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# SAR Test Report

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Report No.: AGC00552200501EH01

**PRODUCT DESIGNATION** : Smart Phone

**BRAND NAME** : CUBOT

**MODEL NAME** : NOTE 7

**APPLICANT** : Shenzhen Huafului Technology Co., Ltd.

**DATE OF ISSUE** : Jun. 23,2020

**STANDARD(S)** : EN 50360:2017; EN62209-1:2016;  
EN62209-2:2010; EN50566:2017; EN 62479:2010

**REPORT VERSION** : V1.0

**Attestation of Global Compliance(Shenzhen) Co., Ltd.**

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### Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Jun. 23,2020	Valid	Initial Release



## Test Report

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Product Designation	Smart Phone
Brand Name	CUBOT
Model Name	NOTE 7
Different Description	N/A
EUT Voltage	DC3.8V by battery
Applicable Standard	EN 50360:2017; EN62209-1:2016; EN62209-2:2010; EN50566:2017; EN 62479:2010
Test Date	Jun. 05,2020 to Jun. 19,2020
Performed Location	Attestation of Global Compliance(Shenzhen) Co., Ltd. 1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao 'an District, Shenzhen, Guangdong, China
Report Template	AGCRT-EC-4G/SAR (2018-01-01)

Note: The results of testing in this report apply to the product/system which was tested only.

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## TABLE OF CONTENTS

<b>1. SUMMARY OF MAXIMUM SAR VALUE .....</b>	<b>5</b>
<b>2. GENERAL INFORMATION.....</b>	<b>6</b>
2.1. EUT DESCRIPTION.....	6
<b>3. SAR MEASUREMENT SYSTEM.....</b>	<b>8</b>
3.1. THE SATIMO SYSTEM USED FOR PERFORMING COMPLIANCE TESTS CONSISTS OF FOLLOWING ITEMS .....	8
3.2. COMOSAR E-FIELD PROBE .....	9
3.3. ROBOT.....	9
3.4. VIDEO POSITIONING SYSTEM .....	10
3.5. DEVICE HOLDER .....	10
3.6. SAM TWIN PHANTOM.....	11
<b>4. SAR MEASUREMENT PROCEDURE.....</b>	<b>11</b>
4.1. SPECIFIC ABSORPTION RATE (SAR).....	11
4.2. SAR MEASUREMENT PROCEDURE .....	13
<b>5. TISSUE SIMULATING LIQUID.....</b>	<b>16</b>
5.1. THE COMPOSITION OF THE TISSUE SIMULATING LIQUID.....	16
5.2. TISSUE DIELECTRIC PARAMETERS FOR HEAD AND BODY PHANTOMS .....	16
5.3. TISSUE CALIBRATION RESULT .....	17
<b>6. SAR SYSTEM CHECK PROCEDURE .....</b>	<b>18</b>
6.1. SAR SYSTEM CHECK PROCEDURES .....	18
6.2. SAR SYSTEM CHECK.....	19
<b>7. EUT TEST POSITION .....</b>	<b>21</b>
7.1. DEFINE TWO IMAGINARY LINES ON THE HANDSET.....	21
7.2. CHEEK POSITION .....	22
7.3. TILT POSITION.....	22
7.4. BODY WORN (LIMBS&HOTSPOT) POSITION.....	23
<b>8. SAR EXPOSURE LIMITS .....</b>	<b>24</b>
<b>9. TEST EQUIPMENT LIST .....</b>	<b>25</b>
<b>10. MEASUREMENT UNCERTAINTY .....</b>	<b>26</b>
<b>11. CONDUCTED POWER MEASUREMENT.....</b>	<b>29</b>
<b>12. TEST RESULTS.....</b>	<b>50</b>
12.1. SAR TEST RESULTS SUMMARY.....	50
<b>APPENDIX A. SAR SYSTEM CHECK DATA .....</b>	<b>72</b>
<b>APPENDIX B. SAR MEASUREMENT DATA.....</b>	<b>86</b>
<b>APPENDIX C. TEST SETUP PHOTOGRAPHS.....</b>	<b>198</b>
<b>APPENDIX D. CALIBRATION DATA .....</b>	<b>212</b>



## 1. SUMMARY OF MAXIMUM SAR VALUE

The maximum results of Specific Absorption Rate (SAR) found during testing for EUT are as follows:

Frequency Band	Highest Reported 10g-SAR(W/Kg)				SAR Test Result
	Head (0mm)	Body-worn (with 5mm separation)	Hotspot (with 10mm separation)	Limbs (with 0mm separation)	
GSM 900	0.232	0.402	0.328	0.985	PASS
DCS 1800	0.132	0.630	0.547	2.192	
WCDMA Band I	0.348	1.150	0.587	2.356	
WCDMA Band VIII	0.289	0.411	0.147	0.844	
LTE Band 1	0.295	1.144	0.631	2.466	
LTE Band 3	0.202	1.079	0.605	3.428	
LTE Band 7	0.039	0.376	0.269	1.194	
LTE Band 8	0.200	0.340	0.320	0.934	
LTE Band 20	0.052	0.111	0.093	0.457	
WIFI 2.4G	0.309	0.198	0.074	0.674	
Simultaneous Reported SAR	1.348		0.682	3.914	
SAR Test Limit (W/Kg)	2.0		2.0	4.0	

This device is compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (2.0 W/Kg & 4.0W/Kg).



## 2. GENERAL INFORMATION

### 2.1. EUT Description

General Information	
Product Designation	Smart Phone
Test Model	NOTE 7
Hardware Version	TE647_MAIN_PCN_V1.0
Software Version	CUBOT_NOTE 7_A041C_V01_20200422
Device Category	Portable
RF Exposure Environment	Uncontrolled
Antenna Type	Internal
GSM and GPRS&EGPRS	
Support Band	<input checked="" type="checkbox"/> GSM 900 <input checked="" type="checkbox"/> DCS 1800 (EU Frequency) <input checked="" type="checkbox"/> GSM 850 <input checked="" type="checkbox"/> PCS 1900 (none EU Frequency)
GPRS & EGPRS Type	Class B
GPRS & EGPRS Class	Class 12(1Tx+4Rx, 2Tx+3Rx, 3Tx+2Rx, 4Tx+1Rx)
TX Frequency Range	GSM900:880-915MHz ; DCS1800:1710-1785MHz
RX Frequency Range	GSM900:925-960MHz ; DCS1800:1805-1880MHz
Release Version	R99
Type of modulation	GMSK for GSM/GPRS; GMSK & 8-PSK for EGPRS
Antenna Gain	GSM900: 2.4dBi, DCS1800: 2.49dBi
Max. Avg. Output Power	GSM900:33.24dBm; DCS1800:30.95dBm
Bluetooth	
Operation Frequency	2402~2480MHz
Antenna Gain	0dBi
Bluetooth Version	V4.2
Type of modulation	<b>BR/EDR:</b> GFSK, $\pi/4$ -DQPSK, 8-DPSK; <b>BLE:</b> GFSK
EIRP	<b>BR/EDR:</b> 7.55dBm; <b>BLE:</b> -3.30dBm
WIFI	
WIFI Specification	<input type="checkbox"/> 802.11a <input checked="" type="checkbox"/> 802.11b <input checked="" type="checkbox"/> 802.11g <input checked="" type="checkbox"/> 802.11n(20) <input checked="" type="checkbox"/> 802.11n(40)
Operation Frequency	2412~2472MHz
EIRP	11b:14.97dBm, 11g:12.94dBm, 11n(20):12.88dBm, 11n(40):12.63dBm
Antenna Gain	0dBi



### EUT Description (Continue)

<b>WCDMA</b>	
Support Band	<input checked="" type="checkbox"/> UMTS FDD Band I <input checked="" type="checkbox"/> UMTS FDD Band VIII <input type="checkbox"/> UMTS FDD Band II <input type="checkbox"/> UMTS FDD Band V
HS Type	HSPA(HSUPA/HSDPA)
TX Frequency Range	FDD Band I : 1920-1980MHz; FDD Band VIII : 880-915MHz;
RX Frequency Range	FDD Band I : 2110-2170MHz; FDD Band VIII : 925-960MHz ;
Release Version	Rel-6
Type of modulation	HSDPA:QPSK/16QAM; HSUPA:BPSK; WCDMA:QPSK
Antenna Gain	Band I:1.98dBi, Band VIII:2.4dBi
Max. Avg. Output Power	Band I:23.64dBm; Band VIII:23.17dBm
<b>LTE</b>	
Support Band	<input checked="" type="checkbox"/> Band 1 <input checked="" type="checkbox"/> Band 3 <input checked="" type="checkbox"/> Band 7 <input checked="" type="checkbox"/> Band 8 <input checked="" type="checkbox"/> Band 20
TX Frequency Range	Band 1:1920-1980 MHz; Band 3: 1710-1785 MHz; Band 7:2500-2570MHz Band 8:880-915 MHz; Band 20:832-862 MHz;
RX Frequency Range	Band 1:2110-2170 MHz; Band 3: 1805-1880 MHz; Band 7:2620-2690MHz Band 8: 925-960 MHz; Band 20: 791-821 MHz;
Release Version	Rel-8
Type of modulation	QPSK,16QAM
Antenna Gain	Band 1 :1.98dBi; Band 3 :2.49dBi; Band 7 :1.55dBi; Band 8 :2.40dBi; Band 20 :1.74dBi;
Diversity Antenna Gain	Band 1 :1.89dBi; Band 3 :2.36dBi; Band 7 :1.47dBi; Band 8 :2.33dBi; Band 20 :1.58dBi;
Max. Avg. Output Power	Band 1: 24.36dBm, Band 3: 24.58dBm , Band 7:24.00dBm; Band 8:24.42dBm; Band 20:23.86dBm;
<b>Li-ion Battery</b>	
Brand Name	CUBOT
Model Name	NOTE 7
Manufacturer Name	Zhongshan Tianmao Battery Co., Ltd.
Manufacturer Address	NO.208, Qian Jin One Road, The Third Industrial Zone, Tanzhou Town, Zhongshan City, China
Capacitance	3100mAh
Rated Voltage	DC3.8V
Charging Voltage	DC4.35 V

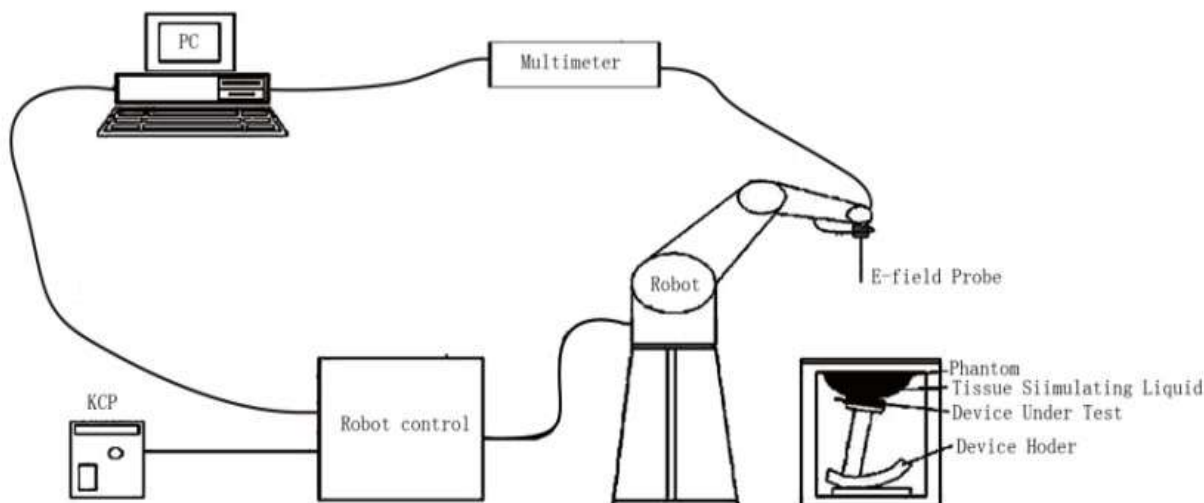
Note: 1.The sample used for testing is end product;

2.Diversity antenna just for receive;



### 3. SAR MEASUREMENT SYSTEM

#### 3.1. The SATIMO system used for performing compliance tests consists of following items




The COMOSAR system for performing compliance tests consists of the following items:

- The PC. It controls most of the bench devices and stores measurement data. A computer running WinXP and the Opensar software.
- The E-Field probe. The probe is a 3-axis system made of 3 distinct dipoles. Each dipole returns a voltage in function of the ambient electric field.
- The Keithley multimeter measures each probe dipole voltages.
- The SAM phantom simulates a human head. The measurement of the electric field is made inside the phantom.
- The liquids simulate the dielectric properties of the human head tissues.
- The network emulator controls the mobile phone under test.
- The validation dipoles are used to measure a reference SAR. They are used to periodically check the bench to make sure that there is no drift of the system characteristics over time.
- The phantom, the device holder and other accessories according to the targeted measurement.

### 3.2. COMOSAR E-Field Probe

The SAR measurement is conducted with the dosimetric probe manufactured by SATIMO. The probe is specially designed and calibrated for use in liquid with high permittivity. The dosimetric probe has special calibration in liquid at different frequency. SATIMO conducts the probe calibration in compliance with international and national standards (e.g.EN62209 etc.)Under ISO17025.The calibration data are in Appendix D.

#### Isotropic E-Field Probe Specification

<b>Model</b>	SSE5	
<b>Manufacture</b>	MVG	
<b>Identification No.</b>	SN 22/12 EP159	
<b>Frequency</b>	0.75GHz-3GHz Linearity:±0.11dB(0.75GHz-3GHz)	
<b>Dynamic Range</b>	0.01W/Kg-100W/Kg Linearity:±0.11dB	
<b>Dimensions</b>	Overall length:330mm Length of individual dipoles:4.5mm Maximum external diameter:8mm Probe Tip external diameter:5mm Distance between dipoles/ probe extremity:2.7mm	
<b>Application</b>	High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields). Only probe which enables compliance testing for frequencies up to 3 GHz with precisin of better 30%.	

### 3.3. Robot

The COMOSAR system uses the KUKA robot from SATIMO SA (France).For the 6-axis controller COMOSAR system, the KUKA robot controller version from SATIMO is used.

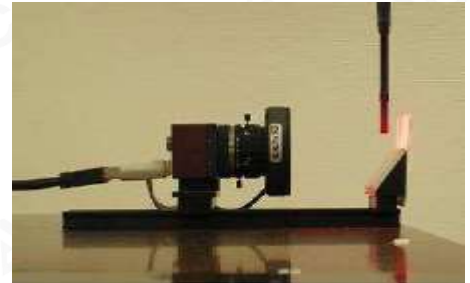
The XL robot series have many features that are important for our application:

- ☐ High precision (repeatability 0.02 mm)
- ☐ High reliability (industrial design)
- ☐ Jerk-free straight movements
- ☐ Low ELF interference (the closed metallic construction shields against motor control fields)
- ☐ 6-axis controller



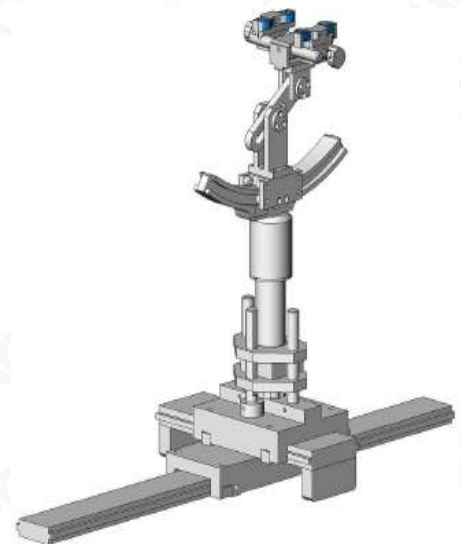
### 3.4. Video Positioning System

The video positioning system is used in OpenSAR to check the probe. Which is composed of a camera, LED, mirror and mechanical parts. The camera is piloted by the main computer with firewire link. During the process, the actual position of the probe tip with respect to the robot arm is measured, as well as the probe length and the horizontal probe offset. The software then corrects all movements, such that the robot coordinates are valid for the probe tip. The repeatability of this process is better than 0.1 mm. If a position has been taught with an aligned probe, the same position will be reached with another aligned probe within 0.1 mm, even if the other probe has different dimensions. During probe rotations, the probe tip will keep its actual position.



### 3.5. Device Holder

The COMOSAR device holder is designed to cope with different positions given in the standard. It has two scales for the device rotation (with respect to the body axis) and the device inclination (with respect to the line between the ear reference points). The rotation center for both scales is the ear reference point (EPR). Thus the device needs no repositioning when changing the angles. The COMOSAR device holder has been made out of low-loss POM material having the following dielectric parameters: relative permittivity  $\epsilon_r = 3$  and loss tangent  $\delta = 0.02$ . The amount of dielectric material has been reduced in the closest vicinity of the device, since measurements have suggested that the influence of the clamp on the test results could thus be lowered.



### 3.6. SAM Twin Phantom

The SAM twin phantom is a fiberglass shell phantom with 2mm shell thickness (except the ear region where shell thickness increases to 6mm). It has three measurement areas:

- ☐ Left head
- ☐ Right head
- ☐ Flat phantom



The bottom plate contains three pair of bolts for locking the device holder. The device holder positions are adjusted to the standard measurement positions in the three sections. A white cover is provided to tap the phantom during off-periods to prevent water evaporation and changes in the liquid parameters. On the phantom top, three reference markers are provided to identify the phantom position with respect to the robot.

## 4. SAR MEASUREMENT PROCEDURE

### 4.1. Specific Absorption Rate (SAR)

SAR is related to the rate at which energy is absorbed per unit mass in object exposed to a radio field. The SAR distribution in a biological body is complicated and is usually carried out by experimental techniques or numerical modeling. The standard recommends limits for two tiers of groups, occupational/controlled and occupational/uncontrolled, based on a person's awareness and ability to exercise control over his or her exposure. In general, occupational/controlled exposure limits are higher than the limits for general population/uncontrolled.

The SAR definition is the time derivative (rate) of the incremental energy (dW) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element(dv) of given mass density (ρ). The equation description is as below:

$$SAR = \frac{d}{dt} \left( \frac{dW}{dm} \right) = \frac{d}{dt} \left( \frac{dW}{\rho dV} \right)$$

SAR is expressed in units of Watts per kilogram (W/Kg)

SAR can be obtained using either of the following equations:

$$SAR = \frac{\sigma E^2}{\rho}$$

$$SAR = c_h \left. \frac{dT}{dt} \right|_{t=0}$$

Where



SAR is the specific absorption rate in watts per kilogram;  
 $E$  is the r.m.s. value of the electric field strength in the tissue in volts per meter;  
 $\sigma$  is the conductivity of the tissue in siemens per metre;  
 $\rho$  is the density of the tissue in kilograms per cubic metre;  
 $c_h$  is the heat capacity of the tissue in joules per kilogram and Kelvin;

$\frac{dT}{dt} \big|_{t=0}$  is the initial time derivative of temperature in the tissue in kelvins per second



## 4.2. SAR Measurement Procedure

a) Measure the local SAR at a test point within 10 mm of the inner surface of the phantom where the measured local SAR exceeds the lower detection limit of the measurement system. Preferably, the test point will be above the expected peak SAR location within said distance from the phantom surface. As explained at Step f) below, a comparative measurement will be made by the system at the same point after completion of the SAR measurement.

b) The area over which the SAR measurement is performed shall cover at least an area larger than the projection of the handset and antenna. For some handsets, the area projected onto the phantom can be large such that the probe may not reach all points. In this case, rotated phantoms may be used and the area may be assessed by multiple overlapping area scans. Measure the two-dimensional SAR distribution within the phantom (area scan procedure). The boundary of the measurement area shall be with respect to the SAM phantom requirements. The measurement resolution and spatial resolution for interpolation shall be chosen to allow identification of the local peak locations to within one-half of the linear dimension of the corresponding side of the zoom-scan volume. The maximum grid spacing shall be 20 mm for frequencies equal to or below 3 GHz and  $(60/f \text{ [GHz]})$  mm for frequencies above 3 GHz. The resolution SAR uncertainty of the measurement can be estimated using the functions in 7.2.10. The maximum distance between the geometrical centre of the probe detectors and the inner surface of the phantom shall be  $\leq 5$  mm for frequencies equal to or below 3 GHz and  $\delta \ln(2)/2$  mm for frequencies above 3 GHz, where  $\delta$  is the plane wave penetration depth and  $\ln(x)$  is the natural logarithm [80]. The maximum variation of the sensor-phantom surface distance shall be  $\pm 1$  mm for frequencies equal to or below 3 GHz and  $\pm 0,5$  mm for frequencies above 3 GHz. At all measurement points, the angle of the probe with respect to the line normal to the surface shall be less than  $30^\circ$  for frequencies equal to or below 3 GHz and  $20^\circ$  for frequencies above 3 GHz (see Figure 6). Table 1 provides the measurement parameters required for the area scan.

c) From the scanned SAR distribution, identify the position of the maximum SAR value, in addition identify the positions of any local maxima with SAR values within 2 dB of the maximum value that will not be within the zoom scan of other peaks. Additional peaks shall be measured only when the primary peak is within 2 dB of the SAR compliance limit (e.g. 1 W/kg for 1,6 W/kg, 1 g limit; or 1,26 W/kg for 2 W/kg, 10 g limit).

d) Measure the three-dimensional SAR distribution at the local maxima locations identified in Step c) (zoom scan procedure). The horizontal grid step shall be  $(24/f \text{ [GHz]})$  mm or less but not more than 8 mm. The minimum zoom scan size is 30 mm by 30 mm by 30 mm for frequencies equal to or below 3 GHz. For higher frequencies, the minimum zoom scan size can be reduced to 22 mm by 22 mm by 22 mm. A smaller volume zoom scan with tighter spacing between the measurement points is allowed due to steeper decay of the E-field, which may reduce the measurement time. For frequencies above 3 GHz, the grid step in the vertical direction shall not exceed  $(8 - f \text{ [GHz]})$  mm, and for frequencies equal to or below 3 GHz if uniform spacing is used the grid step shall not exceed 5 mm. If variable spacing is used in the vertical direction (non-uniform grids or graded grids), the maximum spacing between the two closest measured points to the phantom shell shall not exceed  $(12/f \text{ [GHz]})$  mm for frequencies above 3 GHz, and shall not exceed 4 mm for frequencies at or below 3 GHz. Furthermore the spacing between farther adjacent points shall increase by an incremental factor not exceeding 1,5. When graded grids are used, extrapolation routines shall be tested according to 7.2.10.3.2 with the same spacing as used in measurements. The maximum distance between the geometrical centre of the probe detectors and the inner surface of the phantom shall be 5 mm for frequencies equal to or below 3 GHz and  $\delta \ln(2)/2$  mm for frequencies above 3 GHz, where  $\delta$  is the plane wave penetration depth and  $\ln(x)$  is the natural logarithm. Separate grids shall be centred on each of the local SAR maxima found in Step c). At all measurement points, the angle of the probe with respect to the line normal to the surface shall be less than  $30^\circ$  for frequencies equal to or below 3 GHz and  $20^\circ$  for frequencies above 3 GHz.



e) Use the post-processing, i.e. the interpolation and extrapolation procedures defined in 6.5, to determine peak spatial-average SAR values.

f) Measure the local SAR at exactly the same test point location as in Step a). The SAR drift of the DUT may be estimated by the difference between the two measured single-point SAR values in Steps a) and f). The SAR drift shall be kept within  $\pm 5\%$ ; otherwise, see 7.2.8 for more information on addressing SAR measurement drift.

**Table 1 – Area scan parameters**

Parameter	DUT transmit frequency being tested	
	$f \leq 3$ GHz	$3 \text{ GHz} < f \leq 6 \text{ GHz}$
Maximum distance between the measured points (geometric centre of the sensors) and the inner phantom surface ( $z_{M1}$ in Figure 6 in mm)	$5 \pm 1$	$\delta \ln(2)/2 \pm 0,5^a$
Maximum spacing between adjacent measured points (see 7.2.10.3.1, in mm) <sup>b</sup>	20 or half of the corresponding zoom scan length, whichever is smaller	$60/f$ or half of the corresponding zoom scan length, whichever is smaller
Maximum angle between the probe axis and the phantom surface normal ( $\alpha$ in Figure 6) <sup>c</sup>	$30^\circ$	$20^\circ$
Tolerance in the probe angle	$1^\circ$	$1^\circ$
<sup>a</sup> $\delta$ is the penetration depth for a plane-wave incident normally on a planar half-space. <sup>b</sup> See 7.2.10 on how $\Delta x$ and $\Delta y$ may be selected for individual area scan requirements. <sup>c</sup> The probe angle with respect to the phantom surface normal is restricted due to the degradation in the measurement accuracy in fields with steep spatial gradients. The measurement accuracy decreases with increasing probe angle and increasing frequency. This is the reason for the tighter probe angle restriction at frequencies above 3 GHz.		

**Table 2 – Zoom scan parameters**

Parameter	DUT transmit frequency being tested	
	$f \leq 3$ GHz	$3 \text{ GHz} < f \leq 6 \text{ GHz}$
Maximum distance between the closest measured points and the phantom surface ( $z_{M1}$ in Figure 6 and Table 1, in mm)	5	$\delta \ln(2)/2^a$
Maximum angle between the probe axis and the phantom surface normal ( $\alpha$ in Figure 6)	$30^\circ$	$20^\circ$
Maximum spacing between measured points in the x- and y-directions (7.2.10.3.2, in mm)	8	$24/f^b$
For uniform grids: Maximum spacing between measured points in the direction normal to the phantom shell ( $\Delta z_1$ in Figure 6, in mm)	5	$8 - f$



Parameter	DUT transmit frequency being tested	
	$f \leq 3 \text{ GHz}$	$3 \text{ GHz} < f \leq 6 \text{ GHz}$
<i>For graded grids:</i> Maximum spacing between the two closest measured points in the direction normal to the phantom shell ( $\Delta z_1$ in Figure 6, in mm)	4	$12/f$
<i>For graded grids:</i> Maximum incremental increase in the spacing between measured points in the direction normal to the phantom shell ( $R_z = \Delta z_2 / \Delta z_1$ in Figure 6)	1,5	1,5
Minimum edge length of the zoom scan volume in the x- and y-directions ( $L_z$ in 7.2.10.3.2, in mm)	30	22
Minimum edge length of the zoom scan volume in the direction normal to the phantom shell ( $L_h$ in 7.2.10.3.2, in mm)	30	22
Tolerance in the probe angle	$1^\circ$	$1^\circ$
<sup>a</sup> $\delta$ is the penetration depth for a plane-wave incident normally on a planar half-space. <sup>b</sup> This is the maximum spacing allowed, which may not work for all circumstances.		



## 5. TISSUE SIMULATING LIQUID

For SAR measurement of the field distribution inside the phantom, the phantom must be filled with homogeneous tissue simulating liquid to a depth of at least 15cm. For head SAR testing the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15cm For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15cm. The nominal dielectric values of the tissue simulating liquids in the phantom and the tolerance of 5% are listed in 5.2

### 5.1. The composition of the tissue simulating liquid

Frequency (MHz) \ Ingredient (% Weight)	Water	NaCl	Polysorbate 20	DGBE	1,2-Propanediol	Triton X-100
835	50.36	1.25	48.39	0.0	0.0	0.0
900	34.40	0.79	0.0	0.0	64.81	0.0
1800	55.36	0.35	0.0	13.84	0.0	30.45
2000	50	0.0	0.0	50	0.0	0.0
2450	71.88	0.16	0.0	7.99	0.0	19.97
2600	55.242	0.306	0.0	44.452	0.0	0.0

### 5.2. Tissue Dielectric Parameters for Head and Body Phantoms

The head tissue dielectric parameters recommended by the EN62209-1 have been incorporated in the following table. The body tissue dielectric parameters recommended by the EN62209-2 have been incorporated in the following table.

Target Frequency (MHz)	head		body	
	$\epsilon_r$	$\sigma$ (S/m)	$\epsilon_r$	$\sigma$ (S/m)
300	45.3	0.87	45.3	0.87
450	43.5	0.87	43.5	0.87
<b>835</b>	<b>41.5</b>	<b>0.90</b>	<b>41.5</b>	<b>0.90</b>
<b>900</b>	<b>41.5</b>	<b>0.97</b>	<b>41.5</b>	<b>0.97</b>
1450	40.5	1.20	40.5	1.20
<b>1800 – 2000</b>	<b>40.0</b>	<b>1.40</b>	<b>40.0</b>	<b>1.40</b>
2300	39.5	1.67	39.5	1.67
<b>2450</b>	<b>39.2</b>	<b>1.80</b>	<b>39.2</b>	<b>1.80</b>
<b>2600</b>	<b>39.00</b>	<b>1.96</b>	<b>39.00</b>	<b>1.96</b>
3000	38.5	2.40	38.5	2.40

( $\epsilon_r$  = relative permittivity,  $\sigma$  = conductivity and  $\rho = 1000 \text{ kg/m}^3$ )



### 5.3. Tissue Calibration Result

The dielectric parameters of the liquids were verified prior to the SAR evaluation using SATIMO Dielectric Probe Kit and R&S Network Analyzer ZVL6.

Frequency (MHz)	Target Value		Measurement Value		Tissue Temp [°C]	Test Date
	$\epsilon_r$	$\delta$ [s/m]	$\epsilon_r$	$\delta$ [s/m]		
900	41.50 39.425-43.575	0.97 0.9225-1.0185	40.63	0.94	20.4	Jun. 11,2020
1800	40.00 38.00-42.00	1.40 1.33-1.47	38.65	1.39	20.7	Jun. 16,2020
2000	40.00 38.00-42.00	1.40 1.33-1.47	39.51	1.37	20.5	Jun. 12,2020
835	41.5 39.425-43.575	0.90 0.855-0.945	40.21	0.88	21.2	Jun. 17,2020
900	41.50 39.425-43.575	0.97 0.9225-1.0185	40.61	0.94	20.1	Jun. 05,2020
2450	39.2 37.24-41.16	1.80 1.71-1.89	38.65	1.75	21.0	Jun. 18,2020
2600	39.0 37.05-40.95	1.96 1.86-2.06	38.61	1.92	21.0	Jun. 19,2020



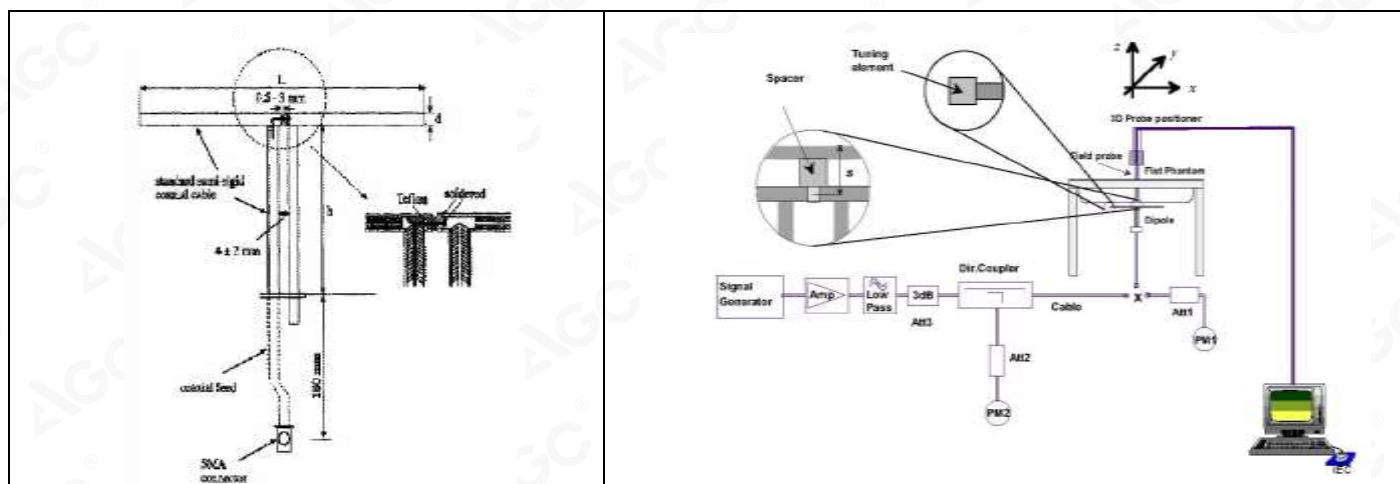
## 6. SAR SYSTEM CHECK PROCEDURE

### 6.1. SAR System Check Procedures

SAR system check is required to confirm measurement accuracy, according to the tissue dielectric media, probe calibration points and other system operating parameters required for measuring the SAR of a test device. The system verification must be performed for each frequency band and within the valid range of each probe calibration point required for testing the device. The same SAR probe(s) and tissue-equivalent media combinations used with each specific SAR system for system verification must be used for device testing. When multiple probe calibration points are required to cover substantially large transmission bands, independent system verifications are required for each probe calibration point. A system verification must be performed before each series of SAR measurements using the same probe calibration point and tissue-equivalent medium. Additional system verification should be considered according to the conditions of the tissue-equivalent medium and measured tissue dielectric parameters, typically every three to four days when the liquid parameters are remeasured or sooner when marginal liquid parameters are used at the beginning of a series of measurements.

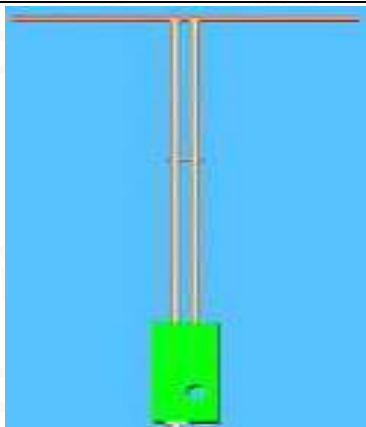
Each SATIMO system is equipped with one or more system check kits. These units, together with the predefined measurement procedures within the SATIMO software, enable the user to conduct the system check and system validation. System kit includes a dipole, and dipole device holder.

The system check verifies that the system operates within its specifications. It's performed daily or before every SAR measurement. The system check uses normal SAR measurement in the flat section of the phantom with a matched dipole at a specified distance. The system check setup is shown as below.



## 6.2. SAR System Check

### 6.2.1. Dipoles

	<p>The dipoles used are based on the EN62209-1 standard, the table below provides details for the mechanical and electrical specifications for the dipoles.</p>
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Frequency	L (mm)	h (mm)	d (mm)
835MHz	161.0	89.8	3.6
900 MHz	149.0	83.3	3.6
1800MHz	72	41.7	3.6
2000MHz	64.5	37.5	3.6
2450MHz	51.5	30.4	3.6
2600MHz	48.5	28.8	3.6

## 6.2.2. System Check Result

System Performance Check at 835MHz & 900 MHz & 1800MHz & 2000MHz & 2450MHz & 2600MHz								
Validation Kit SN 29/15 DIP 0G850-383& SN 23/19 DIP 0G900-482 & SN 46/11 DIP 1G800-186 & SN 46/11 DIP 2G000-188& SN 46/11 DIP 2G450-189& SN 47/14 DIP 2G600-342								
Frequency [MHz]	Target Value(W/Kg)		Reference Result ( $\pm 10\%$ )		Normalized to 1W(W/Kg)		Tissue Temp. [°C]	Test time
	1g	10g	1g	10g	1g	10g		
900	11.38	7.07	10.242-12.518	6.363-7.777	12.15	7.48	20.4	Jun. 11,2020
1800	39.07	20.29	35.163-42.977	18.261-22.319	38.26	19.36	20.7	Jun. 16,2020
2000	44.10	21.49	39.69-48.51	19.341-23.639	40.01	19.46	20.5	Jun. 12,2020
835	9.85	6.27	8.865-10.835	5.643-6.897	9.47	6.02	21.2	Jun. 17,2020
900	11.38	7.07	10.242-12.518	6.363-7.777	11.62	7.17	20.1	Jun. 05,2020
2450	53.97	24.01	48.573-59.367	21.609-26.411	54.47	23.90	21.0	Jun. 18,2020
2600	56.86	24.84	51.174-62.546	22.356-27.324	52.42	23.04	21.0	Jun. 19,2020

Note:

(1) We use a CW signal of 18dBm for system check, and then all SAR values are normalized to 1W forward power. The result must be within  $\pm 10\%$  of target value.

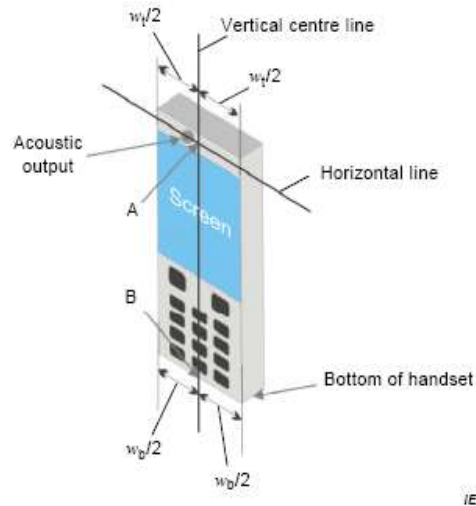
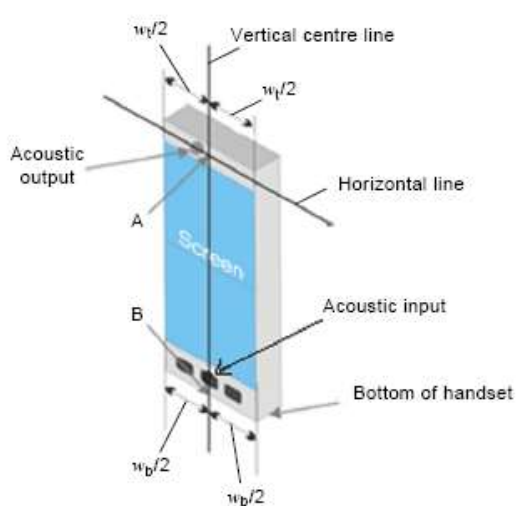


## 7. EUT TEST POSITION

This EUT was tested in **Right Cheek, Right Tilted, Left Cheek, Left Tilted, back, front, Edge1, Edge2, Edge3 and Edge4.**

### 7.1. Define Two Imaginary Lines on the Handset

- (1) The vertical centreline passes through two points on the front side of the DUT: the midpoint of the width  $w_t$  of the handset at the level of the acoustic output (Point A in Figure 1), and the midpoint of the width  $w_b$  at the bottom of the handset (Point B).
- (2) The horizontal line is perpendicular to the vertical centreline and passes through the centre of the acoustic output.
- (3) The two lines intersect at Point A. Note that for many handsets, Point A coincides with the centre of the acoustic output. However, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical centreline is not necessarily parallel to the front face of the DUT, especially for clam-shell handsets, handsets with flip cover pieces, and other irregularly shaped handsets.



## 7.2. Cheek Position

- (1) To position the device with the vertical center line of the body of the device and the horizontal line crossing the center piece in a plane parallel to the sagittal plane of the phantom. While maintaining the device in this plane, align the vertical center line with the reference plane containing the ear and mouth reference point (M: Mouth, RE: Right Ear, and LE: Left Ear) and align the center of the ear piece with the line RE-LE.
- (2) To move the device towards the phantom with the ear piece aligned with the the line LE-RE until the phone touched the ear. While maintaining the device in the reference plane and maintaining the phone contact with ear, move the bottom of the phone until any point on the front side is in contact with the cheek of the phantom or until contact with the ear is lost



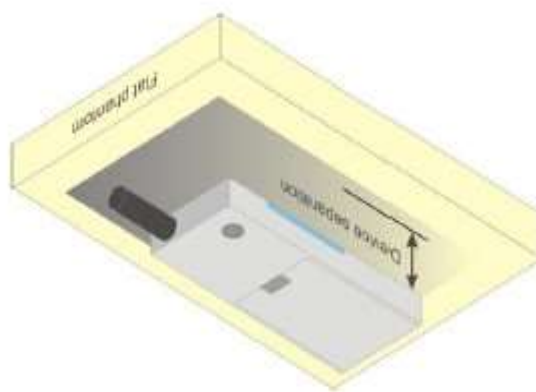
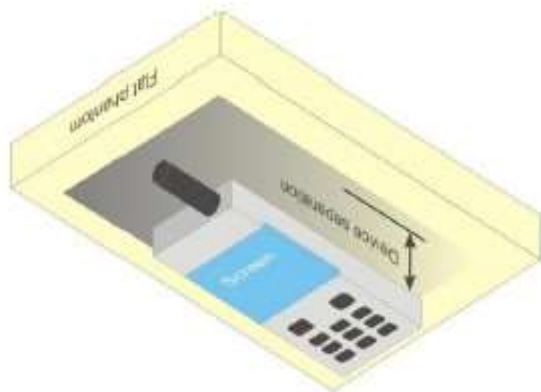
## 7.3. Tilt Position

- (1) To position the device in the “cheek” position described above.
- (2) While maintaining the device in the reference plane described above and pivoting against the ear, moves it outward away from the mouth by an angle of 15 degrees or until with the ear is lost.



#### 7.4. Body Worn (Limbs&Hotspot) Position

- (1) To position the EUT parallel to the phantom surface.
- (2) To adjust the EUT parallel to the flat phantom.
- (3) To adjust the distance between the EUT surface and the flat phantom to **5mm** for body, **10mm** for hotspot and **0mm** for limbs.



## 8. SAR EXPOSURE LIMITS

### Limits for General Population/Uncontrolled Exposure (W/kg)

Type Exposure	Uncontrolled Environment Limit (W/kg)
Spatial Peak SAR (10 g cube tissue for brain or body)	2.00
Spatial Average SAR (Whole body)	0.08
Spatial Peak SAR (Limbs)	4.00

**Note:**

These limits are derived from EN50360 "Product standard to demonstrate the compliance of mobile phones with the basic restrictions related to human exposure to electromagnetic fields" and EN50566 "Product standard to demonstrate compliance of radio frequency fields from handheld and body-mounted wireless communication devices used by the general public"



## 9. TEST EQUIPMENT LIST

Equipment description	Manufacturer/ Model	Identification No.	Current calibration date	Next calibration date
SAR Probe	MVG	SN 22/12 EP159	Dec.18,2019	Dec.17,2020
Phantom	SATIMO	SN_4511_SAM90	Validated. No cal required.	Validated. No cal required.
Liquid	SATIMO	-	Validated. No cal required.	Validated. No cal required.
Comm Tester	Agilent-8960	GB46310822	Oct. 08,2019	Oct. 07,2020
Comm Tester	R&S- CMW500	S/N120909	Jul. 02,2019	Jul. 01,2020
Multimeter	Keithley 2000	4114939	Sep. 09,2019	Sep. 08,2020
Dipole	SATIMO SID835	SN 29/15 DIP 0G835-383	Apr. 26,2019	Apr. 25,2022
Dipole	SATIMO SID900	SN 23/19 DIP 0G900-482	May 31,2019	May 30,2022
Dipole	SATIMO SID1800	SN 46/11 DIP 1G800-186	Apr. 26,2019	Apr. 25,2022
Dipole	SATIMO SID2000	SN 46/11 DIP 2G000-188	Apr. 26,2019	Apr. 25,2022
Dipole	SATIMO SID2450	SN 46/11 DIP 2G450-189	Apr. 26,2019	Apr. 25,2022
Dipole	SATIMO SID2600	SN 47/14 DIP 2G600-342	Apr. 26,2019	Apr. 25,2022
Signal Generator	Agilent-E4438C	US41461365	Oct. 08,2019	Oct. 07,2020
Vector Analyzer	Agilent / E4440A	US41421290	Sep. 09,2019	Sep. 08,2020
Network Analyzer	Rhode & Schwarz ZVL6	SN101443	Oct. 08,2019	Oct. 07,2020
Attenuator	Warison /WATT-6SR1211	S/N:WRJ34AYM2F 1	June 10, 2020	June 09, 2021
Attenuator	Mini-circuits / VAT-10+	31405	June 10, 2020	June 09, 2021
Amplifier	AS0104-55_55	1004793	June 11,2020	June 10,2021
Directional Couple	Werlatone/ C5571-10	SN99463	June 11,2020	June 10,2021
Directional Couple	Werlatone/ C6026-10	SN99482	June 11,2020	June 10,2021
Power Sensor	NRP-Z21	1137.6000.02	Sep. 09,2019	Sep. 08,2020
Power Sensor	NRP-Z23	US38261498	Feb. 18,2020	Feb. 17,2021
Power Viewer	R&S	V2.3.1.0	N/A	N/A

Note: Per EN62209-1/2 Dipole SAR Validation, AGC Lab has adopted 3 years calibration intervals. On annual basis, every measurement dipole has been evaluated and is in compliance with the following criteria:

1. There is no physical damage on the dipole;
2. System validation with specific dipole is within 10% of calibrated value;
3. Return-loss is within 20% of calibrated measurement;
4. Impedance is within 5Ω of calibrated measurement.



## 10. MEASUREMENT UNCERTAINTY

SATIMO Uncertainty- SN 22/12 EP159 Measurement uncertainty for DUT averaged over 1 gram / 10 gram.									
Uncertainty Component	Sec.	Tol (+- %)	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (+-%)	10g Ui (+-%)	vi
<b>Measurement System</b>									
Probe calibration	Annex B	5.831	N	1	1	1	5.831	5.831	∞
Axial Isotropy	7.2.2.2	0.685	R	$\sqrt{3}$	$\sqrt{0.5}$	$\sqrt{0.5}$	0.280	0.280	∞
Hemispherical Isotropy	7.2.2.2	0.915	R	$\sqrt{3}$	$\sqrt{0.5}$	$\sqrt{0.5}$	0.418	0.374	∞
Boundary effect	7.2.2.5	1.000	R	$\sqrt{3}$	1	1	0.577	0.577	∞
Linearity	7.2.2.3	1.260	R	$\sqrt{3}$	1	1	0.346	0.346	∞
System detection limits	7.2.2.3	1.000	R	$\sqrt{3}$	1	1	0.577	0.577	∞
Modulation response	7.2.2.4	3.000	R	$\sqrt{3}$	1	1	0.727	0.727	∞
Readout Electronics	7.2.2.6	0.021	N	1	1	1	0.021	0.021	∞
Response Time	7.2.2.7	0.000	R	$\sqrt{3}$	1	1	0.000	0.000	∞
Integration Time	7.2.2.8	1.400	R	$\sqrt{3}$	1	1	0.808	0.808	∞
RF ambient conditions-Noise	7.2.9	3.000	R	$\sqrt{3}$	1	1	1.732	1.732	∞
RF ambient conditions-reflections	7.2.9	3.000	R	$\sqrt{3}$	1	1	1.732	1.732	∞
Probe positioner mechanical tolerance	7.2.3.1	1.400	R	$\sqrt{3}$	1	1	0.808	0.808	∞
Probe positioning with respect to phantom shell	7.2.3.2	1.400	R	$\sqrt{3}$	1	1	0.808	0.808	∞
Post-processing	7.2.10	2.300	R	$\sqrt{3}$	1	1	1.328	1.328	∞
<b>Test sample Related</b>									
Test sample positioning	7.2.5.3	2.6	N	1	1	1	2.600	2.600	∞
Device holder uncertainty	7.2.5.2	3	N	1	1	1	3.000	3.000	∞
SAR drift measurement	7.2.8	5	R	$\sqrt{3}$	1	1	2.887	2.887	∞
SAR scaling	7.2.11	5	R	$\sqrt{3}$	1	1	2.887	2.887	∞
<b>Phantom and tissue parameters</b>									
Phantom uncertainty (shape and thickness uncertainty)	7.2.4	4	R	$\sqrt{3}$	1	1	2.309	2.309	∞
Uncertainty in SAR correction for deviations in permittivity and conductivity	7.2.7.2	1.9	N	1	1	0.84	1.900	1.596	∞
Liquid conductivity (temperature uncertainty)	7.2.6.6 7.2.6.5	2.5	R	$\sqrt{3}$	0.78	0.71	1.126	1.025	∞
Liquid conductivity (measured)	7.2.6.3 7.2.6.5	4	N	1	0.78	0.71	3.120	2.840	M
Liquid permittivity (temperature uncertainty)	7.2.6.6 7.2.6.5	2.5	R	$\sqrt{3}$	0.23	0.26	0.332	0.375	∞
Liquid permittivity (measured)	7.2.6.4 7.2.6.5	5	N	1	0.23	0.26	1.150	1.300	M
Combined Standard Uncertainty			RSS				9.795	9.608	
Expanded Uncertainty (95% Confidence interval)			K=2				19.589	19.216	



SATIMO Uncertainty-SN 22/12 EP159									
System Validation uncertainty for DUT averaged over 1 gram / 10 gram.									
Uncertainty Component	Sec.	Tol (+-%)	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (+-%)	10g Ui (+-%)	vi
<b>Measurement System</b>									
Probe calibration	Annex B	5.831	N	1	1	1	5.831	5.831	∞
Axial Isotropy	7.2.2.2	0.685	R	$\sqrt{3}$	1	1	0.395	0.395	∞
Hemispherical Isotropy	7.2.2.2	0.915	R	$\sqrt{3}$	0	0	0.000	0.000	∞
Boundary effect	7.2.2.5	1.000	R	$\sqrt{3}$	1	1	0.577	0.577	∞
Linearity	7.2.2.3	1.260	R	$\sqrt{3}$	1	1	0.727	0.727	∞
System detection limits	7.2.2.3	1.0	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Modulation response	7.2.2.4	3.0	R	$\sqrt{3}$	0	0	0.00	0.00	∞
Readout Electronics	7.2.2.6	0.021	N	1	1	1	0.021	0.021	∞
Response Time	7.2.2.7	0.0	R	$\sqrt{3}$	0	0	0.00	0.00	∞
Integration Time	7.2.2.8	1.4	R	$\sqrt{3}$	0	0	0.00	0.00	∞
RF ambient conditions-Noise	7.2.9	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	∞
RF ambient conditions-reflections	7.2.9	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	∞
Probe positioner mechanical tolerance	7.2.3.1	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Probe positioning with respect to phantom shell	7.2.3.2	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Post-Processing	7.2.10	2.3	R	$\sqrt{3}$	1	1	1.33	1.33	∞
<b>System validation source</b>									
Deviation of experimental dipole from numerical dipole	7.2.12	5.0	N	1	1	1	5.00	5.00	∞
Input power and SAR drift measurement	7.2.8	5.0	R	$\sqrt{3}$	1	1	2.89	2.89	∞
Other source contribution Uncertainty	7.2.13	2.0	R	$\sqrt{3}$	1	1	1.15	1.15	∞
<b>Phantom and set-up</b>									
Phantom uncertainty (shape and thickness uncertainty)	7.2.4	4.0	R	$\sqrt{3}$	1	1	2.31	2.31	∞
Uncertainty in SAR correction for deviations in permittivity and conductivity	7.2.7.2	1.9	N	1	1	0.84	1.90	1.60	∞
Liquid conductivity (temperature uncertainty)	7.2.6.6 7.2.6.5	2.5	R	$\sqrt{3}$	0.78	0.71	1.13	1.02	∞
Liquid conductivity (measured)	7.2.6.3 7.2.6.5	4	N	1	0.78	0.71	3.12	2.84	M
Liquid permittivity (temperature uncertainty)	7.2.6.6 7.2.6.5	2.5	R	$\sqrt{3}$	0.23	0.26	0.33	0.38	∞
Liquid permittivity (measured)	7.2.6.4 7.2.6.5	5	N	1	0.23	0.26	1.15	1.30	M
Combined Standard Uncertainty			RSS				9.737	9.536	
Expanded Uncertainty (95% Confidence interval)			K=2				19.473	19.072	



SATIMO Uncertainty-SN 22/12 EP159									
System Check uncertainty for DUT averaged over 1 gram / 10 gram.									
Uncertainty Component	Sec.	Tol (+- %)	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (+-%)	10g Ui (+-%)	vi
<b>Measurement System</b>									
Probe calibration drift	Table 13 note a	0.5	N	1	1	1	0.50	0.50	∞
Axial Isotropy	7.2.2.2	0.685	R	$\sqrt{3}$	0	0	0.00	0.00	∞
Hemispherical Isotropy	7.2.2.2	0.915	R	$\sqrt{3}$	0	0	0.00	0.00	∞
Boundary effect	7.2.2.5	1	R	$\sqrt{3}$	0	0	0.00	0.00	∞
Linearity	7.2.2.3	1.260	R	$\sqrt{3}$	0	0	0.00	0.00	∞
System detection limits	7.2.2.3	1.0	R	$\sqrt{3}$	0	0	0.00	0.00	∞
Modulation response	7.2.2.4	3.0	R	$\sqrt{3}$	0	0	0.00	0.00	∞
Readout Electronics	7.2.2.6	0.021	N	1	0	0	0.00	0.00	∞
Response Time	7.2.2.7	0	R	$\sqrt{3}$	0	0	0.00	0.00	∞
Integration Time	7.2.2.8	1.4	R	$\sqrt{3}$	0	0	0.00	0.00	∞
RF ambient conditions-Noise	7.2.9	3.0	R	$\sqrt{3}$	0	0	0.00	0.00	∞
RF ambient conditions-reflections	7.2.9	3.0	R	$\sqrt{3}$	0	0	0.00	0.00	∞
Probe positioner mechanical tolerance	7.2.3.1	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Probe positioning with respect to phantom shell	7.2.3.2	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Post-processing	7.2.10	2.3	R	$\sqrt{3}$	0	0	0.00	0.00	∞
<b>System check source</b>									
Deviation between experimental dipoles	7.2.12	2.0	N	1	1	1	2.00	2.00	∞
Input power and SAR drift measurement	7.2.8	5.0	R	$\sqrt{3}$	1	1	2.89	2.89	∞
Other source contribution Uncertainty	7.2.13	2.0	R	$\sqrt{3}$	1	1	1.15	1.15	∞
<b>Phantom and set-up</b>									
Phantom uncertainty (shape and thickness uncertainty)	7.2.4	4	R	$\sqrt{3}$	1	1	2.31	2.31	∞
Uncertainty in SAR correction for deviations in permittivity and conductivity	7.2.7.2	1.9	N	1	1	0.84	1.90	1.60	∞
Liquid conductivity (temperature uncertainty)	7.2.6.6 7.2.6.5	2.5	R	$\sqrt{3}$	0.78	0.71	1.13	1.02	∞
Liquid conductivity (measured)	7.2.6.3 7.2.6.5	4	N	1	0.78	0.71	3.12	2.84	M
Liquid permittivity (temperature uncertainty)	7.2.6.6 7.2.6.5	2.5	R	$\sqrt{3}$	0.23	0.26	0.33	0.38	∞
Liquid permittivity (measured)	7.2.6.4 7.2.6.5	5	N	1	0.23	0.26	1.15	1.30	M
Combined Standard Uncertainty			RSS				5.562	5.203	
Expanded Uncertainty (95% Confidence interval)			K=2				11.124	10.406	



## 11. CONDUCTED POWER MEASUREMENT

Mode	Frequency(MHz)	Avg. Output Power(dBm)	Duty cycle Factor(dBm)	Frame Power(dBm)
Maximum Power <1>				
GSM 900	880.2	33.16	-9	24.16
	897.4	33.18	-9	24.18
	914.8	<b>33.24</b>	-9	24.24
GPRS 900 (1 Slot)	880.2	33.06	-9	24.06
	897.4	33.19	-9	24.19
	914.8	33.03	-9	24.03
GPRS 900 (2 Slot)	880.2	30.18	-6	24.18
	897.4	30.03	-6	24.03
	914.8	30.07	-6	24.07
GPRS 900 (3 Slot)	880.2	29.50	-4.26	25.24
	897.4	29.66	-4.26	25.40
	914.8	29.69	-4.26	25.43
GPRS 900 (4 Slot)	880.2	29.27	-3	26.27
	897.4	29.23	-3	26.23
	914.8	29.37	-3	26.37
EGPRS 900 (1 Slot)	880.2	24.78	-9	15.78
	897.4	24.84	-9	15.84
	914.8	24.86	-9	15.86
EGPRS 900 (2 Slot)	880.2	22.69	-6	16.69
	897.4	22.54	-6	16.54
	914.8	22.57	-6	16.57
EGPRS 900 (3 Slot)	880.2	20.56	-4.26	16.30
	897.4	20.48	-4.26	16.22
	914.8	20.63	-4.26	16.37
EGPRS 900 (4 Slot)	880.2	19.74	-3	16.74
	897.4	19.49	-3	16.49
	914.8	19.63	-3	16.63



Mode	Frequency(MHz)	Avg. Output Power(dBm)	Duty cycle Factor(dBm)	Frame Power(dBm)
Maximum Power <2>				
GSM 900	880.2	33.08	-9	24.08
	897.4	33.07	-9	24.07
	914.8	33.15	-9	24.15
GPRS 900 (1 Slot)	880.2	32.94	-9	23.94
	897.4	33.02	-9	24.02
	914.8	32.96	-9	23.96
GPRS 900 (2 Slot)	880.2	30.09	-6	24.09
	897.4	29.93	-6	23.93
	914.8	29.95	-6	23.95
GPRS 900 (3 Slot)	880.2	29.32	-4.26	25.06
	897.4	29.50	-4.26	25.24
	914.8	29.56	-4.26	25.30
GPRS 900 (4 Slot)	880.2	29.12	-3	26.12
	897.4	29.14	-3	26.14
	914.8	29.26	-3	26.26



Mode	Frequency(MHz)	Avg. Output Power(dBm)	Duty cycle Factor(dBm)	Frame Power(dBm)
Maximum Power <1>				
DCS1800	1710.2	30.19	-9	21.19
	1747.4	30.61	-9	21.61
	1784.8	<b>30.95</b>	-9	21.95
GPRS1800 (1 Slot)	1710.2	30.36	-9	21.36
	1747.4	30.49	-9	21.49
	1784.8	30.45	-9	21.45
GPRS1800 (2 Slot)	1710.2	29.57	-6	23.57
	1747.4	29.48	-6	23.48
	1784.8	29.53	-6	23.53
GPRS1800 (3 Slot)	1710.2	26.21	-4.26	21.95
	1747.4	26.32	-4.26	22.06
	1784.8	26.39	-4.26	22.13
GPRS1800 (4 Slot)	1710.2	26.57	-3	23.57
	1747.4	26.94	-3	23.94
	1784.8	27.32	-3	24.32
EGPRS1800 (1 Slot)	1710.2	26.68	-9	17.68
	1747.4	26.54	-9	17.54
	1784.8	26.59	-9	17.59
EGPRS1800 (2 Slot)	1710.2	24.48	-6	18.48
	1747.4	24.59	-6	18.59
	1784.8	24.44	-6	18.44
EGPRS1800 (3 Slot)	1710.2	22.08	-4.26	17.82
	1747.4	22.26	-4.26	18.00
	1784.8	22.13	-4.26	17.87
EGPRS1800 (4 Slot)	1710.2	21.65	-3	18.65
	1747.4	21.83	-3	18.83
	1784.8	21.77	-3	18.77



Mode	Frequency(MHz)	Avg. Output Power(dBm)	Duty cycle Factor(dBm)	Frame Power(dBm)
Maximum Power <2>				
DCS1800	1710.2	30.07	-9	21.07
	1747.4	30.45	-9	21.45
	1784.8	30.84	-9	21.84
GPRS1800 (1 Slot)	1710.2	30.22	-9	21.22
	1747.4	30.36	-9	21.36
	1784.8	30.39	-9	21.39
GPRS1800 (2 Slot)	1710.2	29.48	-6	23.48
	1747.4	29.33	-6	23.33
	1784.8	29.45	-6	23.45
GPRS1800 (3 Slot)	1710.2	26.02	-4.26	21.76
	1747.4	26.20	-4.26	21.94
	1784.8	26.24	-4.26	21.98
GPRS1800 (4 Slot)	1710.2	26.46	-3	23.46
	1747.4	26.85	-3	23.85
	1784.8	27.22	-3	24.22

Note 1:

The Frame Power (Source-based time-averaged Power) is scaled the maximum burst average power based on time slots. The calculated methods are show as following:

Frame Power = Max burst power (1 Up Slot) – 9 dB

Frame Power = Max burst power (2 Up Slot) – 6 dB

Frame Power = Max burst power (3 Up Slot) – 4.26 dB

Frame Power = Max burst power (4 Up Slot) – 3 dB



**UMTS BAND I**

Mode	Frequency(MHz)	Avg. Output Power (dBm)
WCDMA 2100 RMC(12.2bps)	1922.4	23.50
	1950	<b>23.64</b>
	1977.6	23.54
HSDPA Subtest 1	1922.4	22.48
	1950	22.55
	1977.6	22.42
HSDPA Subtest 2	1922.4	21.86
	1950	21.94
	1977.6	21.80
HSDPA Subtest 3	1922.4	21.83
	1950	21.90
	1977.6	21.80
HSDPA Subtest 4	1922.4	21.76
	1950	21.85
	1977.6	21.72
HSUPA Subtest 1	1922.4	20.33
	1950	20.37
	1977.6	20.25
HSUPA Subtest 2	1922.4	20.42
	1950	20.50
	1977.6	20.39
HSUPA Subtest 3	1922.4	21.37
	1950	21.40
	1977.6	21.29
HSUPA Subtest 4	1922.4	19.90
	1950	19.79
	1977.6	19.68
HSUPA Subtest 5	1922.4	20.79
	1950	20.34
	1977.6	20.55



**UMTS BAND VIII**

Mode	Frequency (MHz)	Avg. Output Power (dBm)
WCDMA 900 RMC(12.2bps)	882.4	22.86
	897.6	22.80
	912.6	<b>23.17</b>
HSDPA Subtest 1	882.4	21.73
	897.6	21.84
	912.6	22.18
HSDPA Subtest 2	882.4	21.12
	897.6	21.20
	912.6	21.49
HSDPA Subtest 3	882.4	21.06
	897.6	21.07
	912.6	21.45
HSDPA Subtest 4	882.4	21.04
	897.6	21.04
	912.6	21.39
HSUPA Subtest 1	882.4	19.75
	897.6	19.79
	912.6	20.01
HSUPA Subtest 2	882.4	19.62
	897.6	19.69
	912.6	20.05
HSUPA Subtest 3	882.4	20.60
	897.6	20.68
	912.6	21.04
HSUPA Subtest 4	882.4	19.10
	897.6	19.29
	912.6	19.39
HSUPA Subtest 5	882.4	21.03
	897.6	20.45
	912.6	20.55



According to 3GPP 25.101 sub-clause 6.2.2 , the maximum output power is allowed to be reduced by following the table.

Table 6.1Aa: UE maximum output power with HS-DPCCH and E-DCH

UE Transmit Channel Configuration	CM(db)	MPR(db)
For all combinations of ,DPDCH,DPCCH HS-DPDCH,E-DPDCH and E-DPCCH	$0 \leq CM \leq 3.5$	$MAX(CM-1,0)$
Note: CM=1 for $\beta_d/\beta_{d=12/15}$ , $\beta_{hs}/\beta_{c=24/15}$ . For all other combinations of DPDCH, DPCCH, HS-DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference.		

The device supports MPR to solve linearity issues (ACLR or SEM) due to the higher peak-to average ratios (PAR) of the HSUPA signal. This prevents saturating the full range of the TX DAC inside of device and provides a reduced power output to the RF transceiver chip according to the Cubic Metric (a function of the combinations of DPDCH, DPCCH, HS-DPCCH, E-DPDCH and E-DPCCH).

When E-DPDCH channels are present the beta gains on those channels are reduced firsts to try to get the power under the allowed limit. If the beta gains are lowered as far as possible, then a hard limiting is applied at the maximum allowed level.

The SW currently recalculates the cubic metric every time the beta gains on the E-DPDCH are reduced. The cubic metric will likely get lower each time this is done .However, there is no reported reduction of maximum output power in the HSUPA mode since the device also provides a compensation for the power back-off by increasing the gain of TX\_AGC in the transceiver (PA) device.

The end effect is that the DUT output power is identical to the case where there is no MPR in the device.



## LTE Band

### LTE (TDD) Considerations

For Time-Division Duplex (TDD) systems, SAR must be tested using a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by the defined 3GPP LTE TDD configurations.

SAR was tested with the highest transmission duty factor (63.33%) using Uplink-downlink configuration 0 and Special subframe configuration 7.

LTE TDD Band 40 supports 3GPP TS 36.211 section 4.2 for Type 2 Frame Structure and Table 4.2-2 for uplink-downlink configurations and Table 4.2-1 for Special subframe configurations.

**Table 4.2-1: Configuration of special subframe (lengths of DwPTS/GP/UpPTS)**

Special subframe configuration	Normal cyclic prefix in downlink			Extended cyclic prefix in downlink		
	DwPTS	UpPTS		DwPTS	UpPTS	
		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink
0	$6592 \cdot T_s$	$2192 \cdot T_s$	$2560 \cdot T_s$	$7680 \cdot T_s$	$2192 \cdot T_s$	$2560 \cdot T_s$
1	$19760 \cdot T_s$			$20480 \cdot T_s$		
2	$21952 \cdot T_s$			$23040 \cdot T_s$		
3	$24144 \cdot T_s$			$25600 \cdot T_s$		
4	$26336 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$	$7680 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$
5	$6592 \cdot T_s$			$20480 \cdot T_s$		
6	$19760 \cdot T_s$			$23040 \cdot T_s$		
7	$21952 \cdot T_s$			$12800 \cdot T_s$		
8	$24144 \cdot T_s$			-	-	-
9	$13168 \cdot T_s$			-	-	-

**Table 4.2-2: Uplink-downlink configurations**

Uplink-downlink configuration	Downlink-to-Uplink Switch-point periodicity	Subframe number									
		0	1	2	3	4	5	6	7	8	9
0	5 ms	D	S	U	U	U	D	S	U	U	U
1	5 ms	D	S	U	U	D	D	S	U	U	D
2	5 ms	D	S	U	D	D	D	S	U	D	D
3	10 ms	D	S	U	U	U	D	D	D	D	D
4	10 ms	D	S	U	U	D	D	D	D	D	D
5	10 ms	D	S	U	D	D	D	D	D	D	D
6	5 ms	D	S	U	U	U	D	S	U	U	D



### Calculated Duty Cycle

Uplink-Downlink Configuration	Downlink-to-Uplink Switch-point Periodicity	Subframe Number										Calculated Duty Cycle(%)
		0	1	2	3	4	5	6	7	8	9	
0	5ms	D	S	U	U	U	D	S	U	U	U	63.33
1	5ms	D	S	U	U	D	D	S	U	U	D	43.33
2	5ms	D	S	U	D	D	D	S	U	D	D	23.33
3	10ms	D	S	U	U	U	D	D	D	D	D	31.67
4	10ms	D	S	U	U	D	D	D	D	D	D	21.67
5	10ms	D	S	U	D	D	D	D	D	D	D	11.67
6	5ms	D	S	U	U	U	D	S	U	U	D	53.33

**Note:** Calculated Duty Cycle = Extended cyclic prefix in uplink x (Ts) x # of S + # of U

Example for Calculated Duty Cycle for Uplink-Downlink Configuration 0:

Calculated Duty Cycle =  $5120 \times [1/(15000 \times 2048)] \times 2 + 6 \text{ ms} = 63.33\%$

where

$T_s = 1/(15000 \times 2048)$  seconds



# LTE BAND

Avg. Output Power of LTE Band 1(dBm)						
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				18025	18300	18575
5MHz	QPSK	1	0	24.26	<b>24.36</b>	23.36
			12	24.22	24.31	23.32
			24	24.19	24.32	23.15
		12	0	24.31	24.08	22.99
			6	24.28	24.05	22.92
			13	24.31	24.24	22.91
		25	0	24.29	24.18	22.87
	16QAM	1	0	24.18	24.30	23.33
			12	24.15	24.28	23.29
			24	24.12	24.25	23.10
		12	0	24.29	24.00	22.88
			6	24.26	24.01	22.87
			13	24.23	24.16	22.82
		25	0	24.22	24.12	22.85
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				18050	18300	18550
10MHz	QPSK	1	0	24.09	24.17	23.27
			24	24.16	24.14	23.25
			49	24.05	24.01	23.06
		25	0	24.03	24.05	22.78
			12	24.06	24.02	22.84
			25	24.10	24.03	22.80
		50	0	24.06	24.06	22.79
	16QAM	1	0	24.15	24.26	23.25
			24	24.08	24.23	23.23
			49	24.05	24.20	23.06
		25	0	24.14	23.88	22.09
			12	24.02	23.98	22.74
			25	24.00	24.05	22.75
		50	0	24.17	24.08	22.70



Avg. Output Power of LTE Band 1(dBm)						
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				18075	18300	18525
15MHz	QPSK	1	0	24.30	22.87	23.85
			37	24.28	22.85	23.99
			74	22.59	23.79	22.11
		37	0	24.12	22.95	23.96
			19	24.20	22.75	24.00
			38	22.46	23.84	22.11
		75	0	22.41	23.82	22.10
	16QAM	1	0	24.22	23.00	24.00
			37	24.23	22.99	23.88
			74	22.49	23.89	22.11
		37	0	24.18	22.92	24.04
			19	24.15	22.86	24.02
			38	22.37	23.90	22.10
		75	0	22.32	23.88	22.11
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				18100	18300	18500
20MHz	QPSK	1	0	24.36	23.93	24.02
			49	24.31	23.00	24.00
			99	22.65	23.94	22.13
		50	0	24.26	22.95	24.05
			25	24.22	22.89	24.03
			50	22.53	23.93	22.17
		100	0	22.48	23.90	22.15
	16QAM	1	0	24.32	23.01	23.97
			49	24.29	22.98	23.96
			99	22.56	23.88	22.08
		50	0	24.23	22.91	24.02
			25	24.20	22.85	24.00
			50	22.48	23.82	22.11
		100	0	22.45	23.87	22.08

Avg. Output Power of LTE Band 3 (dBm)						
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				19207	19575	19943
1.4MHz	QPSK	1	0	23.53	23.83	23.50
			2	23.51	23.81	23.48
			5	23.22	23.77	23.27
		3	0	23.28	23.85	23.36
			1	23.25	23.80	23.62
			3	23.22	23.83	23.30
		6	0	23.20	23.79	23.29
	16QAM	1	0	23.48	23.77	23.48
			2	23.45	23.74	23.45
			5	23.19	23.70	23.23
		3	0	23.21	23.80	23.32
			1	23.20	23.75	23.56
			3	23.16	23.79	23.28
		6	0	23.15	23.70	23.20
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				19215	19575	19935
3MHz	QPSK	1	0	23.38	23.53	23.20
			7	23.25	23.68	23.05
			14	23.07	23.55	23.24
		8	0	23.14	23.46	23.12
			4	23.12	23.52	23.26
			8	23.00	23.69	23.39
		15	0	23.06	23.55	23.23
	16QAM	1	0	23.33	23.64	23.38
			7	23.39	23.51	23.55
			14	23.05	23.60	23.47
		8	0	23.16	23.72	23.34
			4	23.18	23.68	23.21
			8	23.02	23.55	23.05
		15	0	23.04	23.66	23.02

Avg. Output Power of LTE Band 3(dBm)						
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				19225	19575	19925
5MHz	QPSK	1	0	23.42	23.75	23.71
			12	23.38	23.71	23.68
			24	23.24	23.37	23.17
		12	0	22.92	23.57	23.37
			6	22.87	23.52	23.35
			13	22.72	23.33	22.97
		25	0	22.65	23.29	22.94
	16QAM	1	0	23.40	23.72	23.66
			12	23.36	23.68	23.54
			24	23.31	23.36	23.12
		12	0	22.88	23.52	23.25
			6	22.81	23.49	23.28
			13	22.67	23.30	22.87
		25	0	22.59	23.22	22.86
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				19250	19575	19900
10MHz	QPSK	1	0	23.39	23.64	23.54
			24	23.32	23.62	23.50
			49	23.26	23.33	23.08
		25	0	22.84	23.48	23.15
			12	22.75	23.41	23.19
			25	22.45	23.08	22.75
		50	0	22.48	23.15	22.68
	16QAM	1	0	23.33	23.56	23.48
			24	23.29	23.52	23.42
			49	23.26	23.20	23.10
		25	0	22.54	23.37	23.21
			12	22.68	23.33	23.19
			25	22.52	23.18	22.78
		50	0	22.50	23.20	22.65

Avg. Output Power of LTE Band 3 (dBm)						
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				19275	19575	19875
15MHz	QPSK	1	0	23.00	24.32	24.22
			37	23.02	24.44	24.18
			74	23.38	23.41	22.75
		37	0	22.65	24.28	24.09
			19	22.59	24.25	24.05
			38	23.04	23.16	22.74
		75	0	23.02	23.12	22.65
	16QAM	1	0	23.05	24.38	24.23
			37	23.01	24.41	24.20
			74	23.41	23.52	22.78
		37	0	22.66	24.28	24.12
			19	22.59	24.25	24.11
			38	23.08	23.16	22.81
		75	0	23.10	23.10	22.72
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				19300	19575	19850
20MHz	QPSK	1	0	23.92	<b>24.58</b>	24.34
			49	23.10	24.51	24.31
			99	23.52	23.65	22.98
		50	0	22.83	24.36	24.26
			25	22.78	24.33	24.23
			50	23.25	23.28	22.95
		100	0	23.21	23.25	22.92
	16QAM	1	0	23.08	24.46	24.27
			49	23.05	24.45	24.25
			99	23.46	23.59	22.84
		50	0	22.79	24.32	24.16
			25	22.71	24.30	24.19
			50	23.18	23.22	22.88
		100	0	23.12	23.19	22.84

Avg. Output Power of LTE Band 7 (dBm)						
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				20775	21100	21425
5MHz	QPSK	1	0	24.00	23.59	23.21
			12	23.78	23.51	23.19
			24	23.60	23.42	22.99
		12	0	23.74	23.38	22.97
			6	23.70	23.34	22.92
			13	23.39	23.20	22.72
		25	0	23.35	23.18	22.67
	16QAM	1	0	23.88	23.54	23.19
			12	23.71	23.48	23.12
			24	23.56	23.37	22.94
		12	0	23.69	23.32	22.87
			6	23.62	23.29	22.86
			13	23.32	23.15	22.65
		25	0	23.30	23.14	22.63
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				20800	21100	21400
10MHz	QPSK	1	0	23.63	23.45	23.00
			24	23.76	23.32	23.05
			49	23.55	23.20	22.84
		25	0	23.68	23.26	22.72
			12	23.59	23.19	22.76
			25	23.22	23.03	22.58
		50	0	23.20	23.08	22.55
	16QAM	1	0	23.66	23.32	23.14
			24	23.55	23.34	23.03
			49	23.64	23.11	22.75
		25	0	23.58	23.25	22.62
			12	23.47	23.07	22.60
			25	23.21	23.06	22.56
		50	0	23.12	23.09	22.45



Avg. Output Power of LTE Band 7 (dBm)						
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				20825	21100	21375
15MHz	QPSK	1	0	23.48	23.51	23.22
			37	23.41	23.48	23.18
			74	23.42	22.75	22.26
		37	0	23.28	23.46	23.35
			19	23.25	23.49	23.33
			38	23.33	22.66	22.49
		75	0	23.36	22.68	22.42
	16QAM	1	0	23.36	23.52	23.24
			37	23.32	23.48	23.21
			74	23.25	22.66	22.28
		37	0	23.29	23.42	23.35
			19	23.16	23.39	23.33
			38	23.18	22.66	22.45
		75	0	23.25	22.59	22.38
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				20850	21100	21350
20MHz	QPSK	1	0	23.51	23.58	23.26
			49	23.49	23.54	23.24
			99	23.47	22.84	22.32
		50	0	23.34	23.55	23.41
			25	23.32	23.52	23.38
			50	23.43	22.75	22.56
		100	0	23.40	22.71	22.51
	16QAM	1	0	23.41	23.51	23.21
			49	23.38	23.48	23.18
			99	23.36	22.78	22.25
		50	0	23.29	23.49	23.34
			25	23.25	23.46	23.26
			50	23.38	22.65	22.49
		100	0	23.36	22.69	22.37



Avg. Output Power of LTE Band 8 (dBm)						
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				21457	21625	21793
1.4MHz	QPSK	1	0	23.77	23.98	24.05
			2	23.71	23.91	24.01
			5	23.76	23.97	23.95
		3	0	23.82	23.92	24.06
			1	23.79	23.86	24.03
			3	23.81	23.93	24.04
		6	0	23.74	23.88	24.02
	16QAM	1	0	23.71	23.91	24.02
			2	23.66	23.88	24.00
			5	23.69	23.89	23.92
		3	0	23.78	23.87	24.03
			1	23.74	23.75	24.00
			3	23.78	23.84	24.02
		6	0	23.65	23.80	24.01
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				21465	21625	21785
3MHz	QPSK	1	0	23.50	23.83	23.95
			7	23.65	23.79	23.84
			14	23.52	23.86	23.91
		8	0	23.64	23.88	23.82
			4	23.56	23.75	23.90
			8	23.68	23.82	23.86
		15	0	23.69	23.70	23.93
	16QAM	1	0	23.53	23.84	23.89
			7	23.45	23.61	23.85
			14	23.56	23.76	23.78
		8	0	23.57	23.68	23.84
			4	23.52	23.75	23.82
			8	23.51	23.67	23.96
		15	0	23.45	23.74	23.87

Avg. Output Power of LTE Band 8(dBm)						
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				21475	21625	21775
5MHz	QPSK	1	0	23.88	24.03	24.35
			12	23.81	24.02	24.32
			24	23.81	24.04	23.98
		12	0	23.91	24.11	24.38
			6	23.89	24.09	24.33
			13	23.88	24.10	24.16
		25	0	23.81	24.06	24.14
	16QAM	1	0	23.81	24.02	24.31
			12	23.79	24.00	24.28
			24	23.75	24.03	23.94
		12	0	23.84	24.09	24.36
			6	23.80	24.05	24.30
			13	23.79	24.06	24.12
		25	0	23.76	24.04	24.10
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				21500	21625	21750
10MHz	QPSK	1	0	23.62	23.91	24.29
			24	23.58	23.87	24.26
			49	23.66	24.05	23.94
		25	0	23.94	24.03	24.42
			12	23.90	23.94	24.37
			25	23.91	24.18	24.21
		50	0	23.86	24.13	24.18
	16QAM	1	0	23.54	23.87	24.21
			24	23.51	23.84	24.20
			49	23.60	24.03	23.84
		25	0	23.89	24.01	24.36
			12	23.88	23.86	24.32
			25	23.85	24.15	24.18
		50	0	23.80	24.12	24.15

Avg. Output Power of LTE Band 20(dBm)						
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				24175	24300	24425
5MHz	QPSK	1	0	23.58	23.77	23.62
			12	23.51	23.74	23.58
			24	22.75	23.38	23.26
		12	0	23.17	23.66	23.20
			6	23.16	23.63	23.16
			13	22.48	23.18	22.99
		25	0	22.43	23.14	22.92
	16QAM	1	0	23.54	23.71	23.58
			12	23.48	23.68	23.54
			24	22.67	23.35	23.21
		12	0	23.12	23.59	23.16
			6	23.10	23.54	23.12
			13	22.38	23.12	22.84
		25	0	22.39	23.10	22.88
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				24200	24300	24400
10MHz	QPSK	0	0	23.47	23.55	23.42
			24	23.34	23.42	23.46
			49	22.51	23.28	23.03
		25	0	23.05	23.36	23.09
			12	23.08	23.45	23.06
			25	22.22	23.02	22.75
		50	0	22.26	23.03	22.68
	16QAM	0	0	23.39	23.60	23.32
			24	23.23	23.59	23.44
			49	22.40	23.26	23.10
		25	0	23.06	23.24	23.06
			12	23.05	23.37	23.05
			25	22.12	23.01	22.67
		50	0	22.08	23.05	22.63



Avg. Output Power of LTE Band 20(dBm)						
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				24225	24300	24375
15MHz	QPSK	1	0	23.55	23.40	22.23
			37	23.58	23.38	22.26
			74	22.04	22.45	21.09
		37	0	23.12	23.24	22.15
			19	23.16	23.21	22.12
			38	22.03	22.32	21.00
		75	0	22.05	22.36	22.08
	16QAM	1	0	23.69	23.33	22.25
			37	23.65	23.29	22.14
			74	22.00	22.28	21.07
		37	0	23.12	23.35	22.11
			19	23.06	23.20	22.05
			38	22.08	22.36	21.12
		75	0	22.04	22.22	22.16
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				24250	24300	24350
20MHz	QPSK	1	0	23.86	23.57	22.43
			49	23.81	23.51	22.40
			99	22.19	22.66	21.18
		50	0	23.33	23.44	22.35
			25	23.32	23.41	22.32
			50	22.21	22.55	21.35
		100	0	22.18	22.50	21.31
	16QAM	1	0	23.74	23.54	22.37
			49	23.78	23.48	22.35
			99	22.15	22.59	21.14
		50	0	23.26	23.32	22.26
			25	23.23	23.33	22.23
			50	22.19	22.46	21.29
		100	0	22.12	22.48	22.25

## WIFI

Mode	Data Rate (Mbps)	Channel	Frequency(MHz)	EIRP (dBm)
802.11b	1	1	2412	14.44
		2	2417	14.08
		7	2442	<b>14.97</b>
		12	2467	14.26
		13	2472	13.94
802.11g	6	1	2412	12.81
		7	2442	12.94
		13	2472	12.31
802.11n(20)	6.5	1	2412	12.58
		7	2442	12.88
		13	2472	12.00
802.11n(40)	13.5	3	2422	11.96
		7	2442	12.63
		11	2462	11.70

Note: For wifi RF test, there is no required about band edge; we test the power for channel 2&12 which is lower than channel 1&13; SAR need to test at low &high channel 1&13.



