SAR Test Report

Report No.: AGC00552200705EH01

PRODUCT DESIGNATION	:	Smartphone
BRAND NAME	:	CUBOT
MODEL NAME	:	J8
APPLICANT	:	Shenzhen Huafurui Technology Co., Ltd.
DATE OF ISSUE	:	Sep. 02,2020
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.

Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Sep. 02,2020	Valid	Initial Release

Test Report	
Applicant Name	Shenzhen Huafurui Technology Co., Ltd.
Applicant Address	Unit 1401 &1402, 14/F, Jinqi zhigu mansion (No. 4 building of Chongwen Garden), Crossing of the Liuxian street and Tangling road, Taoyuan street, Nanshan district, Shenzhen, P.R. China
Manufacturer Name	Shenzhen Huafurui Technology Co., Ltd.
Manufacturer Address	Unit 1401 &1402, 14/F, Jinqi zhigu mansion (No. 4 building of Chongwen Garden), Crossing of the Liuxian street and Tangling road, Taoyuan street, Nanshan district, Shenzhen, P.R. China
Factory Name	Shenzhen Huafurui Technology Co., Ltd.
Factory Address	Unit 1401 &1402, 14/F, Jinqi zhigu mansion (No. 4 building of Chongwen Garden), Crossing of the Liuxian street and Tangling road, Taoyuan street, Nanshan district, Shenzhen, P.R. China
Product Designation	Smartphone
Brand Name	CUBOT
Model Name	J8
EUT Voltage	DC3.8V by battery
Applicable Standard	EN 50360:2017; EN 62209-1:2016; EN 62209-2:2010; EN 50566:2017; EN 62479:2010
Test Date	Aug. 11,2020 to Aug. 18,2020
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-3G/SAR (2018-01-01)

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

Prepared By Thea Huang

Thea Huang (Project Engineer) Aug. 18,2020

Reviewed By Angela Li

Angela Li (Reviewer) Sep. 02,2020

Approved By Forrest Lei

Forrest Lei (Authorized Officer) Sep. 02,2020

TABLE OF CONTENTS

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	Body-worn(with 0mm separation)	Hotspot(with 10mm separation)	Limbs(with 0mm separation)	
GSM 900	0.150	0.688	0.174	0.688	PASS
DCS 1800	0.142	1.464	0.592	2.216	
WCDMA Band I	0.063	1.206	0.379	2.476	
WCDMA Band VIII	0.134	1.161	0.205	1.161	
WIFI 2.4G	0.070	0.171	0.067	0.171	
Simultaneous Reported SAR	1.635			2.551	
SAR Test Limit (W/Kg)	2.0			4.0	

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

2. GENERAL INFORMATION

2.1. EUT Description

General Information	
Product Designation	Smartphone
Test Model	J8
Hardware Version	TE641_MAIN_PCB_V1.0
Software Version	CUBOT_J8_A043C_V03_20200817
Device Category	Portable
RF Exposure Environment	Uncontrolled
Antenna Type	Internal
GSM and GPRS	
Support Band	☒GSM 900 ☒DCS 1800 (EU Frequency) ☒GSM 850 ☒PCS 1900 (none EU Frequency)
GPRS Type	Class B
GPRS 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;
Antenna Gain	1.0dBi
Max. Avg. Output Power	GSM900:33.63dBm; DCS1800:30.01dBm
Bluetooth	
Operation Frequency	2402~2480MHz
Antenna Gain	0dBi
Bluetooth Version	V4.2
Type of modulation	**BR/EDR**: GFSK, Π/4-DQPSK, 8-DPSK; **BLE:** GFSK
EIRP	**BR/EDR**: 1.52dBm; **BLE:** 1.21dBm

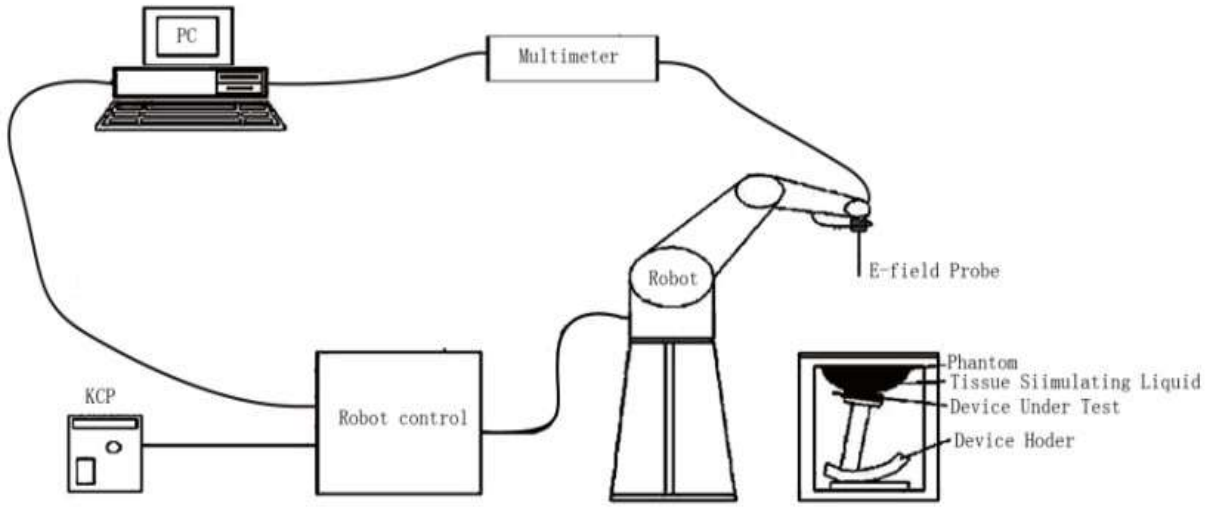
EUT Description(Continue)

WCDMA	
Support Band	☒UMTS FDD Band I ☒UMTS FDD Band VIII ☐UMTS FDD Band II ☐UMTS FDD Band V
HS Type	HSPA(HSUPA/HSDPA)
TX Frequency Range	WCDMA Band I : 1920-1980MHz; WCDMA Band VIII : 880-915MHz
RX Frequency Range	WCDMA Band I : 2110-2170MHz; WCDMA Band VIII : 925-960MHz
Release Version	Rel-6
Type of modulation	HSDPA:QPSK/16QAM; HSUPA:BPSK; WCDMA:QPSK
Antenna Gain	1.0dBi
Max. Avg. Output Power	Band I: 22.30dBm; Band VIII: 22.84dBm
WIFI	
WIFI Specification	☐802.11a ☒802.11b ☒802.11g ☒802.11n(20) ☒802.11n(40)
Operation Frequency	2412~2472MHz
EIRP	11b:15.24dBm,11g:13.65dBm,11n(20):12.73dBm,11n(40):12.38dBm
Antenna Gain	0dBi
Li-ion Battery	
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/ Charging Voltage	DC3.8V/ DC4.35V

Note: The sample used for testing is end product.

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.

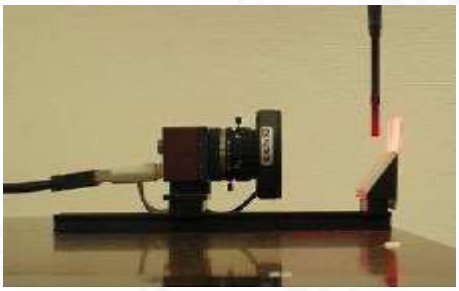
Isotropic E-Field Probe Specification

Model	SSE5	
Manufacture	MVG	
Identification No.	SN 24/20 EP336	
Frequency	0.7GHz-3GHz Linearity:±0.08dB(0.7GHz-3GHz)	
Dynamic Range	0.01W/Kg-100W/Kg Linearity:±0.08dB	
Dimensions	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	
Application	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%.	

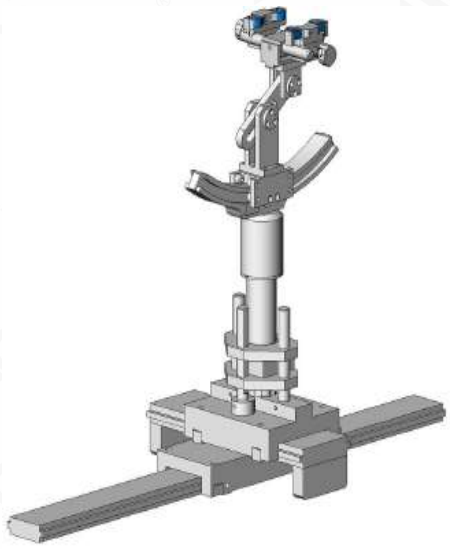
3.3. Robot

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 εr =3 and loss tangent δ = 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:

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

$$SAR = c_h \frac{dT}{dt}\Big|_{t=0}$$

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;
σ	is the conductivity of the tissue in siemens per metre;
ρ	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;
$\frac{dT}{dt} \mid t = 0$	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 [GHz]) mm for frequencies above 3 GHz. The resolution SAR uncertainity 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 $\leqslant$ 5 mm for frequencies equal to or below 3 GHz and δ ln(2)/2 mm for frequencies above 3 GHz, where δ 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 ± 1 mm for frequencies equal to or below 3 GHz and ± 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° for frequencies equal to or below 3 GHz and 20° 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 [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 [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 [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 δ ln(2)/2 mm for frequencies above 3 GHz, where δ 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° for frequencies equal to or below 3 GHz and 20° 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 ± 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 GHz $< f \leq 6$ 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 ± 1	$\delta \ln(2)/2 \pm 0,5$ [a]
Maximum spacing between adjacent measured points (see 7.2.10.3.1, in mm) [b]	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 (α in Figure 6) [c]	30°	20°
Tolerance in the probe angle	1°	1°

[a] δ is the penetration depth for a plane-wave incident normally on a planar half-space.

[b] See 7.2.10 on how Δx and Δy may be selected for individual area scan requirements.

[c] 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 GHz $< f \leq 6$ 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 (α in Figure 6)	30°	20°
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 (Δz_1 in Figure 6, in mm)	5	$8 - f$

Parameter	DUT transmit frequency being tested	
	$f \leq 3$ GHz	3 GHz $< f \leq 6$ GHz
For graded grids: Maximum spacing between the two closest measured points in the direction normal to the phantom shell (Δz_1 in Figure 6, in mm)	4	$12/f$
For graded grids: 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°	1°
[a] δ is the penetration depth for a plane-wave incident normally on a planar half-space. [b] 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

Ingredient (% Weight) / Frequency (MHz)	Water	Nacl	Sugar	HEC	Bactericide	DGBE	1,2-Propanediol	Triton X-100
900	34.4	0.79	0.0	0.0	0.0	0.0	64.81	0.0
1800	55.36	0.35	0.0	0.0	0.0	13.84	0.0	30.45
2000	50	0.0	0.0	0.0	0.0	50	0.0	0.0
2450	71.88	0.16	0.0	0.0	0.0	7.99	0.0	19.97

5.2. Tissue Dielectric Parameters for Head and Body Phantoms

The head tissue dielectric parameters recommended by the EN 62209-1 have been incorporated in the following table.The body tissue dielectric parameters recommended by the EN 62209-2 have been incorporated in the following table.

Target Frequency (MHz)	head		body	
	εr	σ (S/m)	εr	σ (S/m)
300	45.3	0.87	45.3	0.87
450	43.5	0.87	43.5	0.87
835	41.5	0.90	41.5	0.90
900	**41.5**	**0.97**	**41.5**	**0.97**
1450	40.5	1.20	40.5	1.20
1800 – 2000	**40.0**	**1.40**	**40.0**	**1.40**
2450	**39.2**	**1.80**	**39.2**	**1.80**
3000	38.5	2.40	38.5	2.40

(εr = relative permittivity, σ = conductivity and ρ = 1000 kg/m3)

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
	εr	δ[s/m]	εr	δ[s/m]		
900	41.50 39.425-43.575	0.97 0.9225-1.0185	40.05	0.98	20.8	Aug. 18,2020
1800	40.00 38.00-42.00	1.40 1.33-1.47	40.09	1.38	21.3	Aug. 11,2020
2000	40.00 38.00-42.00	1.40 1.33-1.47	38.74	1.38	21.1	Aug. 12,2020
2450	39.2 37.24-41.16	1.80 1.71-1.89	38.65	1.75	20.6	Aug. 17,2020

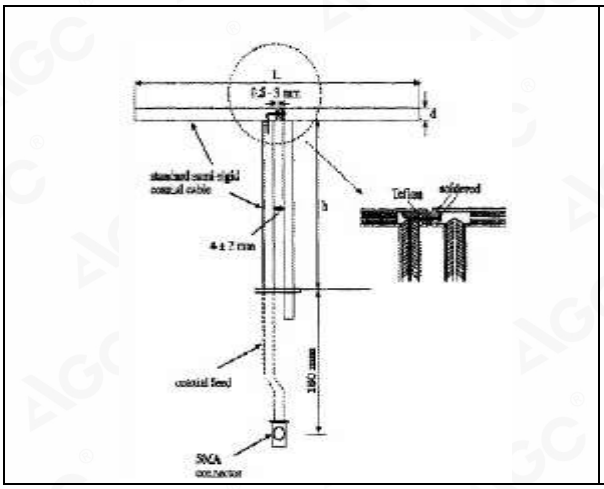
6. SAR SYSTEM CHECK PROCEDURE

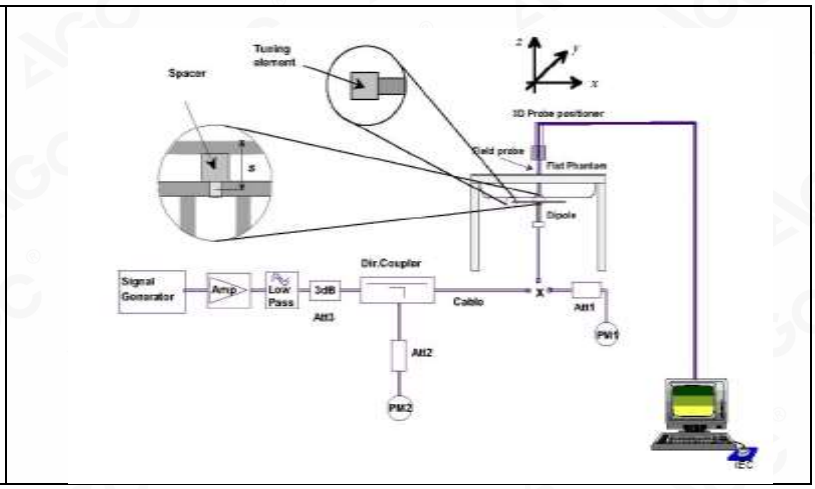
6.1. SAR System Check Procedures

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.

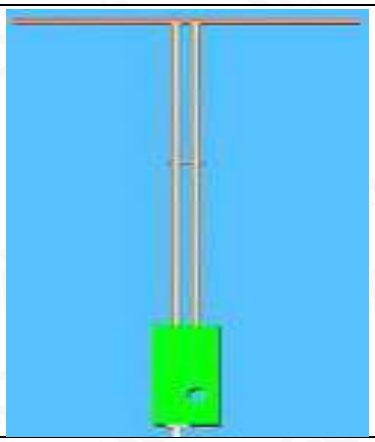
The system check verifies that the system operates within its specifications. It's performed daily or before every SAR measurement. The system check uses normal SAR measurement in the flat section of the phantom with a matched dipole at a specified distance. The system check setup is shown as below.





6.2. SAR System Check

6.2.1. Dipoles



The dipoles used are based on the EN62209-1 standard, the table below provides details for the mechanical and electrical specifications for the dipoles.

Frequency	L (mm)	h (mm)	d (mm)
900 MHz	149.0	83.3	3.6
1800MHz	71.6	41.7	3.6
2000 MHz	64.5	37.5	3.6
2450MHz	51.5	30.4	3.6

6.2.2. System Check Result

System Performance Check at 900 MHz & 1800MHz & 2000MHz & 2450MHz								
Validation Kit: SN 23/19 DIP 0G900-482 & SN 46/11 DIP 1G800-186 & SN 46/11 DIP 2G000-188& SN 46/11 DIP 2G450-189								
Frequency [MHz]	Target Value(W/Kg)		Reference Result (± 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	10.68	6.54	20.8	Aug. 18,2020
1800	39.07	20.29	35.163-42.977	18.261-22.319	37.21	18.59	21.3	Aug. 11,2020
2000	44.10	21.49	39.69-48.51	19.341-23.639	41.11	20.01	21.1	Aug. 12,2020
2450	53.97	24.01	48.573-59.367	21.609-26.411	52.30	23.09	20.6	Aug. 17,2020

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 ±10% of target value.

7. EUT TEST POSITION

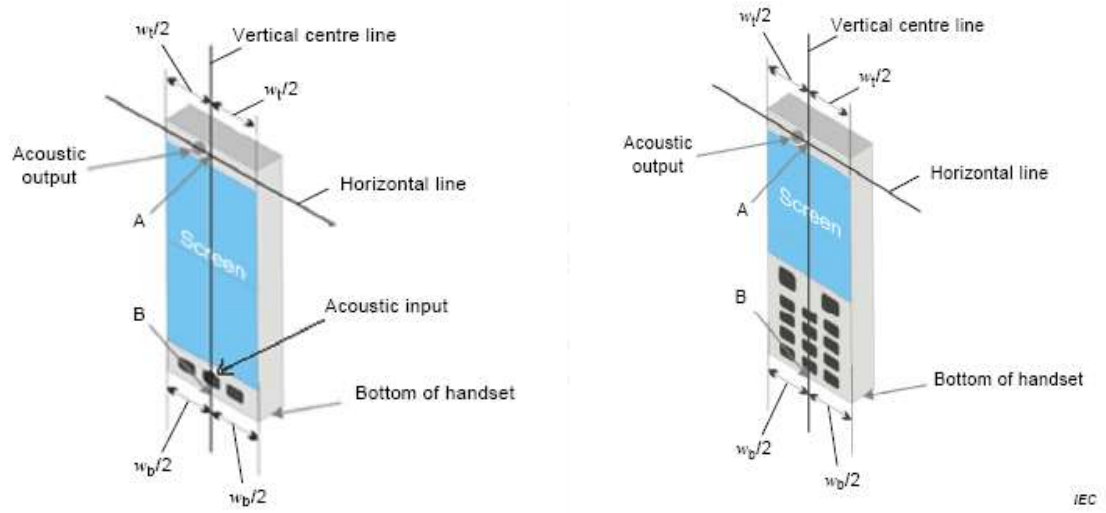
This EUT was tested in **Right Cheek, Right Tilted, Left Cheek, Left Tilted, back, front and 4 Edges.**

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 picec 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.

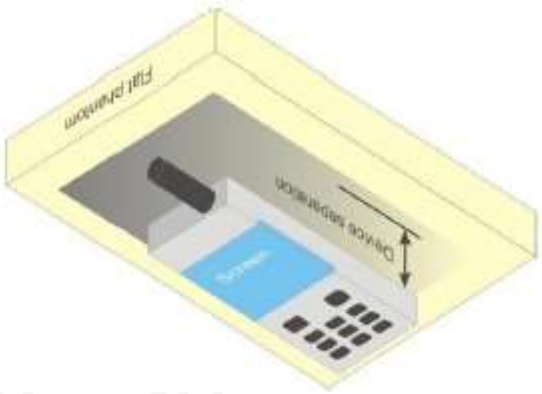
(2) While maintaining the device in the reference plane described above and pivoting against the ear, moves it outward away from the mouth by an angle of 15 degrees or until with the ear is lost.

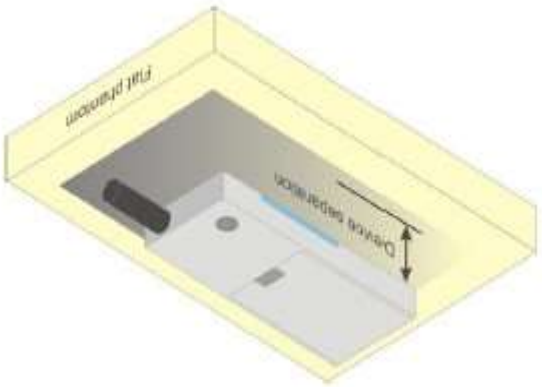
7.4. Test Position

(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 **0mm** while used in body position, **10mm** for hotspot and **0mm** while used in limbs position.





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 24/20 EP336	Jun. 24,2020	Jun. 23,2021
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
Multimeter	Keithley 2000	1350784	Oct. 08,2019	Oct. 07,2020
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
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:WRJ34AYM2F1	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	May 15,2020	May 14,2022
Directional Couple	Werlatone/ C6026-10	SN99482	May 15,2020	May 14,2022
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 EN 62209-1/2 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 24/20 EP336 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
Measurement System									
Probe calibration	Annex B	7.000	N	1	1	1	7.000	7.000	∞
Axial Isotropy	7.2.2.2	0.105	R	$\sqrt{3}$	$\sqrt{0.5}$	$\sqrt{0.5}$	0.043	0.043	∞
Hemispherical Isotropy	7.2.2.2	0.105	R	$\sqrt{3}$	$\sqrt{0.5}$	$\sqrt{0.5}$	0.043	0.043	∞
Boundary effect	7.2.2.5	1.000	R	$\sqrt{3}$	1	1	0.577	0.577	∞
Linearity	7.2.2.3	0.870	R	$\sqrt{3}$	1	1	0.502	0.502	∞
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	1.732	1.732	∞
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	∞
Test sample Related									
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	∞
Phantom and tissue parameters									
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				10.525	10.341	
Expanded Uncertainty (95% Confidence interval)			K=2				21.051	20.681	

SATIMO Uncertainty-SN 24/20 EP336 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
Measurement System									
Probe calibration	Annex B	7	N	1	1	1	7.000	7.000	∞
Axial Isotropy	7.2.2.2	0.105	R	$\sqrt{3}$	1	1	0.061	0.061	∞
Hemispherical Isotropy	7.2.2.2	0.105	R	$\sqrt{3}$	0	0	0.000	0.000	∞
Boundary effect	7.2.2.5	1	R	$\sqrt{3}$	1	1	0.577	0.577	∞
Linearity	7.2.2.3	0.870	R	$\sqrt{3}$	1	1	0.502	0.502	∞
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	∞
System validation source									
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	∞
Phantom and set-up									
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				10.458	10.272	
Expanded Uncertainty (95% Confidence interval)			K=2				20.916	20.544	

SATIMO Uncertainty-SN 24/20 EP336 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
Measurement System									
Probe calibration drift	Table 13 note a	0.5	N	1	1	1	0.50	0.50	∞
Axial Isotropy	7.2.2.2	0.105	R	$\sqrt{3}$	0	0	0.00	0.00	∞
Hemispherical Isotropy	7.2.2.2	0.105	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	0.870	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	∞
System check source									
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	∞
Phantom and set-up									
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	33.63	-9	24.63
	897.4	**33.63**	-9	24.63
	914.8	33.45	-9	24.45
GPRS 900 (1 Slot)	880.2	32.58	-9	23.58
	897.4	32.57	-9	23.57
	914.8	32.36	-9	23.36
GPRS 900 (2 Slot)	880.2	28.65	-6	22.65
	897.4	28.58	-6	22.58
	914.8	28.55	-6	22.55
GPRS 900 (3 Slot)	880.2	26.46	-4.26	22.20
	897.4	26.51	-4.26	22.25
	914.8	26.33	-4.26	22.07
GPRS 900 (4 Slot)	880.2	31.24	-3	28.24
	897.4	31.31	-3	28.31
	914.8	30.89	-3	27.89
Maximum Power <2>				
GSM 900	880.2	33.55	-9	24.55
	897.4	33.58	-9	24.58
	914.8	33.40	-9	24.40
GPRS 900 (1 Slot)	880.2	32.52	-9	23.52
	897.4	32.51	-9	23.51
	914.8	32.30	-9	23.30
GPRS 900 (2 Slot)	880.2	28.56	-6	22.56
	897.4	28.52	-6	22.52
	914.8	28.46	-6	22.46
GPRS 900 (3 Slot)	880.2	26.41	-4.26	22.15
	897.4	26.44	-4.26	22.18
	914.8	26.30	-4.26	22.04
GPRS 900 (4 Slot)	880.2	31.21	-3	28.21
	897.4	31.23	-3	28.23
	914.8	30.85	-3	27.85

Mode	Frequency(MHz)	Avg. Output Power(dBm)	Duty cycle Factor(dBm)	Frame Power(dBm)
Maximum Power <1>				
DCS1800	1710.2	**30.01**	-9	21.01
	1747.4	29.19	-9	20.19
	1784.8	28.62	-9	19.62
GPRS1800 (1 Slot)	1710.2	29.86	-9	20.86
	1747.4	29.69	-9	20.69
	1784.8	28.25	-9	19.25
GPRS1800 (2 Slot)	1710.2	25.72	-6	19.72
	1747.4	25.86	-6	19.86
	1784.8	25.65	-6	19.65
GPRS1800 (3 Slot)	1710.2	24.53	-4.26	20.27
	1747.4	24.79	-4.26	20.53
	1784.8	24.39	-4.26	20.13
GPRS1800 (4 Slot)	1710.2	26.67	-3	23.67
	1747.4	25.49	-3	22.49
	1784.8	24.37	-3	21.37
Maximum Power <2>				
DCS1800	1710.2	29.93	-9	20.93
	1747.4	29.12	-9	20.12
	1784.8	28.53	-9	19.53
GPRS1800 (1 Slot)	1710.2	29.77	-9	20.77
	1747.4	29.62	-9	20.62
	1784.8	28.20	-9	19.20
GPRS1800 (2 Slot)	1710.2	25.65	-6	19.65
	1747.4	25.73	-6	19.73
	1784.8	25.58	-6	19.58
GPRS1800 (3 Slot)	1710.2	24.46	-4.26	20.20
	1747.4	24.71	-4.26	20.45
	1784.8	24.32	-4.26	20.06
GPRS1800 (4 Slot)	1710.2	26.63	-3	23.63
	1747.4	25.42	-3	22.42
	1784.8	24.31	-3	21.31

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	21.91
	1950	**22.30**
	1977.6	22.22
HSDPA Subtest 1	1922.4	20.99
	1950	21.25
	1977.6	21.22
HSDPA Subtest 2	1922.4	20.56
	1950	21.27
	1977.6	20.44
HSDPA Subtest 3	1922.4	20.14
	1950	20.50
	1977.6	20.39
HSDPA Subtest 4	1922.4	20.13
	1950	20.79
	1977.6	20.38
HSUPA Subtest 1	1922.4	19.48
	1950	19.36
	1977.6	19.57
HSUPA Subtest 2	1922.4	19.40
	1950	19.32
	1977.6	19.66
HSUPA Subtest 3	1922.4	20.38
	1950	20.27
	1977.6	20.55
HSUPA Subtest 4	1922.4	18.73
	1950	18.89
	1977.6	18.79
HSUPA Subtest 5	1922.4	20.31
	1950	20.80
	1977.6	20.61

UMTS BAND VIII

Mode	Frequency (MHz)	Avg. Output Power (dBm)
WCDMA 900 RMC(12.2bps)	882.4	**22.84**
	897.6	22.72
	912.6	22.43
HSDPA Subtest 1	882.4	21.92
	897.6	21.74
	912.6	21.55
HSDPA Subtest 2	882.4	21.15
	897.6	20.95
	912.6	20.84
HSDPA Subtest 3	882.4	21.09
	897.6	20.97
	912.6	20.81
HSDPA Subtest 4	882.4	20.99
	897.6	20.90
	912.6	20.78
HSUPA Subtest 1	882.4	19.20
	897.6	18.89
	912.6	18.82
HSUPA Subtest 2	882.4	19.08
	897.6	18.83
	912.6	18.72
HSUPA Subtest 3	882.4	20.02
	897.6	19.86
	912.6	19.69
HSUPA Subtest 4	882.4	18.51
	897.6	18.37
	912.6	18.56
HSUPA Subtest 5	882.4	20.32
	897.6	20.34
	912.6	20.31

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≤ CM≤3.5	MAX(CM-1,0)
Note: CM=1 for β_c/β_d=12/15, β_{hs}/β_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.

WIFI

Mode	Data Rate (Mbps)	Channel	Frequency(MHz)	EIRP (dBm)
802.11b	1	1	2412	14.92
		2	2417	14.85
		7	2442	15.02
		12	2467	15.16
		13	2472	**15.24**
802.11g	6	1	2412	11.03
		7	2442	13.65
		13	2472	11.11
802.11n(20)	6.5	1	2412	11.05
		7	2442	12.73
		13	2472	12.20
802.11n(40)	13.5	3	2422	12.26
		7	2442	12.38
		11	2462	12.25

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 0mm 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 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.

   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. In the limbs SAR test result table, limbs back means display of device down, limbs front means display of device up. In the hotspot SAR test result table, hotspot back means display of device down, hotspot front means display of device up.

