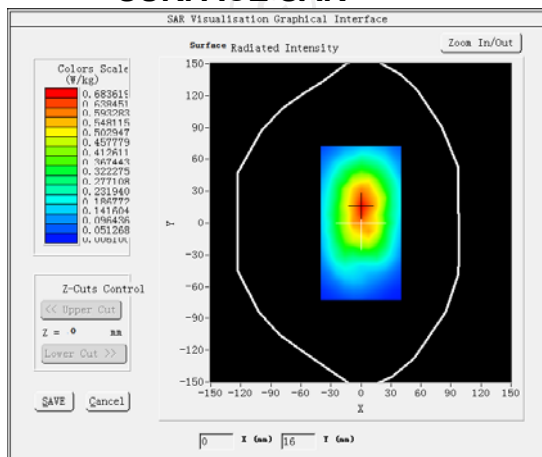


MEASUREMENT 4

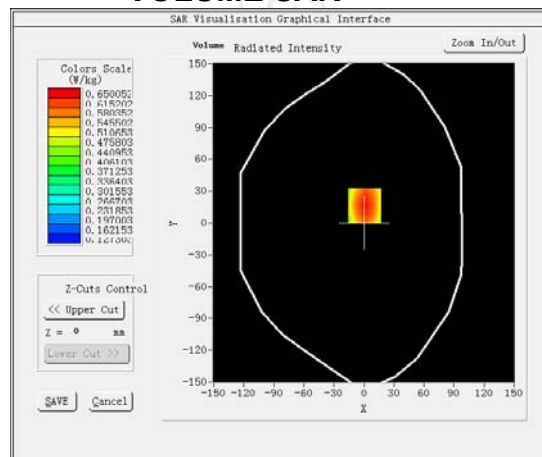
Lower Band SAR (Channel 128): Date: 07/08/2017

Frequency (MHz)	824.200012
Relative permittivity (real part)	55.242077
Relative permittivity (imaginary part)	21.378187
Conductivity (S/m)	0.940253
Variation (%)	-2.280000
Crest Factor:	2.0
Probe Conversion factor	5.65
E-Field Probe:	SSE5 (SN 07/15 EP248)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7, dx=8mm dy=8mm</u> <u>dz=5mm, Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	<u>Validation plane</u>
Device Position	<u>Body back(10mm)</u>
Band	<u>GSM850(GPRS 4slot hotspot)</u>

SURFACE SAR

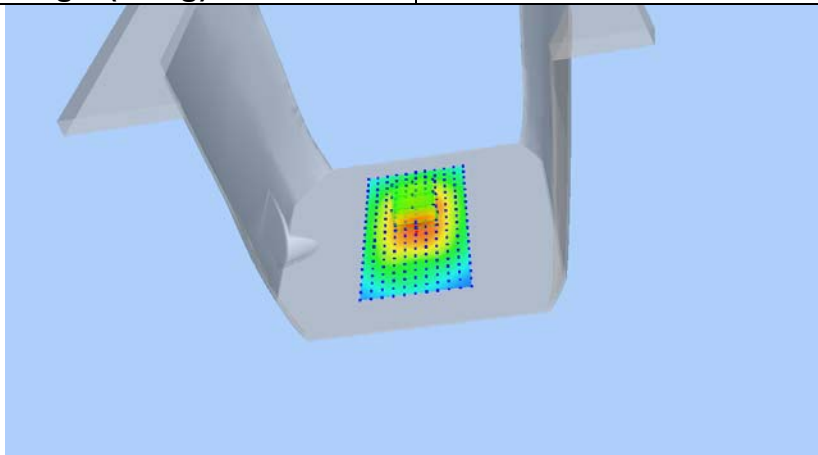


VOLUME SAR

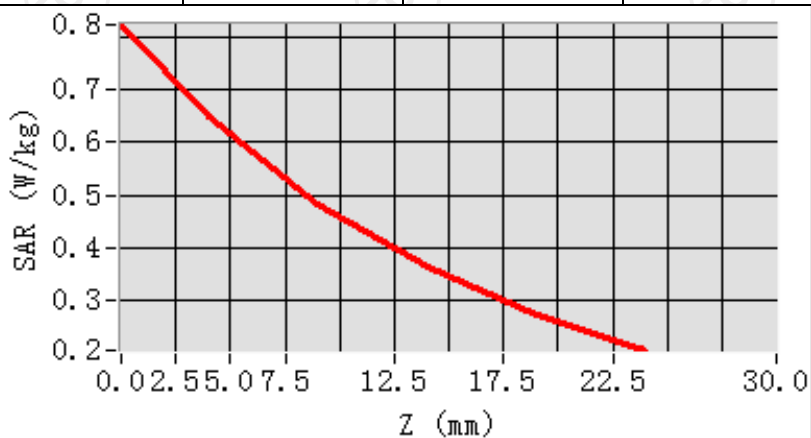


Maximum location: X=1.00, Y=16.00 SAR Peak: 0.84 W/kg

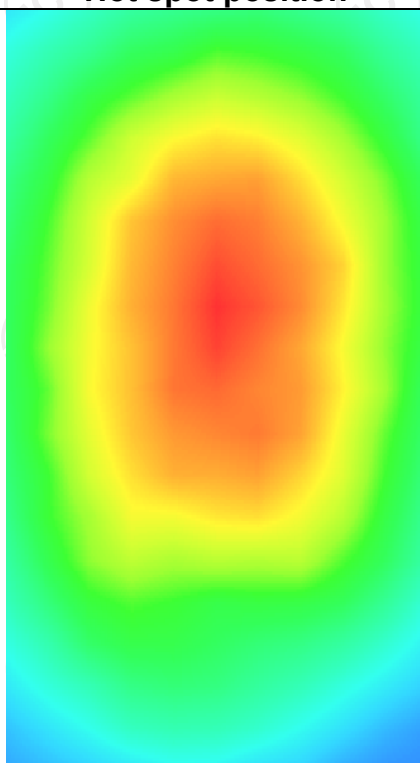
SAR 10g (W/Kg)	0.445128
SAR 1g (W/Kg)	0.636977



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.8232	0.6501	0.4838	0.3630	0.2750



Hot spot position



GSM1900

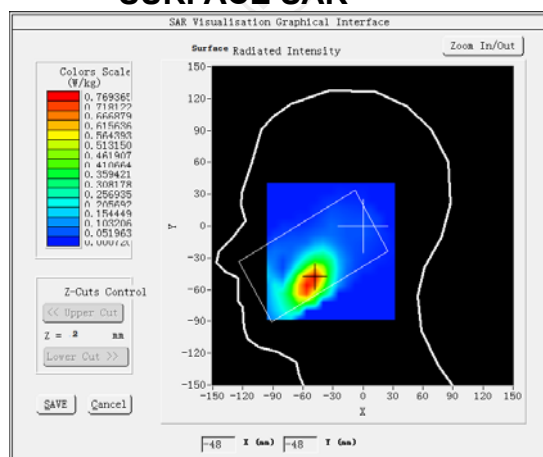
MEASUREMENT 1

Middle Band SAR (Channel 661):

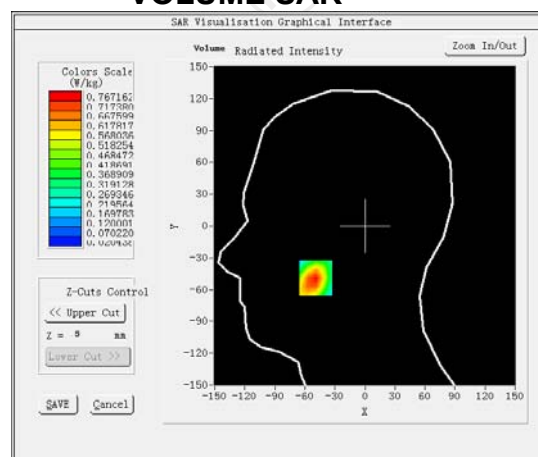
Date: 07/09/2017

Frequency (MHz)	1880.000000
Relative permittivity (real part)	39.102121
Relative permittivity (imaginary part)	12.607061
Conductivity (S/m)	1.350209
Variation (%)	-2.410000
Crest Factor	8.3
Probe Conversion factor	4.85
E-Field Probe:	SSE5 (SN 07/15 EP248)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7, dx=8mm dy=8mm</u> <u>dz=5mm, Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	<u>Right head</u>
Device Position	<u>Cheek</u>
Band	<u>GSM1900(voice)</u>

SURFACE SAR



VOLUME SAR



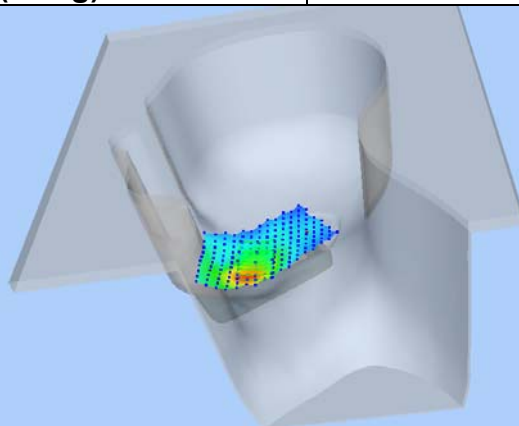
Maximum location: X=-49.00, Y=-49.00 SAR Peak: 1.11 W/kg

SAR 10g (W/Kg)

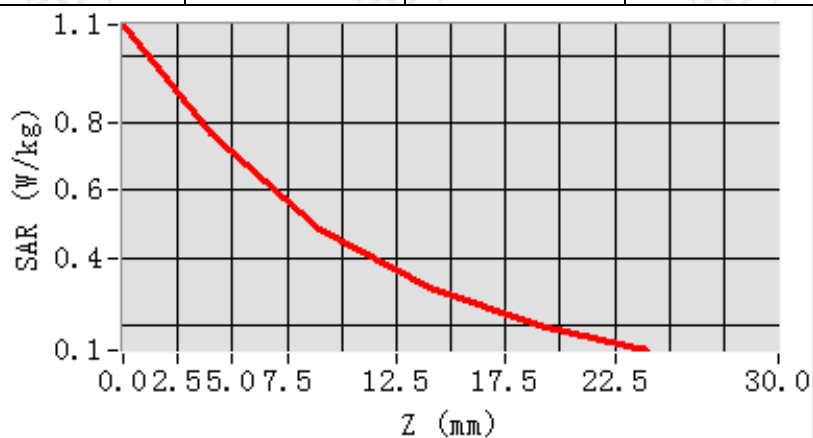
0.419648

SAR 1g (W/Kg)