## 12. TEST RESULTS

### 12.1. SAR Test Results Summary

#### 12.1.1. Test position and configuration

Head SAR was performed with the device configured in the positions according to EN62209-1, Body SAR was performed with the device 5mm from the phantom according to EN62209-2; Hotspot SAR was performed with the device 10mm from the phantom according to EN62209-2; and Limbs SAR was performed with the device 0mm from the phantom according to EN62209-2.

#### 12.1.2. Operation Mode

1 For GSM900, the power control is set to Maximum Power Class. For GPRS 900(GMSK, CS1), the power control level is set to Maximum Power Class. For E-GPRS 900(GMSK: MCS1, 8PSK:MCS5), the power control is set to Maximum Power Class. For DCS 1800, the power control is set to Maximum Power Class. For GPRS 1800(GMSK, CS1), the power control level is set to Maximum Power Class. For E-GPRS 1800 (GMSK: MCS1, 8PSK:MCS5), the power control level is set to Maximum Power Class.

This is a multi-slot class 12 device capable of 4 uplink timeslots. During the head SAR test, the device was transmitting with maximum 1 uplink timeslot; during the body SAR test, it was transmitting with maximum 4 uplink timeslots. Additionally, this device doesn't support dual transfer mode (DTM)

Testing with the headset was performed at the position and channels that resulted in the highest body SAR. This testing was performed with GPRS transmitting with 2/3/4 uplink timeslots. In the Body SAR test result table, body-worn means display of device down, body-front means display of device up.

2 For WCDMA, head and body SAR is tested under RMC 12.2k mode with power control set all up bits SAR for AMR is not required since its power is less than RMC. For HSDPA/HSUPA, SAR is test with its maximum power mode.

3 The following test measurement is LTE procedure:

a) Largest channel bandwidth standalone SAR test requirements

(a1) QPSK with 1 RB allocation

Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.

When the measured SAR is  $\leq 1.0$  W/kg, testing of the remaining RB offset configurations and required test channels is not required for 1 RB allocation; otherwise, SAR is required for the remaining required test channels and only for the RB offset configuration with the highest output power for that channel.

When the measured SAR of a required test channel is  $> 1.80$  W/kg, SAR is required for all three RB offset configurations for that required test channel.

(a2) QPSK with 50% RB allocation

Start with the largest channel bandwidth and measure SAR for QPSK with 50% RB allocation at the worst position for 1 RB allocation in a1)

When the measured SAR is  $\leq 1.0$  W/kg, testing of the remaining RB offset configurations and required test channels is not required for 50% RB allocation; otherwise, SAR is required for the remaining required test channels and only for the RB offset configuration with the highest output power for that channel.

When the measured SAR of a required test channel is  $> 1.80$  W/kg, SAR is required for all three RB offset configurations for that required test channel.

(a3) QPSK with 100% RB allocation

Start with the largest channel bandwidth and measure SAR for QPSK with 100% RB allocation at the



worst position for 1 RB&50%RB allocation in a1&a2)

When the measured SAR is  $\leq 1.0$  W/kg, testing of the remaining channels is not required for 100% RB allocation; otherwise, SAR is required for the remaining channels and only for the highest output power for that channel.

When the measured SAR of a required test channel is  $> 1.80$  W/kg, SAR is required for low,mid,high channel.

(a4) Higher order modulations

For each modulation besides QPSK; e.g., 16-QAM, 64-QAM, apply the QPSK procedures in above sections to determine the QAM configurations that may need SAR measurement. For each configuration identified as required for testing, SAR is required only when the highest maximum output power for the configuration in the higher order modulation is  $> \frac{1}{2}$  dB higher than the highest maximum output power in QPSK or when the measured SAR for the QPSK configuration is  $> 1.8$ W/kg.

b) Other channel bandwidth standalone SAR test requirements

For the other channel bandwidths used by the device in a frequency band, apply all the procedures required for the largest channel bandwidth in section 4.1) to determine the channels and RB configurations that need SAR testing and only measure SAR when the highest maximum output power of a configuration requiring testing in the smaller channel bandwidth is  $> \frac{1}{2}$  dB higher than the highest maximum output power of the largest channel bandwidth configuration or the measured SAR of a configuration for the largest channel bandwidth is  $> 1.8$  W/kg.

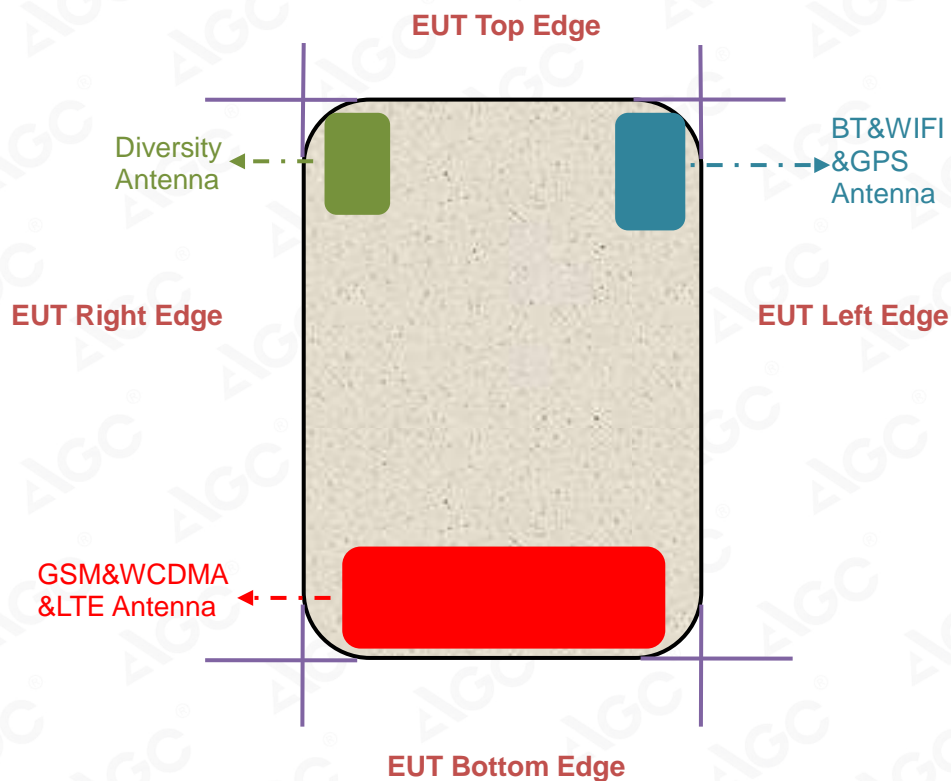
4. For WIFI SAR testing, the EUT has installed WIFI engineering testing software which can provide continuous transmitting RF signal.

5. Sensors have no any influence on power level or SAR result.

6. The portion of the EUT which area scan did not scan has been off the phantom.



### 12.1.3. Antenna Location: (back view)



### 12.1.4. SAR Test Results Summary

SAR MEASUREMENT									
Depth of Liquid (cm):>15					Relative Humidity (%): 57.4				
Product: Smart Phone									
Test Mode: GSM900 with GMSK modulation									
Position	Mode	Ch.	Fr. (MHz)	Power Drift (<±5%)	SAR (10g) (W/kg)	Max. Tune-up Power (dBm)	Meas. output Power (dBm)	Scaled SAR (W/Kg)	Limit (W/Kg)
SIM 1 Card									
Left Cheek	voice	37	897.4	0.15	0.216	33.30	33.18	0.222	2.0
Left Tilt	voice	37	897.4	-0.08	0.122	33.30	33.18	0.125	2.0
Right Cheek	voice	975	880.2	0.16	0.224	33.30	33.16	0.231	2.0
Right Cheek	voice	37	897.4	-0.28	0.226	33.30	33.18	0.232	2.0
Right Cheek	voice	124	914.8	0.20	0.226	33.30	33.24	0.229	2.0
Right Tilt	voice	37	897.4	-0.19	0.176	33.30	33.18	0.181	2.0
Body back	GPRS-4 slots	975	880.2	-0.45	0.225	29.40	29.27	0.232	2.0
Body back	GPRS-4 slots	37	897.4	-0.38	0.318	29.40	29.23	0.331	2.0
Body back	GPRS-4 slots	124	914.8	0.32	0.399	29.40	29.37	0.402	2.0
Body Front	GPRS-4 slots	37	897.4	-0.36	0.296	29.40	29.23	0.308	2.0
Body back + Ear.	voice	124	914.8	0.24	0.267	33.30	33.24	0.271	2.0
Hotspot back	GPRS-4 slots	975	880.2	0.23	0.179	29.40	29.27	0.184	2.0
Hotspot back	GPRS-4 slots	37	897.4	0.30	0.279	29.40	29.23	0.290	2.0
Hotspot back	GPRS-4 slots	124	914.8	-0.08	0.326	29.40	29.37	0.328	2.0
Hotspot Front	GPRS-4 slots	37	897.4	-0.18	0.135	29.40	29.23	0.140	2.0
Hotspot Edge 1 (Top)	GPRS-4 slots	37	897.4	0.48	0.010	29.40	29.23	0.010	2.0
Hotspot Edge 2(Right)	GPRS-4 slots	37	897.4	-0.20	0.081	29.40	29.23	0.084	2.0
Hotspot Edge 3(Bottom)	GPRS-4 slots	37	897.4	-0.07	0.067	29.40	29.23	0.070	2.0
Hotspot Edge 4(Left)	GPRS-4 slots	37	897.4	0.19	0.150	29.40	29.23	0.156	2.0
Limbs back	GPRS-4 slots	975	880.2	-0.80	0.877	29.40	29.27	0.904	4.0
Limbs back	GPRS-4 slots	37	897.4	0.79	0.947	29.40	29.23	0.985	4.0
Limbs back	GPRS-4 slots	124	914.8	-0.83	0.873	29.40	29.37	0.879	4.0
Limbs Front	GPRS-4 slots	37	897.4	0.74	0.560	29.40	29.23	0.582	4.0
Limbs Edge 1(Top)	GPRS-4 slots	37	897.4	-0.72	0.056	29.40	29.23	0.058	4.0
Limbs Edge 2(Right)	GPRS-4 slots	37	897.4	0.85	0.196	29.40	29.23	0.204	4.0
Limbs Edge 3(Bottom)	GPRS-4 slots	37	897.4	-0.79	0.596	29.40	29.23	0.620	4.0
Limbs Edge 4(Left)	GPRS-4 slots	37	897.4	0.81	0.422	29.40	29.23	0.439	4.0
Limbs back + Ear.	voice	37	897.4	-0.76	0.675	33.30	33.18	0.694	4.0

Note:

- For body part and hotspot, when the 10-g SAR is  $\leq 1.0\text{W/kg}$ , testing for low and high channel is optional.
- For Limbs part, when the 10-g SAR is  $\leq 2.0\text{W/kg}$ , testing for low and high channel is optional.
- The test separation of all above table (body part is 5mm, hotspot is 10mm and limbs part is 0mm).
- Since GPRS with 4 TX provides the highest output power, only this mode was considered for SAR assessment in body worn &limbsconfiguration.
- Measurements for SIM Card 2 are not conducted since SIM Card 1 show the highest output power
- Plots are only shown for the bold marked worst case SAR results



SAR MEASUREMENT									
Depth of Liquid (cm):>15					Relative Humidity (%): 46.2				
Product: Smart Phone									
Test Mode: DCS1800 with GMSK modulation									
Position	Mode	Ch.	Fr. (MHz)	Power Drift (<±5%)	SAR (10g) (W/kg)	Max. Tune-up Power (dBm)	Meas. output Power (dBm)	Scaled SAR (W/Kg)	Limit (W/Kg)
SIM 1 Card									
Left Cheek	voice	698	1747.4	-0.28	0.060	31.00	30.61	0.066	2.0
Left Tilt	voice	698	1747.4	0.16	0.023	31.00	30.61	0.025	2.0
Right Cheek	voice	512	1710.2	-0.09	0.047	31.00	30.19	0.057	2.0
Right Cheek	voice	698	1747.4	0.15	0.073	31.00	30.61	0.080	2.0
Right Cheek	voice	885	1784.8	-0.03	<b>0.130</b>	31.00	30.95	<b>0.132</b>	2.0
Right Tilt	voice	698	1747.4	0.19	0.051	31.00	30.61	0.056	2.0
Body back	GPRS-4 slots	512	1710.2	-0.26	0.469	27.40	26.57	0.568	2.0
Body back	GPRS-4 slots	698	1747.4	0.34	<b>0.567</b>	27.40	26.94	<b>0.630</b>	2.0
Body back	GPRS-4 slots	885	1784.8	-0.28	0.481	27.40	27.32	0.490	2.0
Body Front	GPRS-4 slots	698	1747.4	-0.33	0.206	27.40	26.94	0.229	2.0
Body back + Ear.	voice	698	1747.4	0.47	0.462	31.00	30.61	0.505	2.0
Hotspot back	GPRS-4 slots	512	1710.2	-0.38	0.289	27.40	26.57	0.350	2.0
Hotspot back	GPRS-4 slots	698	1747.4	0.31	0.343	27.40	26.94	0.381	2.0
Hotspot back	GPRS-4 slots	885	1784.8	-0.37	<b>0.537</b>	27.40	27.32	<b>0.547</b>	2.0
Hotspot Front	GPRS-4 slots	698	1747.4	0.24	0.207	27.40	26.94	0.230	2.0
Hotspot Edge 1 (Top)	GPRS-4 slots	698	1747.4	-0.32	0.032	27.40	26.94	0.036	2.0
Hotspot Edge 2(Right)	GPRS-4 slots	698	1747.4	0.25	0.104	27.40	26.94	0.116	2.0
Hotspot Edge 3(Bottom)	GPRS-4 slots	698	1747.4	-0.16	0.213	27.40	26.94	0.237	2.0
Hotspot Edge 4(Left)	GPRS-4 slots	698	1747.4	0.20	0.046	27.40	26.94	0.051	2.0
Limbs back	GPRS-4 slots	512	1710.2	-1.06	1.590	27.40	26.57	1.925	4.0
Limbs back	GPRS-4 slots	698	1747.4	1.12	1.819	27.40	26.94	2.022	4.0
Limbs back	GPRS-4 slots	885	1784.8	-1.18	<b>2.152</b>	27.40	27.32	<b>2.192</b>	4.0
Limbs Front	GPRS-4 slots	698	1747.4	0.93	0.612	27.40	26.94	0.680	4.0
Limbs Edge 1(Top)	GPRS-4 slots	698	1747.4	-0.97	0.060	27.40	26.94	0.067	4.0
Limbs Edge 2(Right)	GPRS-4 slots	698	1747.4	0.87	0.529	27.40	26.94	0.588	4.0
Limbs Edge 3(Bottom)	GPRS-4 slots	698	1747.4	-1.06	1.089	27.40	26.94	1.211	4.0
Limbs Edge 4(Left)	GPRS-4 slots	698	1747.4	-0.75	0.154	27.40	26.94	0.171	4.0
Limbs back + Ear.	voice	885	1784.8	1.04	1.764	31.00	30.95	1.784	4.0

Note:

- For body part and hotspot, when the 10-g SAR is  $\leq 1.0\text{W/kg}$ , testing for low and high channel is optional.
- For Limbs part, when the 10-g SAR is  $\leq 2.0\text{W/kg}$ , testing for low and high channel is optional.
- The test separation of all above table (body part is 5mm, hotspot is 10mm and limbs part is 0mm).
- Since GPRS with 4 TX provides the highest output power, only this mode was considered for SAR assessment in body worn &limbsconfiguration.
- Measurements for SIM Card 2 are not conducted since SIM Card 1 show the highest output power
- Plots are only shown for the bold marked worst case SAR results



SAR MEASUREMENT									
Depth of Liquid (cm):>15					Relative Humidity (%): 46.8				
Product: Smart Phone									
Test Mode: WCDMA Band I with QPSK modulation									
Position	Mode	Ch.	Fr. (MHz)	Power Drift (<±5%)	SAR (10g) (W/kg)	Max. Tune-up Power (dBm)	Meas. output Power (dBm)	Scaled SAR (W/Kg)	Limit W/kg
SIM 1 Card									
Left Cheek	RMC12.2kbps	9750	1950	-0.45	0.293	23.70	23.64	0.297	2.0
Left Tilt	RMC12.2kbps	9750	1950	-0.36	0.073	23.70	23.64	0.074	2.0
Right Cheek	RMC12.2kbps	9612	1922.4	0.39	0.301	23.70	23.50	0.315	2.0
Right Cheek	RMC12.2kbps	9750	1950	0.52	<b>0.343</b>	23.70	23.64	<b>0.348</b>	2.0
Right Cheek	RMC12.2kbps	9888	1977.6	-0.28	0.260	23.70	23.54	0.270	2.0
Right Tilt	RMC12.2kbps	9750	1950	0.21	0.110	23.70	23.64	0.112	2.0
Body back	RMC12.2kbps	9612	1922.4	-0.85	1.039	23.70	23.50	1.088	2.0
Body back	RMC12.2kbps	9750	1950	0.76	<b>1.134</b>	23.70	23.64	<b>1.150</b>	2.0
Body back	RMC12.2kbps	9888	1977.6	-0.65	0.968	23.70	23.54	1.004	2.0
Body front	RMC12.2kbps	9750	1950	0.69	0.665	23.70	23.64	0.674	2.0
Body back	HSDPA Subtest 1	9750	1950	-0.62	1.030	22.60	22.55	1.042	2.0
Body back	HSUPA Subtest 1	9750	1950	-0.58	1.029	20.40	20.37	1.036	2.0
Body back + Ear.	RMC12.2kbps	9750	1950	0.63	1.106	23.70	23.64	1.121	2.0
Hotspot back	RMC12.2kbps	9612	1922.4	-0.26	<b>0.561</b>	23.70	23.50	<b>0.587</b>	2.0
Hotspot back	RMC12.2kbps	9750	1950	0.31	0.545	23.70	23.64	0.553	2.0
Hotspot back	RMC12.2kbps	9888	1977.6	-0.26	0.541	23.70	23.54	0.561	2.0
Hotspot Front	RMC12.2kbps	9750	1950	0.37	0.329	23.70	23.64	0.334	2.0
Hotspot back	HSDPA Subtest 1	9750	1950	-0.25	0.532	22.60	22.55	0.538	2.0
Hotspot back	HSUPA Subtest 1	9750	1950	0.41	0.532	20.40	20.37	0.536	2.0
Hotspot Edge 1 (Top)	RMC12.2kbps	9750	1950	-0.08	0.058	23.70	23.64	0.059	2.0
Hotspot Edge 2(Right)	RMC12.2kbps	9750	1950	0.26	0.309	23.70	23.64	0.313	2.0
Hotspot Edge 3(Bottom)	RMC12.2kbps	9750	1950	-0.31	0.471	23.70	23.64	0.478	2.0
Hotspot Edge 4(Left)	RMC12.2kbps	9750	1950	0.33	0.213	23.70	23.64	0.216	2.0
Limbs back	RMC12.2kbps	9612	1922.4	-1.45	2.250	23.70	23.50	<b>2.356</b>	4.0
Limbs back	RMC12.2kbps	9750	1950	1.26	<b>2.276</b>	23.70	23.64	2.308	4.0
Limbs back	RMC12.2kbps	9888	1977.6	-1.30	1.943	23.70	23.54	2.016	4.0
Limbs Front	RMC12.2kbps	9750	1950	1.38	1.459	23.70	23.64	1.479	4.0
Limbs back	HSDPA Subtest 1	9750	1950	-1.57	2.251	22.60	22.55	2.277	4.0
Limbs back	HSUPA Subtest 1	9750	1950	1.51	2.254	20.40	20.37	2.270	4.0
Limbs Edge 1(Top)	RMC12.2kbps	9750	1950	-1.08	0.093	23.70	23.64	0.094	4.0
Limbs Edge 2(Right)	RMC12.2kbps	9750	1950	1.02	0.995	23.70	23.64	1.009	4.0
Limbs Edge 3(Bottom)	RMC12.2kbps	9750	1950	-1.36	1.996	23.70	23.64	2.024	4.0
Limbs Edge 4(Left)	RMC12.2kbps	9750	1950	-0.99	0.528	23.70	23.64	0.535	4.0
Limbs back + Ear.	RMC12.2kbps	9750	1950	1.27	2.249	23.70	23.64	2.280	4.0

Note:

- For body part and hotspot, when the 10-g SAR is ≤ 1.0W/kg, testing for low and high channel is optional.
- For Limbs part, when the 10-g SAR is ≤ 2.0W/kg, testing for low and high channel is optional.
- The test separation of all above table (body part is 5mm, hotspot is 10mm and limbs part is 0mm).
- Plots are only shown for the bold marked worst case SAR results



SAR MEASUREMENT									
Depth of Liquid (cm):>15					Relative Humidity (%): 57.4				
Product: Smart Phone									
Test Mode: WCDMA Band VIII with QPSK modulation									
Position	Mode	Ch.	Fr. (MHz)	Power Drift (<±5%)	SAR (10g) (W/kg)	Max. Tune-up Power (dBm)	Meas. output Power (dBm)	Scaled SAR (W/Kg)	Limit W/kg
SIM 1 Card									
Left Cheek	RMC12.2kbps	2788	897.6	-0.34	0.240	23.20	22.80	0.263	2.0
Left Tilt	RMC12.2kbps	2788	897.6	0.42	0.145	23.20	22.80	0.159	2.0
Right Cheek	RMC12.2kbps	2712	882.4	-0.28	0.163	23.20	22.86	0.176	2.0
Right Cheek	RMC12.2kbps	2788	897.6	0.31	0.250	23.20	22.80	0.274	2.0
Right Cheek	RMC12.2kbps	2863	912.6	-0.26	<b>0.287</b>	23.20	23.17	<b>0.289</b>	2.0
Right Tilt	RMC12.2kbps	2788	897.6	0.20	0.164	23.20	22.80	0.180	2.0
Body back	RMC12.2kbps	2712	882.4	-0.37	0.137	23.20	22.86	0.148	2.0
Body back	RMC12.2kbps	2788	897.6	0.35	<b>0.375</b>	23.20	22.80	<b>0.411</b>	2.0
Body back	RMC12.2kbps	2863	912.6	-0.41	0.326	23.20	23.17	0.328	2.0
Body front	RMC12.2kbps	2788	897.6	0.46	0.129	23.20	22.80	0.141	2.0
Body back	HSDPA Subtest 1	2788	897.6	-0.38	0.223	22.20	21.84	0.242	2.0
Body back	HSUPA Subtest 1	2788	897.6	-0.33	0.230	20.10	19.79	0.247	2.0
Body back + Ear.	RMC12.2kbps	2788	897.6	0.49	0.237	23.20	22.80	0.260	2.0
Hotspot back	RMC12.2kbps	2712	882.4	-0.08	0.136	23.20	22.86	<b>0.147</b>	2.0
Hotspot back	RMC12.2kbps	2788	897.6	0.15	0.125	23.20	22.80	0.137	2.0
Hotspot back	RMC12.2kbps	2863	912.6	-0.04	<b>0.140</b>	23.20	23.17	0.141	2.0
Hotspot Front	RMC12.2kbps	2788	897.6	0.21	0.093	23.20	22.80	0.102	2.0
Hotspot back	HSDPA Subtest 1	2788	897.6	-0.02	0.123	22.20	21.84	0.134	2.0
Hotspot back	HSUPA Subtest 1	2788	897.6	0.00	0.121	20.10	19.79	0.130	2.0
Hotspot Edge 1 (Top)	RMC12.2kbps	2788	897.6	-0.06	0.008	23.20	22.80	0.009	2.0
Hotspot Edge 2(Right)	RMC12.2kbps	2788	897.6	-0.19	0.042	23.20	22.80	0.046	2.0
Hotspot Edge 3(Bottom)	RMC12.2kbps	2788	897.6	0.03	0.048	23.20	22.80	0.053	2.0
Hotspot Edge 4(Left)	RMC12.2kbps	2788	897.6	0.12	0.065	23.20	22.80	0.071	2.0
Limbs back	RMC12.2kbps	2712	882.4	0.87	0.658	23.20	22.86	0.712	4.0
Limbs back	RMC12.2kbps	2788	897.6	-0.95	<b>0.770</b>	23.20	22.80	<b>0.844</b>	4.0
Limbs back	RMC12.2kbps	2863	912.6	0.86	0.705	23.20	23.17	0.710	4.0
Limbs Front	RMC12.2kbps	2788	897.6	-0.92	0.431	23.20	22.80	0.473	4.0
Limbs back	HSDPA Subtest 1	2788	897.6	0.84	0.744	22.20	21.84	0.808	4.0
Limbs back	HSUPA Subtest 1	2788	897.6	-0.90	0.722	20.10	19.79	0.775	4.0
Limbs Edge 1(Top)	RMC12.2kbps	2788	897.6	0.88	0.028	23.20	22.80	0.031	4.0
Limbs Edge 2(Right)	RMC12.2kbps	2788	897.6	-0.75	0.152	23.20	22.80	0.167	4.0
Limbs Edge 3(Bottom)	RMC12.2kbps	2788	897.6	0.86	0.365	23.20	22.80	0.400	4.0
Limbs Edge 4(Left)	RMC12.2kbps	2788	897.6	-0.79	0.372	23.20	22.80	0.408	4.0
Limbs back + Ear.	RMC12.2kbps	2788	897.6	0.77	0.700	23.20	22.80	0.768	4.0

Note:

- For body part and hotspot, when the 10-g SAR is ≤ 1.0W/kg, testing for low and high channel is optional.
- For Limbs part, when the 10-g SAR is ≤ 2.0W/kg, testing for low and high channel is optional.
- The test separation of all above table (body part is 5mm, hotspot is 10mm and limbs part is 0mm).
- Plots are only shown for the bold marked worst case SAR results



SAR MEASUREMENT												
Depth of Liquid (cm):>15						Relative Humidity (%): 46.8						
Product: Smart Phone												
Test Mode: LTE Band 1												
BW MHz	MOD	Position	Test Mode		Ch.	Freq. (MHz)	Power Drift (<±5%)	SAR (10g) (W/kg)	Max. Tune up Power (dBm)	Meas. output Power (dBm)	Scaled SAR (W/Kg)	Limit (W/kg)
			UL RB Allo cati on	UL RB START								
20	QPSK	Left Cheek	1	0	18300	1950	0.63	0.247	24.40	23.93	0.275	2.0
		Left Tilt	1	0	18300	1950	-0.54	0.059	24.40	23.93	0.066	2.0
		Right Cheek	1	0	18100	1930	0.69	0.270	24.40	24.36	0.272	2.0
		Right Cheek	1	0	18300	1950	-0.75	0.257	24.40	23.93	0.286	2.0
		Right Cheek	1	0	18500	1970	0.54	0.270	24.40	24.02	0.295	2.0
		Right Tilt	1	0	18300	1950	-0.19	0.112	24.40	23.93	0.125	2.0
		Body back	1	0	18100	1930	0.85	1.022	24.40	24.36	1.031	2.0
		Body back	1	0	18300	1950	-0.79	1.027	24.40	23.93	1.144	2.0
		Body back	1	0	18500	1970	0.84	1.021	24.40	24.02	1.114	2.0
		Body front	1	0	18300	1950	-0.76	0.575	24.40	23.93	0.641	2.0
		Body back+Ear.	1	0	18300	1950	-0.82	1.019	24.40	23.93	1.135	2.0
		Hotspot back	1	0	18100	1930	-0.45	0.539	24.40	24.36	0.544	2.0
		Hotspot back	1	0	18300	1950	0.52	0.566	24.40	23.93	0.631	2.0
		Hotspot back	1	0	18500	1970	-0.56	0.537	24.40	24.02	0.586	2.0
		Hotspot Front	1	0	18300	1950	0.49	0.348	24.40	23.93	0.388	2.0
		Hotspot Edge 1 (Top)	1	0	18300	1950	-0.43	0.048	24.40	23.93	0.053	2.0
		Hotspot Edge 2(Right)	1	0	18300	1950	0.51	0.246	24.40	23.93	0.274	2.0
		Hotspot Edge 3(Bottom)	1	0	18300	1950	-0.55	0.433	24.40	23.93	0.482	2.0
		Hotspot Edge 4(Left)	1	0	18300	1950	-0.27	0.167	24.40	23.93	0.186	2.0
		Limbs back	1	0	18100	1930	1.34	2.253	24.40	24.36	2.274	4.0
		Limbs back	1	0	18300	1950	-1.48	2.213	24.40	23.93	2.466	4.0
		Limbs back	1	0	18500	1970	1.52	2.204	24.40	24.02	2.406	4.0
		Limbs Front	1	0	18300	1950	-1.09	1.692	24.40	23.93	1.885	4.0
		Limbs Edge 1(Top)	1	0	18300	1950	0.57	0.110	24.40	23.93	0.123	4.0
		Limbs Edge 2(Right)	1	0	18300	1950	-1.46	1.110	24.40	23.93	1.237	4.0
		Limbs Edge 3(Bottom)	1	0	18300	1950	1.38	1.973	24.40	23.93	2.199	4.0
		Limbs Edge 4(Left)	1	0	18300	1950	-0.94	0.548	24.40	23.93	0.611	4.0
		Limbs back + Ear.	1	0	18100	1930	-1.25	2.139	24.40	24.36	2.159	4.0

Note:

- For body part and hotspot, when the 10-g SAR is  $\leq 1.0\text{W/kg}$ , testing for low and high channel is optional.
- For Limbs part, when the 10-g SAR is  $\leq 2.0\text{W/kg}$ , testing for low and high channel is optional.
- The test separation of all above table (body part is 5mm, hotspot is 10mm and limbs part is 0mm).
- Plots are only shown for the bold marked worst case SAR results



SAR MEASUREMENT												
Depth of Liquid (cm):>15						Relative Humidity (%): 46.2						
Product: Smart Phone												
Test Mode: LTE Band 3												
BW MHz	MOD	Position	Test Mode		Ch.	Freq. (MHz)	Power Drift (<±5%)	SAR (10g) (W/kg)	Max. Tune up Power (dBm)	Meas. output Power (dBm)	Scaled SAR (W/Kg)	Limit (W/kg)
			UL RB Allocation	UL RB START								
20	QPSK	Left Cheek	1	0	19575	1747.5	-0.41	0.125	24.60	24.58	0.126	2.0
		Left Tilt	1	0	19575	1747.5	0.35	0.051	24.60	24.58	0.051	2.0
		Right Cheek	1	0	19300	1720	-0.52	0.173	24.60	23.92	<b>0.202</b>	2.0
		Right Cheek	1	0	19575	1747.5	0.46	0.173	24.60	24.58	0.174	2.0
		Right Cheek	1	0	19850	1775	-0.52	<b>0.177</b>	24.60	24.34	0.188	2.0
		Right Tilt	1	0	19575	1747.5	0.59	0.067	24.60	24.58	0.067	2.0
		Body back	1	0	19300	1720	-0.48	0.923	24.60	23.92	<b>1.079</b>	2.0
		Body back	1	0	19575	1747.5	0.46	<b>0.957</b>	24.60	24.58	0.961	2.0
		Body back	1	0	19850	1775	-0.37	0.902	24.60	24.34	0.958	2.0
		Body front	1	0	19575	1747.5	0.33	0.389	24.60	24.58	0.391	2.0
		Body back+Ear	1	0	19575	1747.5	-0.42	0.949	24.60	24.58	0.953	2.0
		Hotspot back	1	0	19300	1720	0.38	0.517	24.60	23.92	<b>0.605</b>	2.0
		Hotspot back	1	0	19575	1747.5	-0.43	<b>0.521</b>	24.60	24.58	0.523	2.0
		Hotspot back	1	0	19850	1775	0.35	0.505	24.60	24.34	0.536	2.0
		Hotspot Front	1	0	19575	1747.5	-0.12	0.267	24.60	24.58	0.268	2.0
		Hotspot Edge 1 (Top)	1	0	19575	1747.5	0.06	0.037	24.60	24.58	0.037	2.0
		Hotspot Edge 2(Right)	1	0	19575	1747.5	-0.19	0.132	24.60	24.58	0.133	2.0
		Hotspot Edge 3(Bottom)	1	0	19575	1747.5	0.14	0.291	24.60	24.58	0.292	2.0
		Hotspot Edge 4(Left)	1	0	19575	1747.5	-0.07	0.058	24.60	24.58	0.058	2.0
		Limbs back	1	0	19300	1720	1.56	2.859	24.60	23.92	3.344	4.0
		Limbs back	1	0	19575	1747.5	-1.87	3.159	24.60	24.58	3.174	4.0
		Limbs back	1	0	19850	1775	1.94	<b>3.229</b>	24.60	24.34	<b>3.428</b>	4.0
		Limbs Front	1	0	19575	1747.5	-0.86	0.858	24.60	24.58	0.862	4.0
		Limbs Edge 1(Top)	1	0	19575	1747.5	0.24	0.086	24.60	24.58	0.086	4.0
		Limbs Edge 2(Right)	1	0	19575	1747.5	-0.53	0.677	24.60	24.58	0.680	4.0
		Limbs Edge 3(Bottom)	1	0	19575	1747.5	1.15	1.718	24.60	24.58	1.726	4.0
		Limbs Edge 4(Left)	1	0	19575	1747.5	-0.28	0.216	24.60	24.58	0.217	4.0
		Limbs back + Ear	1	0	19850	1775	1.43	2.982	24.60	24.34	3.166	4.0

Note:

- For body part and hotspot, when the 10-g SAR is  $\leq 1.0\text{W/kg}$ , testing for low and high channel is optional.
- For Limbs part, when the 10-g SAR is  $\leq 2.0\text{W/kg}$ , testing for low and high channel is optional.
- The test separation of all above table (body part is 5mm, hotspot is 10mm and limbs part is 0mm).
- Plots are only shown for the bold marked worst case SAR results



SAR MEASUREMENT												
Depth of Liquid (cm):>15						Relative Humidity (%): 47.2						
Product: Smart Phone												
Test Mode: LTE Band 7												
BW MHz	MOD	Position	Test Mode		Ch.	Freq. (MHz)	Power Drift ( $\leq \pm 5\%$ )	SAR (10g) (W/kg)	Max. Tune- up Power (dBm)	Meas. output Power (dBm)	Scaled SAR (W/Kg)	Limit (W/kg)
			UL RB Allocat ion	UL RB STAR T								
20	QPSK	Left Cheek	1	0	21100	2535	0.32	0.026	24.00	23.58	0.029	2.0
		Left Tilt	1	0	21100	2535	-0.25	0.013	24.00	23.58	0.014	2.0
		Right Cheek	1	0	20850	2510	0.16	0.032	24.00	23.51	0.036	2.0
		Right Cheek	1	0	21100	2535	-0.20	0.032	24.00	23.58	0.035	2.0
		Right Cheek	1	0	21350	2560	0.26	0.033	24.00	23.26	0.039	2.0
		Right Tilt	1	0	21100	2535	-0.13	0.012	24.00	23.58	0.013	2.0
		Body back	1	0	20850	2510	0.24	0.306	24.00	23.51	0.343	2.0
		Body back	1	0	21100	2535	-0.37	0.320	24.00	23.58	0.352	2.0
		Body back	1	0	21350	2560	-0.30	0.317	24.00	23.26	0.376	2.0
		Body front	1	0	21100	2535	0.29	0.102	24.00	23.58	0.112	2.0
		Body back+Ear.	1	0	21100	2535	-0.48	0.311	24.00	23.58	0.343	2.0
		Hotspot back	1	0	21100	2535	0.23	0.131	24.00	23.58	0.144	2.0
		Hotspot Front	1	0	21100	2535	-0.26	0.049	24.00	23.58	0.054	2.0
		Hotspot Edge 1 (Top)	1	0	21100	2535	0.15	0.005	24.00	23.58	0.006	2.0
		Hotspot Edge 2(Right)	1	0	21100	2535	-0.24	0.053	24.00	23.58	0.058	2.0
		Hotspot Edge 3(Bottom)	1	0	20850	2510	0.20	0.219	24.00	23.51	0.245	2.0
		Hotspot Edge 3(Bottom)	1	0	21100	2535	-0.29	0.205	24.00	23.58	0.226	2.0
		Hotspot Edge 3(Bottom)	1	0	21350	2560	0.15	0.227	24.00	23.26	0.269	2.0
		Hotspot Edge 4(Left)	1	0	21100	2535	-0.18	0.003	24.00	23.58	0.003	2.0
		Limbs back	1	0	21100	2535	1.06	1.021	24.00	23.58	1.125	4.0
		Limbs Front	1	0	21100	2535	-0.23	0.248	24.00	23.58	0.273	4.0
		Limbs Edge 1(Top)	1	0	21100	2535	0.08	0.014	24.00	23.58	0.015	4.0
		Limbs Edge 2(Right)	1	0	21100	2535	-0.64	0.480	24.00	23.58	0.529	4.0
		Limbs Edge 3(Bottom)	1	0	20850	2510	-0.81	0.973	24.00	23.51	1.089	4.0
		Limbs Edge 3(Bottom)	1	0	21100	2535	1.09	1.026	24.00	23.58	1.130	4.0
		Limbs Edge 3(Bottom)	1	0	21350	2560	-1.02	1.007	24.00	23.26	1.194	4.0
		Limbs Edge 4(Left)	1	0	21100	2535	0.01	0.008	24.00	23.58	0.009	4.0
		Limbs Edge 3 + Ear.	1	0	21100	2535	-0.87	0.990	24.00	23.58	1.091	4.0

Note:

- For body part and hotspot, when the 10-g SAR is  $\leq 1.0\text{W/kg}$ , testing for low and high channel is optional.
- For Limbs part, when the 10-g SAR is  $\leq 2.0\text{W/kg}$ , testing for low and high channel is optional.
- The test separation of all above table (body part is 5mm, hotspot is 10mm and limbs part is 0mm).
- Plots are only shown for the bold marked worst case SAR results.



SAR MEASUREMENT												
Depth of Liquid (cm):>15					Relative Humidity (%): 58.8							
Product: Smart Phone												
Test Mode: LTE Band 8												
BW MHz	MOD	Position	Test Mode		Ch.	Freq. (MHz)	Power Drift (<±5%)	SAR (10g) (W/kg)	Max. Tune up Power (dBm)	Meas. output Power (dBm)	Scaled SAR (W/Kg)	Limit (W/kg)
			UL RB Allocati on	UL RB START								
10	QPSK	Left Cheek	1	0	21625	897.5	-0.56	0.174	24.50	23.91	0.199	2.0
		Left Tilt	1	0	21625	897.5	0.40	0.102	24.50	23.91	0.117	2.0
		Right Cheek	1	0	21500	885	-0.58	0.156	24.50	23.62	0.191	2.0
		Right Cheek	1	0	21625	897.5	0.33	<b>0.175</b>	24.50	23.91	<b>0.200</b>	2.0
		Right Cheek	1	0	21750	910	-0.56	0.160	24.50	24.29	0.168	2.0
		Right Tilt	1	0	21625	897.5	0.29	0.123	24.50	23.91	0.141	2.0
		Body back	1	0	21500	885	-0.32	0.278	24.50	23.62	<b>0.340</b>	2.0
		Body back	1	0	21625	897.5	0.57	<b>0.286</b>	24.50	23.91	0.328	2.0
		Body back	1	0	21750	910	-0.40	0.250	24.50	24.29	0.262	2.0
		Body front	1	0	21625	897.5	-0.33	0.106	24.50	23.91	0.121	2.0
		Body back+Ear.	1	0	21625	897.5	0.45	0.271	24.50	23.91	0.310	2.0
		Hotspot back	1	0	21500	885	-0.14	0.261	24.50	23.62	<b>0.320</b>	2.0
		Hotspot back	1	0	21625	897.5	0.06	<b>0.267</b>	24.50	23.91	0.306	2.0
		Hotspot back	1	0	21750	910	-0.23	0.254	24.50	24.29	0.267	2.0
		Hotspot Front	1	0	21625	897.5	0.09	0.208	24.50	23.91	0.238	2.0
		Hotspot Edge 1 (Top)	1	0	21625	897.5	-0.05	0.012	24.50	23.91	0.014	2.0
		Hotspot Edge 2(Right)	1	0	21625	897.5	0.18	0.173	24.50	23.91	0.198	2.0
		Hotspot Edge 3(Bottom)	1	0	21625	897.5	-0.12	0.076	24.50	23.91	0.087	2.0
		Hotspot Edge 4(Left)	1	0	21625	897.5	0.06	0.088	24.50	23.91	0.101	2.0
		Limbs back	1	0	21500	885	-0.74	<b>0.763</b>	24.50	23.62	<b>0.934</b>	4.0
		Limbs back	1	0	21625	897.5	0.65	0.752	24.50	23.91	0.861	4.0
		Limbs back	1	0	21750	910	-0.66	0.744	24.50	24.29	0.781	4.0
		Limbs Front	1	0	21625	897.5	0.72	0.444	24.50	23.91	0.509	4.0
		Limbs Edge 1(Top)	1	0	21625	897.5	-0.84	0.034	24.50	23.91	0.039	4.0
		Limbs Edge 2(Right)	1	0	21625	897.5	0.79	0.150	24.50	23.91	0.172	4.0
		Limbs Edge 3(Bottom)	1	0	21625	897.5	-0.65	0.416	24.50	23.91	0.477	4.0
		Limbs Edge 4(Left)	1	0	21625	897.5	-0.45	0.346	24.50	23.91	0.396	4.0
		Limbs back + Ear.	1	0	21500	885	0.52	0.742	24.50	23.62	0.909	4.0

Note:

- For body part and hotspot, when the 10-g SAR is  $\leq 1.0\text{W/kg}$ , testing for low and high channel is optional.
- For Limbs part, when the 10-g SAR is  $\leq 2.0\text{W/kg}$ , testing for low and high channel is optional.
- The test separation of all above table (body part is 5mm, hotspot is 10mm and limbs part is 0mm).
- Plots are only shown for the bold marked worst case SAR results



SAR MEASUREMENT												
Depth of Liquid (cm):>15					Relative Humidity (%): 52.8							
Product: Smart Phone												
Test Mode: LTE Band 20												
BW MHz	MOD	Position	Test Mode		Ch.	Freq. (MHz)	Power Drift (<±5%)	SAR (10g) (W/kg)	Max. Tune up Power (dBm)	Meas. output Power (dBm)	Scaled SAR (W/Kg)	Limit (W/kg)
			UL RB Allocation	UL RB START								
20	QPSK	Left Cheek	1	0	24300	847	-0.28	0.036	23.90	23.57	0.039	2.0
		Left Tilt	1	0	24300	847	0.15	0.026	23.90	23.57	0.028	2.0
		Right Cheek	1	0	24250	842	-0.27	0.036	23.90	23.86	0.036	2.0
		Right Cheek	1	0	24300	847	0.04	0.045	23.90	23.57	0.049	2.0
		Right Cheek	1	0	24350	852	0.32	0.037	23.90	22.43	0.052	2.0
		Right Tilt	1	0	24300	847	-0.26	0.030	23.90	23.57	0.032	2.0
		Body back	1	0	24250	842	0.04	0.075	23.90	23.86	0.076	2.0
		Body back	1	0	24300	847	-0.11	0.103	23.90	23.57	0.111	2.0
		Body back	1	0	24350	852	0.08	0.075	23.90	22.43	0.105	2.0
		Body front	1	0	24300	847	-0.03	0.072	23.90	23.57	0.078	2.0
		Body back+Ear.	1	0	24250	842	-0.04	0.059	23.90	23.86	0.060	2.0
		Hotspot back	1	0	24250	842	0.10	0.067	23.90	23.86	0.068	2.0
		Hotspot back	1	0	24300	847	-0.23	0.067	23.90	23.57	0.072	2.0
		Hotspot back	1	0	24350	852	0.02	0.066	23.90	22.43	0.093	2.0
		Hotspot Front	1	0	24300	847	-0.19	0.028	23.90	23.57	0.030	2.0
		Hotspot Edge 1 (Top)	1	0	24300	847	0.06	0.004	23.90	23.57	0.004	2.0
		Hotspot Edge 2(Right)	1	0	24300	847	-0.07	0.053	23.90	23.57	0.057	2.0
		Hotspot Edge 3(Bottom)	1	0	24300	847	0.09	0.010	23.90	23.57	0.011	2.0
		Hotspot Edge 4(Left)	1	0	24300	847	-0.15	0.069	23.90	23.57	0.074	2.0
		Limbs back	1	0	24250	842	0.48	0.330	23.90	23.86	0.333	4.0
		Limbs back	1	0	24300	847	-0.52	0.360	23.90	23.57	0.388	4.0
		Limbs back	1	0	24350	852	0.59	0.326	23.90	22.43	0.457	4.0
		Limbs Front	1	0	24300	847	-0.63	0.083	23.90	23.57	0.090	4.0
		Limbs Edge 1(Top)	1	0	24300	847	0.66	0.006	23.90	23.57	0.006	4.0
		Limbs Edge 2(Right)	1	0	24300	847	-0.49	0.064	23.90	23.57	0.069	4.0
		Limbs Edge 3(Bottom)	1	0	24300	847	0.51	0.078	23.90	23.57	0.084	4.0
		Limbs Edge 4(Left)	1	0	24300	847	-0.52	0.108	23.90	23.57	0.117	4.0
		Limbs back + Ear.	1	0	24300	847	0.47	0.342	23.90	23.57	0.369	4.0

Note:

- For body part and hotspot, when the 10-g SAR is ≤ 1.0W/kg, testing for low and high channel is optional.
- For Limbs part, when the 10-g SAR is ≤ 2.0W/kg, testing for low and high channel is optional.
- The test separation of all above table (body part is 5mm, hotspot is 10mm and limbs part is 0mm).
- Plots are only shown for the bold marked worst case SAR results



### WIFI Health Evaluation:

Per EN 62209-2:2010 Annex K, Test reduction based on simultaneous multi-band transmission considerations. For secondary transmitter (i.e. lower power transmitters), we use the following formula to evaluate the threshold power for the secondary transmitter that allows it to be excluded from SAR testing:

$$P_{\text{available}} = P_{\text{max}_m} \times (SAR_{\text{lim}} - SAR_1) / SAR_{\text{lim}}$$

Where

$P_{\text{max}_m}$  is the maximum threshold exclusion power level, which is calculated by  $SAR_{\text{lim}} \times m$ , where  $m$  is an averaging mass.

$P_{\text{available}}$  is the threshold value there need to be tested;

$SAR_{\text{lim}}$  is the SAR limit;

$SAR_1$  is the maximum SAR value of first transmitter mode result;

Restrictive power threshold;

Body part:

$$P_{\text{available}} = P_{\text{th}_m} \times (SAR_{\text{lim}} - SAR_1) / SAR_{\text{lim}} = 20\text{mW} \times (2\text{W/Kg} - 1.150\text{ W/Kg}) / 2\text{W/Kg}$$

$$= 8.5\text{mW} < 31.41\text{mW} \text{ (14.97dBm) for WIFI}$$

Hotspot part:

$$P_{\text{available}} = P_{\text{th}_m} \times (SAR_{\text{lim}} - SAR_1) / SAR_{\text{lim}} = 20\text{mW} \times (2\text{W/Kg} - 0.631\text{ W/Kg}) / 2\text{W/Kg}$$

$$= 13.69\text{mW} < 31.41\text{Mw} \text{ (14.97dBm) for WIFI}$$

Limbs part:

$$P_{\text{available}} = P_{\text{th}_m} \times (SAR_{\text{lim}} - SAR_1) / SAR_{\text{lim}} = 40\text{mW} \times (4\text{W/Kg} - 3.428\text{ W/Kg}) / 4\text{W/Kg}$$

$$= 5.72\text{mW} < 31.41\text{mW} \text{ (14.97dBm) for WIFI}$$

There is need to test WIFI SAR and need to evaluate simultaneous transmission



SAR MEASUREMENT									
Depth of Liquid (cm):>15					Relative Humidity (%): 49.7				
Product: Smart Phone									
Test Mode: 802.11b									
Position	Mode	Ch.	Fr. (MHz)	Power Drift (<±5%)	SAR (10g) (W/kg)	Max. Tune-up Power (dBm)	Meas. output Power (dBm)	Scaled SAR (W/Kg)	Limit (W/kg)
Left Cheek	DTS	7	2442	0.08	0.100	15.00	14.97	0.101	2.0
Left Tilt	DTS	7	2442	-0.12	0.084	15.00	14.97	0.085	2.0
Right Cheek	DTS	1	2412	0.06	0.235	15.00	14.44	0.267	2.0
Right Cheek	DTS	7	2442	-0.09	0.230	15.00	14.97	0.232	2.0
Right Cheek	DTS	13	2472	0.14	<b>0.242</b>	15.00	13.94	<b>0.309</b>	2.0
Right Tilt	DTS	7	2442	-0.25	0.120	15.00	14.97	0.121	2.0
Body back	DTS	1	2412	0.13	0.138	15.00	14.44	0.157	2.0
Body back	DTS	7	2442	-0.07	<b>0.159</b>	15.00	14.97	0.160	2.0
Body back	DTS	13	2472	0.05	0.155	15.00	13.94	<b>0.198</b>	2.0
Body front	DTS	7	2442	-0.08	0.101	15.00	14.97	0.102	2.0
Body back + Ear.	DTS	7	2442	0.11	0.142	15.00	14.97	0.143	2.0
Hotspot back	DTS	7	2442	-0.12	0.051	15.00	14.97	0.051	2.0
Hotspot Front	DTS	1	2412	0.06	0.056	15.00	14.44	0.064	2.0
Hotspot Front	DTS	7	2442	-0.19	<b>0.060</b>	15.00	14.97	0.060	2.0
Hotspot Front	DTS	13	2472	0.03	0.058	15.00	13.94	<b>0.074</b>	2.0
Hotspot Edge 1 (Top)	DTS	7	2442	-0.15	0.055	15.00	14.97	0.055	2.0
Hotspot Edge 2(Right)	DTS	7	2442	0.18	0.012	15.00	14.97	0.012	2.0
Hotspot Edge 3(Bottom)	DTS	7	2442	-0.11	0.014	15.00	14.97	0.014	2.0
Hotspot Edge 4(Left)	DTS	7	2442	-0.07	0.047	15.00	14.97	0.047	2.0
Limbs back	DTS	7	2442	-0.34	0.483	15.00	14.97	0.486	4.0
Limbs Front	DTS	7	2442	0.26	0.309	15.00	14.97	0.311	4.0
Limbs Edge 1(Top)	DTS	7	2442	-0.54	0.236	15.00	14.97	0.238	4.0
Limbs Edge 2(Right)	DTS	7	2442	0.48	0.043	15.00	14.97	0.043	4.0
Limbs Edge 3(Bottom)	DTS	7	2442	-0.36	0.019	15.00	14.97	0.019	4.0
Limbs Edge 4(Left)	DTS	1	2412	0.28	0.514	15.00	14.44	0.585	4.0
Limbs Edge 4(Left)	DTS	7	2442	-0.21	0.520	15.00	14.97	0.524	4.0
Limbs Edge 4(Left)	DTS	13	2472	-0.37	<b>0.528</b>	15.00	13.94	<b>0.674</b>	4.0
Limbs Edge 4 + Ear.	DTS	13	2472	0.42	0.511	15.00	13.94	0.652	4.0

Note:

- For body part and hotspot, when the 10-g SAR is ≤ 1.0W/kg, testing for low and high channel is optional.
- For Limbs part, when the 10-g SAR is ≤ 2.0W/kg, testing for low and high channel is optional.
- The test separation of all above table (body part is 5mm, hotspot is 10mm and limbs part is 0mm).
- Plots are only shown for the bold marked worst case SAR results



### BT Health Evaluation:

Per EN 62209-2:2010 Annex K, Test reduction based on simultaneous multi-band transmission considerations.  
For secondary transmitter (i.e. lower power transmitters), we use the following Formula to evaluate the threshold power for the secondary transmitter that allows it to be excluded from SAR testing:

$$P_{\text{available}} = P_{\text{max},m} \times (SAR_{\text{lim}} - SAR_1) / SAR_{\text{lim}}$$

Where

$P_{\text{max},m}$  is the maximum threshold exclusion power level, which is calculated by  $SAR_{\text{lim}} \times m$ , where  $m$  is an averaging mass.

$P_{\text{available}}$  is the threshold value there need to be tested;

$SAR_{\text{lim}}$  is the SAR limit;

$SAR_1$  is the maximum SAR value of first transmitter mode result;

Restrictive power threshold;

Body part:

$$\begin{aligned} P_{\text{available}} &= P_{\text{th},m} \times (SAR_{\text{lim}} - SAR_1) / SAR_{\text{lim}} = 20\text{mW} \times (2\text{W/Kg} - 1.150\text{ W/Kg}) / 2\text{W/Kg} \\ &= 8.5\text{mW} > 5.68\text{mW} \text{ (7.55dBm) for BT(BR/EDR)} \\ &= 8.5\text{mW} > 0.47\text{mW} \text{ (-3.30dBm) for BT(BLE)} \end{aligned}$$

Hotspot part:

$$\begin{aligned} P_{\text{available}} &= P_{\text{th},m} \times (SAR_{\text{lim}} - SAR_1) / SAR_{\text{lim}} = 20\text{mW} \times (2\text{W/Kg} - 0.631\text{ W/Kg}) / 2\text{W/Kg} \\ &= 13.69\text{mW} > 5.68\text{mW} \text{ (7.55dBm) for BT(BR/EDR)} \\ &= 13.69\text{mW} > 0.47\text{mW} \text{ (-3.30dBm) for BT(BLE)} \end{aligned}$$

Limbs part:

$$\begin{aligned} P_{\text{available}} &= P_{\text{th},m} \times (SAR_{\text{lim}} - SAR_1) / SAR_{\text{lim}} = 40\text{mW} \times (4\text{W/Kg} - 3.428\text{ W/Kg}) / 4\text{W/Kg} \\ &= 5.72\text{mW} > 5.68\text{mW} \text{ (7.55dBm) for BT(BR/EDR)} \\ &= 5.72\text{mW} > 0.47\text{mW} \text{ (-3.30dBm) for BT(BLE)} \end{aligned}$$

According to EN62479:2010, the maximum output power of BT(BR/EDR) is 7.55dBm (5.68mW less than 20mW) refer to ETSI EN 300328 (V2.2.2) Test report (AGC00552200501EE04) for the result of Maximum Transmit Power, which deemed to comply with the basic restrictions without testing.

According to EN62479:2010, the maximum output power of BT(BLE) is -3.30dBm (0.47mW less than 20mW) refer to ETSI EN 300328 (V2.2.2) Test report (AGC00552200501EE11) for the result of Maximum Transmit Power, which deemed to comply with the basic restrictions without testing.



### Simultaneous Multi-band Transmission Evaluation:

According to EN62209-1:2016 section 6.4.3, when the handsets with multiple antennas or multiple transmitters (with single or multiple antennas), transmitting simultaneously require special test considerations;

- (1) The EUT has GSM/WCDMA/LTE antenna, BT/WIFI antenna;
- (2) BT and WIFI share one antenna, and cannot transmit simultaneously;
- (3) GSM and GPRS/WCDMA/LTE can't work at the same time;
- (4) EN 62209-1:2016 section 6.4.3.2 ,SAR measurements for non-correlated signals, Alternative 1: Summation of peak spatial-average SAR values – simplest but most conservative method to find upper bound is always applicable:
  - a) For a test combination where simultaneous operation is intended, add the peak spatial-average SAR values for each antenna and frequency band where simultaneous operation is intended
  - b) Check if the maximum summed SAR value is within 3 dB of the applicable SAR limit. If so, ensure that all of the required test frequency channels have been measured in all frequency bands and for all antennas at which simultaneous operation is intended and repeat Step a).

The maximum summed SAR value in Steps a) and b) is the combined SAR

### Simultaneous Multi-band Transmission SAR:

NO	Simultaneous state	Portable Handset			
		Head	Body-worn	Hotspot	Limbs
1	GSM(voice)+ WIFI 2.4GHz (data)	Yes	Yes	/	Yes
2	GSM(Data)+ WIFI 2.4GHz (data)	Yes	Yes	Yes	Yes
3	WCDMA(RMC12.2kbps)+ WIFI 2.4GHz (data)	Yes	Yes	Yes	Yes
4	LTE+WIFI 2.4GHz (data)	Yes	Yes	Yes	Yes



Frequency	RF Exposure Conditions	Test Position	Simultaneous Transmission Scenario		$\Sigma$ 10-g SAR (W/Kg)	Limit (W/Kg)
			GSM	WIFI		
GSM 900	Head (voice)	Left Touch	0.222	0.101	0.323	2.0
		Left Tilt	0.125	0.085	0.210	2.0
		Right Touch	0.232	0.309	0.541	2.0
		Right Tilt	0.181	0.121	0.302	2.0
	Body-worn	GPRS-4slots	0.402	0.198	0.600	2.0
		Body Front	0.308	0.074	0.382	2.0
		Earphone	0.271	0.143	0.414	2.0
	Hotspot	Back	0.328	0.051	0.379	2.0
		Front	0.140	0.102	0.242	2.0
		Edge 1	0.010	0.055	0.065	2.0
		Edge 2	0.084	0.012	0.096	2.0
		Edge 3	0.070	0.014	0.084	2.0
		Edge 4	0.156	0.047	0.203	2.0
	Limbs	Back	0.985	0.486	1.471	4.0
		Front	0.582	0.311	0.893	4.0
		Edge 1	0.058	0.238	0.296	4.0
		Edge 2	0.204	0.043	0.247	4.0
		Edge 3	0.620	0.019	0.639	4.0
		Edge 4	0.439	0.674	1.113	4.0
		Earphone	0.694	0.652	1.346	4.0
		Left Touch	0.066	0.101	0.167	2.0
DCS 1800	Head (voice)	Left Tilt	0.025	0.085	0.110	2.0
		Right Touch	0.132	0.309	0.441	2.0
		Right Tilt	0.056	0.121	0.177	2.0
	Body-worn	GPRS-4slots	0.630	0.198	0.828	2.0
		Body Front	0.229	0.102	0.331	2.0
		Earphone	0.505	0.143	0.648	2.0
	Hotspot	Back	0.547	0.051	0.598	2.0
		Front	0.230	0.074	0.304	2.0
		Edge 1	0.036	0.055	0.091	2.0
		Edge 2	0.116	0.012	0.128	2.0
		Edge 3	0.237	0.014	0.251	2.0
		Edge 4	0.051	0.047	0.098	2.0
	Limbs	Back	2.192	0.486	2.678	4.0
		Front	0.680	0.311	0.991	4.0
		Edge 1	0.067	0.238	0.305	4.0
		Edge 2	0.588	0.043	0.631	4.0
		Edge 3	1.211	0.019	1.230	4.0
		Edge 4	0.171	0.674	0.845	4.0
		Earphone	1.784	0.652	2.436	4.0



Frequency	RF Exposure Conditions	Test Position	Simultaneous Transmission Scenario		$\Sigma$ 10-g SAR (W/Kg)	Limit (W/Kg)
			WCDMA	WIFI		
WCDMA Band I	Head	Left Touch	0.297	0.101	0.398	2.0
		Left Tilt	0.074	0.085	0.159	2.0
		Right Touch	0.348	0.309	0.657	2.0
		Right Tilt	0.112	0.121	0.233	2.0
	Body-worn	Body back	1.150	0.198	<b>1.348</b>	2.0
		Body Front	0.674	0.102	0.776	2.0
		HSDPA	1.042	0.198	1.240	2.0
		HSUPA	1.036	0.198	1.234	2.0
		Earphone	1.121	0.143	1.264	2.0
	Hotspot	Back	0.587	0.051	0.638	2.0
		Front	0.334	0.074	0.408	2.0
		HSDPA	0.538	0.051	0.589	2.0
		HSUPA	0.536	0.051	0.587	2.0
		Edge 1	0.059	0.055	0.114	2.0
		Edge 2	0.313	0.012	0.325	2.0
		Edge 3	0.478	0.014	0.492	2.0
		Edge 4	0.216	0.047	0.263	2.0
	Limbs	Back	2.356	0.486	2.842	4.0
		Front	1.479	0.311	1.790	4.0
		HSDPA	2.277	0.486	2.763	4.0
		HSUPA	2.270	0.486	2.756	4.0
		Edge 1	0.094	0.238	0.332	4.0
		Edge 2	1.009	0.043	1.052	4.0
		Edge 3	2.024	0.019	2.043	4.0
		Edge 4	0.535	0.674	1.209	4.0
		Earphone	2.280	0.652	2.932	4.0



Frequency	RF Exposure Conditions	Test Position	Simultaneous Transmission Scenario		$\Sigma$ 10-g SAR (W/Kg)	Limit (W/Kg)
			WCDMA	WIFI		
WCDMA Band VIII	Head	Left Touch	0.263	0.101	0.364	2.0
		Left Tilt	0.159	0.085	0.244	2.0
		Right Touch	0.289	0.309	0.598	2.0
		Right Tilt	0.180	0.121	0.301	2.0
	Body-worn	Body back	0.411	0.198	0.609	2.0
		Body Front	0.141	0.102	0.243	2.0
		HSDPA	0.242	0.198	0.440	2.0
		HSUPA	0.247	0.198	0.445	2.0
		Earphone	0.260	0.143	0.403	2.0
	Hotspot	Back	0.147	0.051	0.198	2.0
		Front	0.102	0.074	0.176	2.0
		HSDPA	0.134	0.051	0.185	2.0
		HSUPA	0.130	0.051	0.181	2.0
		Edge 1	0.009	0.055	0.064	2.0
		Edge 2	0.046	0.012	0.058	2.0
		Edge 3	0.053	0.014	0.067	2.0
		Edge 4	0.071	0.047	0.118	2.0
	Limbs	Back	0.844	0.486	1.330	4.0
		Front	0.473	0.311	0.784	4.0
		HSDPA	0.808	0.486	1.294	4.0
		HSUPA	0.775	0.486	1.261	4.0
		Edge 1	0.031	0.238	0.269	4.0
		Edge 2	0.167	0.043	0.210	4.0
		Edge 3	0.400	0.019	0.419	4.0
		Edge 4	0.408	0.674	1.082	4.0
		Earphone	0.768	0.652	1.420	4.0



Frequency	RF Exposure Conditions	Test Position	Simultaneous Transmission Scenario		$\Sigma$ 10-g SAR (W/Kg)	Limit (W/Kg)
			LTE	WIFI		
LTE Band 1	Head	Left Touch	0.275	0.101	0.376	2.0
		Left Tilt	0.066	0.085	0.151	2.0
		Right Touch	0.295	0.309	0.604	2.0
		Right Tilt	0.125	0.121	0.246	2.0
	Body-worn	Body back	1.144	0.198	1.342	2.0
		Body Front	0.641	0.102	0.743	2.0
		Earphone	1.135	0.143	1.278	2.0
	Hotspot	Back	0.631	0.051	<b>0.682</b>	2.0
		Front	0.388	0.074	0.462	2.0
		Edge 1	0.053	0.055	0.108	2.0
		Edge 2	0.274	0.012	0.286	2.0
		Edge 3	0.482	0.014	0.496	2.0
		Edge 4	0.186	0.047	0.233	2.0
	Limbs	Back	2.466	0.486	2.952	4.0
		Front	1.885	0.311	2.196	4.0
		Edge 1	0.123	0.238	0.361	4.0
		Edge 2	1.237	0.043	1.280	4.0
		Edge 3	2.199	0.019	2.218	4.0
		Edge 4	0.611	0.674	1.285	4.0
		Earphone	2.159	0.652	2.811	4.0
LTE Band 3	Head	Left Touch	0.126	0.101	0.227	2.0
		Left Tilt	0.051	0.085	0.136	2.0
		Right Touch	0.202	0.309	0.511	2.0
		Right Tilt	0.067	0.121	0.188	2.0
	Body-worn	Body back	1.079	0.198	1.277	2.0
		Body Front	0.391	0.102	0.493	2.0
		Earphone	0.953	0.143	1.096	2.0
	Hotspot	Back	0.605	0.051	0.656	2.0
		Front	0.268	0.074	0.342	2.0
		Edge 1	0.037	0.055	0.092	2.0
		Edge 2	0.133	0.012	0.145	2.0
		Edge 3	0.292	0.014	0.306	2.0
		Edge 4	0.058	0.047	0.105	2.0
	Limbs	Back	3.428	0.486	<b>3.914</b>	4.0
		Front	0.862	0.311	1.173	4.0
		Edge 1	0.086	0.238	0.324	4.0
		Edge 2	0.680	0.043	0.723	4.0
		Edge 3	1.726	0.019	1.745	4.0
		Edge 4	0.217	0.674	0.891	4.0
		Earphone	3.166	0.652	3.818	4.0



Frequency	RF Exposure Conditions	Test Position	Simultaneous Transmission Scenario		$\Sigma$ 10-g SAR (W/Kg)	Limit (W/Kg)
			LTE	WIFI		
LTE Band 7	Head	Left Touch	0.029	0.101	0.130	2.0
		Left Tilt	0.014	0.085	0.099	2.0
		Right Touch	0.039	0.309	0.348	2.0
		Right Tilt	0.013	0.121	0.134	2.0
	Body-worn	Body back	0.376	0.198	0.574	2.0
		Body Front	0.112	0.102	0.214	2.0
		Earphone	0.343	0.143	0.486	2.0
	Hotspot	Back	0.144	0.051	0.195	2.0
		Front	0.054	0.074	0.128	2.0
		Edge 1	0.006	0.055	0.061	2.0
		Edge 2	0.058	0.012	0.070	2.0
		Edge 3	0.269	0.014	0.283	2.0
		Edge 4	0.003	0.047	0.050	2.0
	Limbs	Back	1.125	0.486	1.611	4.0
		Front	0.273	0.311	0.584	4.0
		Edge 1	0.015	0.238	0.253	4.0
		Edge 2	0.529	0.043	0.572	4.0
		Edge 3	1.194	0.019	1.213	4.0
		Edge 4	0.009	0.674	0.683	4.0
		Earphone	1.091	0.652	1.743	4.0
LTE Band 8	Head	Left Touch	0.199	0.101	0.300	2.0
		Left Tilt	0.117	0.085	0.202	2.0
		Right Touch	0.200	0.309	0.509	2.0
		Right Tilt	0.141	0.121	0.262	2.0
	Body-worn	Body back	0.340	0.198	0.538	2.0
		Body Front	0.121	0.102	0.223	2.0
		Earphone	0.310	0.143	0.453	2.0
	Hotspot	Back	0.320	0.051	0.371	2.0
		Front	0.238	0.074	0.312	2.0
		Edge 1	0.014	0.055	0.069	2.0
		Edge 2	0.198	0.012	0.210	2.0
		Edge 3	0.087	0.014	0.101	2.0
		Edge 4	0.101	0.047	0.148	2.0
	Limbs	Back	0.934	0.486	1.420	4.0
		Front	0.509	0.311	0.820	4.0
		Edge 1	0.039	0.238	0.277	4.0
		Edge 2	0.172	0.043	0.215	4.0
		Edge 3	0.477	0.019	0.496	4.0
		Edge 4	0.396	0.674	1.070	4.0
		Earphone	0.909	0.652	1.561	4.0