2. For WCDMA, head, body and limbs 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.

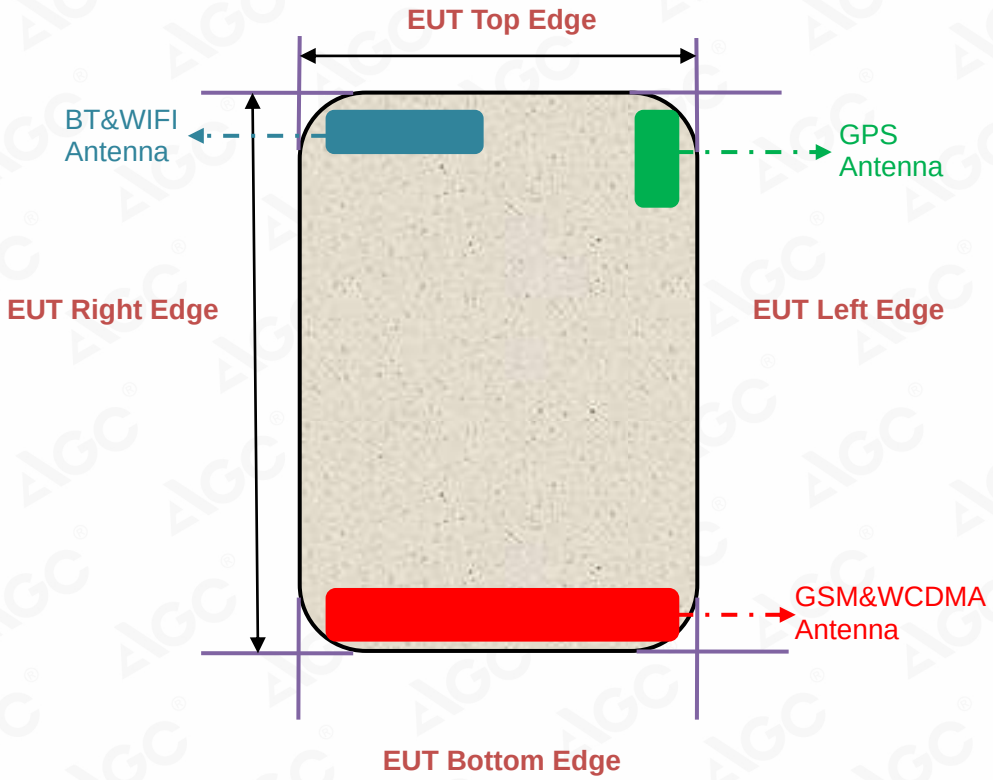
3. For WIFI SAR testing, the EUT has installed WIFI engineering testing software which can provide continuous transmitting RF signal.

4. According to France police, SAR need to add Limbs test from 2020.01.01,4W/Kg limitation, 0mm test separation; In this report, body-worn use the same test separation (0mm), and share one data with Limb test when they test same mode, same position, only different limitation.

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

6. The portion of the device 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 (%): 48.9					
Product: Smartphone									
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	-0.02	0.122	33.70	33.63	0.124	2.0
Left Tilt	voice	37	897.4	-0.05	0.073	33.70	33.63	0.074	2.0
Right Cheek	voice	975	880.2	-0.32	**0.148**	33.70	33.63	**0.150**	2.0
Right Cheek	voice	37	897.4	0.04	0.128	33.70	33.63	0.130	2.0
Right Cheek	voice	124	914.8	-0.12	0.136	33.70	33.45	0.144	2.0
Right Tilt	voice	37	897.4	-0.05	0.096	33.70	33.63	0.098	2.0
Body back	GPRS-4 slots	975	880.2	0.27	0.414	31.40	31.24	0.430	2.0
Body back	GPRS-4 slots	37	897.4	-0.32	0.515	31.40	31.31	0.526	2.0
Body back	GPRS-4 slots	124	914.8	-0.05	**0.612**	31.40	30.89	**0.688**	2.0
Body Front	GPRS-4 slots	37	897.4	-0.29	0.267	31.40	31.31	0.273	2.0
Body back+ Ear.	voice	124	914.8	0.62	0.432	33.70	33.45	0.458	2.0
Hotspot back	GPRS-4 slots	975	880.2	-0.05	0.045	31.40	31.24	0.047	2.0
Hotspot back	GPRS-4 slots	37	897.4	-0.28	0.059	31.40	31.31	0.060	2.0
Hotspot back	GPRS-4 slots	124	914.8	-0.28	**0.155**	31.40	30.89	**0.174**	2.0
Hotspot Front	GPRS-4 slots	37	897.4	0.35	0.056	31.40	31.31	0.057	2.0
Hotspot Edge1(Top)	GPRS-4 slots	37	897.4	-0.17	0.004	31.40	31.31	0.004	2.0
Hotspot Edge2(Right)	GPRS-4 slots	37	897.4	0.42	0.023	31.40	31.31	0.023	2.0
Hotspot Edge3(Bottom)	GPRS-4 slots	37	897.4	-0.06	0.049	31.40	31.31	0.050	2.0
Hotspot Edge4(Left)	GPRS-4 slots	37	897.4	0.28	0.042	31.40	31.31	0.043	2.0
Hotspot back+ Ear.	voice	124	914.8	0.53	0.051	33.70	33.45	0.054	2.0
Limbs back	GPRS-4 slots	975	880.2	0.27	0.414	31.40	31.24	0.430	4.0
Limbs back	GPRS-4 slots	37	897.4	-0.32	0.515	31.40	31.31	0.526	4.0
Limbs back	GPRS-4 slots	124	914.8	-0.05	**0.612**	31.40	30.89	**0.688**	4.0
Limbs Front	GPRS-4 slots	37	897.4	-0.29	0.267	31.40	31.31	0.273	4.0
Limbs Edge1(Top)	GPRS-4 slots	37	897.4	0.05	0.022	31.40	31.31	0.022	4.0
Limbs Edge2(Right)	GPRS-4 slots	37	897.4	-0.36	0.040	31.40	31.31	0.041	4.0
Limbs Edge3(Bottom)	GPRS-4 slots	37	897.4	-0.21	0.169	31.40	31.31	0.173	4.0
Limbs Edge4(Left)	GPRS-4 slots	37	897.4	0.05	0.111	31.40	31.31	0.113	4.0
Limbs back+ Ear.	voice	124	914.8	0.62	0.432	33.70	33.45	0.458	4.0

Note:
·For body and Hotspot part, 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 is 0mm for body part, 10mm for hotspot part is and 0mmfor limbs part.
·Since GPRS with 4 TX provides the highest output power, only this mode was considered for SAR assessment in body worn,limbs and hotsport configuration
·Measurements for SIM Card 2 are not conducted since SIM Card 1 show the highest output power
·Plots are only shown for the bold markered worst case SAR results

SAR MEASUREMENT									
Depth of Liquid (cm):>15				Relative Humidity (%): 45.2					
Product: Smartphone									
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	512	1710.2	-0.05	**0.139**	30.10	30.01	**0.142**	2.0
Left Cheek	voice	698	1747.4	-0.26	0.109	30.10	29.19	0.134	2.0
Left Cheek	voice	885	1784.8	-0.35	0.092	30.10	28.62	0.129	2.0
Left Tilt	voice	698	1747.4	-0.27	0.038	30.10	29.19	0.047	2.0
Right Cheek	voice	698	1747.4	0.42	0.092	30.10	29.19	0.113	2.0
Right Tilt	voice	698	1747.4	-0.15	0.049	30.10	29.19	0.060	2.0
Body back	GPRS-4 slots	512	1710.2	0.62	1.334	26.70	26.67	1.343	2.0
Body back	GPRS-4 slots	698	1747.4	-0.05	1.294	25.50	25.49	1.297	2.0
Body back	GPRS-4 slots	885	1784.8	-0.18	**1.357**	24.70	24.37	**1.464**	2.0
Body Front	GPRS-4 slots	698	1747.4	-0.32	1.046	25.50	25.49	1.048	2.0
Body back+ Ear.	voice	885	1784.8	0.05	1.019	30.10	28.62	1.433	2.0
Hotspot back	GPRS-4 slots	698	1747.4	-0.27	0.339	25.50	25.49	0.340	2.0
Hotspot Front	GPRS-4 slots	698	1747.4	-0.42	0.295	25.50	25.49	0.296	2.0
Hotspot Edge1(Top)	GPRS-4 slots	698	1747.4	0.15	0.026	25.50	25.49	0.026	2.0
Hotspot Edge2(Right)	GPRS-4 slots	698	1747.4	-0.62	0.096	25.50	25.49	0.096	2.0
Hotspot Edge3(Bottom)	GPRS-4 slots	512	1710.2	0.05	0.529	26.70	26.67	0.533	2.0
Hotspot Edge3(Bottom)	GPRS-4 slots	698	1747.4	0.23	**0.591**	25.50	25.49	**0.592**	2.0
Hotspot Edge3(Bottom)	GPRS-4 slots	885	1784.8	-0.28	0.443	24.70	24.37	0.478	2.0
Hotspot Edge4(Left)	GPRS-4 slots	698	1747.4	0.52	0.100	25.50	25.49	0.100	2.0
Hotspot Edge3+ Ear.	voice	698	1747.4	0.32	0.397	30.10	29.19	0.490	2.0
Limbs back	GPRS-4 slots	698	1747.4	-0.05	1.294	25.50	25.49	1.297	4.0
Limbs Front	GPRS-4 slots	698	1747.4	-0.32	1.046	25.50	25.49	1.048	4.0
Limbs Edge1(Top)	GPRS-4 slots	698	1747.4	0.06	0.038	25.50	25.49	0.038	4.0
Limbs Edge2(Right)	GPRS-4 slots	698	1747.4	-0.35	0.263	25.50	25.49	0.264	4.0
Limbs Edge3(Bottom)	GPRS-4 slots	512	1710.2	-1.27	**2.201**	26.70	26.67	**2.216**	4.0
Limbs Edge3(Bottom)	GPRS-4 slots	698	1747.4	1.42	2.036	25.50	25.49	2.041	4.0
Limbs Edge3(Bottom)	GPRS-4 slots	885	1784.8	-0.62	2.001	24.70	24.37	2.159	4.0
Limbs Edge4(Left)	GPRS-4 slots	698	1747.4	-0.35	0.134	25.50	25.49	0.134	4.0
Limbs Edge3+ Ear.	voice	512	1710.2	0.32	1.735	30.10	30.01	1.771	4.0

Note:
·For body and Hotspot part, 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 is 0mm for body part, 10mm for hotspot part is and 0mmfor limbs part.
·Since GPRS with 4 TX provides the highest output power, only this mode was considered for SAR assessment in body worn,limbs and hotsport configuration
·Measurements for SIM Card 2 are not conducted since SIM Card 1 show the highest output power
·Plots are only shown for the bold markered worst case SAR results

SAR MEASUREMENT									
Depth of Liquid (cm):>15				Relative Humidity (%): 47.3					
Product: Smartphone									
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	9612	1922.4	-0.06	0.056	22.40	21.91	**0.063**	2.0
Left Cheek	RMC12.2kbps	9750	1950	-0.38	**0.057**	22.40	22.30	0.058	2.0
Left Cheek	RMC12.2kbps	9888	1977.6	-0.52	0.056	22.40	22.22	0.058	2.0
Left Tilt	RMC12.2kbps	9750	1950	0.07	0.017	22.40	22.30	0.017	2.0
Right Cheek	RMC12.2kbps	9750	1950	-0.62	0.049	22.40	22.30	0.050	2.0
Right Tilt	RMC12.2kbps	9750	1950	-0.35	0.030	22.40	22.30	0.031	2.0
Body back	RMC12.2kbps	9612	1922.4	-0.28	1.077	22.40	21.91	**1.206**	2.0
Body back	RMC12.2kbps	9750	1950	0.42	0.922	22.40	22.30	0.943	2.0
Body back	RMC12.2kbps	9888	1977.6	-0.62	**1.144**	22.40	22.22	1.192	2.0
Body front	RMC12.2kbps	9750	1950	0.05	0.404	22.40	22.30	0.413	2.0
Body back	HSDPA Subtest 1	9750	1950	-0.75	0.867	21.30	21.25	0.877	2.0
Body back	HSUPA Subtest 1	9750	1950	-0.32	0.867	19.60	19.36	0.916	2.0
Body back+ Ear.	RMC12.2kbps	9888	1977.6	0.05	1.121	22.40	22.22	1.168	2.0
Hotspot back	RMC12.2kbps	9612	1922.4	-0.63	0.224	22.40	21.91	0.251	2.0
Hotspot back	RMC12.2kbps	9750	1950	0.08	**0.370**	22.40	22.30	**0.379**	2.0
Hotspot back	RMC12.2kbps	9888	1977.6	-0.52	0.200	22.40	22.22	0.208	2.0
Hotspot front	RMC12.2kbps	9750	1950	-0.24	0.118	22.40	22.30	0.121	2.0
Hotspot	HSDPA Subtest 1	9750	1950	-0.13	0.211	21.30	21.25	0.213	2.0
Hotspot	HSUPA Subtest 1	9750	1950	0.07	0.211	19.60	19.36	0.223	2.0
Hotspot Edge1(Top)	RMC12.2kbps	9750	1950	-0.52	0.009	22.40	22.30	0.009	2.0
Hotspot Edge2(Right)	RMC12.2kbps	9750	1950	-0.36	0.069	22.40	22.30	0.071	2.0
Hotspot Edge3(Bottom)	RMC12.2kbps	9750	1950	0.52	0.210	22.40	22.30	0.215	2.0
Hotspot Edge4(Left)	RMC12.2kbps	9750	1950	0.28	0.031	22.40	22.30	0.032	2.0
Hotspot back+ Ear.	RMC12.2kbps	9888	1977.6	0.35	0.199	22.40	22.22	0.207	2.0
Limbs back	RMC12.2kbps	9750	1950	0.42	0.922	22.40	22.30	0.943	4.0
Limbs front	RMC12.2kbps	9750	1950	0.05	0.404	22.40	22.30	0.413	4.0
Limbs back	HSDPA Subtest 1	9750	1950	-0.75	0.867	21.30	21.25	0.877	4.0
Limbs back	HSUPA Subtest 1	9750	1950	-0.32	0.867	19.60	19.36	0.916	4.0
Limbs Edge1(Top)	RMC12.2kbps	9750	1950	0.58	0.019	22.40	22.30	0.019	4.0
Limbs Edge2(Right)	RMC12.2kbps	9750	1950	-0.69	0.190	22.40	22.30	0.194	4.0
Limbs Edge3(Bottom)	RMC12.2kbps	9612	1922.4	-0.35	2.212	22.40	21.91	**2.476**	4.0
Limbs Edge3(Bottom)	RMC12.2kbps	9750	1950	-0.27	1.769	22.40	22.30	1.810	4.0
Limbs Edge3(Bottom)	RMC12.2kbps	9888	1977.6	0.61	**2.309**	22.40	22.22	2.407	4.0
Limbs Edge4(Left)	RMC12.2kbps	9750	1950	0.52	0.038	22.40	22.30	0.039	4.0
Limbs back+ Ear.	RMC12.2kbps	9888	1977.6	-0.04	2.293	22.40	22.22	2.390	4.0

Note:
·For body and Hotspot part, 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 is 0mm for body part, 10mm for hotspot part is and 0mmfor limbs part.
·Plots are only shown for the bold markered worst case SAR results

SAR MEASUREMENT									
Depth of Liquid (cm):>15				Relative Humidity (%): 48.9					
Product: Smartphone									
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	-0.39	0.122	22.90	22.72	0.127	2.0
Left Tilt	RMC12.2kbps	2788	897.6	-0.62	0.093	22.90	22.72	0.097	2.0
Right Cheek	RMC12.2kbps	2712	882.4	-0.25	0.123	22.90	22.84	0.125	2.0
Right Cheek	RMC12.2kbps	2788	897.6	0.41	**0.129**	22.90	22.72	**0.134**	2.0
Right Cheek	RMC12.2kbps	2863	912.6	-0.07	0.126	22.90	22.43	0.140	2.0
Right Tilt	RMC12.2kbps	2788	897.6	-0.52	0.116	22.90	22.72	0.121	2.0
Body back	RMC12.2kbps	2712	882.4	-0.32	1.011	22.90	22.84	1.025	2.0
Body back	RMC12.2kbps	2788	897.6	-0.05	1.027	22.90	22.72	1.070	2.0
Body back	RMC12.2kbps	2863	912.6	0.27	**1.042**	22.90	22.43	**1.161**	2.0
Body front	RMC12.2kbps	2788	897.6	-0.46	0.317	22.90	22.72	0.330	2.0
Body back	HSDPA Subtest 1	2788	897.6	0.28	0.914	22.00	21.74	0.970	2.0
Body back	HSUPA Subtest 1	2788	897.6	0.52	0.885	19.30	18.89	0.973	2.0
Body back+ Ear.	RMC12.2kbps	2863	912.6	-0.32	1.023	22.90	22.43	1.140	2.0
Hotspot back	RMC12.2kbps	2712	882.4	-0.18	0.179	22.90	22.84	0.181	2.0
Hotspot back	RMC12.2kbps	2788	897.6	0.20	0.182	22.90	22.72	0.190	2.0
Hotspot back	RMC12.2kbps	2863	912.6	-0.05	**0.184**	22.90	22.43	**0.205**	2.0
Hotspot front	RMC12.2kbps	2788	897.6	0.32	0.129	22.90	22.72	0.134	2.0
Hotspot back	HSDPA Subtest 1	2788	897.6	0.05	0.170	22.00	21.74	0.180	2.0
Hotspot back	HSUPA Subtest 1	2788	897.6	-0.27	0.175	19.30	18.89	0.192	2.0
Hotspot Edge1(Top)	RMC12.2kbps	2788	897.6	0.42	0.014	22.90	22.72	0.015	2.0
Hotspot Edge2(Right)	RMC12.2kbps	2788	897.6	0.06	0.030	22.90	22.72	0.031	2.0
Hotspot Edge3(Bottom)	RMC12.2kbps	2788	897.6	0.22	0.027	22.90	22.72	0.028	2.0
Hotspot Edge4(Left)	RMC12.2kbps	2788	897.6	0.38	0.015	22.90	22.72	0.016	2.0
Hotspot back+ Ear.	RMC12.2kbps	2863	912.6	0.32	0.145	22.90	22.43	0.162	2.0
Limbs back	RMC12.2kbps	2712	882.4	-0.32	1.011	22.90	22.84	1.025	4.0
Limbs back	RMC12.2kbps	2788	897.6	-0.05	1.027	22.90	22.72	1.070	4.0
Limbs back	RMC12.2kbps	2863	912.6	0.27	**1.042**	22.90	22.43	**1.161**	4.0
Limbs front	RMC12.2kbps	2788	897.6	-0.46	0.317	22.90	22.72	0.330	4.0
Limbs back	HSDPA Subtest 1	2788	897.6	-0.28	0.914	22.00	21.74	0.970	4.0
Limbs back	HSUPA Subtest 1	2788	897.6	-0.52	0.885	19.30	18.89	0.973	4.0
Limbs Edge1(Top)	RMC12.2kbps	2788	897.6	0.39	0.023	22.90	22.72	0.024	4.0
Limbs Edge2(Right)	RMC12.2kbps	2788	897.6	-0.24	0.075	22.90	22.72	0.078	4.0
Limbs Edge3(Bottom)	RMC12.2kbps	2788	897.6	-0.51	0.132	22.90	22.72	0.138	4.0
Limbs Edge4(Left)	RMC12.2kbps	2788	897.6	0.22	0.094	22.90	22.72	0.098	4.0
Limbs back+ Ear.	RMC12.2kbps	2863	912.6	-0.32	1.023	22.90	22.43	1.140	4.0

Note:
·For body and Hotspot part, 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 is 0mm for body part, 10mm for hotspot part is and 0mmfor limbs part.
·Plots are only shown for the bold markered 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:

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

Where

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

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

SAR_{lim} is the SAR limit;

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

Restrictive power threshold;

$P_{available}$ =$P_{th,m}$×(SAR_{lim} -SAR_1)/ SAR_{lim}=20mW×(2W/Kg -1.464 W/Kg)/ 2W/Kg

=5.36mW<33.42mW(15.24dBm) for WIFI

$P_{available}$ =$P_{th,m}$×(SAR_{lim} -SAR_1)/ SAR_{lim}=40mW×(4W/Kg -2.476 W/Kg)/ 4W/Kg

=15.24mW<33.42mW(15.24dBm) for WIFI

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

SAR MEASUREMENT									
Depth of Liquid (cm):>15				Relative Humidity (%): 47.6					
Product: Smartphone									
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	-0.58	0.052	15.24	15.02	0.055	2.0
Left Tilt	DTS	1	2412	-0.72	0.065	15.24	14.92	**0.070**	2.0
Left Tilt	DTS	7	2442	-0.15	0.064	15.24	15.02	0.067	2.0
Left Tilt	DTS	13	2472	-0.36	**0.067**	15.24	15.24	0.067	2.0
Right Cheek	DTS	7	2442	-0.62	0.052	15.24	15.02	0.055	2.0
Right Tilt	DTS	7	2442	0.35	0.052	15.24	15.02	0.055	2.0
Body back	DTS	1	2412	-0.68	0.159	15.24	14.92	**0.171**	2.0
Body back	DTS	7	2442	-0.42	0.161	15.24	15.02	0.169	2.0
Body back	DTS	13	2472	-0.15	**0.164**	15.24	15.24	0.164	2.0
Body front	DTS	7	2442	-0.72	0.023	15.24	15.02	0.024	2.0
Body back + Ear	DTS	7	2442	-0.76	0.161	15.24	15.24	0.161	2.0
Hotspot back	DTS	1	2412	0.12	0.062	15.24	14.92	**0.067**	4.0
Hotspot back	DTS	7	2442	-0.05	0.063	15.24	15.02	0.066	4.0
Hotspot back	DTS	13	2472	-0.32	**0.064**	15.24	15.24	0.064	4.0
Hotspot front	DTS	7	2442	0.28	0.010	15.24	15.02	0.011	4.0
Hotspot Edge1(Top)	DTS	7	2442	-0.52	0.040	15.24	15.02	0.042	4.0
Hotspot Edge2(Right)	DTS	7	2442	-0.32	0.022	15.24	15.02	0.023	4.0
Hotspot Edge3(Bottom)	DTS	7	2442	0.05	0.001	15.24	15.02	0.001	4.0
Hotspot Edge4(Left)	DTS	7	2442	-0.27	0.005	15.24	15.02	0.005	4.0
Hotspot back + Ear	DTS	13	2472	0.12	0.063	15.24	15.24	0.063	4.0
Limbs back	DTS	1	2412	-0.68	0.159	15.24	14.92	**0.171**	4.0
Limbs back	DTS	7	2442	-0.42	0.161	15.24	15.02	0.169	4.0
Limbs back	DTS	13	2472	-0.15	**0.164**	15.24	15.24	0.164	4.0
Limbs front	DTS	7	2442	-0.72	0.023	15.24	15.02	0.024	4.0
Limbs Edge1(Top)	DTS	7	2442	0.30	0.157	15.24	15.02	0.165	4.0
Limbs Edge2(Right)	DTS	7	2442	-0.06	0.089	15.24	15.02	0.094	4.0
Limbs Edge3(Bottom)	DTS	7	2442	-0.27	0.002	15.24	15.02	0.002	4.0
Limbs Edge4(Left)	DTS	7	2442	0.42	0.012	15.24	15.02	0.013	4.0
Limbs back + Ear	DTS	13	2472	-0.76	0.161	15.24	15.24	0.161	4.0

Note:
·For body and Hotspot part, 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 is 0mm for body part, 10mm for hotspot part is and 0mmfor limbs part.
·Plots are only shown for the bold markered 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:

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

Where

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

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

SAR_{lim} is the SAR limit;

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

Restrictive power threshold;

$P_{available}$ =$P_{th,m}$×(SAR_{lim} -SAR_1)/ SAR_{lim}=20mW×(2W/Kg -1.464 W/Kg)/ 2W/Kg

=5.36mW>1.42mW(1.52dBm) for BT(BR/EDR)
=5.36mW>1.32mW(1.21dBm) for BT(BLE)

$P_{available}$ =$P_{th,m}$×(SAR_{lim} -SAR_1)/ SAR_{lim}=40mW×(4W/Kg -2.476 W/Kg)/ 4W/Kg

=15.24mW>1.42mW(1.52dBm) for BT(BR/EDR)
=15.24mW>1.32mW(1.21dBm) for BT(BLE)

According to EN62479:2010, the maximum output power of BT(BR/EDR) is 1.52dBm (1.42mW less than 20mW) refer to ETSI EN 300328 (V2.2.2) Test report (AGC00552200705EE04) 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 1.21dBm (1.32mW less than 20mW) refer to ETSI EN 300328 (V2.2.2) Test report (AGC00552200705EE11) 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 antenna, BT/WIFI antenna;

(2) BT and WIFI share one antenna, and cannot transmit simultaneously;

(3) GSM and GPRS/WCDMA 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	Yes
2	GSM(Data)+WIFI 2.4GHz (data)	Yes	Yes	Yes	Yes
3	WCDMA(RMC12.2kbps)+WIFI 2.4GHz (data)	Yes	Yes	Yes	Yes

Frequence	RF Exposure Conditions	Test Position	Simultaneous Transmission Scenario		Σ10-g SAR (W/Kg)	Limit (W/Kg)
			GSM	WIFI		
GSM 900	Head (voice)	Left Touch	0.124	0.055	0.179	2.0
		Left Tilt	0.074	0.070	0.144	2.0
		Right Touch	0.150	0.055	0.205	2.0
		Right Tilt	0.098	0.055	0.153	2.0
	Body-worn	GPRS-4slots	0.688	0.171	0.859	2.0
		Body Front	0.273	0.024	0.297	2.0
		Earphone	0.458	0.161	0.619	2.0
	Hotspot	Back	0.174	0.067	0.241	2.0
		Front	0.057	0.011	0.068	2.0
		Edge1(Top)	0.004	0.042	0.046	2.0
		Edge2(Right)	0.023	0.023	0.046	2.0
		Edge3(Bottom)	0.050	0.001	0.051	2.0
		Edge4(Left)	0.043	0.005	0.048	2.0
		Earphone	0.054	0.063	0.117	2.0
	Limbs	Back	0.688	0.171	0.859	4.0
		Front	0.273	0.024	0.297	4.0
		Edge1(Top)	0.022	0.165	0.187	4.0
		Edge2(Right)	0.041	0.094	0.135	4.0
		Edge3(Bottom)	0.173	0.002	0.175	4.0
		Edge4(Left)	0.113	0.013	0.126	4.0
		Earphone	0.458	0.161	0.619	4.0
DCS 1800	Head (voice)	Left Touch	0.142	0.055	0.197	2.0
		Left Tilt	0.047	0.070	0.117	2.0
		Right Touch	0.113	0.055	0.168	2.0
		Right Tilt	0.060	0.055	0.115	2.0
	Body-worn	GPRS-4slots	1.464	0.171	1.635	2.0
		Body Front	1.048	0.024	1.072	2.0
		Earphone	1.433	0.161	1.594	2.0
	Hotspot	Back	0.340	0.067	0.407	2.0
		Front	0.296	0.011	0.307	2.0
		Edge1(Top)	0.026	0.042	0.068	2.0
		Edge2(Right)	0.096	0.023	0.119	2.0
		Edge3(Bottom)	0.592	0.001	0.593	2.0
		Edge4(Left)	0.100	0.005	0.105	2.0
		Earphone	0.490	0.063	0.553	2.0
	Limbs	Back	1.297	0.171	1.468	4.0
		Front	1.048	0.024	1.072	4.0
		Edge1(Top)	0.038	0.165	0.203	4.0
		Edge2(Right)	0.264	0.094	0.358	4.0
		Edge3(Bottom)	2.216	0.002	2.218	4.0
		Edge4(Left)	0.134	0.013	0.147	4.0
		Earphone	1.771	0.161	1.932	4.0

Frequence	RF Exposure Conditions	Test Position	Simultaneous Transmission Scenario		Σ10-g SAR (W/Kg)	Limit (W/Kg)
			WCDMA	WIFI		
WCDMA Band I	Head	Left Touch	0.063	0.055	0.118	2.0
		Left Tilt	0.017	0.070	0.087	2.0
		Right Touch	0.050	0.055	0.105	2.0
		Right Tilt	0.031	0.055	0.086	2.0
	Body-worn	Body back	1.206	0.171	1.377	2.0
		Body Front	0.413	0.024	0.437	2.0
		HSDPA	0.877	0.171	1.048	2.0
		HSUPA	0.916	0.171	1.087	2.0
		Earphone	1.168	0.161	1.329	2.0
	Hotspot	Back	0.379	0.067	0.446	2.0
		Front	0.121	0.011	0.132	2.0
		HSDPA	0.213	0.067	0.280	2.0
		HSUPA	0.223	0.067	0.290	2.0
		Edge1(Top)	0.009	0.042	0.051	2.0
		Edge2(Right)	0.071	0.023	0.094	2.0
		Edge3(Bottom)	0.215	0.001	0.216	2.0
		Edge4(Left)	0.032	0.005	0.037	2.0
		Earphone	0.207	0.063	0.270	2.0
	Limbs	Back	0.943	0.171	1.114	4.0
		Front	0.413	0.024	0.437	4.0
		HSDPA	0.877	0.171	1.048	4.0
		HSUPA	0.916	0.171	1.087	4.0
		Edge1(Top)	0.019	0.165	0.184	4.0
		Edge2(Right)	0.194	0.094	0.288	4.0
		Edge3(Bottom)	2.476	0.002	2.478	4.0
		Edge4(Left)	0.039	0.013	0.052	4.0
		Earphone	2.390	0.161	**2.551**	4.0
WCDMA Band VIII	Head	Left Touch	0.127	0.055	0.182	2.0
		Left Tilt	0.097	0.070	0.167	2.0
		Right Touch	0.134	0.055	0.189	2.0
		Right Tilt	0.121	0.055	0.176	2.0
	Body-worn	Body back	1.161	0.171	1.332	2.0
		Body Front	0.330	0.024	0.354	2.0
		HSDPA	0.970	0.171	1.141	2.0
		HSUPA	0.973	0.171	1.144	2.0
		Earphone	1.140	0.161	1.301	2.0
	Hotspot	Back	0.205	0.067	0.272	2.0
		Front	0.134	0.011	0.145	2.0
		HSDPA	0.180	0.067	0.247	2.0
		HSUPA	0.192	0.067	0.259	2.0
		Edge1(Top)	0.015	0.042	0.057	2.0
		Edge2(Right)	0.031	0.023	0.054	2.0
		Edge3(Bottom)	0.028	0.001	0.029	2.0
		Edge4(Left)	0.016	0.005	0.021	2.0
		Earphone	0.162	0.063	0.225	2.0
	Limbs	Back	1.161	0.171	1.332	4.0
		Front	0.330	0.024	0.354	4.0
		HSDPA	0.970	0.171	1.141	4.0
		HSUPA	0.973	0.171	1.144	4.0
		Edge1(Top)	0.024	0.165	0.189	4.0
		Edge2(Right)	0.078	0.094	0.172	4.0
		Edge3(Bottom)	0.138	0.002	0.140	4.0
		Edge4(Left)	0.098	0.013	0.111	4.0
		Earphone	1.140	0.161	1.301	4.0