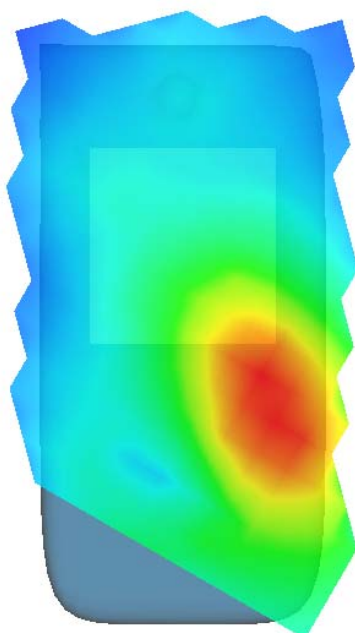
0.726036



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.0908	0.7672	0.4880	0.3114	0.2017



Hot spot position

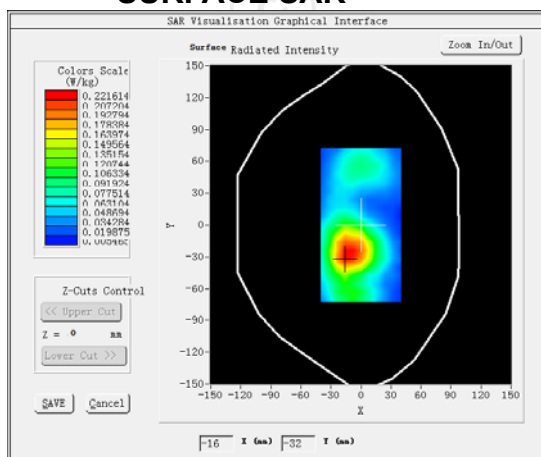


MEASUREMENT 2

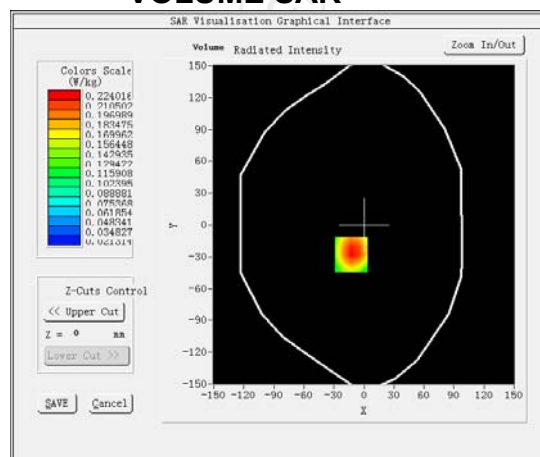
Middle Band SAR (Channel 661): Date: 07/09/2017

Frequency (MHz)	1880.000000
Relative permittivity (real part)	53.320141
Relative permittivity (imaginary part)	14.232400
Conductivity (S/m)	1.503255
Variation (%)	-0.750000
Crest Factor	8.3
Probe Conversion factor	5.01
E-Field Probe:	SSE5 (SN 07/15 EP248)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7, dx=8mm dy=8mm</u> <u>dz=5mm, Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	<u>Validation plane</u>
Device Position	<u>Body back(15mm)</u>
Band	<u>GSM1900(voice)</u>

SURFACE SAR



VOLUME SAR



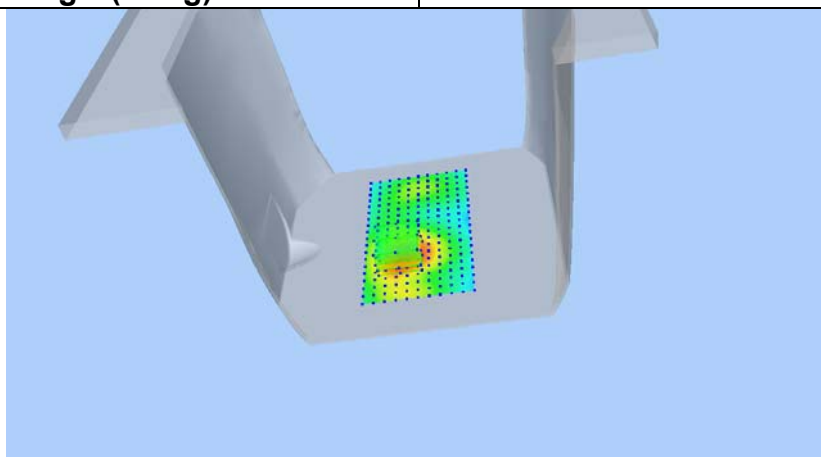
Maximum location: X=-13.00, Y=-28.00 SAR Peak: 0.29 W/kg

SAR 10g (W/Kg)

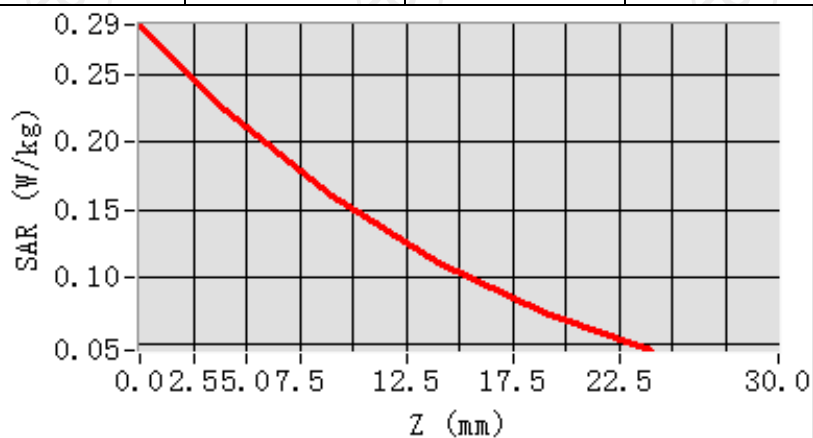
0.139584

SAR 1g (W/Kg)

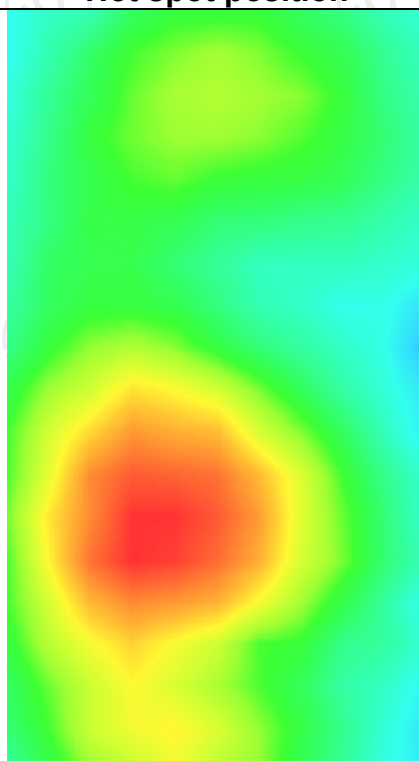
0.214453



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.2878	0.2240	0.1601	0.1109	0.0736



Hot spot position



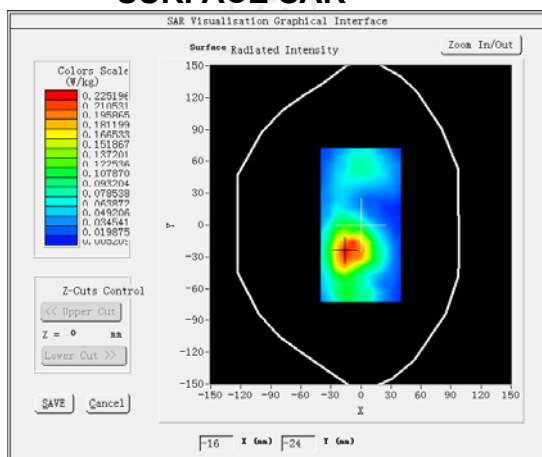
MEASUREMENT 3

Middle Band SAR (Channel 661):

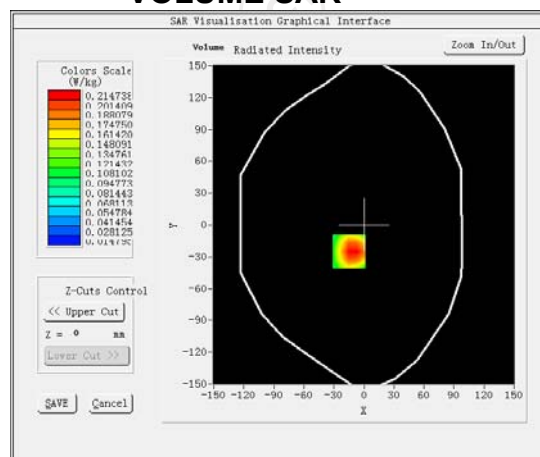
Date: 07/09/2017

Frequency (MHz)	1880.000000
Relative permittivity (real part)	53.320141
Relative permittivity (imaginary part)	14.232400
Conductivity (S/m)	1.503255
Variation (%)	-4.600000
Crest Factor	2.0
Probe Conversion factor	5.01
E-Field Probe:	SSE5 (SN 07/15 EP248)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7, dx=8mm dy=8mm</u> <u>dz=5mm, Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	<u>Validation plane</u>
Device Position	<u>Body back(15mm)</u>
Band	<u>GSM1900(GPRS 4slot)</u>

SURFACE SAR



VOLUME SAR



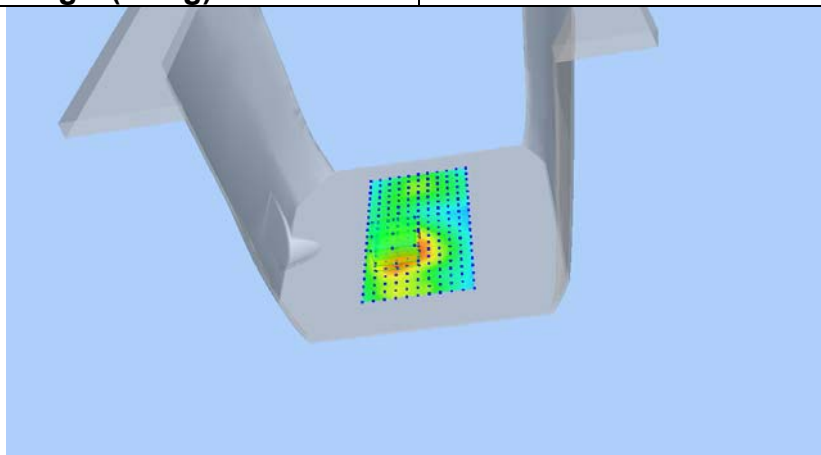
Maximum location: X=-15.00, Y=-25.00 SAR Peak: 0.29 W/kg

SAR 10g (W/Kg)

