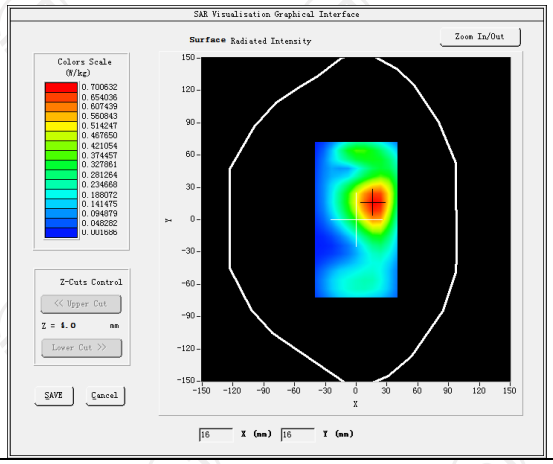
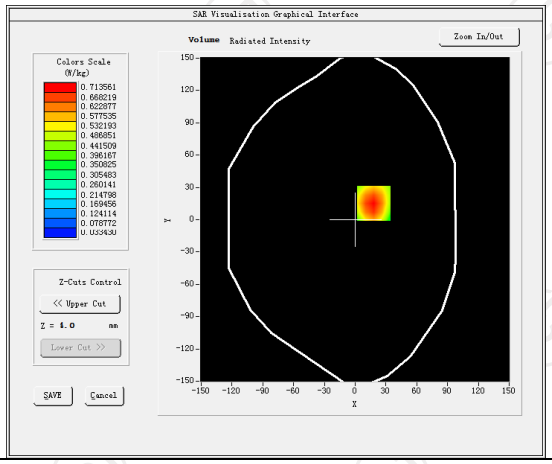
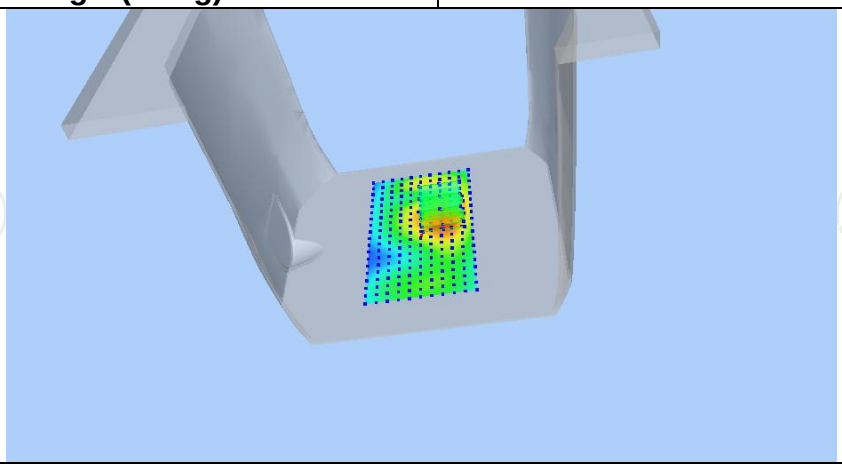
MEASUREMENT 2	
Middle Band SAR (Channel 9400):	Date: 04/22/2021
Frequency (MHz)	1980.000000
Relative permittivity (real part)	53.291337
Relative permittivity (imaginary part)	14.232400
Conductivity (S/m)	1.526736
Variation (%)	-1.030000
Crest Factor	1.0
Probe Conversion factor	2.32
E-Field Probe:	SSE2 (SN 36/20 EPGO346)
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(0mm)
Band	BAND2 WCDMA1900
SURFACE SAR	**VOLUME SAR**

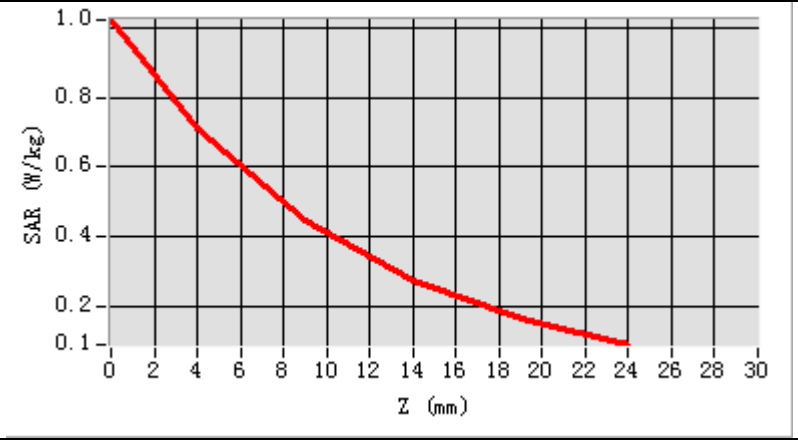




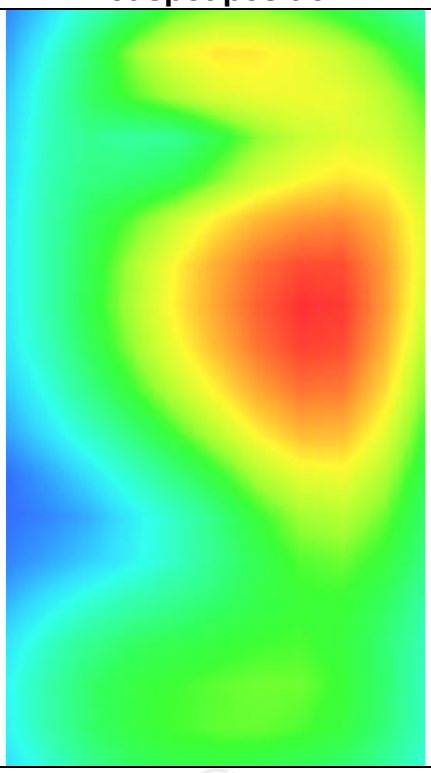
Maximum location: X=19.00, Y=14.00 SAR Peak: 1.00 W/kg	
SAR 10g (W/Kg)	0.414021
SAR 1g (W/Kg)	0.667561

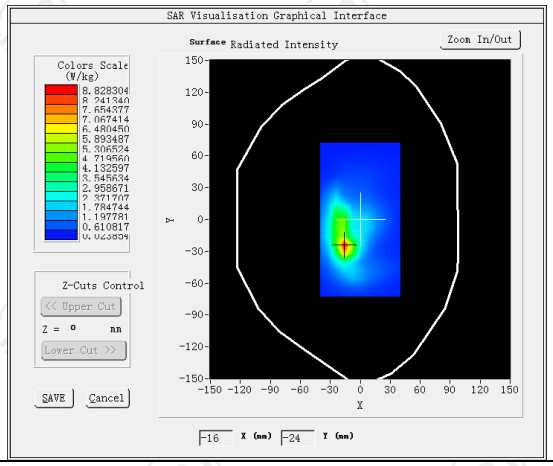
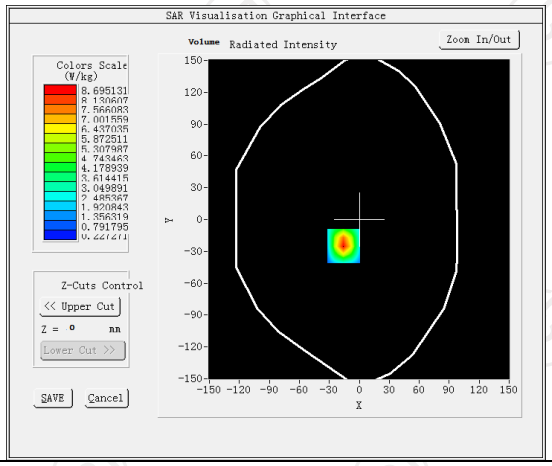


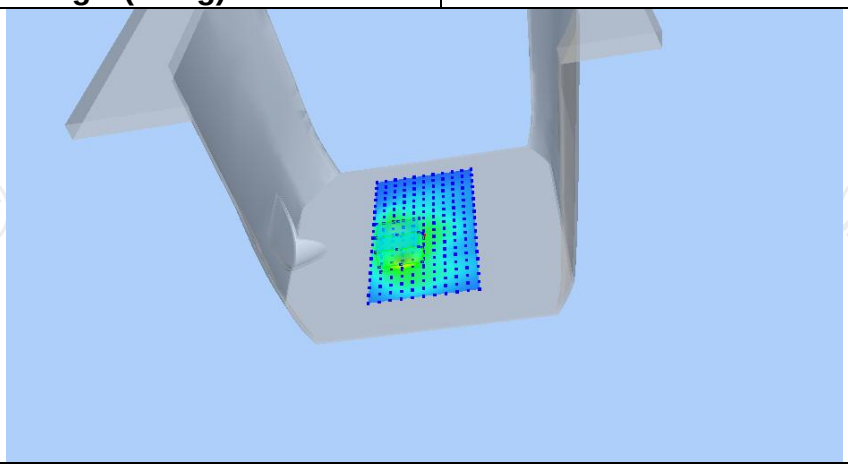
Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.0010	0.7140	0.4463	0.2742	0.1662



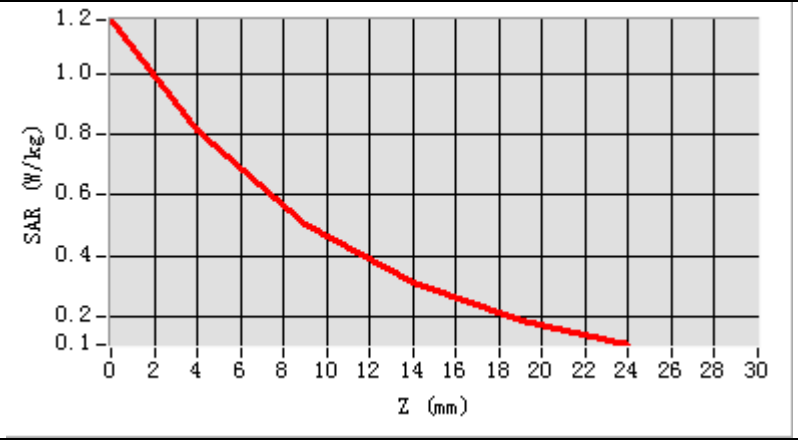
Hot spot position



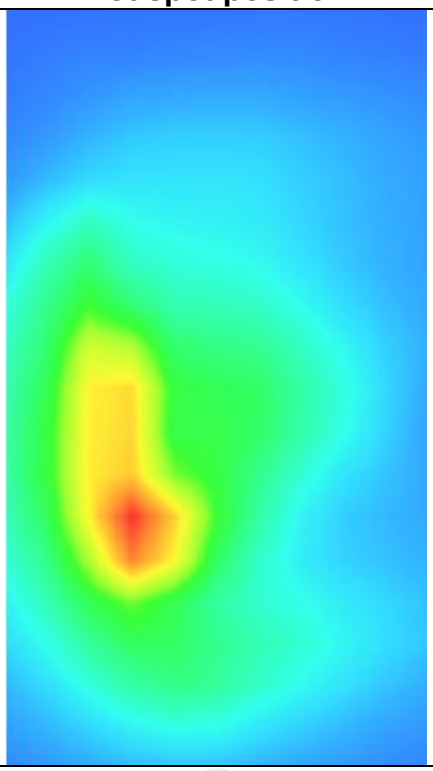
MEASUREMENT 3	
Middle Band SAR (Channel 9400):	Date: 04/22/2021
Frequency (MHz)	1980.000000
Relative permittivity (real part)	53.291337
Relative permittivity (imaginary part)	14.232400
Conductivity (S/m)	1.526736
Variation (%)	-1.070000
Crest Factor	1.0
Probe Conversion factor	2.32
E-Field Probe:	SSE2 (SN 36/20 EPGO346)
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(0mm)
Band	BAND2_WCDMA1900(hotspot)
SURFACE SAR	**VOLUME SAR**
	
Maximum location: X=20.00, Y=21.00 SAR Peak: 1.20 W/kg	
SAR 10g (W/Kg)	0.420654
SAR 1g (W/Kg)	0.682122



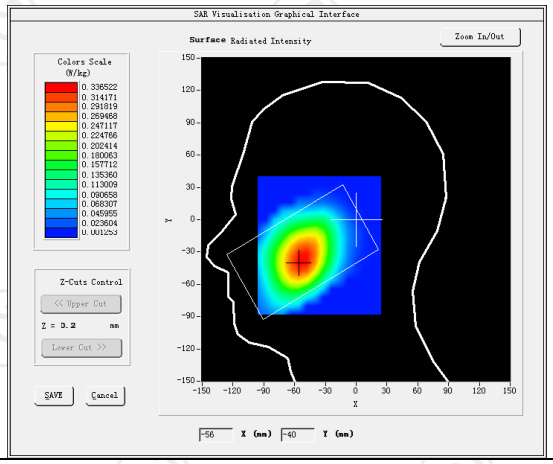
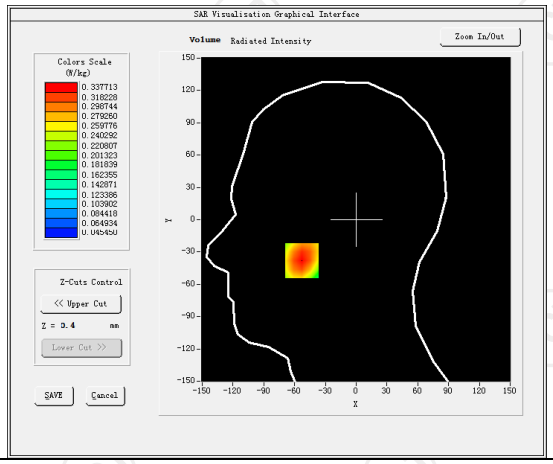
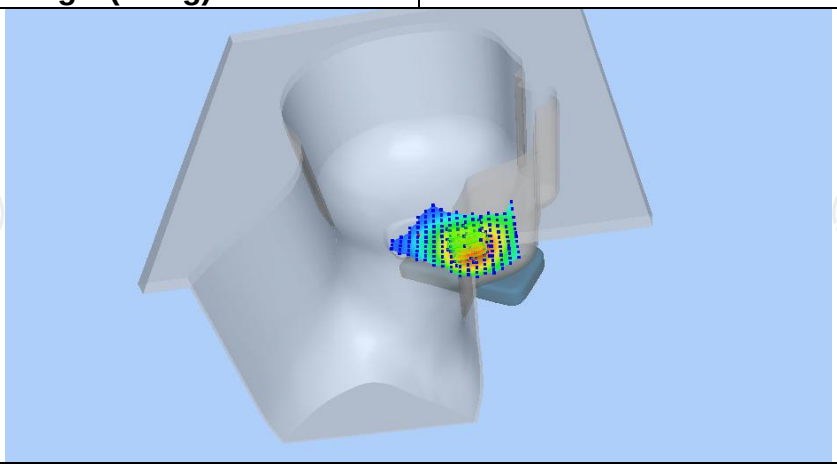
Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.2021	0.8160	0.5050	0.3105	0.1904



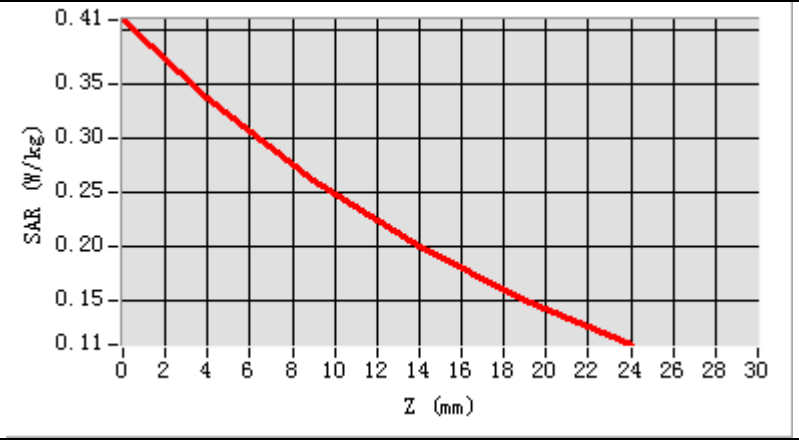
Hot spot position



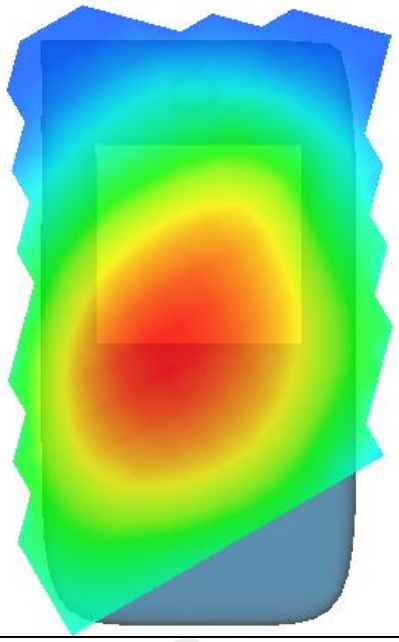
WCDMA Band V

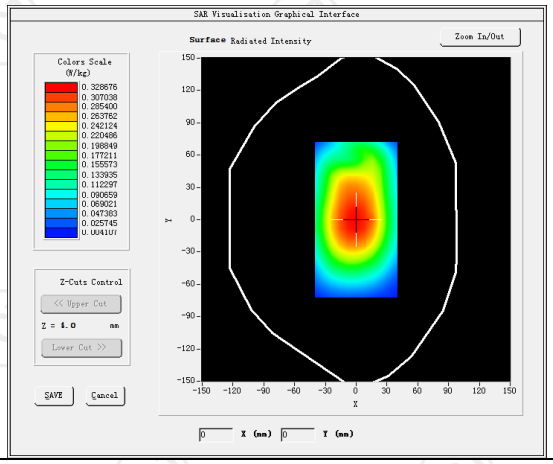
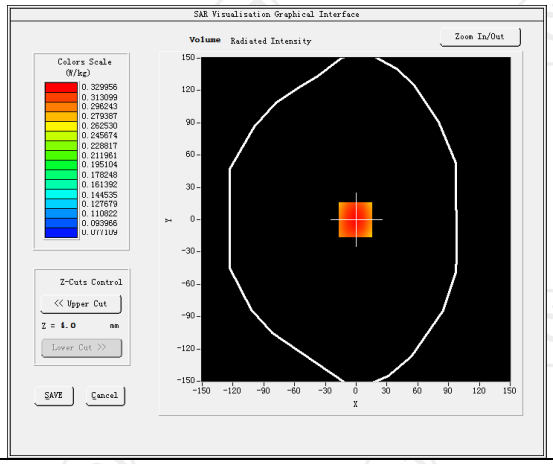
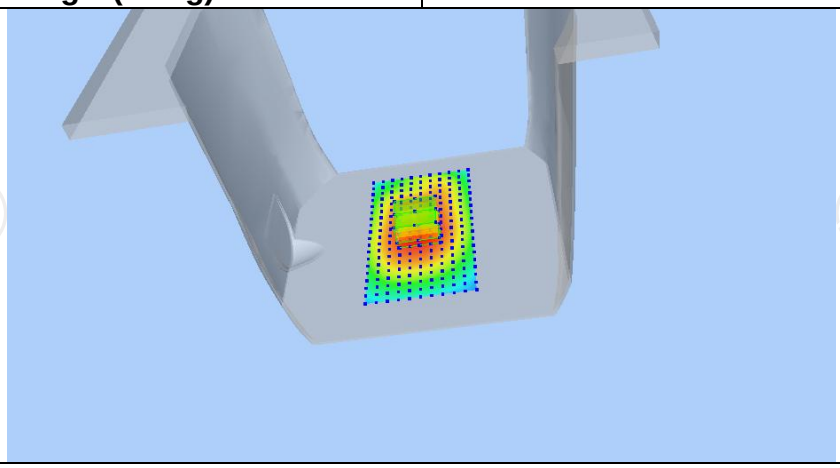
MEASUREMENT 1	
Middle Band SAR (Channel 4182):	Date: 04/19/2021
Frequency (MHz)	836.400000
Relative permittivity (real part)	41.422883
Relative permittivity (imaginary part)	18.129634
Conductivity (S/m)	0.867241
Variation (%)	1.450000
Crest Factor:	1.0
Probe Conversion factor	1.80
E-Field Probe:	SSE2 (SN 36/20 EPGO346)
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	Left head
Device Position	Cheek
Band	BAND5_WCDMA850
SURFACE SAR	**VOLUME SAR**
	
Maximum location: X=-10.00, Y=-14.00 SAR Peak: 0.41 W/kg	
SAR 10g (W/Kg)	0.242040
SAR 1g (W/Kg)	0.335614
	

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.4096	0.3489	0.2620	0.2000	0.1500

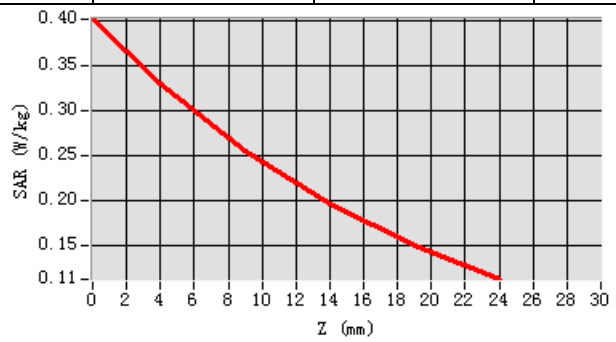


Hot spot position

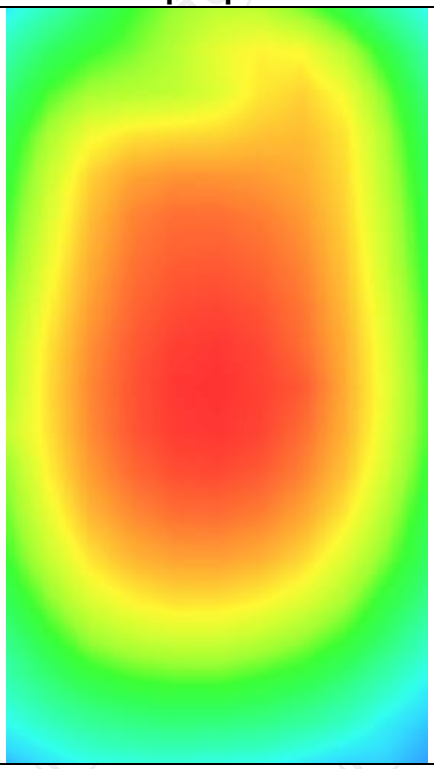


MEASUREMENT 2	
Middle Band SAR (Channel 4182):	Date: 04/19/2021
Frequency (MHz)	836.400000
Relative permittivity (real part)	55.262927
Relative permittivity (imaginary part)	21.378266
Conductivity (S/m)	0.931230
Variation (%)	1.130000
Crest Factor:	1.0
Probe Conversion factor	1.86
E-Field Probe:	SSE2 (SN 36/20 EPGO346)
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(0mm)
Band	BAND5_WCDMA850
SURFACE SAR	**VOLUME SAR**
	
Maximum location: X=-12.00, Y=40.00 SAR Peak: 0.40 W/kg	
SAR 10g (W/Kg)	0.247213
SAR 1g (W/Kg)	0.420012
	

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.4020	0.3310	0.2611	0.2081	0.1520



Hot spot position

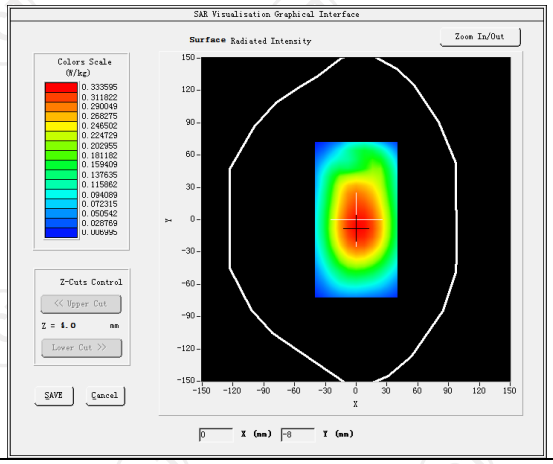


MEASUREMENT 3

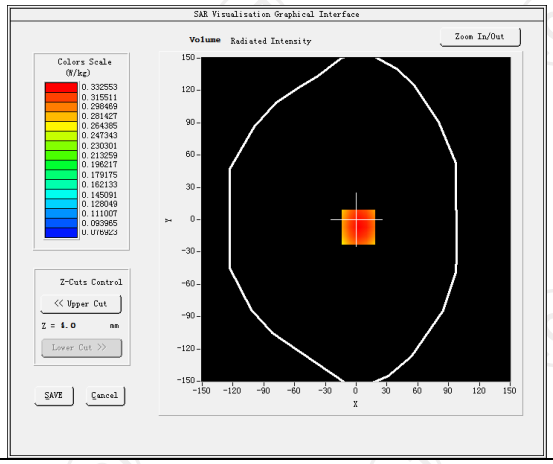
Middle Band SAR (Channel 4182): Date: 04/19/2021

Frequency (MHz)	836.400000
Relative permittivity (real part)	55.262927
Relative permittivity (imaginary part)	21.378266
Conductivity (S/m)	0.931230
Variation (%)	1.010000
Crest Factor:	1.0
Probe Conversion factor	1.86
E-Field Probe:	SSE2 (SN 36/20 EPGO346)
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(0mm)
Band	BAND5_WCDMA850(hotspot)

SURFACE SAR

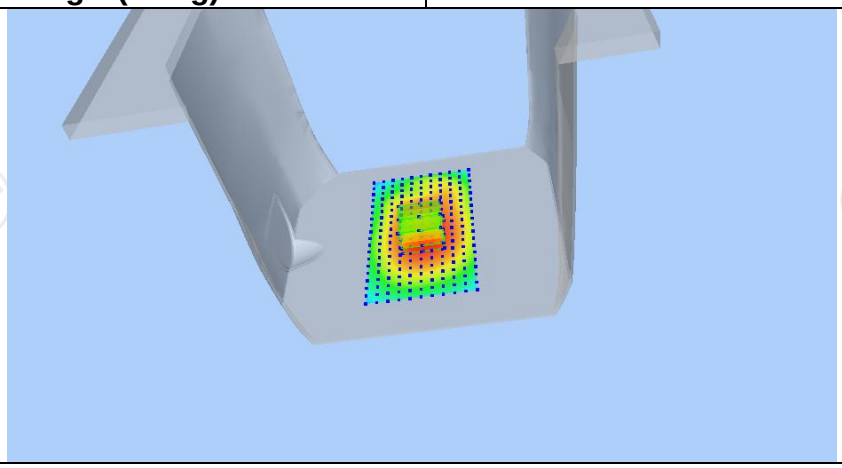


VOLUME SAR

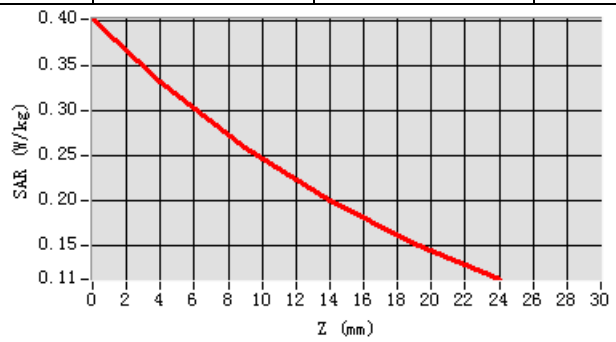


Maximum location: X=22.00, Y=-17.00 SAR Peak: 0.40 W/kg

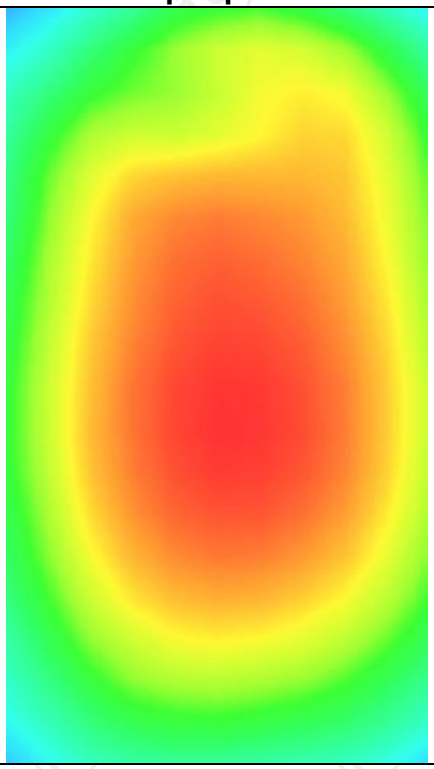
SAR 10g (W/Kg)	0.240561
SAR 1g (W/Kg)	0.441701