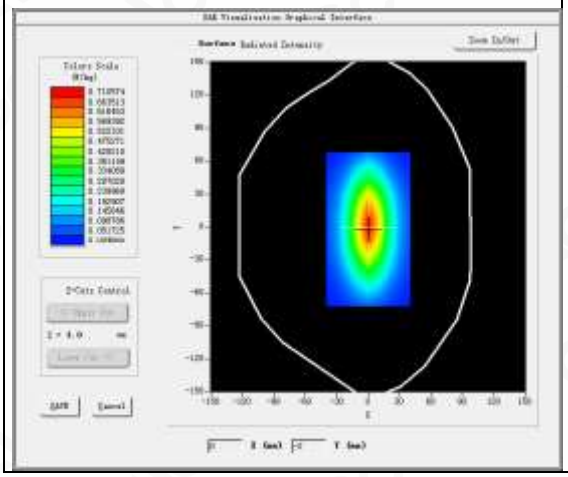
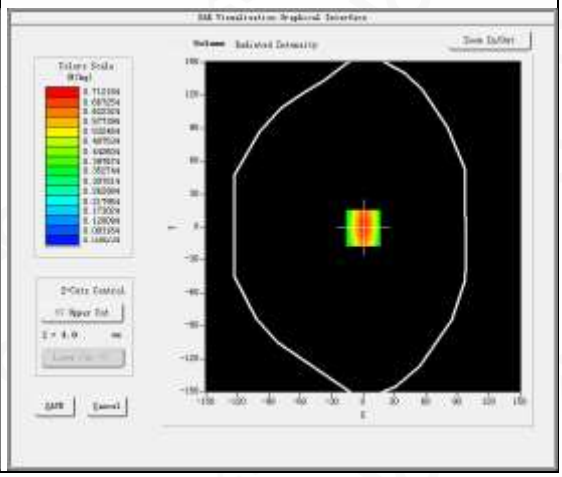
APPENDIX A. SAR SYSTEM CHECK DATA

Test Laboratory: AGC Lab **Date: Aug. 18,2020**
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=5.16
Frequency: 900 MHz; Medium parameters used: f = 900 MHz; σ=0.98 mho/m; εr =40.05; ρ= 1000 kg/m³ ;
Phantom section: Flat Section; Input Power=18dBm
Ambient temperature (℃): 21.1, Liquid temperature (℃): 20.8

SATIMO Configuration:
Probe: SSE5; Calibrated: Jun. 24,2020; Serial No.: SN 24/20 EP336
Sensor-Surface: 4mm (Mechanical Surface Detection)
Phantom: SAM twin phantom
Measurement SW: OpenSAR V4_02_32

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

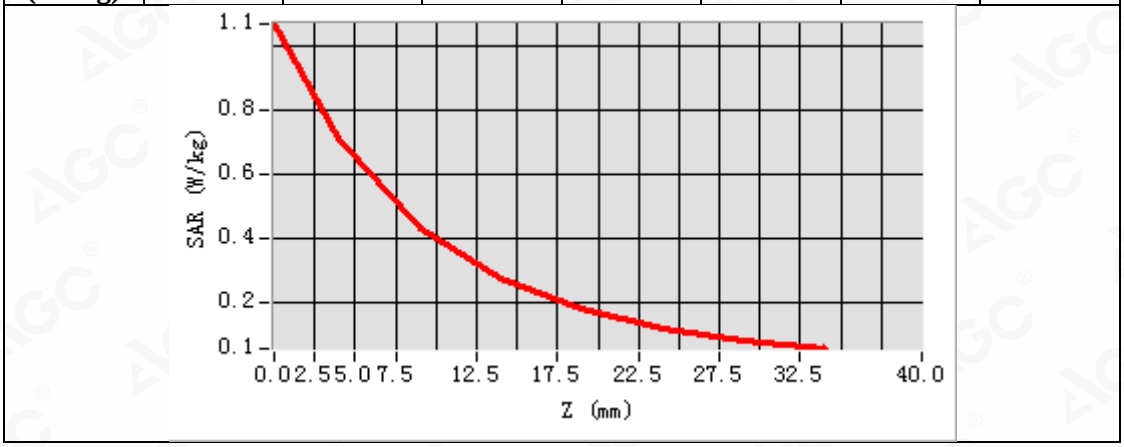
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	SAM twin phantom
Device Position	Flat
Band	CW 900
Channels	Middle
Signal	Crest factor: 1.0

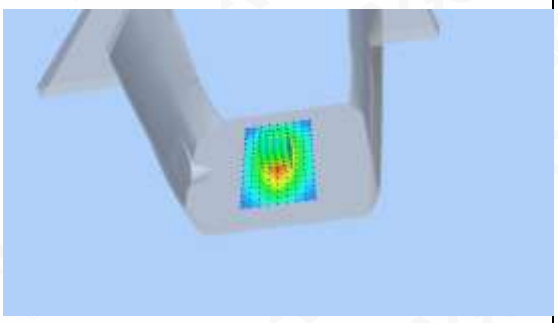
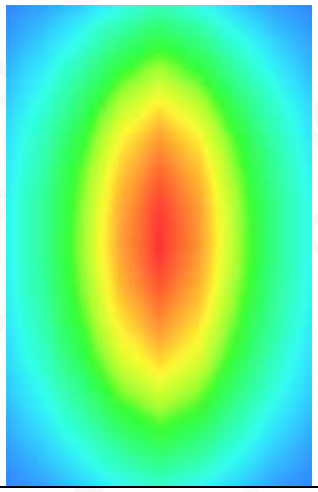
SURFACE SAR	VOLUME SAR
	

Maximum location: X=0.00, Y=-1.00
SAR Peak: 1.06 W/kg

SAR 10g (W/Kg)	0.412388
SAR 1g (W/Kg)	0.673846

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	1.0727	0.7138	0.4227	0.2717	0.1727	0.1138	0.0715



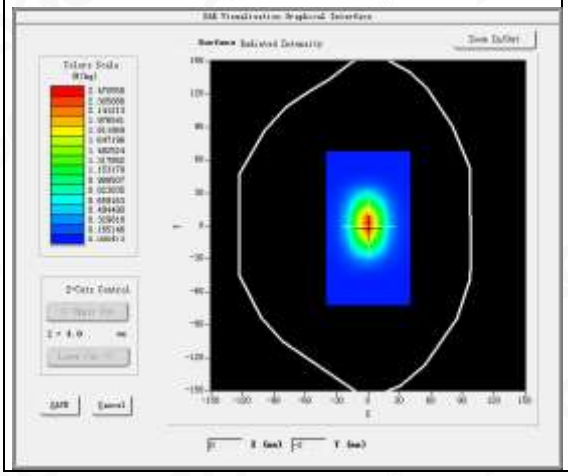
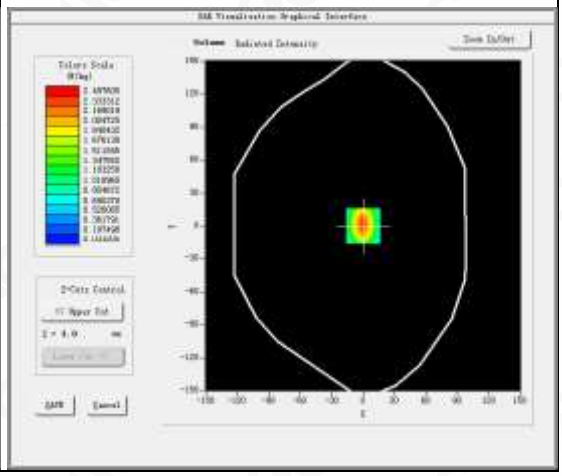
3D screen shot	Hot spot position
	

Test Laboratory: AGC Lab **Date: Aug. 11,2020**
System Check Head 1800MHz
DUT: Dipole 1800 MHz; Type: SID 1800
Communication System: CW; Communication System Band: D1800 (1800.0 MHz); Duty Cycle: 1:1; Conv.F=4.48
Frequency: 1800 MHz; Medium parameters used: f = 1800 MHz; σ= 1.38 mho/m; εr =40.09; ρ= 1000 kg/m³ ;
Phantom section: Flat Section; Input Power=18dBm
Ambient temperature (℃): 21.6, Liquid temperature (℃): 21.3

SATIMO Configuration:
Probe: SSE5; Calibrated: Jun. 24,2020; Serial No.: SN 24/20 EP336
Sensor-Surface: 4mm (Mechanical Surface Detection)
Phantom: SAM twin phantom
Measurement SW: OpenSAR V4_02_32

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

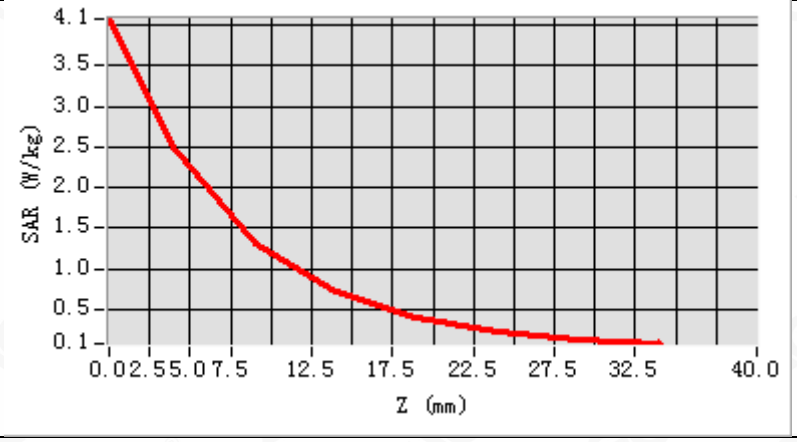
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	SAM twin phantom
Device Position	Flat
Band	CW 1800
Channels	Middle
Signal	Crest factor: 1.0

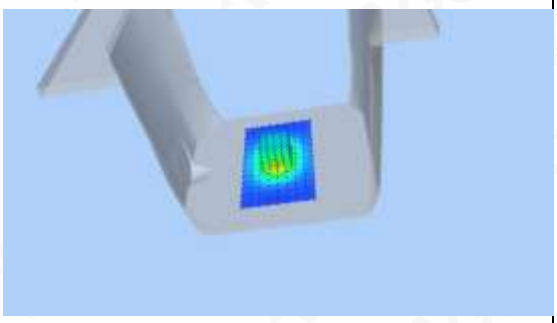
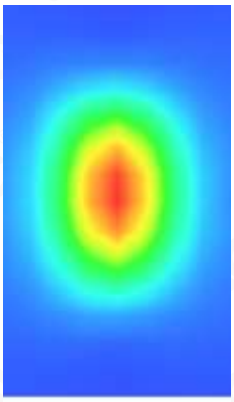
SURFACE SAR	VOLUME SAR
	

Maximum location: X=0.00, Y=0.00
SAR Peak: 4.06 W/kg

SAR 10g (W/Kg)	1.172986
SAR 1g (W/Kg)	2.347587

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	4.0727	2.4939	1.3085	0.7216	0.4028	0.2237	0.1312



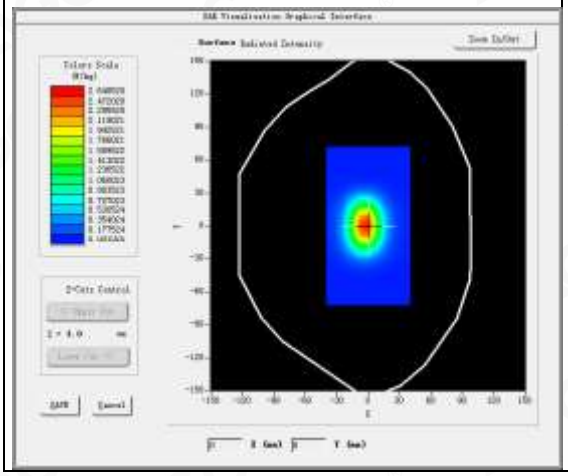
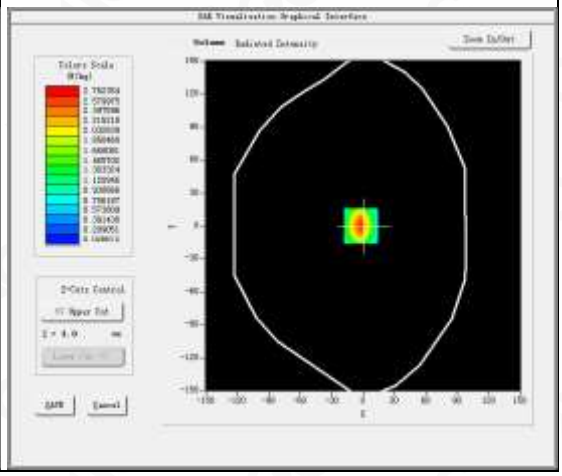
3D screen shot	Hot spot position
	

Test Laboratory: AGC Lab **Date: Aug. 12,2020**
System Check Head 2000MHz
DUT: Dipole 2000 MHz; Type: SID 2000
Communication System: CW; Communication System Band: D2000 (2000.0 MHz); Duty Cycle: 1:1; Conv.F=4.61
Frequency: 2000 MHz; Medium parameters used: f = 2000 MHz; σ=1.38 mho/m; εr =38.74; ρ= 1000 kg/m³ ;
Phantom section: Flat Section; Input Power=18dBm
Ambient temperature (℃): 21.4, Liquid temperature (℃): 21.1

SATIMO Configuration:
Probe: SSE5; Calibrated: Jun. 24,2020; Serial No.: SN 24/20 EP336
Sensor-Surface: 4mm (Mechanical Surface Detection)
Phantom: SAM twin phantom
Measurement SW: OpenSAR V4_02_32

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

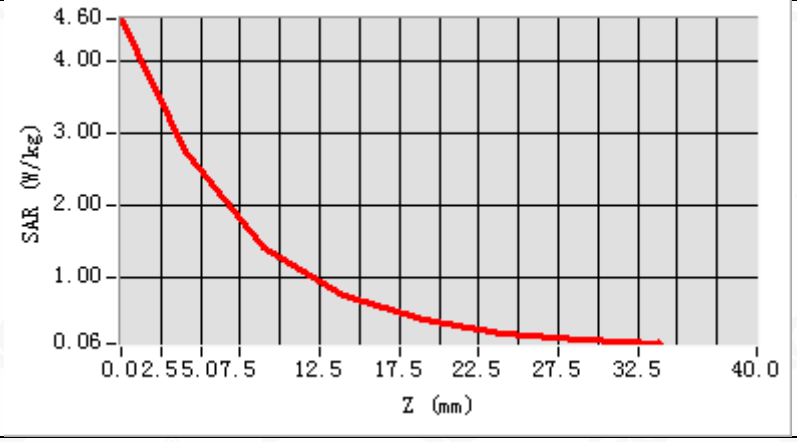
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	SAM twin phantom
Device Position	Flat
Band	CW 2000
Channels	Middle
Signal	Crest factor: 1.0

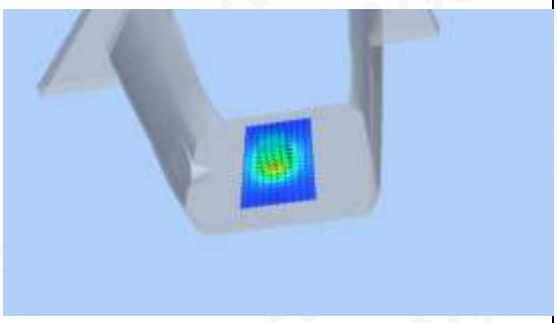
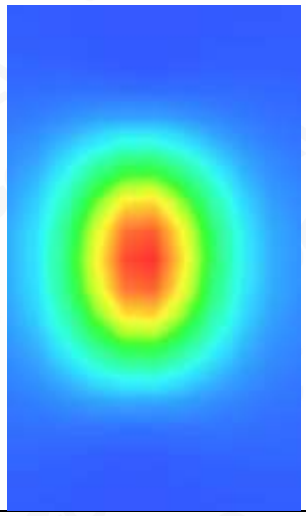
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-2.00, Y=0.00
SAR Peak: 4.58 W/kg

SAR 10g (W/Kg)	1.262853
SAR 1g (W/Kg)	2.593985

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	4.5927	2.7638	1.3948	0.7408	0.3918	0.2136	0.1128



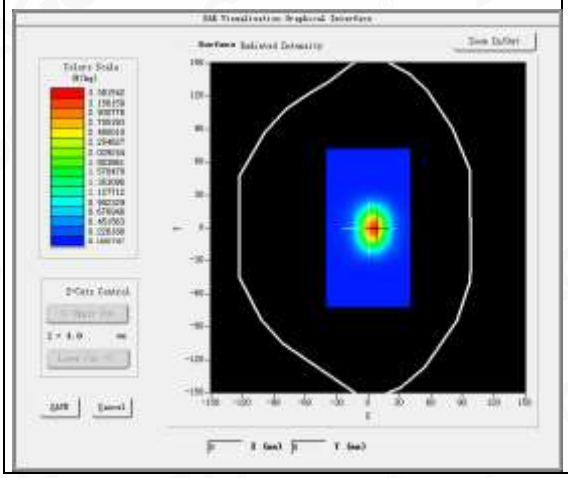
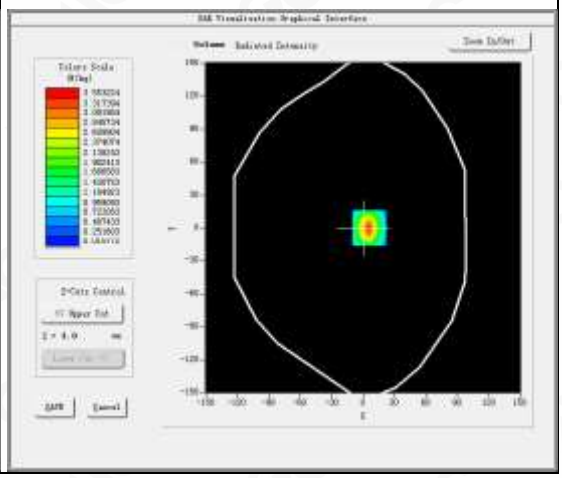
3D screen shot	Hot spot position
	

Test Laboratory: AGC Lab **Date: Aug. 17,2020**
System Check Head 2450 MHz
DUT: Dipole 2450 MHz Type: SID 2450
Communication System: CW; Communication System Band: D2450 (2450.0 MHz); Duty Cycle: 1:1; Conv.F=4.23
Frequency: 2450 MHz; Medium parameters used: f = 2450 MHz; σ =1.75 mho/m; εr =38.65; ρ= 1000 kg/m³ ;
Phantom section: Flat Section; Input Power=18dBm
Ambient temperature (℃): 20.9, Liquid temperature (℃): 20.6

SATIMO Configuration:
Probe: SSE5; Calibrated: Jun. 24,2020; Serial No.: SN 24/20 EP336
Sensor-Surface: 4mm (Mechanical Surface Detection)
Phantom: SAM twin phantom
Measurement SW: OpenSAR V4_02_32

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

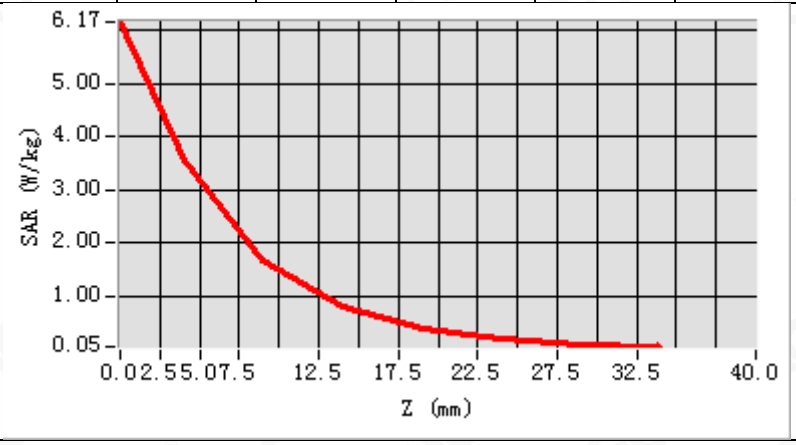
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	SAM twin phantom
Device Position	Flat
Band	CW 2450
Channels	Middle
Signal	Crest factor: 1.0

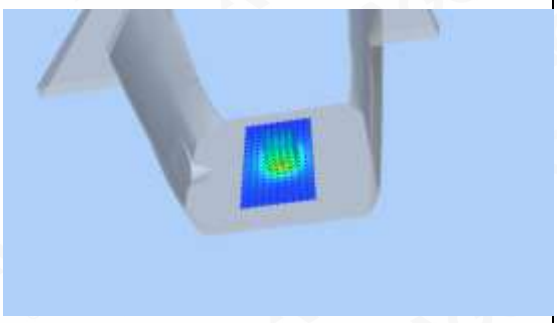
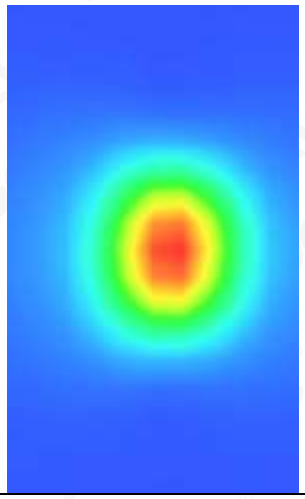
SURFACE SAR	VOLUME SAR
	

Maximum location: X=6.00, Y=0.00
SAR Peak: 6.14 W/kg

SAR 10g (W/Kg)	1.456723
SAR 1g (W/Kg)	3.300137

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	6.1628	3.5516	1.6638	0.8118	0.3943	0.1928	0.0934



3D screen shot	Hot spot position
	

APPENDIX B. SAR MEASUREMENT DATA

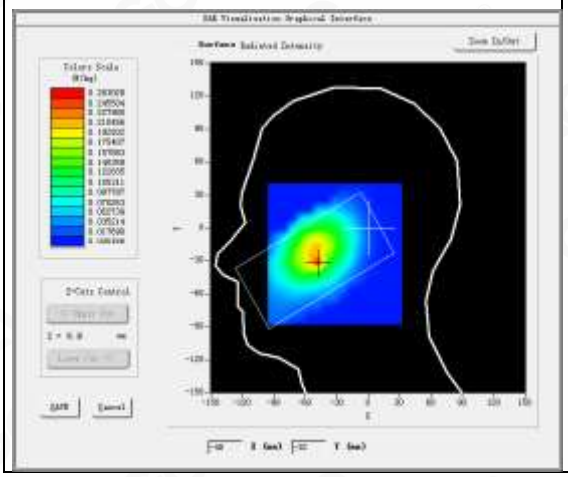
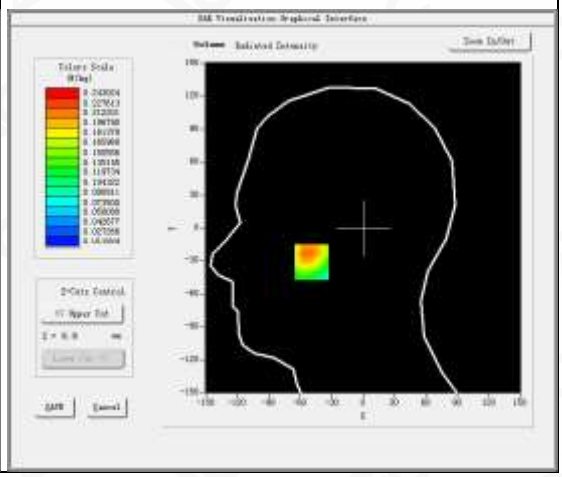
Test Laboratory: AGC Lab **Date: Aug. 18,2020**
GSM 900 Low- Touch-Right <SIM 1>
DUT: Smartphone; Type: J8

Communication System: Generic GSM; Communication System Band: GSM 900; Duty Cycle: 1: 8; Conv.F=5.16
Frequency: 880.2 MHz; Medium parameters used: f = 900 MHz; σ=0.98 mho/m; εr =40.05; ρ= 1000 kg/m³ ;
Phantom section: Right Section
Ambient temperature (℃): 21.1, Liquid temperature (℃): 20.8

SATIMO Configuration:
Probe: SSE5; Calibrated: Jun. 24,2020; Serial No.: SN 24/20 EP336
Sensor-Surface: 4mm (Mechanical Surface Detection)
Phantom: SAM twin phantom
Measurement SW: OpenSAR V4_02_32

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

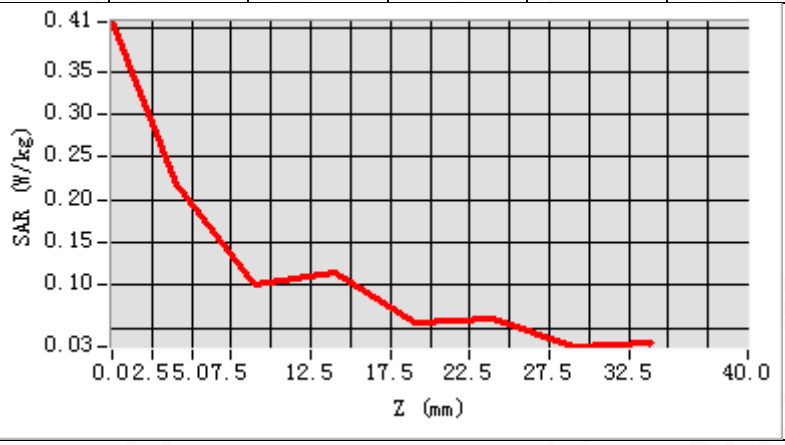
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Right head
Device Position	Cheek
Band	GSM 900
Channels	Low
Signal	TDMA (Crest factor: 8.0)

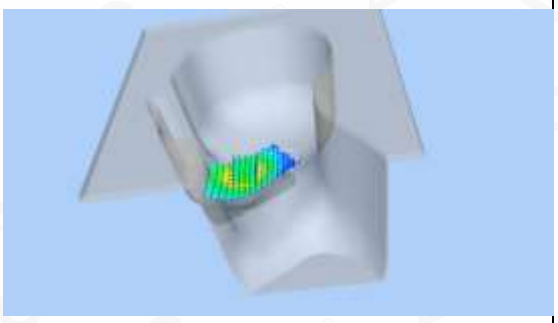
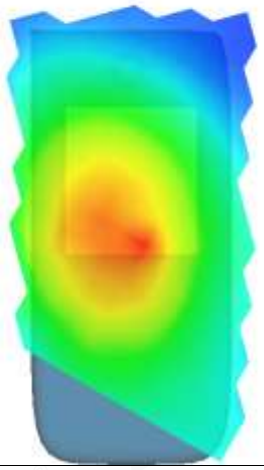
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-49.00, Y=-31.00
SAR Peak: 0.48 W/kg

SAR 10g (W/Kg)	0.148024
SAR 1g (W/Kg)	0.243923

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.4075	0.2178	0.1010	0.1148	0.0558	0.0620	0.0286



3D screen shot	Hot spot position
	

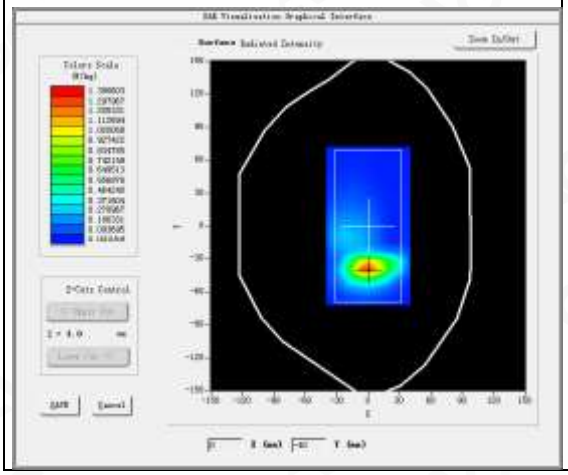
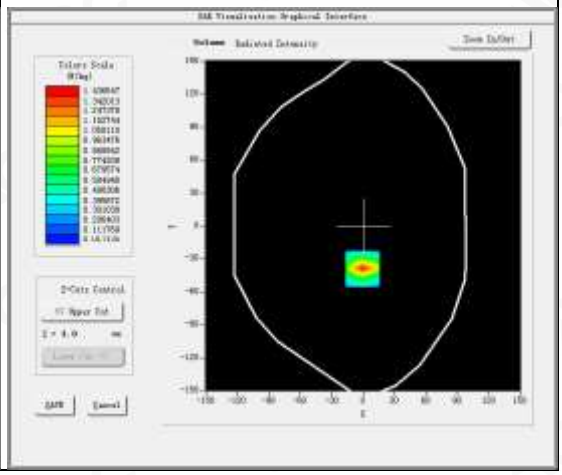
Test Laboratory: AGC Lab **Date: Aug. 18,2020**
GPRS 900 High-Body- Worn(Limbs)- Back (4up) <SIM 1>
DUT: Smartphone; Type: J8

Communication System: GPRS-4 Slot; Communication System Band: GSM 900;Duty Cycle:1:2.1 ; Conv.F=5.16
Frequency: 914.8 MHz; Medium parameters used: f = 900 MHz; σ=0.98 mho/m; εr =40.05; ρ= 1000 kg/m³ ;
Phantom section: Flat Section
Ambient temperature (℃): 21.1, Liquid temperature (℃): 20.8

SATIMO Configuration:
Probe: SSE5; Calibrated: Jun. 24,2020; Serial No.: SN 24/20 EP336
Sensor-Surface: 4mm (Mechanical Surface Detection)
Phantom: SAM twin phantom
Measurement SW: OpenSAR V4_02_32