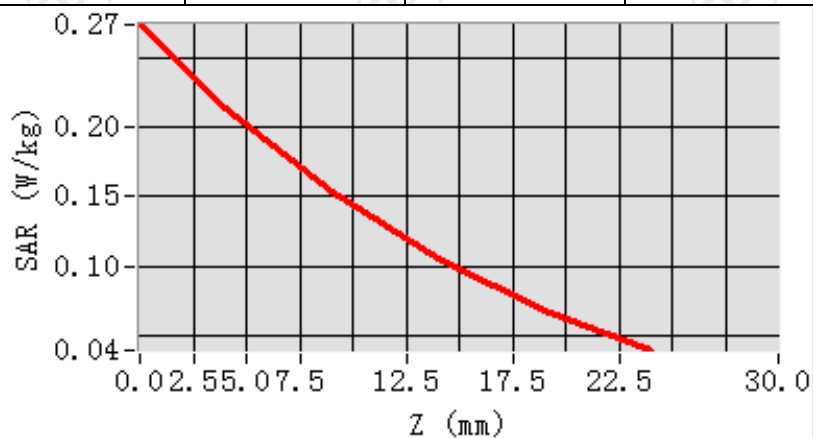
0.131277

SAR 1g (W/Kg)

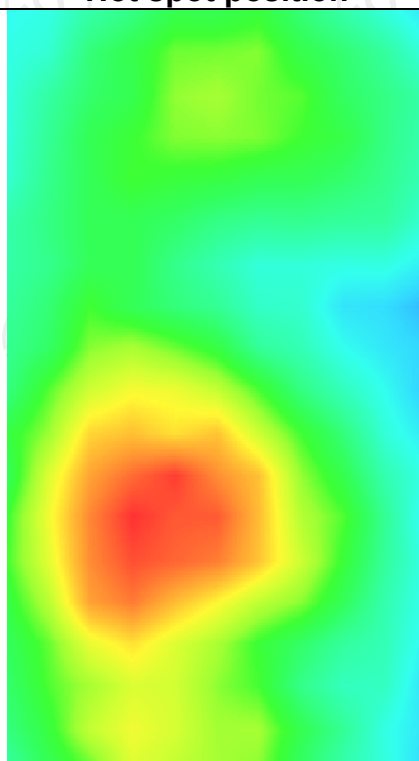
0.207082



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.2733	0.2140	0.1532	0.1054	0.0684



Hot spot position



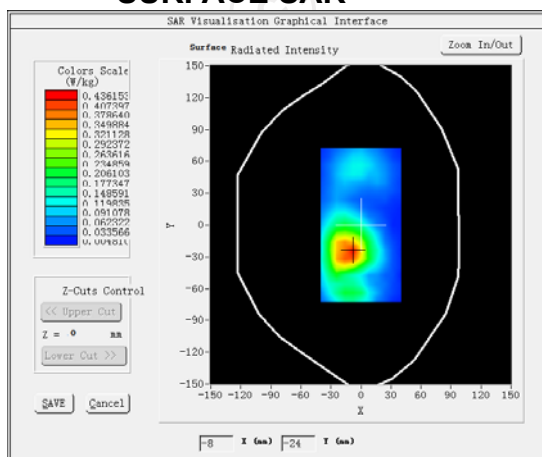
MEASUREMENT 4

Middle Band SAR (Channel 661):

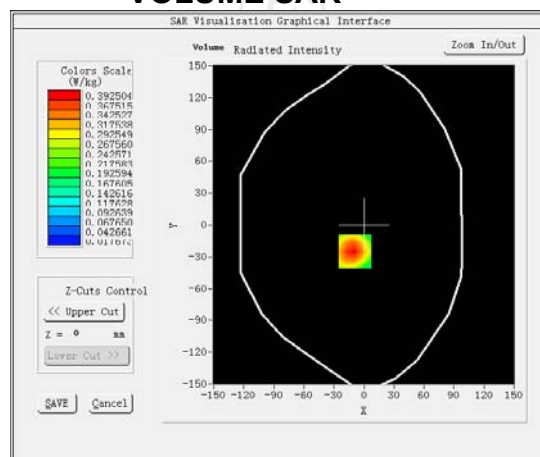
Date: 07/09/2017

Frequency (MHz)	1880.000000
Relative permittivity (real part)	53.320141
Relative permittivity (imaginary part)	14.232400
Conductivity (S/m)	1.503255
Variation (%)	4.350000
Crest Factor	2.0
Probe Conversion factor	5.01
E-Field Probe:	SSE5 (SN 07/15 EP248)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7, dx=8mm dy=8mm</u> <u>dz=5mm, Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	<u>Validation plane</u>
Device Position	<u>Body back(10mm)</u>
Band	<u>GSM1900(GPRS 4slot hot)</u>

SURFACE SAR



VOLUME SAR



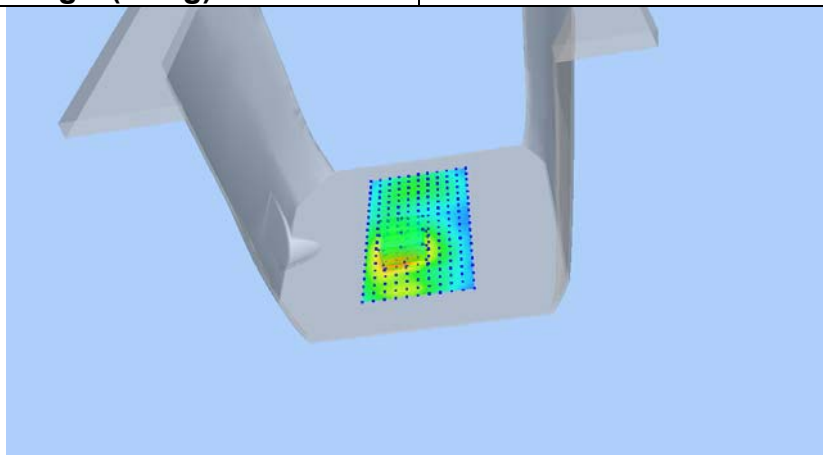
Maximum location: X=-9.00, Y=-25.00 SAR Peak: 0.62 W/kg

SAR 10g (W/Kg)

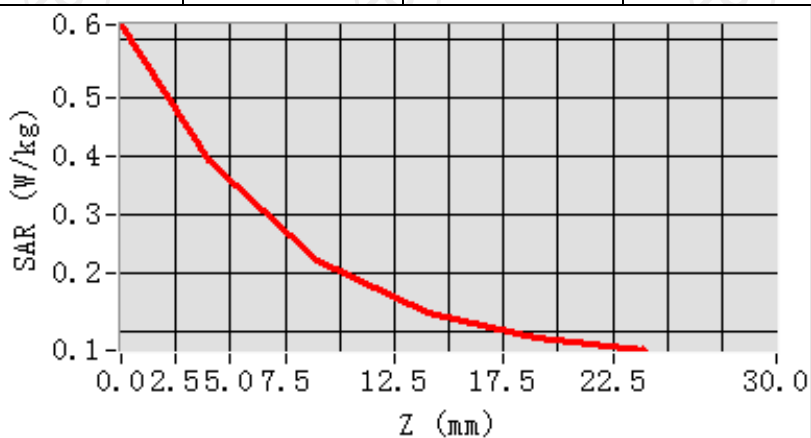
0.222160

SAR 1g (W/Kg)

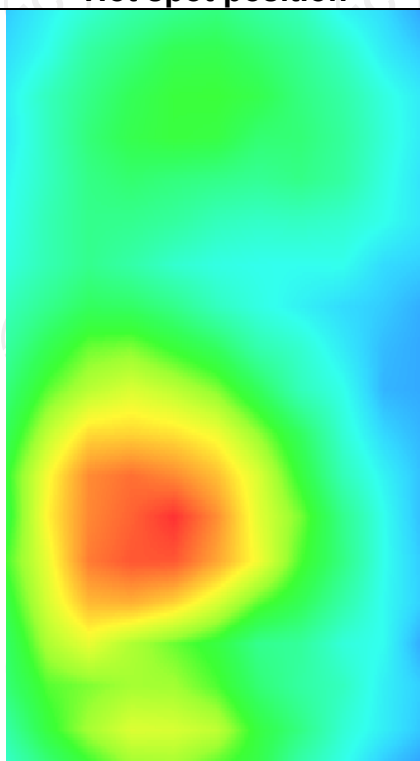
0.375660



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.6232	0.3925	0.2191	0.1305	0.0893



Hot spot position



WCDMA Band II

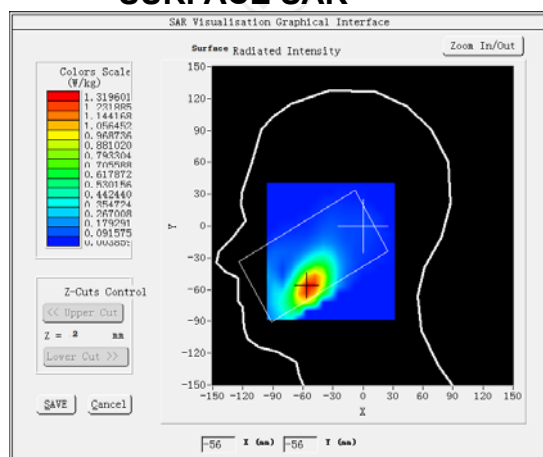
MEASUREMENT 1

Middle Band SAR (Channel 9400):

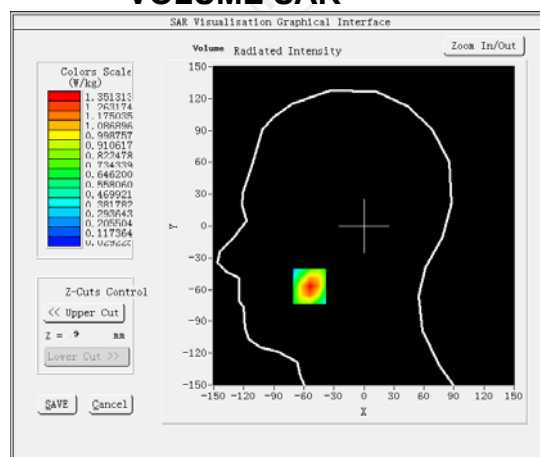
Date: 07/09/2017

Frequency (MHz)	1880.000000
Relative permittivity (real part)	39.076721
Relative permittivity (imaginary part)	12.607061
Conductivity (S/m)	1.350609
Variation (%)	-1.030000
Crest Factor	1.0
Probe Conversion factor	4.85
E-Field Probe:	SSE5 (SN 07/15 EP248)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7, dx=8mm dy=8mm</u> <u>dz=5mm, Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	<u>Right head</u>
Device Position	<u>Cheek</u>
Band	<u>BAND2 WCDMA1900</u>