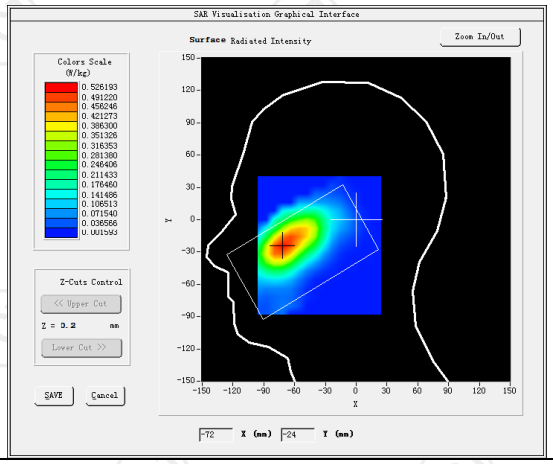
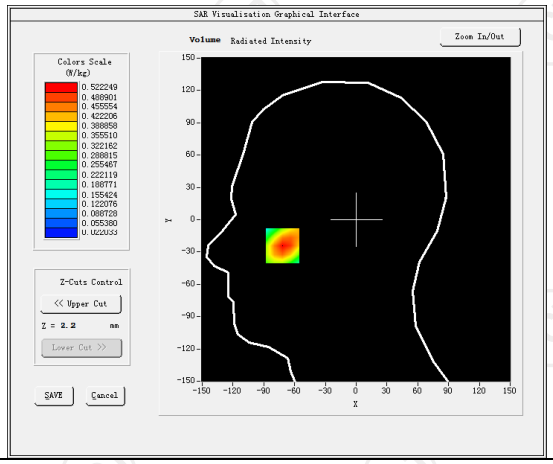
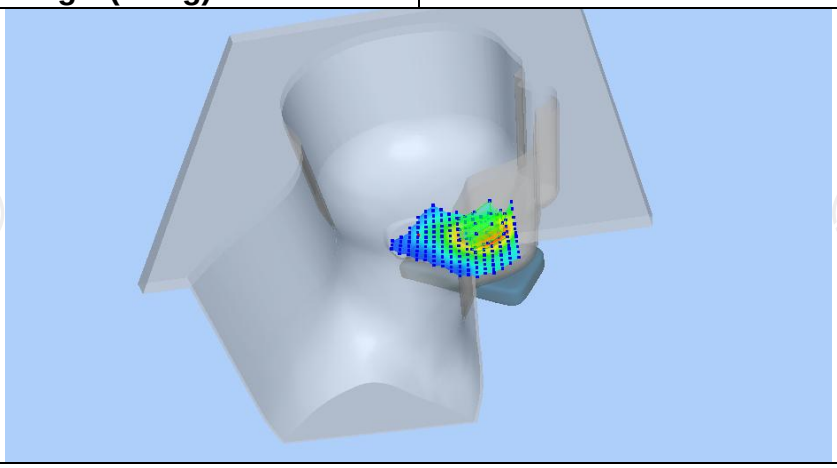
Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.3997	0.3290	0.2653	0.2010	0.1529



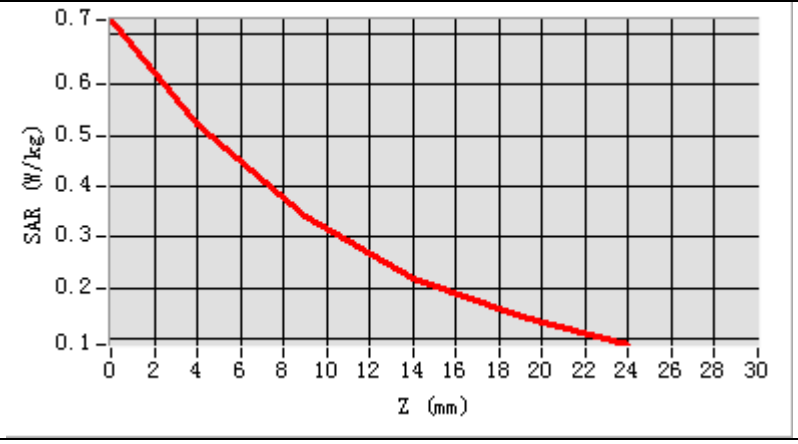
Hot spot position



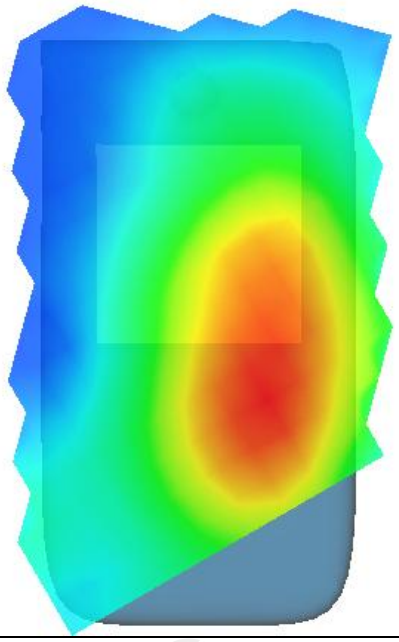
LTE Band 2

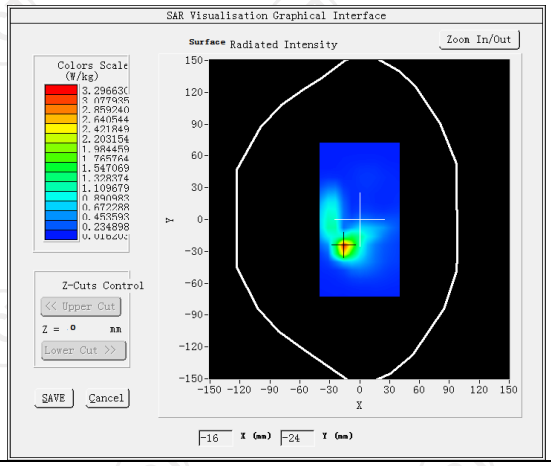
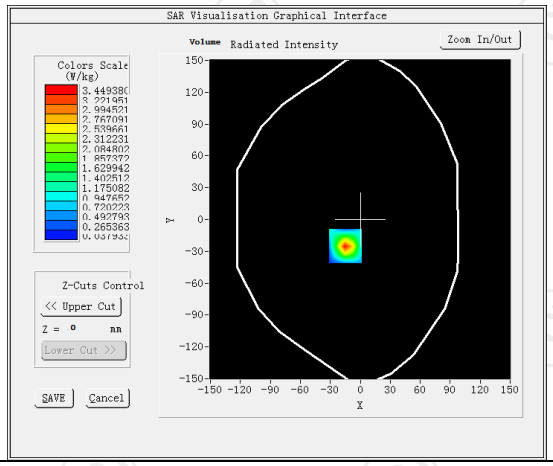
MEASUREMENT 1	
Middle Band SAR (Channel 18900):	Date: 04/21/2021
Frequency (MHz)	1880.000000
Relative permittivity (real part)	39.065208
Relative permittivity (imaginary part)	12.607628
Conductivity (S/m)	1.382108
Variation (%)	1.210000
Crest Factor	1.0
Probe Conversion factor	2.23
E-Field Probe:	SSE2 (SN 36/20 EPGO346)
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	Left head
Device Position	Cheek
Band	LTE band 2 (1 RB#49)
SURFACE SAR	**VOLUME SAR**
	
Maximum location: X=-21.00, Y=-20.00 SAR Peak: 0.70 W/kg	
SAR 10g (W/Kg)	0.124013
SAR 1g (W/Kg)	0.302001
	

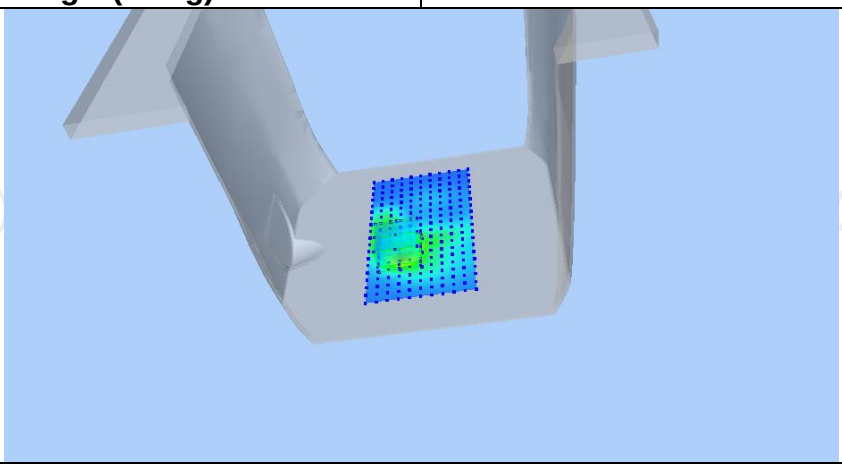
Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.7041	0.4210	0.3314	0.2208	0.1440



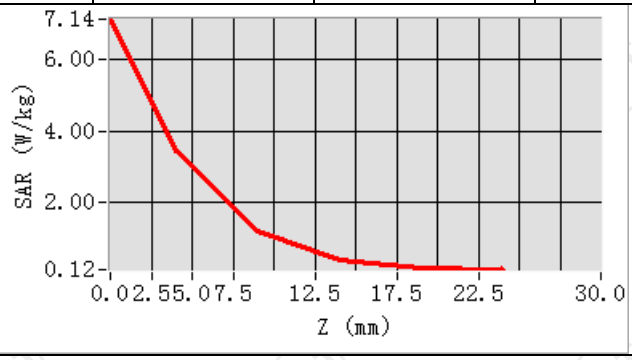
Hot spot position



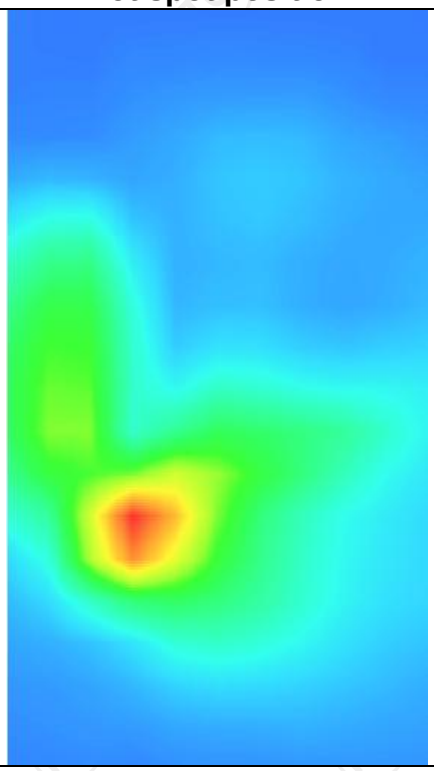
MEASUREMENT 2	
Middle Band SAR (Channel 18900):	Date: 04/21/2021
Frequency (MHz)	1880.000000
Relative permittivity (real part)	53.291337
Relative permittivity (imaginary part)	14.232400
Conductivity (S/m)	1.531736
Variation (%)	3.160000
Crest Factor	1.0
Probe Conversion factor	2.32
E-Field Probe:	SSE2 (SN 36/20 EPGO346)
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(0mm)
Band	LTE band 2 (1 RB#49)
SURFACE SAR	**VOLUME SAR**
	
Maximum location: X=-15.00, Y=-25.00 SAR Peak: 7.11 W/kg	
SAR 10g (W/Kg)	1.215380
SAR 1g (W/Kg)	0.597699

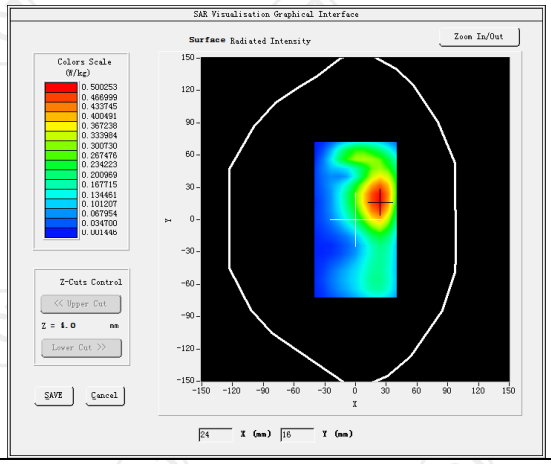
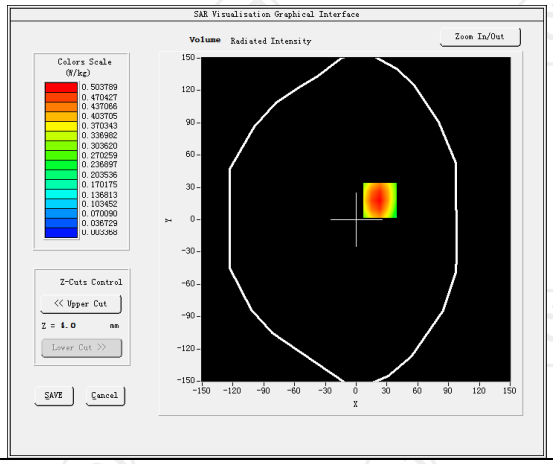


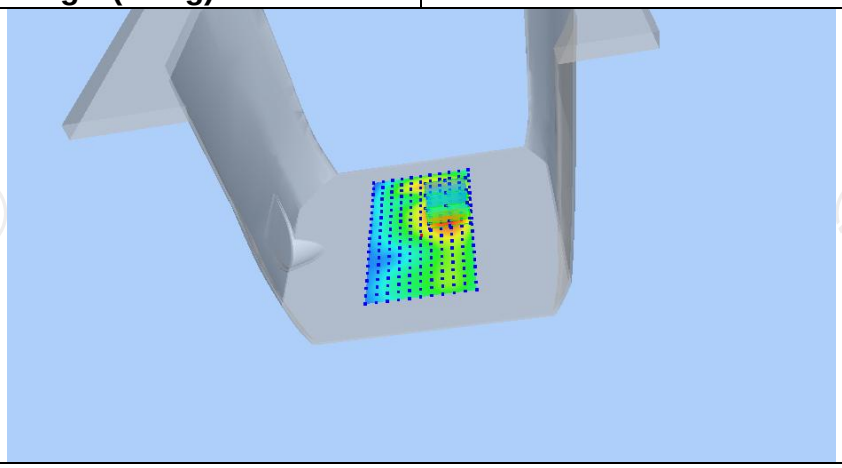
Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	7.1366	3.4494	1.2085	0.4075	0.1866



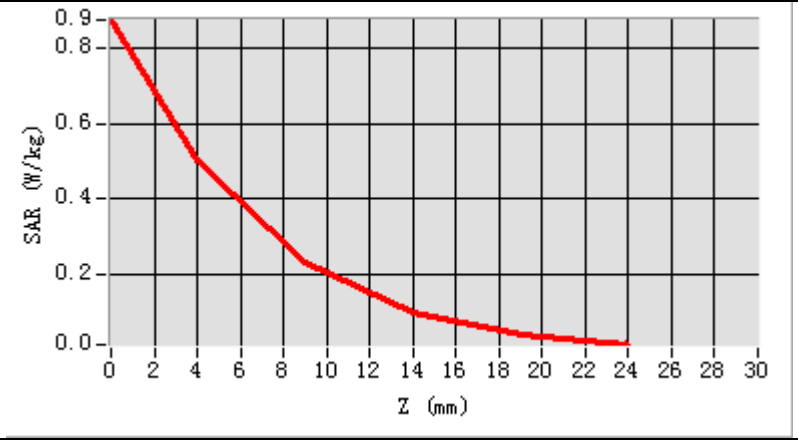
Hot spot position



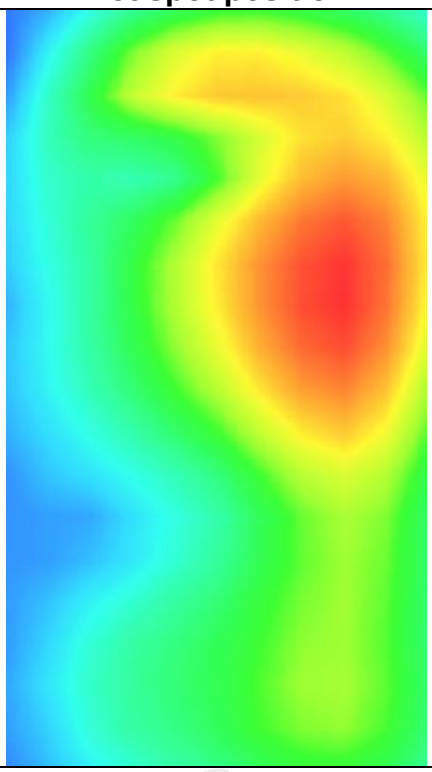
MEASUREMENT 3	
Middle Band SAR (Channel 18900):	Date: 04/21/2021
Frequency (MHz)	1880.000000
Relative permittivity (real part)	53.291337
Relative permittivity (imaginary part)	14.232400
Conductivity (S/m)	1.531736
Variation (%)	-2.560000
Crest Factor	1.0
Probe Conversion factor	2.32
E-Field Probe:	SSE2 (SN 36/20 EPGO346)
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(hotspot 0mm)
Band	LTE band 2 (1 RB#49)
SURFACE SAR	**VOLUME SAR**
	
Maximum location: X=12.00, Y=15.00 SAR Peak: 0.90 W/kg	
SAR 10g (W/Kg)	0.244307
SAR 1g (W/Kg)	0.623536



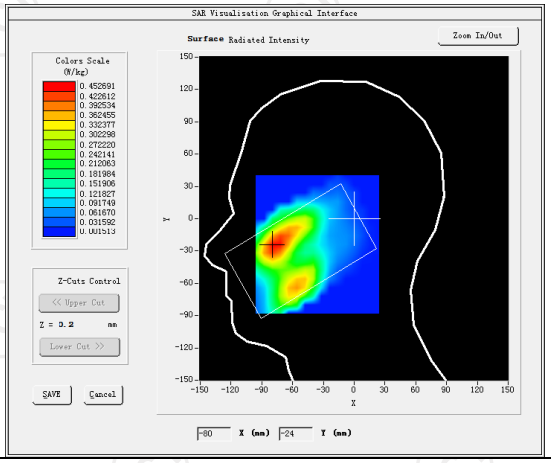
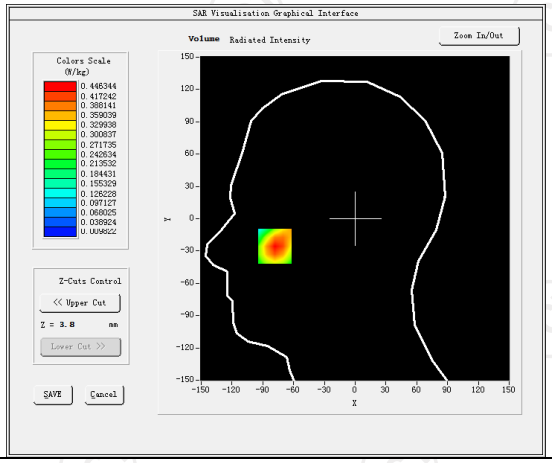
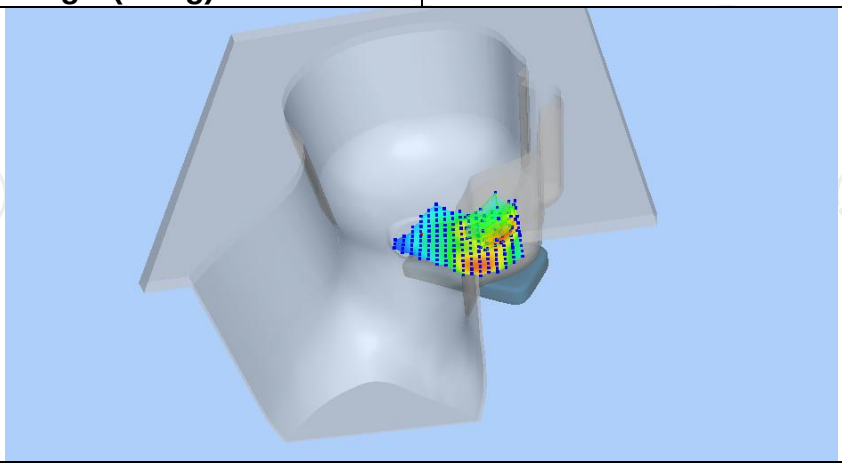
Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.9034	0.5134	0.1914	0.0889	0.029287



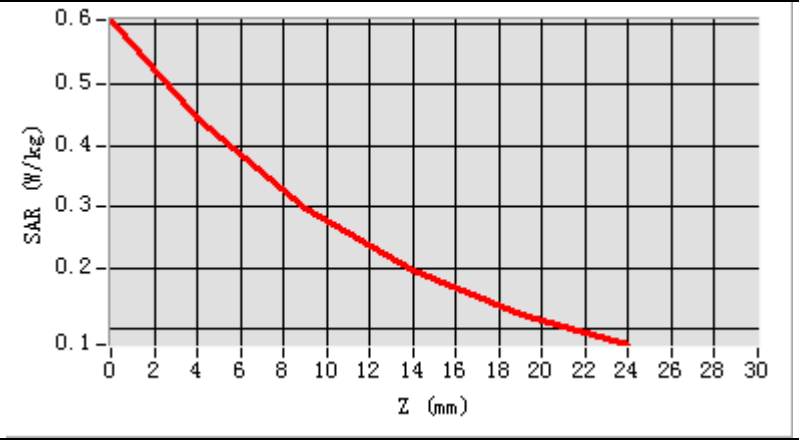
Hot spot position



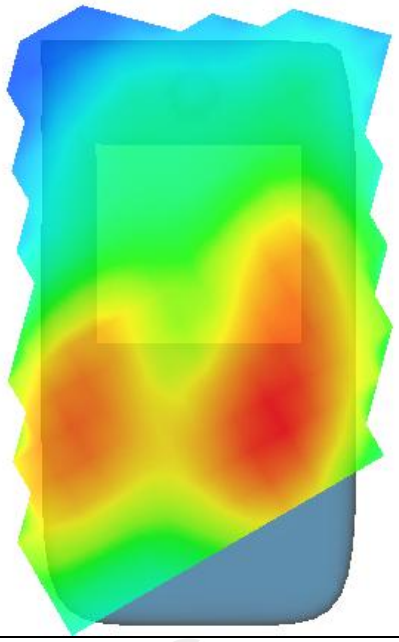
LTE Band 4

MEASUREMENT 1	
Lower Band SAR (Channel 20050):	Date: 04/21/2021
Frequency (MHz)	1720.000000
Relative permittivity (real part)	39.101249
Relative permittivity (imaginary part)	12.468850
Conductivity (S/m)	1.350792
Variation (%)	-1.140000
Crest Factor	1.0
Probe Conversion factor	2.08
E-Field Probe:	SSE2 (SN 36/20 EPGO346)
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	Left head
Device Position	Cheek
Band	LTE band 4(1 RB#49)
SURFACE SAR	**VOLUME SAR**
	
Maximum location: X=-65.00, Y=-13.00 SAR Peak: 0.60 W/kg	
SAR 10g (W/Kg)	0.163040
SAR 1g (W/Kg)	0.330447
	

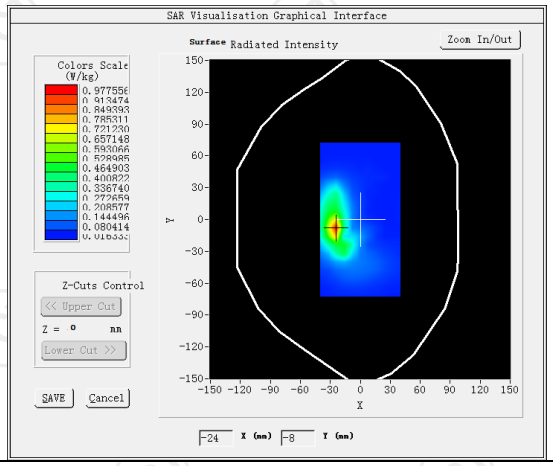
Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.6031	0.4438	0.2910	0.1942	0.1318

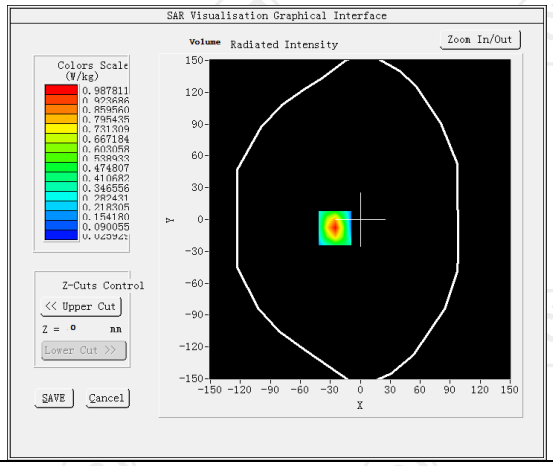


Hot spot position

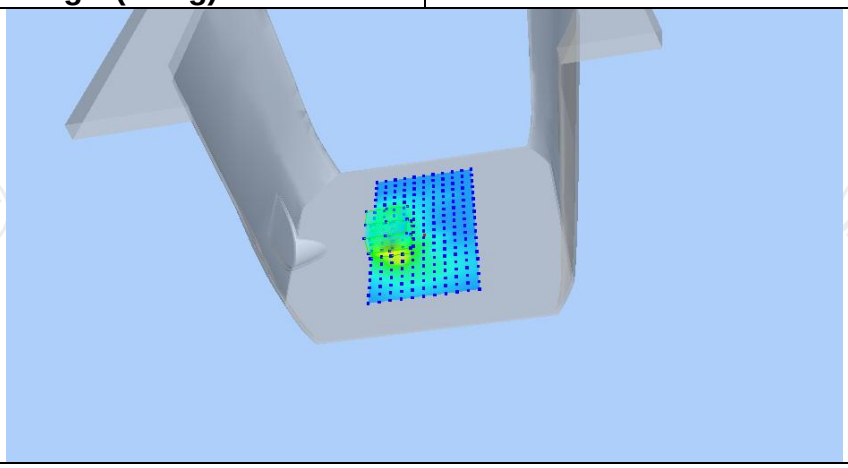


MEASUREMENT 2	
Lower Band SAR (Channel 20050):	Date: 04/21/2021
Frequency (MHz)	1720.000000
Relative permittivity (real part)	53.321249
Relative permittivity (imaginary part)	12.468850
Conductivity (S/m)	1.502592
Variation (%)	1.070000
Crest Factor	1.0
Probe Conversion factor	2.16
E-Field Probe:	SSE2 (SN 36/20 EPGO346)
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(0mm)
Band	LTE band 4(1 RB#49)
SURFACE SAR	**VOLUME SAR**

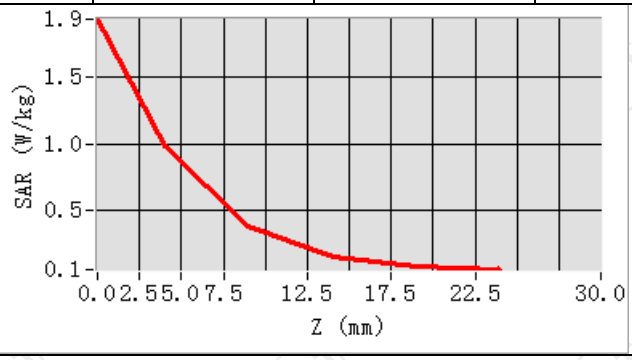




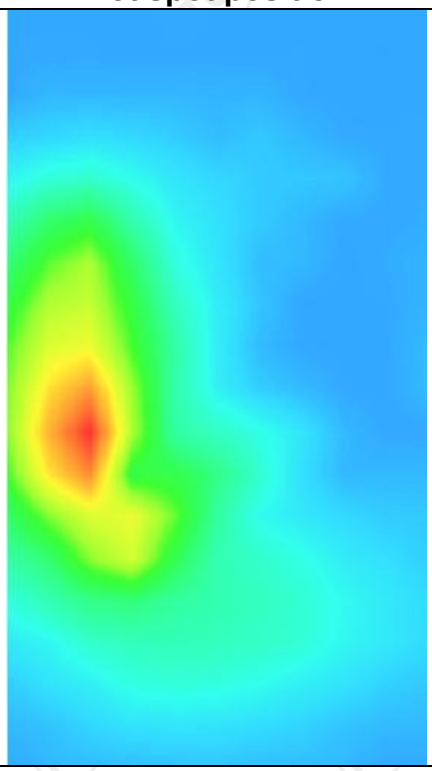
Maximum location: X=-25.00, Y=-8.00 SAR Peak: 1.93 W/kg	
SAR 10g (W/Kg)	0.912370
SAR 1g (W/Kg)	0.467998