Frequency	RF Exposure Conditions	Test Position	Simultaneous Transmission Scenario		$\Sigma$ 10-g SAR (W/Kg)	Limit (W/Kg)
			LTE	WIFI		
LTE Band 20	Head	Left Touch	0.039	0.101	0.140	2.0
		Left Tilt	0.028	0.085	0.113	2.0
		Right Touch	0.052	0.309	0.361	2.0
		Right Tilt	0.032	0.121	0.153	2.0
	Body-worn	Body back	0.111	0.198	0.309	2.0
		Body Front	0.078	0.074	0.152	2.0
		Earphone	0.060	0.143	0.203	2.0
	Hotspot	Back	0.093	0.051	0.144	2.0
		Front	0.030	0.102	0.132	2.0
		Edge 1	0.004	0.055	0.059	2.0
		Edge 2	0.057	0.012	0.069	2.0
		Edge 3	0.011	0.014	0.025	2.0
		Edge 4	0.074	0.047	0.121	2.0
	Limbs	Back	0.457	0.486	0.943	4.0
		Front	0.090	0.311	0.401	4.0
		Edge 1	0.006	0.238	0.244	4.0
		Edge 2	0.069	0.043	0.112	4.0
		Edge 3	0.084	0.019	0.103	4.0
		Edge 4	0.117	0.674	0.791	4.0
		Earphone	0.369	0.652	1.021	4.0



## APPENDIX A. SAR SYSTEM CHECK DATA

Test Laboratory: AGC Lab

Date: Jun. 11,2020

System Check Head 900 MHz

DUT: Dipole 900 MHz Type: SID 900

Communication System: CW; Communication System Band: D900 (900.0 MHz); Duty Cycle: 1:1; Conv.F=5.21

Frequency: 900 MHz; Medium parameters used:  $f = 900$  MHz;  $\sigma = 0.94$  mho/m;  $\epsilon_r = 40.63$ ;  $\rho = 1000$  kg/m<sup>3</sup>;

Phantom section: Flat Section; Input Power=18dBm

Ambient temperature (°C): 20.7, Liquid temperature (°C): 20.4

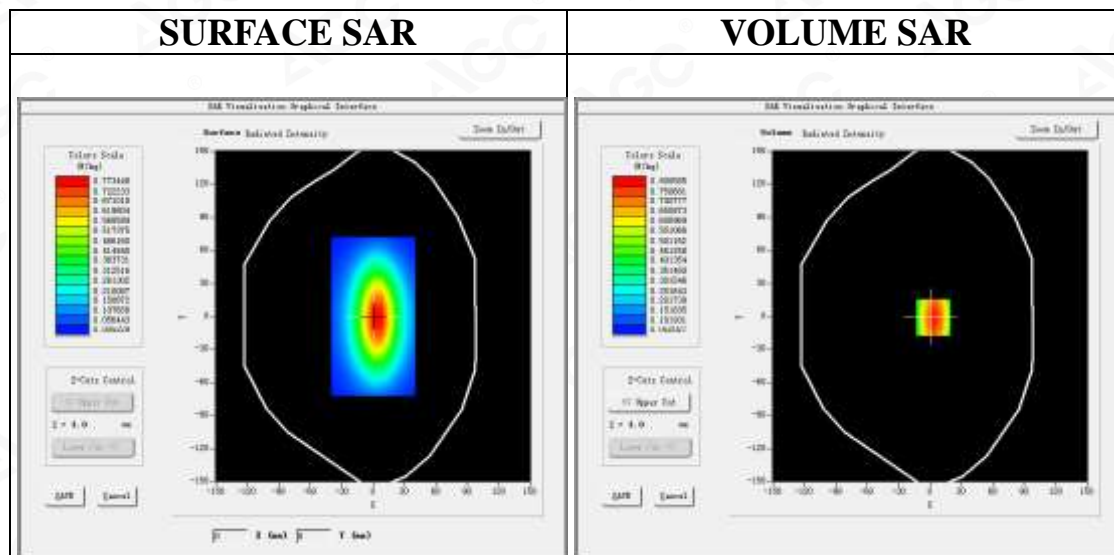
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/System Check 900 Head/Area Scan: Measurement grid: dx=8mm,dy=8mm

Configuration/System Check 900 Head/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm

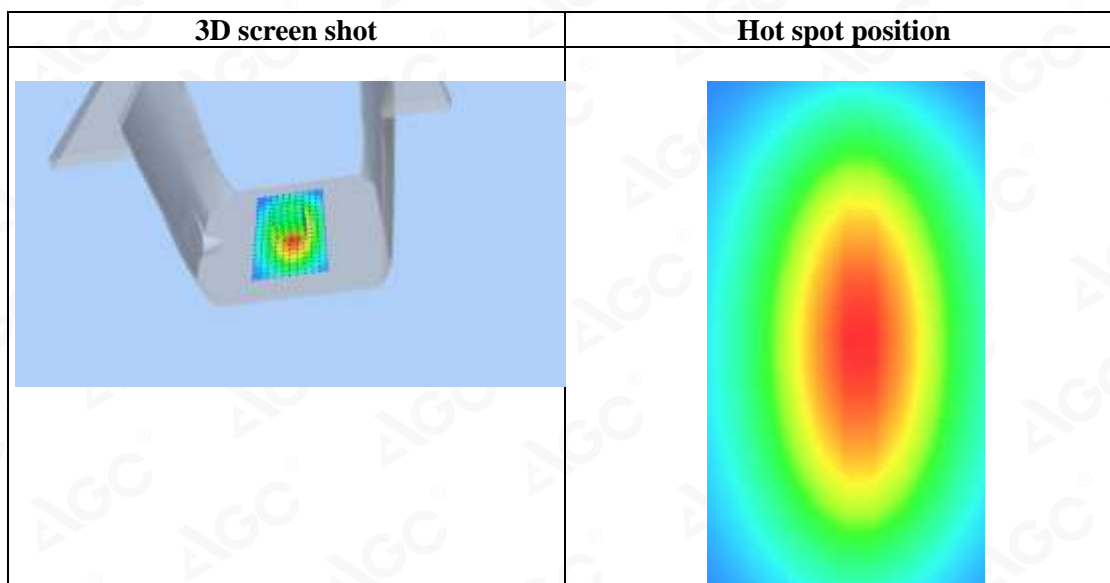
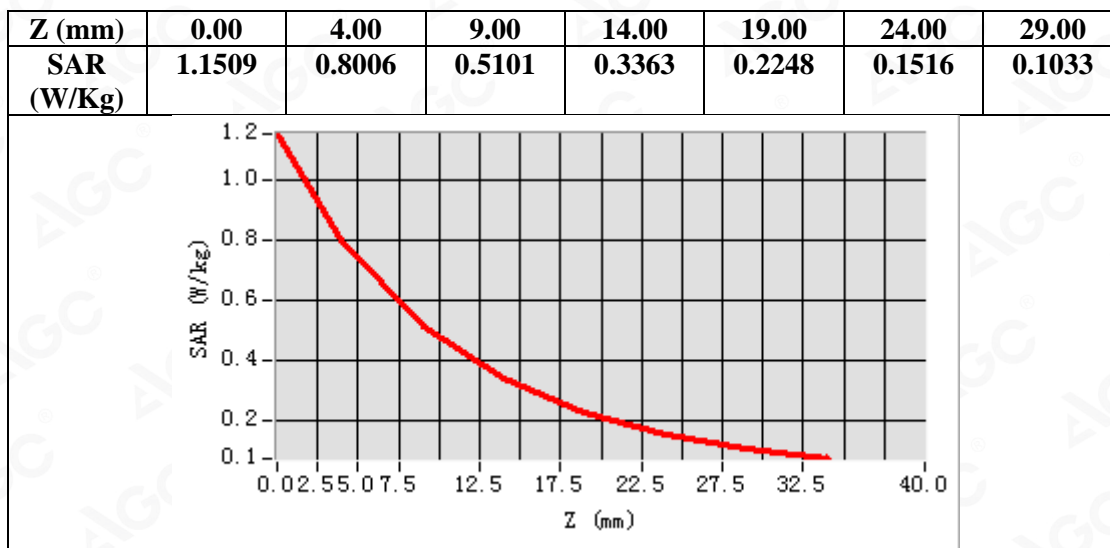
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	SAM twin phantom
Device Position	Flat
Band	CW 900
Channels	Middle
Signal	Crest factor: 1.0



Maximum location: X=3.00, Y=-1.00

SAR Peak: 1.15 W/kg

SAR 10g (W/Kg)	0.471842
SAR 1g (W/Kg)	0.766894



**Test Laboratory: AGC Lab**  
**System Check Head 1800MHz**  
**DUT: Dipole 1800 MHz; Type: SID 1800**

**Date: Jun. 16,2020**

Communication System: CW; Communication System Band: D1800 (1800.0 MHz); Duty Cycle: 1:1; Conv.F=4.68  
Frequency: 1800 MHz; Medium parameters used:  $f = 1800$  MHz;  $\sigma = 1.39$  mho/m;  $\epsilon_r = 38.65$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Flat Section; Input Power=18dBm  
Ambient temperature (°C): 21.0, Liquid temperature (°C): 20.7

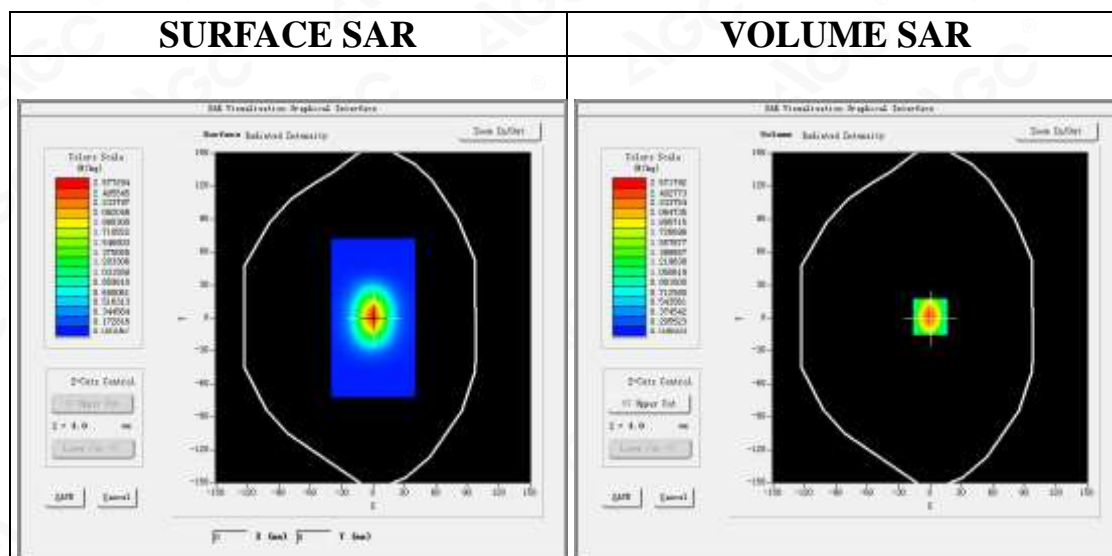
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

**Configuration/System Check 1800 Head/Area Scan:** Measurement grid: dx=8mm, dy=8mm

**Configuration/System Check 1800 Head/Zoom Scan:** Measurement grid: dx=8mm,dy=8mm, dz=5mm

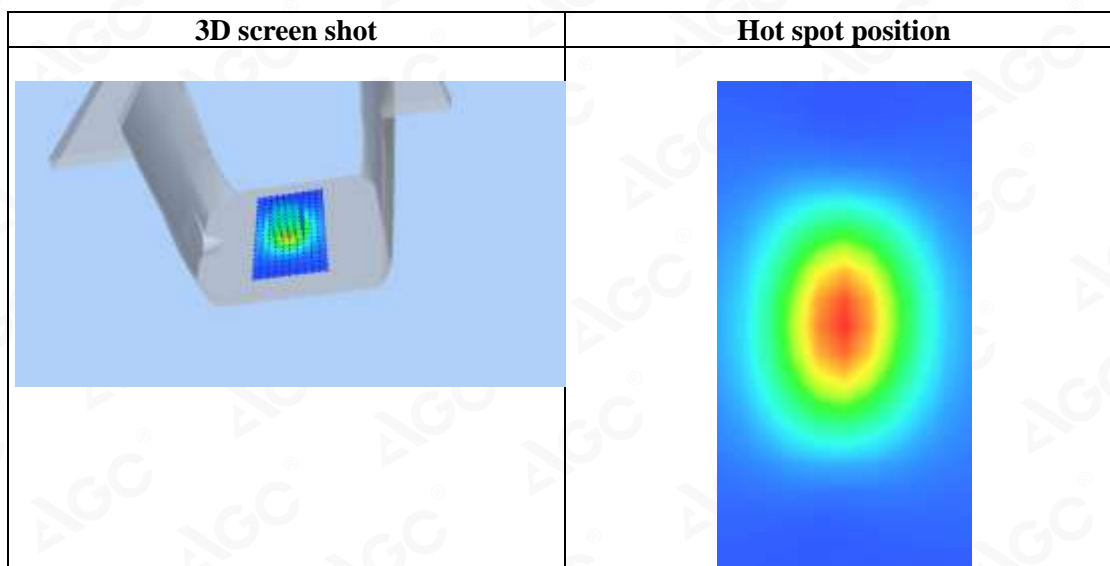
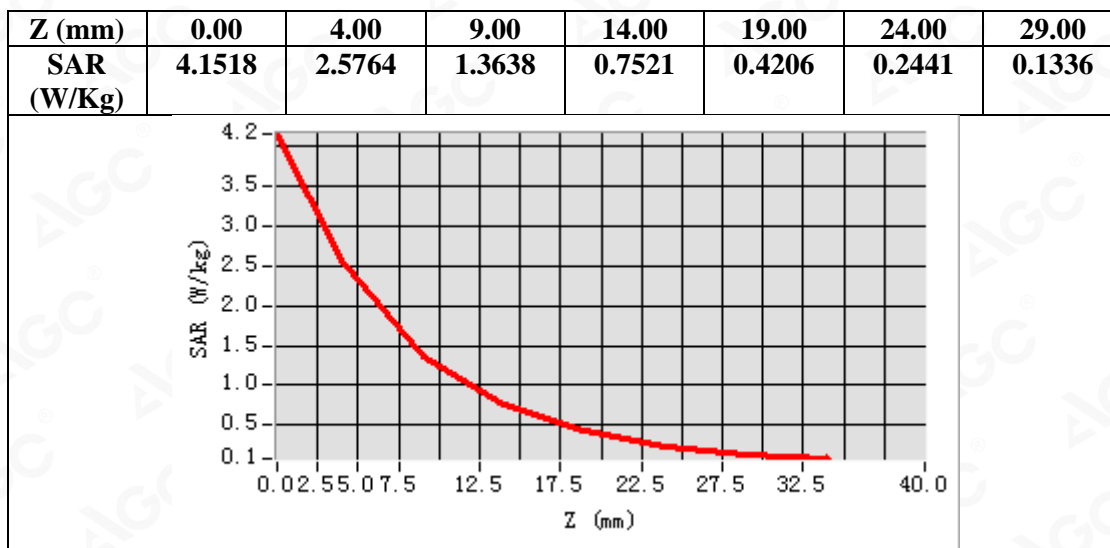
<b>Area Scan</b>	dx=8mm dy=8mm, h= 5.00 mm
<b>ZoomScan</b>	5x5x7,dx=8mm dy=8mm dz=5mm
<b>Phantom</b>	SAM twin phantom
<b>Device Position</b>	Flat
<b>Band</b>	CW 1800
<b>Channels</b>	Middle
<b>Signal</b>	Crest factor: 1.0



**Maximum location: X=0.00, Y=1.00**

**SAR Peak: 4.12 W/kg**

<b>SAR 10g (W/Kg)</b>	1.221387
<b>SAR 1g (W/Kg)</b>	2.413845



**Test Laboratory: AGC Lab**  
**System Check Head 2000MHz**  
**DUT: Dipole 2000 MHz; Type: SID 2000**

**Date: Jun. 12,2020**

Communication System: CW; Communication System Band: D2000 (2000.0 MHz); Duty Cycle: 1:1; Conv.F=5.02  
Frequency: 2000MHz; Medium parameters used:  $f = 2000$  MHz;  $\sigma = 1.37$  mho/m;  $\epsilon_r = 39.51$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Flat Section; Input Power=18dBm  
Ambient temperature (°C): 20.8, Liquid temperature (°C): 20.5

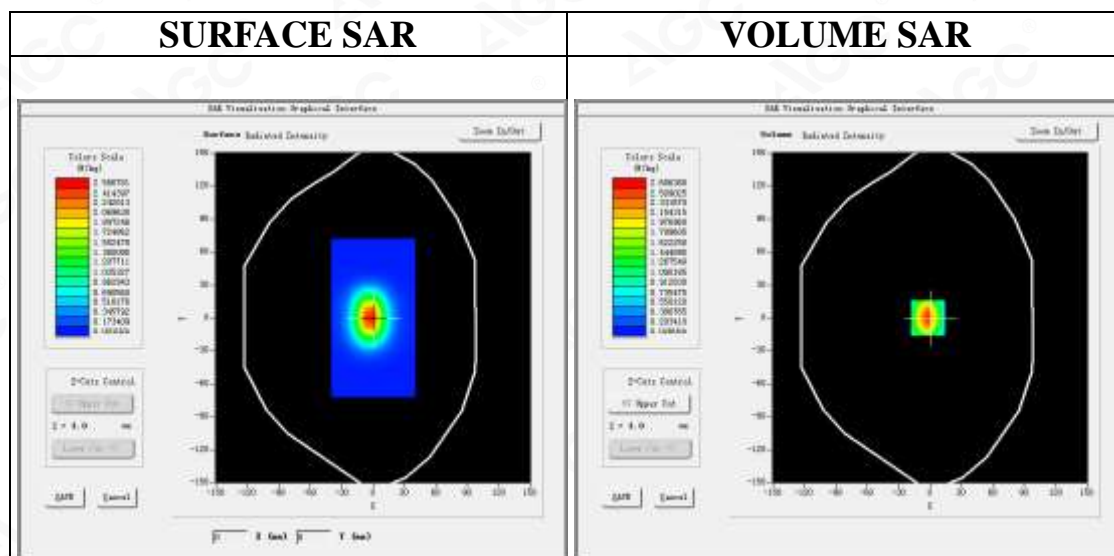
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

**Configuration/System Check 2000 Head/Area Scan:** Measurement grid: dx=8mm,dy=8mm

**Configuration/System Check 2000 Head/Zoom Scan:** Measurement grid: dx=8mm,dy=8mm, dz=5mm

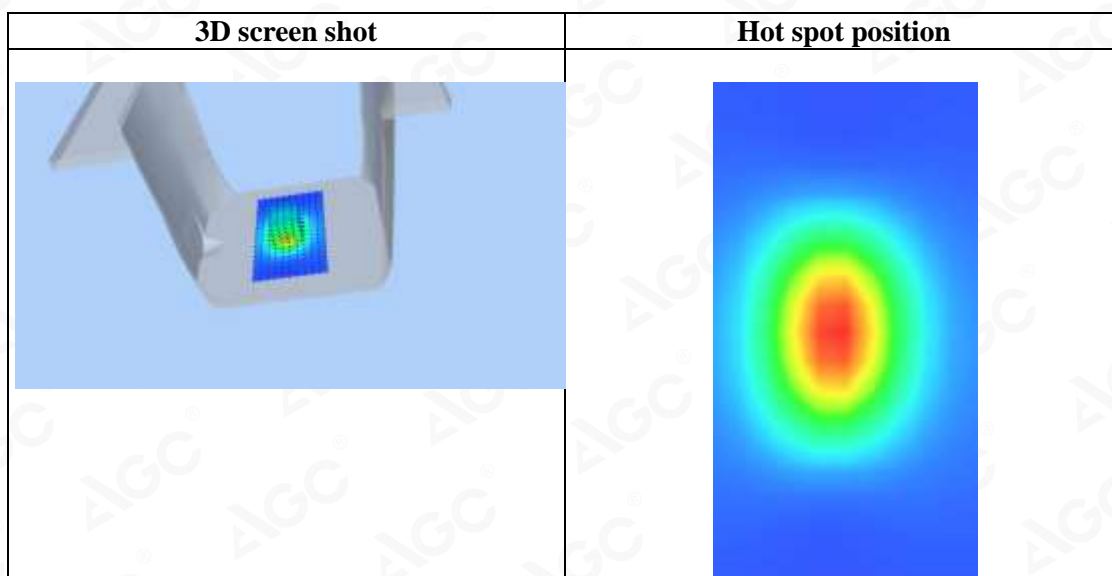
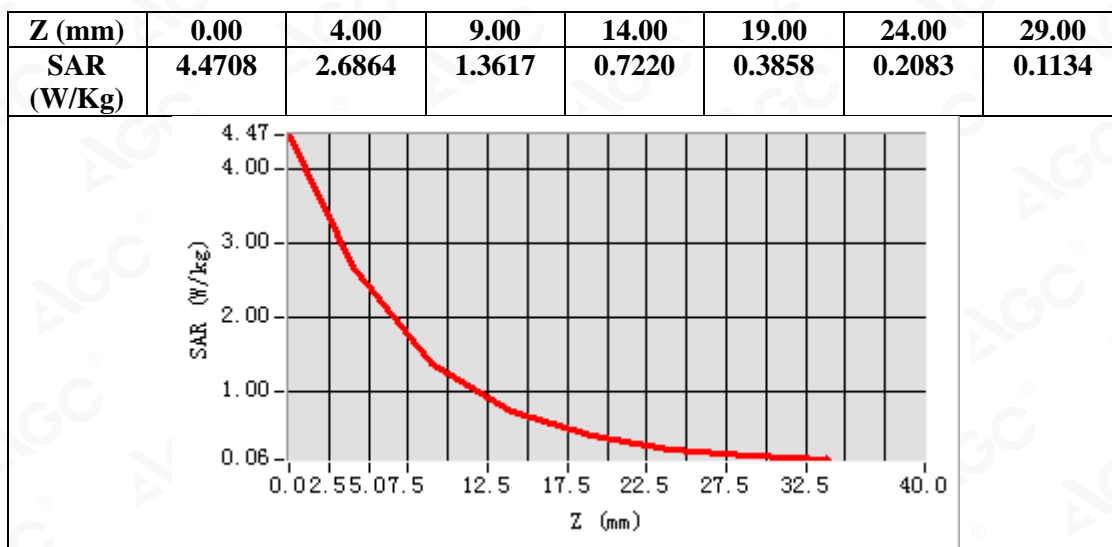
<b>Area Scan</b>	dx=8mm dy=8mm, h= 5.00 mm
<b>ZoomScan</b>	5x5x7,dx=8mm dy=8mm dz=5mm
<b>Phantom</b>	SAM twin phantom
<b>Device Position</b>	Flat
<b>Band</b>	CW 2000
<b>Channels</b>	Middle
<b>Signal</b>	Crest factor: 1.0



**Maximum location: X=-2.00, Y=0.00**  
**SAR Peak: 4.45 W/kg**

<b>SAR 10g (W/Kg)</b>	1.228053
<b>SAR 1g (W/Kg)</b>	2.524560





**Test Laboratory: AGC Lab**  
**System Check Head 835MHz**  
**DUT: Dipole 835 MHz Type: SID 835**

**Date: Jun. 17,2020**

Communication System: CW; Communication System Band: D835(835.0 MHz); Duty Cycle: 1:1; Conv.F=5.26  
Frequency: 835MHz; Medium parameters used:  $f = 850\text{MHz}$ ;  $\sigma = 0.88\text{mho/m}$ ;  $\epsilon_r = 40.21$ ;  $\rho = 1000\text{ kg/m}^3$  ;  
Phantom section: Flat Section; Input Power=18dBm  
Ambient temperature ( $^{\circ}\text{C}$ ): 21.5, Liquid temperature ( $^{\circ}\text{C}$ ): 21.2

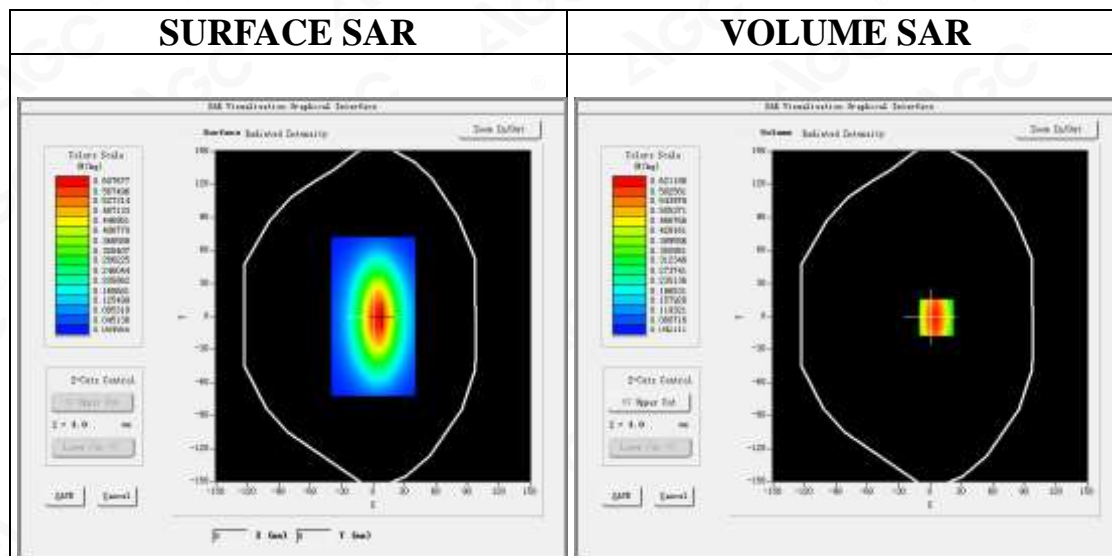
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

**Configuration/System Check 835 Head/Area Scan:** Measurement grid:  $dx=8\text{mm}, dy=8\text{mm}$

**Configuration/System Check 835 Head/Zoom Scan:** Measurement grid:  $dx=8\text{mm}, dy=8\text{mm}, dz=5\text{mm}$

<b>Area Scan</b>	$dx=8\text{mm } dy=8\text{mm}, h= 5.00\text{ mm}$
<b>ZoomScan</b>	$5 \times 5 \times 7, dx=8\text{mm } dy=8\text{mm } dz=5\text{mm}$
<b>Phantom</b>	SAM twin phantom
<b>Device Position</b>	Flat
<b>Band</b>	CW 835
<b>Channels</b>	Middle
<b>Signal</b>	Crest factor: 1.0

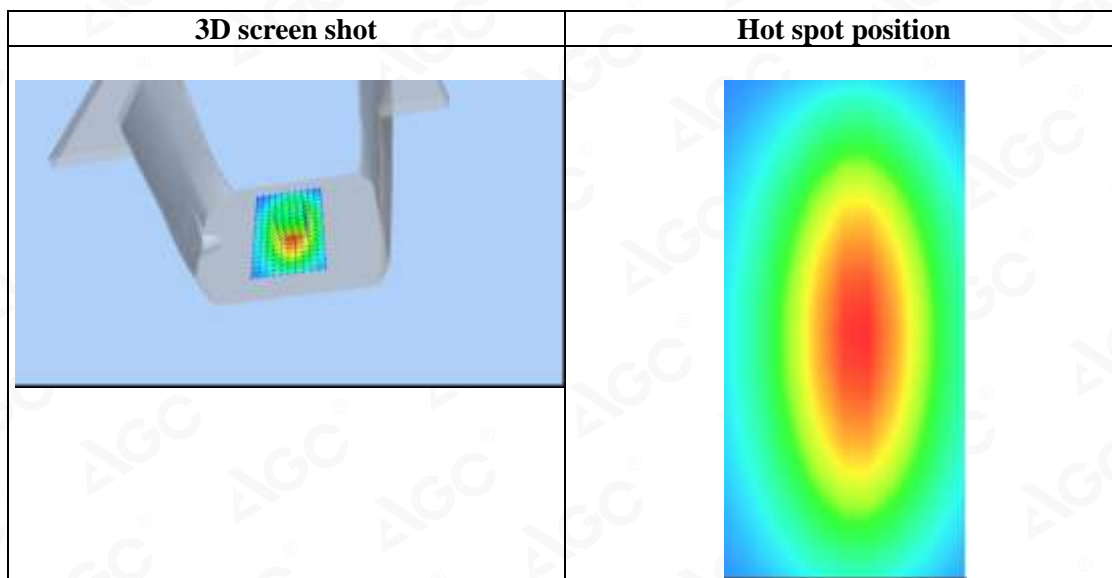
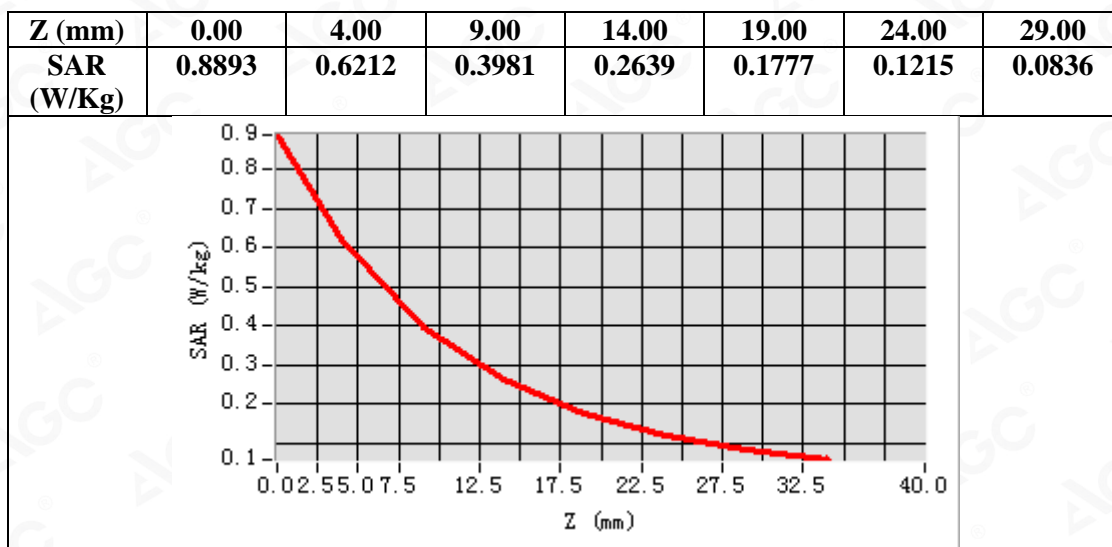


**Maximum location: X=6.00, Y=-1.00**

**SAR Peak: 0.89 W/kg**

<b>SAR 10g (W/Kg)</b>	0.379920
<b>SAR 1g (W/Kg)</b>	0.597229





**Test Laboratory: AGC Lab**  
**System Check Head 900 MHz**  
**DUT: Dipole 900 MHz Type: SID 900**

**Date: Jun. 05,2020**

Communication System: CW; Communication System Band: D900 (900.0 MHz); Duty Cycle: 1:1; Conv.F=5.21  
Frequency: 900 MHz; Medium parameters used:  $f = 900 \text{ MHz}$ ;  $\sigma = 0.94 \text{ mho/m}$ ;  $\epsilon_r = 40.61$ ;  $\rho = 1000 \text{ kg/m}^3$  ;  
Phantom section: Flat Section; Input Power=18dBm  
Ambient temperature ( $^{\circ}\text{C}$ ): 20.4, Liquid temperature ( $^{\circ}\text{C}$ ): 20.1

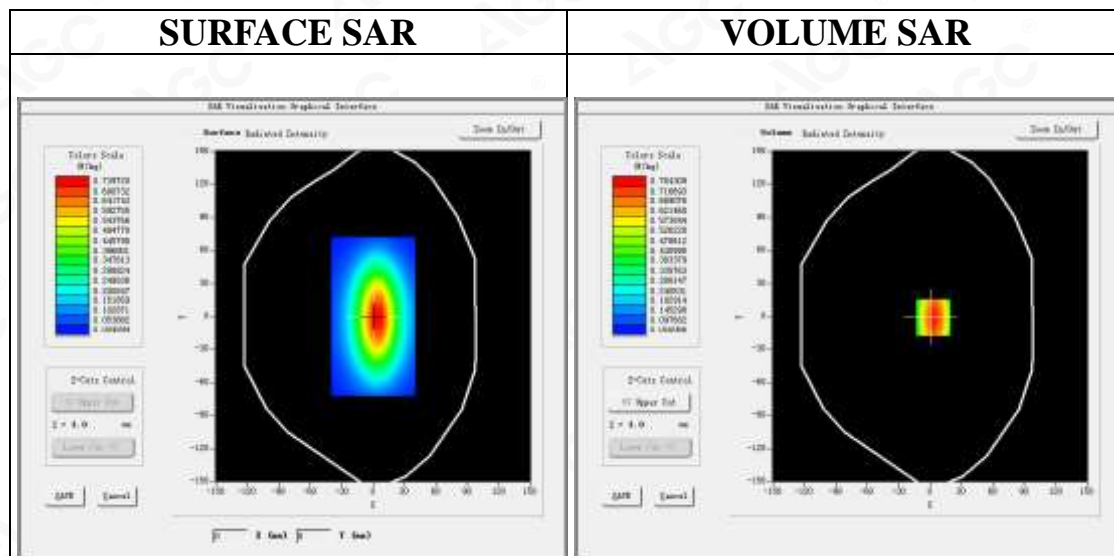
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

**Configuration/System Check 900 Head/Area Scan:** Measurement grid:  $dx=8\text{mm}, dy=8\text{mm}$

**Configuration/System Check 900 Head/Zoom Scan:** Measurement grid:  $dx=8\text{mm}, dy=8\text{mm}, dz=5\text{mm}$

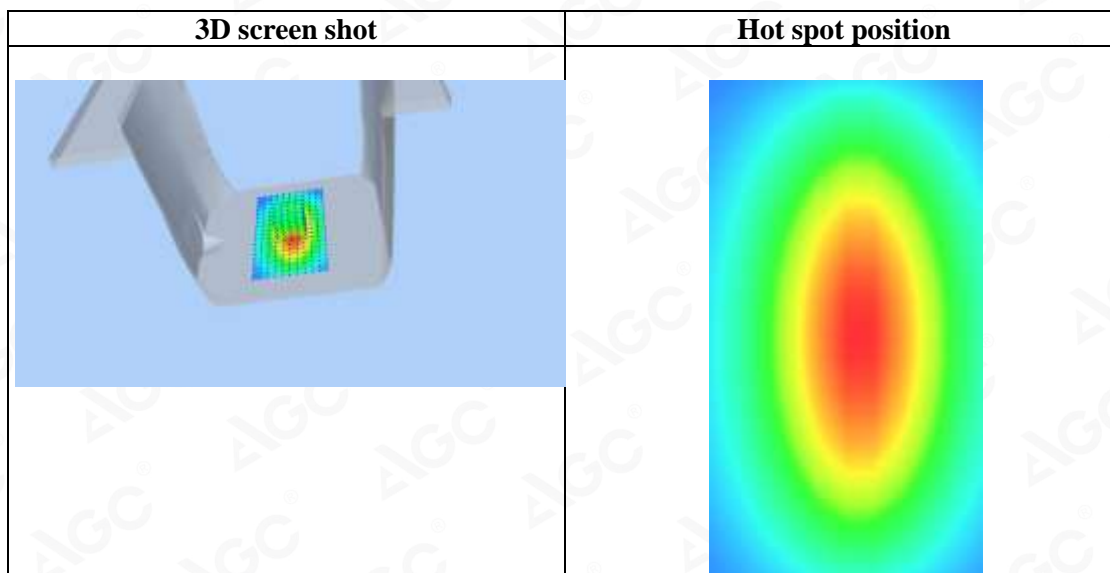
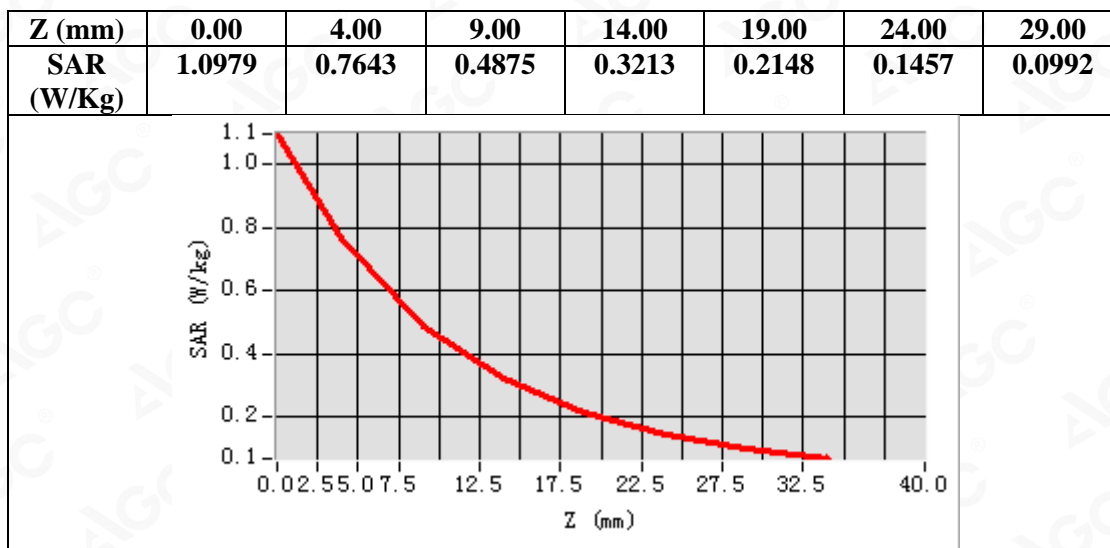
<b>Area Scan</b>	$dx=8\text{mm } dy=8\text{mm}, h= 5.00 \text{ mm}$
<b>ZoomScan</b>	$5 \times 5 \times 7, dx=8\text{mm } dy=8\text{mm } dz=5\text{mm}$
<b>Phantom</b>	SAM twin phantom
<b>Device Position</b>	Flat
<b>Band</b>	CW 900
<b>Channels</b>	Middle
<b>Signal</b>	Crest factor: 1.0



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

**SAR Peak: 1.10 W/kg**

<b>SAR 10g (W/Kg)</b>	0.452571
<b>SAR 1g (W/Kg)</b>	0.733404



**Test Laboratory: AGC Lab**  
**System Check Head 2450 MHz**  
**DUT: Dipole 2450 MHz Type: SID 2450**

**Date: Jun. 18,2020**

Communication System: CW; Communication System Band: D2450 (2450.0 MHz); Duty Cycle: 1:1; Conv.F=4.95  
Frequency: 2450 MHz; Medium parameters used:  $f = 2450$  MHz;  $\sigma = 1.75$  mho/m;  $\epsilon_r = 38.65$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Flat Section; Input Power=18dBm  
Ambient temperature (°C): 21.2, Liquid temperature (°C): 21.0

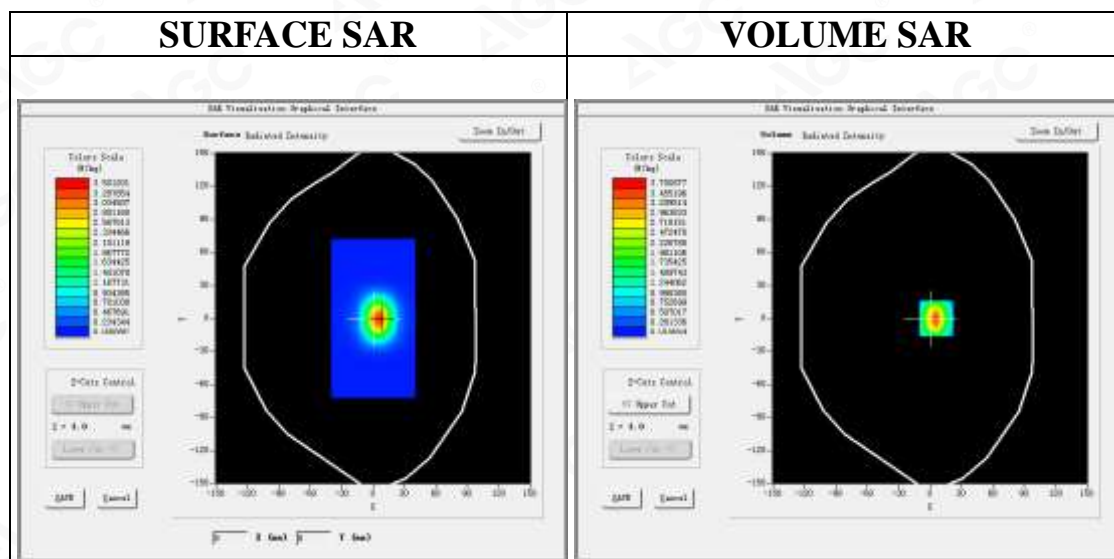
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

**Configuration/System Check 2450 MHz Head/Area Scan:** Measurement grid: dx=8mm, dy=8mm

**Configuration/System Check 2450 MHz Head/Zoom Scan:** Measurement grid: dx=8mm,dy=8mm, dz=5mm

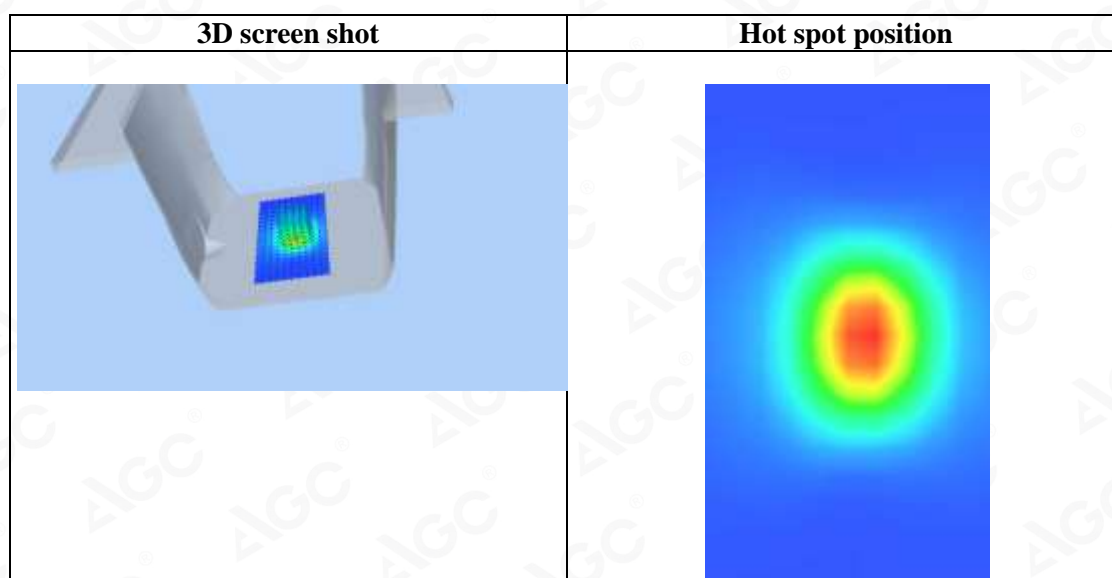
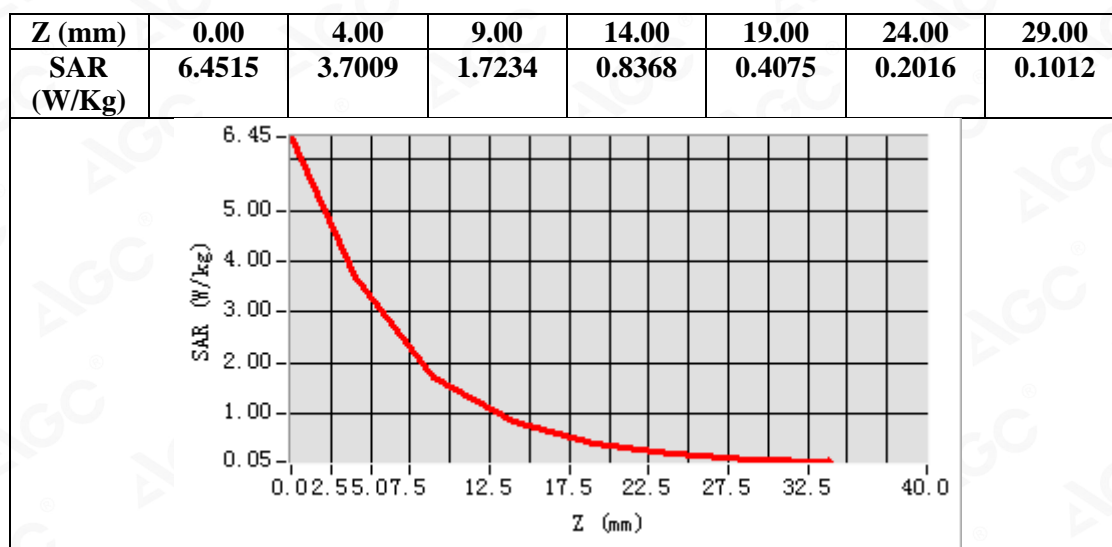
<b>Area Scan</b>	dx=8mm dy=8mm, h= 5.00 mm
<b>ZoomScan</b>	5x5x7,dx=8mm dy=8mm dz=5mm
<b>Phantom</b>	SAM twin phantom
<b>Device Position</b>	Flat
<b>Band</b>	CW 2450
<b>Channels</b>	Middle
<b>Signal</b>	Crest factor: 1.0



**Maximum location: X=6.00, Y=0.00**

**SAR Peak: 6.41 W/kg**

<b>SAR 10g (W/Kg)</b>	1.507910
<b>SAR 1g (W/Kg)</b>	3.436632



**Test Laboratory:** AGC Lab  
**System Check Head** 2600MHz  
**DUT: Dipole 2600 MHz; Type: SID 2600**

**Date:** Jun. 19,2020

Communication System: CW; Communication System Band: D2600 (2600.0 MHz); Duty Cycle: 1:1; Conv.F=4.52  
Frequency:2600 MHz; Medium parameters used:  $f = 2600$  MHz;  $\sigma = 1.92$  mho/m;  $\epsilon_r = 38.61$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Flat Section; Input Power=18dBm  
Ambient temperature (°C): 21.3, Liquid temperature (°C): 21.0

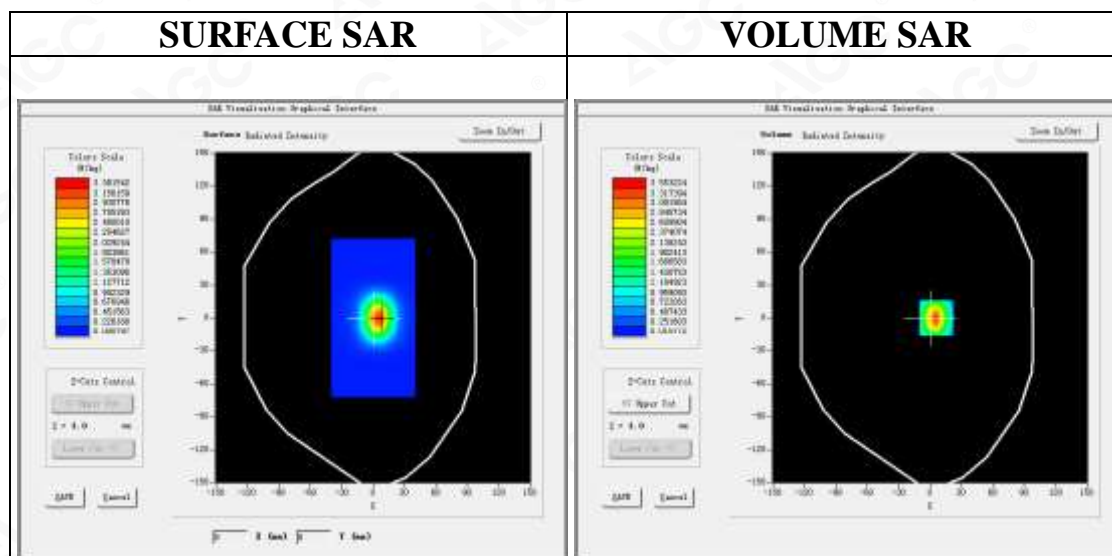
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

**Configuration/System Check 2600 Head/Area Scan:** Measurement grid: dx=8mm,dy=8mm

**Configuration/System Check 2600 Head/Zoom Scan:** Measurement grid: dx=8mm,dy=8mm, dz=5mm

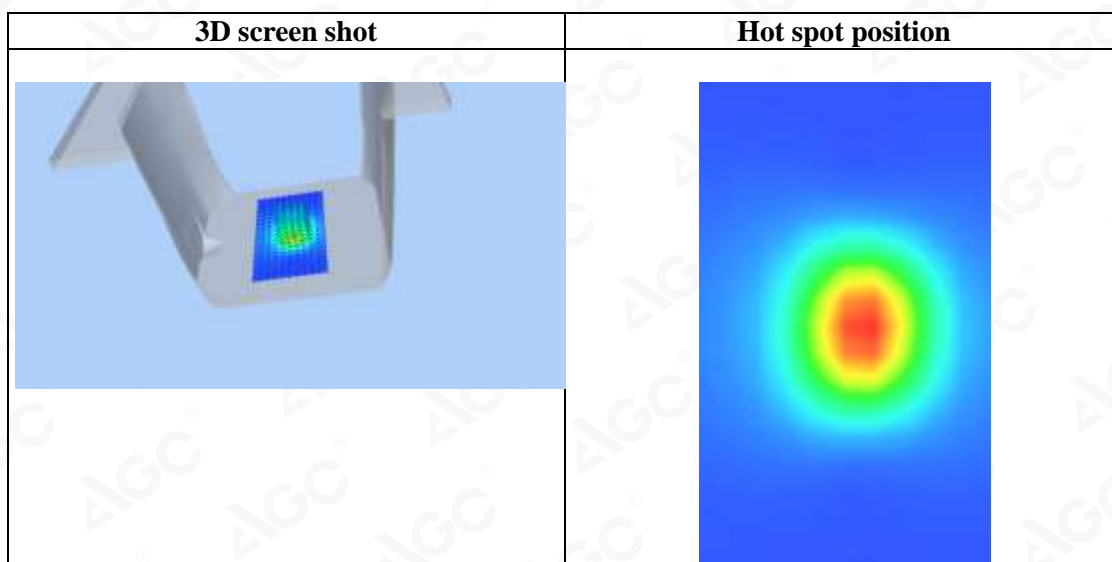
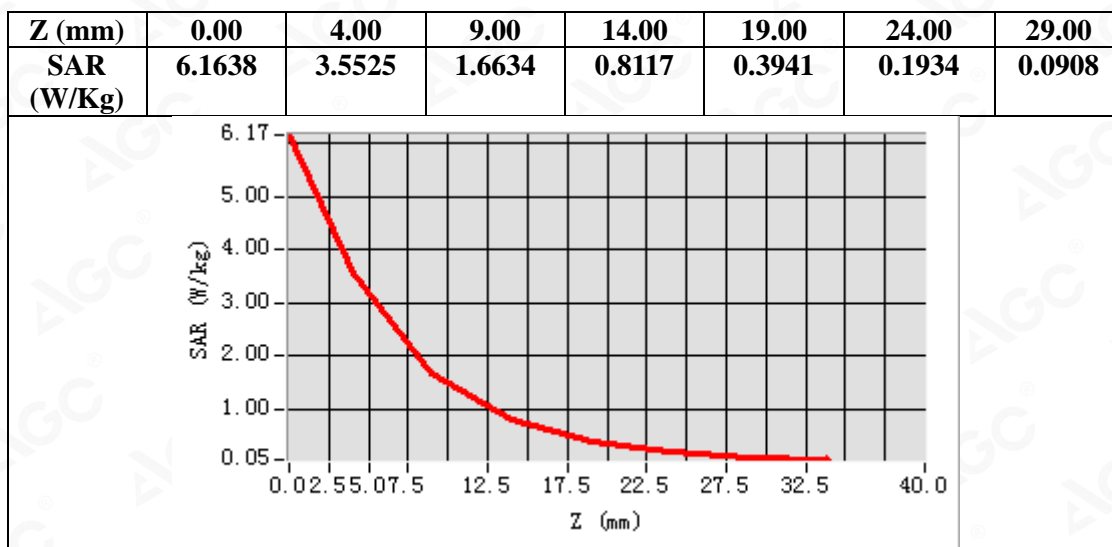
<b>Area Scan</b>	dx=8mm dy=8mm, h= 5.00 mm
<b>ZoomScan</b>	5x5x7,dx=8mm dy=8mm dz=5mm
<b>Phantom</b>	SAM twin phantom
<b>Device Position</b>	Flat
<b>Band</b>	CW 2600
<b>Channels</b>	Middle
<b>Signal</b>	Crest factor: 1.0



**Maximum location: X=6.00, Y=0.00**

**SAR Peak: 6.14 W/kg**

<b>SAR 10g (W/Kg)</b>	1.453985
<b>SAR 1g (W/Kg)</b>	3.307317



## APPENDIX B. SAR MEASUREMENT DATA

Test Laboratory: AGC Lab  
GSM 900 Mid- Touch-Right <SIM 1>  
DUT: Smart Phone; Type: NOTE 7

Date: Jun. 11,2020

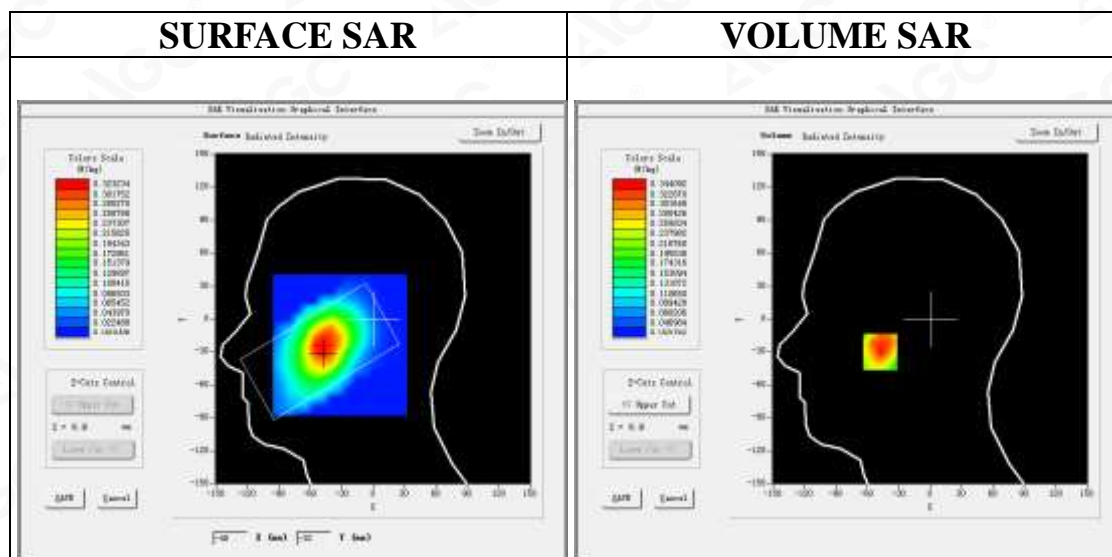
Communication System: Generic GSM; Communication System Band: GSM 900; Duty Cycle: 1: 8; Conv.F=5.21  
Frequency: 897.4 MHz; Medium parameters used:  $f = 900$  MHz;  $\sigma = 0.94$  mho/m;  $\epsilon_r = 40.63$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Right Section  
Ambient temperature (°C): 20.7, Liquid temperature (°C): 20.4

SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/GSM 900 Mid- Touch-Right /Area Scan: Measurement grid: dx=8mm, dy=8mm  
Configuration/GSM 900 Mid- Touch-Right /Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Right head
Device Position	Cheek
Band	GSM 900
Channels	Middle
Signal	TDMA (Crest factor: 8.0)

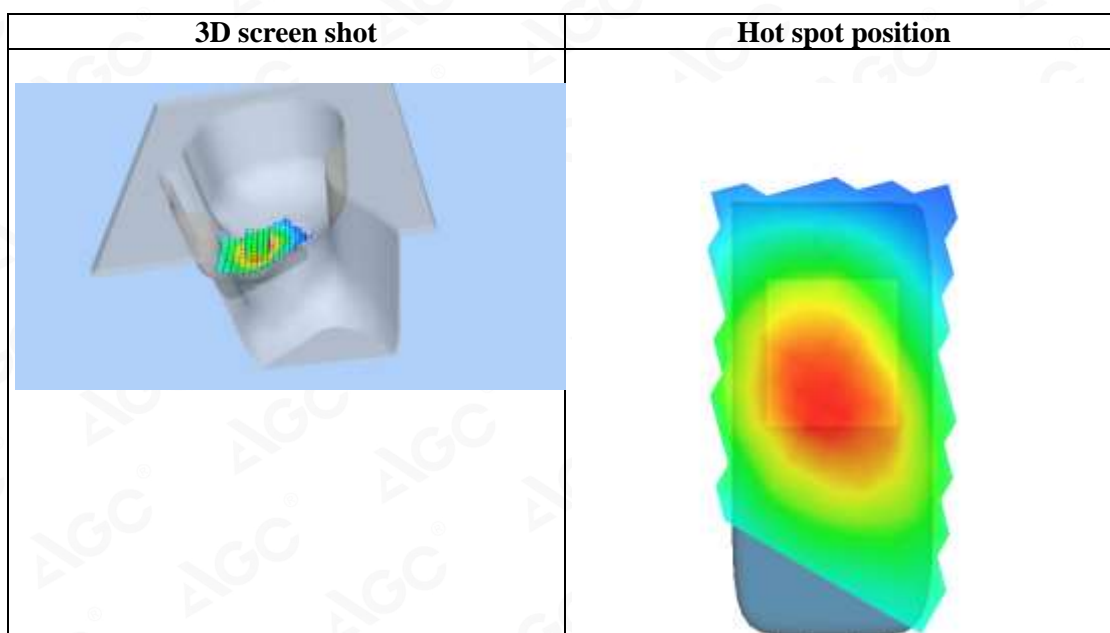
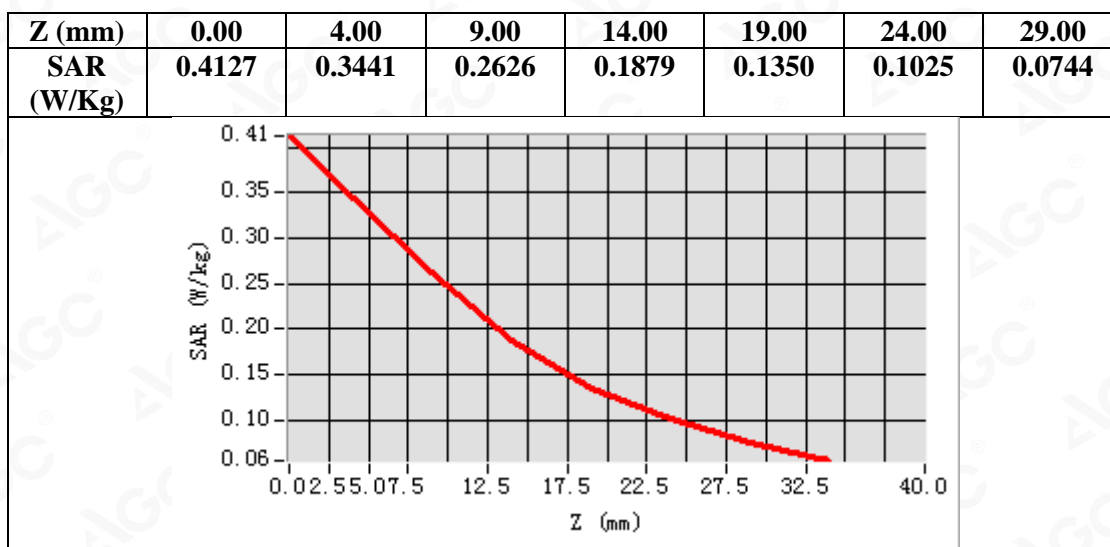


Maximum location: X=-48.00, Y=-30.00

SAR Peak: 0.44 W/kg

SAR 10g (W/Kg)	0.225924
SAR 1g (W/Kg)	0.323480





Test Laboratory: AGC Lab  
GSM 900 High- Touch-Right <SIM 1>  
DUT: Smart Phone; Type: NOTE 7

Date: Jun. 11,2020

Communication System: Generic GSM; Communication System Band: GSM 900; Duty Cycle: 1: 8; Conv.F=5.21  
Frequency: 914.8 MHz; Medium parameters used:  $f = 900$  MHz;  $\sigma = 0.94$  mho/m;  $\epsilon_r = 40.63$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Right Section  
Ambient temperature (°C): 20.7, Liquid temperature (°C): 20.4

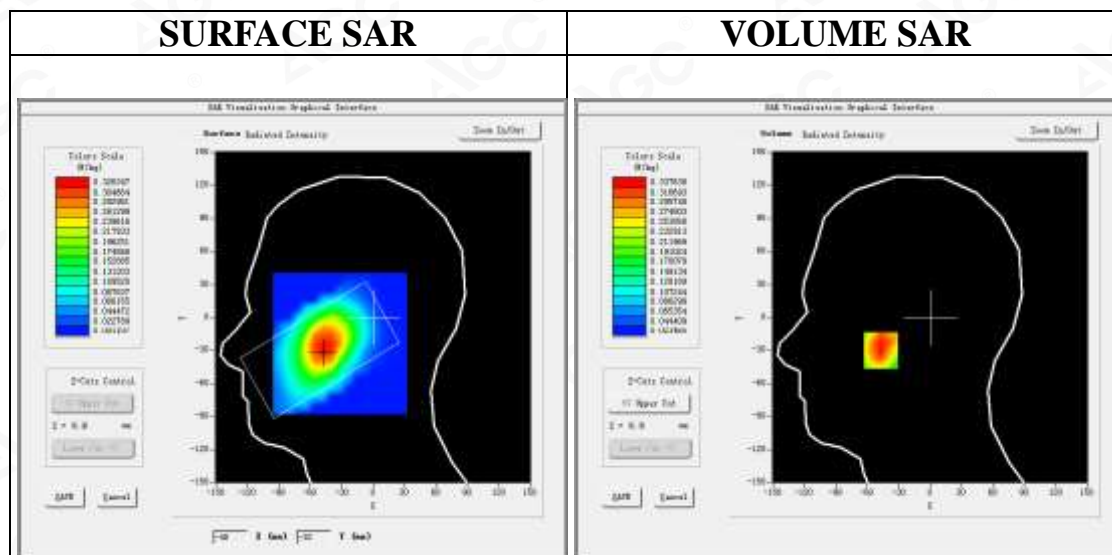
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/GSM 900 High- Touch-Right /Area Scan: Measurement grid: dx=8mm, dy=8mm

Configuration/GSM 900 High- Touch-Right /Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

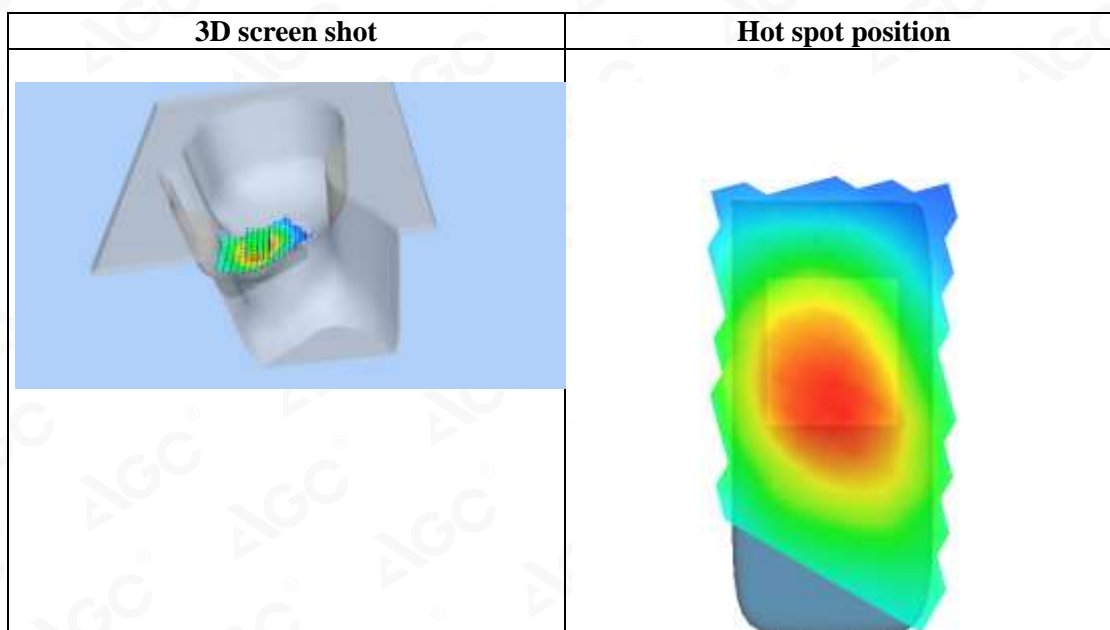
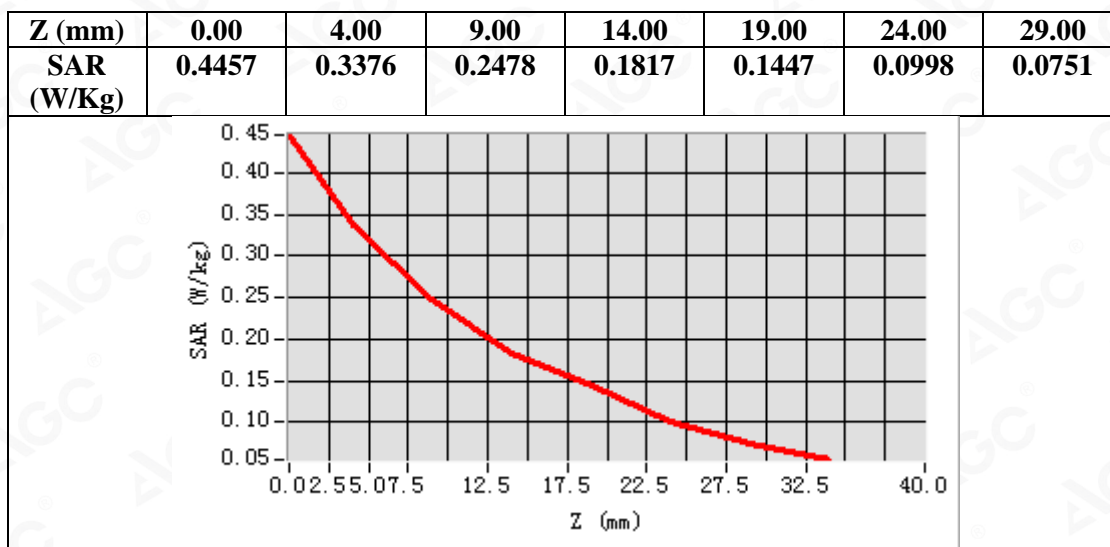
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Right head
Device Position	Cheek
Band	GSM 900
Channels	High
Signal	TDMA (Crest factor: 8.0)



Maximum location: X=-47.00, Y=-30.00

SAR Peak: 0.45 W/kg

SAR 10g (W/Kg)	0.226359
SAR 1g (W/Kg)	0.326032



**Test Laboratory:** AGC Lab  
**GPRS 900 High-Body- Worn- Back (4up) <SIM 1>**  
**DUT: Smart Phone; Type: NOTE 7**

**Date:** Jun. 11,2020

Communication System: GPRS-4 Slot; Communication System Band: GSM 900;Duty Cycle:1:2.1 ; Conv.F=5.21  
Frequency: 914.8 MHz; Medium parameters used:  $f = 900$  MHz;  $\sigma = 0.94$  mho/m;  $\epsilon_r = 40.63$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Flat Section  
Ambient temperature (°C): 20.7, Liquid temperature (°C): 20.4

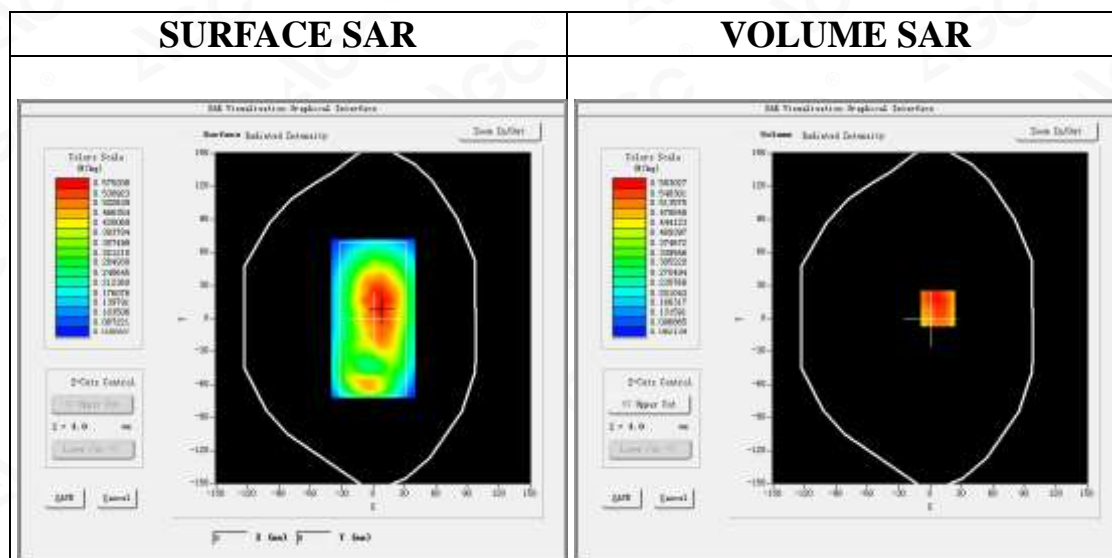
**SATIMO Configuration:**

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

**Configuration/GPRS 900 High- Body- Back /Area Scan:** Measurement grid: dx=8mm, dy=8mm

**Configuration/GPRS 900 High- Body- Back /Zoom Scan:** Measurement grid: dx=8mm,dy=8mm, dz=5mm;

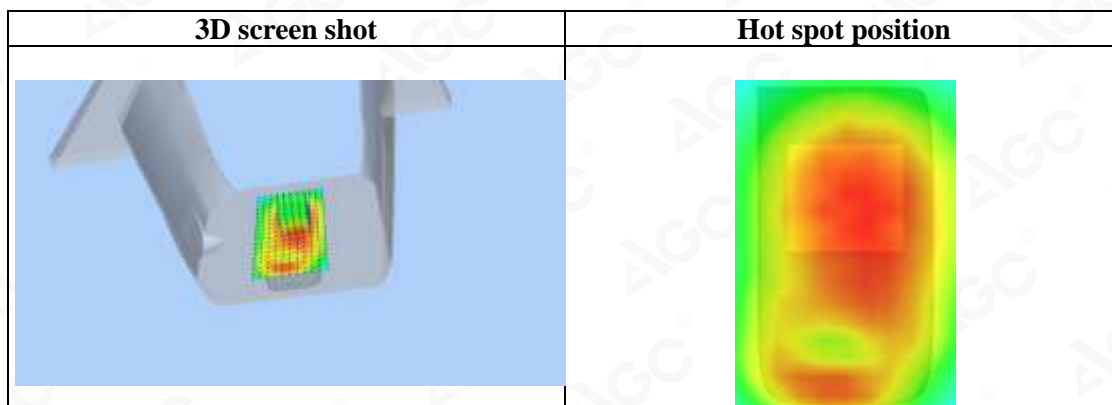
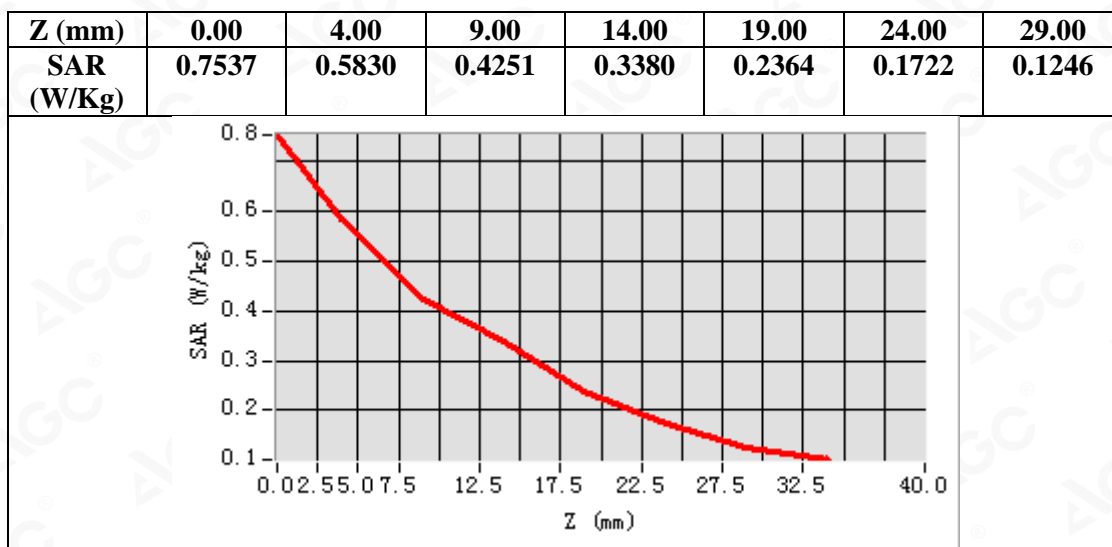
<b>Area Scan</b>	surf_sam_plan.txt, h= 5.00 mm
<b>ZoomScan</b>	5x5x7,dx=8mm dy=8mm dz=5mm
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body Back
<b>Band</b>	GSM 900
<b>Channels</b>	High
<b>Signal</b>	TDMA (Crest factor: 2.0)



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

**SAR Peak: 0.77 W/kg**

<b>SAR 10g (W/Kg)</b>	0.399056
<b>SAR 1g (W/Kg)</b>	0.560204



Test Laboratory: AGC Lab  
GPRS 900 High- Hotspot - Back (4up) <SIM 1>  
DUT: Smart Phone; Type: NOTE 7