SURFACE SAR

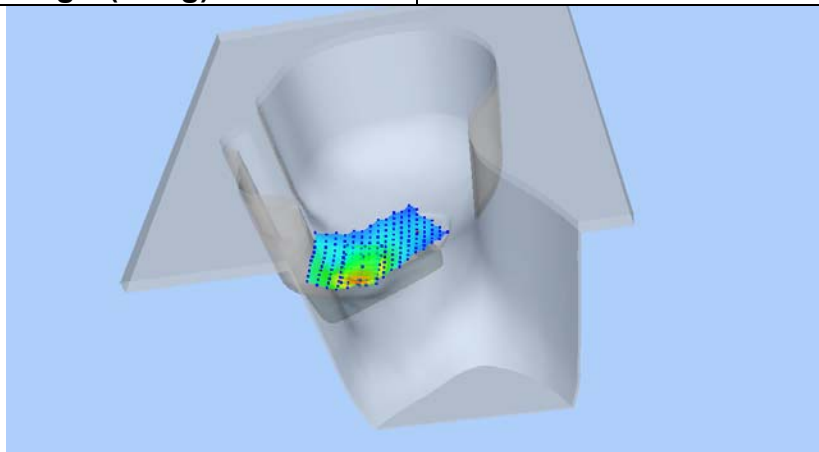


VOLUME SAR

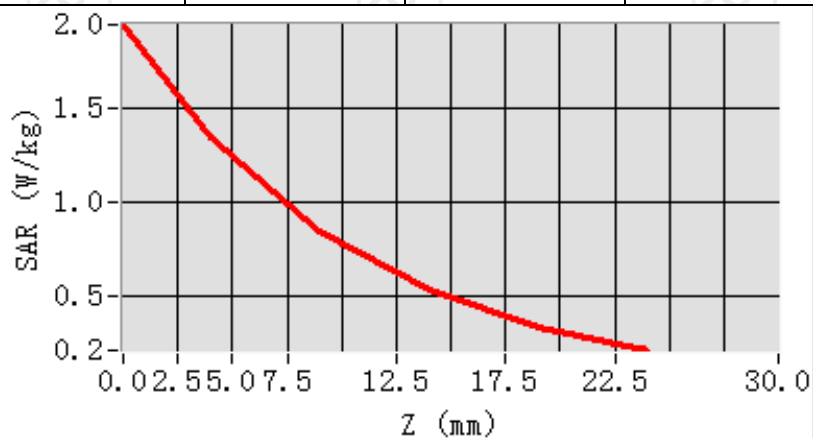


Maximum location: X=-54.00, Y=-57.00 SAR Peak: 1.96 W/kg

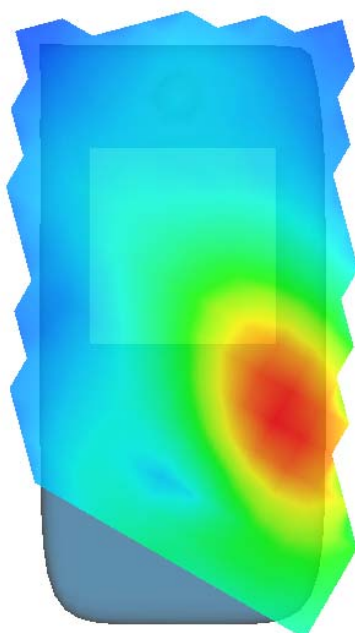
SAR 10g (W/Kg)	0.716435
SAR 1g (W/Kg)	1.257615



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.9506	1.3513	0.8422	0.5268	0.3357



Hot spot position



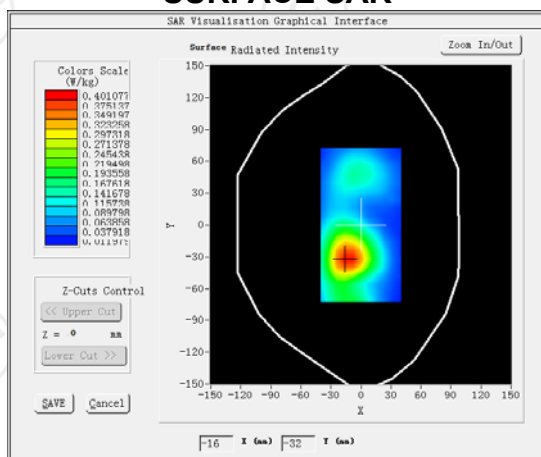
MEASUREMENT 2

Middle Band SAR (Channel 9400):

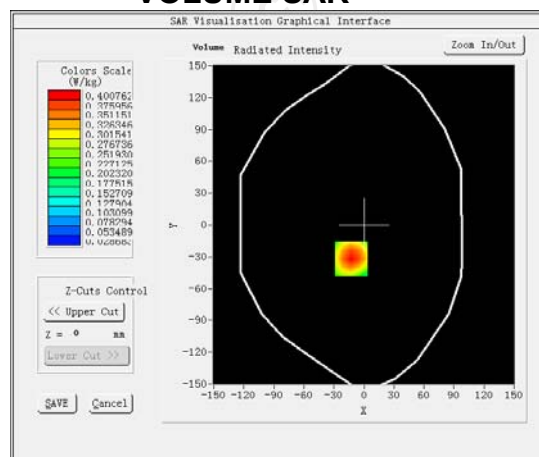
Date: 07/09/2017

Frequency (MHz)	1880.000000
Relative permittivity (real part)	53.320141
Relative permittivity (imaginary part)	14.232400
Conductivity (S/m)	1.503255
Variation (%)	-2.030000
Crest Factor	1.0
Probe Conversion factor	5.01
E-Field Probe:	SSE5 (SN 07/15 EP248)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7, dx=8mm dy=8mm</u> <u>dz=5mm, Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	<u>Validation plane</u>
Device Position	<u>Body back(15mm)</u>
Band	<u>BAND2 WCDMA1900</u>

SURFACE SAR



VOLUME SAR



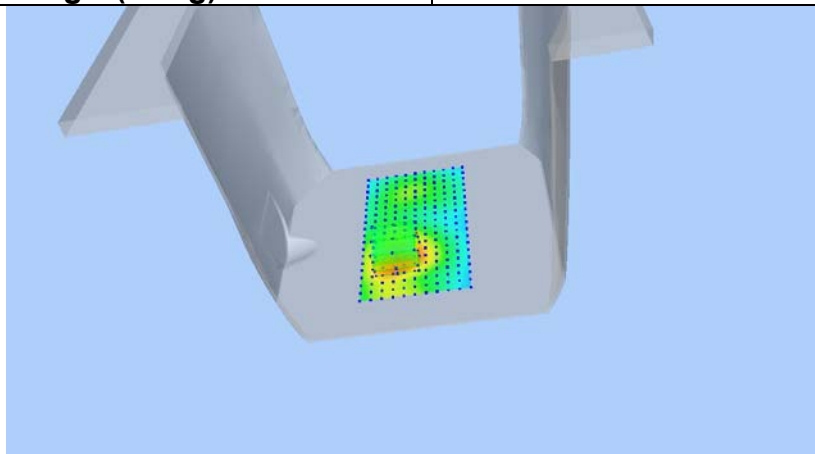
Maximum location: X=-13.00, Y=-32.00 SAR Peak: 0.55 W/kg

SAR 10g (W/Kg)

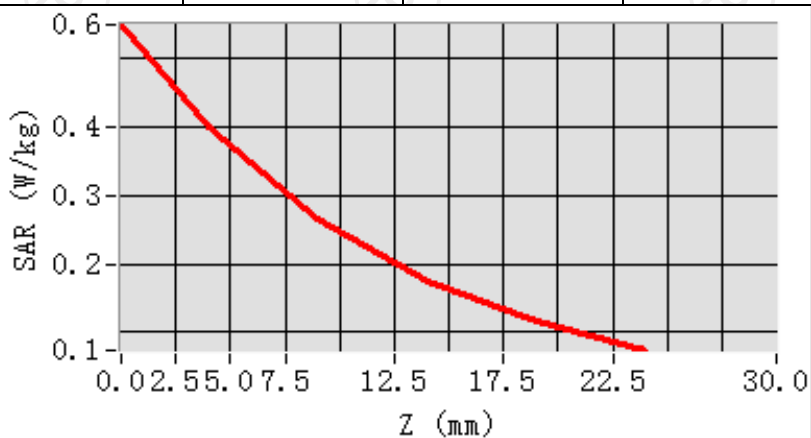
0.237729

SAR 1g (W/Kg)

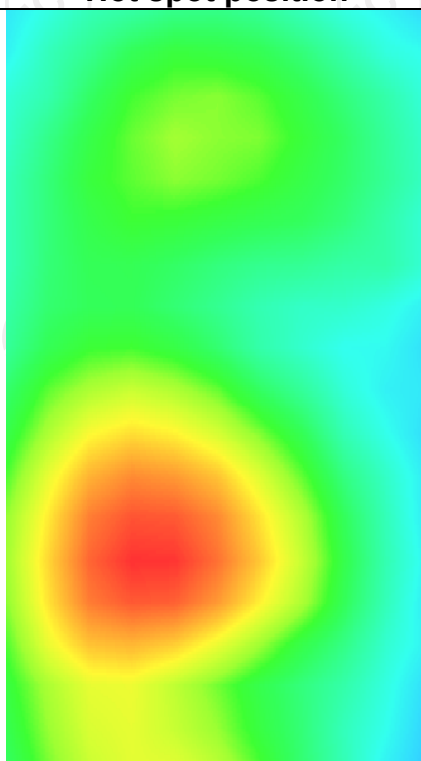
0.380054



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.5503	0.4008	0.2662	0.1762	0.1165



Hot spot position



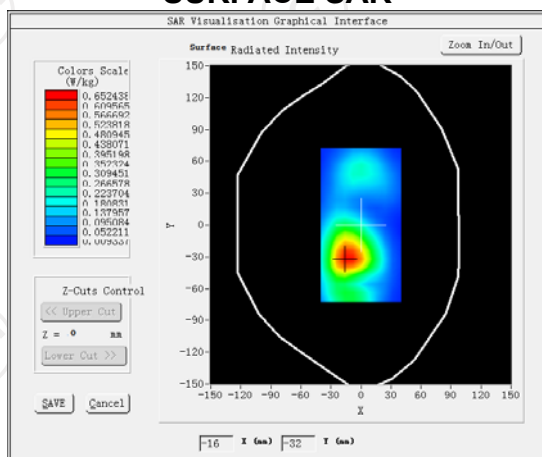
MEASUREMENT 3

Middle Band SAR (Channel 9400):

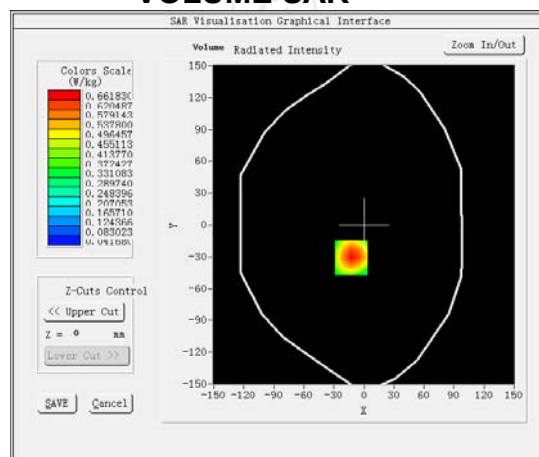
Date: 07/09/2017

Frequency (MHz)	1880.000000
Relative permittivity (real part)	53.320141
Relative permittivity (imaginary part)	14.232400
Conductivity (S/m)	1.503255
Variation (%)	0.090000
Crest Factor	1.0
Probe Conversion factor	5.01
E-Field Probe:	SSE5 (SN 07/15 EP248)
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7, dx=8mm dy=8mm dz=5mm, Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Body back(10mm)
Band	BAND2 WCDMA1900(hotspot)