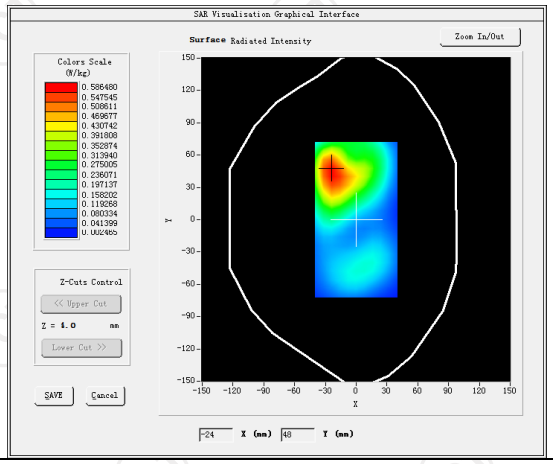
Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.9365	0.9878	0.3865	0.1539	0.0814

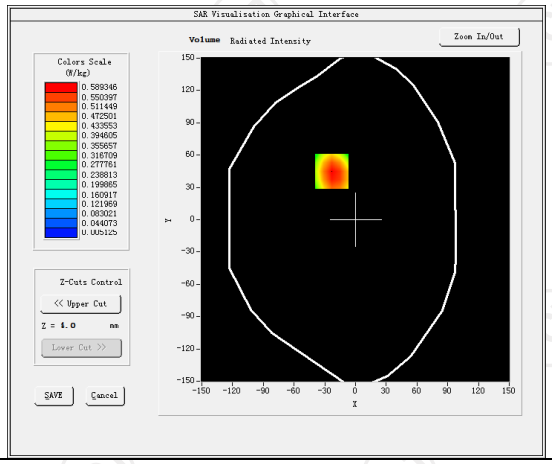


Hot spot position

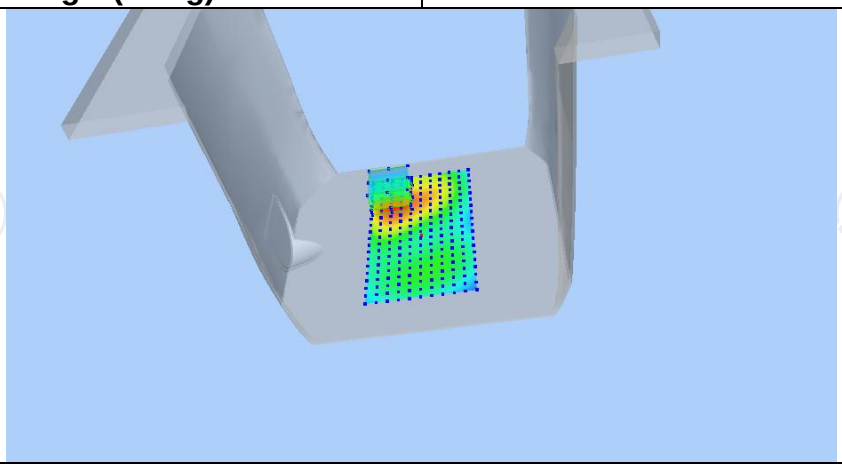


MEASUREMENT 3	
Lower Band SAR (Channel 20050):	Date: 04/21/2021
Frequency (MHz)	1720.000000
Relative permittivity (real part)	53.321249
Relative permittivity (imaginary part)	12.468850
Conductivity (S/m)	1.502592
Variation (%)	2.910000
Crest Factor	1.0
Probe Conversion factor	2.16
E-Field Probe:	SSE2 (SN 36/20 EPGO346)
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(hotspot 0mm)
Band	LTE band 4(1 RB#49)
SURFACE SAR	**VOLUME SAR**

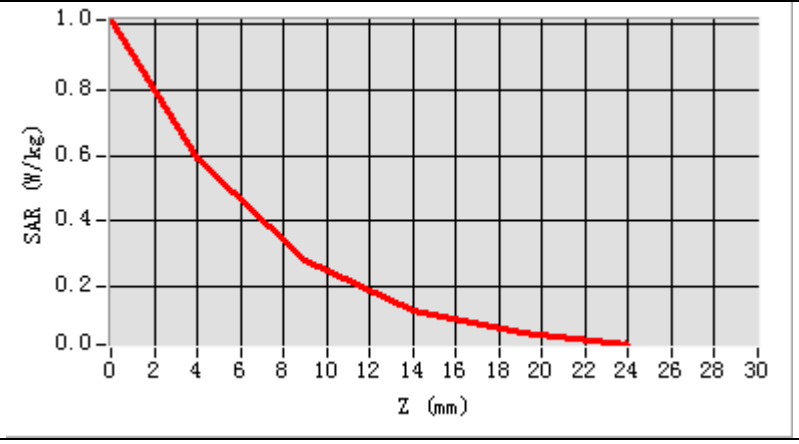




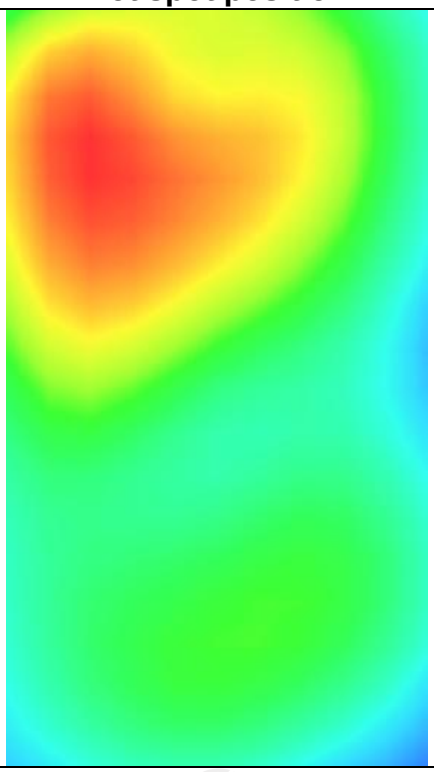
Maximum location: X=-20.00, Y=30.00 SAR Peak: 1.00 W/kg	
SAR 10g (W/Kg)	0.307173
SAR 1g (W/Kg)	0.477030



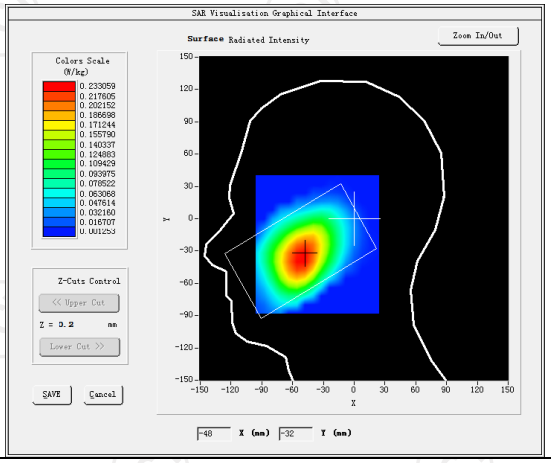
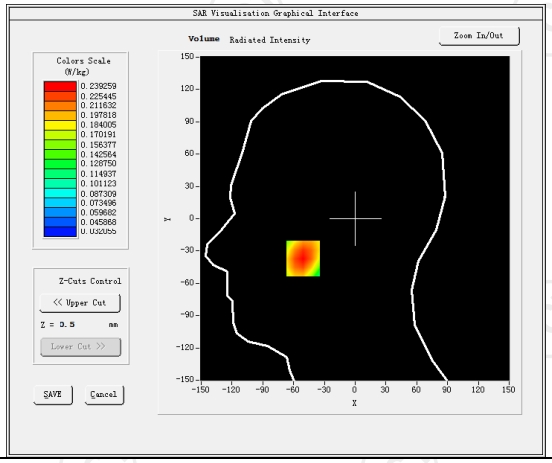
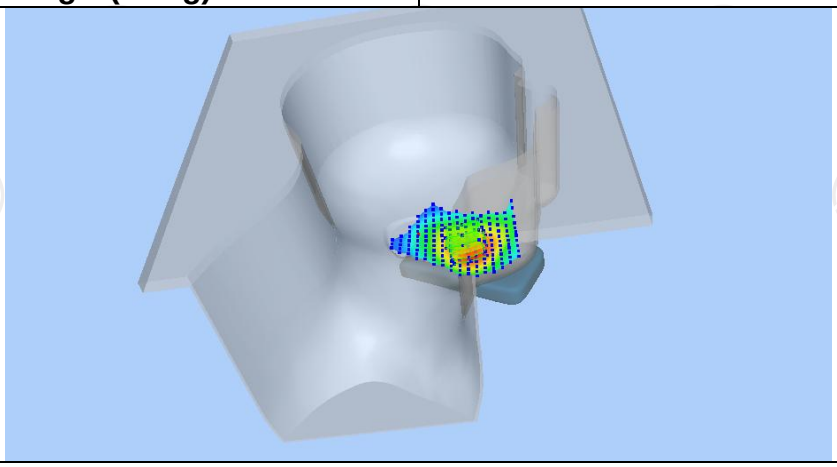
Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.0028	0.5921	0.2894	0.1250	0.0552



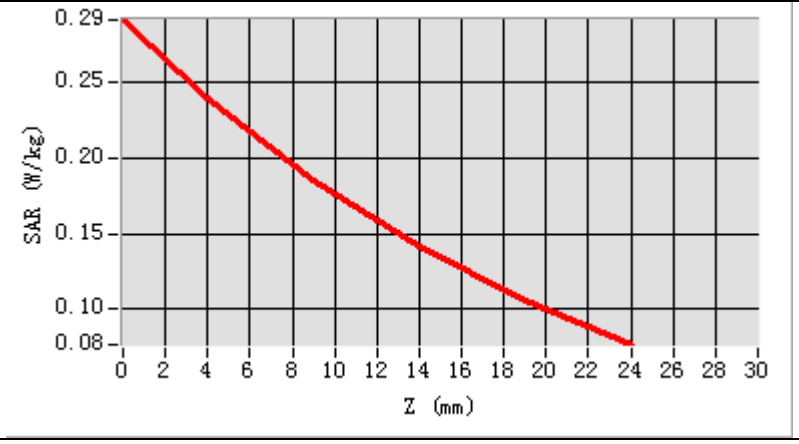
Hot spot position



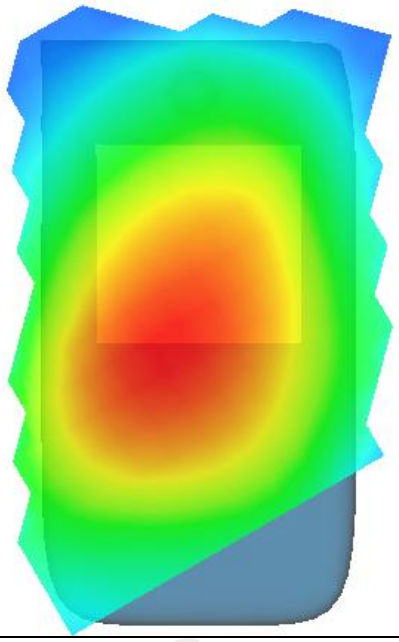
LTE Band 5

MEASUREMENT 1	
Middle Band SAR (Channel 20525):	Date: 04/19/2021
Frequency (MHz)	836.500000
Relative permittivity (real part)	41.432976
Relative permittivity (imaginary part)	12.468860
Conductivity (S/m)	0.862835
Variation (%)	1.590000
Crest Factor	1.0
Probe Conversion factor	1.80
E-Field Probe:	SSE2 (SN 36/20 EPGO346)
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	Left head
Device Position	Cheek
Band	LTE band 5(1 RB#24)
SURFACE SAR	**VOLUME SAR**
	
Maximum location: X=-50.00, Y=-35.00 SAR Peak: 0.29 W/kg	
SAR 10g (W/Kg)	0.174890
SAR 1g (W/Kg)	0.240264
	

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.2878	0.2390	0.1840	0.1412	0.1062



Hot spot position



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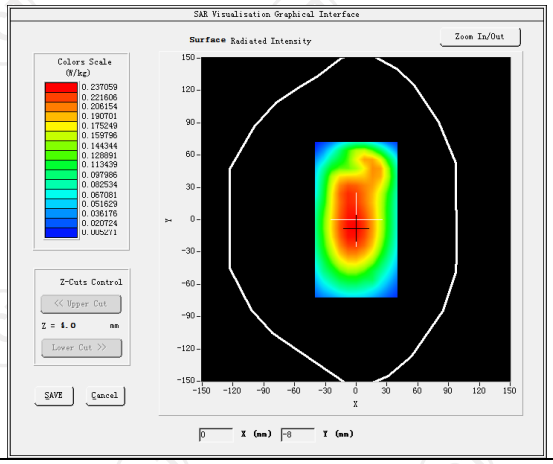
MEASUREMENT 2

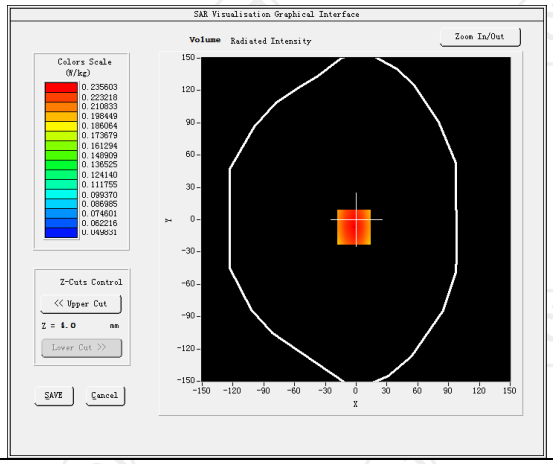
Middle Band SAR (Channel 20525): Date: 04/19/2021

Frequency (MHz)	836.500000
Relative permittivity (real part)	55.260832
Relative permittivity (imaginary part)	12.468860
Conductivity (S/m)	0.934272
Variation (%)	-2.650000
Crest Factor	1.0
Probe Conversion factor	1.86
E-Field Probe:	SSE2 (SN 36/20 EPGO346)
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(0mm)
Band	LTE band 5(1 RB#24)

SURFACE SAR

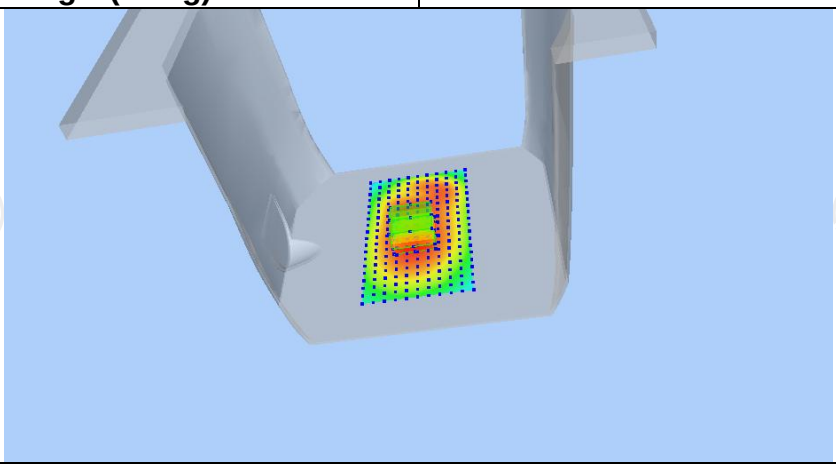


VOLUME SAR

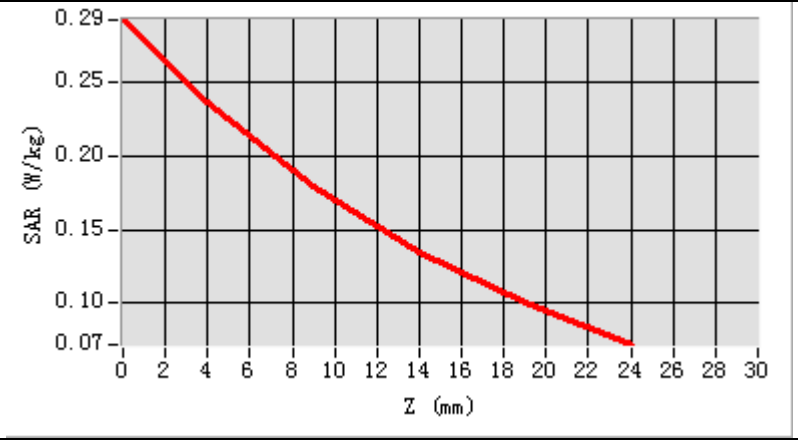


Maximum location: X=-12.00, Y=-17.00 SAR Peak: 0.29 W/kg

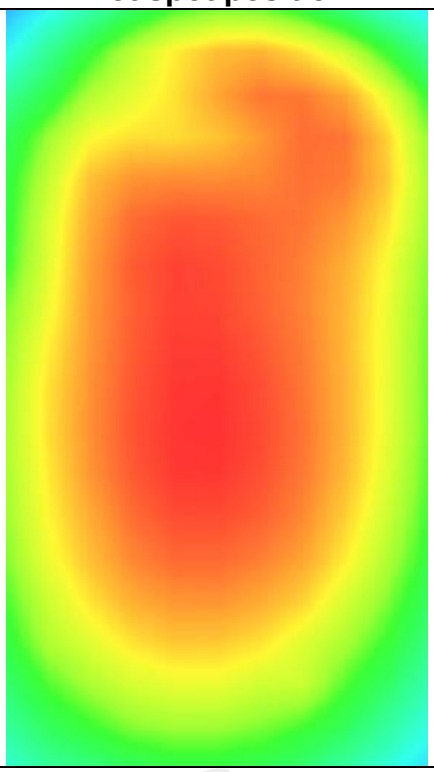
SAR 10g (W/Kg)	0.171320
SAR 1g (W/Kg)	0.279565



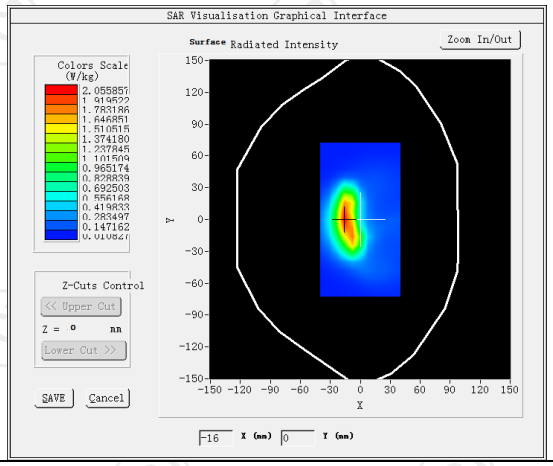
Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.2897	0.2467	0.1889	0.1351	0.1100

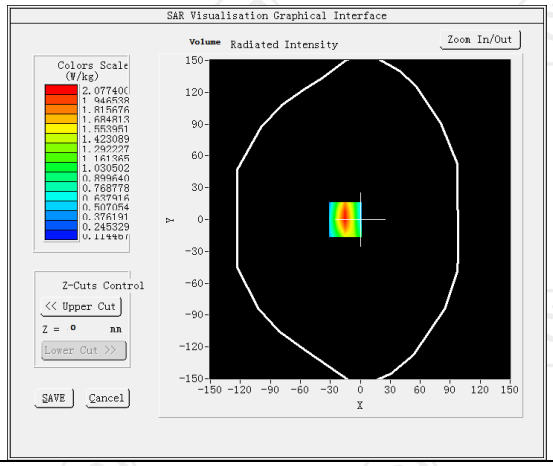


Hot spot position

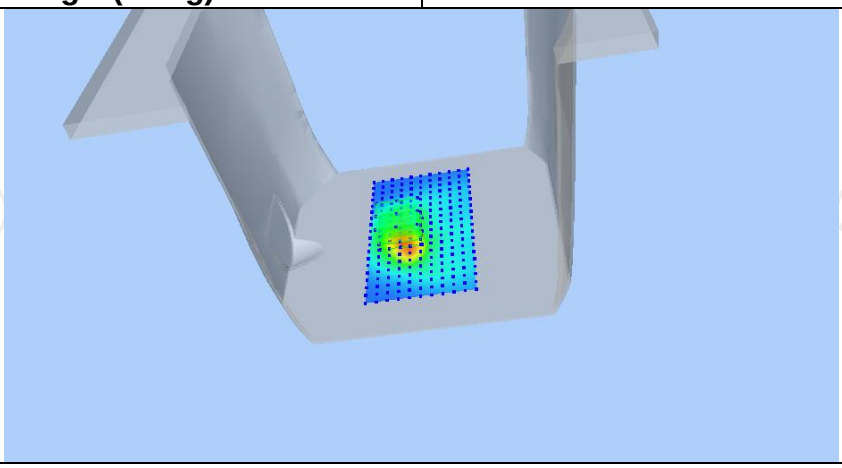


MEASUREMENT 3	
Middle Band SAR (Channel 20525):	Date: 04/19/2021
Frequency (MHz)	836.500000
Relative permittivity (real part)	55.260832
Relative permittivity (imaginary part)	12.468860
Conductivity (S/m)	0.934272
Variation (%)	-0.680000
Crest Factor	1.0
Probe Conversion factor	1.86
E-Field Probe:	SSE2 (SN 36/20 EPGO346)
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((hotspot 0mm)
Band	LTE band 5(1 RB#24)
SURFACE SAR	**VOLUME SAR**

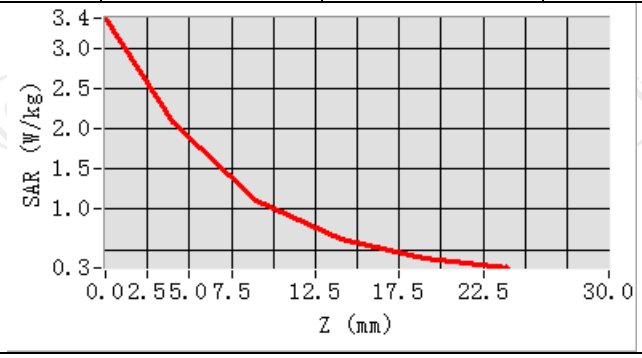




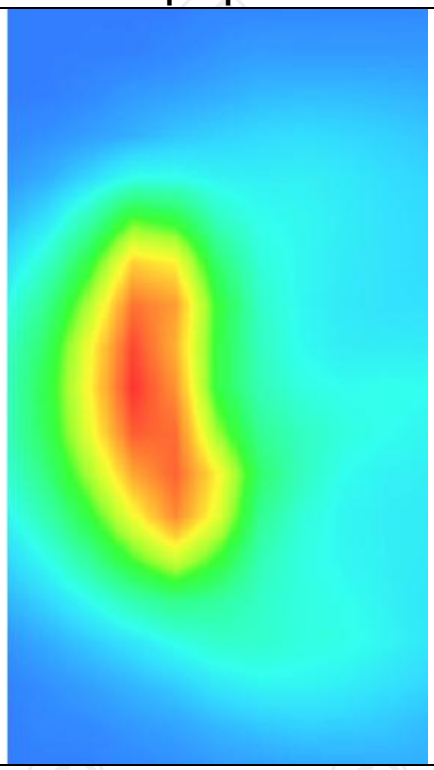
Maximum location: X=-15.00, Y=0.00 SAR Peak: 3.43 W/kg	
SAR 10g (W/Kg)	1.016243
SAR 1g (W/Kg)	0.401300



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	3.3811	2.0774	1.1097	0.6218	0.3956



Hot spot position



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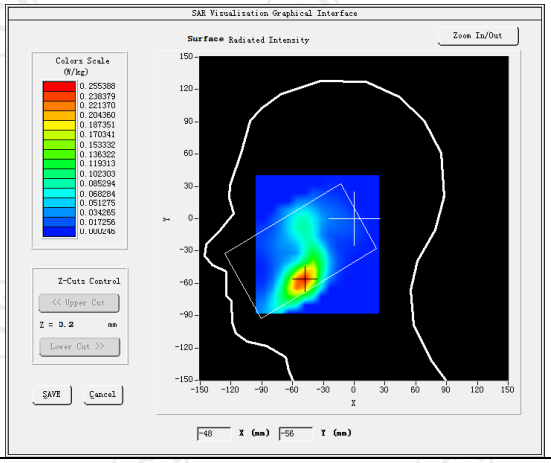
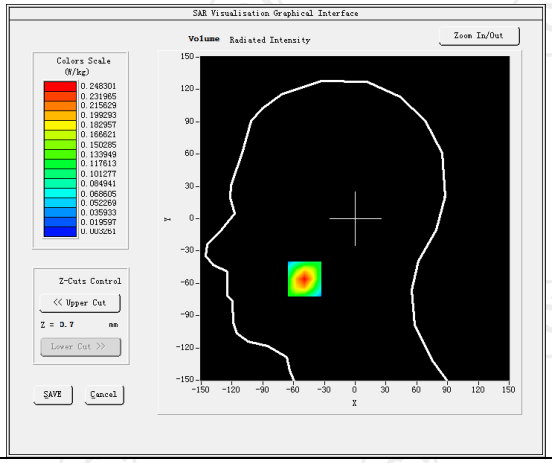
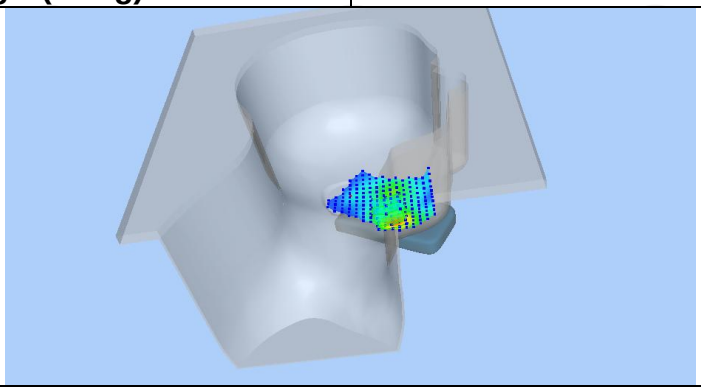
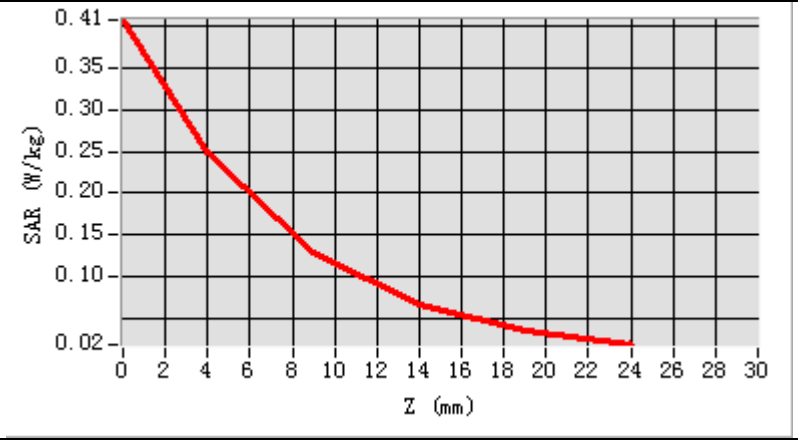
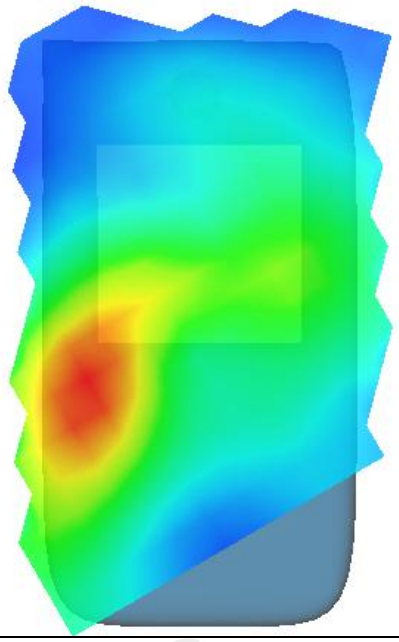
LTE Band 7

MEASUREMENT 1	
Higher Band SAR (Channel 21100):	Date: 06/01/2021
Frequency (MHz)	2560.000000
Relative permittivity (real part)	38.852754
Relative permittivity (imaginary part)	12.468850
Conductivity (S/m)	1.922731
Variation (%)	-4.570000
Crest Factor	1.0
Probe Conversion factor	4.38
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	Left head
Device Position	Cheek
Band	LTE band 7(1 RB#0)
SURFACE SAR	**VOLUME SAR**
	
Maximum location: X=-49.00, Y=-56.00 SAR Peak: 0.41 W/kg	
SAR 10g (W/Kg)	0.113664
SAR 1g (W/Kg)	0.232488
	

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.4072	0.2483	0.1284	0.0660	0.0354