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

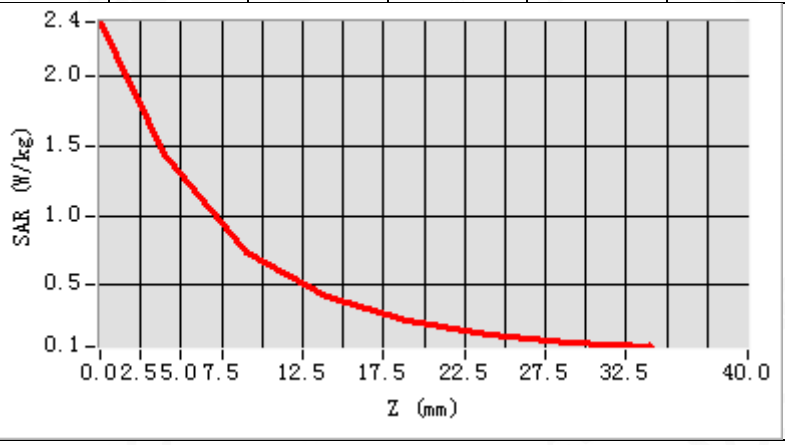
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Body(Limbs) Back
Band	GSM 900
Channels	High
Signal	TDMA (Crest factor: 2.0)

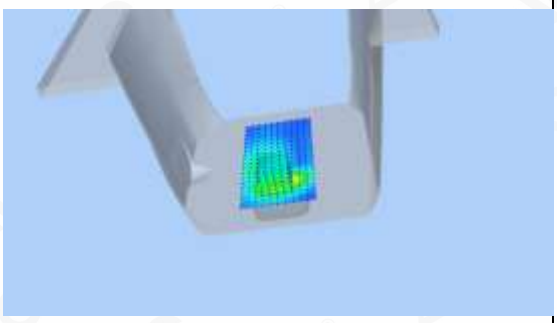
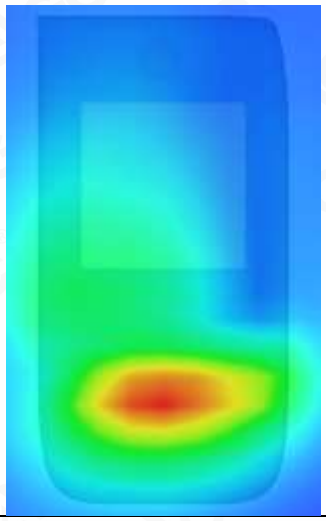
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-1.00, Y=-39.00
SAR Peak: 2.37 W/kg

SAR 10g (W/Kg)	0.611685
SAR 1g (W/Kg)	1.293657

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	2.3948	1.4366	0.7383	0.4178	0.2422	0.1456	0.0884



3D screen shot	Hot spot position
	

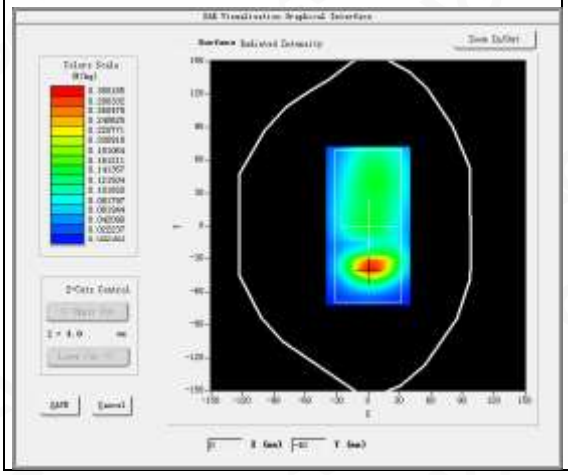
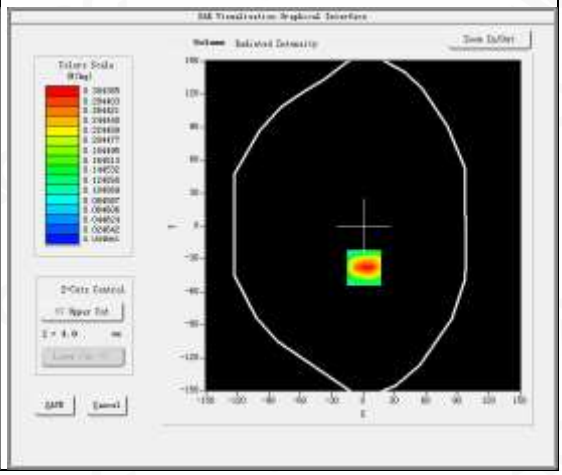
Test Laboratory: AGC Lab **Date: Aug. 18,2020**
GPRS 900 High-Hotspot- Back (4up) <SIM 1>
DUT: Smartphone; Type: J8

Communication System: GPRS-4 Slot; Communication System Band: GSM 900;Duty Cycle:1:2.1 ; Conv.F=5.16
Frequency: 914.8 MHz; Medium parameters used: f = 900 MHz; σ=0.98 mho/m; εr =40.05; ρ= 1000 kg/m³ ;
Phantom section: Flat Section
Ambient temperature (℃): 21.1, Liquid temperature (℃): 20.8

SATIMO Configuration:
Probe: SSE5; Calibrated: Jun. 24,2020; Serial No.: SN 24/20 EP336
Sensor-Surface: 4mm (Mechanical Surface Detection)
Phantom: SAM twin phantom
Measurement SW: OpenSAR V4_02_32

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;

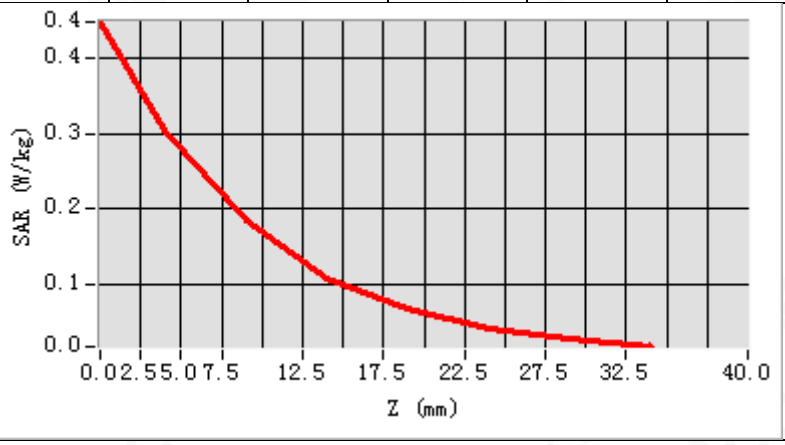
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Hotspot Back
Band	GSM 900
Channels	High
Signal	TDMA (Crest factor: 2.0)

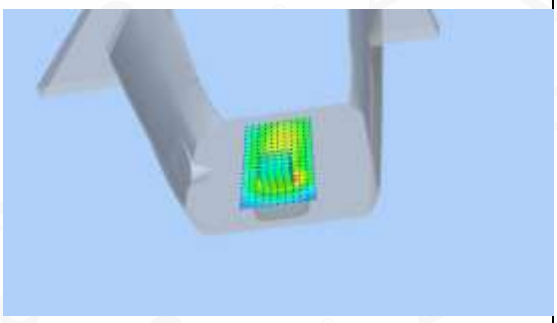
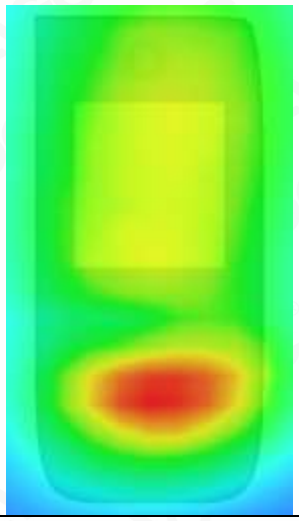
SURFACE SAR	VOLUME SAR
	

Maximum location: X=1.00, Y=-38.00
SAR Peak: 0.47 W/kg

SAR 10g (W/Kg)	0.154558
SAR 1g (W/Kg)	0.286225

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.4480	0.3044	0.1837	0.1075	0.0656	0.0406	0.0257



3D screen shot	Hot spot position
	

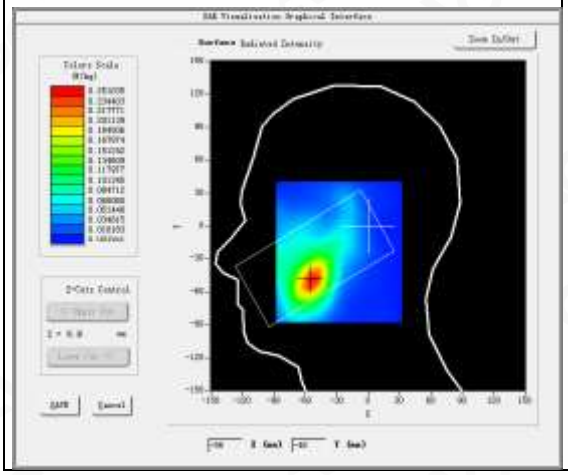
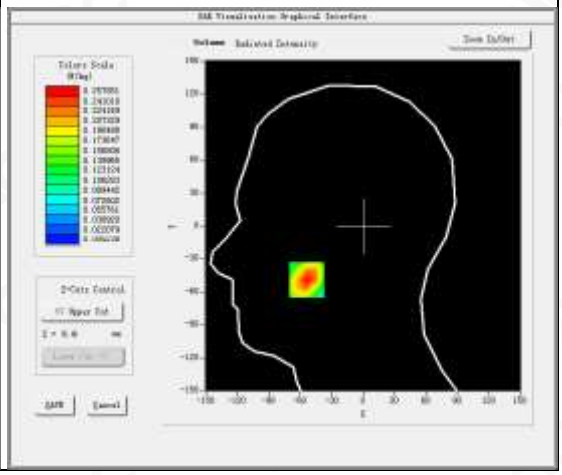
Test Laboratory: AGC Lab **Date: Aug. 11,2020**
DCS 1800 Low-Touch-Left <SIM1>
DUT: Smartphone; Type: J8

Communication System: Generic GSM; Communication System Band: DCS 1800; Duty Cycle: 1:8; Conv.F=4.48
Frequency: 1710.2 MHz; Medium parameters used: f = 1800 MHz; σ= 1.38 mho/m; εr =40.09; ρ= 1000 kg/m³ ;
Phantom section: Left Section
Ambient temperature (℃):21.6, Liquid temperature (℃):21.3

SATIMO Configuration:
Probe: SSE5; Calibrated: Jun. 24,2020; Serial No.: SN 24/20 EP336
Sensor-Surface: 4mm (Mechanical Surface Detection)
Phantom: SAM twin phantom
Measurement SW: OpenSAR V4_02_32

Configuration/DCS1800 Low- Touch-Left/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/DCS1800 Low- Touch-Left/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

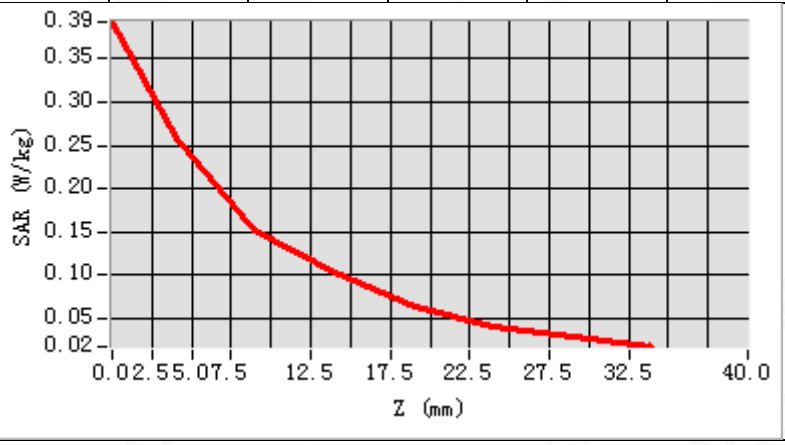
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Left head
Device Position	Cheek
Band	DCS 1800
Channels	Low
Signal	TDMA (Crest factor: 8.0)

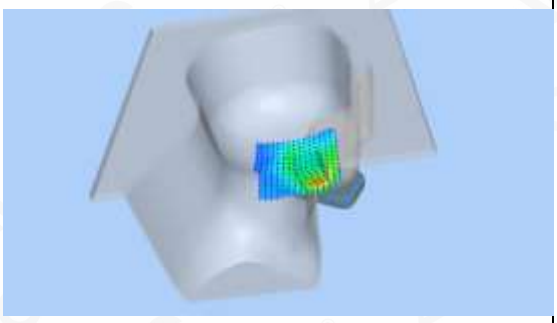
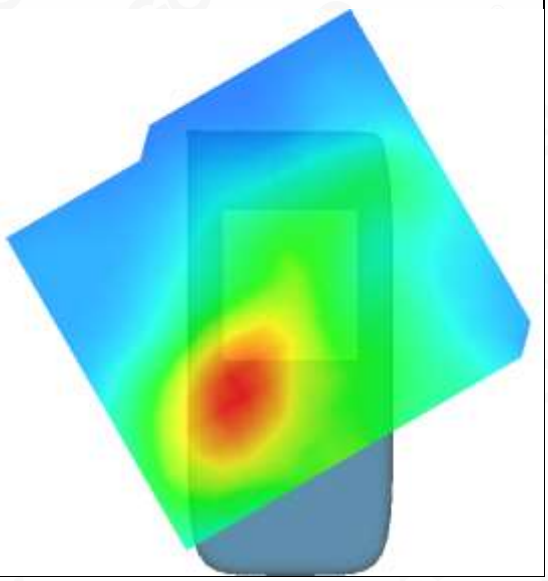
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-54.00, Y=-49.00
SAR Peak: 0.41 W/kg

SAR 10g (W/Kg)	0.139196
SAR 1g (W/Kg)	0.248142

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.3927	0.2579	0.1515	0.1033	0.0640	0.0404	0.0276



3D screen shot	Hot spot position
	

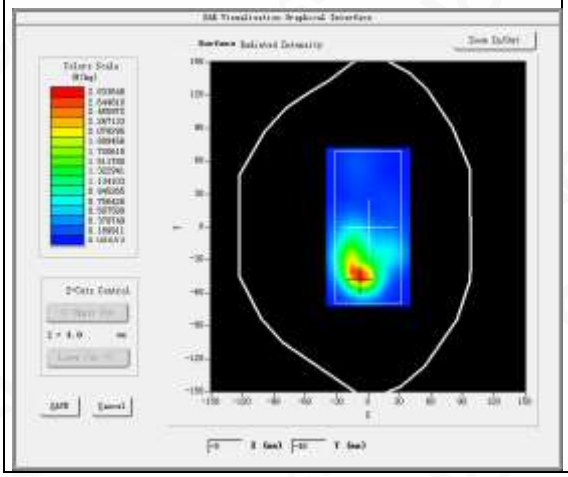
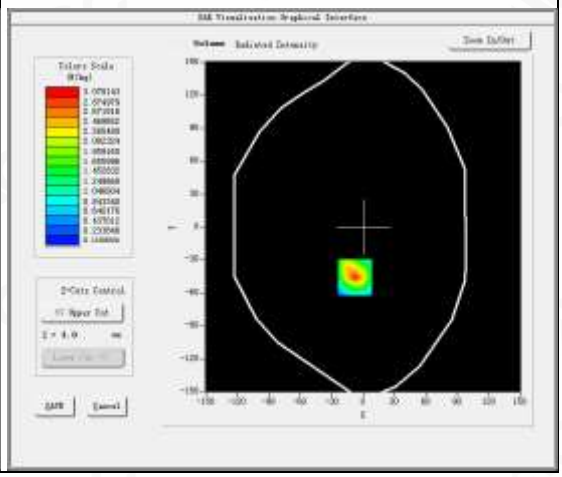
Test Laboratory: AGC Lab **Date: Aug. 11,2020**
GPRS 1800 High-Body- Worn- Back (4up) <SIM1>
DUT: Smartphone; Type: J8

Communication System: GPRS-4 Slot; Communication System Band: DCS1800; Duty Cycle: 1:2.1; Conv.F=4.48
Frequency: 1784.8 MHz; Medium parameters used: f = 1800 MHz; σ= 1.38 mho/m; εr =40.09; ρ= 1000 kg/m³ ;
Phantom section: Flat Section
Ambient temperature (℃):21.6, Liquid temperature (℃):21.3

SATIMO Configuration:
Probe: SSE5; Calibrated: Jun. 24,2020; Serial No.: SN 24/20 EP336
Sensor-Surface: 4mm (Mechanical Surface Detection)
Phantom: SAM twin phantom
Measurement SW: OpenSAR V4_02_32

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

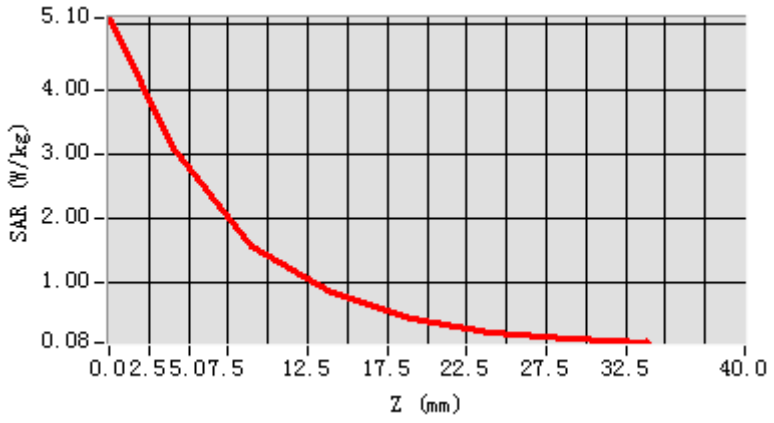
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Body Back
Band	DCS 1800
Channels	High
Signal	TDMA (Crest factor: 2.0)

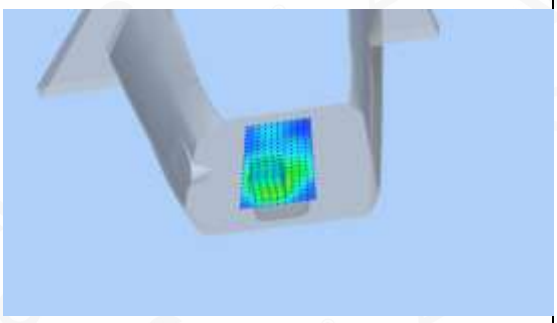
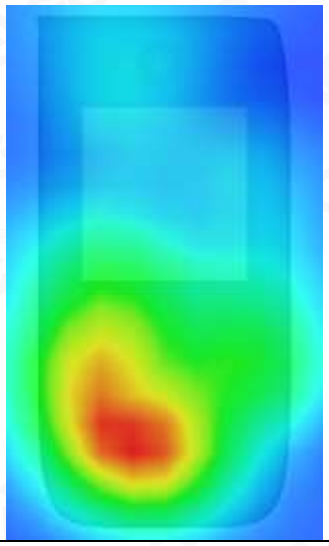
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-8.00, Y=-46.00
SAR Peak: 5.06 W/kg

SAR 10g (W/Kg)	1.356798
SAR 1g (W/Kg)	2.816271

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	5.1050	3.0781	1.5707	0.8551	0.4636	0.2472	0.1407



3D screen shot	Hot spot position
	

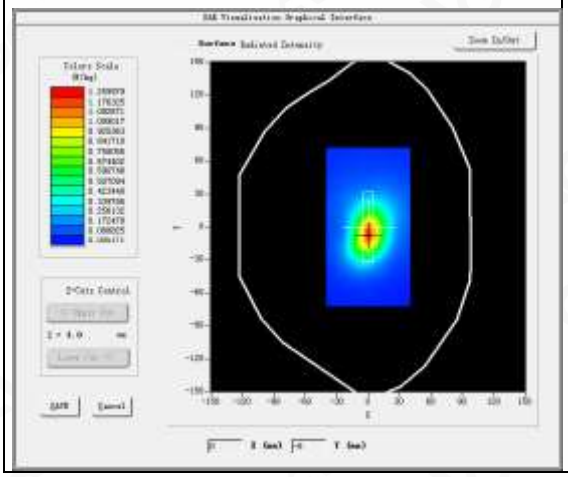
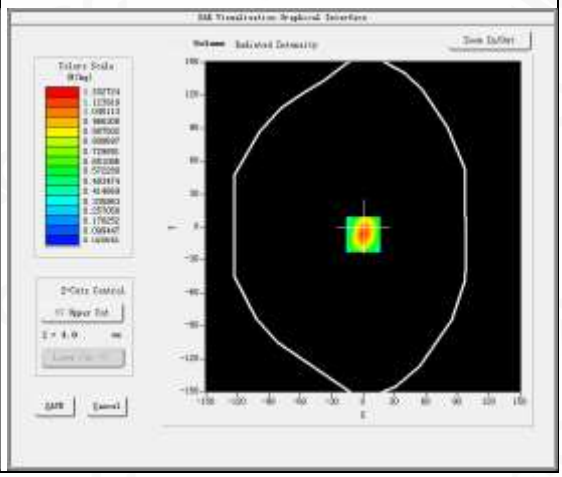
Test Laboratory: AGC Lab **Date: Aug. 11,2020**
GPRS 1800 Mid-Hotspot- Edge3 (4up) <SIM1>
DUT: Smartphone; Type: J8

Communication System: GPRS-4 Slot; Communication System Band: DCS1800; Duty Cycle: 1:2.1; Conv.F=4.48
Frequency: 1747.4 MHz; Medium parameters used: f = 1800 MHz; σ= 1.38 mho/m; εr =40.09; ρ= 1000 kg/m^3 ;
Phantom section: Flat Section
Ambient temperature (℃):21.6, Liquid temperature (℃):21.3

SATIMO Configuration:
Probe: SSE5; Calibrated: Jun. 24,2020; Serial No.: SN 24/20 EP336
Sensor-Surface: 4mm (Mechanical Surface Detection)
Phantom: SAM twin phantom
Measurement SW: OpenSAR V4_02_32

Configuration/GPRS 1800 Mid- Hotspot- Edge3 /Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/GPRS 1800 Mid- Hotspot- Edge3 /Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

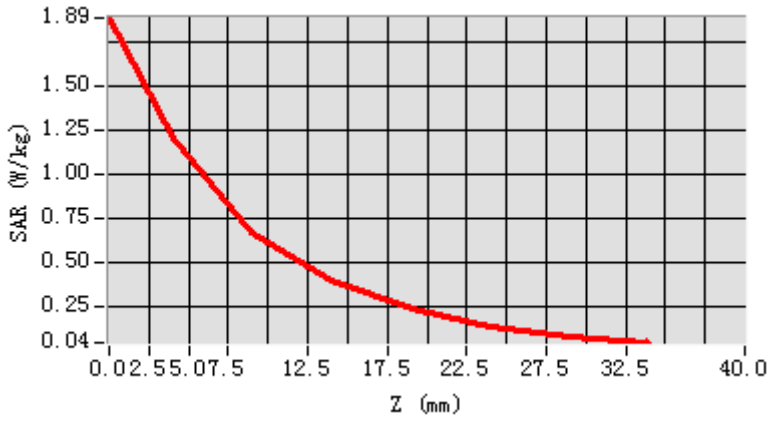
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Hotspot Edge3
Band	DCS 1800
Channels	Middle
Signal	TDMA (Crest factor: 2.0)

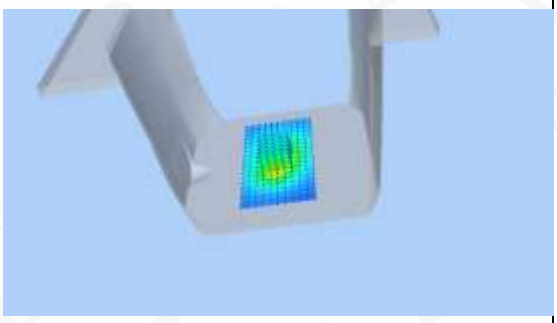
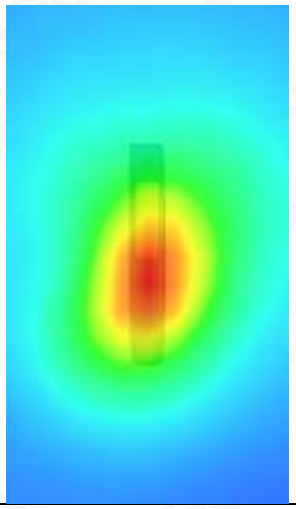
SURFACE SAR	VOLUME SAR
	

Maximum location: X=0.00, Y=-7.00
SAR Peak: 1.87 W/kg

SAR 10g (W/Kg)	0.591469
SAR 1g (W/Kg)	1.121827

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	1.8880	1.2027	0.6712	0.4008	0.2363	0.1329	0.0813



3D screen shot	Hot spot position
	

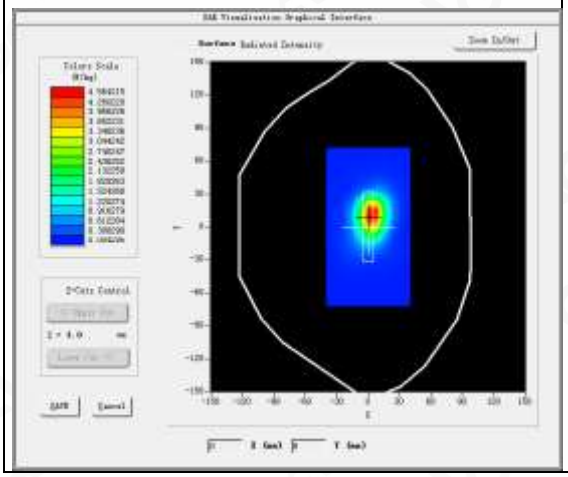
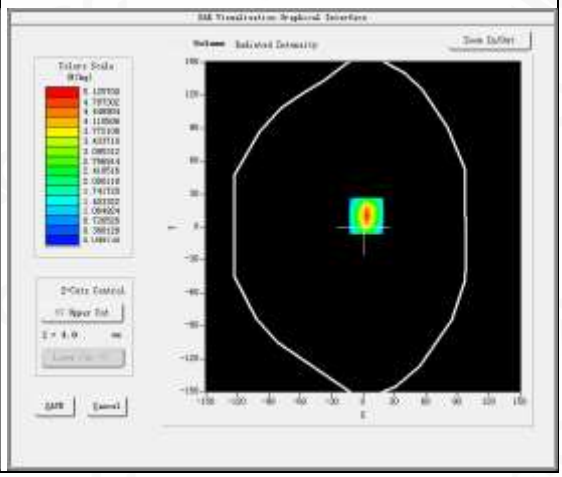
Test Laboratory: AGC Lab **Date: Aug. 11,2020**
GPRS 1800 Low-Limbs- Edge3 (4up) <SIM1>
DUT: Smartphone; Type: J8

Communication System: GPRS-4 Slot; Communication System Band: DCS1800; Duty Cycle: 1:2.1; Conv.F=4.48
Frequency: 1710.2 MHz; Medium parameters used: f = 1800 MHz; σ= 1.38 mho/m; εr =40.09; ρ= 1000 kg/m^3 ;
Phantom section: Flat Section
Ambient temperature (℃):21.6, Liquid temperature (℃):21.3

SATIMO Configuration:
Probe: SSE5; Calibrated: Jun. 24,2020; Serial No.: SN 24/20 EP336
Sensor-Surface: 4mm (Mechanical Surface Detection)
Phantom: SAM twin phantom
Measurement SW: OpenSAR V4_02_32

Configuration/GPRS 1800 Low-Limbs- Edge3 /Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/GPRS 1800 Low-Limbs- Edge3 /Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

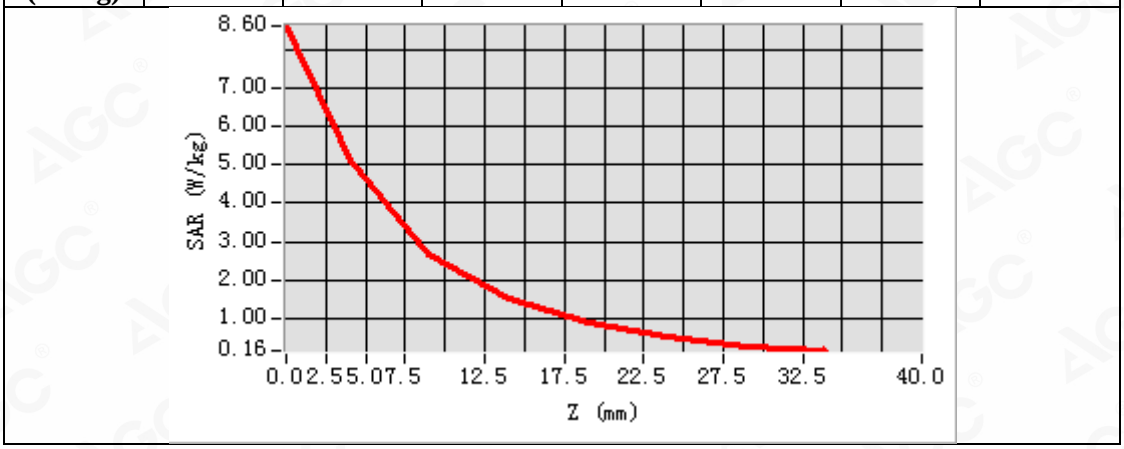
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Limbs Edge3
Band	DCS 1800
Channels	Low
Signal	TDMA (Crest factor: 2.0)

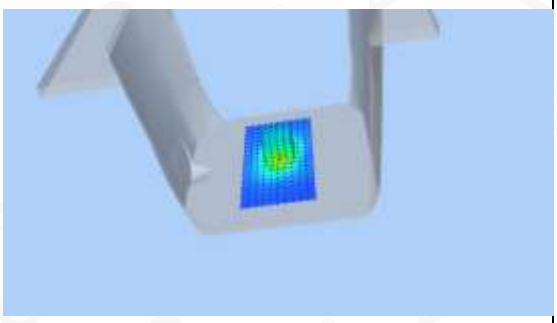
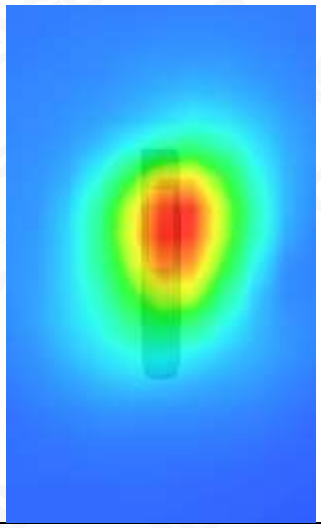
SURFACE SAR	VOLUME SAR
	