SURFACE SAR



VOLUME SAR



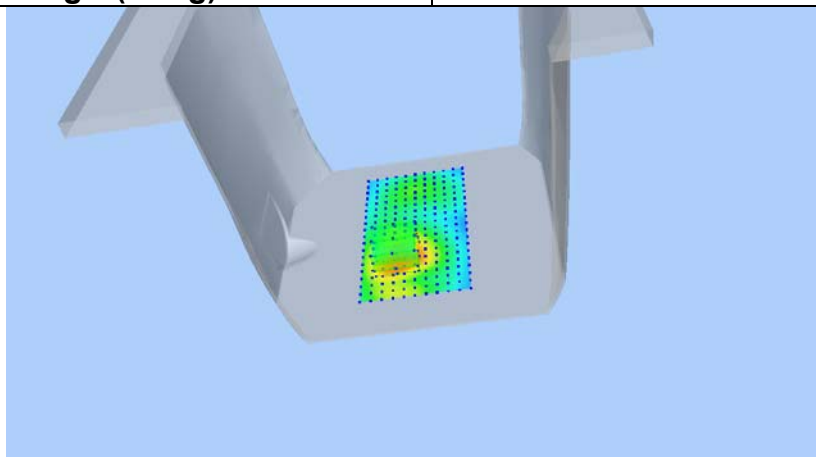
Maximum location: X=-13.00, Y=-31.00 SAR Peak: 0.91 W/kg

SAR 10g (W/Kg)

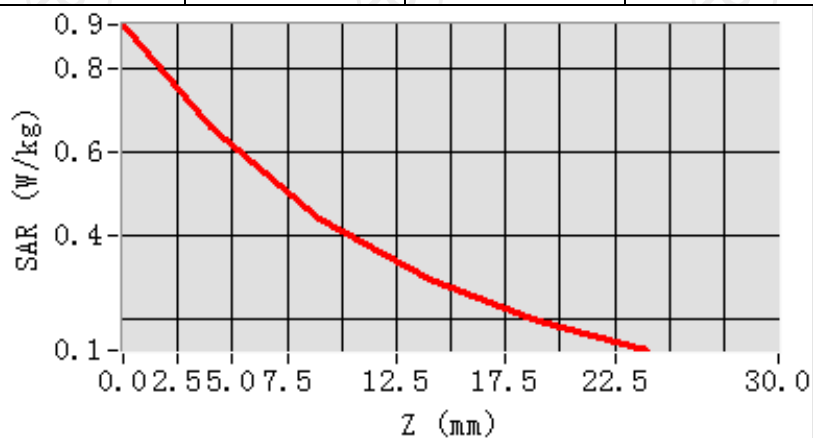
0.388729

SAR 1g (W/Kg)

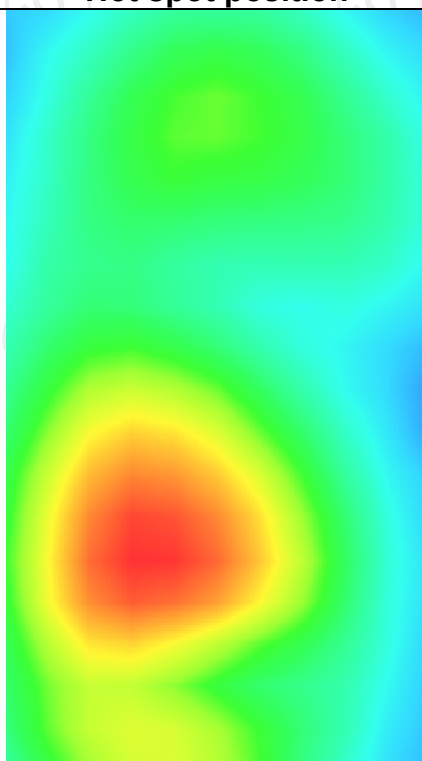
0.627655



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.9058	0.6618	0.4414	0.2930	0.1940



Hot spot position



WCDMA Band V

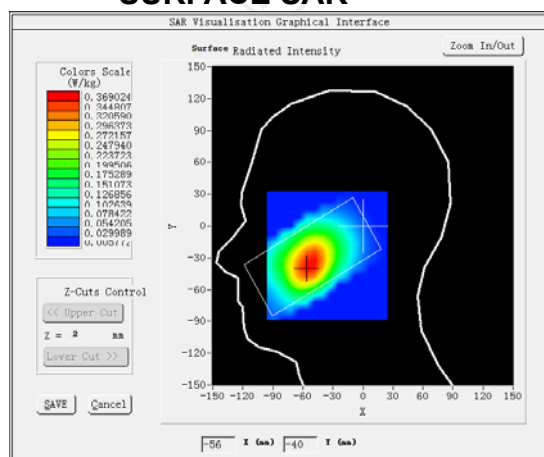
MEASUREMENT 1

Middle Band SAR (Channel 4182):

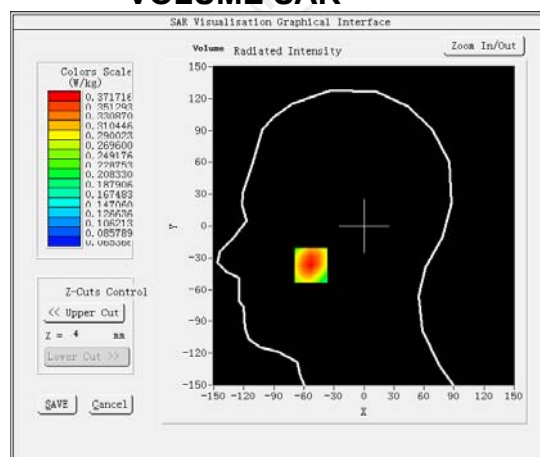
Date: 07/08/2017

Frequency (MHz)	836.600000
Relative permittivity (real part)	41.417760
Relative permittivity (imaginary part)	18.129852
Conductivity (S/m)	0.874923
Variation (%)	-0.330000
Crest Factor:	1.0
Probe Conversion factor	5.50
E-Field Probe:	SSE5 (SN 07/15 EP248)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7, dx=8mm dy=8mm</u> <u>dz=5mm, Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	<u>Left head</u>
Device Position	<u>Cheek</u>
Band	<u>BAND5 WCDMA850</u>

SURFACE SAR



VOLUME SAR



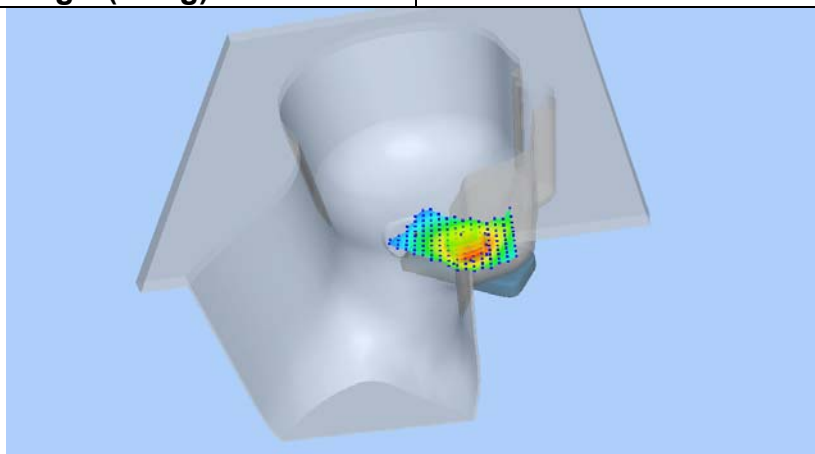
Maximum location: X=-53.00, Y=-37.00 SAR Peak: 0.44 W/kg

SAR 10g (W/Kg)

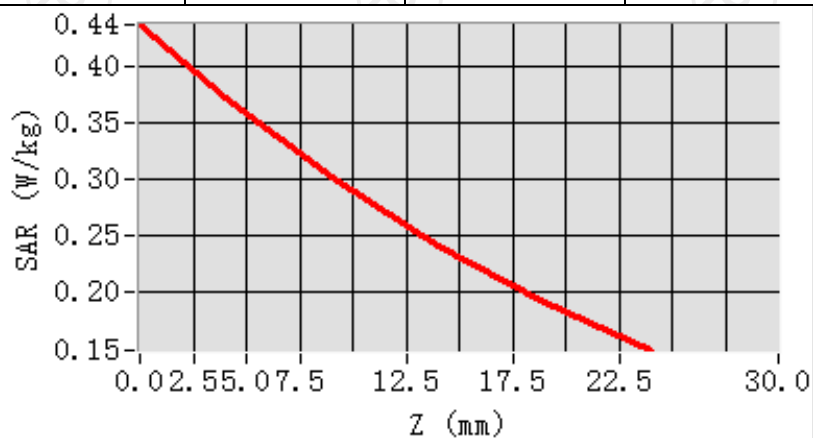
0.265108

SAR 1g (W/Kg)

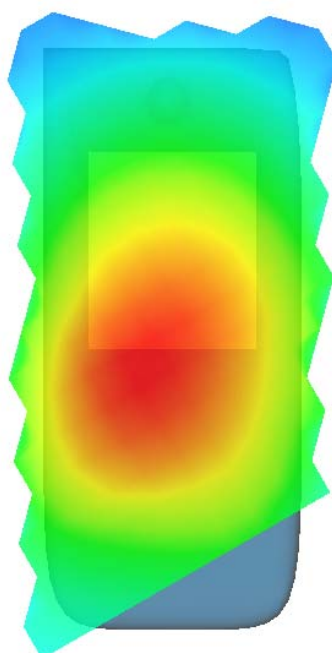
0.357215



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.4366	0.3717	0.3015	0.2422	0.1922



Hot spot position



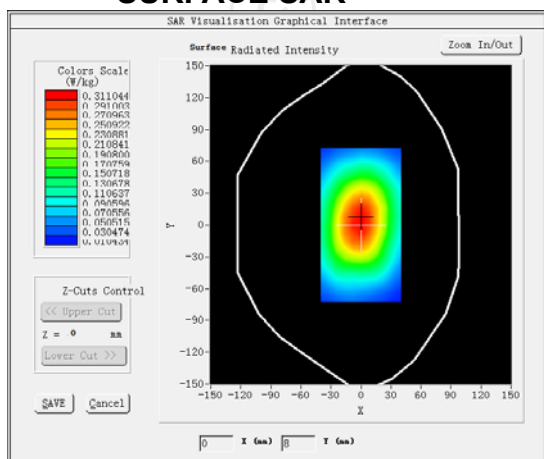
MEASUREMENT 2

Middle Band SAR (Channel 4182):