Hot spot position

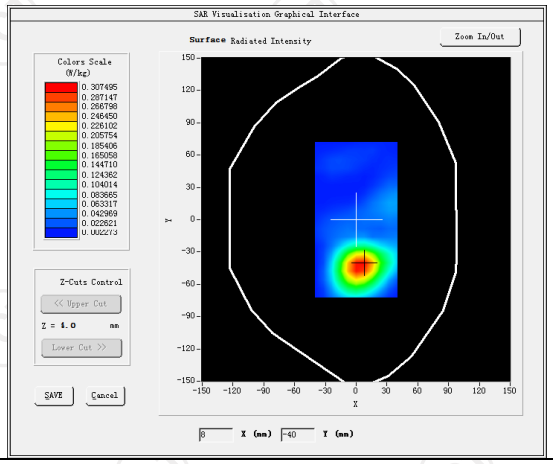


MEASUREMENT 2

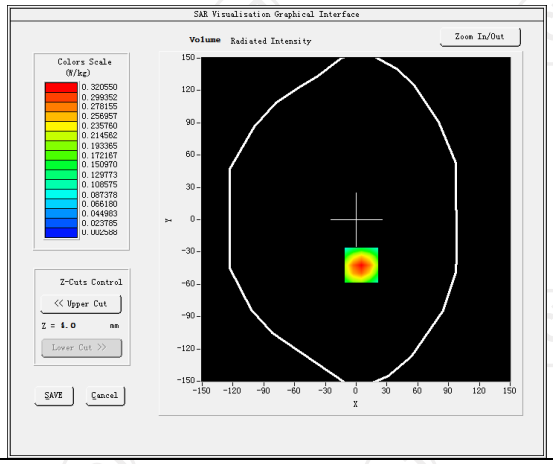
Higher Band SAR (Channel 21100): Date: 06/01/2021

Frequency (MHz)	2560.000000
Relative permittivity (real part)	52.011509
Relative permittivity (imaginary part)	12.468850
Conductivity (S/m)	2.108245
Variation (%)	-3.690000
Crest Factor	1.0
Probe Conversion factor	4.52
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(0mm)
Band	LTE band 7(1 RB#0)

SURFACE SAR

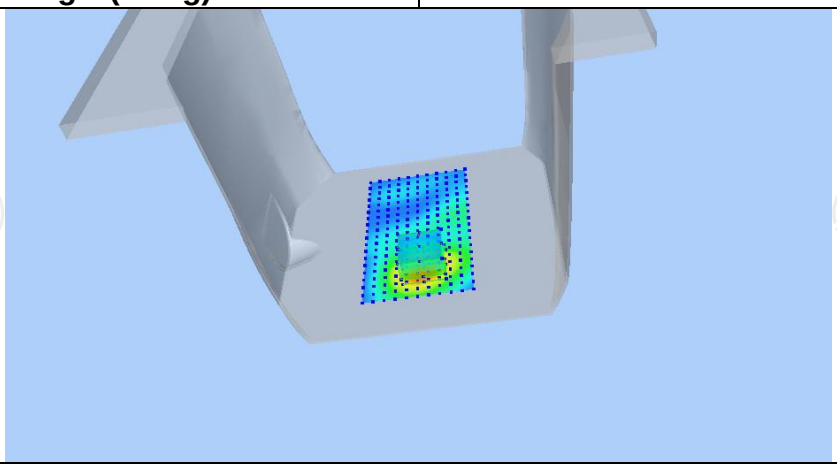


VOLUME SAR

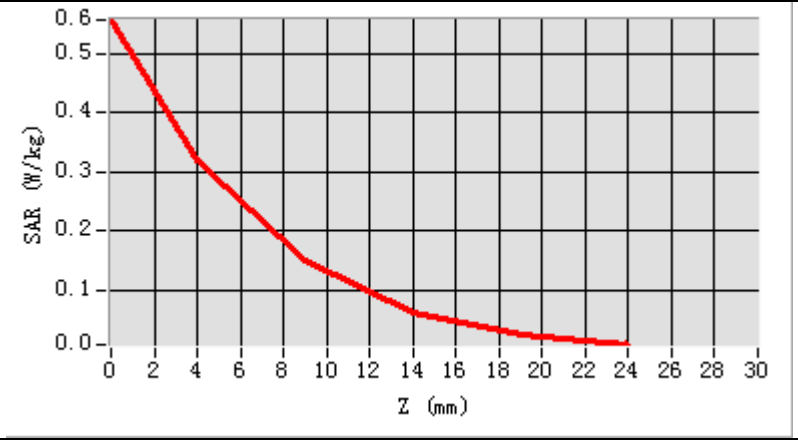


Maximum location: X=5.00, Y=-42.00 SAR Peak: 0.56 W/kg

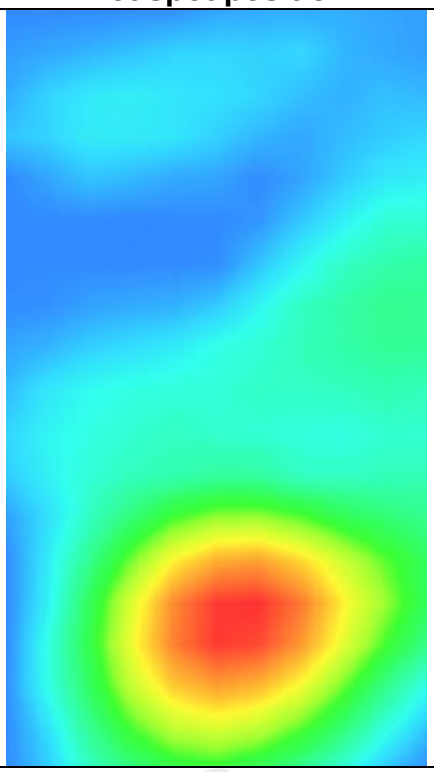
SAR 10g (W/Kg)	0.144922
SAR 1g (W/Kg)	0.301120

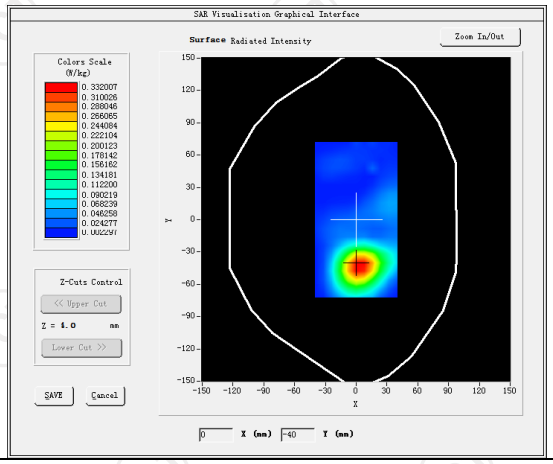
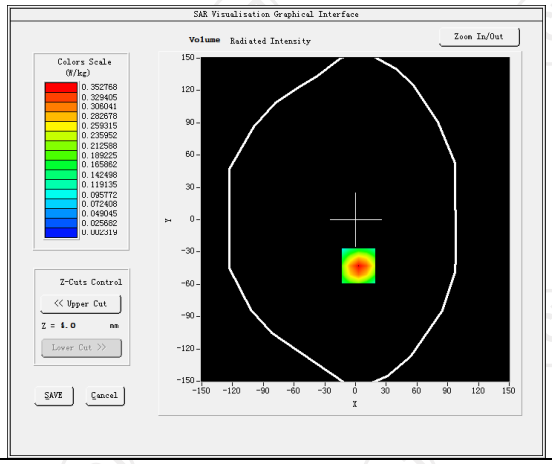
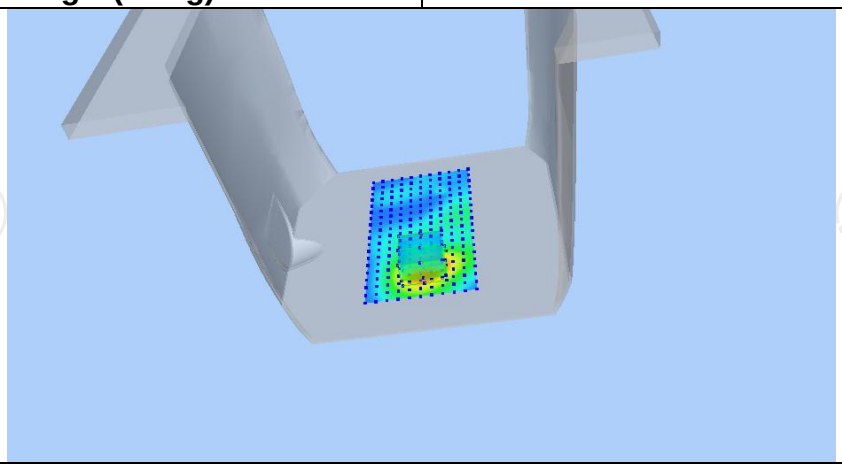


Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.5568	0.3206	0.1482	0.0630	0.0249

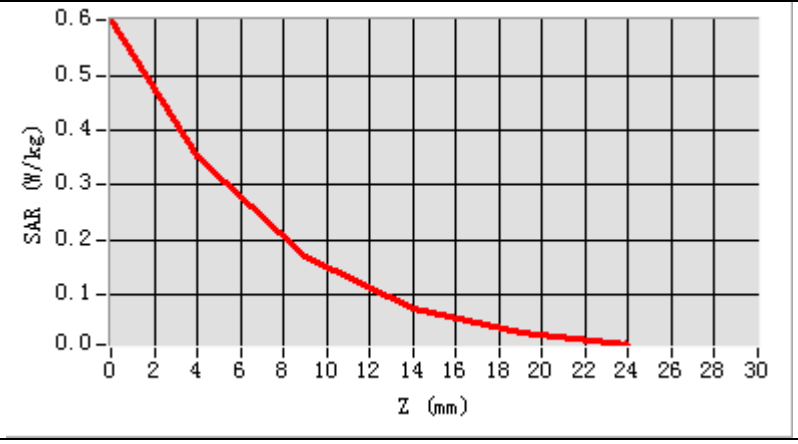


Hot spot position

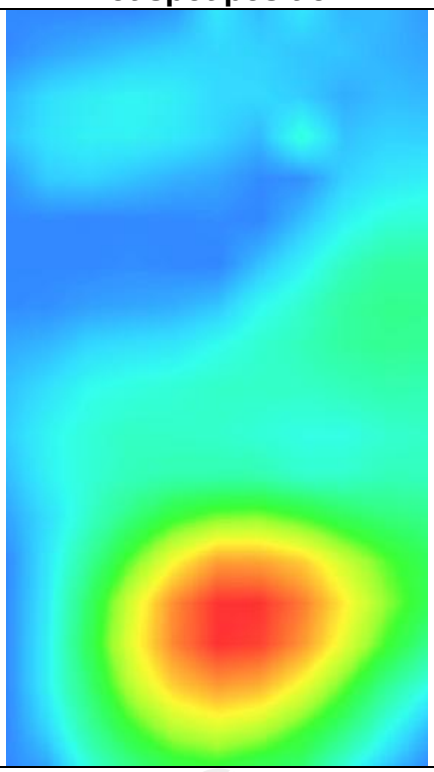


MEASUREMENT 3	
Higher Band SAR (Channel 21100):	Date: 06/01/2021
Frequency (MHz)	2560.000000
Relative permittivity (real part)	52.011509
Relative permittivity (imaginary part)	12.468850
Conductivity (S/m)	2.108245
Variation (%)	-4.810000
Crest Factor	1.0
Probe Conversion factor	4.52
E-Field Probe:	SSE5 (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(hotspot 0mm)
Band	LTE band 7(1 RB#0)
SURFACE SAR	**VOLUME SAR**
	
Maximum location: X=3.00, Y=-43.00 SAR Peak: 0.60 W/kg	
SAR 10g (W/Kg)	0.159240
SAR 1g (W/Kg)	0.330210
	

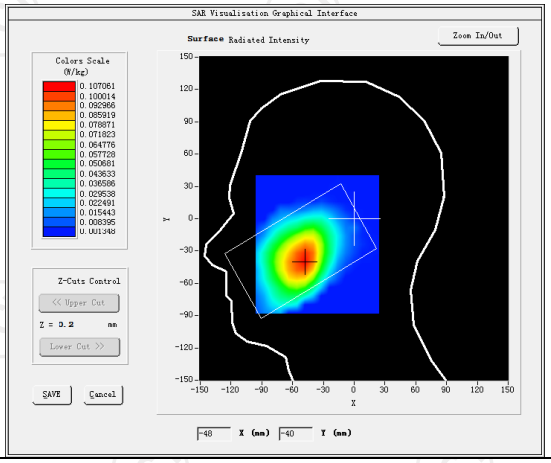
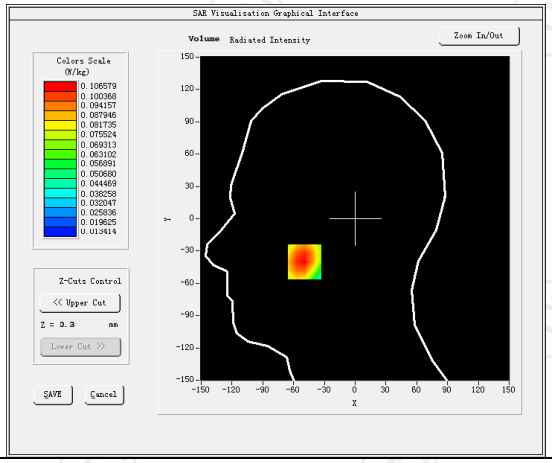
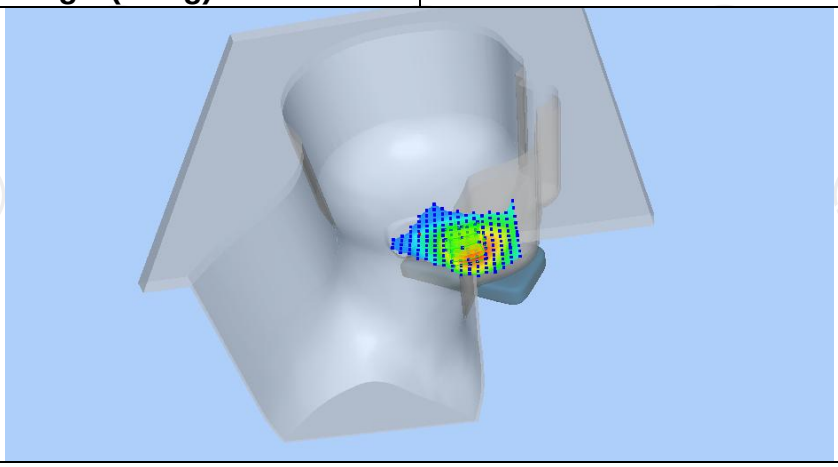
Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.6016	0.3528	0.1674	0.0728	0.0287



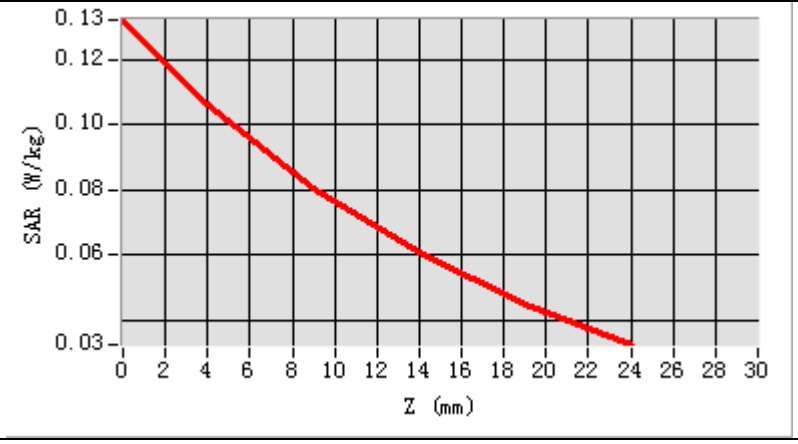
Hot spot position



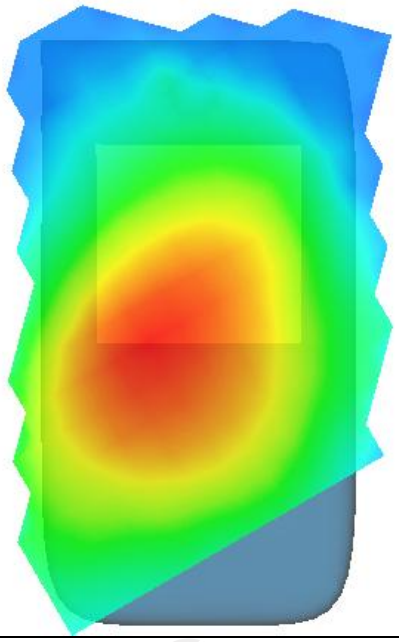
LTE Band 12

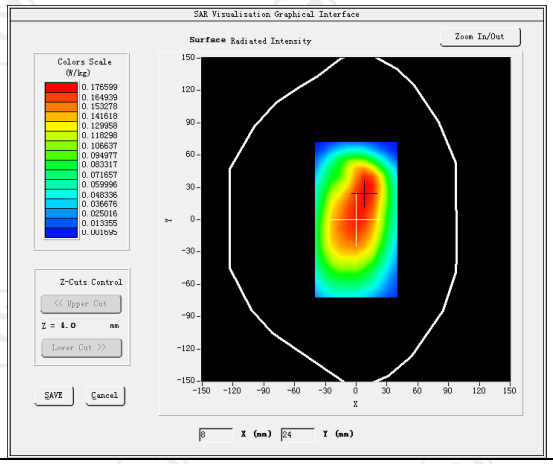
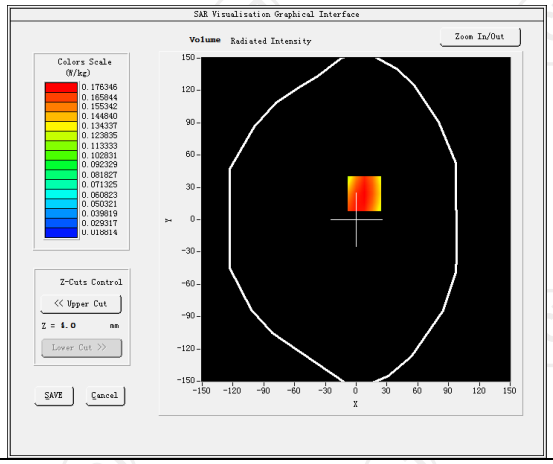
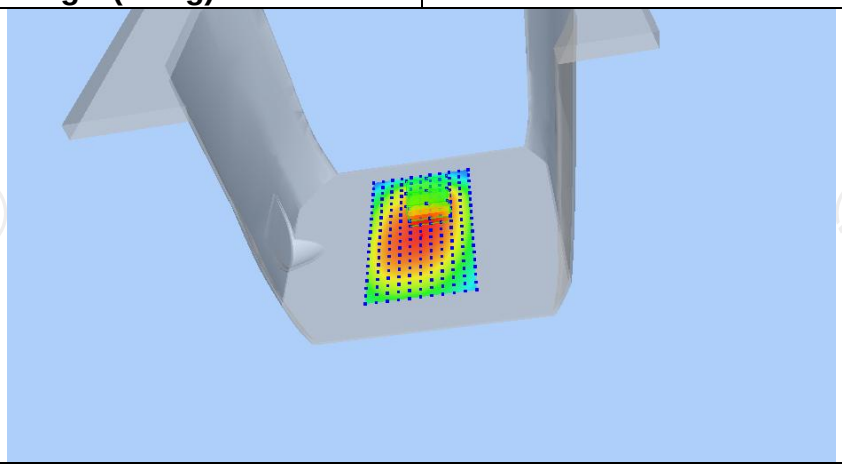
MEASUREMENT 1	
Lower Band SAR (Channel 23060):	Date: 04/15/2021
Frequency (MHz)	704.000000
Relative permittivity (real part)	41.432976
Relative permittivity (imaginary part)	12.468860
Conductivity (S/m)	0.862835
Variation (%)	-1.530000
Crest Factor	1.0
Probe Conversion factor	1.80
E-Field Probe:	SSE2 (SN 36/20 EPGO346)
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	Left head
Device Position	Cheek
Band	LTE band 12(1 RB#24)
SURFACE SAR	**VOLUME SAR**
	
Maximum location: X=-40.00, Y=-39.00 SAR Peak: 0.13 W/kg	
SAR 10g (W/Kg)	0.100471
SAR 1g (W/Kg)	0.114692
	

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.1298	0.1141	0.0710	0.0632	0.0467

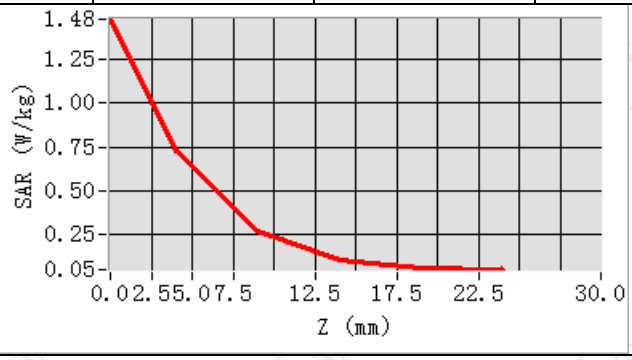


Hot spot position

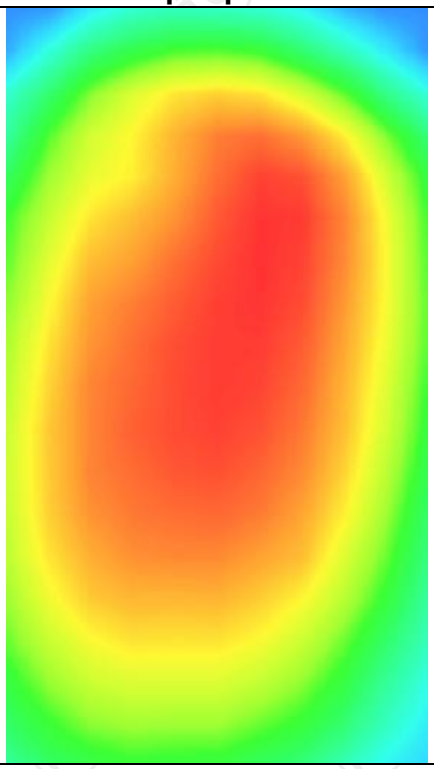


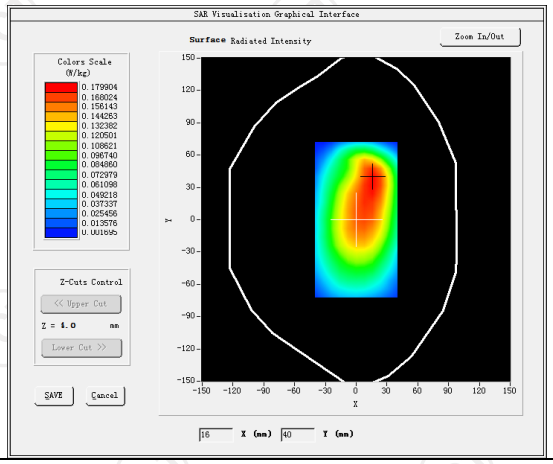
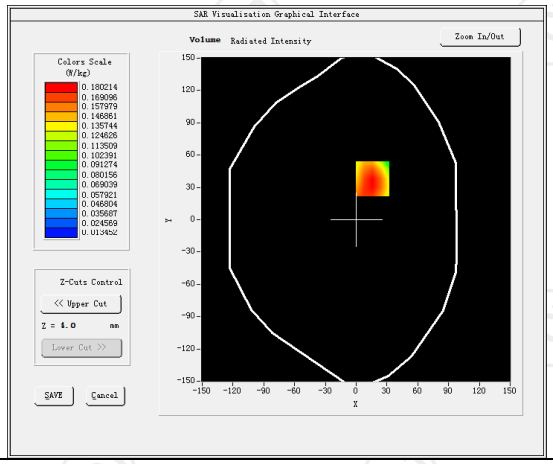
MEASUREMENT 2	
Lower Band SAR (Channel 23060):	Date: 04/15/2021
Frequency (MHz)	704.000000
Relative permittivity (real part)	55.260832
Relative permittivity (imaginary part)	12.468860
Conductivity (S/m)	0.934272
Variation (%)	-2.810000
Crest Factor	1.0
Probe Conversion factor	1.86
E-Field Probe:	SSE2 (SN 36/20 EPGO346)
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(0mm)
Band	LTE band 12(1 RB#24)
SURFACE SAR	**VOLUME SAR**
	
Maximum location: X=25.00, Y=11.00 SAR Peak: 1.48 W/kg	
SAR 10g (W/Kg)	0.124160
SAR 1g (W/Kg)	0.221732
	

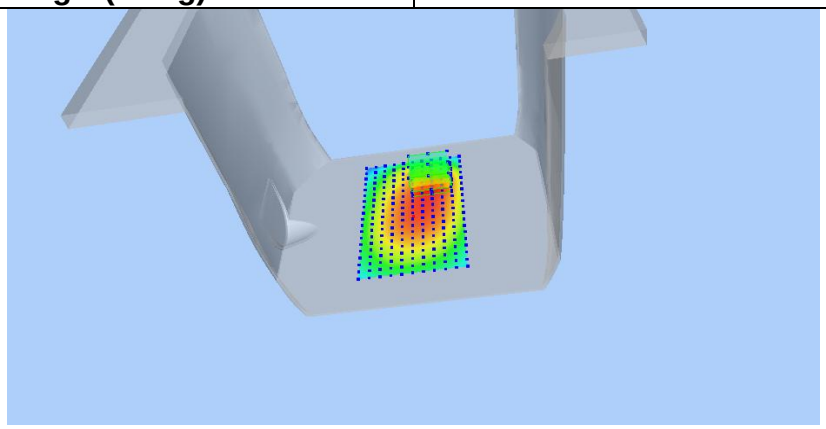
Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.4772	0.7315	0.2735	0.1073	0.0623



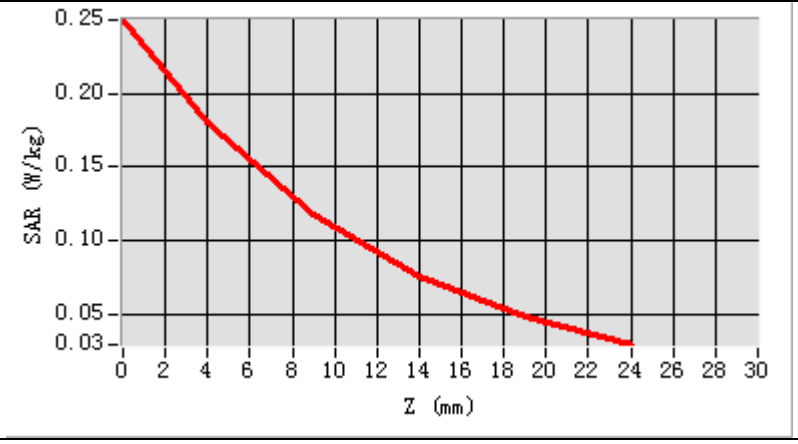
Hot spot position



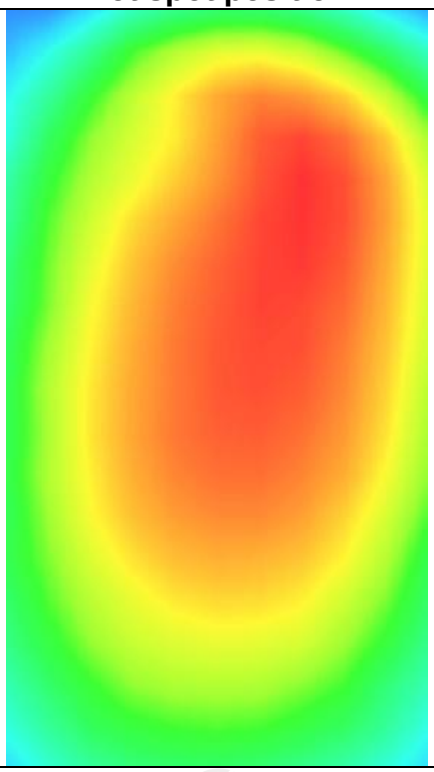
MEASUREMENT 3	
Lower Band SAR (Channel 23060):	Date: 04/15/2021
Frequency (MHz)	704.000000
Relative permittivity (real part)	55.260832
Relative permittivity (imaginary part)	12.468860
Conductivity (S/m)	0.934272
Variation (%)	1.060000
Crest Factor	1.0
Probe Conversion factor	1.86
E-Field Probe:	SSE2 (SN 36/20 EPGO346)
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(hotspot 0mm)
Band	LTE band 12(1 RB#24)
SURFACE SAR	**VOLUME SAR**
	
Maximum location: X=16.00, Y=26.00 SAR Peak: 0.25 W/kg	
SAR 10g (W/Kg)	0.120730
SAR 1g (W/Kg)	0.241238