Maximum location: X=3.00, Y=10.00
SAR Peak: 8.49 W/kg

SAR 10g (W/Kg)	2.201304
SAR 1g (W/Kg)	4.700906

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	8.6021	5.1257	2.6388	1.5437	0.9173	0.5164	0.2884



3D screen shot	Hot spot position
	

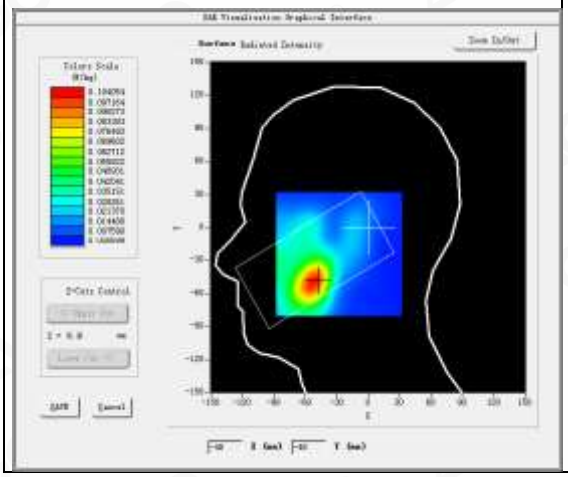
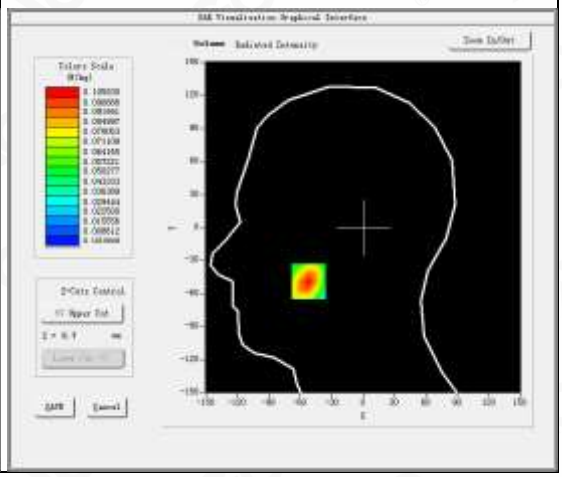
Test Laboratory: AGC Lab **Date: Aug. 12,2020**
WCDMA Band I Low-Touch-Left (RMC)
DUT: Smartphone; Type: J8

Communication System: UMTS; Communication System Band: Band I UTRA/FDD ; Duty Cycle: 1:1; Conv.F=4.61;
Frequency: 1922.4MHz; Medium parameters used: f = 2000 MHz; σ= 1.38 mho/m; εr =38.74; ρ= 1000 kg/m³ ;
Phantom section: Left Section
Ambient temperature (℃):21.4, Liquid temperature (℃):21.1

SATIMO Configuration:
Probe: SSE5; Calibrated: Jun. 24,2020; Serial No.: SN 24/20 EP336
Sensor-Surface: 4mm (Mechanical Surface Detection)
Phantom: SAM twin phantom
Measurement SW: OpenSAR V4_02_32

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

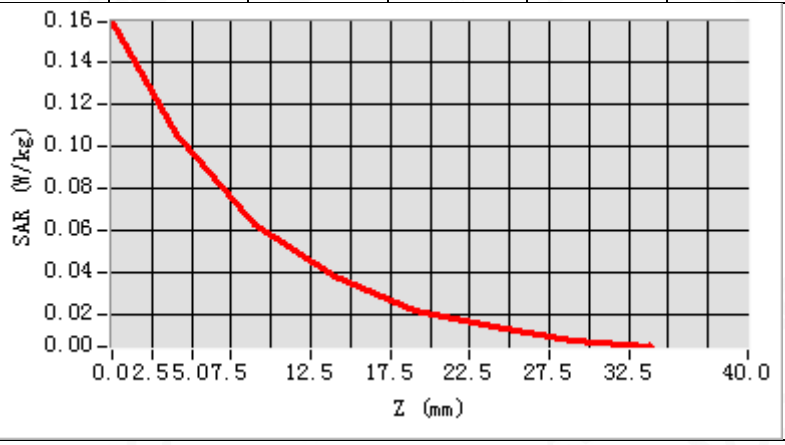
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Left head
Device Position	Cheek
Band	WCDMA Band I
Channels	Low
Signal	CDMA (Crest factor: 1.0)

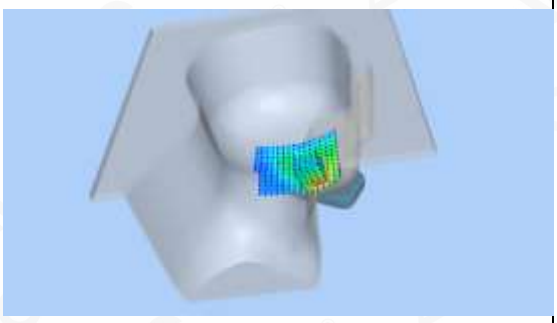
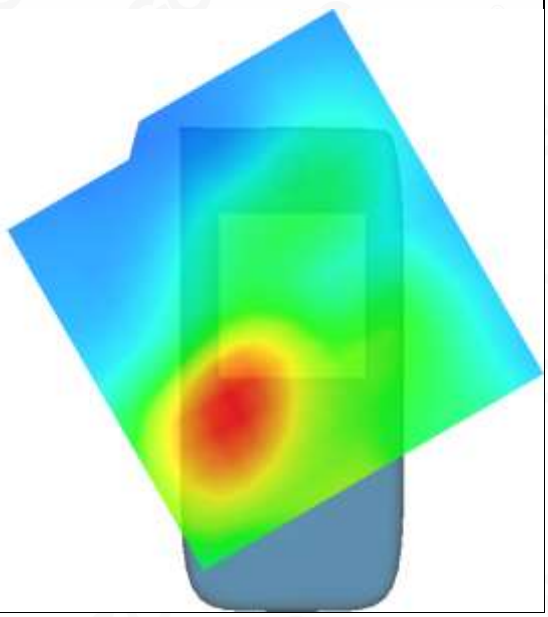
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-52.00, Y=-49.00
SAR Peak: 0.16 W/kg

SAR 10g (W/Kg)	0.055920
SAR 1g (W/Kg)	0.100387

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.1592	0.1058	0.0624	0.0380	0.0222	0.0137	0.0077



3D screen shot	Hot spot position
	

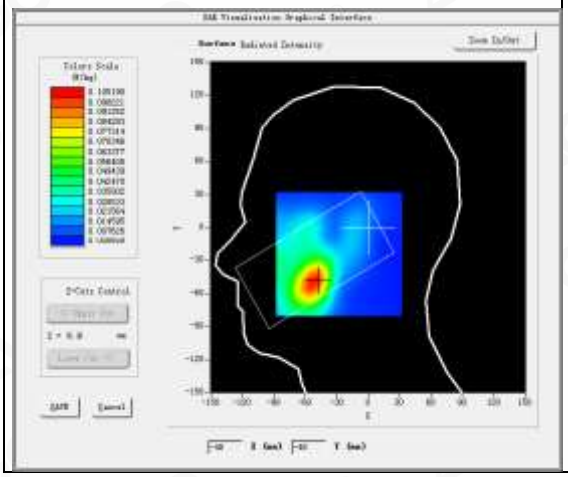
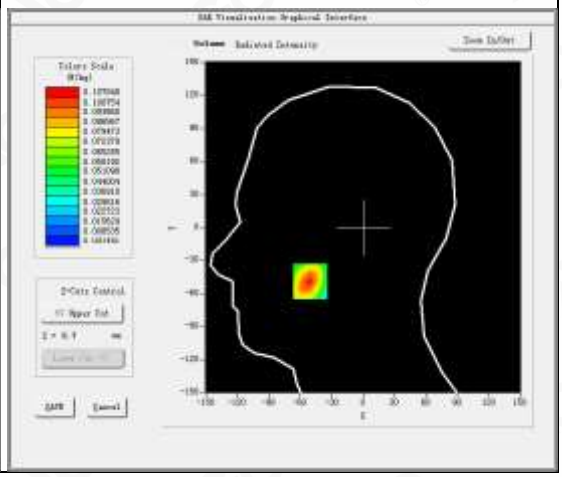
Test Laboratory: AGC Lab **Date: Aug. 12,2020**
WCDMA Band I Mid-Touch-Left (RMC)
DUT: Smartphone; Type: J8

Communication System: UMTS; Communication System Band: Band I UTRA/FDD ; Duty Cycle: 1:1; Conv.F=4.61;
Frequency: 1950MHz; Medium parameters used: f = 2000 MHz; σ= 1.38 mho/m; εr =38.74; ρ= 1000 kg/m³ ;
Phantom section: Left Section
Ambient temperature (℃):21.4, Liquid temperature (℃):21.1

SATIMO Configuration:
Probe: SSE5; Calibrated: Jun. 24,2020; Serial No.: SN 24/20 EP336
Sensor-Surface: 4mm (Mechanical Surface Detection)
Phantom: SAM twin phantom
Measurement SW: OpenSAR V4_02_32

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

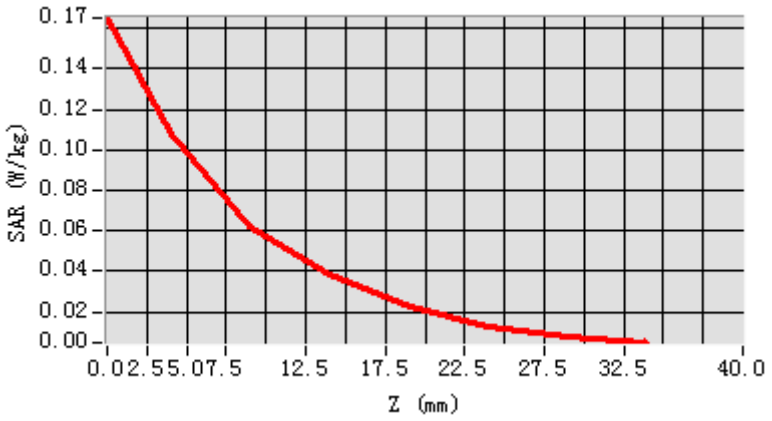
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Left head
Device Position	Cheek
Band	WCDMA Band I
Channels	Middle
Signal	CDMA (Crest factor: 1.0)

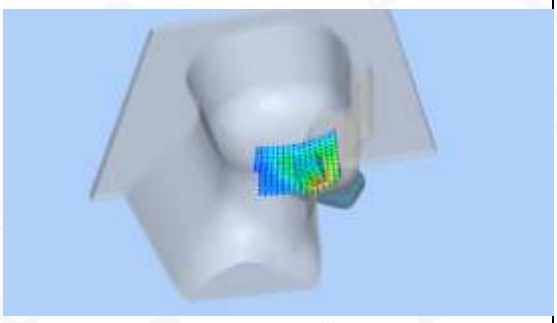
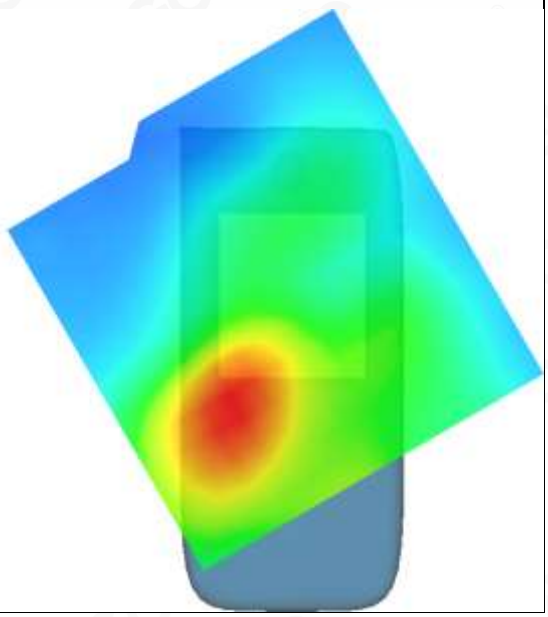
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-51.00, Y=-49.00
SAR Peak: 0.16 W/kg

SAR 10g (W/Kg)	0.057051
SAR 1g (W/Kg)	0.102880

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.1650	0.1078	0.0625	0.0382	0.0230	0.0131	0.0079



3D screen shot	Hot spot position
	

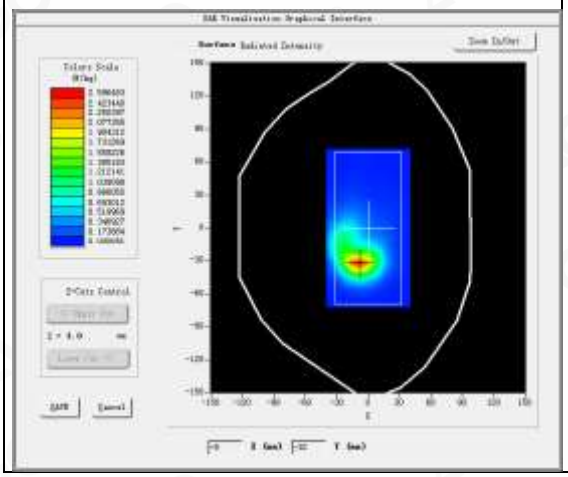
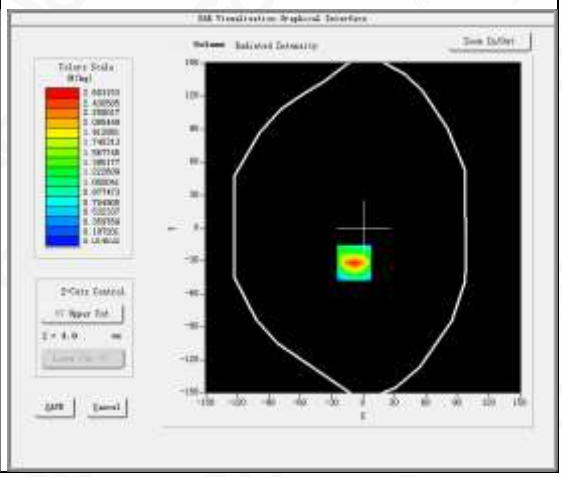
Test Laboratory: AGC Lab **Date: Aug. 12,2020**
WCDMA Band I Low-Body-Towards Grounds (RMC)
DUT: Smartphone; Type: J8

Communication System: UMTS; Communication System Band: Band I UTRA/FDD ;Duty Cycle:1:1; Conv.F=4.61;
Frequency: 1922.4MHz; Medium parameters used: f = 2000 MHz; σ= 1.38mho/m; εr =38.74; ρ= 1000 kg/m³ ;
Phantom section: Flat Section
Ambient temperature (℃):21.4, Liquid temperature (℃):21.1

SATIMO Configuration:
Probe: SSE5; Calibrated: Jun. 24,2020; Serial No.: SN 24/20 EP336
Sensor-Surface: 4mm (Mechanical Surface Detection)
Phantom: SAM twin phantom
Measurement SW: OpenSAR V4_02_32

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

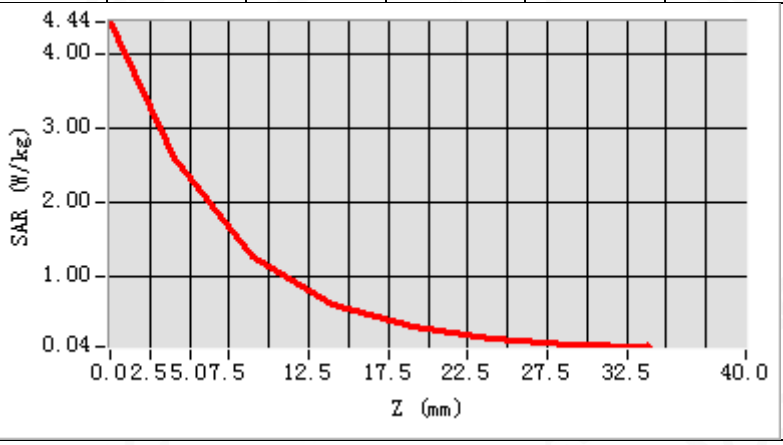
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Body Back
Band	WCDMA Band I
Channels	Low
Signal	CDMA (Crest factor: 1.0)

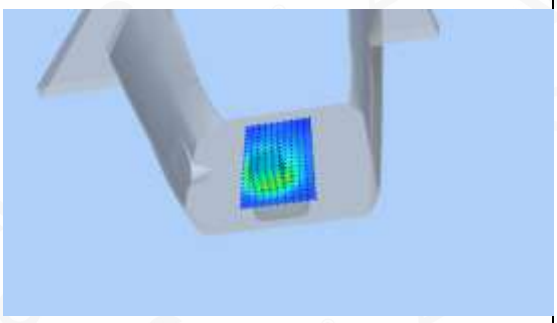
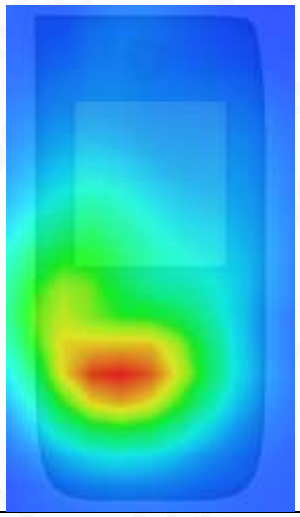
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-9.00, Y=-32.00
SAR Peak: 4.56 W/kg

SAR 10g (W/Kg)	1.077414
SAR 1g (W/Kg)	2.398374

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	4.4414	2.6032	1.2597	0.6210	0.3150	0.1601	0.0831



3D screen shot	Hot spot position
	

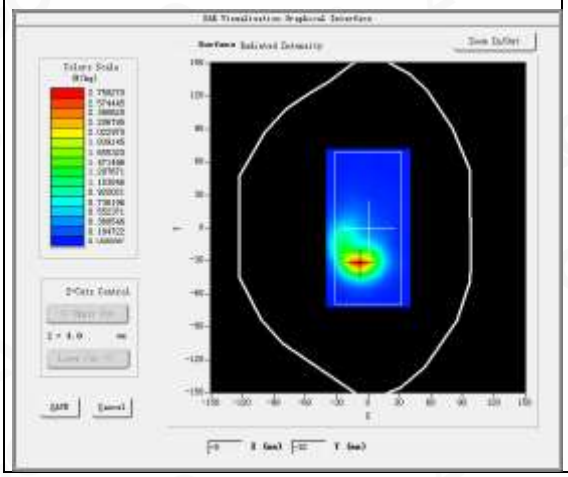
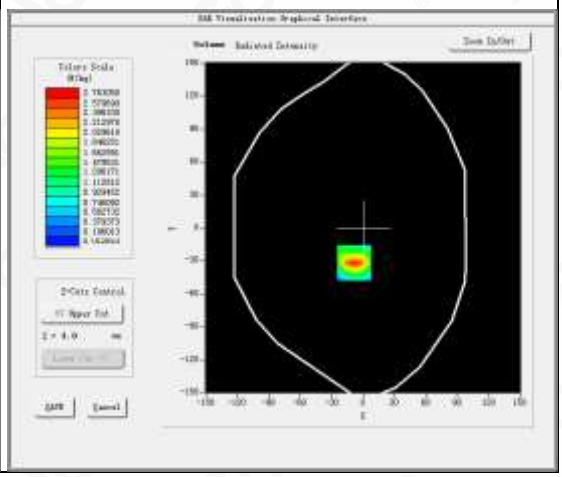
Test Laboratory: AGC Lab **Date: Aug. 12,2020**
WCDMA Band I High-Body-Towards Grounds (RMC)
DUT: Smartphone; Type: J8

Communication System: UMTS; Communication System Band: Band I UTRA/FDD ;Duty Cycle:1:1; Conv.F=4.61;
Frequency: 1977.6MHz; Medium parameters used: f = 2000 MHz; σ= 1.38mho/m; εr =38.74; ρ= 1000 kg/m³ ;
Phantom section: Flat Section
Ambient temperature (℃):21.4, Liquid temperature (℃):21.1

SATIMO Configuration:
Probe: SSE5; Calibrated: Jun. 24,2020; Serial No.: SN 24/20 EP336
Sensor-Surface: 4mm (Mechanical Surface Detection)
Phantom: SAM twin phantom
Measurement SW: OpenSAR V4_02_32

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

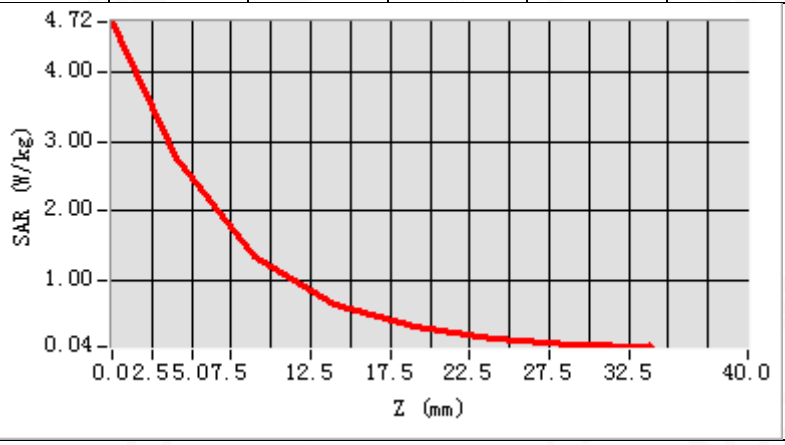
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Body Back
Band	WCDMA Band I
Channels	High
Signal	CDMA (Crest factor: 1.0)

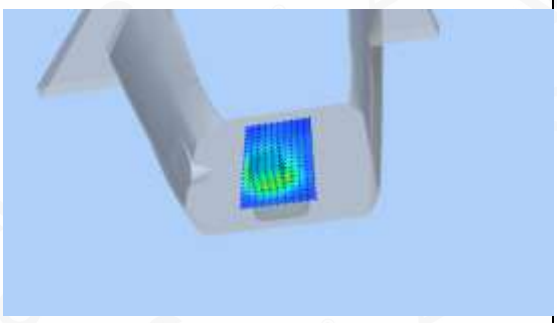
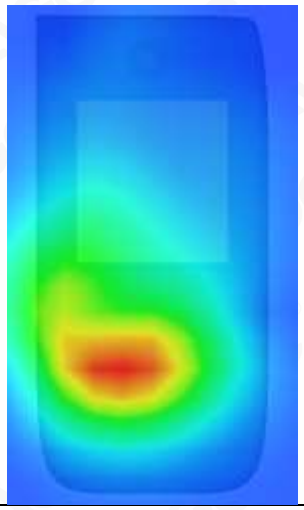
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-9.00, Y=-32.00
SAR Peak: 4.88 W/kg

SAR 10g (W/Kg)	1.143788
SAR 1g (W/Kg)	2.551474

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	4.7227	2.7630	1.3279	0.6459	0.3187	0.1577	0.0798



3D screen shot	Hot spot position
	

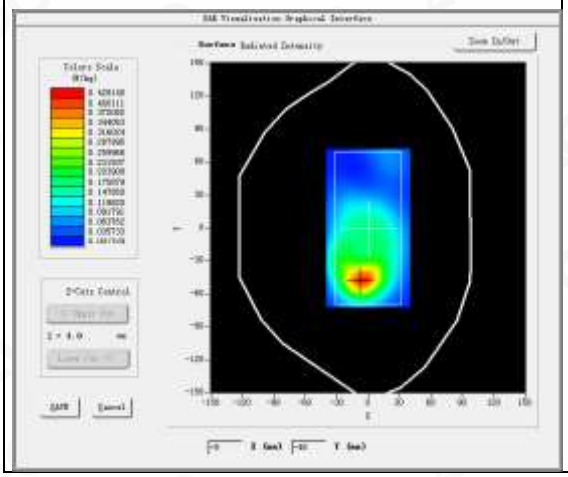
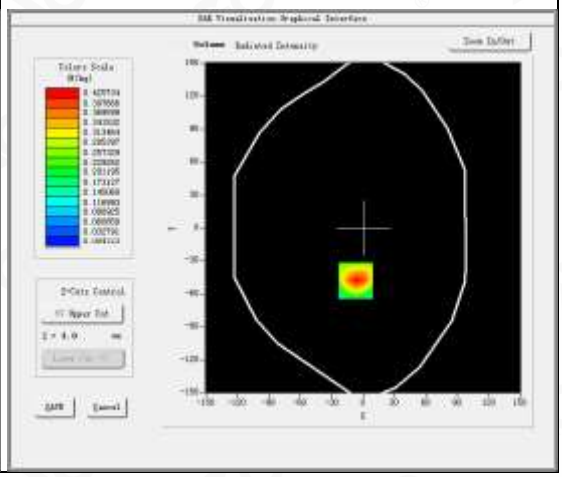
Test Laboratory: AGC Lab **Date: Aug. 12,2020**
WCDMA Band I Mid- Hotspot -Towards Grounds (RMC)
DUT: Smartphone; Type: J8

Communication System: UMTS; Communication System Band: Band I UTRA/FDD ;Duty Cycle:1:1; Conv.F=4.61;
Frequency: 1950MHz; Medium parameters used: f = 2000 MHz; σ= 1.38mho/m; εr =38.74; ρ= 1000 kg/m³ ;
Phantom section: Flat Section
Ambient temperature (℃):21.4, Liquid temperature (℃):21.1

SATIMO Configuration:
Probe: SSE5; Calibrated: Jun. 24,2020; Serial No.: SN 24/20 EP336
Sensor-Surface: 4mm (Mechanical Surface Detection)
Phantom: SAM twin phantom
Measurement SW: OpenSAR V4_02_32

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

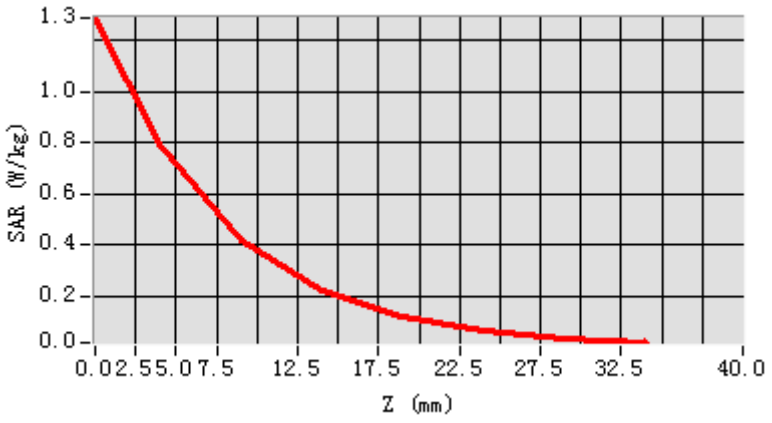
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Hotspot Back
Band	WCDMA Band I
Channels	Middle
Signal	CDMA (Crest factor: 1.0)

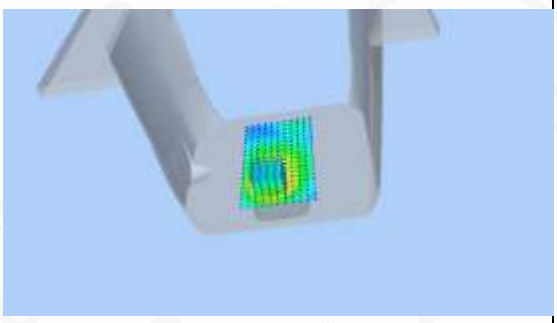
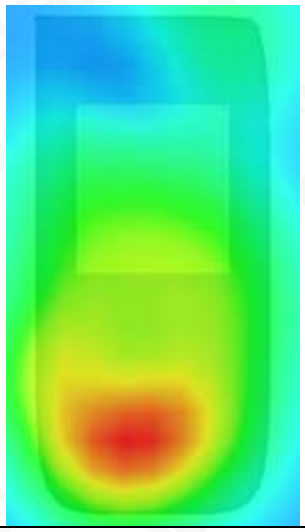
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-7.00, Y=-48.00
SAR Peak: 1.18 W/kg

SAR 10g (W/Kg)	0.369800
SAR 1g (W/Kg)	0.742512

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	1.2857	0.7933	0.4161	0.2210	0.1166	0.0621	0.0330



3D screen shot	Hot spot position
	

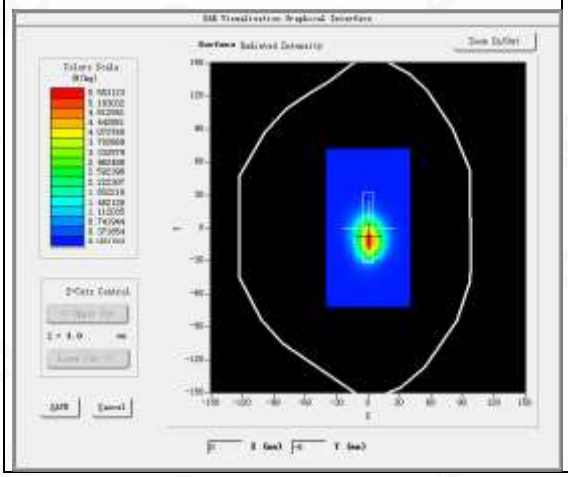
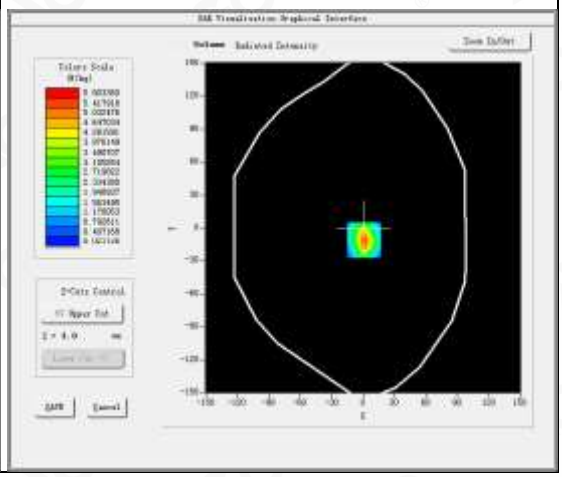
Test Laboratory: AGC Lab **Date: Aug. 12,2020**
WCDMA Band I Low- Limbs –Edge3 (RMC)
DUT: Smartphone; Type: J8