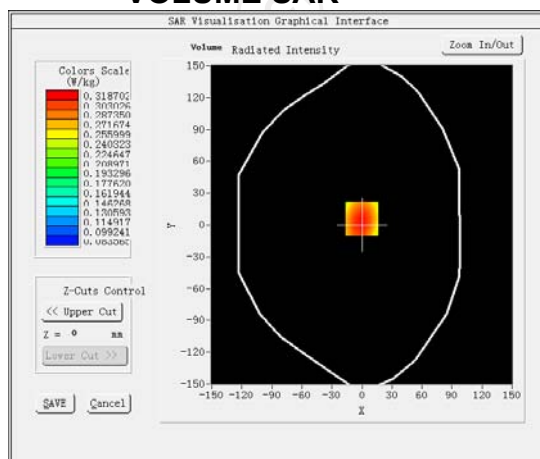
Date: 07/08/2017

Frequency (MHz)	836.400024
Relative permittivity (real part)	55.242077
Relative permittivity (imaginary part)	21.378187
Conductivity (S/m)	0.940253
Variation (%)	-1.260000
Crest Factor:	1.0
Probe Conversion factor	5.65
E-Field Probe:	SSE5 (SN 07/15 EP248)
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7, dx=8mm dy=8mm dz=5mm, Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Body back(15mm)
Band	BAND5 WCDMA850

SURFACE SAR

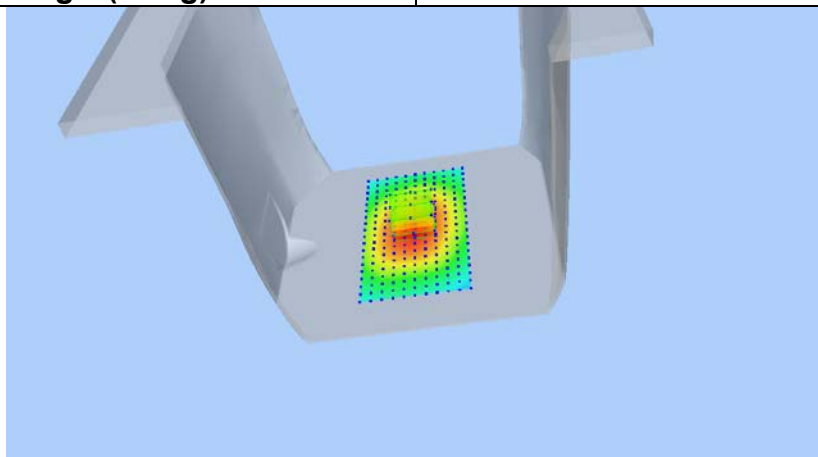


VOLUME SAR

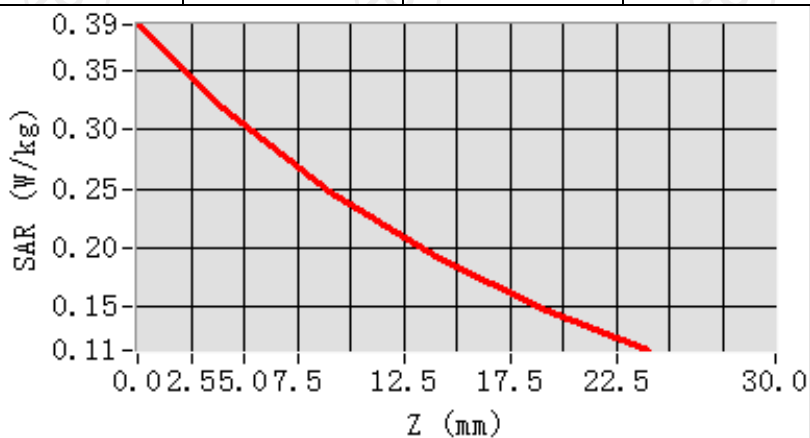


Maximum location: X=0.00, Y=6.00 SAR Peak: 0.39 W/kg

SAR 10g (W/Kg)	0.231358
SAR 1g (W/Kg)	0.314162



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.3881	0.3187	0.2481	0.1929	0.1496



Hot spot position



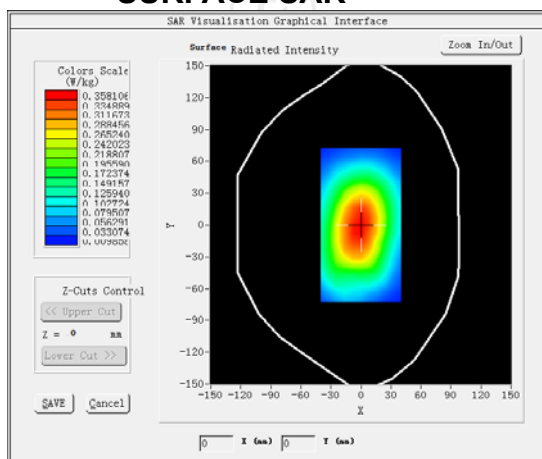
MEASUREMENT 3

Middle Band SAR (Channel 4182):

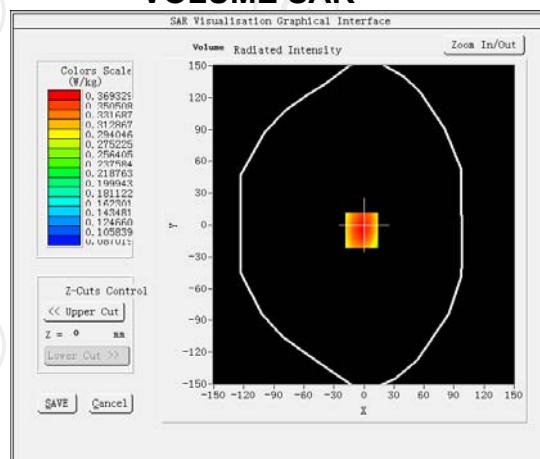
Date: 07/08/2017

Frequency (MHz)	836.400024
Relative permittivity (real part)	55.242077
Relative permittivity (imaginary part)	21.378187
Conductivity (S/m)	0.940253
Variation (%)	0.130000
Crest Factor:	1.0
Probe Conversion factor	5.65
E-Field Probe:	SSE5 (SN 07/15 EP248)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7, dx=8mm dy=8mm</u> <u>dz=5mm, Complete/ndx=8mm dy=8mm,</u> <u>h= 5.00 mm</u>
Phantom	<u>Validation plane</u>
Device Position	<u>Body back(10mm)</u>
Band	<u>BAND5 WCDMA850(hotspot)</u>

SURFACE SAR



VOLUME SAR



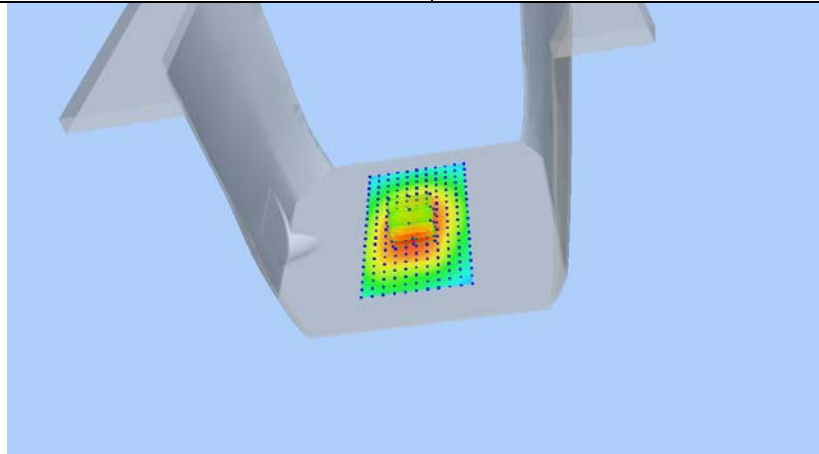
Maximum location: X=-2.00, Y=-5.00 SAR Peak: 0.45 W/kg

SAR 10g (W/Kg)

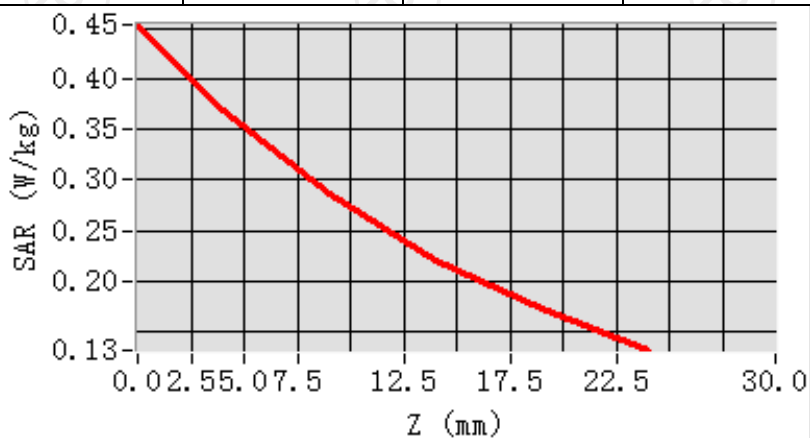
0.266584

SAR 1g (W/Kg)

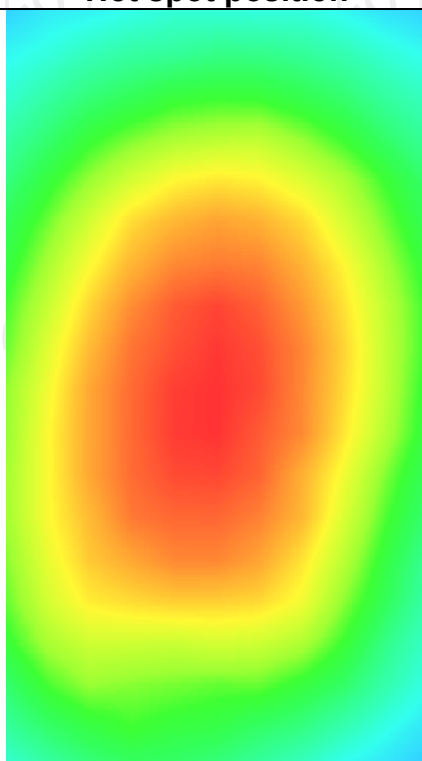
0.362976



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.4531	0.3693	0.2855	0.2212	0.1718