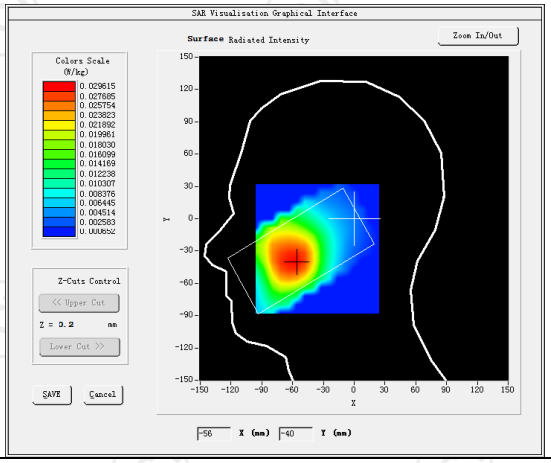
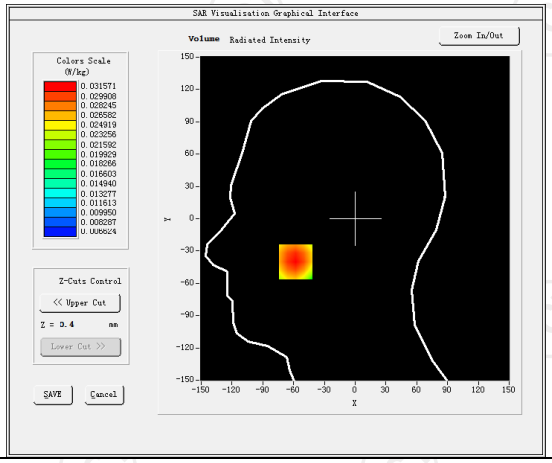
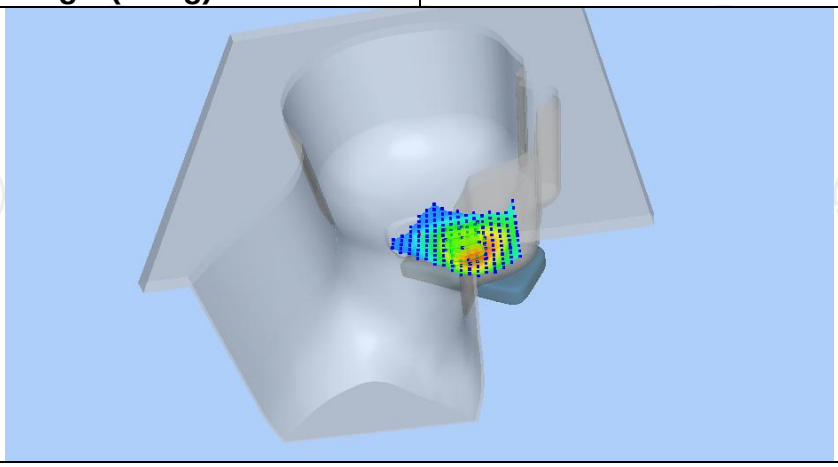
Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.2520	0.1802	0.1173	0.0761	0.0482



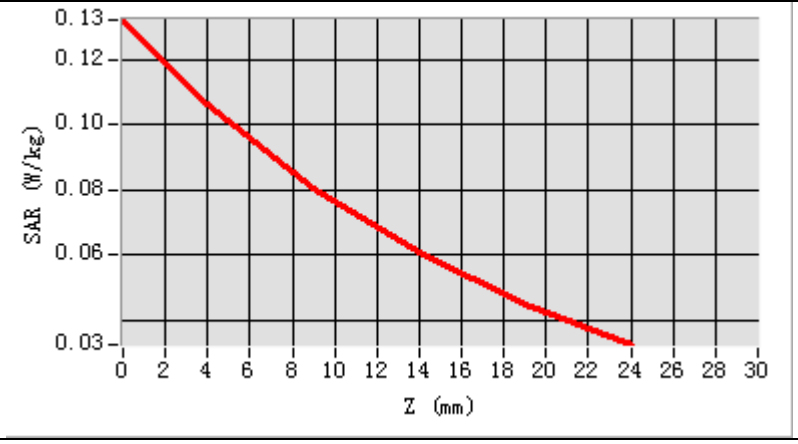
Hot spot position



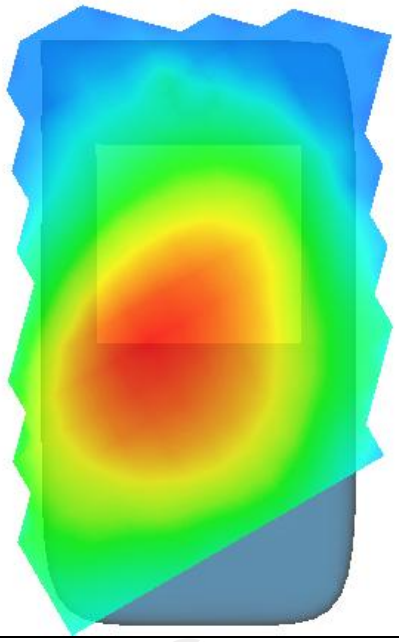
LTE Band 13

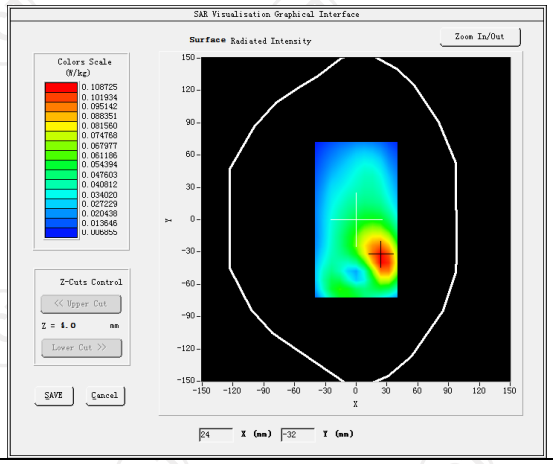
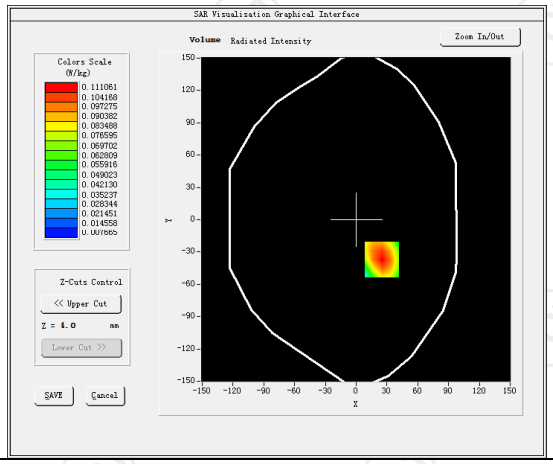
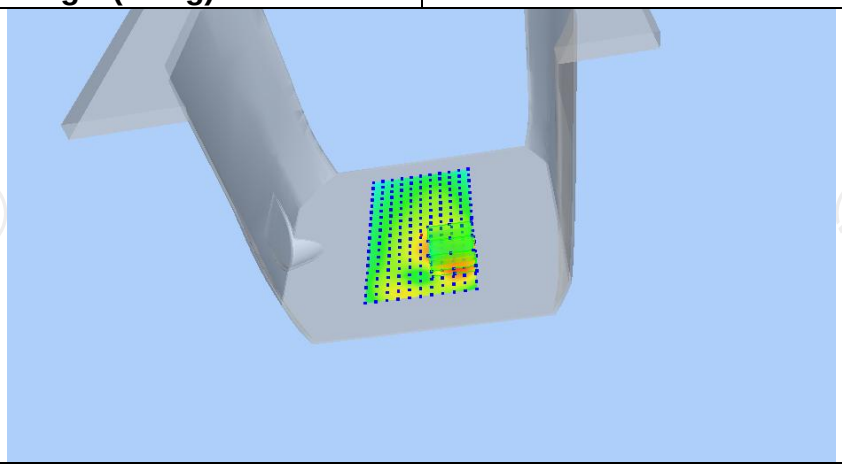
MEASUREMENT 1	
Middle Band SAR (Channel 23230):	Date: 04/15/2021
Frequency (MHz)	782.000000
Relative permittivity (real part)	41.432976
Relative permittivity (imaginary part)	12.468860
Conductivity (S/m)	0.862835
Variation (%)	-1.460000
Crest Factor	1.0
Probe Conversion factor	1.80
E-Field Probe:	SSE2 (SN36/20 EPGO346)
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	Left head
Device Position	Cheek
Band	LTE band 13(1 RB#24)
SURFACE SAR	**VOLUME SAR**
	
Maximum location: X=-48.00, Y=-42.00 SAR Peak: 0.13 W/kg	
SAR 10g (W/Kg)	0.103470
SAR 1g (W/Kg)	0.122601
	

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.1343	0.1070	0.0812	0.0610	0.0450

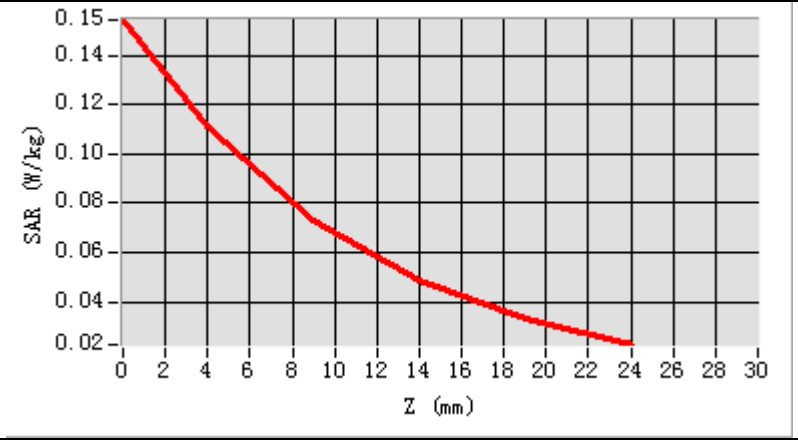


Hot spot position

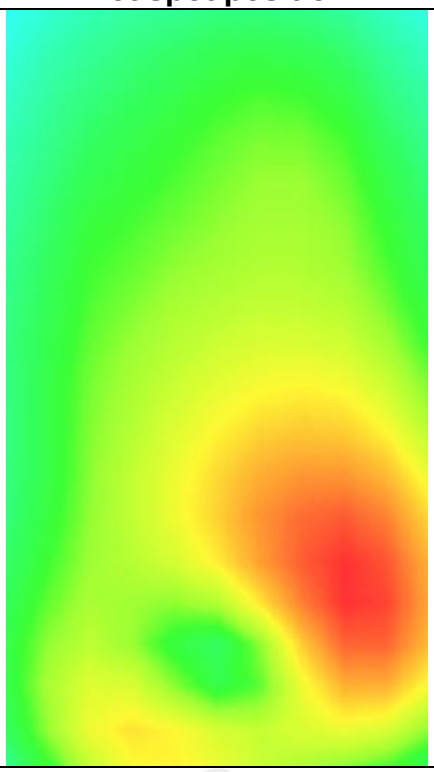


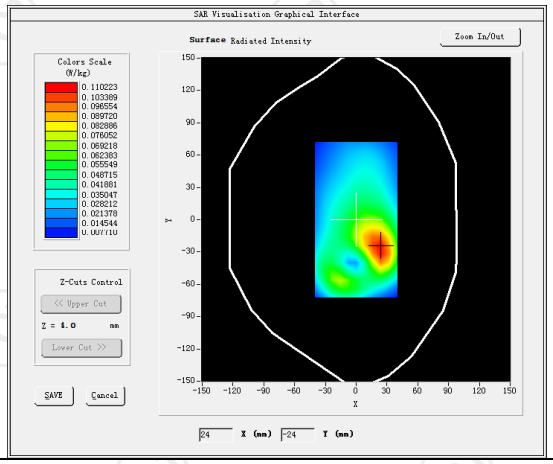
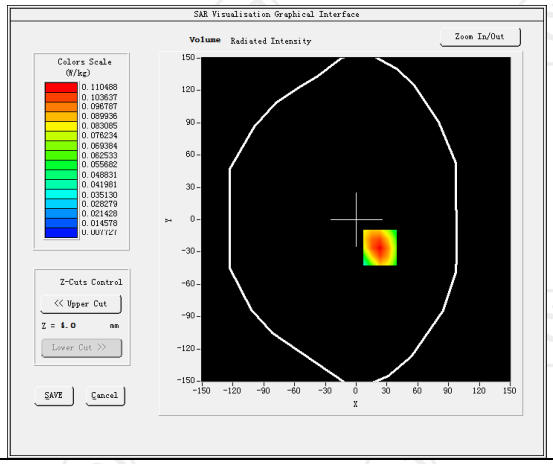
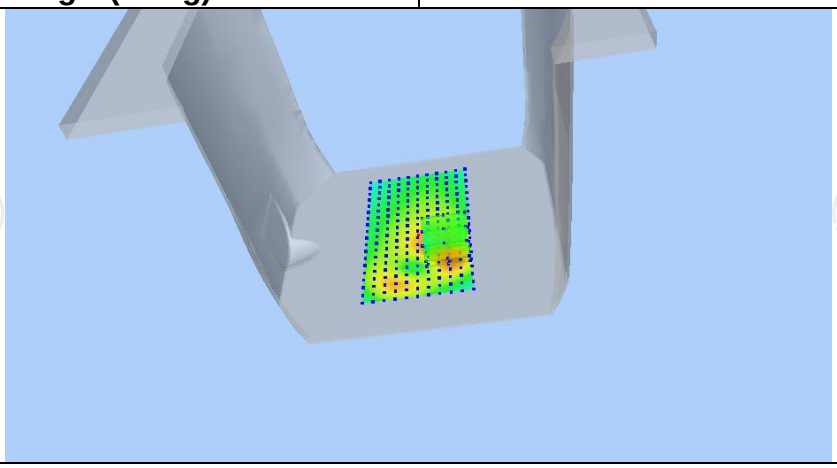
MEASUREMENT 2	
Middle Band SAR (Channel 23230):	Date: 04/15/2021
Frequency (MHz)	782.000000
Relative permittivity (real part)	55.260832
Relative permittivity (imaginary part)	12.468860
Conductivity (S/m)	0.934272
Variation (%)	-1.810000
Crest Factor	1.0
Probe Conversion factor	1.86
E-Field Probe:	SSE2 (SN36/20 EPGO346)
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(0mm)
Band	LTE band 13(1 RB#24)
SURFACE SAR	**VOLUME SAR**
	
Maximum location: X=25.00, Y=-37.00 SAR Peak: 0.15 W/kg	
SAR 10g (W/Kg)	0.071030
SAR 1g (W/Kg)	0.103376
	

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.1211	0.1120	0.0731	0.0490	0.0340

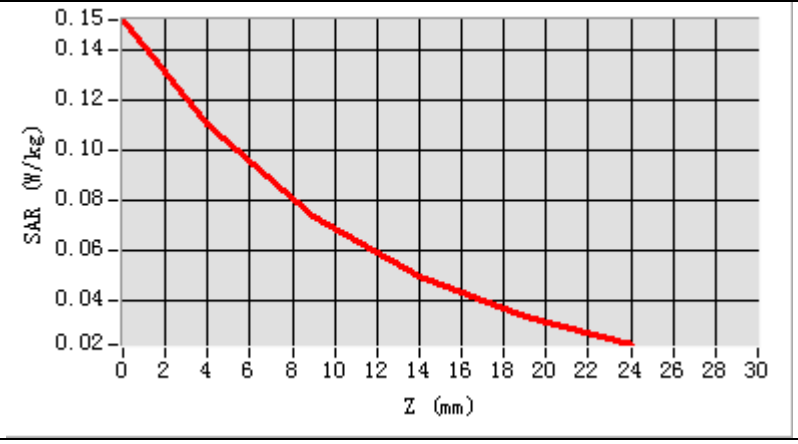


Hot spot position

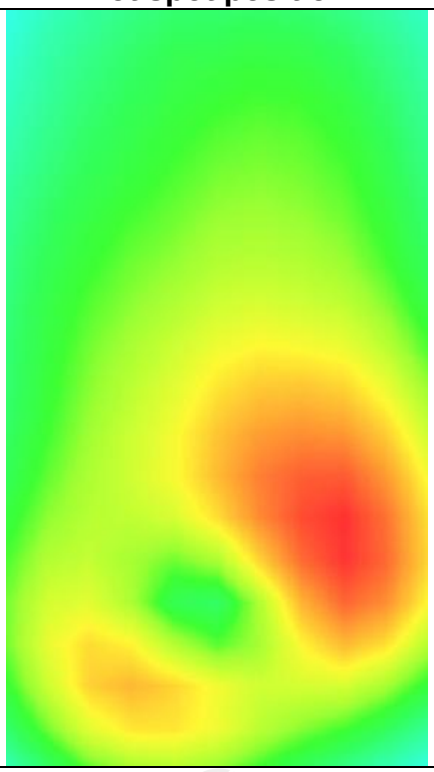


MEASUREMENT 3	
Middle Band SAR (Channel 23230):	Date: 04/15/2021
Frequency (MHz)	782.000000
Relative permittivity (real part)	55.260832
Relative permittivity (imaginary part)	12.468860
Conductivity (S/m)	0.934272
Variation (%)	-2.650000
Crest Factor	1.0
Probe Conversion factor	1.86
E-Field Probe:	SSE2 (SN36/20 EPGO346)
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(hotspot 0mm)
Band	LTE band 13(1 RB#24)
SURFACE SAR	**VOLUME SAR**
	
Maximum location: X=22.00, Y=-24.00 SAR Peak: 0.15 W/kg	
SAR 10g (W/Kg)	0.074531
SAR 1g (W/Kg)	0.151752
	

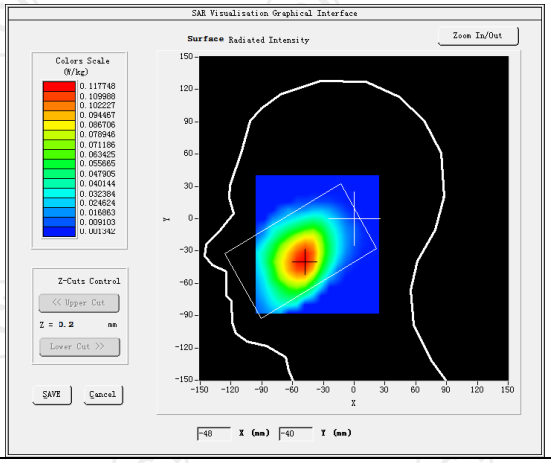
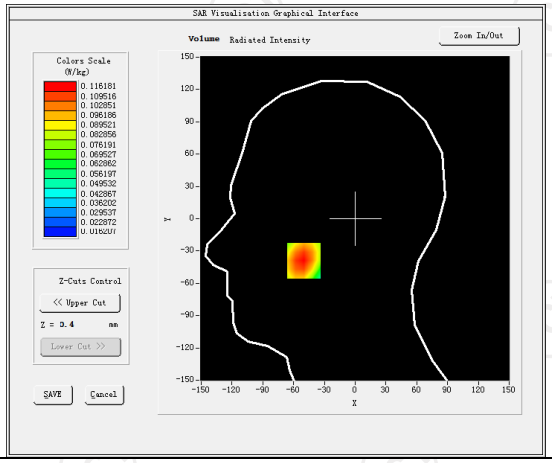
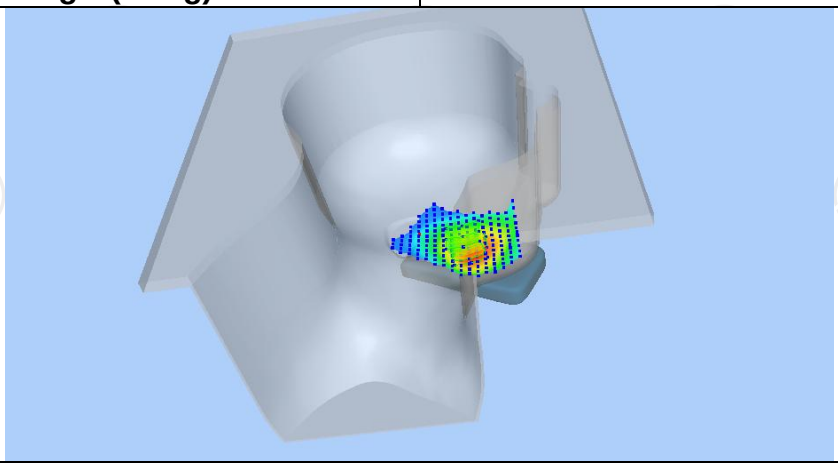
Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.1520	0.1110	0.0734	0.0492	0.0340



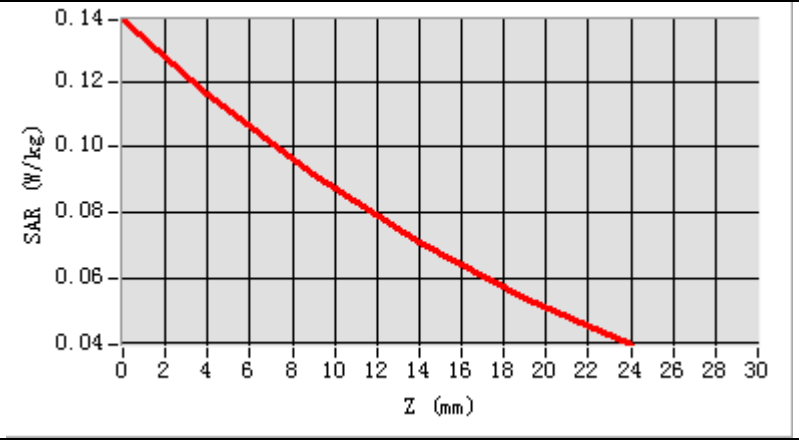
Hot spot position



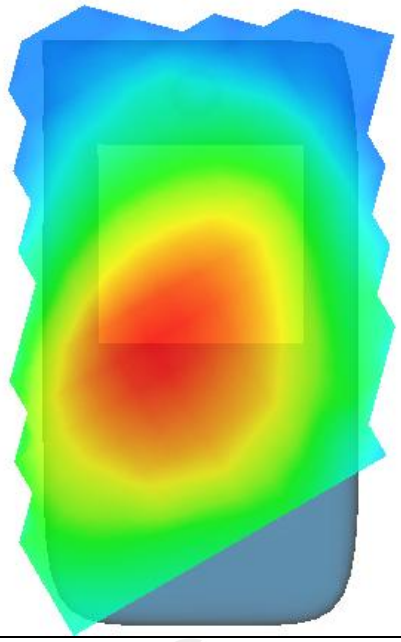
LTE Band 17

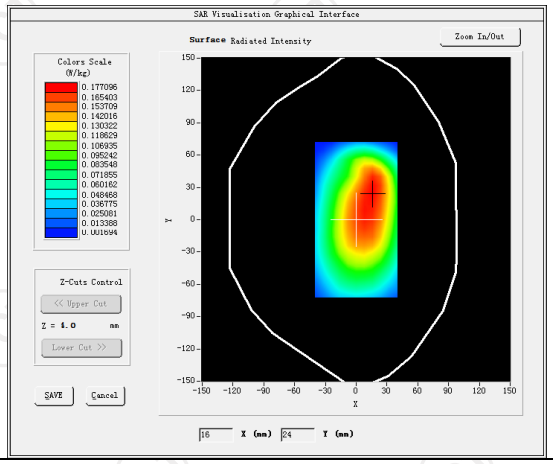
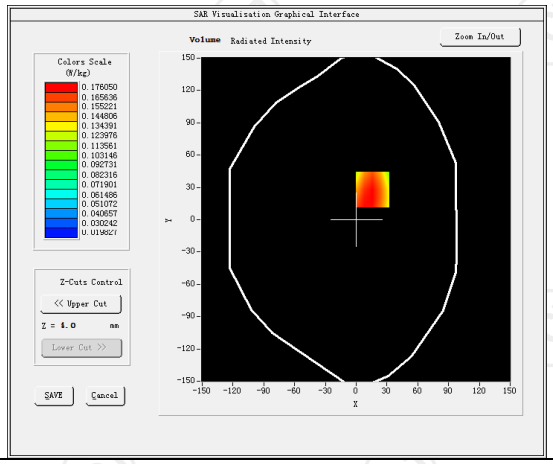
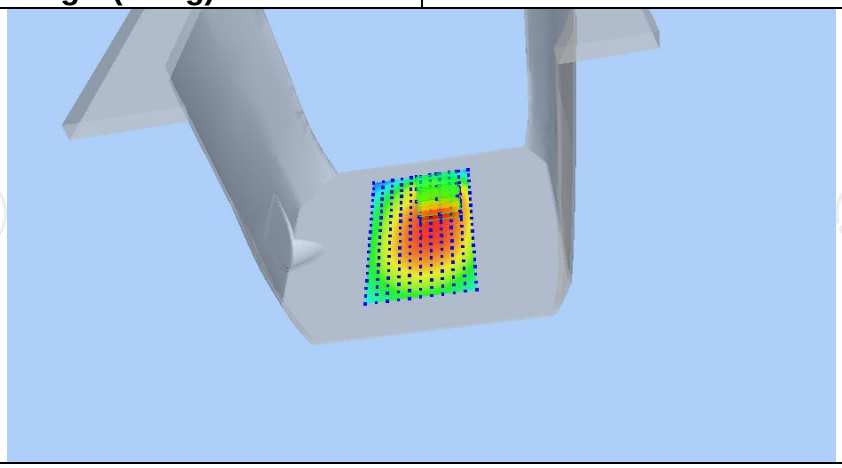
MEASUREMENT 1	
Hight Band SAR (Channel 23800):	Date: 04/15/2021
Frequency (MHz)	711.000000
Relative permittivity (real part)	41.430182
Relative permittivity (imaginary part)	12.468765
Conductivity (S/m)	0.859210
Variation (%)	0.710000
Crest Factor	1.0
Probe Conversion factor	1.80
E-Field Probe:	SSE2 (SN 36/20 EPGO346)
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	Left head
Device Position	Cheek
Band	LTE band 17(1 RB#0)
SURFACE SAR	**VOLUME SAR**
	
Maximum location: X=-10.00, Y=-29.00 SAR Peak: 0.14 W/kg	
SAR 10g (W/Kg)	0.082421
SAR 1g (W/Kg)	0.124631
	

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.1400	0.1200	0.0911	0.0712	0.0540

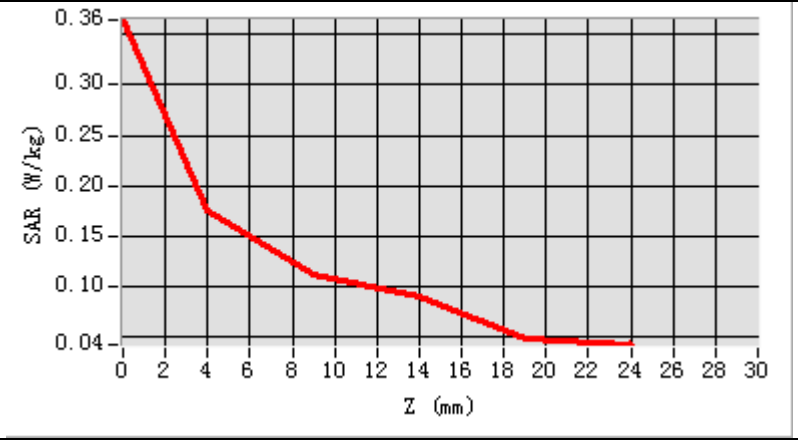


Hot spot position

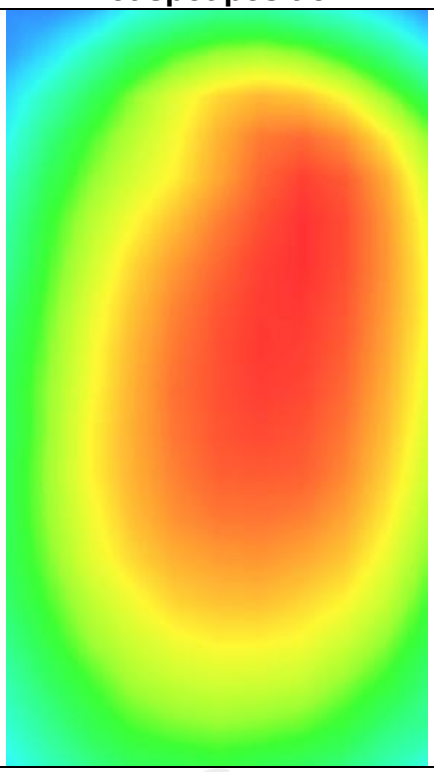


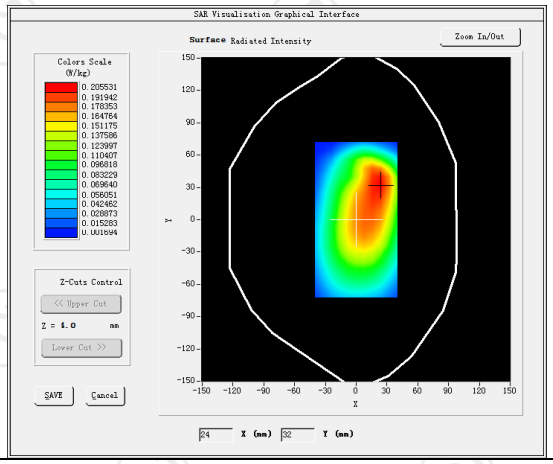
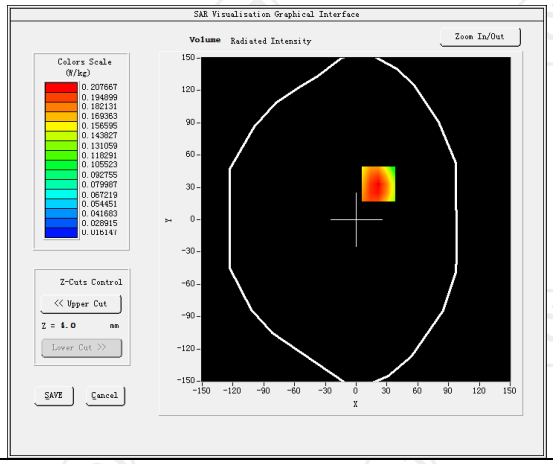
MEASUREMENT 2	
Hight Band SAR (Channel 23800):	Date: 04/15/2021
Frequency (MHz)	711.000000
Relative permittivity (real part)	55.263812
Relative permittivity (imaginary part)	12.468867
Conductivity (S/m)	0.930822
Variation (%)	1.290000
Crest Factor	1.0
Probe Conversion factor	1.86
E-Field Probe:	SSE2 (SN 36/20 EPGO346)
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(0mm)
Band	LTE band 17(1 RB#0)
SURFACE SAR	**VOLUME SAR**
	