Communication System: UMTS; Communication System Band: Band I UTRA/FDD ;Duty Cycle:1:1; Conv.F=4.61;
Frequency: 1922.4MHz; Medium parameters used: f = 2000 MHz; σ= 1.38mho/m; εr =38.74; ρ= 1000 kg/m³ ;
Phantom section: Flat Section
Ambient temperature (℃):21.4, Liquid temperature (℃):21.1

SATIMO Configuration:
Probe: SSE5; Calibrated: Jun. 24,2020; Serial No.: SN 24/20 EP336
Sensor-Surface: 4mm (Mechanical Surface Detection)
Phantom: SAM twin phantom
Measurement SW: OpenSAR V4_02_32

Configuration/WCDMA Band I Low- Limbs - Edge3/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/WCDMA Band I Low- Limbs - Edge3//Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

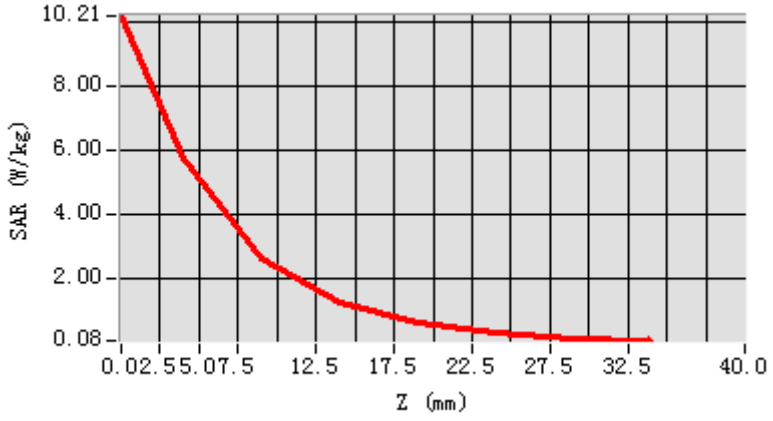
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Limbs Edge3
Band	WCDMA Band I
Channels	Low
Signal	CDMA (Crest factor: 1.0)

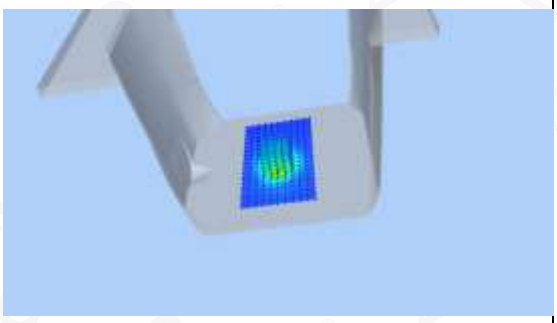
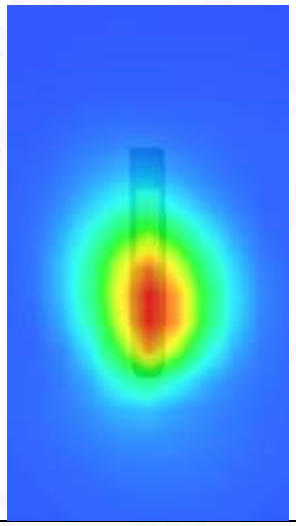
SURFACE SAR	VOLUME SAR
	

Maximum location: X=1.00, Y=-11.00
SAR Peak: 10.55 W/kg

SAR 10g (W/Kg)	2.212388
SAR 1g (W/Kg)	5.367759

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	10.2132	5.8034	2.6653	1.2923	0.6345	0.3162	0.1603



3D screen shot	Hot spot position
	

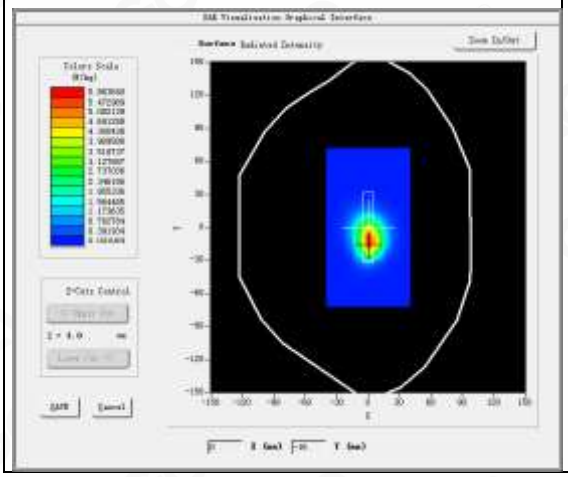
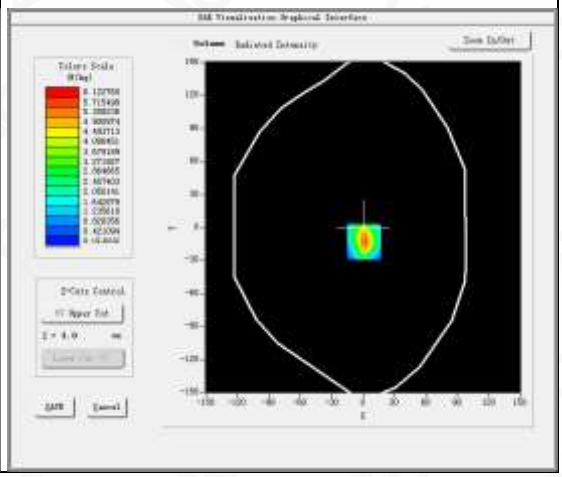
Test Laboratory: AGC Lab **Date: Aug. 12,2020**
WCDMA Band I High-Limbs- Edge3 (RMC)
DUT: Smartphone; Type: J8

Communication System: UMTS; Communication System Band: Band I UTRA/FDD ;Duty Cycle:1:1; Conv.F=4.61;
Frequency: 1977.6MHz; Medium parameters used: f = 2000 MHz; σ= 1.38mho/m; εr =38.74; ρ= 1000 kg/m³ ;
Phantom section: Flat Section
Ambient temperature (℃):21.4, Liquid temperature (℃):21.1

SATIMO Configuration:
Probe: SSE5; Calibrated: Jun. 24,2020; Serial No.: SN 24/20 EP336
Sensor-Surface: 4mm (Mechanical Surface Detection)
Phantom: SAM twin phantom
Measurement SW: OpenSAR V4_02_32

Configuration/WCDMA Band I High- Limbs - Edge3/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/WCDMA Band I High- Limbs - Edge3//Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

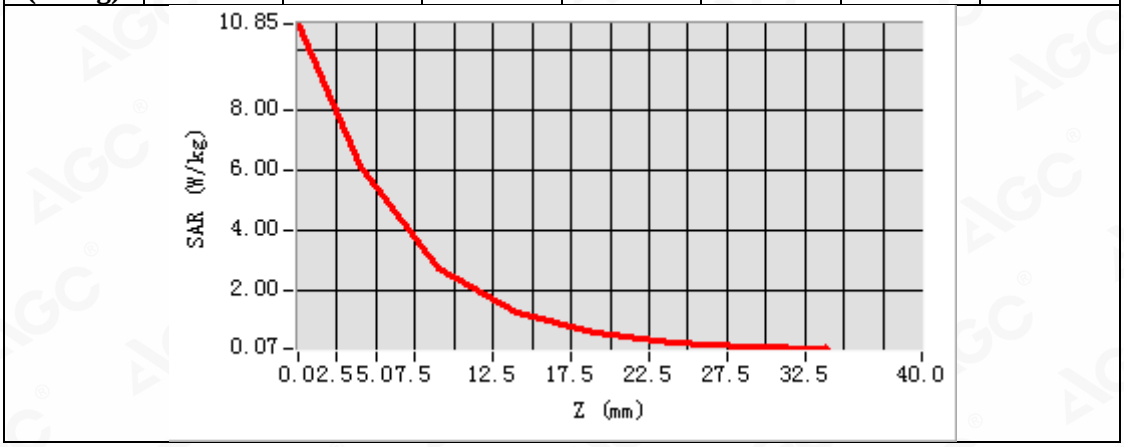
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Limbs Edge3
Band	WCDMA Band I
Channels	High
Signal	CDMA (Crest factor: 1.0)

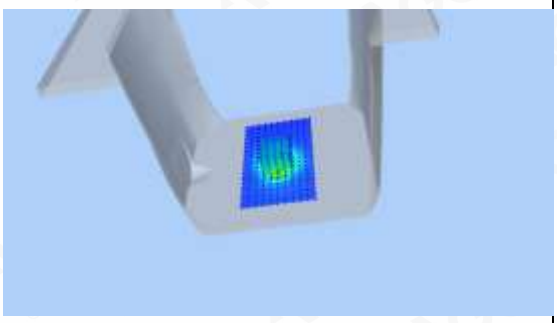
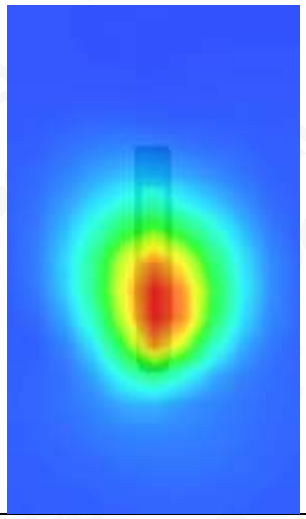
SURFACE SAR	VOLUME SAR
	

Maximum location: X=1.00, Y=-13.00
SAR Peak: 11.34 W/kg

SAR 10g (W/Kg)	2.309252
SAR 1g (W/Kg)	5.673350

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	10.8528	6.1228	2.7617	1.2874	0.6066	0.2912	0.1428



3D screen shot	Hot spot position
	

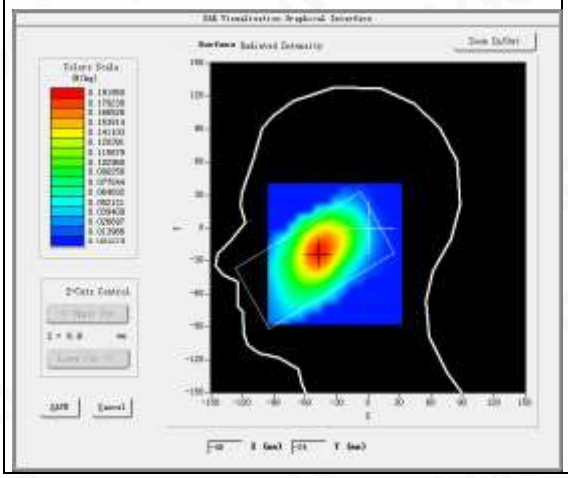
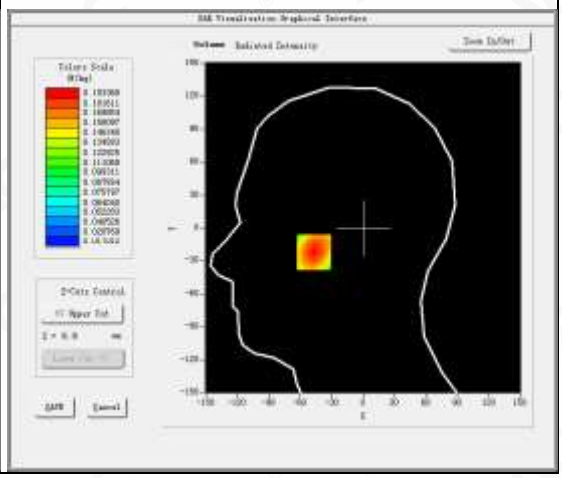
Test Laboratory: AGC Lab **Date: Aug. 18,2020**
WCDMA Band VIII Mid- Touch-Right (RMC)
DUT: Smartphone; Type: J8

Communication System: UMTS; Communication System Band: Band VIII UTRA/FDD; Duty Cycle:1:1; Conv.F=5.16
Frequency: 897.6MHz;; Medium parameters used: f = 900 MHz; σ=0.98mho/m; εr =40.05; ρ= 1000 kg/m³ ;
Phantom section: Right Section
Ambient temperature (℃): 21.1, Liquid temperature (℃): 20.8

SATIMO Configuration:
Probe: SSE5; Calibrated: Jun. 24,2020; Serial No.: SN 24/20 EP336
Sensor-Surface: 4mm (Mechanical Surface Detection)
Phantom: SAM twin phantom
Measurement SW: OpenSAR V4_02_32

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

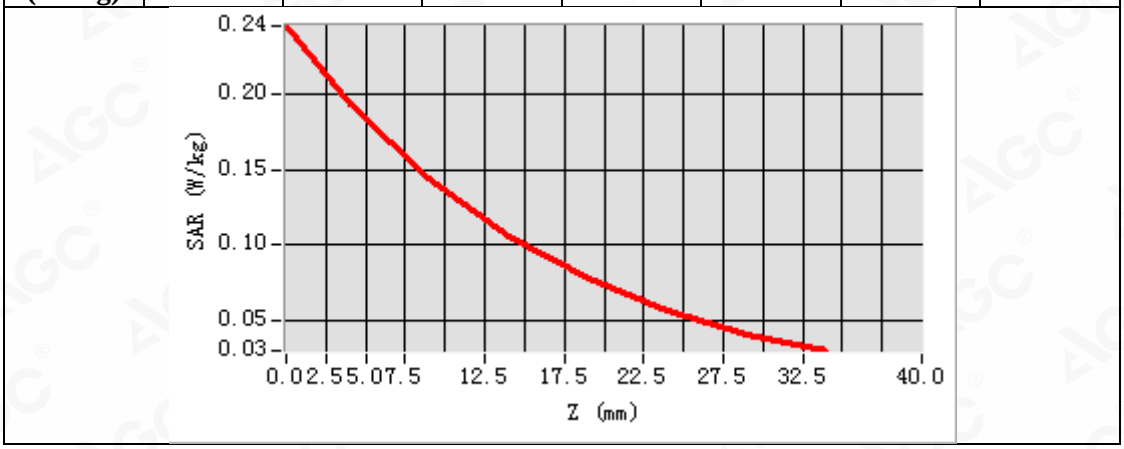
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Right head
Device Position	Cheek
Band	WCDMA Band VIII
Channels	Middle
Signal	CDMA (Crest factor: 1.0)

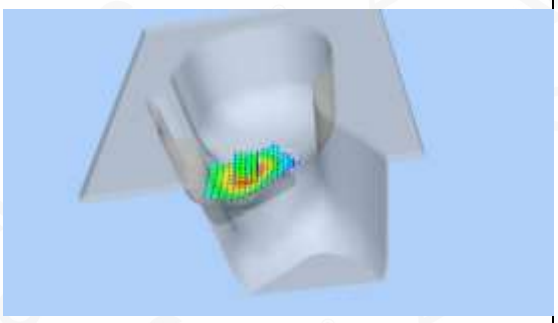
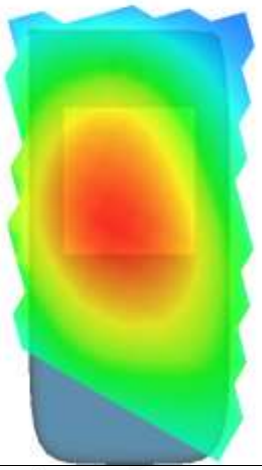
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-47.00, Y=-22.00
SAR Peak: 0.24 W/kg

SAR 10g (W/Kg)	0.129225
SAR 1g (W/Kg)	0.185377

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.2450	0.1934	0.1437	0.1054	0.0782	0.0566	0.0410



3D screen shot	Hot spot position
	

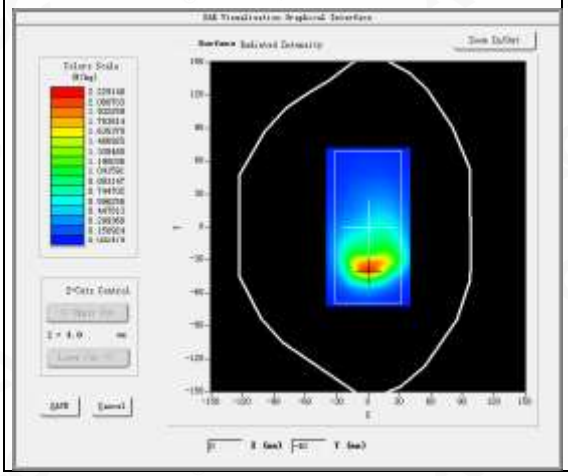
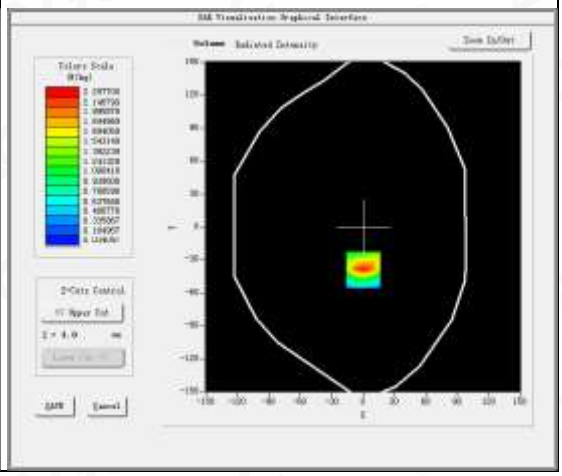
Test Laboratory: AGC Lab **Date: Aug. 18,2020**
WCDMA Band VIII High-Body(Limbs)-Towards Grounds (RMC)
DUT: Smartphone; Type: J8

Communication System: UMTS; Communication System Band: Band VIII UTRA/FDD; Duty Cycle:1:1; Conv.F=5.16
Frequency: 912.6 MHz; Medium parameters used: f = 900 MHz; σ=0.98 mho/m; εr =40.05; ρ= 1000 kg/m³ ;
Phantom section: Flat Section
Ambient temperature (℃): 21.1, Liquid temperature (℃): 20.8

SATIMO Configuration:
Probe: SSE5; Calibrated: Jun. 24,2020; Serial No.: SN 24/20 EP336
Sensor-Surface: 4mm (Mechanical Surface Detection)
Phantom: SAM twin phantom
Measurement SW: OpenSAR V4_02_32

Configuration/ WCDMA Band VIII High-Body(Limbs)-Back/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/ WCDMA Band VIII High-Body(Limbs)-Back/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

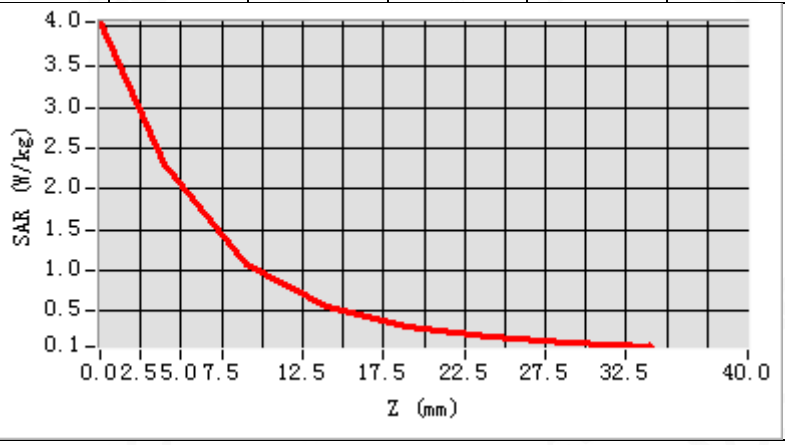
Area Scan	surf_sam_plan.txt, h= 5.00 mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Body(Limbs) Back
Band	WCDMA Band VIII
Channels	High
Signal	CDMA (Crest factor: 1.0)

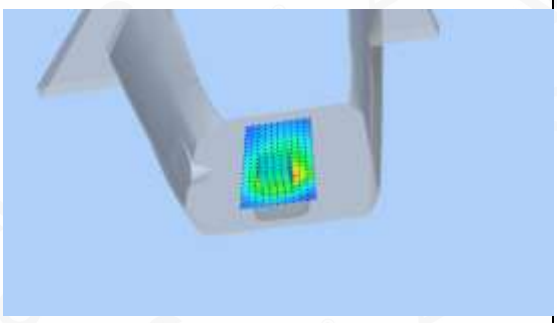
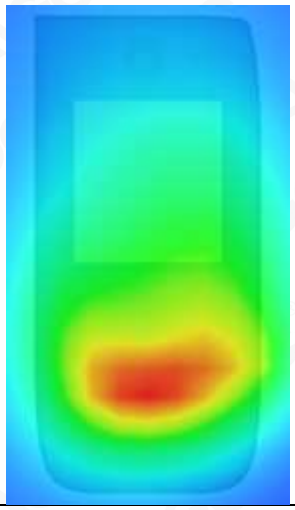
SURFACE SAR	VOLUME SAR
	

Maximum location: X=0.00, Y=-39.00
SAR Peak: 4.02 W/kg

SAR 10g (W/Kg)	1.041697
SAR 1g (W/Kg)	2.168382

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	4.0425	2.2977	1.0787	0.5708	0.3200	0.1859	0.1121



3D screen shot	Hot spot position
	

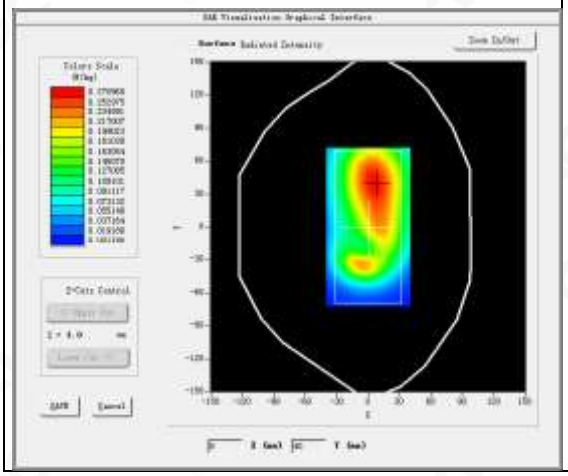
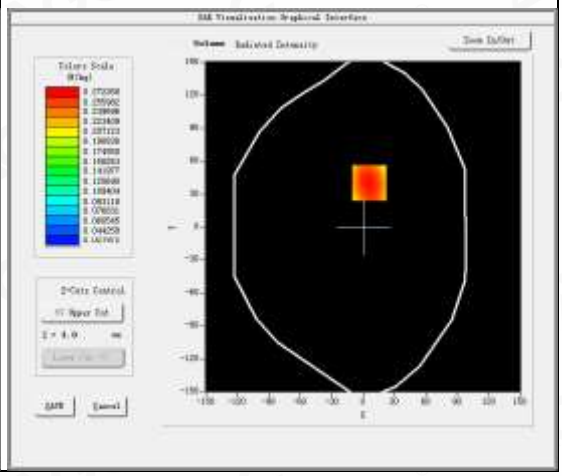
Test Laboratory: AGC Lab **Date: Aug. 18,2020**
WCDMA Band VIII High-Hotspot-Towards Grounds (RMC)
DUT: Smartphone; Type: J8

Communication System: UMTS; Communication System Band: Band VIII UTRA/FDD; Duty Cycle:1:1; Conv.F=5.16
Frequency: 912.6 MHz; Medium parameters used: f = 900 MHz; σ=0.98 mho/m; εr =40.05; ρ= 1000 kg/m³ ;
Phantom section: Flat Section
Ambient temperature (℃): 21.1, Liquid temperature (℃): 20.8

SATIMO Configuration:
Probe: SSE5; Calibrated: Jun. 24,2020; Serial No.: SN 24/20 EP336
Sensor-Surface: 4mm (Mechanical Surface Detection)
Phantom: SAM twin phantom
Measurement SW: OpenSAR V4_02_32

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;

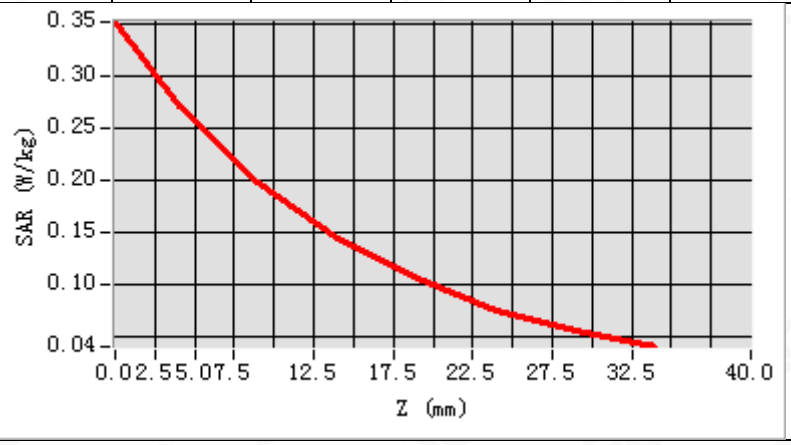
Area Scan	surf_sam_plan.txt, h= 5.00 mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Hotspot Back
Band	WCDMA Band VIII
Channels	High
Signal	CDMA (Crest factor: 1.0)

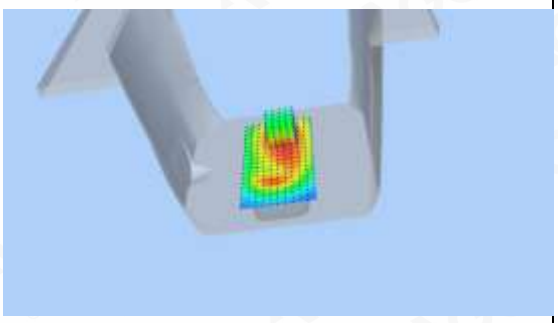
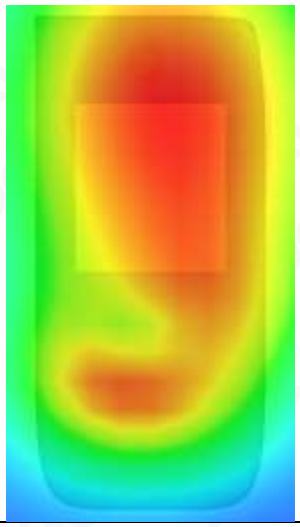
SURFACE SAR	VOLUME SAR
	

Maximum location: X=6.00, Y=40.00
SAR Peak: 0.36 W/kg

SAR 10g (W/Kg)	0.184456
SAR 1g (W/Kg)	0.264154

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.3526	0.2723	0.1973	0.1444	0.1049	0.0753	0.0546



3D screen shot	Hot spot position
	

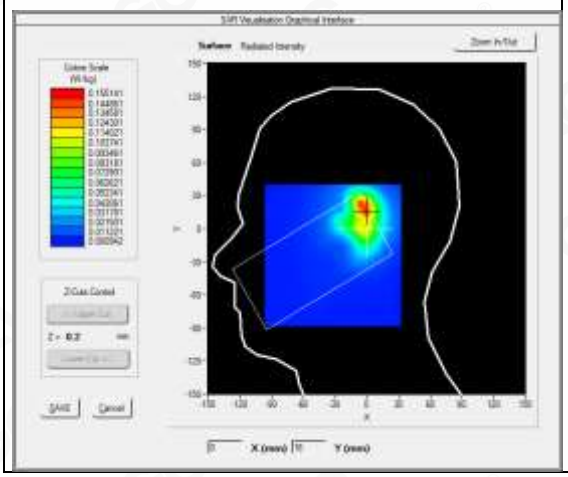
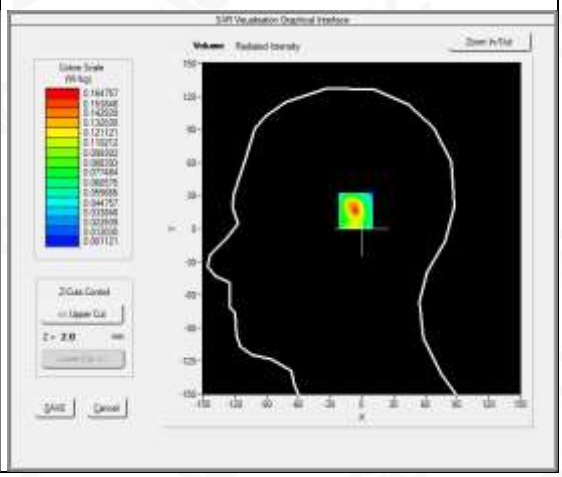
WIFI MODE
Test Laboratory: AGC Lab **Date: Aug. 17,2020**
802.11b Low -Tilt-Left
DUT: Smartphone; Type: J8

Communication System: Wi-Fi; Communication System Band: 802.11b; Duty Cycle: 1:1; Conv.F=4.23;
Frequency: 2412 MHz; Medium parameters used: f = 2450 MHz; σ= 1.75mho/m; εr =38.65; ρ= 1000 kg/m³ ;
Phantom section: Left Section
Ambient temperature (℃):20.9, Liquid temperature (℃): 20.6

SATIMO Configuration:
Probe: SSE5; Calibrated: Jun. 24,2020; Serial No.: SN 24/20 EP336
Sensor-Surface: 4mm (Mechanical Surface Detection)
Phantom: SAM twin phantom
Measurement SW: OpenSAR V4_02_32

Configuration/802.11b Low- Tilt-Left/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/802.11b Low- Tilt-Left/Zoom Scan: Measurement grid: dx=8mm, dy=8mm,dz=5mm;