Date: Jun. 11,2020

Communication System: GPRS-4 Slot; Communication System Band: GSM 900;Duty Cycle:1:2.1 ; Conv.F=5.21  
Frequency: 914.8 MHz; Medium parameters used:  $f = 900$  MHz;  $\sigma = 0.94$  mho/m;  $\epsilon_r = 40.63$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Flat Section  
Ambient temperature (°C): 20.7, Liquid temperature (°C): 20.4

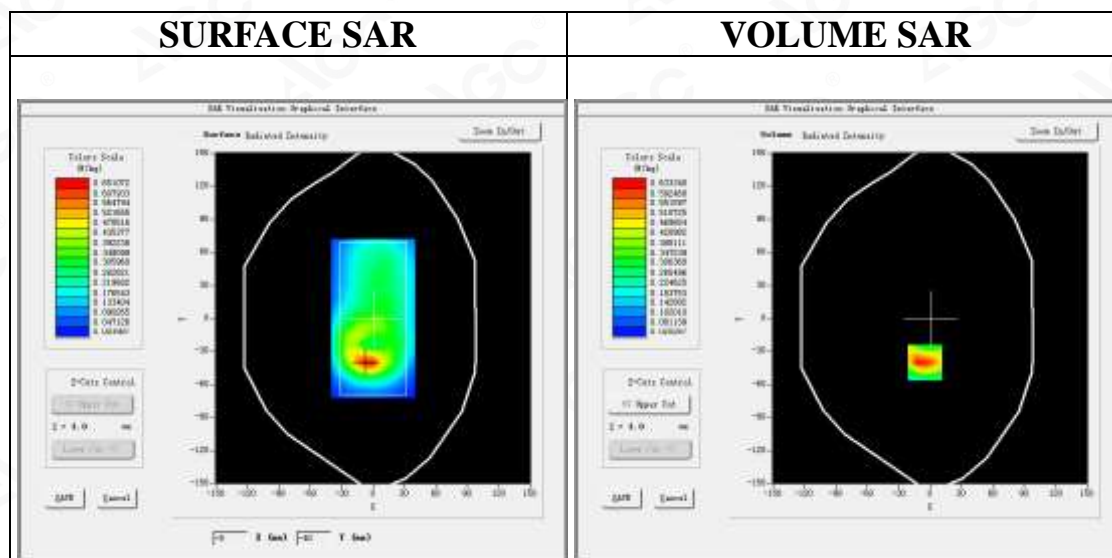
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/GPRS 900 High- Hotspot- Back /Area Scan: Measurement grid: dx=8mm, dy=8mm

Configuration/GPRS 900 High- Hotspot - Back /Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

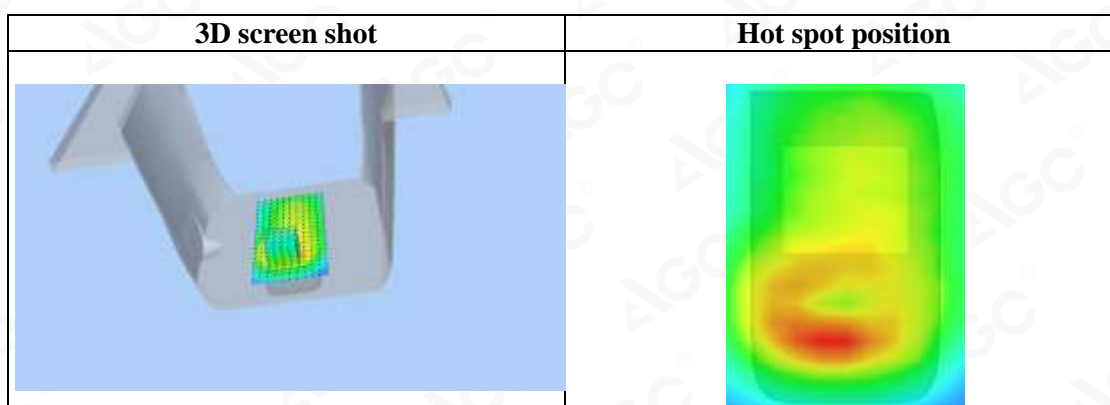
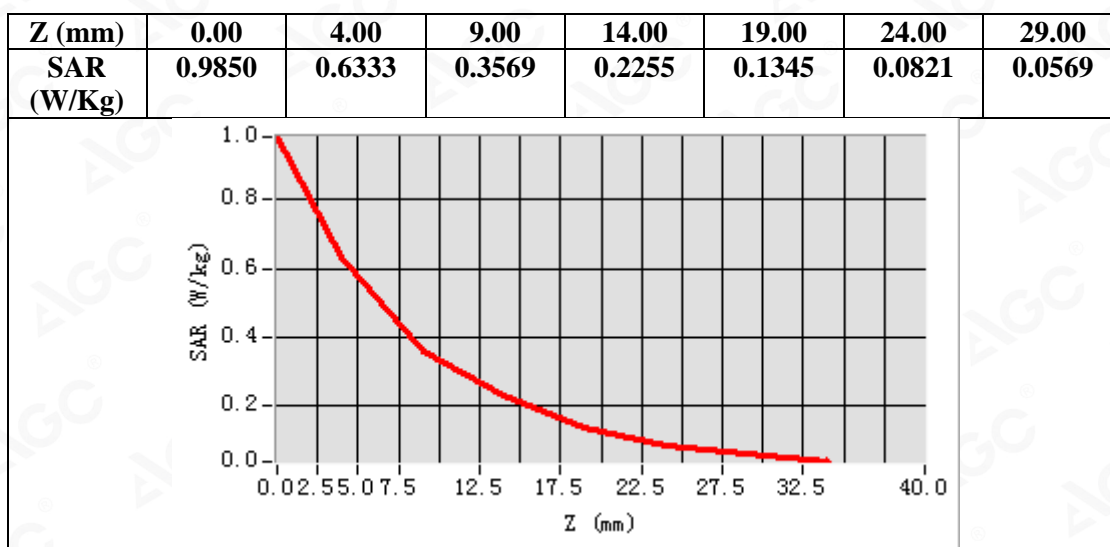
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Hotspot Back
Band	GSM 900
Channels	High
Signal	TDMA (Crest factor: 2.0)



Maximum location: X=-5.00, Y=-40.00

SAR Peak: 1.04 W/kg

SAR 10g (W/Kg)	0.326135
SAR 1g (W/Kg)	0.604560



**Test Laboratory:** AGC Lab  
**GPRS 900 Mid- Limbs - Back (4up) <SIM 1>**  
**DUT:** Smart Phone; **Type:** NOTE 7

**Date:** Jun. 11,2020

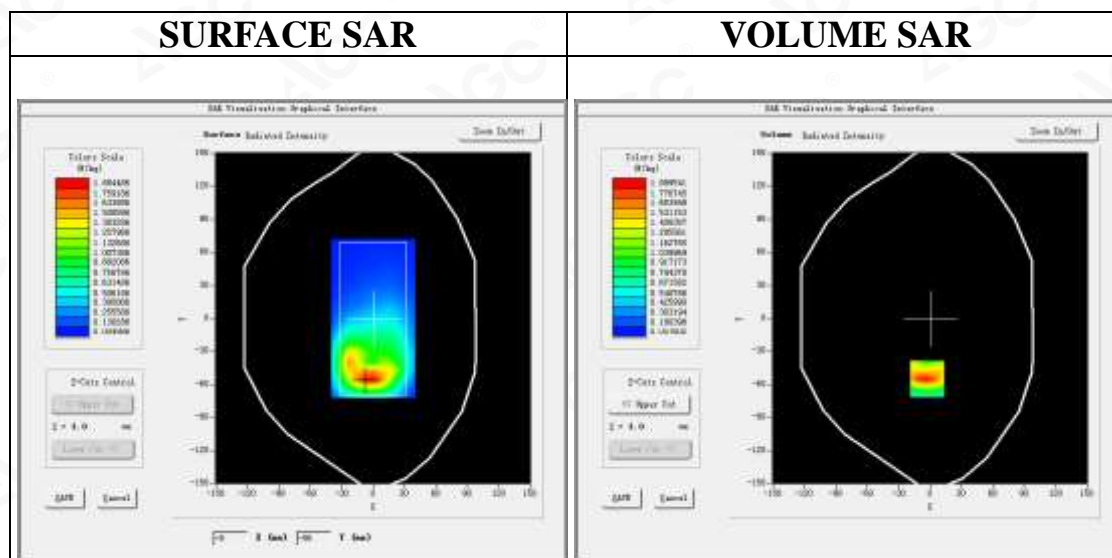
Communication System: GPRS-4 Slot; Communication System Band: GSM 900;Duty Cycle:1:2.1 ; Conv.F=5.21  
Frequency: 897.4 MHz; Medium parameters used:  $f = 900$  MHz;  $\sigma = 0.94$  mho/m;  $\epsilon_r = 40.63$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Flat Section  
Ambient temperature (°C): 20.7, Liquid temperature (°C): 20.4

SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

**Configuration/GPRS 900 Mid- Limbs - Back /Area Scan:** Measurement grid: dx=8mm, dy=8mm  
**Configuration/GPRS 900 Mid- Limbs - Back /Zoom Scan:** Measurement grid: dx=8mm,dy=8mm, dz=5mm;

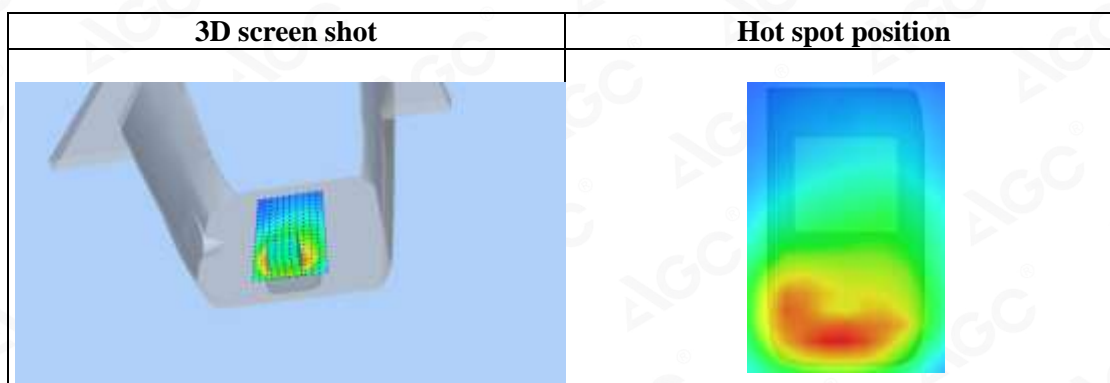
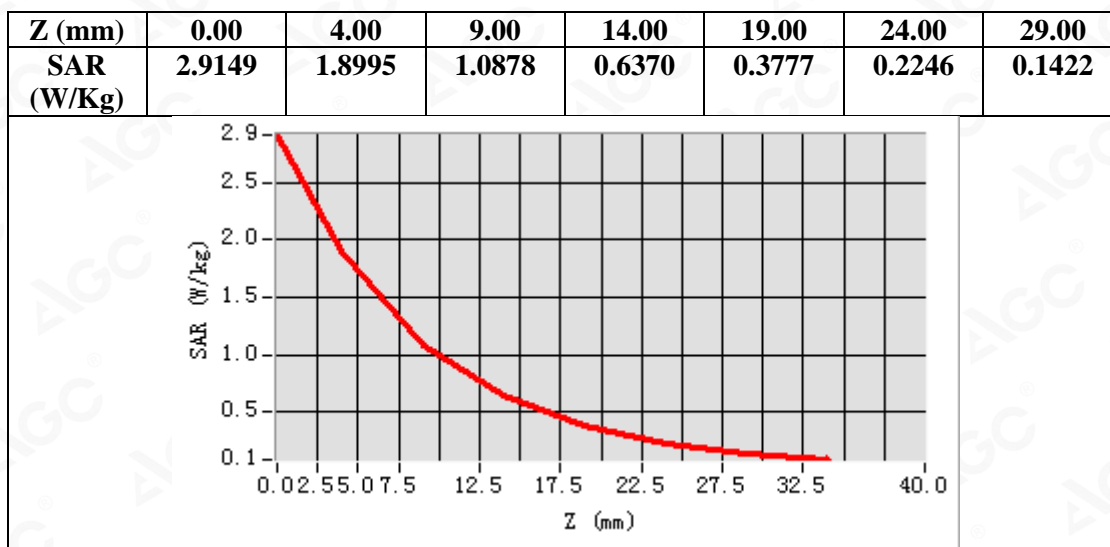
<b>Area Scan</b>	surf_sam_plan.txt, h= 5.00 mm
<b>ZoomScan</b>	5x5x7,dx=8mm dy=8mm dz=5mm
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Limbs Back
<b>Band</b>	GSM 900
<b>Channels</b>	Middle
<b>Signal</b>	TDMA (Crest factor: 2.0)



**Maximum location: X=-3.00, Y=-55.00**

**SAR Peak: 2.98 W/kg**

<b>SAR 10g (W/Kg)</b>	0.947292
<b>SAR 1g (W/Kg)</b>	1.767430



Test Laboratory: AGC Lab  
DCS 1800 High-Touch -Right <SIM1>  
DUT: Smart Phone; Type: NOTE 7

Date: Jun. 16,2020

Communication System: Generic GSM; Communication System Band: DCS 1800; Duty Cycle: 1:8; Conv.F=4.68  
Frequency: 1784.8 MHz; Medium parameters used:  $f = 1800$  MHz;  $\sigma = 1.39$  mho/m;  $\epsilon_r = 38.65$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Right Section  
Ambient temperature (°C): 21.0, Liquid temperature (°C): 20.7

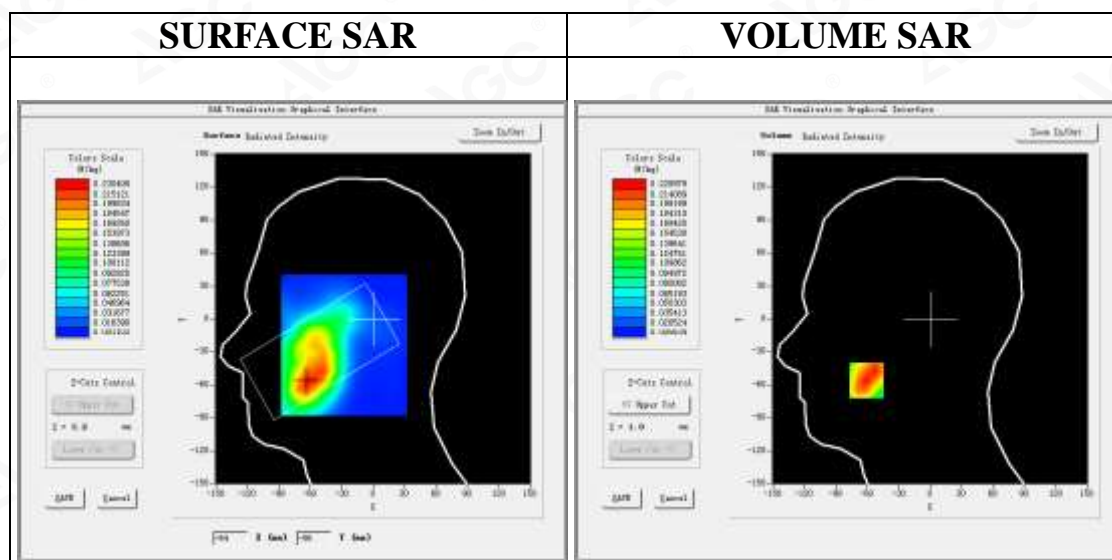
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/DCS1800 High- Touch-Right/Area Scan: Measurement grid: dx=8mm, dy=8mm

Configuration/DCS1800 High- Touch-Right/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

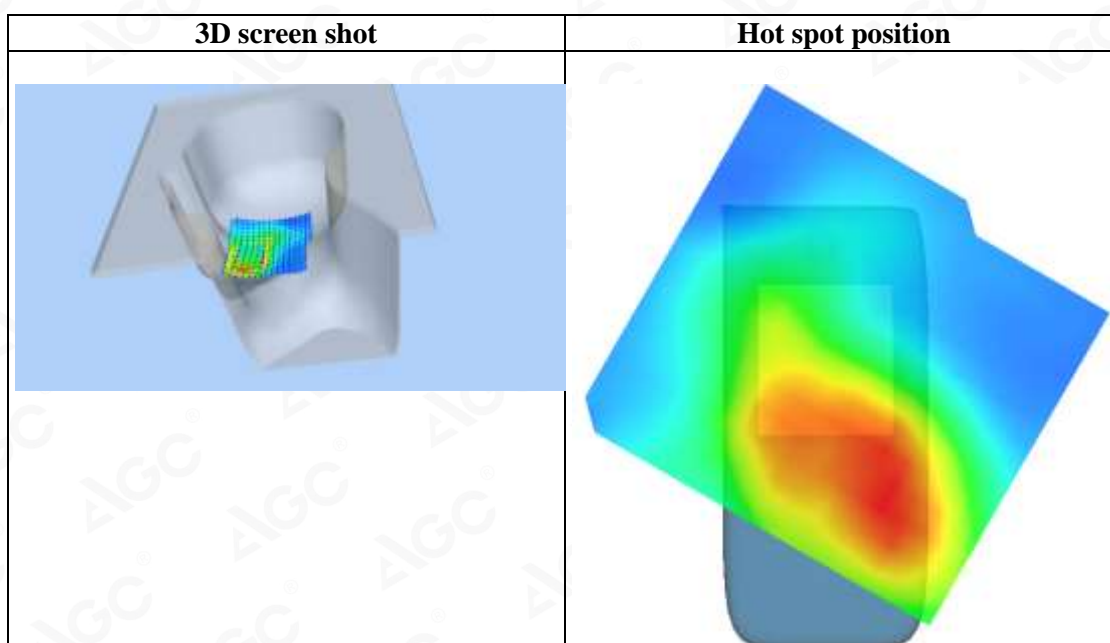
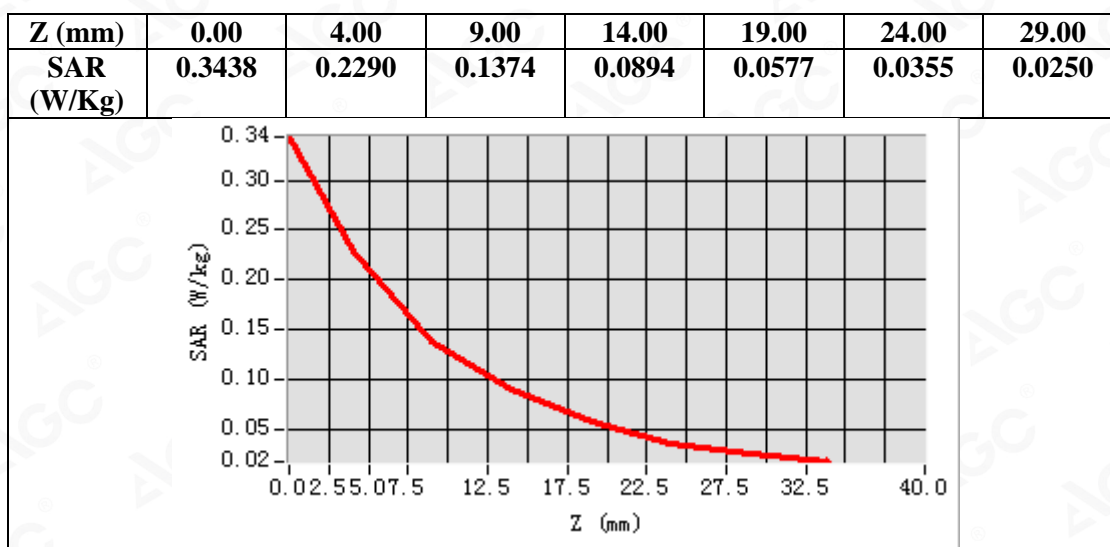
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Right head
Device Position	Cheek
Band	DCS 1800
Channels	High
Signal	TDMA (Crest factor: 8.0)



Maximum location: X=-61.00, Y=-56.00

SAR Peak: 0.36 W/kg

SAR 10g (W/Kg)	0.130142
SAR 1g (W/Kg)	0.216391



Test Laboratory: AGC Lab  
GPRS 1800 Mid-Body- Worn- Back (4up) <SIM1>  
DUT: Smart Phone; Type: NOTE 7

Date: Jun. 16,2020

Communication System: GPRS-4 Slot; Communication System Band: DCS1800; Duty Cycle: 1:2.1; Conv.F=4.68  
Frequency: 1747.4 MHz; Medium parameters used:  $f = 1800$  MHz;  $\sigma = 1.39$  mho/m;  $\epsilon_r = 38.65$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Flat Section  
Ambient temperature (°C): 21.0, Liquid temperature (°C): 20.7

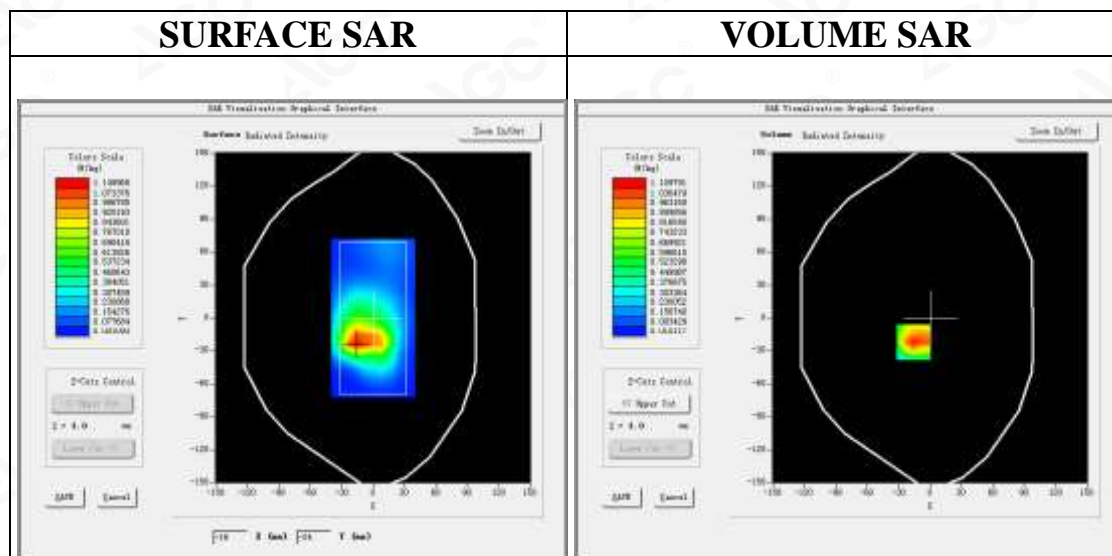
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/GPRS 1800 Mid- Body- Back /Area Scan: Measurement grid: dx=8mm, dy=8mm

Configuration/GPRS 1800 Mid- Body- Back /Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

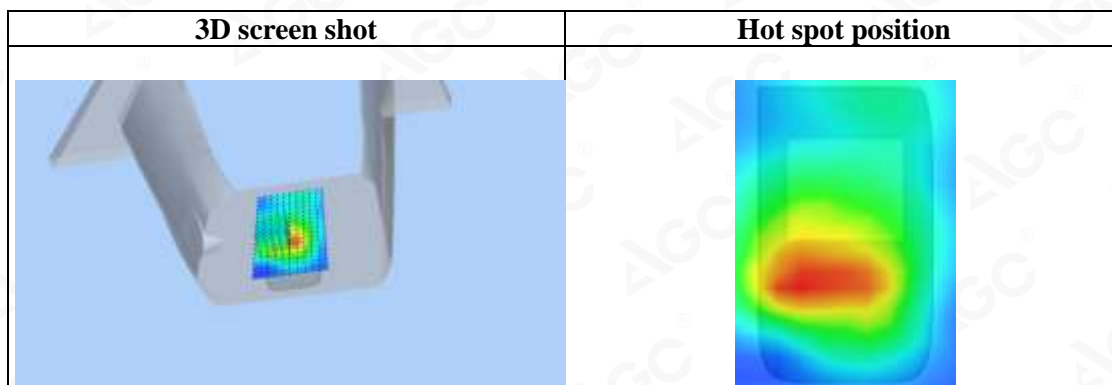
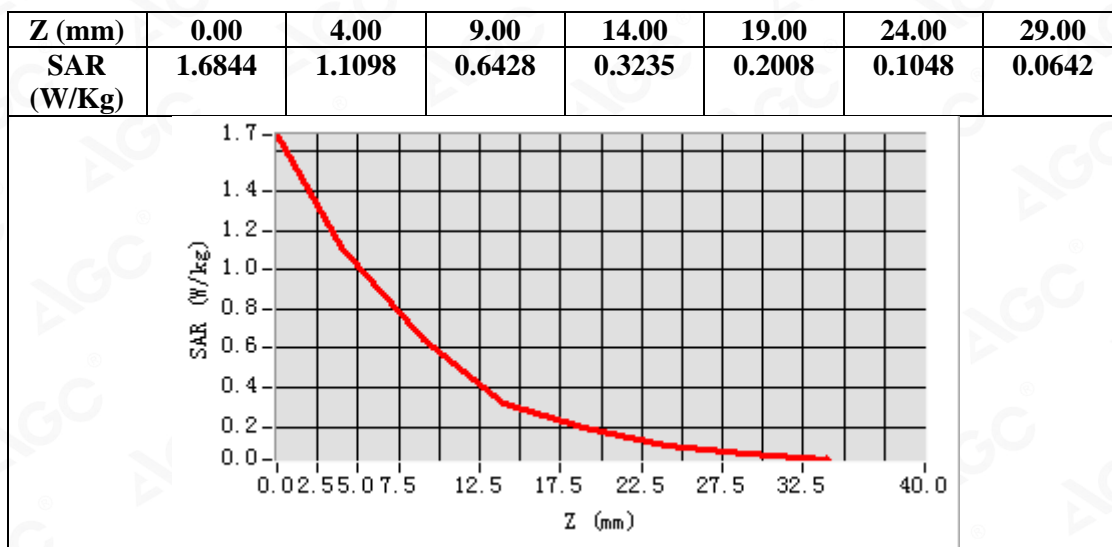
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Body Back
Band	DCS 1800
Channels	Middle
Signal	TDMA (Crest factor: 2.0)



Maximum location: X=-16.00, Y=-22.00

SAR Peak: 1.72 W/kg

SAR 10g (W/Kg)	0.566658
SAR 1g (W/Kg)	1.030418



Test Laboratory: AGC Lab  
GPRS 1800 High-Hotspot- Back (4up) <SIM1>  
DUT: Smart Phone; Type: NOTE 7

Date: Jun. 16,2020

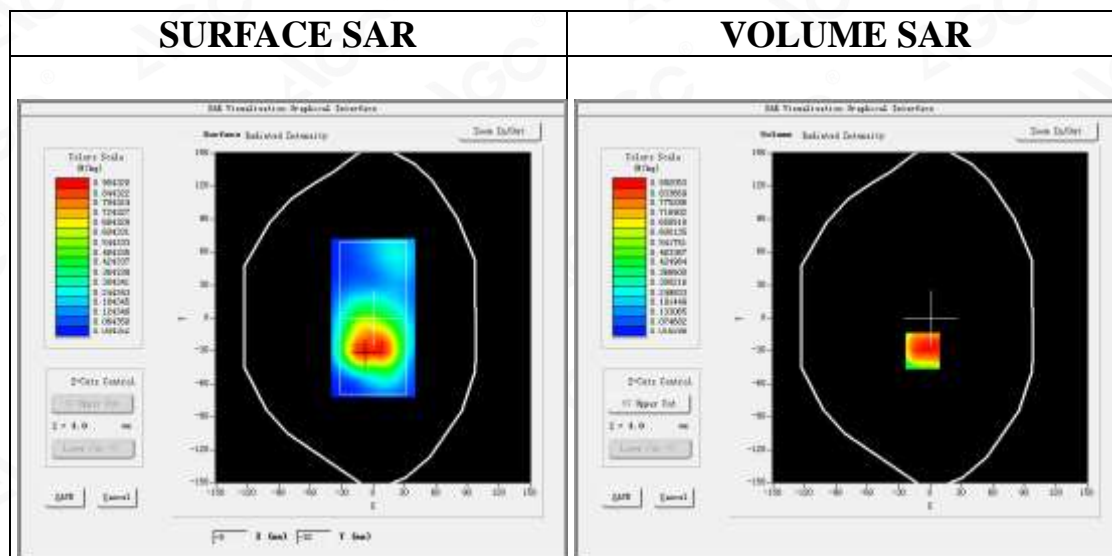
Communication System: GPRS-4 Slot; Communication System Band: DCS1800; Duty Cycle: 1:2.1; Conv.F=4.68  
Frequency: 1784.8 MHz; Medium parameters used:  $f = 1800$  MHz;  $\sigma = 1.39$  mho/m;  $\epsilon_r = 38.65$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Flat Section  
Ambient temperature (°C): 21.0, Liquid temperature (°C): 20.7

SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/GPRS 1800 High- Hotspot- Back /Area Scan: Measurement grid: dx=8mm, dy=8mm  
Configuration/GPRS 1800 High- Hotspot- Back /Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

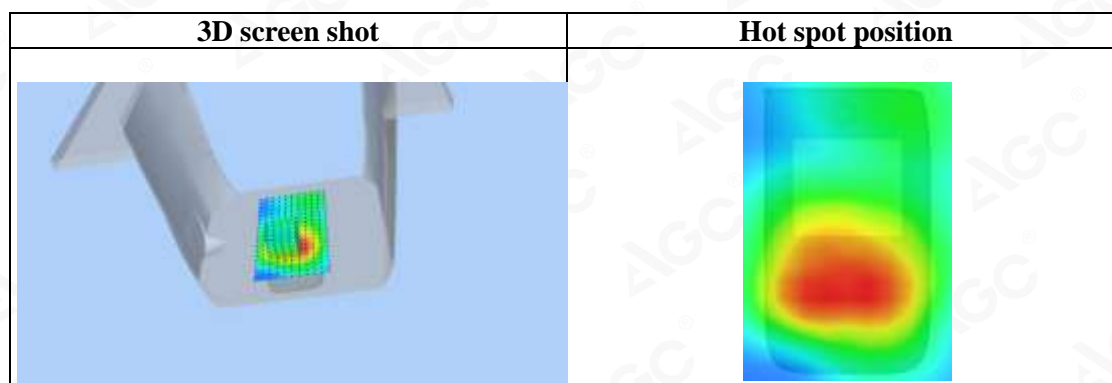
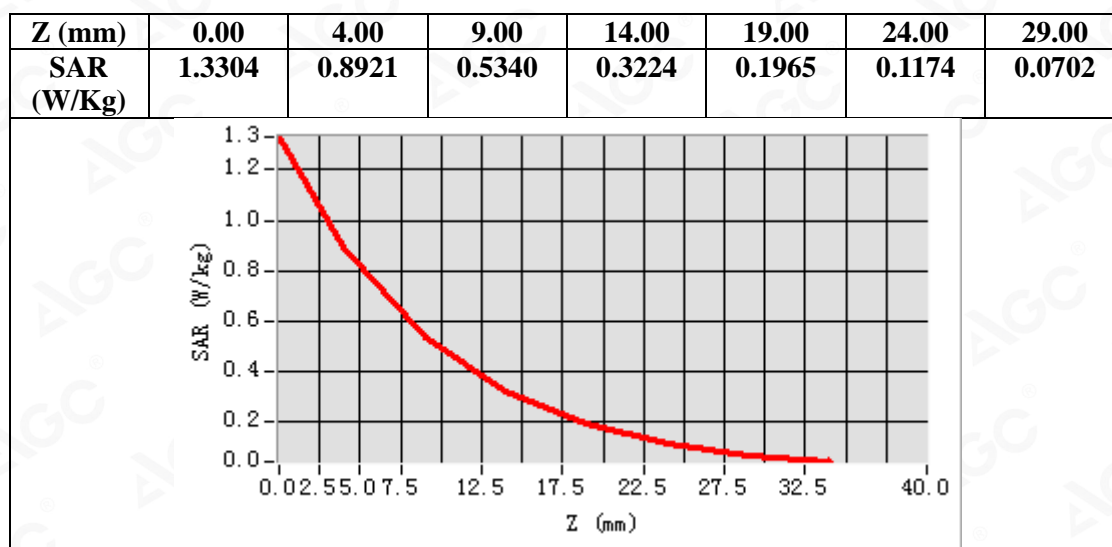
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Hotspot Back
Band	DCS 1800
Channels	High
Signal	TDMA (Crest factor: 2.0)



Maximum location: X=-7.00, Y=-30.00

SAR Peak: 1.35 W/kg

SAR 10g (W/Kg)	0.537349
SAR 1g (W/Kg)	0.869725



Test Laboratory: AGC Lab  
GPRS 1800 High-Limbs- Back (4up) <SIM1>  
DUT: Smart Phone; Type: NOTE 7

Date: Jun. 16,2020

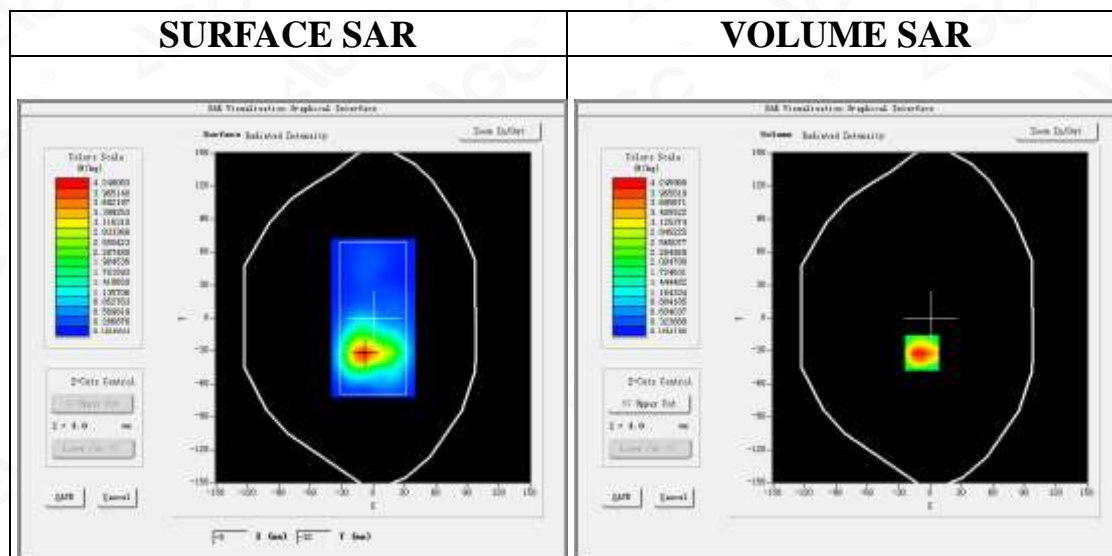
Communication System: GPRS-4 Slot; Communication System Band: DCS1800; Duty Cycle: 1:2.1; Conv.F=4.68  
Frequency: 1784.8 MHz; Medium parameters used:  $f = 1800$  MHz;  $\sigma = 1.39$  mho/m;  $\epsilon_r = 38.65$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Flat Section  
Ambient temperature (°C): 21.0, Liquid temperature (°C): 20.7

SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/GPRS 1800 High- Limbs- Back /Area Scan: Measurement grid: dx=8mm, dy=8mm  
Configuration/GPRS 1800 High- Limbs- Back /Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

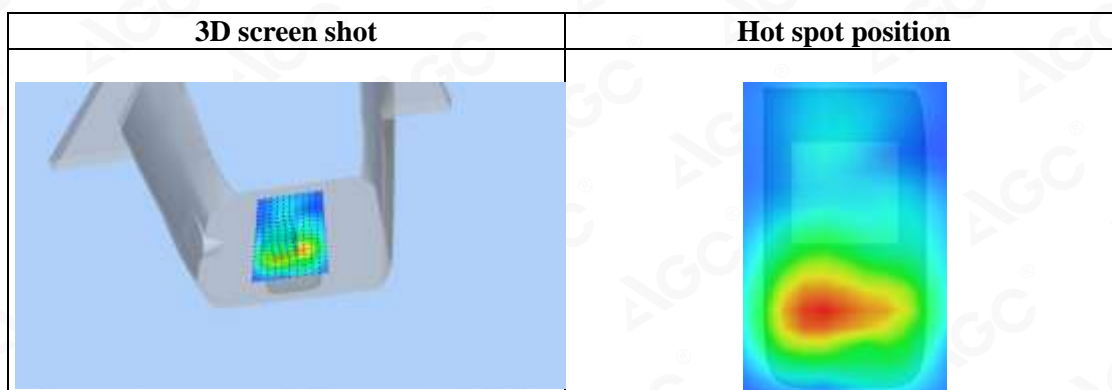
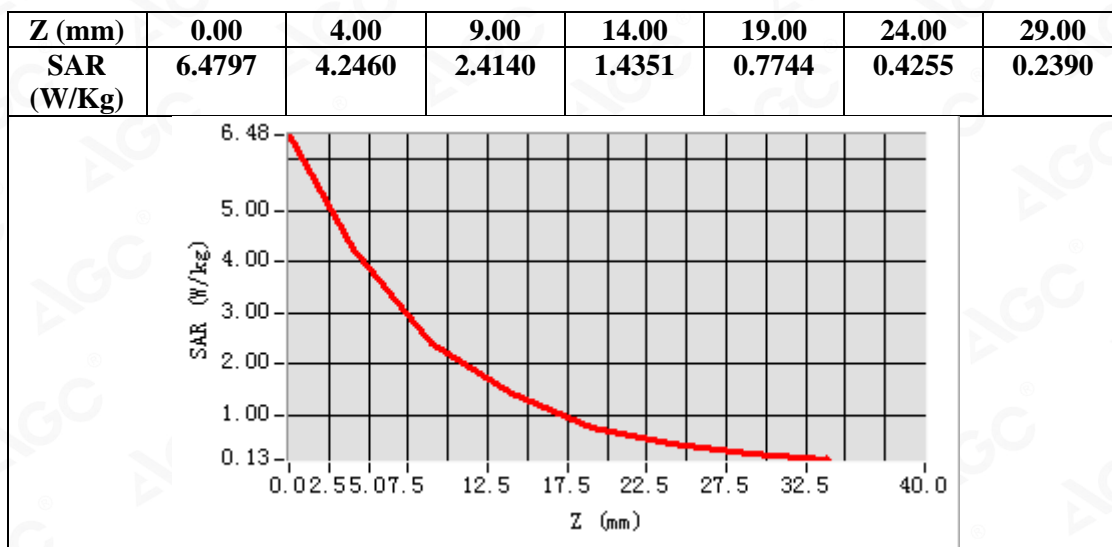
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Limbs Back
Band	DCS 1800
Channels	High
Signal	TDMA (Crest factor: 2.0)



Maximum location: X=-8.00, Y=-32.00

SAR Peak: 7.10 W/kg

SAR 10g (W/Kg)	2.151669
SAR 1g (W/Kg)	4.127826



Test Laboratory: AGC Lab  
WCDMA Band I Mid-Touch-Right (RMC)  
DUT: Smart Phone; Type: NOTE 7

Date: Jun. 12,2020

Communication System: UMTS; Communication System Band: Band I UTRA/FDD ;Duty Cycle:1:1; Conv.F=5.02;  
Frequency: 1950MHz; Medium parameters used:  $f = 2000$  MHz;  $\sigma = 1.37$  mho/m;  $\epsilon_r = 39.51$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Right Section  
Ambient temperature (°C): 20.8, Liquid temperature (°C): 20.5

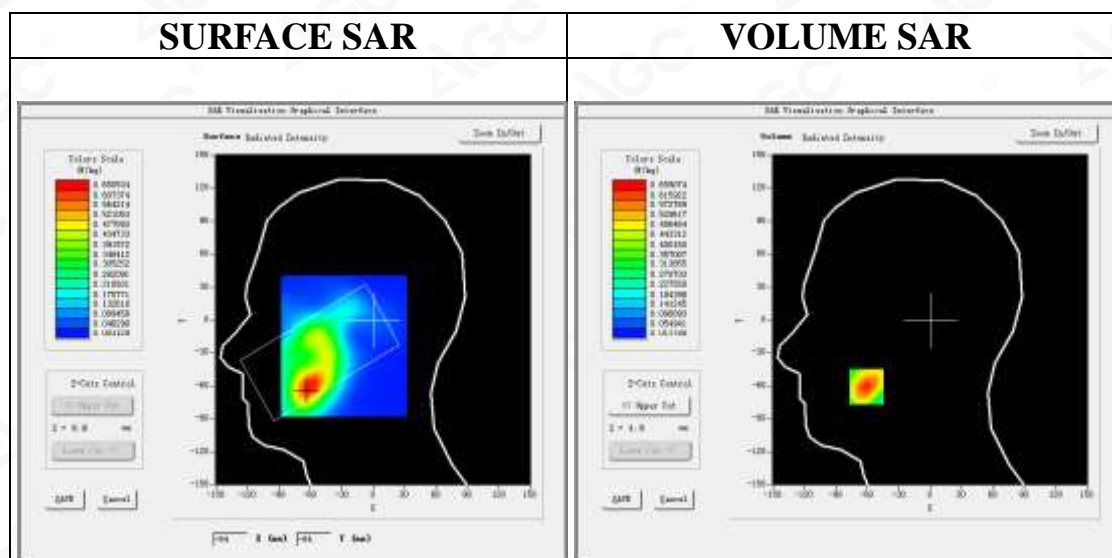
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/ WCDMA Band I Mid-Touch-Right/Area Scan: Measurement grid: dx=8mm, dy=8mm

Configuration/ WCDMA Band I Mid-Touch-Right/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

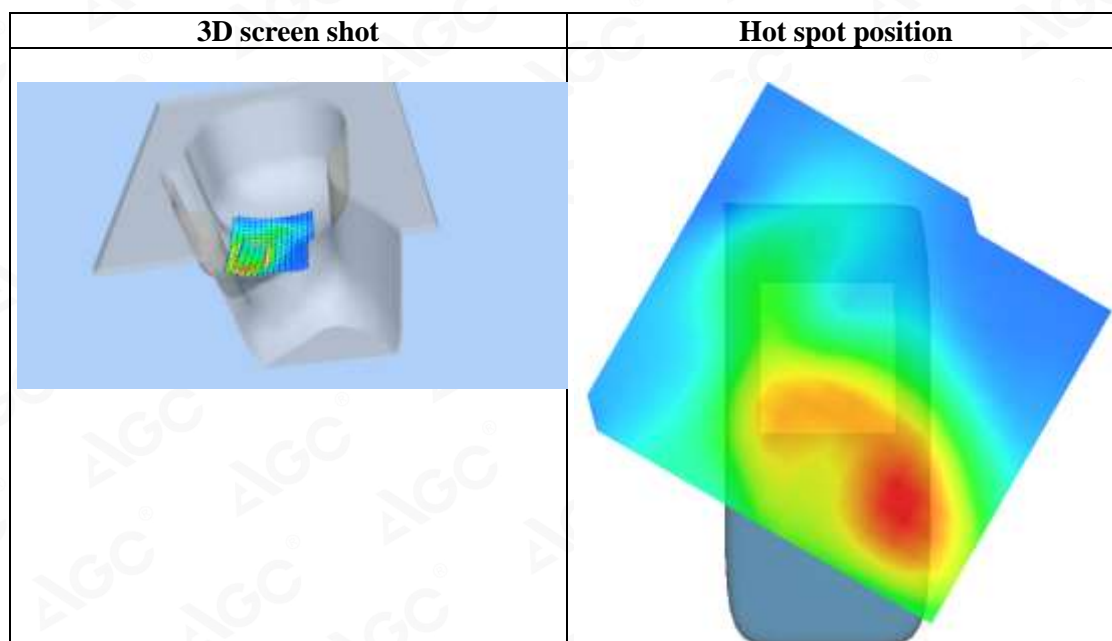
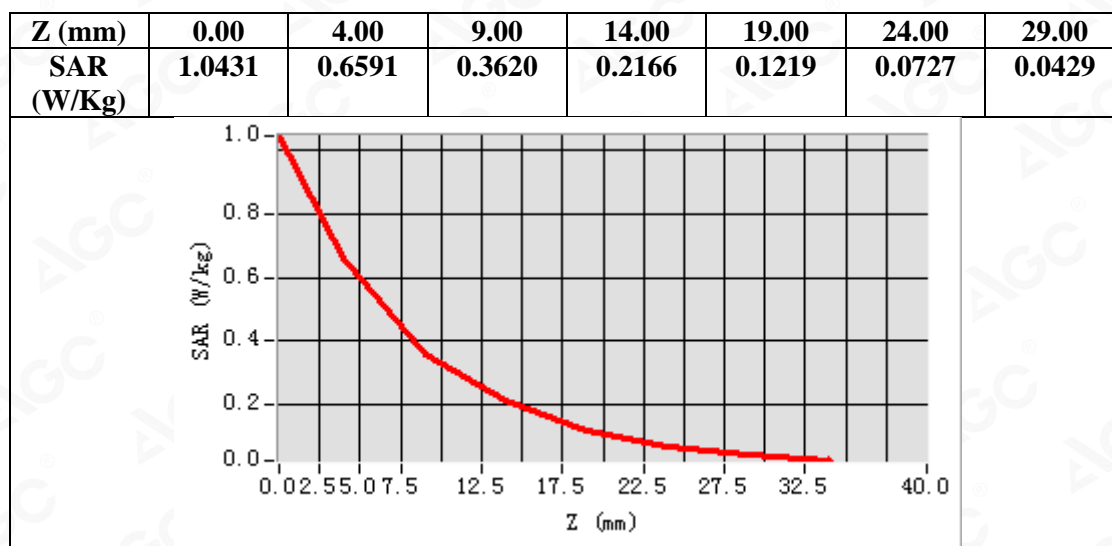
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Right head
Device Position	Cheek
Band	WCDMA Band I
Channels	Middle
Signal	CDMA (Crest factor: 1.0)



Maximum location: X=-61.00, Y=-61.00

SAR Peak: 1.04 W/kg

SAR 10g (W/Kg)	0.343158
SAR 1g (W/Kg)	0.628014



Test Laboratory: AGC Lab  
WCDMA Band I Mid-Body-Towards Grounds (RMC)  
DUT: Smart Phone; Type: NOTE 7

Date: Jun. 12,2020

Communication System: UMTS; Communication System Band: Band I UTRA/FDD ;Duty Cycle:1:1; Conv.F=5.02;  
Frequency: 1950MHz; Medium parameters used:  $f = 2000$  MHz;  $\sigma = 1.37$  mho/m;  $\epsilon_r = 39.51$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Flat Section  
Ambient temperature (°C): 20.8, Liquid temperature (°C): 20.5

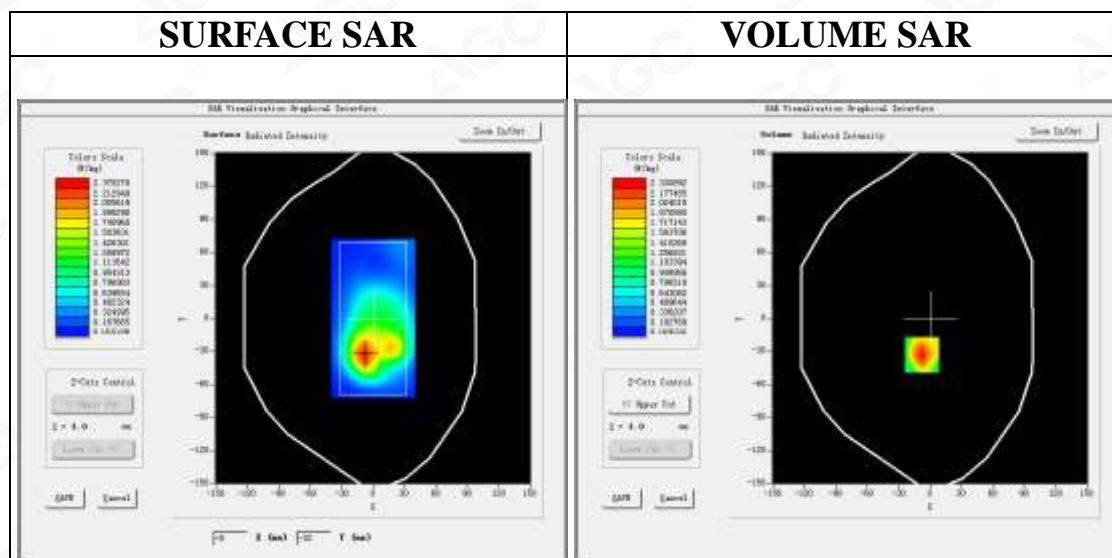
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/WCDMA BAND I Mid-Body-Back/Area Scan: Measurement grid: dx=8mm, dy=8mm

Configuration/WCDMA BAND I Mid-Body-Back//Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

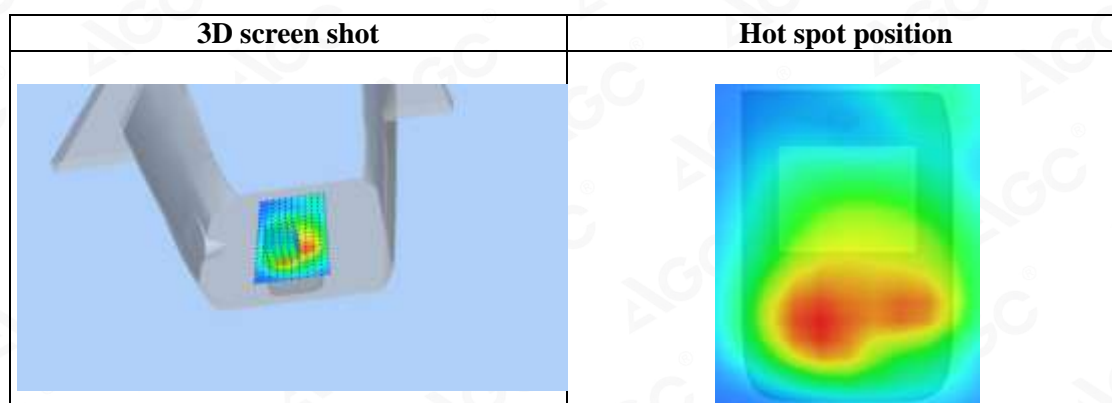
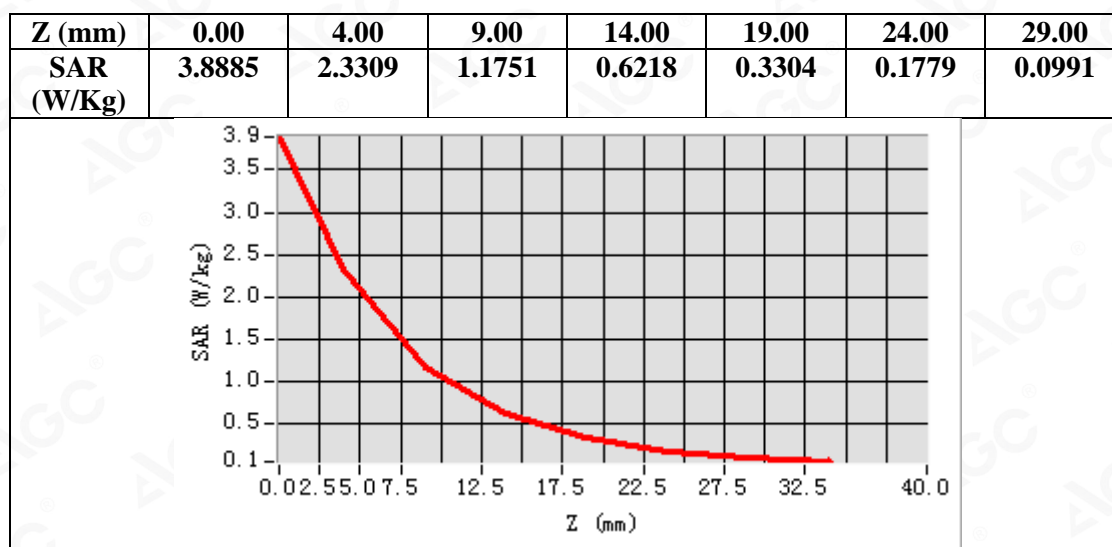
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Body Back
Band	WCDMA Band I
Channels	Middle
Signal	CDMA (Crest factor: 1.0)



Maximum location: X=-8.00, Y=-33.00

SAR Peak: 3.93 W/kg

SAR 10g (W/Kg)	1.133507
SAR 1g (W/Kg)	2.244705



**Test Laboratory:** AGC Lab  
**WCDMA Band I Low-Hotspot-Towards Grounds (RMC)**  
**DUT: Smart Phone; Type: NOTE 7**

**Date:** Jun. 12,2020

Communication System: UMTS; Communication System Band: Band I UTRA/FDD ;Duty Cycle:1:1; Conv.F=5.02;  
Frequency: 1922.4MHz; Medium parameters used:  $f = 2000$  MHz;  $\sigma = 1.37$  mho/m;  $\epsilon_r = 39.51$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Flat Section  
Ambient temperature (°C): 20.8, Liquid temperature (°C): 20.5

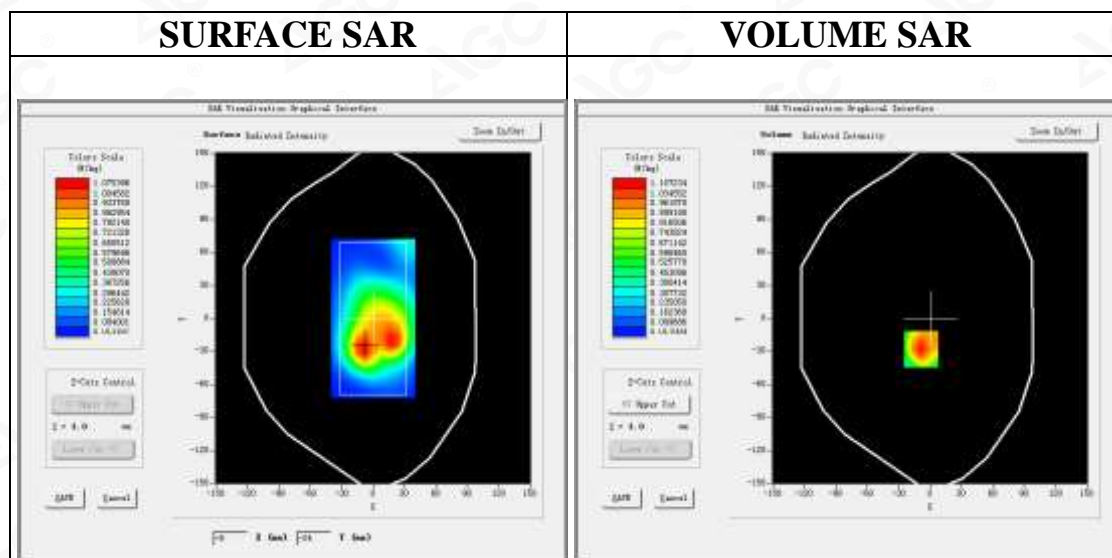
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

**Configuration/WCDMA BAND I Low-Hotspot-Back/Area Scan:** Measurement grid: dx=8mm, dy=8mm

**Configuration/WCDMA BAND I Low-Hotspot-Back//Zoom Scan:** Measurement grid: dx=8mm,dy=8mm, dz=5mm;

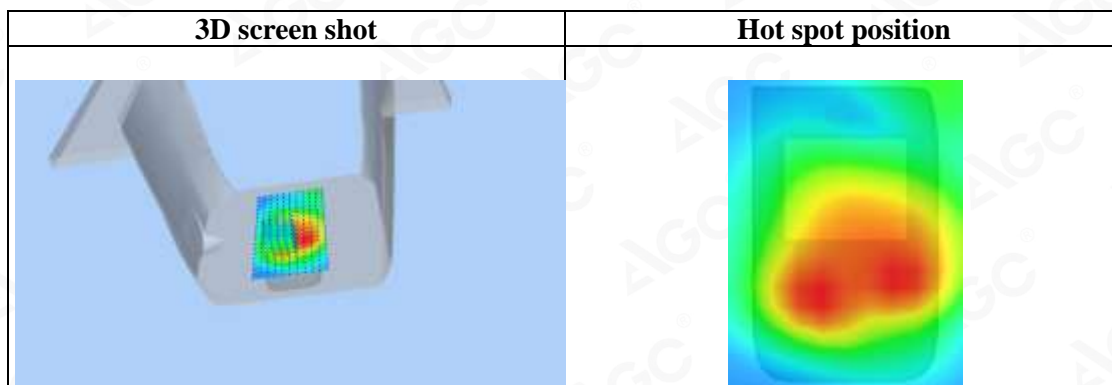
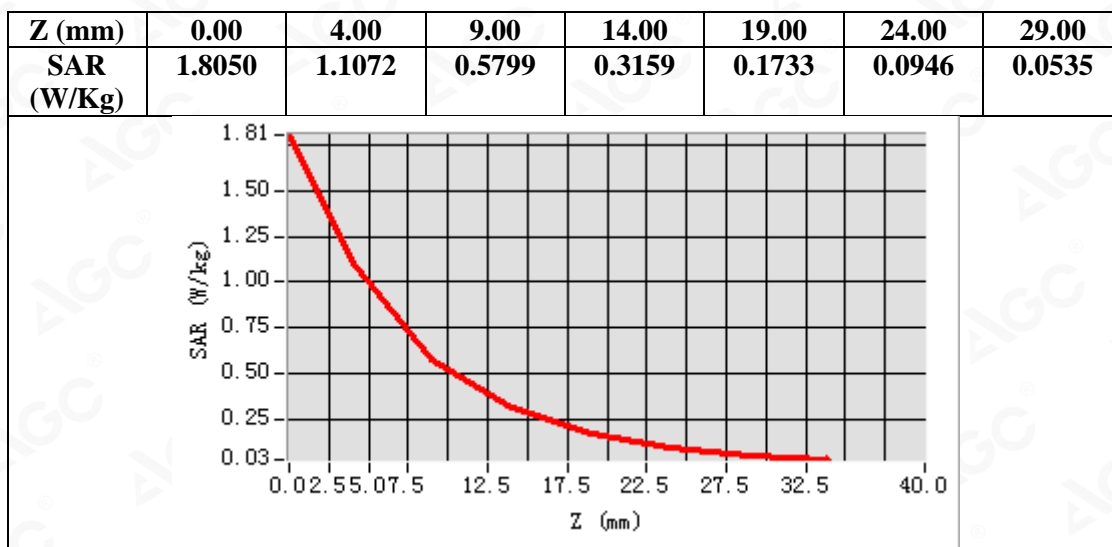
<b>Area Scan</b>	surf_sam_plan.txt, h= 5.00 mm
<b>ZoomScan</b>	5x5x7,dx=8mm dy=8mm dz=5mm
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Hotspot Back
<b>Band</b>	WCDMA Band I
<b>Channels</b>	Low
<b>Signal</b>	CDMA (Crest factor: 1.0)



**Maximum location: X=-9.00, Y=-28.00**

**SAR Peak: 1.80 W/kg**

<b>SAR 10g (W/Kg)</b>	0.560879
<b>SAR 1g (W/Kg)</b>	1.058148



Test Laboratory: AGC Lab  
WCDMA Band I Low-Limbs-Towards Grounds (RMC)  
DUT: Smart Phone; Type: NOTE 7

Date: Jun. 12,2020

Communication System: UMTS; Communication System Band: Band I UTRA/FDD ;Duty Cycle:1:1; Conv.F=5.02;  
Frequency: 1922.4MHz; Medium parameters used:  $f = 2000$  MHz;  $\sigma = 1.37$  mho/m;  $\epsilon_r = 39.51$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Flat Section  
Ambient temperature (°C): 20.8, Liquid temperature (°C): 20.5

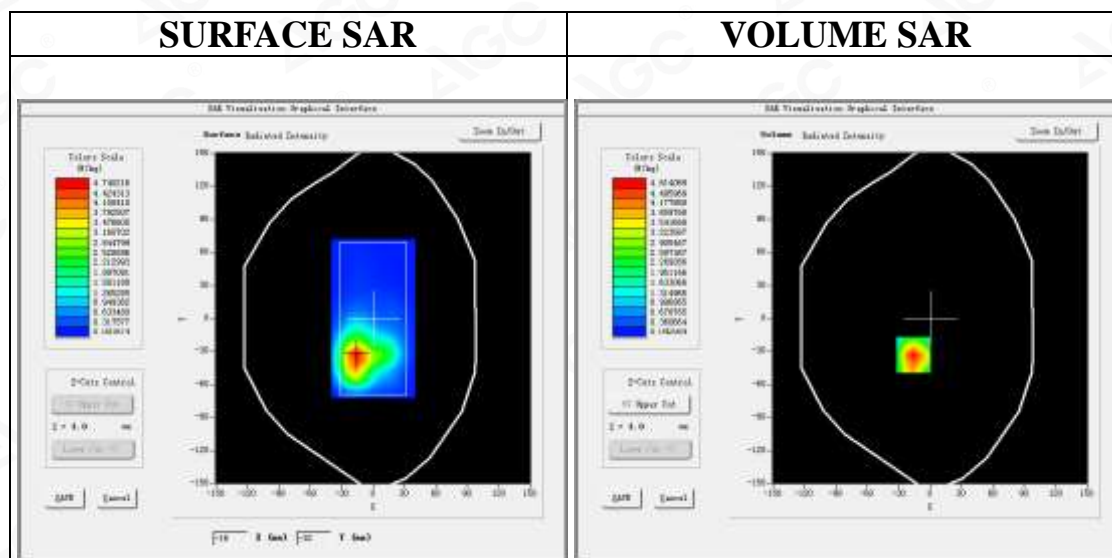
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/WCDMA BAND I Low-Limbs-Back/Area Scan: Measurement grid: dx=8mm, dy=8mm

Configuration/WCDMA BAND I Low-Limbs-Back//Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

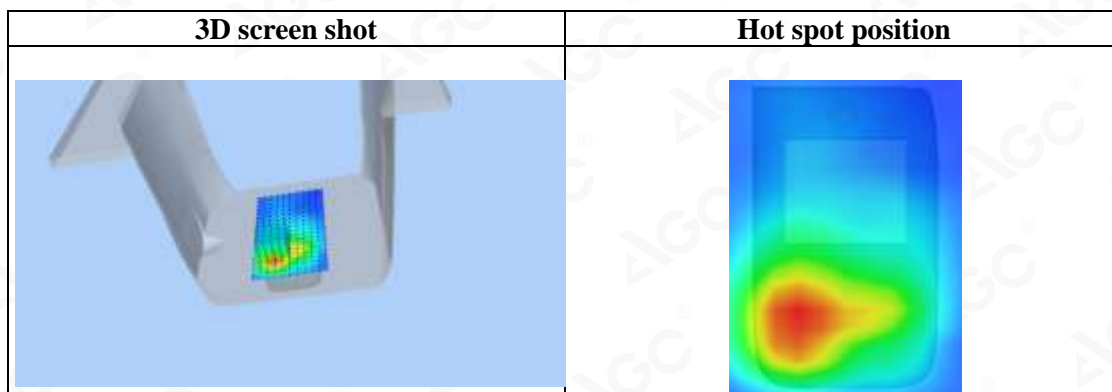
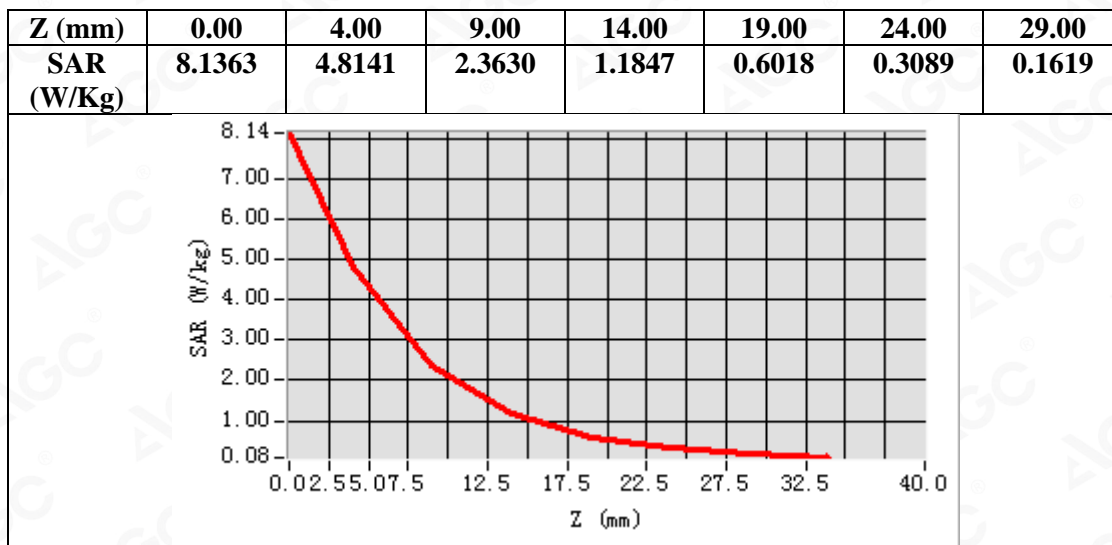
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Limbs Back
Band	WCDMA Band I
Channels	Low
Signal	CDMA (Crest factor: 1.0)



Maximum location: X=-16.00, Y=-33.00

SAR Peak: 8.18 W/kg

SAR 10g (W/Kg)	2.249603
SAR 1g (W/Kg)	4.556597



Test Laboratory: AGC Lab  
WCDMA Band I Mid-Limbs-Towards Grounds (RMC)  
DUT: Smart Phone; Type: NOTE 7

Date: Jun. 12,2020

Communication System: UMTS; Communication System Band: Band I UTRA/FDD ;Duty Cycle:1:1; Conv.F=5.02;  
Frequency: 1950MHz; Medium parameters used:  $f = 2000$  MHz;  $\sigma = 1.37$  mho/m;  $\epsilon_r = 39.51$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Flat Section  
Ambient temperature (°C): 20.8, Liquid temperature (°C): 20.5

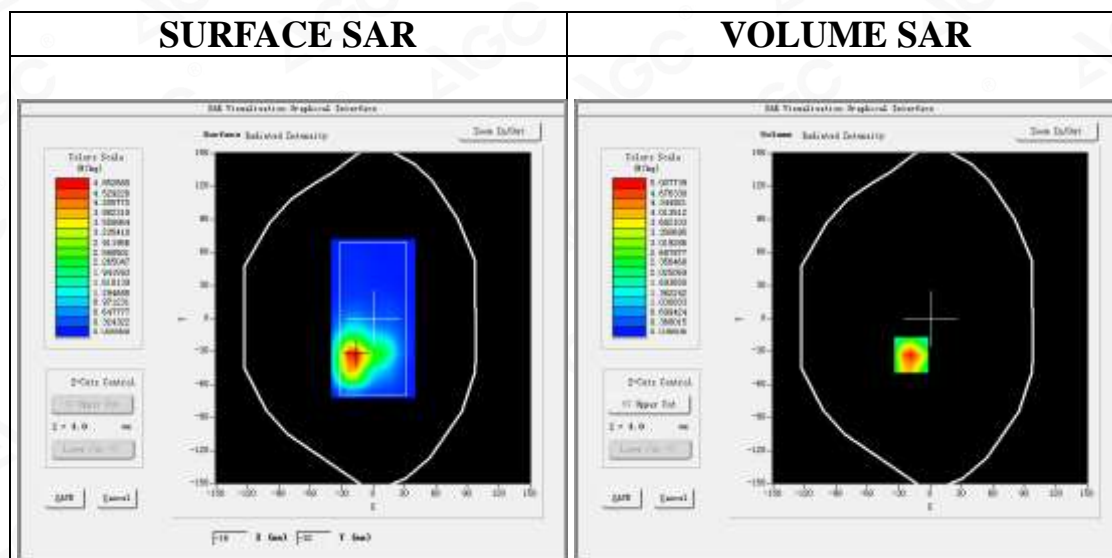
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/WCDMA BAND I Mid-Limbs-Back/Area Scan: Measurement grid: dx=8mm, dy=8mm

Configuration/WCDMA BAND I Mid-Limbs-Back//Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

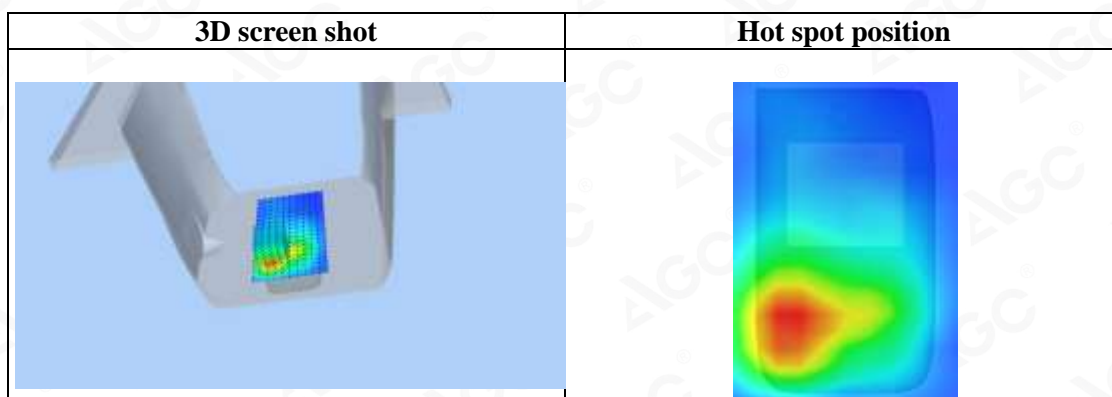
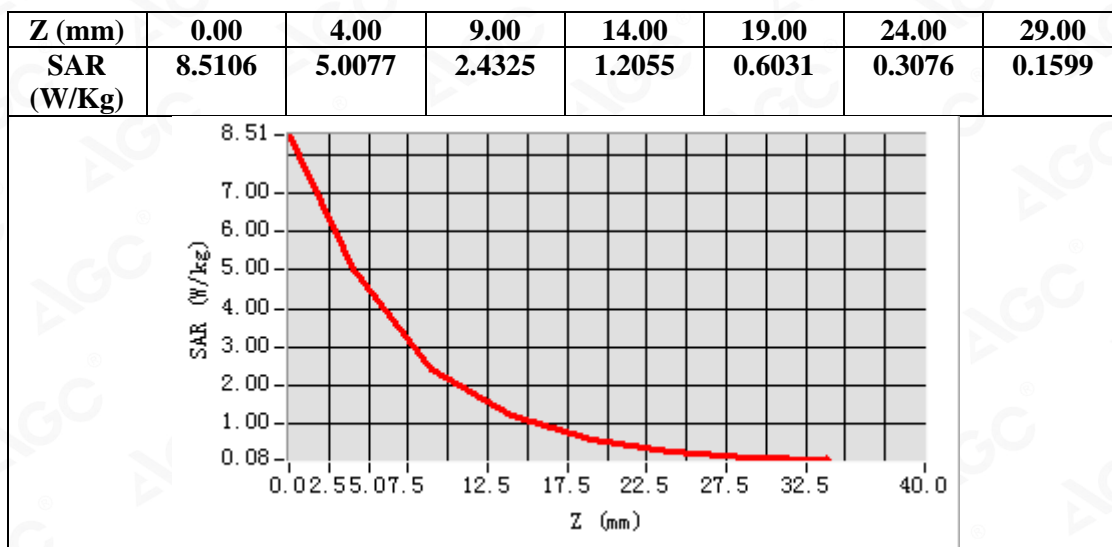
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Limbs Back
Band	WCDMA Band I
Channels	Middle
Signal	CDMA (Crest factor: 1.0)



Maximum location: X=-18.00, Y=-33.00

SAR Peak: 8.68 W/kg

SAR 10g (W/Kg)	2.275923
SAR 1g (W/Kg)	4.735718



Test Laboratory: AGC Lab  
WCDMA Band VIII High- Touch-Right (RMC)  
DUT: Smart Phone; Type: NOTE 7

Date: Jun. 11,2020

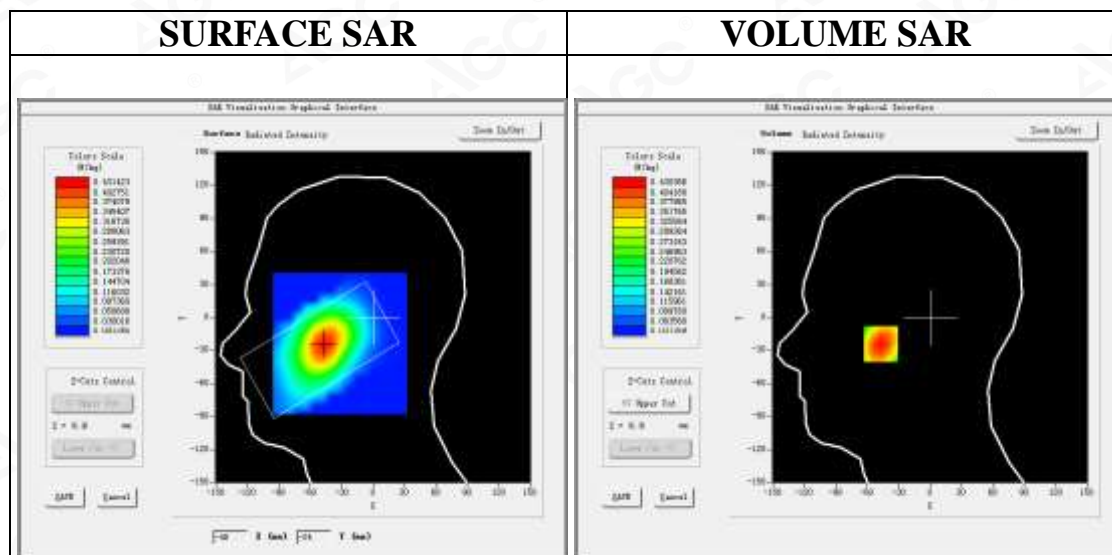
Communication System: UMTS; Communication System Band: BAND VIII UTRA/FDD; Duty Cycle:1:1; Conv.F=5.21  
Frequency: 912.6MHz;; Medium parameters used:  $f = 900 \text{ MHz}$ ;  $\sigma = 0.94 \text{ mho/m}$ ;  $\epsilon_r = 40.63$ ;  $\rho = 1000 \text{ kg/m}^3$  ;  
Phantom section: Right Section  
Ambient temperature ( $^{\circ}\text{C}$ ): 20.7, Liquid temperature ( $^{\circ}\text{C}$ ): 20.4

SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/ WCDMA BAND VIII High-Touch-Right/Area Scan: Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$   
Configuration/ WCDMA BAND VIII High-Touch-Right/Zoom Scan: Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$ ;

Area Scan	$dx=8\text{mm}$ $dy=8\text{mm}$ , $h= 5.00 \text{ mm}$
ZoomScan	$5 \times 5 \times 7$ , $dx=8\text{mm}$ $dy=8\text{mm}$ $dz=5\text{mm}$
Phantom	Right head
Device Position	Cheek
Band	WCDMA BAND VIII
Channels	High
Signal	CDMA (Crest factor: 1.0)

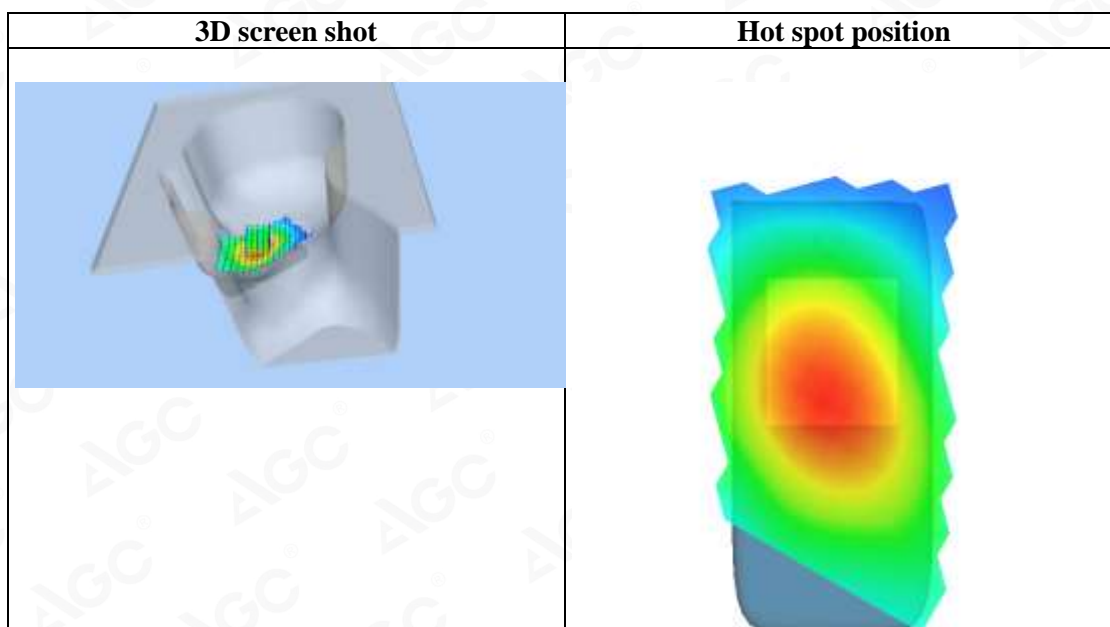
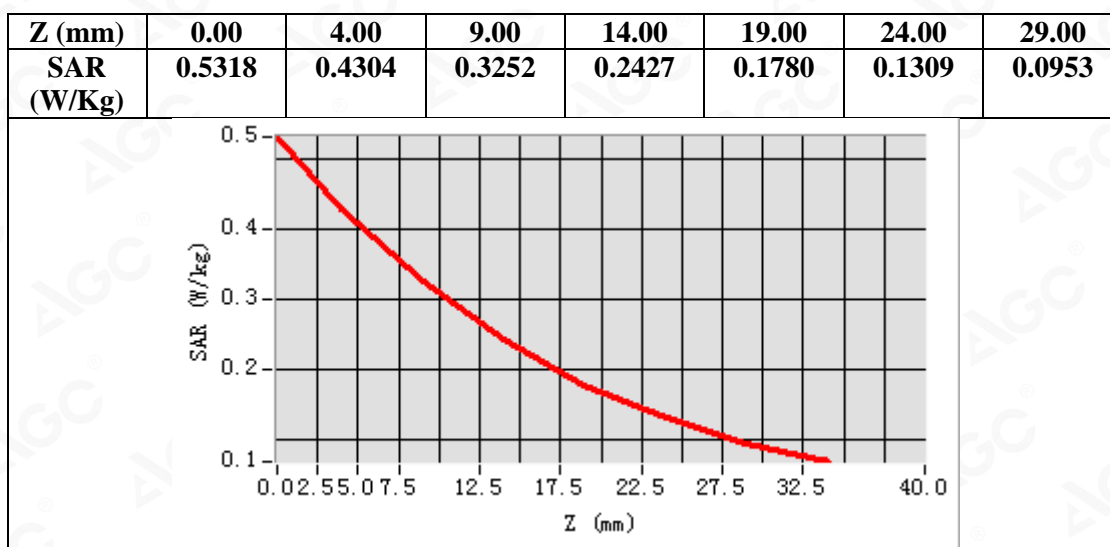


Maximum location: X=-47.00, Y=-24.00

SAR Peak: 0.54 W/kg

SAR 10g (W/Kg)	0.286952
SAR 1g (W/Kg)	0.413301





Test Laboratory: AGC Lab  
WCDMA Band VIII Mid-Body-Towards Grounds (RMC)  
DUT: Smart Phone; Type: NOTE 7

Date: Jun. 11,2020

Communication System: UMTS; Communication System Band: BAND VIII UTRA/FDD; Duty Cycle:1:1; Conv.F=5.21  
Frequency: 897.6 MHz; Medium parameters used:  $f = 900$  MHz;  $\sigma = 0.94$  mho/m;  $\epsilon_r = 40.63$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Flat Section  
Ambient temperature (°C): 20.7, Liquid temperature (°C): 20.4

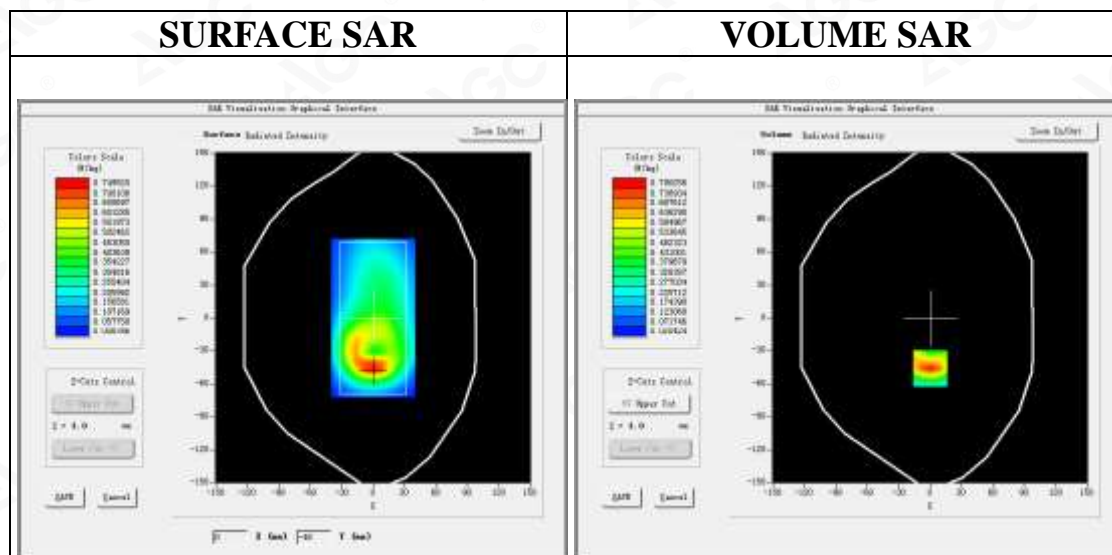
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/ WCDMA BAND VIII Mid-Body-Back/Area Scan: Measurement grid: dx=8mm, dy=8mm

Configuration/ WCDMA BAND VIII Mid-Body-Back/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

Area Scan	surf_sam_plan.txt, h= 5.00 mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Body Back
Band	WCDMA BAND VIII
Channels	Middle
Signal	CDMA (Crest factor: 1.0)

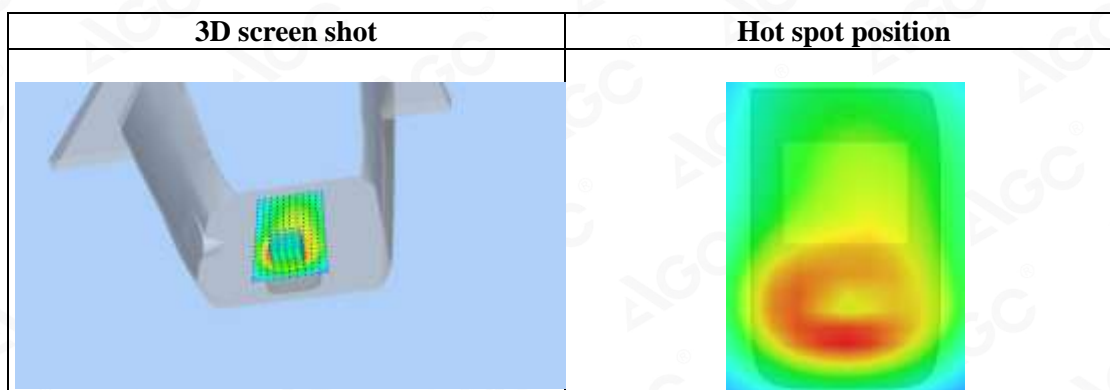
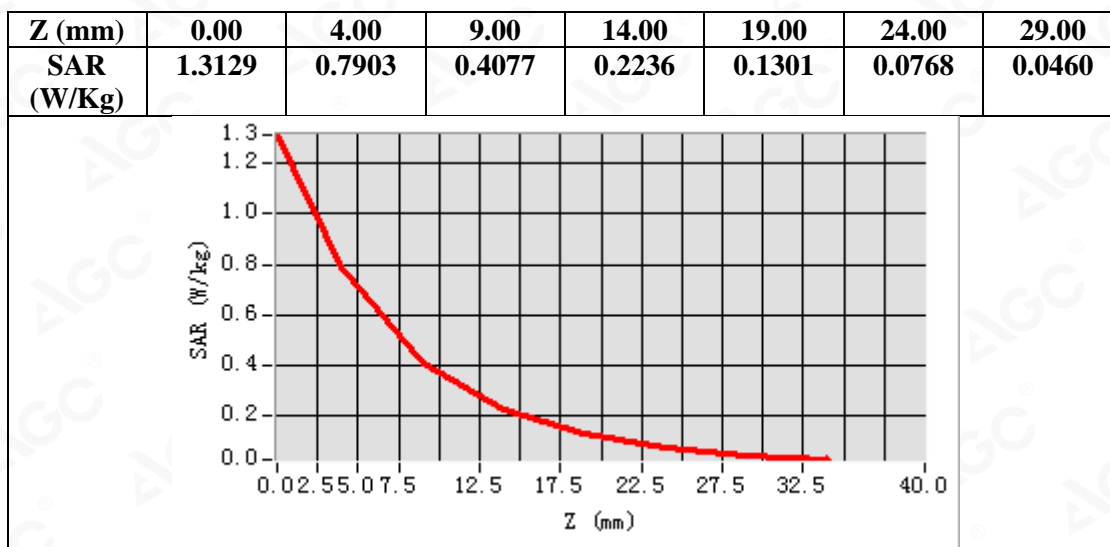


Maximum location: X=0.00, Y=-46.00

SAR Peak: 1.30 W/kg

SAR 10g (W/Kg)	0.375380
SAR 1g (W/Kg)	0.739465





Test Laboratory: AGC Lab  
WCDMA Band VIII Low-Hotspot-Towards Grounds (RMC)  
DUT: Smart Phone; Type: NOTE 7

Date: Jun. 11,2020

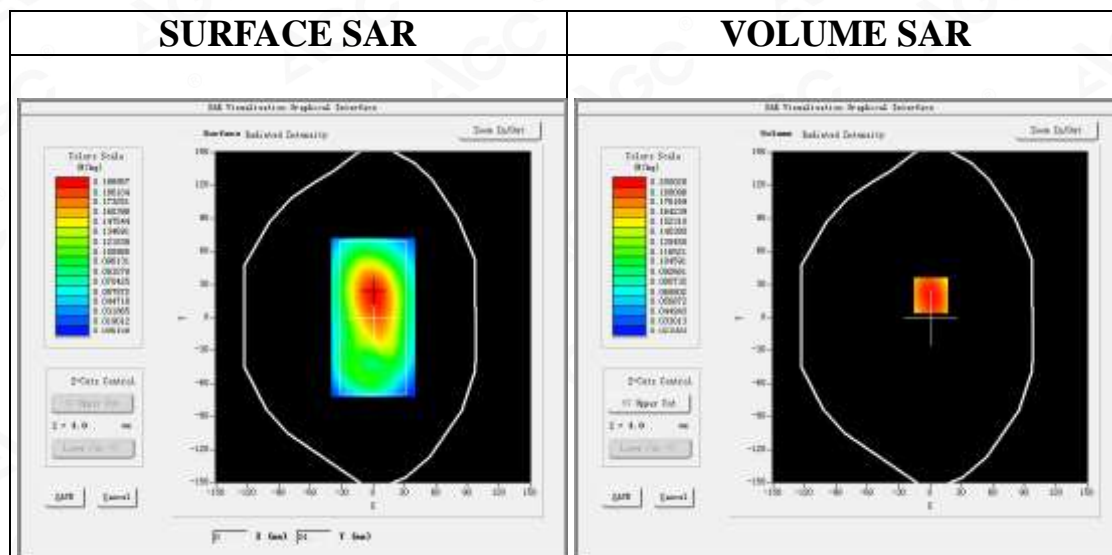
Communication System: UMTS; Communication System Band: BAND VIII UTRA/FDD; Duty Cycle:1:1; Conv.F=5.21  
Frequency: 882.4 MHz; Medium parameters used:  $f = 900$  MHz;  $\sigma = 0.94$  mho/m;  $\epsilon_r = 40.63$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Flat Section  
Ambient temperature (°C): 20.7, Liquid temperature (°C): 20.4

SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/ WCDMA BAND VIII Low-Hotspot-Back/Area Scan: Measurement grid: dx=8mm, dy=8mm  
Configuration/ WCDMA BAND VIII Low-Hotspot-Back/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

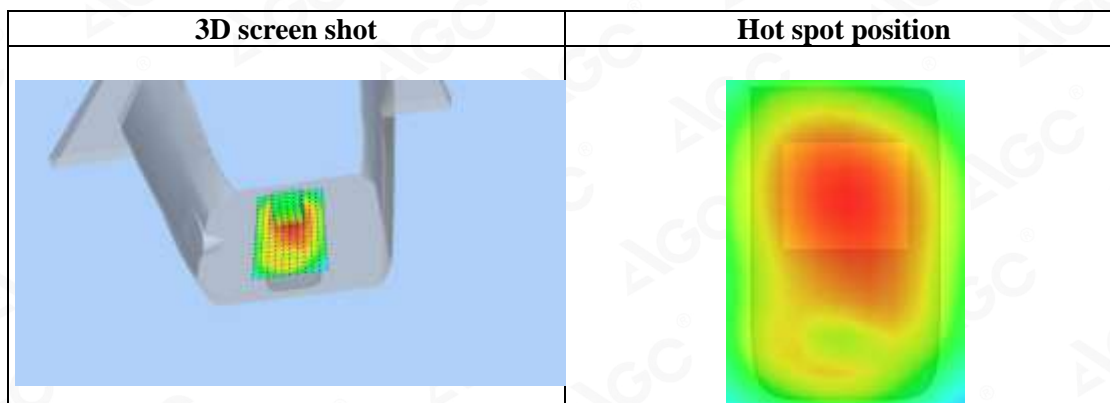
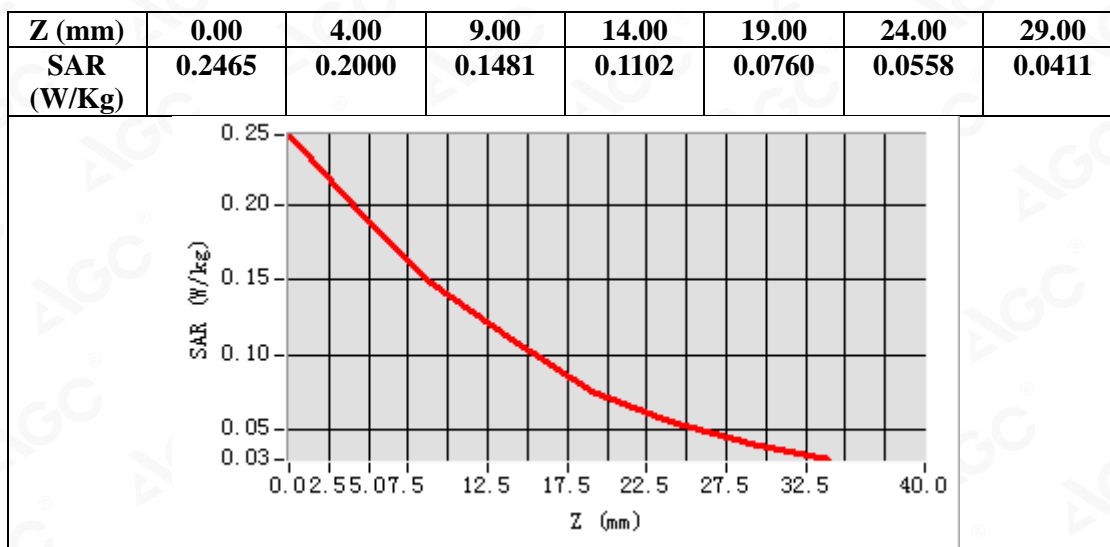
Area Scan	surf_sam_plan.txt, h= 5.00 mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Hotspot Back
Band	WCDMA BAND VIII
Channels	Low
Signal	CDMA (Crest factor: 1.0)



Maximum location: X=1.00, Y=20.00

SAR Peak: 0.25 W/kg

SAR 10g (W/Kg)	0.136031
SAR 1g (W/Kg)	0.191488



Test Laboratory: AGC Lab  
WCDMA Band VIII High-Hotspot-Towards Grounds (RMC)  
DUT: Smart Phone; Type: NOTE 7

Date: Jun. 11,2020

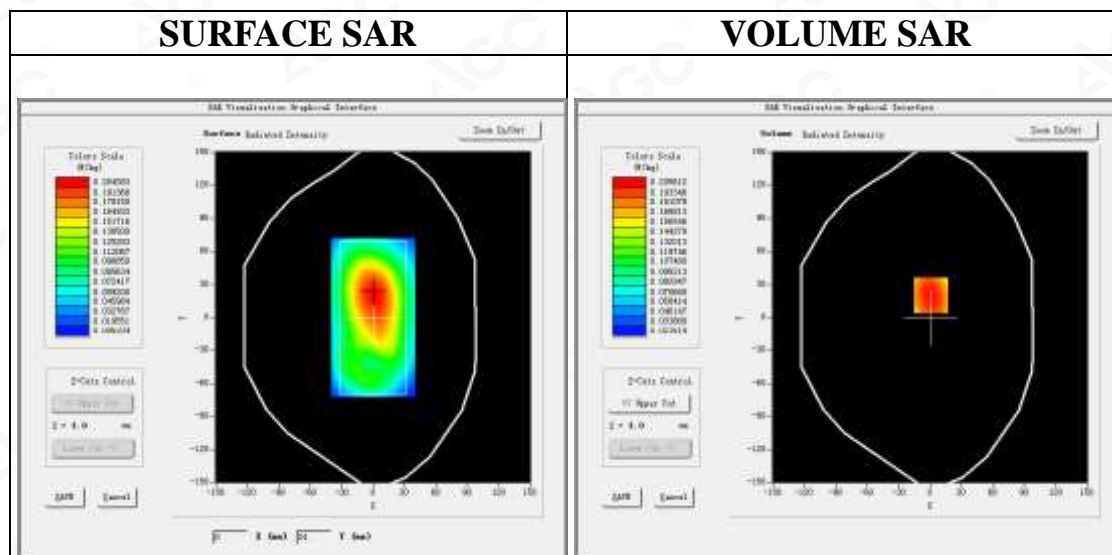
Communication System: UMTS; Communication System Band: BAND VIII UTRA/FDD; Duty Cycle:1:1; Conv.F=5.21  
Frequency: 912.6 MHz; Medium parameters used:  $f = 900$  MHz;  $\sigma = 0.94$  mho/m;  $\epsilon_r = 40.63$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Flat Section  
Ambient temperature (°C): 20.7, Liquid temperature (°C): 20.4

SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/ WCDMA BAND VIII High-Hotspot-Back/Area Scan: Measurement grid: dx=8mm, dy=8mm  
Configuration/ WCDMA BAND VIII High-Hotspot-Back/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

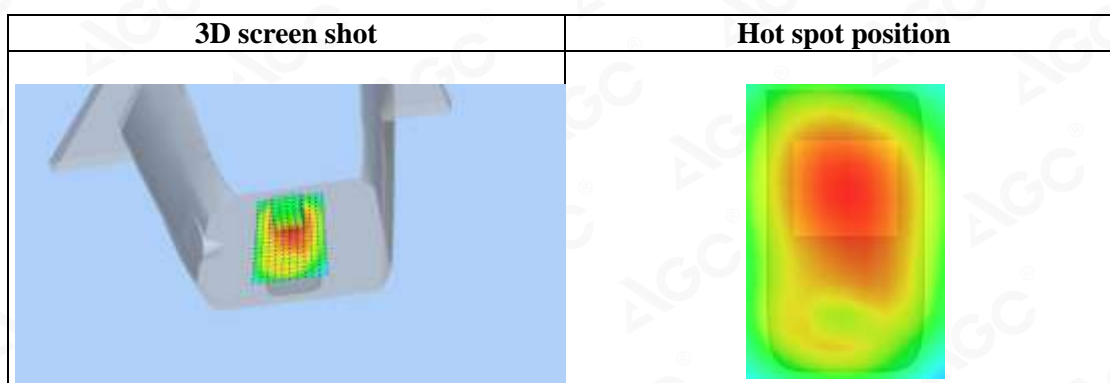
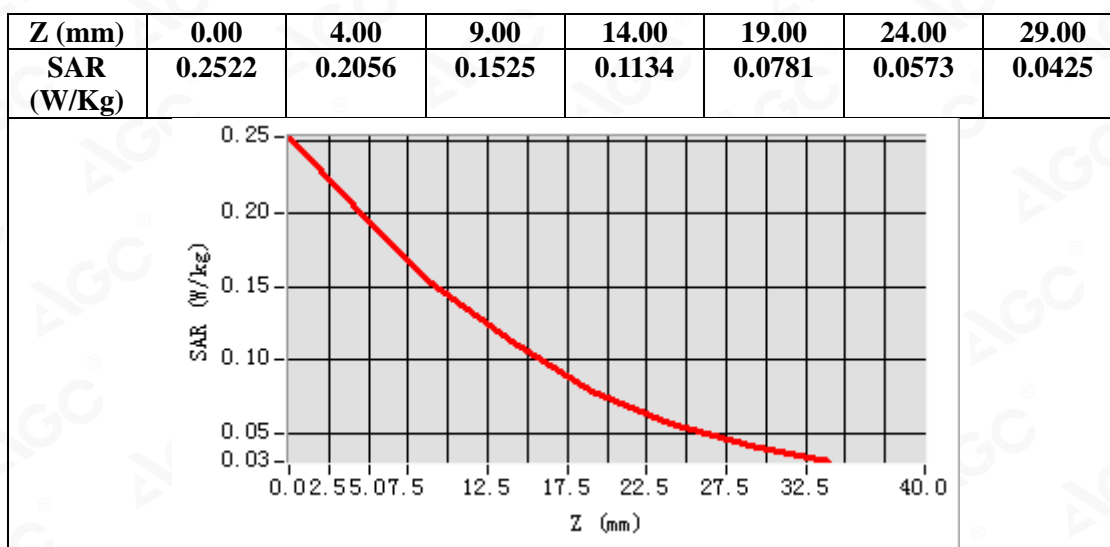
Area Scan	surf_sam_plan.txt, h= 5.00 mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Hotspot Back
Band	WCDMA BAND VIII
Channels	High
Signal	CDMA (Crest factor: 1.0)



Maximum location: X=1.00, Y=20.00

SAR Peak: 0.25 W/kg

SAR 10g (W/Kg)	0.140152
SAR 1g (W/Kg)	0.197099



**Test Laboratory:** AGC Lab  
**WCDMA Band VIII Mid-Limbs-Towards Grounds (RMC)**  
**DUT: Smart Phone; Type: NOTE 7**

**Date:** Jun. 11,2020

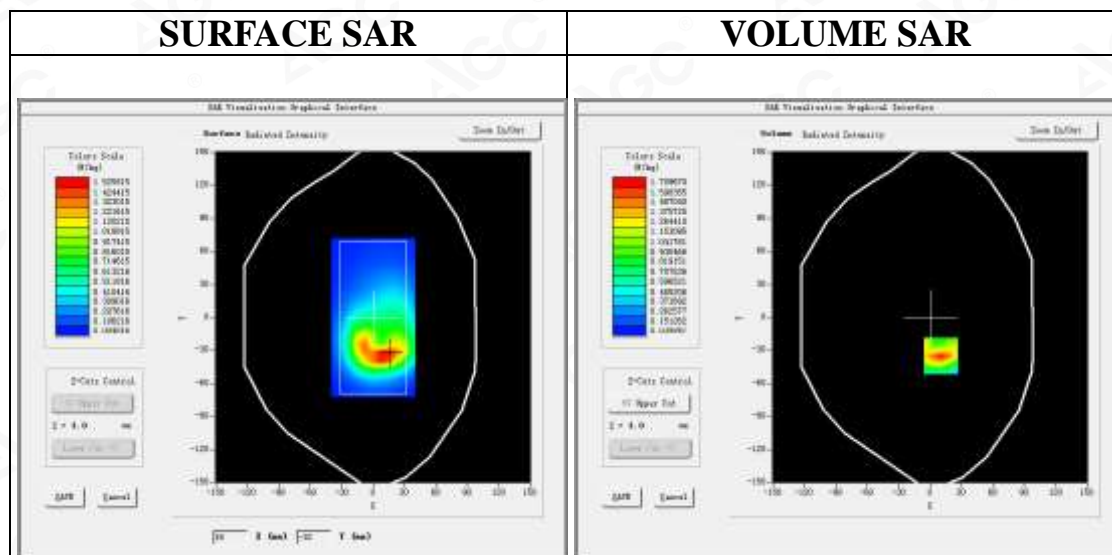
Communication System: UMTS; Communication System Band: BAND VIII UTRA/FDD; Duty Cycle:1:1; Conv.F=5.21  
Frequency: 897.6 MHz; Medium parameters used:  $f = 900$  MHz;  $\sigma = 0.94$  mho/m;  $\epsilon_r = 40.63$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Flat Section  
Ambient temperature (°C): 20.7, Liquid temperature (°C): 20.4

SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

**Configuration/ WCDMA BAND VIII Mid-Limbs-Back/Area Scan:** Measurement grid: dx=8mm, dy=8mm  
**Configuration/ WCDMA BAND VIII Mid-Limbs-Back/Zoom Scan:** Measurement grid: dx=8mm,dy=8mm, dz=5mm;

<b>Area Scan</b>	surf_sam_plan.txt, h= 5.00 mm
<b>Zoom Scan</b>	5x5x7,dx=8mm dy=8mm dz=5mm
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Limbs Back
<b>Band</b>	WCDMA BAND VIII
<b>Channels</b>	Middle
<b>Signal</b>	CDMA (Crest factor: 1.0)

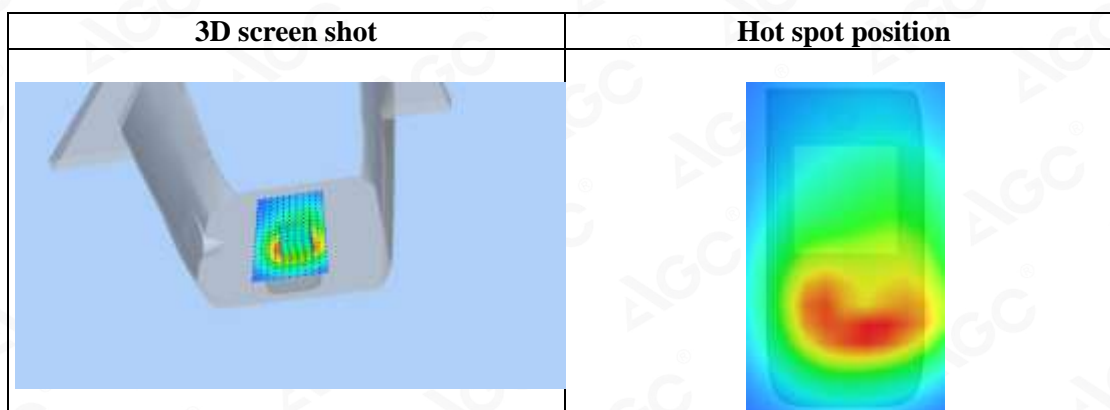
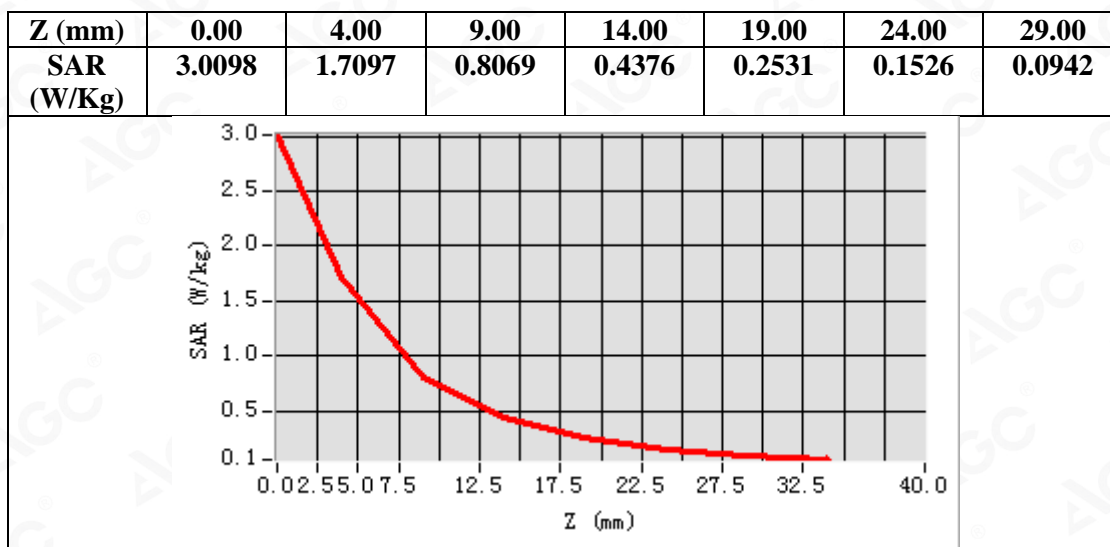


**Maximum location: X=10.00, Y=-35.00**

**SAR Peak: 2.97 W/kg**

<b>SAR 10g (W/Kg)</b>	0.769539
<b>SAR 1g (W/Kg)</b>	1.581767





Test Laboratory: AGC Lab  
LTE Band 1 High-Touch-Right (1RB#0)  
DUT: Smart Phone; Type: NOTE 7

Date: Jun. 12,2020

Communication System: LTE; Communication System Band: LTE Band 1 ;Duty Cycle:1:1; Conv.F=5.02;  
Frequency: 1970MHz; Medium parameters used:  $f = 2000$  MHz;  $\sigma = 1.37$  mho/m;  $\epsilon_r = 39.51$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Right Section  
Ambient temperature (°C):20.8, Liquid temperature (°C):20.5

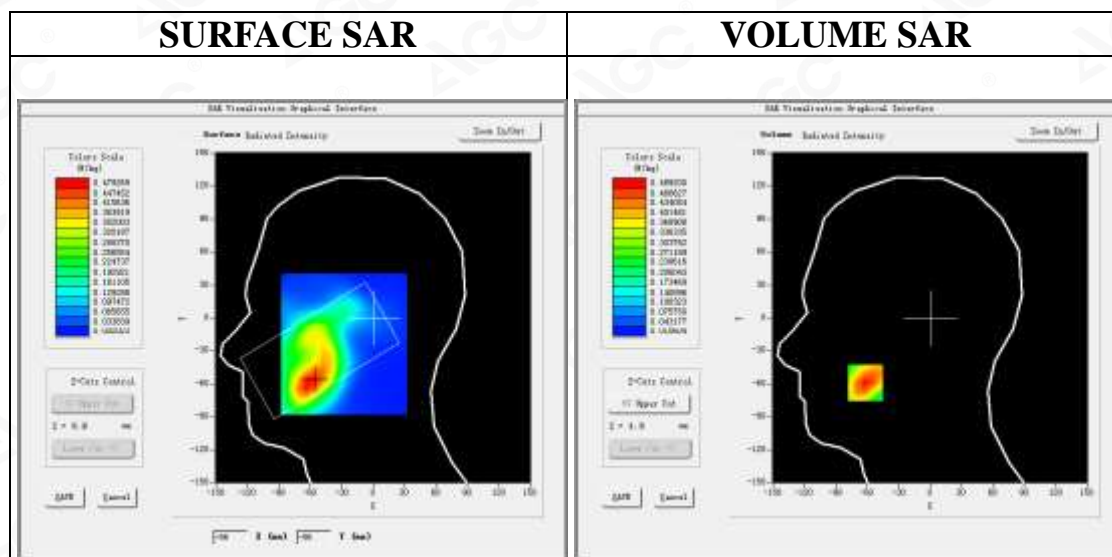
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/LTE BAND 1 High- Touch-Right /Area Scan: Measurement grid: dx=8mm, dy=8mm

Configuration/LTE BAND 1 High- Touch-Right /Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

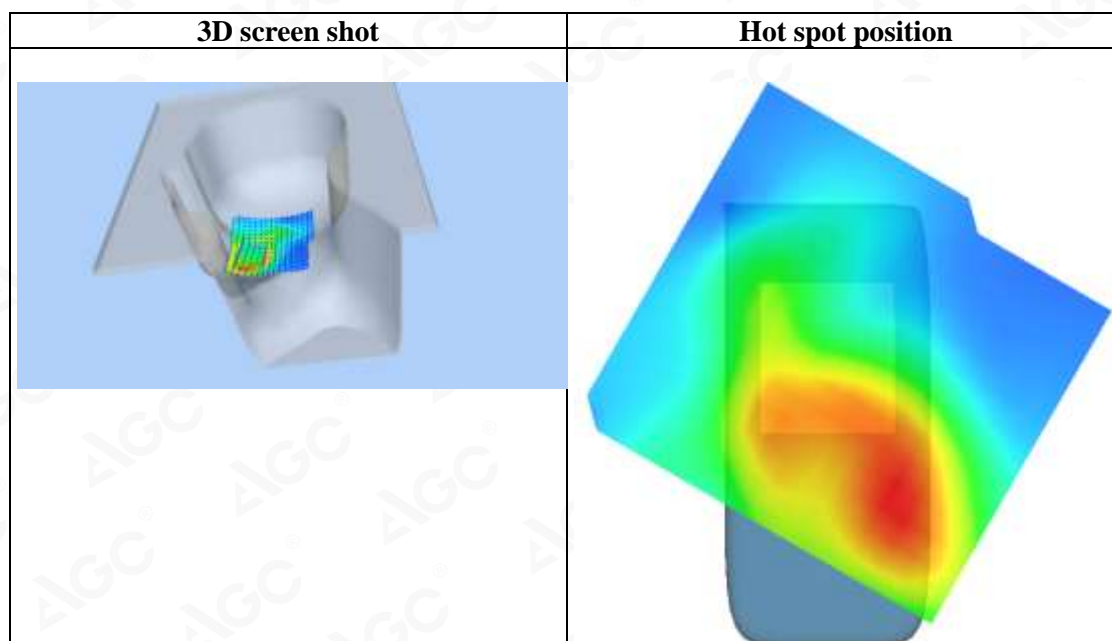
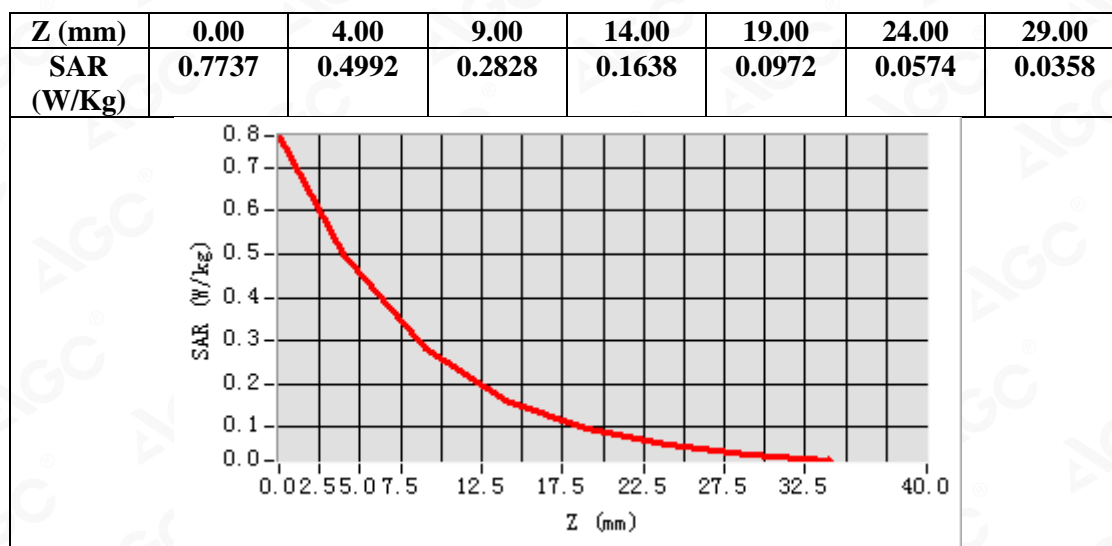
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Right head
Device Position	Cheek
Band	LTE Band 1
Channels	High
Signal	OFDM (Crest factor: 1.0)



Maximum location: X=-62.00, Y=-59.00

SAR Peak: 0.77 W/kg

SAR 10g (W/Kg)	0.269850
SAR 1g (W/Kg)	0.477214



Test Laboratory: AGC Lab  
LTE Band 1 Mid-Body-Back (1RB#0)  
DUT: Smart Phone; Type: NOTE 7

Date: Jun. 12,2020

Communication System: LTE; Communication System Band: LTE Band 1 ;Duty Cycle:1:1; Conv.F=5.02;  
Frequency: 1950MHz; Medium parameters used:  $f = 2000$  MHz;  $\sigma = 1.37$  mho/m;  $\epsilon_r = 39.51$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Flat Section  
Ambient temperature (°C):20.8, Liquid temperature (°C):20.5

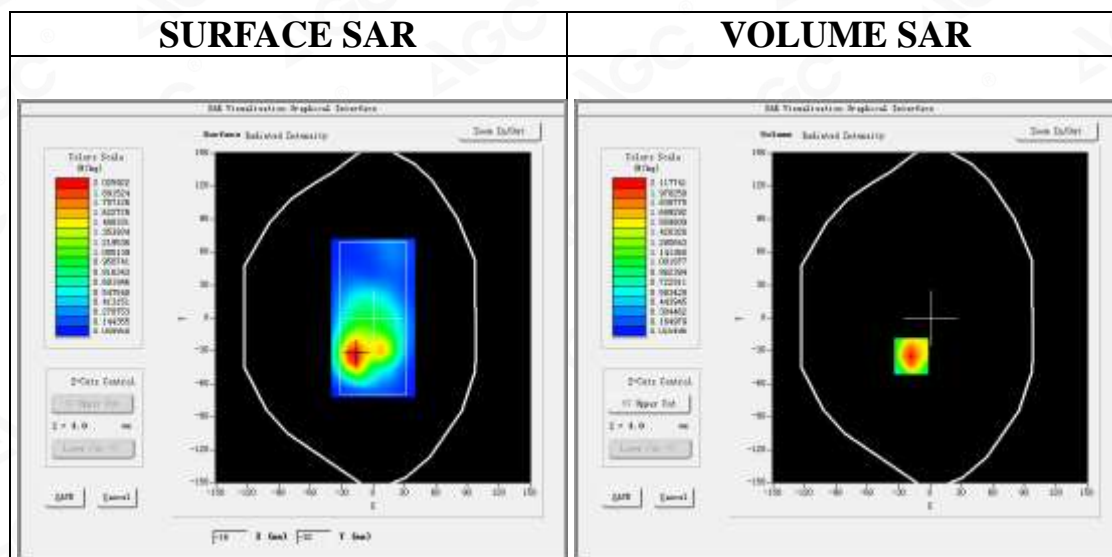
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/LTE BAND 1 Mid-Body-back /Area Scan: Measurement grid: dx=8mm, dy=8mm

Configuration/LTE BAND 1 Mid-Body-back /Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

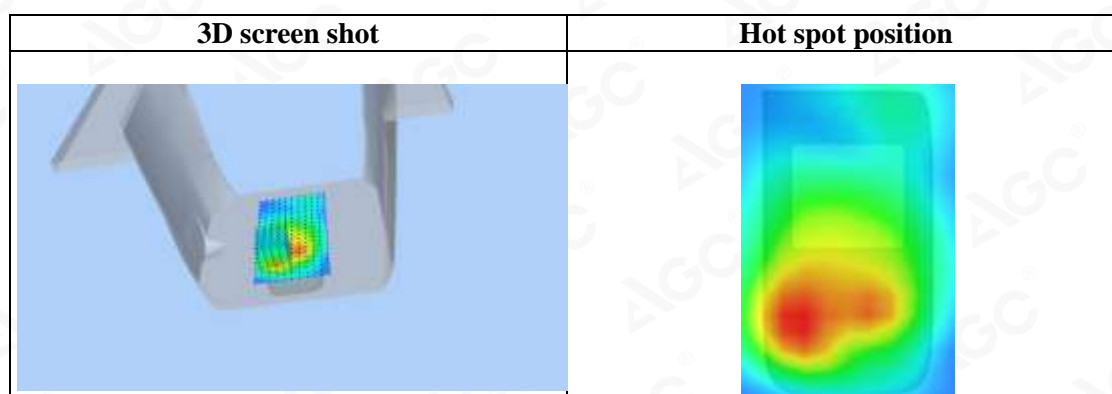
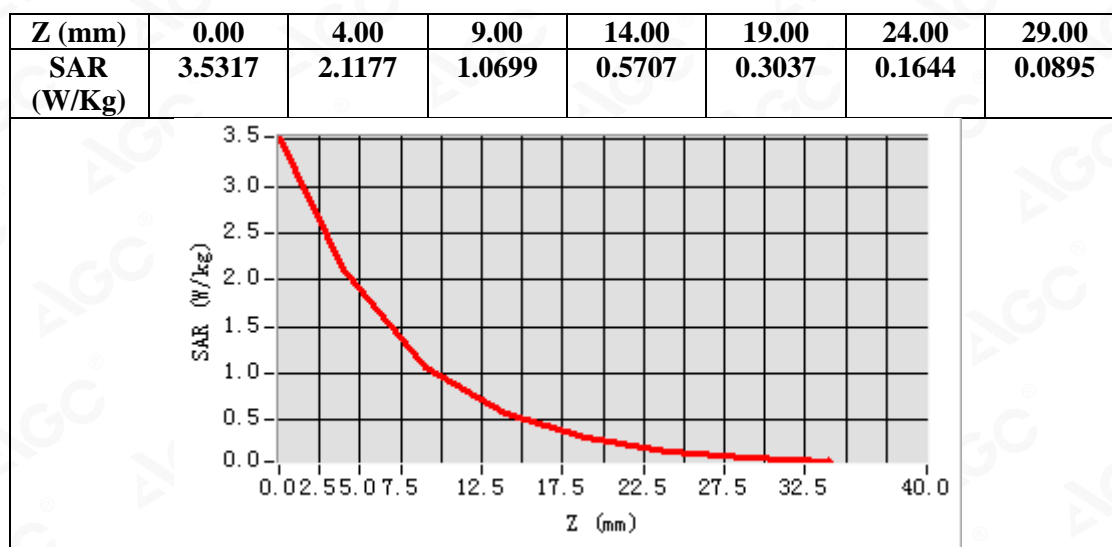
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Body Back
Band	LTE Band 1
Channels	Middle
Signal	OFDM (Crest factor: 1.0)



Maximum location: X=-18.00, Y=-35.00

SAR Peak: 3.53 W/kg

SAR 10g (W/Kg)	1.027098
SAR 1g (W/Kg)	2.023755



Test Laboratory: AGC Lab  
LTE Band 1 Mid-Hotspot-Back (1RB#0)  
DUT: Smart Phone; Type: NOTE 7

Date: Jun. 12,2020

Communication System: LTE; Communication System Band: LTE Band 1 ;Duty Cycle:1:1; Conv.F=5.02;  
Frequency: 1950MHz; Medium parameters used:  $f = 2000$  MHz;  $\sigma = 1.37$  mho/m;  $\epsilon_r = 39.51$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Flat Section  
Ambient temperature (°C):20.8, Liquid temperature (°C):20.5

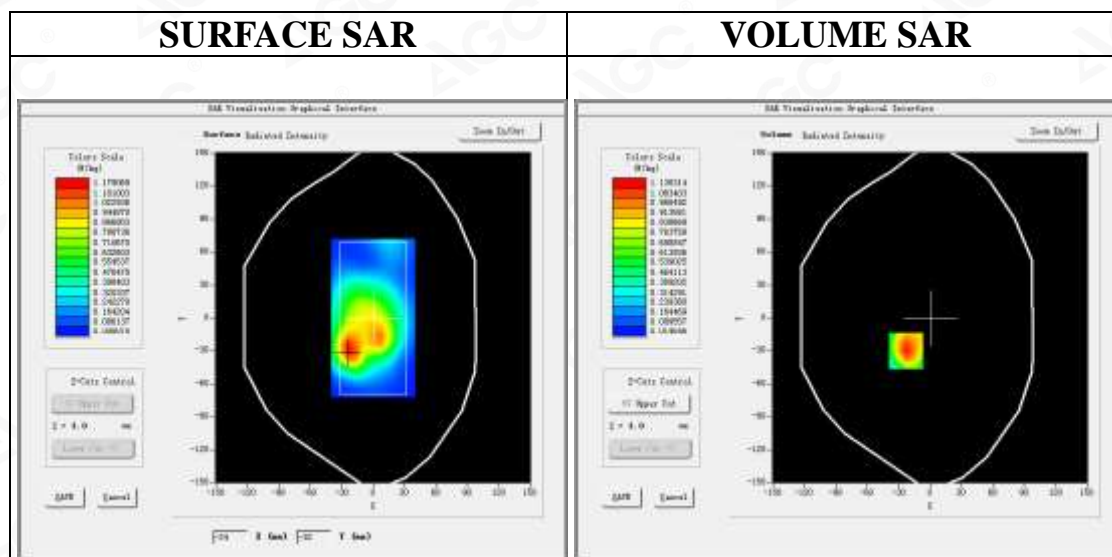
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/LTE BAND 1 Mid-Hotspot-back /Area Scan: Measurement grid: dx=8mm, dy=8mm

Configuration/LTE BAND 1 Mid-Hotspot-back /Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

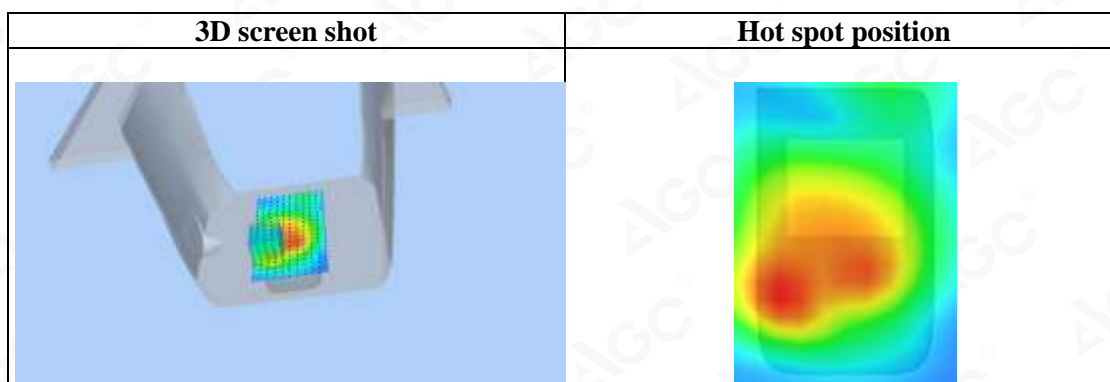
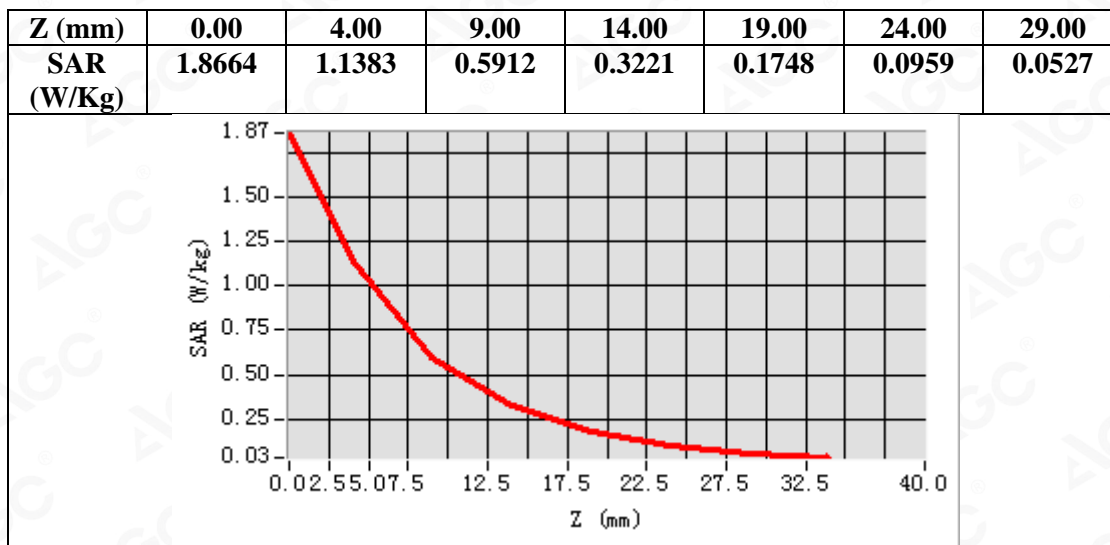
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Hotspot Back
Band	LTE Band 1
Channels	Middle
Signal	OFDM (Crest factor: 1.0)



Maximum location: X=-23.00, Y=-30.00

SAR Peak: 1.85 W/kg

SAR 10g (W/Kg)	0.566304
SAR 1g (W/Kg)	1.084009



Test Laboratory: AGC Lab  
LTE Band 1 Low-Limbs-Back (1RB#0)  
DUT: Smart Phone; Type: NOTE 7

Date: Jun. 12,2020

Communication System: LTE; Communication System Band: LTE Band 1 ;Duty Cycle:1:1; Conv.F=5.02;  
Frequency: 1930MHz; Medium parameters used:  $f = 2000$  MHz;  $\sigma = 1.37$  mho/m;  $\epsilon_r = 39.51$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Flat Section  
Ambient temperature (°C):20.8, Liquid temperature (°C):20.5

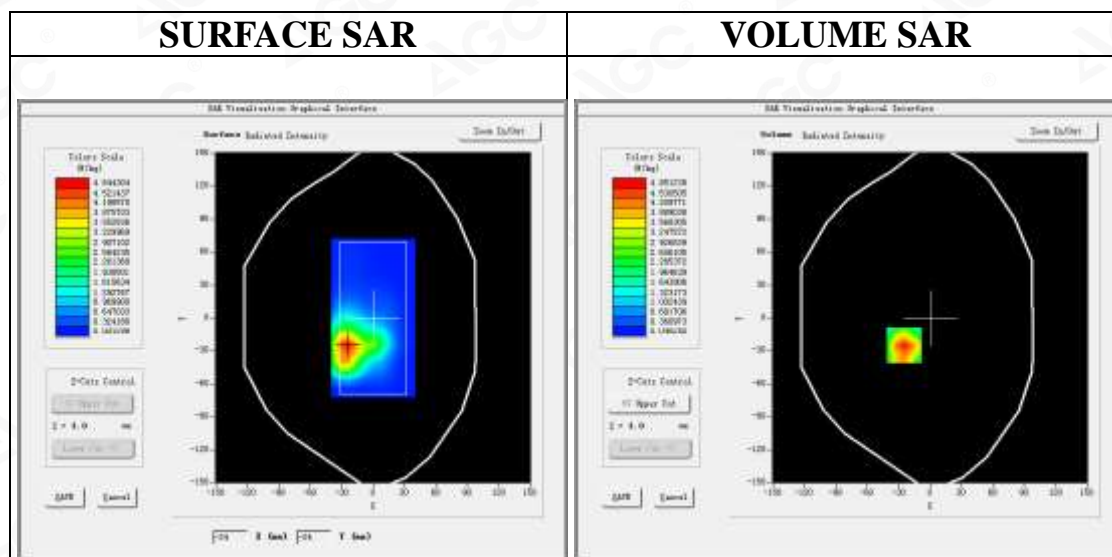
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/LTE BAND 1 Low-Limbs-back /Area Scan: Measurement grid: dx=8mm, dy=8mm

Configuration/LTE BAND 1 Low-Limbs-back /Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

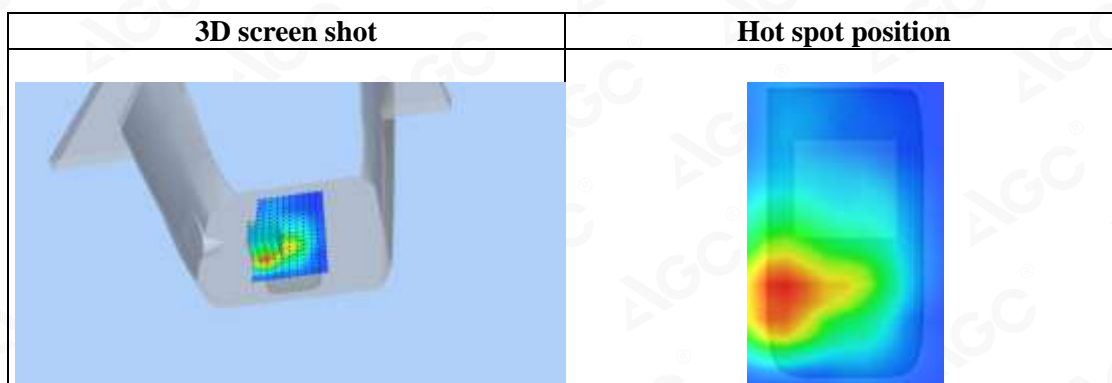
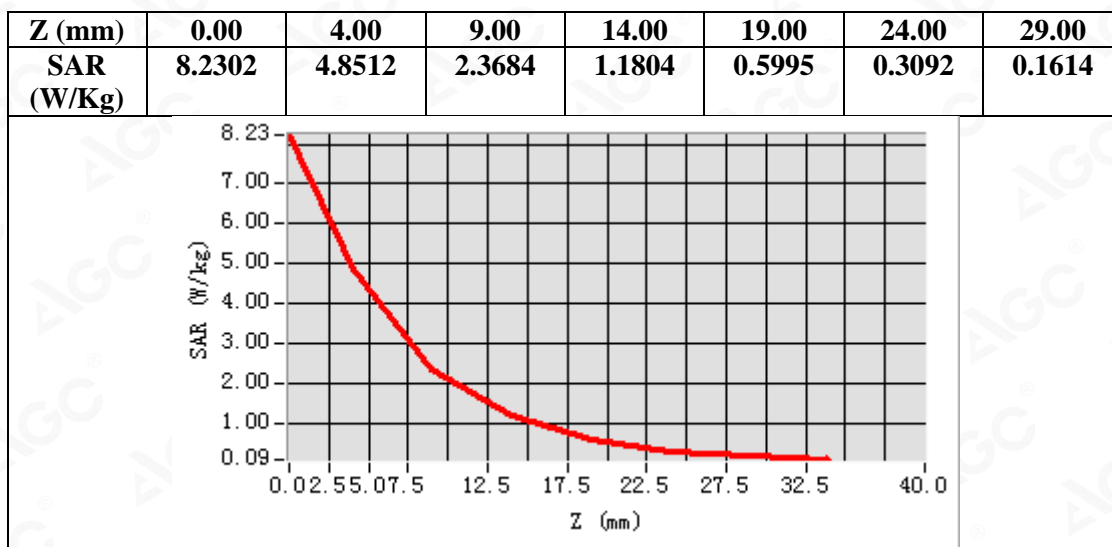
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Limbs Back
Band	LTE Band 1
Channels	Low
Signal	OFDM (Crest factor: 1.0)



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

SAR Peak: 8.28 W/kg

SAR 10g (W/Kg)	2.253466
SAR 1g (W/Kg)	4.578802



Test Laboratory: AGC Lab  
LTE Band 1 Mid-Limbs-Back (1RB#0)  
DUT: Smart Phone; Type: NOTE 7

Date: Jun. 12,2020

Communication System: LTE; Communication System Band: LTE Band 1 ;Duty Cycle:1:1; Conv.F=5.02;  
Frequency: 1950MHz; Medium parameters used:  $f = 2000$  MHz;  $\sigma = 1.37$  mho/m;  $\epsilon_r = 39.51$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Flat Section  
Ambient temperature (°C):20.8, Liquid temperature (°C):20.5

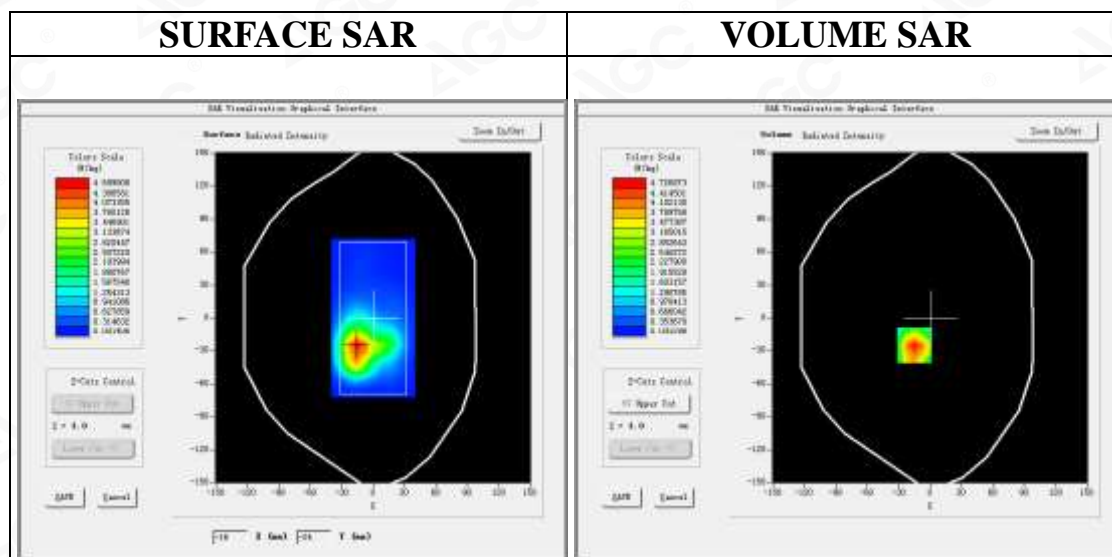
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/LTE BAND 1 Mid-Limbs-back /Area Scan: Measurement grid: dx=8mm, dy=8mm

Configuration/LTE BAND 1 Mid-Limbs-back /Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

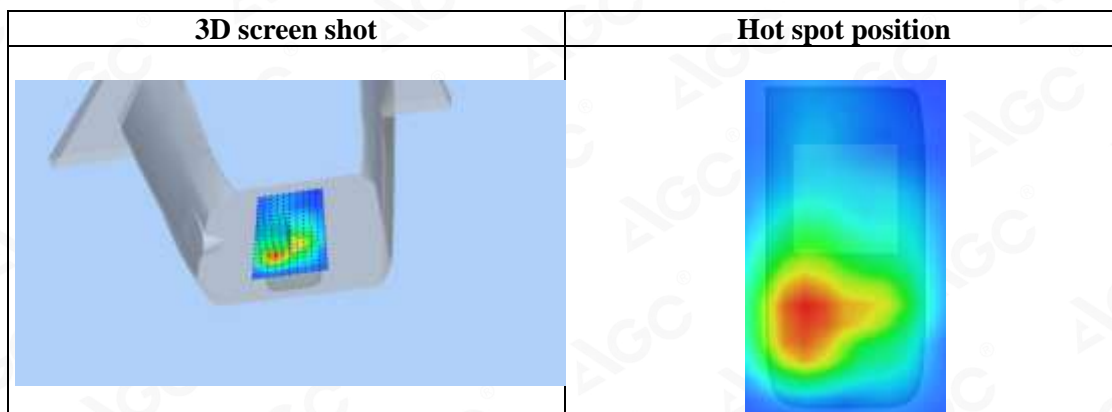
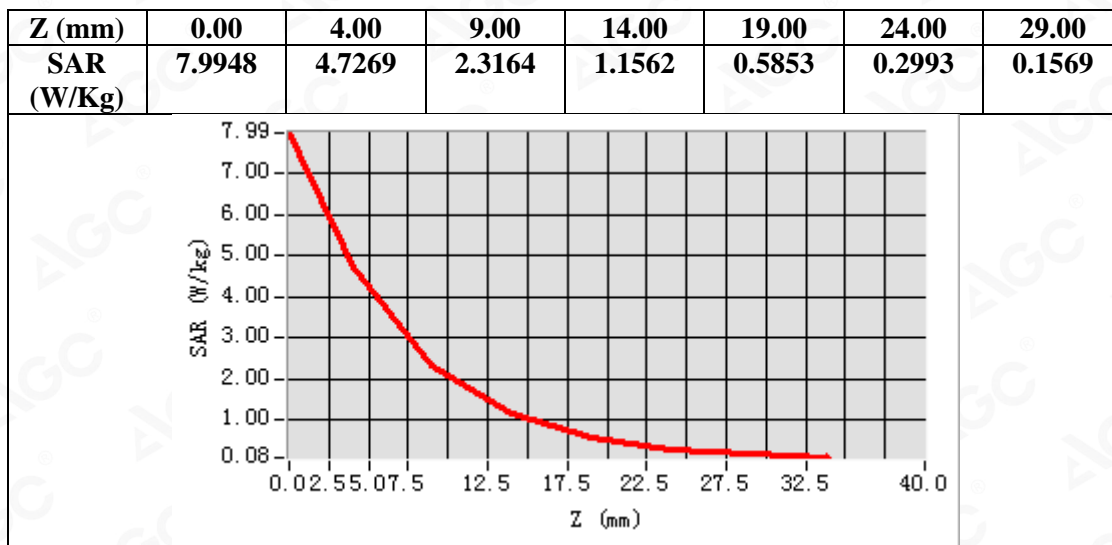
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Limbs Back
Band	LTE Band 1
Channels	Middle
Signal	OFDM (Crest factor: 1.0)



Maximum location: X=-15.00, Y=-25.00

SAR Peak: 8.01 W/kg

SAR 10g (W/Kg)	2.212753
SAR 1g (W/Kg)	4.463440



Test Laboratory: AGC Lab  
LTE Band 3 Low-Touch-Right (1RB#0)  
DUT: Smart Phone; Type: NOTE 7

Date: Jun. 16,2020

Communication System: LTE; Communication System Band: LTE Band 3; Duty Cycle: 1:1; Conv.F=4.68  
Frequency: 1720MHz; Medium parameters used:  $f = 1800$  MHz;  $\sigma = 1.39$  mho/m;  $\epsilon_r = 38.65$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Right Section  
Ambient temperature (°C):21.0, Liquid temperature (°C):20.7

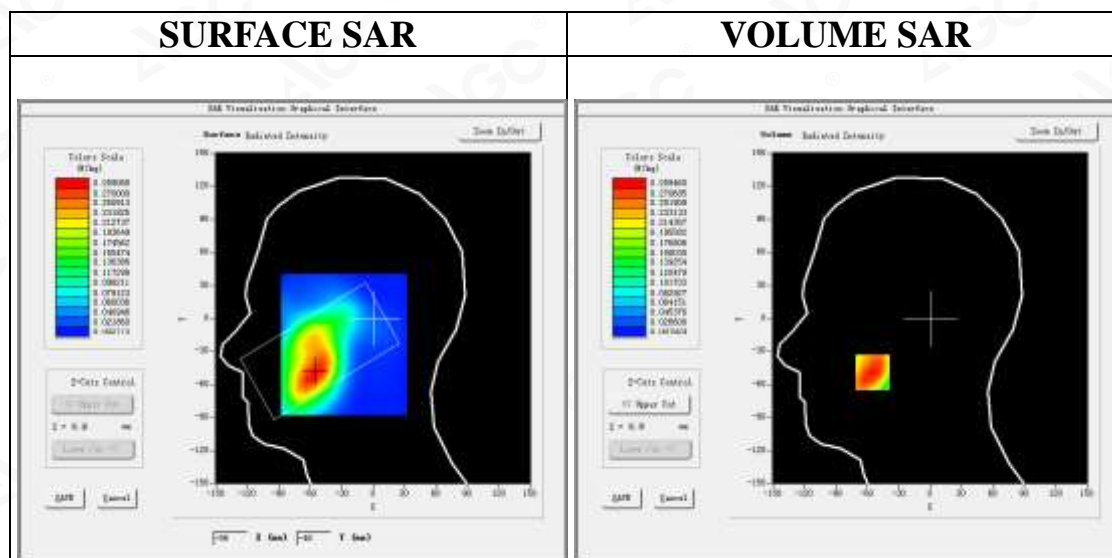
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/LTE Band 3 Low- Touch-Right/Area Scan: Measurement grid: dx=8mm, dy=8mm

Configuration/LTE Band 3 Low- Touch-Right/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

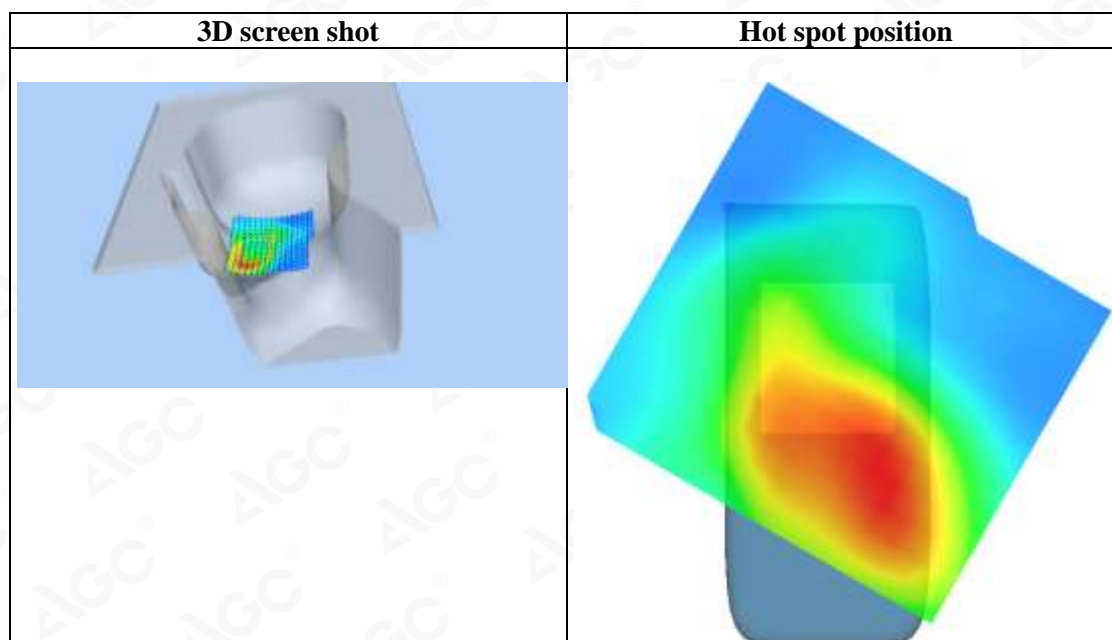
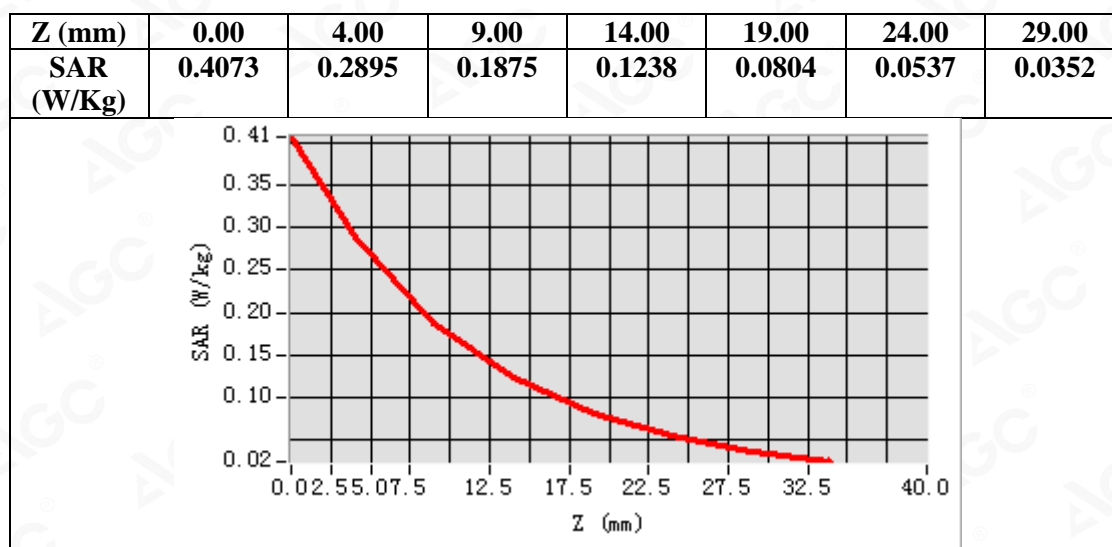
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Right head
Device Position	Cheek
Band	LTE Band 3
Channels	Low
Signal	OFDM (Crest factor: 1.0)



Maximum location: X=-55.00, Y=-49.00

SAR Peak: 0.42 W/kg

SAR 10g (W/Kg)	0.173425
SAR 1g (W/Kg)	0.278391



**Test Laboratory:** AGC Lab  
**LTE Band 3 High-Touch-Right (1RB#0)**  
**DUT:** Smart Phone; **Type:** NOTE 7

**Date:** Jun. 16,2020

Communication System: LTE; Communication System Band: LTE Band 3; Duty Cycle: 1:1; Conv.F=4.68  
Frequency: 1775MHz; Medium parameters used:  $f = 1800$  MHz;  $\sigma = 1.39$  mho/m;  $\epsilon_r = 38.65$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Right Section  
Ambient temperature (°C):21.0, Liquid temperature (°C):20.7

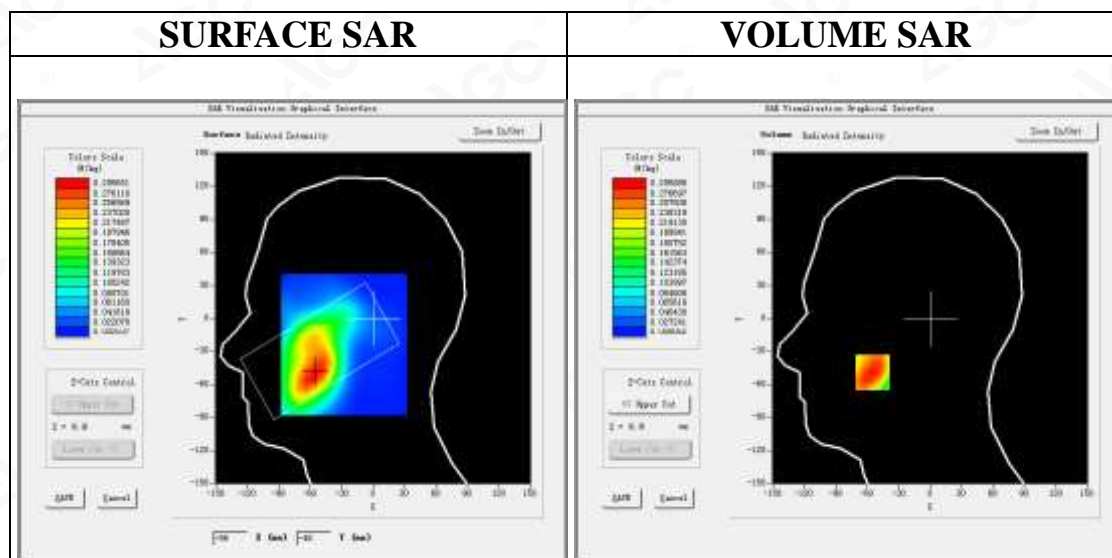
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