Maximum location: X=17.00, Y=27.00 SAR Peak: 0.36 W/kg	
SAR 10g (W/Kg)	0.113246
SAR 1g (W/Kg)	0.220995
	

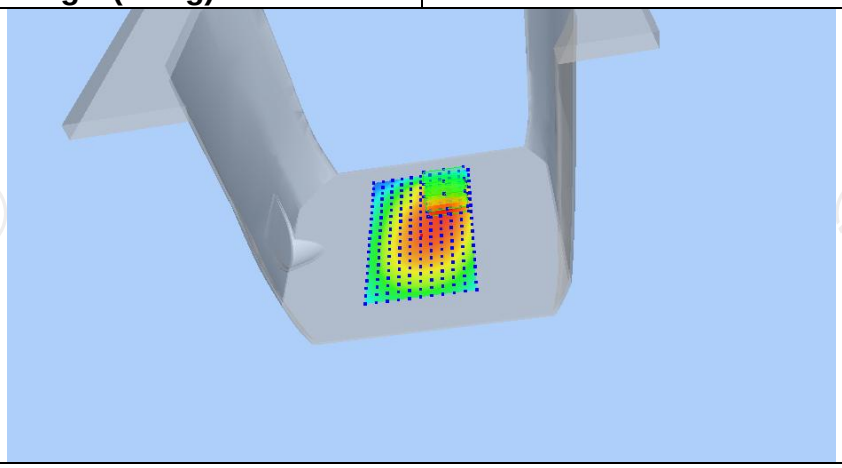
Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.3623	0.1840	0.1022	0.0901	0.0542



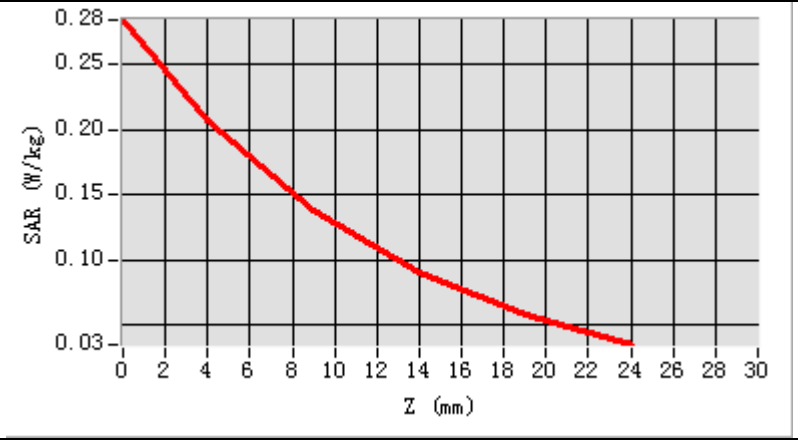
Hot spot position



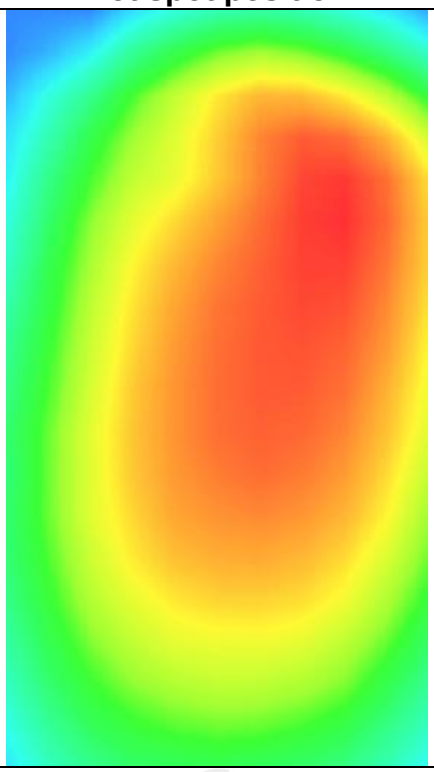
MEASUREMENT 3	
Hight Band SAR (Channel 23800):	Date: 04/15/2021
Frequency (MHz)	711.000000
Relative permittivity (real part)	55.263812
Relative permittivity (imaginary part)	12.468867
Conductivity (S/m)	0.881392
Variation (%)	1.170000
Crest Factor	1.0
Probe Conversion factor	1.86
E-Field Probe:	SSE2 (SN 36/20 EPGO346)
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(hotspot 0mm)
Band	LTE band 17(1 RB#0)
SURFACE SAR	**VOLUME SAR**
	
Maximum location: X=21.00, Y=23.00 SAR Peak: 0.28 W/kg	
SAR 10g (W/Kg)	0.140212
SAR 1g (W/Kg)	0.241400



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.2811	0.2070	0.1328	0.0900	0.0574

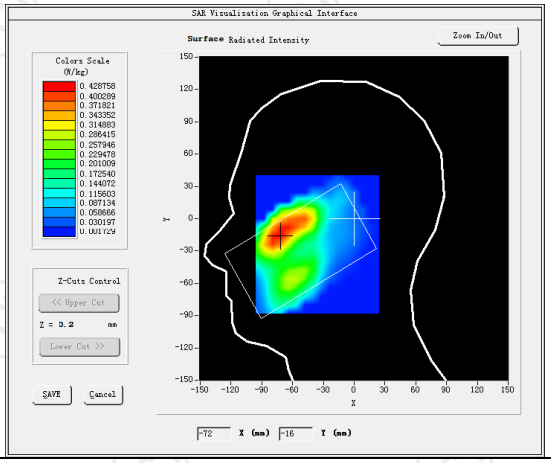


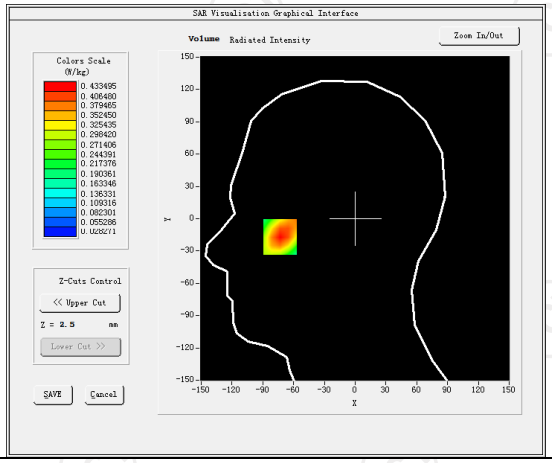
Hot spot position



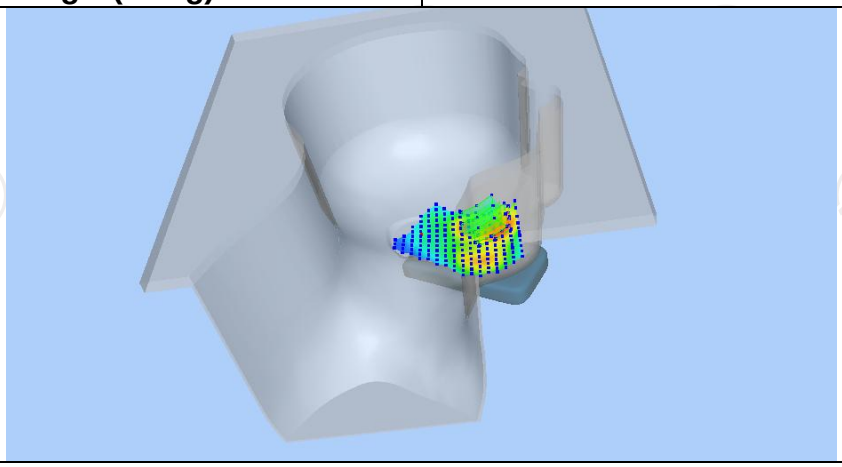
LTE Band 66

MEASUREMENT 1	
Lower Band SAR (Channel 132072):	Date: 04/21/2021
Frequency (MHz)	1720.000000
Relative permittivity (real part)	39.111249
Relative permittivity (imaginary part)	12.468850
Conductivity (S/m)	1.340792
Variation (%)	-1.110000
Crest Factor	1.0
Probe Conversion factor	2.08
E-Field Probe:	SSE2 (SN 36/20 EPGO346)
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	Left head
Device Position	Cheek
Band	LTE band 66(1 RB#49)
SURFACE SAR	**VOLUME SAR**

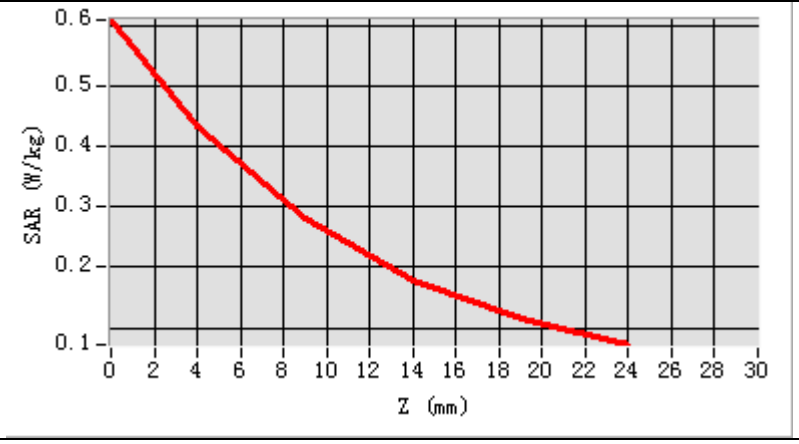




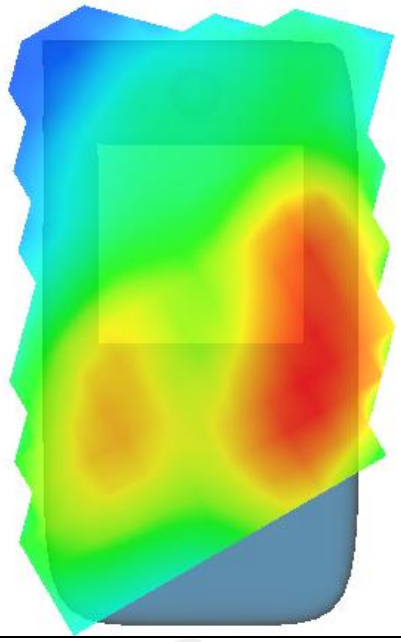
Maximum location: X=-20.00, Y=-15.00 SAR Peak: 0.60 W/kg	
SAR 10g (W/Kg)	0.242111
SAR 1g (W/Kg)	0.408850

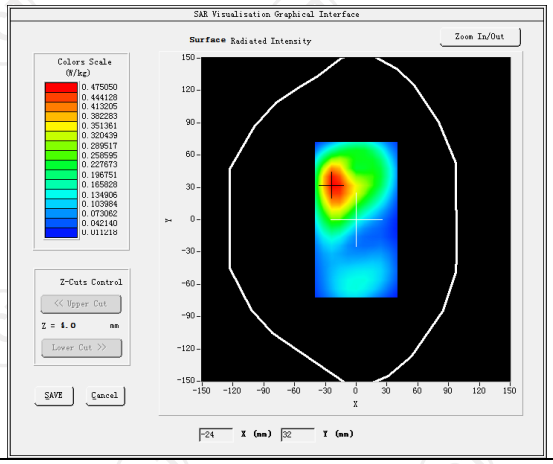
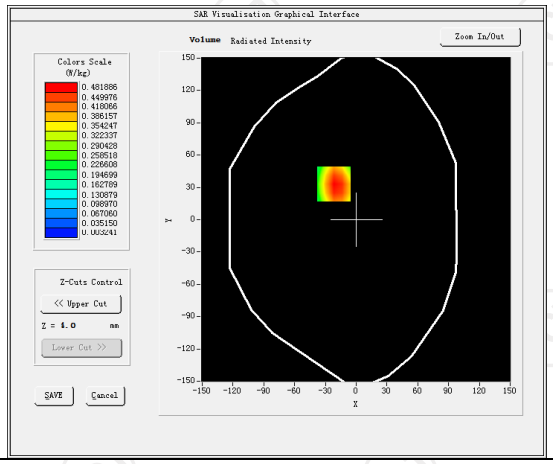


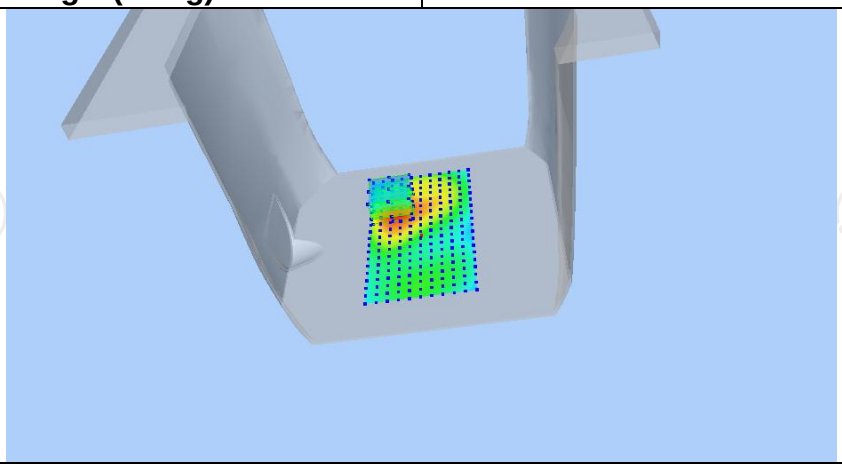
Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.6040	0.4330	0.2782	0.1791	0.1142



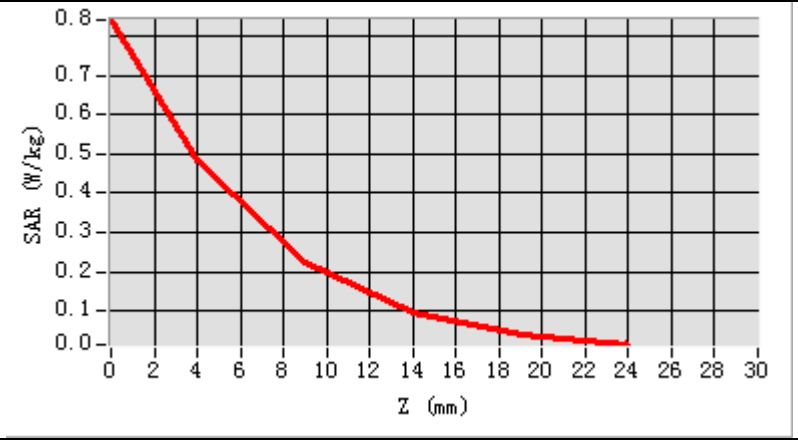
Hot spot position



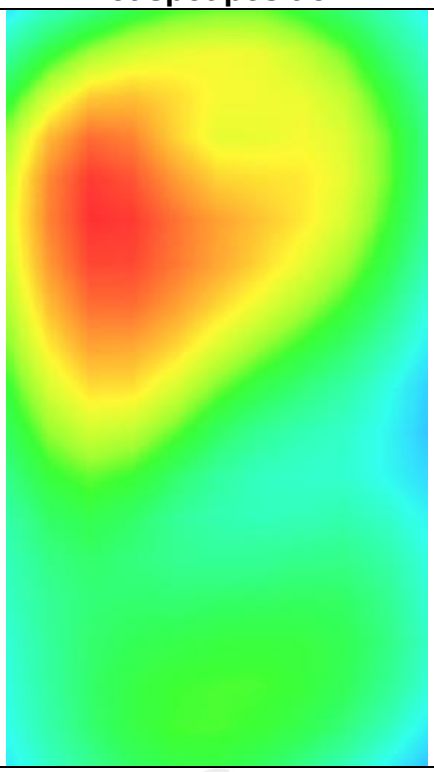
MEASUREMENT 2	
Lower Band SAR (Channel 132072):	Date: 04/21/2021
Frequency (MHz)	1720.000000
Relative permittivity (real part)	53.341249
Relative permittivity (imaginary part)	15.168850
Conductivity (S/m)	1.492592
Variation (%)	-3.300000
Crest Factor	1.0
Probe Conversion factor	2.16
E-Field Probe:	SSE2 (SN 36/20 EPGO346)
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(0mm)
Band	LTE band 66(1 RB#49)
SURFACE SAR	**VOLUME SAR**
	
Maximum location: X=-20.00, Y=19.00 SAR Peak: 0.80 W/kg	
SAR 10g (W/Kg)	0.236850
SAR 1g (W/Kg)	0.362112

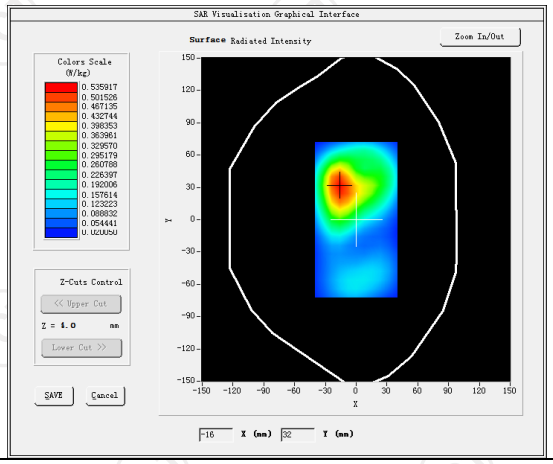
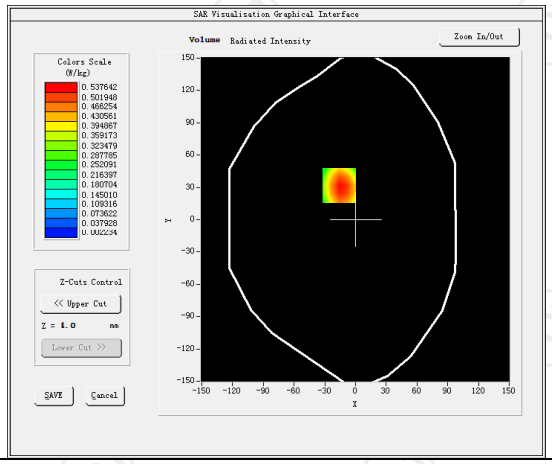
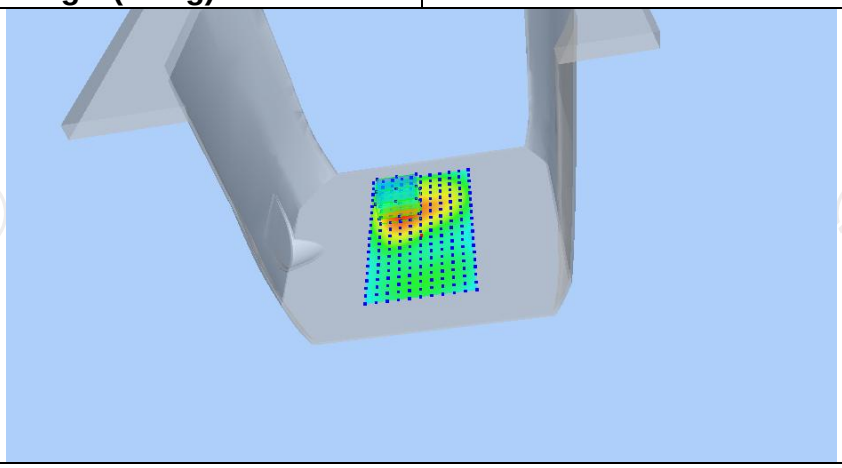


Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.8002	0.4820	0.2228	0.0971	0.0420

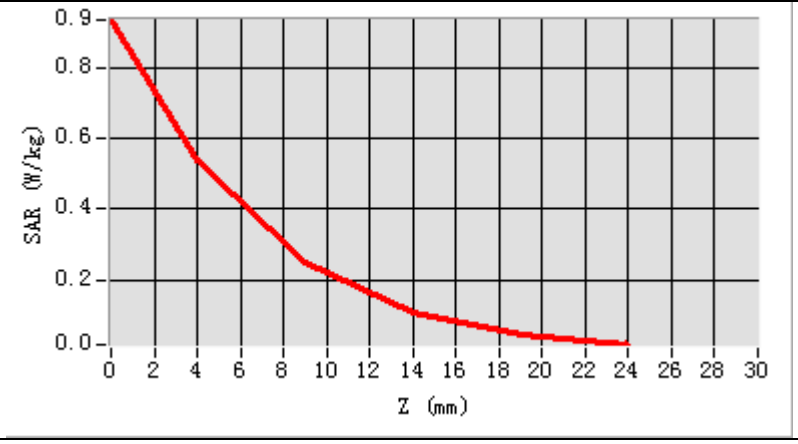


Hot spot position

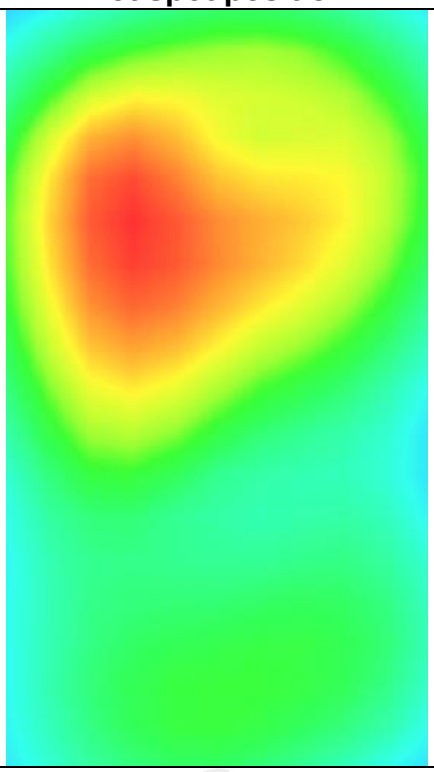


MEASUREMENT 3	
Lower Band SAR (Channel 132072):	Date: 04/21/2021
Frequency (MHz)	1720.000000
Relative permittivity (real part)	53.341249
Relative permittivity (imaginary part)	15.168850
Conductivity (S/m)	1.492592
Variation (%)	1.210000
Crest Factor	1.0
Probe Conversion factor	2.16
E-Field Probe:	SSE2 (SN 36/20 EPGO346)
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(hotspot 0mm)
Band	LTE band 66(1 RB#49)
SURFACE SAR	**VOLUME SAR**
	
Maximum location: X=-13.00, Y=10.00 SAR Peak: 0.90 W/kg	
SAR 10g (W/Kg)	0.276211
SAR 1g (W/Kg)	0.377213
	

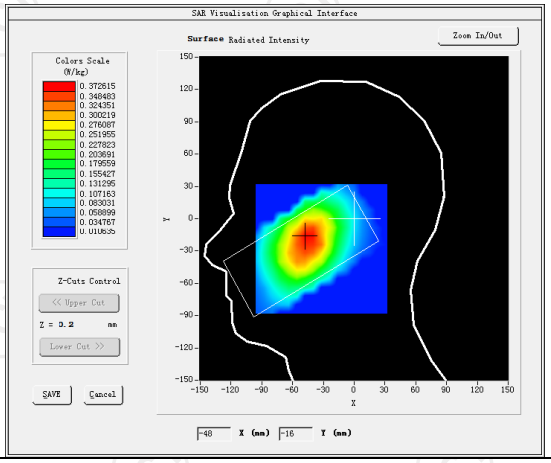
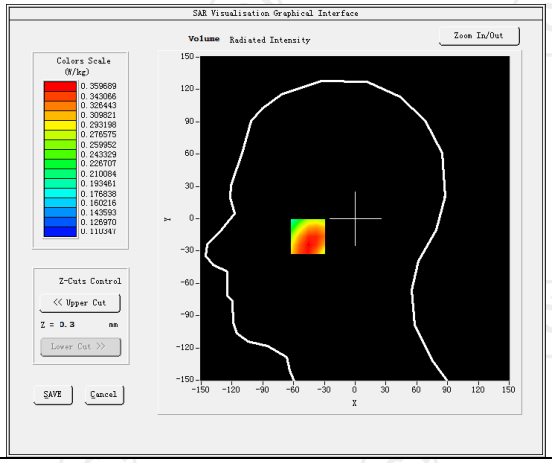
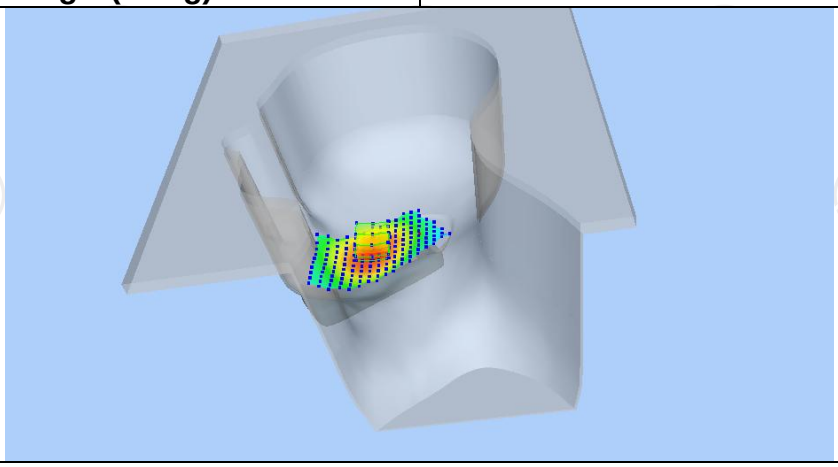
Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.9043	0.5380	0.2490	0.1041	0.0460



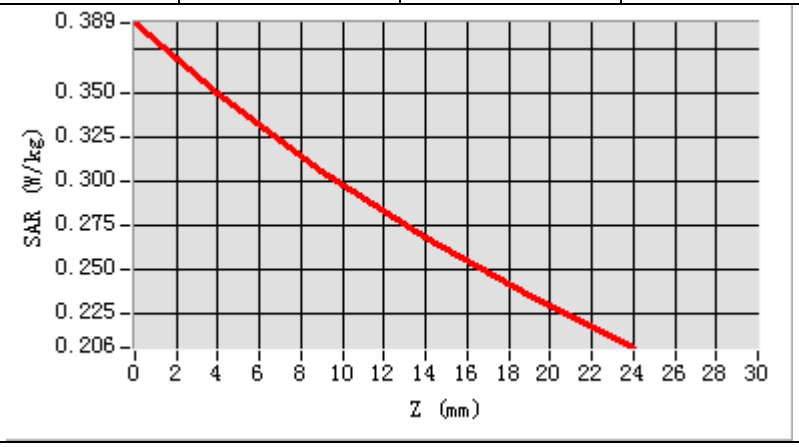
Hot spot position



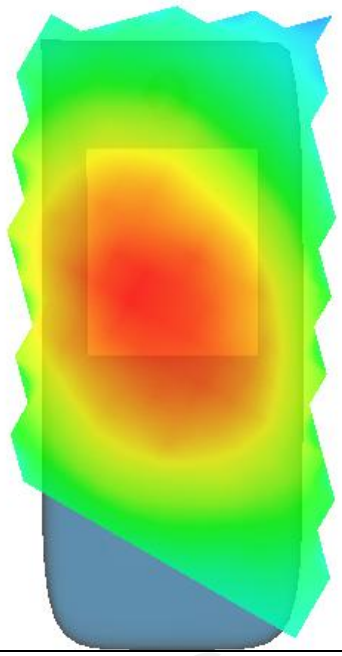
LTE Band 71

MEASUREMENT 1	
Lower Band SAR (Channel 133222):	Date: 04/15/2021
Frequency (MHz)	673.000000
Relative permittivity (real part)	41.432976
Relative permittivity (imaginary part)	12.468860
Conductivity (S/m)	0.862835
Variation (%)	-1.200000
Crest Factor	1.0
Probe Conversion factor	1.80
E-Field Probe:	SSE2 (SN 36/20 EPGO346)
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	Right head
Device Position	Cheek
Band	LTE band 71(1 RB#49)
SURFACE SAR	**VOLUME SAR**
	