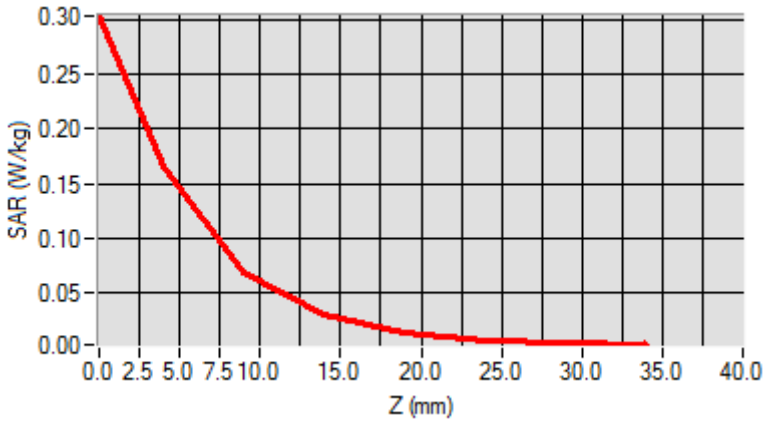
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Left head
Device Position	Tilt
Band	2450MHz
Channels	Low
Signal	Crest factor: 1.0

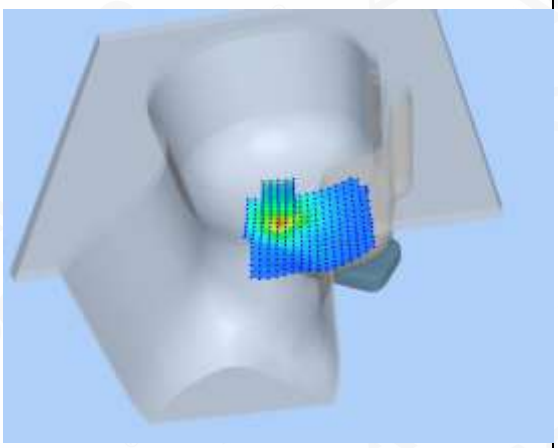
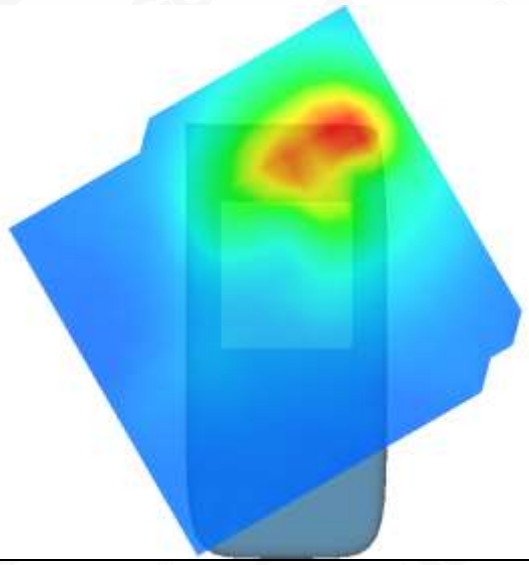
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-1.00, Y=17.00
SAR Peak: 0.31 W/kg

SAR 10g (W/Kg)	0.065038
SAR 1g (W/Kg)	0.155759

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.3032	0.1648	0.0691	0.0308	0.0138	0.0066	0.0037



3D screen shot	Hot spot position
	

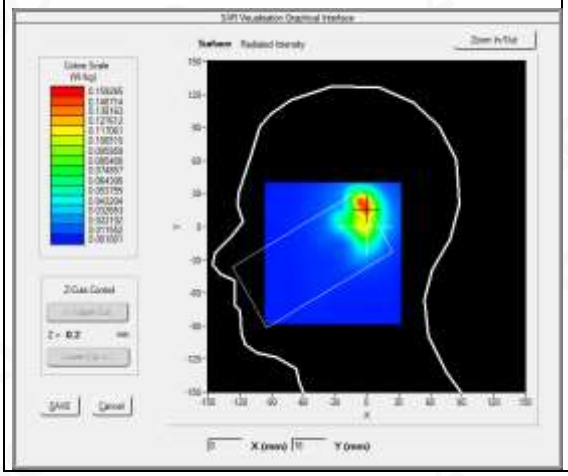
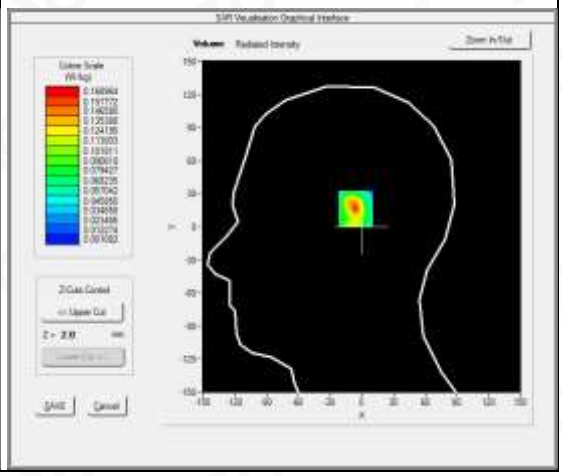
Test Laboratory: AGC Lab **Date: Aug. 17,2020**
802.11b High-Tilt-Left
DUT: Smartphone; Type: J8

Communication System: Wi-Fi; Communication System Band: 802.11b; Duty Cycle: 1:1; Conv.F=4.23;
Frequency: 2472 MHz; Medium parameters used: f = 2450 MHz; σ= 1.75mho/m; εr =38.65; ρ= 1000 kg/m³ ;
Phantom section: Left Section
Ambient temperature (℃):20.9, Liquid temperature (℃): 20.6

SATIMO Configuration:
Probe: SSE5; Calibrated: Jun. 24,2020; Serial No.: SN 24/20 EP336
Sensor-Surface: 4mm (Mechanical Surface Detection)
Phantom: SAM twin phantom
Measurement SW: OpenSAR V4_02_32

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

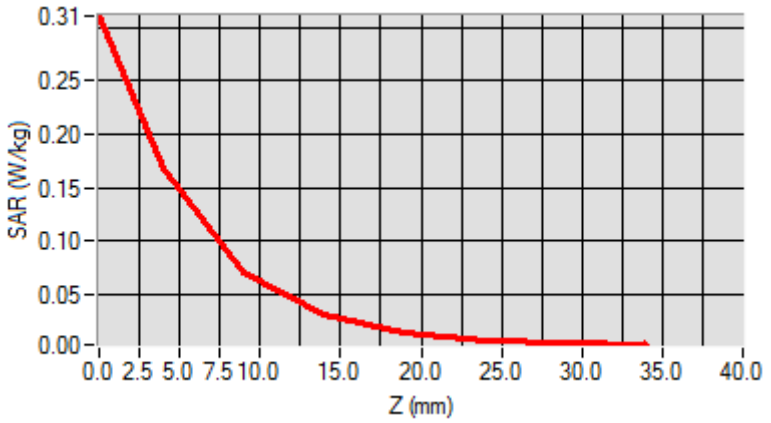
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Left head
Device Position	Tilt
Band	2450MHz
Channels	High
Signal	Crest factor: 1.0

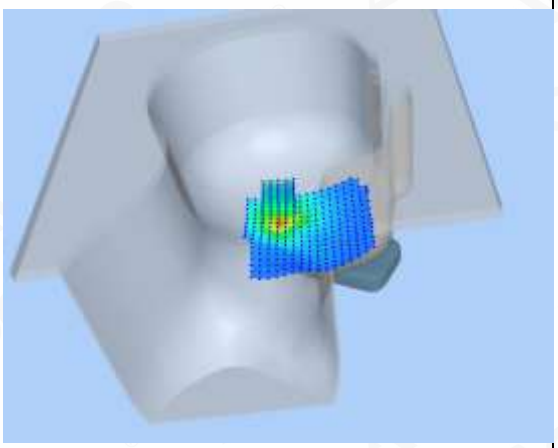
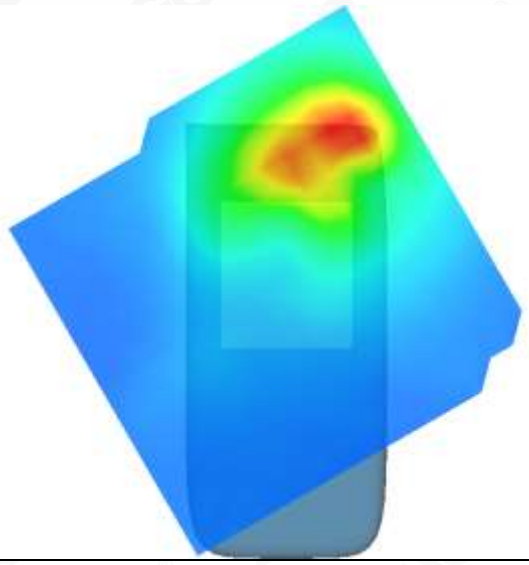
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-1.00, Y=17.00
SAR Peak: 0.32 W/kg

SAR 10g (W/Kg)	0.066717
SAR 1g (W/Kg)	0.159798

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.3111	0.1690	0.0710	0.0315	0.0142	0.0069	0.0036



3D screen shot	Hot spot position
	

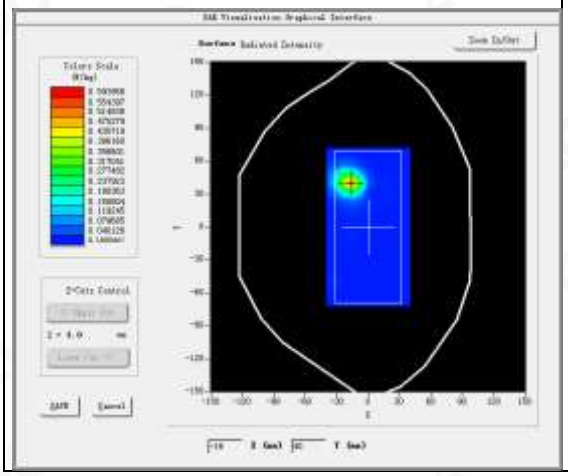
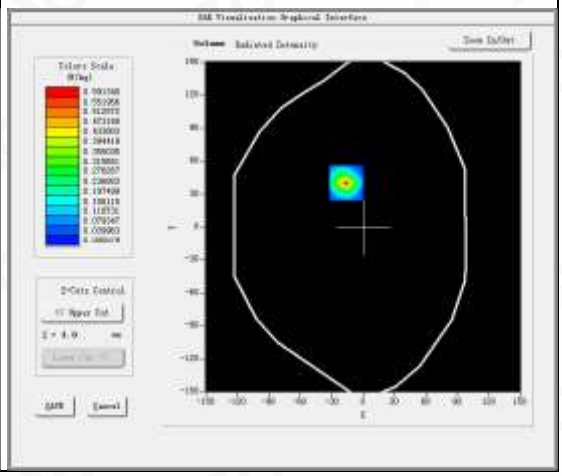
Test Laboratory: AGC Lab **Date: Aug. 17,2020**
802.11b Low-Body-Worn(Limbs)- Back
DUT: Smartphone; Type: J8

Communication System: Wi-Fi; Communication System Band: 802.11b; Duty Cycle: 1:1; Conv.F=4.23;
Frequency: 2412 MHz; Medium parameters used: f = 2450 MHz; σ= 1.75mho/m; εr =38.65; ρ= 1000 kg/m³ ;
Phantom section: Flat Section
Ambient temperature (℃):20.9, Liquid temperature (℃): 20.6

SATIMO Configuration:
Probe: SSE5; Calibrated: Jun. 24,2020; Serial No.: SN 24/20 EP336
Sensor-Surface: 4mm (Mechanical Surface Detection)
Phantom: SAM twin phantom
Measurement SW: OpenSAR V4_02_32

Configuration/802.11b Low- Body(Limbs)- Back /Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/802.11b Low- Body(Limbs)- Back /Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

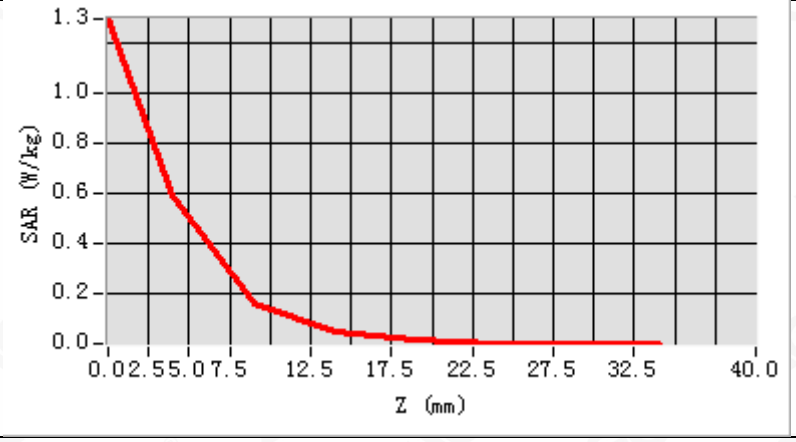
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Body(Limbs) Back
Band	2450MHz
Channels	Low
Signal	Crest factor: 1.0

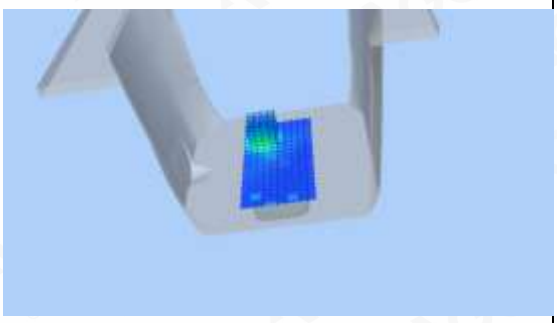
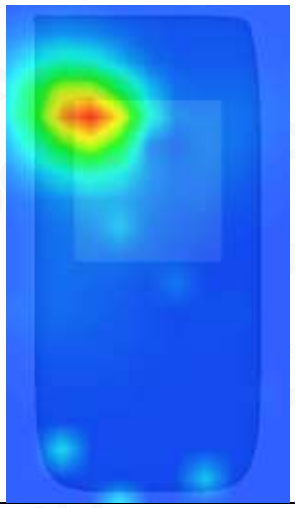
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-16.00, Y=40.00
SAR Peak: 1.26 W/kg

SAR 10g (W/Kg)	0.159046
SAR 1g (W/Kg)	0.522876

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	1.2944	0.5913	0.1595	0.0452	0.0137	0.0046	0.0016



3D screen shot	Hot spot position
	

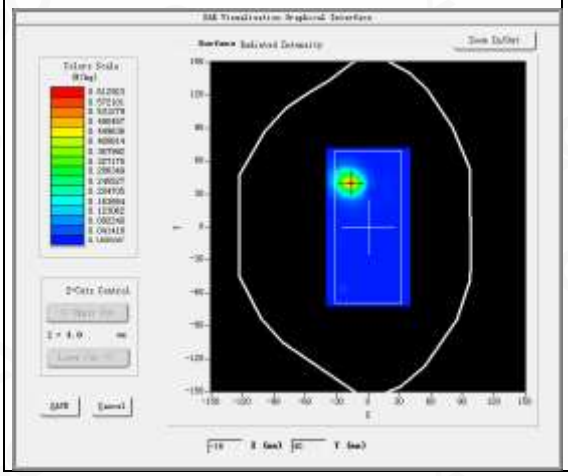
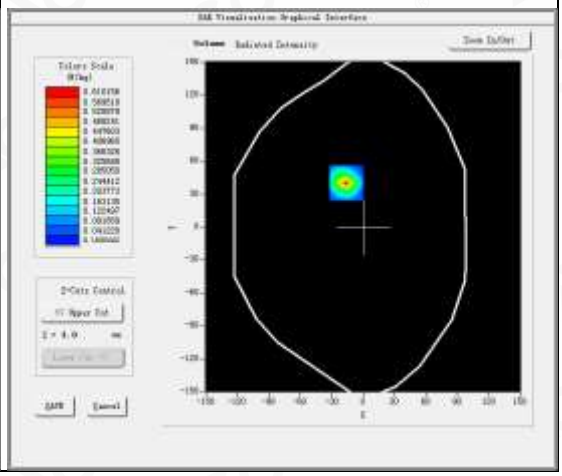
Test Laboratory: AGC Lab **Date: Aug. 17,2020**
802.11b High-Body-Worn(Limbs)- Back
DUT: Smartphone; Type: J8

Communication System: Wi-Fi; Communication System Band: 802.11b; Duty Cycle: 1:1; Conv.F=4.23;
Frequency: 2472 MHz; Medium parameters used: f = 2450 MHz; σ= 1.75mho/m; εr =38.65; ρ= 1000 kg/m³ ;
Phantom section: Flat Section
Ambient temperature (℃):20.9, Liquid temperature (℃): 20.6

SATIMO Configuration:
Probe: SSE5; Calibrated: Jun. 24,2020; Serial No.: SN 24/20 EP336
Sensor-Surface: 4mm (Mechanical Surface Detection)
Phantom: SAM twin phantom
Measurement SW: OpenSAR V4_02_32

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

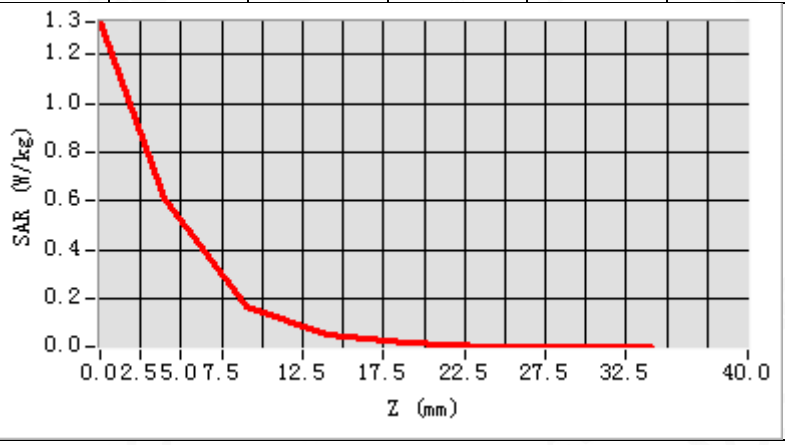
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Body(Limbs) Back
Band	2450MHz
Channels	High
Signal	Crest factor: 1.0

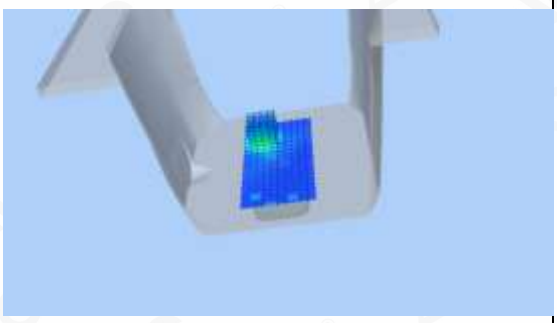
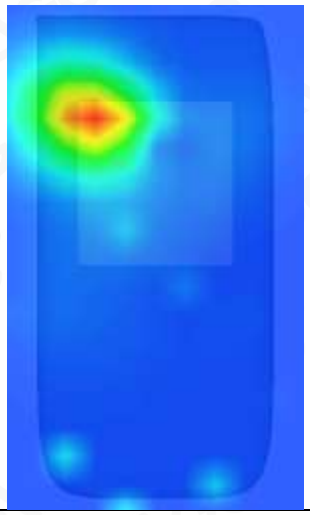
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-16.00, Y=40.00
SAR Peak: 1.30 W/kg

SAR 10g (W/Kg)	0.164244
SAR 1g (W/Kg)	0.539718

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	1.3348	0.6102	0.1648	0.0467	0.0142	0.0047	0.0018



3D screen shot	Hot spot position
	

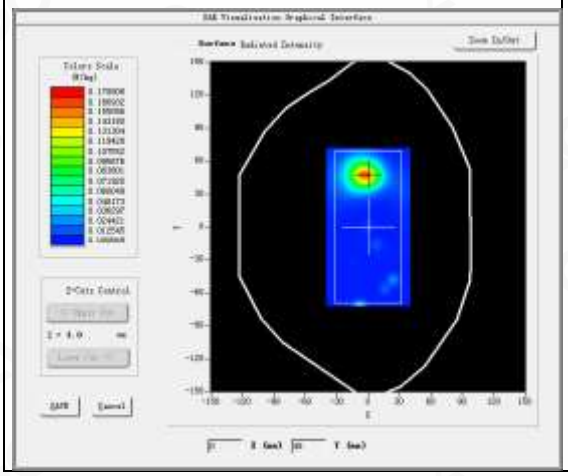
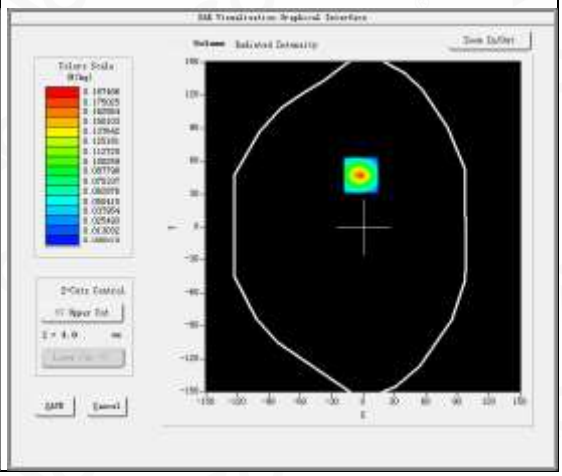
Test Laboratory: AGC Lab **Date: Aug. 17,2020**
802.11b Low-Hotspot- Back
DUT: Smartphone; Type: J8

Communication System: Wi-Fi; Communication System Band: 802.11b; Duty Cycle: 1:1; Conv.F=4.23;
Frequency: 2412 MHz; Medium parameters used: f = 2450 MHz; σ= 1.75mho/m; εr =38.65; ρ= 1000 kg/m³ ;
Phantom section: Flat Section
Ambient temperature (℃):20.9, Liquid temperature (℃): 20.6

SATIMO Configuration:
Probe: SSE5; Calibrated: Jun. 24,2020; Serial No.: SN 24/20 EP336
Sensor-Surface: 4mm (Mechanical Surface Detection)
Phantom: SAM twin phantom
Measurement SW: OpenSAR V4_02_32

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

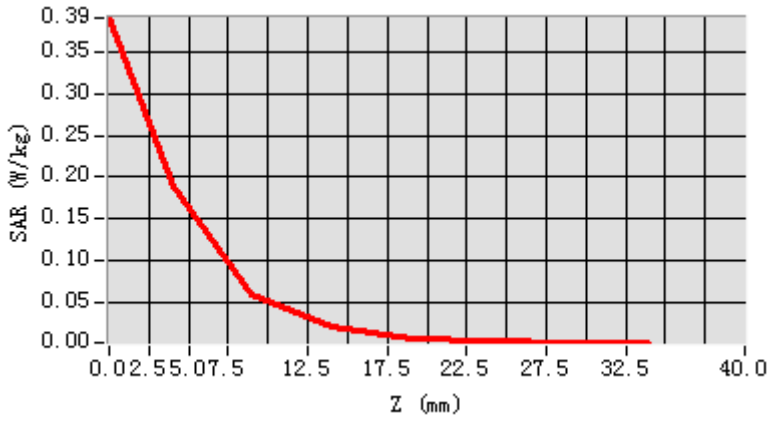
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Hotspot Back
Band	2450MHz
Channels	Low
Signal	Crest factor: 1.0

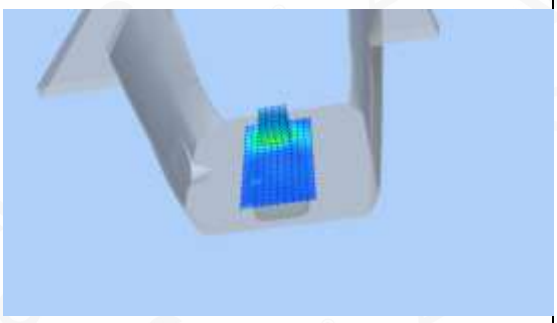
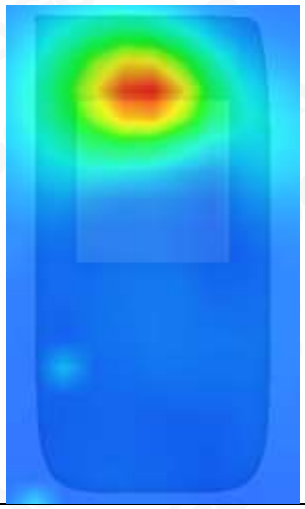
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-2.00, Y=47.00
SAR Peak: 0.38 W/kg

SAR 10g (W/Kg)	0.062457
SAR 1g (W/Kg)	0.174043

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.3910	0.1875	0.0586	0.0190	0.0065	0.0024	0.0010



3D screen shot	Hot spot position
	

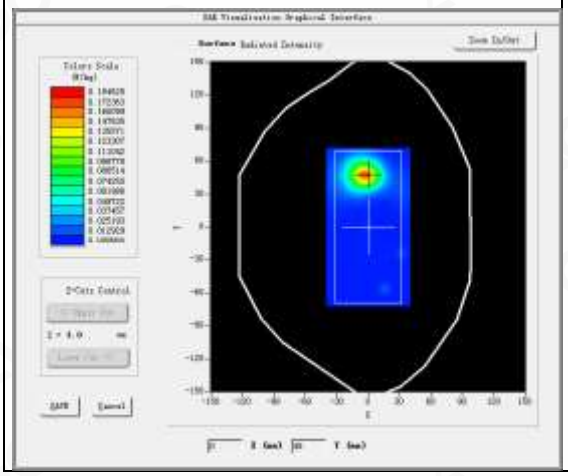
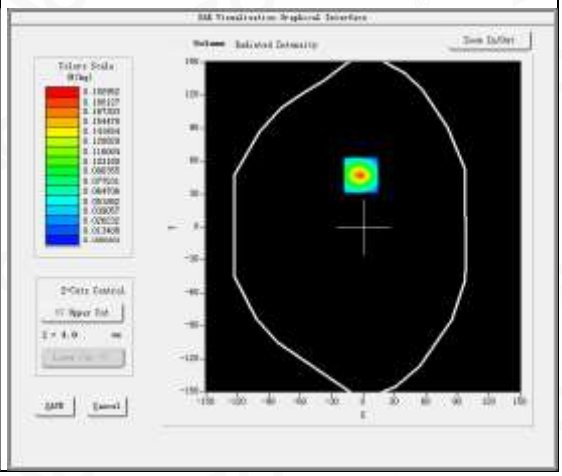
Test Laboratory: AGC Lab **Date: Aug. 17,2020**
802.11b High-Hotspot- Back
DUT: Smartphone; Type: J8

Communication System: Wi-Fi; Communication System Band: 802.11b; Duty Cycle: 1:1; Conv.F=4.23;
Frequency: 2472 MHz; Medium parameters used: f = 2450 MHz; σ= 1.75mho/m; εr =38.65; ρ= 1000 kg/m³ ;
Phantom section: Flat Section
Ambient temperature (℃):20.9, Liquid temperature (℃): 20.6

SATIMO Configuration:
Probe: SSE5; Calibrated: Jun. 24,2020; Serial No.: SN 24/20 EP336
Sensor-Surface: 4mm (Mechanical Surface Detection)
Phantom: SAM twin phantom
Measurement SW: OpenSAR V4_02_32

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

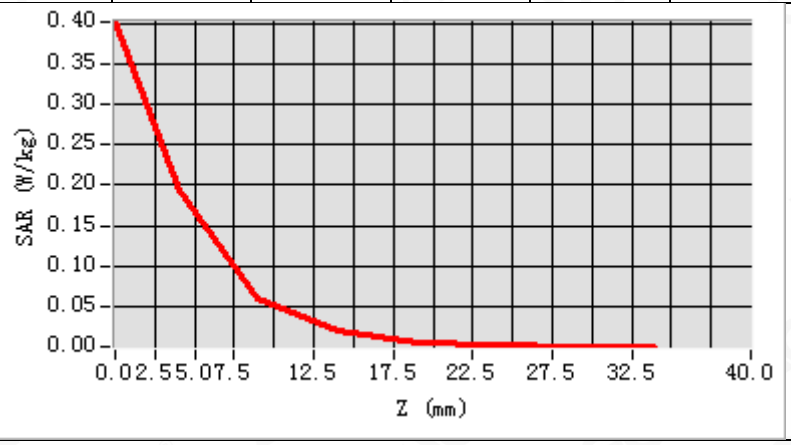
Area Scan	surf_sam_plan.txt, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Hotspot Back
Band	2450MHz
Channels	High
Signal	Crest factor: 1.0

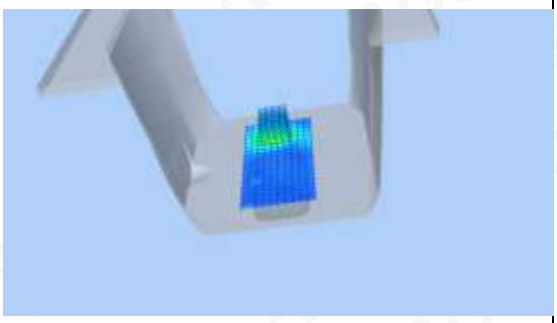
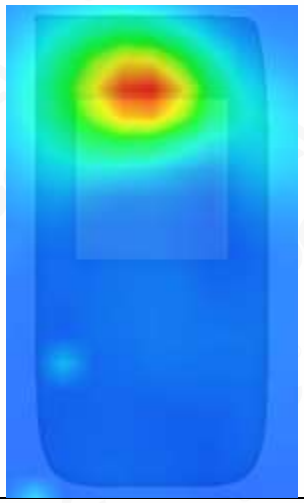
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-2.00, Y=47.00
SAR Peak: 0.39 W/kg

SAR 10g (W/Kg)	0.064408
SAR 1g (W/Kg)	0.179187

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.4017	0.1930	0.0605	0.0196	0.0066	0.0026	0.0011