Hot spot position

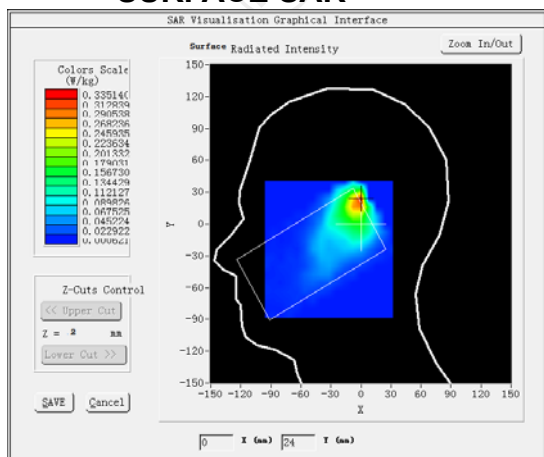


WLAN 2.4

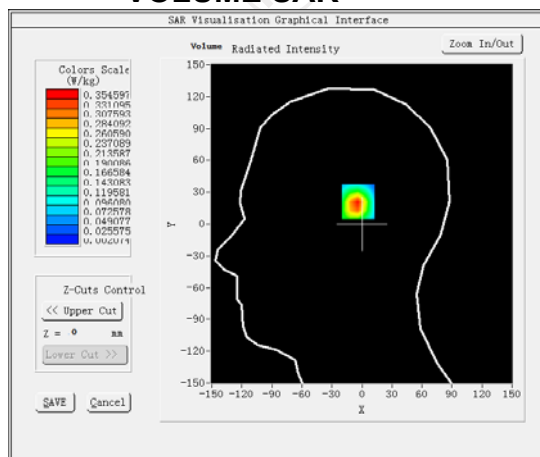
MEASUREMENT 1

Lower Band SAR (Channel 1):		Date: 07/10/2017
Frequency (MHz)	2412.000000	
Relative permittivity (real part)	37.842510	
Relative permittivity (imaginary part)	13.546980	
Conductivity (S/m)	1.793261	
Variation (%)	0.800000	
Crest Factor	1.0	
Probe Conversion factor	4.58	
E-Field Probe:	SSE5 (SN 07/15 EP248)	
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>	
ZoomScan	<u>5x5x7, dx=8mm dy=8mm</u> <u>dz=5mm, Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>	
Phantom	<u>Right head</u>	
Device Position	<u>Cheek</u>	
Band	<u>IEEE 802.11b ISM</u>	

SURFACE SAR



VOLUME SAR



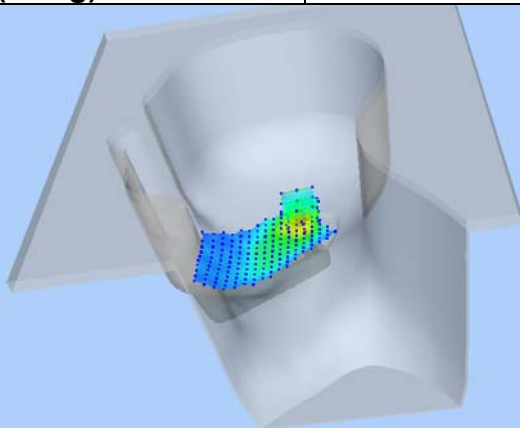
Maximum location: X=-1.00, Y=22.00 SAR Peak: 0.58 W/kg

SAR 10g (W/Kg)

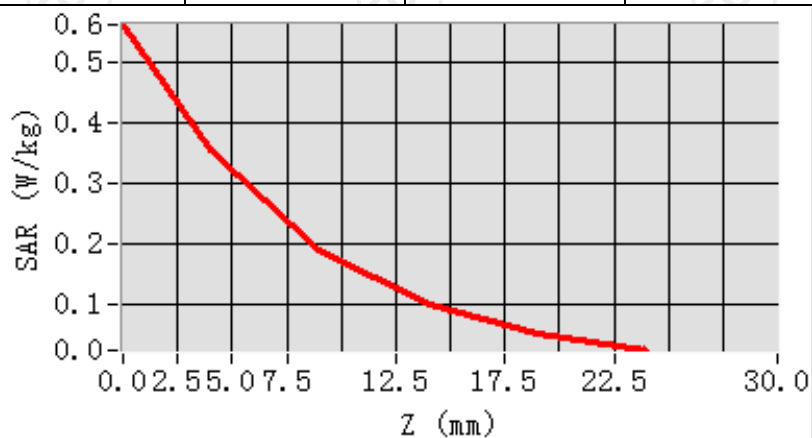
0.162170

SAR 1g (W/Kg)

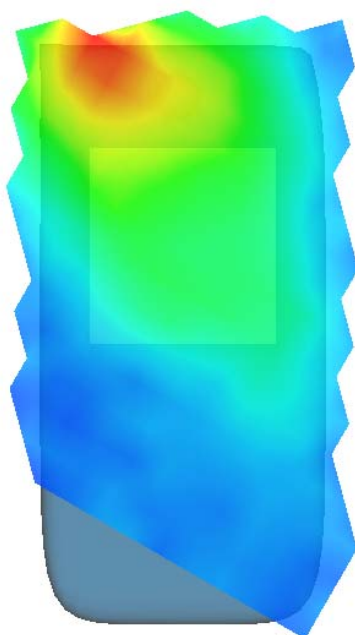
0.337554



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.5640	0.3546	0.1899	0.0985	0.0502



Hot spot position



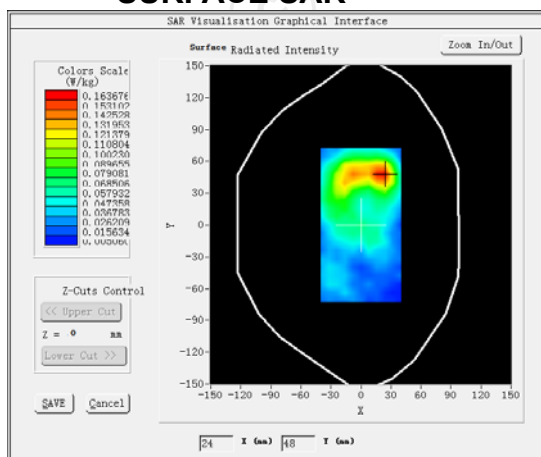
MEASUREMENT 2

Lower Band SAR (Channel 1):

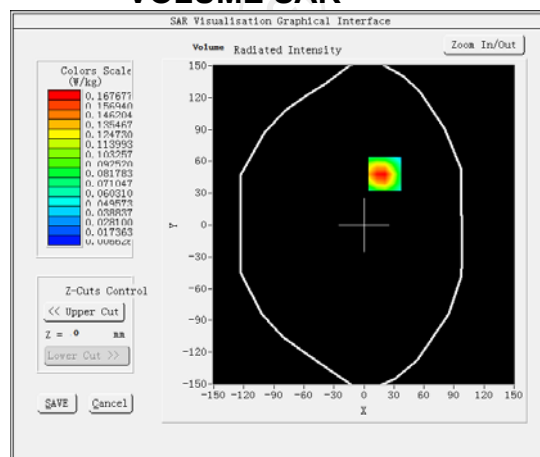
Date: 07/10/2017

Frequency (MHz)	241200000
Relative permittivity (real part)	54.650265
Relative permittivity (imaginary part)	14.318444
Conductivity (S/m)	1.973526
Variation (%)	-3.260000
Crest Factor	1.0
Probe Conversion factor	4.70
E-Field Probe:	SSE5 (SN 07/15 EP248)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7, dx=8mm dy=8mm</u> <u>dz=5mm, Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	Validation plane
Device Position	Body back(15mm)
Band	<u>IEEE 802.11b ISM</u>

SURFACE SAR



VOLUME SAR



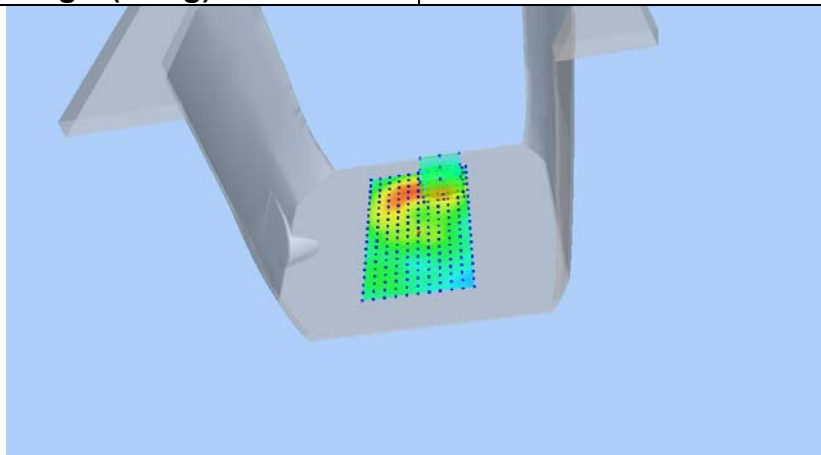
Maximum location: X=21.00, Y=48.00 SAR Peak: 0.26 W/kg

SAR 10g (W/Kg)

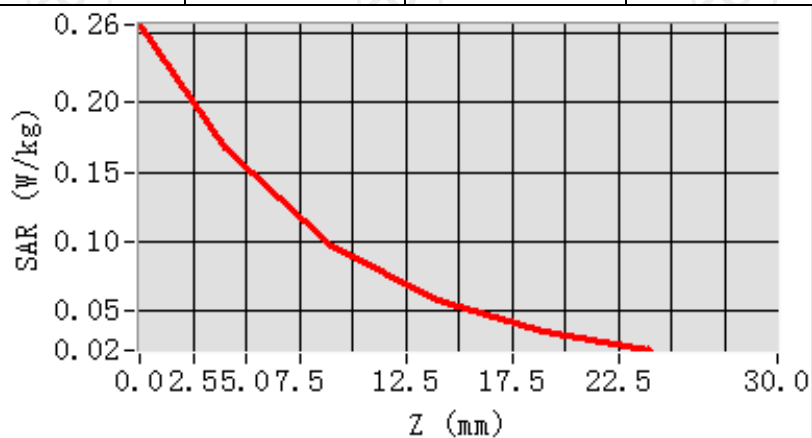
0.088755

SAR 1g (W/Kg)

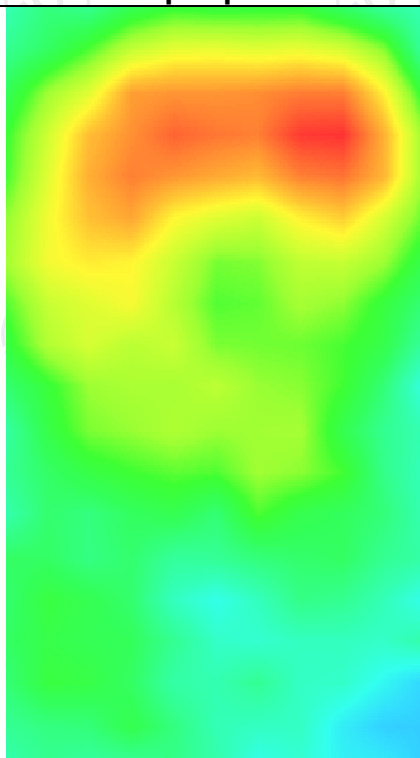
0.165646



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.2568	0.1677	0.0965	0.0562	0.0342