Maximum location: X=-40.00, Y=-11.00 SAR Peak: 0.39 W/kg	
SAR 10g (W/Kg)	0.298223
SAR 1g (W/Kg)	0.344063
	

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.3892	0.3503	0.3102	0.2704	0.2350



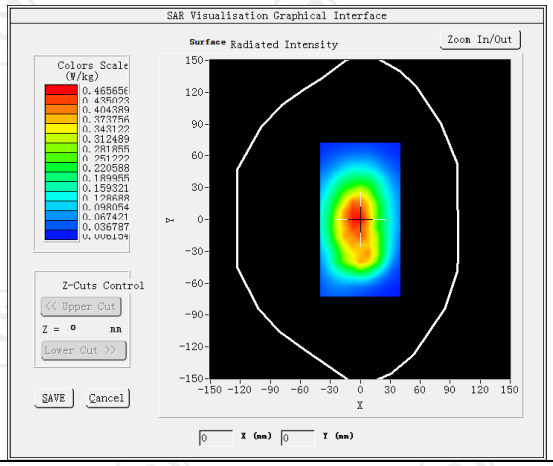
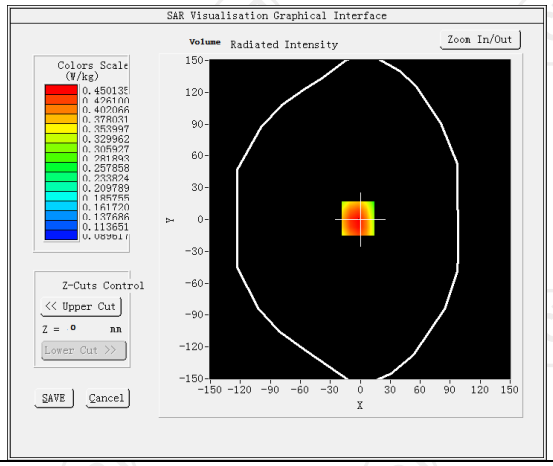
Hot spot position



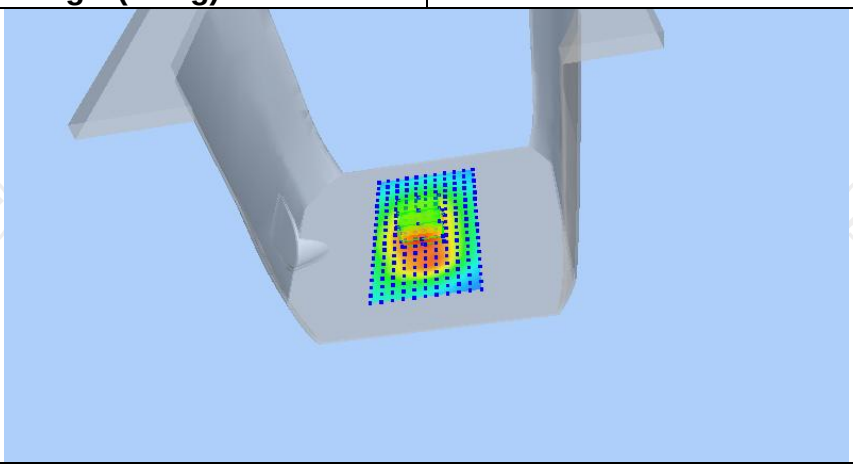
MEASUREMENT 2

Lower Band SAR (Channel 133222): Date: 04/15/2021

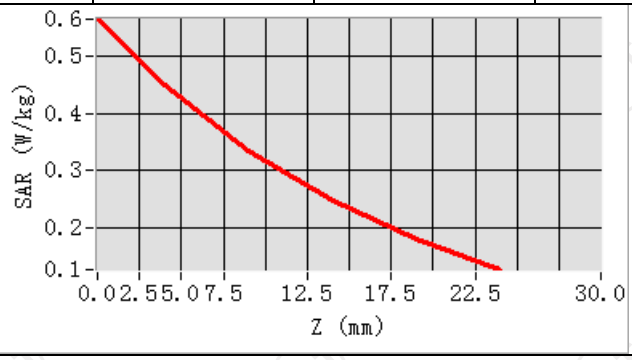
Frequency (MHz)	673.000000
Relative permittivity (real part)	55.260832
Relative permittivity (imaginary part)	12.468860
Conductivity (S/m)	0.934272
Variation (%)	1.140000
Crest Factor	1.0
Probe Conversion factor	1.86
E-Field Probe:	SSE2 (SN 36/20 EPGO346)
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Body back(0mm)
Band	LTE band 71 (1 RB#49)

SURFACE SAR	**VOLUME SAR**
	

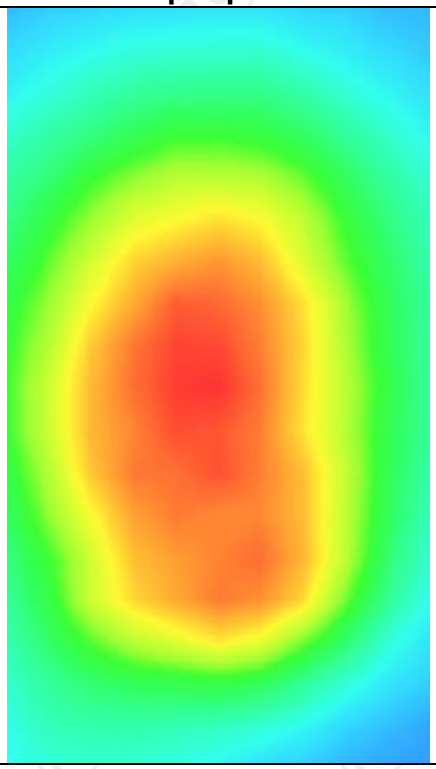
Maximum location: X=-12.00, Y=10.00 SAR Peak: 0.60 W/kg	
SAR 10g (W/Kg)	0.303615
SAR 1g (W/Kg)	0.456723



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.5960	0.4500	0.3404	0.2484	0.1810



Hot spot position

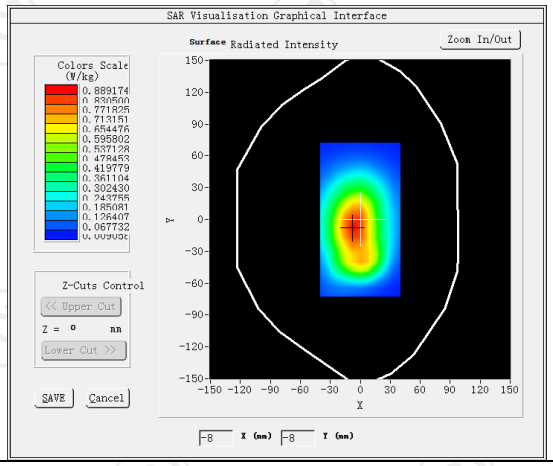


MEASUREMENT 3

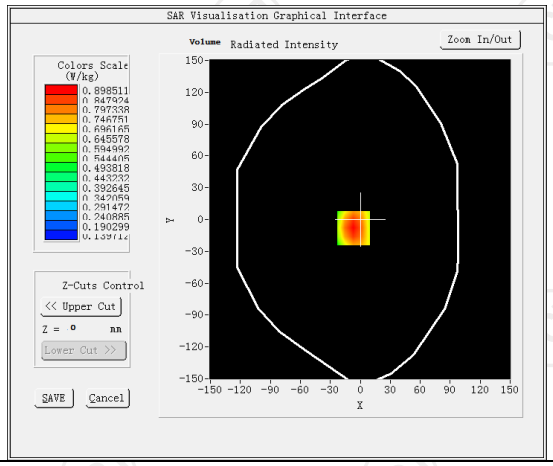
Lower Band SAR (Channel 133222): Date: 04/15/2021

Frequency (MHz)	673.000000
Relative permittivity (real part)	55.260832
Relative permittivity (imaginary part)	12.468860
Conductivity (S/m)	0.934272
Variation (%)	-1.130000
Crest Factor	1.0
Probe Conversion factor	1.86
E-Field Probe:	SSE2 (SN 36/20 EPGO346)
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(hotspot 0mm)
Band	LTE band 71(1 RB#49)

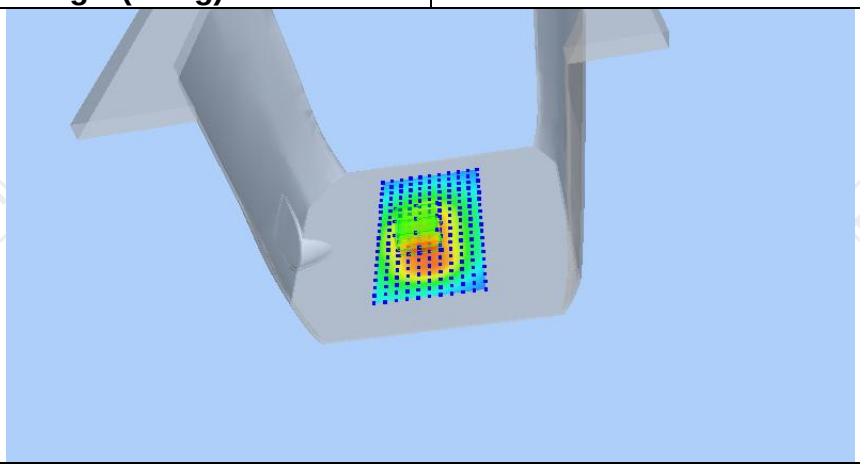
SURFACE SAR



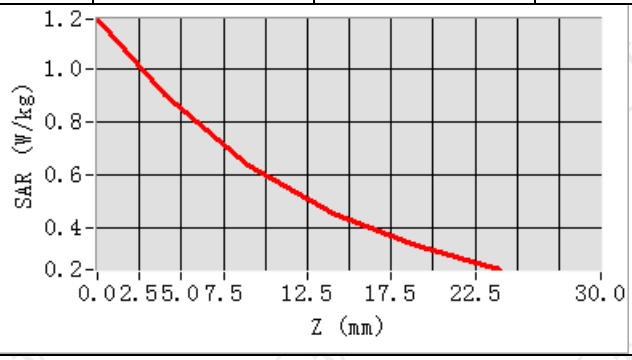
VOLUME SAR



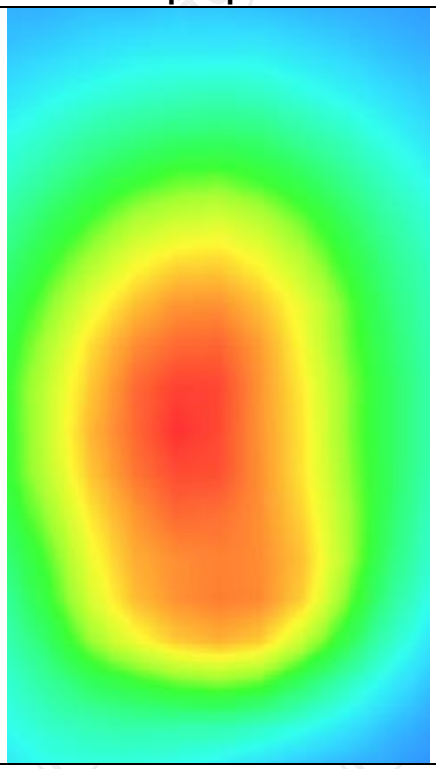
Maximum location: X=-17.00, Y=-18.00 SAR Peak: 1.18 W/kg	
SAR 10g (W/Kg)	0.892450
SAR 1g (W/Kg)	0.471432



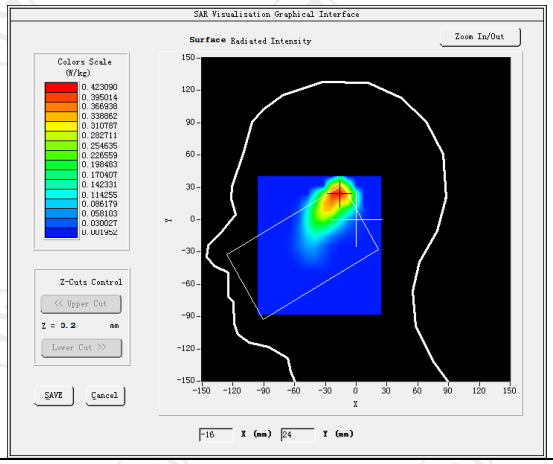
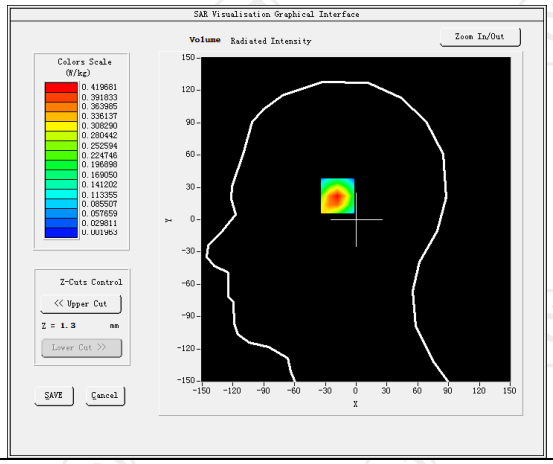
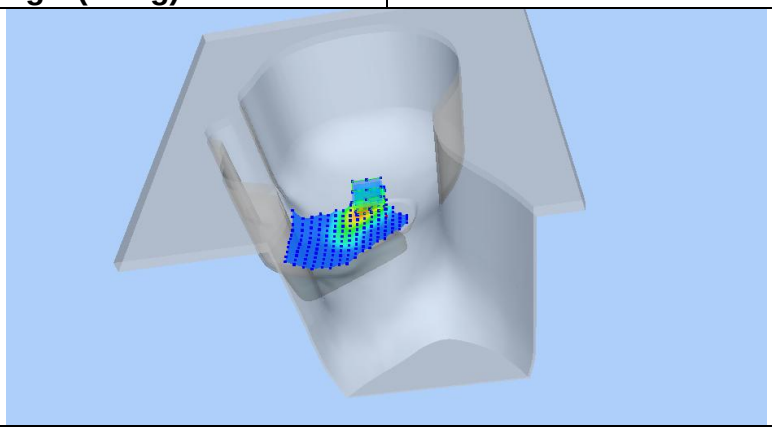
Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.1851	0.9016	0.6420	0.4625	0.3340



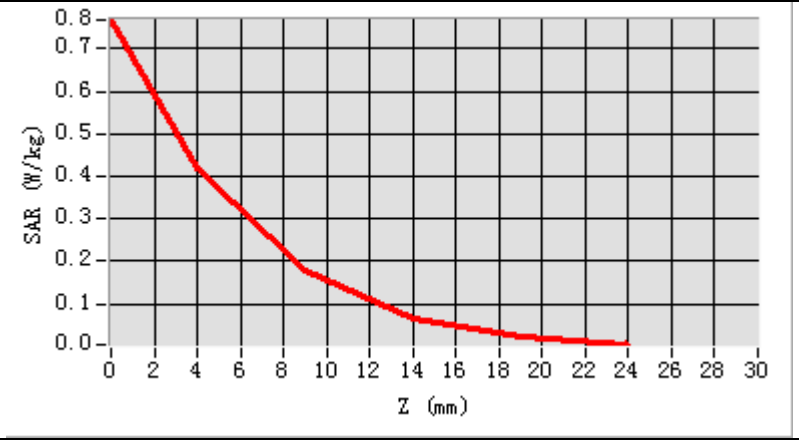
Hot spot position



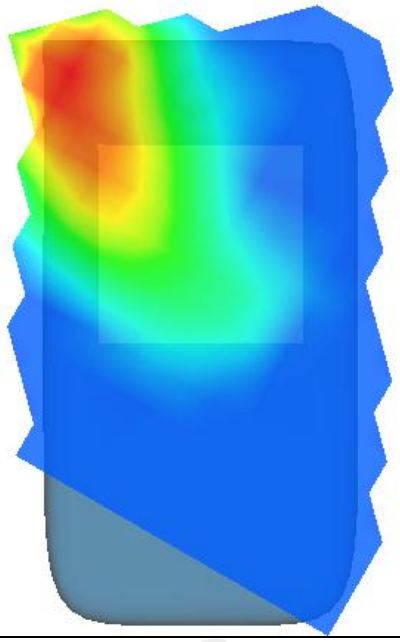
WLAN 2.4

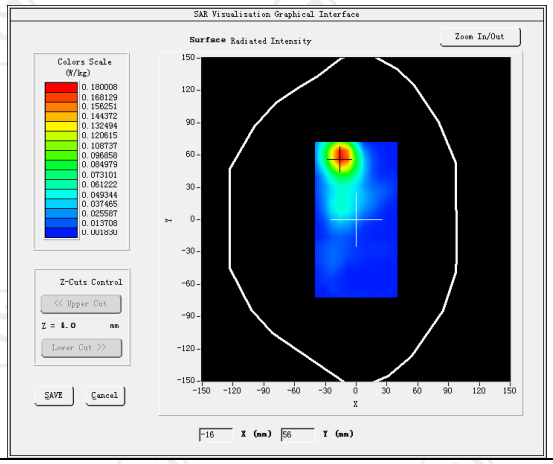
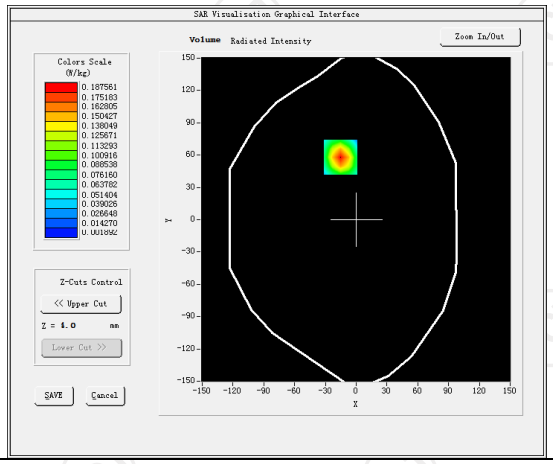
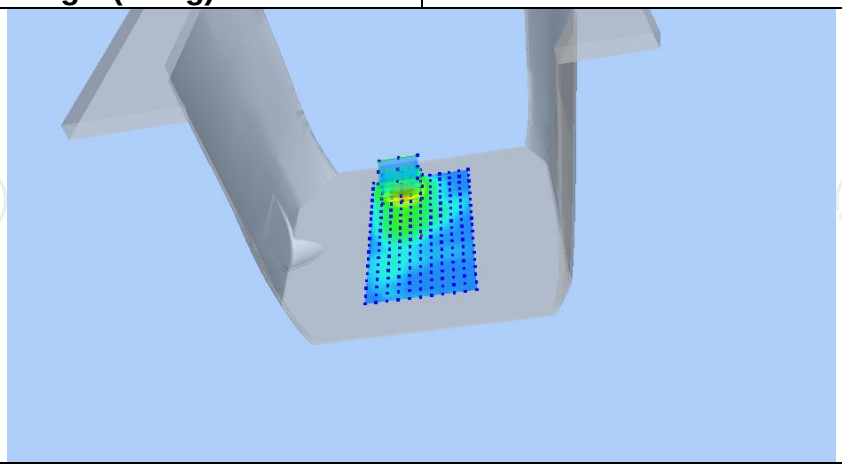
MEASUREMENT 1	
Hight Band SAR (Channel 11):	Date: 04/26/2021
Frequency (MHz)	2462.000000
Relative permittivity (real part)	37.852831
Relative permittivity (imaginary part)	13.546209
Conductivity (S/m)	1.812611
Variation (%)	-1.340000
Crest Factor	1.0
Probe Conversion factor	2.31
E-Field Probe:	SSE2 (SN 36/20 EPGO346)
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	Right head
Device Position	Cheek
Band	IEEE 802.11g ISM
SURFACE SAR	**VOLUME SAR**
	
Maximum location: X=-12.00, Y=20.00 SAR Peak: 0.80 W/kg	
SAR 10g (W/Kg)	0.101251
SAR 1g (W/Kg)	0.201150
	

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.8020	0.4203	0.1872	0.0762	0.0311

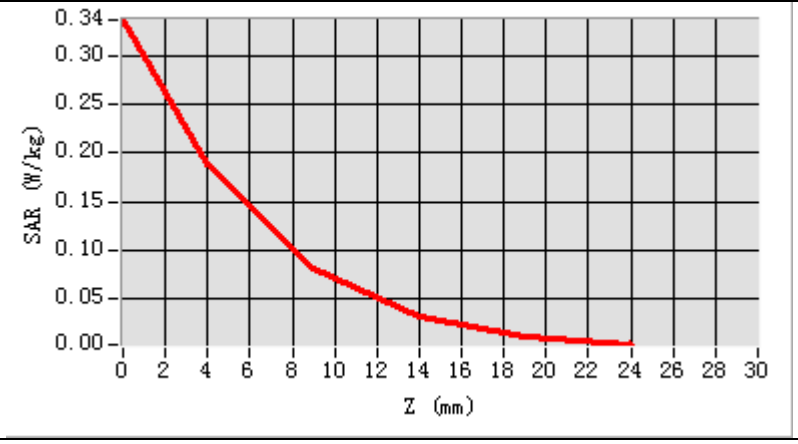


Hot spot position

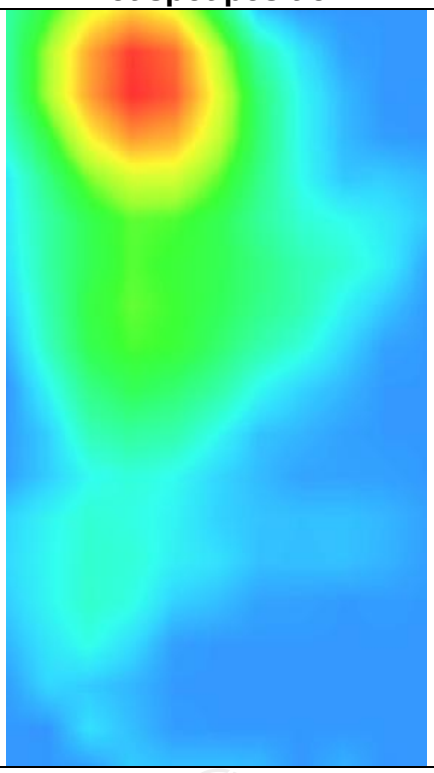


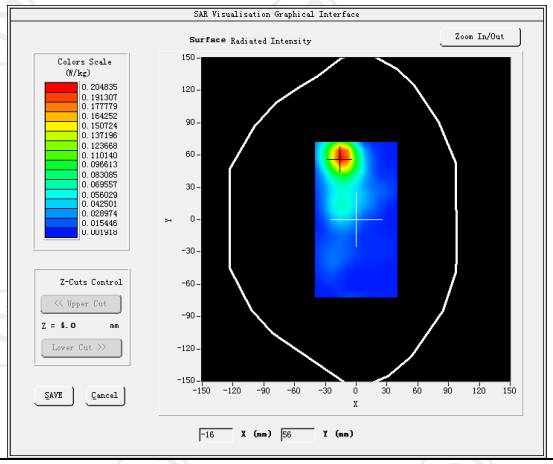
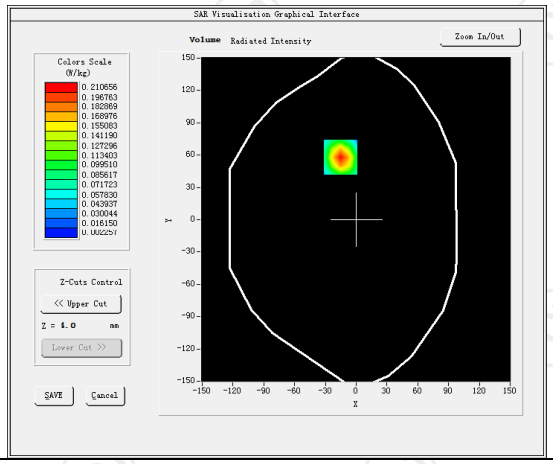
MEASUREMENT 2	
Hight Band SAR (Channel 11):	Date: 04/26/2021
Frequency (MHz)	2462.000000
Relative permittivity (real part)	54.630667
Relative permittivity (imaginary part)	14.318428
Conductivity (S/m)	1.982536
Variation (%)	2.010000
Crest Factor	1.0
Probe Conversion factor	2.37
E-Field Probe:	SSE2 (SN 36/20 EPGO346)
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(0mm)
Band	IEEE 802.11g ISM
SURFACE SAR	**VOLUME SAR**
	
Maximum location: X=-11.00, Y=57.00 SAR Peak: 0.34 W/kg	
SAR 10g (W/Kg)	0.128131
SAR 1g (W/Kg)	0.184304
	

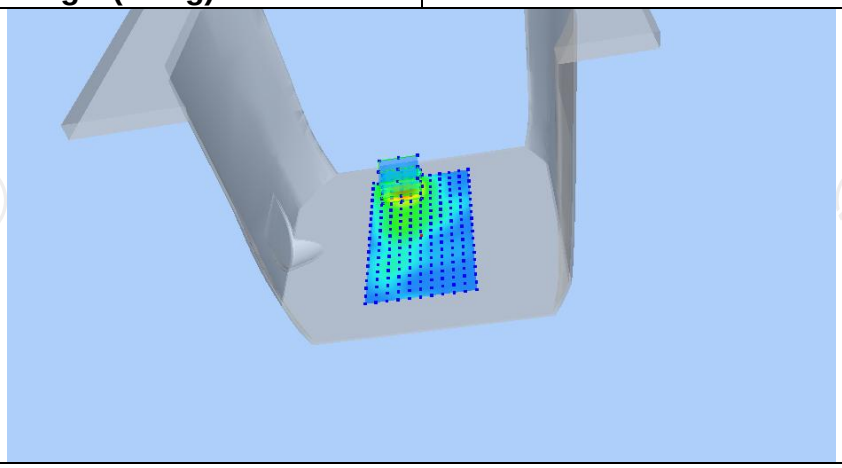
Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.3401	0.1882	0.0824	0.0321	0.0110



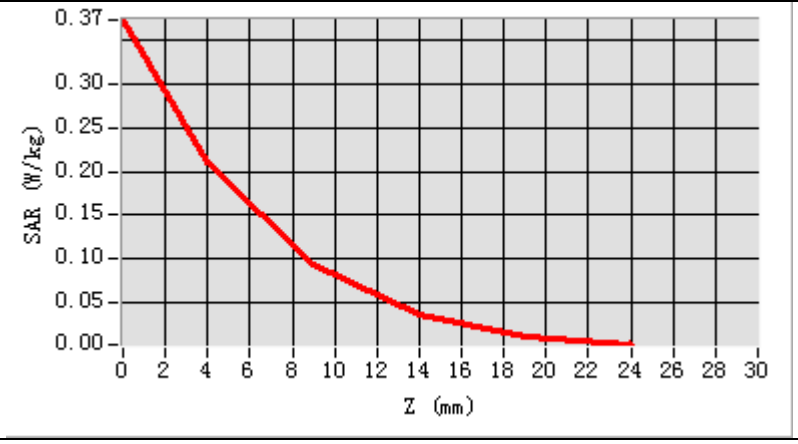
Hot spot position



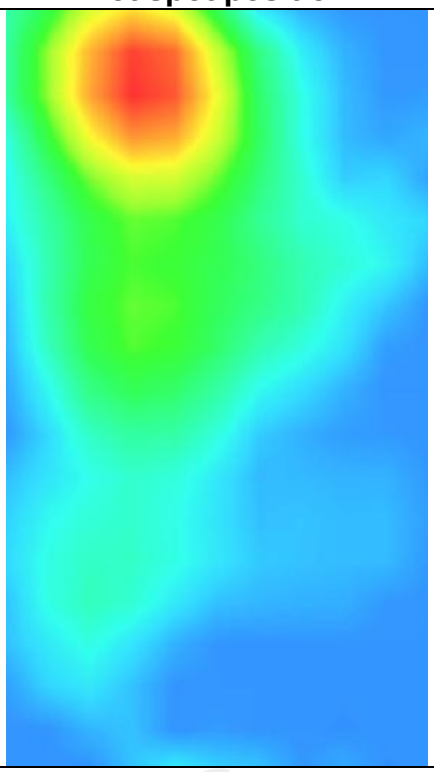
MEASUREMENT 3	
Hight Band SAR (Channel 11):	Date: 04/26/2021
Frequency (MHz)	2462.000000
Relative permittivity (real part)	54.630667
Relative permittivity (imaginary part)	14.318428
Conductivity (S/m)	1.982536
Variation (%)	-3.110000
Crest Factor	1.0
Probe Conversion factor	2.37
E-Field Probe:	SSE2 (SN 36/20 EPGO346)
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(0mm)
Band	IEEE 802.11g ISM(hotspot)
SURFACE SAR	**VOLUME SAR**
	