3D screen shot	Hot spot position
	

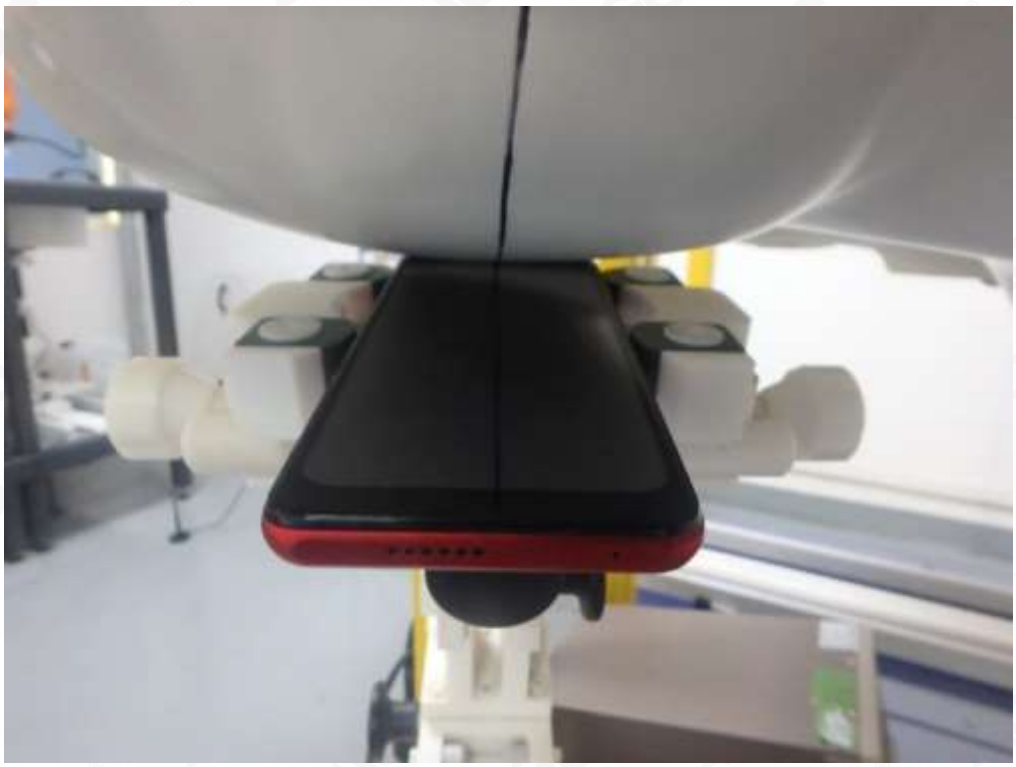
APPENDIX C. TEST SETUP PHOTOGRAPHS

LEFT-CHEEK TOUCH

LEFT-TILT 15°

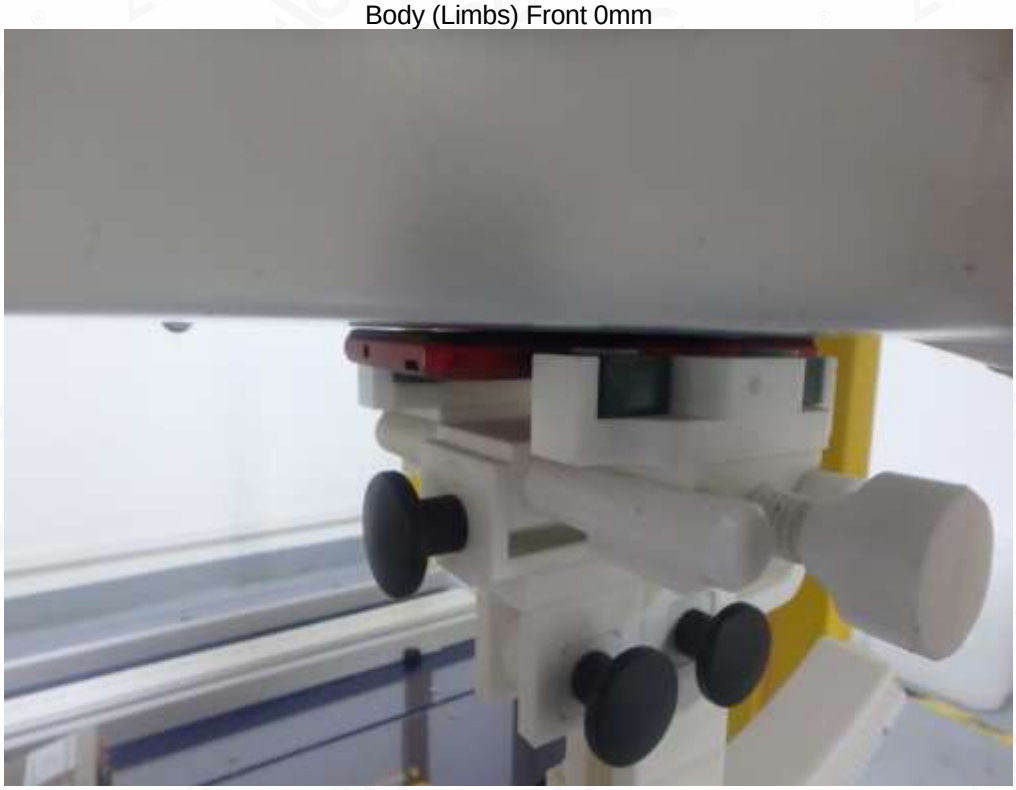
RIGHT- CHEEK TOUCH

RIGHT-TILT 15°



Body(Limbs) Back 0mm

Body (Limbs) Front 0mm



Limbs Edge1(Top) 0mm

Limbs Edge2(Right) 0mm

Limbs Edge3(Bottom) 0mm

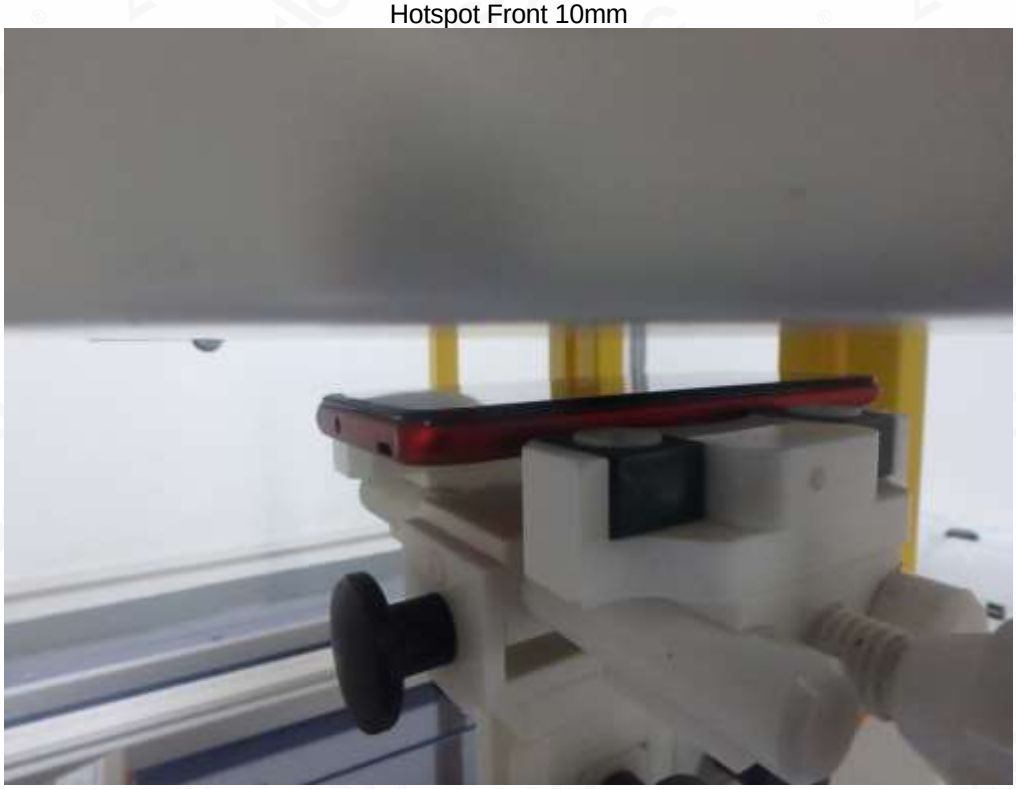
Limbs Edge4(Left) 0mm

Body(Limbs) back with Headset 0mm

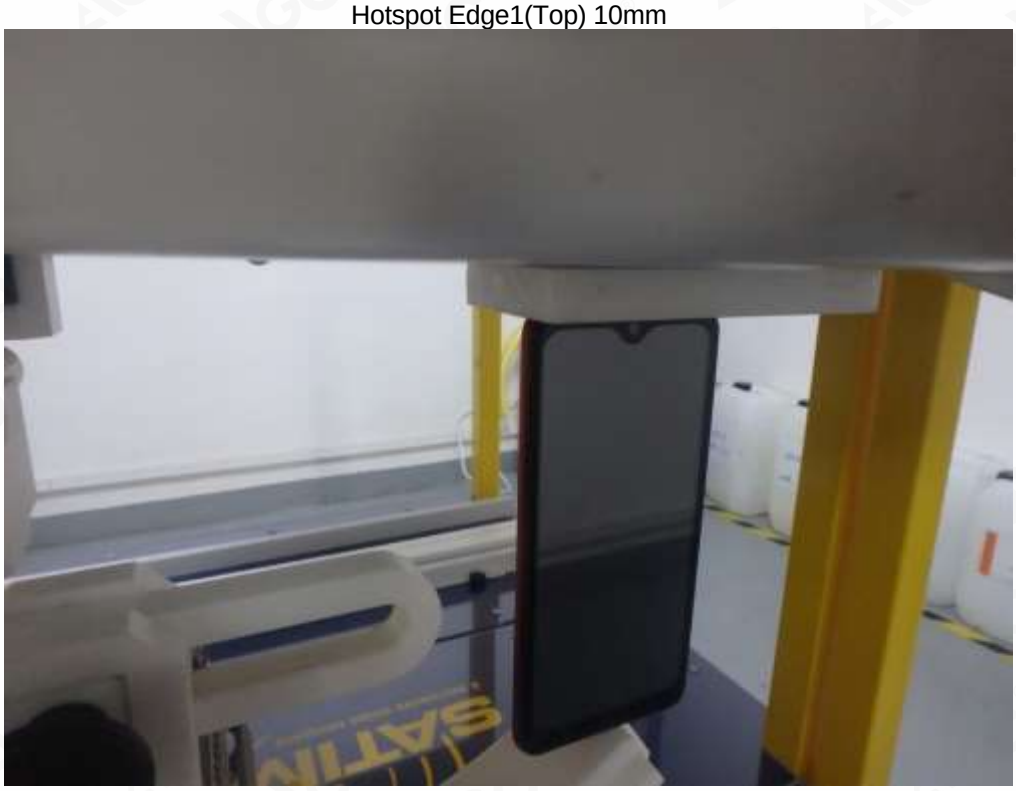
Limbs edge3 with Headset 0mm

Hotspot Back 10mm

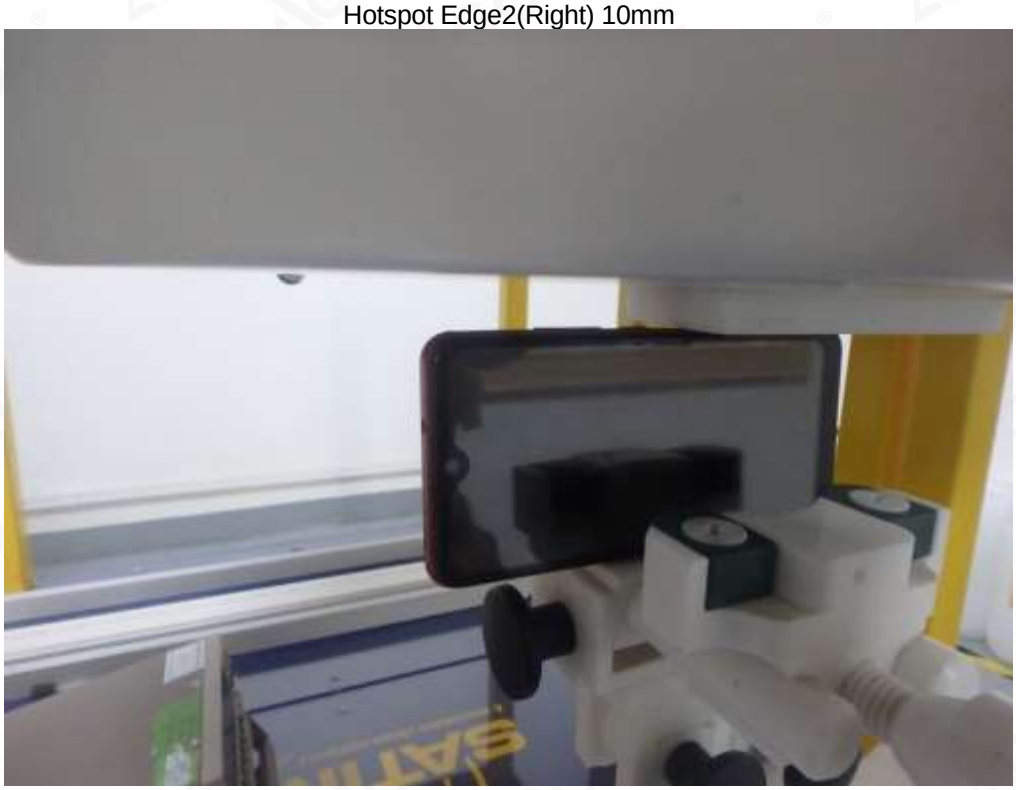
Hotspot Front 10mm



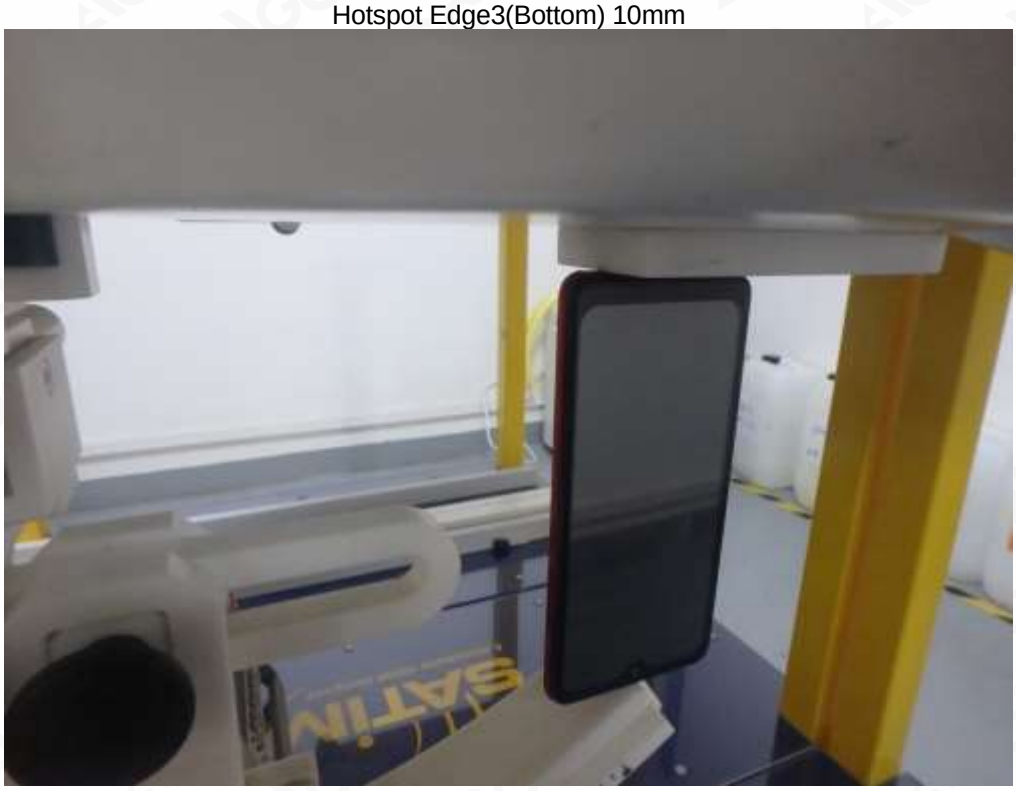
Hotspot Edge1(Top) 10mm



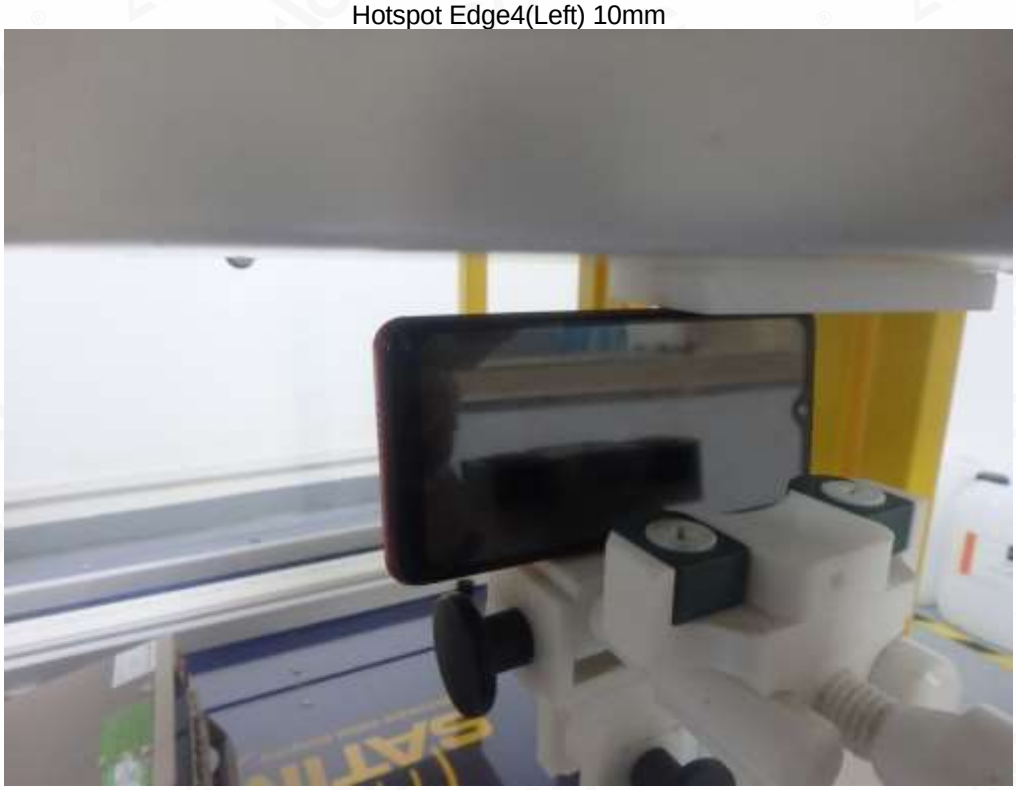
Hotspot Edge2(Right) 10mm



Hotspot Edge3(Bottom) 10mm



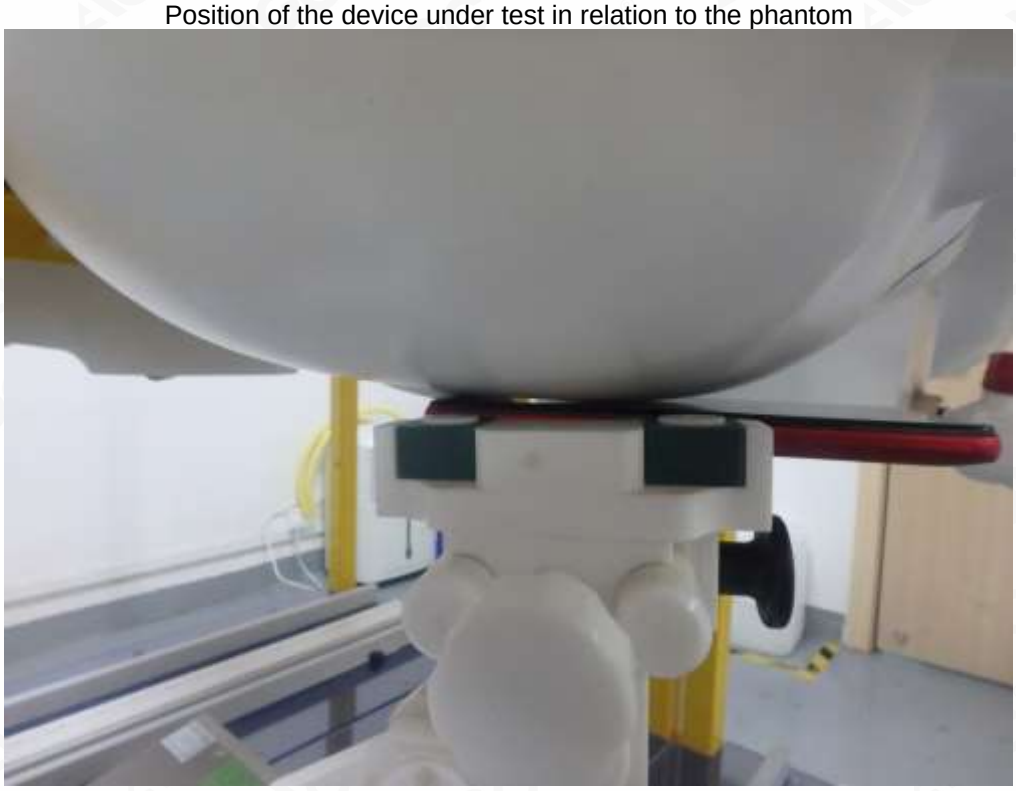
Hotspot Edge4(Left) 10mm



Hotspot back with Headset 10mm

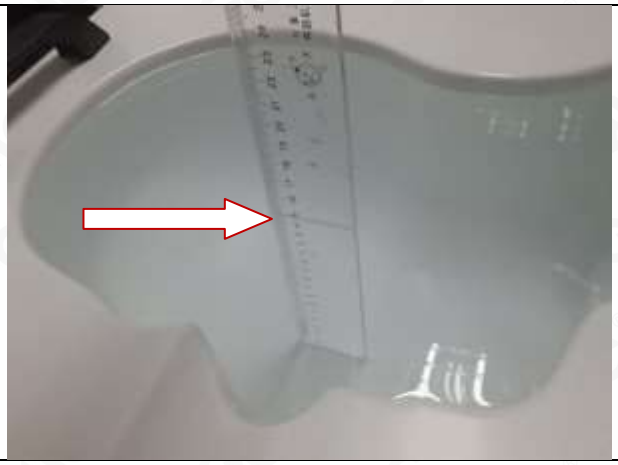
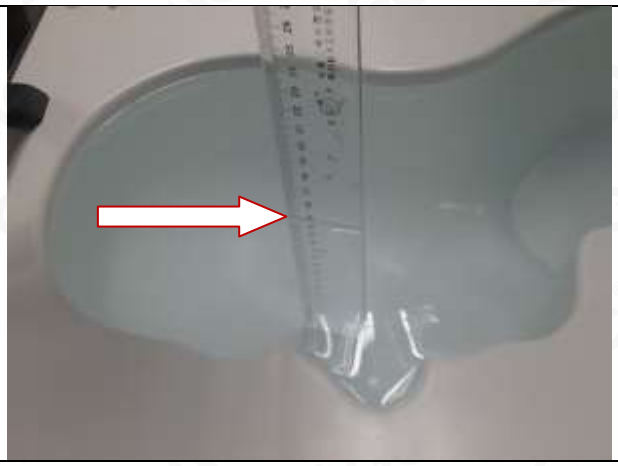
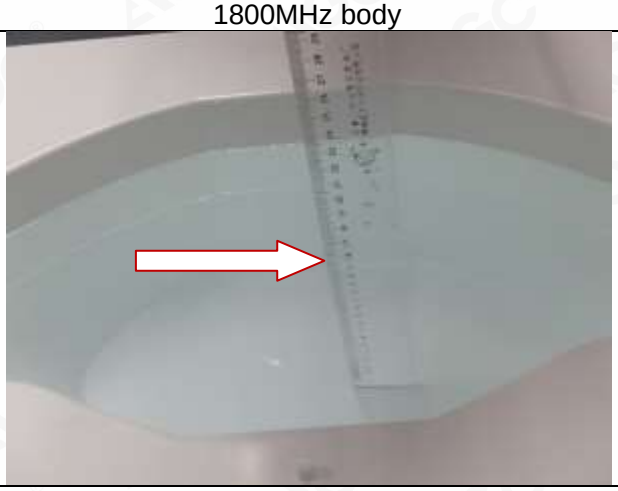
Hotspot edge3 with Headset 10mm

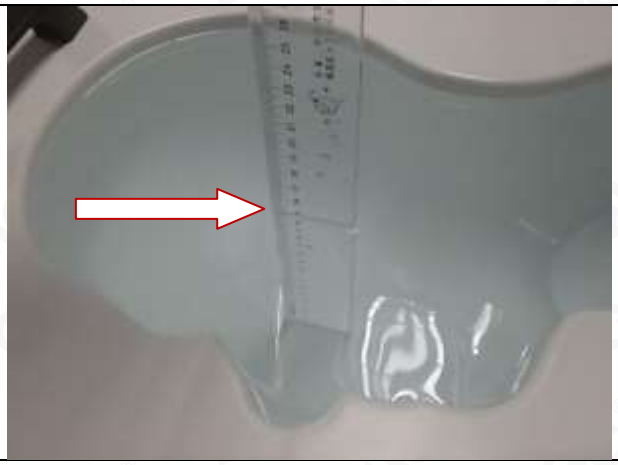
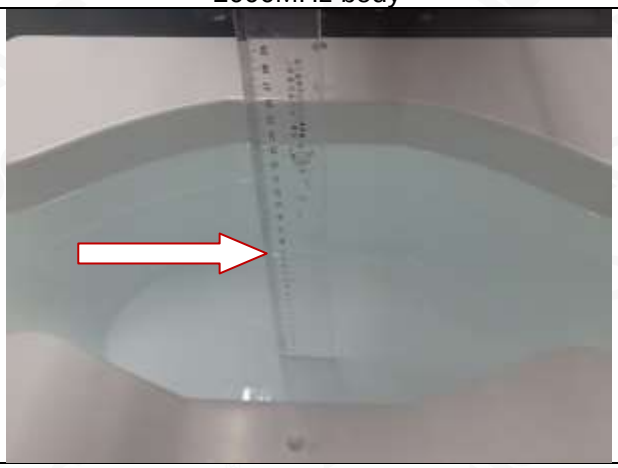
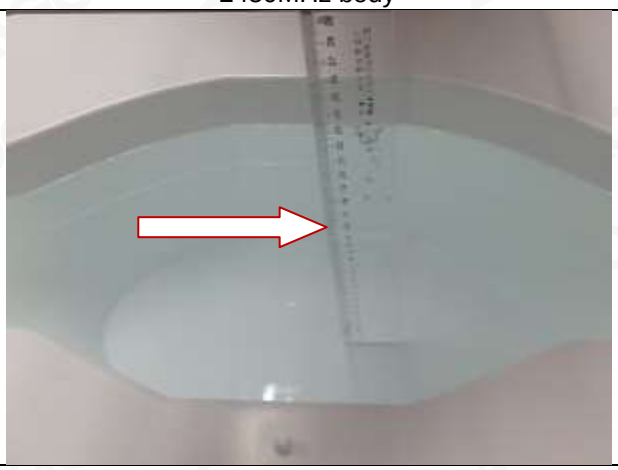
Position of the device under test in relation to the phantom



DEPTH OF THE LIQUID IN THE PHANTOM—ZOOM IN

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

900MHz head	900MHz body
	
1800MHz head	1800MHz body
	

2000MHz head	2000MHz body
	
2450MHz head	2450MHz body
	

APPENDIX D. CALIBRATION DATA

Refer to Attached files.

Conditions of Issuance of Test Reports

1. All samples and goods are accepted by the Attestation of Global Compliance (Shenzhen) Co., Ltd (the "Company") solely for testing and reporting in accordance with the following terms and conditions. The company provides its services on the basis that such terms and conditions constitute express agreement between the company and any person, firm or company requesting its services (the "Clients").

2. Any report issued by Company as a result of this application for testing services (the "Report") shall be issued in confidence to the Clients and the Report will be strictly treated as such by the Company. It may not be reproduced either in its entirety or in part and it may not be used for advertising or other unauthorized purposes without the written consent of the Company. The Clients to whom the Report is issued may, however, show or send it, or a certified copy thereof prepared by the Company to its customer, supplier or other persons directly concerned. The Company will not, without the consent of the Clients, enter into any discussion or correspondence with any third party concerning the contents of the Report, unless required by the relevant governmental authorities, laws or court orders.

3.The Company shall not be called or be liable to be called to give evidence or testimony on the Report in a court of law without its prior written consent, unless required by the relevant governmental authorities, laws or court orders.

4. The non-CMA report issued by AGC is only permitted to be used by the client as internal reference use and shall not be used for public demonstration purpose.

5. In the event of the improper use of the report as determined by the Company, the Company reserves the right to withdraw it, and to adopt any other additional remedies which may be appropriate.

6. Samples submitted for testing are accepted on the understanding that the Report issued cannot form the basis of, or be the instrument for, any legal action against the Company.

7. The Company will not be liable for or accept responsibility for any loss or damage however arising from the use of information contained in any of its Reports or in any communication whatsoever about its said tests or investigations.

8.Clients wishing to use the Report in court proceedings or arbitration shall inform the Company to that effect prior to submitting the sample for testing.

9. The Company is not responsible for recalling the electronic version of the original report when any revision is made to them. The Client assumes the responsibility to providing the revised version to any interested party who uses them.

10. Subject to the variable length of retention time for test data and report stored hereinto as otherwise specifically required by individual accreditation authorities, the Company will only keep the supporting test data and information of the test report for a period of six years. The data and information will be disposed of after the aforementioned retention period has elapsed. Under no circumstances shall we provide any data and information which has been disposed of after retention period. Under no circumstances shall we be liable for damage of any kind, including (but not limited to) compensatory damages, lost profits, lost data, or any form of special, incidental, indirect, consequential or punitive damages of any kind, whether based on breach of contract of warranty, tort (including negligence), product liability or otherwise, even if we are informed in advance of the possibility of such damages.