Hot spot position



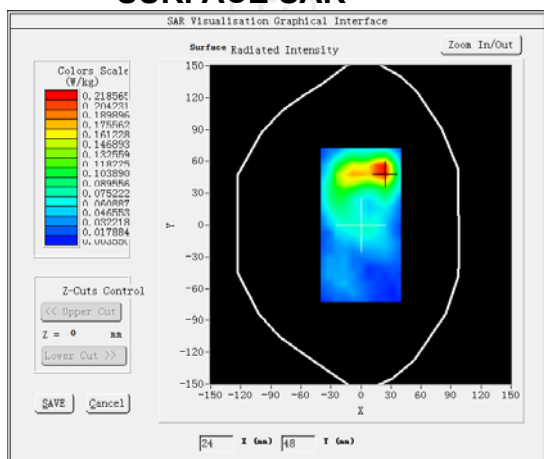
MEASUREMENT 3

Lower Band SAR (Channel 1):

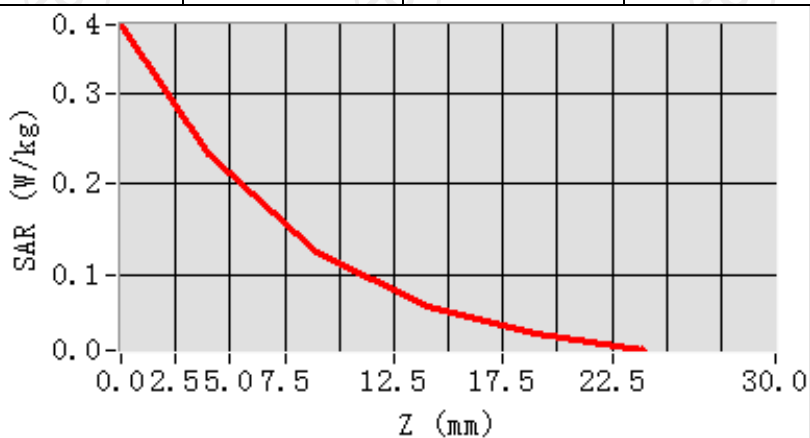
Date: 07/10/2017

Frequency (MHz)	2412.000000
Relative permittivity (real part)	54.650265
Relative permittivity (imaginary part)	14.318444
Conductivity (S/m)	1.973526
Variation (%)	3.150000
Crest Factor	1.0
Probe Conversion factor	4.70
E-Field Probe:	SSE5 (SN 07/15 EP248)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7, dx=8mm dy=8mm</u> <u>dz=5mm, Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	Validation plane
Device Position	Body back(10mm)
Band	<u>IEEE 802.11b ISM</u>

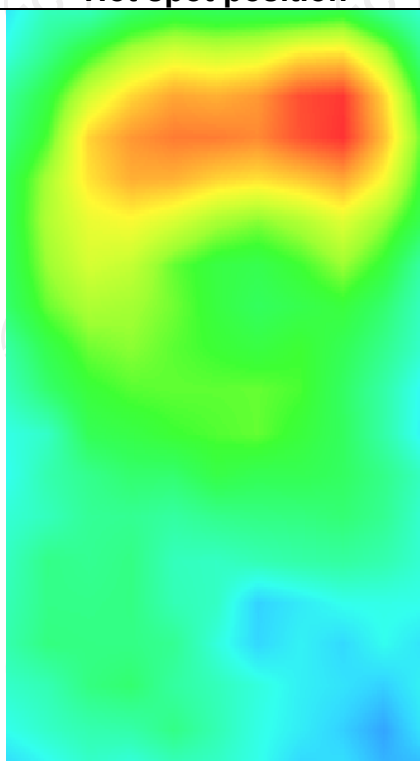
SURFACE SAR



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.3745	0.2335	0.1244	0.0652	0.0348



Hot spot position



Appendix A: EUT Photos



Liquid depth



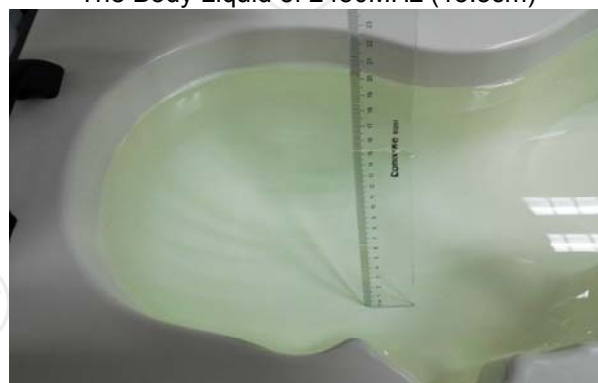
The Body Liquid of 835MHz (15.4cm)



The Body Liquid of 2450MHz (15.3cm)



The Body Liquid of 1900MHz (16.4 cm)



The Head Liquid of 835MHz (15.3cm)



The Head Liquid of 1900MHz (15.5cm)



The Head Liquid of 2450MHz (15.6cm)

Appendix B: Test Setup Photos



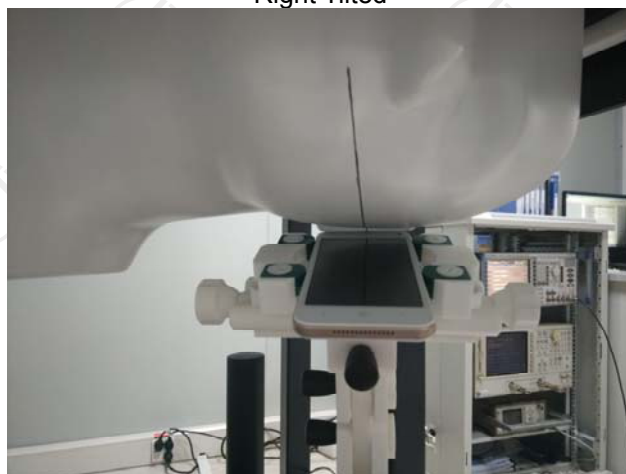
Right Cheek



Right Tilted



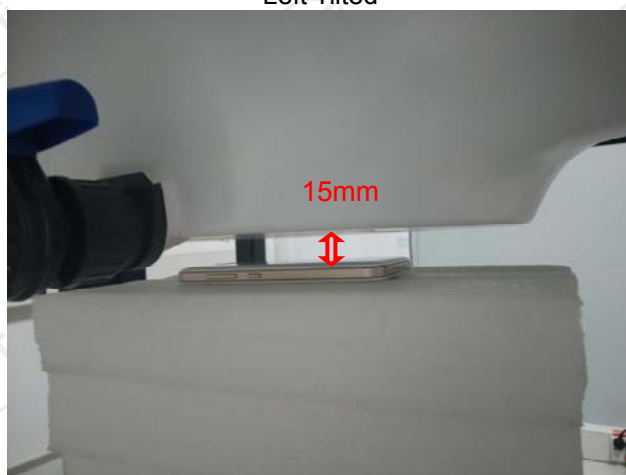
Left Cheek



Left Tilted



Body worn – Front (15mm)



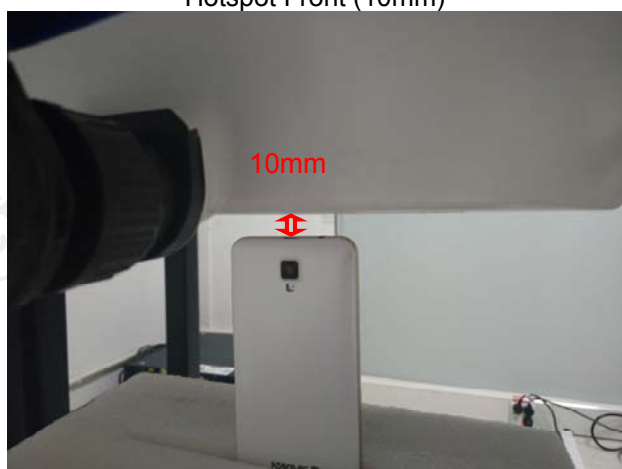
Body worn – Back (15mm)



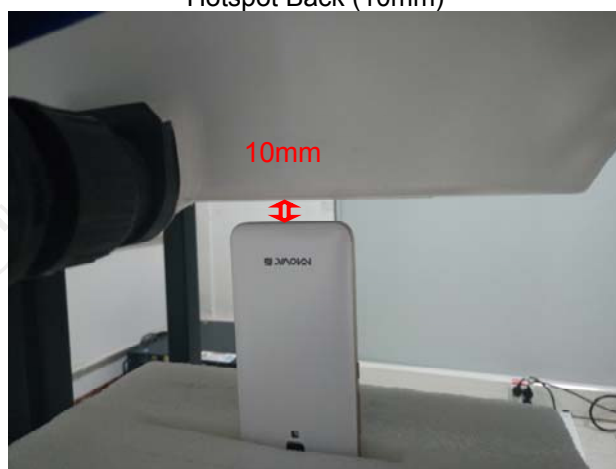
Hotspot Front (10mm)



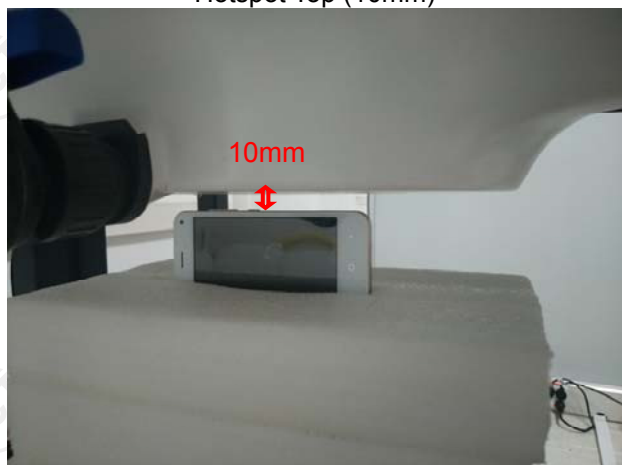
Hotspot Back (10mm)



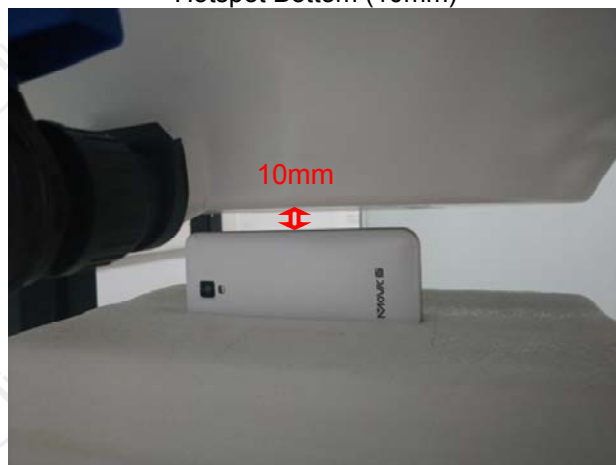
Hotspot Top (10mm)



Hotspot Bottom (10mm)



Hotspot Right (10mm)



Hotspot Left (10mm)