Maximum location: X=-14.00, Y=55.00 SAR Peak: 0.37 W/kg	
SAR 10g (W/Kg)	0.134240
SAR 1g (W/Kg)	0.205290



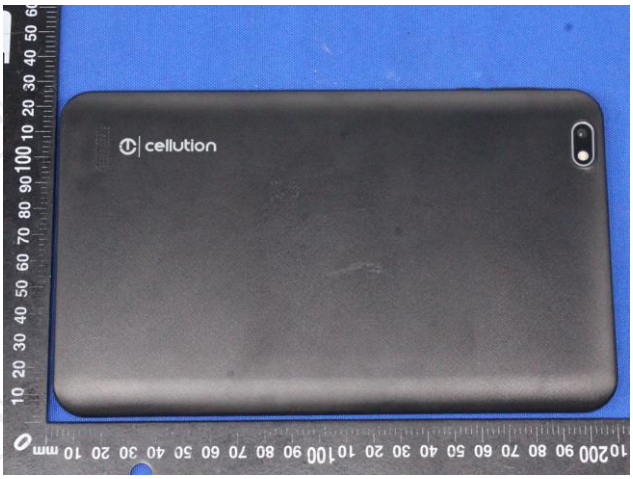
Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.3698	0.2110	0.1040	0.0372	0.0120



Hot spot position



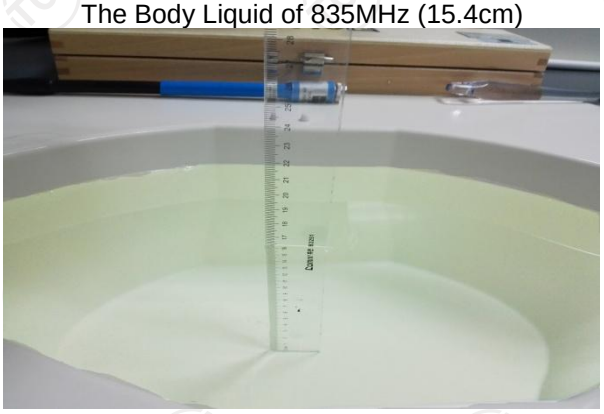
13. Appendix A: EUT Photos



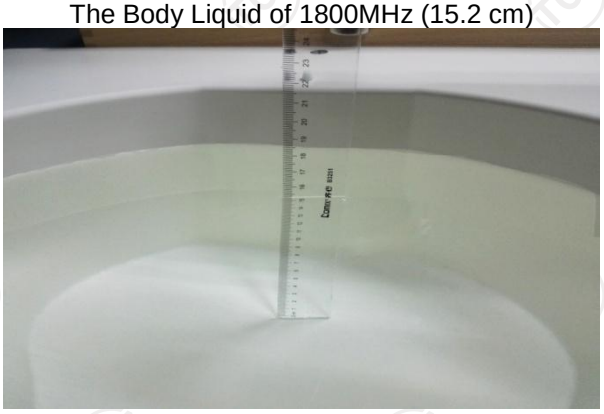
Liquid depth

The Body Liquid of 835MHz (15.4cm)

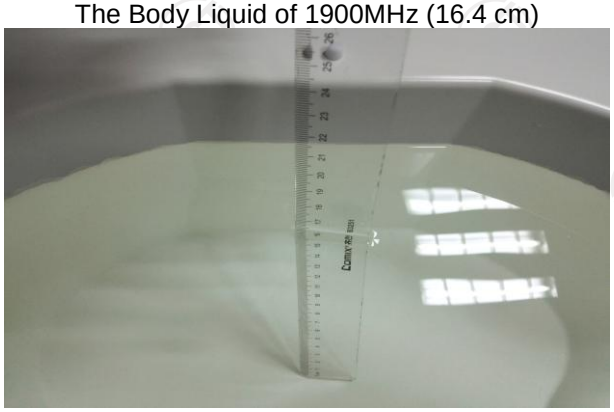
The Body Liquid of 1800MHz (15.2 cm)



The Body Liquid of 1900MHz (16.4 cm)

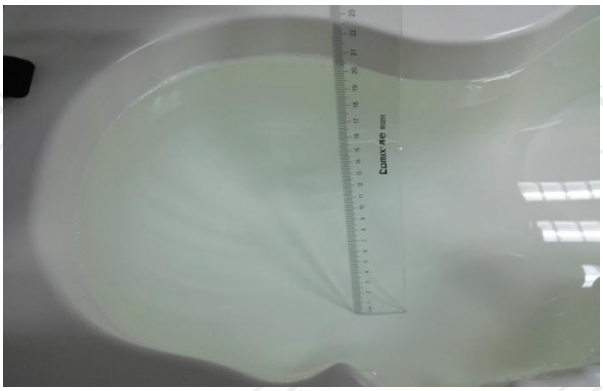


The Body Liquid of 2450MHz (15.3cm)

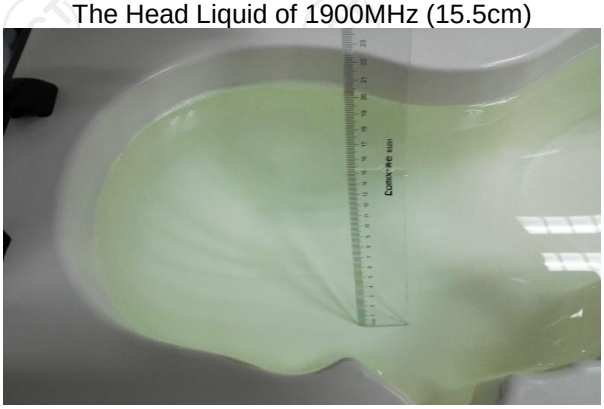


The Body Liquid of 2600MHz (16.5cm)

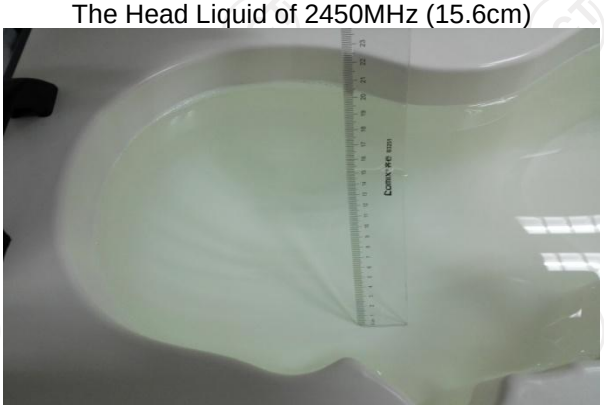
The Head Liquid of 1900MHz (15.5cm)



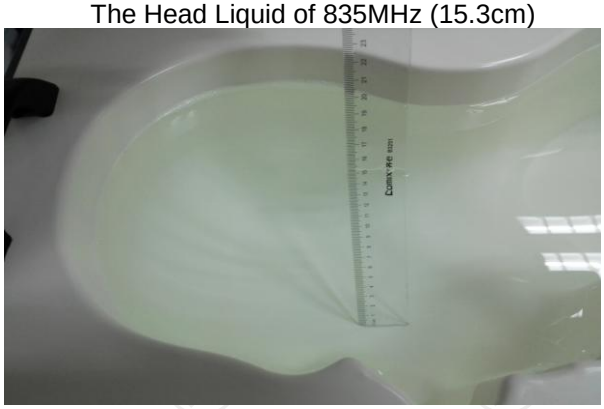
The Head Liquid of 2450MHz (15.6cm)



The Head Liquid of 835MHz (15.3cm)

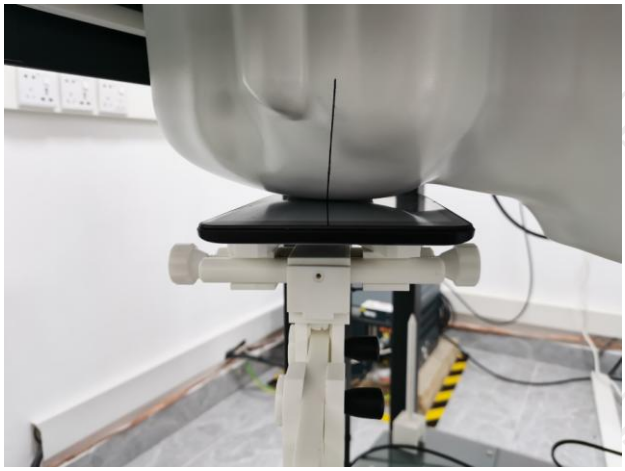


The Head Liquid of 1800MHz (15.2cm)

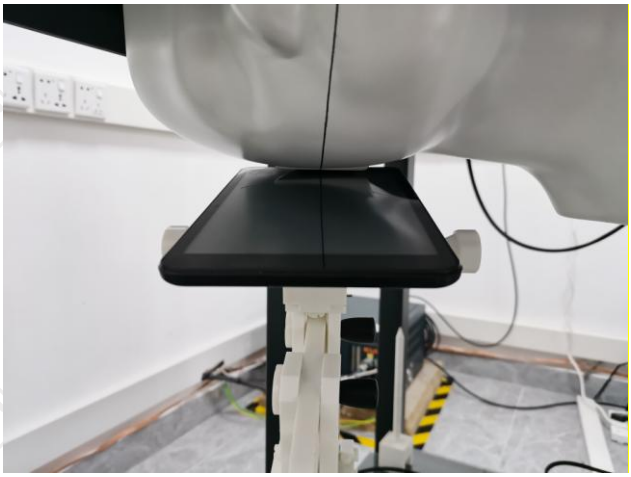


The Head Liquid of 1800MHz (15.2cm)

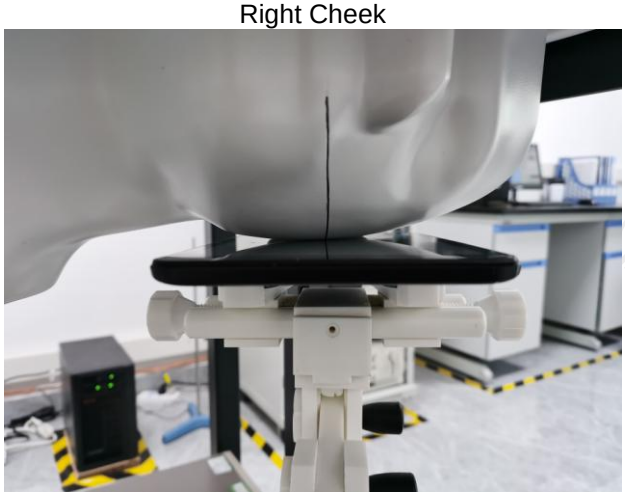
Appendix B: Test Setup Photos



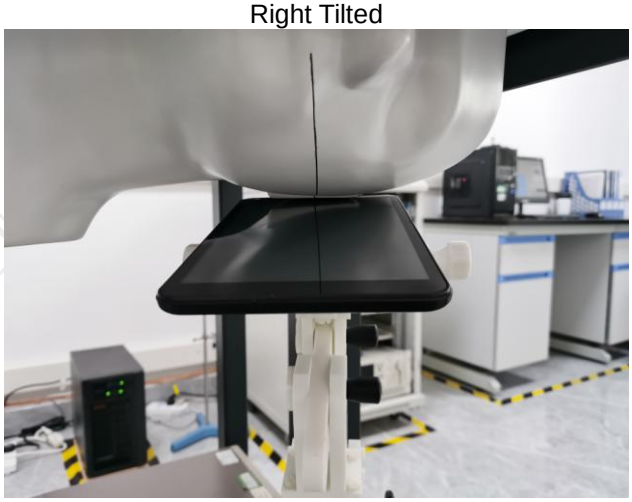
Right Cheek



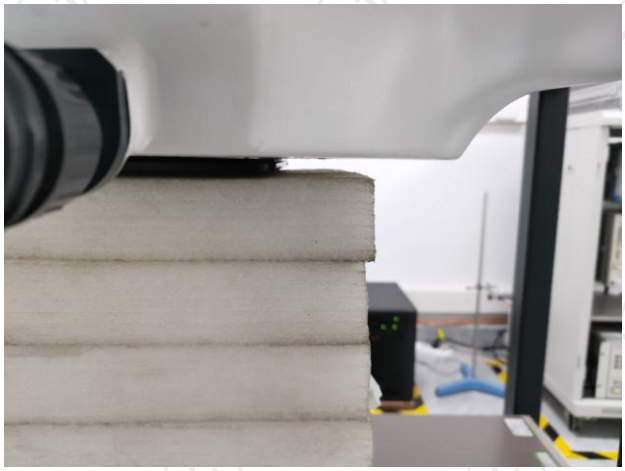
Right Tilted



Left Cheek



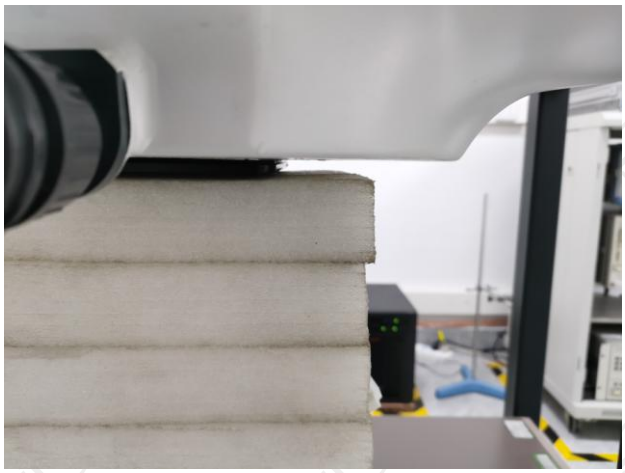
Left Tilted



Body worn – Front (0mm)

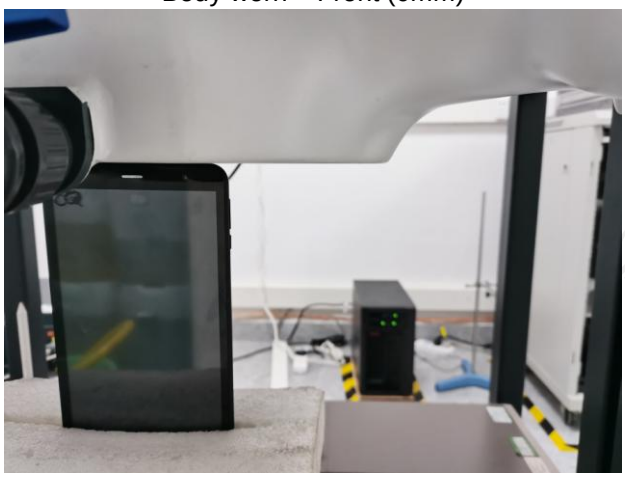
Body worn – Back (0mm)

Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com



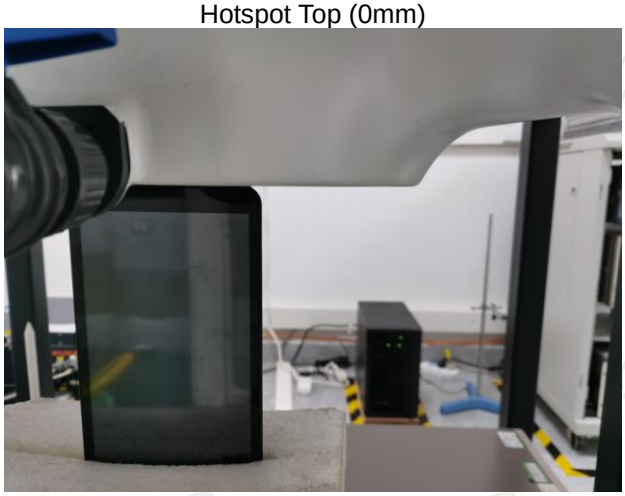
Body worn – Front (0mm)

Body worn – Back (0mm)



Hotspot Top (0mm)

Hotspot Right (0mm)



Hotspot Bottom (0mm)

Appendix C: Probe Calibration Certificate

COMOSAR E-FIELD Probe

COMOSAR E-Field Probe Calibration Report

Ref : ACR.297.1.20.MVGB.A

SHENZHEN TONGCE TESTING LAB.

TCT TESTING INDUSTRIAL PARK, FUQIAO 5TH INDUSTRIAL ZONE, FUHAI STREET, BAOAN DISTRICT, SHENZHEN, GUANGDONG , 518103, PEOPLES REPUBLIC OF CHINA

MVG COMOSAR DOSIMETRIC E-FIELD PROBE

SERIAL NO.: SN 36/20 EPGO346

Calibrated at MVG

Z.I. de la pointe du diable

Technopôle Brest Iroise – 295 avenue Alexis de Rochon

29280 PLOUZANE - FRANCE

Calibration date: 10/23/2020

Accreditations #2-6789 and #2-6814
Scope available on www.cofrac.fr

Summary:

This document presents the method and results from an accredited COMOSAR E-Field Probe calibration performed at MVG, using the CALIPROBE test bench, for use with a MVG COMOSAR system only. The test results covered by accreditation are traceable to the International System of Units (SI).

Page: 1/10

	Name	Function	Date	Signature
Prepared by :	Jérôme LUC	Technical Manager	10/23/2020	
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Distribution :	SHENHEN TONGCE TESTING LAB.

Issue	Name	Date	Modifications
A	Jérôme LUC	10/23/2020	Initial release

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1 DEVICE UNDER TEST

Device Under Test	
Device Type	COMOSAR DOSIMETRIC E FIELD PROBE
Manufacturer	MVG
Model	SSE2
Serial Number	SN 36/20 EPGO346
Product Condition (new / used)	New
Frequency Range of Probe	0.15 GHz-6GHz
Resistance of Three Dipoles at Connector	Dipole 1: R1=0.217 MΩ Dipole 2: R2=0.245 MΩ Dipole 3: R3=0.219 MΩ

2 PRODUCT DESCRIPTION

2.1 GENERAL INFORMATION

MVG's COMOSAR E field Probes are built in accordance to the IEEE 1528, FCC KDB865664 D01, CENELEC EN62209 and CEI/IEC 62209 standards.

Figure 1 – *MVG COMOSAR Dosimetric E field Dipole*

Probe Length	330 mm
Length of Individual Dipoles	2 mm
Maximum external diameter	8 mm
Probe Tip External Diameter	2.5 mm
Distance between dipoles / probe extremity	1 mm

3 MEASUREMENT METHOD

The IEEE 1528, FCC KDB865664 D01, CENELEC EN62209 and CEI/IEC 62209 standards provide recommended practices for the probe calibrations, including the performance characteristics of interest and methods by which to assess their affect. All calibrations / measurements performed meet the fore mentioned standards.

3.1 LINEARITY

The evaluation of the linearity was done in free space using the waveguide, performing a power sweep to cover the SAR range 0.01W/kg to 100W/kg.

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3.2 SENSITIVITY

The sensitivity factors of the three dipoles were determined using a two step calibration method (air and tissue simulating liquid) using waveguides as outlined in the standards.

3.3 LOWER DETECTION LIMIT

The lower detection limit was assessed using the same measurement set up as used for the linearity measurement. The required lower detection limit is 10 mW/kg.

3.4 ISOTROPY

The axial isotropy was evaluated by exposing the probe to a reference wave from a standard dipole with the dipole mounted under the flat phantom in the test configuration suggested for system validations and checks. The probe was rotated along its main axis from 0 to 360 degrees in 15-degree steps. The hemispherical isotropy is determined by inserting the probe in a thin plastic box filled with tissue-equivalent liquid, with the plastic box illuminated with the fields from a half wave dipole. The dipole is rotated about its axis (0°–180°) in 15° increments. At each step the probe is rotated about its axis (0°–360°).

3.1 BOUNDARY EFFECT

The boundary effect is defined as the deviation between the SAR measured data and the expected exponential decay in the liquid when the probe is oriented normal to the interface. To evaluate this effect, the liquid filled flat phantom is exposed to fields from either a reference dipole or waveguide. With the probe normal to the phantom surface, the peak spatial average SAR is measured and compared to the analytical value at the surface.

The boundary effect uncertainty can be estimated according to the following uncertainty approximation formula based on linear and exponential extrapolations between the surface and d_{be} + d_{step} along lines that are approximately normal to the surface:

$$\mathrm{SAR}_{\mathrm{uncertainty}}[\%] = \delta\mathrm{SAR}_{be}\frac{(d_{be}+d_{step})^2}{2d_{step}}\frac{\left(e^{-d_{be}/(\delta/2)}\right)}{\delta/2} \quad \text{for } (d_{be}+d_{step}) < 10\text{ mm}$$

where

$\mathrm{SAR}_{\mathrm{uncertainty}}$	is the uncertainty in percent of the probe boundary effect
d_{be}	is the distance between the surface and the closest *zoom-scan* measurement point, in millimetre
Δ_{step}	is the separation distance between the first and second measurement points that are closest to the phantom surface, in millimetre, assuming the boundary effect at the second location is negligible
δ	is the minimum penetration depth in millimetres of the head tissue-equivalent liquids defined in this standard, i.e., $\delta \approx$ 14 mm at 3 GHz;
$\Delta\mathrm{SAR}_{be}$	in percent of SAR is the deviation between the measured SAR value, at the distance d_{be} from the boundary, and the analytical SAR value.

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The measured worst case boundary effect SARuncertainty[%] for scanning distances larger than 4mm is 1.0% Limit ,2%).

4 MEASUREMENT UNCERTAINTY

The guidelines outlined in the IEEE 1528, OET 65 Bulletin C, CENELEC EN50361 and CEI/IEC 62209 standards were followed to generate the measurement uncertainty associated with an E-field probe calibration using the waveguide technique. All uncertainties listed below represent an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2, traceable to the Internationally Accepted Guides to Measurement Uncertainty.

Uncertainty analysis of the probe calibration in waveguide					
ERROR SOURCES	**Uncertainty value (%)**	**Probability Distribution**	**Divisor**	**ci**	**Standard Uncertainty (%)**
Expanded uncertainty 95 % confidence level k = 2					14 %

5 CALIBRATION MEASUREMENT RESULTS

Calibration Parameters	
Liquid Temperature	20 +/- 1 °C
Lab Temperature	20 +/- 1 °C
Lab Humidity	30-80 %

5.1 SENSITIVITY IN AIR

Normx dipole 1 (μV/(V/m)^2)	Normy dipole 2 (μV/(V/m)^2)	Normz dipole 3 (μV/(V/m)^2)
0.81	0.71	0.80

DCP dipole 1 (mV)	DCP dipole 2 (mV)	DCP dipole 3 (mV)
115	112	112

Calibration curves ei=f(V) (i=1,2,3) allow to obtain E-field value using the formula:

$$E = \sqrt{E_1^{\ 2} + E_2^{\ 2} + E_3^{\ 2}}$$

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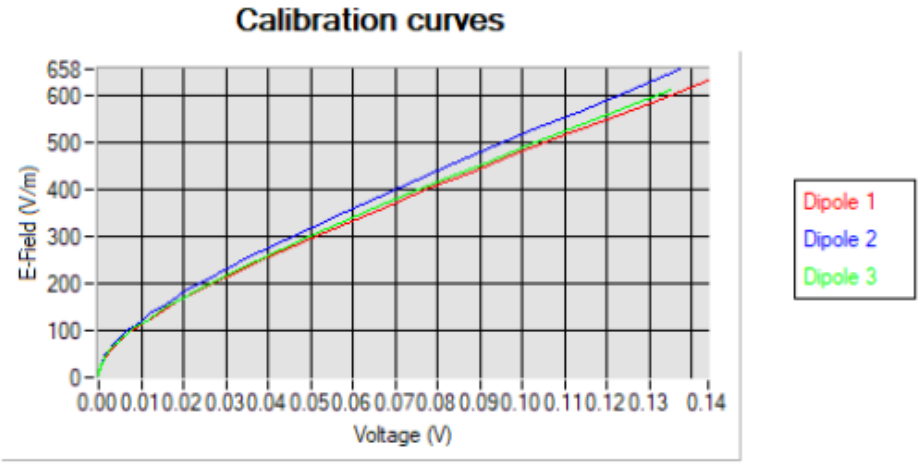
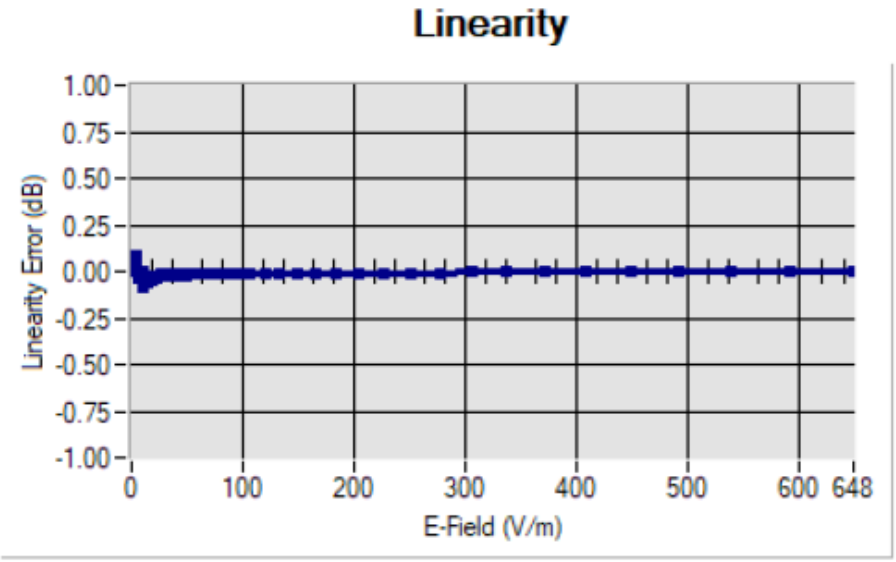


5.2 LINEARITY



Linearity:+/-1.97% (+/-0.09dB)

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5.3 SENSITIVITY IN LIQUID

Liquid	Frequency (MHz +/- 100MHz)	ConvF	Epsilon (S/m)	Permittivity
HL750	750	1.71	0.93	40.76
BL750	750	1.78	0.98	56.70
HL900	900	1.91	0.93	41.94
BL900	900	1.96	0.98	54.62
HL1800	1800	2.08	1.29	40.86
BL1800	1800	2.16	1.47	52.27
HL2000	2000	2.03	1.42	38.37
BL2000	2000	2.10	1.52	52.03
HL2450	2450	2.31	1.80	38.72
BL2450	2450	2.37	1.97	54.91
HL2600	2600	2.16	1.89	39.98
BL2600	2600	2.23	2.18	54.42
HL5200	5200	2.01	4.45	36.68
BL5200	5200	2.08	5.46	49.02
HL5800	5800	2.06	5.08	34.81
BL5800	5800	2.13	6.12	47.81

LOWER DETECTION LIMIT: 8mW/kg

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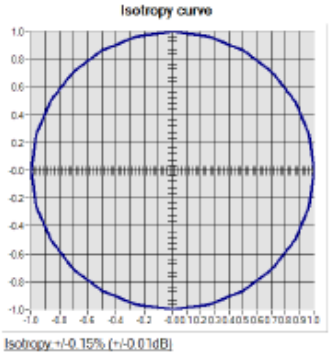
5.4 ISOTROPY

HL1800 MHz



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6 LIST OF EQUIPMENT

Equipment Summary Sheet				
Equipment Description	**Manufacturer / Model**	**Identification No.**	**Current Calibration Date**	**Next Calibration Date**
Flat Phantom	MVG	SN-20/09-SAM71	Validated. No cal required.	Validated. No cal required.
COMOSAR Test Bench	Version 3	NA	Validated. No cal required.	Validated. No cal required.
Network Analyzer	Rohde & Schwarz ZVM	100203	05/2019	05/2022
Network Analyzer – Calibration kit	Rohde & Schwarz ZV-Z235	101223	05/2019	05/2022
Multimeter	Keithley 2000	1160271	02/2020	02/2023
Signal Generator	Rohde & Schwarz SMB	106589	04/2019	04/2022
Amplifier	Aethercomm	SN 046	Characterized prior to test. No cal required.	Characterized prior to test. No cal required.
Power Meter	NI-USB 5680	170100013	05/2019	05/2022
Directional Coupler	Narda 4216-20	01386	Characterized prior to test. No cal required.	Characterized prior to test. No cal required.
Waveguide	Mega Industries	069Y7-158-13-712	Validated. No cal required.	Validated. No cal required.
Waveguide Transition	Mega Industries	069Y7-158-13-701	Validated. No cal required.	Validated. No cal required.
Waveguide Termination	Mega Industries	069Y7-158-13-701	Validated. No cal required.	Validated. No cal required.
Temperature / Humidity Sensor	Testo 184 H1	44220687	05/2020	05/2023

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