**Configuration/LTE Band 3 High- Touch-Right/Area Scan:** Measurement grid: dx=8mm, dy=8mm

**Configuration/LTE Band 3 High- Touch-Right/Zoom Scan:** Measurement grid: dx=8mm,dy=8mm, dz=5mm;

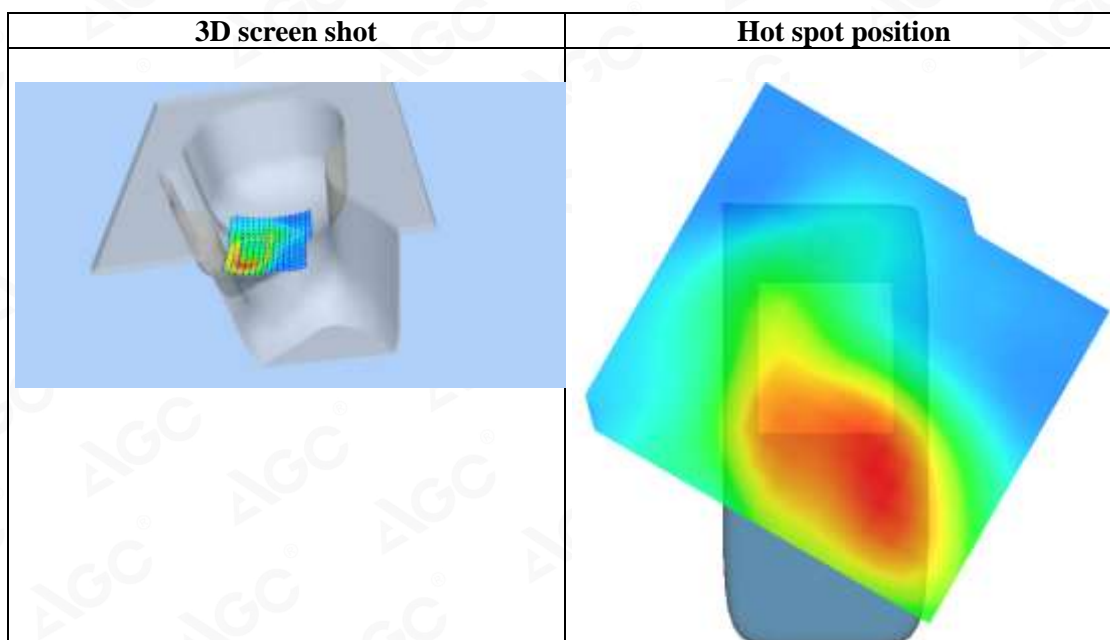
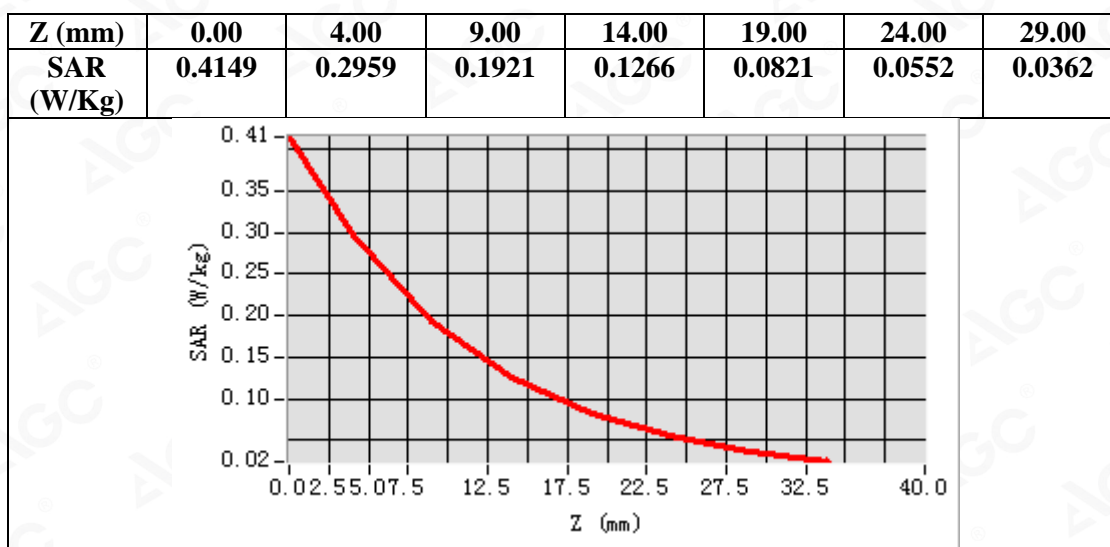
<b>Area Scan</b>	dx=8mm dy=8mm, h= 5.00 mm
<b>ZoomScan</b>	5x5x7,dx=8mm dy=8mm dz=5mm
<b>Phantom</b>	Right head
<b>Device Position</b>	Cheek
<b>Band</b>	LTE Band 3
<b>Channels</b>	High
<b>Signal</b>	OFDM (Crest factor: 1.0)



**Maximum location: X=-55.00, Y=-49.00**

**SAR Peak: 0.43 W/kg**

<b>SAR 10g (W/Kg)</b>	0.177438
<b>SAR 1g (W/Kg)</b>	0.284503



Test Laboratory: AGC Lab  
LTE Band 3 Low-Body-Back (1RB#0)  
DUT: Smart Phone; Type: NOTE 7

Date: Jun. 16,2020

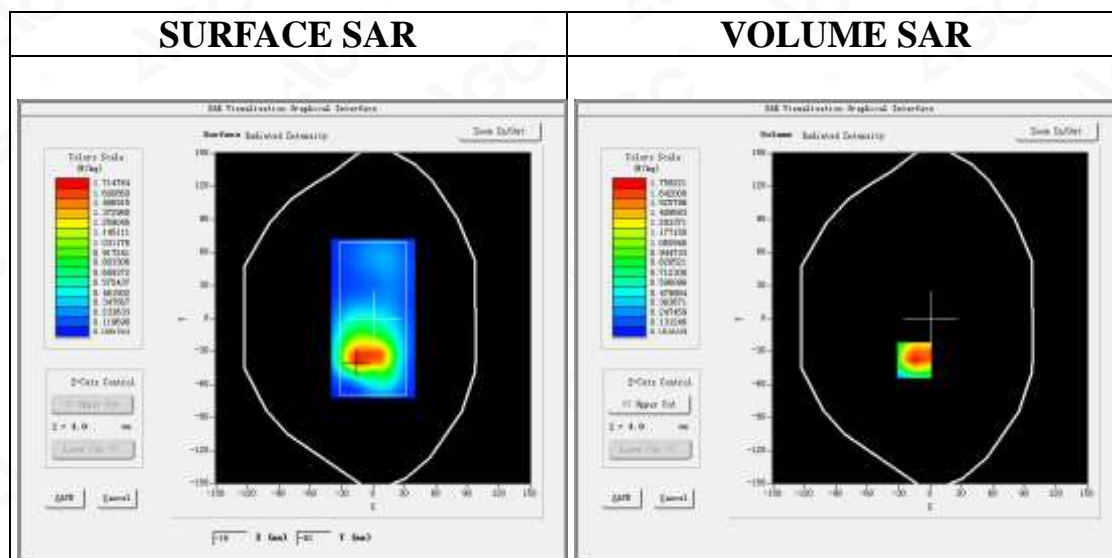
Communication System: LTE; Communication System Band: LTE Band 3; Duty Cycle: 1:1; Conv.F=4.68  
Frequency: 1720MHz; Medium parameters used:  $f = 1800$  MHz;  $\sigma = 1.39$  mho/m;  $\epsilon_r = 38.65$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Flat Section  
Ambient temperature (°C):21.0, Liquid temperature (°C):20.7

SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/LTE Band 3 Low-Body-back /Area Scan: Measurement grid: dx=8mm, dy=8mm  
Configuration/LTE Band 3 Low-Body-back /Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

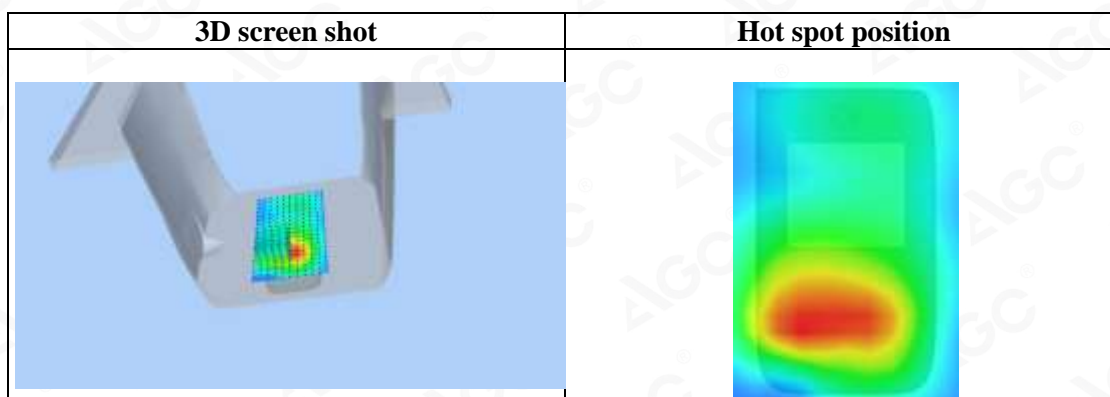
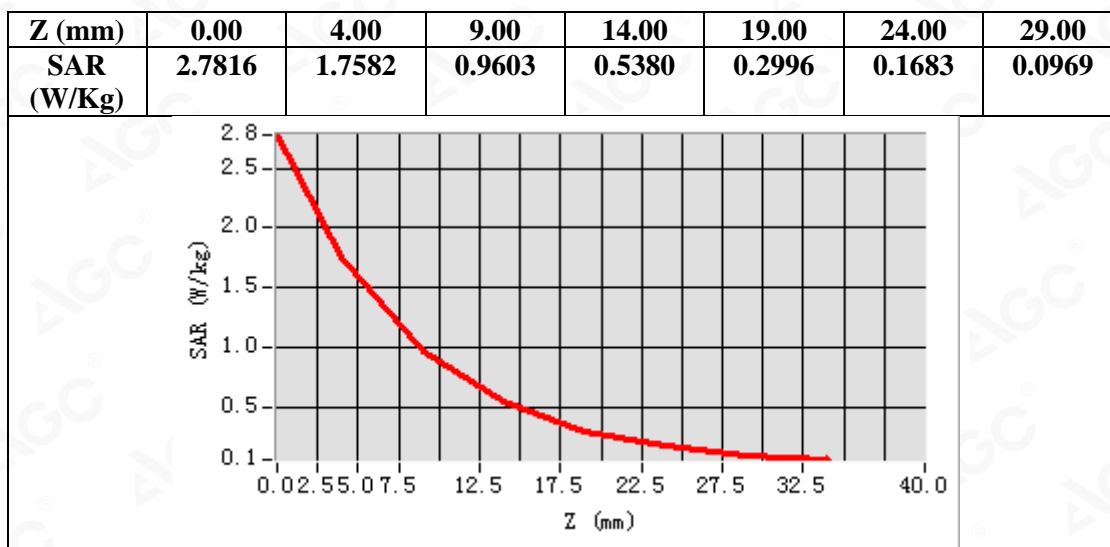
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Body Back
Band	LTE Band 3
Channels	Low
Signal	OFDM (Crest factor: 1.0)



Maximum location: X=-15.00, Y=-38.00

SAR Peak: 2.77 W/kg

SAR 10g (W/Kg)	0.922702
SAR 1g (W/Kg)	1.669487



Test Laboratory: AGC Lab  
LTE Band 3 Mid-Body-Back (1RB#0)  
DUT: Smart Phone; Type: NOTE 7

Date: Jun. 16,2020

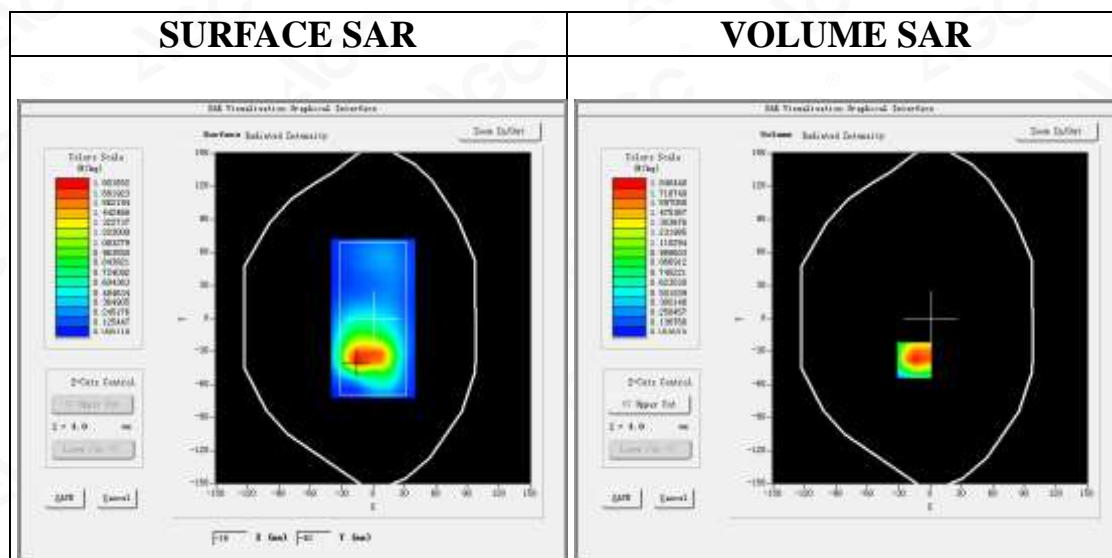
Communication System: LTE; Communication System Band: LTE Band 3; Duty Cycle: 1:1; Conv.F=4.68  
Frequency: 1747.5MHz; Medium parameters used:  $f = 1800$  MHz;  $\sigma = 1.39$  mho/m;  $\epsilon_r = 38.65$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Flat Section  
Ambient temperature (°C):21.0, Liquid temperature (°C):20.7

SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/LTE Band 3 Mid-Body-back /Area Scan: Measurement grid: dx=8mm, dy=8mm  
Configuration/LTE Band 3 Mid-Body-back /Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

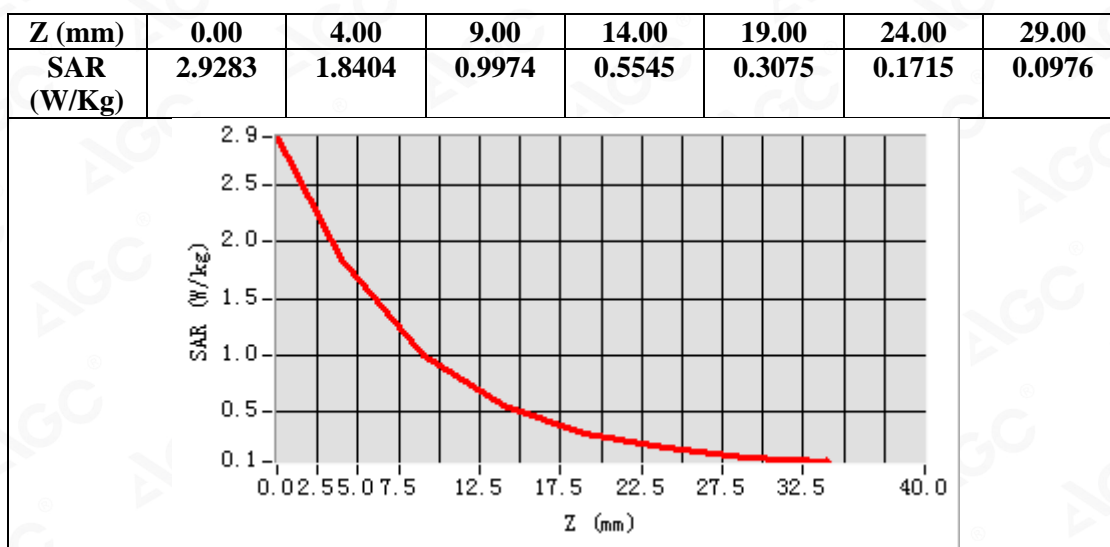
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Body Back
Band	LTE Band 3
Channels	Middle
Signal	OFDM (Crest factor: 1.0)



Maximum location: X=-15.00, Y=-38.00

SAR Peak: 2.91 W/kg

SAR 10g (W/Kg)	0.957225
SAR 1g (W/Kg)	1.744778



Test Laboratory: AGC Lab  
LTE Band 3 Low-Hotspot-Back (1RB#0)  
DUT: Smart Phone; Type: NOTE 7

Date: Jun. 16,2020

Communication System: LTE; Communication System Band: LTE Band 3; Duty Cycle: 1:1; Conv.F=4.68  
Frequency: 1720MHz; Medium parameters used:  $f = 1800$  MHz;  $\sigma = 1.39$  mho/m;  $\epsilon_r = 38.65$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Flat Section  
Ambient temperature (°C):21.0, Liquid temperature (°C):20.7

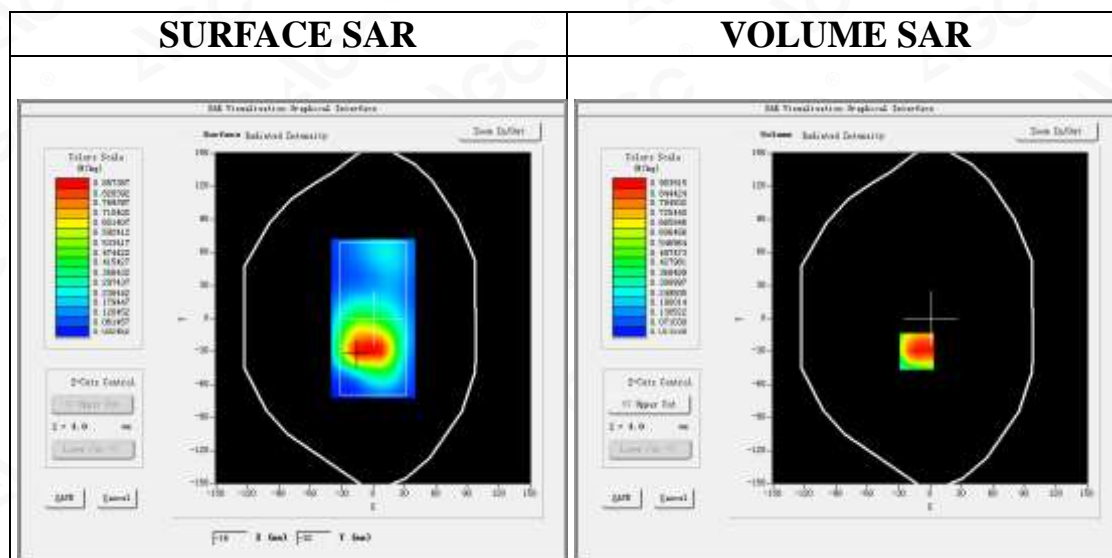
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/LTE Band 3 Low-Hotspot-back /Area Scan: Measurement grid: dx=8mm, dy=8mm

Configuration/LTE Band 3 Low-Hotspot-back /Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

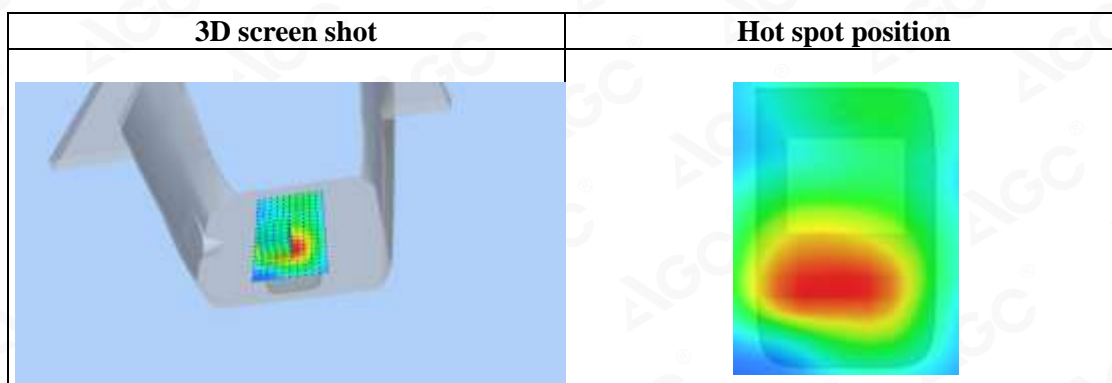
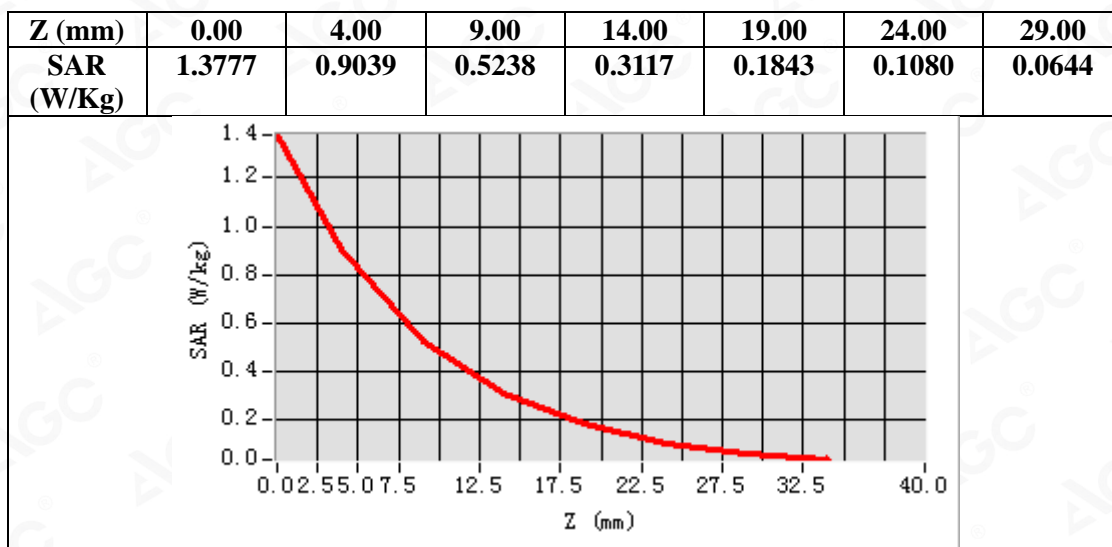
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Hotspot Back
Band	LTE Band 3
Channels	Low
Signal	OFDM (Crest factor: 1.0)



Maximum location: X=-13.00, Y=-30.00

SAR Peak: 1.39 W/kg

SAR 10g (W/Kg)	0.517141
SAR 1g (W/Kg)	0.878873



Test Laboratory: AGC Lab  
LTE Band 3 Mid-Hotspot-Back (1RB#0)  
DUT: Smart Phone; Type: NOTE 7

Date: Jun. 16,2020

Communication System: LTE; Communication System Band: LTE Band 3; Duty Cycle: 1:1; Conv.F=4.68  
Frequency: 1747.5MHz; Medium parameters used:  $f = 1800$  MHz;  $\sigma = 1.39$  mho/m;  $\epsilon_r = 38.65$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Flat Section  
Ambient temperature (°C):21.0, Liquid temperature (°C):20.7

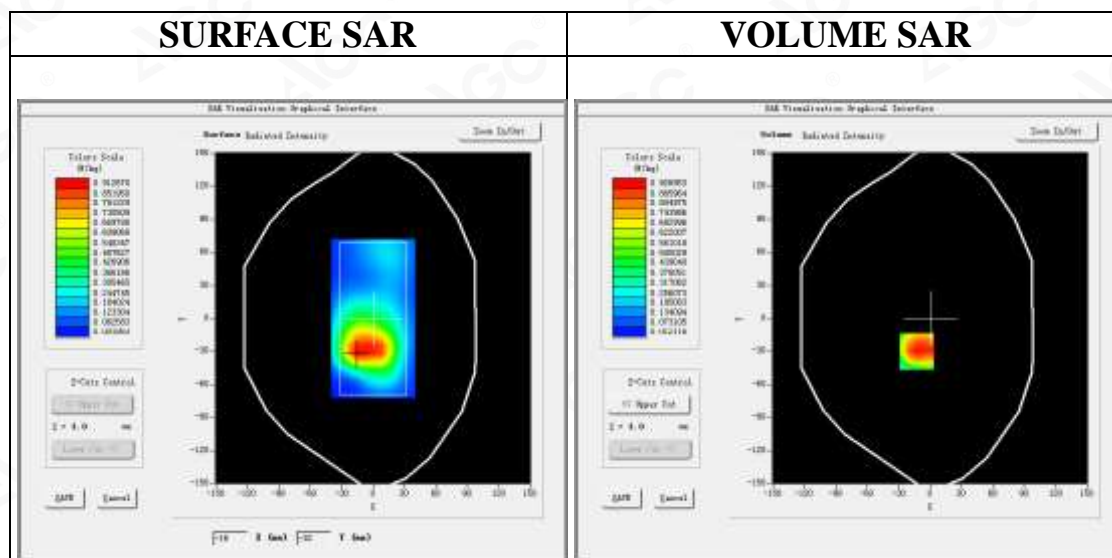
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/LTE Band 3 Mid-Hotspot-back /Area Scan: Measurement grid: dx=8mm, dy=8mm

Configuration/LTE Band 3 Mid-Hotspot-back /Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

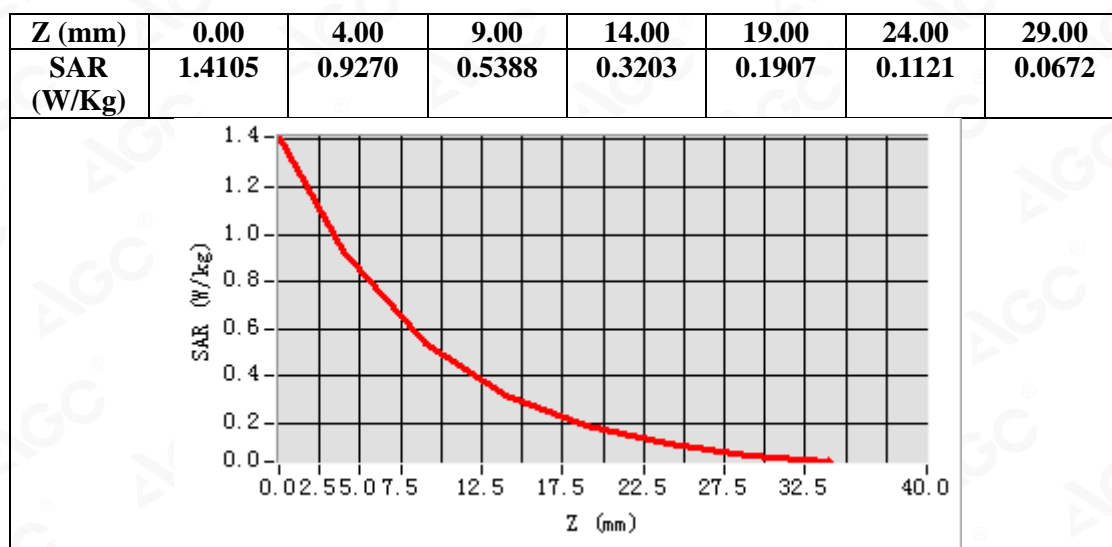
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Hotspot Back
Band	LTE Band 3
Channels	Middle
Signal	OFDM (Crest factor: 1.0)



Maximum location: X=-13.00, Y=-30.00

SAR Peak: 1.43 W/kg

SAR 10g (W/Kg)	0.521410
SAR 1g (W/Kg)	0.894151



Test Laboratory: AGC Lab  
LTE Band 3 High-Limbs-Back (1RB#0)  
DUT: Smart Phone; Type: NOTE 7

Date: Jun. 16,2020

Communication System: LTE; Communication System Band: LTE Band 3; Duty Cycle: 1:1; Conv.F=4.68  
Frequency: 1775MHz; Medium parameters used:  $f = 1800$  MHz;  $\sigma = 1.39$  mho/m;  $\epsilon_r = 38.65$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Flat Section  
Ambient temperature (°C):21.0, Liquid temperature (°C):20.7

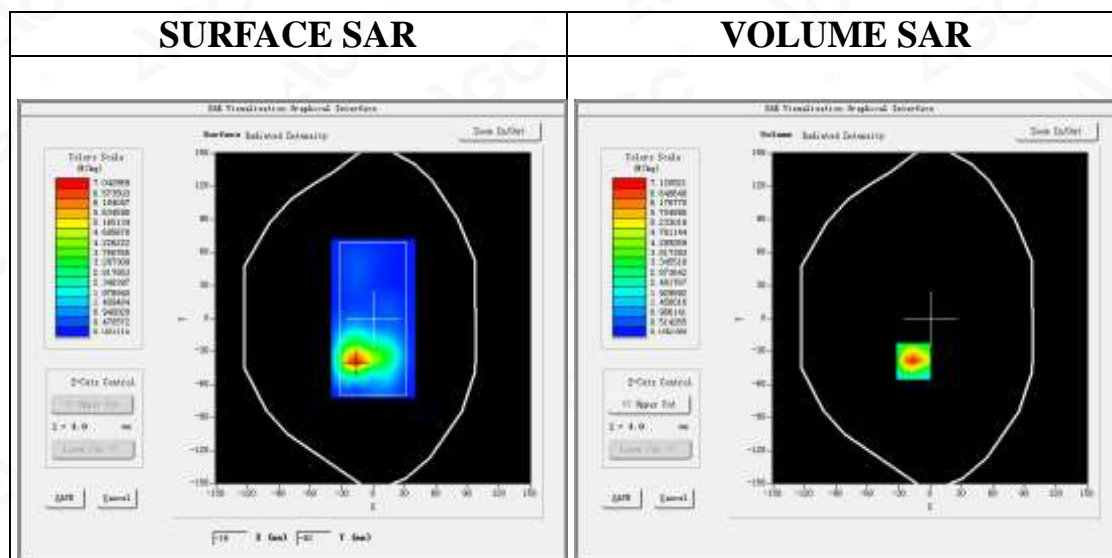
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/LTE Band 3 High-Limbs-back /Area Scan: Measurement grid: dx=8mm, dy=8mm

Configuration/LTE Band 3 High-Limbs-back /Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

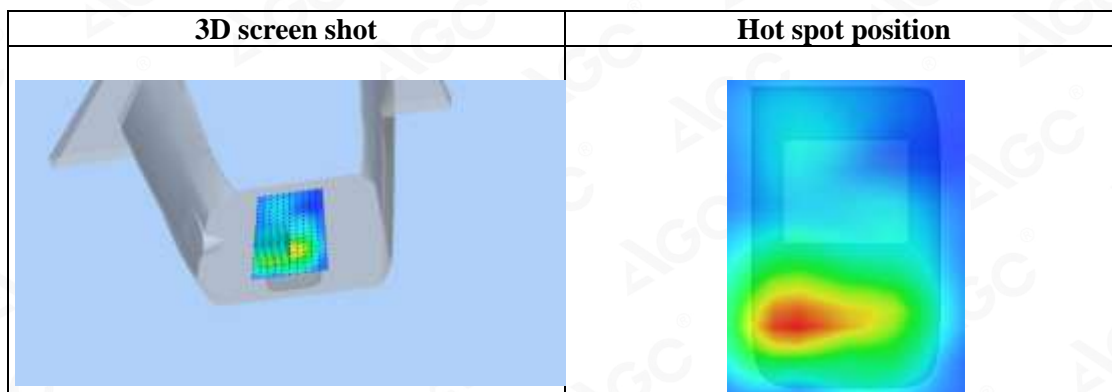
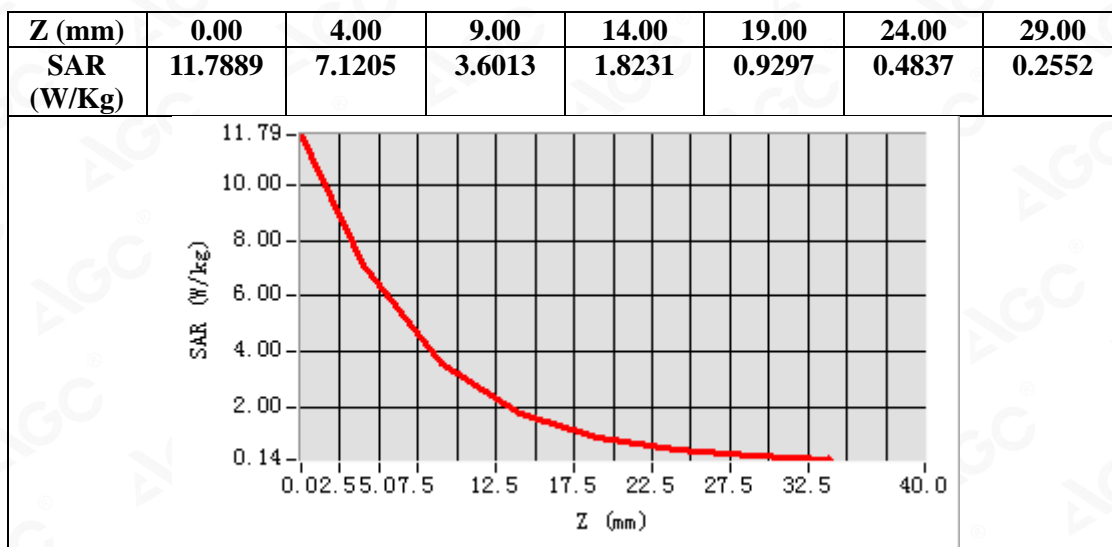
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Limbs Back
Band	LTE Band 3
Channels	High
Signal	OFDM (Crest factor: 1.0)



Maximum location: X=-16.00, Y=-39.00

SAR Peak: 12.03 W/kg

SAR 10g (W/Kg)	3.228589
SAR 1g (W/Kg)	6.708671



Test Laboratory: AGC Lab  
LTE Band 7 High-Touch-Right (1RB#0)  
DUT: Smart Phone; Type: NOTE 7

Date: Jun. 19,2020

Communication System: LTE; Communication System Band: LTE Band 7; Duty Cycle:1:1; Conv.F=4.52  
Frequency: 2560MHz; Medium parameters used:  $f = 2600$  MHz;  $\sigma = 1.92$  mho/m;  $\epsilon_r = 38.61$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Right Section  
Ambient temperature (°C): 21.3, Liquid temperature (°C): 21.0

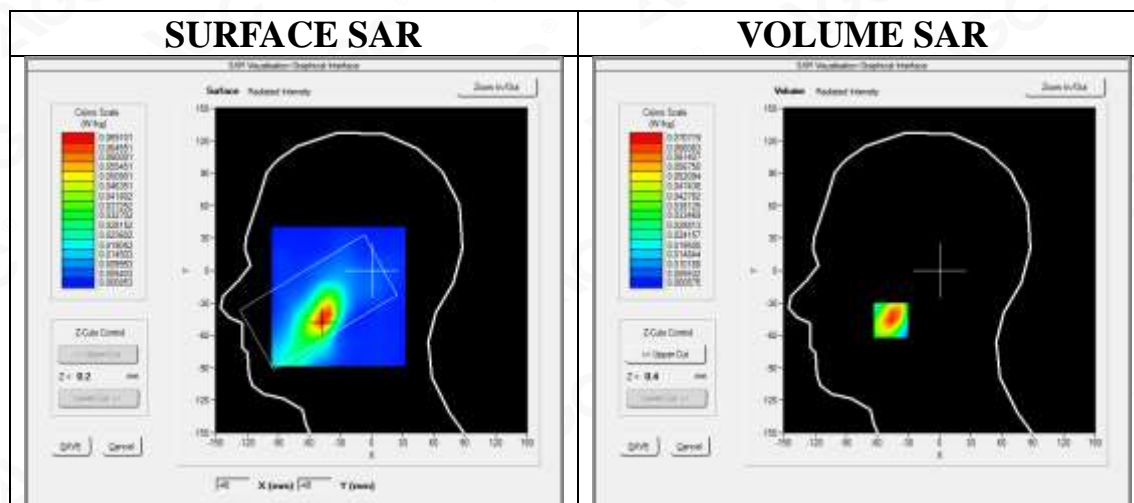
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/ LTE BAND 7 High-Touch-Right/Area Scan: Measurement grid: dx=8mm, y=8mm

Configuration/ LTE BAND 7 High-Touch-Right/Zoom Scan: Measurement grid: dx=8mm, dy=8mm, dz=5mm

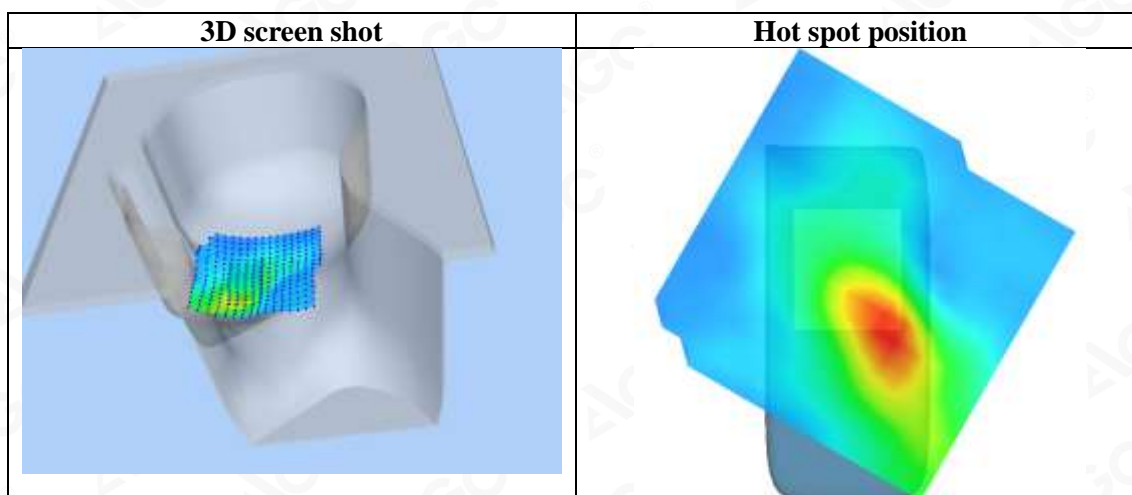
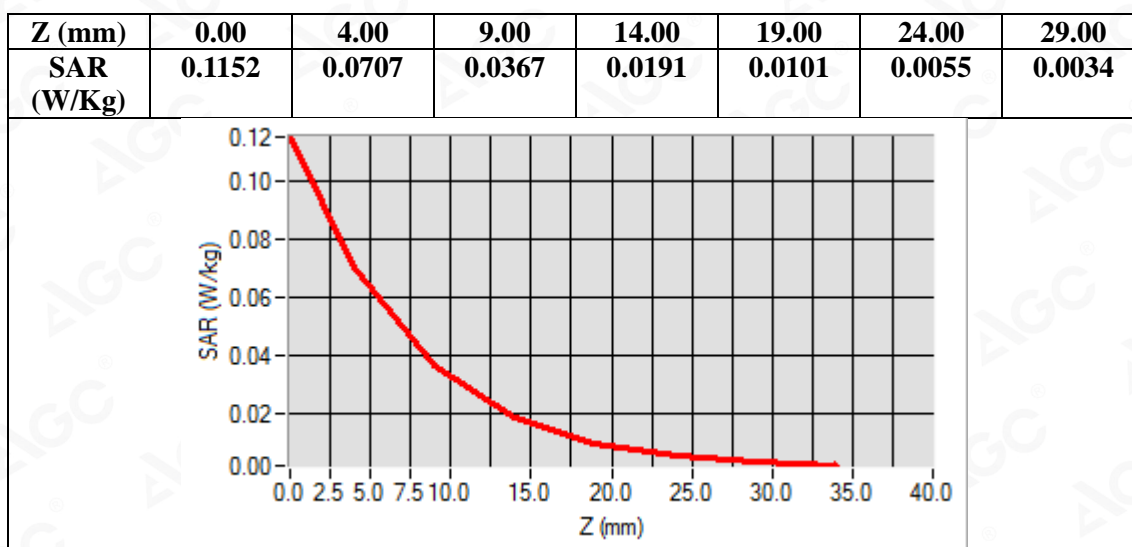
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Right head
Device Position	Cheek
Band	LTE BAND 7
Channels	High
Signal	OFDM (Crest factor: 1.0)



Maximum location: X=-47.00, Y=-46.00

SAR Peak: 0.12 W/kg

SAR 10g (W/Kg)	0.032587
SAR 1g (W/Kg)	0.066624



Test Laboratory: AGC Lab  
LTE Band 7 Mid-Body-Back (1RB#0)  
DUT: Smart Phone; Type: NOTE 7

Date: Jun. 19,2020

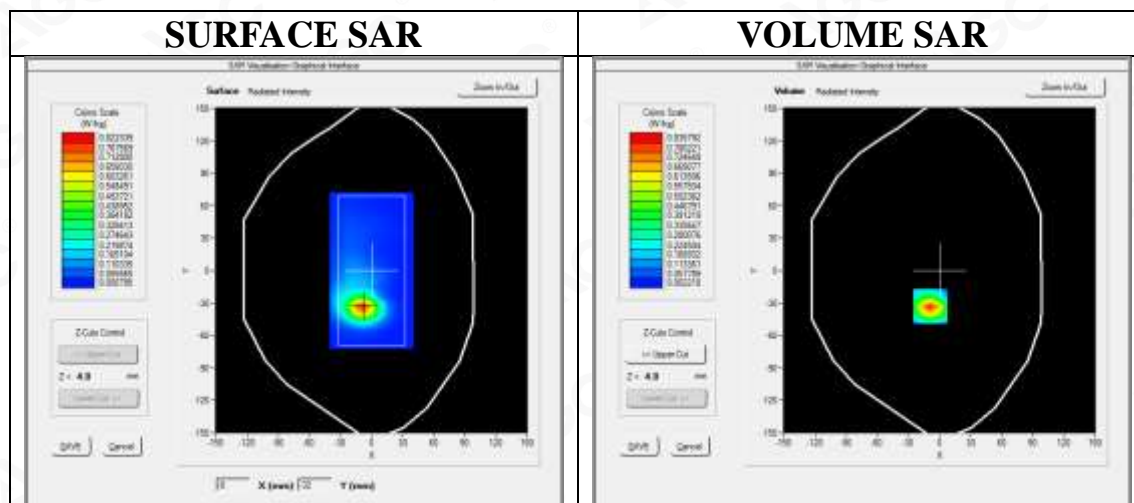
Communication System: LTE; Communication System Band: LTE Band 7; Duty Cycle:1:1; Conv.F=4.52  
Frequency: 2535MHz; Medium parameters used:  $f = 2600$  MHz;  $\sigma = 1.92$  mho/m;  $\epsilon_r = 38.61$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Flat Section  
Ambient temperature (°C): 21.3, Liquid temperature (°C): 21.0

SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/ LTE BAND 7 Mid-Body-Back /Area Scan: Measurement grid: dx=8mm, y=8mm  
Configuration/ LTE BAND 7 Mid-Body-Back /Zoom Scan: Measurement grid: dx=8mm, dy=8mm, dz=5mm

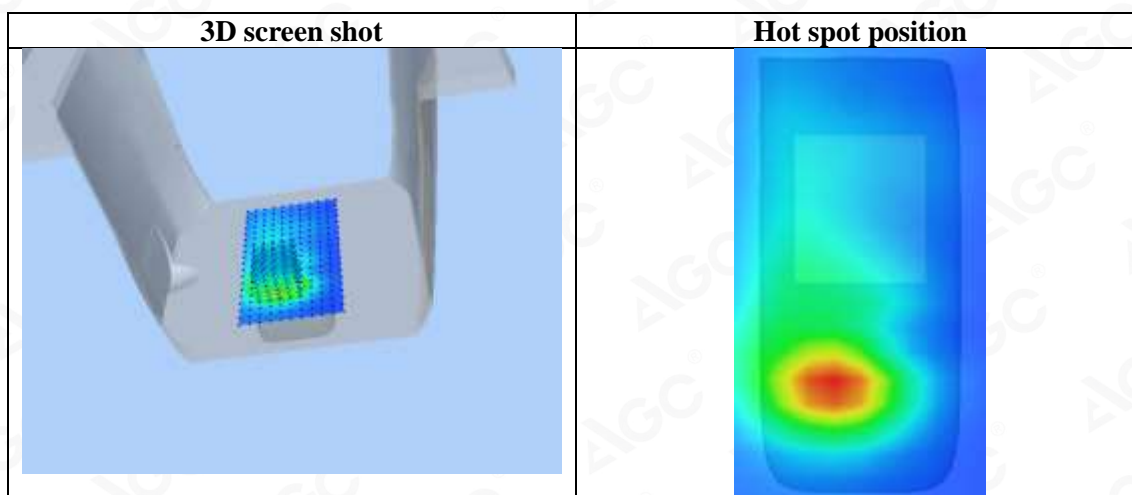
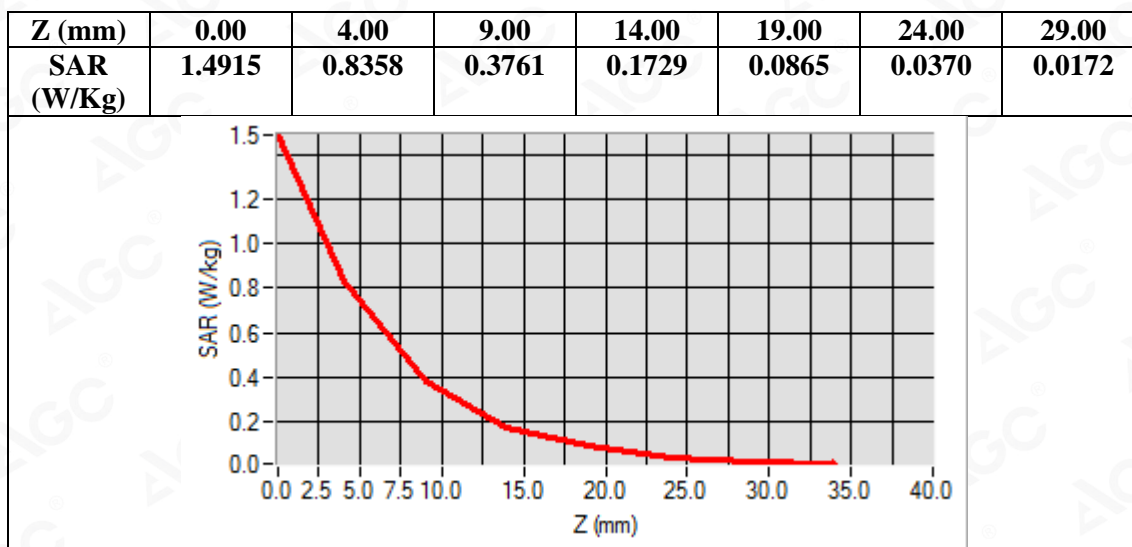
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Body Back
Band	LTE BAND 7
Channels	Middle
Signal	OFDM (Crest factor: 1.0)



Maximum location: X=-9.00, Y=-33.00

SAR Peak: 1.48 W/kg

SAR 10g (W/Kg)	0.319637
SAR 1g (W/Kg)	0.768606



Test Laboratory: AGC Lab  
LTE Band 7 High-Body-Back (1RB#0)  
DUT: Smart Phone; Type: NOTE 7

Date: Jun. 19,2020

Communication System: LTE; Communication System Band: LTE Band 7; Duty Cycle:1:1; Conv.F=4.52  
Frequency: 2560MHz; Medium parameters used:  $f = 2600$  MHz;  $\sigma = 1.92$  mho/m;  $\epsilon_r = 38.61$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Flat Section  
Ambient temperature (°C): 21.3, Liquid temperature (°C): 21.0

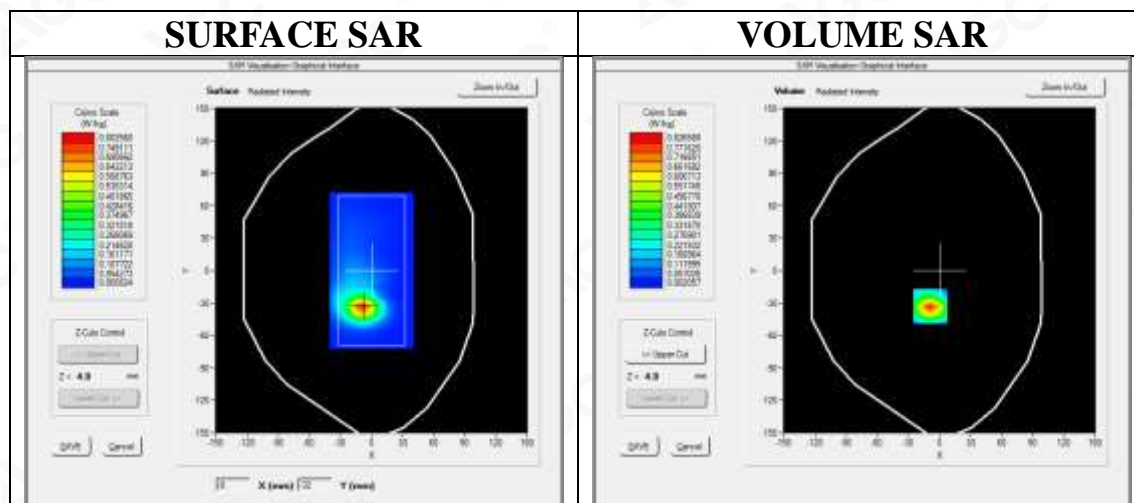
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/ LTE BAND 7 High-Body-Back /Area Scan: Measurement grid: dx=8mm, y=8mm

Configuration/ LTE BAND 7 High-Body-Back /Zoom Scan: Measurement grid: dx=8mm, dy=8mm, dz=5mm

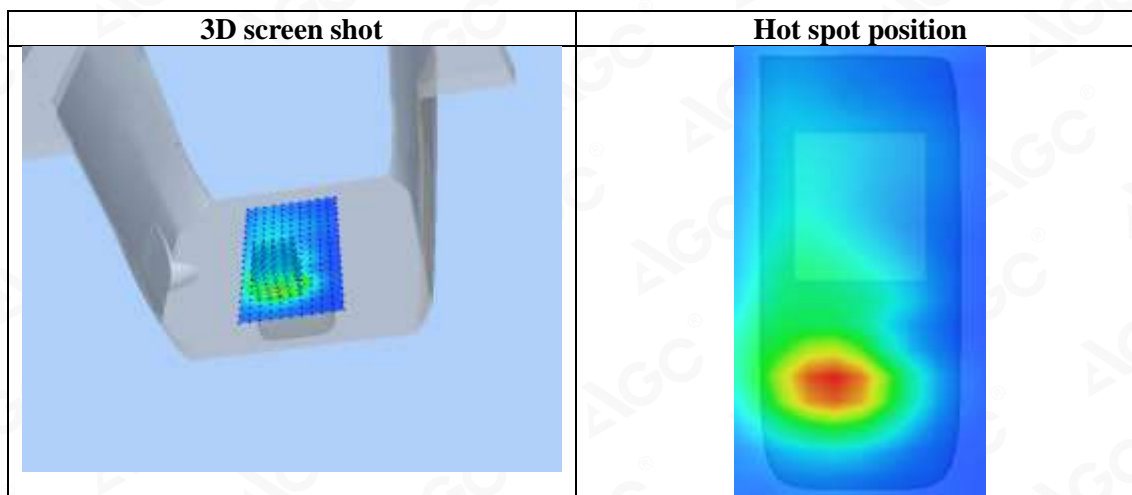
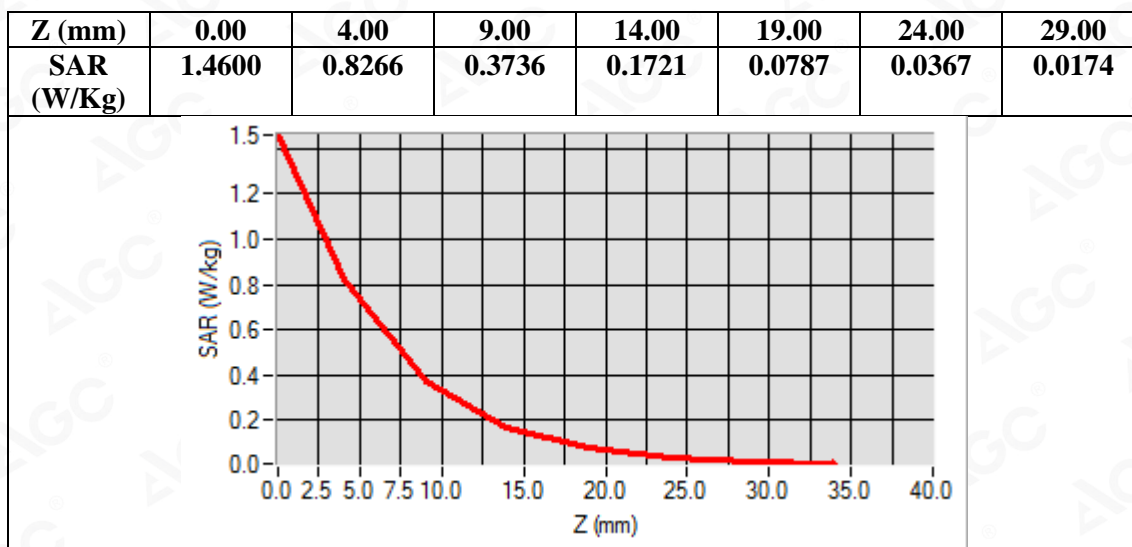
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Body Back
Band	LTE BAND 7
Channels	High
Signal	OFDM (Crest factor: 1.0)



Maximum location: X=-9.00, Y=-33.00

SAR Peak: 1.45 W/kg

SAR 10g (W/Kg)	0.316693
SAR 1g (W/Kg)	0.758759



Test Laboratory: AGC Lab  
LTE Band 7 High-Hotspot Edge 3 (1RB#0)  
DUT: Smart Phone; Type: NOTE 7

Date: Jun. 19,2020

Communication System: LTE; Communication System Band: LTE Band 7; Duty Cycle:1:1; Conv.F=4.52  
Frequency: 2560MHz; Medium parameters used:  $f = 2600$  MHz;  $\sigma = 1.92$  mho/m;  $\epsilon_r = 38.61$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Flat Section  
Ambient temperature (°C): 21.3, Liquid temperature (°C): 21.0

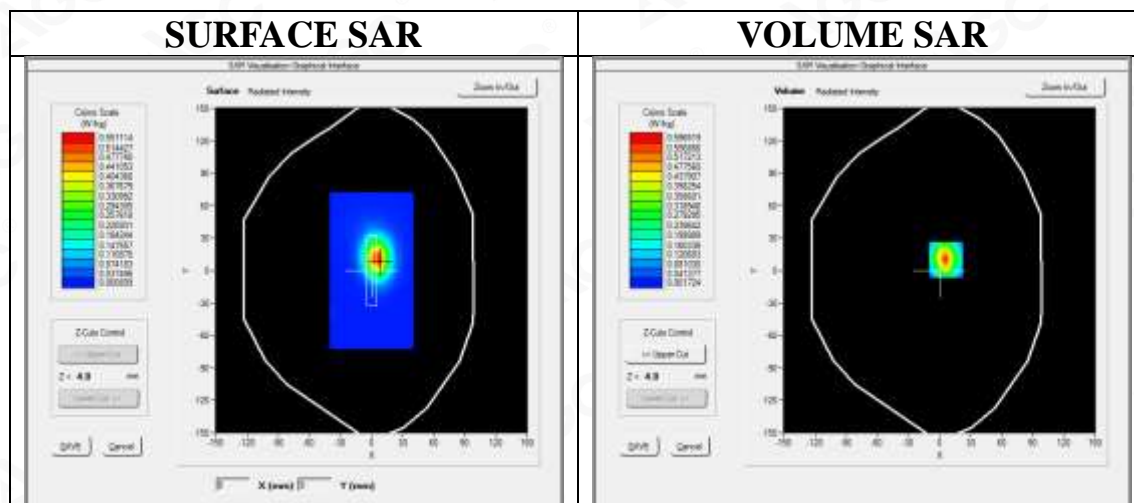
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/ LTE BAND 7 High-Hotspot Edge 3 /Area Scan: Measurement grid: dx=8mm, y=8mm

Configuration/ LTE BAND 7 High-Hotspot Edge 3 /Zoom Scan: Measurement grid: dx=8mm, dy=8mm, dz=5mm

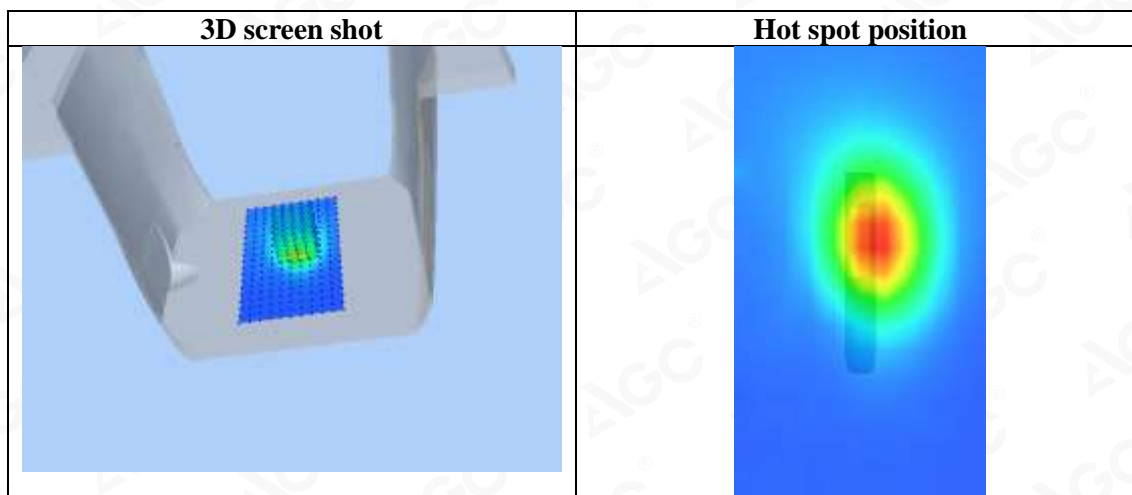
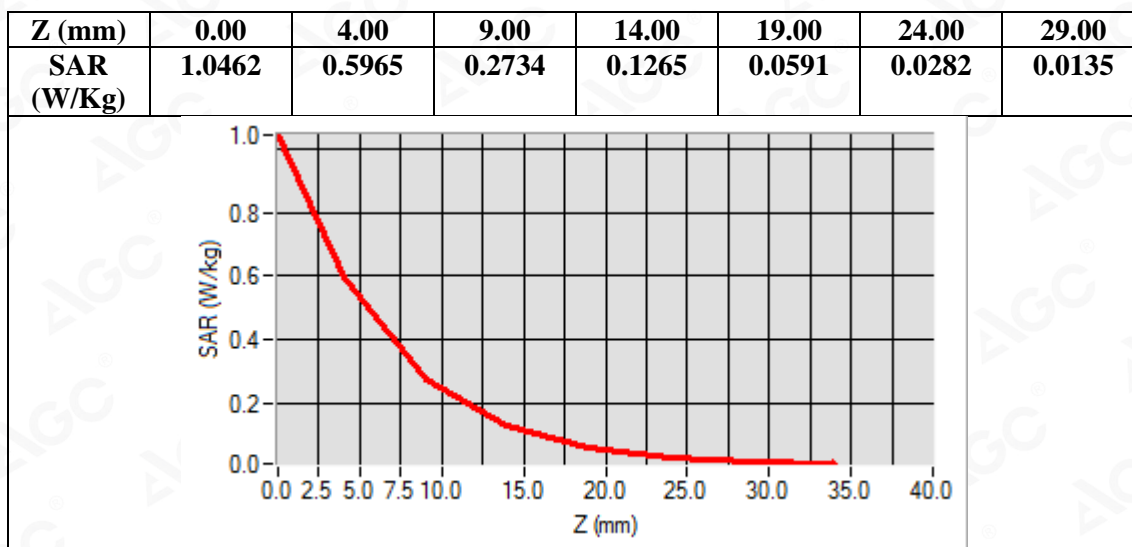
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Hotspot Edge 3
Band	LTE BAND 7
Channels	High
Signal	OFDM (Crest factor: 1.0)



Maximum location: X=6.00, Y=10.00

SAR Peak: 1.04 W/kg

SAR 10g (W/Kg)	0.227056
SAR 1g (W/Kg)	0.542425



Test Laboratory: AGC Lab  
LTE Band 7 Mid-Limbs Edge 3 (1RB#0)  
DUT: Smart Phone; Type: NOTE 7

Date: Jun. 19,2020

Communication System: LTE; Communication System Band: LTE Band 7; Duty Cycle:1:1; Conv.F=4.52  
Frequency: 2535MHz; Medium parameters used:  $f = 2600$  MHz;  $\sigma = 1.92$  mho/m;  $\epsilon_r = 38.61$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Flat Section  
Ambient temperature (°C): 21.3, Liquid temperature (°C): 21.0

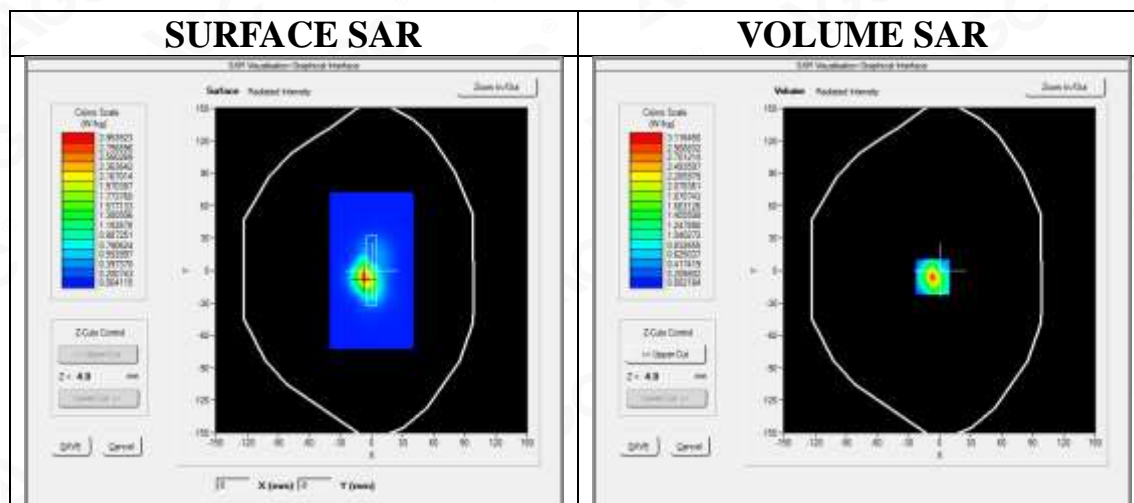
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/ LTE BAND 7 Mid-Limbs Edge 3 /Area Scan: Measurement grid: dx=8mm, y=8mm

Configuration/ LTE BAND 7 Mid-Limbs Edge 3 /Zoom Scan: Measurement grid: dx=8mm, dy=8mm, dz=5mm

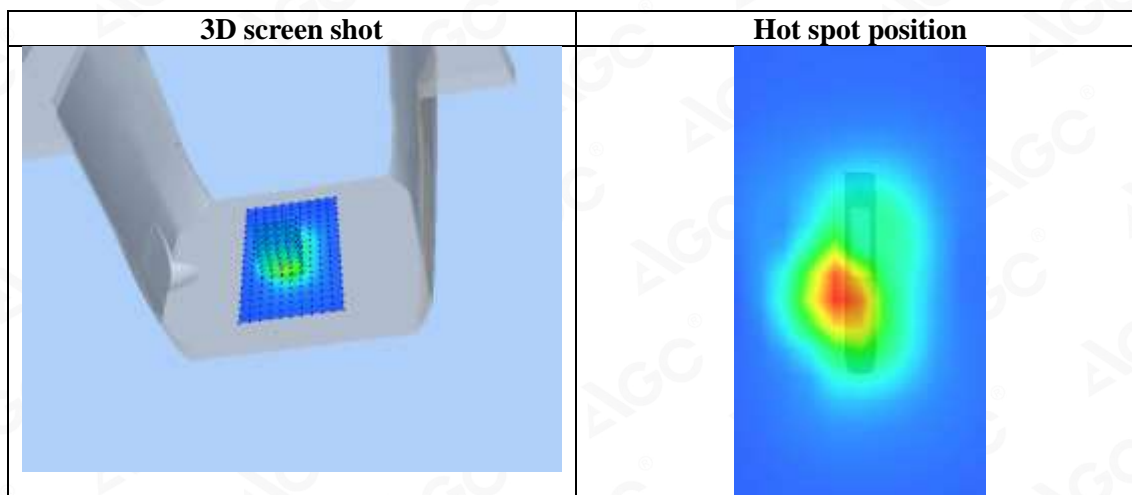
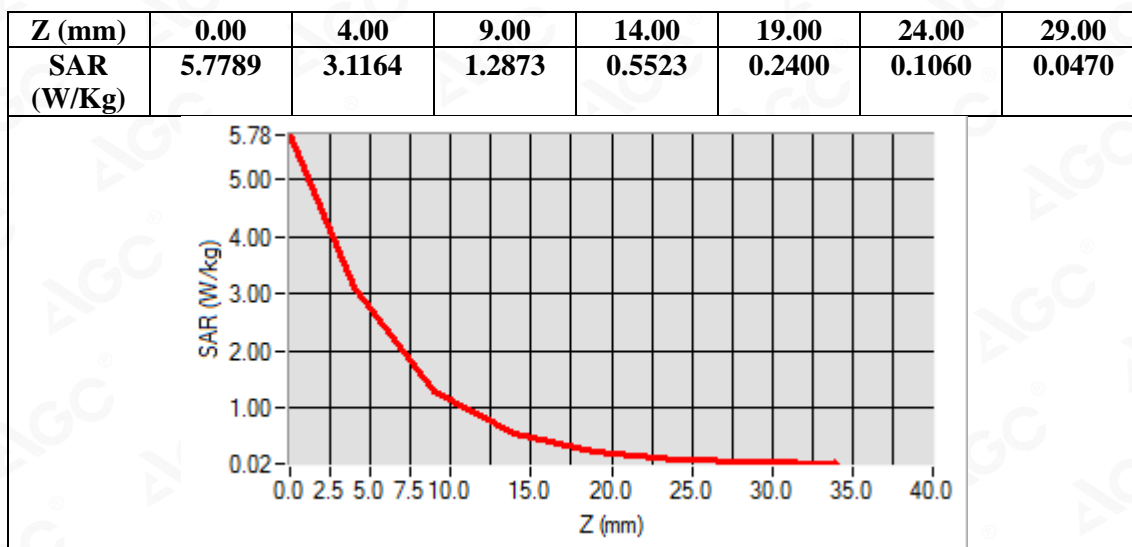
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Limbs Edge 3
Band	LTE BAND 7
Channels	Middle
Signal	OFDM (Crest factor: 1.0)



Maximum location: X=-7.00, Y=-6.00

SAR Peak: 5.72 W/kg

SAR 10g (W/Kg)	1.025939
SAR 1g (W/Kg)	2.757411



Test Laboratory: AGC Lab  
LTE Band 7 High-Limbs Edge 3 (1RB#0)  
DUT: Smart Phone; Type: NOTE 7

Date: Jun. 19,2020

Communication System: LTE; Communication System Band: LTE Band 7; Duty Cycle:1:1; Conv.F=4.52  
Frequency: 2560MHz; Medium parameters used:  $f = 2600$  MHz;  $\sigma = 1.92$  mho/m;  $\epsilon_r = 38.61$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Flat Section  
Ambient temperature (°C): 21.3, Liquid temperature (°C): 21.0

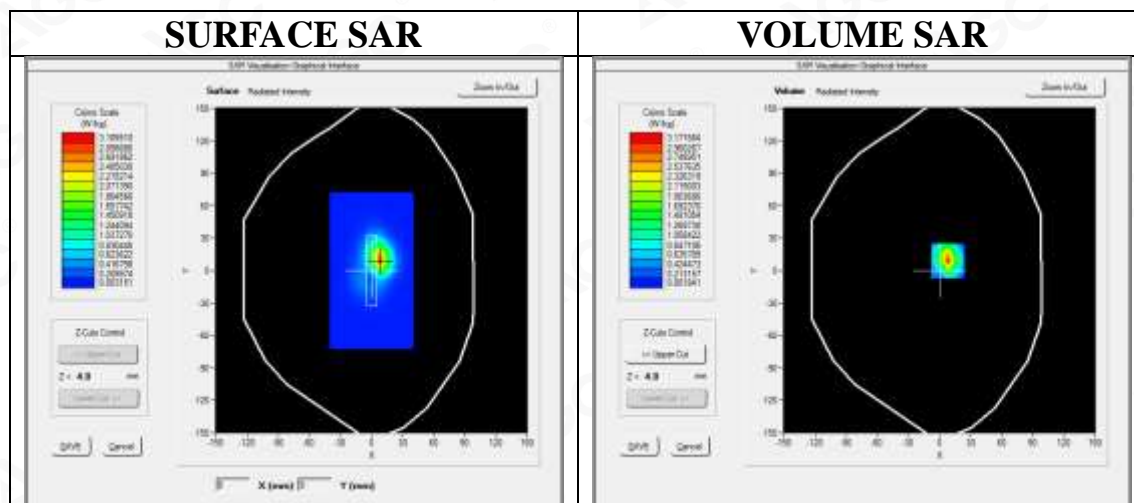
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/ LTE BAND 7 High-Limbs Edge 3 /Area Scan: Measurement grid: dx=8mm, y=8mm

Configuration/ LTE BAND 7 High-Limbs Edge 3 /Zoom Scan: Measurement grid: dx=8mm, dy=8mm, dz=5mm

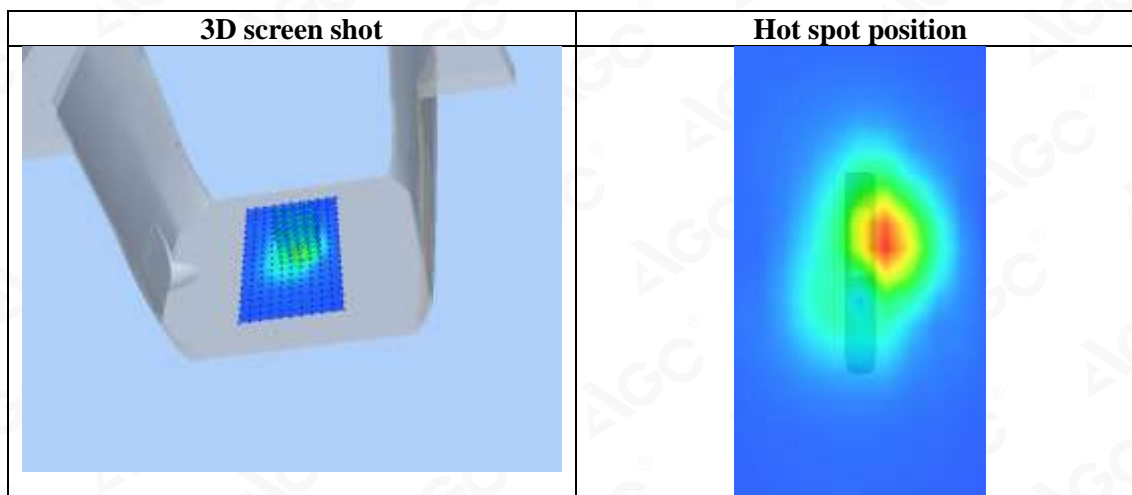
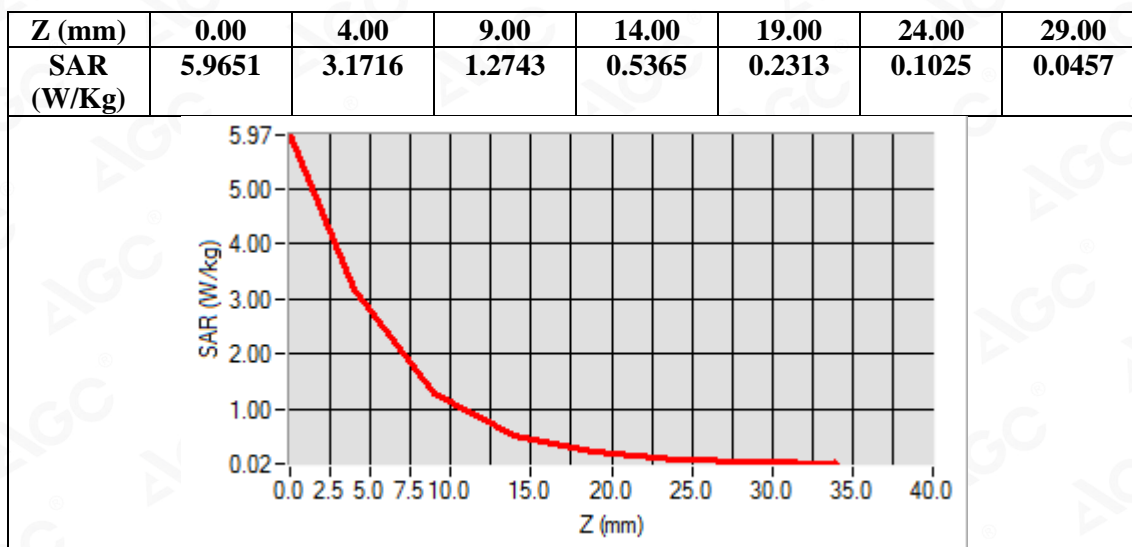
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Limbs Edge 3
Band	LTE BAND 7
Channels	High
Signal	OFDM (Crest factor: 1.0)



Maximum location: X=8.00, Y=9.00

SAR Peak: 5.89 W/kg

SAR 10g (W/Kg)	1.007439
SAR 1g (W/Kg)	2.786795



Test Laboratory: AGC Lab  
LTE Band 8 Mid-Touch-Right (1RB#0)  
DUT: Smart Phone; Type: NOTE 7

Date: Jun. 05,2020

Communication System: LTE; Communication System Band: LTE Band 8; Duty Cycle:1:1; Conv.F=5.21  
Frequency: 897.5MHz; Medium parameters used:  $f = 900$  MHz;  $\sigma = 0.94$  mho/m;  $\epsilon_r = 40.61$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Right Section  
Ambient temperature (°C): 20.4, Liquid temperature (°C): 20.1

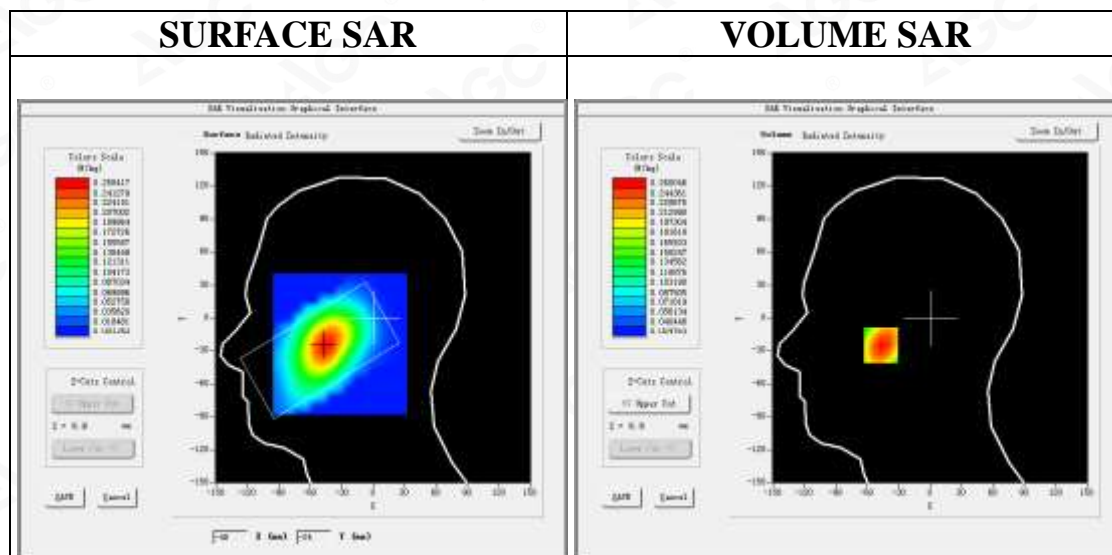
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/ LTE BAND 8 Mid-Touch-Right/Area Scan: Measurement grid: dx=8mm, y=8mm

Configuration/ LTE BAND 8 Mid-Touch-Right/Zoom Scan: Measurement grid: dx=8mm, dy=8mm, dz=5mm

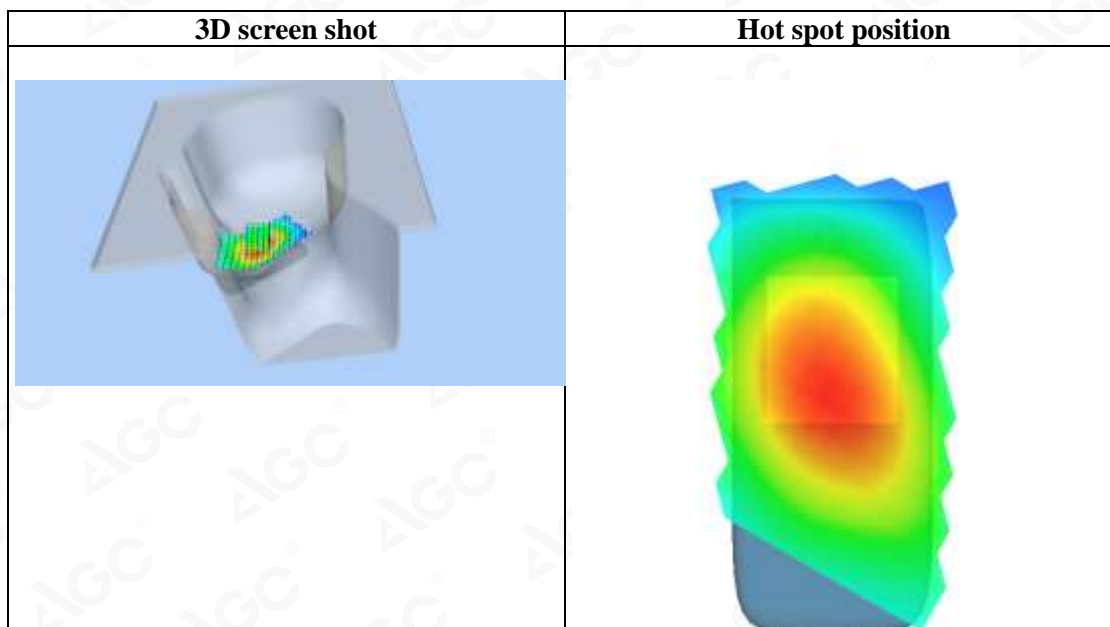
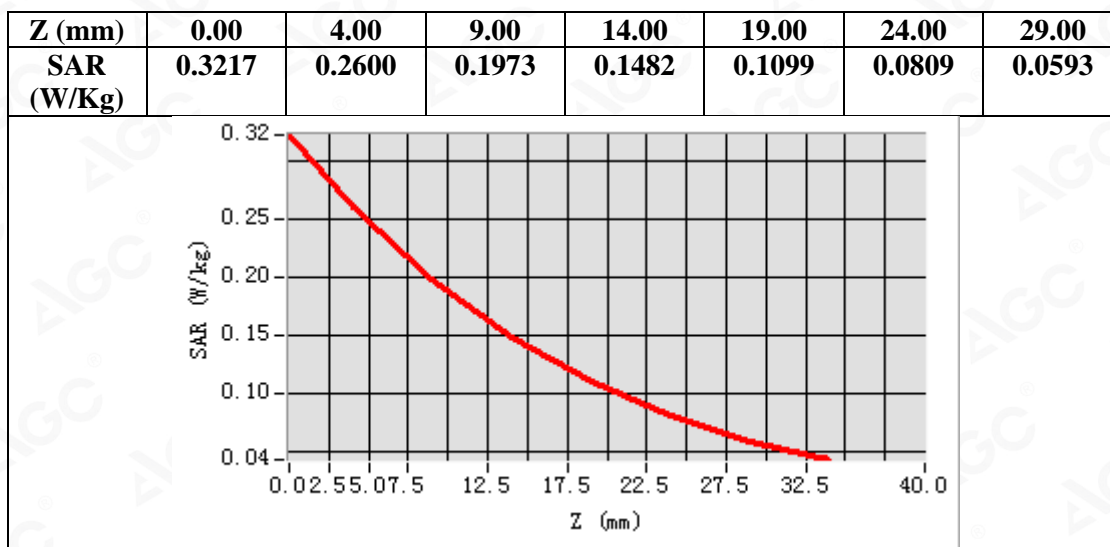
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Right head
Device Position	Cheek
Band	LTE BAND 8
Channels	Middle
Signal	OFDM (Crest factor: 1.0)



Maximum location: X=-47.00, Y=-25.00

SAR Peak: 0.32 W/kg

SAR 10g (W/Kg)	0.175416
SAR 1g (W/Kg)	0.249504



Test Laboratory: AGC Lab  
LTE Band 8 Low-Body-Back (1RB#0)  
DUT: Smart Phone; Type: NOTE 7

Date: Jun. 05,2020

Communication System: LTE; Communication System Band: LTE Band 8; Duty Cycle:1:1; Conv.F=5.21  
Frequency: 885MHz; Medium parameters used:  $f = 900$  MHz;  $\sigma = 0.94$  mho/m;  $\epsilon_r = 40.61$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Flat Section  
Ambient temperature (°C): 20.4, Liquid temperature (°C): 20.1

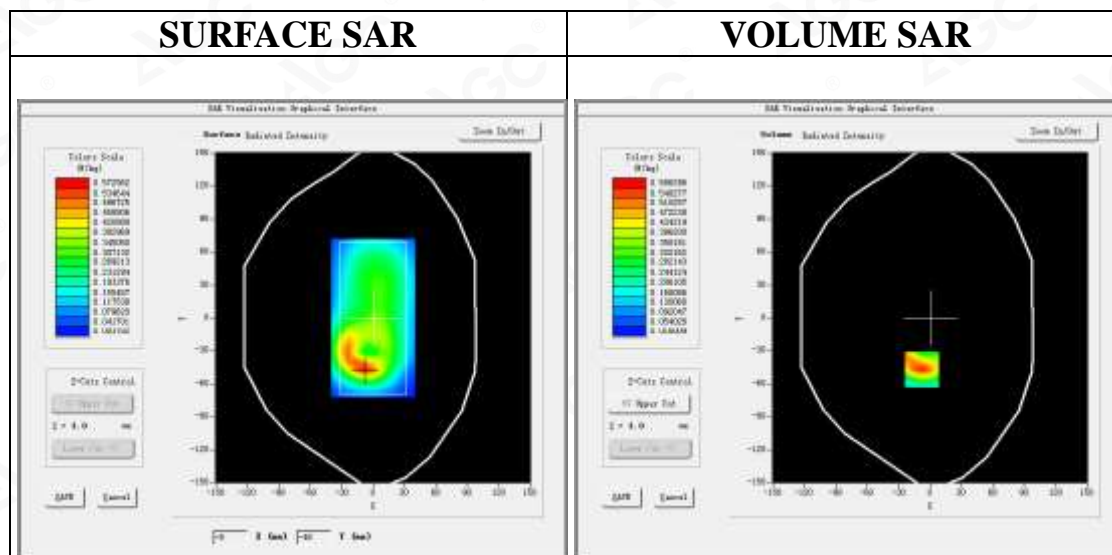
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/ LTE BAND 8 Low-Body-Back/Area Scan: Measurement grid: dx=8mm, y=8mm

Configuration/ LTE BAND 8 Low-Body-Back /Zoom Scan: Measurement grid: dx=8mm, dy=8mm, dz=5mm

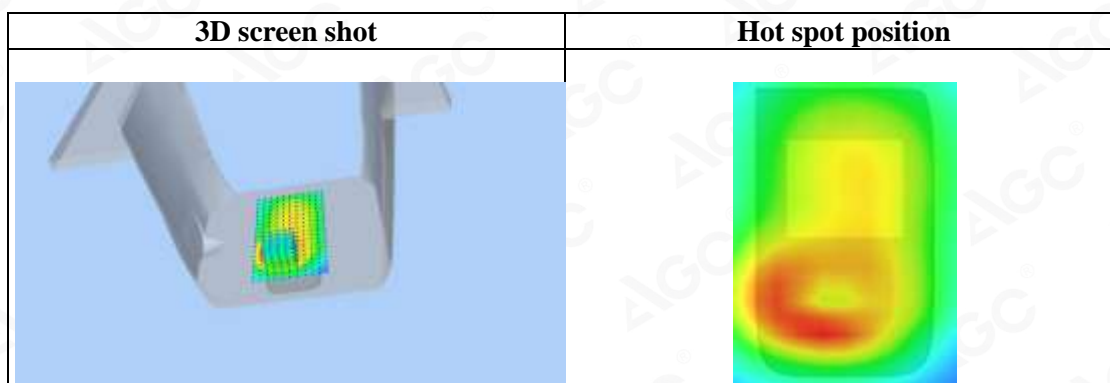
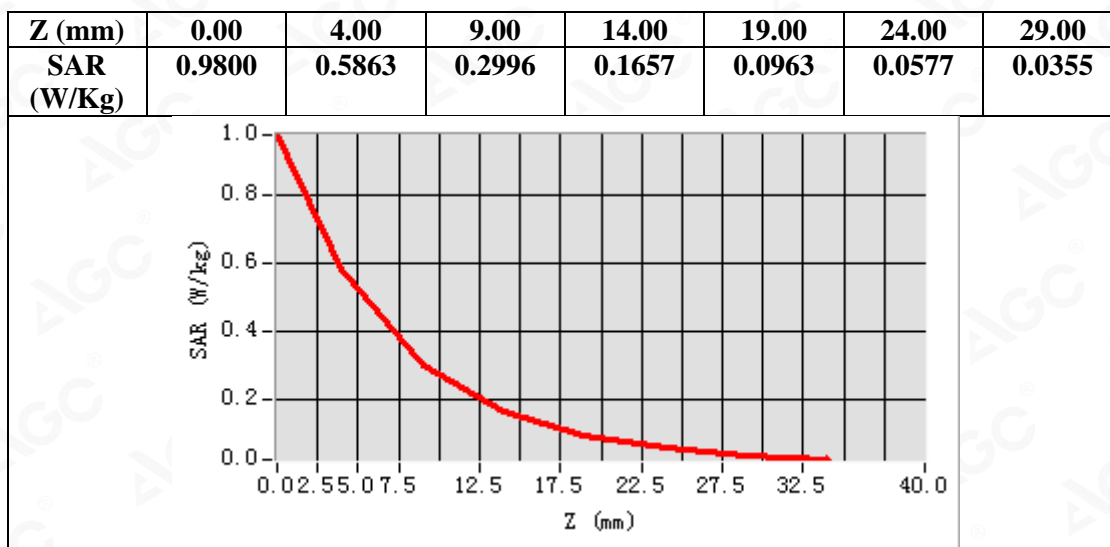
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Body Back
Band	LTE BAND 8
Channels	Low
Signal	OFDM (Crest factor: 1.0)



Maximum location: X=-8.00, Y=-47.00

SAR Peak: 0.98 W/kg

SAR 10g (W/Kg)	0.277864
SAR 1g (W/Kg)	0.550181



Test Laboratory: AGC Lab  
LTE Band 8 Mid-Body-Back (1RB#0)  
DUT: Smart Phone; Type: NOTE 7

Date: Jun. 05,2020

Communication System: LTE; Communication System Band: LTE Band 8; Duty Cycle:1:1; Conv.F=5.21  
Frequency: 897.5MHz; Medium parameters used:  $f = 900$  MHz;  $\sigma=0.94$  mho/m;  $\epsilon_r=40.61$ ;  $\rho=1000$  kg/m<sup>3</sup> ;  
Phantom section: Flat Section  
Ambient temperature (°C): 20.4, Liquid temperature (°C): 20.1

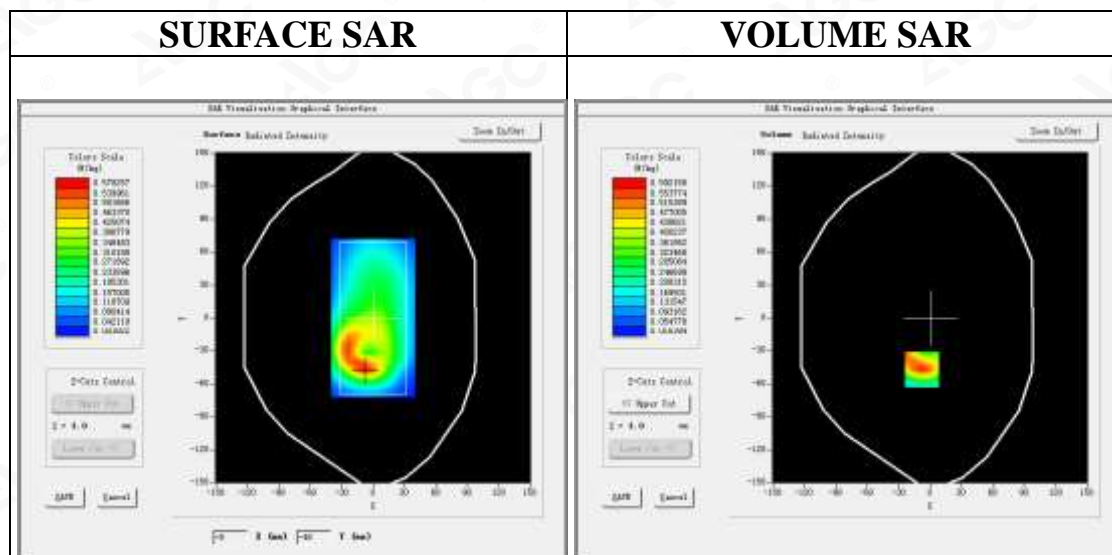
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/ LTE BAND 8 Mid-Body-Back/Area Scan: Measurement grid: dx=8mm, y=8mm

Configuration/ LTE BAND 8 Mid-Body-Back /Zoom Scan: Measurement grid: dx=8mm, dy=8mm, dz=5mm

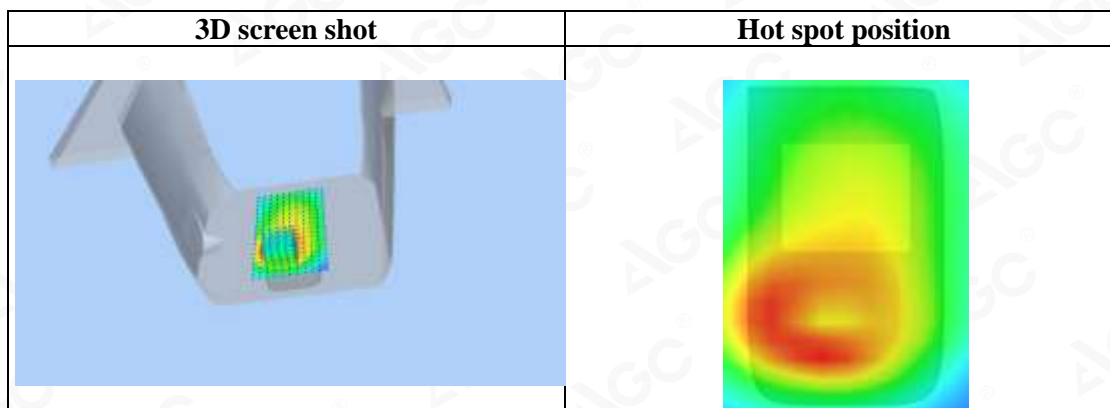
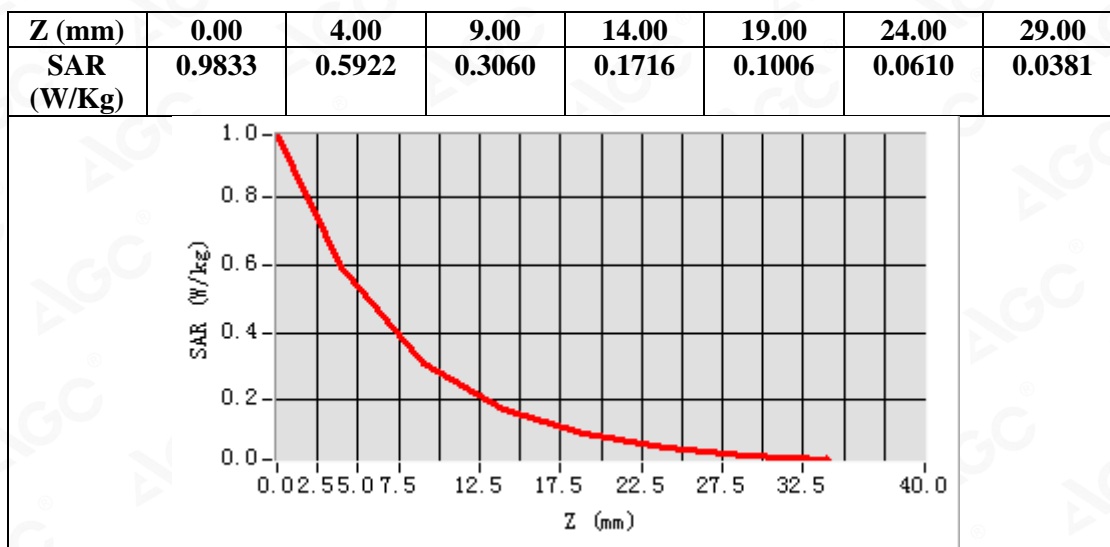
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Body Back
Band	LTE BAND 8
Channels	Middle
Signal	OFDM (Crest factor: 1.0)



Maximum location: X=-8.00, Y=-47.00

SAR Peak: 0.98 W/kg

SAR 10g (W/Kg)	0.286230
SAR 1g (W/Kg)	0.557363



Test Laboratory: AGC Lab  
LTE Band 8 Low-Hotspot-Back (1RB#0)  
DUT: Smart Phone; Type: NOTE 7

Date: Jun. 05,2020

Communication System: LTE; Communication System Band: LTE Band 8; Duty Cycle:1:1; Conv.F=5.21  
Frequency: 885MHz; Medium parameters used:  $f = 900$  MHz;  $\sigma = 0.94$  mho/m;  $\epsilon_r = 40.61$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Flat Section  
Ambient temperature (°C): 20.4, Liquid temperature (°C): 20.1

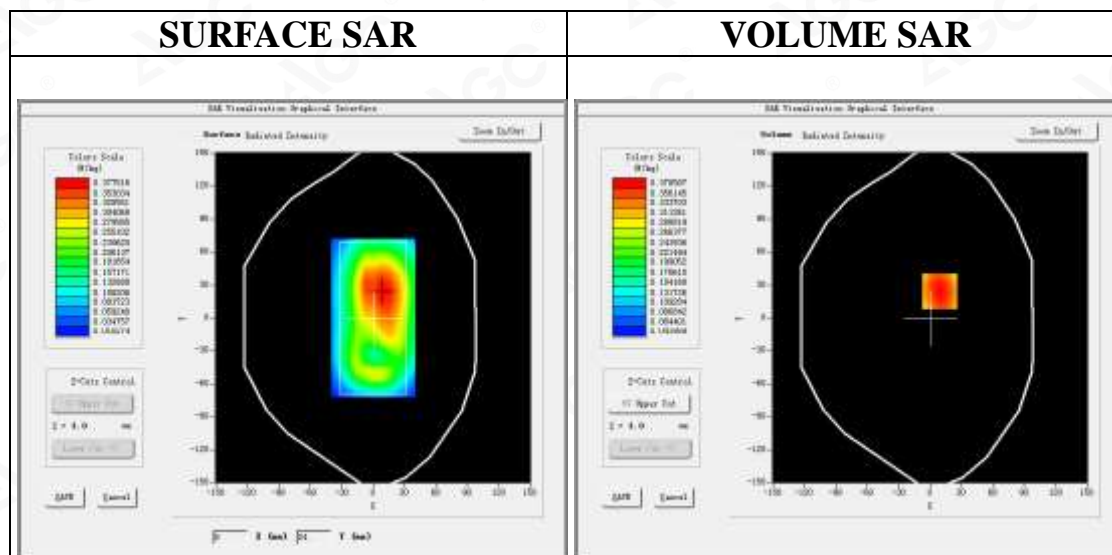
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/ LTE BAND 8 Low-Hotspot-Back/Area Scan: Measurement grid: dx=8mm, y=8mm

Configuration/ LTE BAND 8 Low-Hotspot-Back /Zoom Scan: Measurement grid: dx=8mm, dy=8mm, dz=5mm

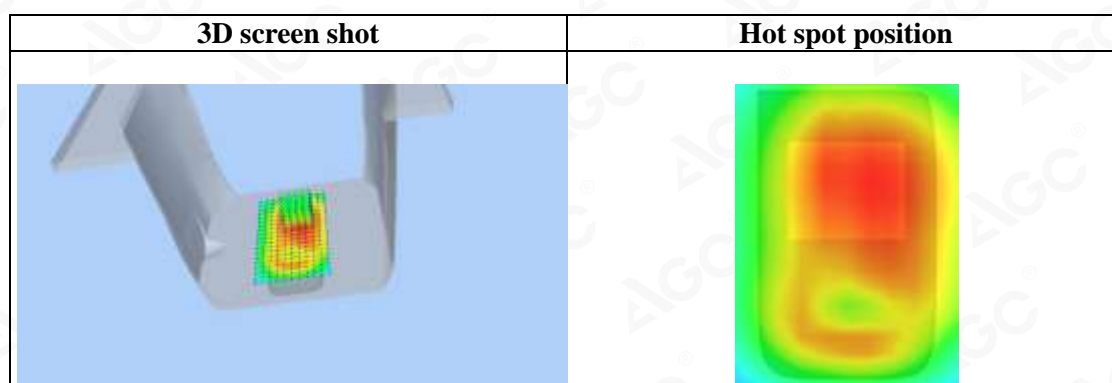
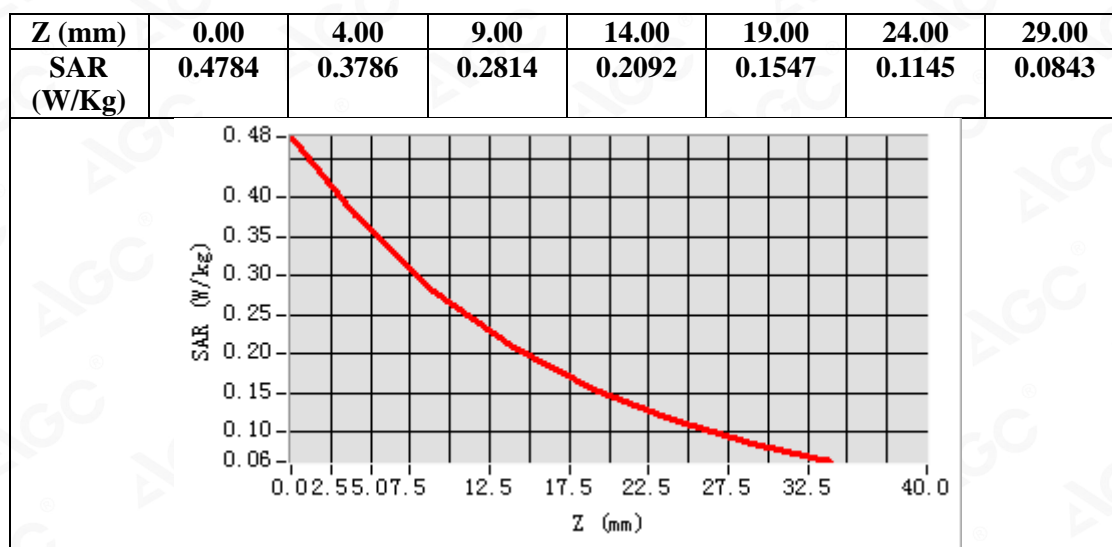
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Hotspot Back
Band	LTE BAND 8
Channels	Low
Signal	OFDM (Crest factor: 1.0)



Maximum location: X=9.00, Y=24.00

SAR Peak: 0.48 W/kg

SAR 10g (W/Kg)	0.260876
SAR 1g (W/Kg)	0.366459



Test Laboratory: AGC Lab  
LTE Band 8 Mid-Hotspot-Back (1RB#0)  
DUT: Smart Phone; Type: NOTE 7

Date: Jun. 05,2020

Communication System: LTE; Communication System Band: LTE Band 8; Duty Cycle:1:1; Conv.F=5.21  
Frequency: 897.5MHz; Medium parameters used:  $f = 900$  MHz;  $\sigma=0.94$  mho/m;  $\epsilon_r=40.61$ ;  $\rho=1000$  kg/m<sup>3</sup> ;  
Phantom section: Flat Section  
Ambient temperature (°C): 20.4, Liquid temperature (°C): 20.1

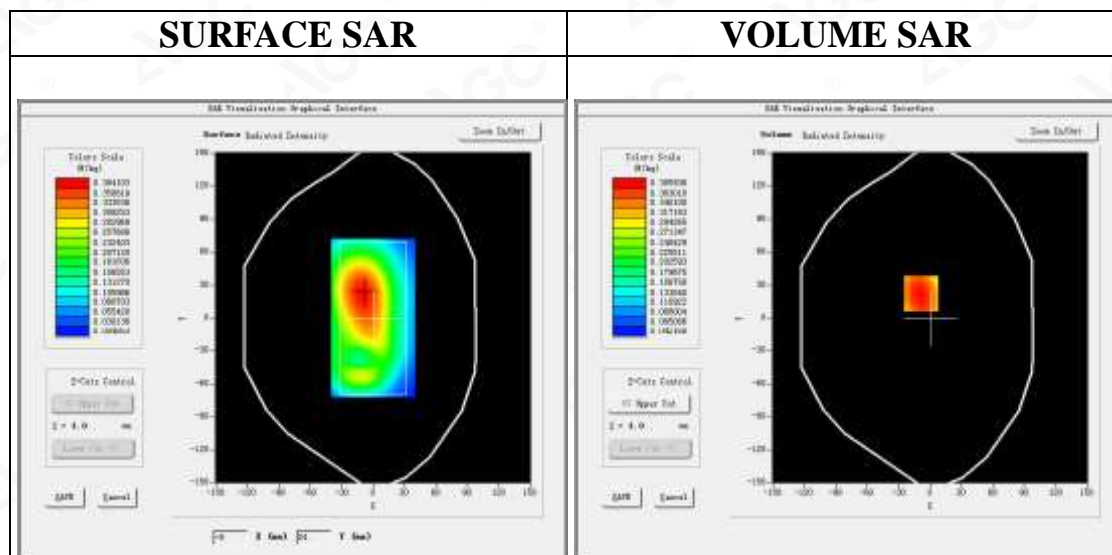
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/ LTE BAND 8 Mid-Hotspot-Back/Area Scan: Measurement grid: dx=8mm, y=8mm

Configuration/ LTE BAND 8 Mid-Hotspot-Back /Zoom Scan: Measurement grid: dx=8mm, dy=8mm, dz=5mm

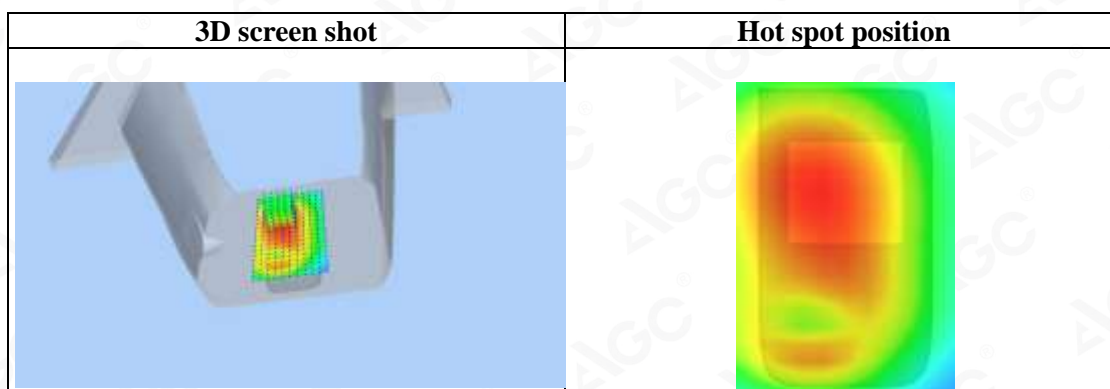
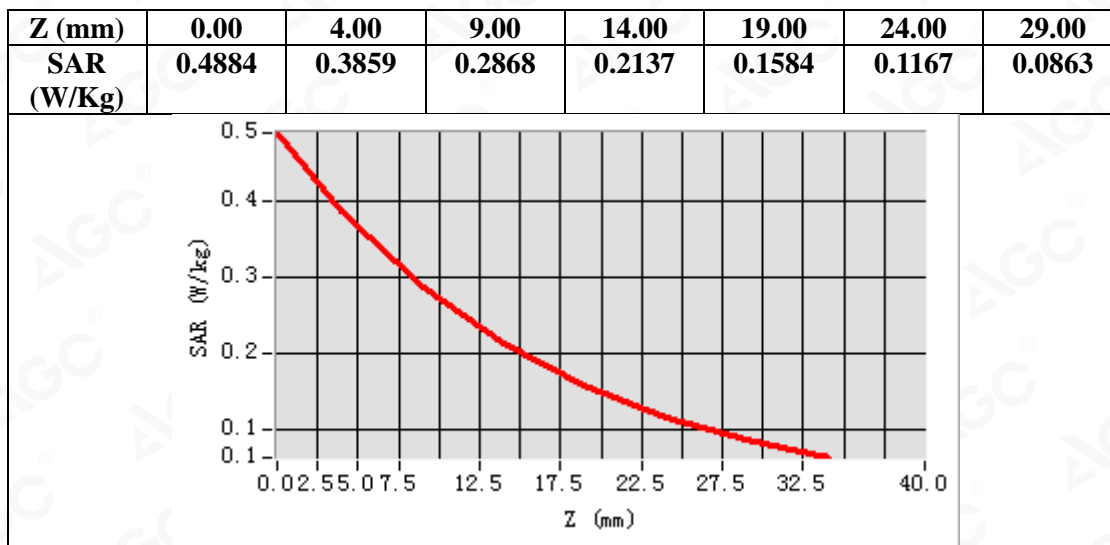
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Hotspot Back
Band	LTE BAND 8
Channels	Middle
Signal	OFDM (Crest factor: 1.0)



Maximum location: X=-9.00, Y=22.00

SAR Peak: 0.49 W/kg

SAR 10g (W/Kg)	0.266692
SAR 1g (W/Kg)	0.373379



Test Laboratory: AGC Lab  
LTE Band 8 Low-Limbs-Back (1RB#0)  
DUT: Smart Phone; Type: NOTE 7

Date: Jun. 05,2020

Communication System: LTE; Communication System Band: LTE Band 8; Duty Cycle:1:1; Conv.F=5.21  
Frequency: 885MHz; Medium parameters used:  $f = 900 \text{ MHz}$ ;  $\sigma = 0.94 \text{ mho/m}$ ;  $\epsilon_r = 40.61$ ;  $\rho = 1000 \text{ kg/m}^3$  ;  
Phantom section: Flat Section  
Ambient temperature ( $^{\circ}\text{C}$ ): 20.4, Liquid temperature ( $^{\circ}\text{C}$ ): 20.1

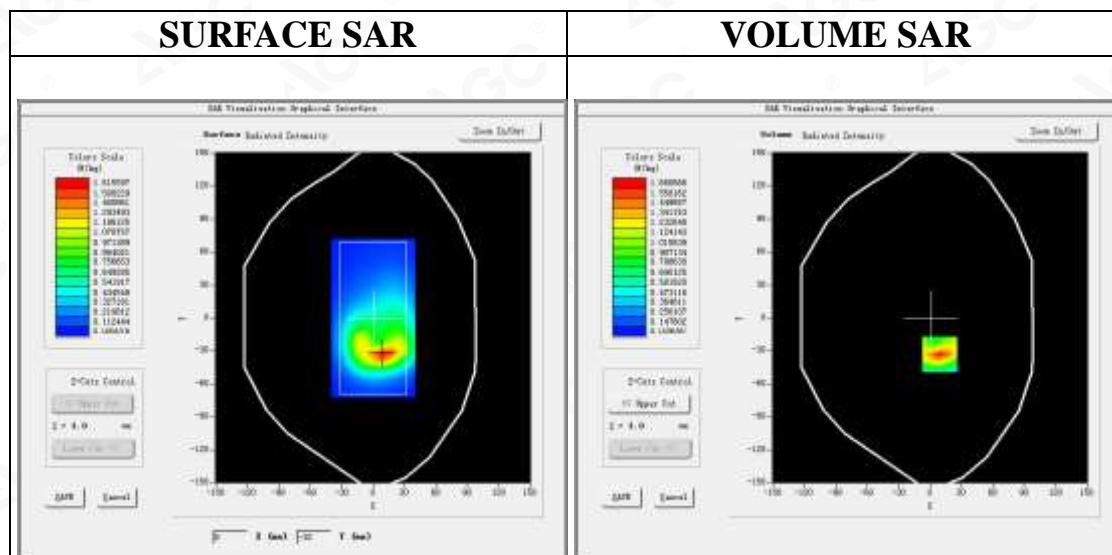
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/ LTE BAND 8 Low-Limbs-Back/Area Scan: Measurement grid:  $dx=8\text{mm}$ ,  $y=8\text{mm}$

Configuration/ LTE BAND 8 Low-Limbs-Back /Zoom Scan: Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

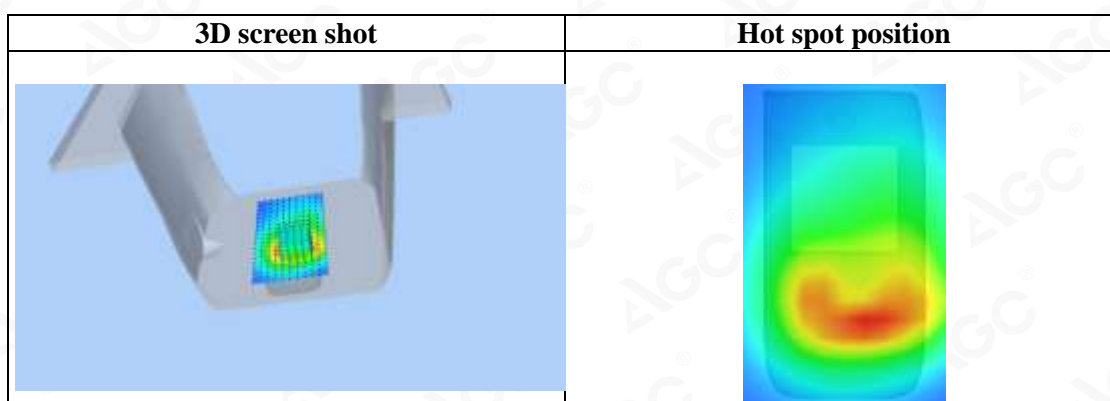
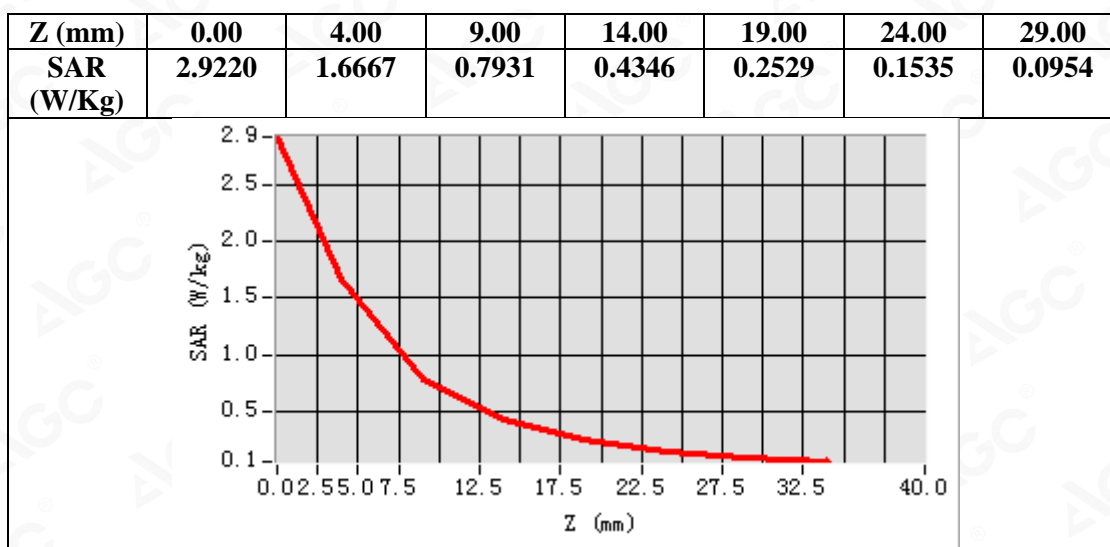
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Limbs Back
Band	LTE BAND 8
Channels	Low
Signal	OFDM (Crest factor: 1.0)



Maximum location: X=9.00, Y=-33.00

SAR Peak: 2.90 W/kg

SAR 10g (W/Kg)	0.763229
SAR 1g (W/Kg)	1.552724



Test Laboratory: AGC Lab  
LTE Band 20 Mid-Touch-Right (1RB#0)  
DUT: Smart Phone; Type: NOTE 7

Date: Jun. 17,2020

Communication System: LTE; Communication System Band: LTE Band 20; Duty Cycle:1:1; Conv.F=5.26  
Frequency: 847MHz; Medium parameters used:  $f = 850\text{MHz}$ ;  $\sigma = 0.88 \text{ mho/m}$ ;  $\epsilon_r = 40.21$ ;  $\rho = 1000 \text{ kg/m}^3$  ;  
Phantom section: Right Section  
Ambient temperature ( $^{\circ}\text{C}$ ): 21.5, Liquid temperature ( $^{\circ}\text{C}$ ): 21.2

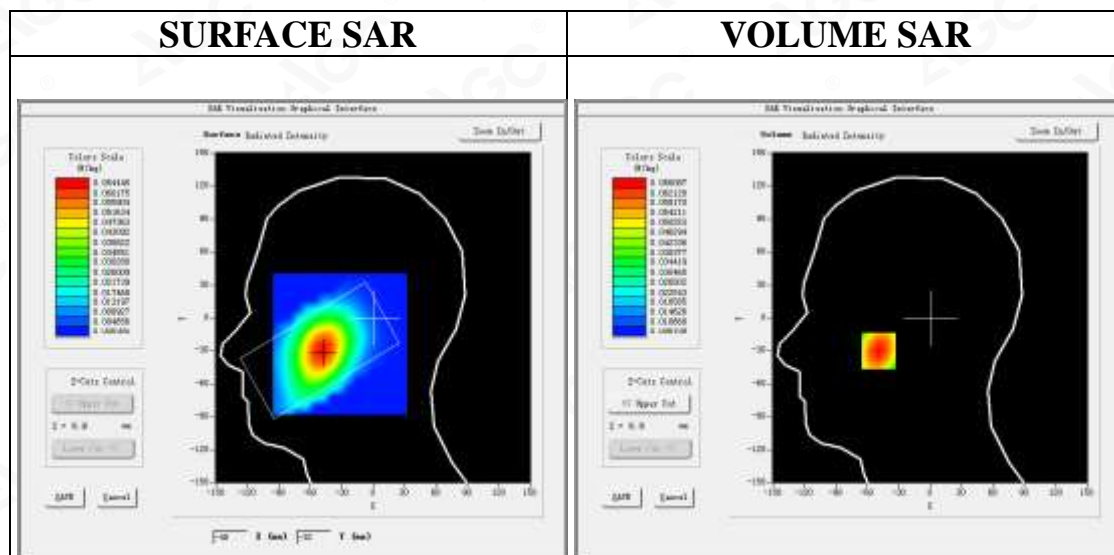
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/ LTE BAND 20 Mid-Touch-Right /Area Scan: Measurement grid:  $dx=8\text{mm}$ ,  $y=8\text{mm}$

Configuration/ LTE BAND 20 Mid-Touch-Right /Zoom Scan: Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

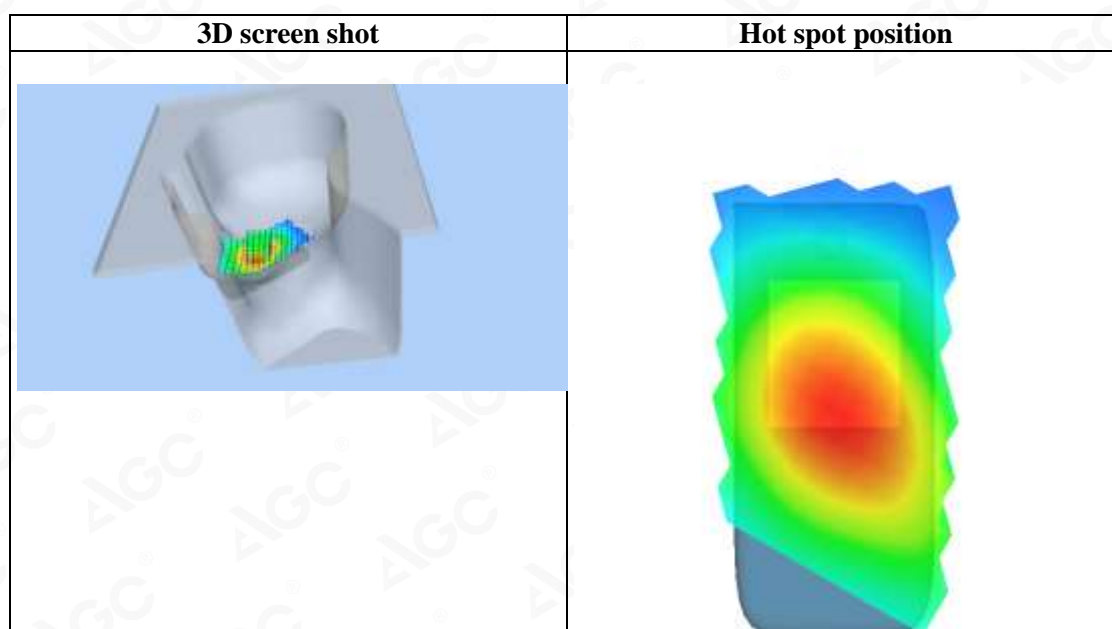
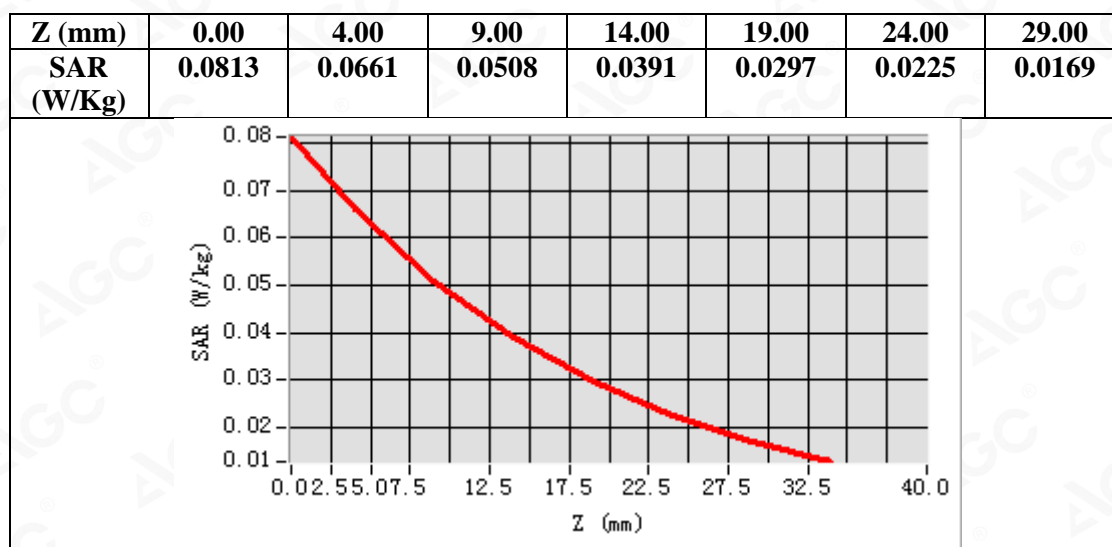
Area Scan	$dx=8\text{mm}$ $dy=8\text{mm}$ , $h= 5.00 \text{ mm}$
ZoomScan	$5 \times 5 \times 7$ , $dx=8\text{mm}$ $dy=8\text{mm}$ $dz=5\text{mm}$
Phantom	Right head
Device Position	Cheek
Band	LTE BAND 20
Channels	Middle
Signal	OFDM (Crest factor: 1.0)



Maximum location: X=-49.00, Y=-30.00

SAR Peak: 0.08 W/kg

SAR 10g (W/Kg)	0.045264
SAR 1g (W/Kg)	0.063578



Test Laboratory: AGC Lab  
LTE Band 20 High-Touch-Right (1RB#0)  
DUT: Smart Phone; Type: NOTE 7

Date: Jun. 17,2020

Communication System: LTE; Communication System Band: LTE Band 20; Duty Cycle:1:1; Conv.F=5.26  
Frequency: 852MHz; Medium parameters used:  $f = 850\text{MHz}$ ;  $\sigma = 0.88 \text{ mho/m}$ ;  $\epsilon_r = 40.21$ ;  $\rho = 1000 \text{ kg/m}^3$  ;  
Phantom section: Right Section  
Ambient temperature ( $^{\circ}\text{C}$ ): 21.5, Liquid temperature ( $^{\circ}\text{C}$ ): 21.2

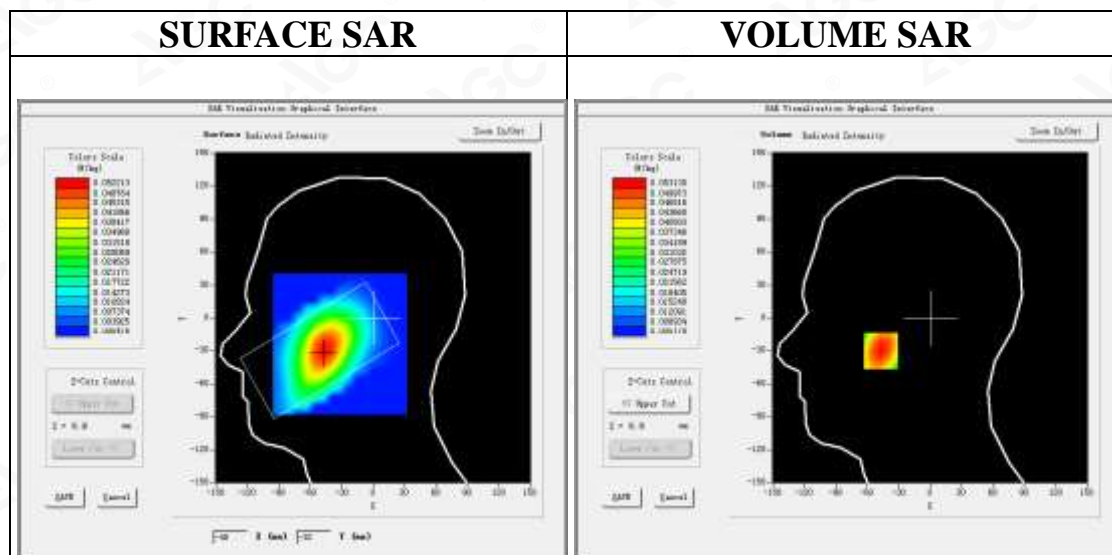
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/ LTE BAND 20 High-Touch-Right /Area Scan: Measurement grid:  $dx=8\text{mm}$ ,  $y=8\text{mm}$

Configuration/ LTE BAND 20 High-Touch-Right /Zoom Scan: Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

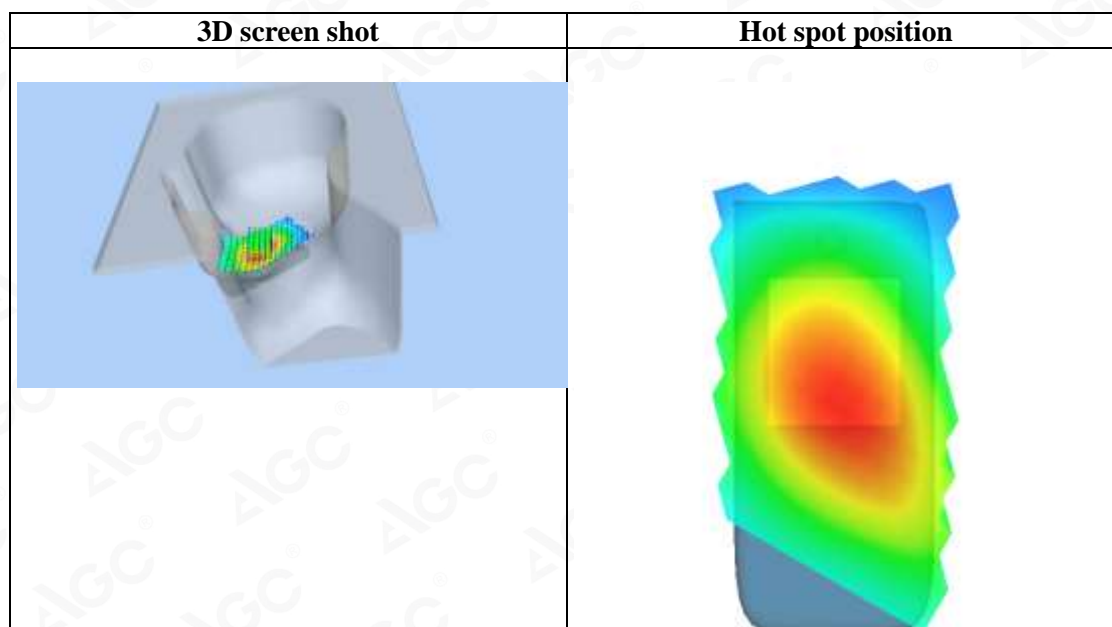
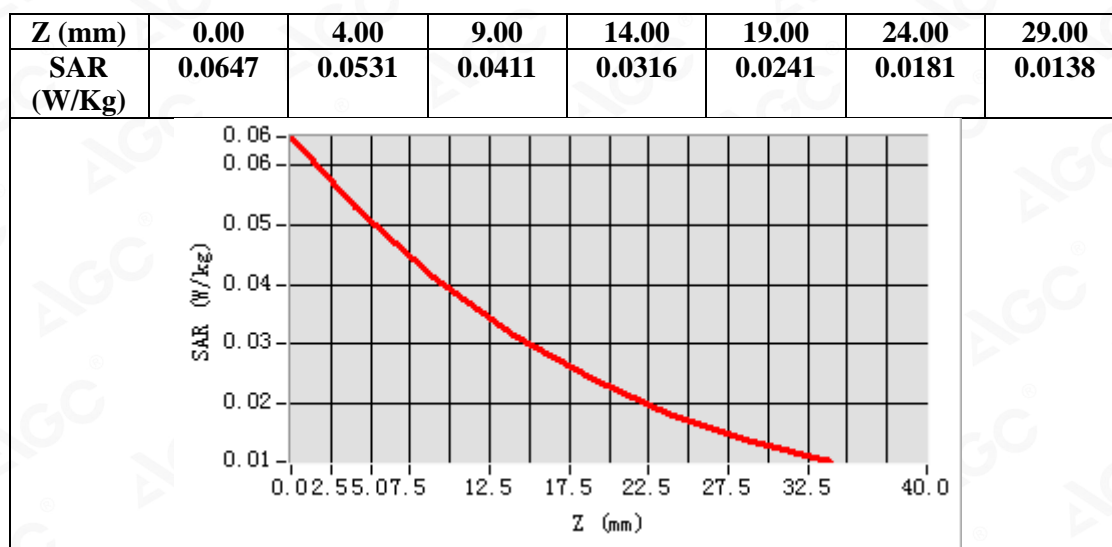
Area Scan	$dx=8\text{mm}$ $dy=8\text{mm}$ , $h= 5.00 \text{ mm}$
ZoomScan	$5 \times 5 \times 7$ , $dx=8\text{mm}$ $dy=8\text{mm}$ $dz=5\text{mm}$
Phantom	Right head
Device Position	Cheek
Band	LTE BAND 20
Channels	High
Signal	OFDM (Crest factor: 1.0)



Maximum location:  $X=-47.00$ ,  $Y=-30.00$

SAR Peak:  $0.06 \text{ W/kg}$

SAR 10g (W/Kg)	0.036798
SAR 1g (W/Kg)	0.051159



Test Laboratory: AGC Lab  
LTE Band 20 Mid-Body-Back (1RB#0)  
DUT: Smart Phone; Type: NOTE 7

Date: Jun. 17,2020

Communication System: LTE; Communication System Band: LTE Band 20; Duty Cycle:1:1; Conv.F=5.26  
Frequency: 847MHz; Medium parameters used:  $f = 850\text{MHz}$ ;  $\sigma = 0.88 \text{ mho/m}$ ;  $\epsilon_r = 40.21$ ;  $\rho = 1000 \text{ kg/m}^3$  ;  
Phantom section: Flat Section  
Ambient temperature ( $^{\circ}\text{C}$ ): 21.5, Liquid temperature ( $^{\circ}\text{C}$ ): 21.2

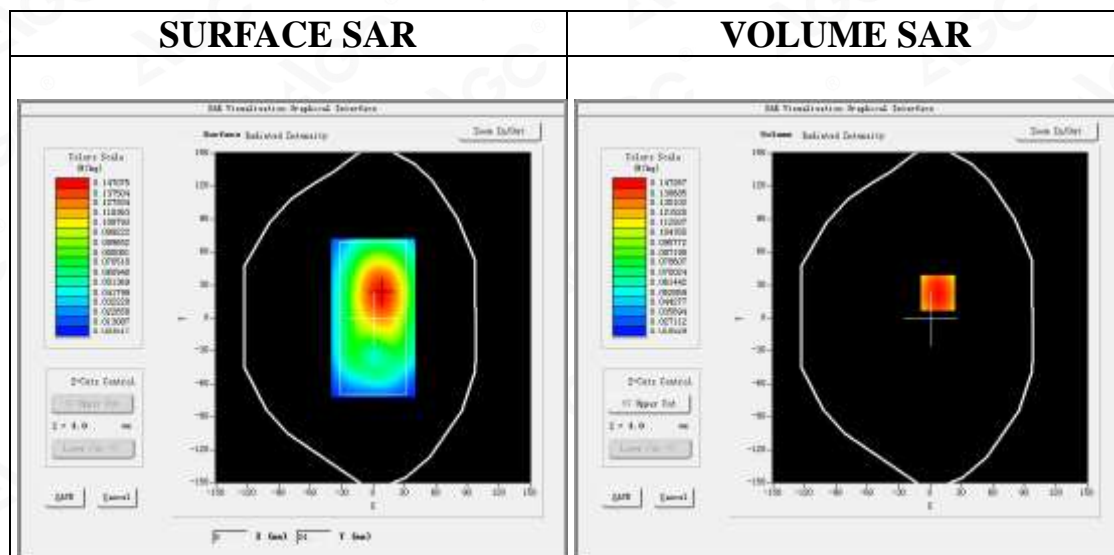
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/ LTE BAND 20 Mid-Body-Back /Area Scan: Measurement grid:  $dx=8\text{mm}$ ,  $y=8\text{mm}$

Configuration/ LTE BAND 20 Mid-Body-Back /Zoom Scan: Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

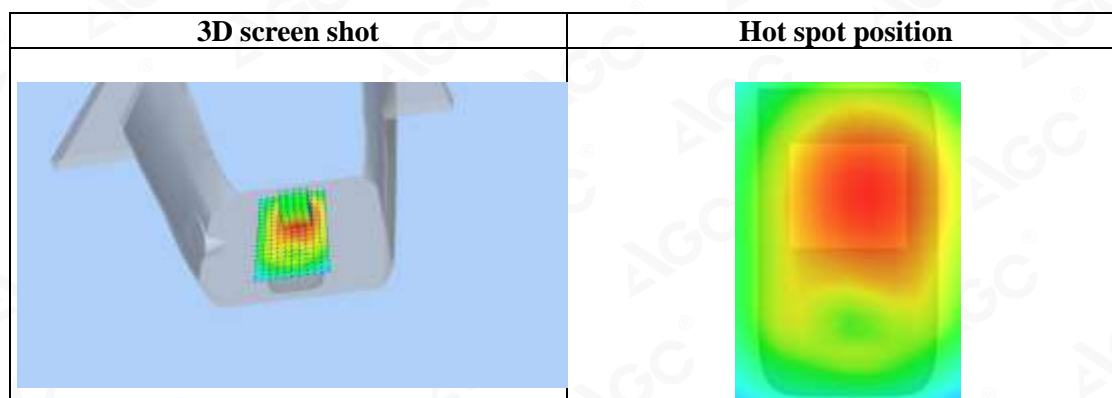
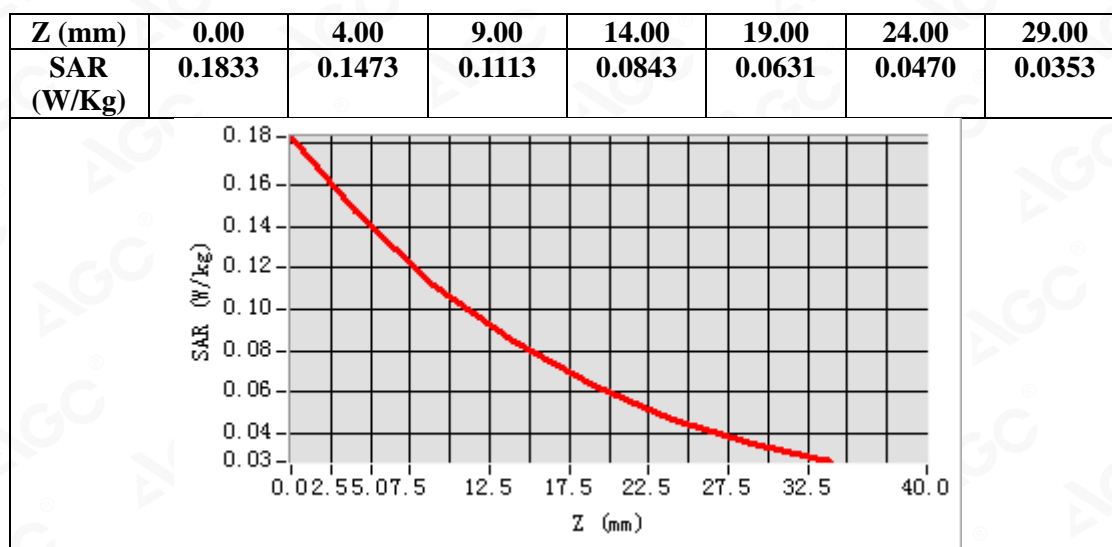
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Body Back
Band	LTE BAND 20
Channels	Middle
Signal	OFDM (Crest factor: 1.0)



Maximum location: X=7.00, Y=23.00

SAR Peak: 0.18 W/kg

SAR 10g (W/Kg)	0.103192
SAR 1g (W/Kg)	0.142444



Test Laboratory: AGC Lab  
LTE Band 20 Low-Hotspot-Back (1RB#0)  
DUT: Smart Phone; Type: NOTE 7

Date: Jun. 17,2020

Communication System: LTE; Communication System Band: LTE Band 20; Duty Cycle:1:1; Conv.F=5.26  
Frequency: 842MHz; Medium parameters used:  $f = 850\text{MHz}$ ;  $\sigma = 0.88 \text{ mho/m}$ ;  $\epsilon_r = 40.21$ ;  $\rho = 1000 \text{ kg/m}^3$  ;  
Phantom section: Flat Section  
Ambient temperature ( $^{\circ}\text{C}$ ): 21.5, Liquid temperature ( $^{\circ}\text{C}$ ): 21.2

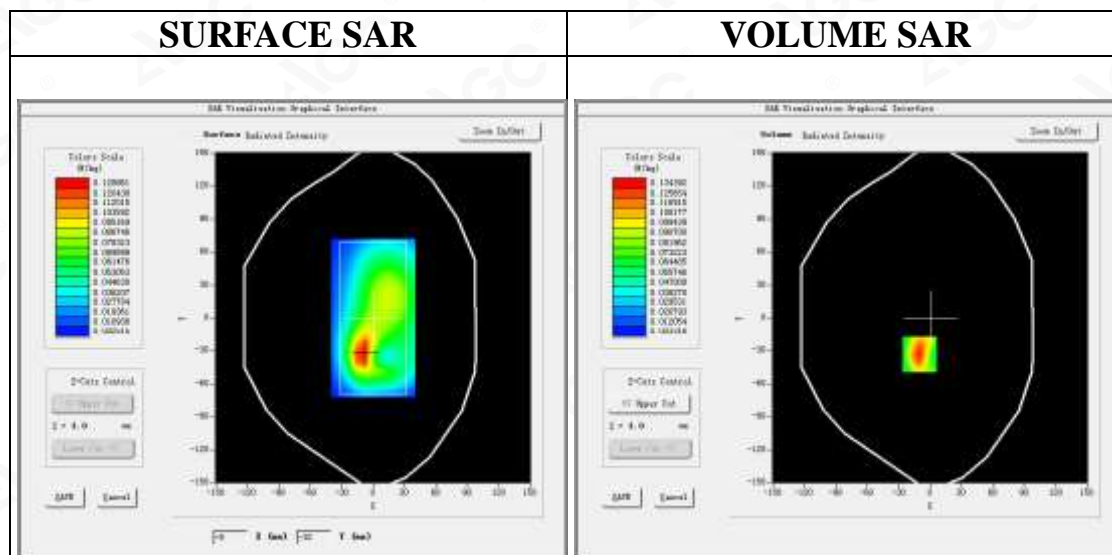
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/ LTE BAND 20 Low-Hotspot-Back /Area Scan: Measurement grid:  $dx=8\text{mm}$ ,  $y=8\text{mm}$

Configuration/ LTE BAND 20 Low-Hotspot-Back /Zoom Scan: Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

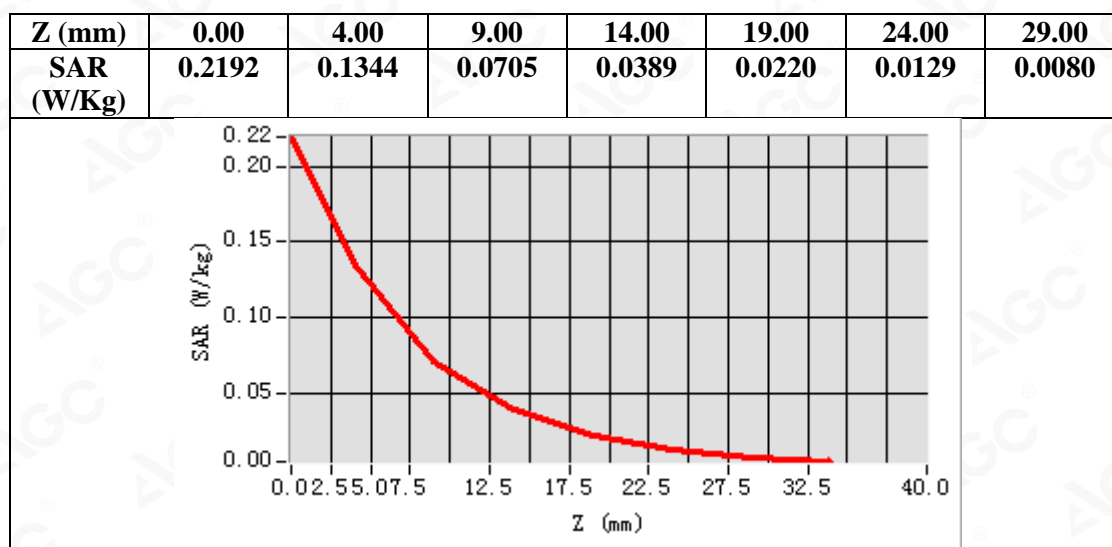
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Hotspot Back
Band	LTE BAND 20
Channels	Low
Signal	OFDM (Crest factor: 1.0)



Maximum location: X=-10.00, Y=-33.00

SAR Peak: 0.22 W/kg

SAR 10g (W/Kg)	0.067192
SAR 1g (W/Kg)	0.127283



Test Laboratory: AGC Lab  
LTE Band 20 High-Hotspot-Back (1RB#0)  
DUT: Smart Phone; Type: NOTE 7

Date: Jun. 17,2020

Communication System: LTE; Communication System Band: LTE Band 20; Duty Cycle:1:1; Conv.F=5.26  
Frequency: 852MHz; Medium parameters used:  $f = 850\text{MHz}$ ;  $\sigma = 0.88 \text{ mho/m}$ ;  $\epsilon_r = 40.21$ ;  $\rho = 1000 \text{ kg/m}^3$  ;  
Phantom section: Flat Section  
Ambient temperature ( $^{\circ}\text{C}$ ): 21.5, Liquid temperature ( $^{\circ}\text{C}$ ): 21.2

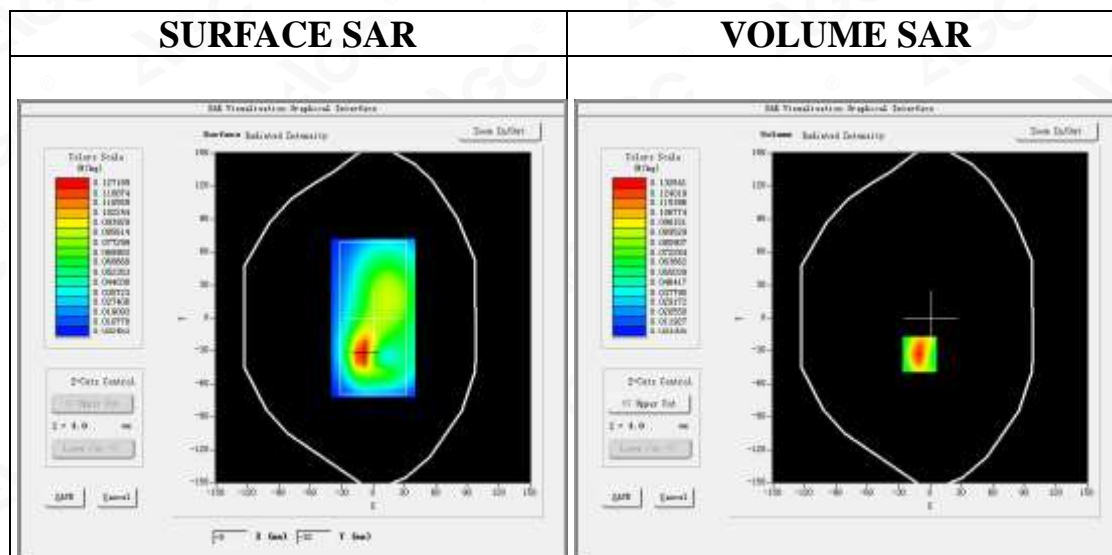
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/ LTE BAND 20 High-Hotspot-Back /Area Scan: Measurement grid:  $dx=8\text{mm}$ ,  $y=8\text{mm}$

Configuration/ LTE BAND 20 High-Hotspot-Back /Zoom Scan: Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

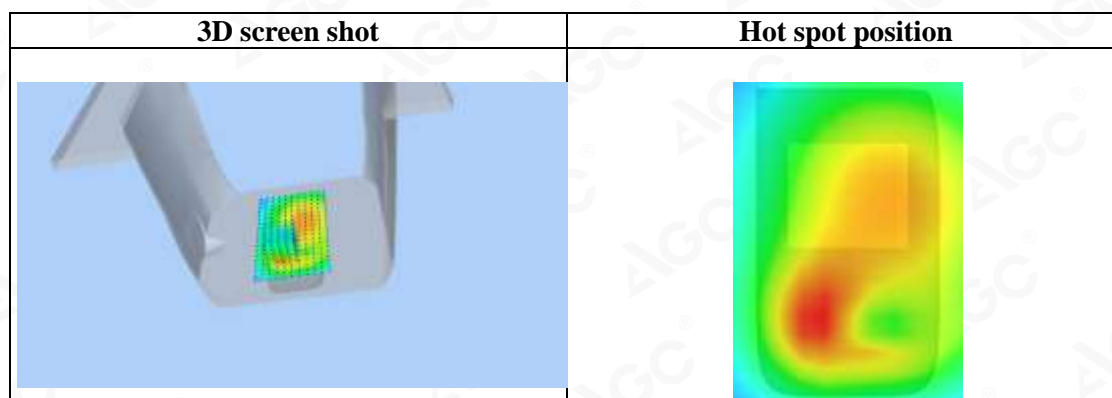
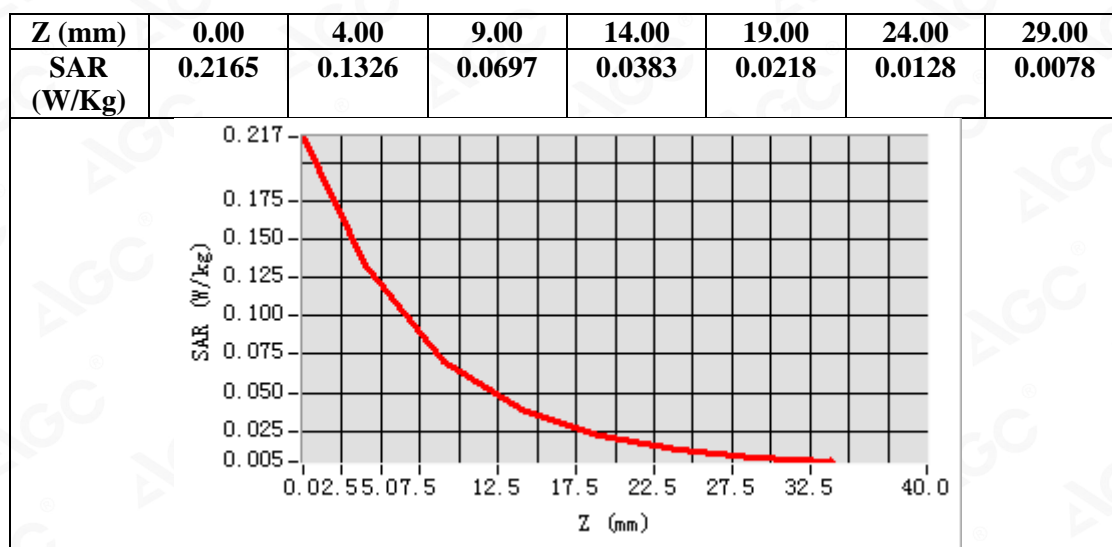
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Hotspot Back
Band	LTE BAND 20
Channels	High
Signal	OFDM (Crest factor: 1.0)



Maximum location: X=-10.00, Y=-33.00

SAR Peak: 0.22 W/kg

SAR 10g (W/Kg)	0.066347
SAR 1g (W/Kg)	0.125733



Test Laboratory: AGC Lab  
LTE Band 20 Mid-Limbs-Back (1RB#0)  
DUT: Smart Phone; Type: NOTE 7

Date: Jun. 17,2020

Communication System: LTE; Communication System Band: LTE Band 20; Duty Cycle:1:1; Conv.F=5.26  
Frequency: 847MHz; Medium parameters used:  $f = 850\text{MHz}$ ;  $\sigma = 0.88 \text{ mho/m}$ ;  $\epsilon_r = 40.21$ ;  $\rho = 1000 \text{ kg/m}^3$  ;  
Phantom section: Flat Section  
Ambient temperature ( $^{\circ}\text{C}$ ): 21.5, Liquid temperature ( $^{\circ}\text{C}$ ): 21.2

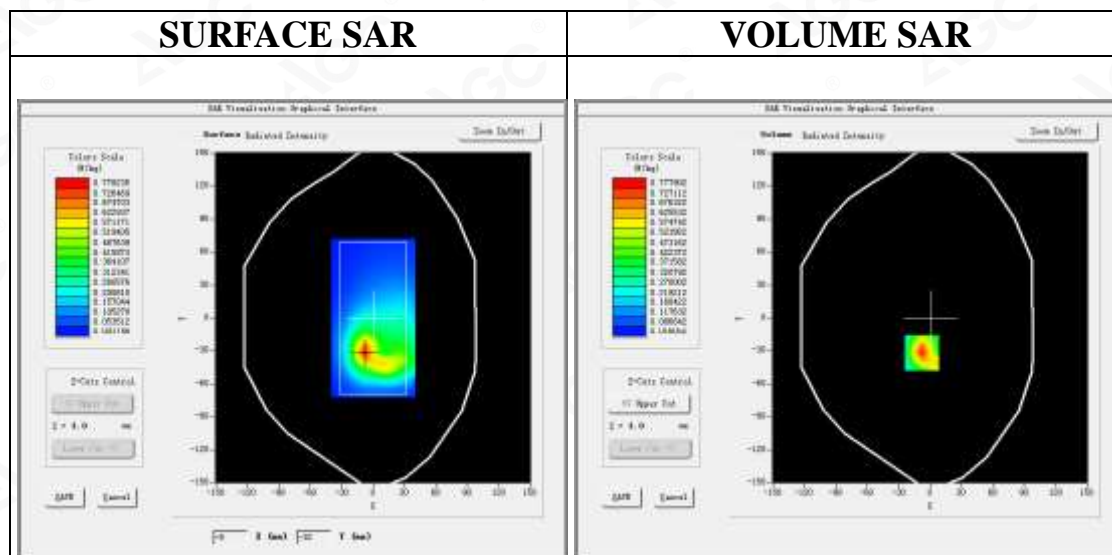
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/ LTE BAND 20 Mid-Limbs-Back /Area Scan: Measurement grid:  $dx=8\text{mm}$ ,  $y=8\text{mm}$

Configuration/ LTE BAND 20 Mid-Limbs-Back /Zoom Scan: Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

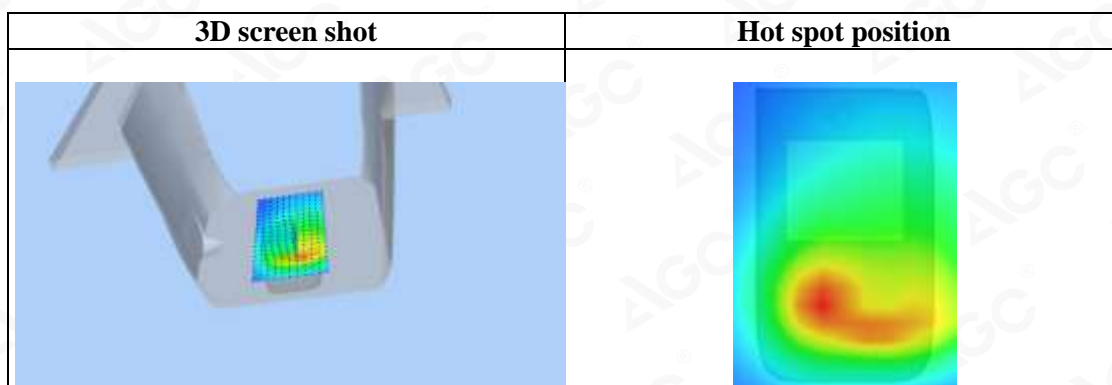
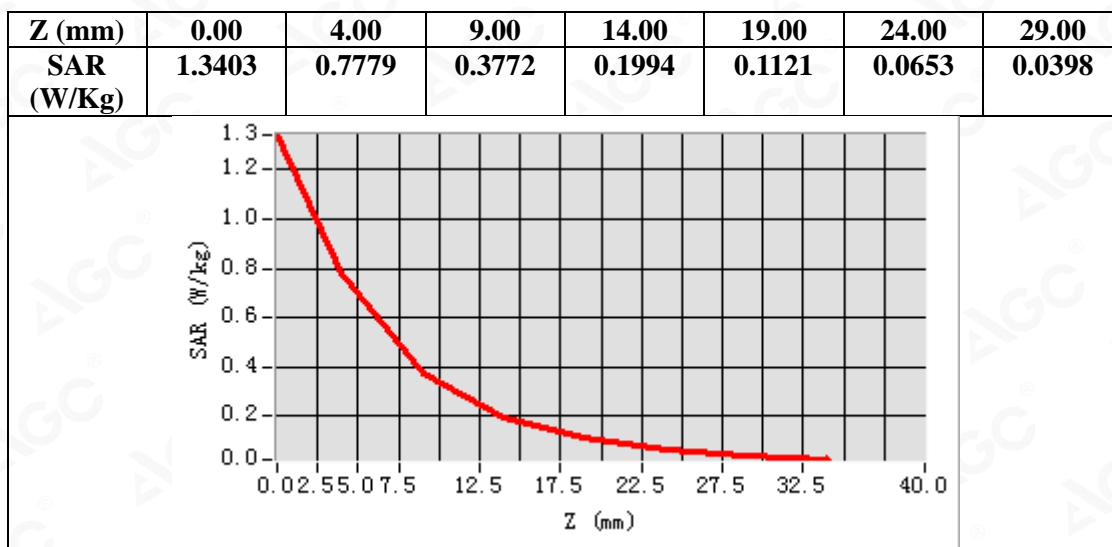
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Limbs Back
Band	LTE BAND 20
Channels	Middle
Signal	OFDM (Crest factor: 1.0)



Maximum location: X=-8.00, Y=-32.00

SAR Peak: 1.32 W/kg

SAR 10g (W/Kg)	0.360113
SAR 1g (W/Kg)	0.722148



Test Laboratory: AGC Lab  
LTE Band 20 High-Limbs-Back (1RB#0)  
DUT: Smart Phone; Type: NOTE 7

Date: Jun. 17,2020

Communication System: LTE; Communication System Band: LTE Band 20; Duty Cycle:1:1; Conv.F=5.26  
Frequency: 852MHz; Medium parameters used:  $f = 850\text{MHz}$ ;  $\sigma = 0.88 \text{ mho/m}$ ;  $\epsilon_r = 40.21$ ;  $\rho = 1000 \text{ kg/m}^3$  ;  
Phantom section: Flat Section  
Ambient temperature ( $^{\circ}\text{C}$ ): 21.5, Liquid temperature ( $^{\circ}\text{C}$ ): 21.2

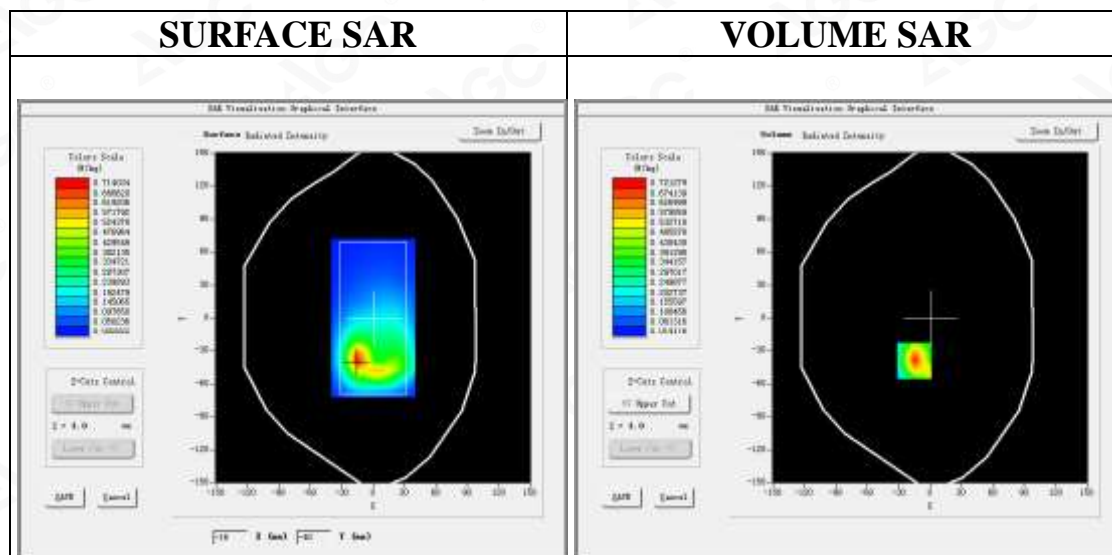
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/ LTE BAND 20 High-Limbs-Back /Area Scan: Measurement grid:  $dx=8\text{mm}$ ,  $y=8\text{mm}$

Configuration/ LTE BAND 20 High-Limbs-Back /Zoom Scan: Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$

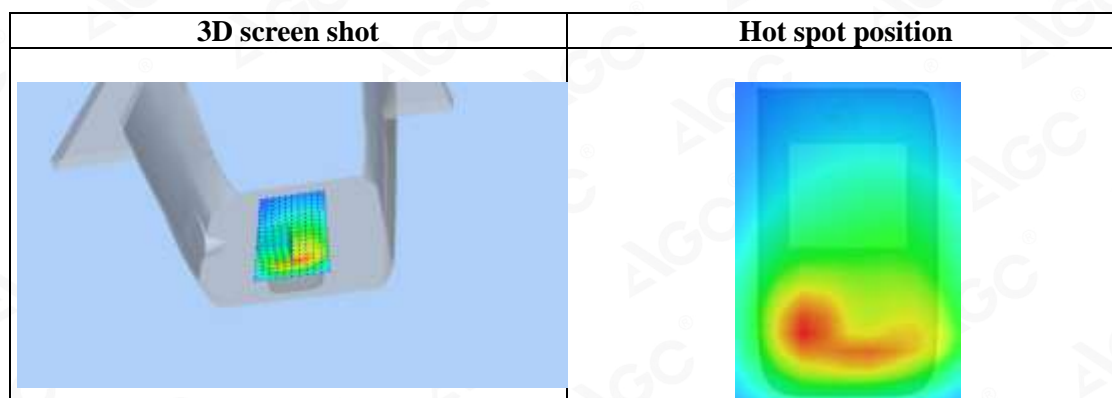
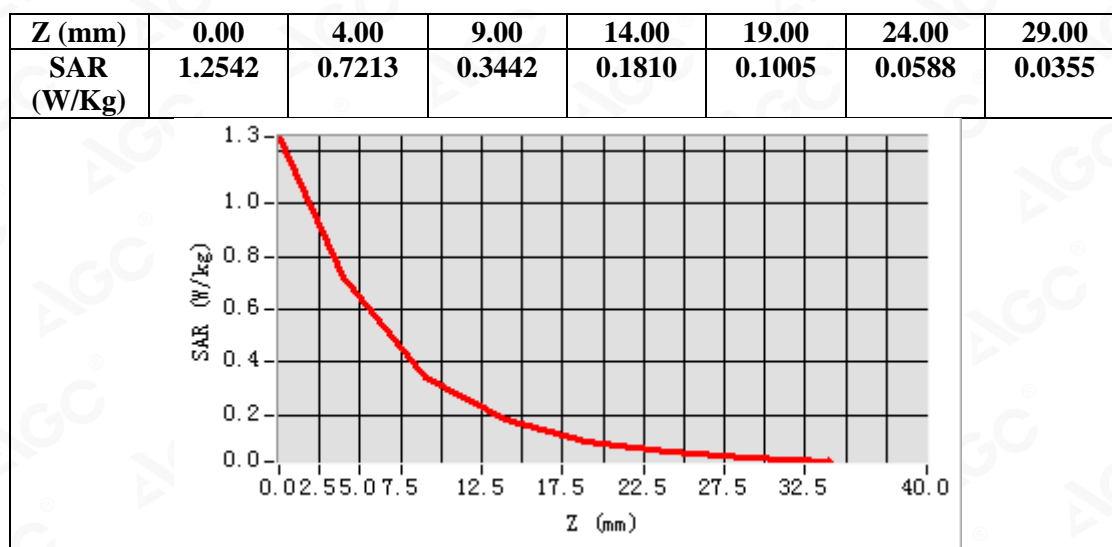
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Limbs Back
Band	LTE BAND 20
Channels	High
Signal	OFDM (Crest factor: 1.0)



Maximum location: X=-15.00, Y=-39.00

SAR Peak: 1.24 W/kg

SAR 10g (W/Kg)	0.326245
SAR 1g (W/Kg)	0.668519



## WIFI MODE

Test Laboratory: AGC Lab

802.11b High- Touch-Right

DUT: Smart Phone; Type: NOTE 7

Date: Jun. 18,2020

Communication System: Wi-Fi; Communication System Band: 802.11b; Duty Cycle: 1:1; Conv.F=4.95;  
Frequency: 2472 MHz; Medium parameters used:  $f = 2450$  MHz;  $\sigma = 1.75$  mho/m;  $\epsilon_r = 38.65$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Right Section  
Ambient temperature (°C):21.2, Liquid temperature (°C): 21.0

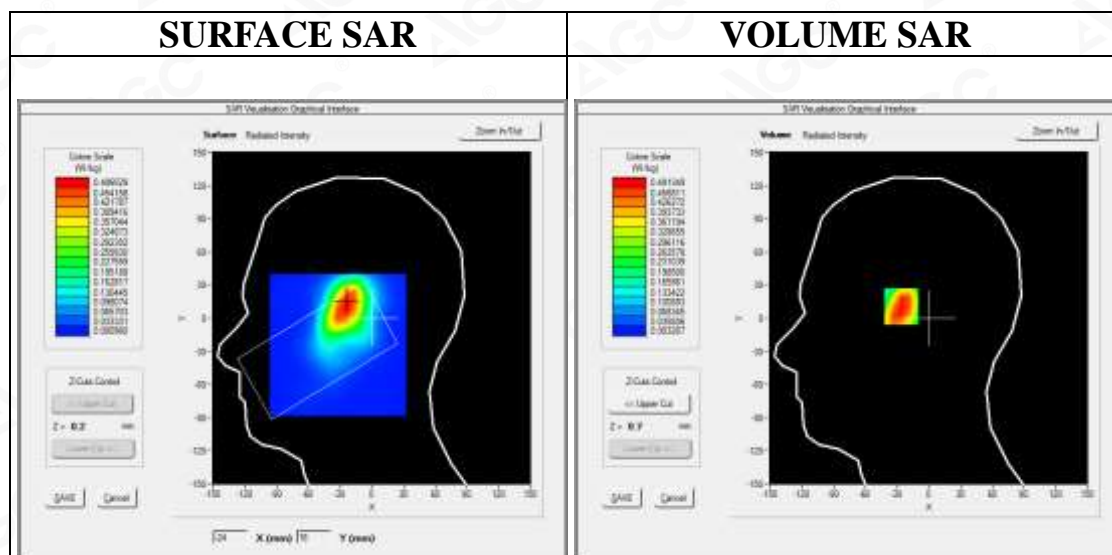
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/802.11b High- Touch-Right /Area Scan: Measurement grid: dx=8mm, dy=8mm

Configuration/802.11b High- Touch-Right /Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Right head
Device Position	Cheek
Band	2450MHz
Channels	High
Signal	Crest factor: 1.0



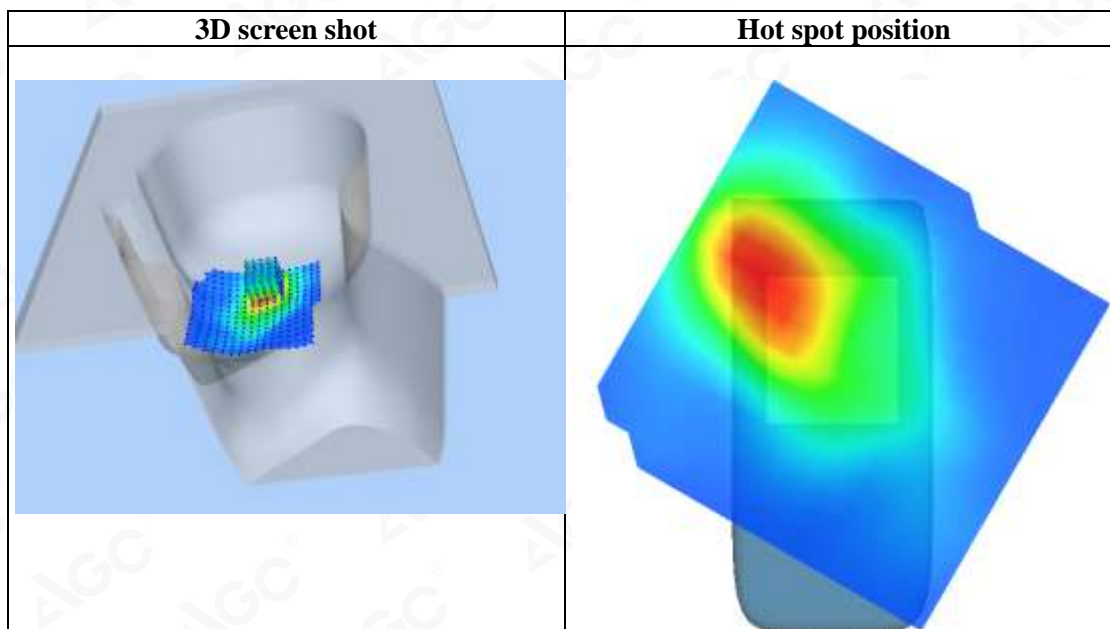
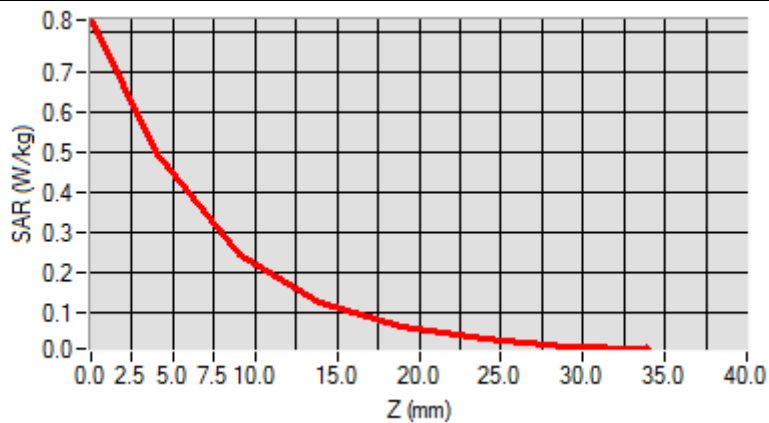
Maximum location: X=-24.00, Y=13.00

SAR Peak: 0.88 W/kg

SAR 10g (W/Kg)	0.241788
SAR 1g (W/Kg)	0.481401



Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.8281	0.4913	0.2415	0.1233	0.0608	0.0309	0.0155



Test Laboratory: AGC Lab  
802.11b Mid-Body-Worn- Back  
DUT: Smart Phone; Type: NOTE 7

Date: Jun. 18,2020

Communication System: Wi-Fi; Communication System Band: 802.11b; Duty Cycle: 1:1; Conv.F=4.95;  
Frequency: 2442 MHz; Medium parameters used:  $f = 2450$  MHz;  $\sigma = 1.75$  mho/m;  $\epsilon_r = 38.65$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Flat Section  
Ambient temperature (°C):21.2, Liquid temperature (°C): 21.0

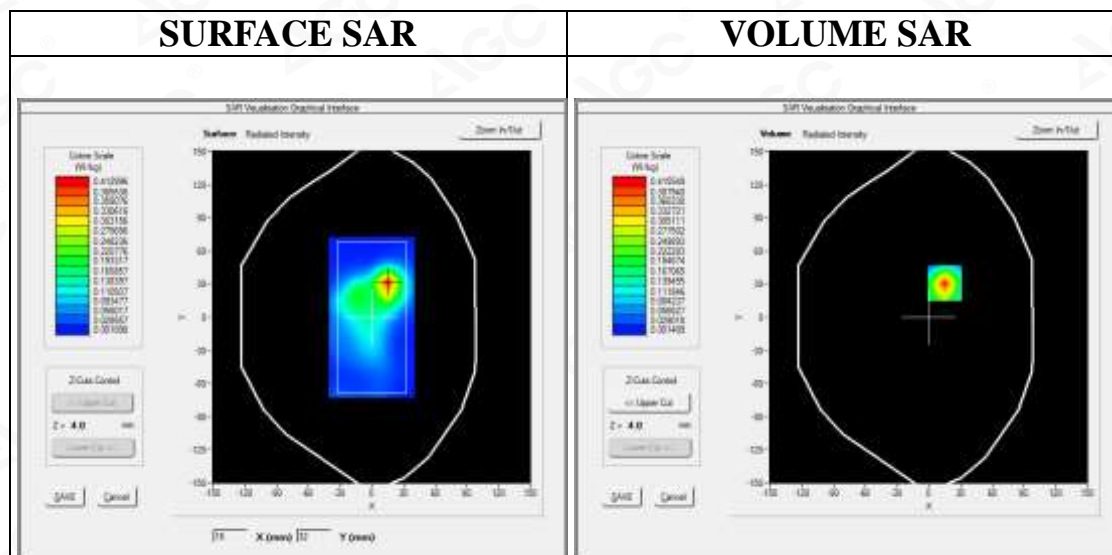
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/802.11b Mid- Body- Back /Area Scan: Measurement grid: dx=8mm, dy=8mm

Configuration/802.11b Mid- Body- Back /Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

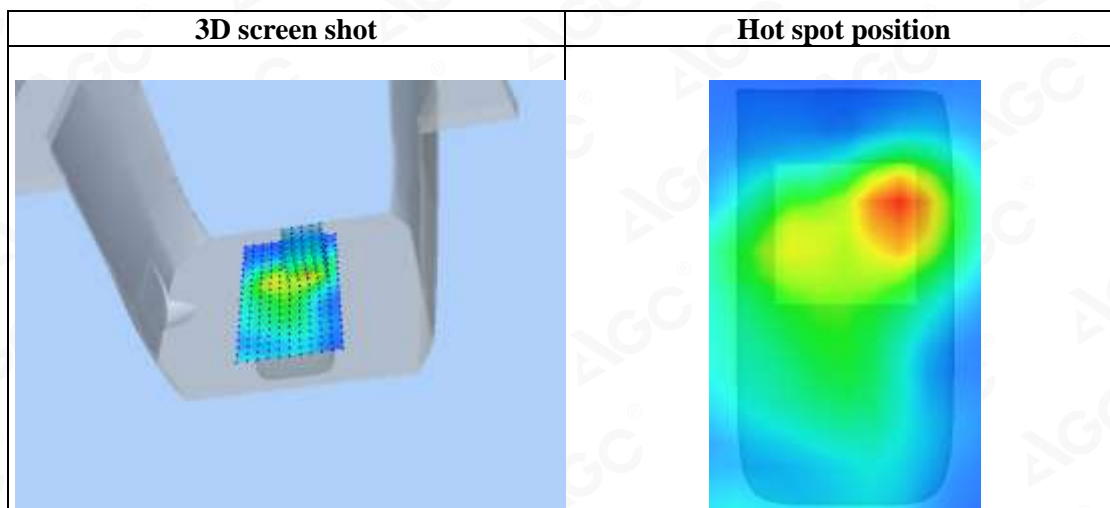
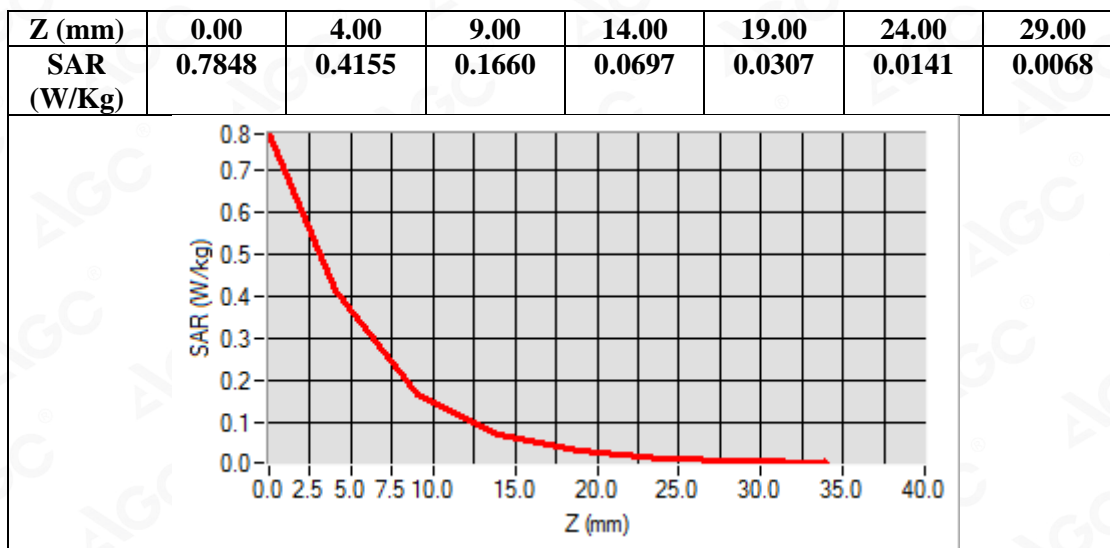
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Body Back
Band	2450MHz
Channels	Middle
Signal	Crest factor: 1.0



Maximum location: X=15.00, Y=31.00

SAR Peak: 0.77 W/kg

SAR 10g (W/Kg)	0.159091
SAR 1g (W/Kg)	0.381495



Test Laboratory: AGC Lab  
802.11b High-Body-Worn- Back  
DUT: Smart Phone; Type: NOTE 7

Date: Jun. 18,2020

Communication System: Wi-Fi; Communication System Band: 802.11b; Duty Cycle: 1:1; Conv.F=4.95;  
Frequency: 2472 MHz; Medium parameters used:  $f = 2450$  MHz;  $\sigma = 1.75$  mho/m;  $\epsilon_r = 38.65$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Flat Section  
Ambient temperature (°C):21.2, Liquid temperature (°C): 21.0

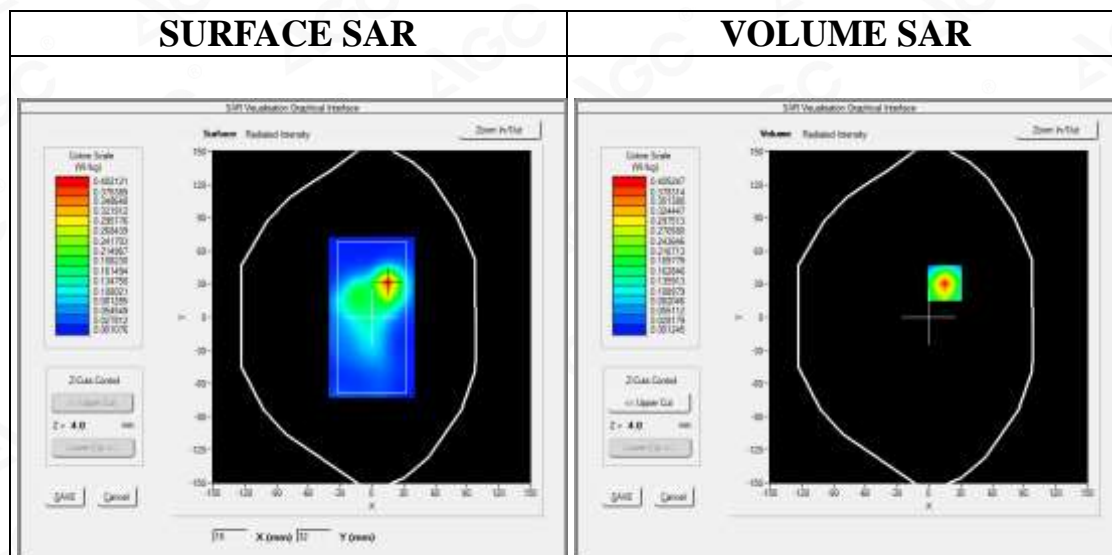
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/802.11b High- Body- Back /Area Scan: Measurement grid: dx=8mm, dy=8mm

Configuration/802.11b High- Body- Back /Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

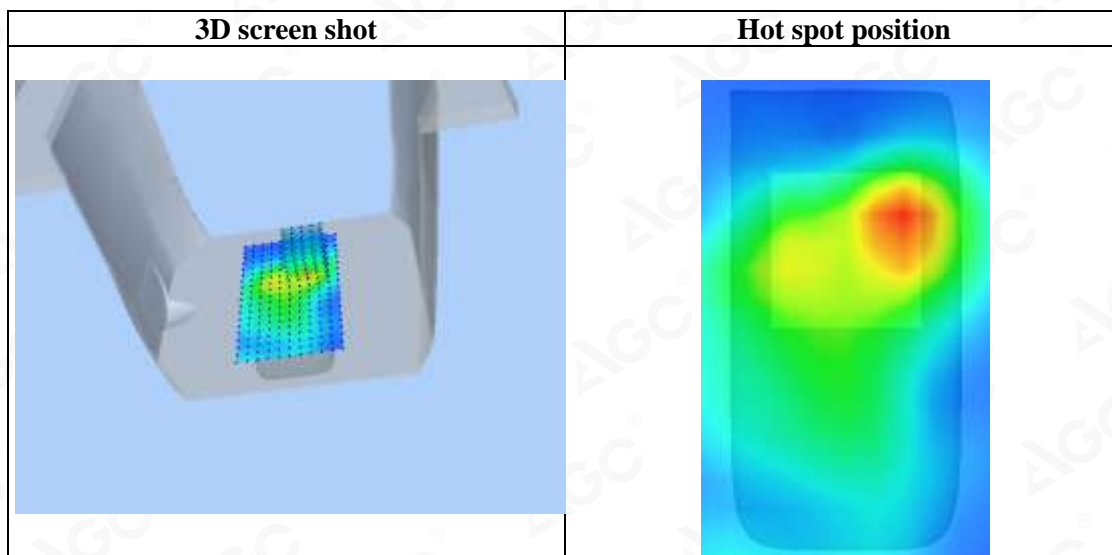
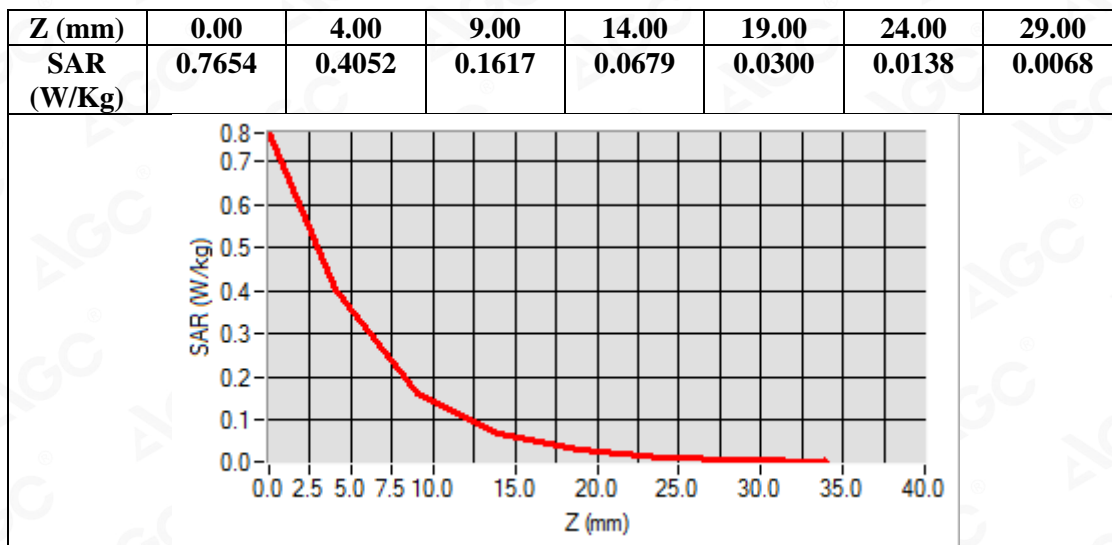
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Body Back
Band	2450MHz
Channels	High
Signal	Crest factor: 1.0



Maximum location: X=15.00, Y=31.00

SAR Peak: 0.75 W/kg

SAR 10g (W/Kg)	0.155189
SAR 1g (W/Kg)	0.372046



**Test Laboratory: AGC Lab**  
**802.11b Mid-Hotspot- Front**  
**DUT: Smart Phone; Type: NOTE 7**

**Date: Jun. 18,2020**

Communication System: Wi-Fi; Communication System Band: 802.11b; Duty Cycle: 1:1; Conv.F=4.95;  
Frequency: 2442 MHz; Medium parameters used:  $f = 2450$  MHz;  $\sigma = 1.75$  mho/m;  $\epsilon_r = 38.65$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Flat Section  
Ambient temperature (°C):21.2, Liquid temperature (°C): 21.0

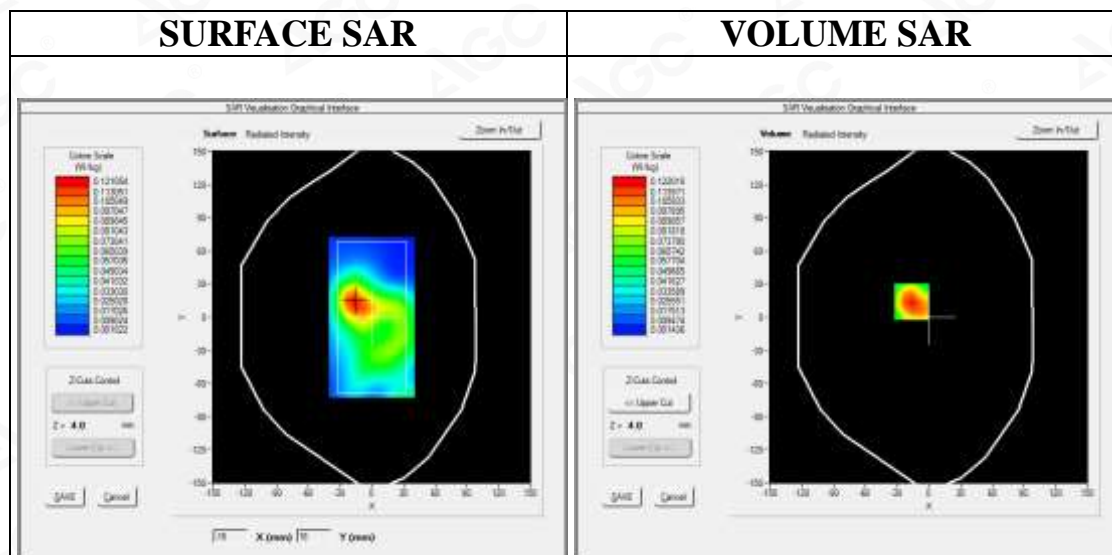
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

**Configuration/802.11b Mid- Hotspot- Front /Area Scan:** Measurement grid: dx=8mm, dy=8mm

**Configuration/802.11b Mid- Hotspot- Front /Zoom Scan:** Measurement grid: dx=8mm,dy=8mm, dz=5mm;

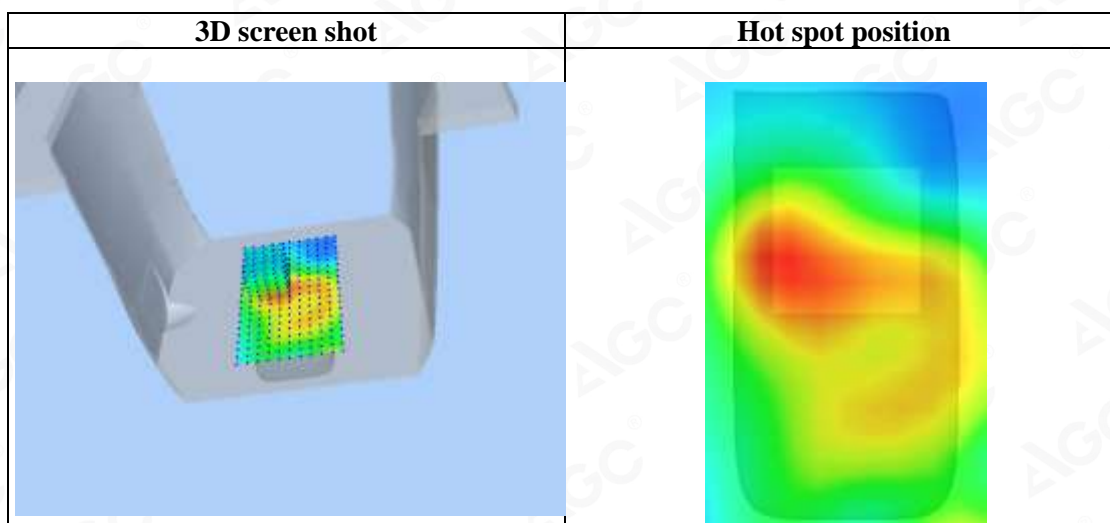
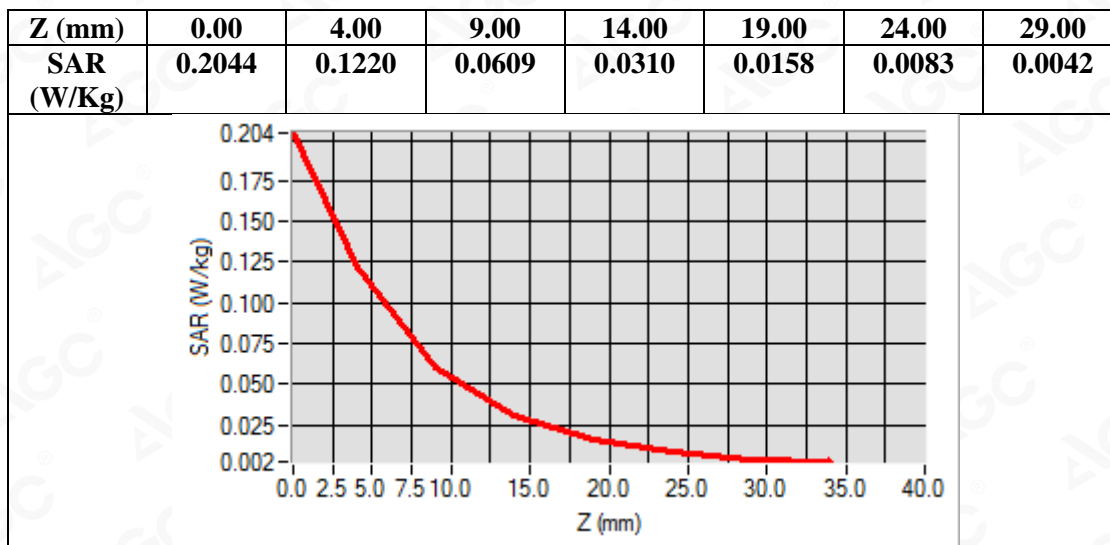
<b>Area Scan</b>	surf_sam_plan.txt, h= 5.00 mm
<b>ZoomScan</b>	5x5x7,dx=8mm dy=8mm dz=5mm
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Hotspot Front
<b>Band</b>	2450MHz
<b>Channels</b>	Middle
<b>Signal</b>	Crest factor: 1.0



**Maximum location: X=-16.00, Y=14.00**

**SAR Peak: 0.21 W/kg**

<b>SAR 10g (W/Kg)</b>	0.059579
<b>SAR 1g (W/Kg)</b>	0.117717



**Test Laboratory: AGC Lab**  
**802.11b High-Hotspot- Front**  
**DUT: Smart Phone; Type: NOTE 7**

**Date: Jun. 18,2020**

Communication System: Wi-Fi; Communication System Band: 802.11b; Duty Cycle: 1:1; Conv.F=4.95;  
Frequency: 2472 MHz; Medium parameters used:  $f = 2450$  MHz;  $\sigma = 1.75$  mho/m;  $\epsilon_r = 38.65$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Flat Section  
Ambient temperature (°C):21.2, Liquid temperature (°C): 21.0

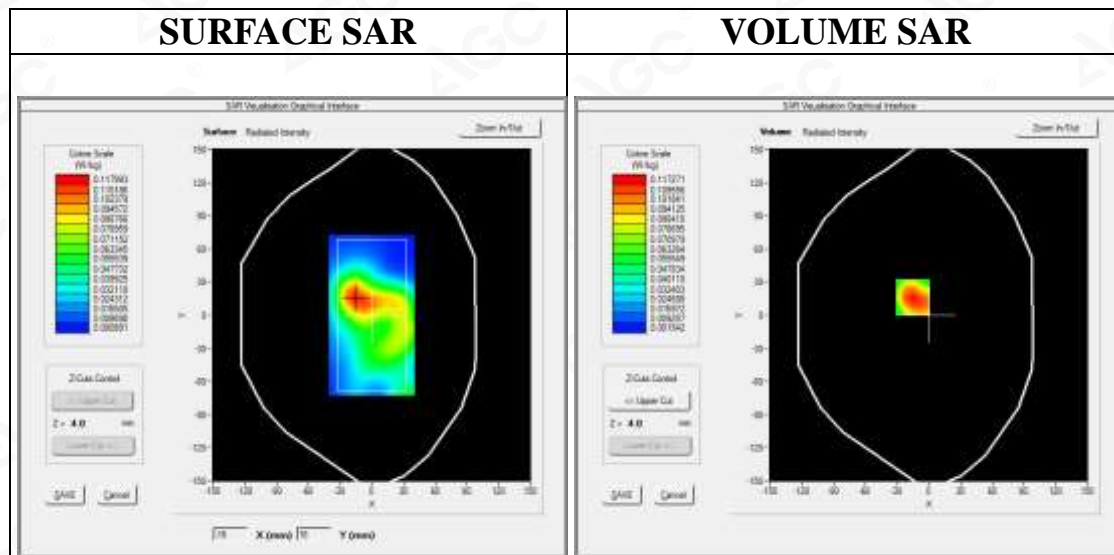
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

**Configuration/802.11b High- Hotspot- Front /Area Scan:** Measurement grid: dx=8mm, dy=8mm

**Configuration/802.11b High- Hotspot- Front /Zoom Scan:** Measurement grid: dx=8mm,dy=8mm, dz=5mm;

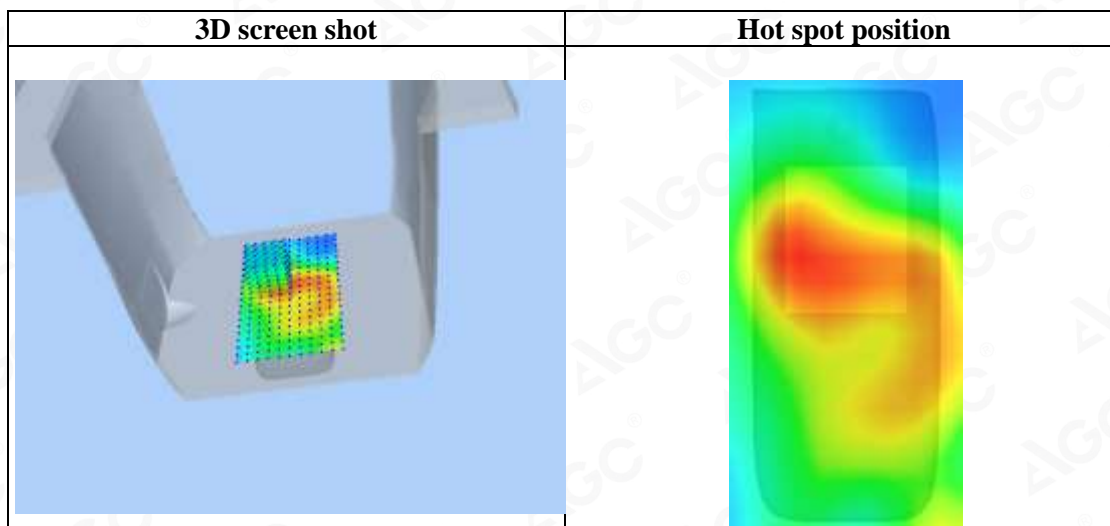
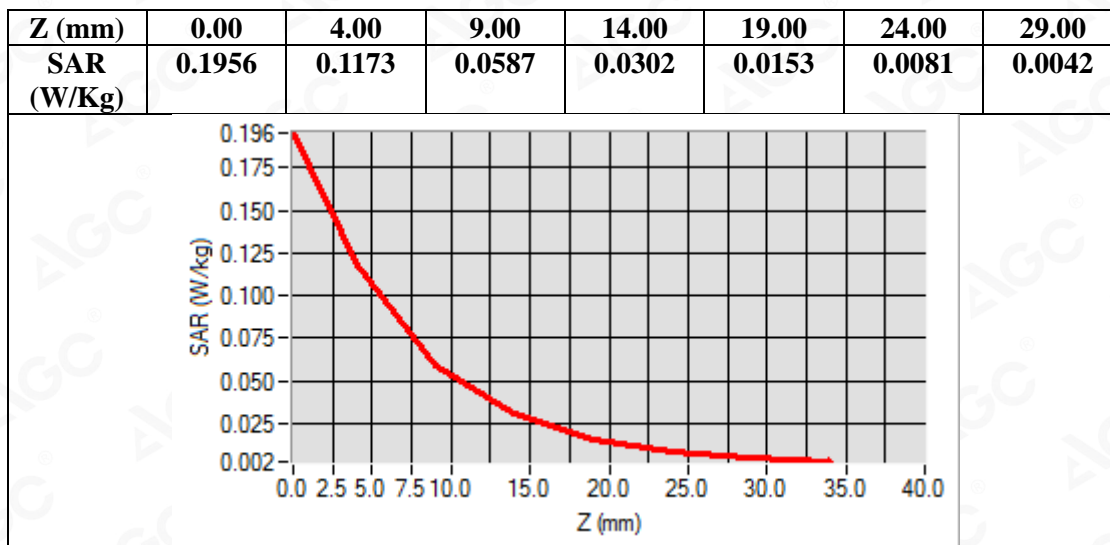
<b>Area Scan</b>	surf_sam_plan.txt, h= 5.00 mm
<b>ZoomScan</b>	5x5x7,dx=8mm dy=8mm dz=5mm
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Hotspot Front
<b>Band</b>	2450MHz
<b>Channels</b>	High
<b>Signal</b>	Crest factor: 1.0



**Maximum location: X=-15.00, Y=16.00**

**SAR Peak: 0.20 W/kg**

<b>SAR 10g (W/Kg)</b>	0.057941
<b>SAR 1g (W/Kg)</b>	0.112947



Test Laboratory: AGC Lab  
802.11b High-Limbs Edge 4  
DUT: Smart Phone; Type: NOTE 7

Date: Jun. 18,2020

Communication System: Wi-Fi; Communication System Band: 802.11b; Duty Cycle: 1:1; Conv.F=4.95;  
Frequency: 2472 MHz; Medium parameters used:  $f = 2450$  MHz;  $\sigma = 1.75$  mho/m;  $\epsilon_r = 38.65$ ;  $\rho = 1000$  kg/m<sup>3</sup> ;  
Phantom section: Flat Section  
Ambient temperature (°C):21.2, Liquid temperature (°C): 21.0

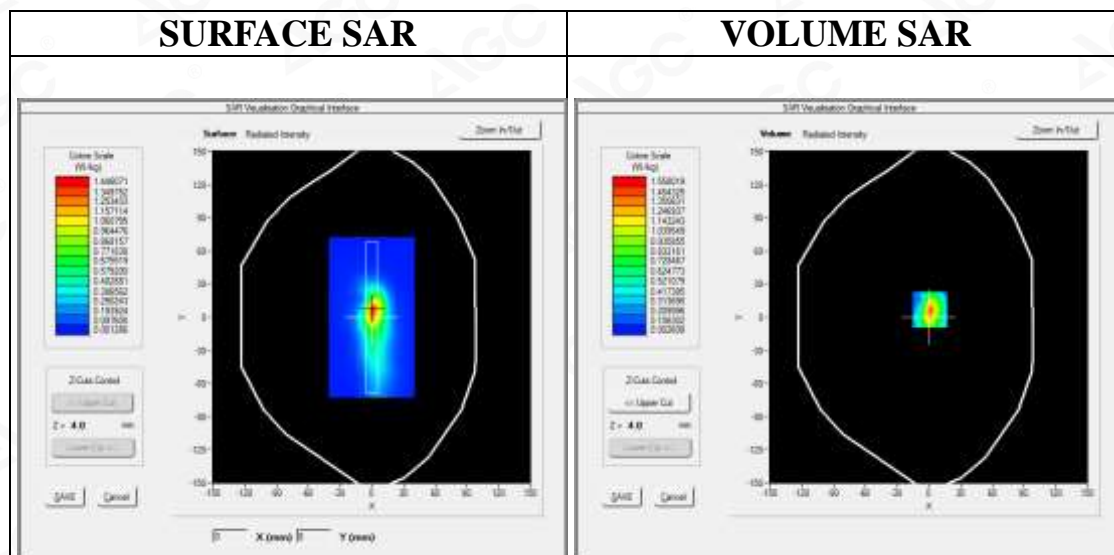
SATIMO Configuration:

- Probe: SSE5; Calibrated: Dec.18,2019; Serial No.: SN 22/12 EP159
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4\_02\_35

Configuration/802.11b High- Limbs Edge 4 /Area Scan: Measurement grid: dx=8mm, dy=8mm

Configuration/802.11b High- Limbs Edge 4 /Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

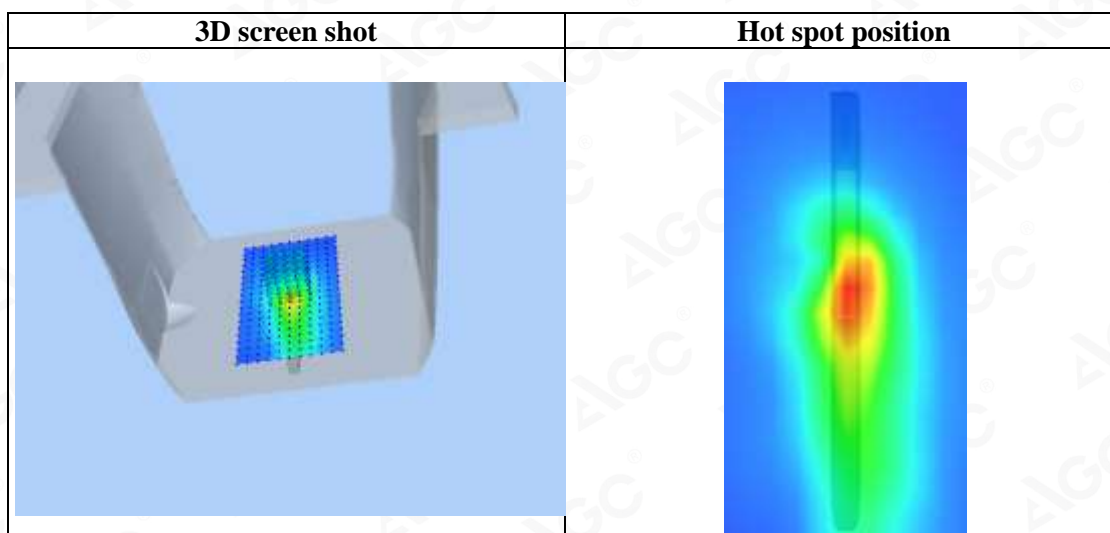
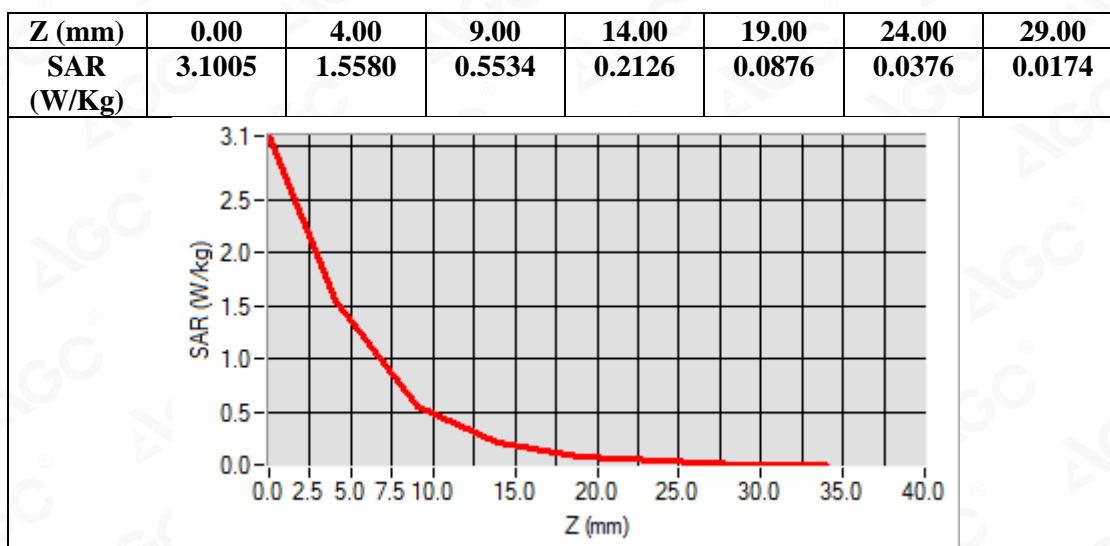
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Limbs Edge 4
Band	2450MHz
Channels	High
Signal	Crest factor: 1.0



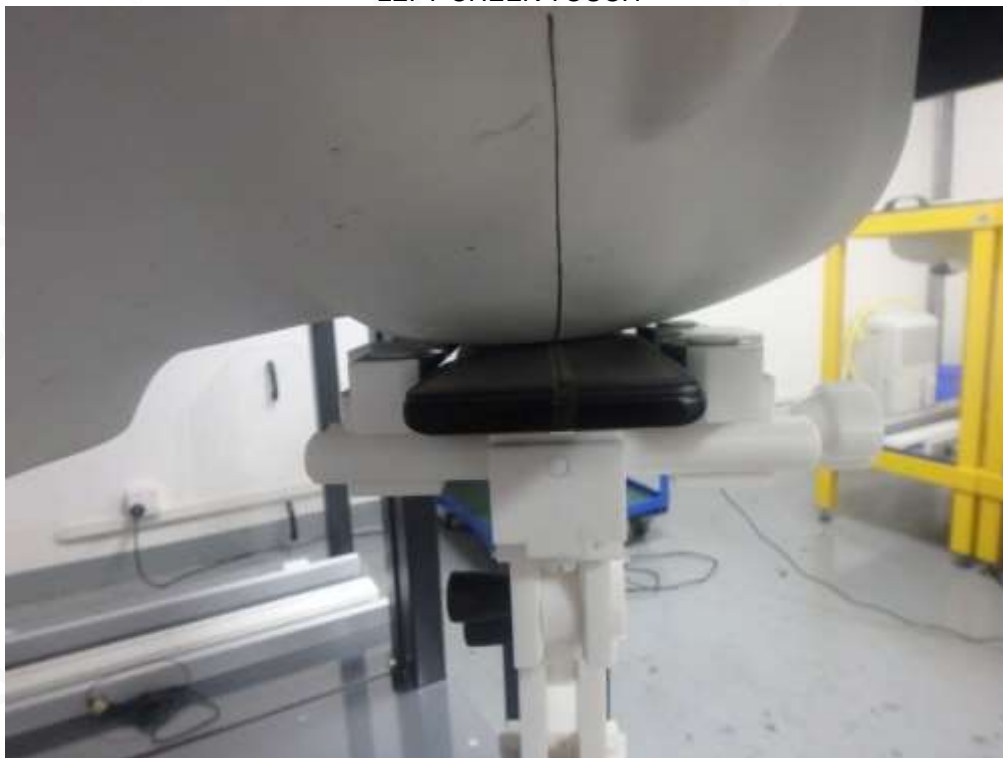
Maximum location: X=1.00, Y=7.00

SAR Peak: 3.06 W/kg

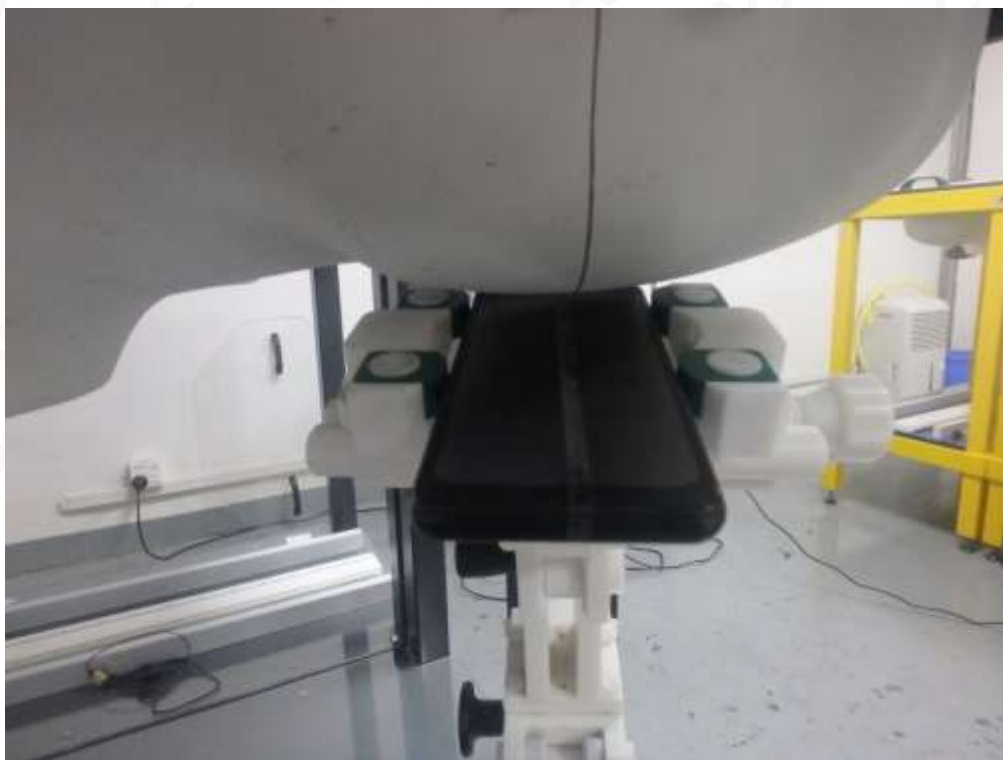
SAR 10g (W/Kg)	0.527683
SAR 1g (W/Kg)	1.404252



**APPENDIX C. TEST SETUP PHOTOGRAPHS**  
**LEFT-CHEEK TOUCH**



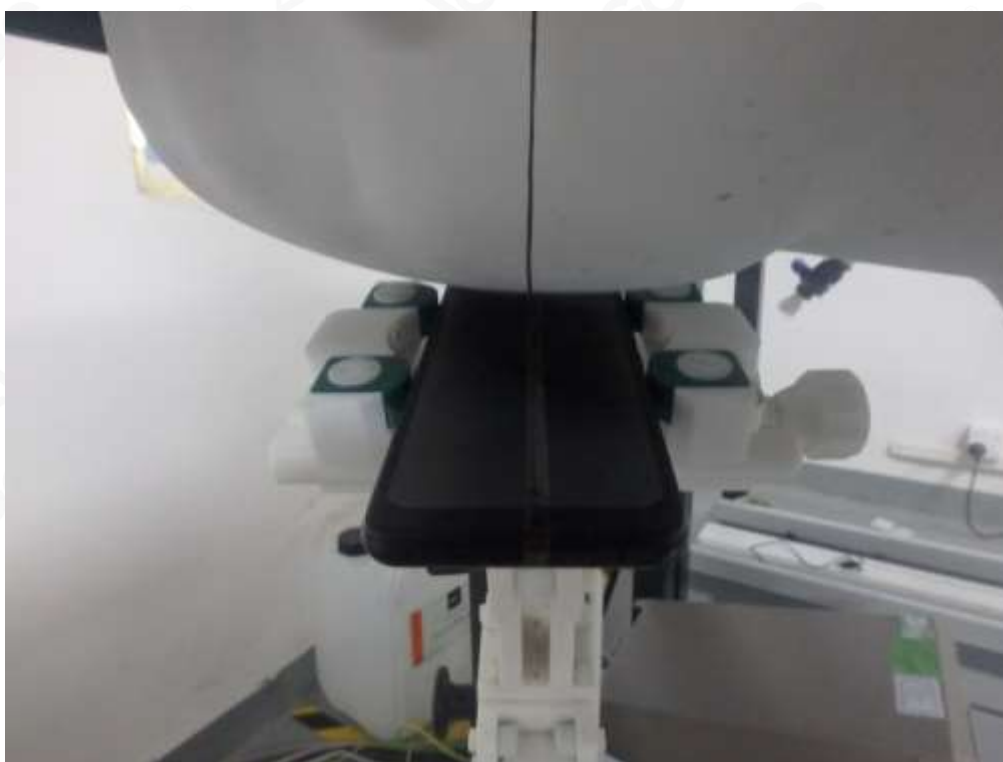
**LEFT-TILT 15°**



RIGHT-CHEEK TOUCH



RIGHT-TILT 15°



Body Back 5mm



Body Front 5mm



Body back with Headset 5mm



Hotspot back 10mm



Hotspot Front 10mm



Hotspot Edge 1(Top) 10mm



Hotspot Edge 2(Right) 10mm



Hotspot Edge 3(Bottom) 10mm



Hotspot Edge 4(Left) 10mm



Limbs back 0mm



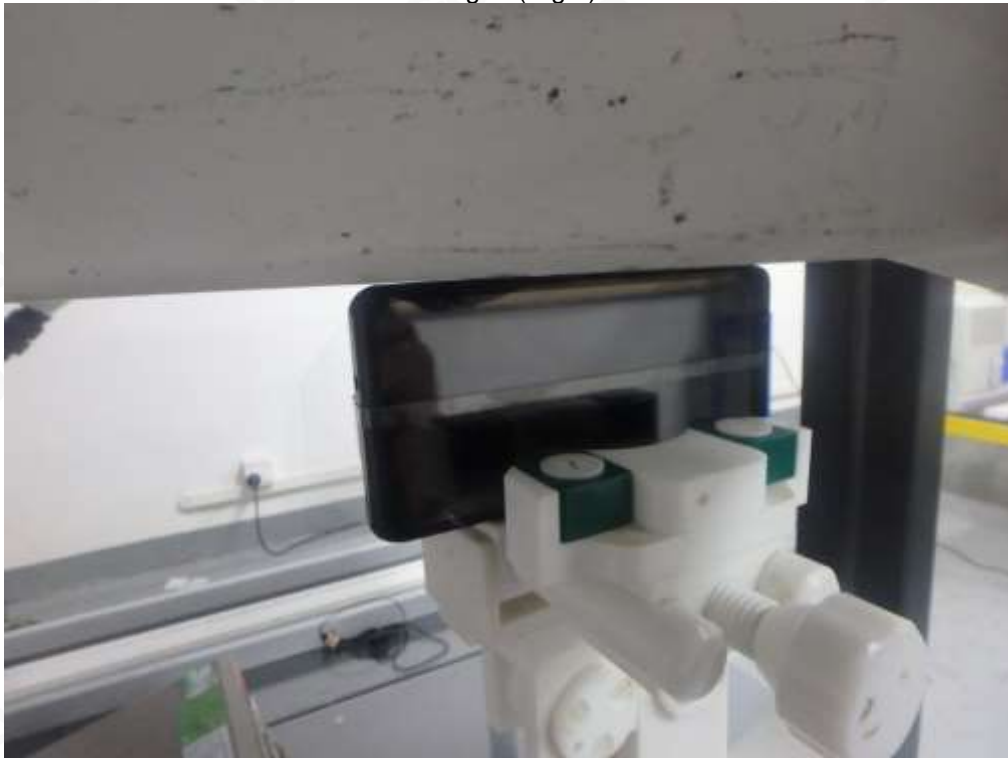
Limbs Front 0mm



Limbs Edge 1(Top) 0mm



Limbs Edge 2(Right) 0mm



Limbs Edge 3(Bottom) 0mm



Limbs Edge 4(Left) 0mm



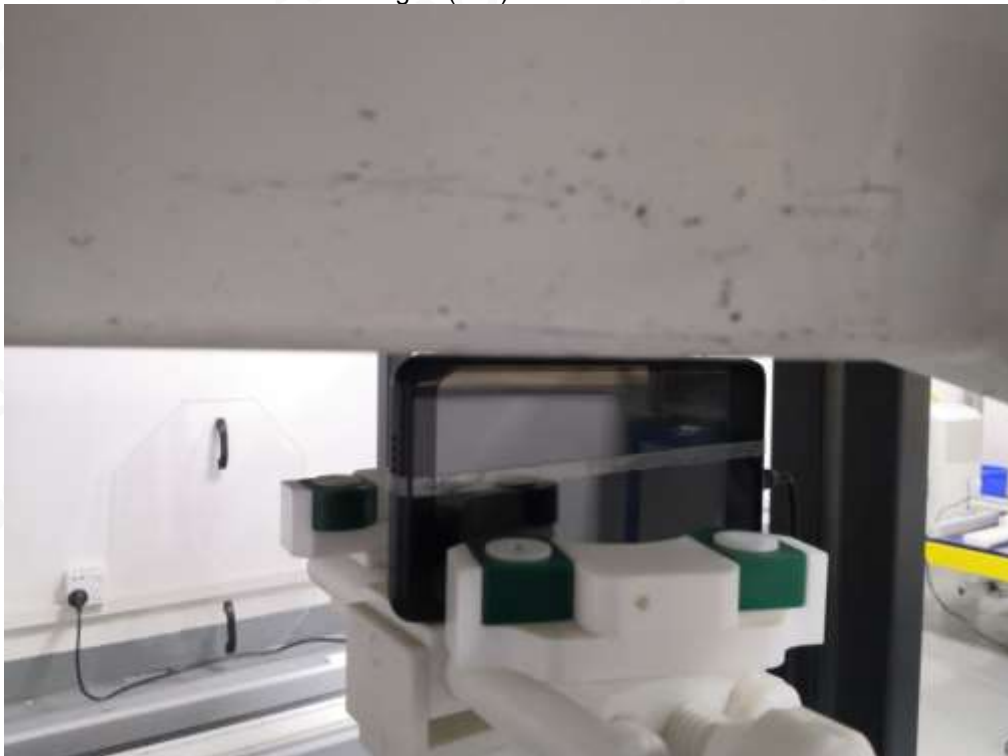
Limbs back with Headset 0mm



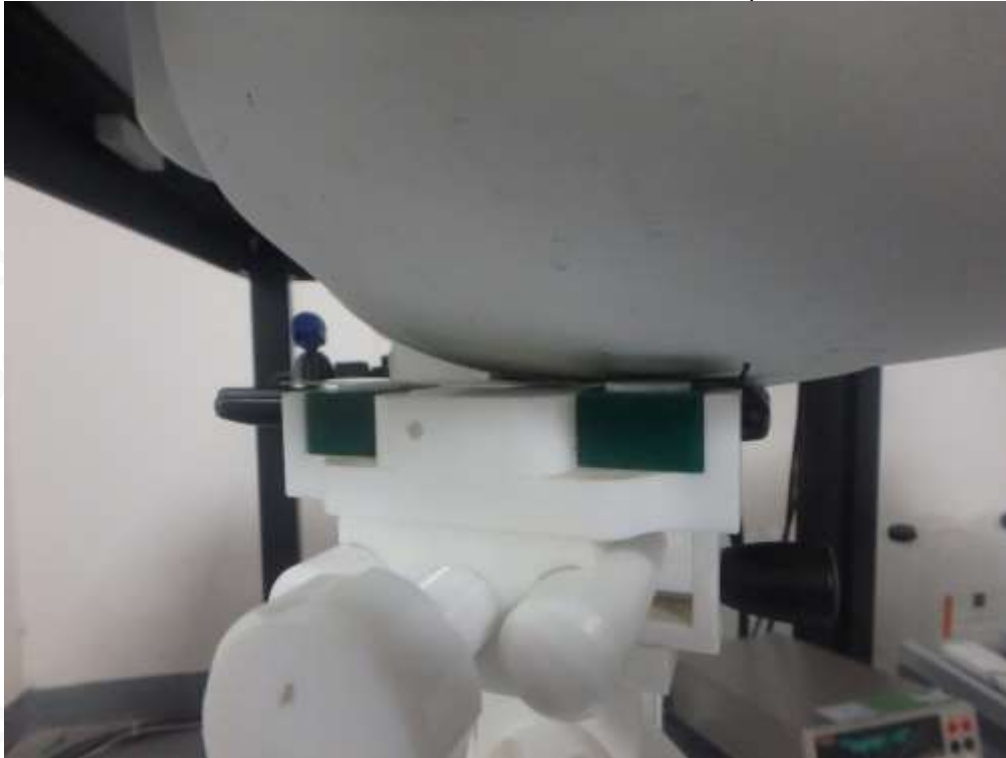
Limbs Edge 3(Bottom) with Headset 0mm



Limbs Edge 4(Left) with Headset 0mm


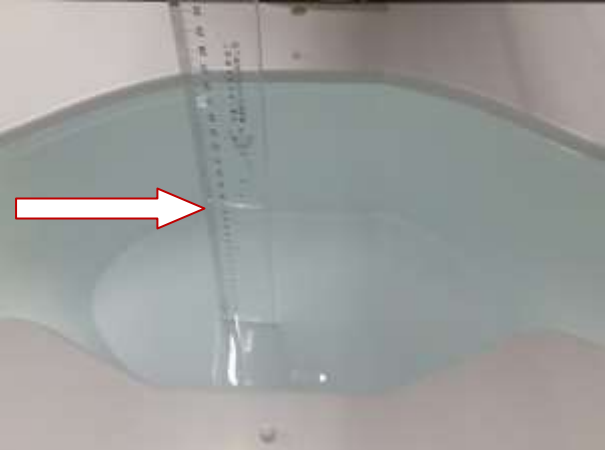
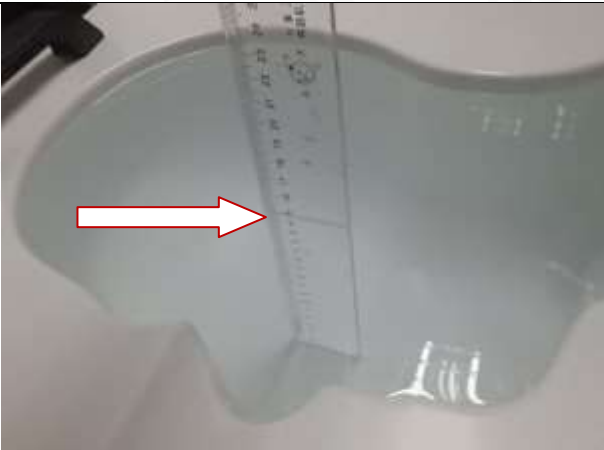
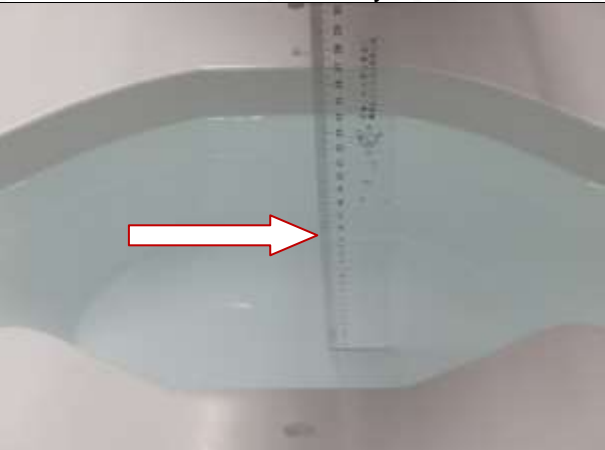

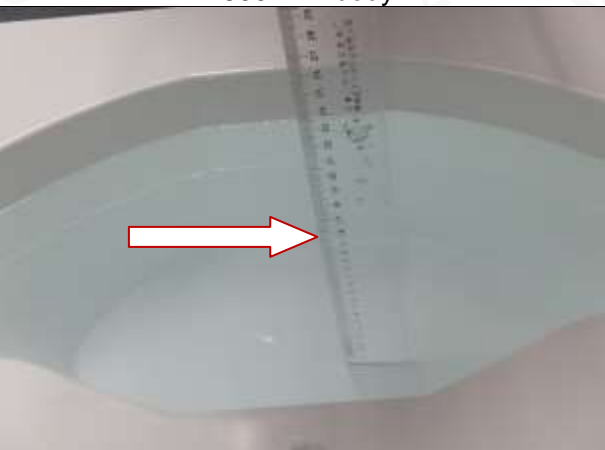


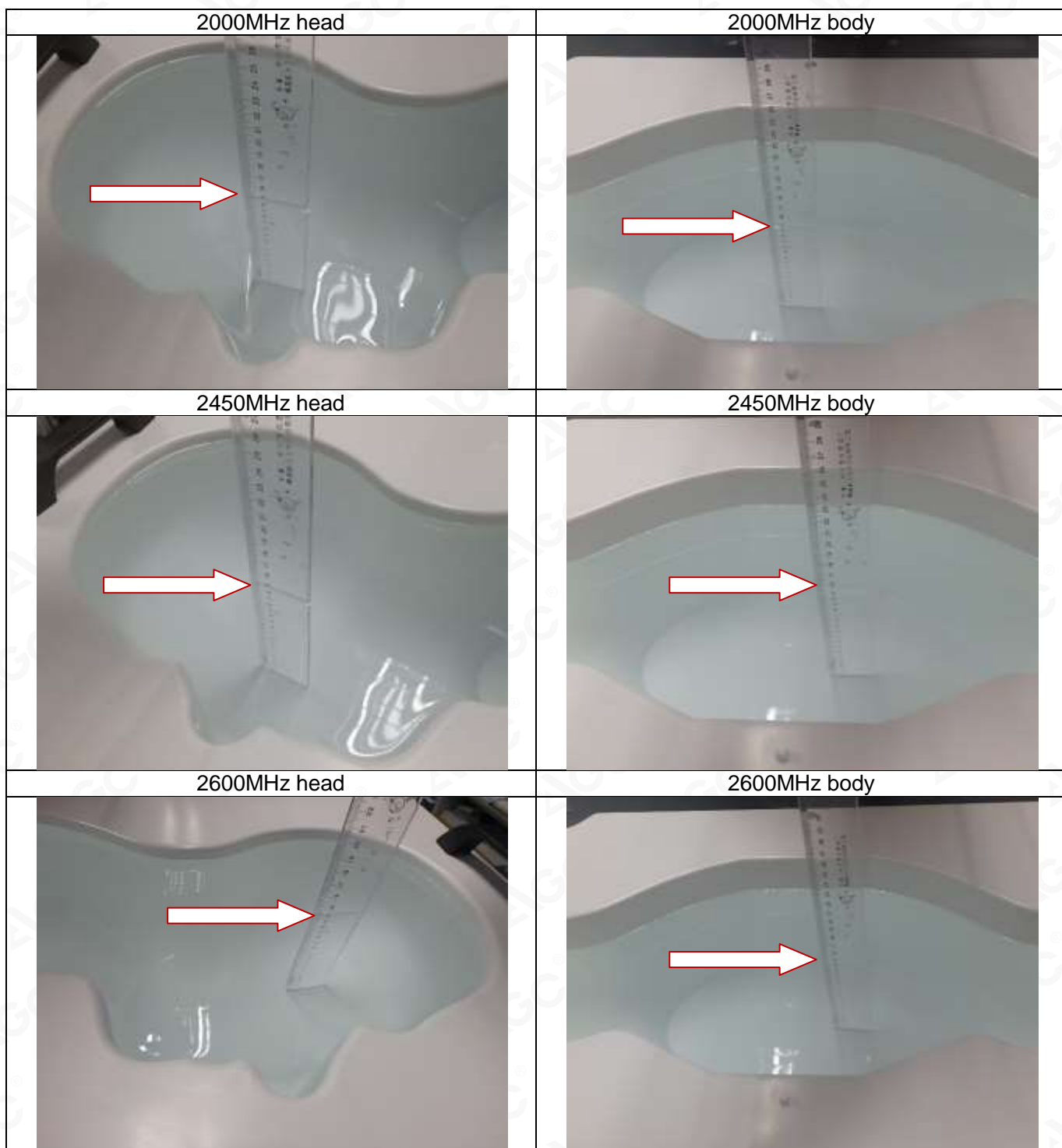
Position of the device under test in relation to the phantom



## DEPTH OF THE LIQUID IN THE PHANTOM—ZOOM IN

Note : The position used in the measurement were according to EN62209-1/2

835MHz head	850MHz body
	
900MHz head	900MHz body
	
1800MHz head	1800MHz body
	



## APPENDIX D. CALIBRATION DATA

Refer to Attached files.

